



Manuale di assistenza tecnica

Serie 30

TIGRETRAC 2500 HST
TIGRETRAC 3800 HST
TIGRETRAC 3800 HST 4WS
SUPERPARK 3800 HST



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stampato da *Lego* s.r.l

PREMESSA



Premessa

Questo manuale d'officina, riguardante la serie 30 Tigretrac-Superpark, è stato redatto dalla Antonio CARRARO S.p.A. per facilitare l'apprendimento di come intervenire sul trattore nel modo più corretto e nel minor tempo possibile.

In esso sono contenute tutte le informazioni di carattere generale relative ai trattori, con particolare rilievo alle operazioni di registrazione, stacco e riattacco, oltre alle norme di smontaggio e montaggio.

Per migliorare l'interpretazione del testo è stata fornita, con la descrizione delle operazioni, un'ampia documentazione di figure che, oltre a rendere visiva la successione delle fasi di stacco-riattacco, smontaggio-montaggio e registrazioni, mette in evidenza l'uso degli attrezzi e l'impiego degli strumenti di misura.

Numerosi disegni e schemi permettono inoltre la visione completa degli organi del trattore e del loro funzionamento, offrendo al tecnico riparatore una conferma circa la modalità di intervento.

Sicurezza e prevenzione

La maggior parte degli incidenti ed infortuni che si verificano nelle officine sono causati dalla mancata osservanza di qualche semplice e fondamentale regola di sicurezza e prevenzione.

Le fondamentali regole di sicurezza e prevenzione non significano affatto «ostacolare i processi produttivi delle officine ma, al contrario, migliorano le prestazioni dell'uomo e della macchina, a tutto vantaggio del singolo lavoratore e dell'intera collettività».

I dati contenuti in questa pubblicazione sono forniti a titolo indicativo e potrebbero risultare non aggiornati in conseguenza di modifiche adottate dal Costruttore, in qualunque momento, per ragioni di natura tecnica o commerciale nonché per adattamento ai requisiti di legge nei diversi Paesi.

Norme generali di sicurezza e prevenzione.



Fare attenzione al segnale triangolare di pericolo presente in questo manuale: esso segnala situazioni o complesso di circostanze che possono provocare danni sia fisici che materiali.

Generalità

- Eseguire le operazioni osservando scrupolosamente le misure di prevenzione e sicurezza.

- Non indossare abbigliamenti larghi e svolazzanti, orologi da polso, anelli, ecc. Si consiglia, invece, di usare indumenti antinfortunistici previsti, come guanti, occhiali, scarpe di sicurezza.

- Non usare le mani per allineare delle forature ma adeguati attrezzi.

- Per sollevare usare sempre mezzi di capacità adeguata.

- Per lo smaltimento di oli attenersi alle norme antinquinamento.

Evitare di inquinare l'ambiente.

- Non usare benzina, gasolio o altri liquidi infiammabili per sgrassare o lavare particolari, ma usare solventi commerciali e atossici.

- Maneggiare funi metalliche o catene proteggendosi le mani con dei guanti antinfortunistici.

- Maneggiare con cura l'olio idraulico perché è velenoso e attacca la vernice.

- Non eseguire nessun intervento sul trattore quando il motore è in moto, a meno che non sia previsto.

- Far attenzione al cesoialmento.

- Far attenzione allo schiacciamento.

- Far attenzione all'impigliamento.

- Far attenzione all'urto.

- Far attenzione all'eiezione di fluido ad alta pressione.

- Scollegare sempre la batteria prima di qualsiasi intervento.

- Non far funzionare il trattore in ambienti chiusi.

- Non disperdere nell'ambiente i fluidi esausti, le cartucce dei filtri usate, olii, grassi lubrificanti ed elementi usati per la pulizia degli stessi. Affidarsi esclusivamente ai centri di raccolta olii esausti regolarmente autorizzati.

Evitare di inquinare l'ambiente.

- Le operazioni che richiedono particolare attenzione possono causare pericolo all'operatore se non sono eseguite correttamente.



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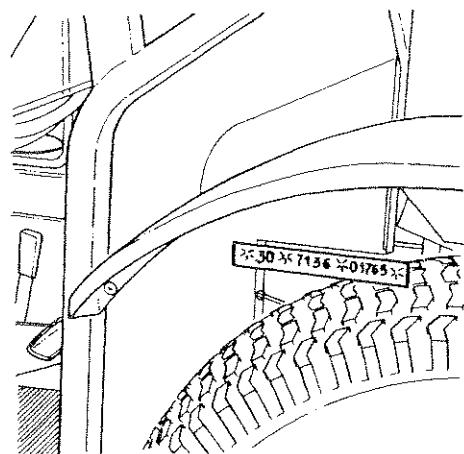
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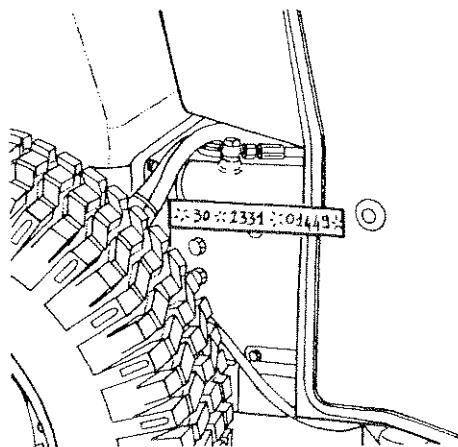


DATI PER L'IDENTIFICAZIONE

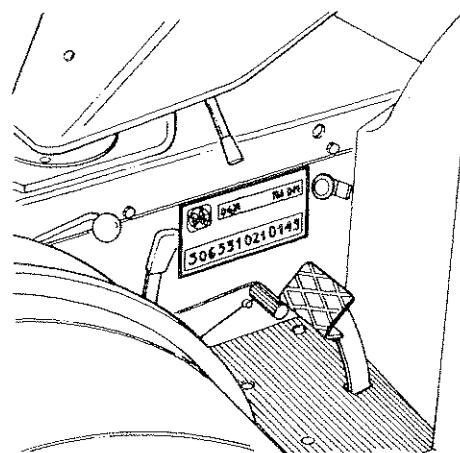
Ubicazione dei dati per l'identificazione



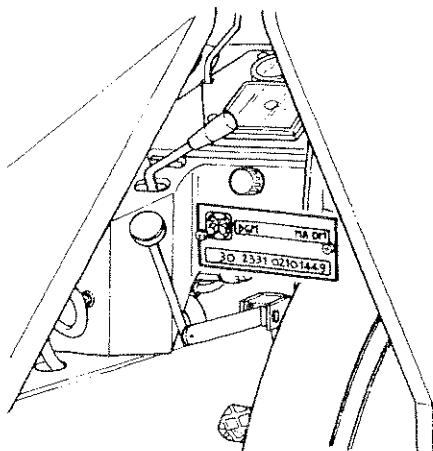
1 - Tigretrac HST: tipo e numero di telaio



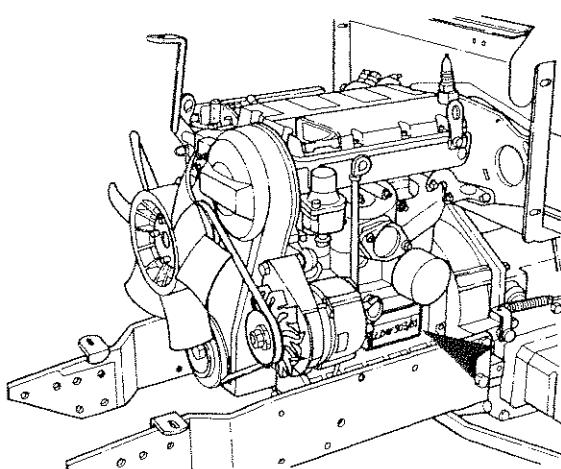
2 - Superpark HST: tipo e numero di telaio



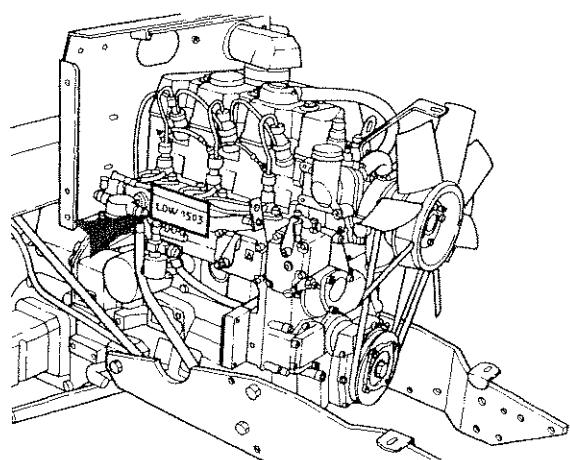
3 - Tigretrac HST: targhetta riassuntiva dei dati di identificazione



4 - Superpark HST: targhetta riassuntiva dei dati di identificazione



5 - Tipo e numero di identificazione del motore

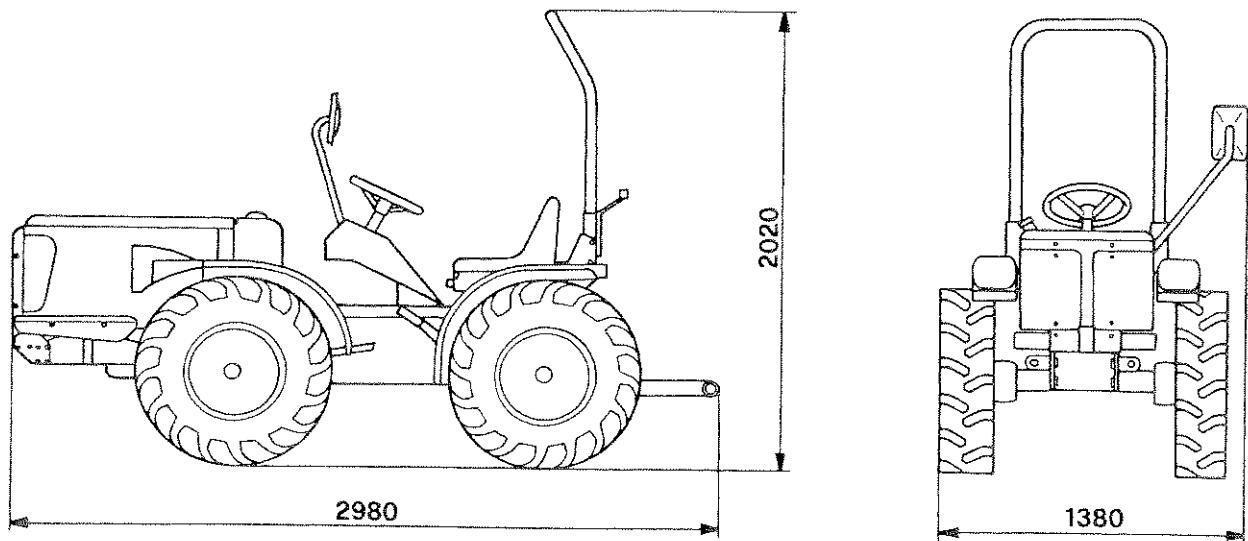


6 - Tipo e numero di identificazione del motore

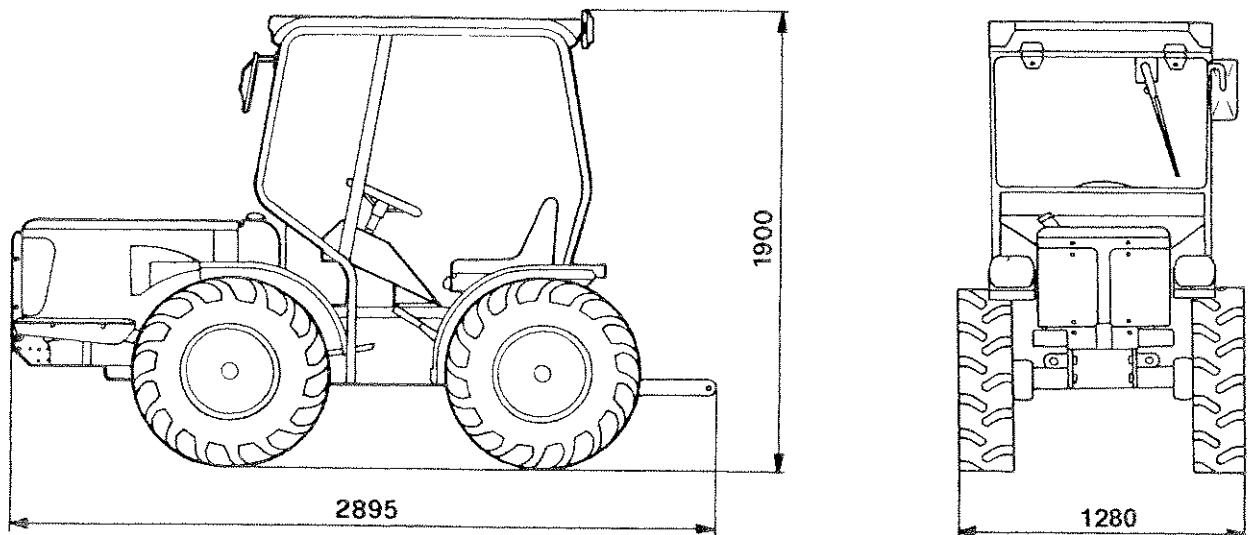
Ricambi

L'ordinazione dei pezzi deve essere corredata dalle seguenti indicazioni:

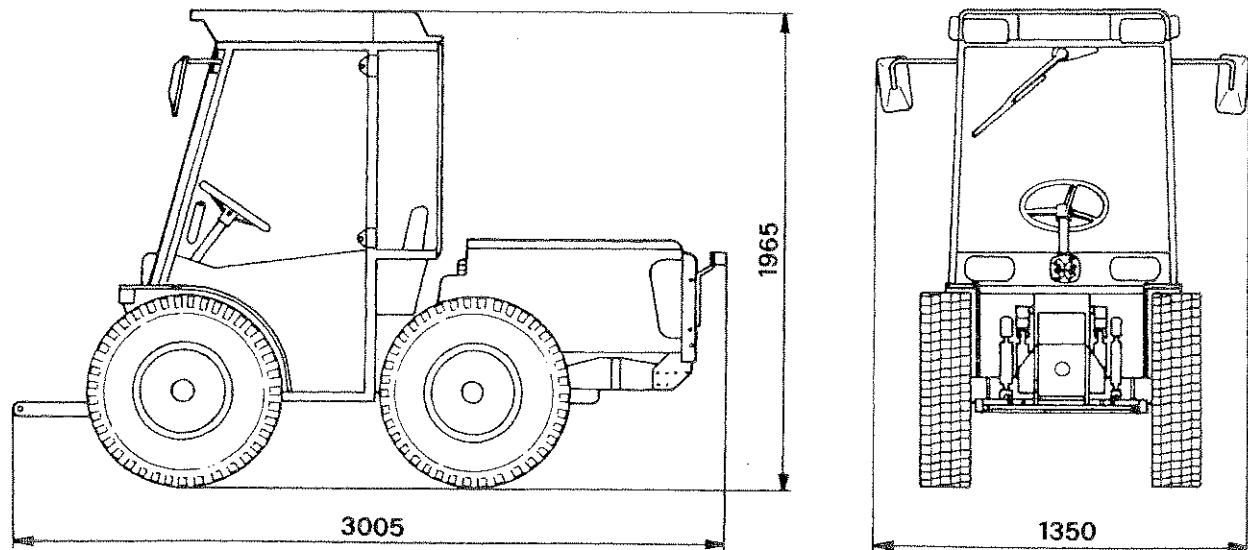
- 1) numero di matricola del trattore e serie
- 2) denominazione del pezzo e numero di codice

**DIMENSIONI PRINCIPALI**

- Dimensioni principali del tigretrac con arco di protezione.



- Dimensioni principali del tigretrac con telaio di protezione:



- Dimensioni principali del Superpark



Pesi

Peso del trattore in ordine di marcia (rifornimento-conducente)

		Peso totale	Peso assale anteriore	Peso assale posteriore	Ruote di serie (a listino)
Tigretrac 2500 HST	a	1008	550	458	6.50-16
	b	1080	616	464	
	c	1180	660	520	
Tigretrac 3800 HST	a	1062	644	418	6.50-16
	b	1134	704	430	
	c	1236	738	498	
Tigretrac 3800 HST 4 WS	b	1178	688	490	6.50-16
	c	1280	740	540	
Superpark 3800 HST	b	1090	370	720	28x9.00-15
	c	1188	406	782	

a = trattore con arco di protezione

b = trattore con telaio di protezione a 4 montanti (aperto)

c = trattore con telaio di protezione a 4 montanti (cabina)

RIFORNIMENTI

Parti da rifornire	QUANTITÀ (LT)		Rifornimenti
	LDW 903	LDW 1503	
Serbatoio carburante	30	30	Gasolio
Radiatore, motore	2,7	2,7	GISTEDA-FLÙ
Scatola trasmissione anteriore e circuito idraulico	6,5	6,5	15/40 ESSO UNIFARM
Scatola cambio posteriore e circuito idrostatico	8,5	8,5	10/30 ESSO UNIFARM
Recipiente liquido lavacristallo	0,5	0,5	Acqua
Coppa motore e filtro olio	2	4,15	15/40 ESSO UNIFARM

CARATTERISTICHE MOTORI

Lombardini

Tipo motori	LDW 903 FOCS	LDW 1503 CHD
Cilindri Nr.	3	3
Alesaggio mm	72	88
Corsa cm	75	85
Cilindrata cm ³	916	1551
Giri/1'	3000	3000
Potenza KW/CV	15.5/21	26.5/36
Coppia massima Nm/g.	56.6/2200	99/2100
Raffreddamento	acqua	acqua



COPPIE DI SERRAGGIO

Valori indicativi per coppie di serraggio massimi in Nm - Kgm
Supposto al coefficiente di attrito = 0.14

DENOMINAZIONE	CLASSE DI RESISTENZA					
Diametro x p (mm)	Nm	Kgm	Nm	Kgm	Nm	Kgm
M 5 x 0.8	5.9	0.6	7.84	0.8	9.9	1.01
M 6 x 1	10.1	1.03	14.3	1.46	17.2	1.75
M 8 x 1	25.5	2.6	36.3	3.7	43.1	4.4
M 8 x 1.25	24.3	2.48	34.2	3.49	41.1	4.19
M 10 x 1.25	50.9	5.2	71.5	7.3	85.3	8.7
M 10 x 1.5	48.7	4.97	68.6	7	82	8.37
M 12 x 1.5	87.2	8.9	122.5	12.5	147	15
M 12 x 1.75	82.9	8.46	116.6	11.9	140.1	14.3
M 14 x 1.5	140.1	14.30	196	20	235.2	24
M 14 x 2	131.9	13.46	195.2	19.92	222.5	22.70
M 16 x 1.5	210.7	21.5	294	30	352.8	36
M 16 x 2	199.9	20.4	282.2	28.80	339.1	34.6
M 18 x 1.5	303.8	31	421.4	43	509.6	52

Viti speciali

DESCRIZIONE	DIAMETRO PASSO - MM	COPPIA DI SERRAGGIO NM. KGM.
Viti fissaggio corona scatola differenziale	M 10 x 1.25	83 8.5
Dadi o viti fissaggio ruote	M 14 x 1.5	137 14
Dadi fissaggio semialberi assale ant.	M 18 x 1.5	88 9
Tappo valvola di massimo gruppo idrostatico	—	68.6 7
Tappo valvola di alimentazione gruppo idrostatico	—	39.3 4

RACCORDI - NIPPLER (con rondella in CU)

DIAMETRO NOMINALE	CHIAVE ESAGONALE (mm)	COPPIA - SERRAGGIO Nm Kgm	
M14x1.5	17-19	44	4.5
M16x1.5	22-24	59	6.0
M18x1.5	24-27	59	6.0
M20x1.5	27	59	6.0
GAS 1/4»	17-19	44	4.5
GAS 3/8»	22-24	59	6
GAS 1/2»	27	59	6

LUBRIFICANTI

- olio ESSO UNIFARM 15 W 40
- Scatola trasmissione anteriore (serbatoio impianto idraulico).
- Motore (Diesel)
- olio ESSO UNIFARM 10 W 30
Scatola trasmissione posteriore (cambio di velocità e serbatoio dell'idrostatico).
- GRASSO FIAT ZETA 2
Profili scanalati
Giunti - semialberi
- GRASSO GP GREASE
Sui vari punti di ingrassaggio (ingrassatori)
- GRASSO TECNOLUBE POLIMER 400
Bronzine in genere
Gabbie a rulli
- GRASSO ESSO BEACON 2
Fili di comando acceleratore - bloccaggio

- LIQUIDO ANTIGELO GISTEDA-FLÙ

Percentuali d'impiego:

- 18% GISTEDA FLÙ per temperature fino a - 8 °C
- 28% GISTEDA FLÙ per temperature fino a - 13 °C
- 36% GISTEDA FLÙ per temperature fino a - 20 °C
- 40% GISTEDA FLÙ per temperature fino a - 24 °C
- 50% GISTEDA FLÙ per temperature fino a - 38 °C

FISSATORI-SUGGELLATORI

Utilizzare per il montaggio i prodotti indicati o altri dotati di caratteristiche equivalenti.

Sigillante RTV 1473 NERO ANGST-PFISTER
giunzioni - guarnizioni
coperchio cambio di velocità
calotte - assali anteriori - assali posteriori
flangie - coperchi

LOCTITE 242

frenatura media e sigillatura di parti filettate in genere
grani di ancoraggio - giunti

LOCTITE 270

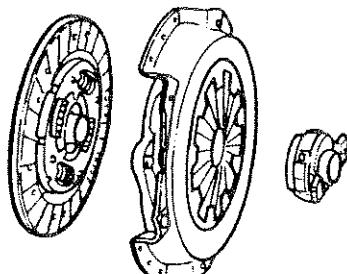
fissaggio ad alta resistenza, frenatura e sigillatura di prigionieri, dadi e viti

LOCTITE 510

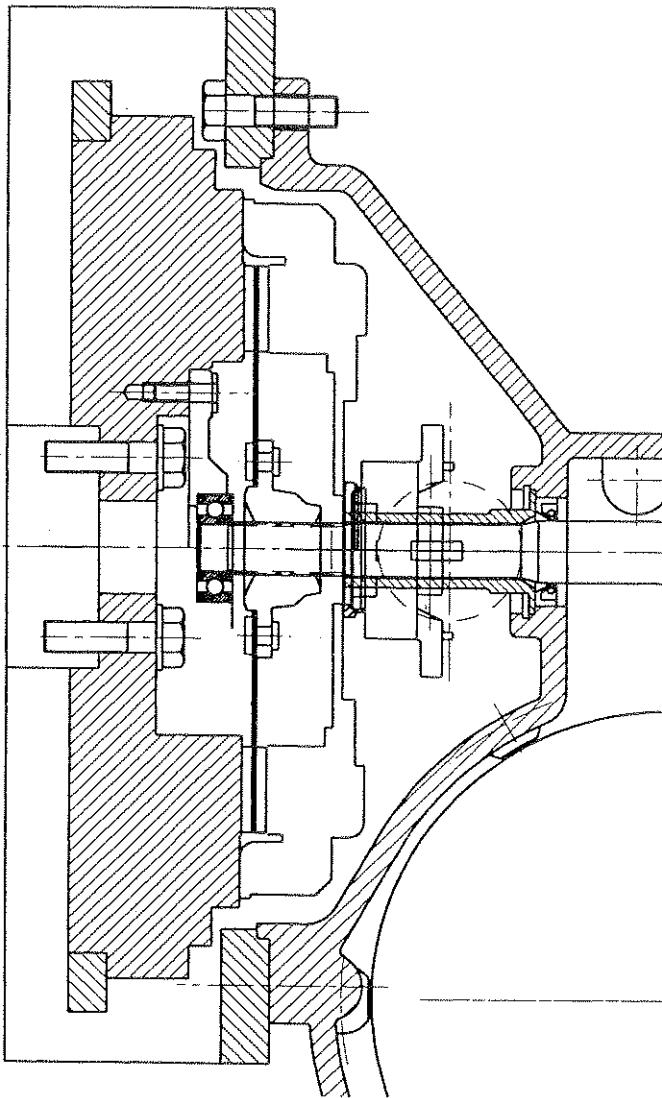
sigillatura di piani
tappi non filettati

Better - AREXONS

guarnizione liquida
tappi filettati
indicatori temperatura acqua sul radiatore-motore

**Disco e meccanismo frizione**

OP.1166



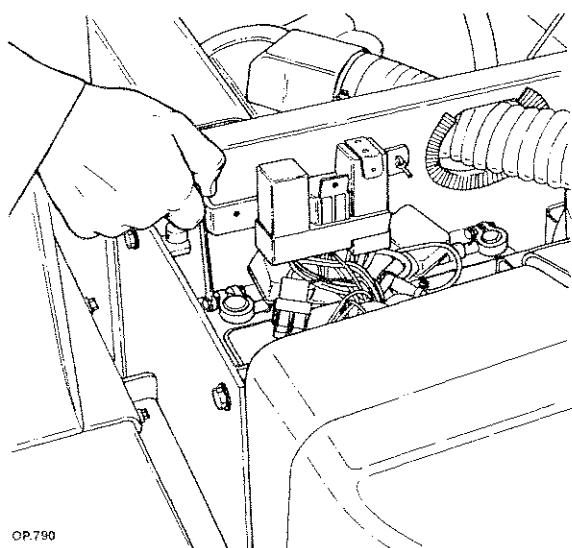
- Complessivo frizione motore

Caratteristiche tecniche

Tipo trattore	2500 - 3800	
Disco frizione	codice denominazione	40211010 VALEO 176676 AD
Meccanismo frizione	codice denominazione	40210004 VALEO 742906 FD
Cuscinetto reggispinta	codice	5073504
Diametro disco	mm	181,5
Spessore nominale	mm	8,6 ± 0,1
Spessore ammissibile	mm	6,0
Tipo materiale di attrito	VALEO F 202	

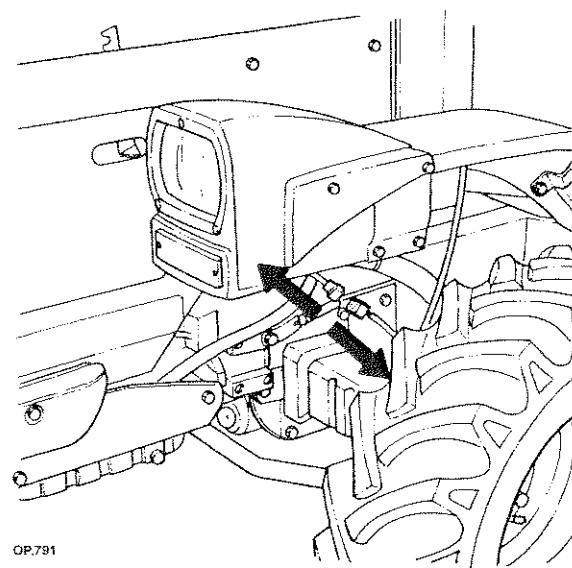
Stacco - riattacco

- Per accedere alla frizione occorre separare il motore completo dalla scatola trasmissione anteriore; procedere come segue:



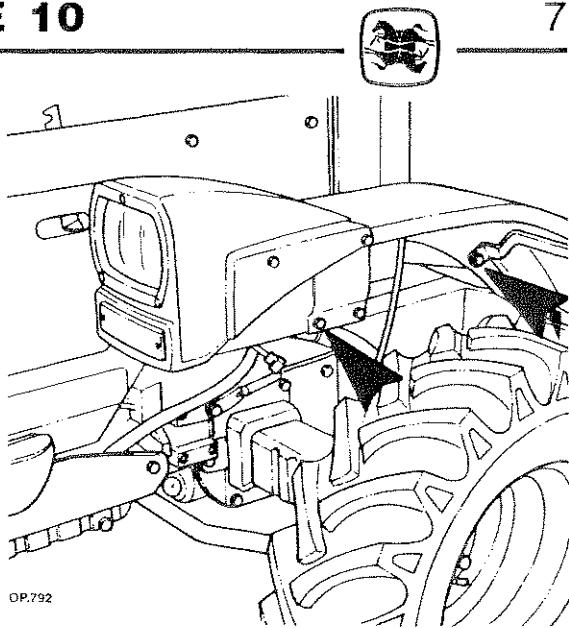
OP.790

1 - staccare il cavo della batteria ed isolarlo.



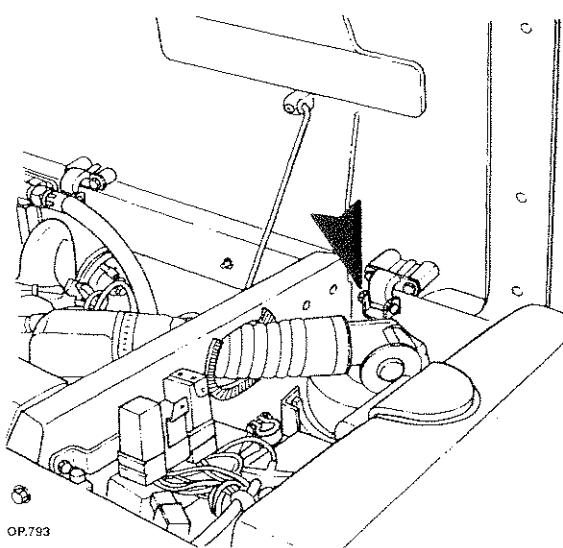
OP.791

2 - Togliere le connessioni elettriche sui fanali.



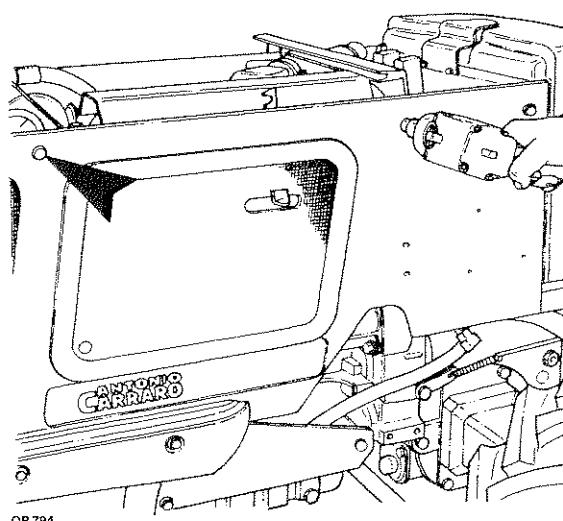
OP.792

3 - Svitare le viti e togliere i parafanghi anteriori.



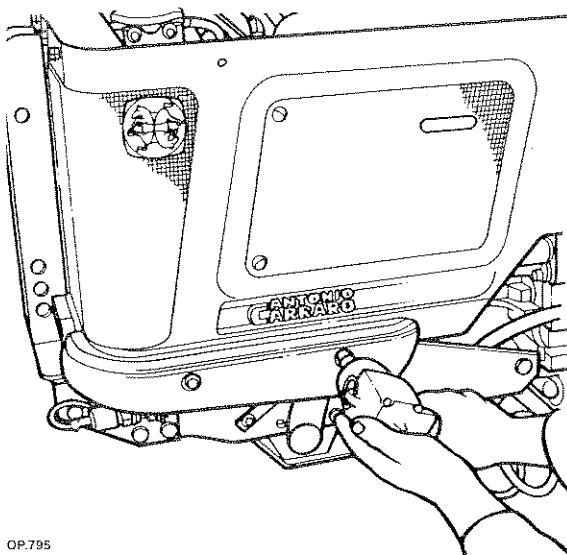
OP.793

4 - Svitare le viti e togliere il manto (cofano).



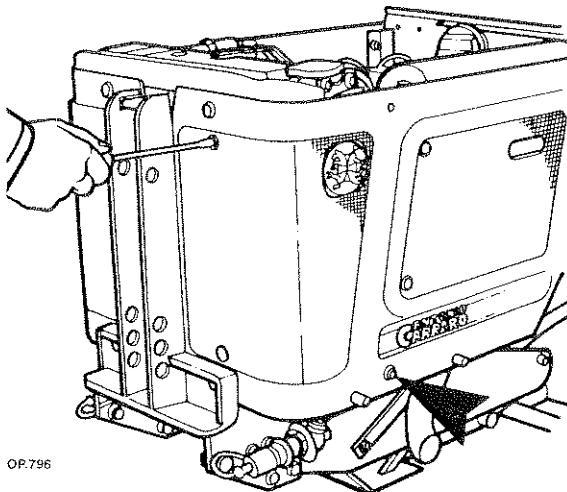
OP.794

5 - Svitare le viti e togliere la protezione marmitta e aggancio cofano.



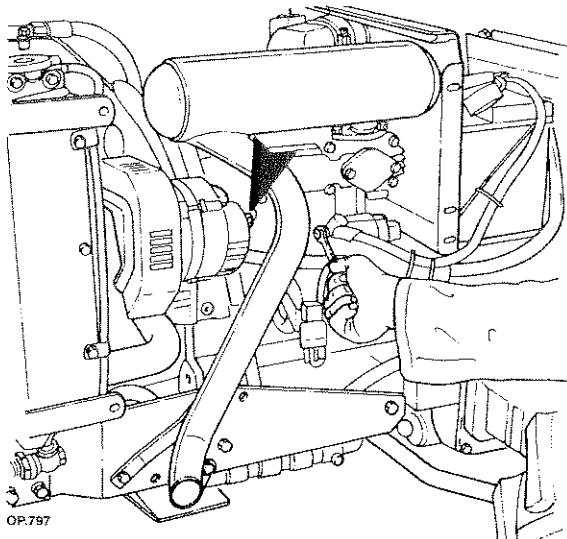
OP.795

- 6 - Svitare le viti e togliere i paraurti.
7 - Sfilare la vaschetta lavavetri (solo Super-park).



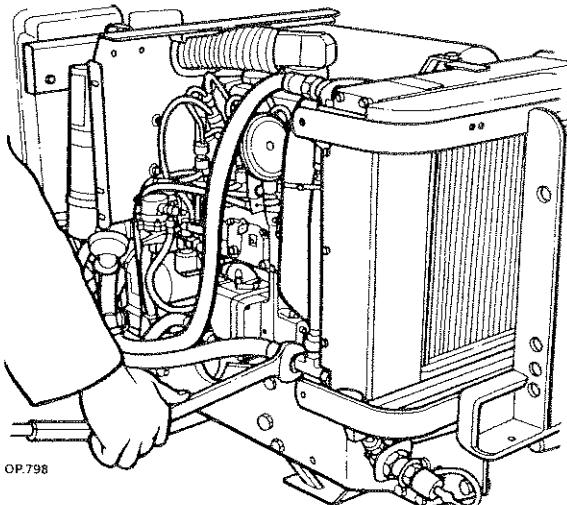
OP.796

- 8 - Sganciare le mascherine anteriori, svitare le viti e togliere le fiancate dx e sx.



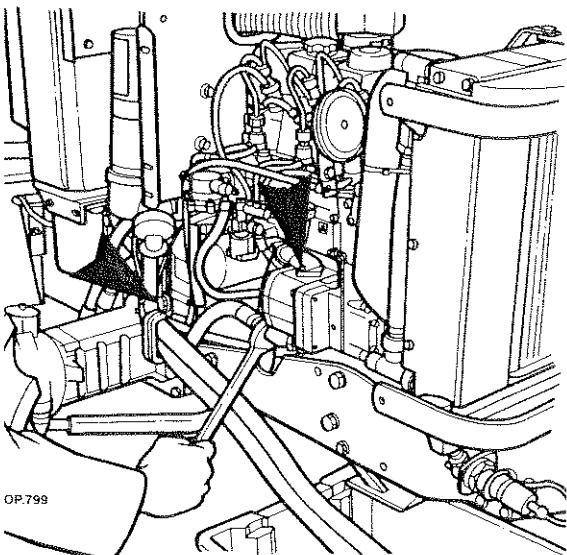
OP.797

- 9 - Staccare il supporto Relais e le connessioni elettriche sul motore.



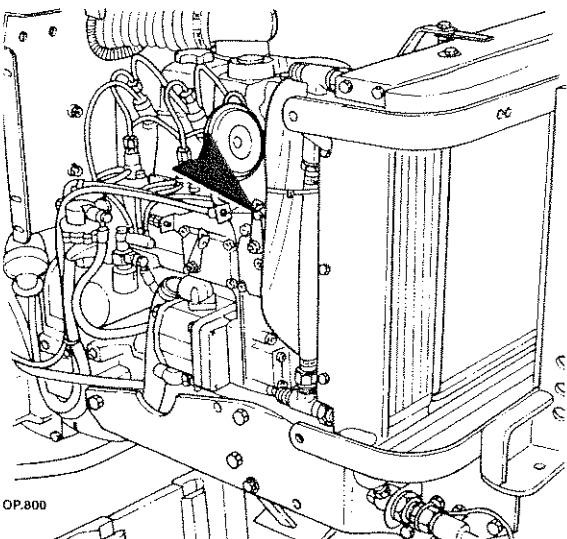
OP.798

- 10 - Svitare i raccordi tubi idraulici allo scambiatore e tappare i fori con adeguati tappi.



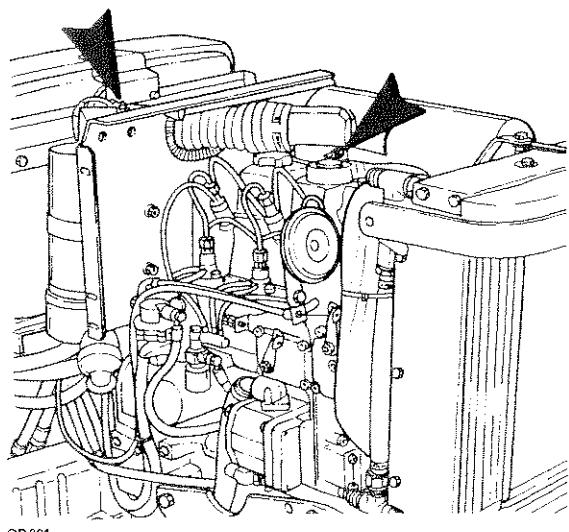
OP.799

- 11 - Staccare i tubi di mandata e aspirazione sulla pompa idraulica e le fascette di contenimento.



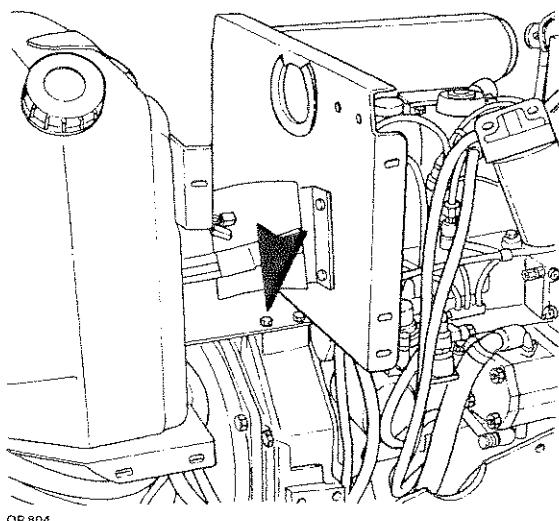
OP.800

- 12 - Allentare il morsetto e sfilare in parte il filo acceleratore.



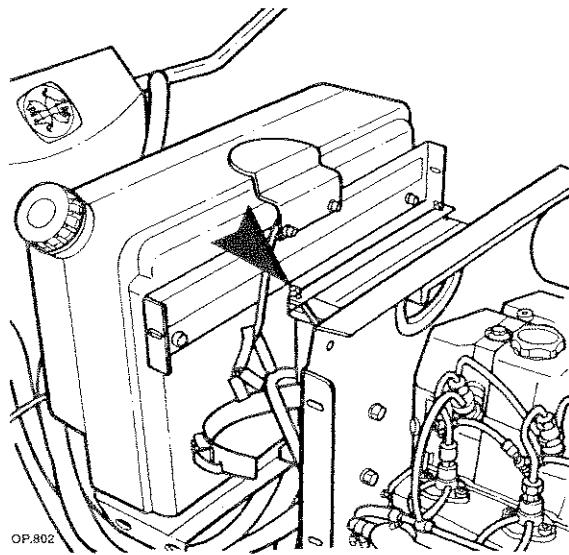
OP.801

13 - Allentare le fascette tubo aspirazione e filtro e togliere il filtro completo-tubo aspirazione.



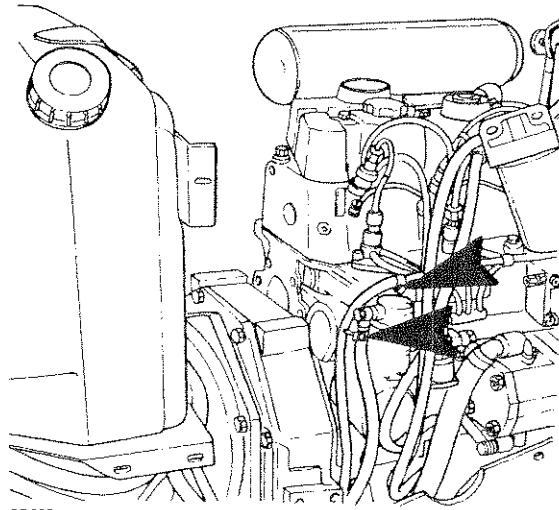
OP.804

16 - Svitare le viti e togliere la paratia (togliere il terminale dello scarico sul 2500).



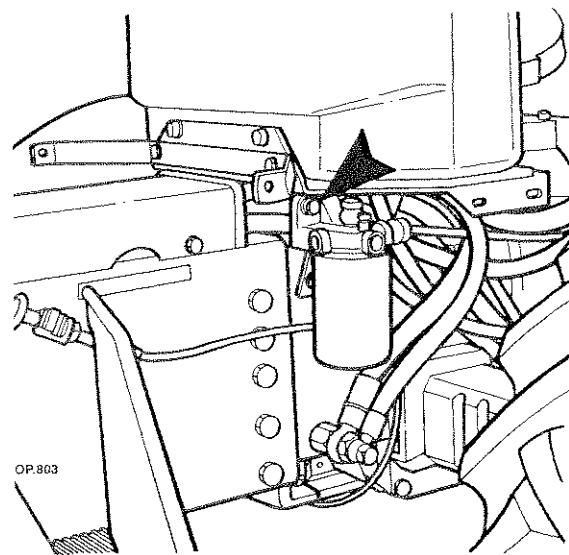
OP.802

14 - Svitare gli attacchi e sfilare la batteria.



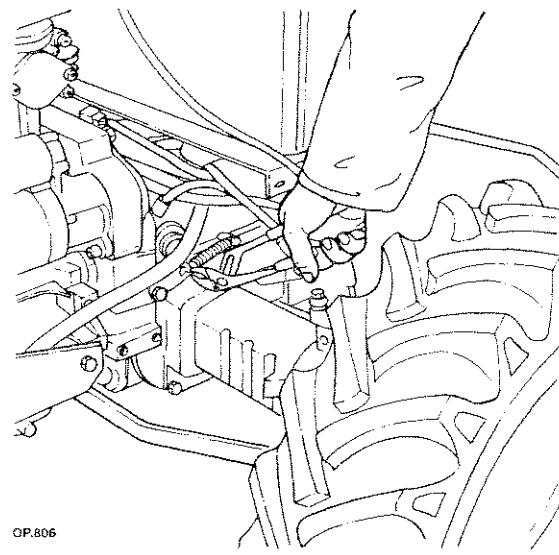
OP.805

17 - Allentare le fascette e sfilare i tubi della nafta dalla pompa A.C. e rifiuto pompa-iniettori.



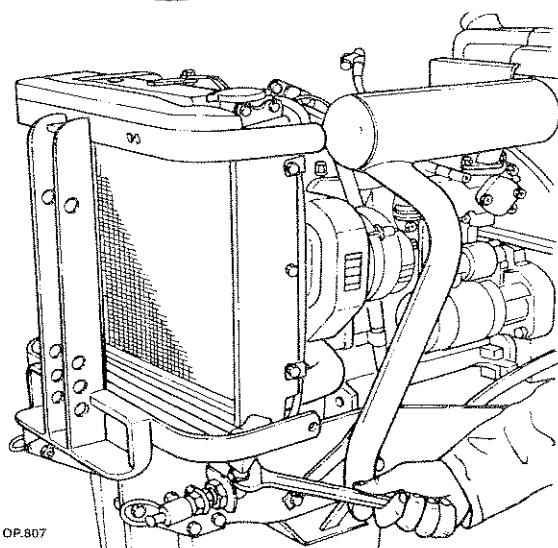
OP.803

15 - Svitare le viti e togliere il filtro nafta.

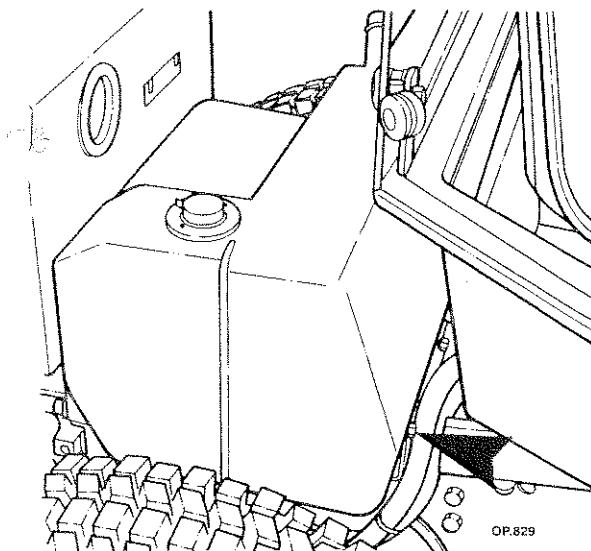


OP.806

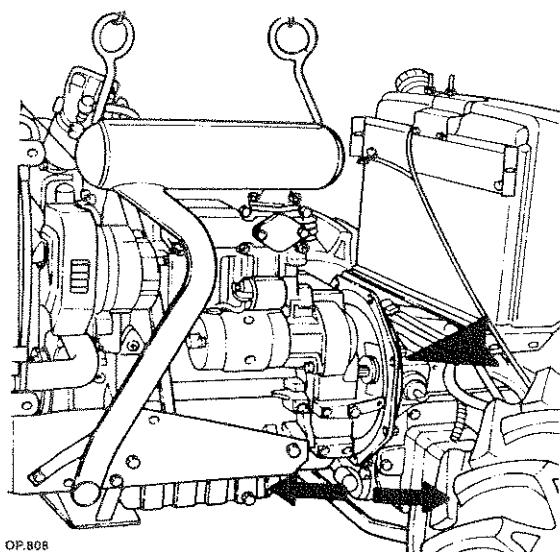
18 - Togliere la molla ritorno pedale frizione.



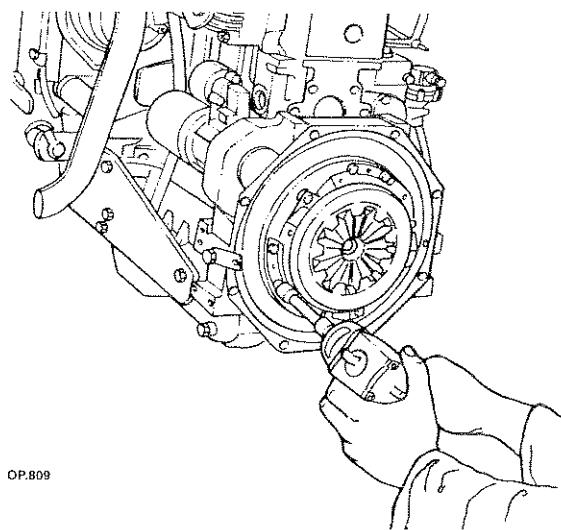
19 - Svitare i raccordi prese idrauliche.



20 - Svitare le viti e togliere il serbatoio (solo Superpark).



21 - Ancorare il motore, svitare le viti e separare il motore dalla scatola trasmissione.



22 - Svitare le viti e staccare il meccanismo-disco frizione dal volano motore.



ATTENZIONE - PERICOLO

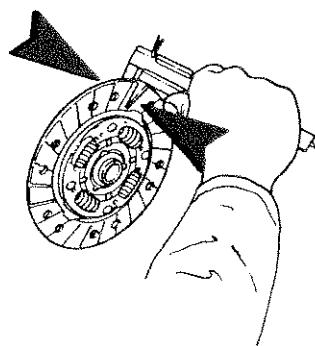


Eseguire le operazioni osservando scrupolosamente le misure di prevenzione.

- Non usare benzina, gasolio o altri liquidi infiammabili per sgrassare o lavare particolari, ma usare solventi commerciali e atossici.

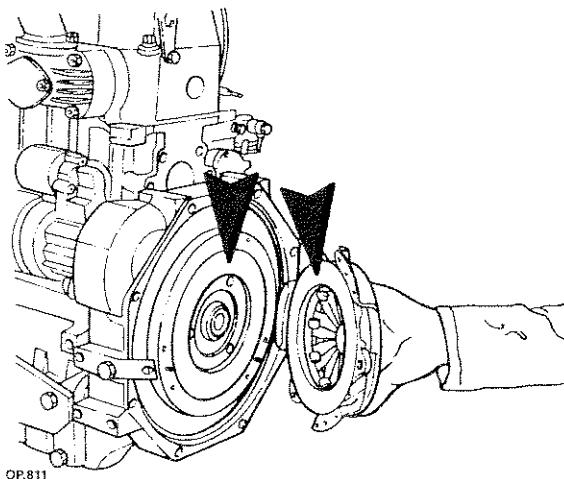
CONTROLLO FRIZIONE

- 1 - Verificare che le guarnizioni di attrito del disco non siano eccessivamente usurate e che non presentino delle rigature.



OP.810

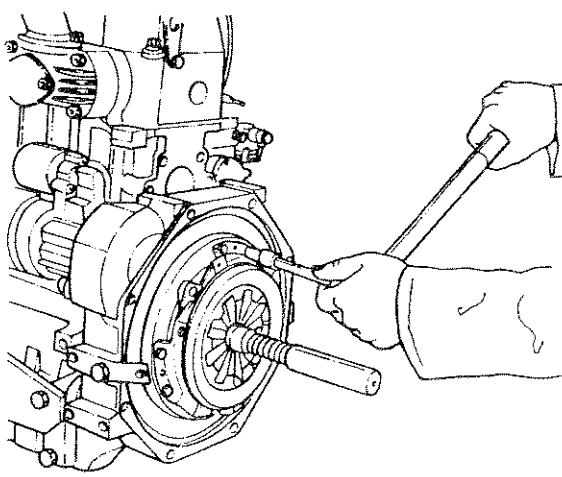
- Verifica spessore ammissibile



OP.811

2 - Assicurarsi che le superfici di strisciamento del piatto spingidisco e del volano motore non presentino delle rigature o delle bruciature.

In tal caso si consiglia la sostituzione del disco e meccanismo frizione e la rettifica del volano motore.



OP.813

b - Montare il gruppo frizione al volano servendosi dell'attrezzo AT 27981072 per l'allineamento del disco condotto.

c - Attenersi alle coppie di serraggio elencate a pag. 4.

d - Rimontare il tutto procedendo in ordine inverso a quanto descritto per lo smontaggio.

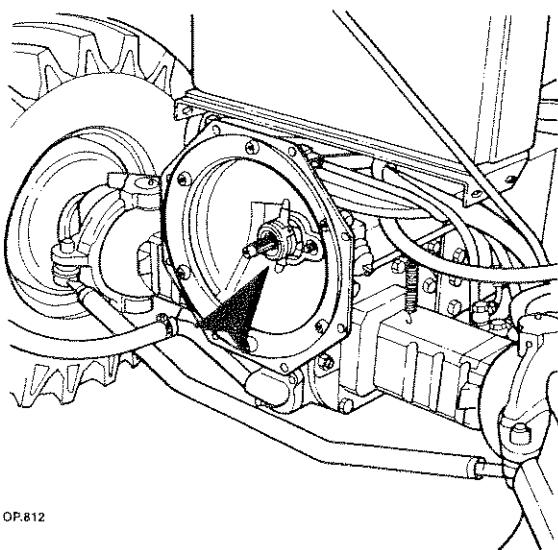
e - Ingrassare l'alberino comando forcella cuscinetto reggisposta e il manicotto dove scorre.

RIATTACCO FRIZIONE

Prima di effettuare il riattacco del gruppo frizione, considerare le seguenti avvertenze:

a - controllare le condizioni del cuscinetto reggisposta e del cuscinetto di supporto albero presa moto al cambio (primario) piantato o su flangia all'albero motore.

Tali cuscinetti non devono presentare impuntamenti o rumorosità di rotazione, pena la sostituzione.



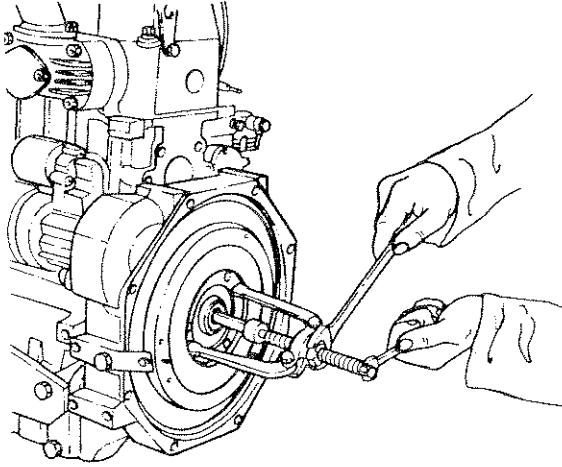
OP.812

ATTENZIONE - PERICOLO

Eseguire le operazioni osservando scrupolosamente le misure di prevenzione.

- Non usare le mani per allineare delle forature ma adeguati attrezzi.

STACCO-RIATTACCO CUSCINETTO



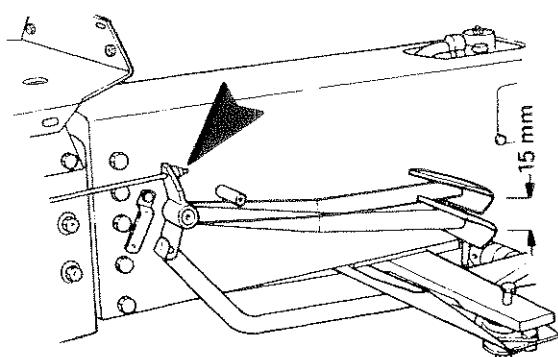
1 - Estrarre il cuscinetto utilizzando l'estrattore AT 37981216 e l'adattatore AT 37981222.

2 - Montare in cuscinetto utilizzando un adeguato tampone.



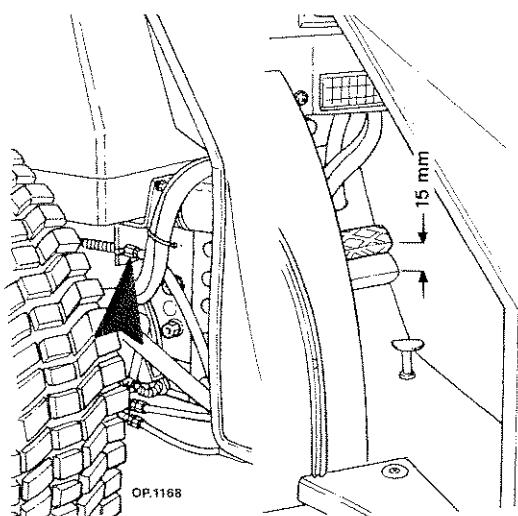
REGISTRAZIONE CORSA PEDALE

La corsa a vuoto del pedale della frizione è di 15 mm circa corrispondenti alla luce di 1 mm circa esistente tra il cuscinetto reggispin- ta e l'anello di attrito della flangia comando disinnesto frizione. Rilevando una corsa a vuoto inferiore a quella prescritta, a causa dell'usura subita dal disco condotto, è nec- essario ripristinare le condizioni originali di fun- zionamento, agendo sui tiranti o cavi regis- trabili.



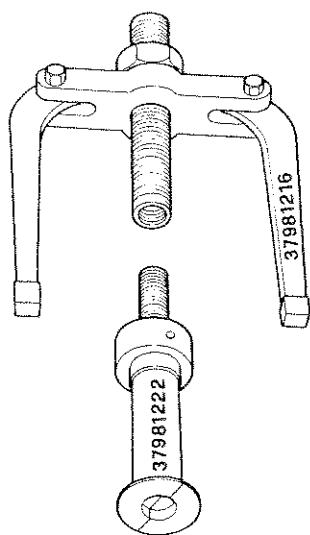
OP.1167

- Verifica e registrazione gioco frizione Tigre-trac



- Verifica e registrazione gioco frizione Super-park

ATTREZZATURA



AT.001

- 1 - Estrattore combinato per estrarre il cusci- netto sull'albero motore AT. 37981216 AT. 37981222



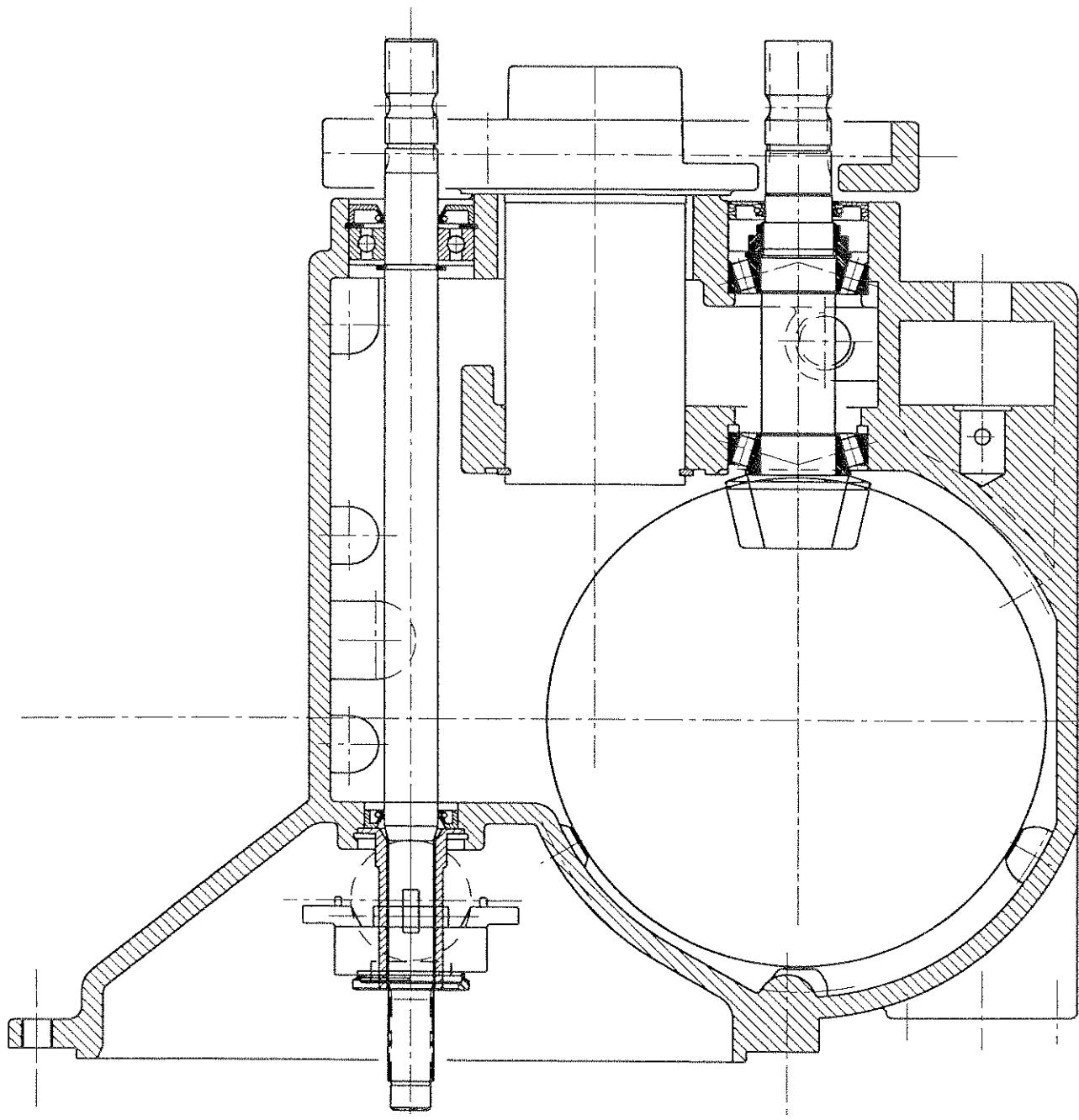
AT.190

- 2 - Attrezzo per allineare il gruppo frizione all'asse motore cambio

**FRIZIONE**

Diagnosi degli inconvenienti

Inconvenienti	Cause possibili	Verifiche	Rimedi
Frizione slitta	Tracce di lubrificante sul disco frizione	Verificare anelli di tenuta albero motore primario cambio	Pulire con benzina le parti a contatto giarnizioni frizione e sostituire le guarnizioni di tenuta. Sostituire il disco.
	Disco frizione usurato	Verificare lo spessore del disco frizione e lo stato del meccanismo frizione	Sostituire il disco e meccanismo
Frizione non stacca con motore in moto, le marce si innestano con difficoltà	Meccanismo frizione inefficiente	Verificare comandi meccanici, funi, guaine	Registrare corse pedali frizione. Sostituire meccanismo e relativo disco
Frizione strappa	Superfici del disco deformate	Verificare efficienza del disco e verificare che non ci siano bruciature nelle superfici a contatto del disco. (Volano motore e meccanismo)	Sostituire disco e meccanismo frizione e rettificare il volano motore
Frizione rumorosa	Disco frizione inefficiente o particolari usurati nel meccanismo frizione	Verificare molle parastrappi disco frizione	Sostituire disco
Pedale frizione troppo duro da azionare	Indurimento dei comandi esterni. Indurimento dell'incernieramento pedale	Verificare gli incernieramenti e lubrificare	Lubrificare i comandi

**COMPLESSIVO TRASMISSIONE ANTERIORE**



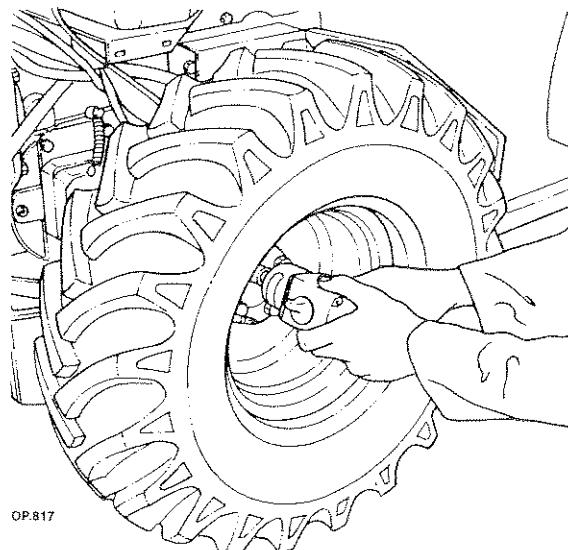
TRASMISSIONE ANTERIORE

Stacco e riattacco

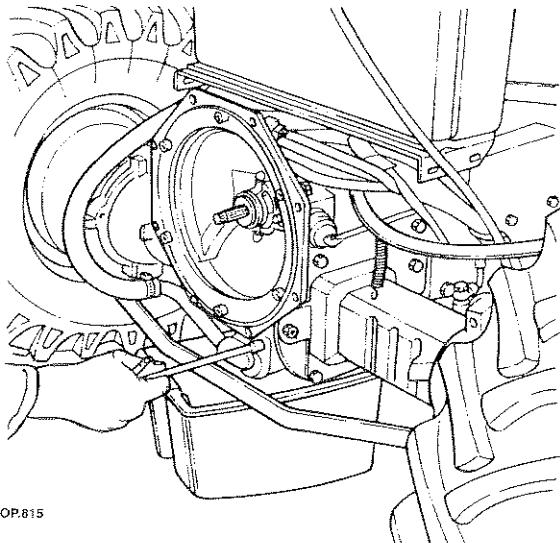
A - Tigretrac

Per accedere al gruppo trasmissione anteriore procedere come segue:

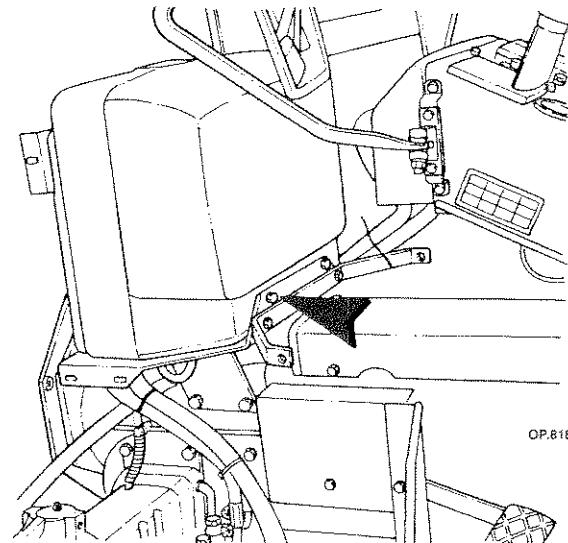
- 1 - procedere come indicato nelle illustrazioni relative allo stacco gruppo frizione punti 1-20 pag. 7-8-9-10.



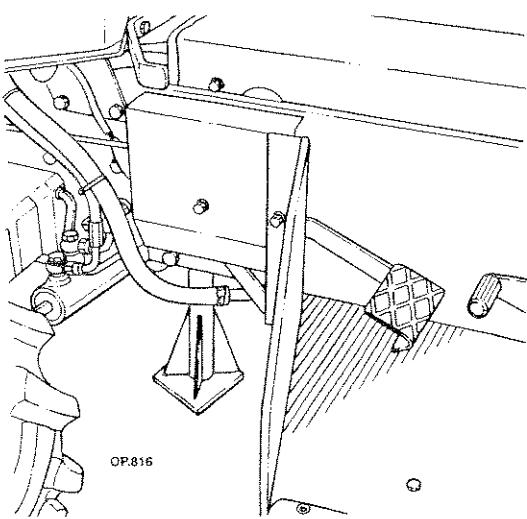
- 4 - Svitare le viti e togliere le ruote anteriori.



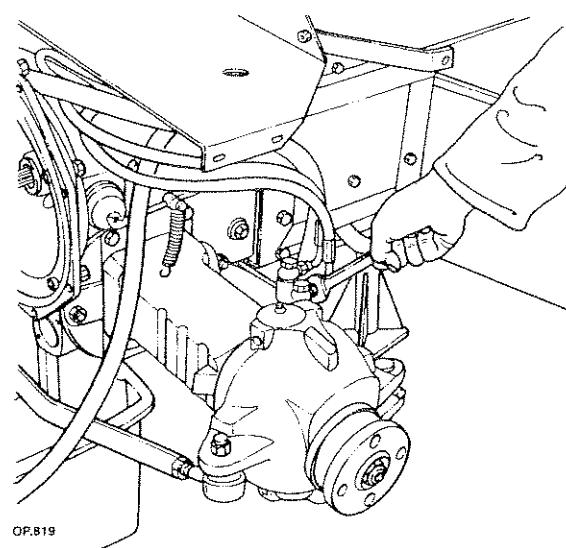
- 2 - Svitare le viti, sfilare il supporto e filtro impianto idraulico scaricando l'olio in un apposito recipiente.



- 5 - Svitare le viti e togliere il serbatoio nafta.



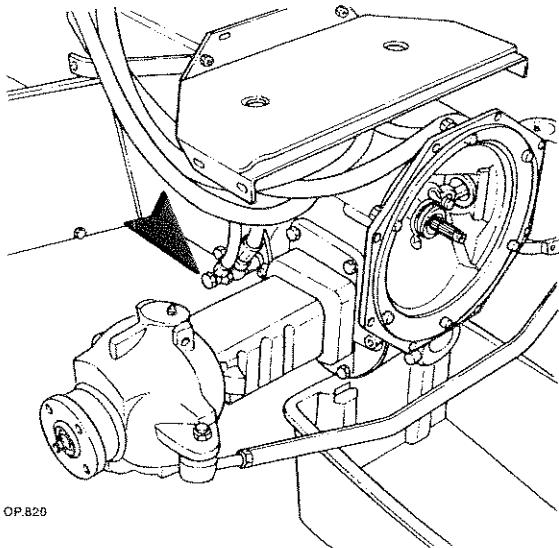
- 3 - Posizionare un cavalletto fisso sotto la trasmissione centrale lato anteriore.



- 6 - Svitare i raccordi sul cilindro sterzo e tappare i fori con adeguati tappi in plastica.

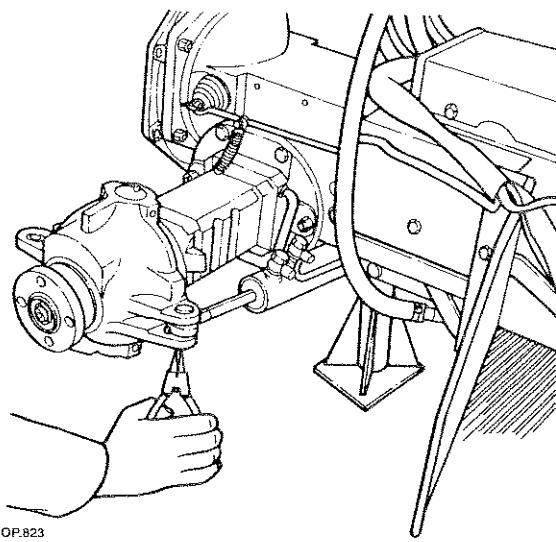


TRASMISSIONE ANTERIORE 20



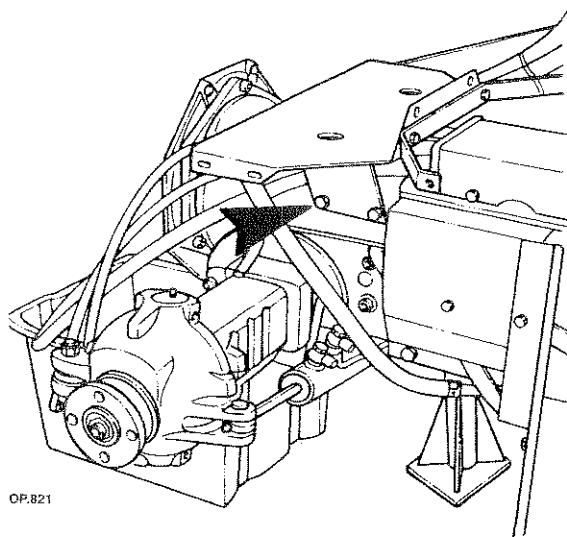
OP.820

7 - Svitare i raccordi scarichi impianto idraulico.



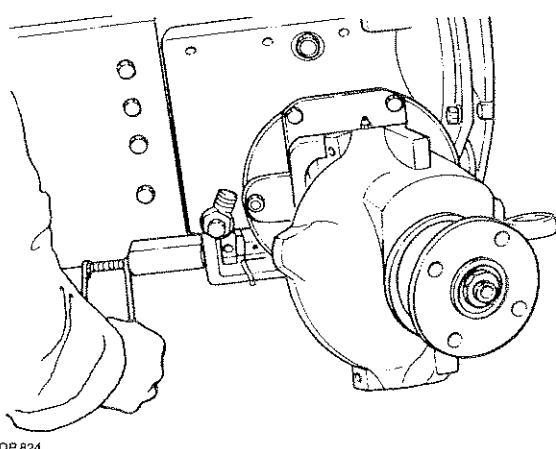
OP.823

10 - Togliere la spina elastica e l'anello elastico di contenimento perni cilindro idroguida.



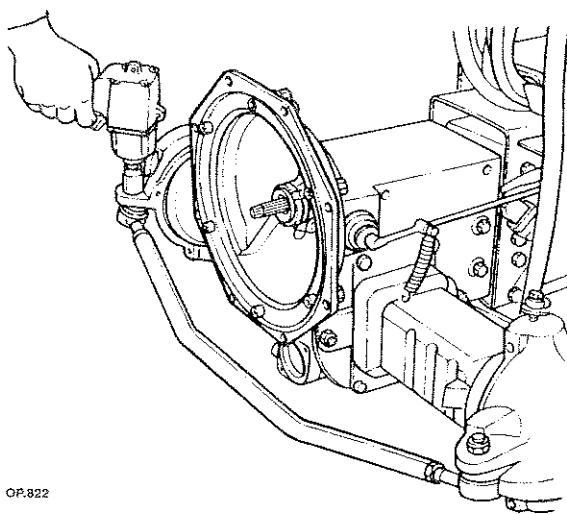
OP.821

8 - Svitare le viti e togliere il supporto serbatoio.



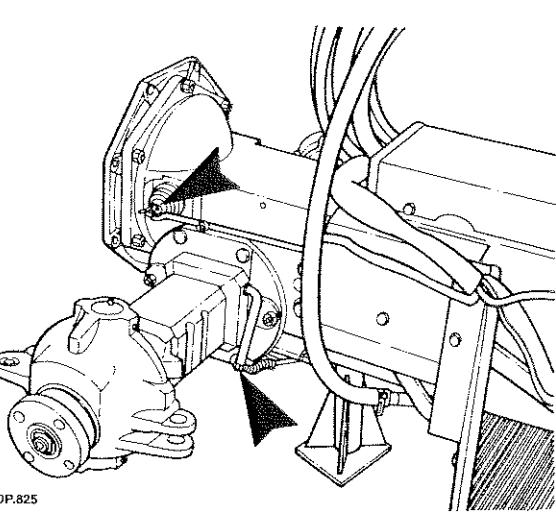
OP.824

11 - Sfilare il perno dalla scatola di trasmissione usando l'attrezzo AT 2.7981.314



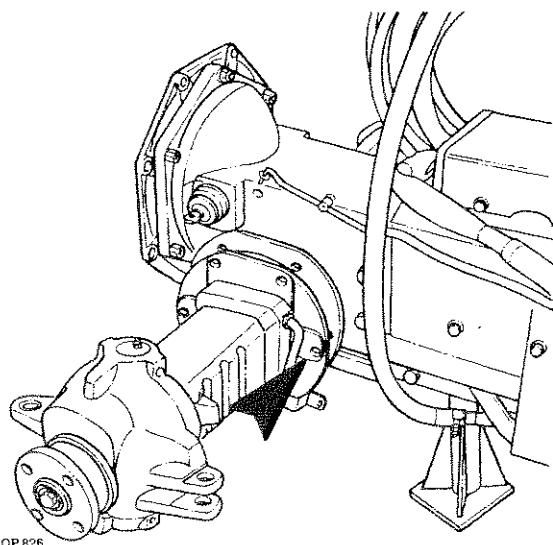
OP.822

9 - Svitare i dadi e togliere la barra di accoppiamento sterzo.



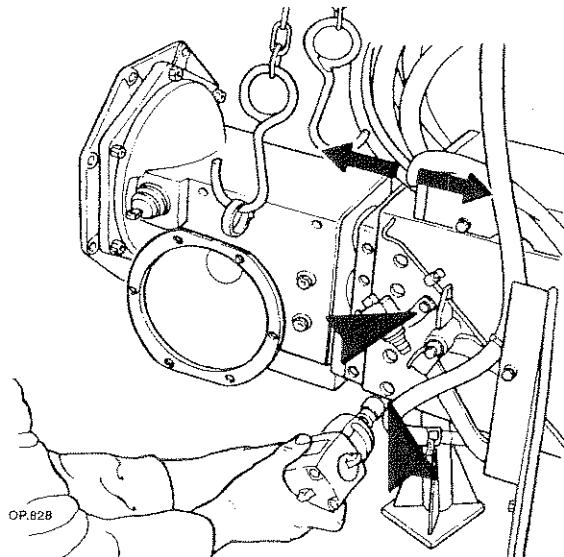
OP.825

12 - Allentare il morsetto e sfilare il filo bloccaggio e togliere la copiglia di contenimento asta frizione.



13 - Svitare le viti e sfilare l'assale lato bloccaggio differenziale recuperando eventuali spessori di registro.

14 - Svitare le viti e sfilare l'assale opposto recuperando il gruppo differenziale completo.



16 - Svitare le viti e togliere il consenso di avviamento.

17 - Svitare le viti di fissaggio gruppo anteriore al corpetto centrale e sfilare la scatola trasmissione anteriore.



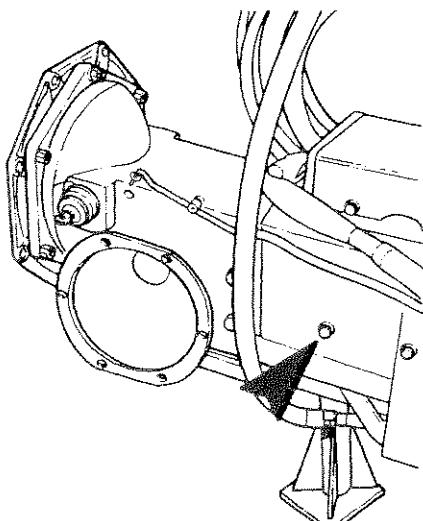
ATTENZIONE - PERICOLO



Eseguire le operazioni osservando scrupolosamente le misure di prevenzione.

- Per sollevare usare sempre mezzi di capacità adeguata.
- Maneggiare funi metalliche o catene proteggendosi le mani con dei guanti antinfortunistici.
- Non usare le mani per allineare delle forature ma adeguati attrezzi.

OP.827



15 - Svitare la protezione pedale frizione.



ATTENZIONE - PERICOLO

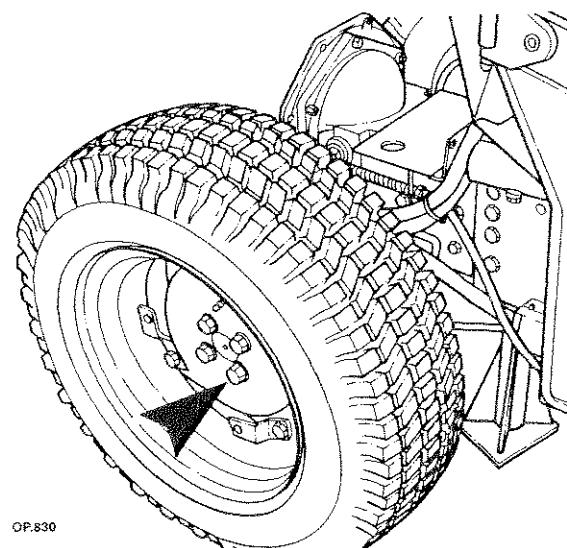


Eseguire le operazioni osservando scrupolosamente le misure di prevenzione.

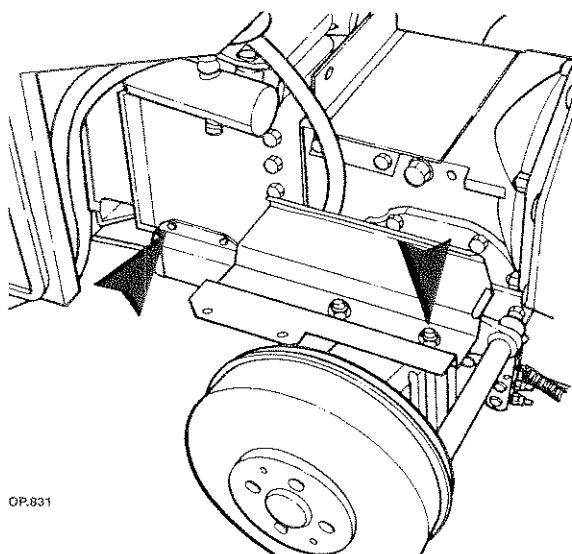
- Per lo smaltimento di oli attenersi alle norme antinquinamento.
- Evitare di inquinare l'ambiente.

B - Superpark

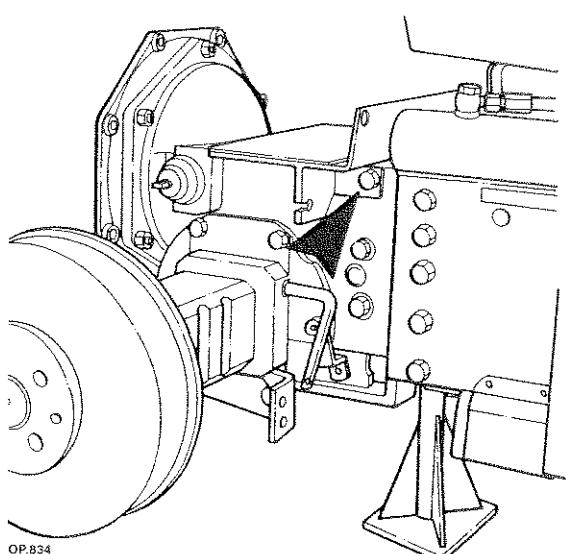
Procedere come indicato nelle illustrazioni relative al Tigretrac punti 1-3 pag. 15.



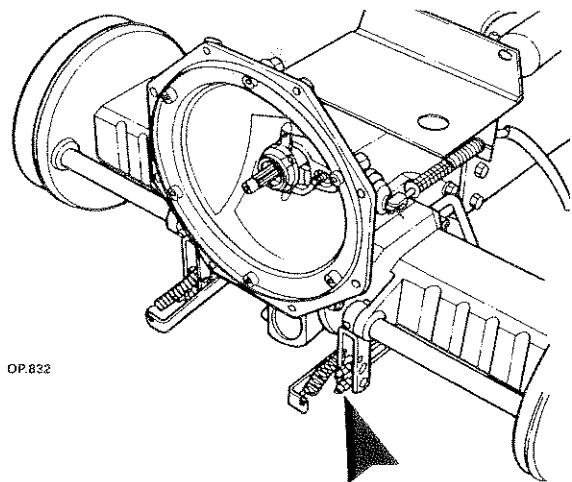
4 - Svitare le viti-dadi e togliere le ruote.



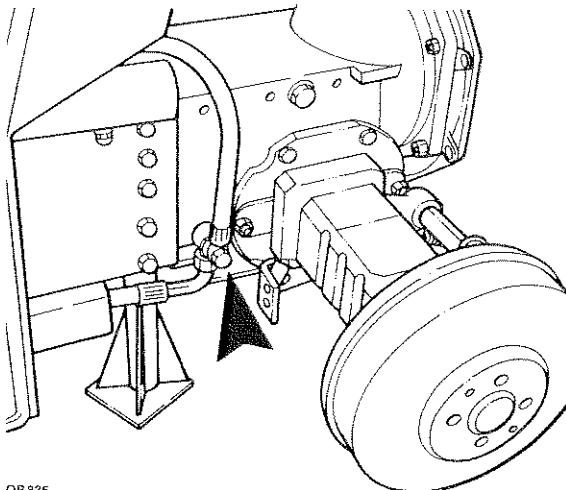
5 - Svitare le viti e togliere il supporto batteria e la protezione tubi.



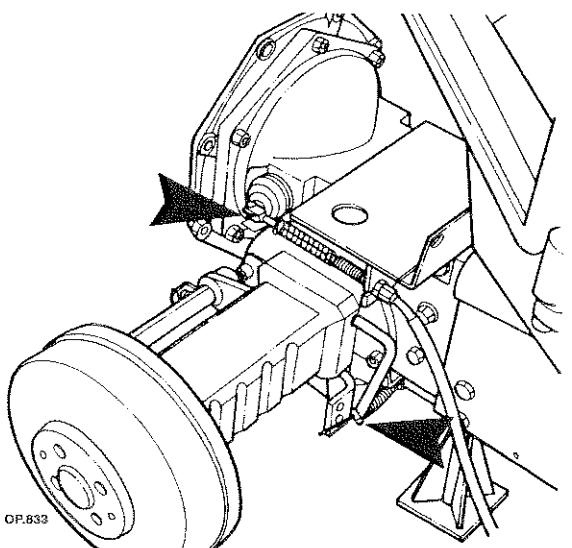
8 - Svitare le viti e togliere il supporto del serbatoio.



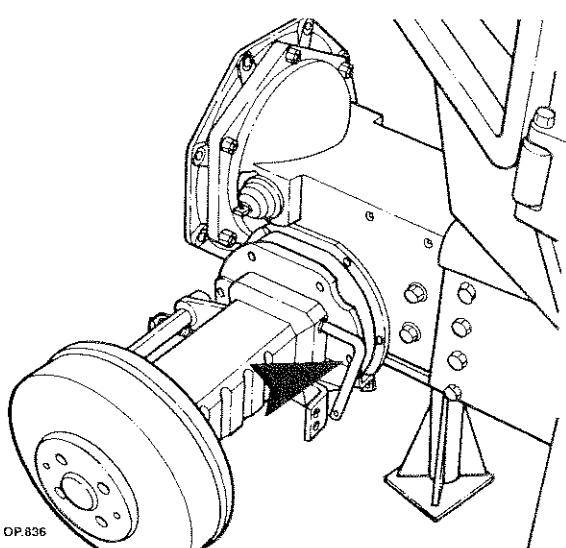
6 - Svitare i dadi e controdadi delle funi freno a mano e freno di servizio e sfilare in parte i fili e guaine.



9 - Svitare i tubi scarico impianto idraulico.



7 - Allentare il morsetto del filo bloccaggio e togliere la copiglia perno fune frizione.



10 - Svitare le viti e sfilare l'assale destro e sinistro recuperando spessori e gruppo differenziale.

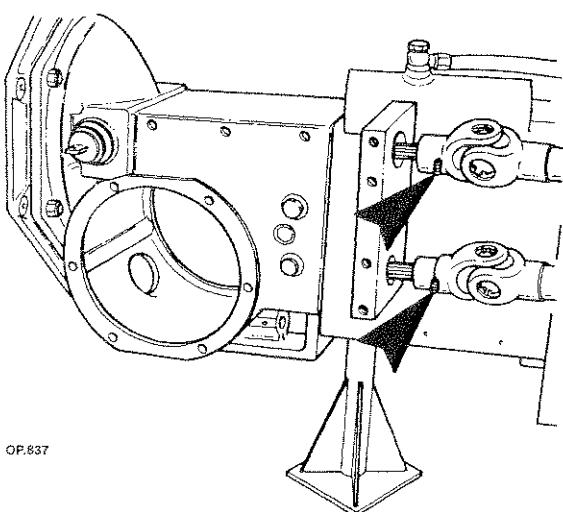


Riattacco

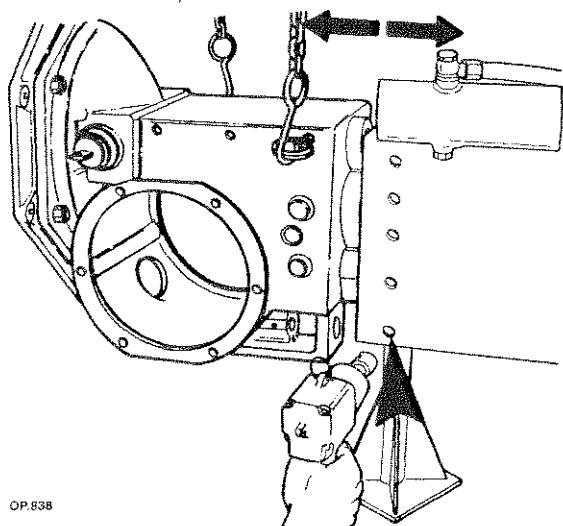
A Tigretrac - B Superpark

Procedere al riattacco della trasmissione anteriore considerando le seguenti avvertenze:

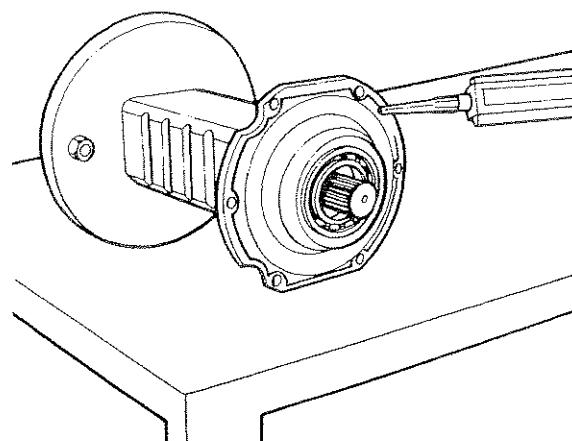
- a - invertire le operazioni dello stacco punti A-B;
- b - attenersi alle coppie di serraggio elencate a pag. 4;
- c - effettuare un'accurata pulizia in particolar modo delle superfici da accoppiare;
- d - applicare un cordone di mastice di tenuta del diametro di circa 3 mm seguendo il tracciato indicato nella figura;



11 - Svitare i grani di ancoraggio giunti centrali.



12 - Svitare le viti di fissaggio gruppo anteriore al corpetto centrale e sfilare la scatola trasmissione posteriore per il Superpark.



- applicazione mastice di tenuta

e - montare i grani di ancoraggio giunti cardanici con della loctite 242 (ferma filetti medio).



ATTENZIONE - PERICOLO



Eseguire le operazioni osservando scrupolosamente le misure di prevenzione.

- Non usare benzina, gasolio o altri liquidi infiammabili per sgrassare o lavare particolari, ma usare solventi commerciali e atossici.
- Per lo smaltimento di oli attenersi alle norme antquinamento.

Evitare di inquinare l'ambiente.

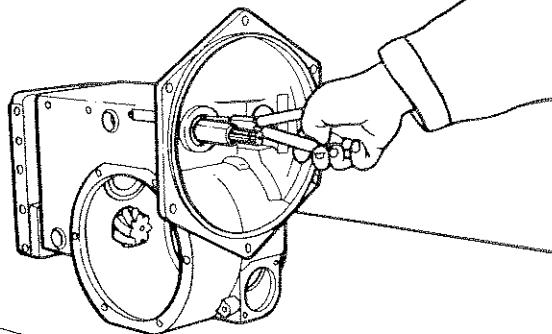


Smontaggio - Montaggio

Scatola trasmissione anteriore per il Tigre-trac mentre per il Superpark posteriore

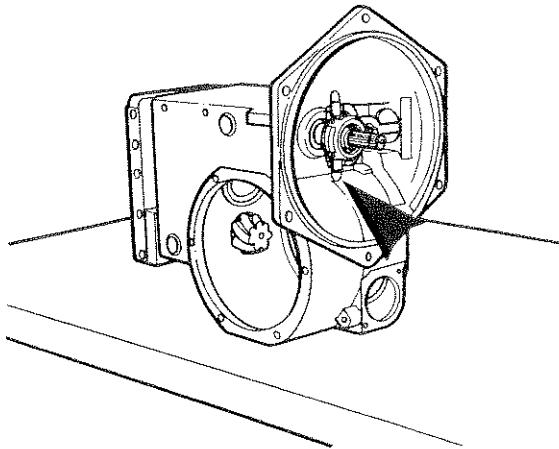
Per lo smontaggio dei vari componenti della scatola trasmissione procedere come segue:

- 1 - bloccare la scatola su di un cavalletto o adagiarla sopra ad un banco.



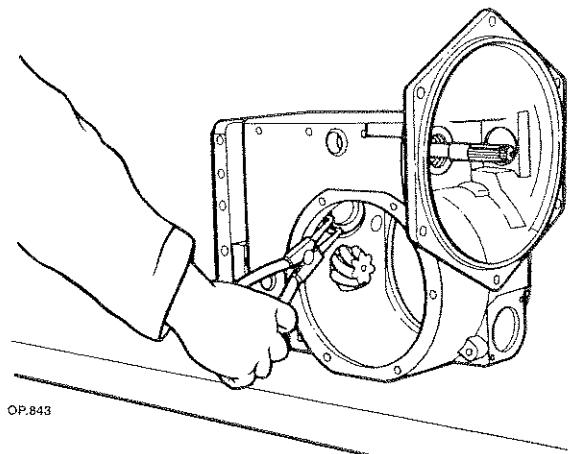
OP.842

- 4 - Estrarre l'anello di contenimento e sfilare il manico di guida cuscinetto reggispirta frizione.



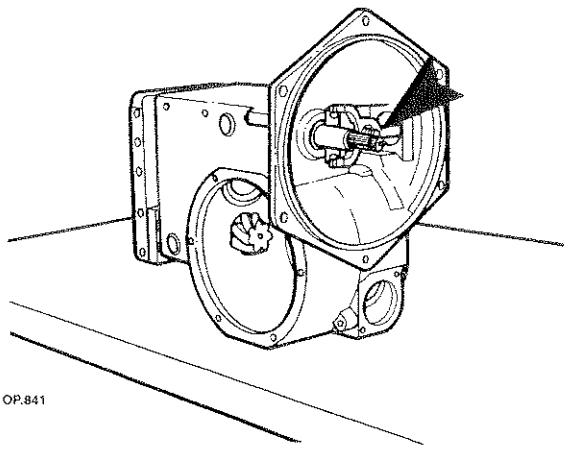
OP.840

- 2 - Sfilare le mollette di contenimento e togliere il cuscinetto disinnestato frizione.



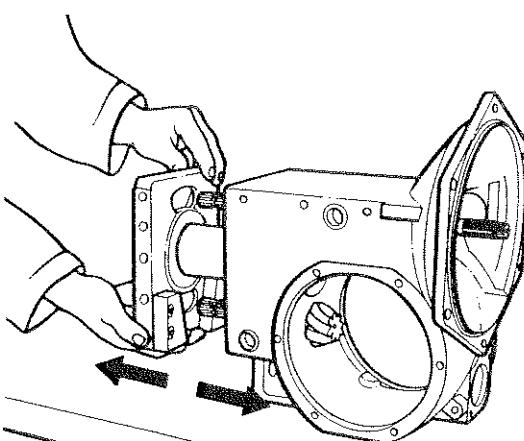
OP.843

- 5 - Togliere l'anello elastico di contenimento flangia snodo centrale.



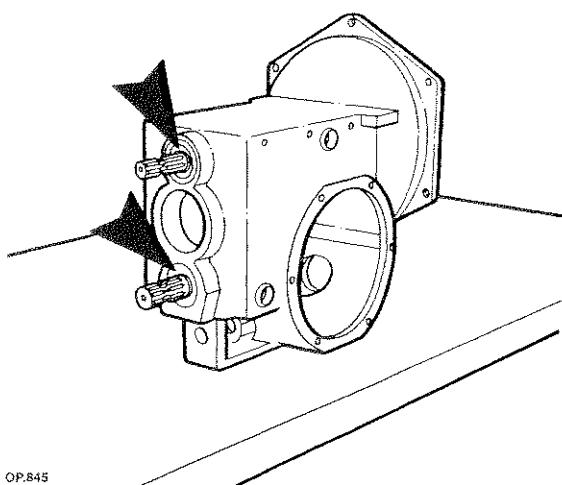
OP.841

- 3 - Svitare la vite e togliere la leva di comando frizione.

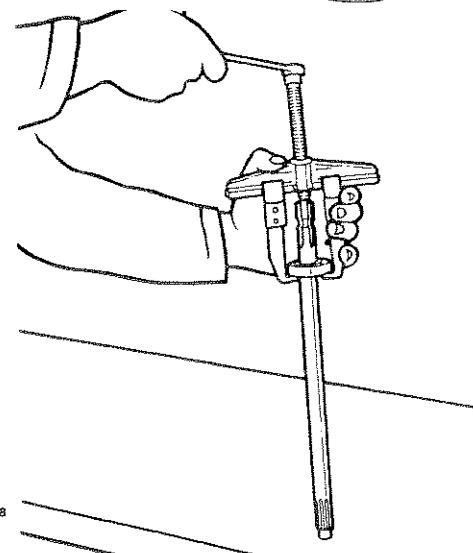


OP.844

- 6 - Sfilare la flangia snodo centrale.

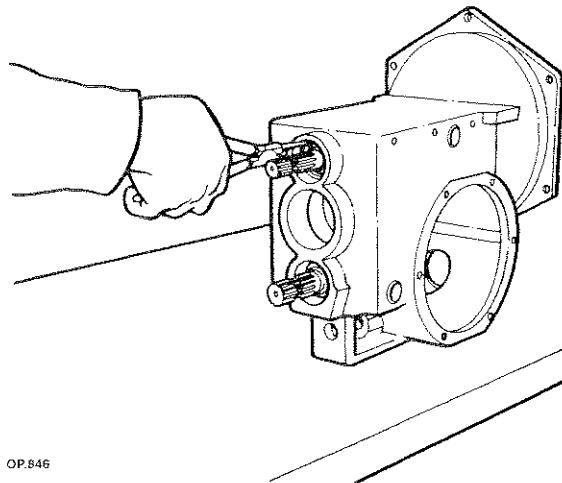


OP.845



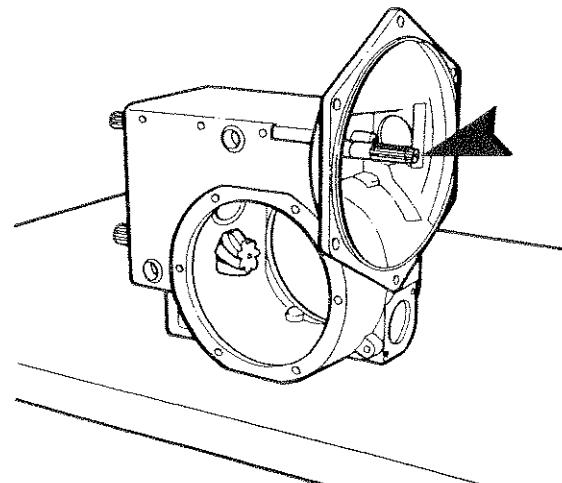
OP.848

7 - Estrarre le guarnizioni di tenuta dell'albero primario e del pignone.



OP.846

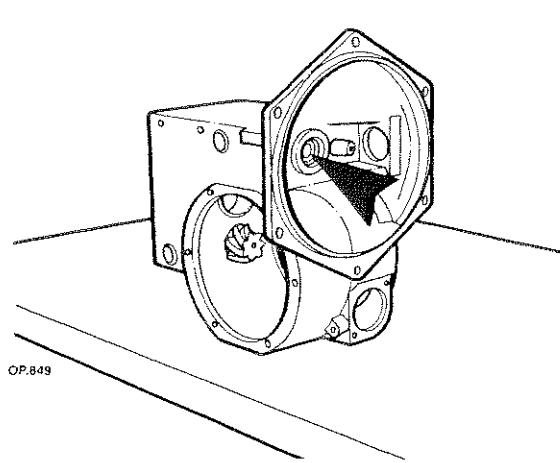
8 - Togliere l'anello di contenimento albero primario.



OP.847

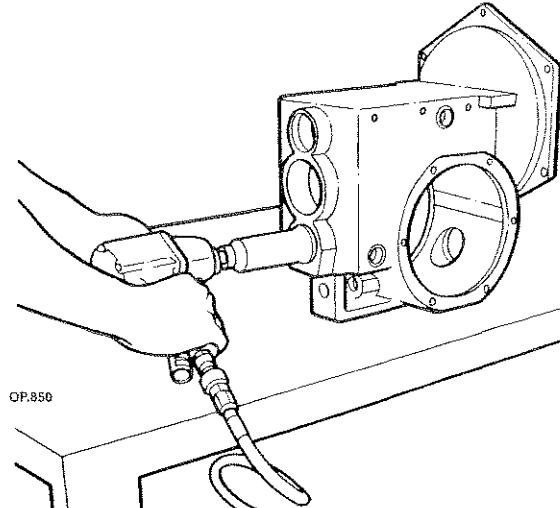
9 - Sfilare l'albero primario con un adeguato martello.

10 - Estrarre il cuscinetto utilizzando l'estratore universale AT 37981257.



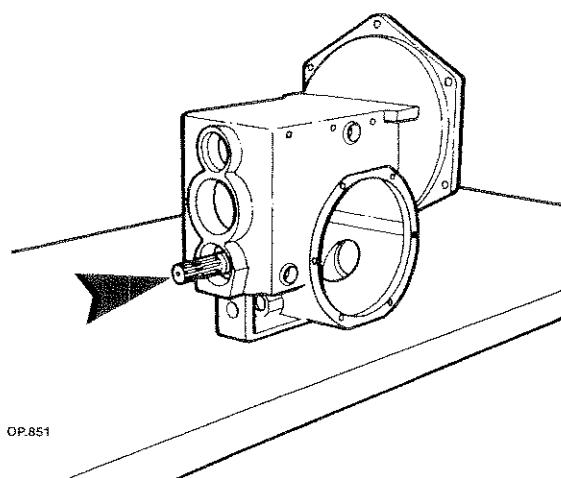
OP.849

11 - Togliere l'anello di tenuta dell'albero primario.

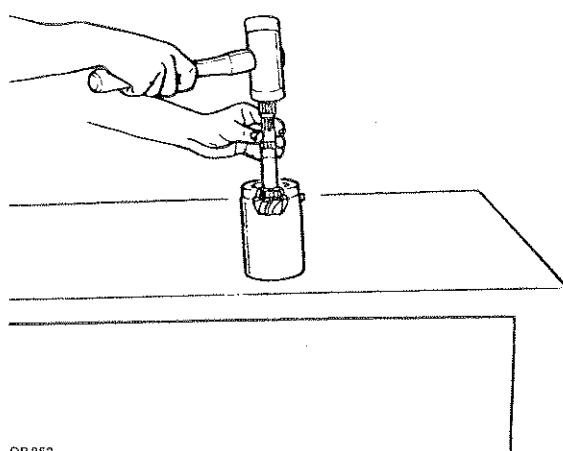


OP.850

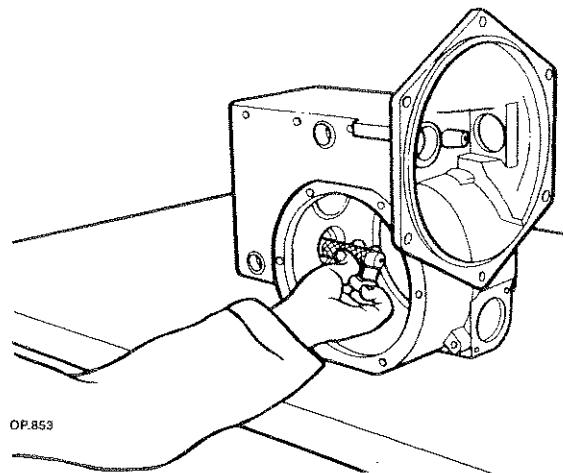
12 - Svitare la ghiera di fissaggio cuscinetti pignone con l'attrezzo AT 37981306.



13 - Sfilare il pignone recuperando la sede interna del cuscinetto posteriore pignone.



14 - Togliere il cuscinetto sul pignone utilizzando l'attrezzo AT 37981314.



15 - Togliere la sede cuscinetti sul cambio utilizzando il tampone AT 37981278 recuperando lo spessore cuscinetto pignone.

16 - Fare attenzione a non invertire i cuscinetti pignone perchè lo spessore di registro pignone è in funzione anche al cuscinetto.



ATTENZIONE - PERICOLO

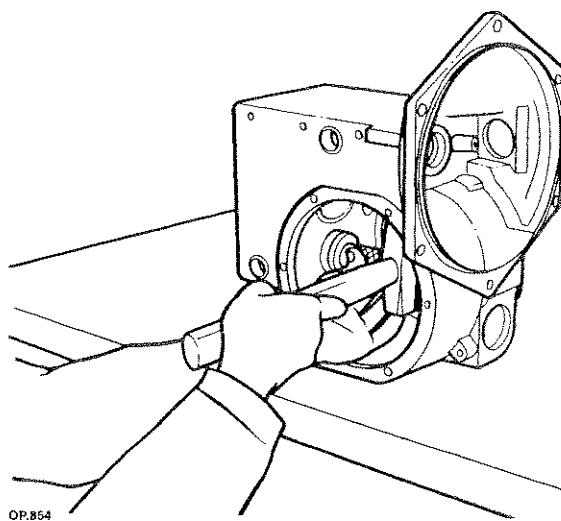
Eseguire le operazioni osservando scrupolosamente le misure di prevenzione.

- Non usare benzina, gasolio o altri liquidi infiammabili per sgrassare o lavare particolari, ma usare solventi commerciali e atossici.

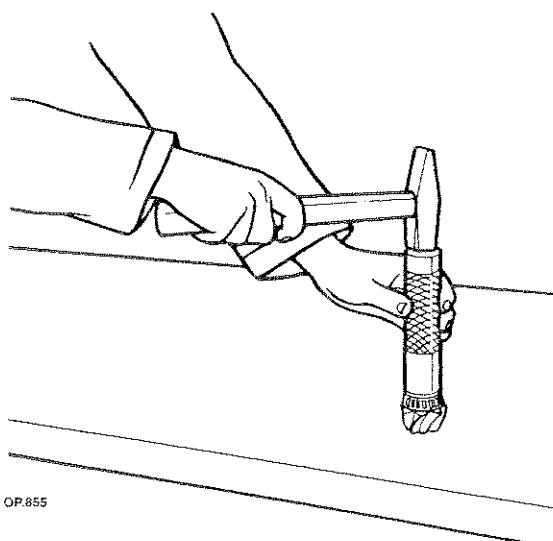
MONTAGGIO

Procedere al montaggio considerando le seguenti avvertenze:

- a - effettuare un'accurata pulizia del carter, particolarmente all'interno;
- b - oliare e ingrassare O.ring. e guarnizioni di tenuta;
- c - procedere nell'ordine inverso allo smontaggio invertendo le precedenti operazioni;
- d - attenersi alle illustrazioni di pag. 14 per l'orientamento dei vari particolari;
- e - attenersi alle coppie di serraggio elencate a pag. 4;
- f - considerare le seguenti operazioni.

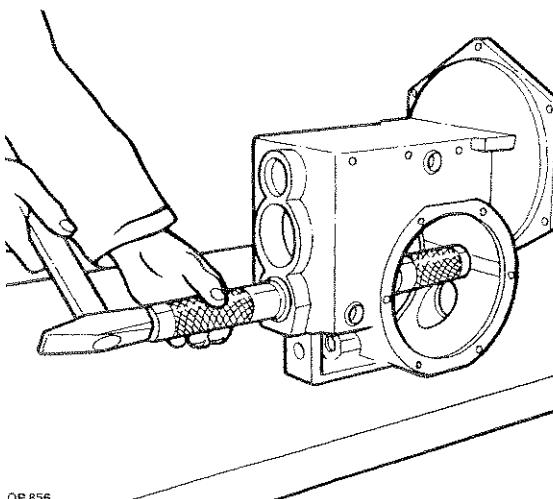


1 - Montare le sedi cuscinetti pignone utilizzando il tampone AT 37981277.



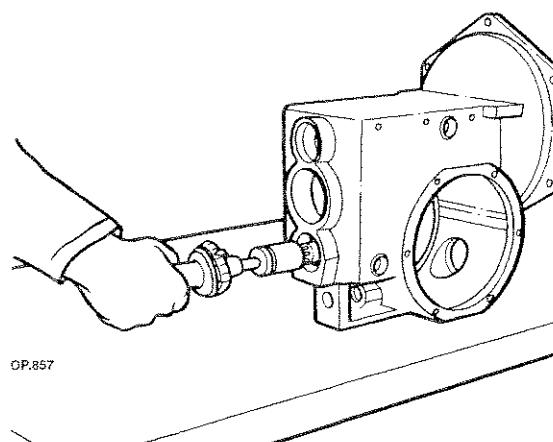
OP.855

2 - Montare il cuscinetto sul pignone usando il tampone AT 37981271.



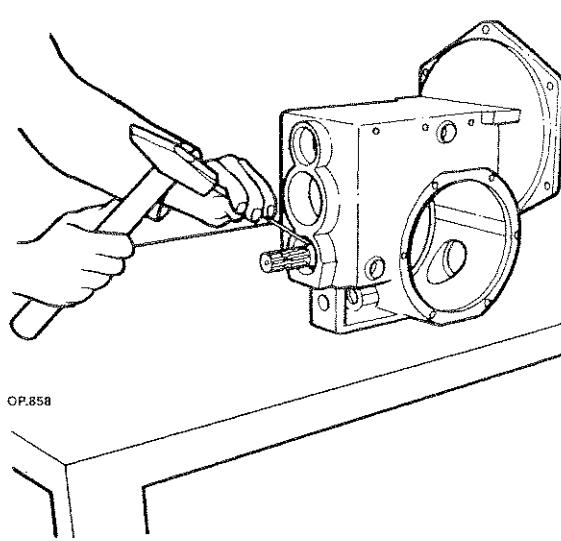
OP.856

3 - Infilare il pignone sulla scatola, posizionare l'attrezzo AT 27981273 per effettuare il montaggio del cuscinetto posteriore AT 37981271.



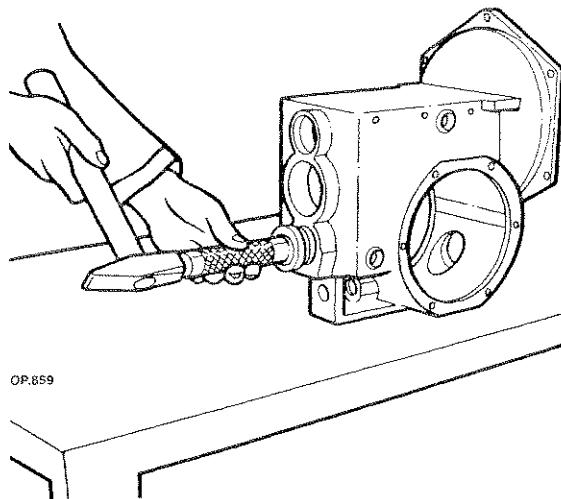
OP.857

4 - Fissare la ghiera con AT 37981306 fino ad ottenere una coppia di rotolamento del pignone di 250÷300 Ncm con torsiometro AT 37981196 e adattatore AT 37981281.



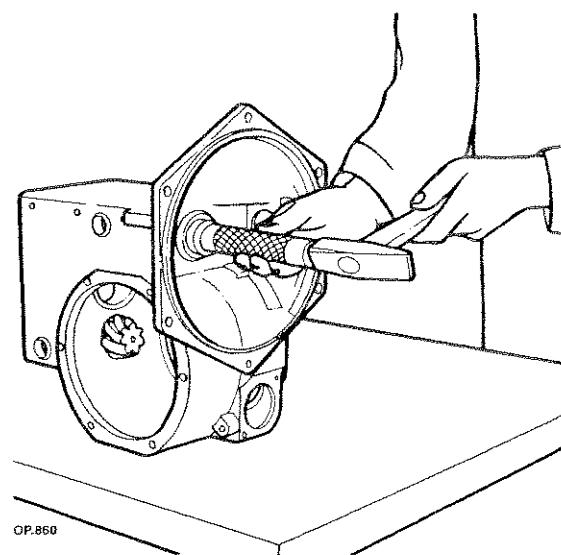
OP.858

5 - Acciaccare accuratamente la ghiera.



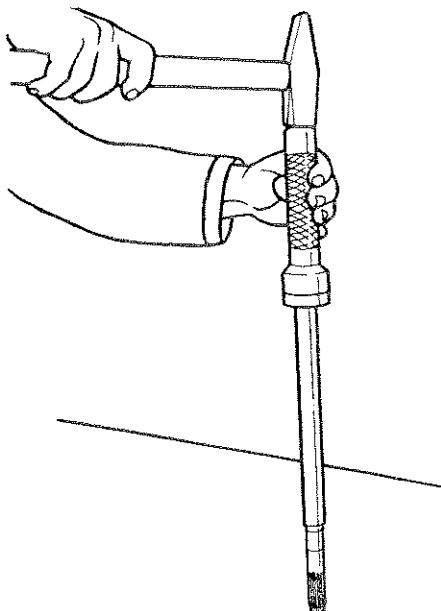
OP.859

6 - Montare la guarnizione di tenuta con busola AT 37981021 e battitoio AT 37981275.

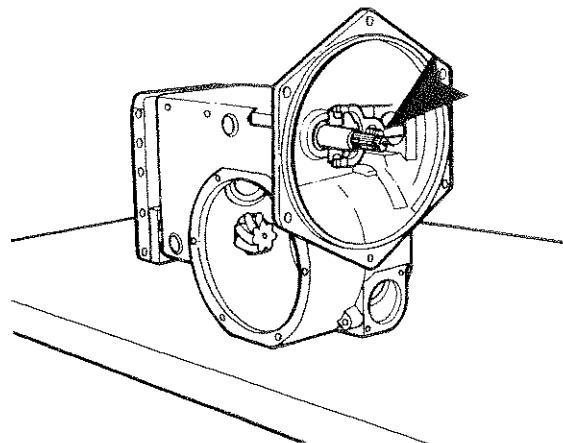


OP.860

7 - Montare la guarnizione di tenuta dell'albero primario usando il battitoio AT 37981279.

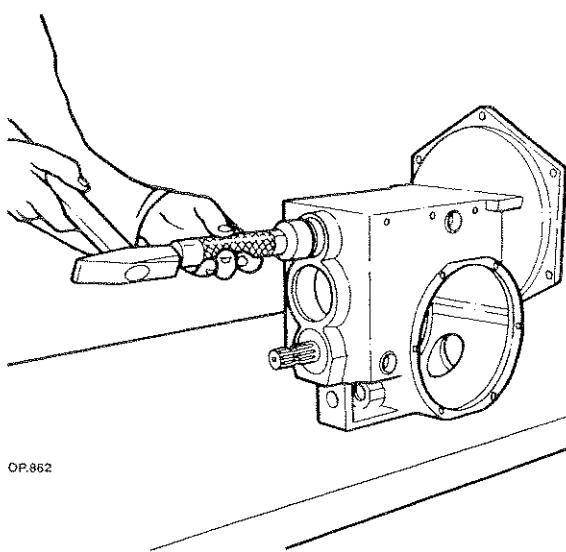


8 - Montare il cuscinetto sull'albero primario utilizzando il tampone AT 37981276.



OP.841

11 - Prima di infilare il cuscinetto reggispinga ingassare il manicotto dove scorre il cuscinetto e l'albero scanalato.



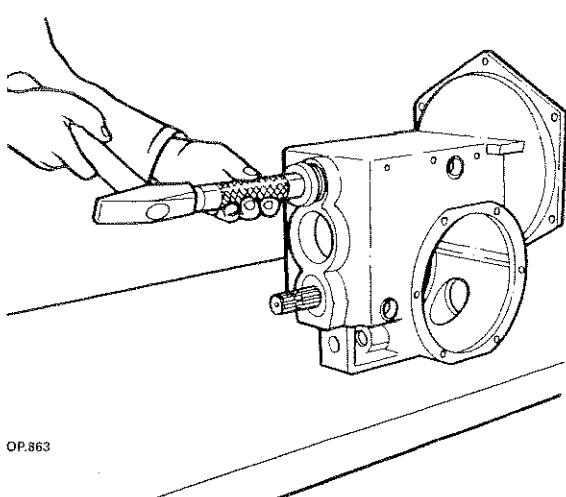
9 - Montare l'albero primario utilizzando il battitoio AT 37981276.



ATTENZIONE - PERICOLO

Eseguire le operazioni osservando scrupolosamente le misure di prevenzione.

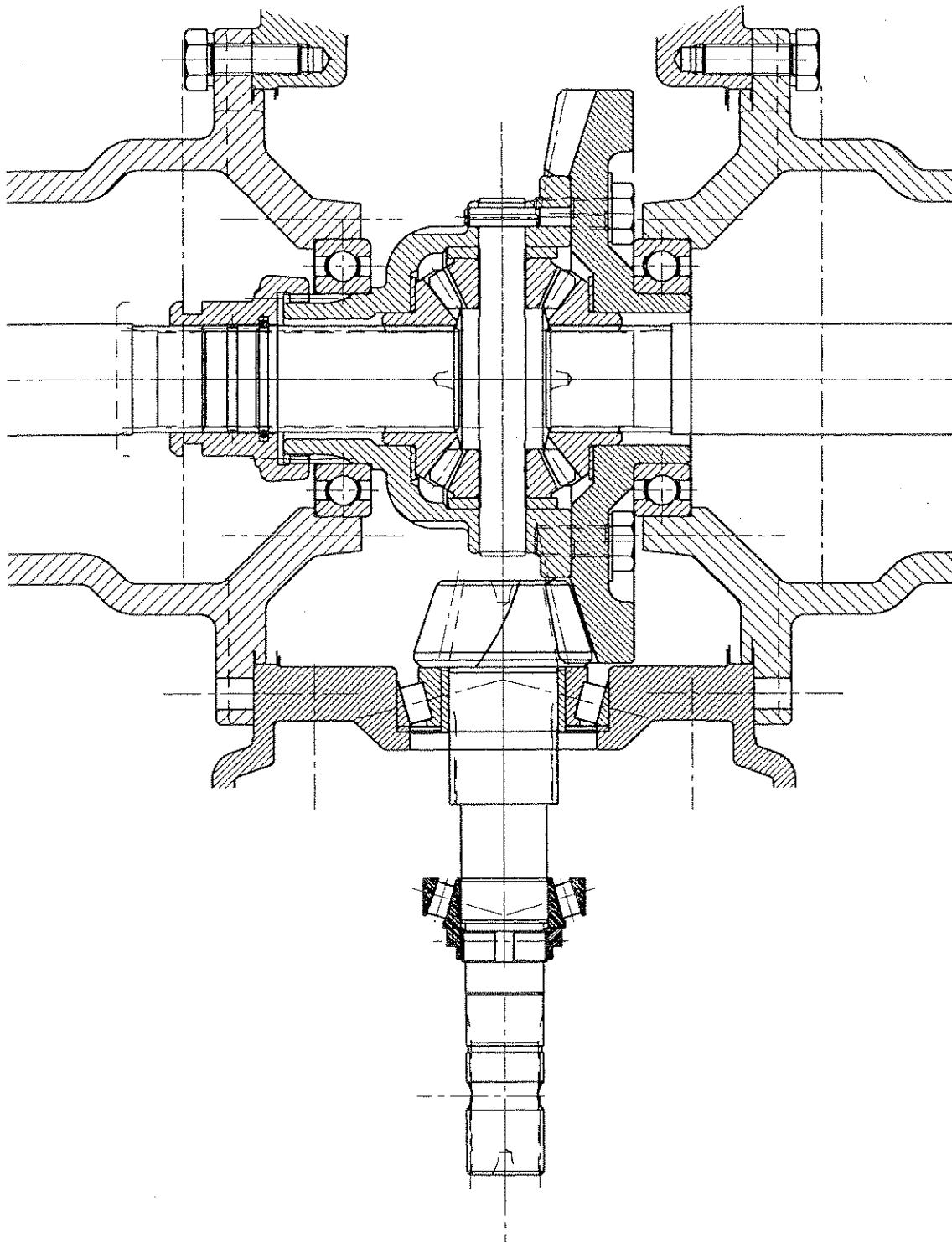
- Usare indumenti antinfortunistici previsti, come guanti e scarpe di sicurezza.
- Non usare le mani per allineare delle forature ma adeguati attrezzi.



10 - Montare la guarnizione di tenuta utilizzando il tampone AT 37981274 e l'adattatore AT 37981020.



COMPLESSIVO GRUPPO DIFFERENZIALE





GRUPPO DIFFERENZIALE

Registrazione della coppia conica

A - Calcolo dello spessore dell'anello di appoggio del cuscinetto pignone conico.

Il valore di detto spessore viene determinato mediante la misurazione dell'altezza Testa pignone sull'attrezzo AT 37981282; infilare il pignone sull'attrezzo AT 37981282 con i propri cuscinetti, serrare leggermente la ghiera in modo da creare un momento volvente.

Con un comparatore ad orologio la cui astina (tastatore) viene

Il valore ricavato dovrà essere sommato o sottratto al valore centesimale scritto con penna elettrica sulla testa del pignone.

Se (A) è il valore indicato dal comparatore e (B) quello impresso dal costruttore sul pignone, lo spessore (S) dell'anello di appoggio da montare è dato dalla seguente formula:

$$S = A-(+B) = A-B$$

/

$$S = A-(\pm B) =$$

\

$$S = A-(-B) = A+B$$

Esempio:

$$A = 1,70 \text{ (valore letto sul comparatore)}$$

$$B = -0,15 \text{ (quota centesimale scritta sul pignone dal costruttore)}$$

$$\text{spessore } S = A-(\pm B)$$

|

$$= 2,70-(-0,15)$$

|

$$= 2,70+0,15$$

|

$$= 2,85$$

In questo caso si deve montare un anello dello spessore pari a mm 1,85 (sotto il cuscinetto del pignone).

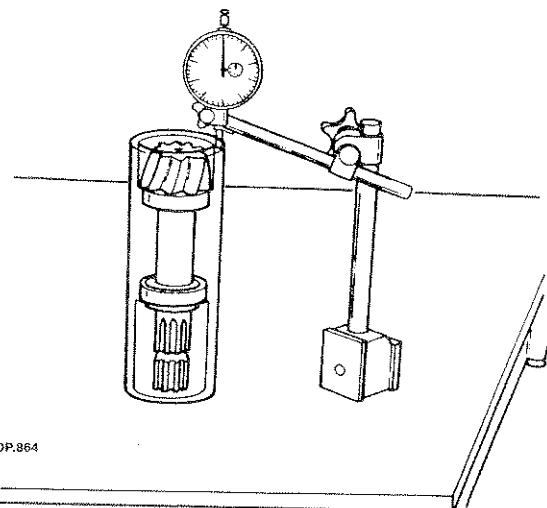
- Se necessario arrotondare sempre per eccesso entro 0,05 mm.

Quindi lo spessore da montare è di 1,9 mm.

Nota

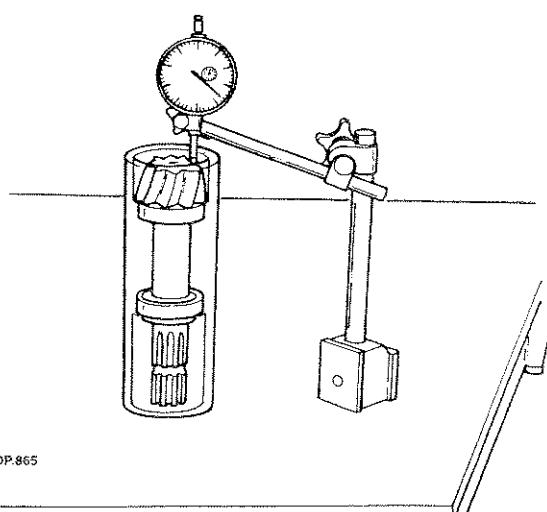
L'anello di appoggio del cuscinetto a rulli sul pignone viene fornito di ricambio:
mm 1,7-1,8-1,9-2-2,1-2,2-2,3.

OP.864



appoggiata sull'attrezzo azzerandolo

OP.865



e successivamente sulla testa pignone.

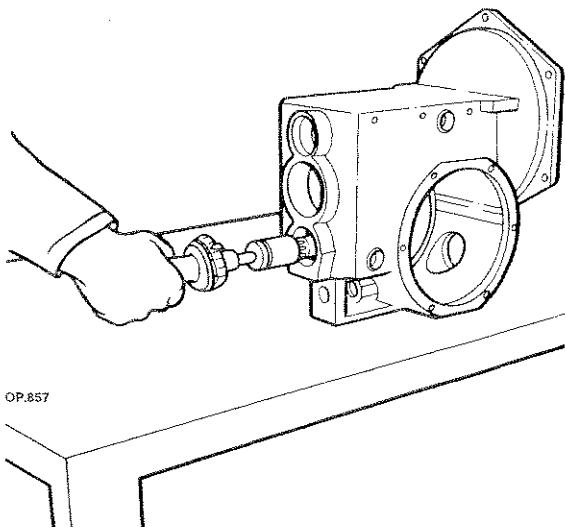


B - Precarico cuscinetto pignone.

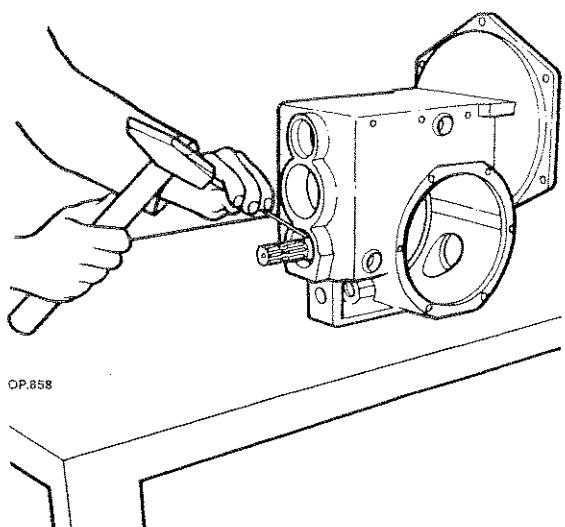
Per effettuare l'operazione di precarico ei cuscinetti a rulli conici del pignone procedere come segue:

1 - avvitare la ghiera sul pignone con una coppia di serraggio 8-10 Kgm (78-98 Nm).

2 - Ruotare il pignone di alcuni giri in modo da assestarsi i cuscinetti nelle proprie sedi.



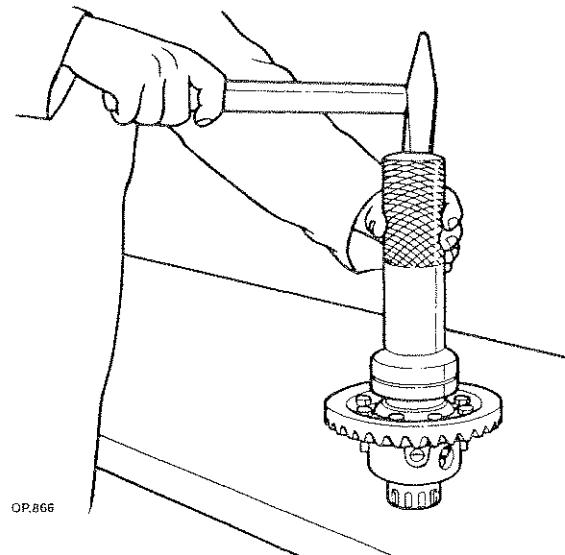
3 - Allentare la ghiera e riavvitarla sempre con l'attrezzo AT 37981306 fino a raggiungere una resistenza di rotolamento del pignone di $250\div300$ Ncm ($0,25\div0,3$ Kgm) con torsionometro AT 37981196 e adattatore AT 37981281.



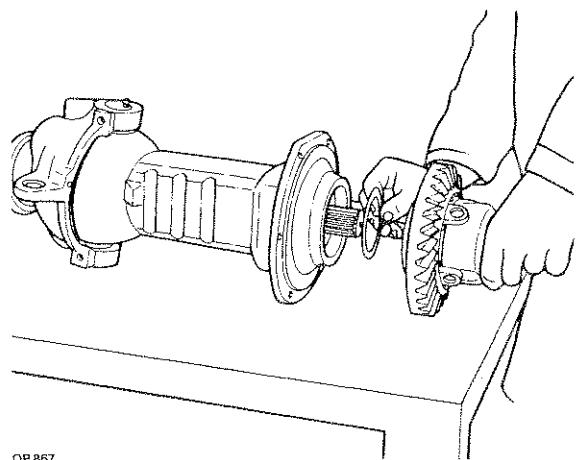
Acciaccare accuratamente la ghiera.

C) Registrazione gioco tra corona e pignone e precarico cuscinetti scatola differenziale.

Procedere come segue:



1 - montare il cuscinetto sulla scatola differenziale utilizzando il tampone AT 37981093.



2 - Inserire tra il supporto differenziale e il gruppo uno spessore nominale (PS di 0,2 mm).

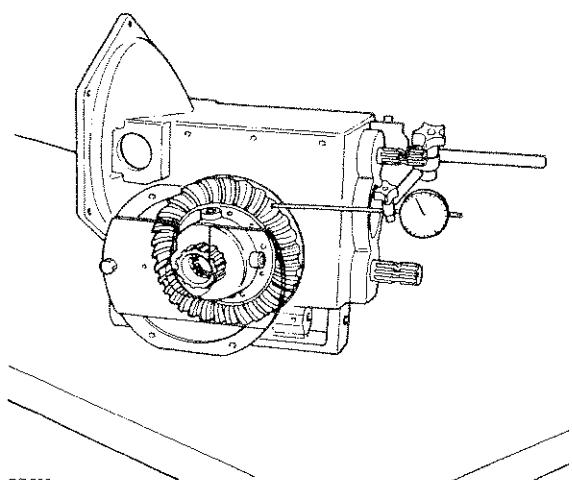
3 - Infilare il gruppo differenziale sul supporto servendosi di un adeguato martello (plastica-rame).

4 - Montare il gruppo differenziale nella scatola trasmissione provvisoriamente senza mastice di tenuta, e fissarlo con alcune viti.



5 - Applicare dalla parte opposta della scatola trasmissione l'attrezzo AT 27981318 necessario per allineare il gruppo differenziale alla scatola e precaricare leggermente il cuscinetto differenziale.

6 - Applicare un comparatore centesimale con base magnetica sulla scatola trasmissione e con l'astina il più perpendicolarmen- te possibile e all'esterno di un dente della corona. Verificare il gioco tra pignone e corona.



7 - Eseguire l'operazione di verifica gioco sfalsandola di 120° e confrontare la media dei tre valori con il gioco normale prescritto ($0,15 \pm 0,23$ mm).

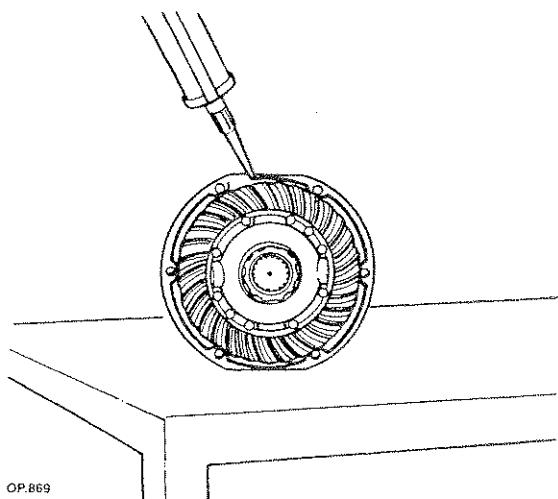
8 - Qualora il valore del gioco rilevato sia superiore o inferiore a quello prescritto, è necessario aumentare o diminuire il valore dello spessore nominale (PS 0,2 mm).

Nota

Aggiungendo uno spessore (PS) di 0,1 mm il gioco fra i denti della coppia conica diminuisce di 0,07 mm, mentre togliendo uno spessore di 0,1 mm il gioco aumenta di 0,07 mm. Lo spessore PS viene fornito a ricambi da 0,1-0,2-0,3-0,5 mm.

9 - Togliere il supporto differenziale e montare lo spessore calcolato.

10 - Montare il supporto-gruppo differenziale alla scatola trasmissione dopo aver pulito e grassato le superfici da accoppiare ed aver applicato un cordone di mastice di tenuta del diametro di circa 3 mm seguendo il tracciato indicato.



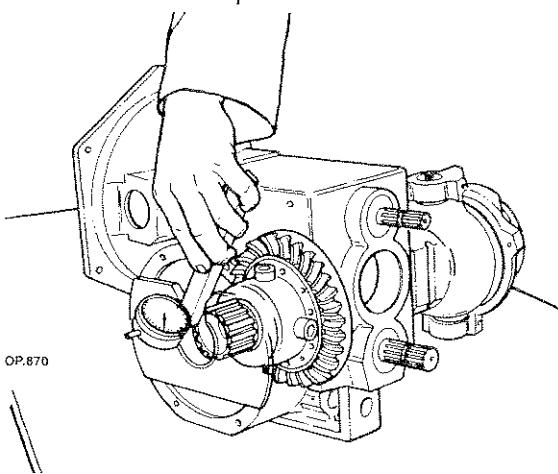
- Schema di applicazione mastice.

11 - Attenersi alle coppie di serraggio elen- cate a pag. 4.

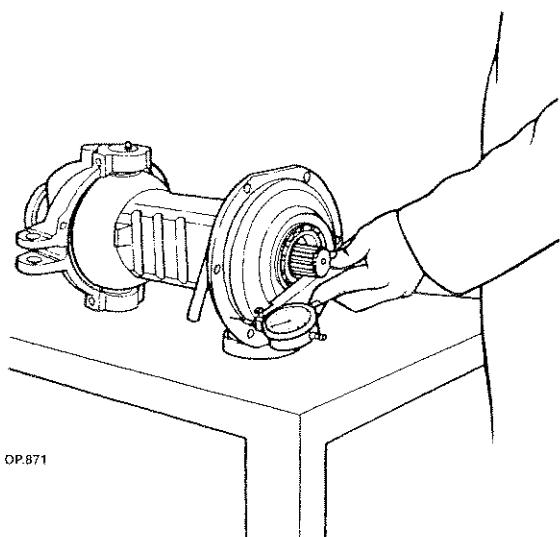
12 - Ricontrollare il gioco tra corona e pignone con il gioco normale prescritto di $0,15 \pm 0,23$ mm.

Precarico cuscinetti scatola differenziale

13 - Posizionare il comparatore centesimale con il supporto AT 27981215 sulla superficie di unione tra il supporto e la scatola, in modo che il tastatore risulti a contatto con la sede del cuscinetto sulla scatola differenziale ed azzerare il comparatore.



Successivamente posizionarlo sul cuscinetto del supporto scatola differenziale in modo che il tastatore risulti a contatto con la super- ficie di unione della scatola.



14 - Eseguire l'operazione sfalsandola di 120° e la media dei tre valori Gm sommata a un precarico di 0,1 mm dà lo spessore S da montare tra la scatola differenziale e il cuscinetto del supporto differenziale.
Se necessario arrotondare per eccesso entro 0,05 mm.

Esempio

Gm = 0,25 mm media dei valori letti sul comparatore

0,1 mm = maggiorazione per incrementare il precarico dei cuscinetti

$$\begin{aligned} \text{Spessore } S &= Gm + 0,1 \\ | \\ &= 0,25+0,1 \\ | \\ &= 0,35 \end{aligned}$$

arrotondamento sempre per eccesso 0,05.

In questo caso si devono montare due spessori di 0,2 mm = 0,4 mm.



ATTENZIONE - PERICOLO



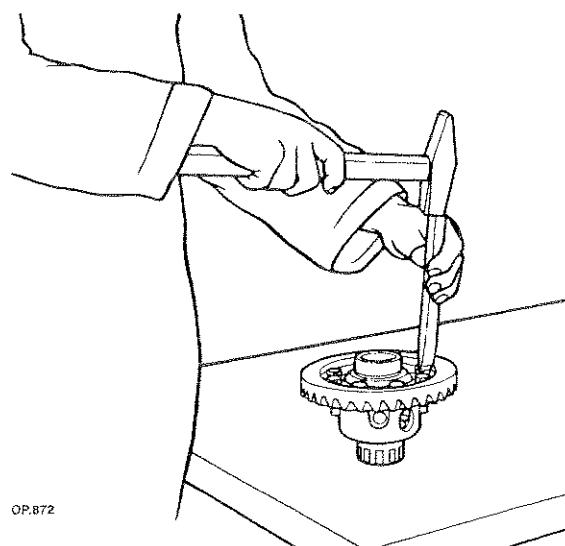
Eseguire le operazioni osservando scrupolosamente le misure di prevenzione.

- Non usare benzina, gasolio o altri liquidi infiammabili per sgrassare o lavare particolari, ma usare solventi commerciali e atossici. Evitare di inquinare l'ambiente.

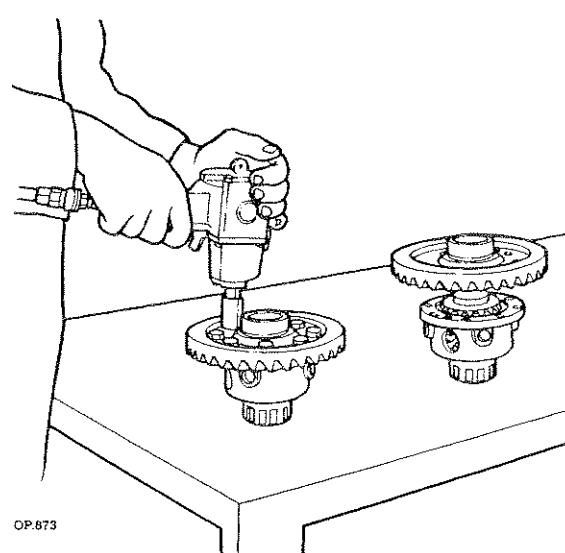
DIFFERENZIALE

Smontaggio - Montaggio

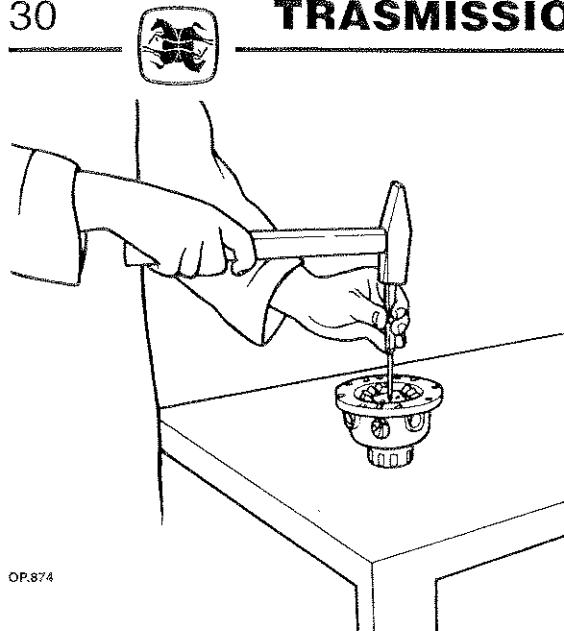
Con gruppo staccato dalla scatola trasmissione procedere come segue:



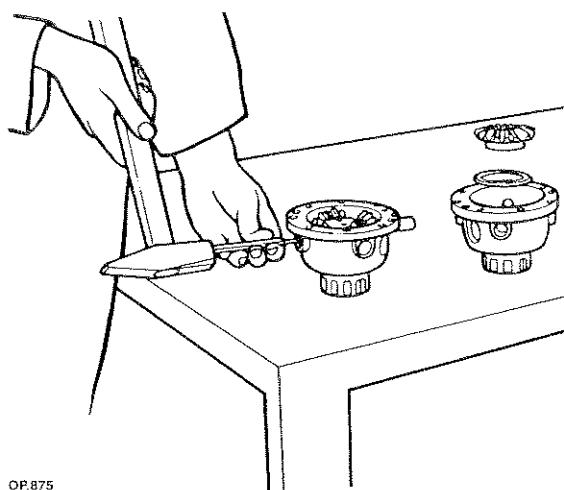
1 - raddrizzare le piastrine ferma viti.



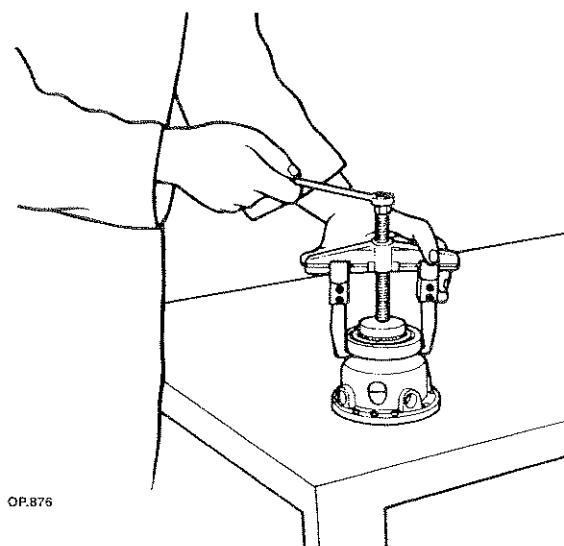
2 - Svitare le viti e staccare la corona conica dalla scatola differenziale.



3 - Togliere le spine elastiche.



4 - Togliere i perni recuperando i satelliti, ralle di rasamento e planetari.



5 - Togliere il cuscinetto utilizzando l'estrattore universale AT 37981247 e adattatore AT 37981214.

MONTAGGIO

Procedere al montaggio di tutti i particolari del gruppo differenziale considerando le seguenti avvertenze:

- a** - procedere invertendo le operazioni dello smontaggio;
- b** - attenersi alle illustrazioni per l'orientamento dei vari componenti;
- c** - assicurarsi che l'intaglio delle spine elastiche sia orientato nel senso dello sforzo, sollecitanti la spina;
- d** - serrare le viti con una coppia di 8,5 Kgm (83 Nm);
- e** - verificare il gioco assiale dei planetari.

**ATTENZIONE - PERICOLO**

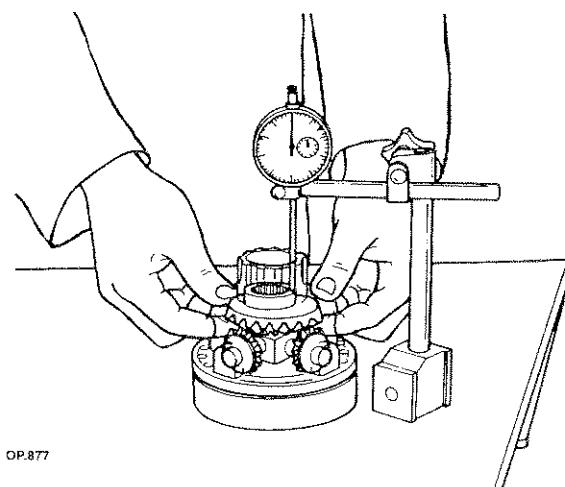
Eseguire le operazioni osservando scrupolosamente le misure di prevenzione.

- Per lo smaltimento di oli attenersi alle norme antinquinamento.
- Evitare di inquinare l'ambiente.

Verifica gioco assiale Planetari

Per verificare il gioco assiale dei planetari procedere come segue:

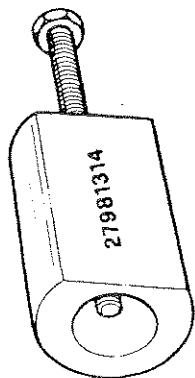
- 1** - posizionare il tastatore del comparatore centesimale sul planetario.



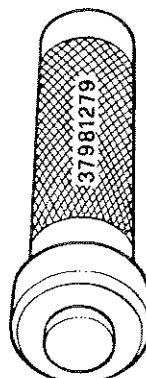
OP.877

- 2** - Agire sul planetario portandolo completamente a contatto del satellite e successivamente spingerlo a contatto della scatola differenziale rilevando sul comparatore centesimale un gioco assiale.

- 3** - Lo spostamento assiale previsto è di 0,15-0,30 mm.



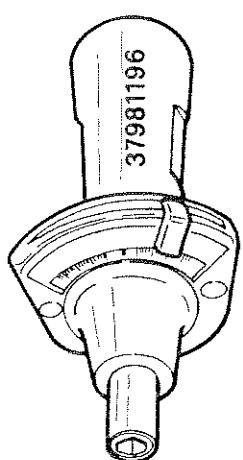
AT.191



AT.192

1 - Estrattore perno cilindro sterzo.

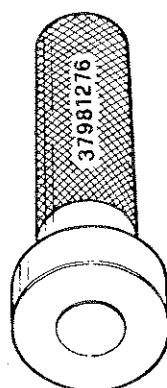
4 - Tampone per il montaggio dell'anello di tenuta albero primario.



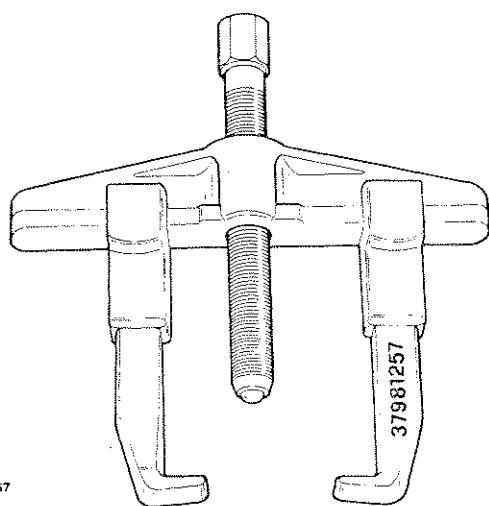
AT.020

2 - Torsiomentro (misuratore di coppia) Ncm.

5 - Tampone per il montaggio cuscinetto albero primario.

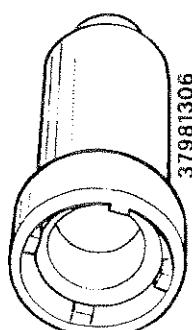


AT.193



AT.067

3 - Estrattore universale.

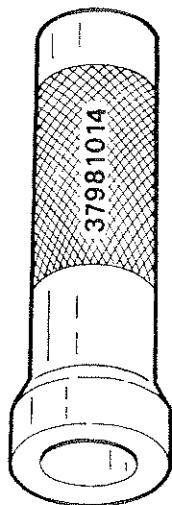


AT.194

6 - Chiave per fissaggio ghiera pignone differenziale.

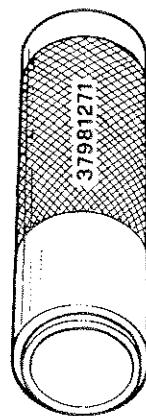


ATTREZZATURA 20 AT.



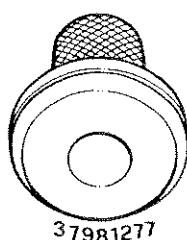
AT.023

7 - Tampone per montaggio cuscinetti.



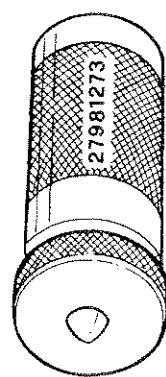
AT.198

10 - Tampone per il montaggio cuscinetto del pignone differenziale.



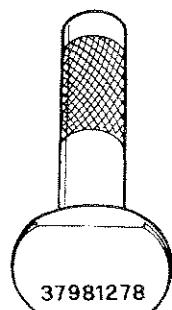
AT.196

8 - Tampone per il montaggio della sede cuscinetto pignone.



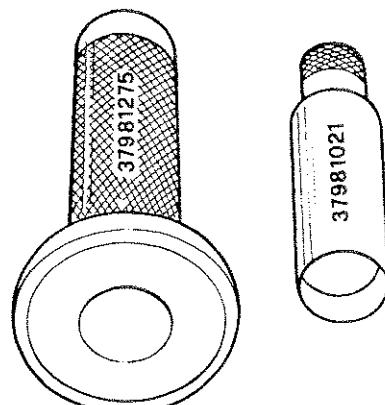
AT.199

11 - Attrezzo per il montaggio del cuscinetto posteriore pignone.



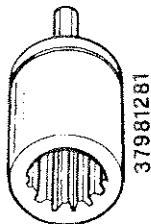
AT.197

9 - Tampone per lo smontaggio della sede cuscinetto pignone.

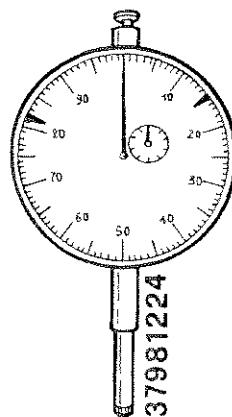


AT.200

12 - Tampone e adattatore per il montaggio di guarnizione di tenuta.



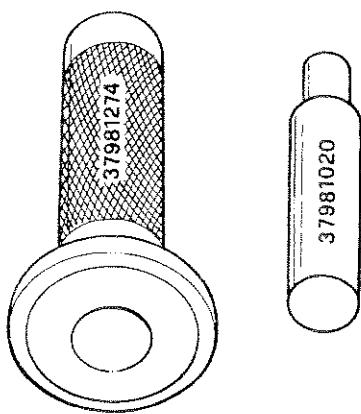
AT.201



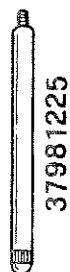
AT.026

13 - Chiave per il controllo della coppia di rotolamento pignone.

16 - Comparatore centesimale.



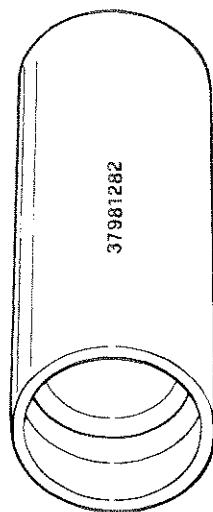
AT.202



AT.027

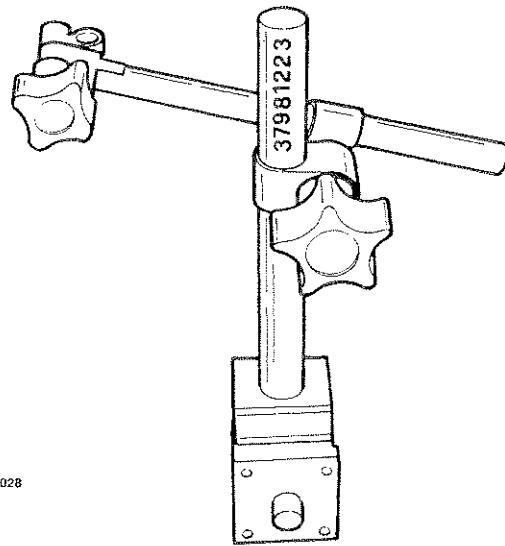
14 - Tampone e adattatore per il montaggio di garnizioni di tenuta.

17 - Prolunga per comparatore centesimale.



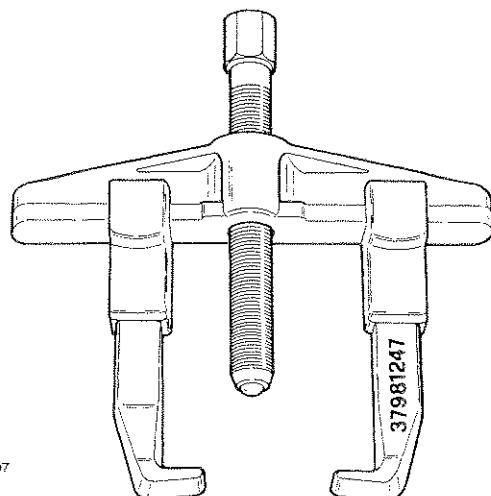
AT.203

15 - Attrezzo per determinare lo spessore del cuscinetto pignone.

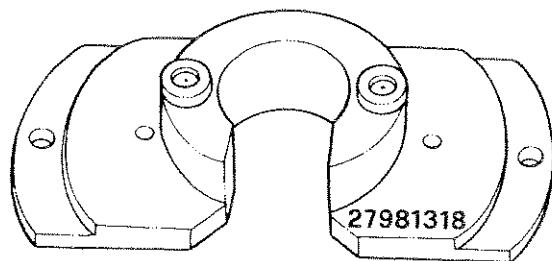


AT.028

18 - Supporto magnetico per comparatore centesimale.



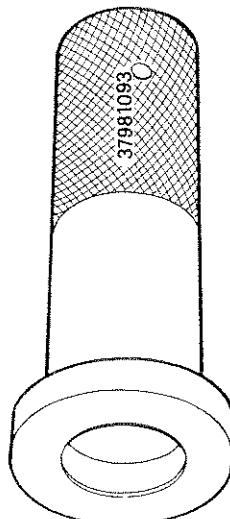
AT.007



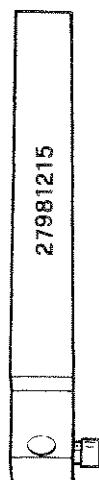
AT.204

19 - Estrattore universale.**22 - Attrezzo per allineamento gruppo differenziale.**

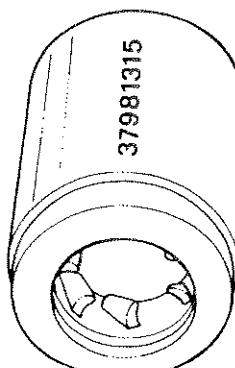
AT.032



AT.045

20 - Adattatore per estrarre il cuscinetto scatola differenziale.**23 - Tampone per il montaggio del cuscinetto sulla scatola differenziale.**

AT.031

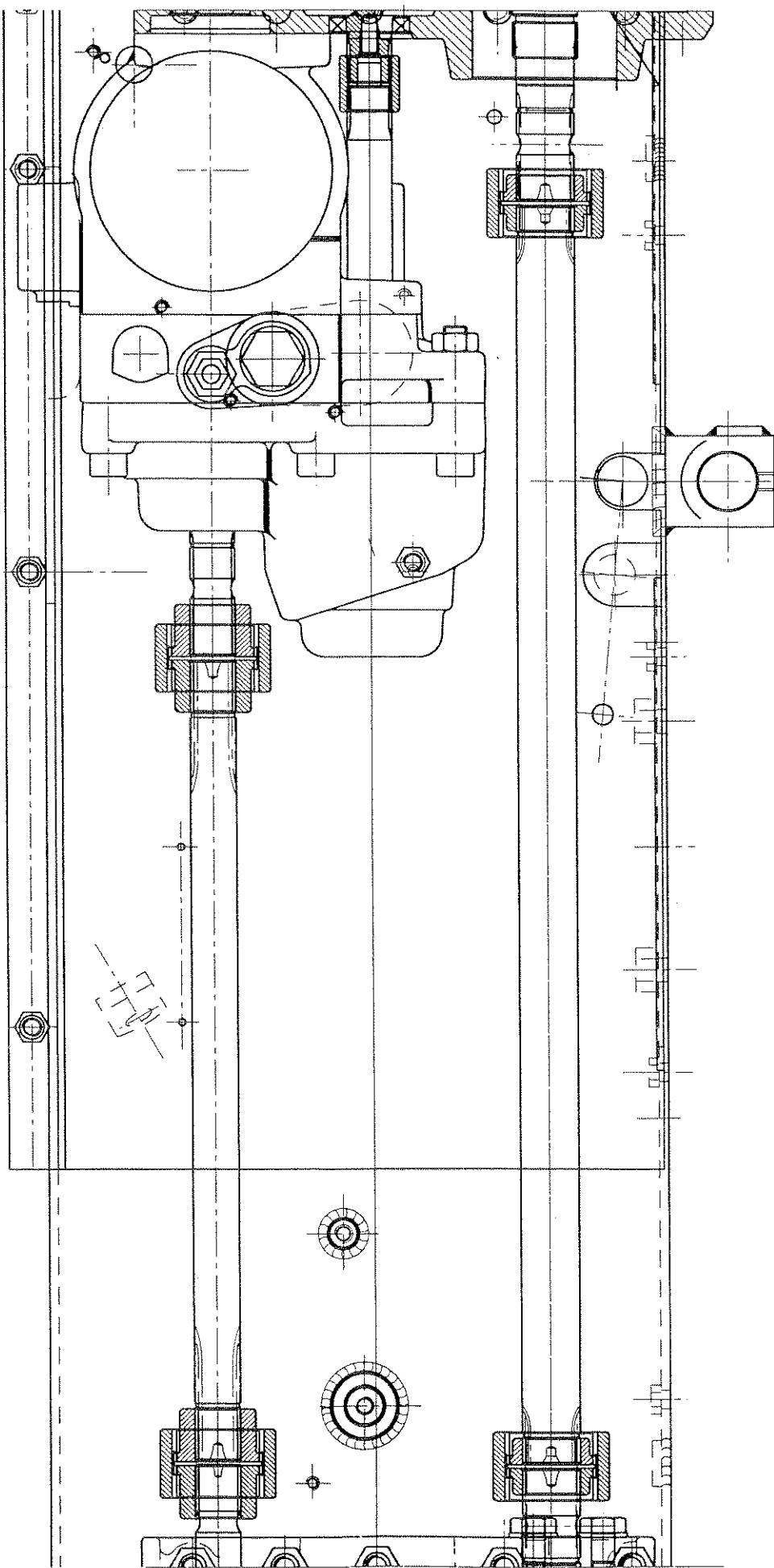


AT.195

21 - Supporto comparatore centesimale.**24 - Tampone per estrarre cuscinetto del pignone.**



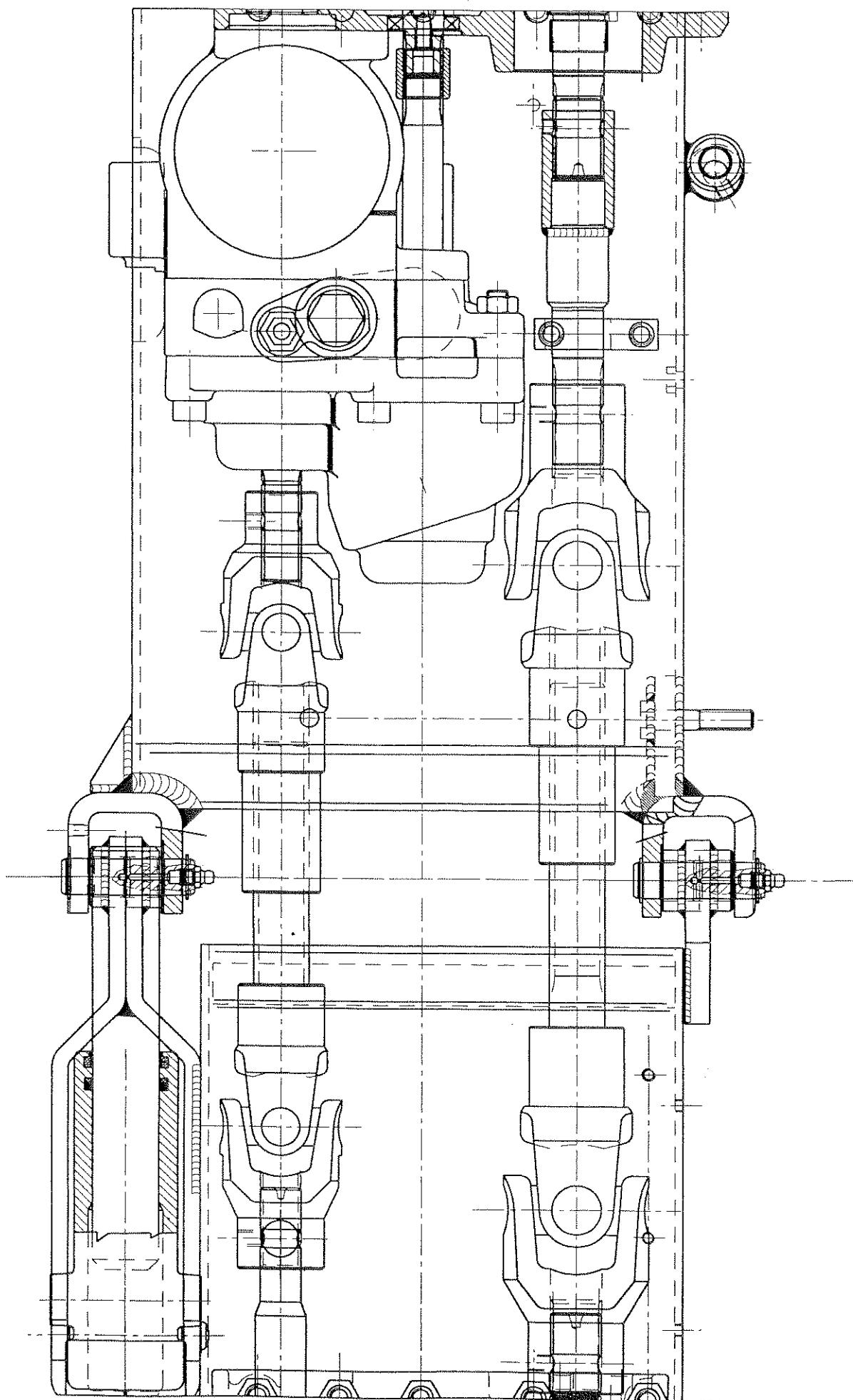
COMPLESSIVO TRASMISSIONE CENTRALE TIGRETRAC





TRASMISSIONE CENTRALE 30

COMPLESSIVO TRASMISSIONE CENTRALE SUPERPARK





Trasmissione centrale - Gruppo idrostatico

Il gruppo idrostatico è a corpi sovrapposti, composto da:

- 1 - Pompa a pistoni assiali a cilindrata variabile (cilindrata max 28 cm³), gruppo rotante a 9 pistoni con servocomando idraulico comandato a distanza da un manipolatore (joystick).
- 2 - Motore a pistoni assiali con cilindrata fissa (28 cm³) gruppo rotante a 9 pistoni.
Il gruppo incorpora le valvole di massima, le valvole di alimentazione ed il servocomando per la variazione della pompa.

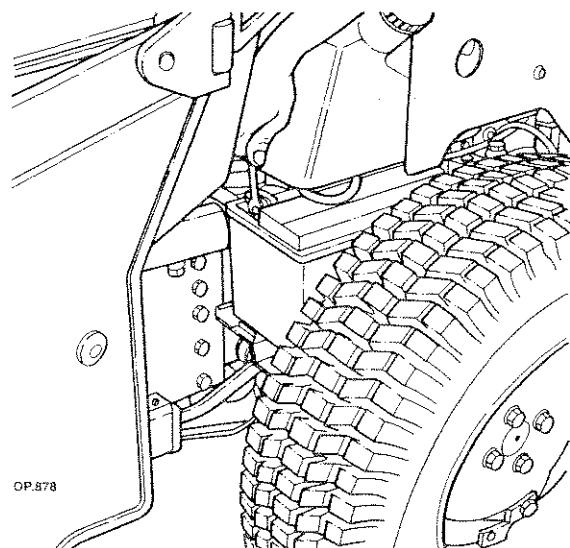
Caratteristiche tecniche

GRUPPO IDROSTATICO	POMPA	MOTORE
CILINDRATA	28 cm ³	28 cm ³
CILINDRATA POMPA DI SOVRALIMENTAZIONE	9 cm ³	9 cm ³
REGIME MAX DI ROTAZ. CONTINUO	3600 min ⁻¹	3600 min ⁻¹
REGIME MINIMO DI ROTAZIONE	500 min ⁻¹	500 min ⁻¹
PRESSIONE DI PICCO	300 bar	300 bar
PRESSIONE DI SOVRALIMENTAZIONE	15-30 bar	15-30 bar
MASSIMA TEMPERATURA CONT. OLIO	80 °C	80 °C
FILTRAZIONE RACCOMANDATA	10 micron	10 micron

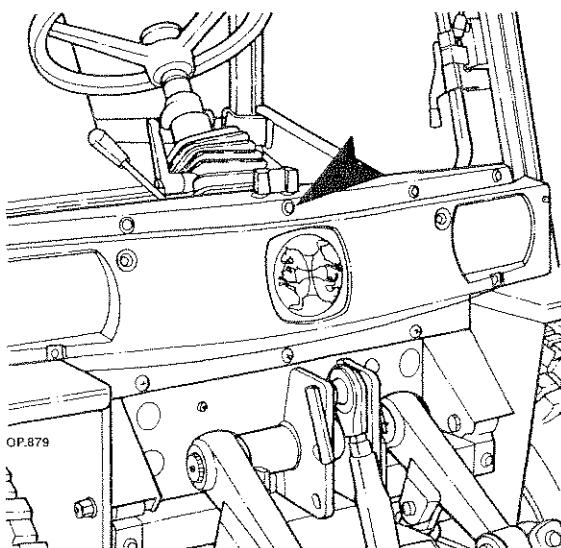
Istruzioni per lo stacco e riattacco

Superpark

Per accedere al gruppo idrostatico bisogna:



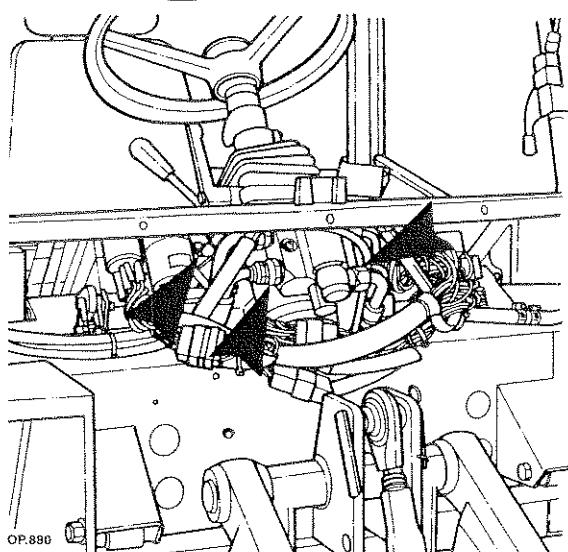
1 - staccare il cavo positivo della batteria ed isolarlo.



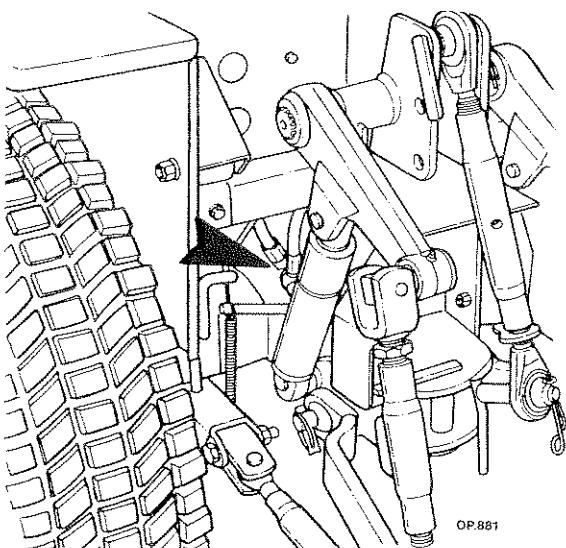
2 - Svitare le viti e togliere la mascherina portafanali staccando le connessioni elettriche.



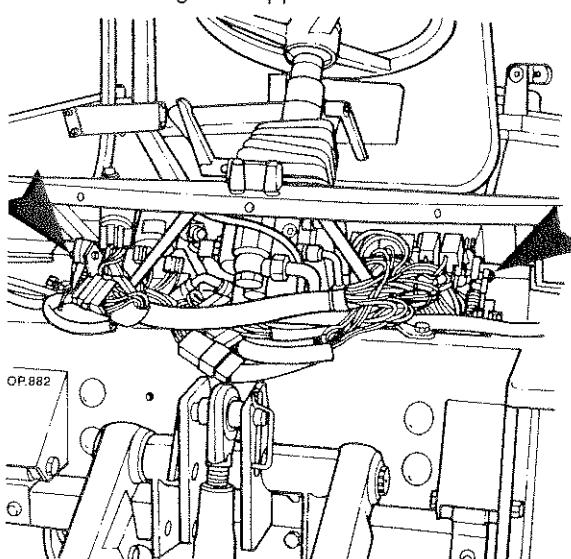
TRASMISSIONE CENTRALE 30



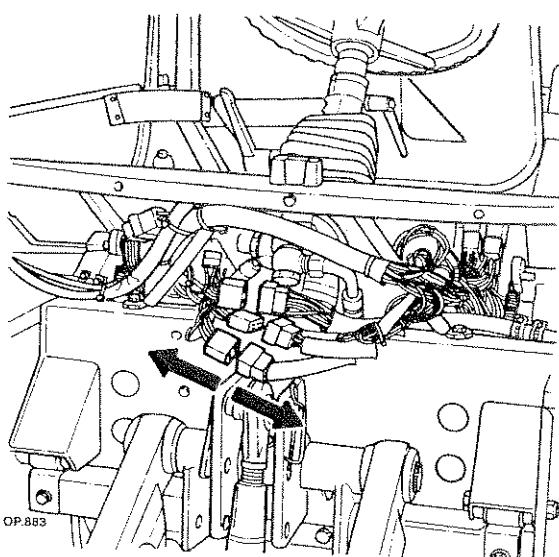
3 - Allentare il morsetto filo acceleratore e svitare i tubi mandata al distributore e scarico idroguida.



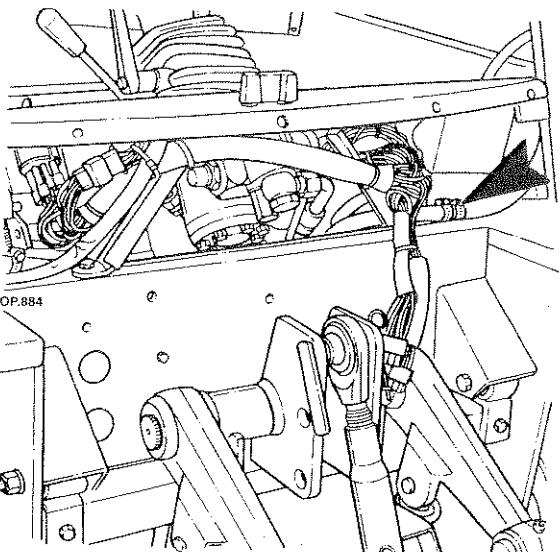
4 - Svitare i tubi mandata ai cilindri e tappare i fori con adeguati tappi.



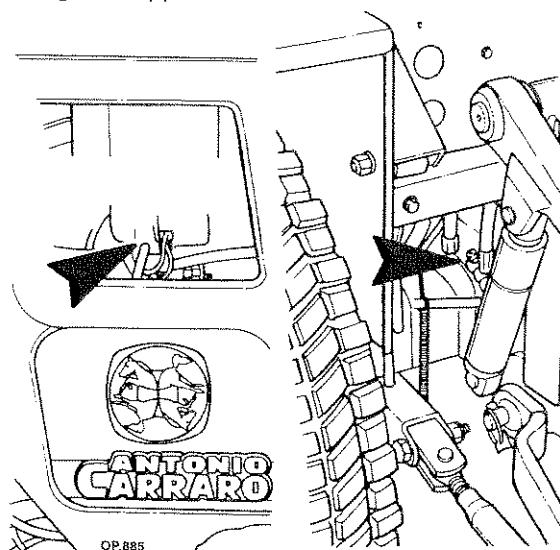
5 - Togliere gli anelli di tenuta e sganciare i fili comandi freni servizio, soccorso e stanzionamento.



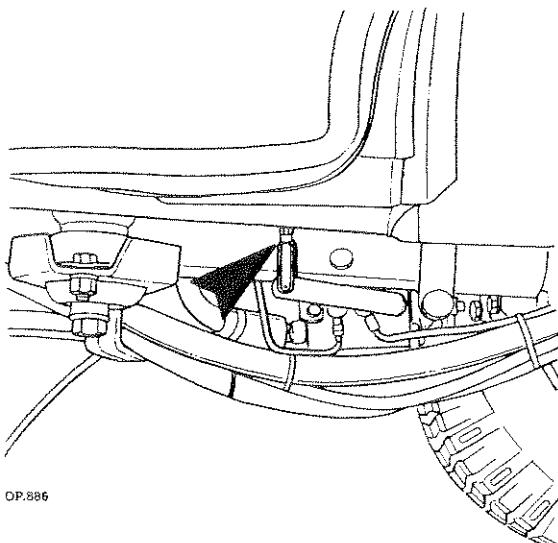
6 - Staccare la connessione elettrica posteriore.



7 - Allentare le fascette e togliere i tubi riscaldamento cabina tappando i fori con adeguati tappi.



8 - Allentare i morsetti fili bloccaggio e disinnesto trazione e sfilarli in parte - staccare il tubicino pompa lavavetri.



OP.886

9 - Togliere il forcettino di comando (speed-fix).

10 - Staccare la connessione sul conta Km e indicatore intasamento filtro olio cambio.

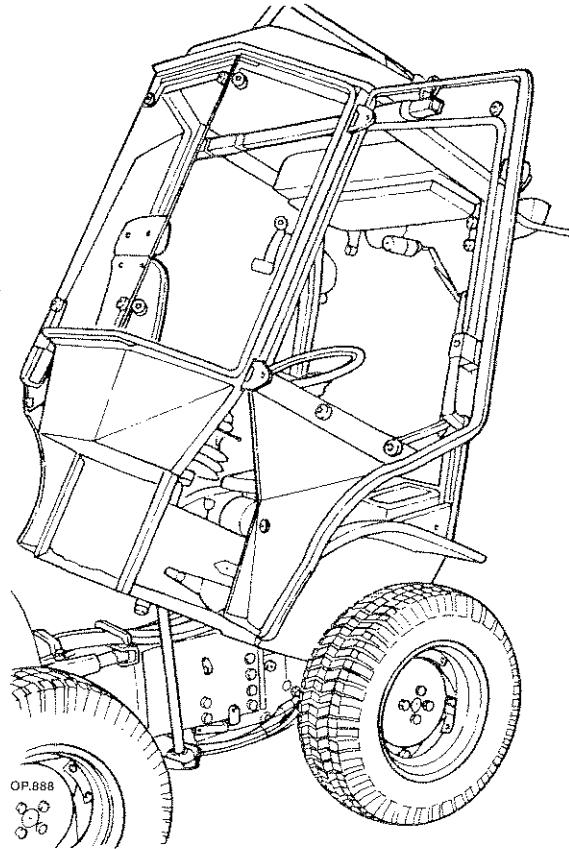


ATTENZIONE - PERICOLO



Eseguire le operazioni osservando scrupolosamente le misure di prevenzione.

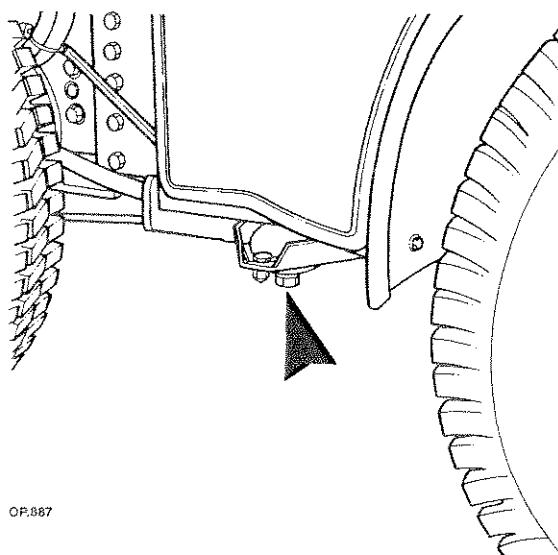
- Per sollevare usare sempre mezzi di capacità adeguata.
- Maneggiare funi metalliche o catene proteggendosi le mani con dei guanti antinfortunistici.



12 - Imbragare la cabina lato posteriore agganciandola a un paranco e sollevarla quel tanto da mettere un puntone di sicurezza.

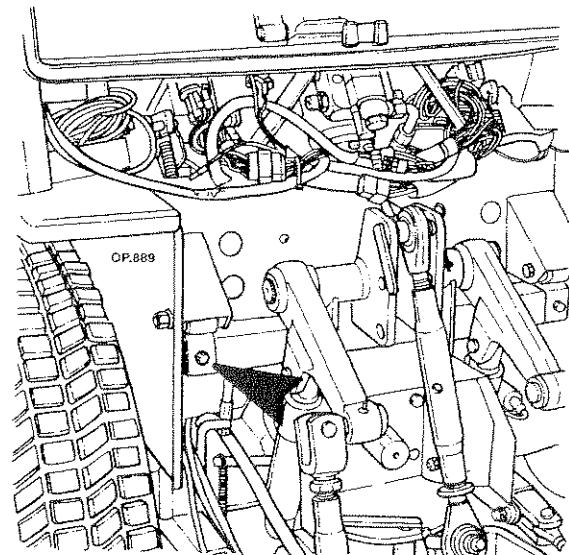
13 - Togliere gli anelli di arresto e scollegare le aste comando PTO e selezione di avanzamento.

14 - Togliere il puntone di sicurezza e abbassare la cabina.

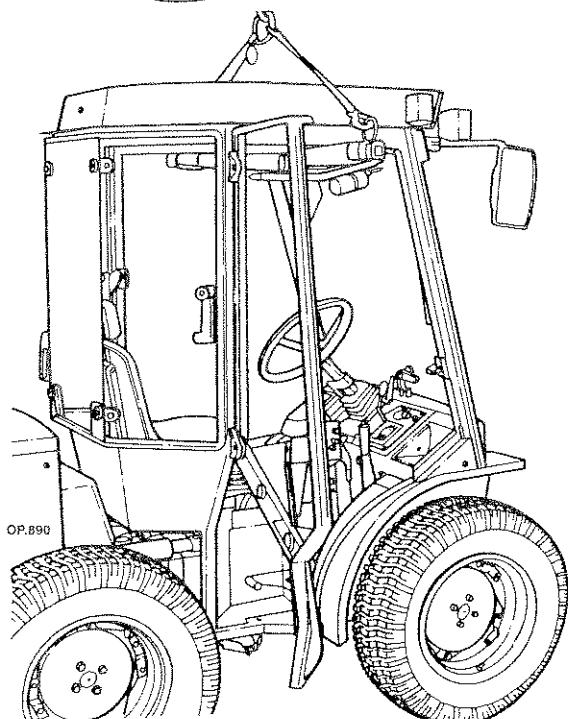


OP.887

11 - Svitare i bulloni silent block posteriori cabina.



15 - Svitare i bulloni dei supporti anteriori cabina.



16 - Togliere la cabina completamente.

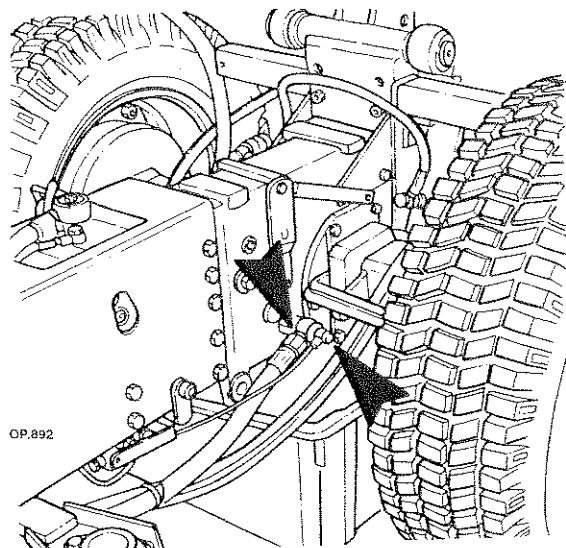


ATTENZIONE - PERICOLO

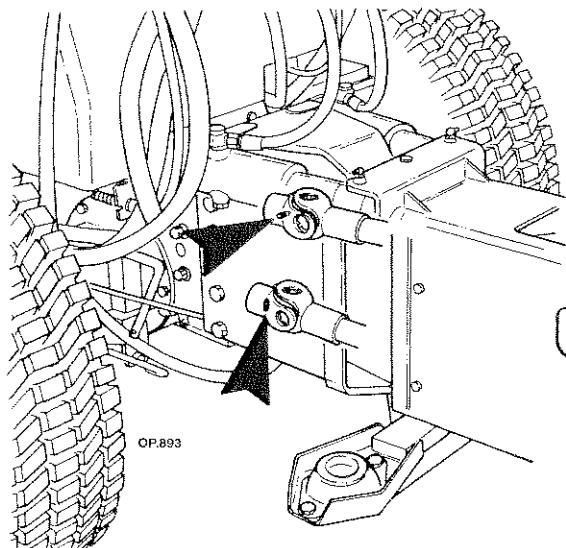


Eseguire le operazioni osservando scrupolosamente le misure di prevenzione.

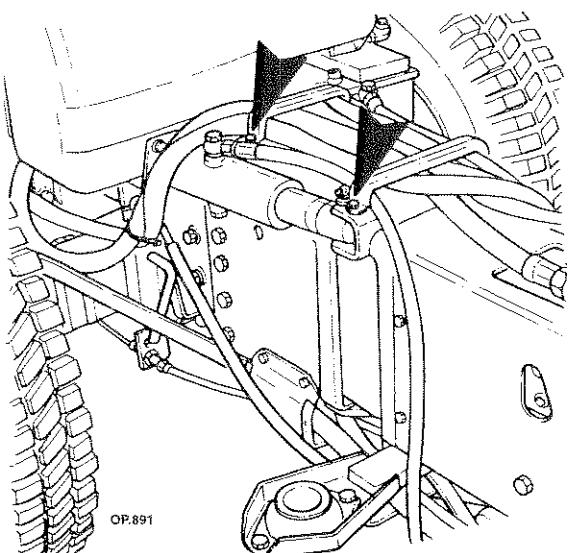
- Usare indumenti antinfortunistici previsti, come guanti e scarpe di sicurezza.
- Far attenzione al cesoiamiento.
- Far attenzione allo schiacciamento.
- Far attenzione all'impigliamento.



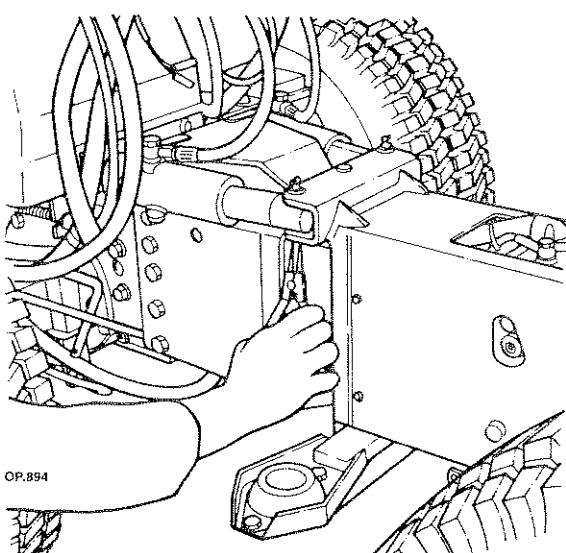
18 - Svitare i raccordi e scaricare l'olio in un apposito recipiente.



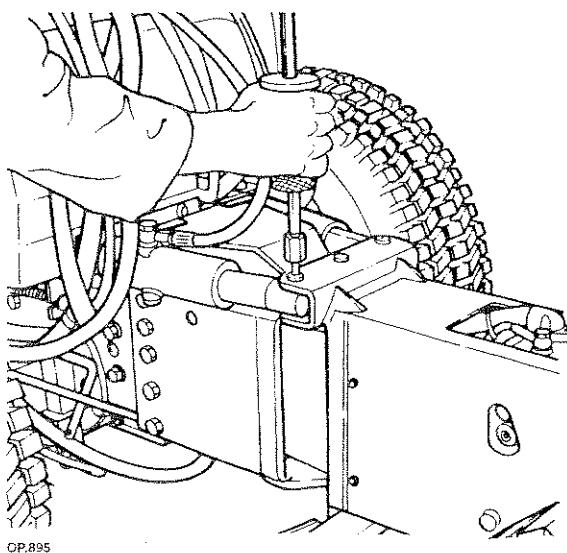
19 - Svitare i grani di ancoraggio giunti e sfilarli.



17 - Svitare le viti e togliere le fascette contenimento tubi.

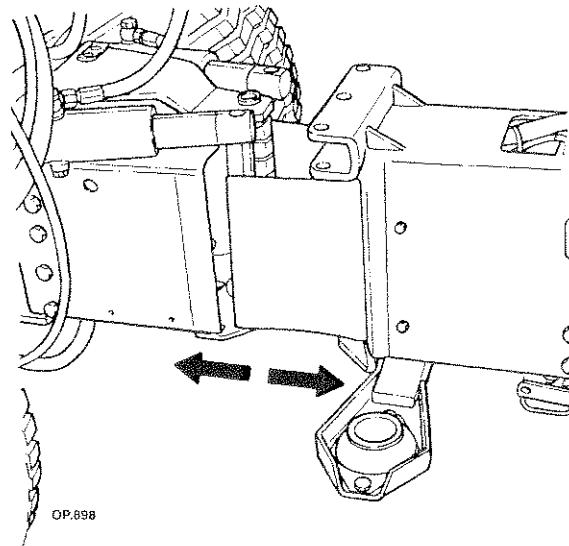


20 - Togliere gli anelli elastici sui perni cilindri idroguida.



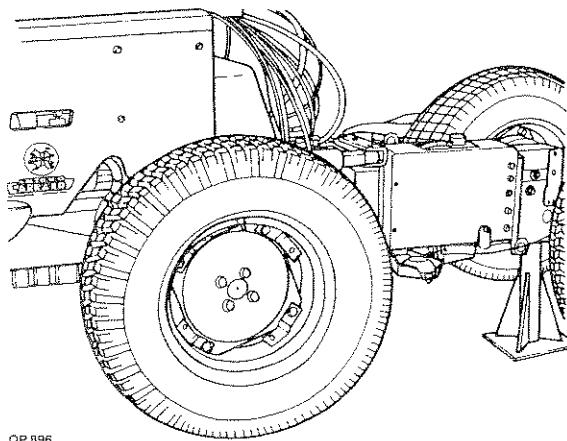
OP.895

21 - Avvitare al posto dell'ingrassatore l'adattatore AT 27981047 e con l'estrattore AT 27981047 estrarre i perni cilindri idroguida.



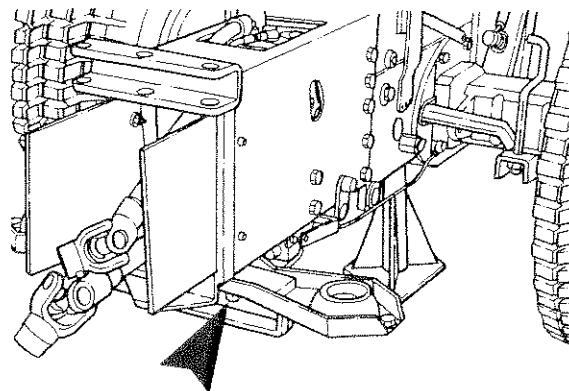
OP.898

24 - Separare l'avanreno anteriore da quello posteriore.



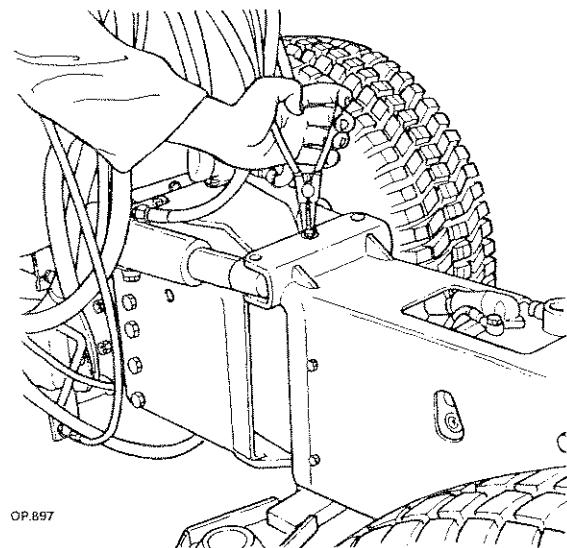
OP.896

22 - Posizionare un cavalletto mobile sotto il motore diesel e uno fisso sotto il cambio lato posteriore.



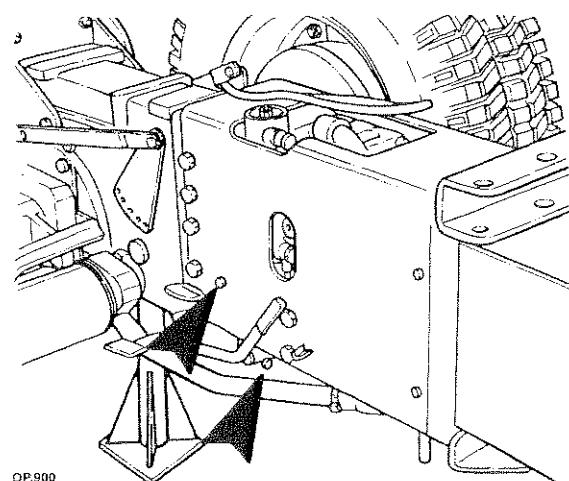
OP.899

25 - Svitare le viti e togliere il supporto cabina.



OP.897

23 - Togliere gli anelli elastici e con un adeguato battitoio togliere i perni snodo centrale.

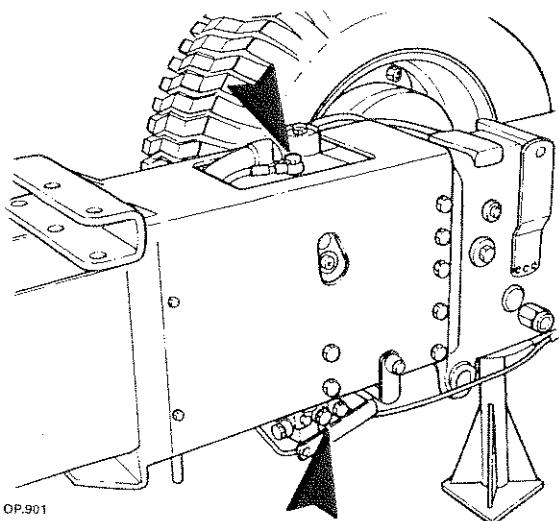


OP.900

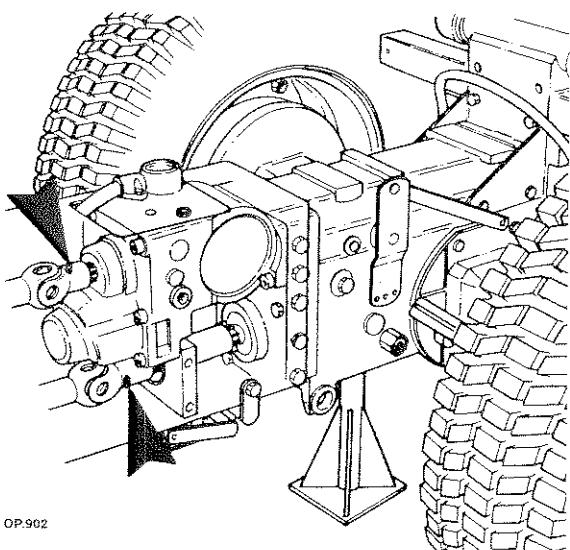
26 - Svitare e sfilare il comando bloccaggio.



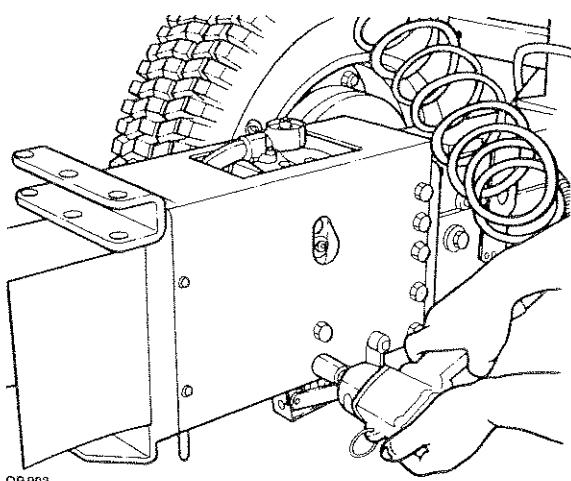
TRASMISSIONE CENTRALE 30



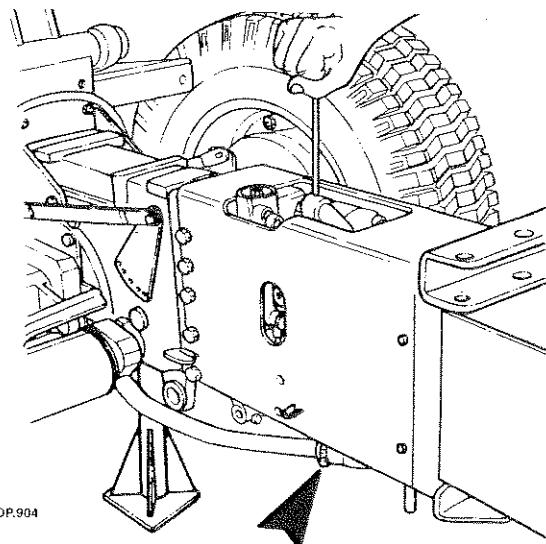
27 - Svitare i raccordi dei tubi di collegamento del manipolatore (joystick).



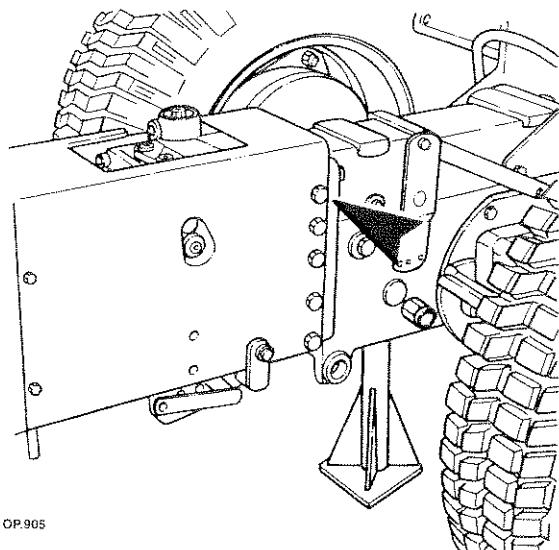
28 - Svitare i grani di ancoraggio giunti e sfilarli.



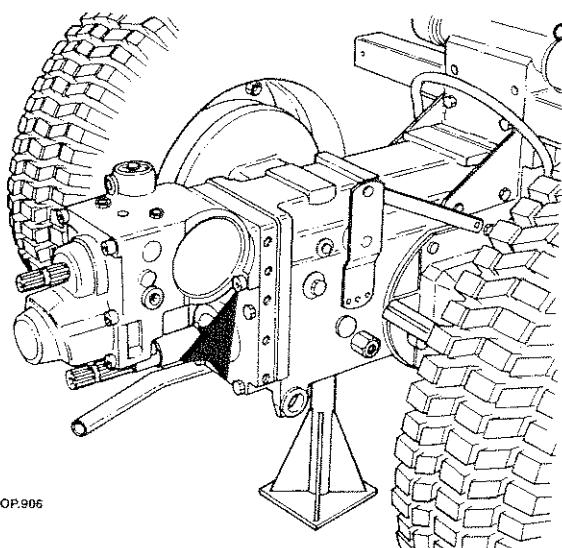
29 - Svitare le viti del supporto prolunga e sfilarlo dal corpetto inclinandolo.



30 - Allentare le fascette e togliere il tubo di collegamento gruppo idrostatico al cambio di velocità.



31 - Svitare le viti e sfilare il corpetto centrale.



32 - Svitare le viti e sfilare il gruppo idrostatico.



ATTENZIONE - PERICOLO



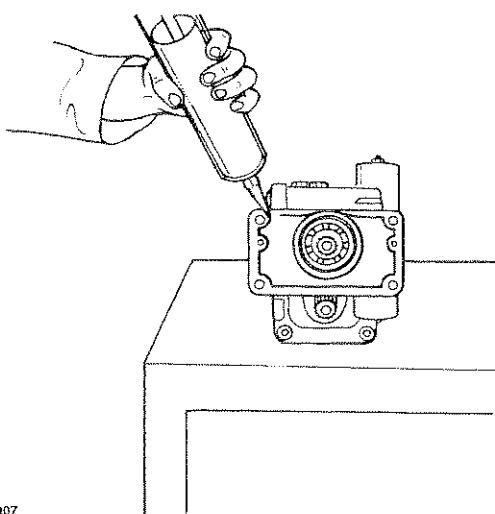
Eseguire le operazioni osservando scrupolosamente le misure di prevenzione.

- Non usare le mani per allineare delle forature.

Riattacco

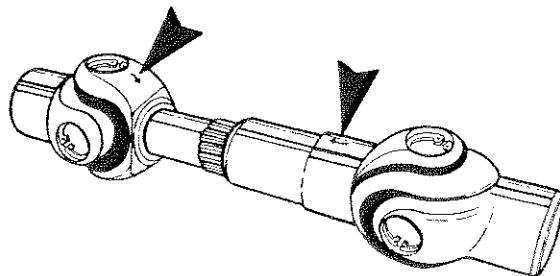
Procedere al riattacco considerando le seguenti avvertenze:

- a** - invertire le operazioni dello stacco;
- b** - attenersi alle illustrazioni per l'orientamento dei vari particolari;
- c** - attenersi alle coppie di serraggio elencate a pag. 4;
- d** - prima di infilare le prolunghe o giunti cardanici ingrassare accuratamente i profili scanalati (per il tipo di grasso da usare, vedi pag. 5);
- e** - avvitare i grani di ancoraggio prolunghe o giunti applicando della loctite 242 (ferma filetti medio);
- f** - effettuare un'accurata pulizia in particolar modo delle superfici da accoppiare ed applicare un cordone di mastice di tenuta del diametro di circa 3 mm seguendo il tracciato indicato nella figura;



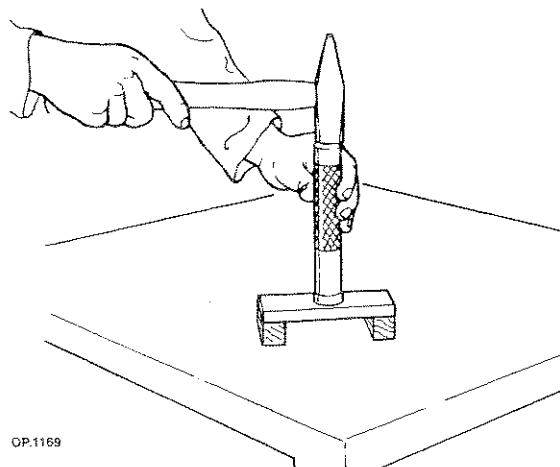
OP.907

Schema di applicazione mastice di tenuta.



OP.054

- g** - verificare allineamento crocere doppio giunto cardanici;



OP.1169

- h** - utilizzare il tampone AT 37981312 per estrarre e montare l'astuccio a rullini sulla piastra centrale;

- i** - curare la pulizia di tutte le parti dell'impianto che verranno a contatto con l'olio idraulico del circuito (serbatoio - tubi - scambiatore di calore);

- l** - assicurarsi che non vi siano ostacoli che impediscono la normale aspirazione della pompa del gruppo idrostatico (tappi);

- m** - sostituire la cartuccia filtro olio;

- n** - non avviare il motore diesel ed azionare il gruppo idrostatico prima di aver eseguito il riempimento del circuito idraulico con olio (nuovo);

- o** - riempire il serbatoio (cambio di velocità) con olio vedi pag. 5;

- p** - riempire il gruppo idrostatico con olio vedi pag. 5 attraverso uno dei fori di drenaggio.



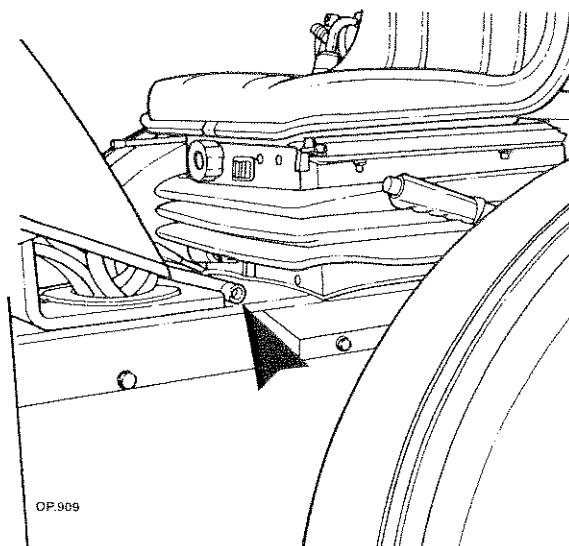
ATTENZIONE - PERICOLO



Eseguire le operazioni osservando scrupolosamente le misure di prevenzione.

- Non usare benzina, gasolio o altri liquidi infiammabili per sgrassare o lavare particolari, ma usare solventi commerciali e atossici.
- Per lo smaltimento di oli attenersi alle norme antinquinamento.

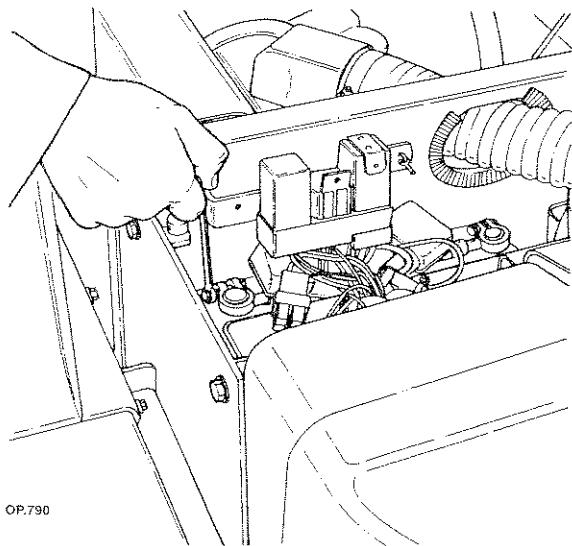
Evitare di inquinare l'ambiente.



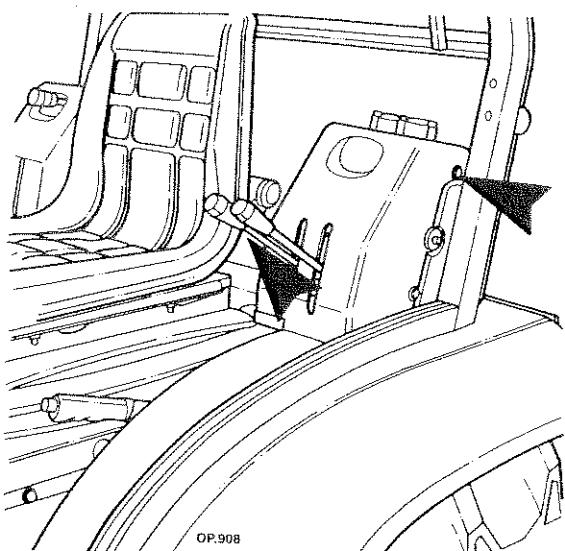
3 - Svitare le viti e togliere il sedile completo.

Tigretrac con telaio a 4 montanti

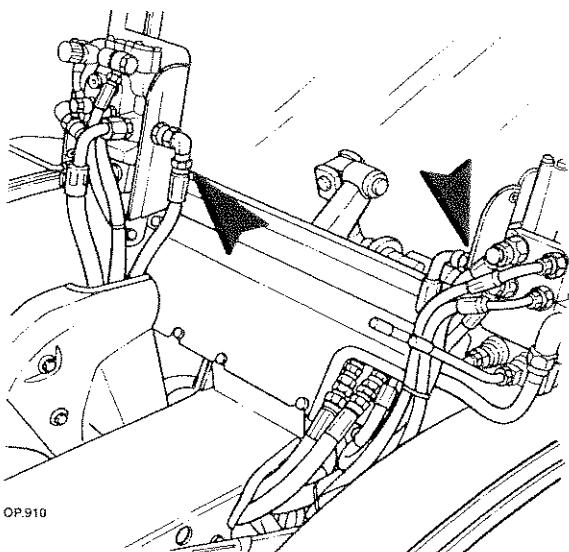
Per accedere al gruppo idrostatico bisogna:



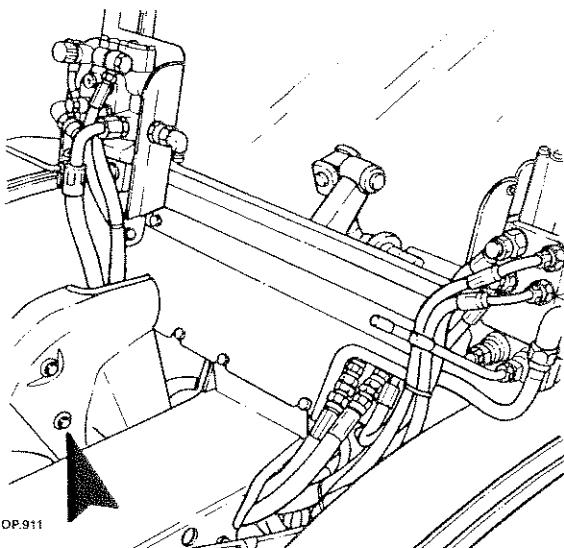
1 - staccare un cavo della batteria ed isolarlo.



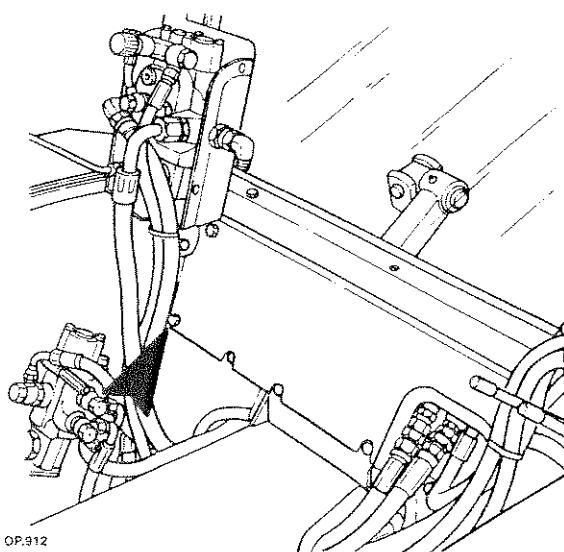
2 - Sfilare le impugnature leve distributori e le protezioni dei distributori.



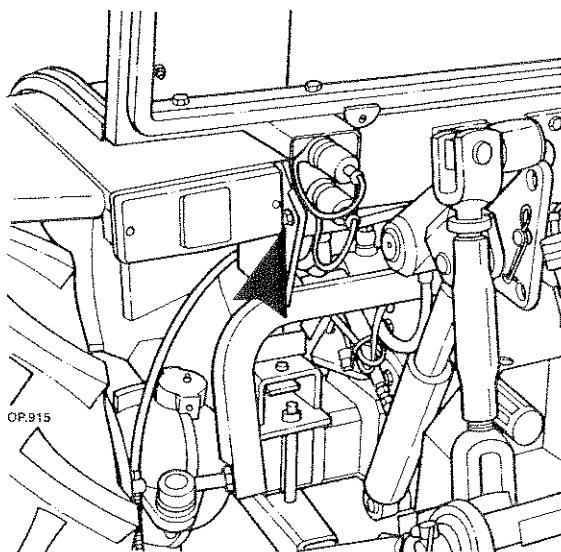
4 - Svitare i raccordi e togliere il tubo mandata (di collegamento distributori).



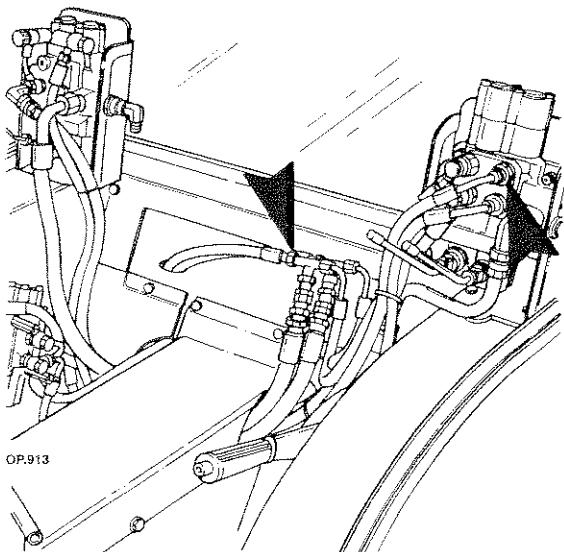
5 - Svitare le viti e togliere la protezione del deviatore 2-4 ruote sterzanti.



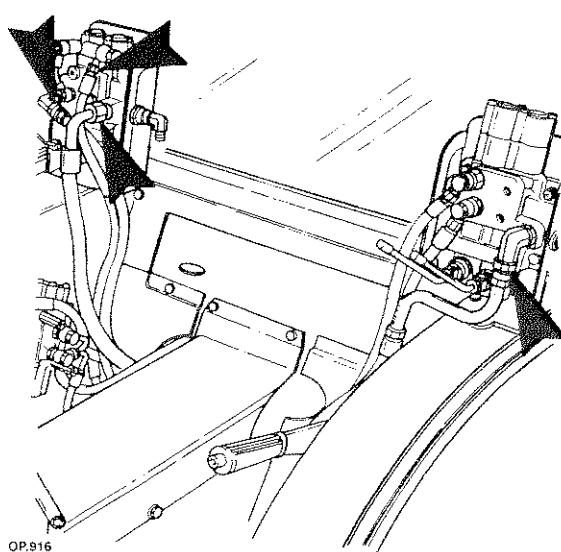
6 - Svitare le viti e togliere la protezione.



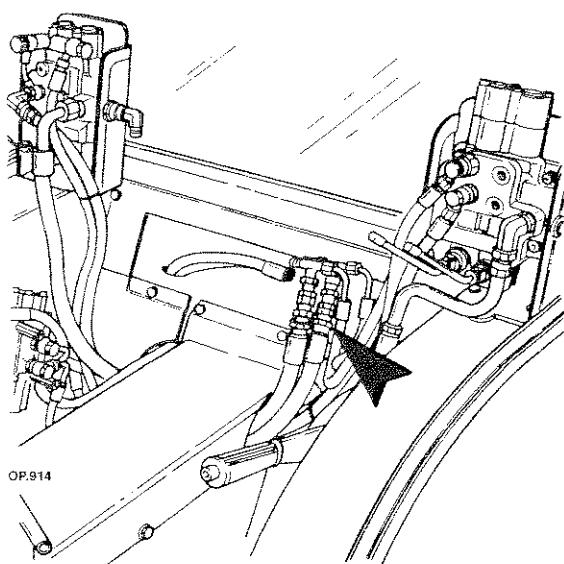
9 - Svitare i supporti prese idrauliche e toglierle.



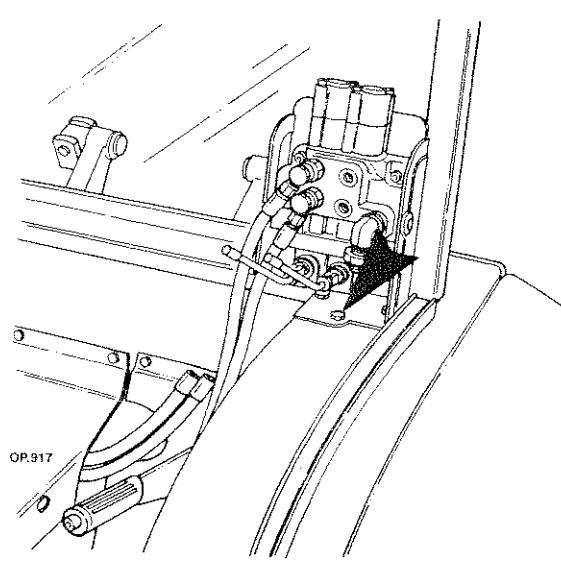
7 - Svitare i raccordi prese idrauliche posteriori.



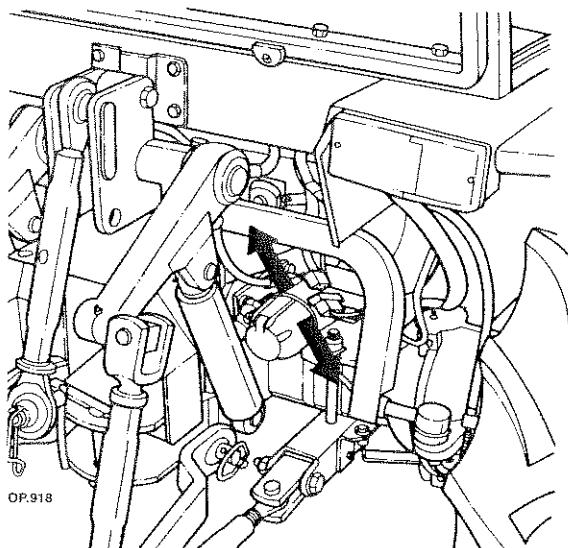
10 - Svitare i raccordi tubi mandata-scarico-mandata.



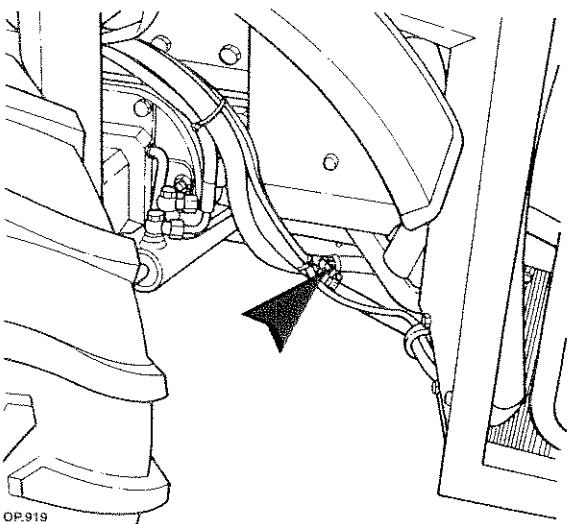
8 - Svitare i raccordi prese idrauliche anteriori.



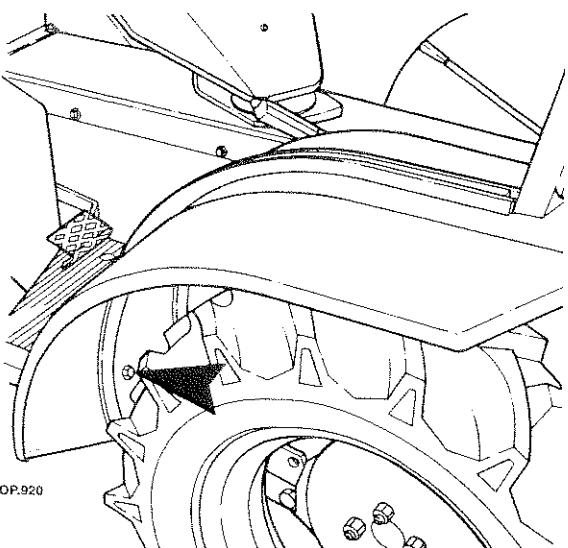
11 - Svitare le viti e togliere i distributori con i relativi supporti.



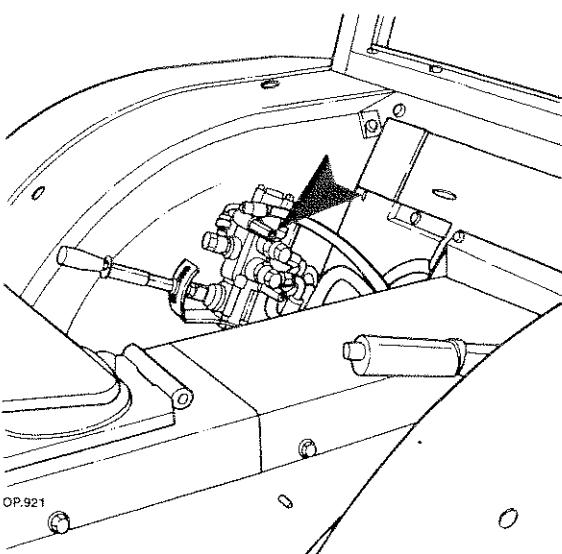
12 - Staccare le connessioni elettriche cabina.



13 - Allentare le fascette e staccare i tubi riscaldamento cabina (tappandoli con adeguati tappi in plastica).



14 - Svitare le viti e togliere i fermi porte sui parafanghi posteriori (con cabina chiusa).



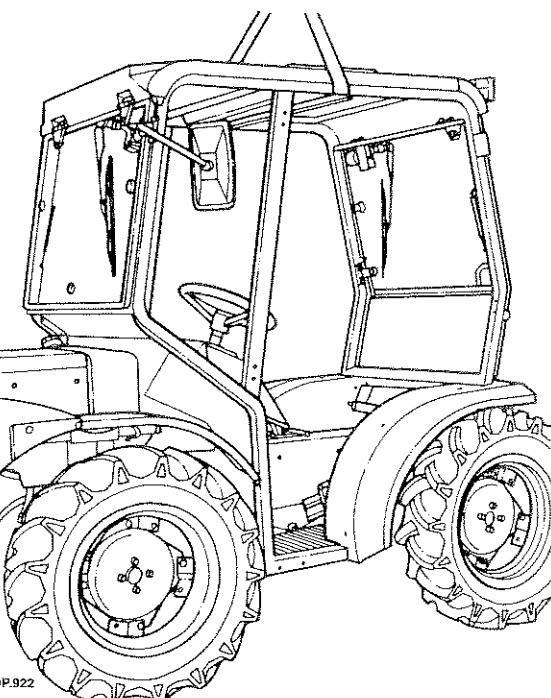
15 - Svitare le viti e togliere il deviatore per 4 ruote sterzanti.



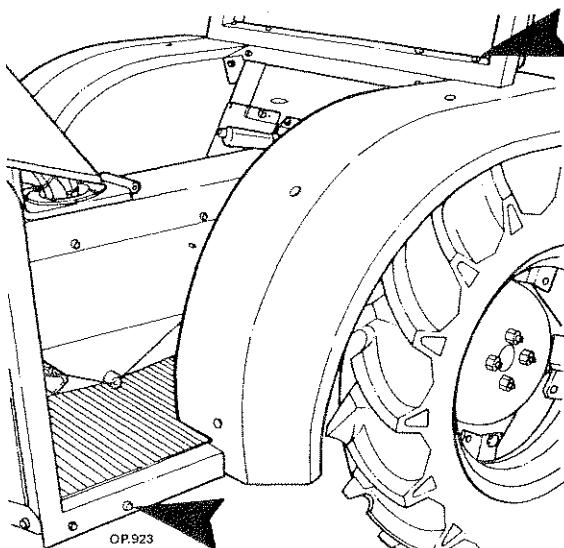
ATTENZIONE - PERICOLO

Eseguire le operazioni osservando scrupolosamente le misure di prevenzione.

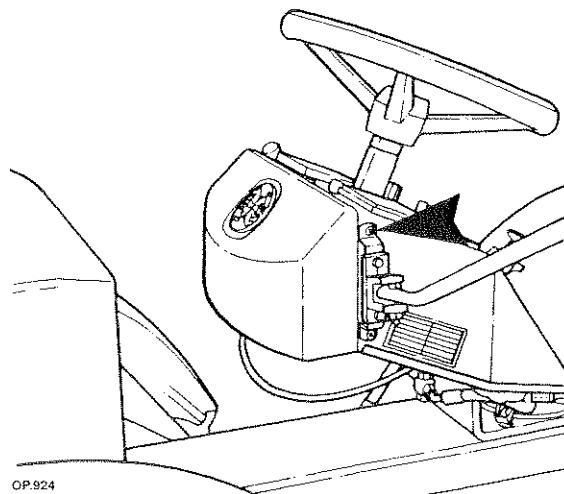
- Per sollevare usare sempre mezzi di capacità adeguata.
- Maneggiare funi metalliche o catene proteggendosi le mani con dei guanti antinfortunistici.



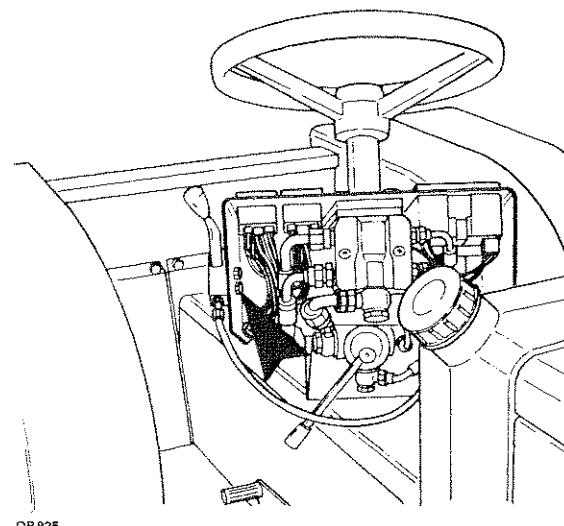
16 - Imbragare con una fune il telaio agganciandolo ad un paranco.



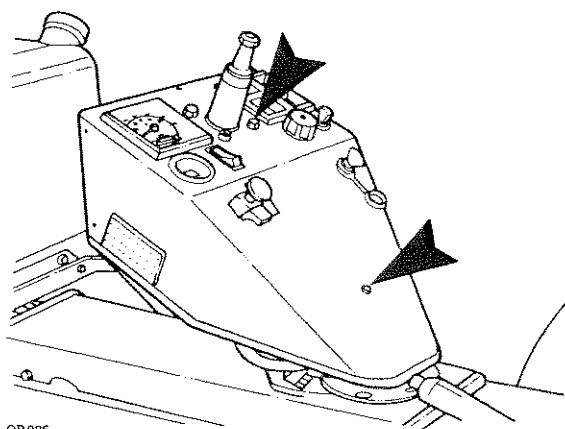
17 - Svitare le viti di sostegno telaio di sicurezza e separarlo dal carro.



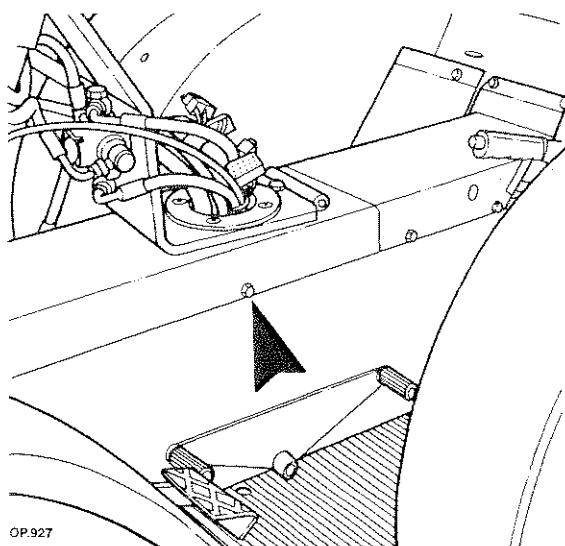
18 - Svitare le viti e togliere il coperchio cruscotto.



19 - Svitare le viti e togliere il manettino a gas e volante.



20 - Svitare il morsetto e sfilare il filo disinnesto trazione, staccare le connessioni elettriche, svitare le viti e togliere il cruscotto.



21 - Svitare le viti e sollevare il supporto piattaforma girevole sfilando la linea elettrica posteriore e del contachilometri adagiandola verso il motore diesel.

22 - Togliere le spine elastiche e sfilare comandi avanti-indietro della PTO e scelta velocità.



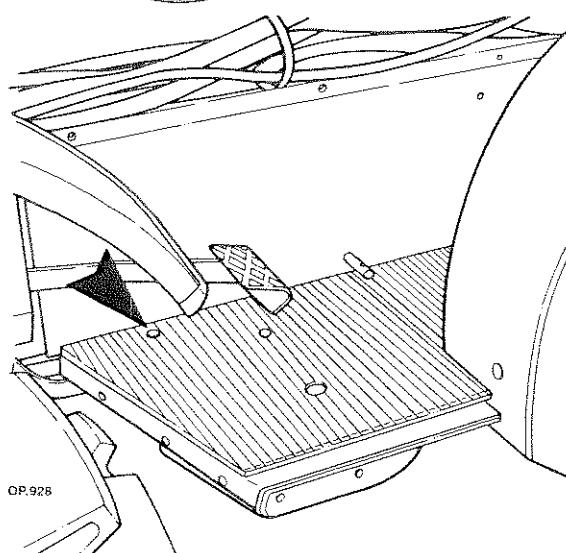
ATTENZIONE - PERICOLO



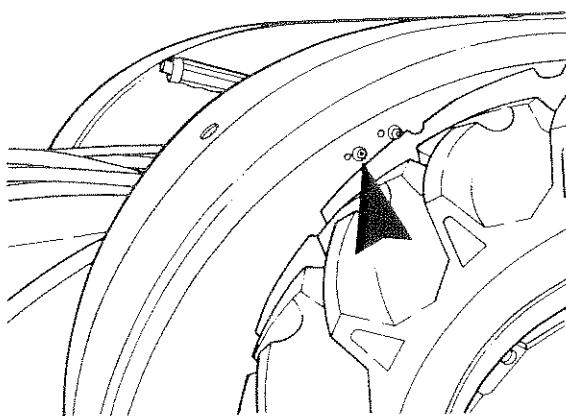
Eseguire le operazioni osservando scrupolosamente le misure di prevenzione.

- Per lo smaltimento di oli attenersi alle norme antinquinamento.

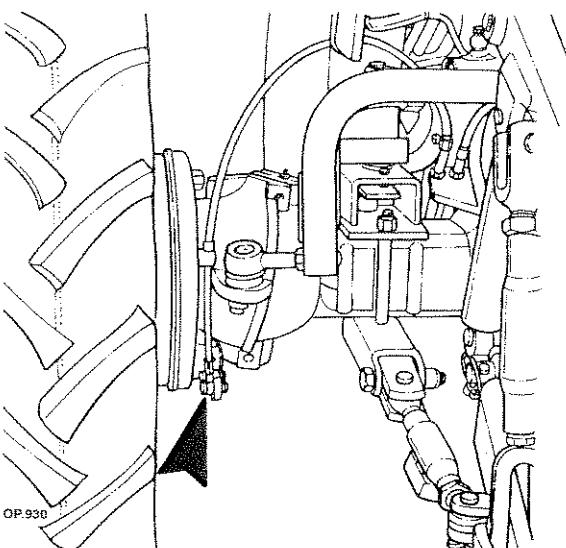
Evitare di inquinare l'ambiente.



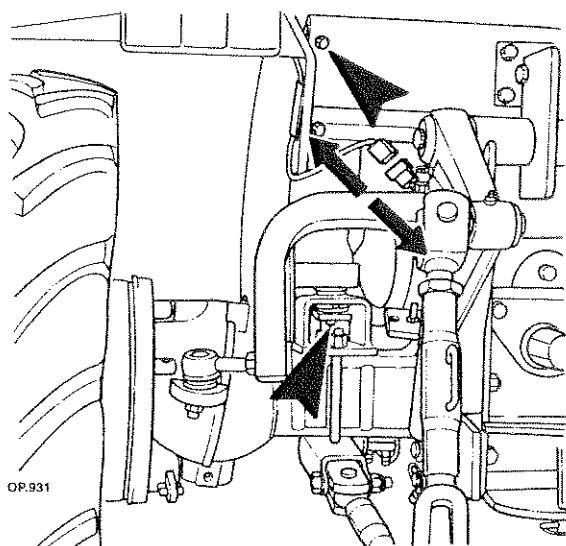
23 - Svitare le viti e togliere le fiancate copri corpetto e pedane.



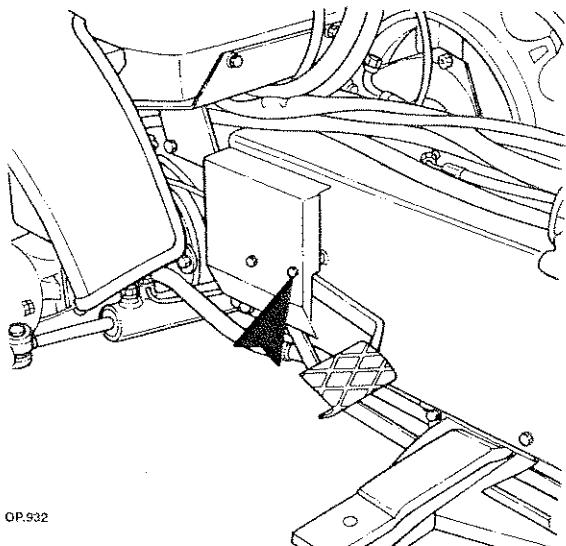
24 - Svitare le viti e togliere il supporto freno a mano.



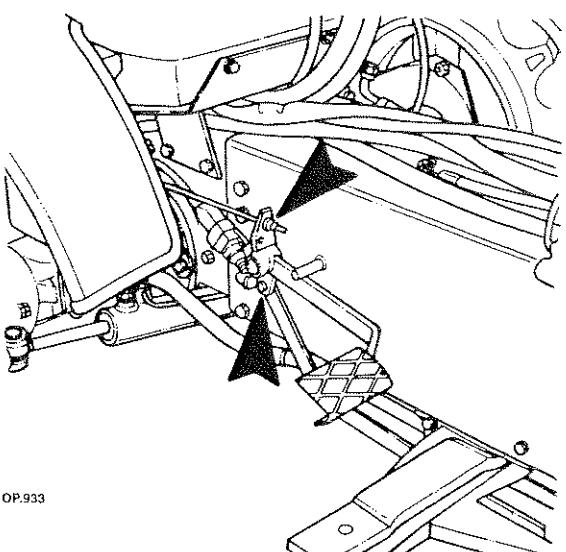
25 - Togliere gli anelli di contenimento e sganciare le funi dei freni.



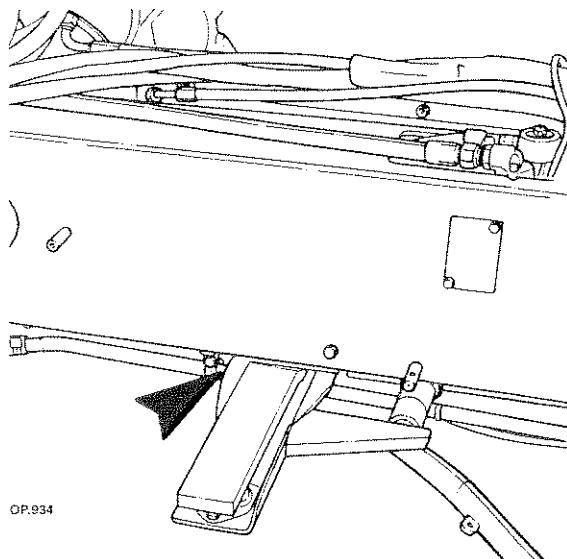
26 - Svitare le viti e togliere il parafango posteriore destro e sinistro staccando le connessioni elettriche.



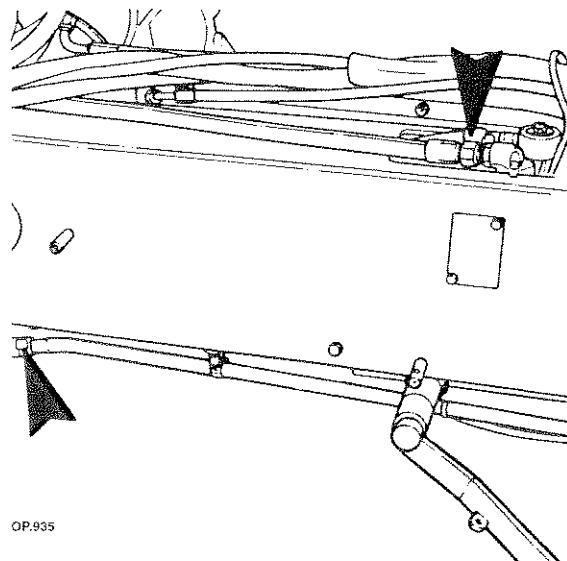
27 - Togliere il coperchio pedale frizione.



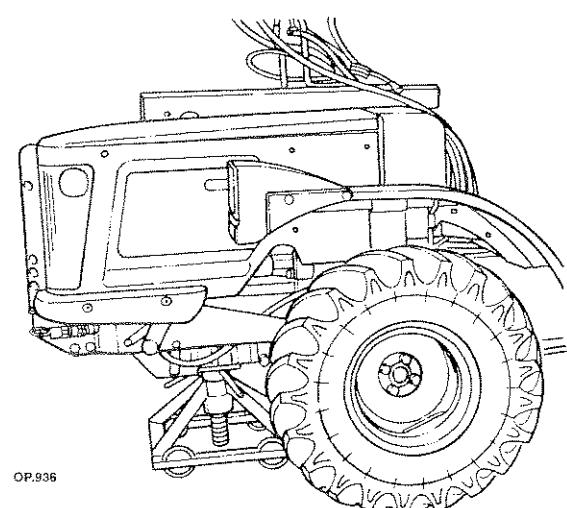
28 - Svitare il dado e togliere l'anello di contenimento doppio comando frizione togliendo il pedale completo.



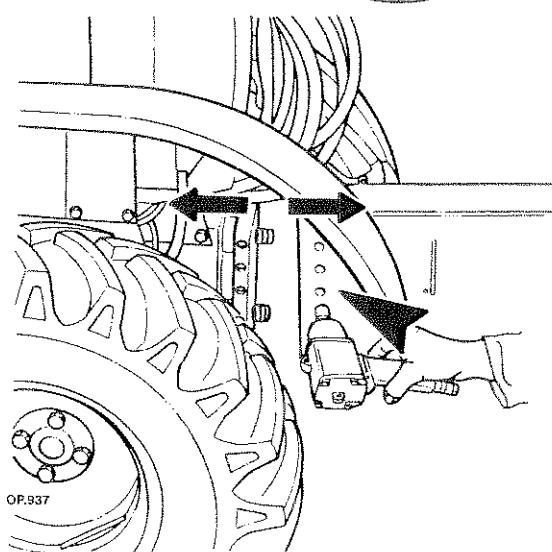
29 - Svitare le viti e togliere la traversa porta telaio.



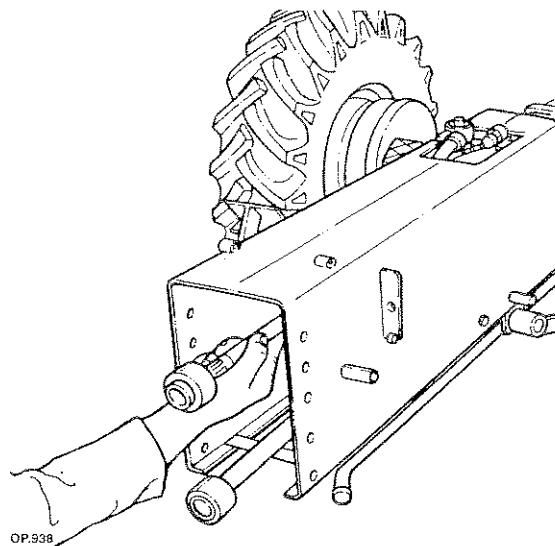
30 - Allentare la fascetta e il raccordo tubi collegamento motore idrostatico allo scambiatore.



31 - Posizionare un cavalletto mobile sotto il motore diesel e uno fisso sotto il cambio lato anteriore.



32 - Svitare le viti e separare l'avantreno dal gruppo posteriore.



33 - Sfilare le prolunghe centrali.

34 - Svitare le viti e togliere le protezioni inferiori sul corpetto centrale.

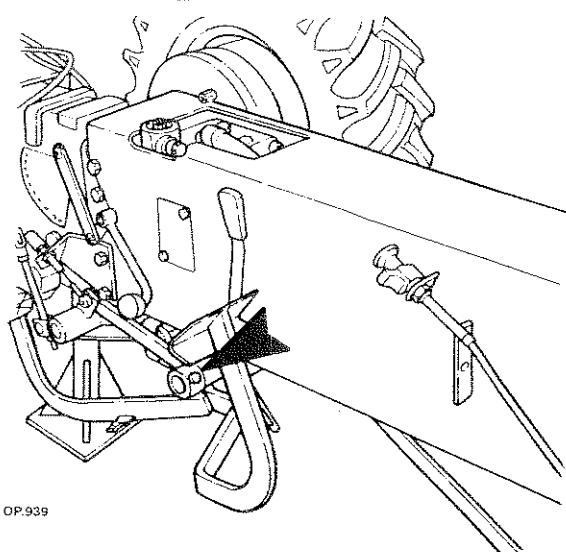
35 - Togliere le copiglie e staccare i tiranti di collegamento freni.



ATTENZIONE - PERICOLO

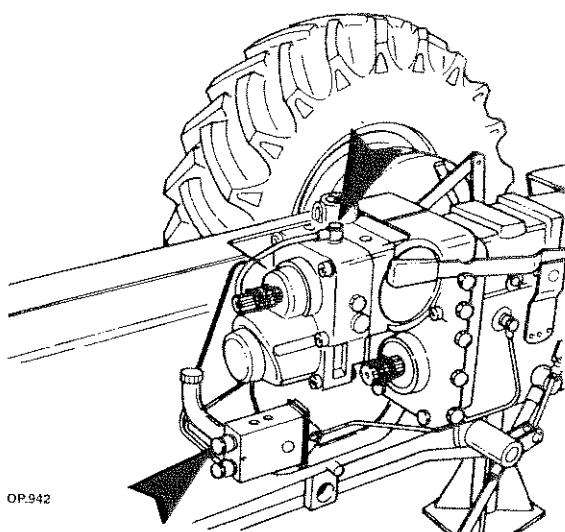
Eseguire le operazioni osservando scrupolosamente le misure di prevenzione.

- Usare indumenti antinfortunistici previsti, come guanti e scarpe di sicurezza.
 - Non usare le mani per allineare delle forature ma adeguati attrezzi.
-



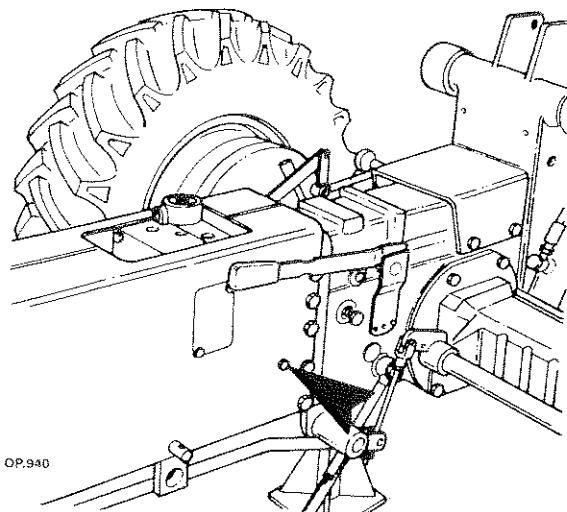
OP.939

36 - Togliere la spina elastica e sfilare i pedali freni.



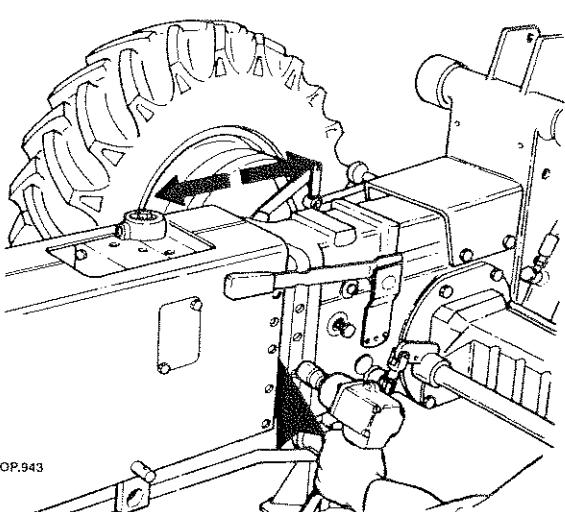
OP.942

39 - Svitare i raccordi e togliere i tubi dal manipolatore (joystick).



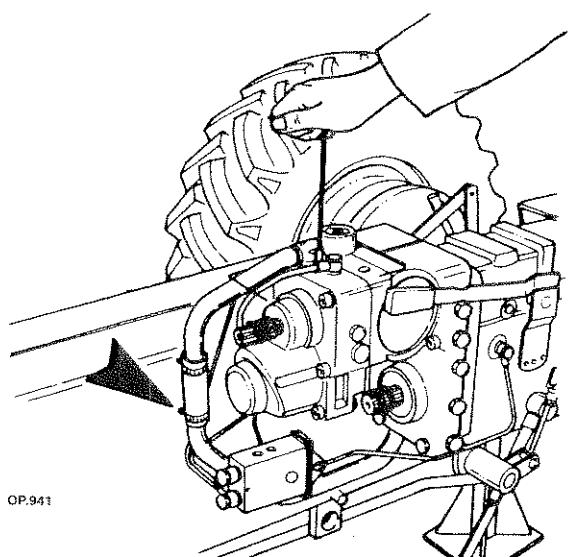
OP.940

37 - Svitare il dado e sfilare il contachilometri.



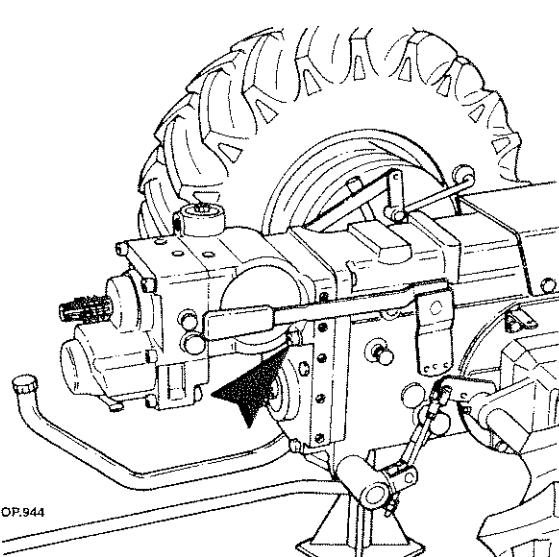
OP.943

40 - Svitare le viti e sfilare il corpetto centrale.



OP.941

38 - Allentare la fascetta e togliere il tubo aspirazione olio.



OP.944

41 - Svitare le viti e sfilare il gruppo idrostatico.

**ATTENZIONE - PERICOLO**

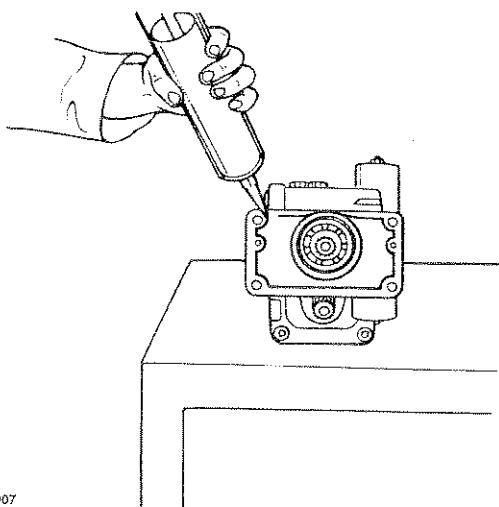
Eseguire le operazioni osservando scrupolosamente le misure di prevenzione.

- Non usare le mani per allineare delle forature ma adeguati attrezzi.

Riattacco

Procedere al riattacco considerando le seguenti avvertenze:

- a** - invertire le operazioni dello stacco;
- b** - attenersi alle illustrazioni per l'orientamento dei vari particolari;
- c** - attenersi alle coppie di serraggio elencate a pag. 4;
- d** - prima di infilare le prolunghe o giunti cardanici ingrassare accuratamente i profili scanalati (per il tipo di grasso da usare vedi pag. 5);
- e** - effettuare un'accurata pulizia in particolar modo delle superfici da accoppiare ed applicare un cordone di mastice di tenuta del diametro di circa 3 mm seguendo il tracciato indicato nella figura:



- Schema di applicazione mastice di tenuta

- f** - curare la pulizia di tutte le parti dell'impianto che verranno a contatto con l'olio idraulico del circuito (serbatoio-tubi-scambiatori di calore).

g - assicurarsi che non vi siano ostacoli che impediscano la normale aspirazione della pompa del gruppo idrostatico (tappi);

h - sostituire la cartuccia filtro olio;

i - non avviare il motore diesel ed azionare il gruppo idrostatico prima di aver eseguito il riempimento del circuito idraulico con olio (nuovo);

l - riempire il serbatoio (cambio di velocità) con olio vedi pag. 5;

m - riempire il gruppo idrostatico con olio vedi pag. 5 attraverso uno dei fori di drenaggio.

**ATTENZIONE - PERICOLO**

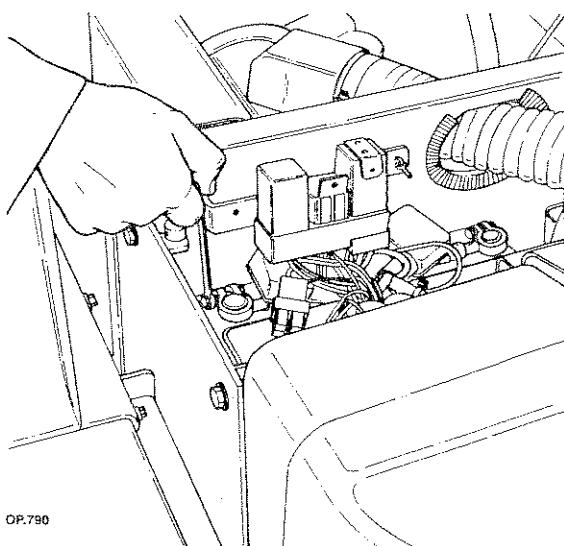
Eseguire le operazioni osservando scrupolosamente le misure di prevenzione.

- Non usare benzina, gasolio o altri liquidi infiammabili per sgrassare o lavare particolari, ma usare solventi commerciali e atossici.
- Per lo smaltimento di oli attenersi alle norme antinquinamento.

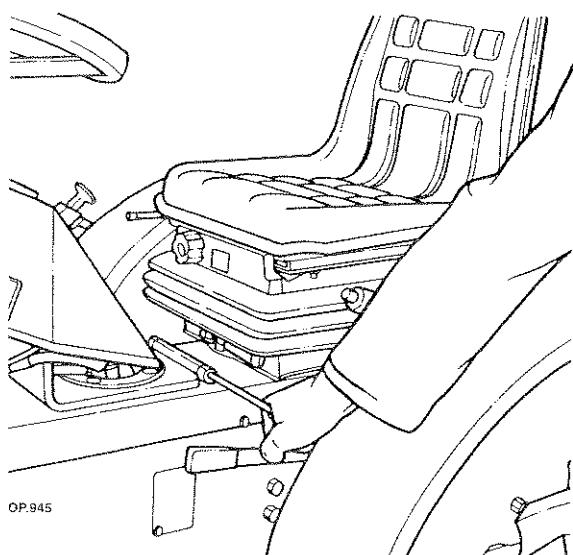
Evitare di inquinare l'ambiente.

Tigretrac con arco di protezione

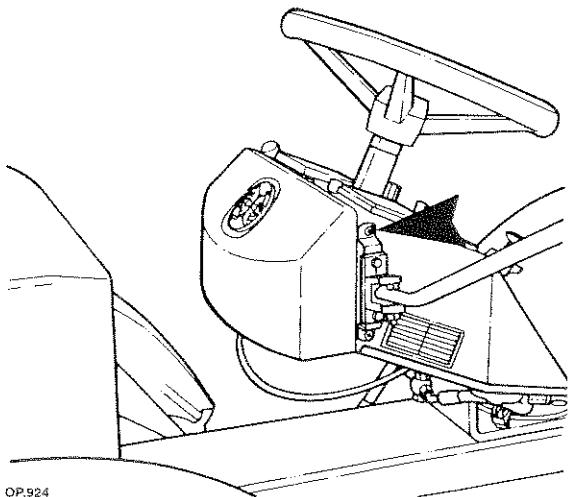
Per accedere al gruppo idrostatico bisogna:



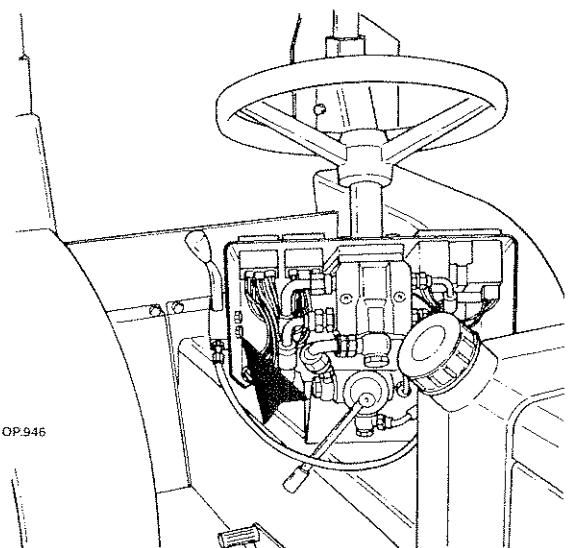
- 1** - staccare un cavo della batteria ed isolarlo.



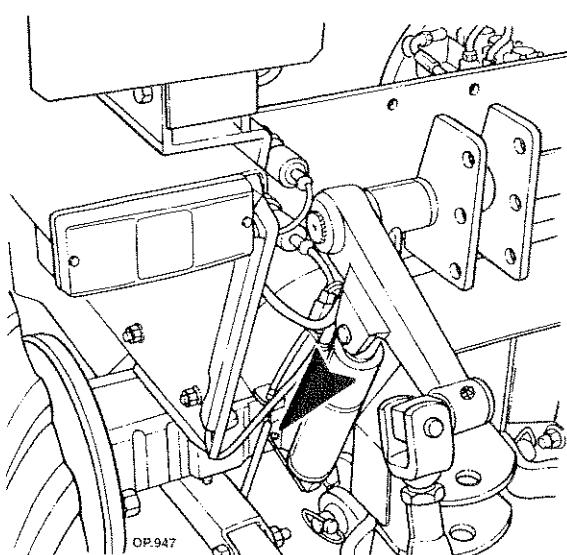
2 - Svitare le viti e togliere il sedile completo.



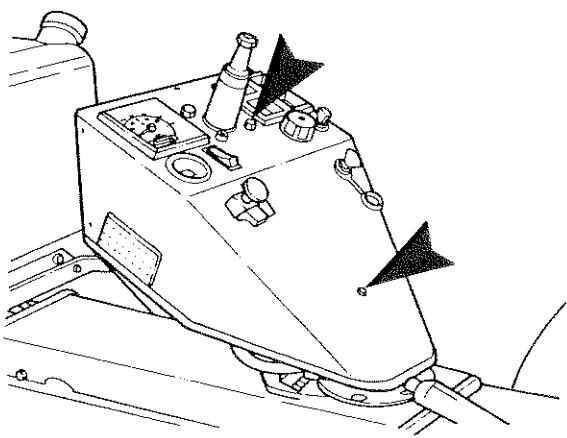
3 - Svitare le viti e togliere il coperchio cruscotto.



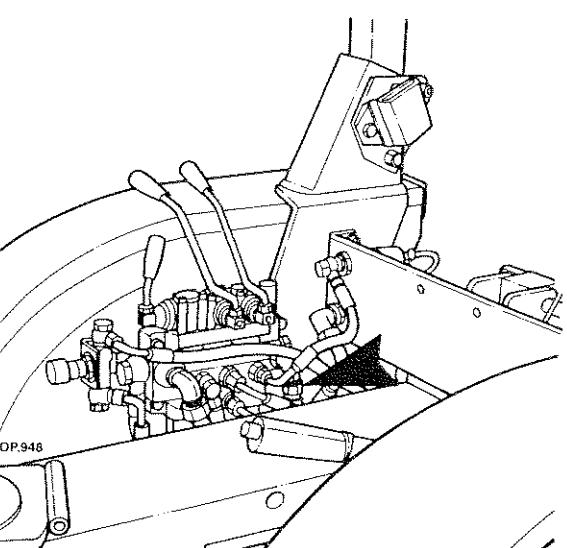
4 - Svitare le viti e togliere il manettino gas e volante.



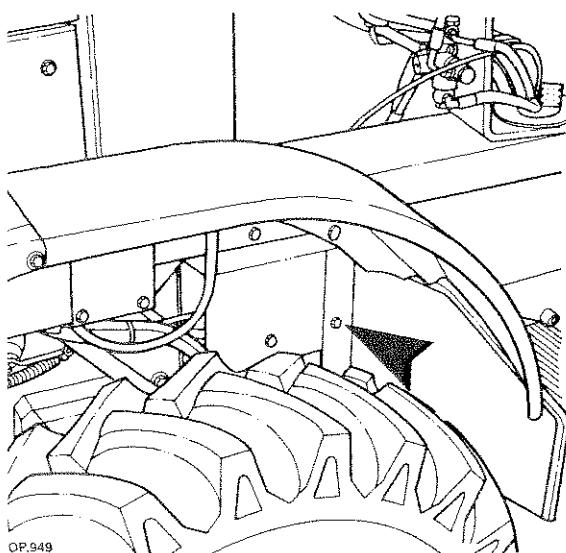
5 - Allentare i morsetti e sfilare i fili disinnesco trazione e innesto bloccaggio differenziale.



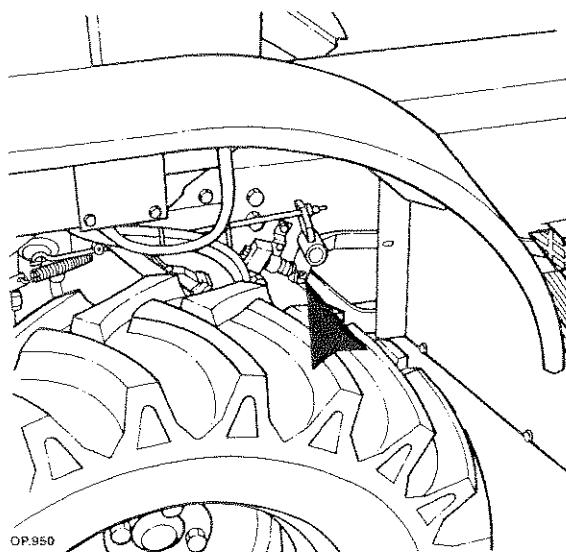
6 - Svitare le viti di sostegno cruscotto, staccare la connessione elettrica e sfilarlo.



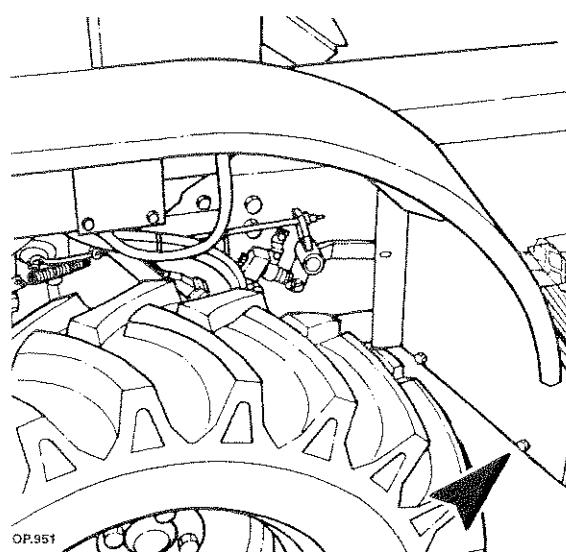
7 - Svitare il tubo di mandata sul distributore e tappare i fori con adeguati tappi.



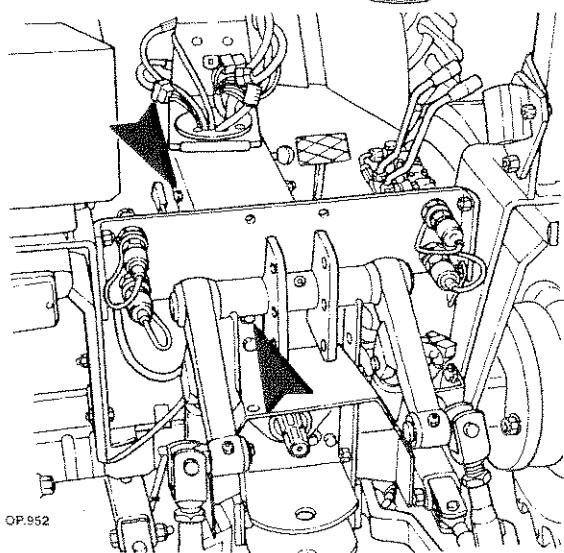
8 - Svitare le viti e togliere il coperchio pedale frizione e staccare la connessione elettrica consenso avviamento.



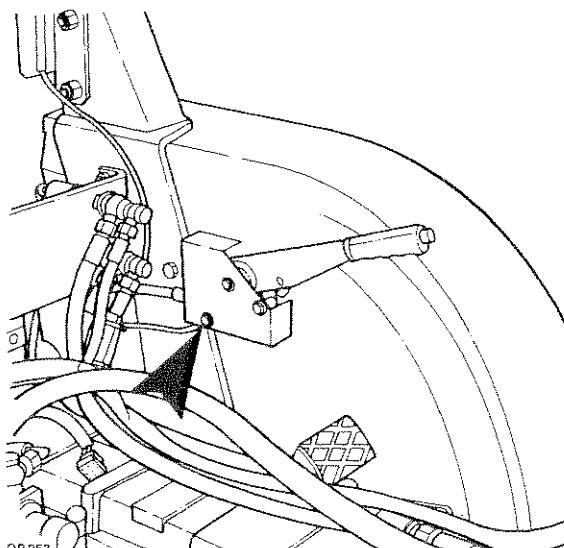
9 - Togliere le copiglie e staccare il doppio comando frizione.



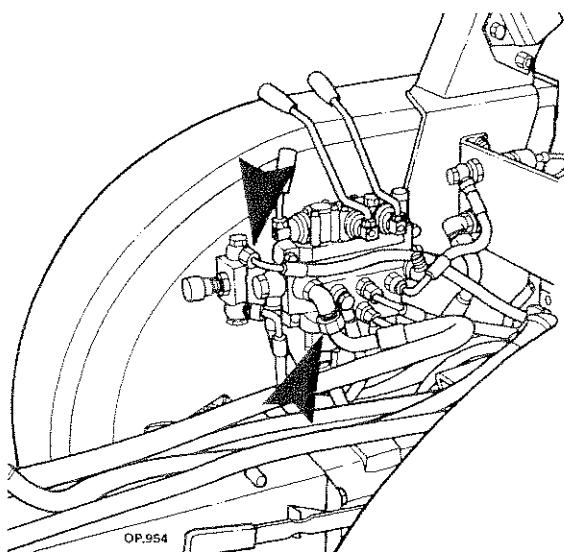
10 - Svitare le viti, togliere la protezione pedana e sfilare il pedale frizione.



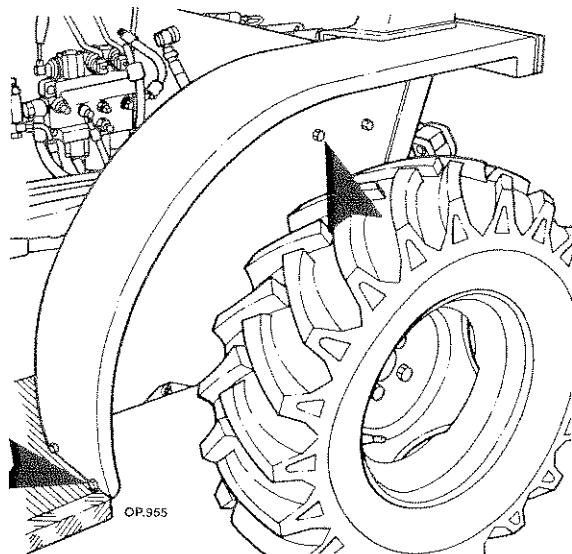
11 - Svitare le viti e sollevare il supporto piattaforma girevole sfilando la linea elettrica posteriore e del contachilometri adagiandola verso il motore diesel.



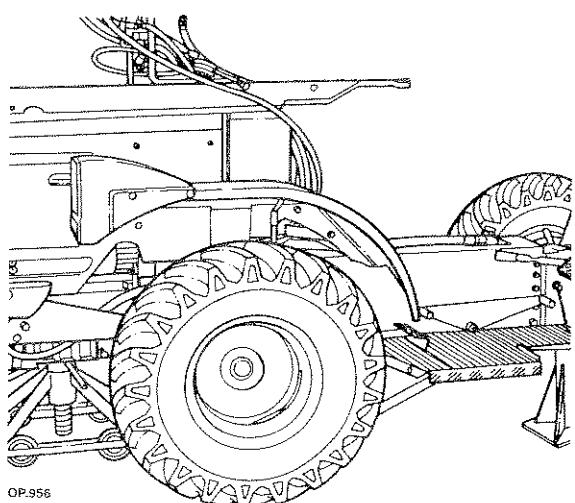
12 - Svitare le viti e togliere il freno a mano.



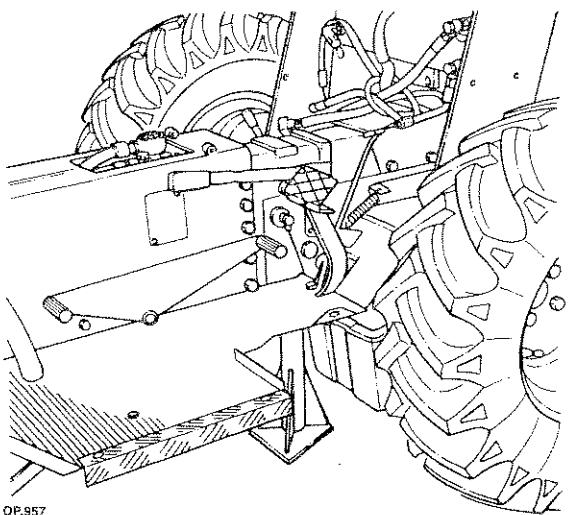
13 - Svitare i raccordi tubi scarico-mandata ai cilindri e alle prese idrauliche e tappare i fori con adeguati tappi.



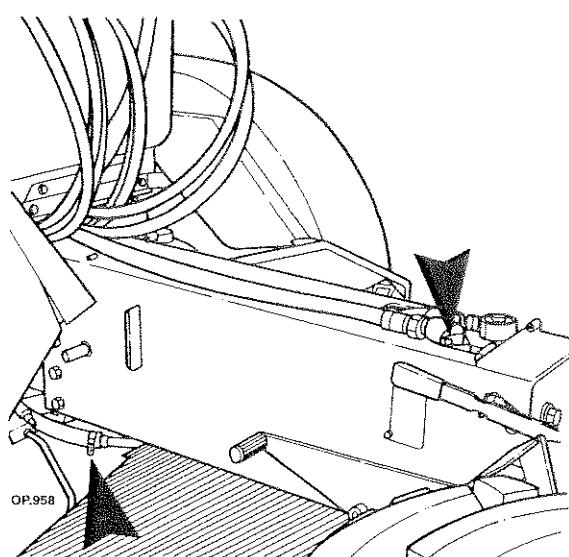
14 - Svitare le viti e togliere i parafanghi posteriori.



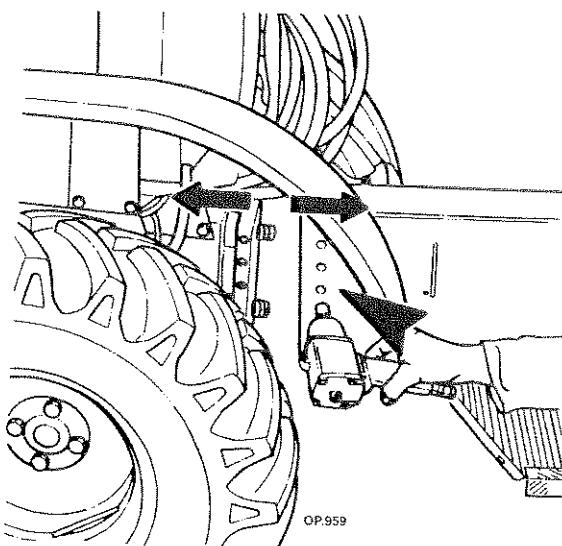
15 - Posizionare un cavalletto mobile sotto il motore e uno fisso sotto il cambio lato anteriore.



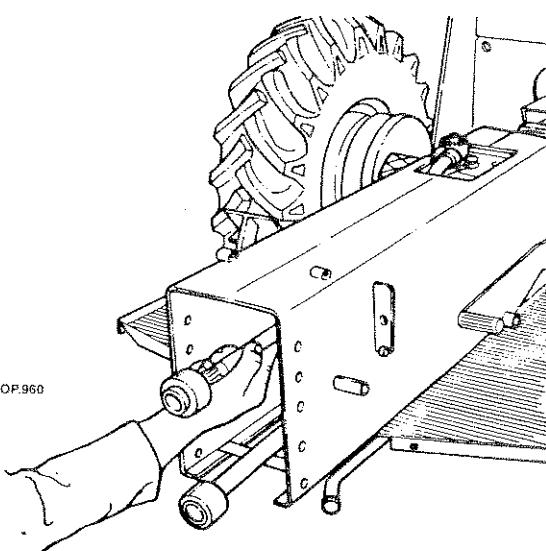
16 - Scaricare l'olio del cambio in un apposito recipiente.



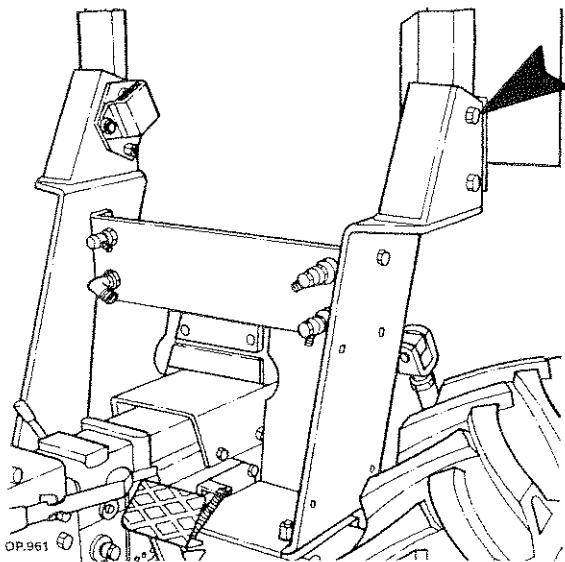
17 - Allentare la fascetta e il raccordo tubi-
gruppo idrostatico scambiatore.



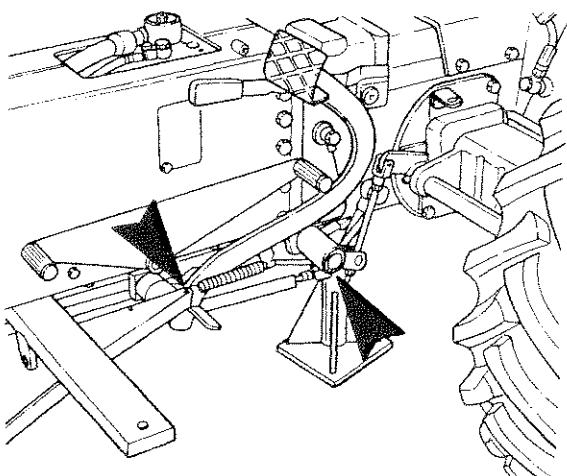
18 - Svitare le viti e separare l'avantreno dal
gruppo posteriore cambio e gruppo idrostatico.



19 - Sfilare le prolunghe centrali.

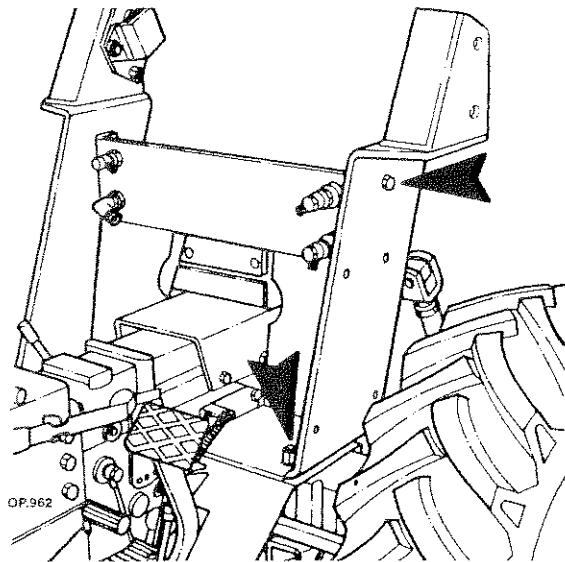


20 - Svitare le viti e togliere l'arco di protezione.

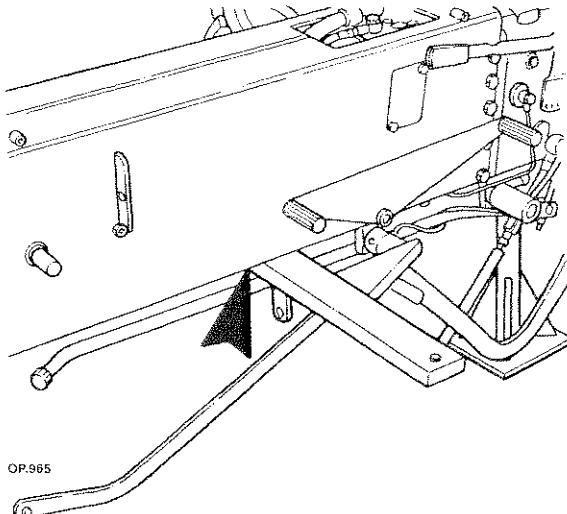


OP.964

23 - Togliere le copiglie e staccare i tiranti di collegamento freni.

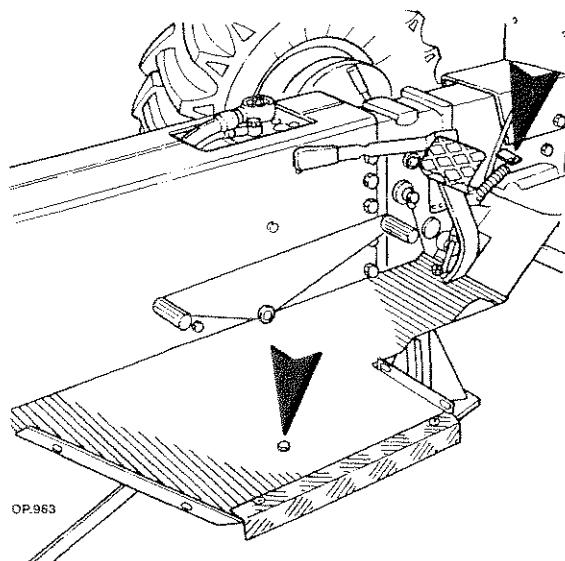


21 - Svitare le viti e togliere i supporti arco di protezione.

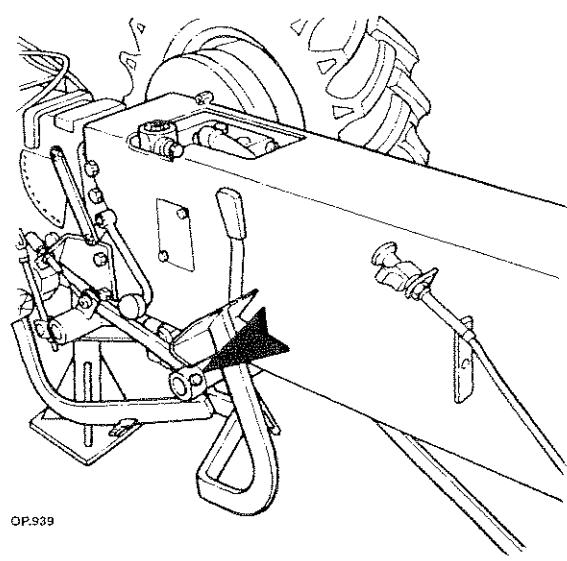


OP.965

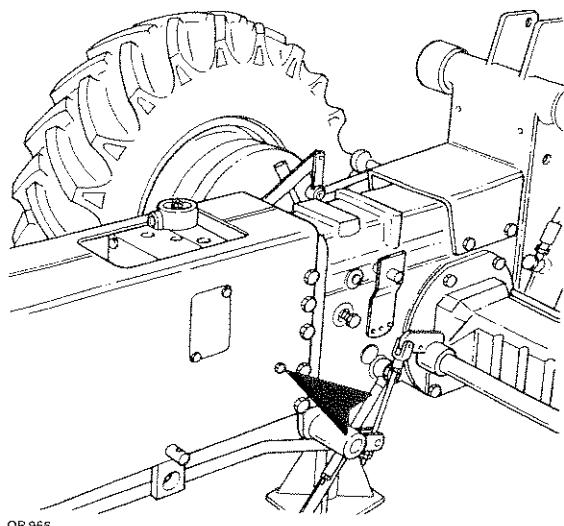
24 - Svitare le viti e togliere il supporto pedale.



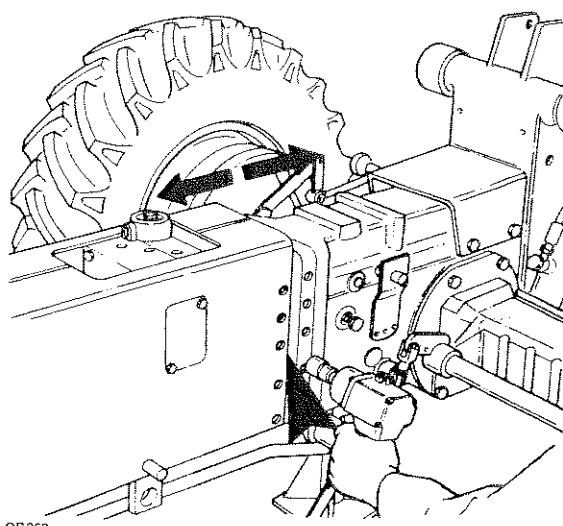
22 - Togliere la molla ritorno pedale freni e svitare le viti e togliere le pedane.



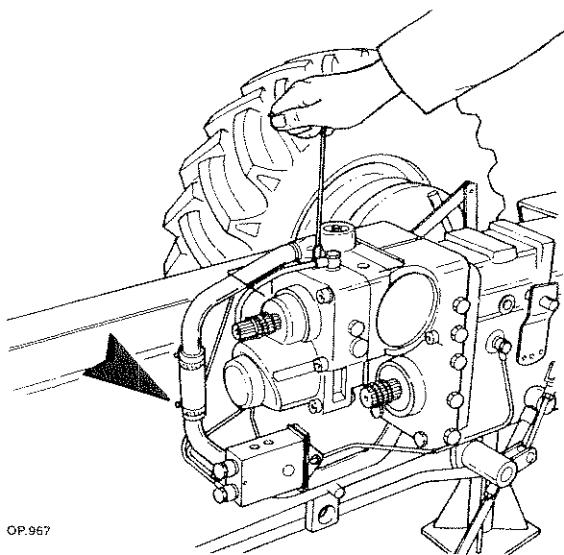
25 - Togliere la spina elastica e sfilare i pedali freni.



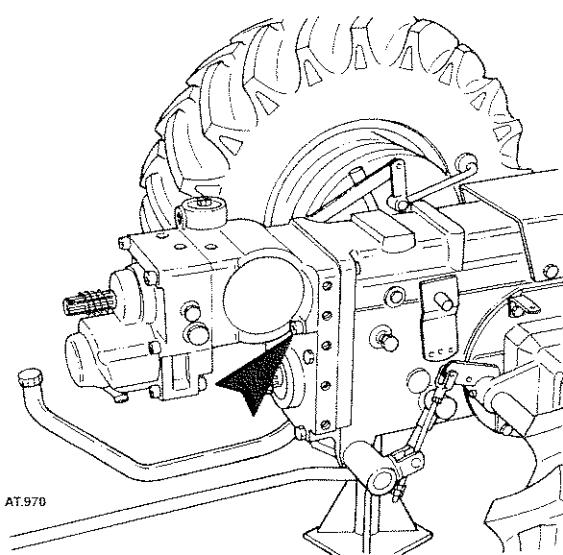
26 - Svitare il dado e sfilare il contachilometri.



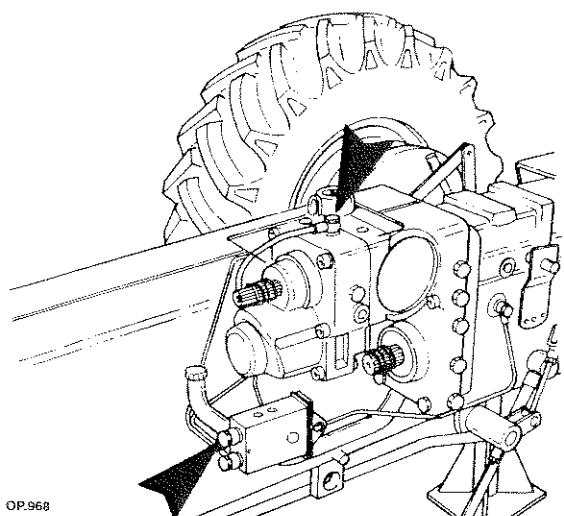
29 - Svitare le viti e sfilare il corpetto centrale.



27 - Allentare la fascetta e togliere il tubo aspirazione olio.



30 - Svitare le viti e sfilare il gruppo idrostatico.



28 - Svitare i raccordi e togliere i tubi dal manipolatore (joystick).

ATTENZIONE - PERICOLO

Eseguire le operazioni osservando scrupolosamente le misure di prevenzione.

- Usare indumenti antinfortunistici previsti, come guanti e scarpe di sicurezza.

**ATTENZIONE - PERICOLO**

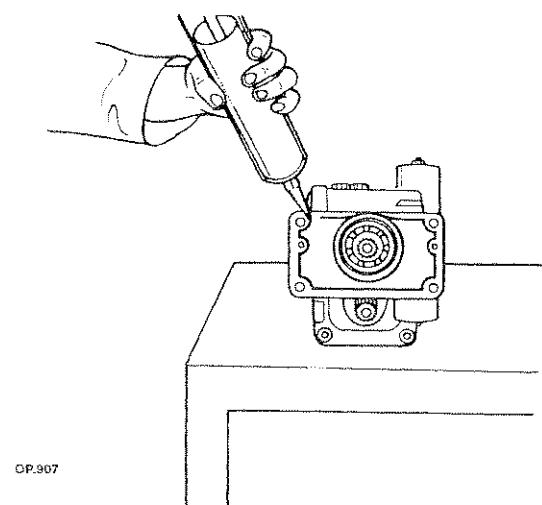
Eseguire le operazioni osservando scrupolosamente le misure di prevenzione.

- Non usare le mani per allineare delle forature ma adeguati attrezzi.

Riattacco

Procedere al riattacco considerando le seguenti avvertenze:

- a** - invertire le operazioni dello stacco;
- b** - attenersi alle illustrazioni per l'orientamento dei vari particolari;
- c** - attenersi alle coppie di serraggio elencate a pag. 4;
- d** - prima di infilare le prolunghe o giunti cardanici ingrassare accuratamente i profili scanalati (per il tipo di grasso da usare vedi pag. 5);
- e** - effettuare un'accurata pulizia in particolar modo delle superfici da accoppiare ed applicare un cordone di mastice di tenuta del diametro di circa 3 mm seguendo il tracciato indicato nella figura:



- Schema di applicazione mastice di tenuta

- f** - curare la pulizia di tutte le parti dell'impianto che verranno a contatto con l'olio idraulico del circuito (serbatoio-tubi-scambiatori di calore).

g - assicurarsi che non vi siano ostacoli che impediscano la normale aspirazione della pompa del gruppo idrostatico (tappi);

h - sostituire la cartuccia filtro olio;

i - non avviare il motore diesel ed azionare il gruppo idrostatico prima di aver eseguito il riempimento del circuito idraulico con olio (nuovo);

I - riempire il serbatoio (cambio di velocità) con olio vedi pag. 5;

m - riempire il gruppo idrostatico con olio vedi pag. 5 attraverso uno dei fori di drenaggio.

**ATTENZIONE - PERICOLO**

Eseguire le operazioni osservando scrupolosamente le misure di prevenzione.

- Non usare benzina, gasolio o altri liquidi infiammabili per sgrassare o lavare particolari, ma usare solventi commerciali e atossici.
- Per lo smaltimento di oli attenersi alle norme antinquinamento.

Evitare di inquinare l'ambiente.

NOTE

Per unire la trasmissione anteriore con quella posteriore bisogna:

1 - calettare l'albero o giunto superiore.

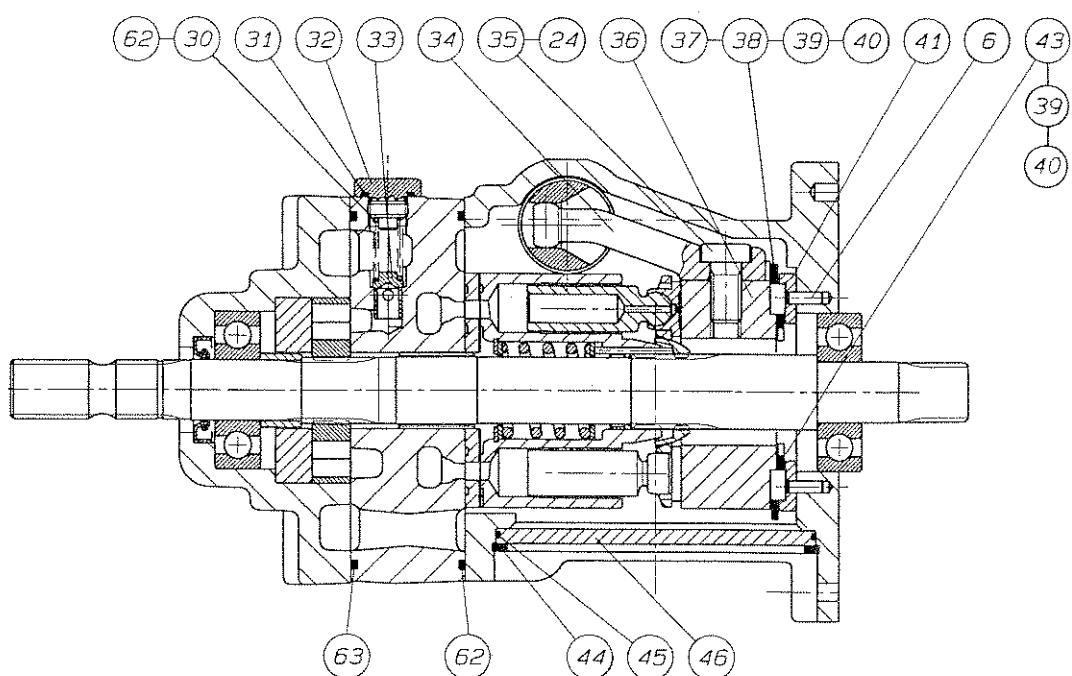
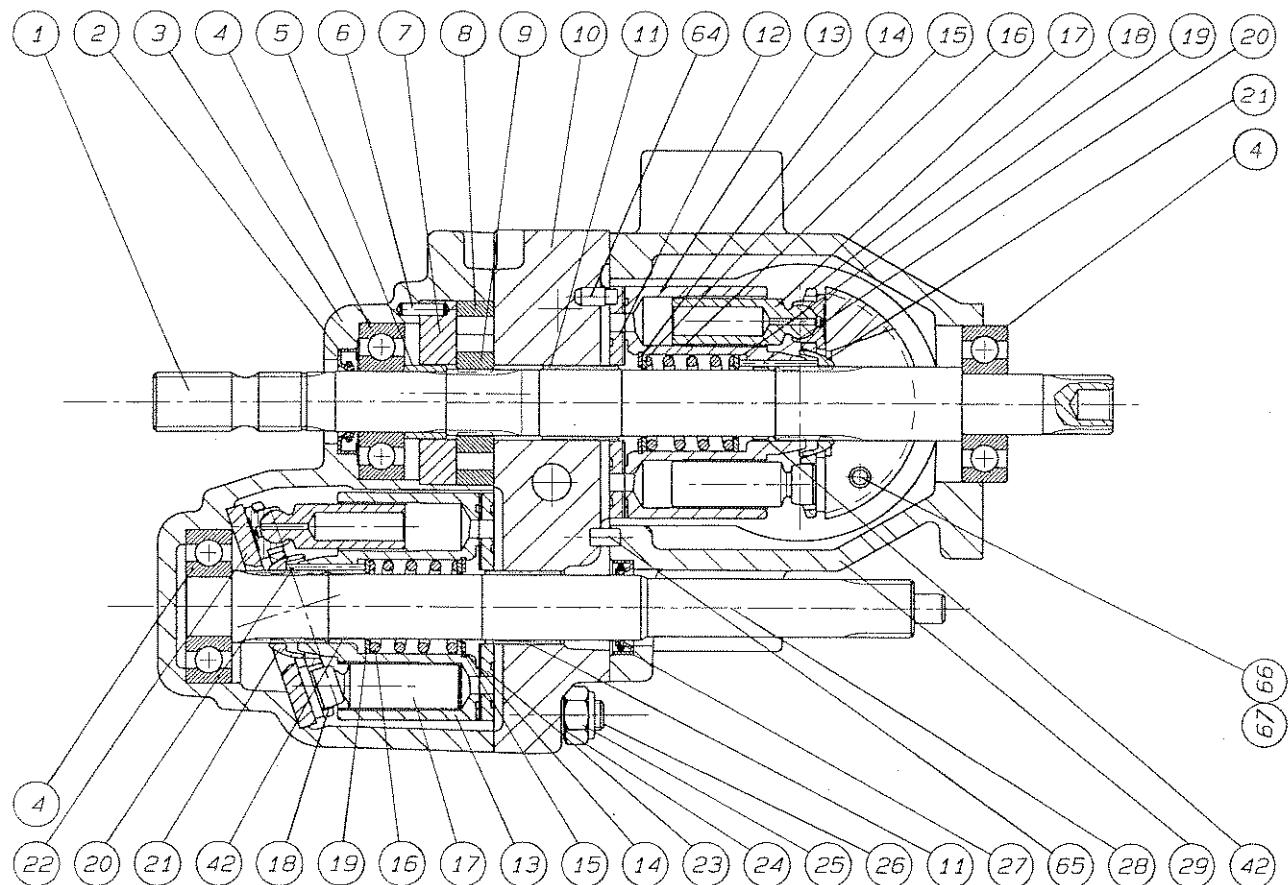
2 - Calettare l'albero o giunto inferiore quel poco che si riesce.

3 - Sollevare un assale quel tanto da far ruotare una ruota in modo che ci sia un recupero di giri tra trasmissione anteriore e posteriore.

4 - Unire il tutto.



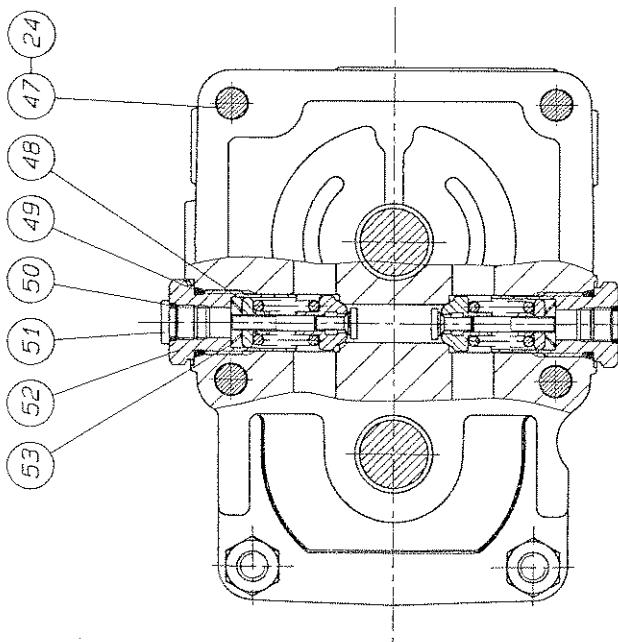
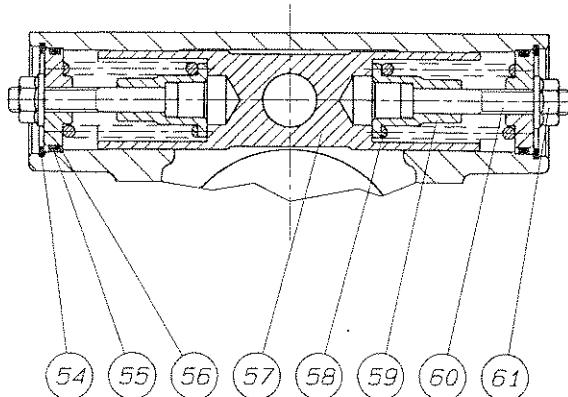
SEZIONE GRUPPO IDROSTATICO CGS28





Sezione sul servocomando

Sezione sul servocomando



POS. DESCRIZIONE

001	ALBERO POMPA CGS28	035	VITE TCEI M10X20 DIN7984(T.RIB.)
002	ANELLO TEN. BAB1SL 20X35X6-6,5	036	CORPO OSCILLANTE CGS28
003	CORPO MOTORE CGS28	037	TAPPO STEI M10X12 FORATO 2,1
004	CUSCINETTO SFERE 6304 QE6VB277 (20x52X15)	038	GRUPPO GABBIA A RULLI M4PV58 DX
005	DISTANZ. CENTR.POMPA ALIM. CGS28	039	FILO CUSCINETTO T30-M4PV58
006	SPINA 4X14 H8 UNI1707	040	RULLO FORATO PER FASE GABBIA T30
007	CENTRAGGIO POMPA ALIM. CGS28	041	SEMIGUSCIO SCORR. RULLI PV30
008	ROTORE ESTERNO H12,5 CGS28	042	MOLLA NASTRO FERMO SPINE PV20
009	ROTORE INTERNO H12,5 CGS28	043	GRUPPO GABBIA A RULLI M4PV58 SX
010	DISTRIBUTORE INTERMEDIO CGS28	044	ANELLO ELASTICO INT.D 107 BR107 INA
011	BOCCOLA MBI CB85-2225 D 22X25	045	OR 1,78X101,32 2-045 COPER.CGS28
012	PIATTO DISTRIBUTORE M4PV28-CGS228 SX	046	COPERCHIO CHIUSURA POMPA CGS28
013	GRUPPO BLOCCO CILINDRI M4PV28	047	VITE TCEI M10X70 UNI5931
014	ANELLO EL.INT.SEEGER 32 UNI7437	048	VALVOLA HP MAX PRESS. 300 BAR
015	DISTANZIALE 26X32X1,5 BL.CIL.T20	049	OR 2,62X17,12 90xSH 2-115 VALMAX
016	MOLLA BLOCCO CILINDRI T20	050	OR 1,83X8,92 3-904 90xSH SAE 7/16»UNF
017	GRUPPO PISTONE COMPLETO M4PV28	051	TAPPO TCEI SAE 7/16»-20-UNF
018	PIATTO PREMIPATTINI M4PV28	052	TAPPO VALVOLA MT CON PRESA DI
019	ROSETTA BLOC.CIL.PV20 23X32X1,5	053	PRESSE
020	RULLINO 2X27 (MF20)	054	MOLLA CONICA VALV.MAX SPEC.FILO DO.8
021	SNODO SFERICO M4PV28	055	ANELLO EL.INT.SEEGER 35 UNI7437
022	PIATTO REGGISPINTA M4MF28	056	OR 2,62X28,24 2-122 COP.LAT.SER.CGS28
023	PIATTO DISTRIBUTORE M4MF28	057	DISCO CHIUSURA SC CGS28
024	ROSETTA SCHNORR 10	058	PISTONE SERVOCOMANDO CGS28
025	DADO AUTOBLOCCANTE M10	059	MOLLA SERVOCOMANDO CGS28
026	VITE TCEI M10X55 UNI5931	060	PORTAMOLLA PISTONE SERVO CGS28
027	ANELLO TEN. BABS1L 22X32X7-7,5	061	VITE REGISTRAZ. PISTONE SC T30
028	ALBERO MOTORE CGS28	062	DADO TENUTA DSL 8
029	CORPO POMPA CGS28	063	OR 2,62X139,37 2-161 DISTR.CGS28
030	MOLLA AZZERATORE PV20	064	ROSETTA PIANA 4,3X9 UNI6592-69
031	OR 1,78X142-015 90xSH VALV. ALIM.TAPPO 1/4	065	OR 2,62X152,07 2-163 DTSTR.CGS28
032	TAPPO 1/4GAS VALV. ALIM. M4PV58 NUOVA	066	SPINA PIATTO DISTRIBUTORE T20
033	PISTONE VALV.ALIM.M4PV58 NUOVA	067	SPINA 6X10 H8 UNI1707
034	LEVA COMANDO OSCILLANTE CGS28		BOCCOLA PERNO FASE GABBIA
			SPINA FASE GABBIA M4PV58



Smontaggio - Montaggio gruppo idrostatico

Prima di procedere allo smontaggio del gruppo idrostatico è necessario osservare alcune avvertenze:

a - pulire accuratamente il gruppo esternamente, evitare in ogni modo che corpi estranei, come polvere, sporco, ecc., possano entrare nel gruppo;

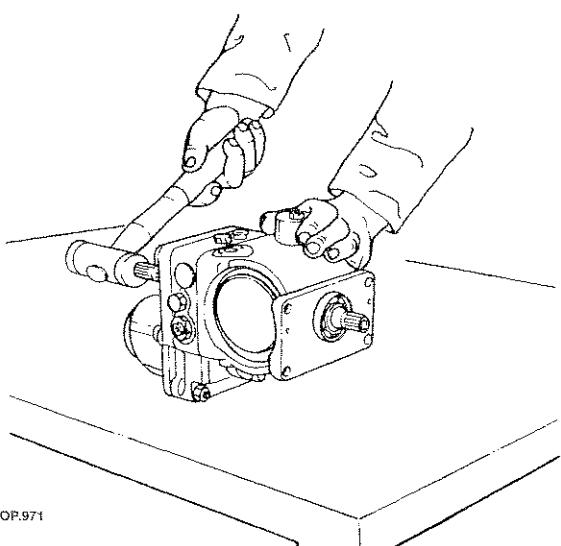
b - predisporre un piano di lavoro pulito ove poter posizionare i vari particolari componenti il gruppo senza confonderli;

c - non usare stracci o panni per pulire ma dell'apposita carta per la pulizia;

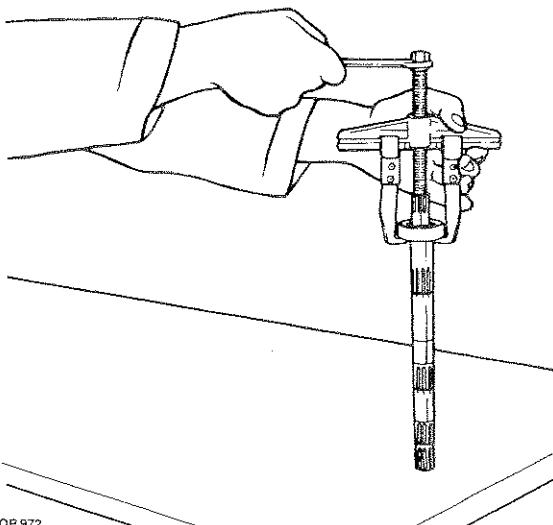
d - non disperdere nell'ambiente fluidi esausti ed elementi usati per la pulizia degli stessi. Affidarsi esclusivamente ai centri di raccolta oli esausti regolarmente autorizzati. Evitare di inquinare l'ambiente;

e - procedere come segue:

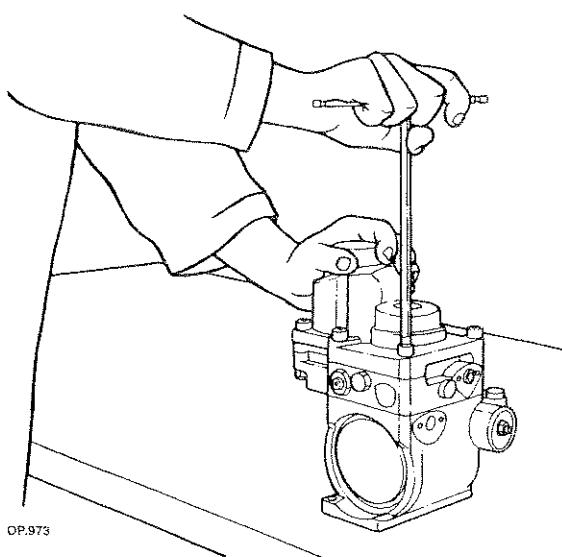
1 - posizionare il gruppo sopra un banco.



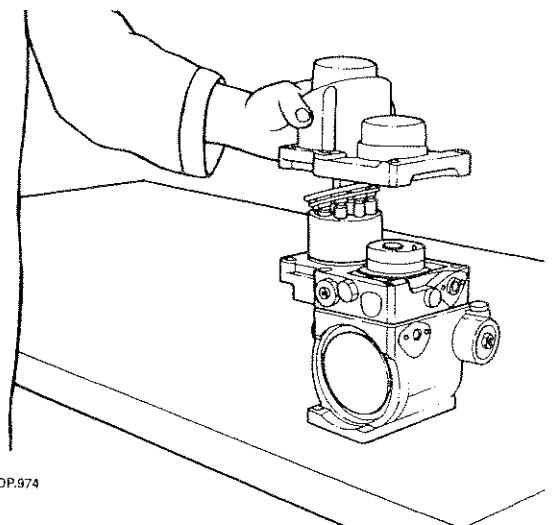
2 - Sfilare l'albero con un mazzuolo.



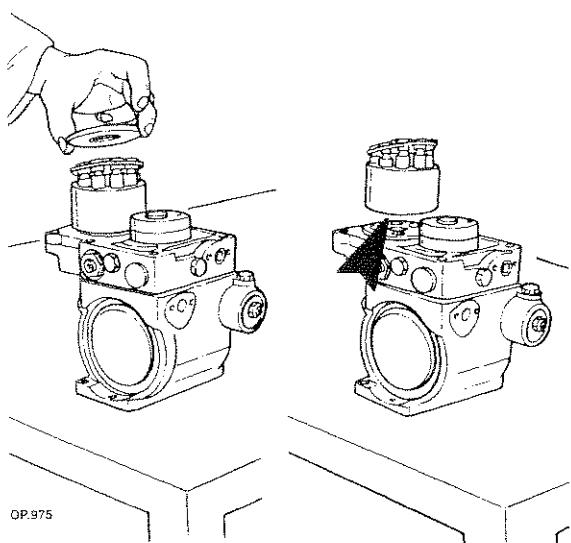
3 - Estrarre il cuscinetto sull'albero primario utilizzando l'estrattore universale AT 37981257.



4 - Disporre il gruppo in verticale e svitare le viti.

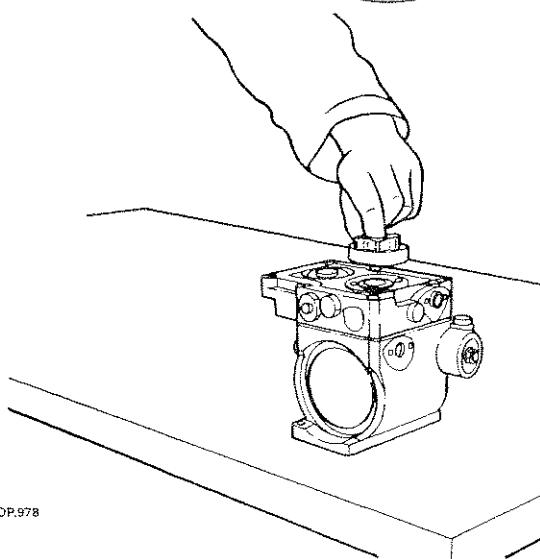


5 - Sfilare verso l'alto il corpo motore e prestare attenzione agli elementi rimasti sul distributore. Curare che nessuno di tali elementi possa cadere o ammaccarsi.



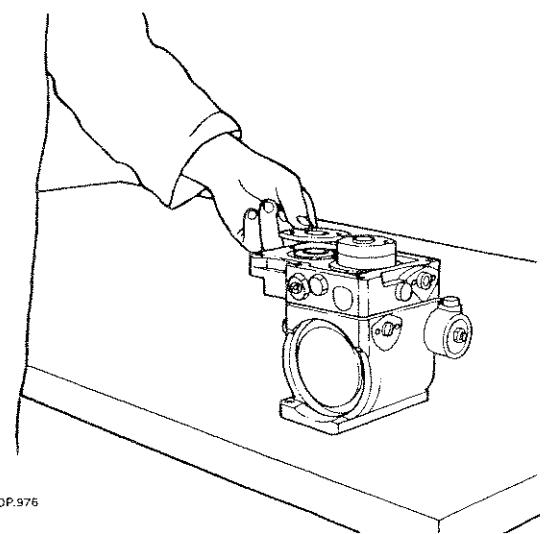
OP.975

6 - Togliere nell'ordine il piatto inclinato e il gruppo rotante del motore, appoggiandoli su di una superficie piana e pulita.



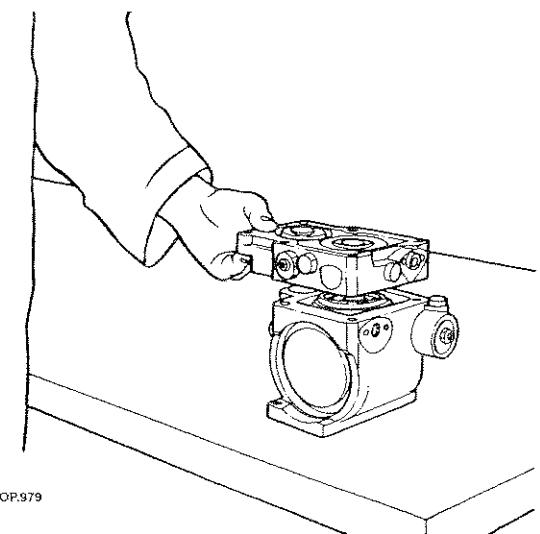
OP.978

9 - Togliere i rotori della pompa di alimentazione.



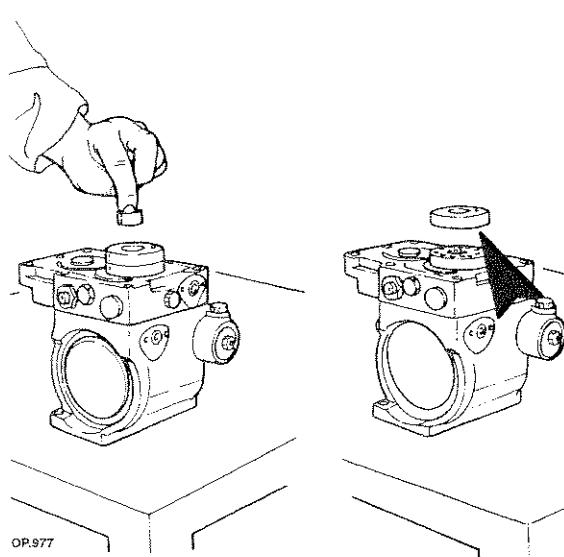
OP.976

7 - Togliere il piattello distributore, pulirlo e appoggiarlo su di una superficie piana e pulita.



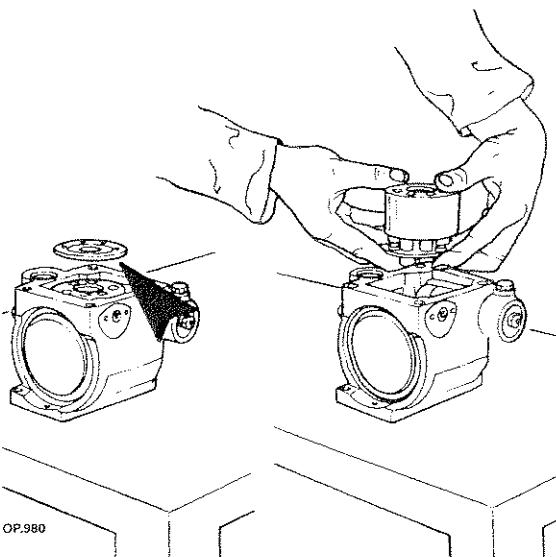
OP.979

10 - Sfilare il blocco distributore facendo attenzione che il piattello del blocco rotante non rimanga attaccato.



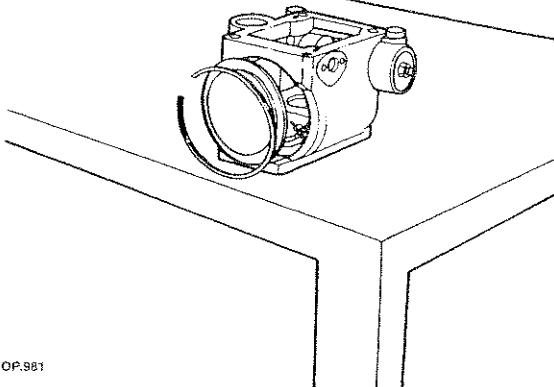
OP.977

8 - Togliere il distanziale e il centraggio della pompa di alimentazione.

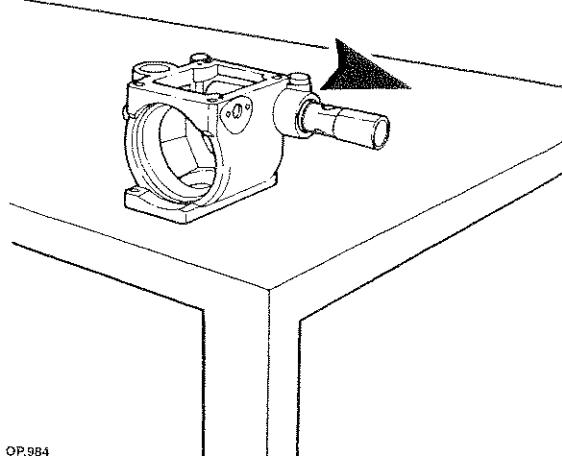


OP.980

11 - Sfilare il piattello e il blocco rotante completo.

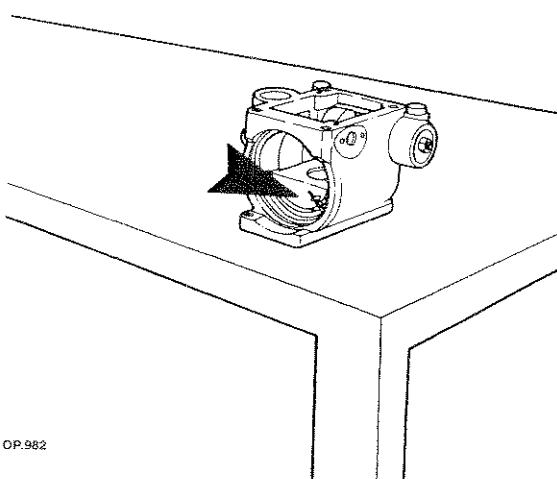


OP.981



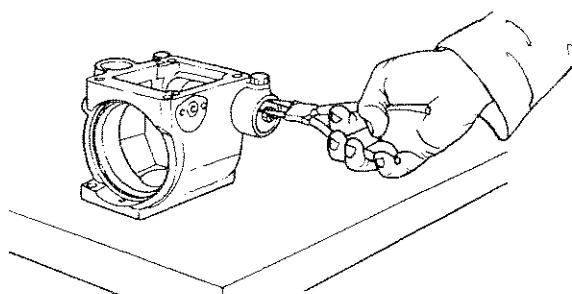
OP.984

12 - Estrarre il seeger con un cacciaviti a lama piatta ed estrarre il coperchio.

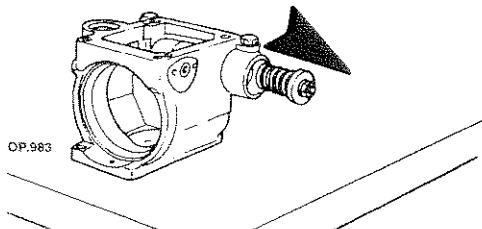


OP.982

13 - Estrarre l'oscillante curando di non smarrire o danneggiare i fili fase gabbia, togliere i due semigusci e relative spine di centraggio.

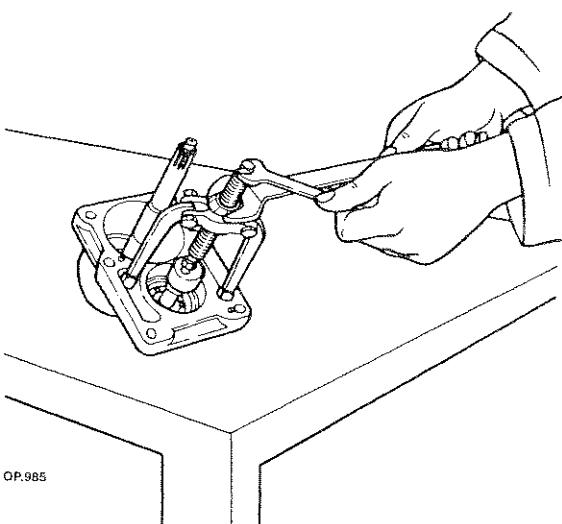


OP.983



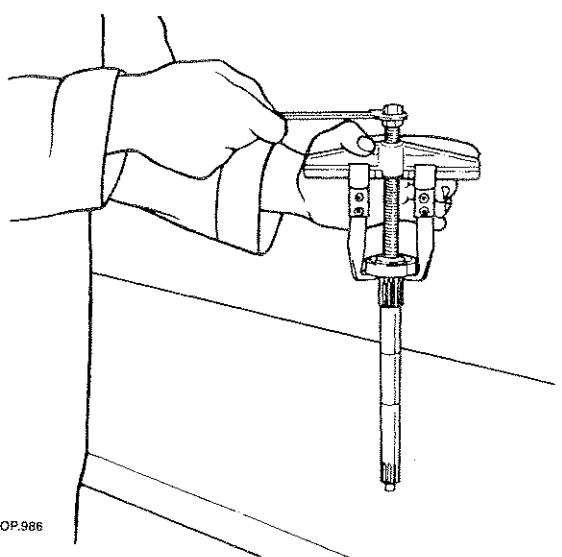
14 - Togliere i due anelli di tenuta e sfilare i due gruppi di registro servocomando.

15 - Sfilare il cilindro servocomando.



OP.985

16 - Estrarre il cuscinetto utilizzando l'estratore a griffe AT 37981216 e adattatore AT 37981222



OP.986

17 - Estrarre il cuscinetto utilizzando l'estratore universale AT 37981257.



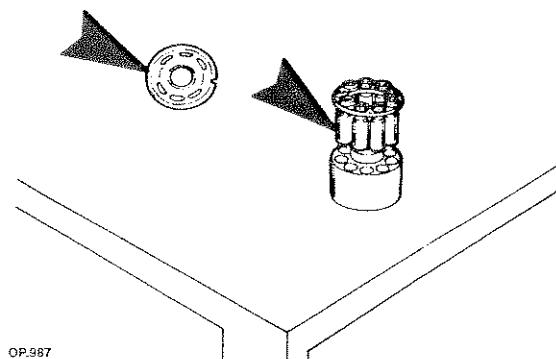
CONTROLLO PARTICOLARI

Nota - Avvertenze

E' importante effettuare un accurato controllo dei vari particolari della pompa e del motore, una volta aperto il gruppo completo. Componenti in ordine garantiscono una buona efficienza ed una lunga vita alla trasmissione. Componenti usurati portano come conseguenza un'efficienza non ottimale, con conseguente dissipazione di potenza dovuta a trafilamenti di olio interni alla pompa, e quindi surriscaldamenti dell'olio e spreco di carburante per il funzionamento della macchina.

CONTROLLO PIATTELLO DISTRIBUTORE - BLOCCO CILINDRI-PISTONI E PATTINI.

Vedi disegno sezionato a pag. 58-59 n° 12-23-13-17.



Il piattello distributore è in acciaio; eventuali rigature sulla superficie comprese nell'area tra due asole di distribuzione sono solitamente dovute ad impurità solide ed abrasive presenti nel fluido idraulico. I componenti le cui superfici di lavoro presentano rigature molto accentuate (sensibili al tatto o con l'unghia) non assicurano più la necessaria tenuta. Occorrerà quindi procedere ad una rilappatura delle superfici, od alla sostituzione del componente se l'usura è troppo profonda.

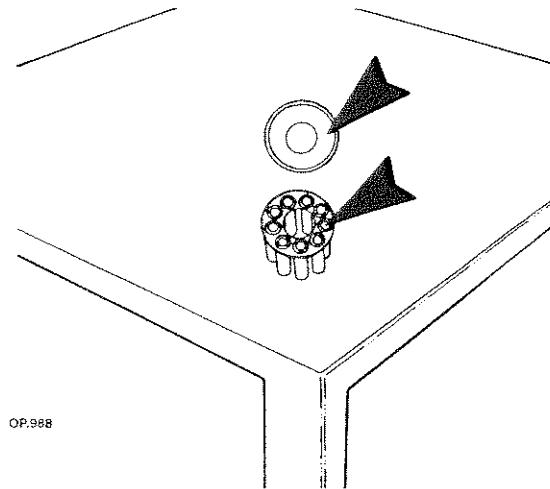
La superficie del blocco cilindri che ruota a contatto con piattello distributore è sottoposta alle stesse considerazioni esposte nel capitolo precedente. Inoltre devono essere verificate le boccole di scorrimento dei pistoni ed il gioco in questi ultimi.

Nel caso si avvertono giochi sensibili e rigature accentuate occorre sostituire il blocco completo.

Ogni pistone termina con uno snodo sferico che alloggia il pattino di scorrimento sull'oscillante. Impurità solide ed abrasive arrecano rigature al pattino ed al pistoncino; se queste sono molto accentuate è opportuna la sostituzione, altrimenti, se molto leggere, provvedere a ripristinare le superfici mediante levigatura su carta ottica o lappatura.

CONTROLLO DISCO PREMI-PATTINI-SEMI-SFERA OSCILLANTE E PIATTO INCLINATO.

Vedi disegno sezionato pag. 58-59 n° 18-21-36-22.



L'alterazione del colore originale del disco premi pattini indica che l'unità ha lavorato a temperature estremamente elevate che ne possono provocare la deformazione con conseguente accentuata usura del gruppo rotante e dell'oscillante.

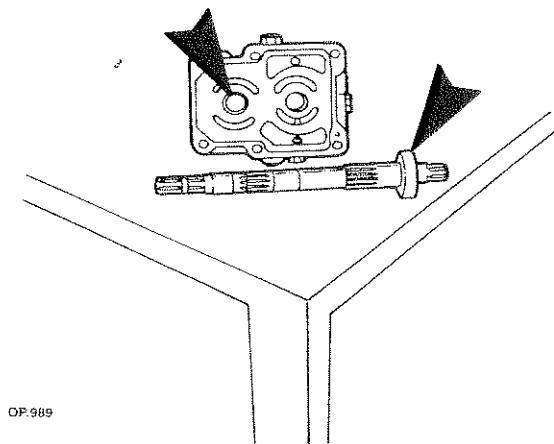


Il disco deve essere comunque sostituito quando nella zona ove esso è a contatto coi pattini dei pistoni e in quella che poggia sulla semisfera si riscontrano rigature anulari dovute ad impurità e ad usura, di profondità percepibile con l'unghia.

Inoltre deve essere sostituito nel caso siano percepibili con l'unghia segni di usura, come rigature o grippaggi dovuti ad impurità presenti nell'olio, surriscaldamento o difettoso sostentamento idrostatico dei pistoni. Controllare pure l'integrità della parte di scorrimento dell'oscillante sulle gabbie a rulli.

CONTROLLO BUCCOLA-DISTRIBUTORE E ALBERO CUSCINETTO

Vedi disegno sezionato a pag. 58-59 n° 11-1-28-4.



Controllare che le boccole site nel distributore ove ruotano gli alberi non presentino segni di usura nel materiale antifrizione, grippaggi oppure giochi eccessivi con l'albero stesso.

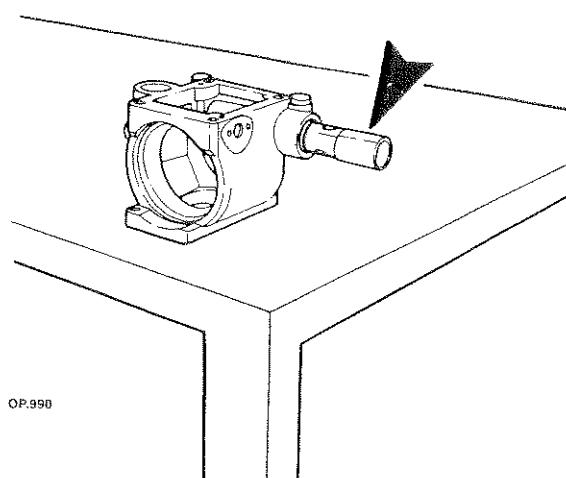
Controllare che la parte dell'albero atta allo scorrimento nella boccola non presenti segni di usura o grippaggio.

Controllare che lo scanalato ricavato sull'albero che trasmette il moto al blocco cilindri non sia usurato in maniera anormale.

Controllare i rulli del cuscinetto e le relative piste: non devono presentare segni evidenti di usura e grippaggio.

CONTROLLO SERVOCOMANDO

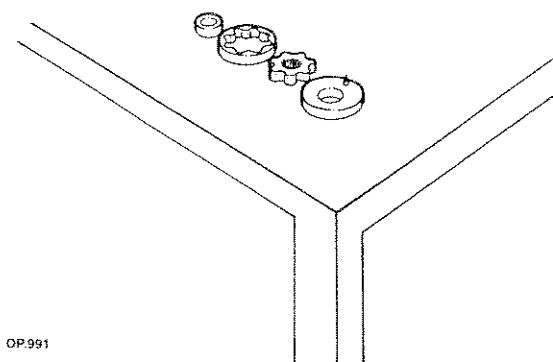
Vedi disegno sezionato pag. 59.



Controllare che il pistone non presenti rigature percepibili con l'unghia; controllare pure l'integrità delle zone a tenuta del corpo servocomando, e che il gioco tra di esse ed il pistone sia minimo, pur consentendo a quest'ultimo di scorrere liberamente.

CONTROLLO POMPA DI SOVRALIMENTAZIONE

Vedi disegno sezionato a pag. 58-59 n° 7-8-9.

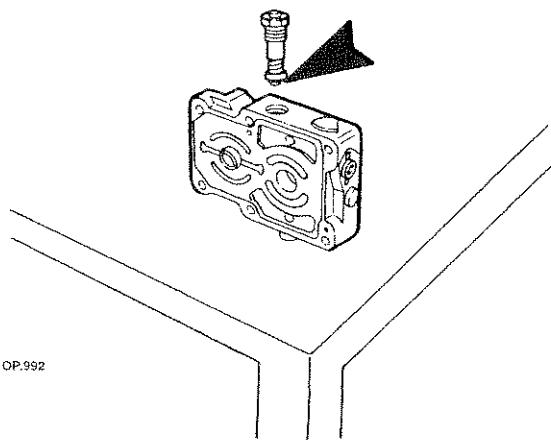


I rotori della pompa di sovrallimentazione non devono presentare evidenti rigature; devono avere un piccolo gioco radiale fra di loro (cioè quando l'uno è contenuto nell'altro) ed un minimo di gioco fra rotore esterno ed il corpo. Accertarsi pure che il disco di centraggio 7 e la superficie di strisciamento sul distributore non evidenzino segni di usura percepibili con l'unghia.



CONTROLLO VALVOLE DI MASSIMA PRESSIONE

Vedi disegno sezionato a pag. 59.



Le valvole di massima pressione sono a taratura fissa, eseguita direttamente in fase di costruzione e non modificabile a posteriori.

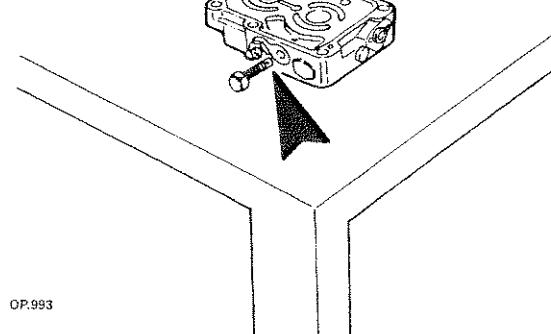
Il valore standard è di 300 bar.

- Controllare che la sede interna del distributore non presenti ammaccature o rigature che potrebbero causare trafiletti nella sede valvola.

Se la sede di tenuta non fosse integra, sostituire il distributore.

CONTROLLO VALVOLA DI ALIMENTAZIONE.

Vedi disegno sezionato pag. 58-59 n° 60-30-31-32-33.



Controllare che la parte cilindrica dell'otturatore non sia usurata e non presenti ammaccature o rigature, e che la molla e gli altri particolari siano integri e non presentino deformazioni.

In caso contrario, sostituire la valvola completa.

Controllare che la sede di tenuta dell'otturatore sul distributore non presenti ammaccature o deformazioni di qualsiasi genere.

Se la sede risulta usurata occorre sostituire il distributore.



ATTENZIONE - PERICOLO

Eseguire le operazioni osservando scrupolosamente le misure di prevenzione.

- Non usare le mani per allineare delle forature ma adeguati attrezzi.

MONTAGGIO

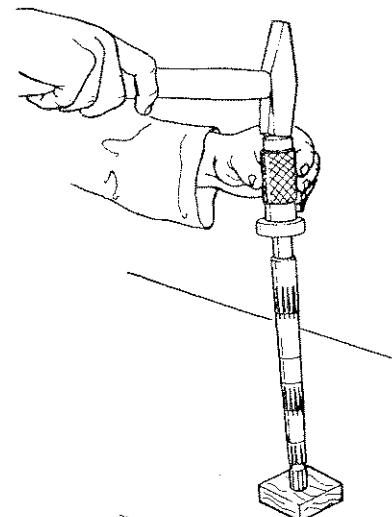
Procedere al montaggio considerando le seguenti avvertenze:

a - procedere invertendo le operazioni dello smontaggio;

b - attenersi alle illustrazioni di pag. 58-59 per l'orientamento dei vari componenti;

c - attenersi alle coppie di serraggio elencate a pag. 4;

d - considerare le seguenti operazioni:

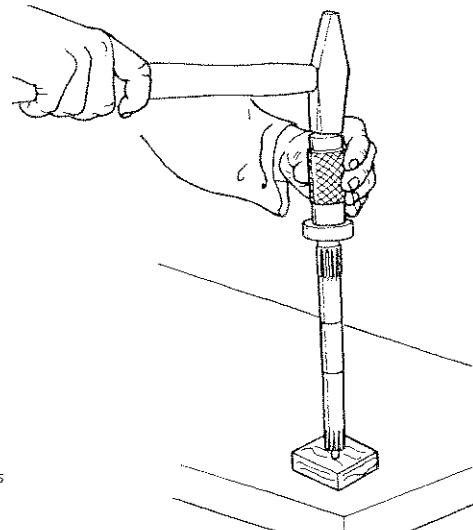


1 - montare il cuscinetto sull'albero della pompa utilizzando il tampone AT 37981319.



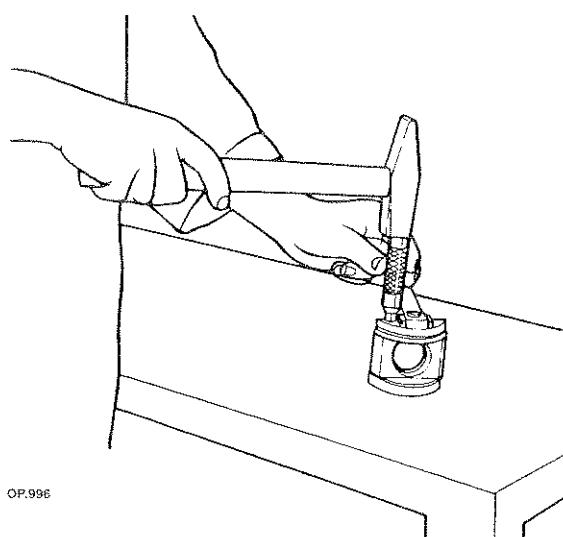
TRASMISSIONE CENTRALE 30

OP.995



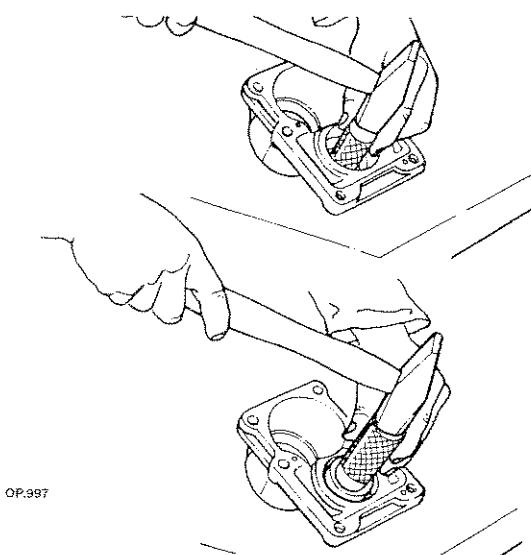
2 - Montare il cuscinetto sull'albero motore utilizzando il tampone AT 37981319.

OP.996



3 - Montare le due boccole di scorrimento dell'oscillante utilizzando il tampone AT 37981320.

OP.997

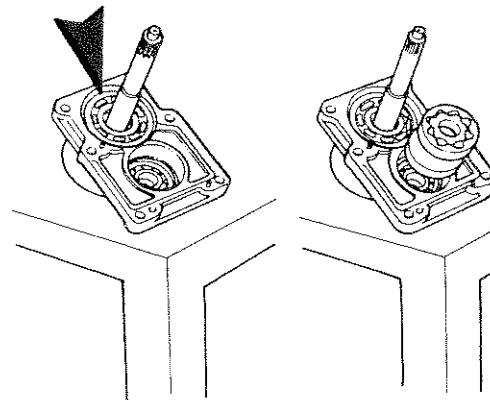


4 - Montare l'anello di tenuta utilizzando il tampone AT 37981321 e il cuscinetto con il tampone AT 37981322.

OP.998

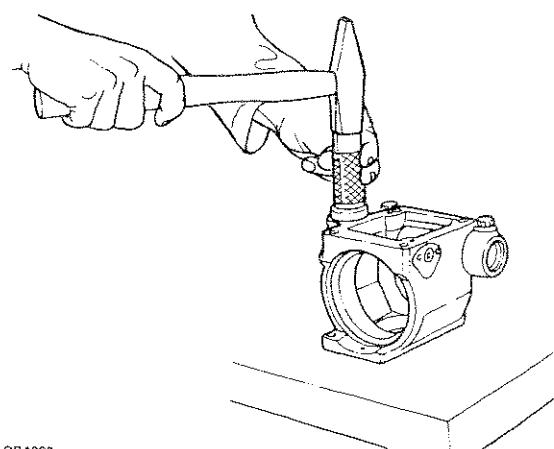
5 - Montare l'albero motore completo di cuscinetto utilizzando il tampone AT 37981323.

OP.999

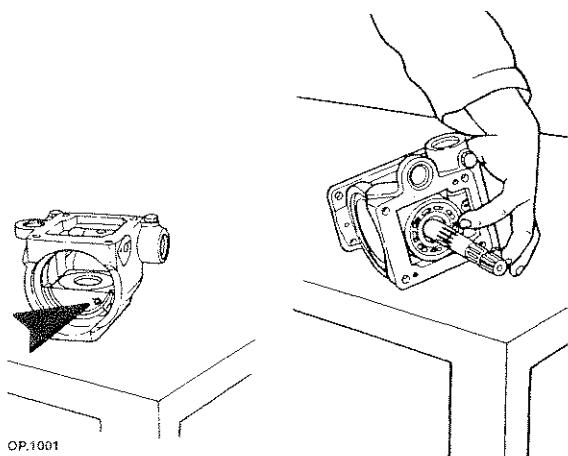


6 - Inserire il gruppo rotante del motore e il gruppo pompa alimentazione.

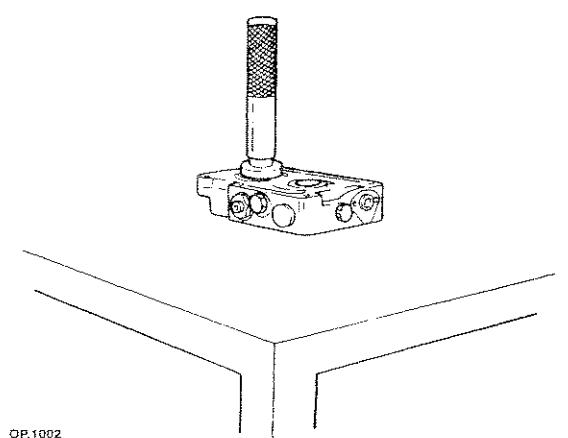
OP.1000



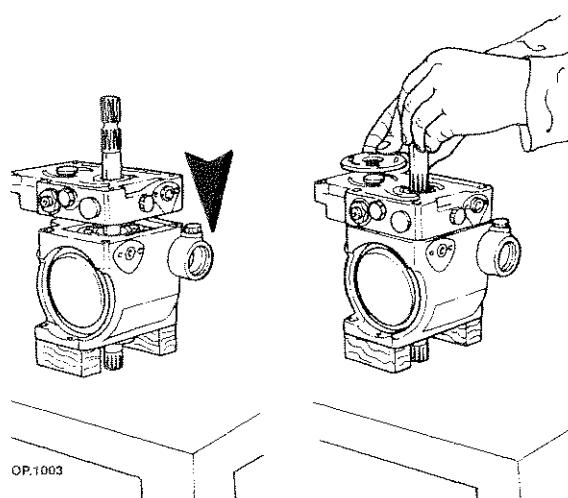
7 - Montare l'anello di tenuta utilizzando il tampone AT 37981324.



8 - Montare l'insieme gruppo oscillante, oliare abbondantemente le superfici dell'oscillante e infilare l'albero e gruppo rotante completo.

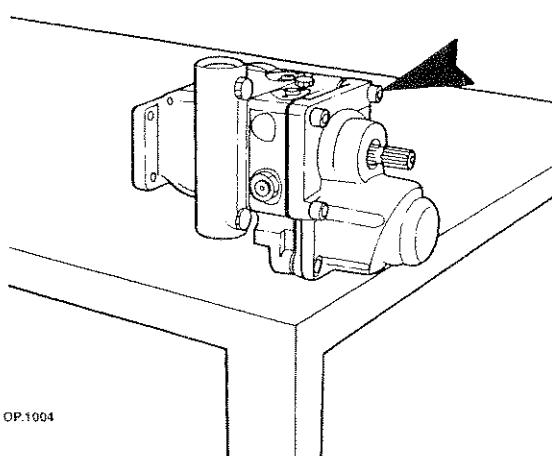


9 - Montare le boccole sia lato pompa che lato motore utilizzando il tampone AT 37981325.

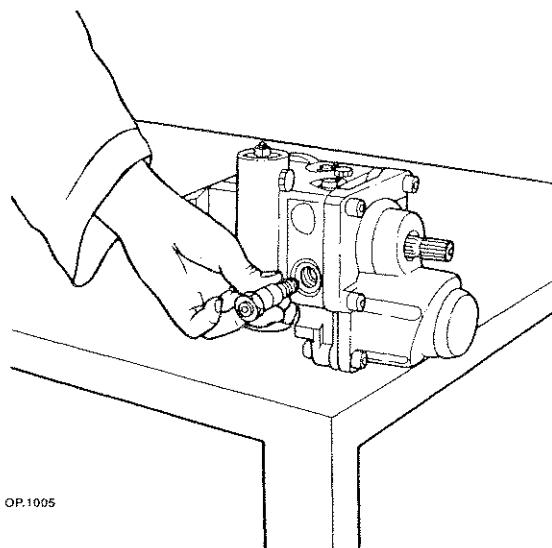


10 - Montare gli OR sul distributore intermedio e infilarlo sul corpo pompa.

11 - Montare e centrare se i due lati i piattelli pompa e motore.



12 - Accostare i tre gruppi facendo combaciare correttamente le rispettive superfici e avvitare le viti.



13 - Montare le valvole di massima.

14 - Con un manicotto scanalato infilato all'estremità dell'albero pompa, provare se la rotazione avviene regolarmente senza sforzo eccessivo.

ATTENZIONE - PERICOLO

Eseguire le operazioni osservando scrupolosamente le misure di prevenzione.

- Non usare benzina, gasolio o altri liquidi infiammabili per sgrassare o lavare particolari, ma usare solventi commerciali e atossici.



Gruppo idrostatico

Diagnosi degli inconvenienti

Inconveniente	Cause possibili	Verifiche e rimedi
Con il joystick (sul pedale) di comando in posizione di zero e la marcia più lenta innestata la macchina si muove comunque.	<ul style="list-style-type: none"> - Pressione residua nel joystick di comando. - Staratura azzeramento pompa. 	<ul style="list-style-type: none"> - Staccare il joystick di comando controllo dal gruppo idrostatico e controllare se persiste il movimento. Riparare o sostituire il joystick di comando. - Ritarare azzeramento della pompa.
L'olio nell'impianto tende a surriscaldarsi durante il normale impiego della macchina.	<ul style="list-style-type: none"> - Livello olio nel serbatoio insufficiente. - Scambiatore di calore intasato o guasto. - Filtro in aspirazione intasato o difficoltà di aspirazione. - Carico di lavoro eccessivo. 	<ul style="list-style-type: none"> - Controllare livello olio nel serbatoio e, se necessario, rabboccarlo. - Pulire la superficie radiante dello scambiatore di calore; controllare che la ventola funzioni correttamente. - Controllare il filtro in aspirazione e, se necessario, sostituirlo - Ridurre il carico.
<ul style="list-style-type: none"> - La macchina non si muove regolarmente. - La macchina avanza a sbalzi. - La macchina denota un tiro inferiore al dovuto. 	<ul style="list-style-type: none"> - Livello olio nel serbatoio insufficiente. - Filtro in aspirazione intasato o difficoltà di aspirazione. - Temperatura olio eccessiva. - Pressione di sovralimentazione insufficiente. - Valvole di massima intasate. 	<ul style="list-style-type: none"> - Controllare livello olio nel serbatoio e, se necessario, rabboccarlo. - Controllare il filtro in aspirazione e, se necessario, sostituirlo. - Controllare pressione di sovralimentazione. - Controllare e pulire valvole di massima.
<ul style="list-style-type: none"> - La macchina si muove regolarmente solo avanti o solo indietro. - La macchina non si muove affatto, pur azionando ripetutamente il servocomando. 	<ul style="list-style-type: none"> - Servocomando guasto. - Valvole di massima intasate su uno o entrambi i lati. - Livello olio nel serbatoio insufficiente. - Filtro in aspirazione intasato o difficoltà di aspirazione. - Temperatura olio eccessiva. - Pressione di sovralimentazione insufficiente. - Eccessiva usura dei componenti. 	<ul style="list-style-type: none"> - Scambiare fra loro i tubi di comando provenienti dal servocomando; verificare se il problema persiste nella stessa direzione. In caso contrario, sostituire o riparare il servocomando. - Controllare livello olio nel serbatoio e, se necessario, rabboccarlo. - Controllare il filtro in aspirazione e, se necessario, sostituirlo. - Controllare pressione di sovralimentazione. - Controllare e pulire valvole di massima. - Eseguire il controllo del rendimento del gruppo; se necessario sostituire o revisionare l'intero gruppo.

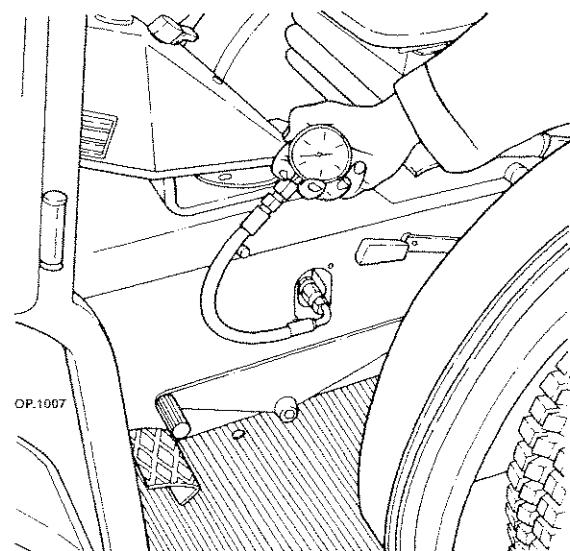
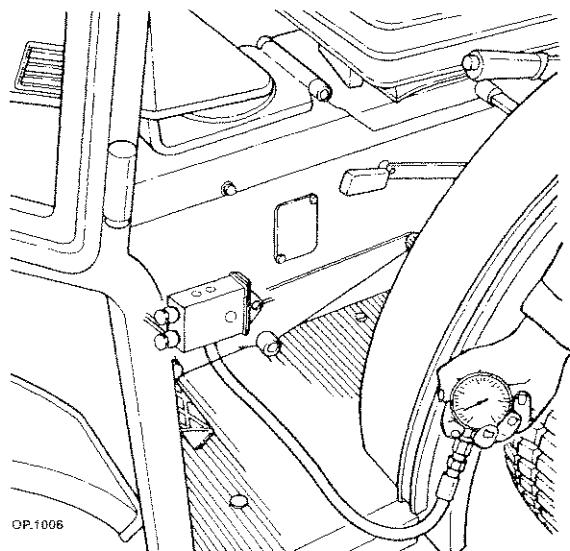


CONTROLLO PRESSIONI GRUPPO IDRO-STATICO

Controllo pressione pompa di sovralimentazione.

Per effettuare il controllo della pressione della pompa di sovralimentazione procedere come segue:

- 1 - spegnere il motore diesel e installare un manometro sulla presa della pressione di sovralimentazione AT 37981190 adattatore AT 37981259.

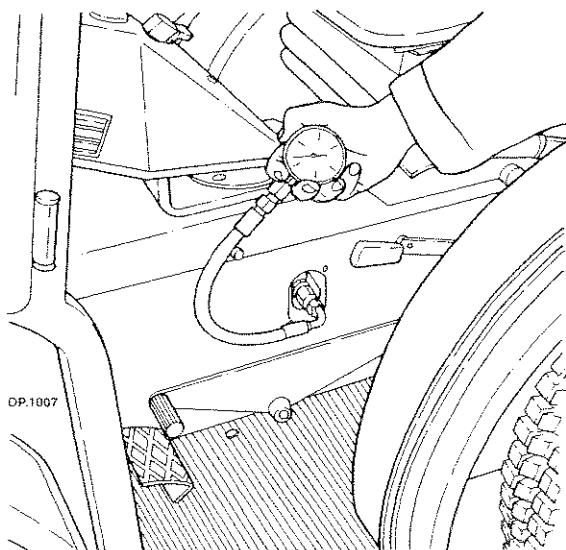


- 2 - Avviare il motore Diesel e portarlo ad un regime di 2500 g/1' con pompa in cilindrata azzerata; con l'olio a circa 50° verificare che la pressione di alimentazione sia di 25 bar circa.

Controllo pressione valvole di massima.

Per effettuare il controllo della pressione delle valvole di massima procedere come segue:

- 1 - Spegnere il motore diesel e installare un manometro AT 37981330 con adattatore AT 37981259 sulle prese della pressione di lavoro disponibile sui tappi delle valvole di massima.



- 2 - Avviare il motore diesel e portarlo a un regime di 2500 g/1', con l'olio a circa 50°.

- 3 - Frenare fortemente la macchina; accertarsi che non vi siano ostacoli o persone davanti o dietro a essa.

- 4 - Innestare la marcia più alta ed azionare la pompa finché non si sentono scattare le valvole di massima (la rumorosità tipica di questa situazione è un chiaro indice della loro apertura).

Pressione massima di Picco 300 bar.

- 5 - Non prolungare la prova oltre il tempo strettamente necessario per la verifica, per evitare il surriscaldamento dell'olio in queste condizioni di funzionamento.

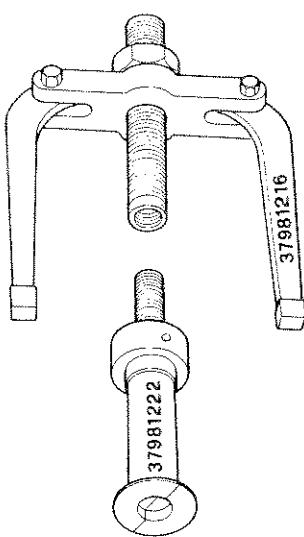


ATTENZIONE - PERICOLO



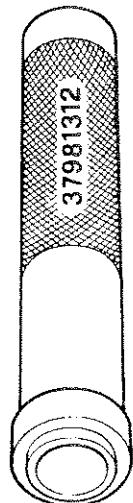
Eseguire le operazioni osservando scrupolosamente le misure di prevenzione.

- Far attenzione all'eiezione di fluido ad alta pressione.



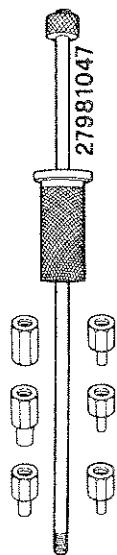
AT.001

1 - Estrattore combinato per estrarre il cuscinetto.



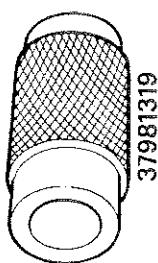
AT.205

4 - Tampone per montare ed estrarre l'astuccio a rulli della piastra centrale del Superpark.



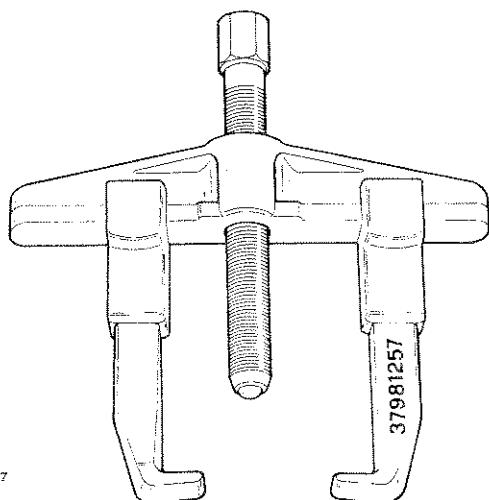
AT.004

2 - Estrattore a massa battente con adattatori.



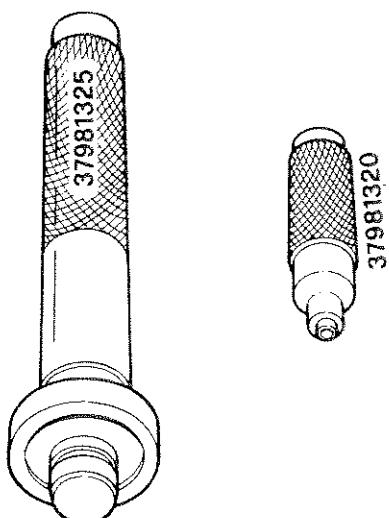
AT.206

5 - Tampone per montaggio cuscinetti gruppo idrostatico.



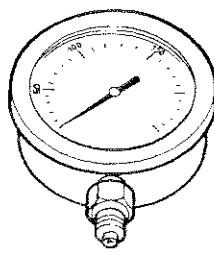
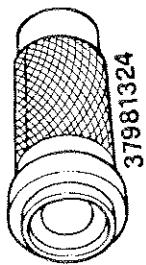
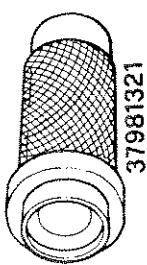
AT.057

3 - Estrattore universale.



AT.207

6 - Tamponi per montaggio boccole sul gruppo idrostatico.



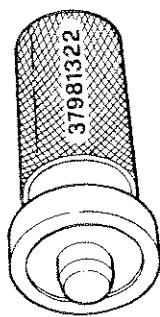
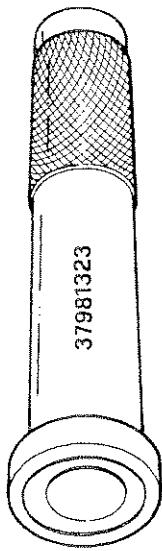
AT.208

7 - Tamponi per il montaggio di guarnizioni di tenuta sul gruppo idrostatico.

AT.211

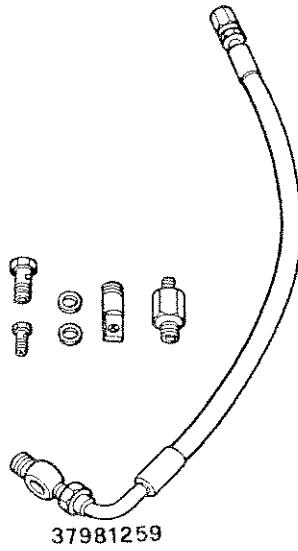
10 - Manometro da 0-600 bar misuratore di pressione.

AT.209

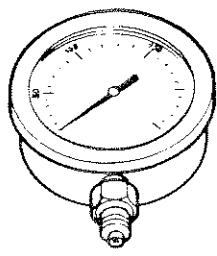


8 - Tamponi per il montaggio di cuscinetti sul gruppo idrostatico.

AT.081



11 - Adattatore per misurare la pressione.



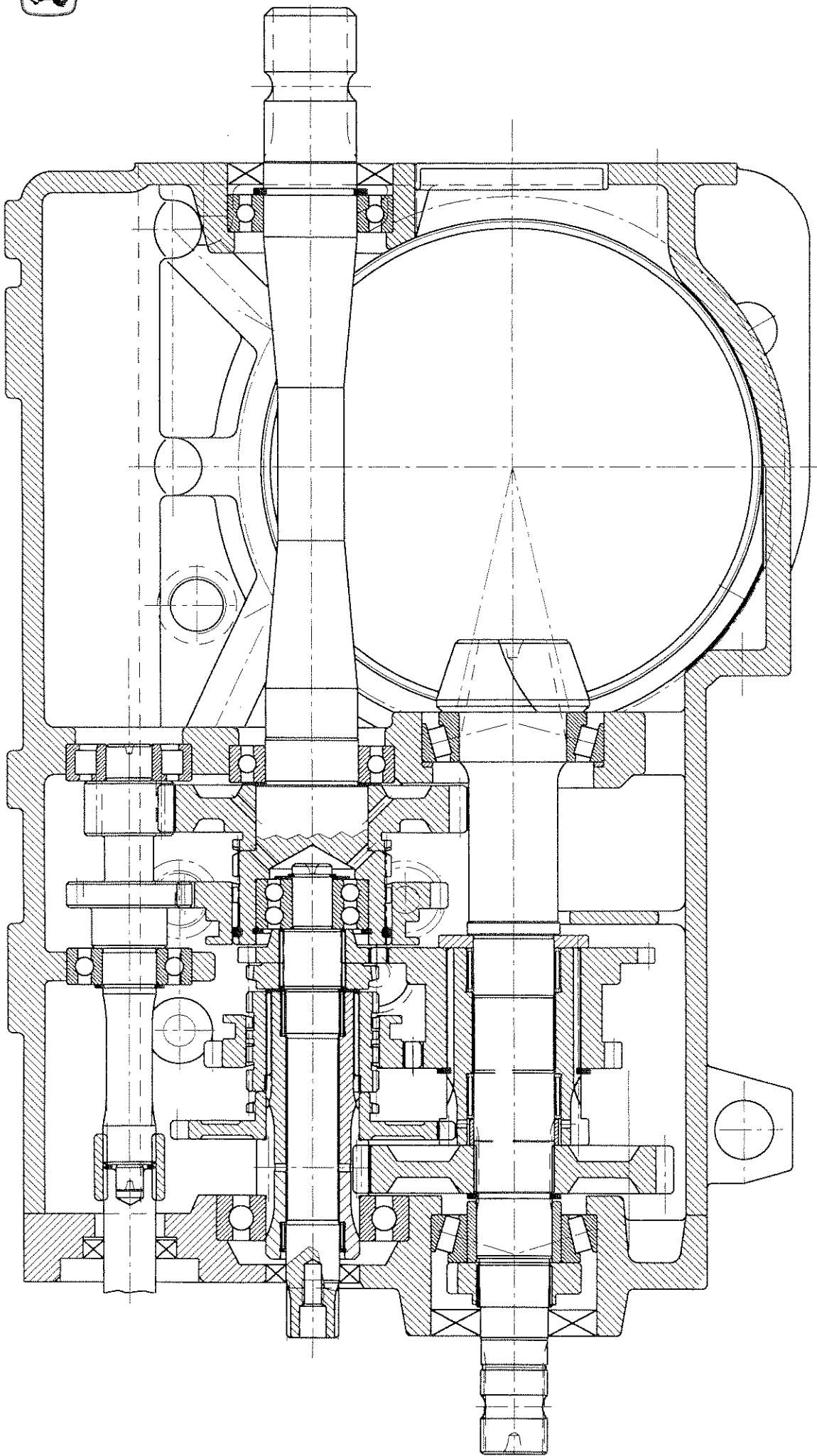
37981190

AT.210

9 - Manometro da 0-100 bar misuratore di pressione.



COMPLESSIVO CAMBIO DI VELOCITÀ





TRASMISSIONE POSTERIORE TIGRETRAC

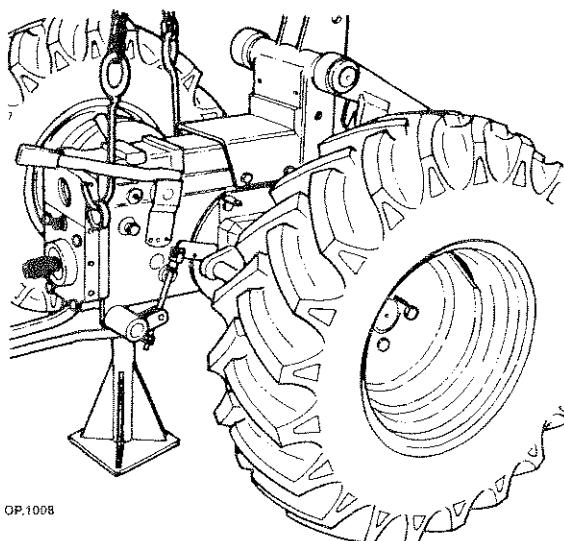
TRASMISSIONE ANTERIORE SUPERPARK

Istruzioni per lo stacco e riattacco

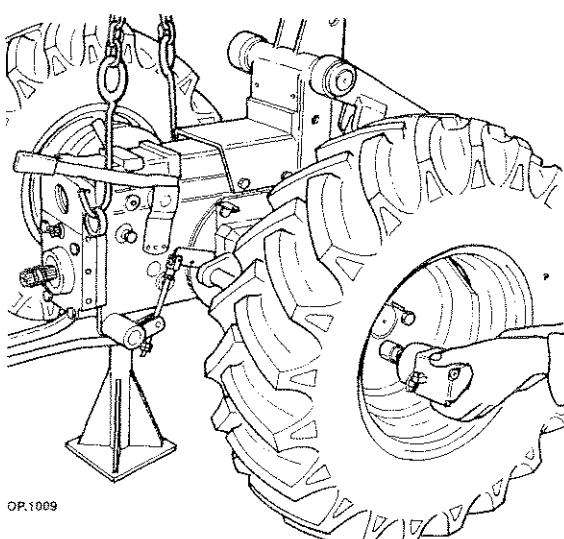
Tigretrac - Superpark

Per accedere al gruppo trasmissione posteriore (cambio di velocità) bisogna:

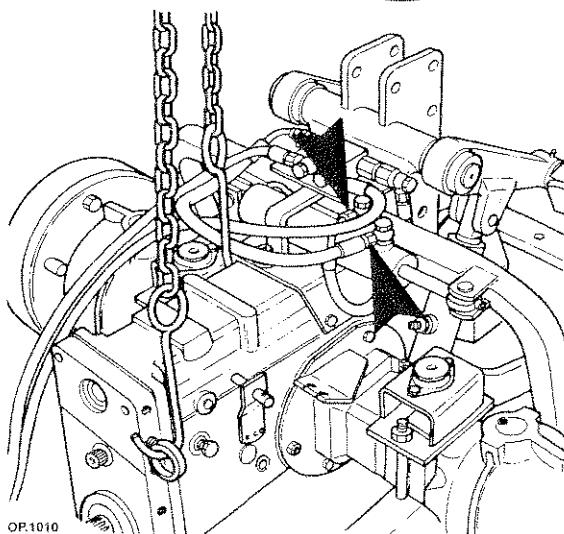
- 1 - procedere analogamente a quanto descritto per lo stacco riattacco della trasmissione centrale.



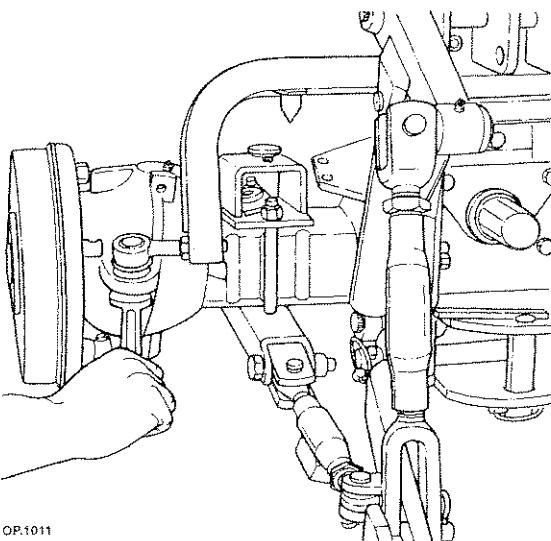
- 2 - Aggiicare una fune al paranco e fissarla al cambio di velocità.



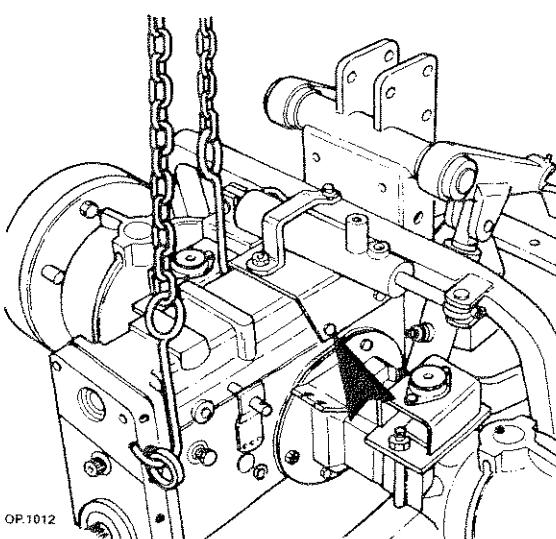
- 3 - Svitare le viti e togliere le ruote.



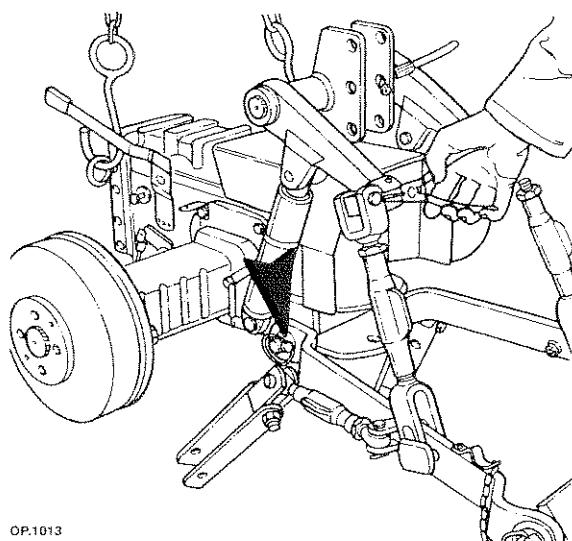
- 4 - Svitare i raccordi tubi cilindri sterzo, svitare le viti e sfilare la valvola e il supporto valvola sterzo.



- 5 - Svitare i dadi testine barra di accoppiamento sterzo.

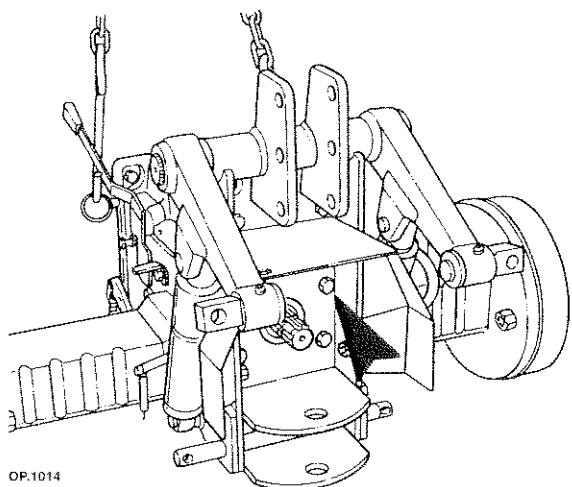


- 6 - Svitare le viti e togliere il supporto cilindro sterzo e barra di accoppiamento.



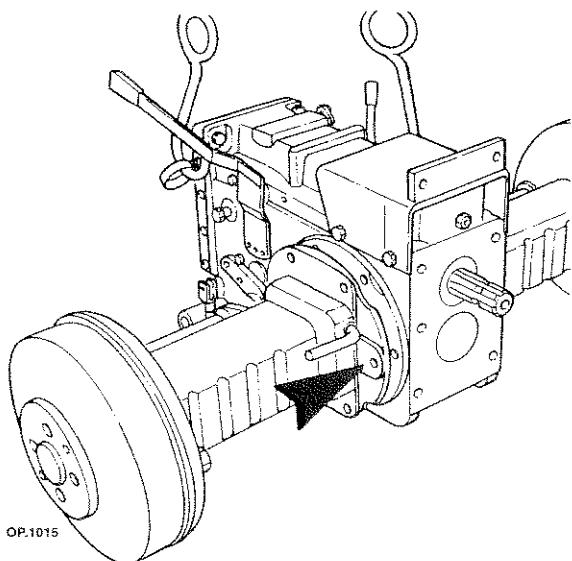
OP.1013

7 - Scollegare i tiranti dei bracci di sollevamento e togliere le barre di sollevamento.



OP.1014

8 - Svitare le viti e togliere il coperchio supporto sollevamento.



9 - Svitare le viti e togliere gli assali.



ATTENZIONE - PERICOLO

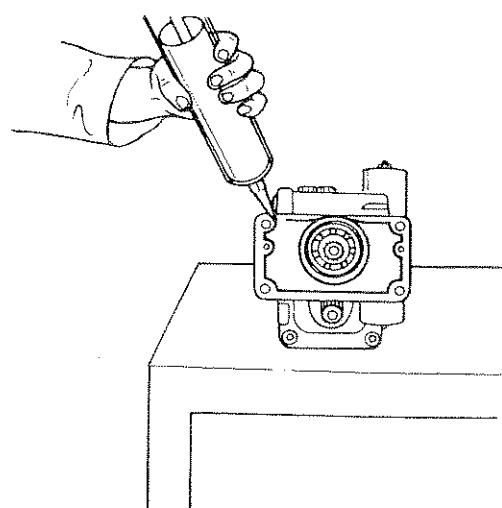
Eseguire le operazioni osservando scrupolosamente le misure di prevenzione.

- Non usare le mani per allineare delle forature ma adeguati attrezzi.

Riattacco

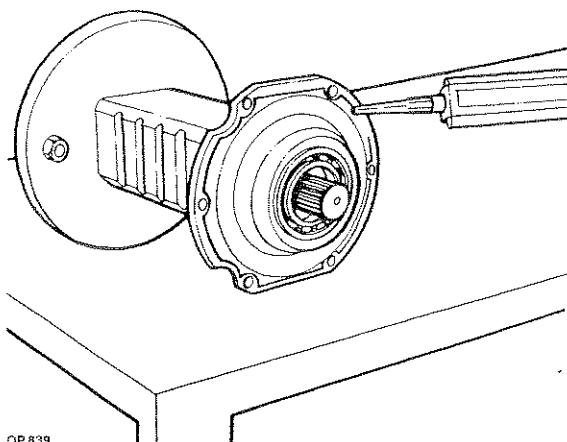
Procedere al riattacco considerando le seguenti avvertenze:

- a - invertire le operazioni dello stacco;
- b - attenersi alle illustrazioni per l'orientamento dei vari particolari;
- c - attenersi alle coppie di serraggio elencate a pag. 4;
- d - prima di infilare le prolungherie o giunti cardanici ingrassare accuratamente i profili scanalati (per il tipo di grasso da usare vedi pag. 5);
- e - avvitare i grani di ancoraggio prolungherie o giunti applicando della loctite 242 (ferma filetti medio).
- f - effettuare un'accurata pulizia in particolar modo delle superfici da accoppiare ed applicare un cordone di mastice di tenuta del diametro di circa 3 mm seguendo il tracciato indicato nella figura:

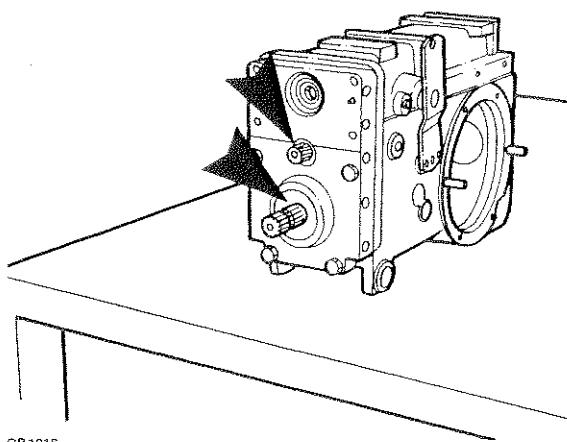


OP.907

- Schema di applicazione mastice di tenuta



OP.839



OP.1018

- applicazione mastice di tenuta

g - curare la pulizia di tutte le parti dell'impianto che verranno a contatto con l'olio idraulico del circuito (serbatoio-tubi-scambiatori di calore).

h - assicurarsi che non vi siano ostacoli che impediscono la normale aspirazione della pompa del gruppo idrostatico (tappi);

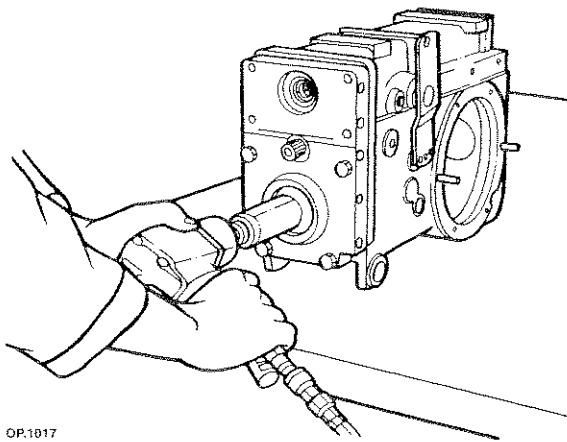
i - sostituire la cartuccia filtro olio;

I - non avviare il motore diesel ed azionare il gruppo idrostatico prima di aver eseguito il riempimento del circuito idraulico con olio (nuovo);

m - riempire il serbatoio (cambio di velocità) con olio vedi pag. 5;

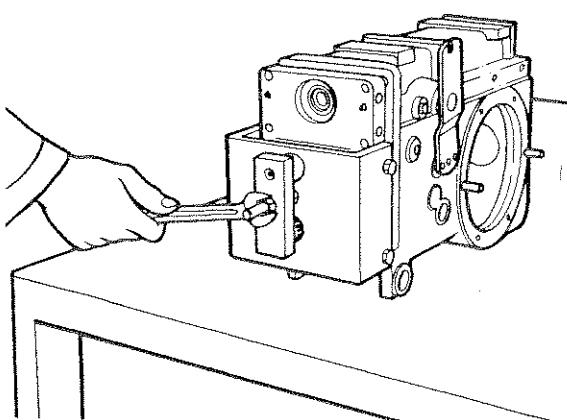
n - riempire il gruppo idrostatico con olio vedi pag. 5 attraverso uno dei fori di drenaggio.

2 - Estrarre le guarnizioni di tenuta.



OP.1017

3 - Svitare la ghiera del pignone utilizzando l'attrezzo AT 37981280.



OP.1018

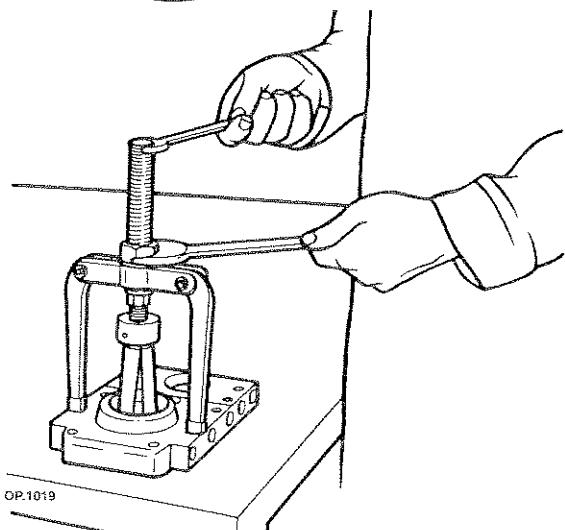
4 - Svitare le viti e utilizzando l'estrattore AT 27981286 togliere il coperchio cambio.

CAMBIO DI VELOCITÀ

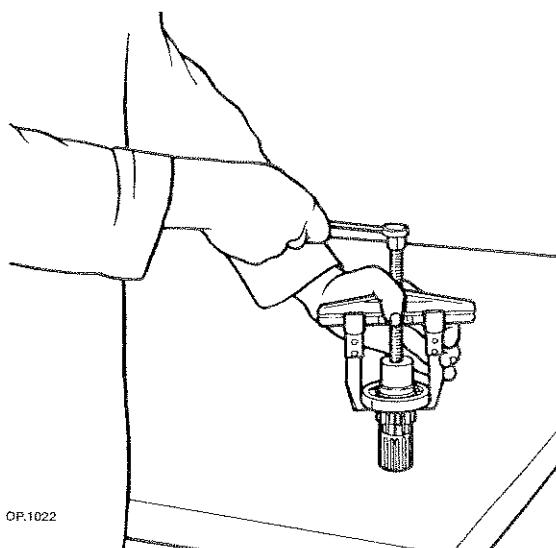
Smontaggio - montaggio

Per lo smontaggio dei vari componenti del cambio di velocità procedere come segue:

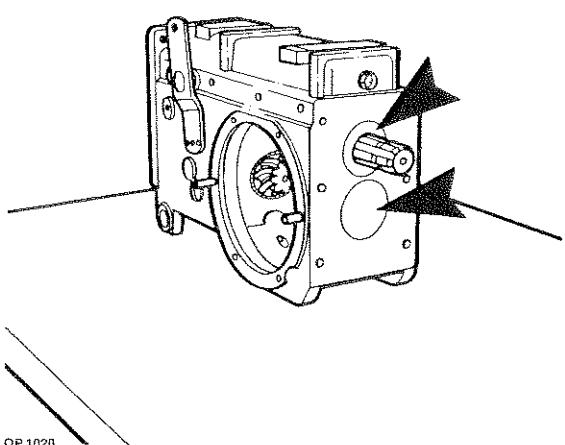
1 - bloccare la scatola trasmissione cambio sul cavalletto o adagiarla sopra un banco.



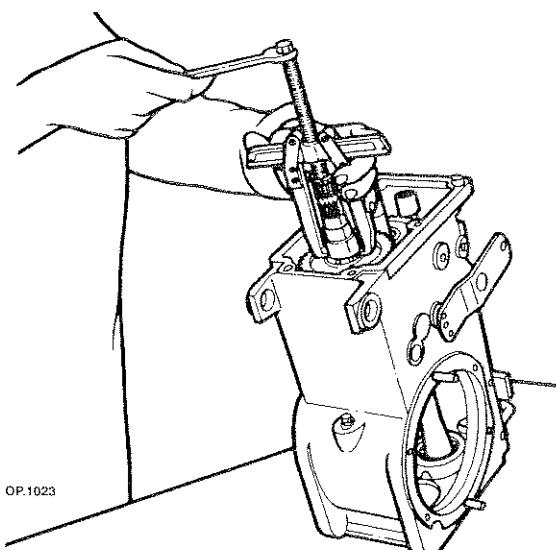
5 - Togliere la sede del cuscinetto posteriore pignone utilizzando l'estrattore AT 37981216 e l'adattatore AT 37981222.



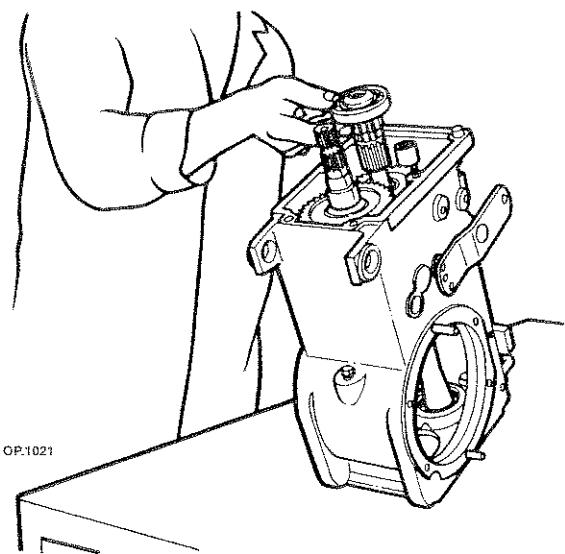
8 - Estrarre il cuscinetto dall'albero utilizzando l'estrattore AT 37981257 e l'adattatore AT 37981265.



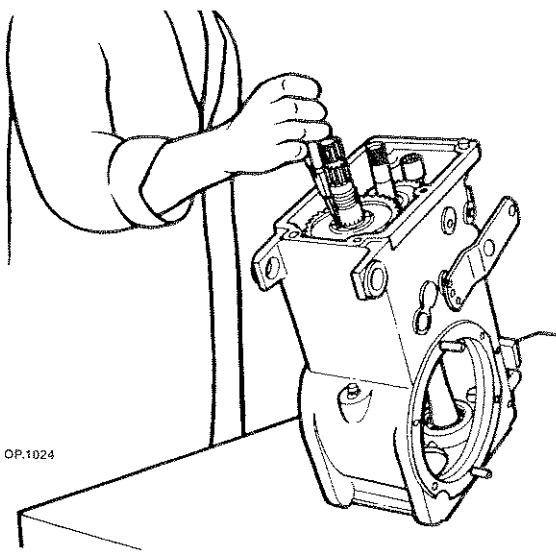
6 - Togliere l'anello di tenuta albero PTO e il tappo di lavorazione.



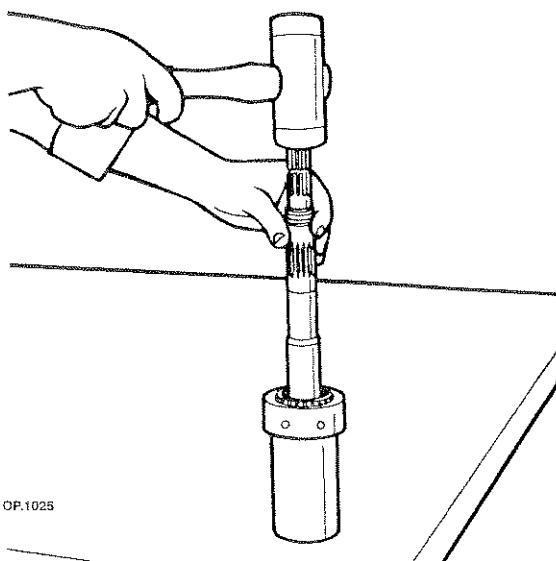
9 - Estrarre la riduzione con l'estrattore universale AT 37981257.



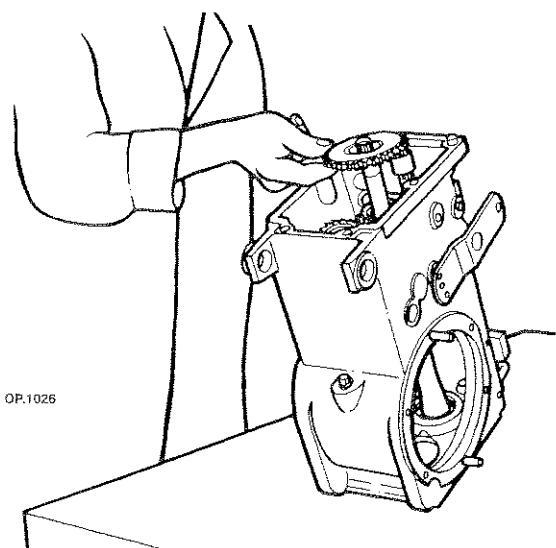
7 - Sfilare l'albero ingranaggio conduttrice della riduzione finale.



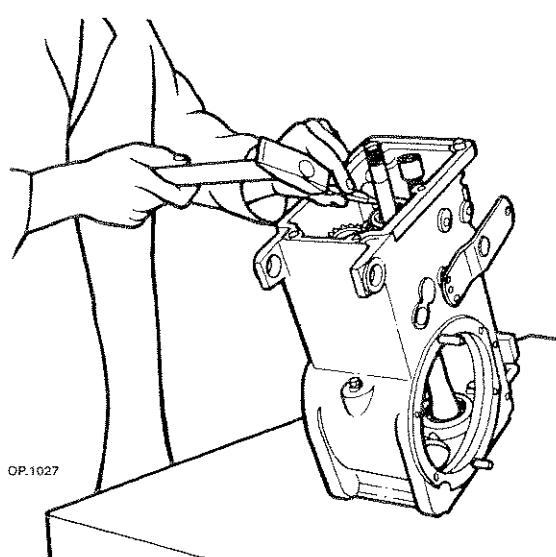
10 - Estrarre l'anello elastico di contenimento e sfilare l'ingranaggio condotto della riduzione finale.



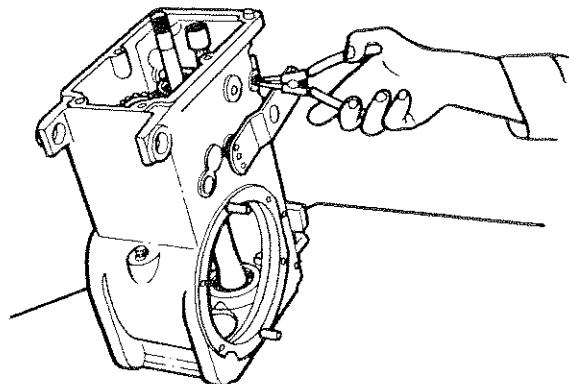
11 - Sfilare il pignone e togliere il cuscinetto utilizzando il tampone AT 27981287.



12 - Sfilare l'ingranaggio della lenta.

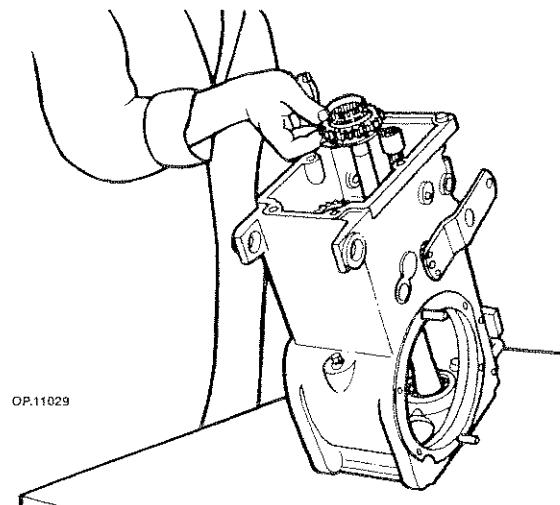


13 - Togliere la spina elastica dalla forcella innesto velocità.



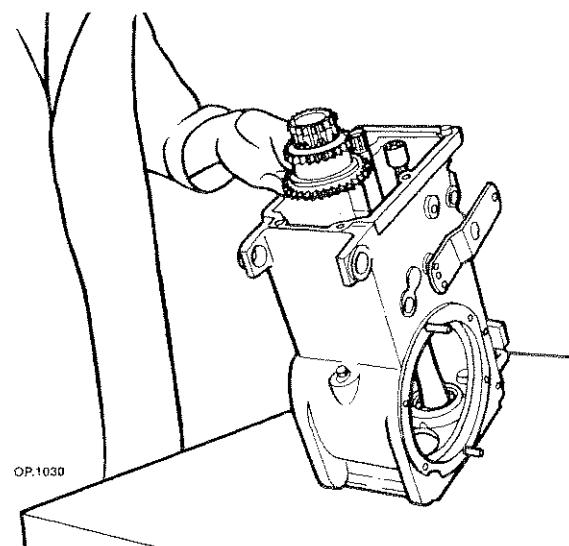
OP.1028

14 - Estrarre l'anello elastico di contenimento e sfilare l'alberino di comando scelta velocità e recuperando pattini molla e sfera di posizione.



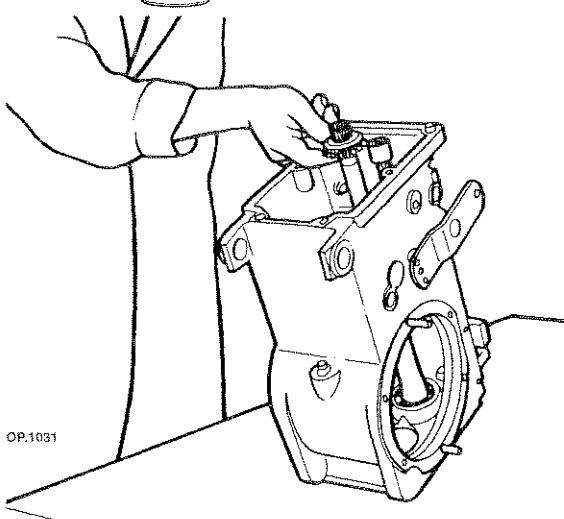
OP.11029

15 - Sfilare ingranaggio manicotto d'innesto velocità normale-lenta-veloce.

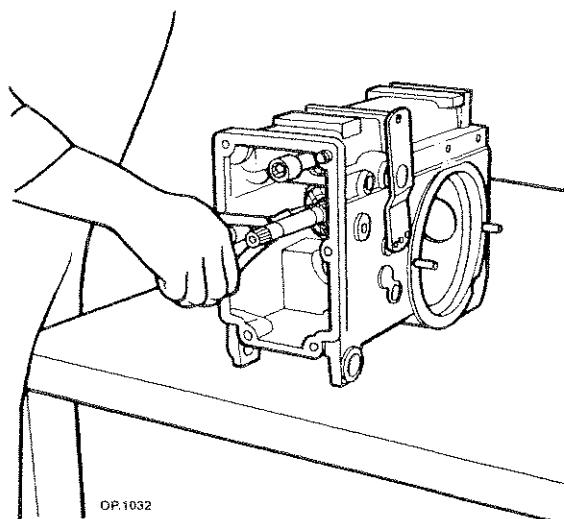


OP.1030

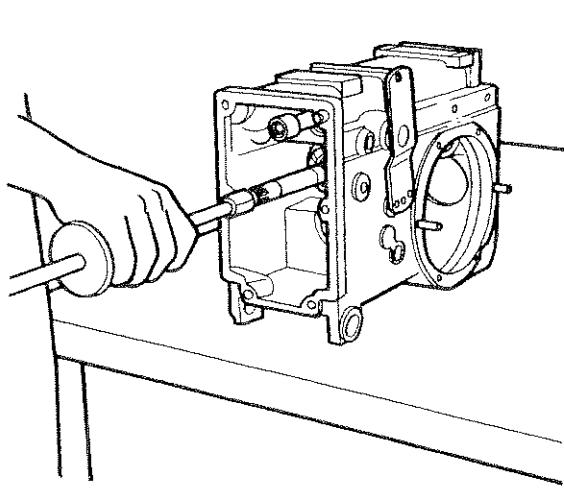
16 - Sfilare il gruppo condotto L.N.V. recuperando le gabbie a rulli, distanziali e rasamenti.



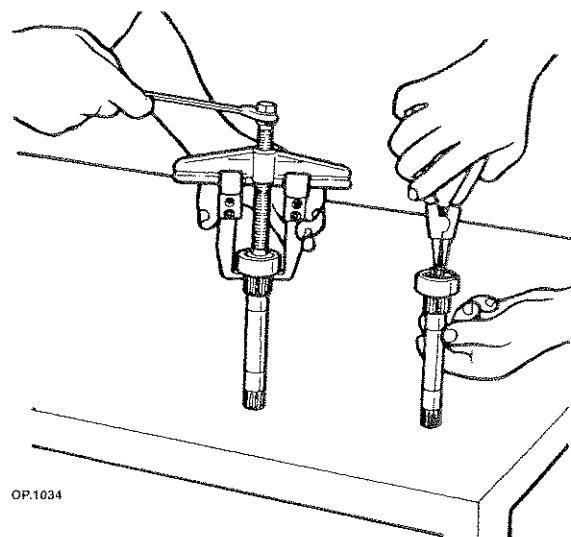
17 - Sfilare la gabbia a rulli sull'albero presa moto, i rasamenti del tipo AS, il manicotto di presa moto e l'ingranaggio sempre in presa della Veloce.



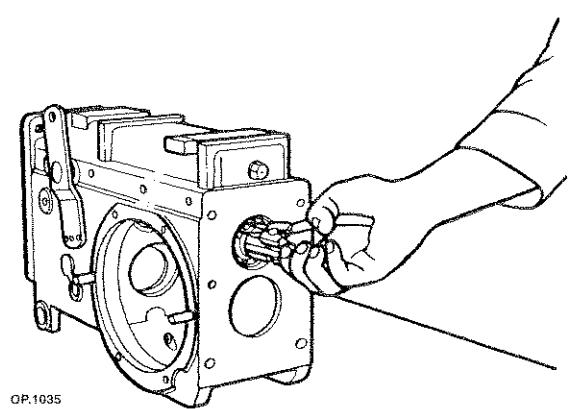
18 - Togliere l'anello di contenimento sull'albero PTO.



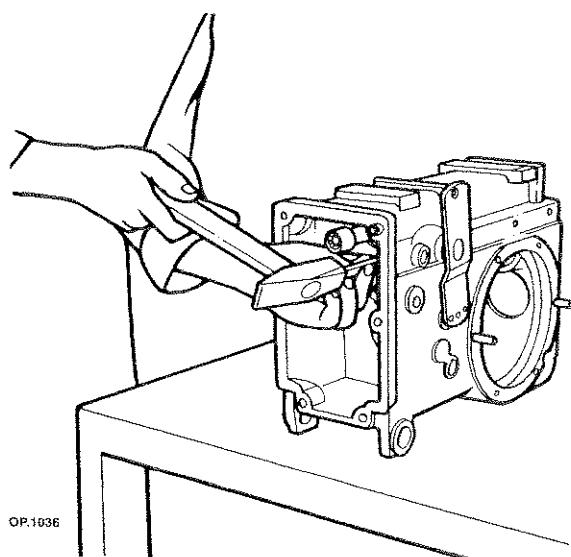
19 - Estrarre l'albero primario utilizzando l'estrattore a massa battente AT 27981047 ed adattatore



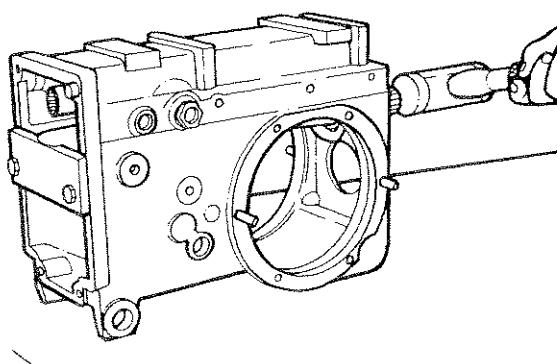
20 - Togliere l'anello di contenimento ed estrarre il cuscinetto utilizzando l'estrattore AT 37981257.



21 - Togliere l'anello di contenimento cuscinetto albero PTO.

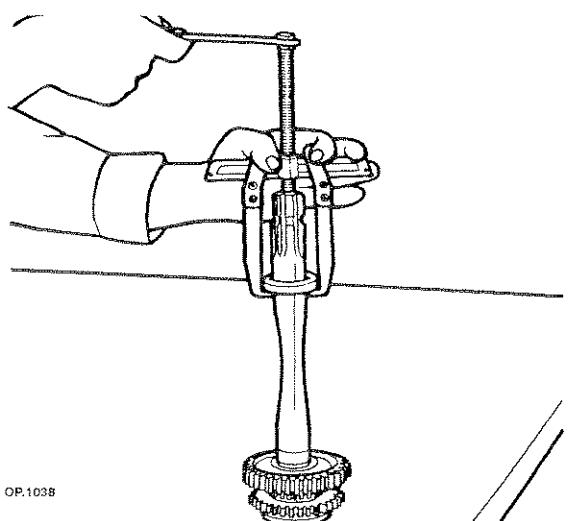


22 - Togliere la spina elastica e sfilare l'albero di selezione PTO.



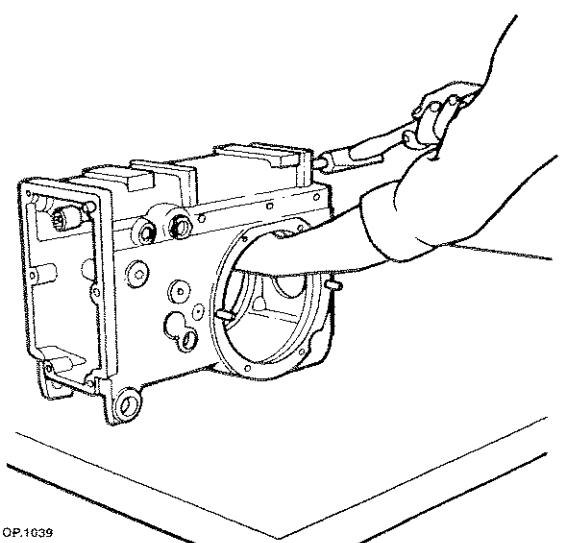
OP.1037

23 - Posizionare l'attrezzo AT 37981302 di contenimento ingranaggi PTO e con un mazzuolo agire sull'albero PTO sfilandolo.



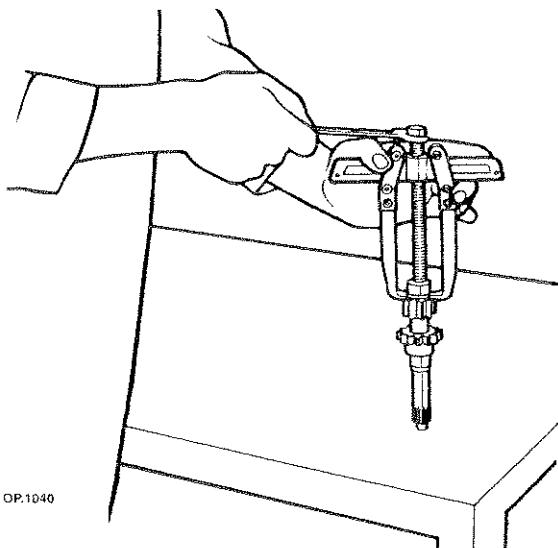
OP.1038

24 - Estrarre il cuscinetto albero PTO utilizzando l'estrattore universale AT 37981257.



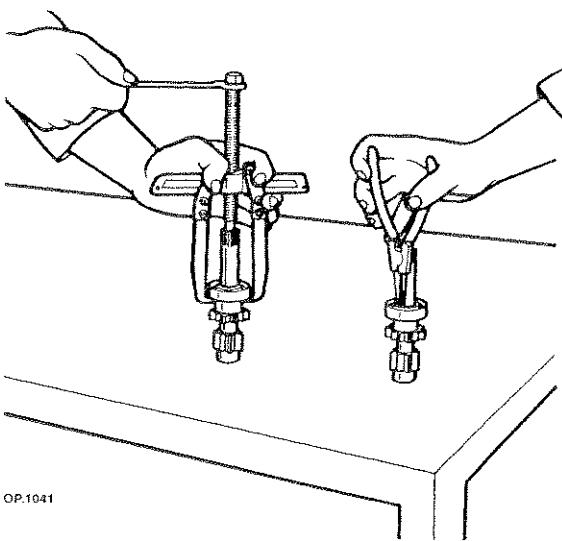
OP.1039

25 - Svitare e togliere il tappo carico olio cambio e con un perno togliere l'albero primario PTO.



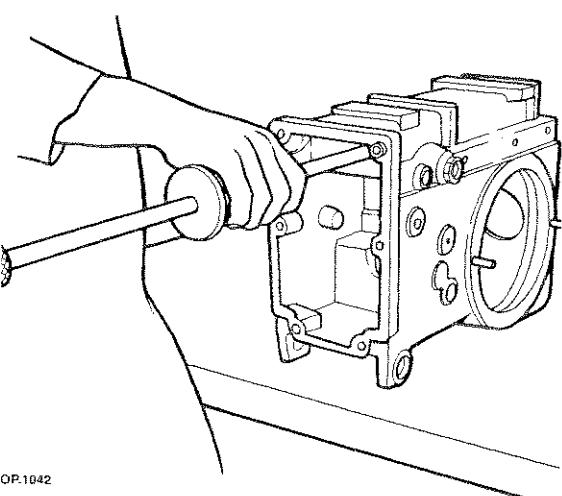
OP.1040

26 - Utilizzando l'estrattore AT 37981257 togliere la sede del cuscinetto.



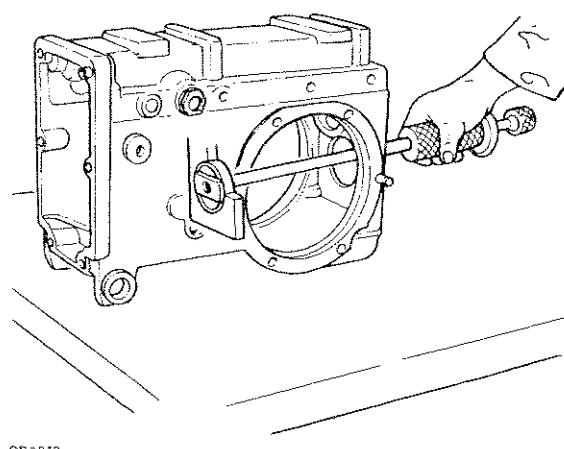
OP.1041

27 - Togliere l'anello di contenimento ed estrarre il cuscinetto con l'estrattore AT 37981257.



OP.1042

28 - Con l'estrattore a massa battente AT 27981047 e adattatore AT 37981297 togliere la sede del cuscinetto.



OP.1043

29 - Con l'estrattore a massa battente AT 27981047 e adattatore AT 37981296 togliere la sede del cuscinetto pignone.



ATTENZIONE - PERICOLO



Eseguire le operazioni osservando scrupolosamente le misure di prevenzione.

- Le operazioni che richiedono particolare attenzione possono causare pericolo all'operatore se non sono eseguite correttamente.

Avvertenze: spine elastiche

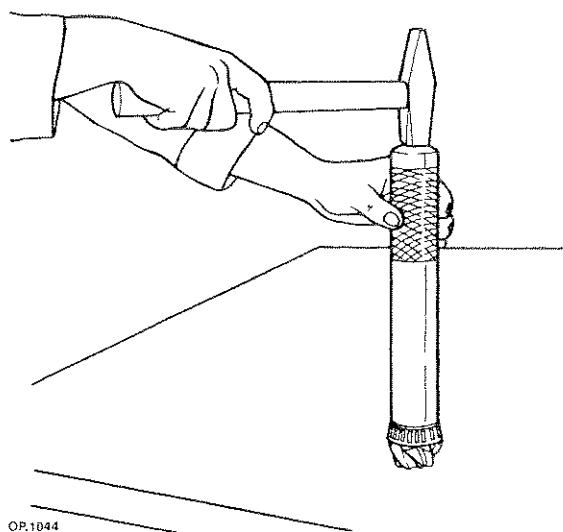
Al montaggio delle spine elastiche a tubo spaccato assicurarsi che l'intaglio delle stesse sia orientato nel senso dello sforzo, sollecitante la spina.

Le spine elastiche a spirale invece non necessitano di alcun orientamento di montaggio.

MONTAGGIO

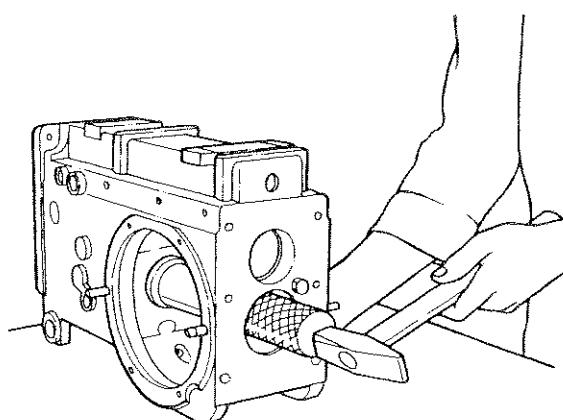
Procedere al montaggio considerando le seguenti avvertenze:

- a - procedere nell'ordine inverso allo smontaggio invertendo le precedenti operazioni;
- b - attenersi alle illustrazioni di pag. 72 per l'orientamento dei vari particolari;
- c - attenersi alle coppie di serraggio elencate a pag. 4;
- d - oliare e ingrassare O.ring e guarnizioni di tenuta;
- e - pulire e sgrassare accuratamente le superfici da accoppiare e applicare un cordone di mastice di tenuta del diametro di circa 3 mm seguendo il tracciato indicato in figura;
- f - considerare le seguenti operazioni:



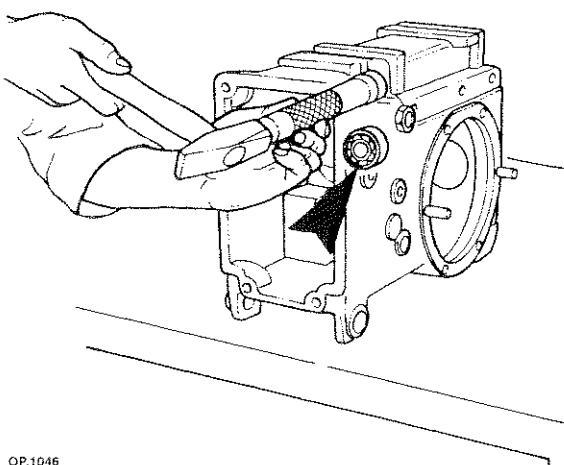
OP.1044

- 1 - montare il cuscinetto sull'albero del pignone con il tampone AT 37981145.



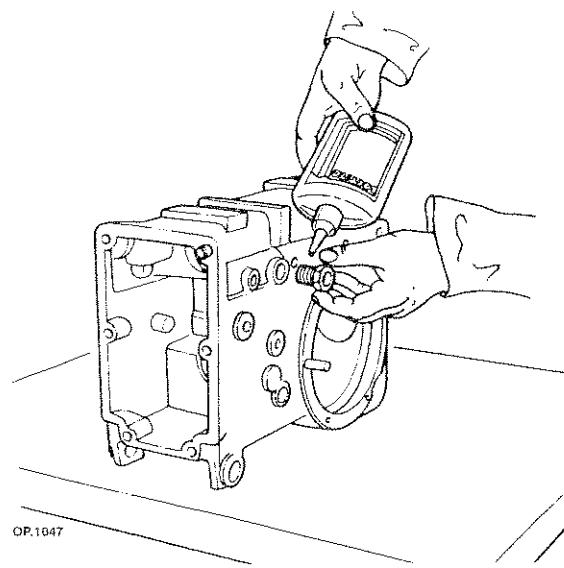
OP.1045

- 2 - Montare la sede cuscinetto e relativo spessore utilizzando il tampone AT 37981095.



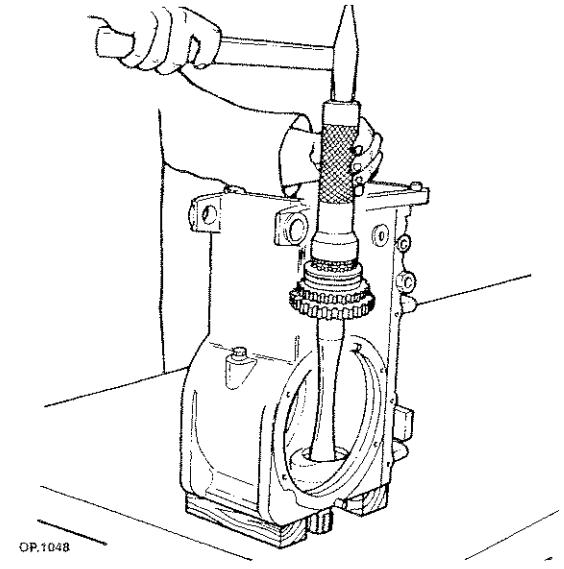
OP.1046

3 - Montare i cuscinetti degli alberi PTO con il tampone AT 37981276.

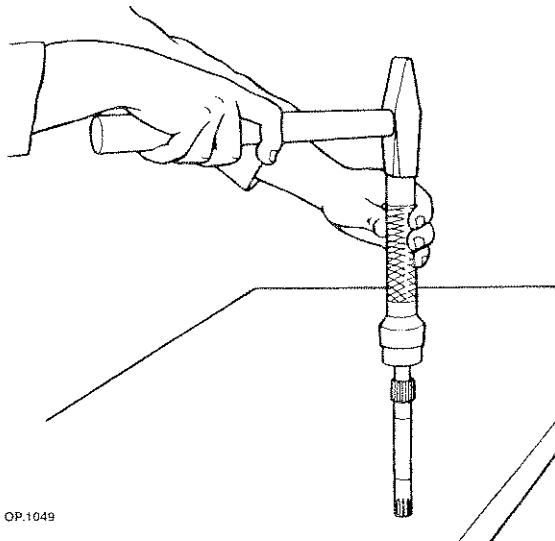


OP.1047

4 - Avvitare la boccola di innesto PTO con loctite 242 (ferma filetti medio).

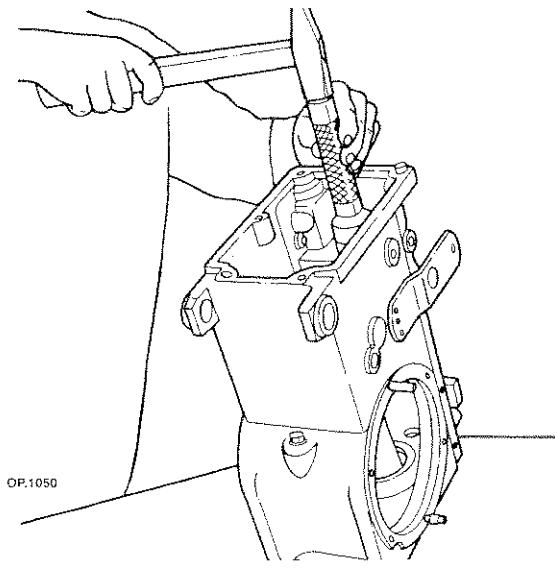


5 - Montare l'albero della PTO utilizzando il tampone AT 37981014.



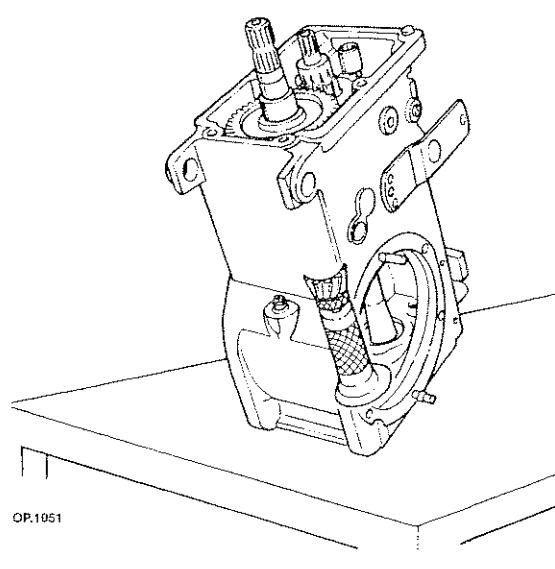
OP.1049

6 - Montare il cuscinetto sull'albero primario utilizzando il tampone AT 37981276.



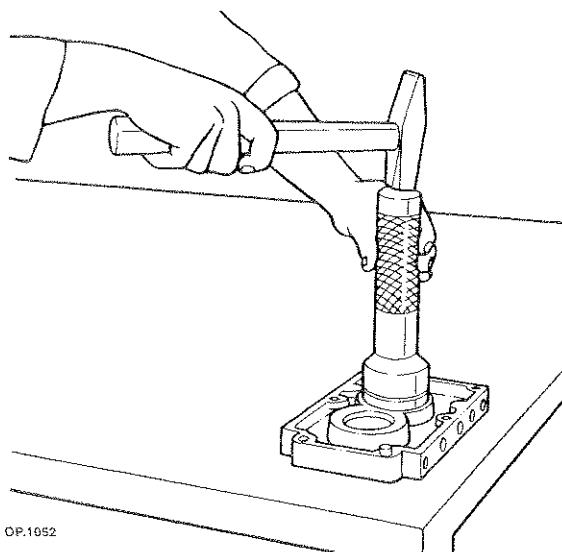
OP.1050

7 - Montare albero primario e cuscinetto utilizzando il tampone AT 37981276.



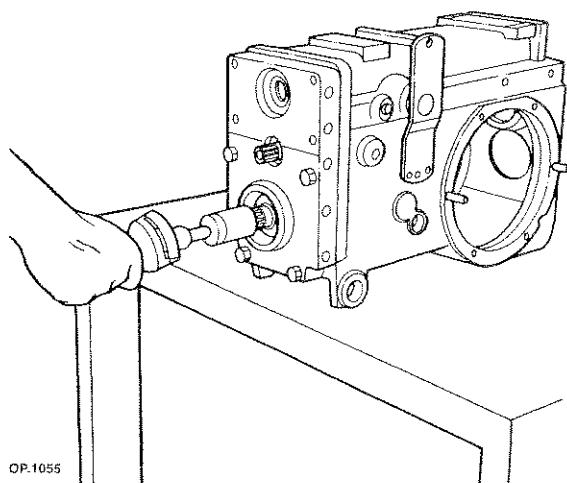
OP.1051

8 - Infilare il pignone posizionandolo con l'attrezzo AT 27981109.



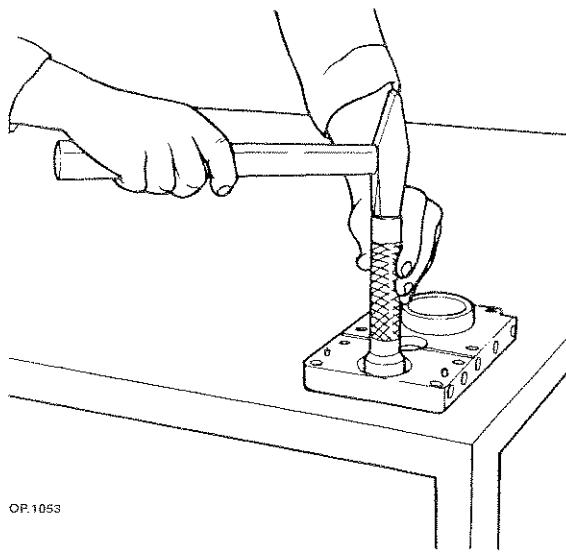
OP.1052

9 - Montare il cuscinetto sul coperchio cambio utilizzando il tampone AT 37981012.



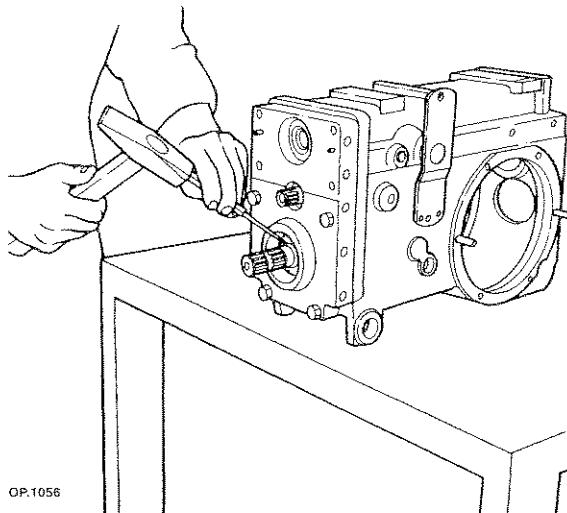
OP.1055

12 - Verificare la coppia di rotolamento pignone e fissare la ghiera vedi pag. 85 pre-carico cuscinetti pignone conico.



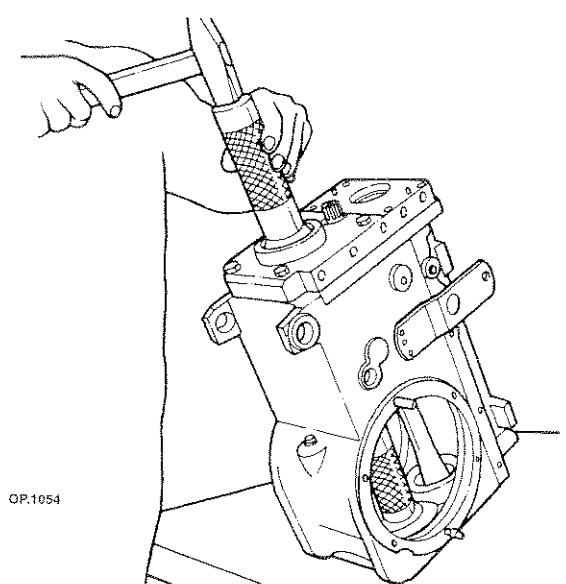
OP.1053

10 - Montare la guarnizione di tenuta utilizzando il tampone AT 37981279.



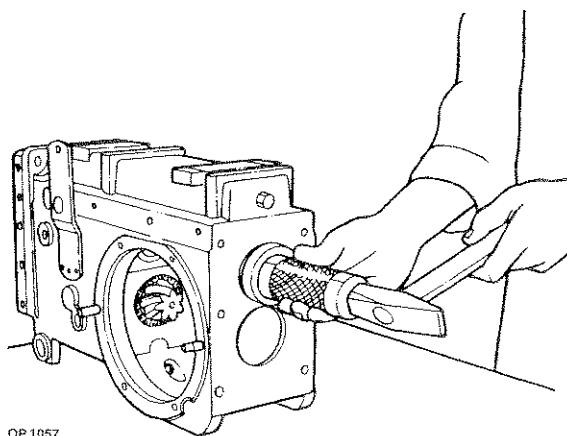
OP.1056

13 - Eseguire l'acciaccatura sulla ghiera.



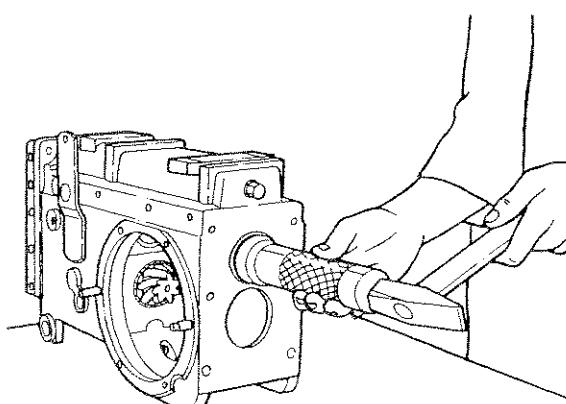
OP.1054

11 - Montare cuscinetto e boccola pignone utilizzando il tampone AT 37981014.



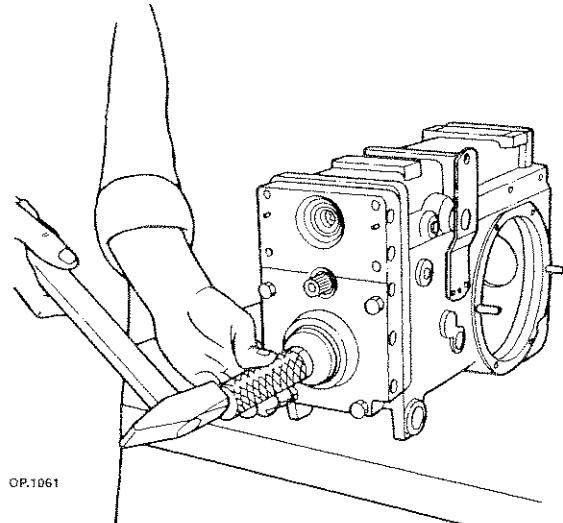
OP.1057

14 - Montare il cuscinetto posteriore PTO utilizzando il tampone AT 37981014.



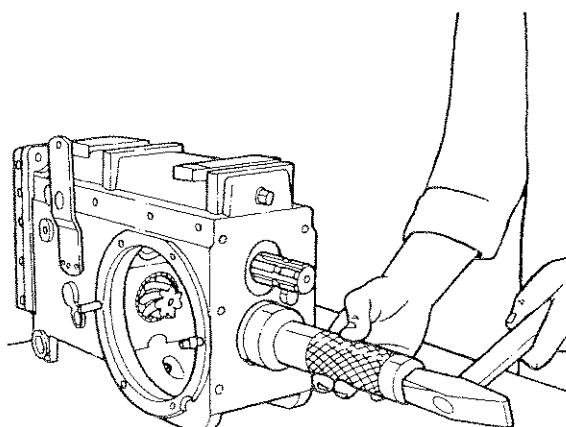
OP.1058

15 - Montare la guarnizione di tenuta utilizzando il tampone AT 37981292 e adattatore AT 37981291.



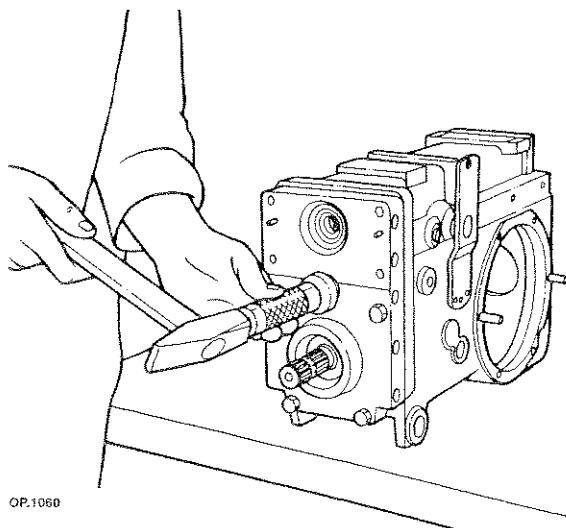
OP.1061

18 - Montare la guarnizione di tenuta pignone con il tampone AT 37981289 e adattatore AT 37981288.



OP.1059

16 - Montare il tappo di lavorazione utilizzando il tampone AT 37981012.



OP.1060

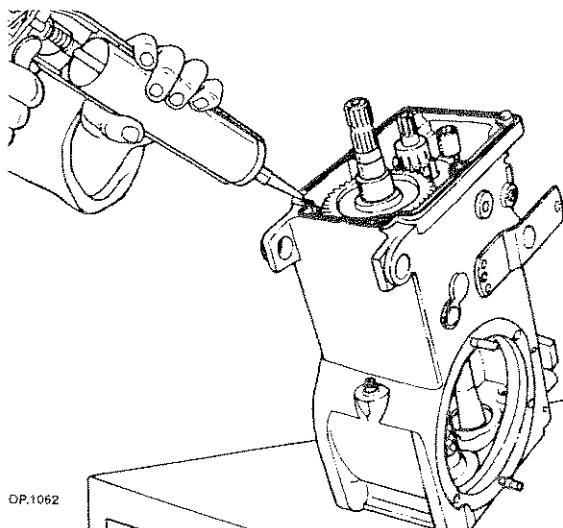
17 - Montare la guarnizione di tenuta albero primario con il tampone AT 37981090 e adattatore AT 37981020.

ATTENZIONE - PERICOLO

Eseguire le operazioni osservando scrupolosamente le misure di prevenzione.

- Non usare benzina, gasolio o altri liquidi infiammabili per sgrassare o lavare particolari, ma usare solventi commerciali e atossici.
- Non disperdere nell'ambiente i fluidi esausti, le cartucce dei filtri usate, olii, grassi lubrificanti ed elementi usati per la pulizia degli stessi.

Afidarsi esclusivamente ai centri di raccolta olii esausti regolarmente autorizzati.
Evitare di inquinare l'ambiente.



- Schema di applicazione mastice.



GRUPPO DIFFERENZIALE

Registrazione della coppia conica

A - Calcolo dello spessore dell'anello di appoggio del cuscinetto pignone conico.

Il valore di detto spessore viene determinato mediante la misurazione dell'altezza Testa pignone sull'attrezzo AT 37981283; infilare il pignone sull'attrezzo AT 37981283 con i propri cuscinetti, serrare leggermente la ghiera in modo da creare un momento volvente (200 Ncm).

Con un comparatore ad orologio la cui astina

Il valore ricavato dovrà essere sommato o sottratto al valore centesimale scritto con penna elettrica sulla testa del pignone.

Se (A) è il valore indicato dal comparatore e (B) quello impresso dal costruttore sul pignone, lo spessore (S) dell'anello di appoggio da montare è dato dalla seguente formula:

$$S = A-(+B) = A-B$$

/

$$S = A-(\pm B) =$$

\

$$S = A-(-B) = A+B$$

Esempio:

$A = 1,70$ (valore letto sul comparatore)
 $B = 0,15$ (quota centesimale scritta sul pignone)

$$\text{spessori } S = A-(\pm B)$$

$$|$$

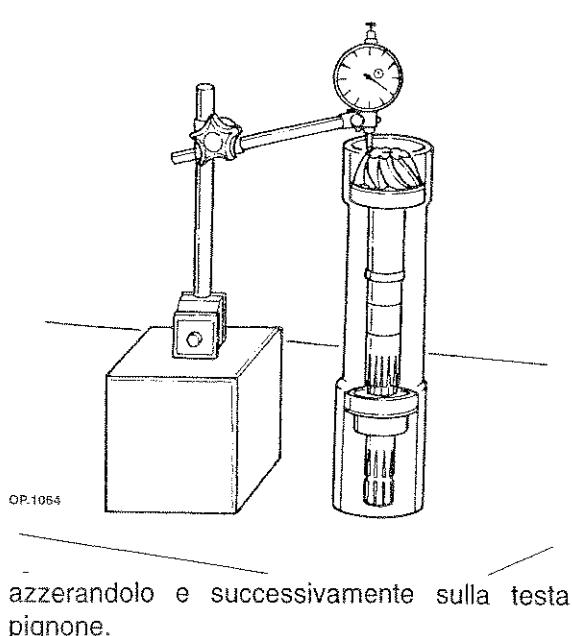
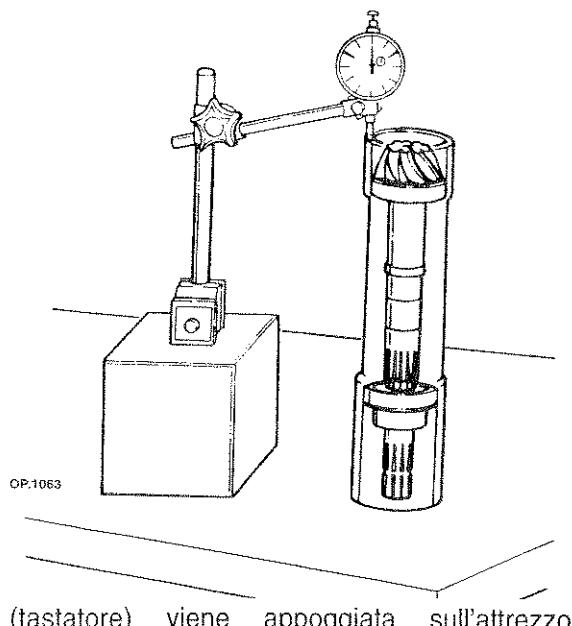
$$= 1,70-(-0,15)$$

$$|$$

$$= 1,70+0,15$$

$$|$$

$$= 1,85$$



In questo caso si deve montare un anello dello spessore pari a mm 1,85 (sotto il cuscinetto del pignone).

Se necessario arrotondare il valore per eccesso entro 0,05 mm.

Quindi lo spessore da montare è di 1,9 mm.

Nota

L'anello di appoggio del cuscinetto a rulli sul pignone viene fornito di ricambio:
mm 1,7-1,8-1,9-2-2,1-2,2-2,3.



B - Precarico cuscinetto pignone.

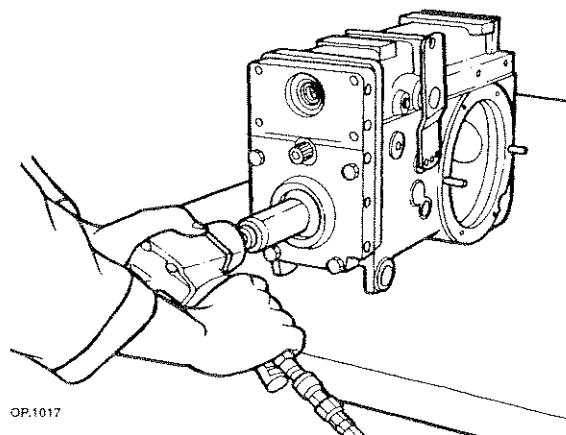
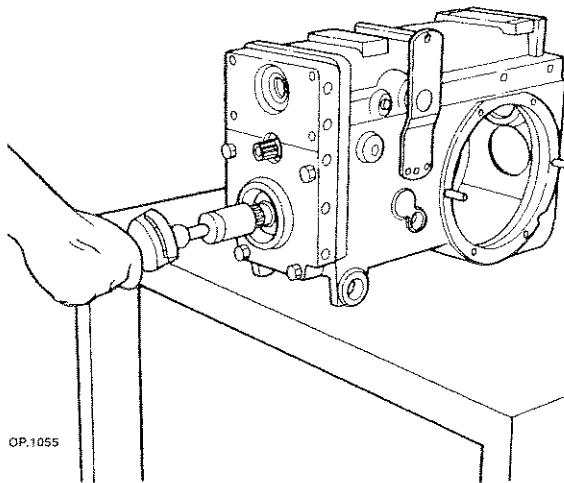
Per effettuare l'operazione di precarico dei cuscinetti a rulli conici del pignone procedere come segue:

1 - avvitare la ghiera sul pignone con una coppia di serraggio 8-10 Kgm (78-98 Nm).

2 - Ruotare il pignone di alcuni giri in modo da assestarsi i cuscinetti nelle proprie sedi.

3 - Allentare la ghiera.

4 - Rilevare la coppia di rotolamento (R) necessaria a far ruotare il pignone con tutti i suoi ruotismi.



5 - Avvitare la ghiera con l'attrezzo AT 37981280 fino a raggiungere una resistenza di rotolamento del pignone $RT = (300 \text{ Ncm}) + R$ con torsiometro AT 37981196 e adattatore AT 37981281.

Esempio:

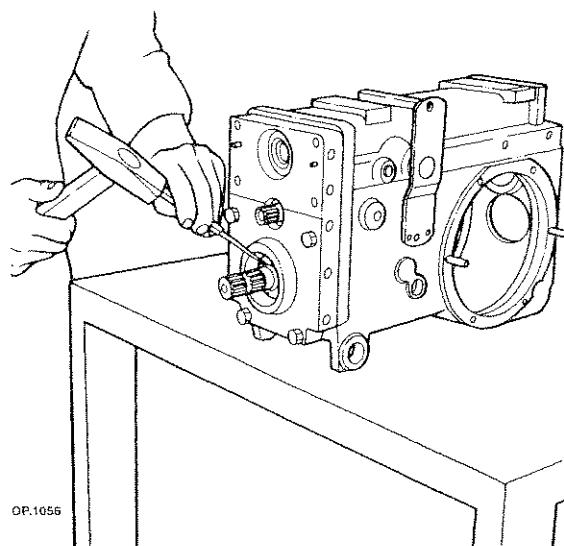
$R = 150 \text{ Ncm}$ valore letto sul torsiometro prima di fissare la ghiera

$300 \text{ Ncm} =$ valore teorico di precarico dei cuscinetti a rulli conici del pignone

$RT =$ resistenza di rotolamento del pignone montato sul cambio (completo)

$$\begin{aligned} RT &= 300 + R \\ &= 300 + 150 \\ &= 450 \text{ Ncm} \end{aligned}$$

In questo caso la ghiera dovrà essere fissata fino ad ottenere una resistenza al rotolamento del pignone di 450 Ncm (0,45 Kgm).



6 - Eseguire l'acciaccatura sulla ghiera.



ATTENZIONE - PERICOLO



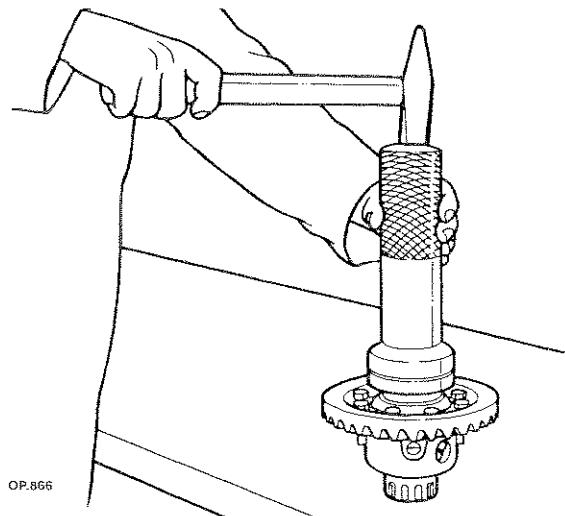
Eseguire le operazioni osservando scrupolosamente le misure di prevenzione.

- Far attenzione al cesoimento, allo schiacciamento e all'urto.
Si consiglia di usare indumenti antinfortunistici.

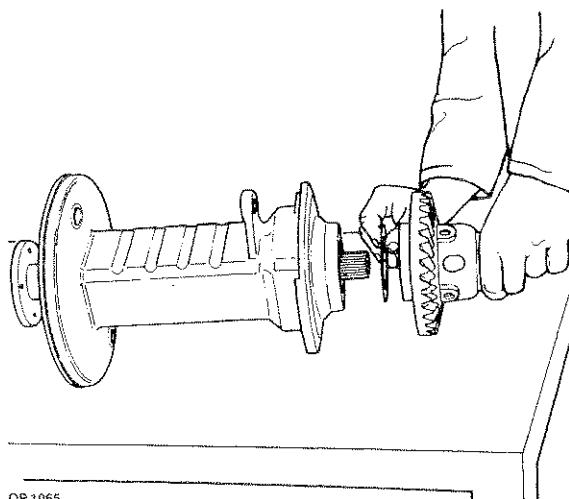


C - Registrazione gioco tra corona e pre-carico cuscinetti scatola differenziale.

Procedere come segue:



1 - Montare il cuscinetto sulla scatola differenziale utilizzando il tampone AT 37981093.



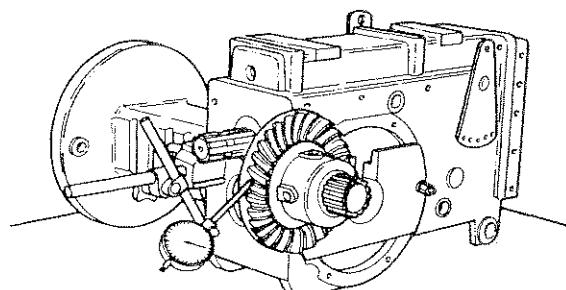
2 - Inserire tra il supporto differenziale e il gruppo uno spessore nominale (PS di 0,2 mm).

3 - Infilare il gruppo differenziale sul supporto servendosi di un adeguato martello (plastica-rame).

4 - Montare il gruppo differenziale nella scatola trasmissione provvisoriamente senza mastice di tenuta, e fissarlo con alcune viti.

5 - Applicare dalla parte opposta della scatola trasmissione l'attrezzo AT 27981318 necessario per allineare il gruppo differenziale alla scatola e precaricare leggermente il cuscinetto differenziale.

6 - Applicare un comparatore centesimale con base magnetica sulla scatola trasmissione e con l'astina il più perpendicolaramente possibile e all'esterno di un dente della corona. Verificare il gioco tra pignone e corona.



OP.1066

7 - Eseguire l'operazione di verifica gioco sfalsandola di 120° e confrontare la media dei tre valori con il gioco normale prescritto (0,15/0,23).

8 - Qualora il valore del gioco rilevato sia superiore o inferiore a quello prescritto, è necessario aumentare o diminuire il valore dello spessore nominale (PS 0,2 mm).

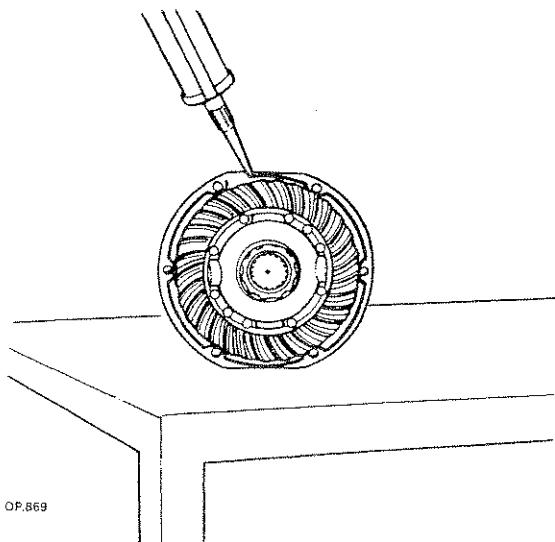
Nota

Aggiungendo uno spessore (PS) di 0,1 mm il gioco fra i denti della coppia conica diminuisce di 0,07 mm, mentre togliendo uno spessore di 0,1 mm il gioco aumenta di 0,07 mm. Lo spessore PS viene fornito a ricambi da 0,1-0,2-0,3-0,5 mm.

9 - Togliere il supporto differenziale e montare lo spessore calcolato.



10 - Montare il supporto-gruppo differenziale alla scatola trasmissione dopo aver pulito e grassato le superfici da accoppiare ed aver applicato un cordone di mastice di tenuta del diametro di circa 3 mm seguendo il tracciato indicato.



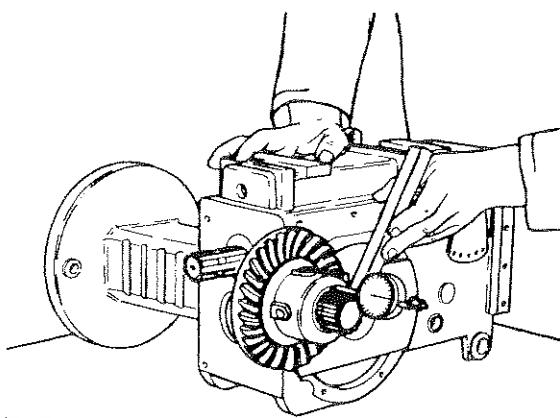
- Schema di applicazione mastice.

11 - Attenersi alle coppie di serraggio elencate a pag. 4.

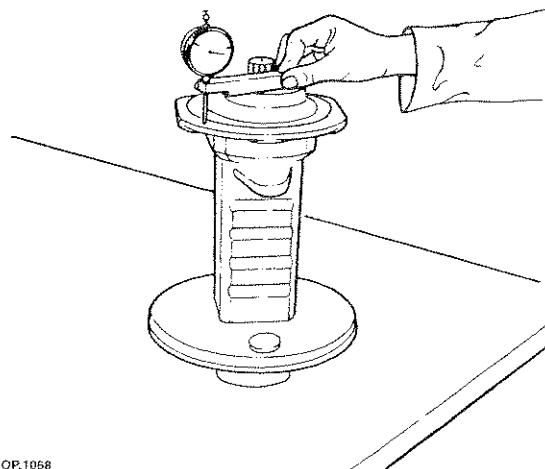
12 - Ricontrollare il gioco tra corona e pignone con il gioco normale prescritto di 0,15/0,23 mm.

- Precarico cuscinetti scatola differenziale.

13 - Posizionare il comparatore centesimale con il supporto AT 27981215 sulla superficie di unione tra il supporto e la scatola in modo che il tastatore risulti a contatto con la sede del cuscinetto sulla scatola differenziale ed azzerare il comparatore.



Successivamente posizionarlo sul cuscinetto del supporto scatola differenziale in modo che il tastatore risulti a contatto con la superficie di unione della scatola.



OP.1068

14 - Eseguire l'operazione sfalsandola di 120° e la media dei tre valori Gm sommata a un precarico di 0,1 mm dà lo spessore S da montare tra la scatola differenziale e il cuscinetto del supporto differenziale.
Se necessario arrotondare per eccesso entro 0,05 mm.

Esempio

$Gm = 0,25 \text{ mm}$ media dei valori letti sul comparatore

$0,1 \text{ mm} =$ maggiorazione per incrementare il precarico dei cuscinetti

$$\begin{aligned} \text{Spessore } S &= Gm + 0,1 \\ &= 0,25+0,1 \\ &= 0,35 \end{aligned}$$

arrotondare sempre per eccesso 0,05 mm.

In questo caso si devono montare due spessori di 0,2 mm = 0,4 mm.



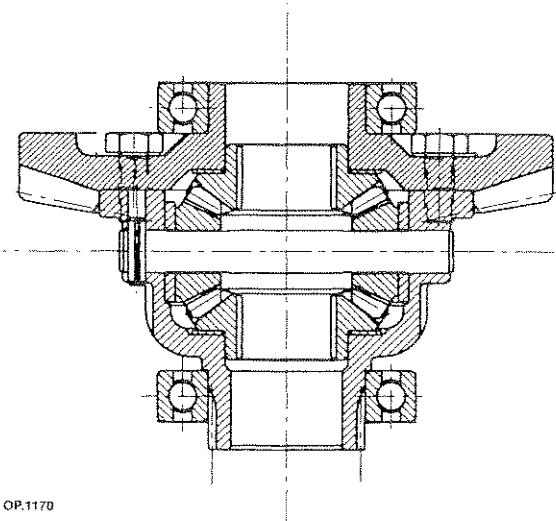
ATTENZIONE - PERICOLO



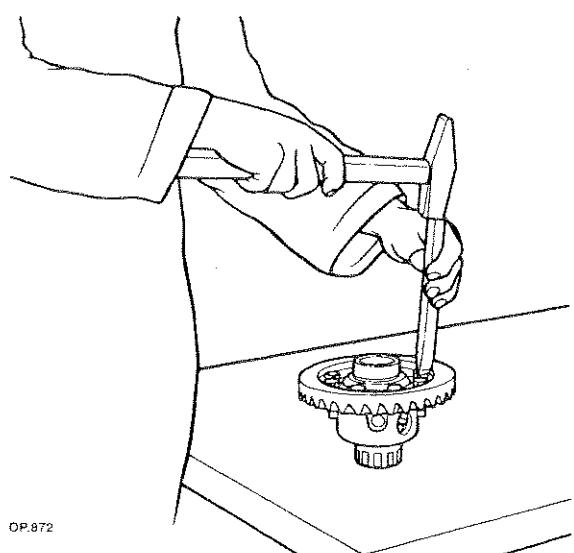
Eseguire le operazioni osservando scrupolosamente le misure di prevenzione.

**DIFFERENZIALE****Smontaggio - Montaggio**

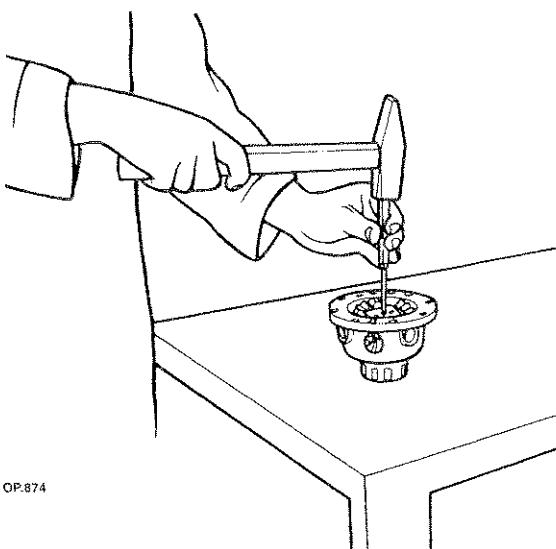
Con gruppo staccato dalla scatola trasmissione procedere come segue:



OP.1170

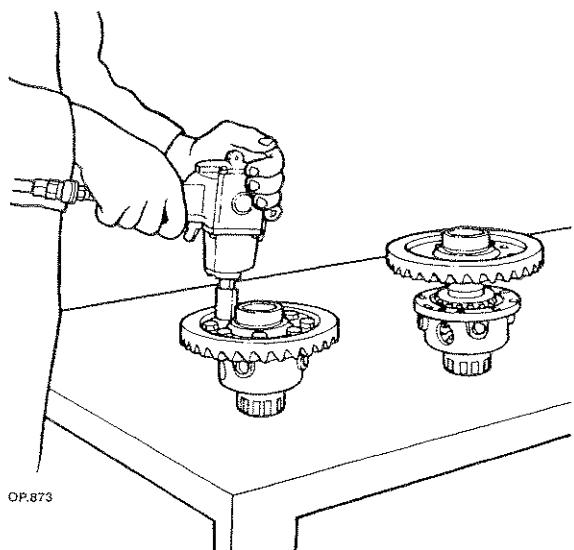


1 - raddrizzare le piastrine ferma viti.

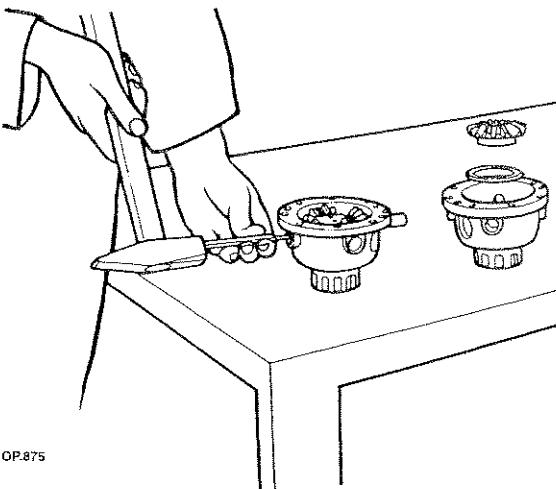


OP.874

3 - Togliere le spine elastiche.

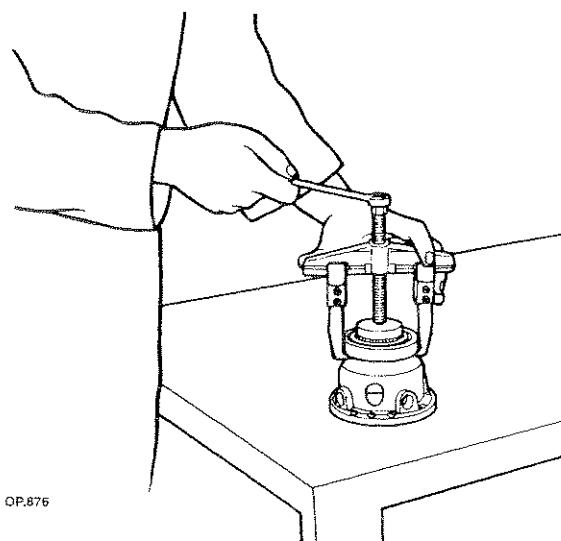


2 - Svitare le viti e staccare la corona conica dalla scatola differenziale.



OP.875

4 - Togliere i perni recuperando i satelliti, ralle di rasamento e planetari.



5 - Togliere il cuscinetto utilizzando l'estrattore universale AT 37981247 e adattatore AT 37981214.



ATTENZIONE - PERICOLO



Eseguire le operazioni osservando scrupolosamente le misure di prevenzione.

- Per lo smaltimento di oli attenersi alle norme antinquinamento.

Evitare di inquinare l'ambiente.

MONTAGGIO

Procedere al montaggio di tutti i particolari del gruppo differenziale considerando le seguenti avvertenze:

a - procedere invertendo le operazioni dello smontaggio;

b - attenersi alle illustrazioni per l'orientamento dei vari componenti;

c - serrare le viti con una coppia di 8,5 Kgm (83 Nm);

d - verificare il gioco assiale dei planetari.

Avvertenze: spine elastiche

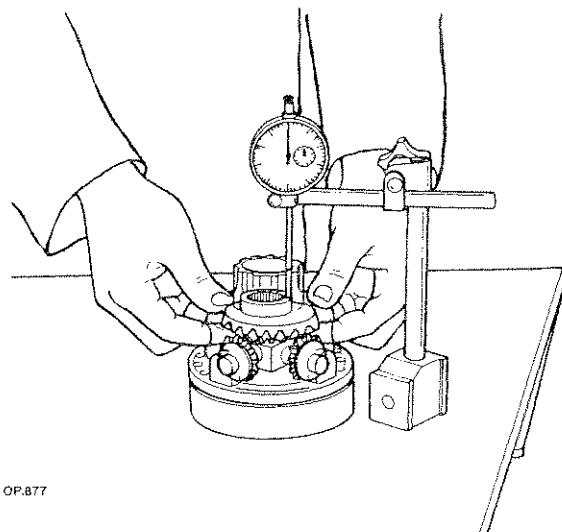
Al montaggio delle spine elastiche a tubo spaccato assicurarsi che l'intaglio delle stesse sia orientato nel senso dello sforzo, sollecitante la spina.

Le spine elastiche a spirale invece non necessitano di alcun orientamento di montaggio.

Verifica gioco assiale Planetari

Per verificare il gioco assiale dei planetari procedere come segue:

1 - posizionare il tastatore del comparatore centesimale sul planetario.



2 - Agire sul planetario portandolo completamente a contatto del satellite e successivamente springerlo a contatto della scatola differenziale rilevando sul comparatore centesimale un gioco assiale.

3 - Lo spostamento assiale previsto _di 0,15-0,30 mm.



ATTENZIONE - PERICOLO

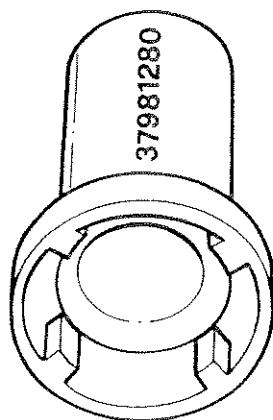


Eseguire le operazioni osservando scrupolosamente le misure di prevenzione.

- Usare indumenti antinfortunistici previsti, come guanti e scarpe di sicurezza.
- Non usare le mani per allineare delle forature ma adeguati attrezzi.

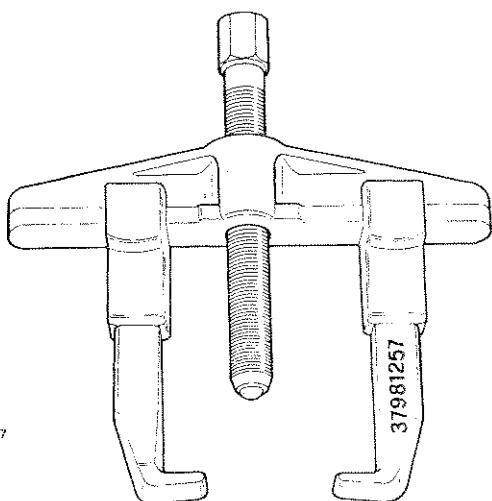


AT.212



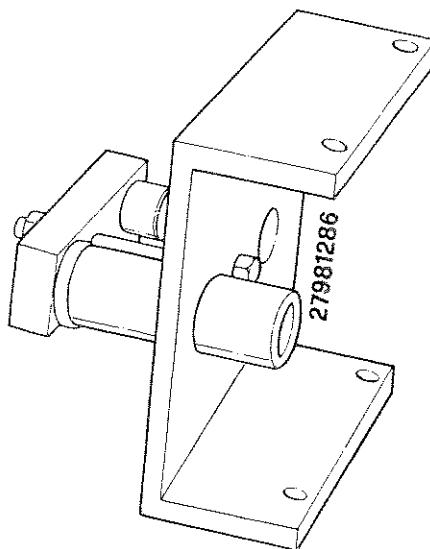
1 - Chiave per ghiera pignone.

AT.067



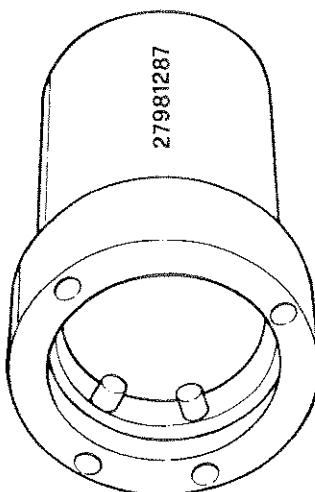
4 - Estrattore universale.

AT.213



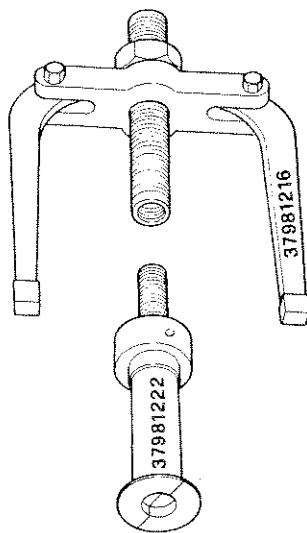
2 - Estrattore per coperchio cambio.

AT.214



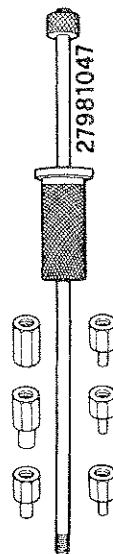
5 - Tampone per estrarre la sede del cuscinetto pignone.

AT.001

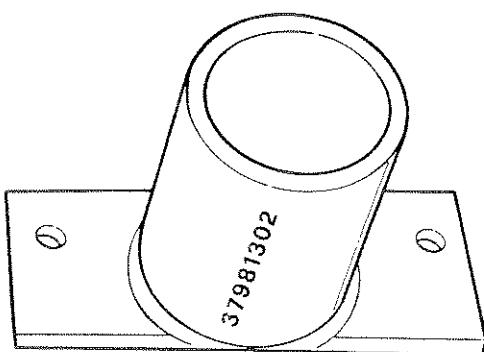


3 - Estrattore combinato AT 36981216 AT 37981222.

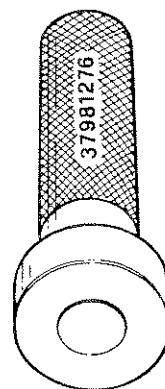
AT.004



6 - Estrattore a massa battente con adattatori.



AT.215



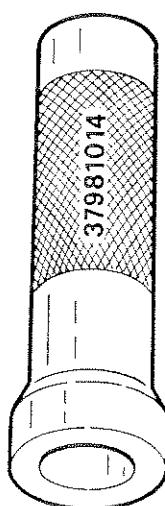
AT.193

7 - Fermo gruppo ingranaggi per estrarre l'albero della PTO.

10 - Tampone per il montaggio di cuscinetti.



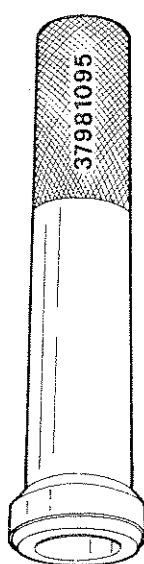
AT.015



AT.023

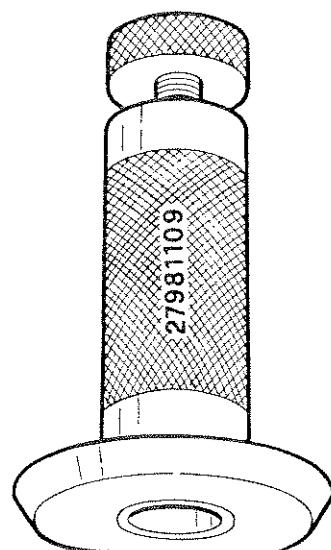
8 - Tampone per montaggio cuscinetto a rulli conici.

11 - Tampone per montaggio cuscinetti.



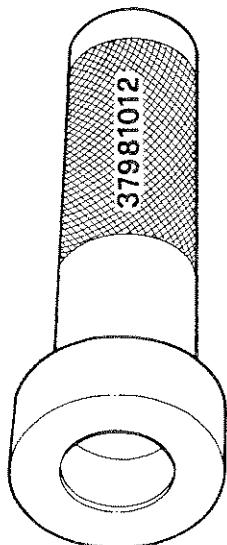
AT.017

9 - Tampone per montaggio sede cuscinetto a rulli conici.



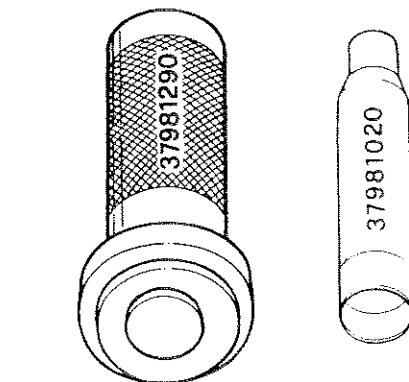
AT.018

12 - Fermo pignone differenziale.



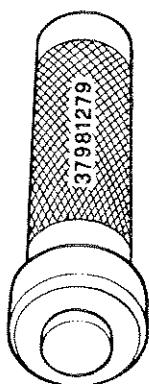
AT.037

13 - Tampone per montaggio cuscinetti.



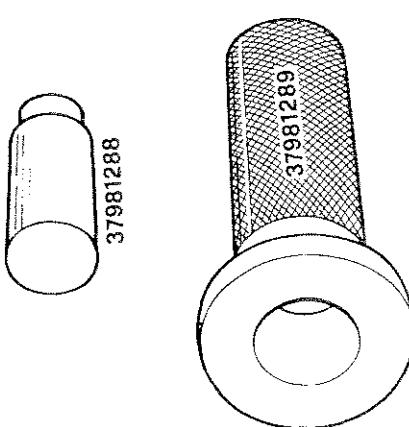
AT.219

16 - Tampone e adattatore per il montaggio di guarnizioni di tenuta.



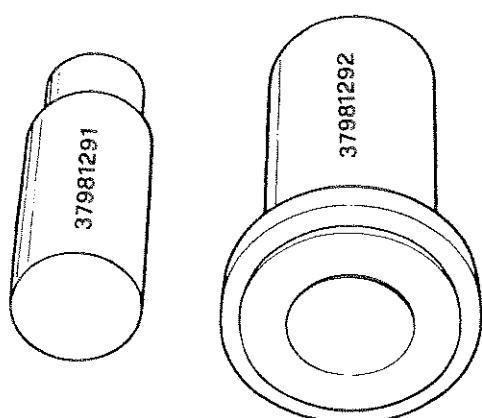
AT.192

14 - Tampone per il montaggio dell'anello di tenuta albero primario.



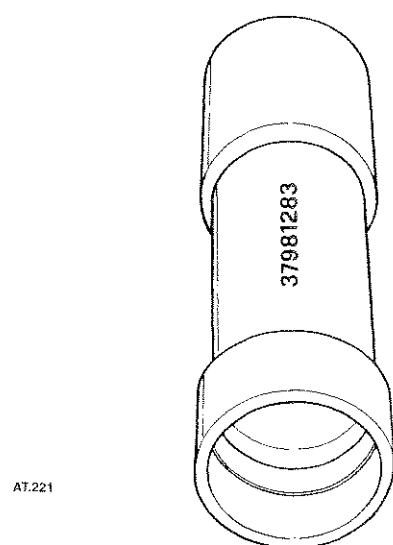
AT.220

17 - Tampone e adattatore per il montaggio di guarnizioni di tenuta.



AT.218

15 - Tampone e adattatore per montaggio di guarnizione tenuta.

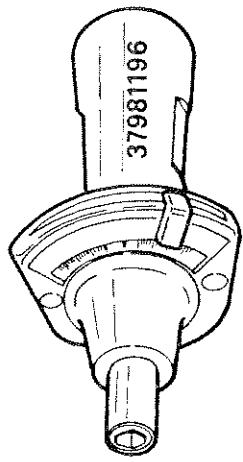


AT.221

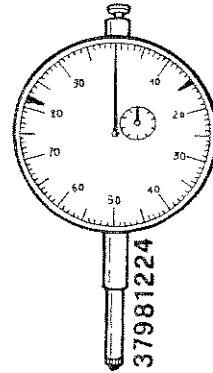
18 - Attrezzo per determinare lo spessore del cuscinetto pignone.



AT.020



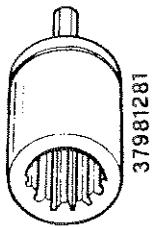
AT.026



19 - Torsiometro (misuratore di coppia) Ncm.

22 - Comparatore centesimale.

AT.201



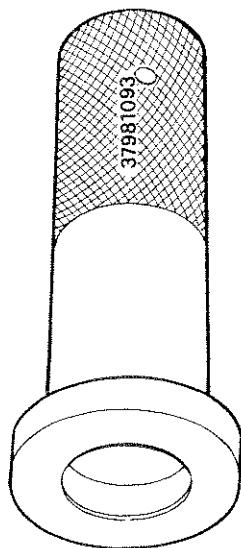
AT.027



20 - Chiave per il controllo della coppia di rotolamento pignone.

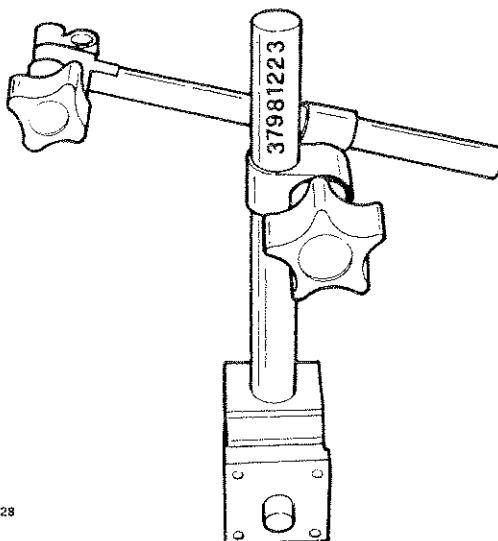
23 - Prolunga per comparatore centesimale.

AT.045

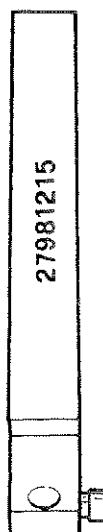


21 - Tampone per cuscinetti.

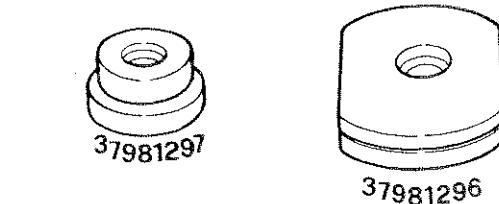
AT.028



24 - Supporto magnetico per comparatore centesimale.



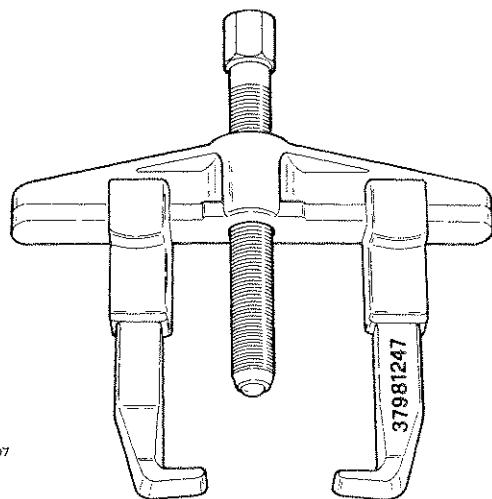
AT.031



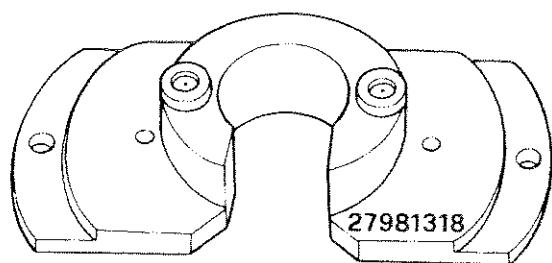
AT.223

25 - Supporto comparatore centesimale.

28 - Adattatori per estrattore a massa battente.



AT.007



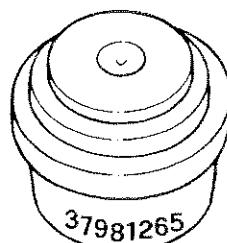
AT.204

26 - Estrattore universale.

29 - Attrezzo per allineare il gruppo differenziale.



AT.032



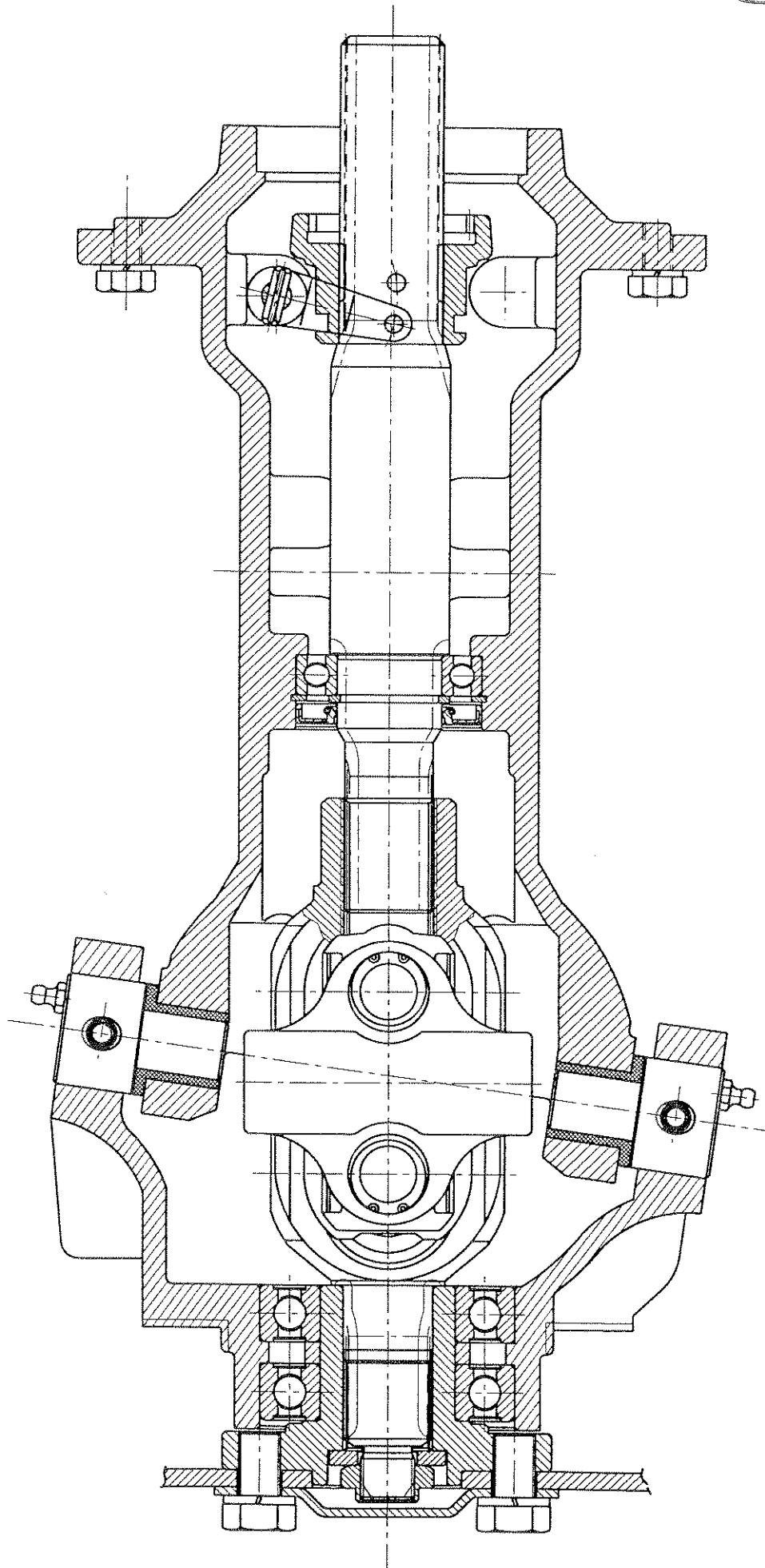
AT.094

27 - Adattatore per estrarre il cuscinetto sca-

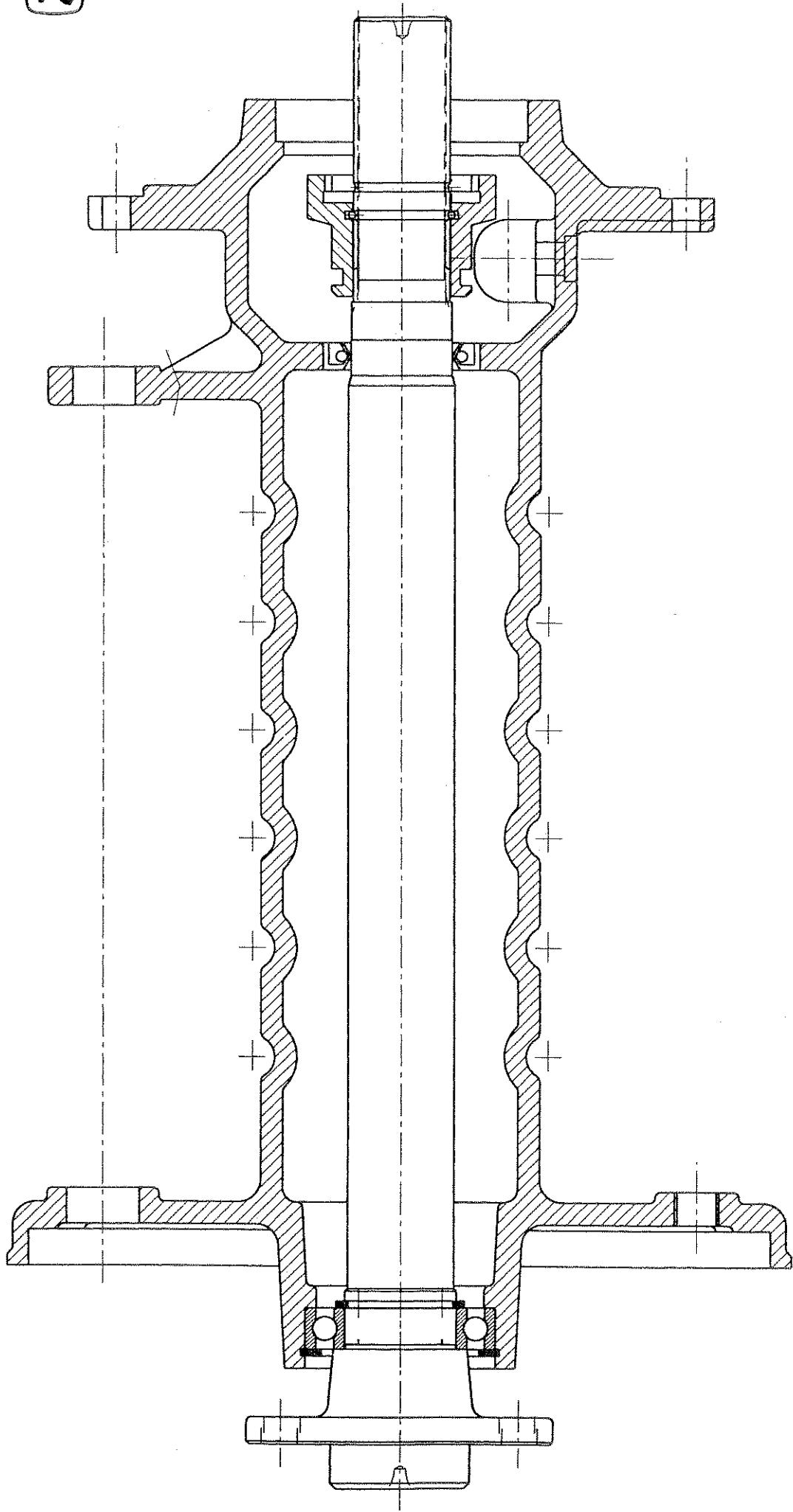
30 - Adattatore per estrattore universale.



COMPLESSIVO ASSALE ANTERIORE



COMPLESSIVO ASSALE POSTERIORE



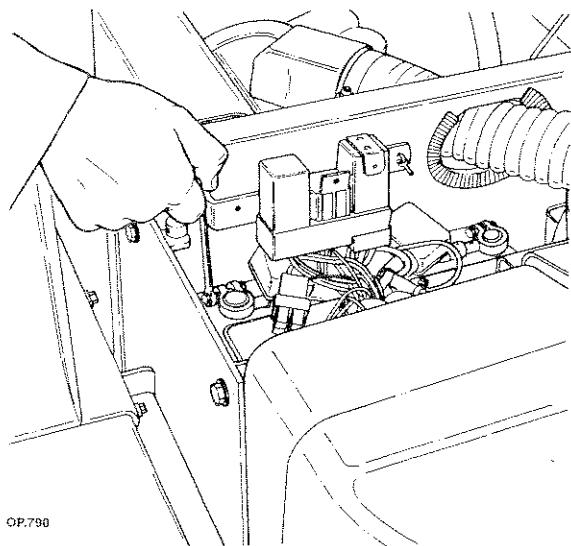


ASSALE ANTERIORE

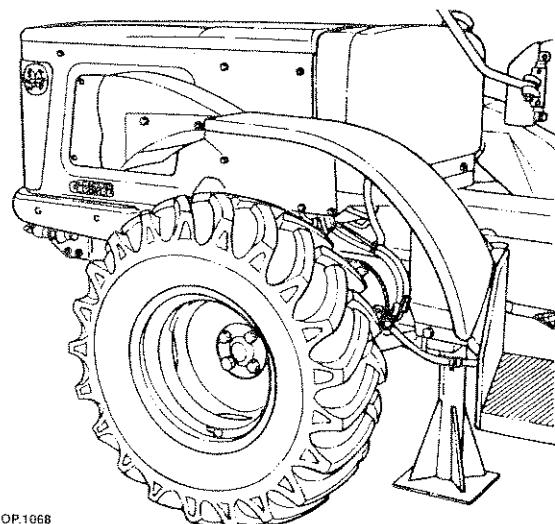
Istruzioni per lo stacco e riattacco

- Tigretrac

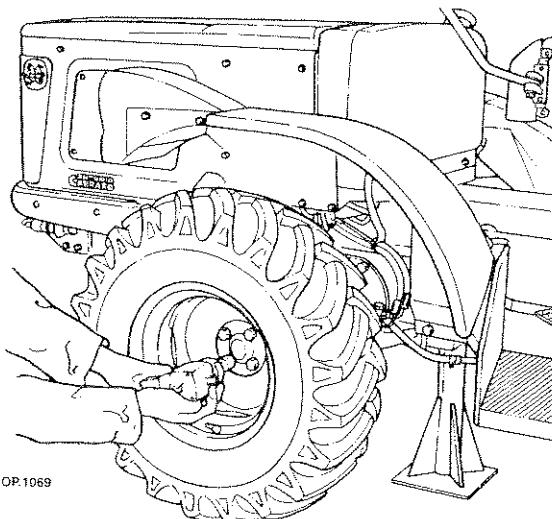
Per accedere al gruppo assale anteriore procedere come segue:



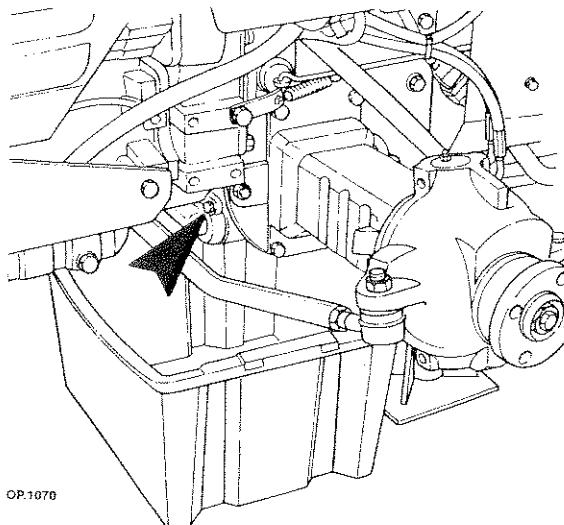
1 - staccare il cavo positivo della batteria ed isolarlo.



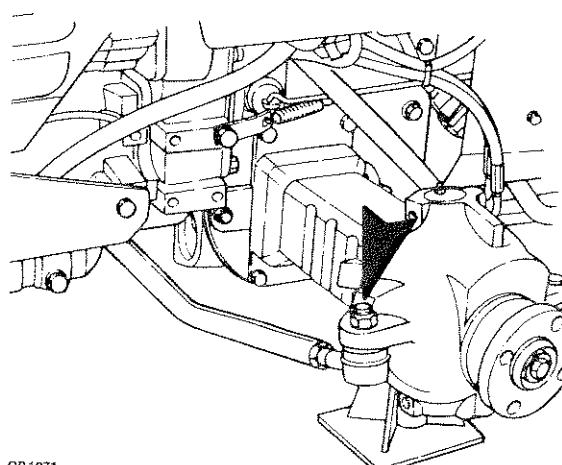
2 - Posizionare un cavalletto fisso sotto la trasmissione centrale lato anteriore.



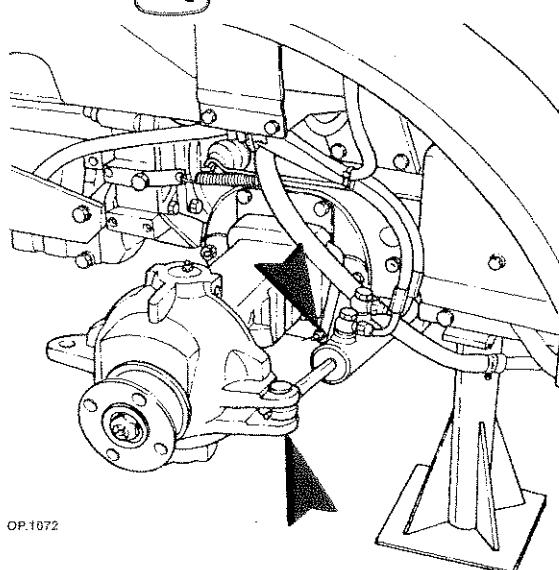
3 - Svitare le viti e togliere le ruote anteriori.



4 - Svitare le viti e togliere il coperchio filtro aspirazione olio idraulico scaricando l'olio in un apposito recipiente.

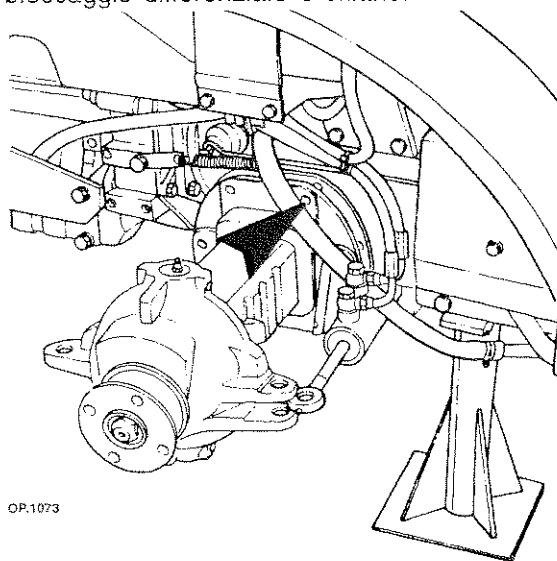


5 - Svitare i dadi di fissaggio testine barra di accoppiamento sterzo e toglierla.



6 - Togliere l'anello elastico e sfilare il perno cilindro dello sterzo utilizzando un puntone adeguato.

7 - Allentare il morsetto del filo comando bloccaggio differenziale e sfilarlo.



8 - Svitare le viti dell'assale con bloccaggio differenziale e sfilarlo dalla scatola trasmissione recuperando gli spessori di registro scatola differenziale.

9 - Svitare le viti dell'assale opposto al bloccaggio differenziale e sfilarlo recuperando scatola differenziale completa.



ATTENZIONE - PERICOLO



Eseguire le operazioni osservando scrupolosamente le misure di prevenzione.

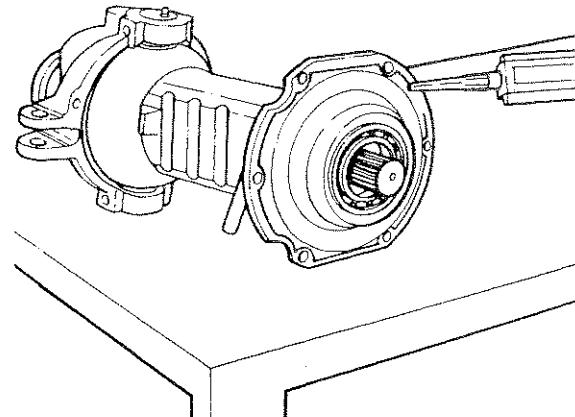
- Non usare benzina, gasolio o altri liquidi infiammabili per sgrassare o lavare particolari, ma usare solventi commerciali e atossici.

Riattacco

Procedere al riattacco considerando le seguenti avvertenze:

a - effettuare una accurata pulizia delle superfici da accoppiare;

b - applicare un cordone di mastice di tenuta del diametro di circa 3 mm seguendo il tracciato indicato nel disegno;



- Schema di applicazione mastice di tenuta.

c - attenersi alle coppie di serraggio elencate a pag. 4;

d - invertire le operazioni dello stacco;

e - lavare accuratamente il filtro dell'olio e curare la pulizia di tutte le parti dell'impianto che verranno a contatto con l'olio idraulico del circuito.



ATTENZIONE - PERICOLO



Eseguire le operazioni osservando scrupolosamente le misure di prevenzione.

- Per sollevare usare sempre mezzi di capacità adeguata.

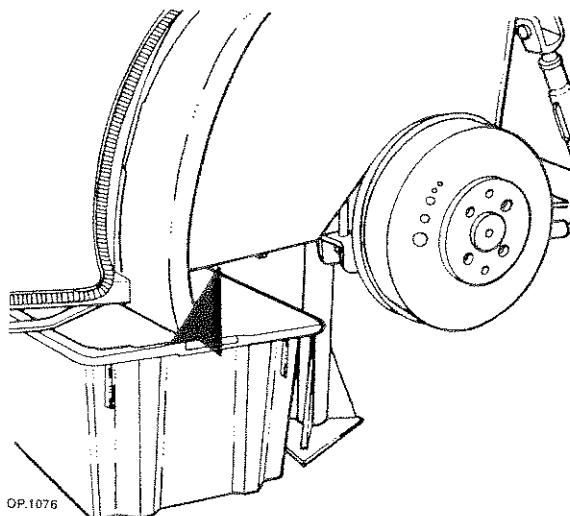


ASSALE ANTERIORE

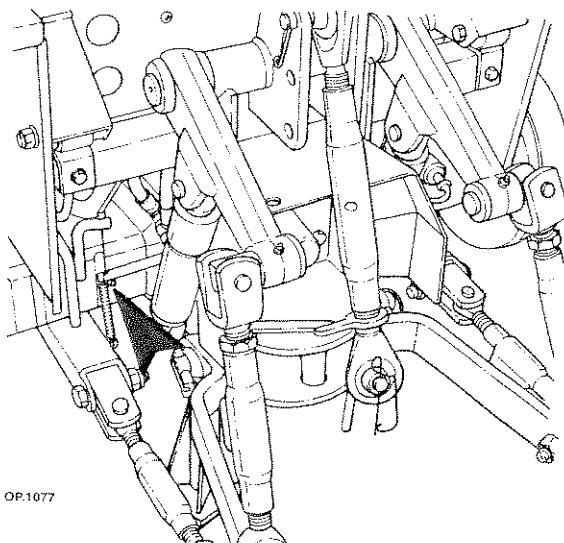
Istruzioni per lo stacco e riattacco

Superpark

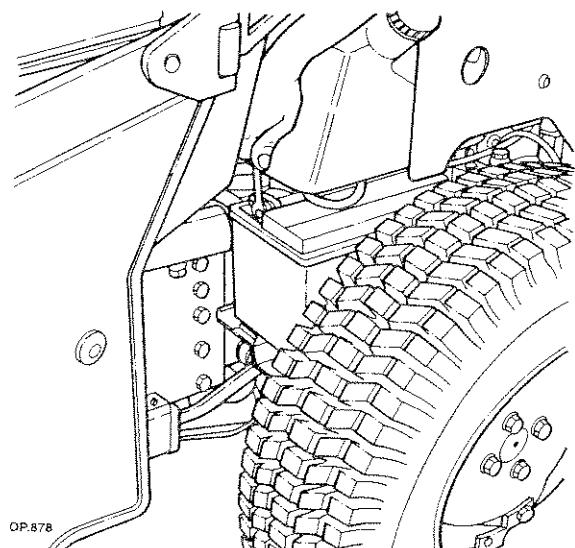
Per accedere al gruppo assale anteriore procedere come segue:



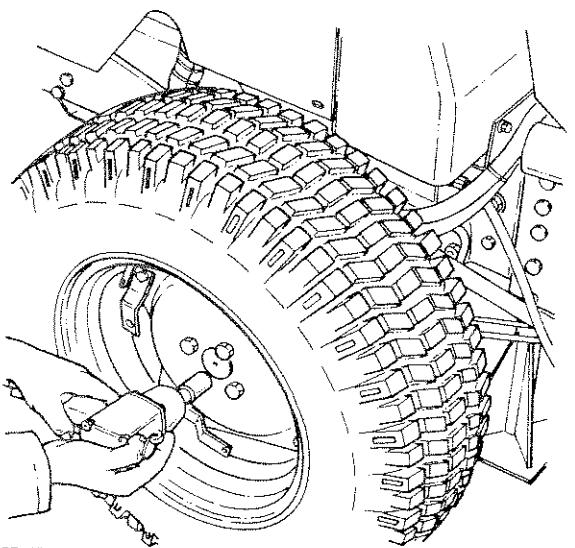
4 - Svitare il tappo scarico olio cambio recuperando l'olio in un apposito recipiente.



5 - Allentare i morsetti fili comando bloccaggio differenziale e disinnesto trazione.

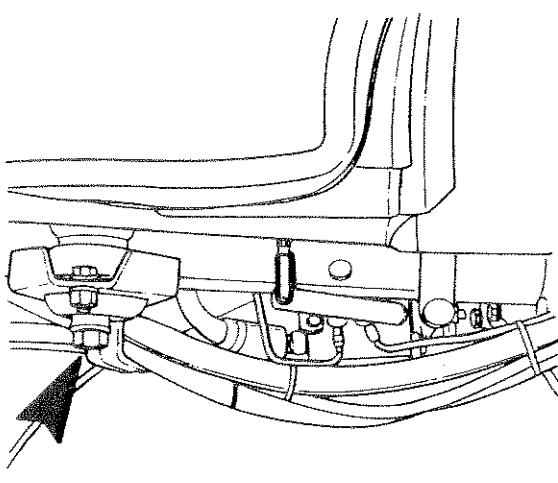


1 - staccare il cavo positivo della batteria ed isolarlo.



2 - Posizionare un cavalletto fisso sotto la trasmissione.

3 - Svitare le viti e togliere le ruote anteriori.



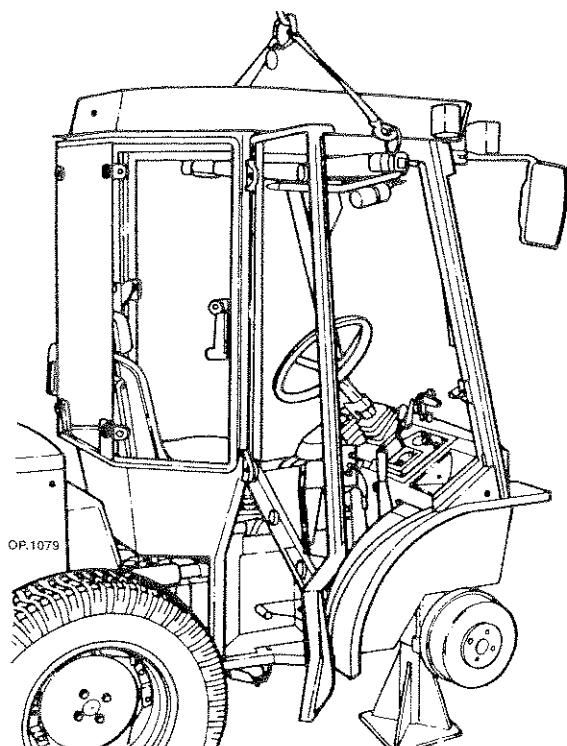
6 - Svitare le viti supporto cabina.

7 - Togliere il forcellino di comando speed-fix.

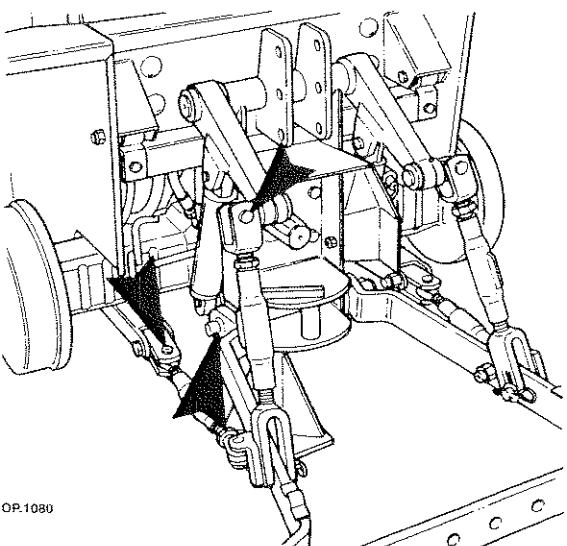
**ATTENZIONE - PERICOLO**

Eseguire le operazioni osservando scrupolosamente le misure di prevenzione.

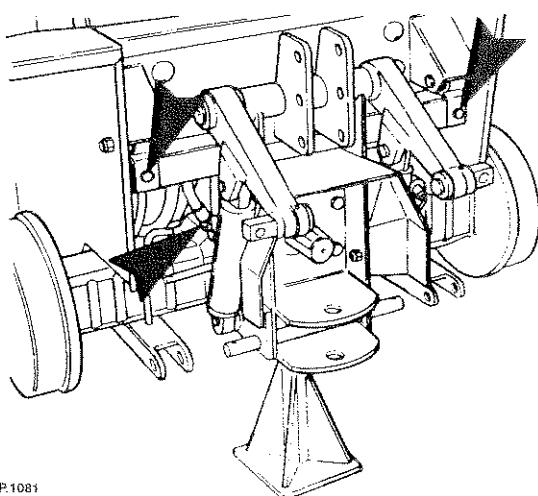
- Per sollevare usare sempre mezzi di capacità adeguata.
- Usare indumenti antinfortunistici previsti, come guanti e scarpe di sicurezza.



- 8** - Imbragare con una fune la cabina lato posteriore agganciandola ad un paranco e sollevarla quel tanto da interporre un distanziale (di legno) di circa 30 mm tra la cabina e il silentbloc.



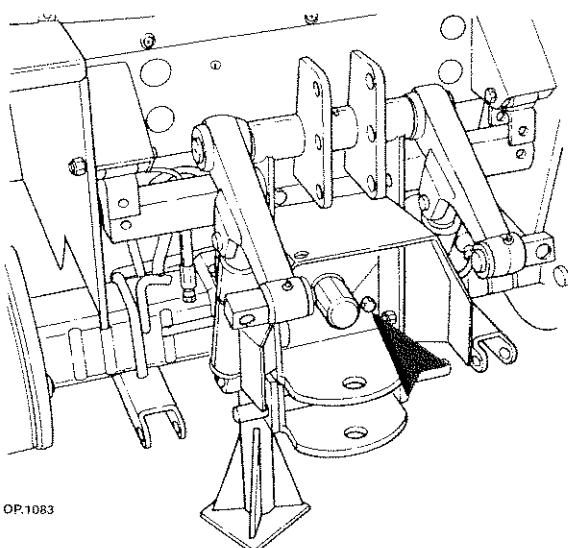
- 9** - Staccare tiranti e barre sollevamento.



OP.1081

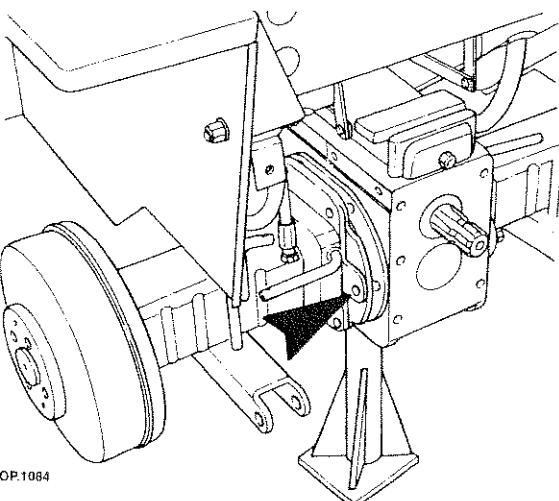
10 - Svitare i raccordi tubi mandata cilindri sollevamento e tapparli.

11 - Svitare le viti supporto cabina anteriore.



OP.1082

12 - Svitare le viti e togliere il coperchio-supporto sollevamento e cabina.



OP.1084

13 - Svitare le viti dell'assale con bloccaggio differenziale e sfilarlo dalla scatola trasmissione recuperando gli spessori di registro scatola differenziale.



14 - Svitare le viti dell'assale opposto al bloccaggio differenziale e sfilarlo recuperando scatola differenziale completa.



ATTENZIONE - PERICOLO



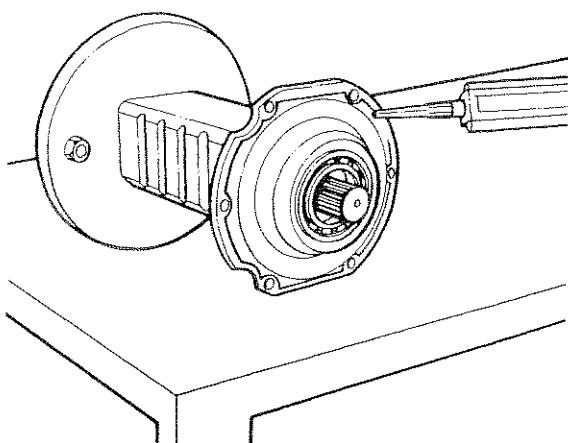
Eseguire le operazioni osservando scrupolosamente le misure di prevenzione.

- Non usare benzina, gasolio o altri liquidi infiammabili per sgrassare o lavare particolari, ma usare solventi commerciali e atossici.

Riattacco

Procedere al riattacco considerando le seguenti avvertenze:

- a - effettuare una accurata pulizia delle superfici da accoppiare;
- b - applicare un cordone di mastice di tenuta del diametro di circa 3 mm seguendo il tracciato indicato nel disegno;



OP.839

- applicazione mastice di tenuta

- c - attenersi alle coppie di serraggio elencate a pag. 4;

- d - invertire le operazioni dello stacco;

- e - sostituire la cartuccia filtro olio idrostatico e curare la pulizia di tutte le parti dell'impianto che verranno a contatto con l'olio idraulico del circuito.



ATTENZIONE - PERICOLO



Eseguire le operazioni osservando scrupolosamente le misure di prevenzione.

- Non disperdere nell'ambiente i fluidi esausti, le cartucce dei filtri usate, olii, grassi lubrificanti ed elementi usati per la pulizia degli stessi.

Affidarsi esclusivamente ai centri di raccolta oli esausti regolarmente autorizzati.

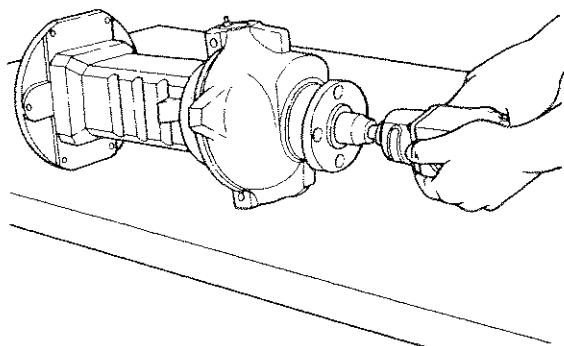
Evitare di inquinare l'ambiente.

Smontaggio - montaggio

Tigretrac

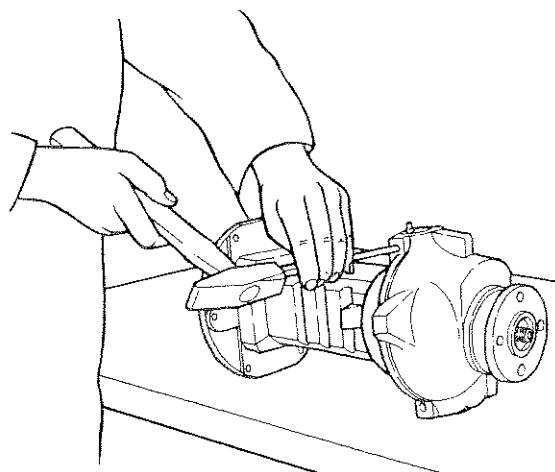
Per lo smontaggio dell'assale anteriore procedere come segue:

- 1 - adagiare il gruppo assale sopra ad un banco.



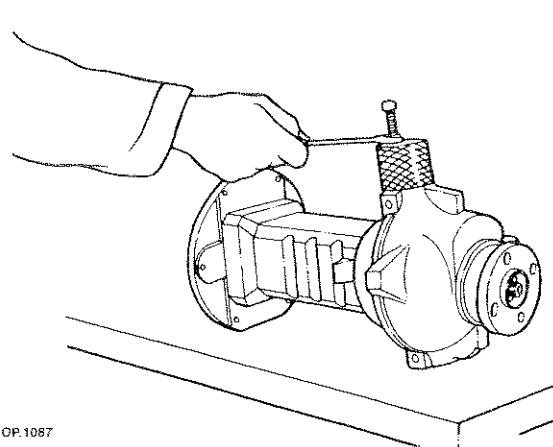
OP.1085

- 2 - Svitare il dado del semialbero cardanico.



OP.1086

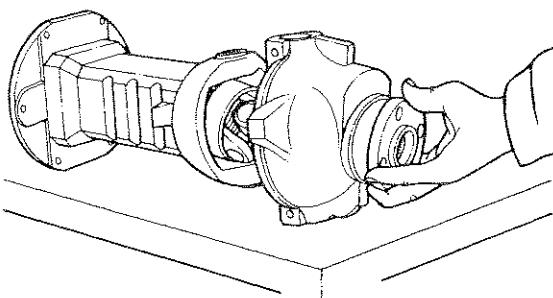
- 3 - Estrarre le spine elastiche di contenimento perni snodo.



OP.1087

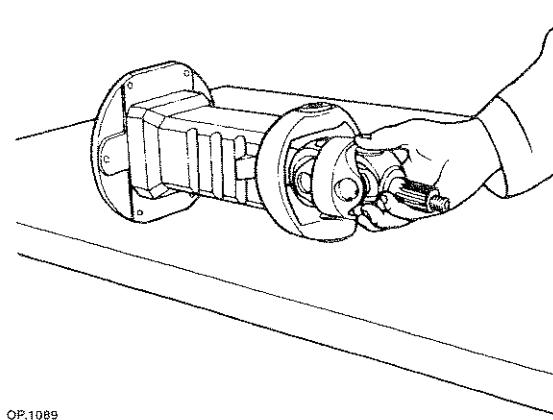
4 - Togliere gli ingrassatori dalle boccole.

5 - Avvitare l'attrezzo AT 37981044 al posto dell'ingrassatore ed estrarre boccole-perni.



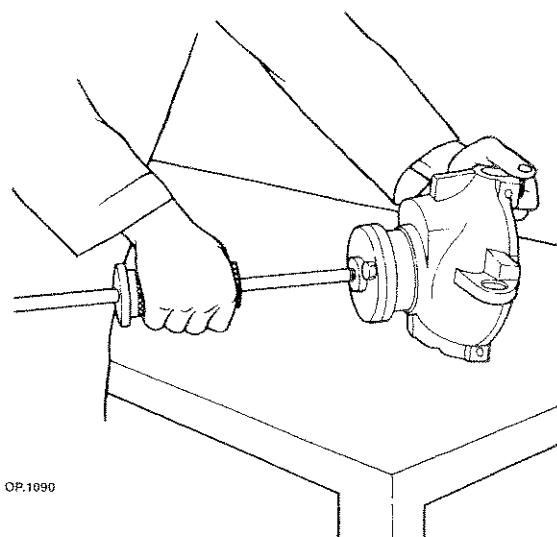
OP.1088

6 - Separare il mozzo ruota sterzo dall'assale.



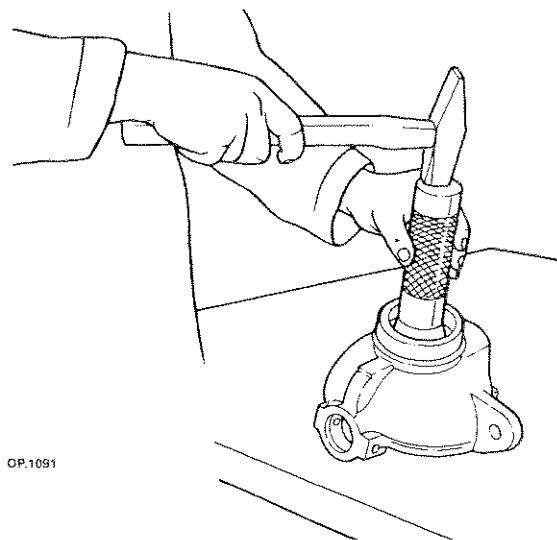
OP.1089

7 - Sfilare il giunto cardanico.



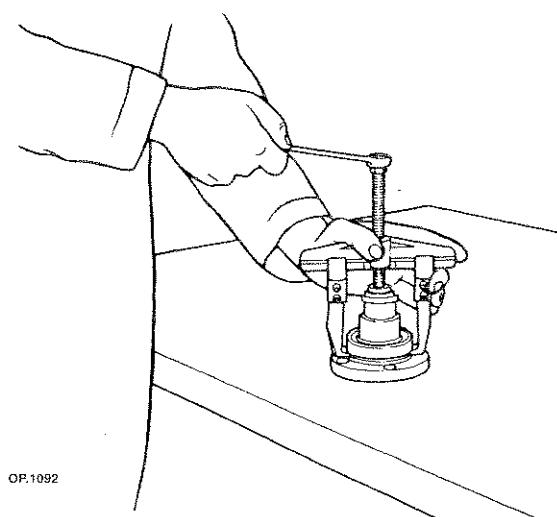
OP.1090

8 - Estrarre il mozzo ruota con estrattore AT 27981047 e adattatore AT 37981270.



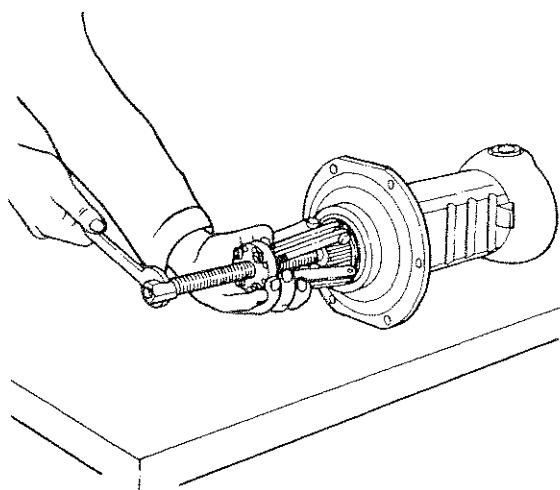
OP.1091

9 - Togliere il cuscinetto utilizzando un adeguato tampone AT 37981014.



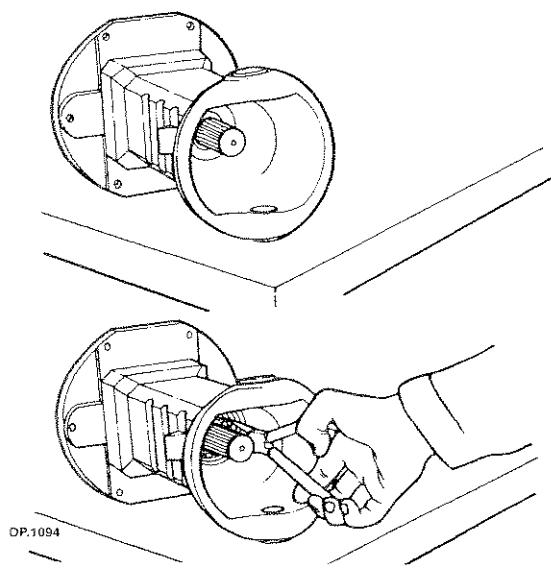
OP.1092

10 - Estrarre il cuscinetto utilizzando l'estrattore AT 37981257 e l'adattatore AT 37981265.



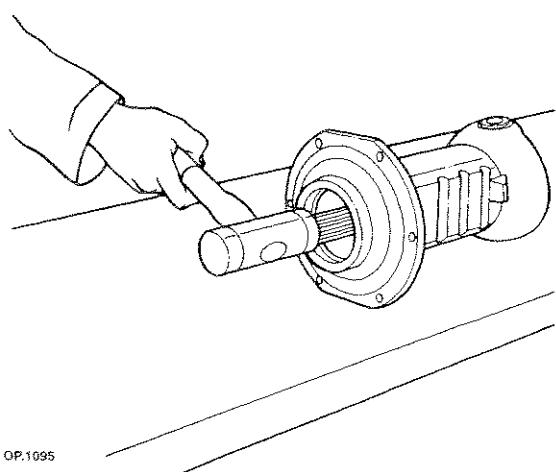
OP.1093

11 - Togliere il cuscinetto utilizzando l'estrattore AT 37981261.



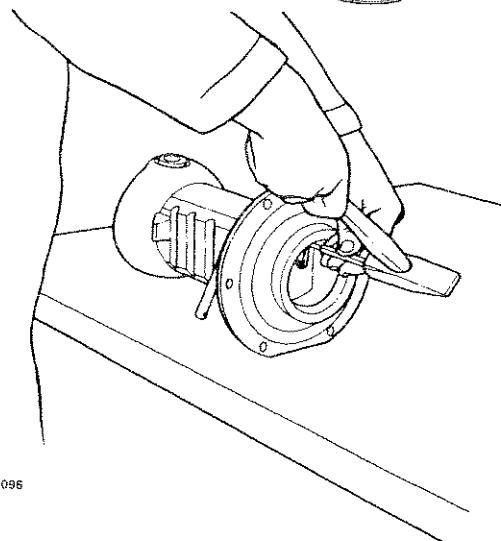
OP.1094

12 - Togliere la guarnizione di tenuta ed estrarre l'anello di contenimento albero.



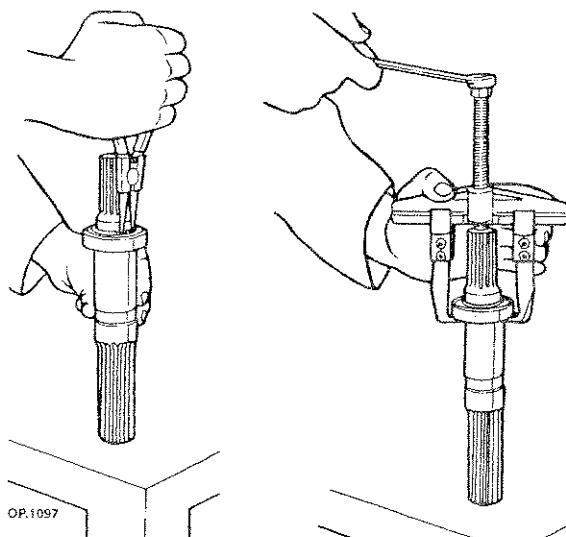
OP.1095

13 - Sfilare l'albero recuperando l'innesto bloccaggio.



OP.1096

14 - Togliere la spina elastica e sfilare l'alberino comando bloccaggio recuperando la forcella d'innesto.



OP.1097

15 - Togliere l'anello di contenimento e sfilare il cuscinetto utilizzando l'estrattore AT 37981257.



ATTENZIONE - PERICOLO



Eseguire le operazioni osservando scrupolosamente le misure di prevenzione.

- Usare indumenti antinfortunistici previsti, come guanti e scarpe di sicurezza.



Montaggio

Procedere al montaggio del gruppo considerando le seguenti avvertenze:

a - procedere invertendo le operazioni dello smontaggio;

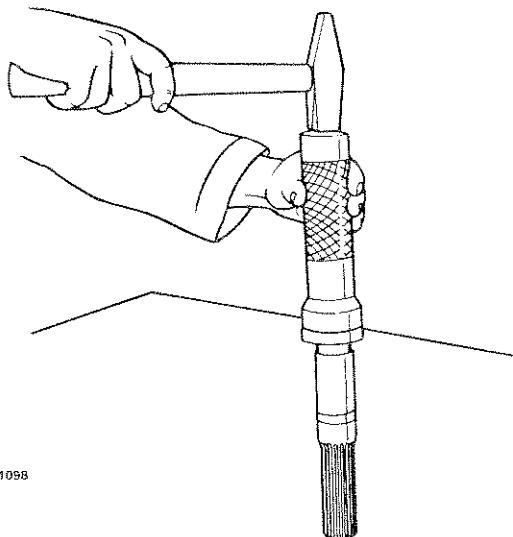
b - attenersi alle illustrazioni per l'orientamento dei vari componenti;

c - attenersi alle coppie di serraggio elencate a pag. 4;

d - eseguire l'acciazzatura sul dado dell'albero cardanico;

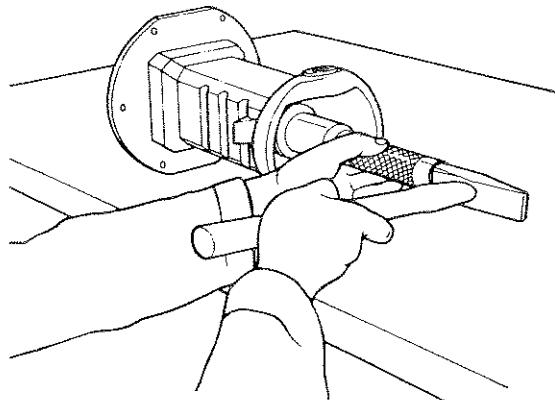
e - considerare le seguenti operazioni:

OP.1098

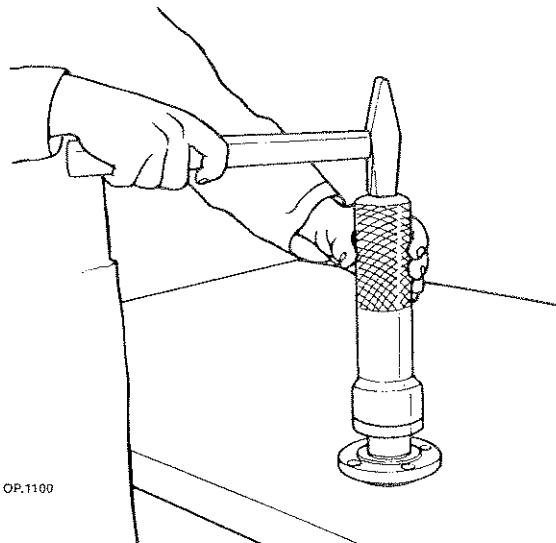


1 - montare il cuscinetto sull'albero utilizzando il tampone AT 37981014.

OP.1099

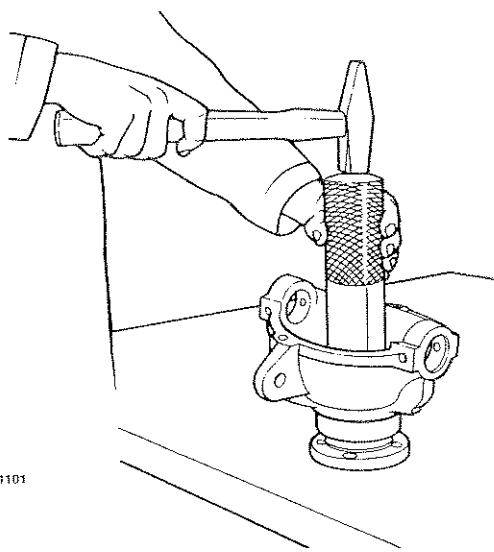


2 - Montare la guarnizione di tenuta utilizzando il tampone AT 37981326 e adattatore AT 37981327.



3 - Montare il cuscinetto sul mozzo ruota utilizzando il tampone AT 37981328.

OP.1101



4 - Montare il cuscinetto utilizzando il tamponne AT 37981328.



ATTENZIONE - PERICOLO

Eseguire le operazioni osservando scrupolosamente le misure di prevenzione.

- Non usare benzina, gasolio o altri liquidi infiammabili per sgrassare o lavare particolari, ma usare solventi commerciali e atossici.

Evitare di inquinare l'ambiente.



**ATTENZIONE - PERICOLO**

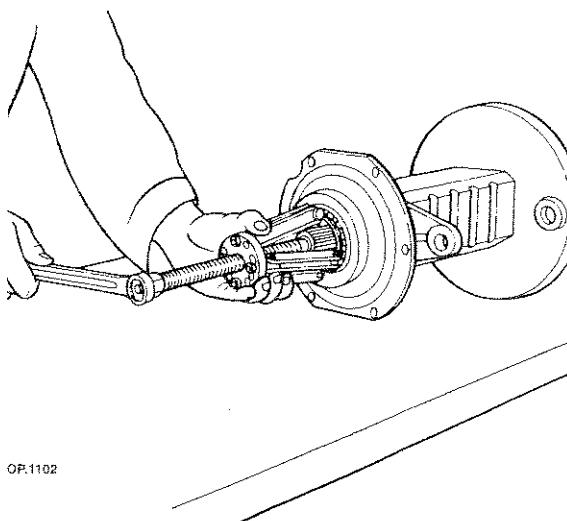
Eseguire le operazioni osservando scrupolosamente le misure di prevenzione.

- Le operazioni che richiedono particolare attenzione possono causare pericolo all'operatore se non sono eseguite correttamente.

Superpark**Smontaggio**

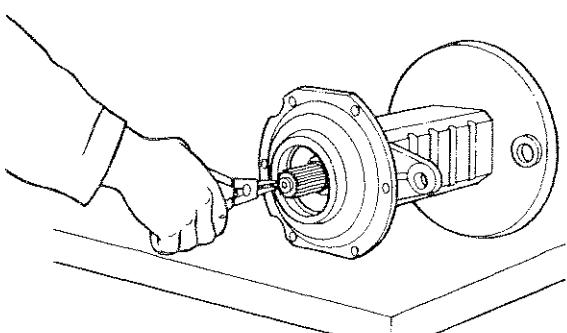
Per lo smontaggio dell'assale anteriore procedere come segue:

- 1 - adagiare l'assale sopra ad un banco.



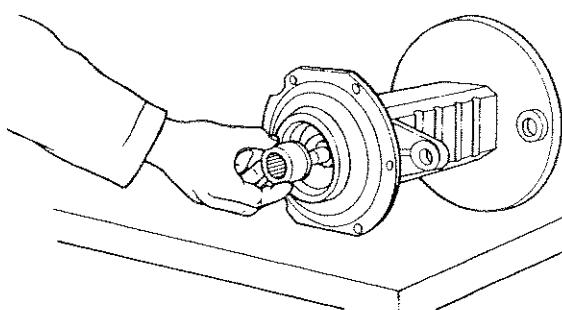
OP.1102

- 2 - Estrarre il cuscinetto utilizzando l'estrattore AT 37981261.



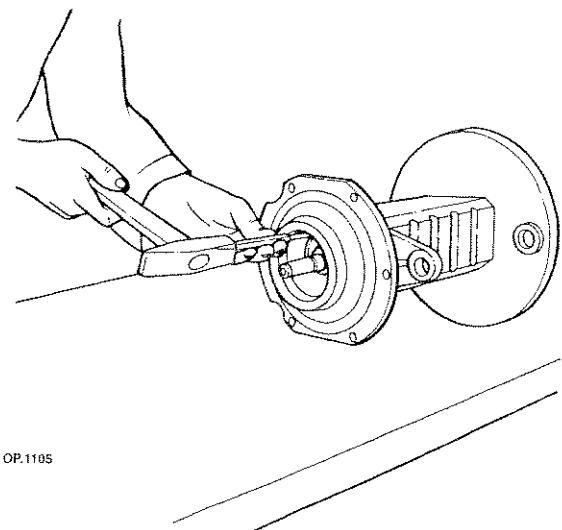
OP.1103

- 3 - Togliere l'anello elastico e sfilare il manico di trascinamento.



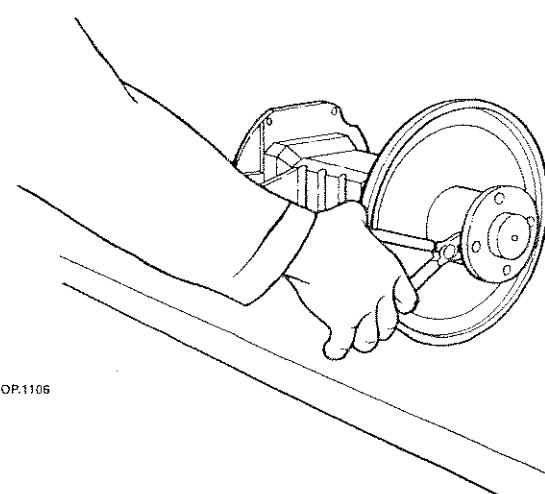
OP.1104

- 4 - Sfilare il manico d'innesto trazione recuperando i pattini di comando.



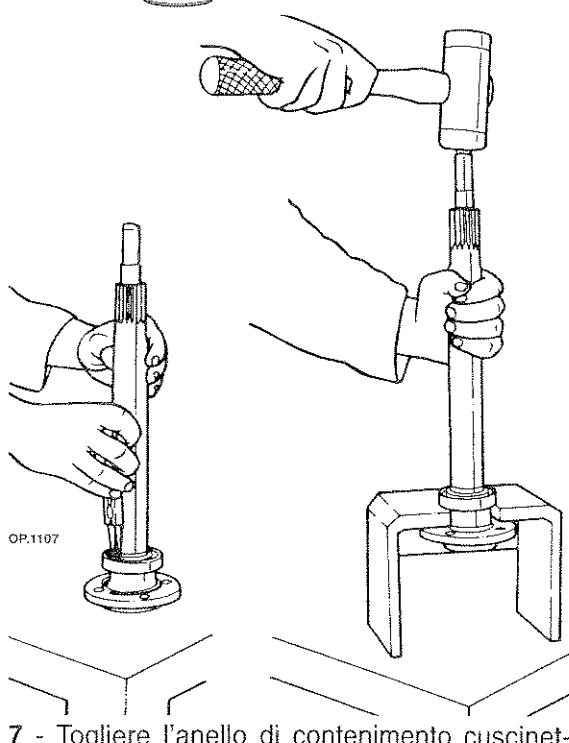
OP.1105

- 5 - Estrarre la spina elastica e sfilare l'albero recuperando la forcella di comando.



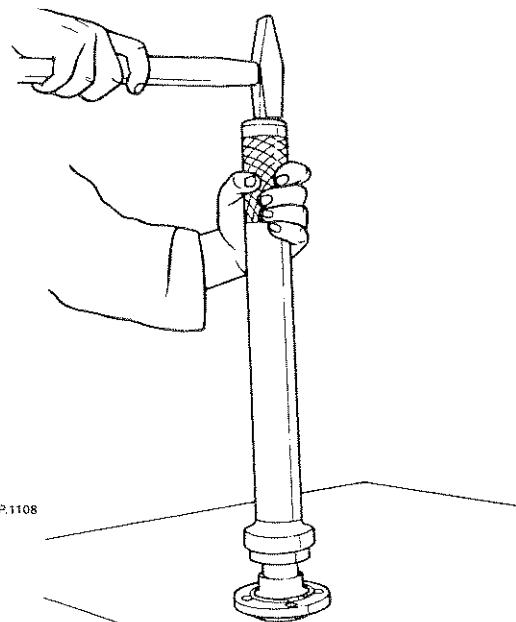
OP.1106

- 6 - Togliere l'anello di contenimento e sfilare il semiasse completo.

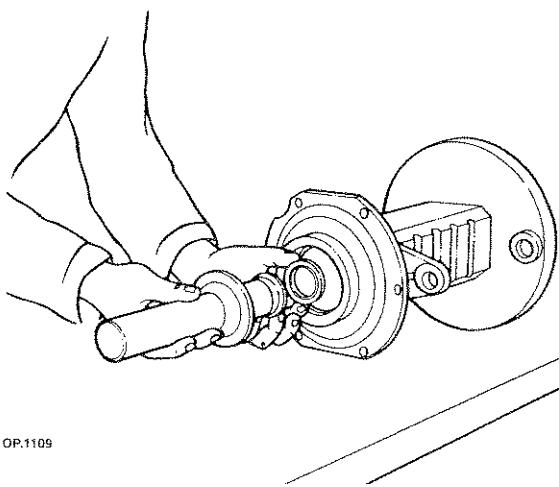


7 - Togliere l'anello di contenimento cuscinetto.

8 - Sfilare il cuscinetto utilizzando l'attrezzo AT 37981316.



1 - montare il cuscinetto semiasse utilizzando il battitoio AT 37981092.



OP.1109

2 - Montare la guarnizione di tenuta utilizzando il tampone AT 37981329.

Montaggio

Procedere al montaggio del gruppo considerando le seguenti avvertenze:

- a - procedere invertendo le operazioni dello smontaggio;
- b - attenersi alle illustrazioni per l'orientamento dei vari componenti;
- c - attenersi alle coppie di serraggio elencate a pag. 4;
- d - considerare le seguenti operazioni:



ATTENZIONE - PERICOLO

Eseguire le operazioni osservando scrupolosamente le misure di prevenzione.
- Non usare benzina, gasolio o altri liquidi infiammabili per sgrassare o lavare particolari, ma usare solventi commerciali e atossici. Evitare di inquinare l'ambiente.

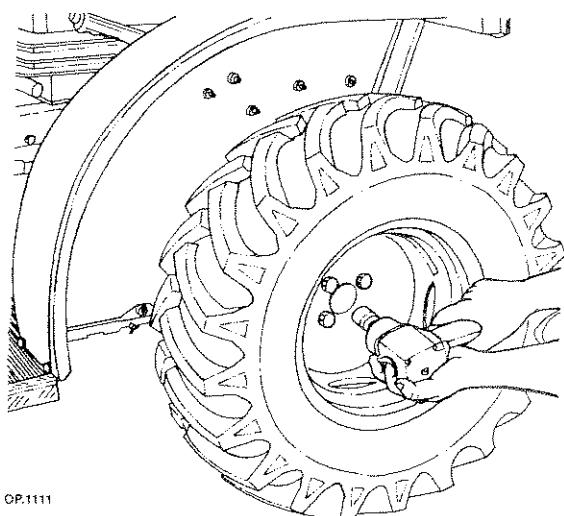


ASSALE POSTERIORE

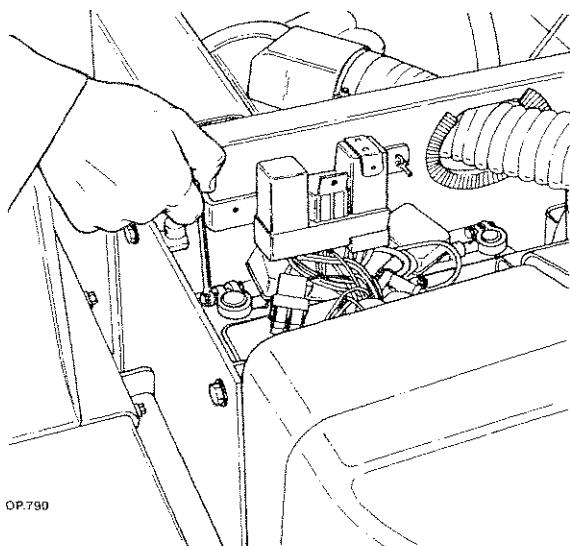
Istruzioni per lo stacco e riattacco

A - Tigretrac

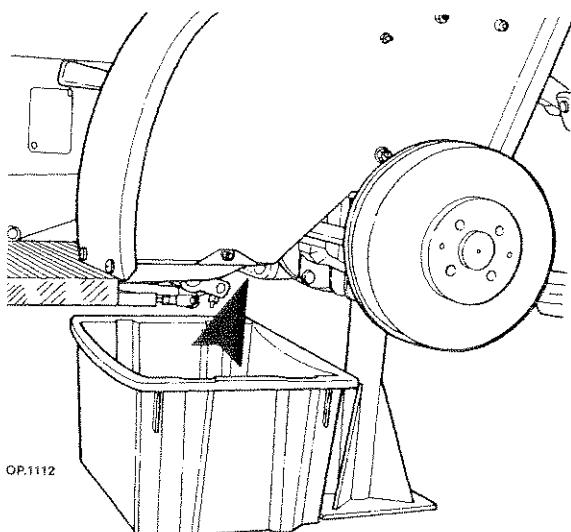
Per accedere al gruppo assali posteriore procedere come segue:



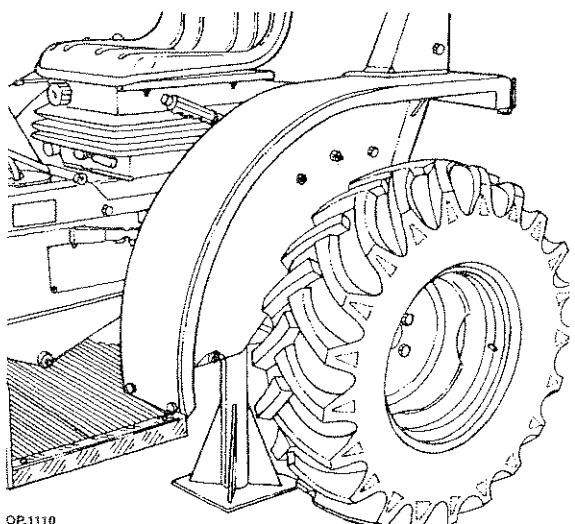
3 - Svitare le viti e togliere le ruote posteriori.



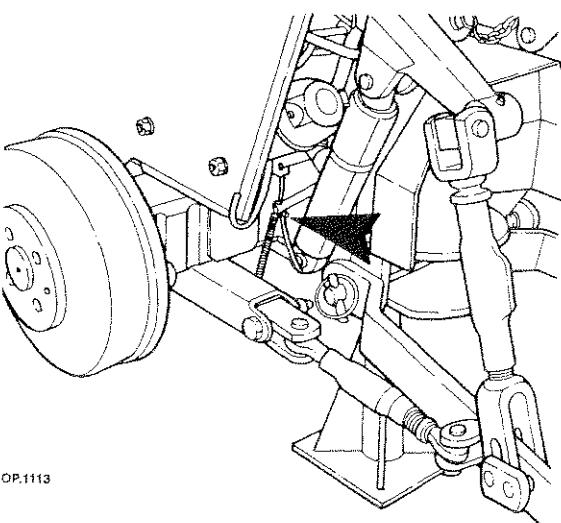
1 - staccare il cavo positivo della batteria ed isolarlo.



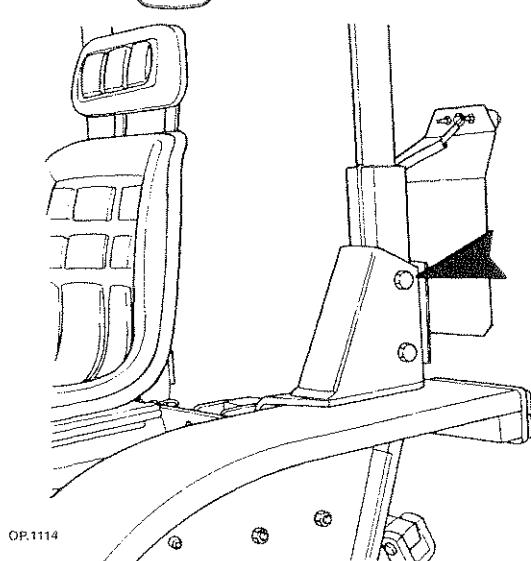
4 - Svitare il tappo scarico olio recuperando l'olio in un apposito recipiente.



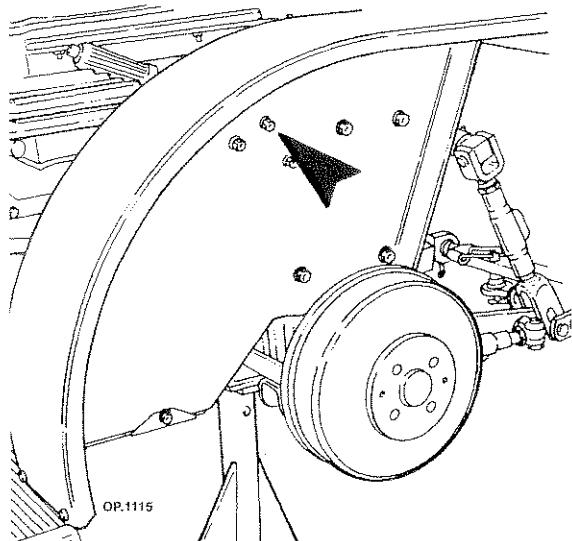
2 - Posizionare un cavalletto sotto la trasmissione lato posteriore.



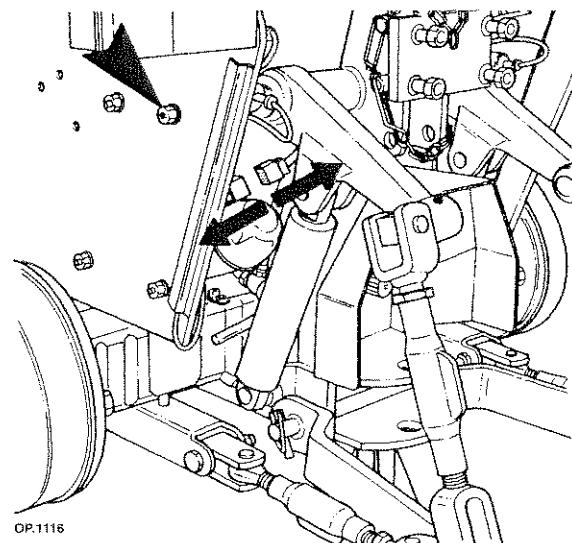
5 - Allentare il morsetto del filo disinnesto trazione e sfilarlo.



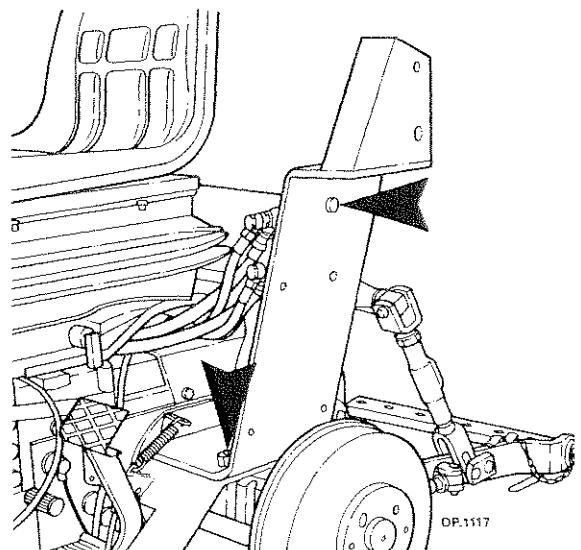
6 - Svitare le viti e togliere supporto targa e arco di protezione.



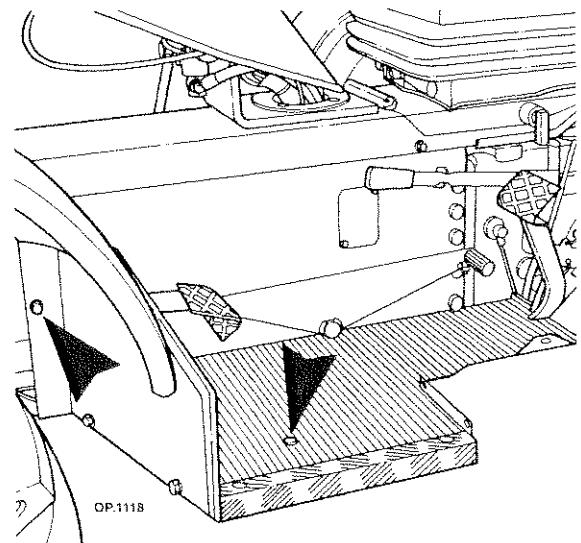
7 - Svitare le viti e togliere il supporto freno a mano.



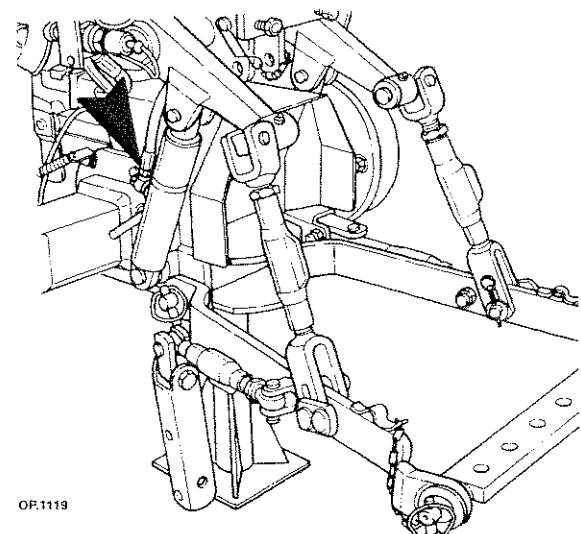
8 - Staccare la connessione elettrica sui parafanghi e svitare le viti e togliere i parafanghi.



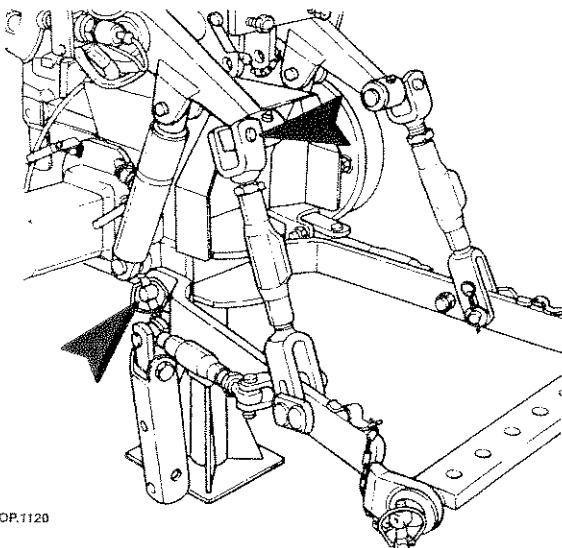
9 - Svitare le viti e togliere i supporti arco di protezione.



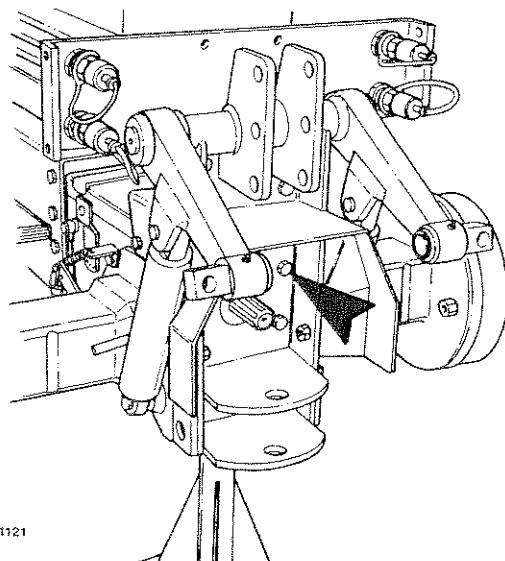
10 - Svitare le viti e togliere le pedane.
11 - Staccare i tiranti freni.



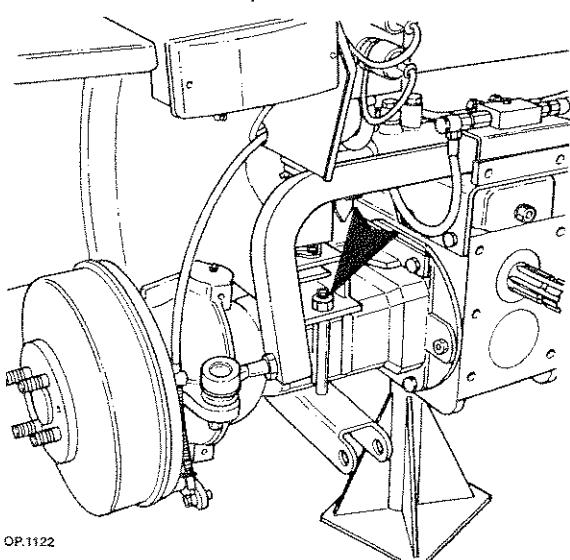
12 - Svitare i raccordi dei tubi cilindri sollevamento e tappare i fori.



13 - Staccare tiranti e barre sollevamento.

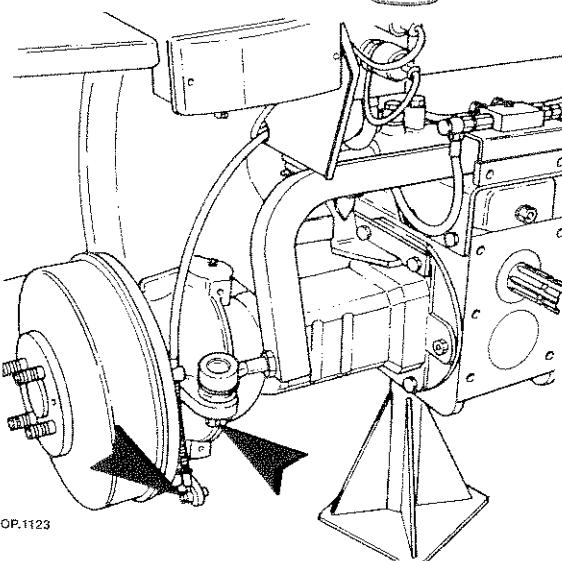


14 - Svitare le viti e togliere il coperchio-supporto sollevamento posteriore.



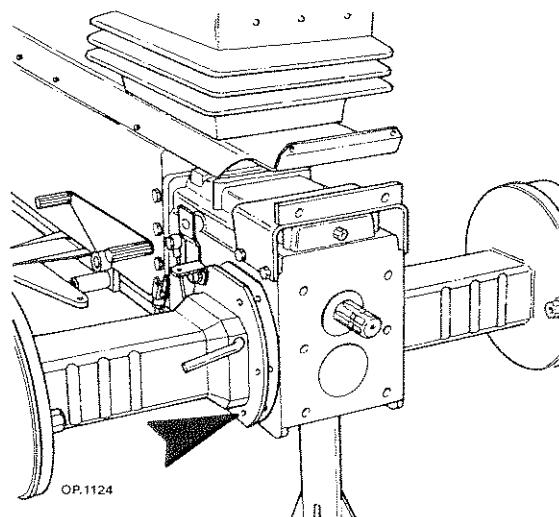
Solo Tigretrac con telaio e 4 WS

14.1 - Svitare i bulloni e sfilare i supporti telaio di protezione.



14.2 - Togliere gli anelli e sfilare le funi dei freni.

14.3 - Svitare i dadi e togliere le testine barra di accoppiamento sterzo.



15 - Svitare le viti dell'assale con bloccaggio differenziale e sfilarlo dalla scatola trasmissione recuperando gli spessori di registro scatola differenziale.

16 - Svitare le viti dell'assale opposto al bloccaggio differenziale e sfilarlo recuperando scatola differenziale completa.



ATTENZIONE - PERICOLO



Eseguire le operazioni osservando scrupolosamente le misure di prevenzione.

- Per sollevare usare sempre mezzi di capacità adeguata.

**ATTENZIONE - PERICOLO**

Eseguire le operazioni osservando scrupolosamente le misure di prevenzione.

- Non disperdere nell'ambiente i fluidi esausti, le cartucce dei filtri usate, oli, grassi lubrificanti ed elementi usati per la pulizia degli stessi.

Affidarsi esclusivamente ai centri di raccolta oli-esausti regolarmente autorizzati.

Evitare di inquinare l'ambiente.

ASSALE POSTERIORE**Istruzioni per lo stacco e riattacco****B - Superpark**

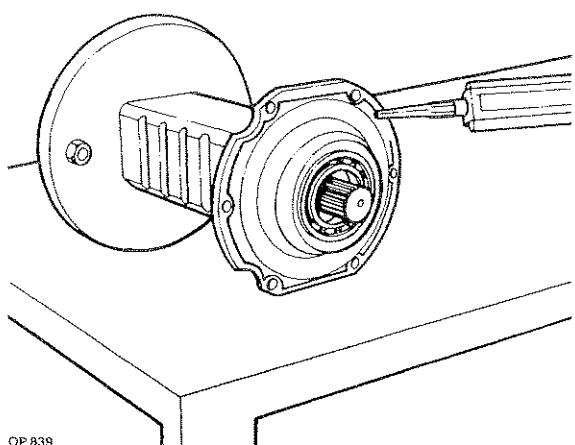
Per accedere al gruppo assali posteriore procedere come segue:

Riattacco

Procedere al riattacco considerando le seguenti avvertenze:

a - effettuare una accurata pulizia delle superfici da accoppiare;

b - applicare un cordone di mastice di tenuta del diametro di circa 3 mm seguendo il tracciato indicato nel disegno:

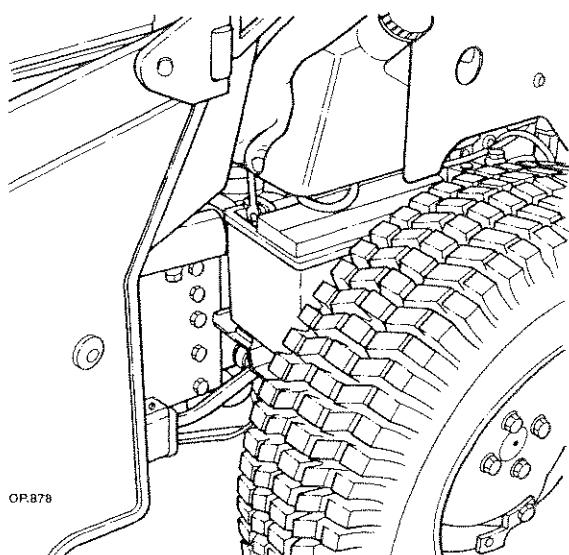


- applicazione mastice di tenuta

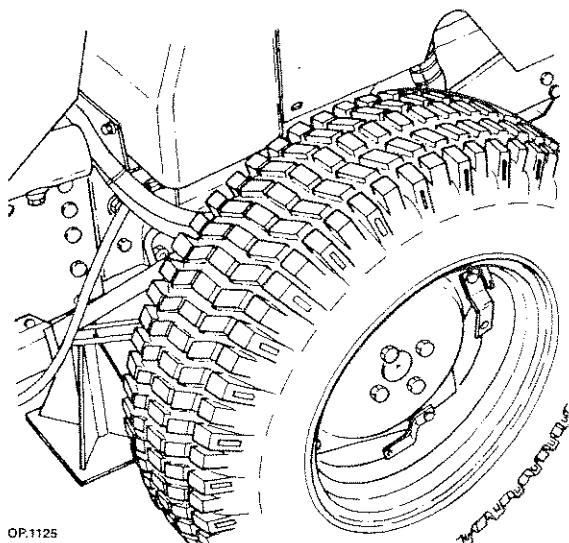
c - attenersi alle coppie di serraggio elencate a pag. 4;

d - invertire le operazioni dello stacco;

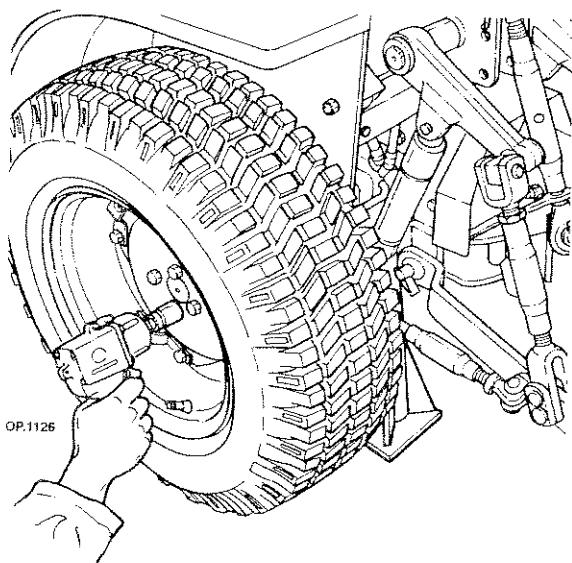
e - sostituire la cartuccia filtro olio idrostatico e curare la pulizia di tutte le parti dell'impianto che verranno a contatto con l'olio idraulico del circuito.



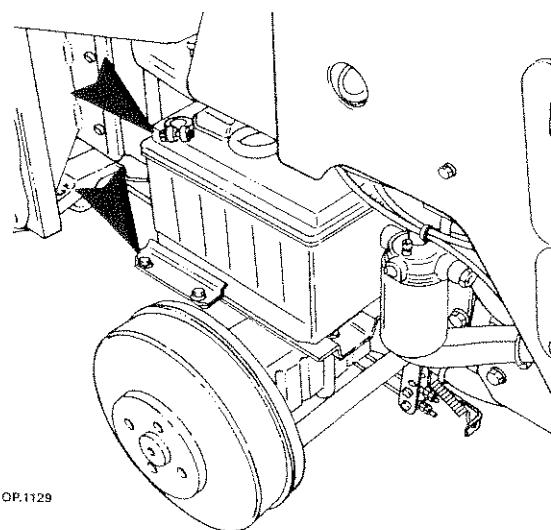
1 - Staccare il cavo positivo della batteria ed isolarlo.



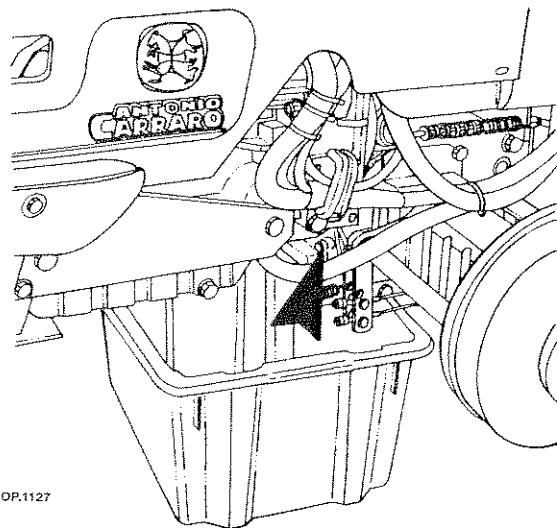
2 - Posizionare un cavalletto sotto la trasmissione lato posteriore.



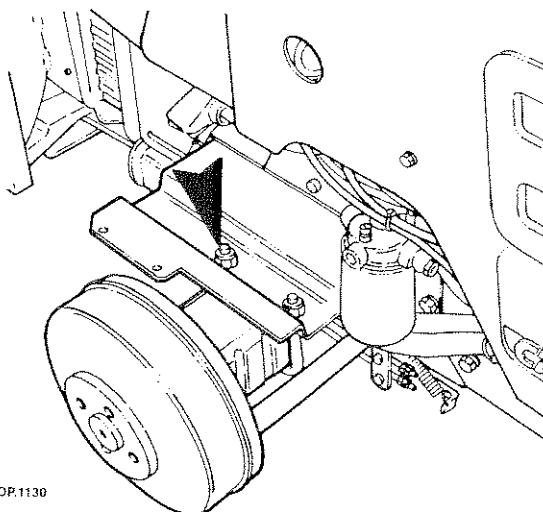
3 - Svitare le viti e togliere le ruote.



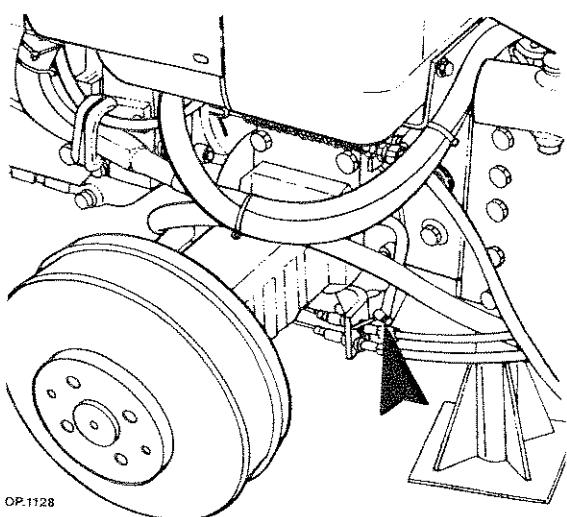
6 - Staccare il morsetto e il supporto e togliere la batteria.



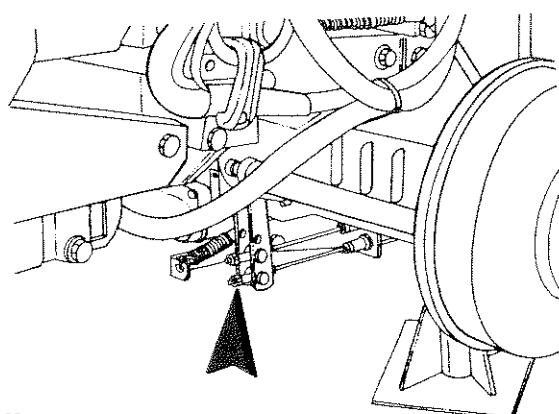
4 - Svitare le viti e togliere il coperchio filtro aspirazione olio idraulico scaricando l'olio in un apposito recipiente.



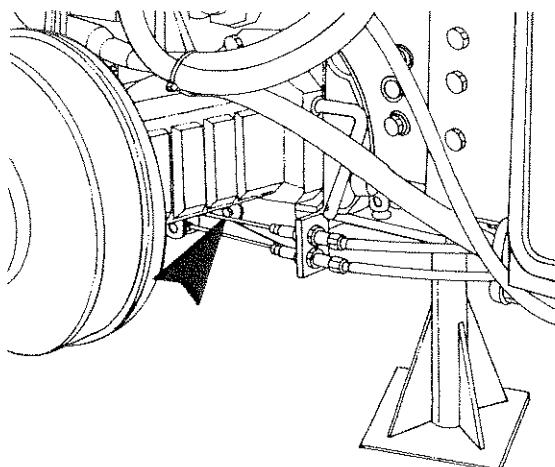
7 - Svitare i dadi e togliere il supporto batteria.



5 - Allentare il morsetto e sfilare il filo comando bloccaggio differenziale.

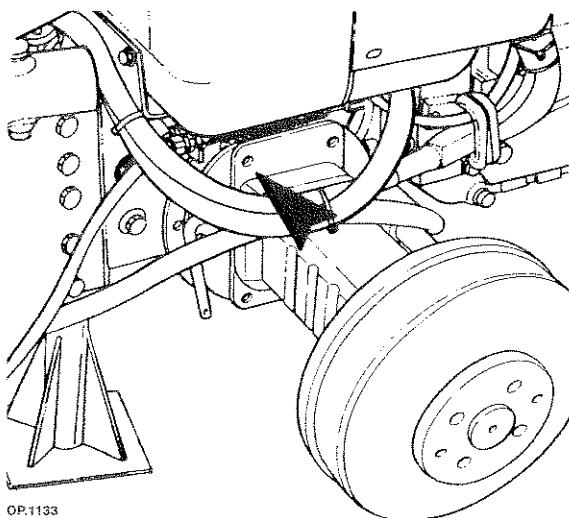


8 - Svitare dadi e controdadi e sfilare i fili comando freni.



OP.1132

9 - Svitare le viti e togliere i supporti ferma guaine di comando freni.



10 - Svitare le viti dell'assale con bloccaggio differenziale e sfilarlo dalla scatola trasmissione recuperando gli spessori di registro scatola differenziale.

11 - Svitare le viti dell'assale opposto al bloccaggio differenziale e sfilarlo recuperando scatola differenziale completa.



ATTENZIONE - PERICOLO



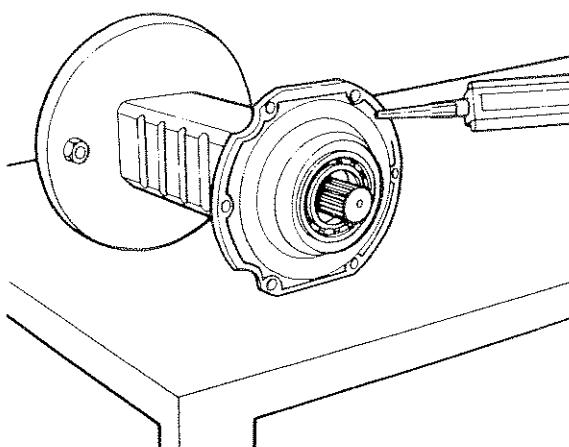
Eseguire le operazioni osservando scrupolosamente le misure di prevenzione.

- Per sollevare usare sempre mezzi di capacità adeguata.
- Usare indumenti antinfortunistici previsti, come guanti e scarpe e sicurezza.

Riattacco

Procedere al riattacco considerando le seguenti avvertenze:

- a - effettuare una accurata pulizia delle superfici da accoppiare;
- b - applicare un cordone di mastice di tenuta del diametro di circa 3 mm seguendo il tracciato indicato nel disegno;



OP.839

- applicazione mastice di tenuta

c - attenersi alle coppie di serraggio elencate a pag. 4;

d - invertire le operazioni dello stacco;

e - lavare accuratamente il filtro olio e curare la pulizia di tutte le parti dell'impianto che verranno a contatto con l'olio idraulico del circuito.



ATTENZIONE - PERICOLO



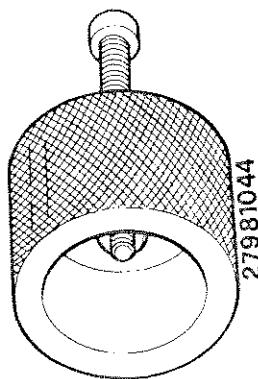
Eseguire le operazioni osservando scrupolosamente le misure di prevenzione.

- Per lo smaltimento di oli attenersi alle norme antinquinamento.
Evitare di inquinare l'ambiente.

Smontaggio - montaggio

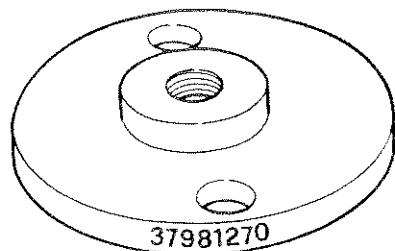
- Tigretrac - Superpark

Procedere analogamente a quanto descritto per quello anteriore del Superpark.
Vedi pag. 105-106.



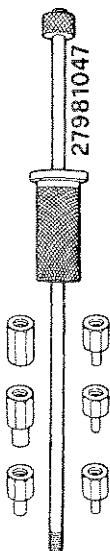
AT.224

1 - Estrattore per boccole-perni assali.



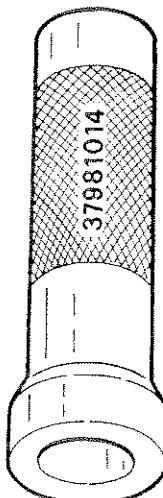
AT.225

4 - Adattatore per estrattore a massa battente.



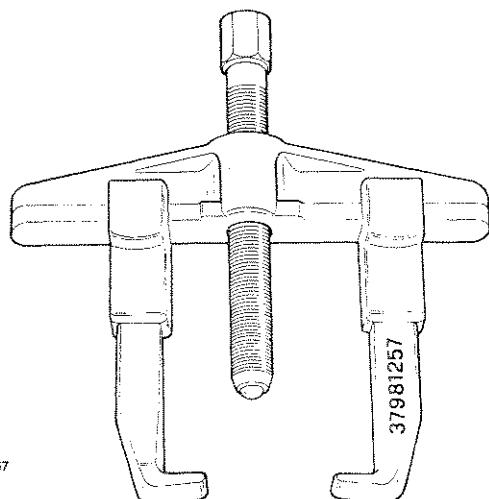
AT.094

2 - Estrattore a massa battente con adattatori.



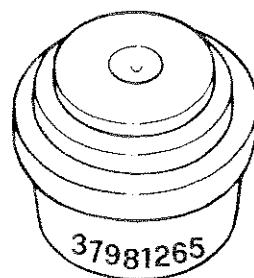
AT.023

5 - Tamponcino per montaggio cuscinetti.



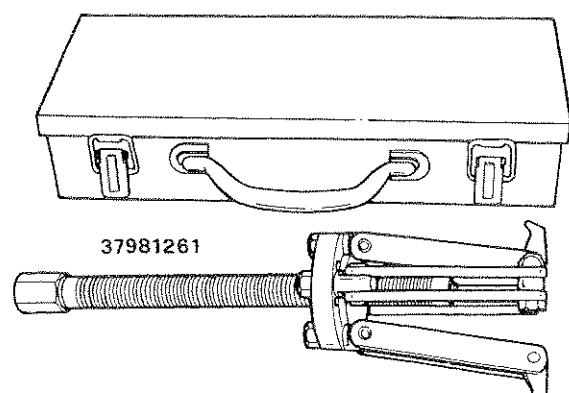
AT.067

3 - Estrattore universale.



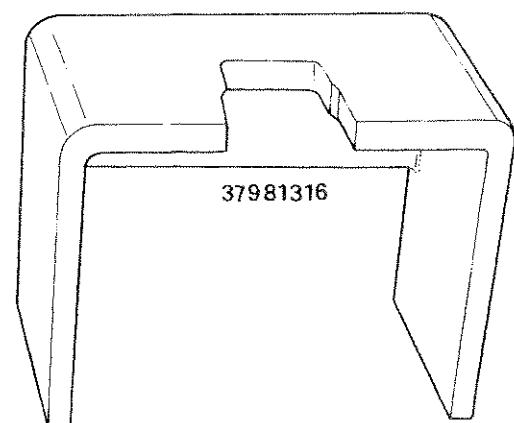
AT.094

6 - Adattatore per estrattore universale.



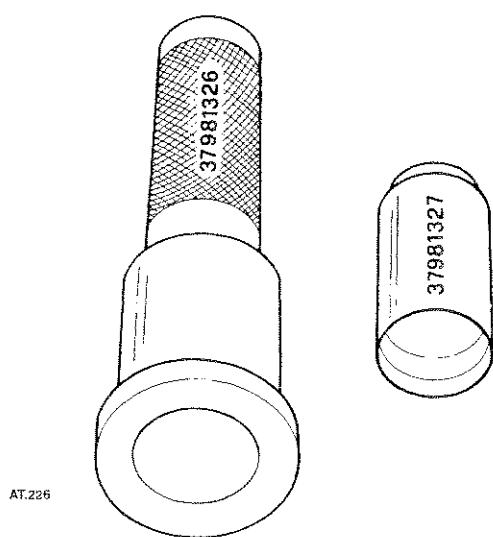
AT.060

7 - Estrattore universale.



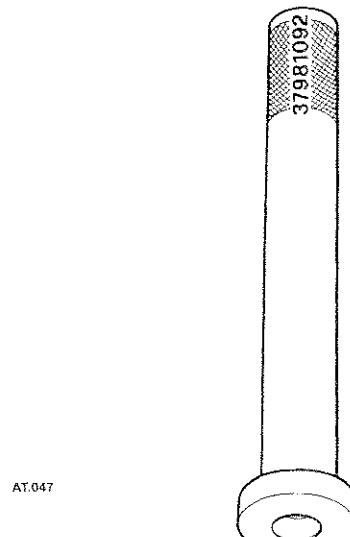
AT.228

10 - Attrezzo per estrarre i cuscinetti dei semiassi.



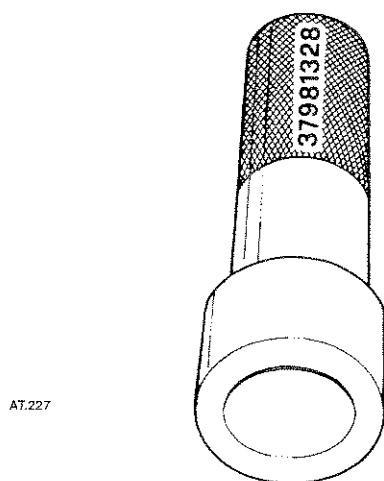
AT.226

8 - Tampone e adattatore per il montaggio della guarnizione di tenuta.



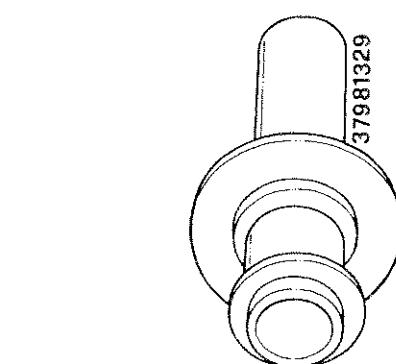
AT.047

11 - Tampone per il montaggio dei cuscinetti sui semiassi.



AT.227

9 - Tampone per il montaggio cuscinetto semiasse.



AT.229

12 - Tampone per il montaggio dell'anello di tenuta.

FRENI**Descrizione**

I freni, del tipo a ganasce, agiscono nell'interno dei tamburi applicati ai mozzi delle ruote posteriori.

Freni	Dispositivo:			Diametro tamburo
	Servizio	Soccorso	Stazionamento	
Tigretrac Superpark	Ad espansione, con trasmissione meccanica, comandato da un unico pedale.	Ad espansione, con trasmissione meccanica, azionato mediante leva a mano che agisce contemporaneamente sulle ganasce.	È lo stesso dispositivo di soccorso, bloccato in posizione frenata mediante dispositivo per l'irreversibilità del movimento.	252

Materiale d'attrito: superficie frenate $(23 \times 5) \times 4 = 460 \text{ cm}^2$ S.R

Marca e tipo: Ferodo 380 4F senza amianto

Diagnosi degli inconvenienti

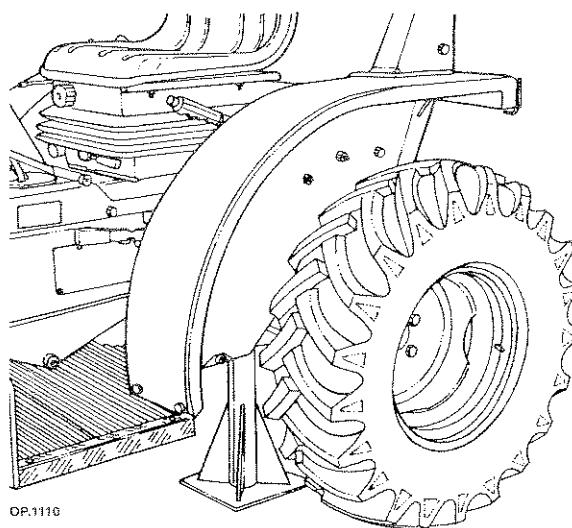
Inconvenienti	Cause possibili	Rimedi
Frenatura insufficiente	1) Materiale di attrito danneggiato, usurato o eccessivamente liscia la superficie di attrito 2) Freni da registrare	Sostituire le ganasce Eseguire la registrazione dei freni
Corsa eccessiva dei pedali di comando	1) Freni da registrare 2) Materiale di attrito delle ganasce danneggiato o strappato	Eseguire la registrazione Sostituire le ganasce
Frenatura non bilanciata	1) Freni da registrare 2) Tiranti da registrare	Eseguire la registrazione Eseguire la registrazione
Freno di stazionamento duro da azionare	1) Alberino di collegamento con ruggine	Rimuovere i particolari ed ingrassarli
Freno di stazionamento disinserito, il trattore rimane bloccato	1) Impedimenti nella corsa di ritorno dei tiranti	Rimuovere gli impedimenti

**FRENI**

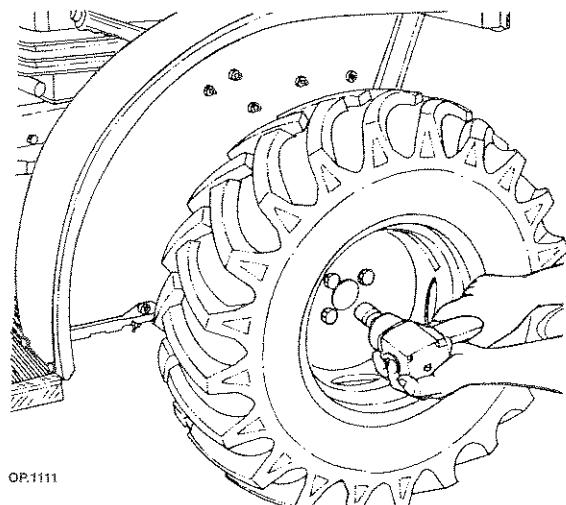
Istruzione per lo stacco e riattacco

Tigretrac - Superpark

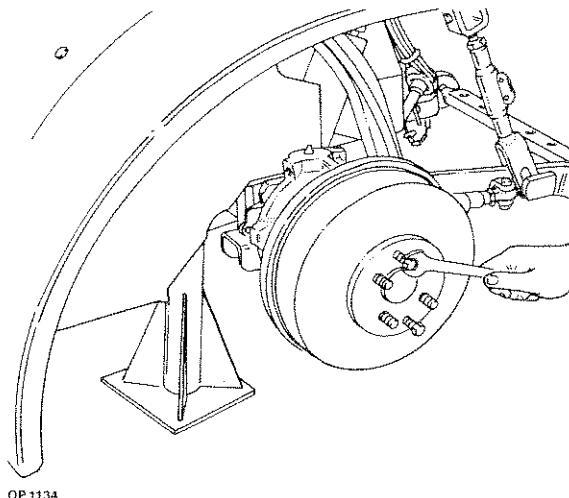
Per accedere ai freni procedere come segue:



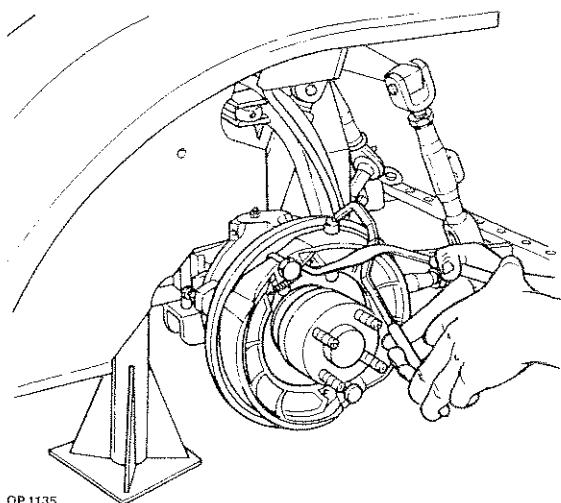
1 - Posizionare un cavalletto sotto la trasmissione lato posteriore.



2 - Svitare le viti e togliere le ruote posteriori.



3 - Avvitare due viti ø 10 mm sui fori filettati dei tamburi ed estrarli.



4 - Togliere le molle ritorno ganasce freni utilizzando la Pinza Beta 1471/330.

**ATTENZIONE - PERICOLO**

Eseguire le operazioni osservando scrupolosamente le misure di prevenzione.

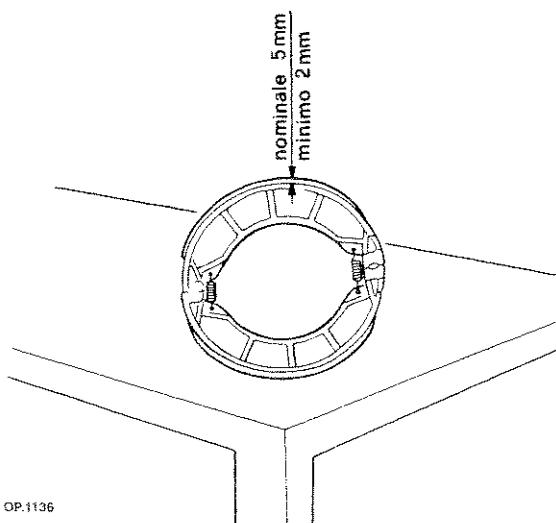
- Usare indumenti antinfortunistici previsti, come guanti e scarpe di sicurezza.



Riattacco

Procedere al riattacco considerando le seguenti avvertenze:

- a - invertire le operazioni dello stacco;
 - b - verificare che le guarnizioni di attrito non siano eccessivamente usurate e che non presentino delle rigature.
- In tal caso si consiglia la sostituzione;

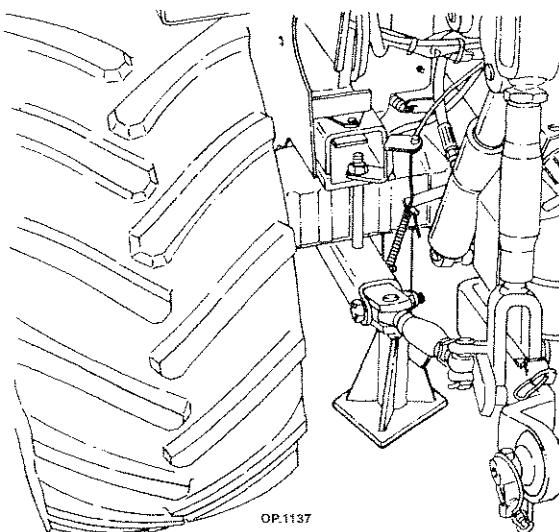


- Verifica quota nominale guarnizione di attrito.

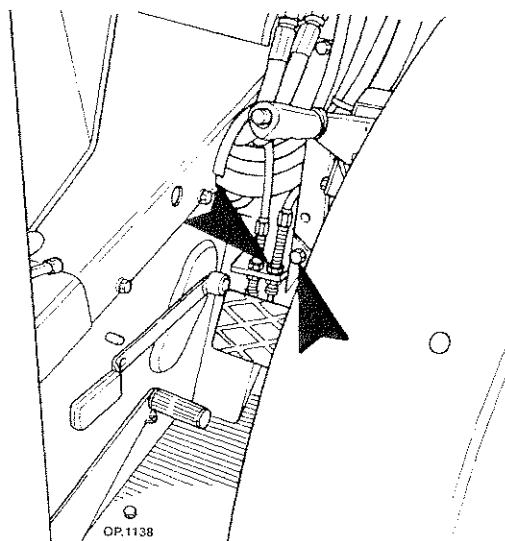
- c - pulire accuratamente prima di eseguire i montaggi dei particolari e ingrassare i comandi (solo comandi).

Registrazione freni

Per eseguire una corretta registrazione dei freni procedere come segue:



- 1 - Posizionare dei cavalletti fissi sotto gli assali.



2 - Svitare le viti e togliere la protezione per accedere ai registri freni Tigretrac 4 WS.

3 - Avvicinare le ganasce al tamburo tramite i tiranti o funi di registro.

4 - Azionare il pedale freni con forza 500-600 N (50,9-61 Kg) in modo da ottenere un assentamento delle ganasce rispetto al tamburo.

5 - Riavvicinare le ganasce al tamburo tramite il tirante o fune di registro freni fino ad ottenere uno strisciamento delle ganasce sul tamburo.

6 - Girare il registro in senso inverso di un giro completo in modo da liberare le ganasce dal tamburo.

7 - Eseguire le correzioni di bilanciamento freni.

Registrazione corsa comando a mano freni

Per la registrazione della corsa leva di comando del freno di stazionamento procedere come segue:

1 - eseguire alcune manovre di bloccaggio del freno di stazionamento applicando una forza di 400÷500 N (40,7÷50,9 Kg) per assestarsi i comandi e le ganasce freni.

2 - Avvitare o allontanare il dado di registro finché la leva di comando non esegua 4÷5 scatti applicando una forza di 400÷500 N (40,7÷50,9 Kg).



Sterzo idrostatico

L'unità di sterzatura idrostatica consiste nella capacità di conferire alle ruote sterzanti uno spostamento angolare proporzionale alla rotazione del volante di comando sfruttando una ben determinata quantità d'olio inviata dal sistema idroguida all'attuatore martinetto (cilindro di sterzatura). Questo significa che non esiste nessuna connessione meccanica tra il volante e le ruote sterzanti, ma solo delle tubazioni flessibili uniscono l'idroguida ai cilindri di sterzatura.

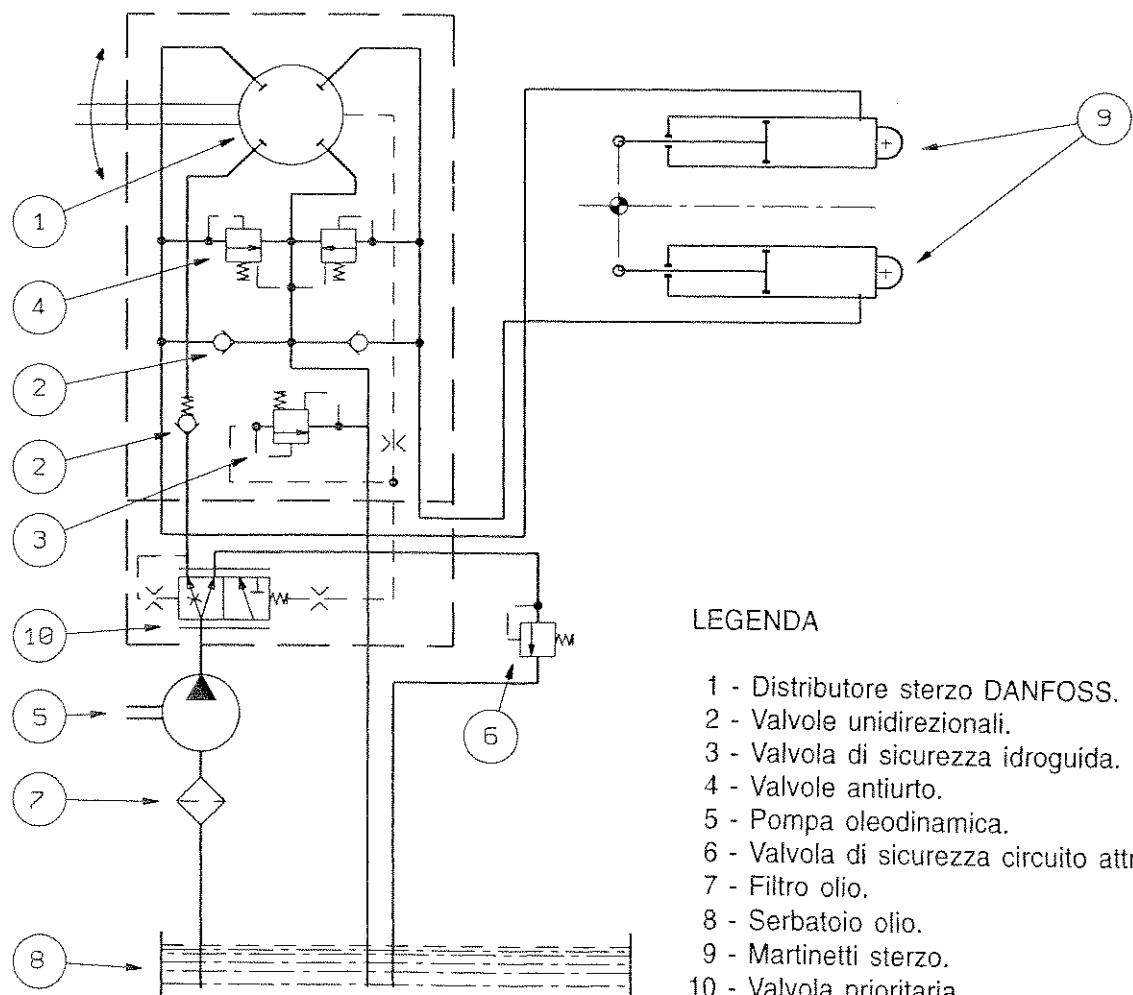
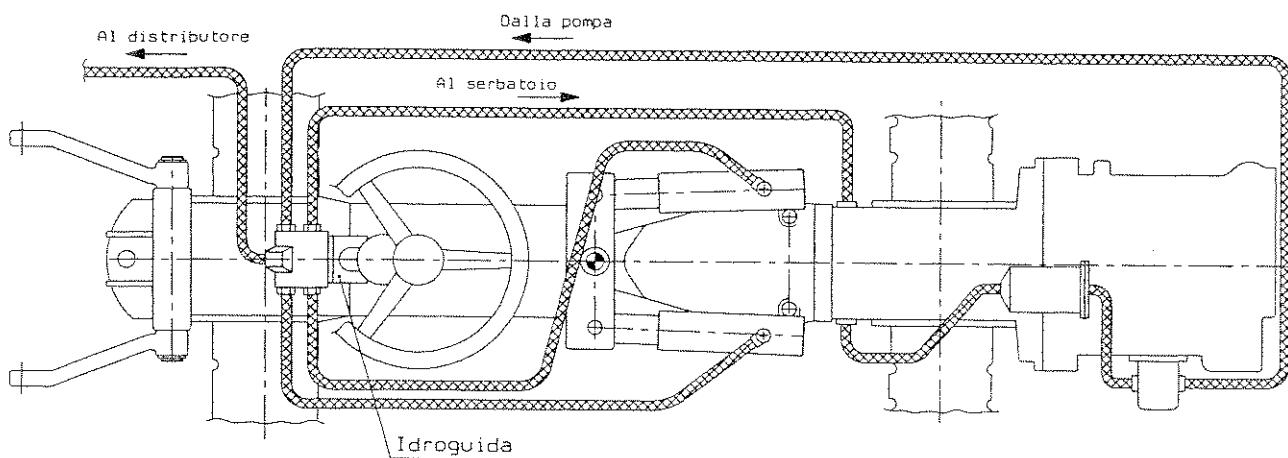
Idroguida

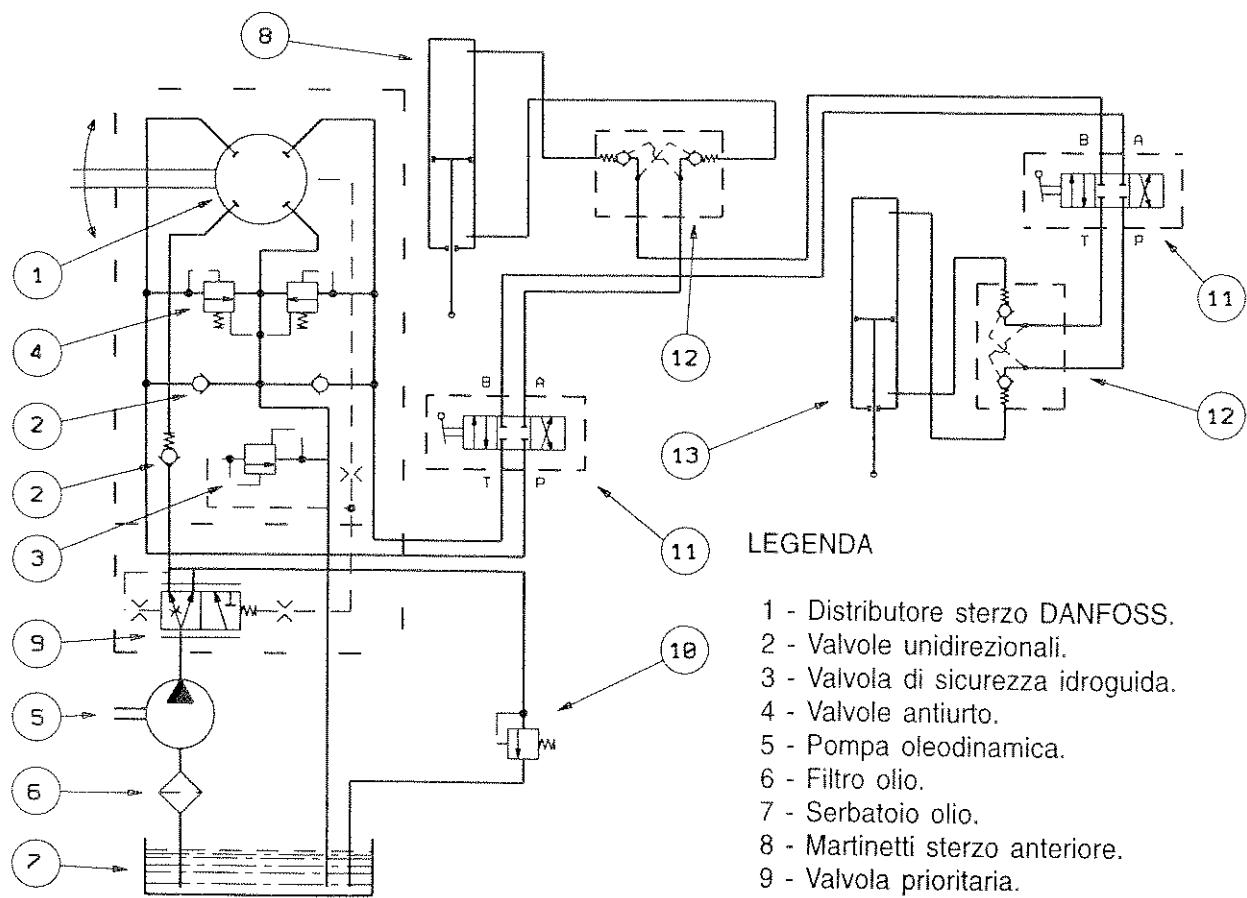
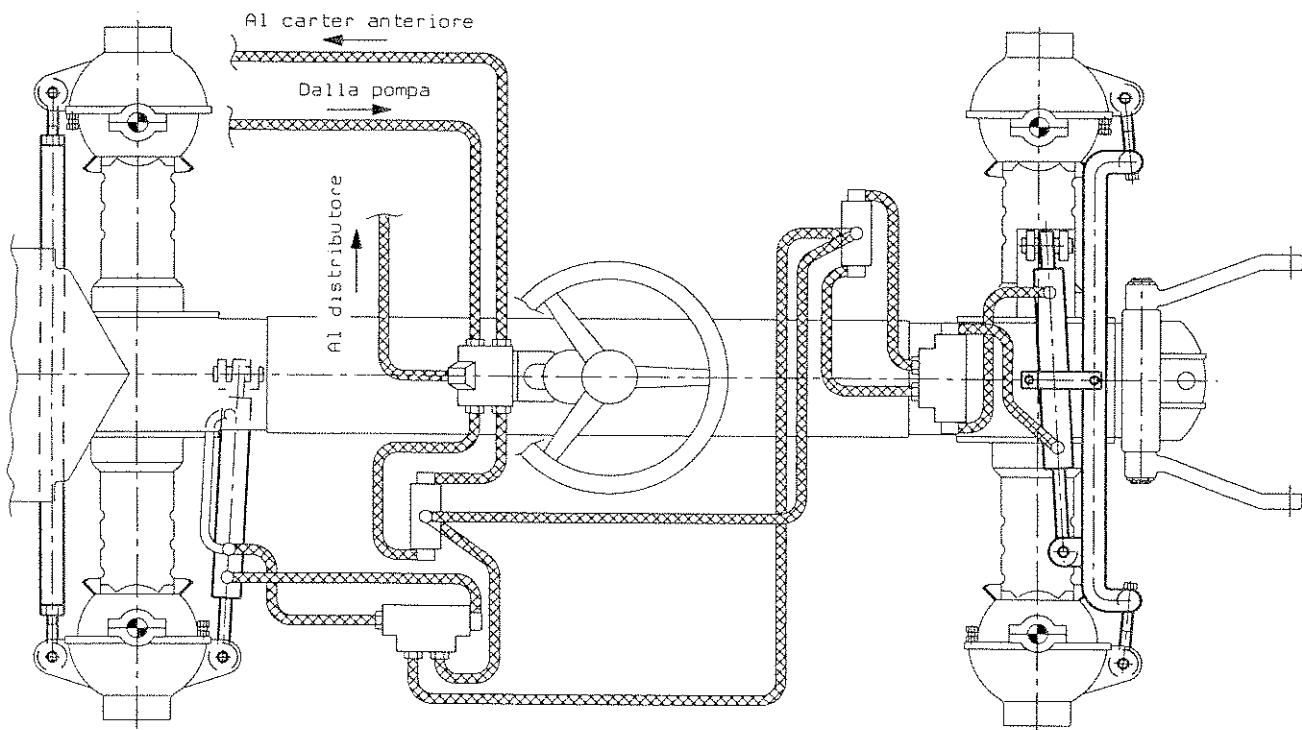
Caratteristiche tecniche

	Tigretrac 2500	Tigretrac 3800	Tigretrac 3800 4WS	Superpark 3800
Marca	DANFOSS	DANFOSS	DANFOSS	DANFOSS
Idroguida	Tipo	OSPC 50 LS/150-3133	OSPC 50 LS/150-3133	OSPC 100 LS/150-3133
	Codice	40805006	40805006	40805006
Valvola prioritaria		OLSA 40/152 B 0119		
Taratura valvola sovrapressione	130 Bar	130 Bar	130 Bar	130 Bar
Taratura valvola antishock	200 Bar	200 Bar	200 Bar	200 Bar
Diametro martinetto	15/40	15/40	15/40	40
Corsa martinetto	163	163	163	118
Giri volante	4.1 3.5	4.1 3.5	4.1 3.5	3
Convergenza		mm 0÷2		



SCHEMA IDRAULICO STERZO SUPERPARK 3800

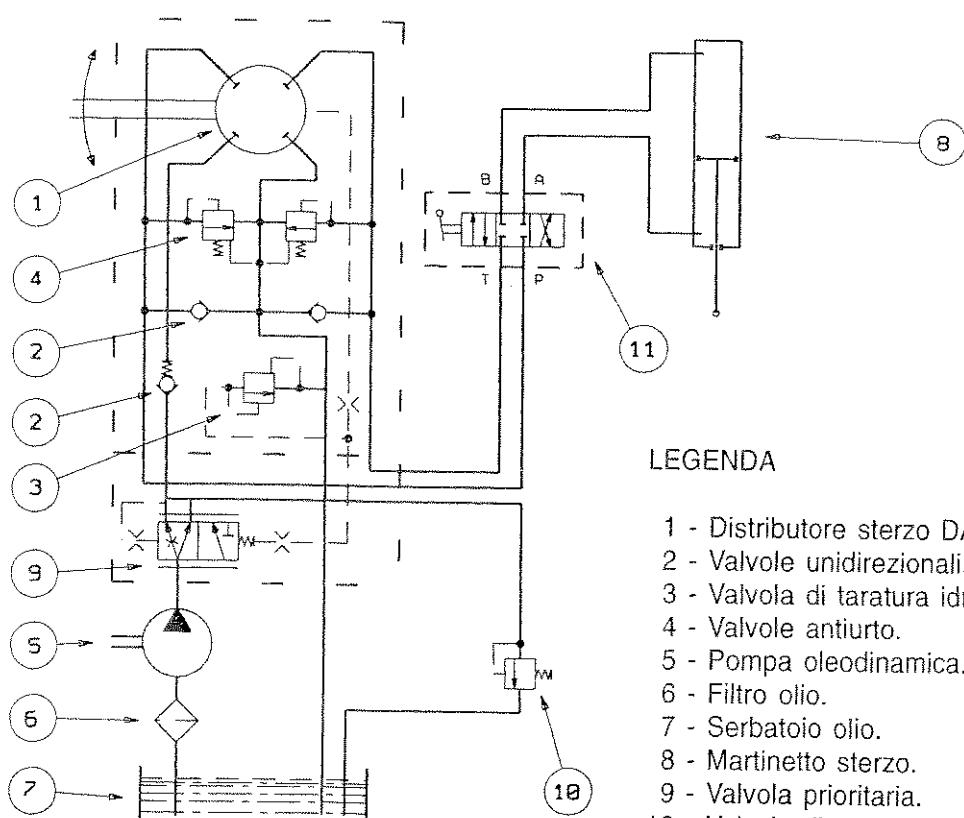
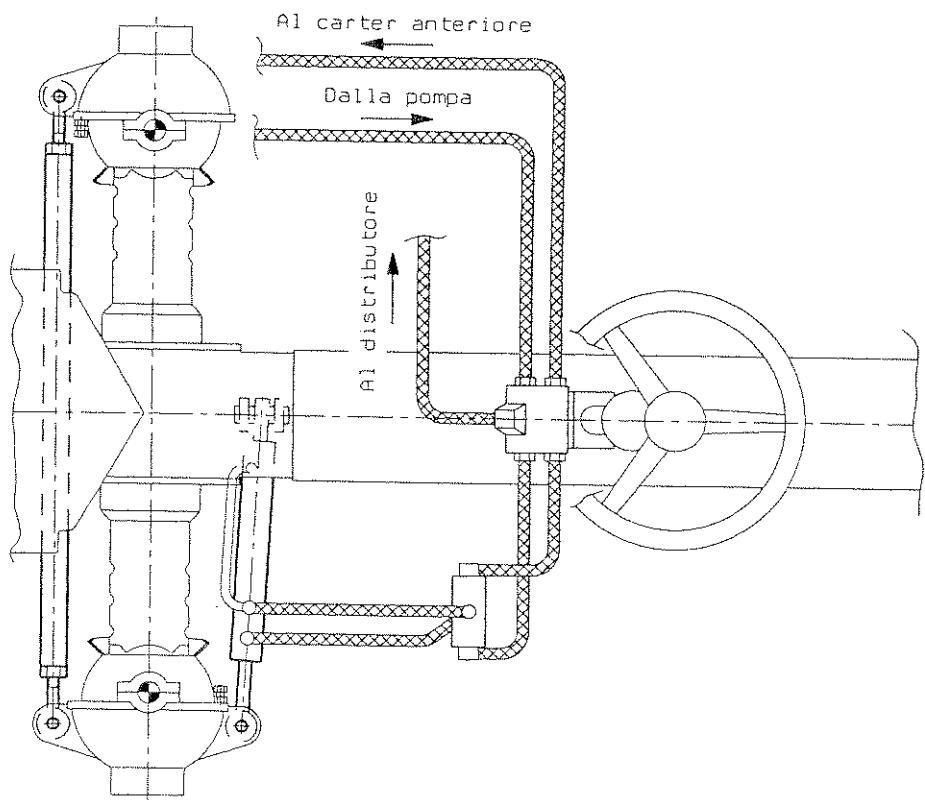


**IMPIANTO IDRAULICO STERZO TIGRETRAC 3800 4WS****LEGENDA**

- 1 - Distributore sterzo DANFOSS.
- 2 - Valvole unidirezionali.
- 3 - Valvola di sicurezza idroguida.
- 4 - Valvole antiurto.
- 5 - Pompa oleodinamica.
- 6 - Filtro olio.
- 7 - Serbatoio olio.
- 8 - Martinetti sterzo anteriore.
- 9 - Valvola prioritaria.
- 10 - Valvola di taratura circuito attrezzi.
- 11 - Deviatori.
- 12 - Valvole di blocco.
- 13 - Martinetto sterzo posteriore.



IMPIANTO IDRAULICO STERZO TIGRETRAC 3800



LEGENDA

- 1 - Distributore sterzo DANFOSS.
- 2 - Valvole unidirezionali.
- 3 - Valvola di taratura idroguida.
- 4 - Valvole antiurto.
- 5 - Pompa oleodinamica.
- 6 - Filtro olio.
- 7 - Serbatoio olio.
- 8 - Martinetto sterzo.
- 9 - Valvola prioritaria.
- 10 - Valvola di taratura circuito attrezature
- 11 - Deviatore

**IDROGUIDA****Diagnosi degli inconvenienti dell'idroguida**

Inconvenienti	Cause possibili	Rimedi
Il volante è eccessivamente duro da girare	1) Pompa idraulica inefficiente 2) Idroguida starata 3) Indurimento del piantone di sterzo sulla sua boccola per ossidazione o grippaggio	Sostituire la pompa idraulica Procedere alla taratura della idroguida Sostituirlo o eliminare le cause (lubrificandolo)
Perdita olio dal gruppo idroguida	1) Tubazioni di collegamento allentate sui raccodi: 2) Rosette di tenuta o guarnizioni O.ring difettate 3) Guarnizioni O.ring del gruppo idroguida difettose	Eliminare l'inconveniente Sostituire le rosette e le guarnizioni Sostituire le guarnizioni
Il trattore non mantiene la direzione volante	1) Presenza di aria nel circuito idraulico 2) Guarnizioni di tenuta dei martinetti usurate 3) Valvole di sicurezza cilindro o di riflusso aperte per immissione di impurità o danneggiate	Eliminare le possibili infiltrazioni d'aria Sostituire le guarnizioni Eliminare le impurità e pulire il filtro o sostituire il distributore
Il trattore non sterza	1) Controllare il livello dell'olio nel serbatoio-scatola trasmissione anteriore 2) Pompa idraulica per idroguida e sollevamento rotta	Ripristinare il livello Sostituire la pompa

P.S.

Nell'eventualità che ci fossero problemi sul gruppo idroguida consultare il manuale della Danfoss.

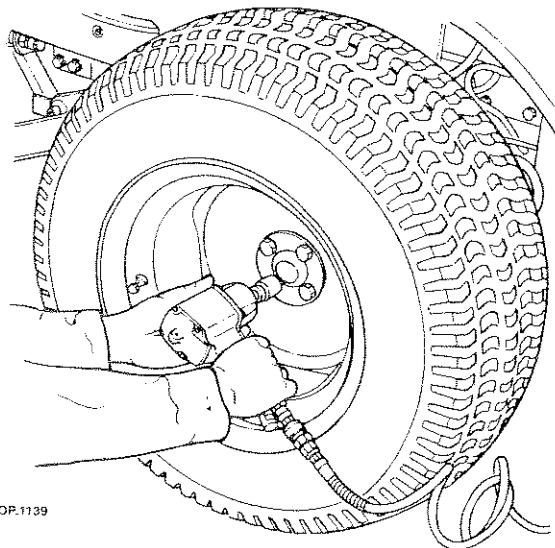
**ATTENZIONE - PERICOLO**

Eseguire le operazioni osservando scrupolosamente le misure di prevenzione.

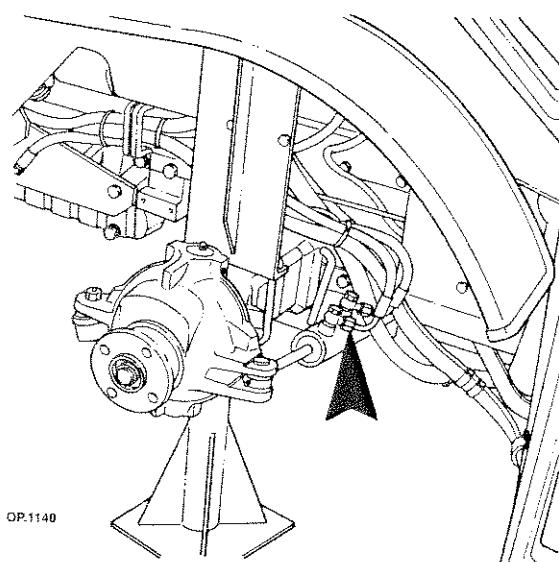
- Far attenzione al cesoimento - schiacciamento - impigliamento - urto - eiezione di fluido ad alta pressione, ecc.

Cilindro operatore sterzo**Revisione - sostituzione guarnizione O.ring****TIGRETRAC**

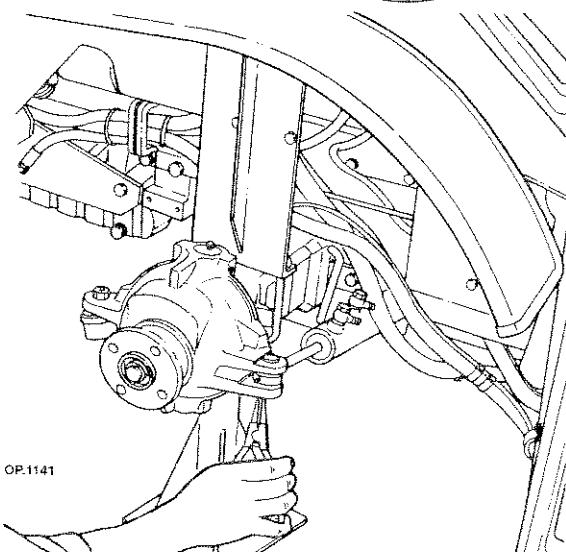
Per revisionare il cilindro operatore sterzo procedere come segue:



- 1** - posizionare un cavalletto fisso sotto l'asse, svitare le viti e togliere la ruota.

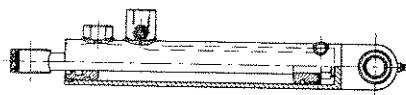


- 2** - Svitare i raccordi tubi olio e tappare i fori con adeguati tappi.



- 3** - Togliere l'anello elastico e sfilare il perno di ancoraggio.

- 4** - Utilizzando l'estrattore AT 37981314 togliere il perno cilindro sterzo e sfilare il cilindro completo.



- cilindro idroguida Tigretrac

- 5** - Togliere l'anello elastico e sfilare lo stelo assemblato.

- 6** - Sostituire le guarnizioni O.ring danneggiate.

- 7** - Recuperare l'olio del cilindro.

- 8** - Procedere al montaggio considerando le seguenti avvertenze:

a - effettuare un'accurata pulizia;

b - oliare le guarnizioni O.ring prima di eseguire il montaggio.

c - invertire le operazioni per il montaggio.

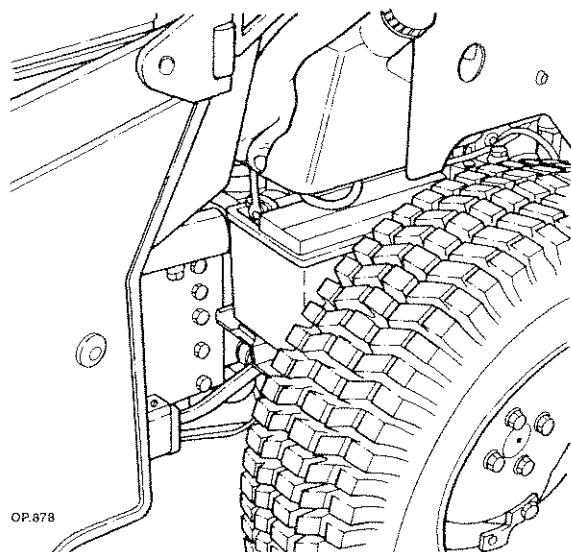
**ATTENZIONE - PERICOLO**

Eseguire le operazioni osservando scrupolosamente le misure di prevenzione.

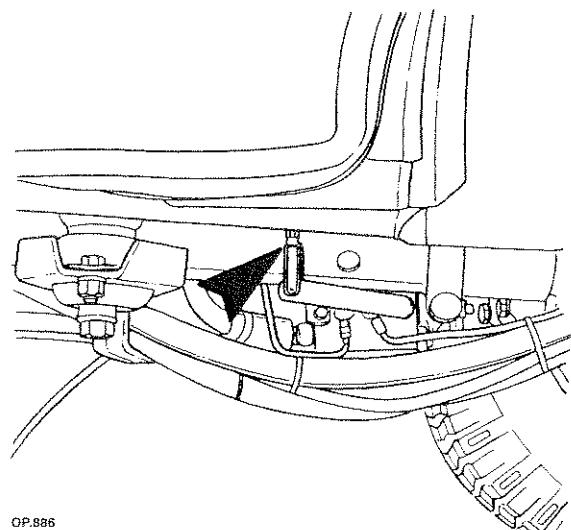
- Usare indumenti antinfortunistici previsti, come guanti e scarpe di sicurezza.
- Non usare le mani per allineare delle forature ma adeguati attrezzi.

Cilindro operatore sterzo**Revisione - sostituzione guarnizione O.ring****SUPERPARK**

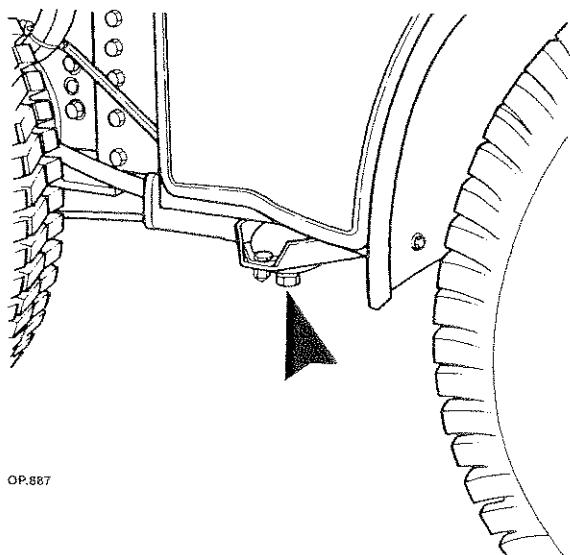
Per revisionare il cilindro operatore sterzo procedere come segue:



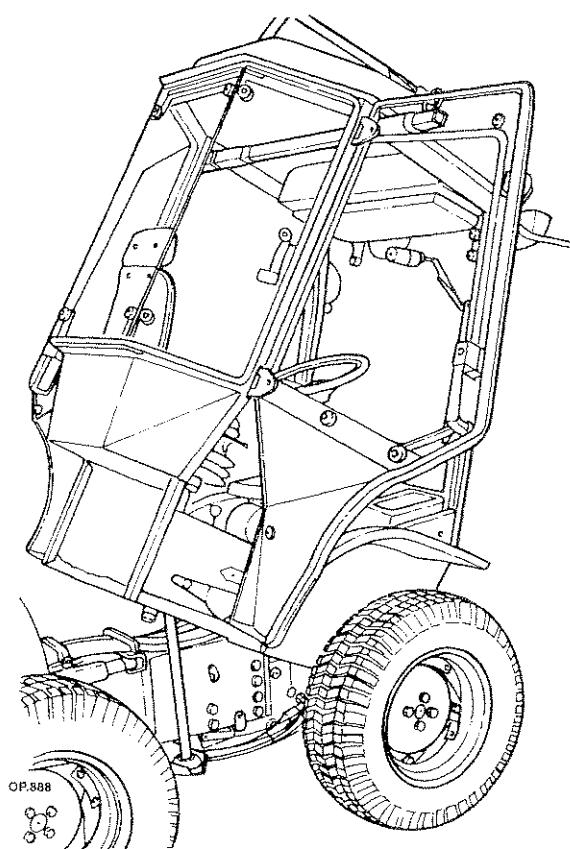
- 1** - Staccare il cavo positivo della batteria ed isolarlo.



- 2** - Togliere il forcellino di comando (speed-fix).



- 3** - Svitare i bulloni silent bloc posteriori cabina.

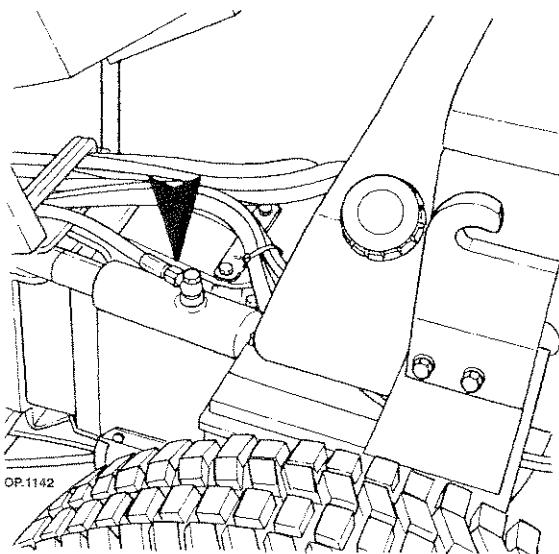


- 4** - Imbragare la cabina lato posteriore agganciandola a un paranco e sollevarla quel tanto da mettere un puntone di sicurezza.

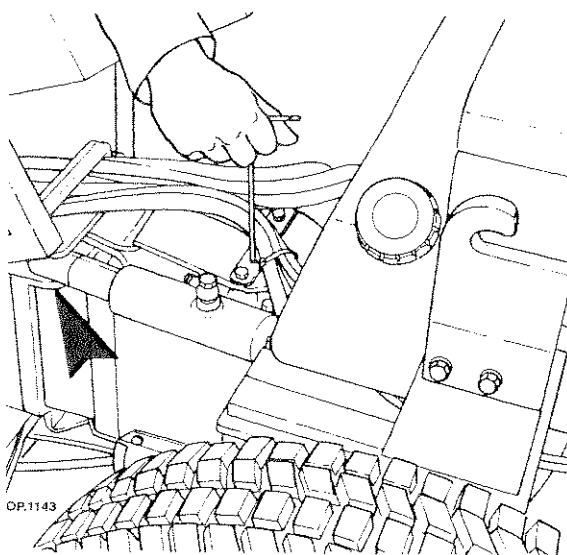
**ATTENZIONE - PERICOLO**

Eseguire le operazioni osservando scrupolosamente le misure di prevenzione.

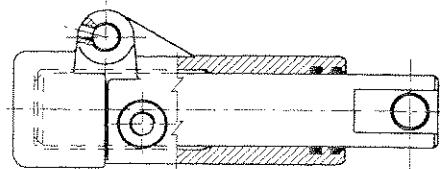
- Per sollevare usare sempre mezzi di capacità adeguata.
- Maneggiare funi metalliche o catene proteggendosi le mani con dei guanti antinfortunistici.



5 - Svitare i raccordi tubo ai cilindri idroguida e tappare i fori con adeguati tappi in plastica.



6 - Togliere i perni di contenimento e sfilare il cilindro sterzo.



OP.1172

- cilindro idroguida Superpark

7 - Sfilare lo stelo recuperando quel poco di olio rimasto nel cilindro.

8 - Sostituire le guarnizioni danneggiate O.ring.

9 - Procedere al montaggio considerando le seguenti avvertenze:

- a - effettuare un'accurata pulizia;
- b - oliare le guarnizioni O.ring prima di eseguire il montaggio;
- c - invertire le operazioni per il montaggio;
- d - attenersi alle coppie di serraggio elencate a pag. 4.



ATTENZIONE - PERICOLO



Eseguire le operazioni osservando scrupolosamente le misure di prevenzione.

- Per lo smaltimento di oli attenersi alle norme antinquinamento.
Evitare di inquinare l'ambiente.

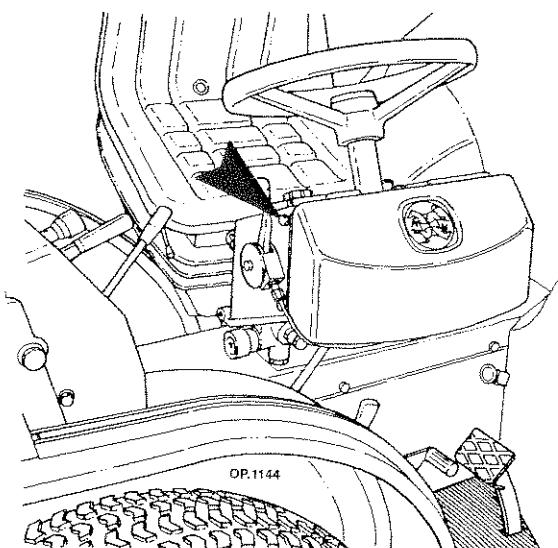
Distributore guida idrostatico

Stacco - riattacco

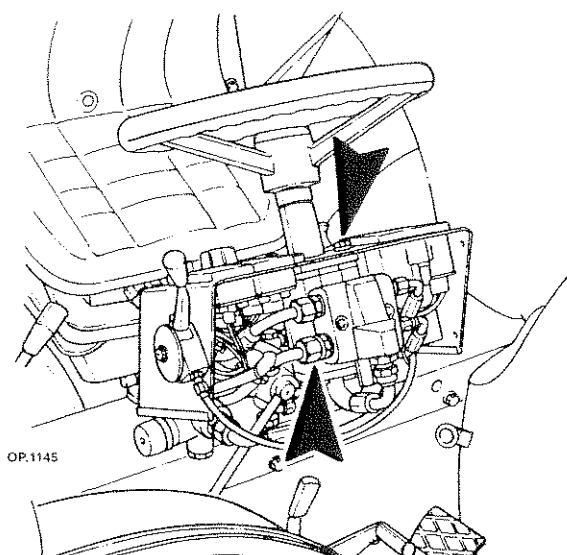
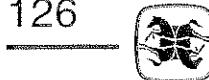
Per staccare il distributore idroguida procedere come segue:

1 - Staccare il cavo positivo della batteria ed isolarlo.

Tigretrac



2 - Svitare le viti e togliere il coperchio.



- 3 - Svitare i cinque raccordi di manda e ritorno olio dal distributore idroguida e tappare i fori con adeguati tappi in plastica.
- 4 - Svitare le viti di fissaggio distributore idroguida al puntone dello sterzo.
- 5 - Recuperare il distributore idroguida.



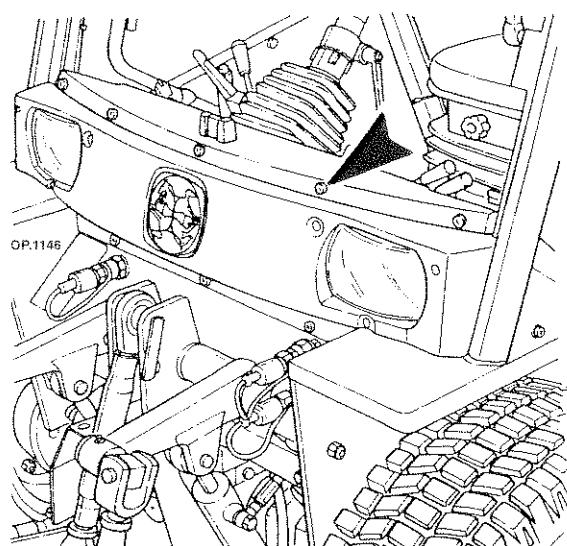
ATTENZIONE - PERICOLO



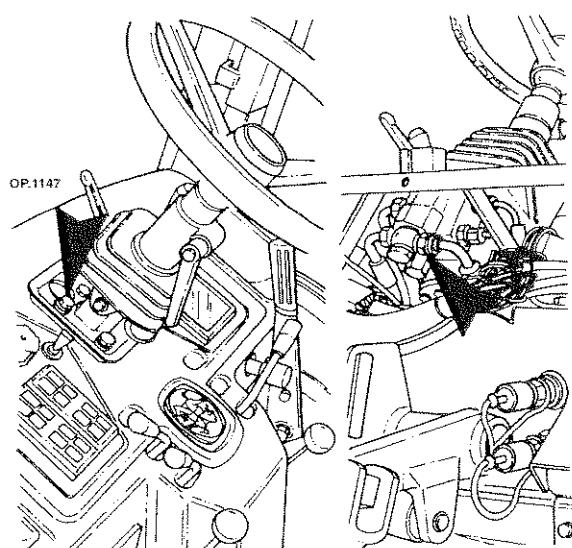
Eseguire le operazioni osservando scrupolosamente le misure di prevenzione.

- Far attenzione alla eiezione di fluido ad alta pressione.

Superpark



- 2 - Svitare le viti e togliere il coperchio crucotto-supporto fanali.



- 3 - Svitare i cinque raccordi di manda e ritorno olio dal distributore idroguida e tappare i fori con adeguati tappi in plastica.
- 4 - Svitare le viti di fissaggio distributore idroguida al puntone dello sterzo.
- 5 - Recuperare il distributore idroguida.

Riattacco

Distributore guida idrostatica

Tigretrac - Superpark

- Riattaccare il distributore idroguida considerando le seguenti avvertenze:

- a - procedere invertendo le operazioni dello stacco;
- b - ricordarsi di togliere i tappi dai tubi;
- c - attenersi alle coppie di serraggio elencate a pag. 4.

Smontaggio - montaggio

Distributori guida idrostatica

Vedi manuale idroguida (Danfoss).

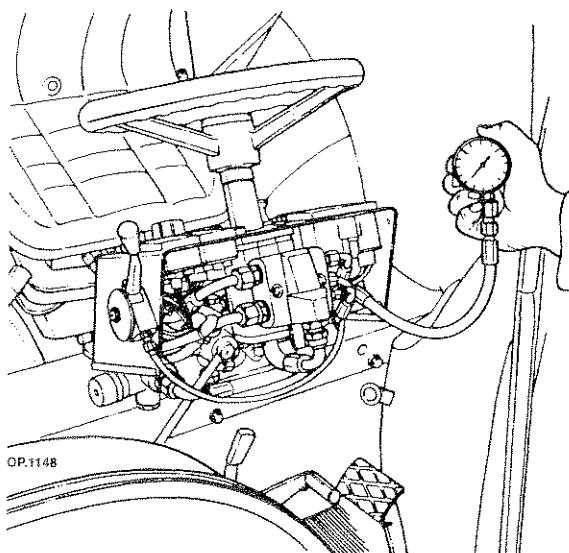


Controllo valvola di sovrappressione idro-guida.

Per effettuare il controllo della sovrappressione idroguida procedere come segue:

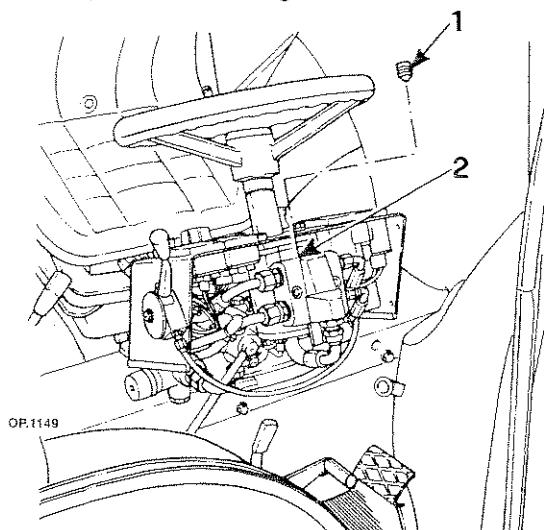
1 - Spegnere il motore e smontare un raccordo di collegamento tubazione di mandata olio al cilindro.

2 - Montare al posto del raccordo originale, precedentemente smontato, l'adattatore AT 37981259 e il manometro AT 37981258.



3 - Avviare il motore, portarlo ad un regime di 1500 g/1' e sterzare completamente; in queste condizioni la valvola di sovrappressione interviene ed il manometro indica la pressione effettiva.

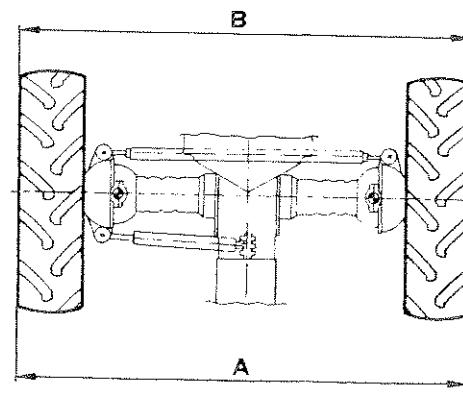
4 - In caso di pressione diversa da quella prescritta è possibile tarare la valvola agendo sull'apposita vite di registro.



- Regolazione della pressione nel circuito idraulico.

Controllo convergenza delle ruote direttive

Verificare la convergenza delle ruote direttive (anteriori) considerando che, in posizione di marcia rettilinea le ruote devono risultare parallele all'asse longitudinale del trattore oppure con un leggero errore di ± 2 mm.



- Controllo convergenza.

Per controllare l'esatto valore della convergenza procedere come segue:

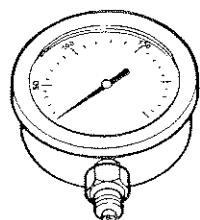
1 - Posizionare il volante a metà corsa.

2 - Verificare che le ruote siano parallele all'asse longitudinale del trattore.

3 - Appoggiare una riga sul lato esterno della ruota dx e una sulla sx sul piano orizzontale e passante per il centro della ruota.

4 - Misurare quindi la distanza A e la distanza B, verificando che queste misure risultino uguali oppure superiori fino ad un massimo di 2 mm e inferiori di un minimo di 2 mm, vedi dis. controllo convergenza.

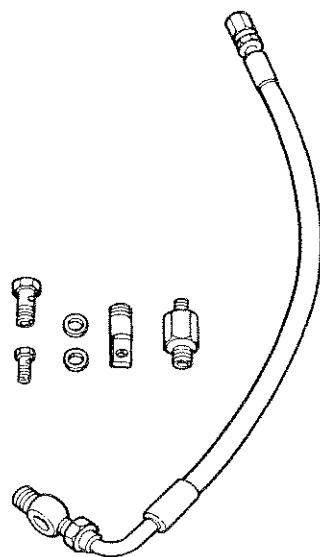
5 - Agire sulla barra di accoppiamento ruote per eventuali correzioni.



37981258

AT.080

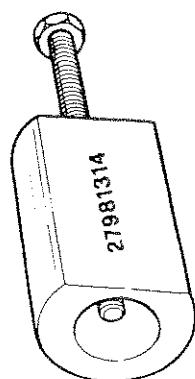
1 - Manometro misuratore pressione.



AT.081

37981259

2 - Adattatore per misurare la pressione.



AT.191

3 - Estrattore perno cilindro sterzo.



GRUPPO IDRAULICO DI SOLLEVAMENTO

Il sollevamento idraulico è dotato di un distributore a centro aperto.

L'olio viene prelevato dalla scatola trasmissione anteriore da una pompa e filtrato da un filtro riciclabile e mandato in pressione ai circuiti.

Caratteristiche tecniche

Sollevamento idraulico

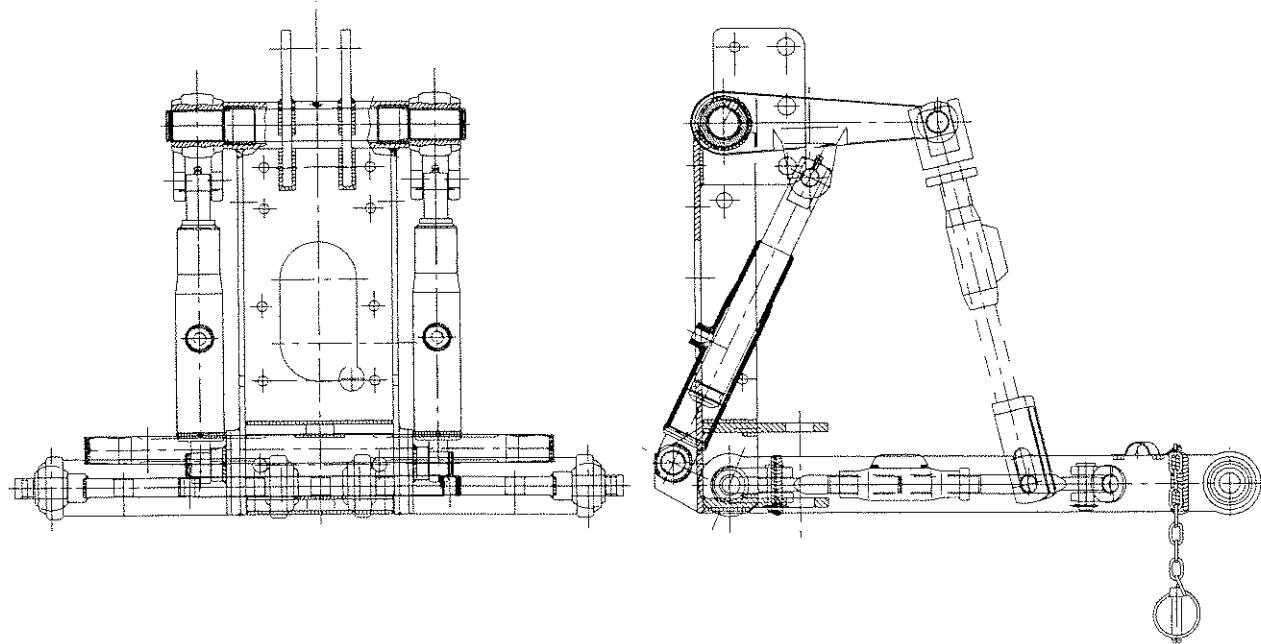
Sollevatore	Normale	Normale	Normale
Tipo	MD B4 100 M 140 K 01	MD B4 100 M 140 K 01	MD B4 100 M 140 K 01
Marca	DIN OIL IDROIRMA	DIN OIL IDROIRMA	DIN OIL IDROIRMA
Codice	4 152 509	4 152 509	4 152 505
Taratura valvola di massima	110-120 BAR	135 BAR	135 BAR
Tipo trattore	Tigretrac 2500	Tigretrac 3800	Superpark 3800

Pompa idraulica

Pompa idraulica	HLPS/X 170 C AM2/24S 100	HLPD/L 211 C
Marca	Lamborghini Idroirma	Lamborghini
Codice	2151535	2151536
cm ³ /giro	7 6,8	11
Tipo trattore	Tigretrac 2500	Tigretrac 3800 Superpark 3800

Cilindro sollevamento-martinetto

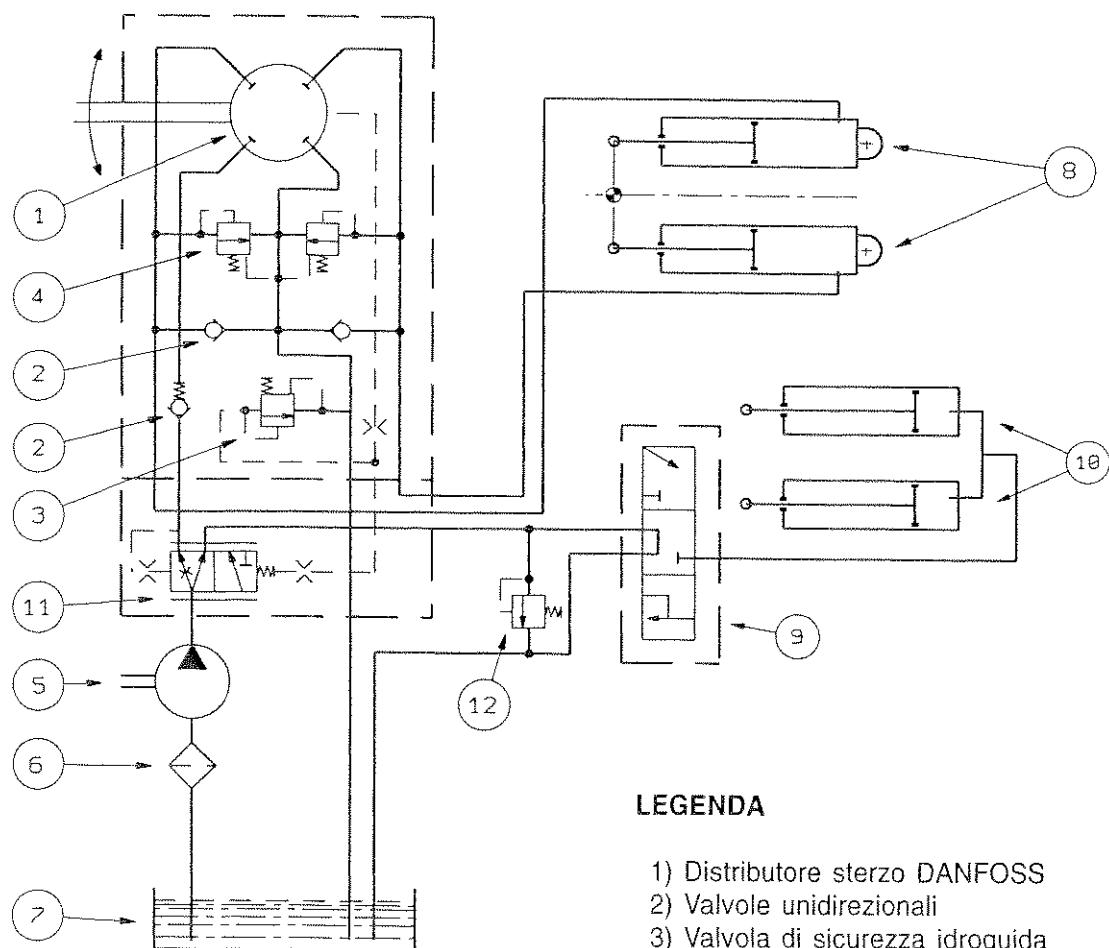
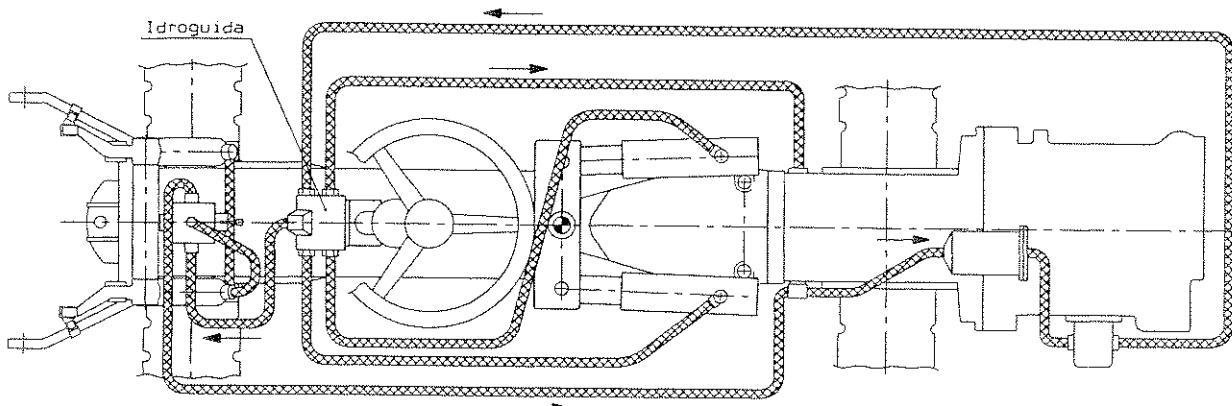
Codice martinetto	23401009
Corsa utile	146
Diametro stelo	35
Tipo trattore	Tigretrac Superpark

**ATTACCO-SOLLEVAMENTO****Diagnosi degli inconvenienti**

Inconveniente	Cause possibili	Rimedi
Il sollevamento non avviene o avviene lentamente	1) Controllare che il sollevatore non sia sovraccarico 2) Verificare il funzionamento della pompa 3) Controllare la taratura della valvola di sicurezza 4) Verificare il livello dell'olio 5) Verificare l'efficienza del filtro olio	Sostituire la pompa Verificare la taratura Ripristinare il livello olio Pulire il filtro olio
Il sollevatore non solleva	1) Filtro olio intasato 2) Pompa idraulica inefficiente 3) Mancanza di olio nel serbatoio	Pulire il filtro Sostituire la pompa Ripristinare il livello olio le verificare le eventuali perdite



SCHEMA-IDRAULICO SOLLEVAMENTO SUPERPARK 3800

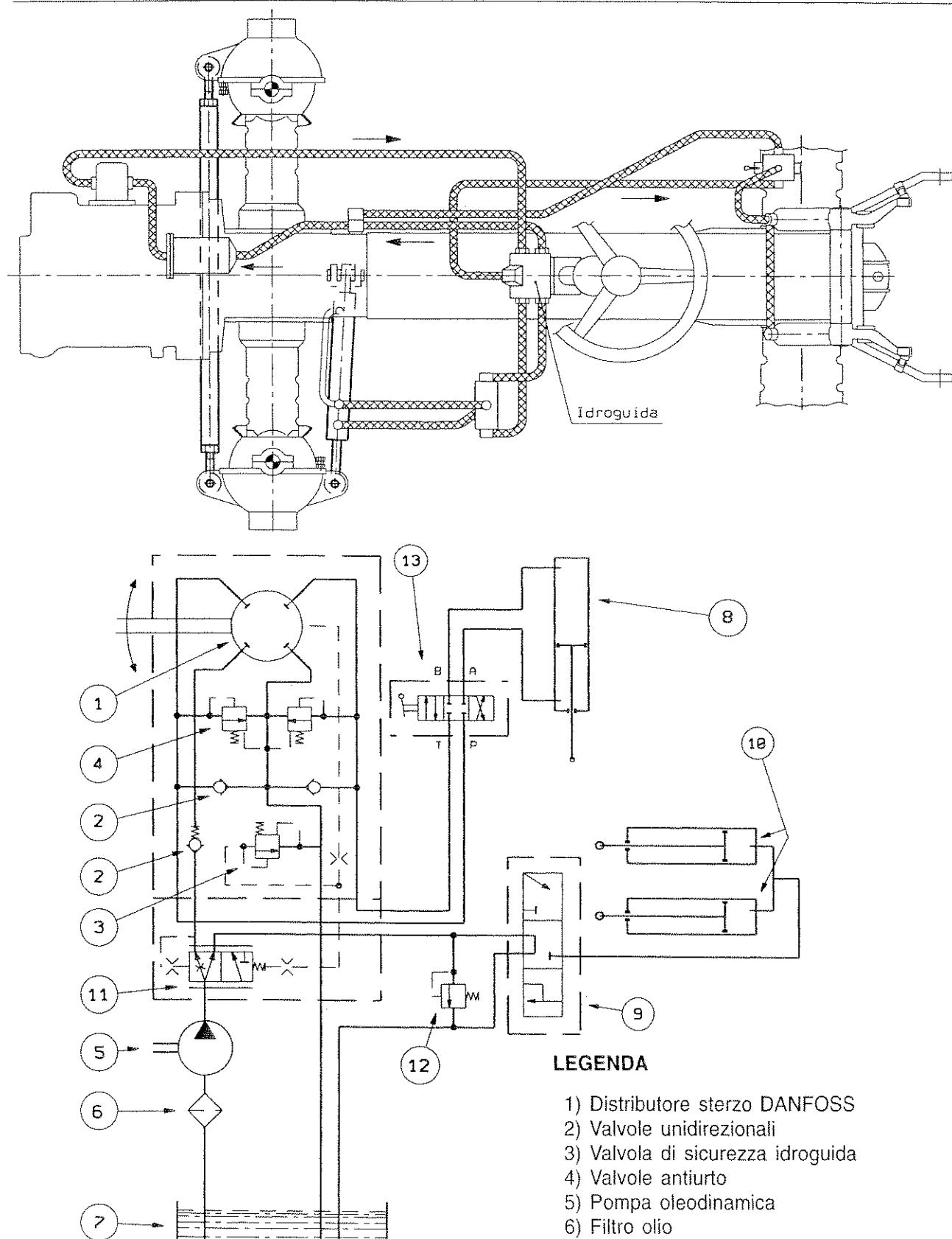


LEGENDA

- 1) Distributore sterzo DANFOSS
- 2) Valvole unidirezionali
- 3) Valvola di sicurezza idroguida
- 4) Valvole antiurto
- 5) Pompa oleodinamica
- 6) Filtro olio
- 7) Serbatoio olio
- 8) Martinetti sterzo
- 9) Distributore sollevatore normale
- 10) Martinetti sollevatore
- 11) Valvola prioritaria
- 12) Valvola di sicurezza circuito attrezzature



SCHEMA-IDRAULICO SOLLEVAMENTO TIGRETRAC 3800



LEGENDA

- 1) Distributore sterzo DANFOSS
- 2) Valvole unidirezionali
- 3) Valvola di sicurezza idroguida
- 4) Valvole antiurto
- 5) Pompa oleodinamica
- 6) Filtro olio
- 7) Serbatoio olio
- 8) Martinetto sterzo
- 9) Distributore sollevatore normale
- 10) Martinetti sollevatore
- 11) Valvola prioritaria
- 12) Valvola di sicurezza circuito attrezzi
- 13) Deviatore

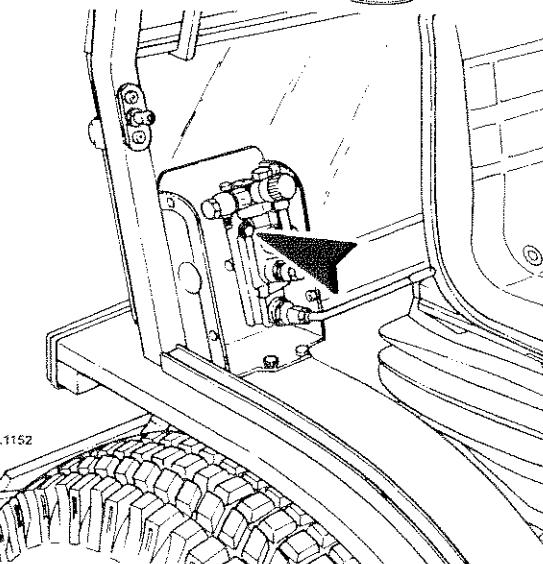


ATTENZIONE - PERICOLO

Eseguire le operazioni osservando scrupolosamente le misure di prevenzione.

- Non disperdere nell'ambiente i fluidi esausti. Affidarsi esclusivamente ai centri di raccolta olii esausti regolarmente autorizzati.

Evitare di inquinare l'ambiente.



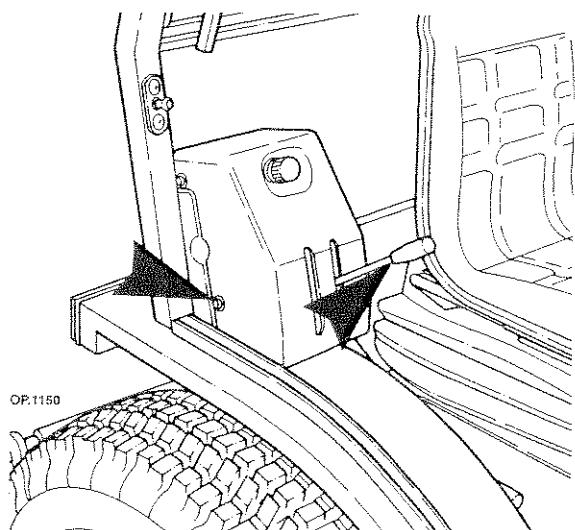
OP.1152

DISTRIBUTORE SOLLEVAMENTO

Stacco - riattacco

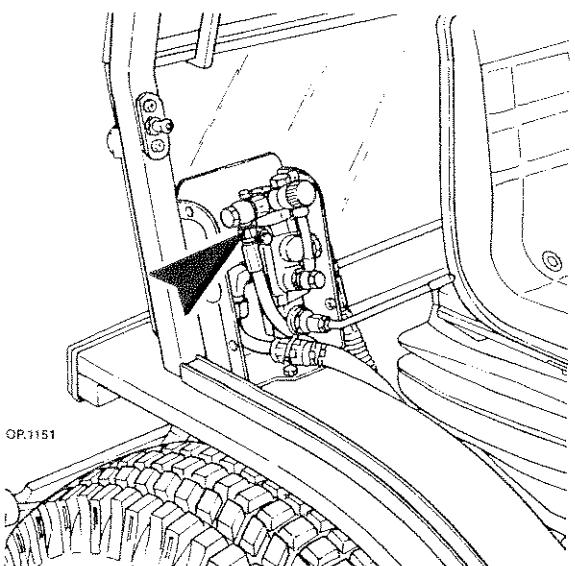
Per staccare il distributore del sollevamento procedere come segue:

Tigretrac



OP.1150

1 - Svitare le viti e togliere le protezioni distributore e sfilare i pomelli leve distributore.



OP.1151

2 - Svitare i raccordi mandata e ritorno olio e tappare i fori con adeguati tappi.

3 - Svitare le viti di fissaggio distributore sollevamento.

4 - Recuperare il distributore sollevamento.

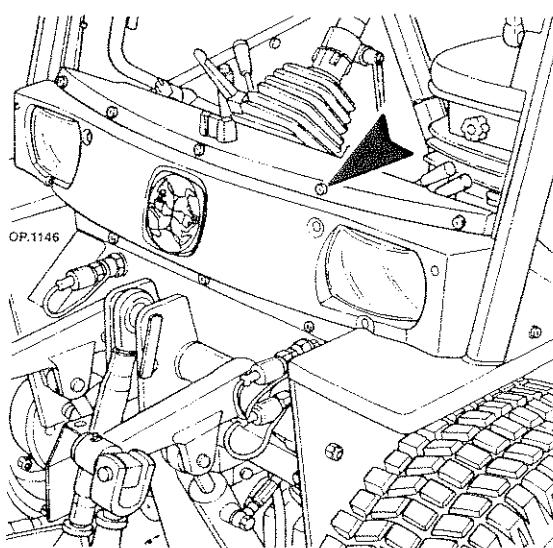


ATTENZIONE - PERICOLO

Eseguire le operazioni osservando scrupolosamente le misure di prevenzione.

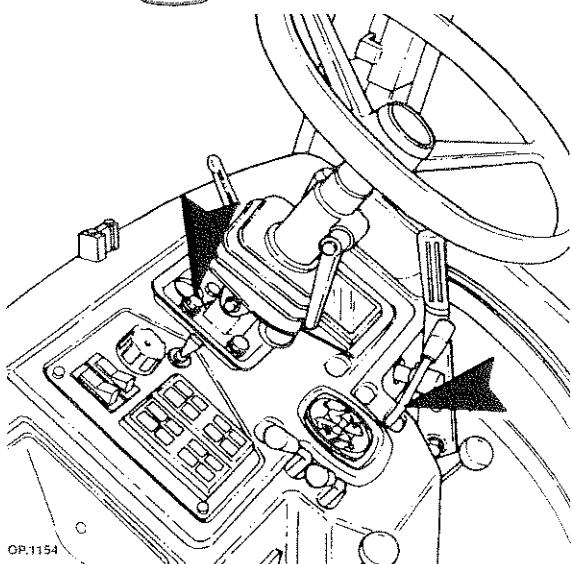
- Far attenzione alla eiezione di fluido ad alta pressione.

Superpark



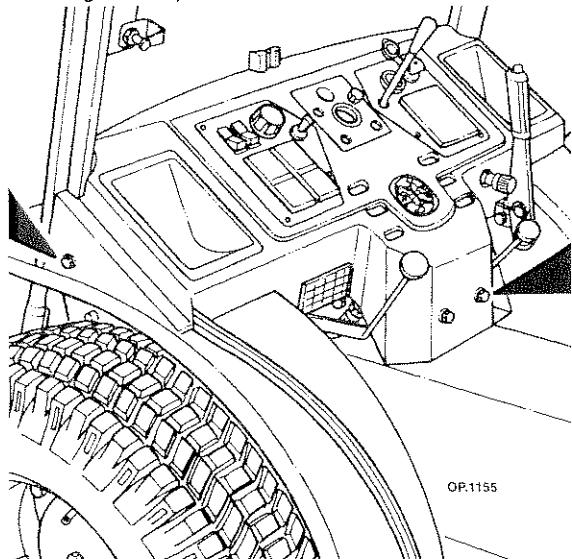
OP.1146

1 - Svitare le viti e togliere il coperchio cruscotto-supporto fanali.

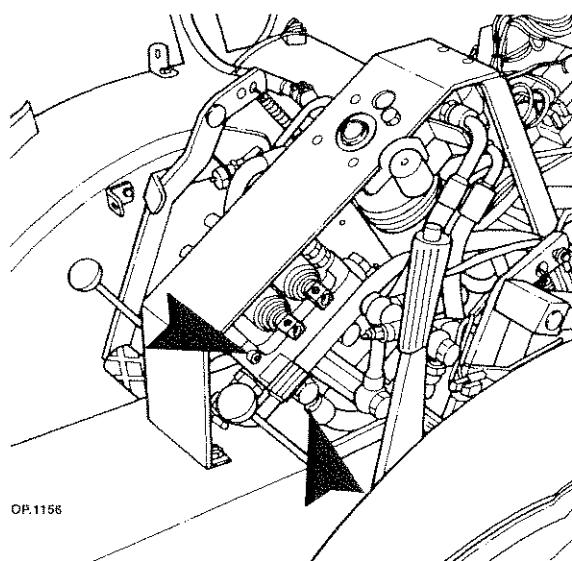


2 - Svitare le viti e togliere il piantone dello sterzo completo.

3 - Togliere i pomelli comando distributore.



4 - Svitare le viti e sollevare la plancia porta strumenti.



5 - Svitare i raccordi tubi olio mandata e scarico e tappare i fori con adeguati tappi.

6 - Svitare le viti di fissaggio distributore e recuperarlo.

Riattacco

Distributore sollevamento

Tigretrac - Superpark

Riattaccare il distributore considerando le seguenti avvertenze:

a - procedere invertendo le operazioni dello stacco;

b - ricordarsi di togliere i tappi dai tubi;

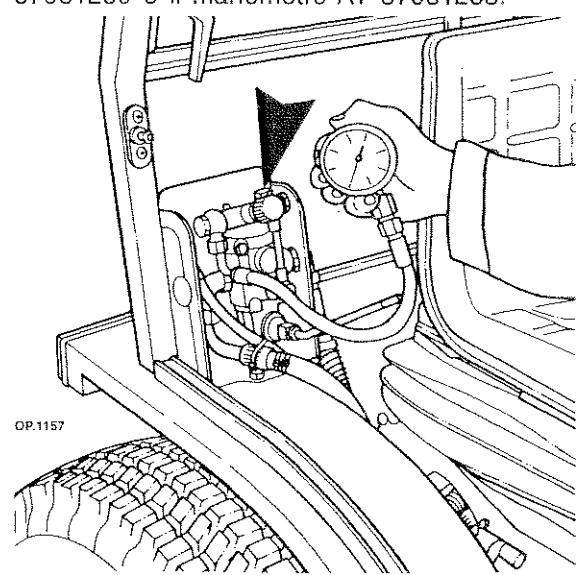
c - attenersi alle coppie di serraggio elencate a pag. 4.

CONTROLLO VALVOLA DI SOVRAPRESSIONE IMPIANTO IDRAULICO

Per effettuare il controllo della sovrappressione impianto idraulico procedere come segue:

1 - a motore spento smontare un raccordo di collegamento tubazione di mandata ai cilindri del sollevamento.

2 - Montare al posto del raccordo originale, precedentemente smontato, l'adattatore AT 37981259 e il manometro AT 37981258.

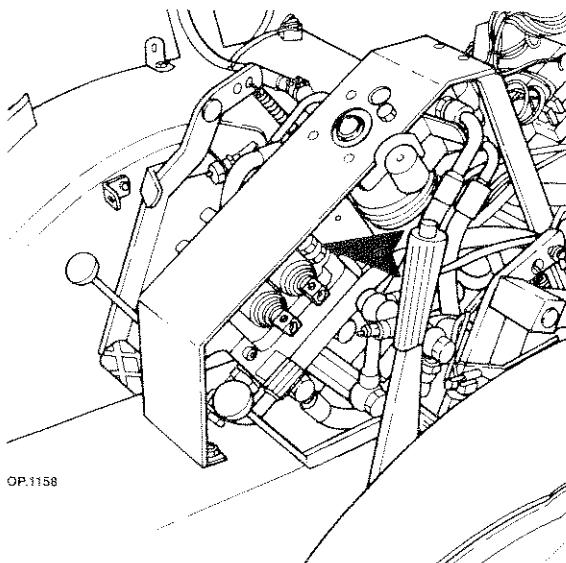


- Verifica pressione
- Viti registro pressione



3 - Avviare il motore, portarlo ad un regime di 1500 g/i" circa e far sollevare completamente il sollevamento fino a fine corsa dei martinetti; in queste condizioni la valvola di sovrappressione deve intervenire ed il manometro deve indicare la pressione.

4 - Nel caso di pressione diversa da quella prescritta è possibile intervenire sulla vite di registro collocata sul distributore.



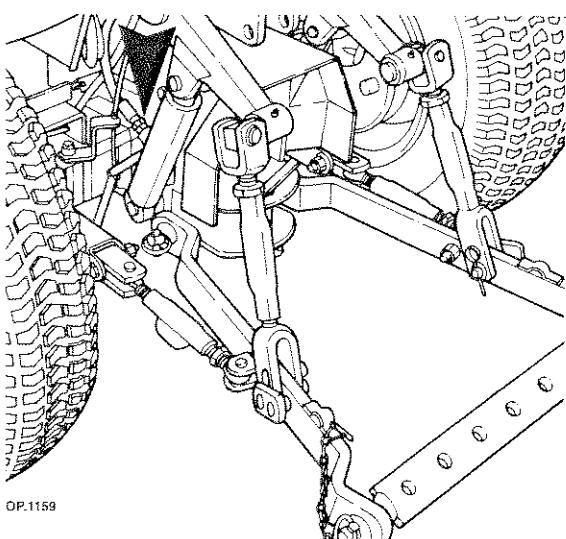
- Vite registro pressione (Superpark)

CILINDRO SOLLEVAMENTO

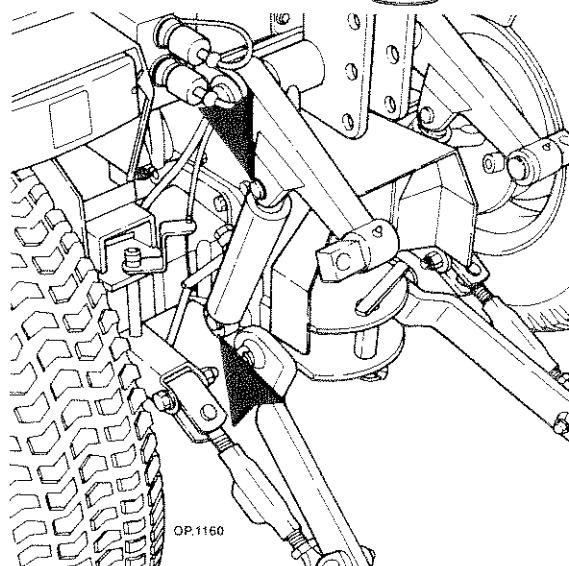
Stacco - riattacco

Per staccare il cilindro del sollevamento procedere come segue:

1 - abbassare il sollevamento.



2 - Svitare i raccordi tubi ai cilindri e tappare i fori.



3 - Togliere l'anello di contenimento sul cilindro.

4 - Togliere gli anelli del perno di ritegno dello cilindro.

5 - Sfilare il perno.

6 - Togliere il cilindro di sollevamento.

7 - Riattaccare il cilindro di sollevamento considerando le seguenti avvertenze:

a - procedere invertendo le operazioni dello stacco;

b - ingassare boccole e perni;

c - attenersi alle coppie di serraggio elencate a pag. 4.



ATTENZIONE - PERICOLO



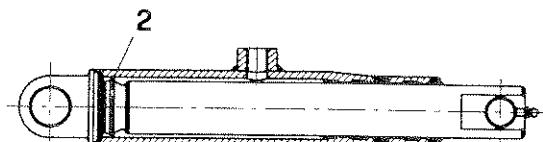
Eseguire le operazioni osservando scrupolosamente le misure di prevenzione.

- Usare indumenti antinfortunistici previsti, come guanti e scarpe di sicurezza.
- Far attenzione al cesoijamento.
- Far attenzione allo schiacciamento.
- Far attenzione all'impigliamento.

**CILINDRO SOLLEVAMENTO****Smontaggio - montaggio**

Per sfilare lo stelo dal cilindro occorre:

- 1 - spostare lo stelo facendo coincidere l'anello elastico di contenimento in direzione del foro di ingresso olio al cilindro.
- 2 - Spostare dalla cava l'anello (2) con un cacciavite portandolo nell'apposita gola.



OP.1173

- cilindro sollevamento
- 3 - Sfilare lo stelo.
- 4 - Sostituire le guarnizioni di tenuta O.ring danneggiate.
- 5 - Procedere al montaggio considerando le seguenti avvertenze:
 - a - effettuare un'accurata pulizia;
 - b - oliare le guarnizioni di tenuta O.ring;
 - c - invertire le operazioni dello smontaggio.

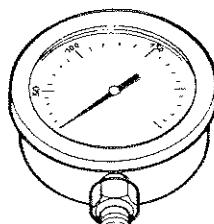
**ATTENZIONE - PERICOLO**

Eseguire le operazioni osservando scrupolosamente le misure di prevenzione.

- Non disperdere nell'ambiente i fluidi esausti, le cartucce dei filtri usate, olii, grassi lubrificanti ed elementi usati per la pulizia degli stessi.

Affidarsi esclusivamente ai centri di raccolta oli esausti regolarmente autorizzati.

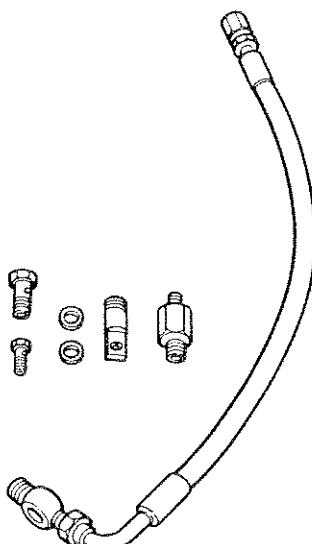
Evitare di inquinare l'ambiente.

Attrezzatura AT 80

37981258

AT.080

1 - Manometro misuratore pressione.



AT.081

2 - Adattatore per misurare la pressione.

37981259



IMPIANTO ELETTRICO

L'impianto elettrico è di tipo automobilistico. Esso è composto principalmente da: batteria, alternatore, motorino d'avviamento, sistemi di illuminazione e segnalazione, cruscotto con strumenti di comando e controllo.
È diviso in dodici linee protette da fusibile con a valle un fusibile generale.
L'impianto funziona ad una tensione di 12 volt nominali.

Caratteristiche tecniche

Batteria

Tipo trattore	Tigretrac 2500	Tigretrac - Superpark 3800
Tensione nominale	V 12	12
Capacità nominale	Ah 48	70
Intensità di scarica	A 230	420
Dimensioni	mm 225x220x135	278x190x175
Codice	46705005	46705001

Motorino di avviamento

Tipo trattore	Tigretrac 2500	Tigretrac - Superpark 3800
Tensione	V 12	12
Potenza nominale	KW 1,1	2,2
Comando	Elettromagnetico	
Innesto	Con traslazione ed avvitamento del pignone	

Alternatore

Tipo trattore	Tigretrac 2500	Tigretrac - Superpark 3800	
Tipo alternatore	Trifase autoraddrizzante		
Tensione nominale erogata	V 13÷14		
Intensità di corrente erogata	A 33	45	
Regolatore di tensione	Elettronico incorporato nell'alternatore		

**Valvole fusibili**

Prima di sostituire una valvola fusa con un'altra dello stesso amperaggio, ricercare ed eliminare il guasto che ha provocato l'inconveniente.

Fusibili generali

Fusibili da 60 ampere per trattori 2500-3800

Valvole fusibili	Circuiti protetti	Ampere fusibile
1	Luci posizione ant. Dx e post. Sx - faro lavoro Sx - luce targa	15
2	Luci posizione ant. Sx e post. Dx - faro lavoro Dx	15
3	Luci indicatori funzioni-spie-tachimetro	7,5
4	Lamp. allarm - autoradio - luce cortesia - presa bipolare (lampeggiante)	10
5	Anabbagliante proiettore sinistro	7,5
6	Anabbagliante proiettore destro	7,5
7	Cronografiometro - spia batteria - rilevatore allarmi	7,5
8	Lamp. allarm - riscaldatore	25
9	Abbagliante Dx e Sx + spia	15
10	Rilevatore candelette - elettrostop - spie-AT. cassetto C 1100	7,5
11	Stop - tergilampi - lava vetro	10
12	Claxon - sensore contachilometri	10

Tachimetro digitale

Il tachimetro digitale LCD non necessita di alcuna regolazione

Caratteristiche tecniche generali

Dati di funzionamento: campo di indicazione 0÷40 Km/h
tensione nominale 12 V
precisione $\pm 0,1$ Km/h

Segnale di comando: generatore d'impulso "Honeywell"
1GT 101DC accoppiato con ruota
fonica con n. 10 denti

 **Illuminazione - segnalazione**

Due proiettori anteriori asimmetrici con fascio di luce anabagliante e abbagliante, con lampada a doppio filamento di 45/40 W.

Due fanali anteriori comprendenti:

- luce di posizione (lampada di 5 W) con trasparente bianco;
- luce di direzione (lampada di 21 W) con trasparente arancione.

Due fanali posteriori comprendenti:

- luce di posizione ed arresto (lampada da 5/21 W) con trasparente rosso;
- luce di direzione (lampada da 21 W) con trasparente arancione;
- due catadiotri posteriori rossi.

Un fanale di illuminazione targa (lampada di 5 W).

Una serie di indicatori ottici con lampade di 1,2/3 W per:

- carica alternatore (luce rossa);
- insufficiente pressione olio motore (luce rossa);
- insufficienza livello carburante (luce rossa);
- inserimento freno a mano (luce rossa);
- inserimento candelette preriscaldo (luce gialla);
- intasamento filtro aria a secco (luce rossa);
- inserimento fari posteriori da lavoro (luce verde);
- inserimento luci di posizione (luce verde);
- inserimento luci abbaglianti (luce blu);
- inserimento luci di direzione del trattore (luce verde);
- inserimento luci di direzione del rimorchio (luce verde);
- inserimento luci di emergenza (luce rossa);
- intasamento filtro olio idrostatico (luce gialla);
- temperatura elevata acqua motore (luce rossa).

Commutatore di avviamento

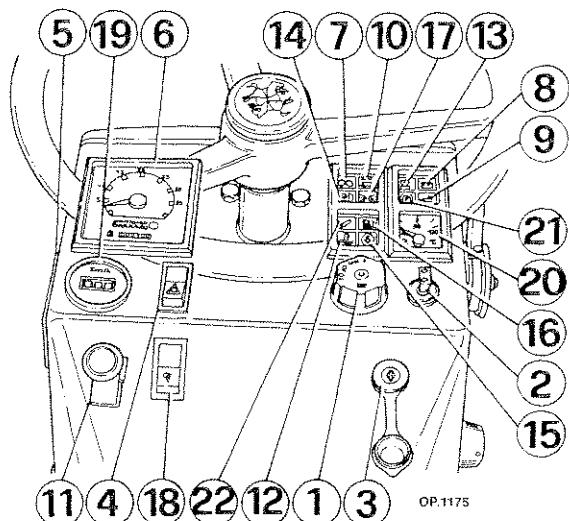
Posizione commutatore	Apparecchi inseriti
Posizione 0	Nessun circuito sotto corrente ad eccezione della presa unipolare di corrente e luce di emergenza chiave estraibile.
Posizione 1	Predisposizione avviamento motore. Funzionamento dei segnalatori e degli strumenti di controllo. Utilizzatori vari sotto tensione.
Posizione 2	Avviamento del motore (la chiave, se rilasciata, ritorna automaticamente in posizione 1).
Posizione P	Fanali, illuminazione cruscotto, luci di posizione, di stazionamento e targa (chiave estraibile).

FUNZIONI DI SICUREZZA

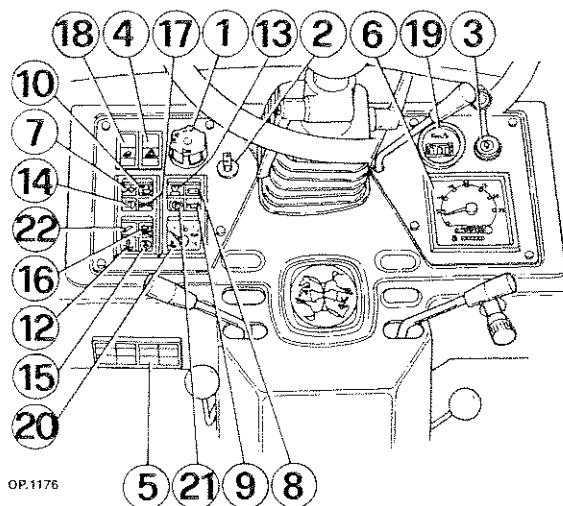
Oltre agli indicatori visivi esiste un indicatore di malfunzionamento supplementare sonoro e consiste nell'accensione del claxon nel momento in cui si accendono le spie: alta temperatura acqua, insufficiente pressione olio motore, intasamento filtro aria motore, intasamento filtro olio idrostatico. Per spegnere l'avvisatore acustico schiacciare il pedale della frizione.



QUADRI DI COMANDO CON STRUMENTI DI CONTROLLO



- 1 - Comutatore luci ed avvisatore acustico
- 2 - Deviatore indicatori di direzione ed avvisatore visivo
- 3 - Interruttore d'avviamento
- 4 - Interruttore lampalarm
- 5 - Scatola fusibili di protezione
- 6 - Cronogirometro indica il numero di giri del motore e della presa di potenza, e le ore di funzionamento della macchina.
- 7 - Spia indicatori di direzione
- 8 - Spia insufficiente ricarica batteria (rossa)
- 9 - Spia insufficiente pressione olio motore



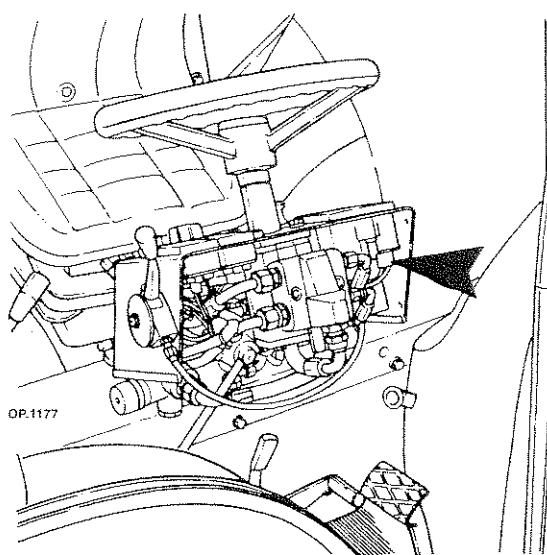
- 10 - Spia indicatori di direzione rimorchio
- 11 - Pomello disinnesco trazione
- 12 - Spia alta temperatura acqua
- 13 - Spia preriscaldatore
- 14 - Spia luci abbaglianti
- 15 - Spia intasamento filtro aria
- 16 - Spia riserva combustibile
- 17 - Spia luci di posizione
- 18 - Comando fari di lavoro
- 19 - Tachimetro digitale
- 20 - Indicatore temperatura acqua
- 21 - Spia freno di stazionamento
- 22 - Spia intasamento filtro olio idrostatico

Regolazione contagiri motore sul cronografo elettronico.

Il cronografo elettronico indica il numero dei giri motore e della presa di potenza, e le ore di funzionamento della macchina.

Per egualare i giri motore ai giri sul contagiri procedere come segue:

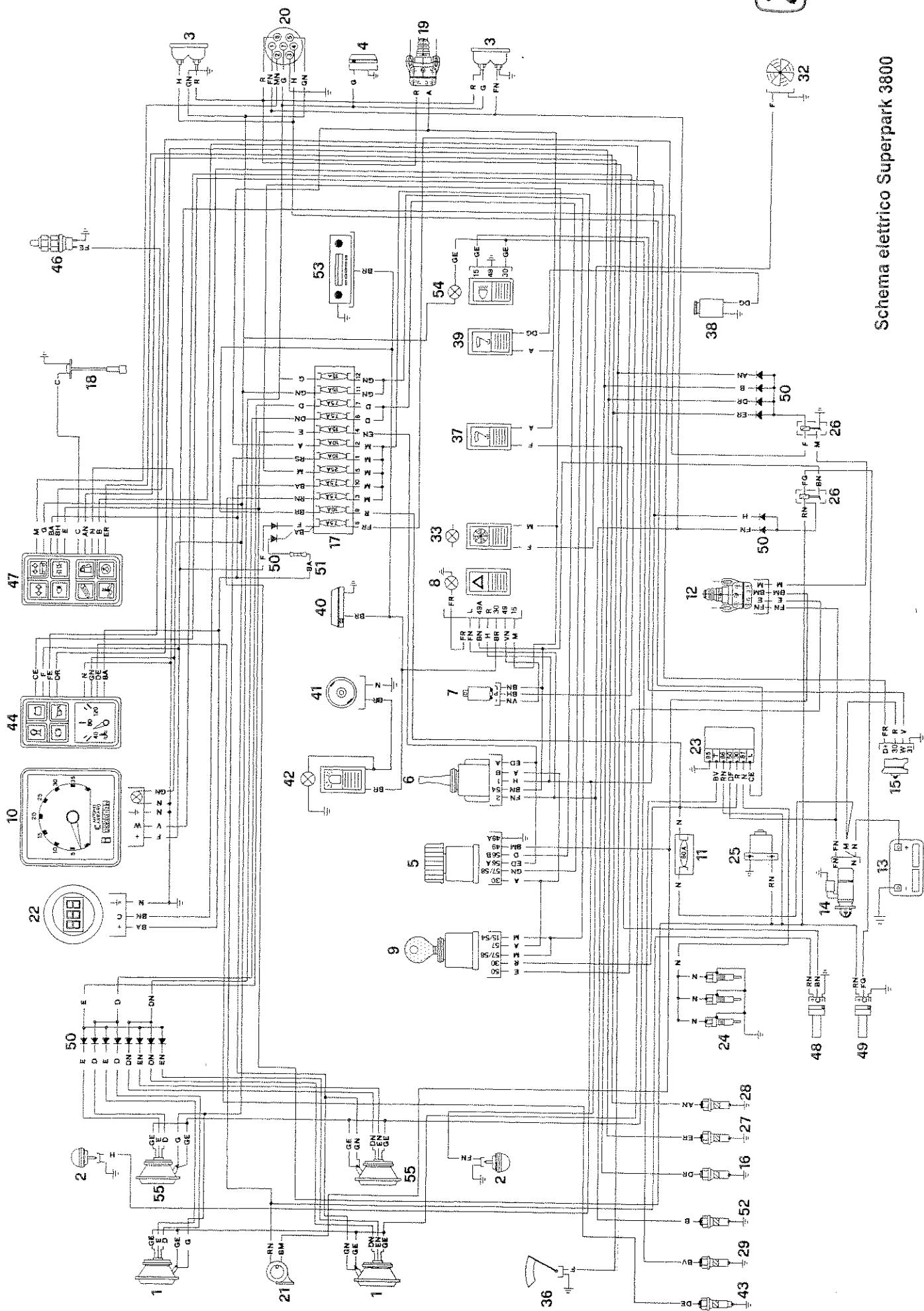
- 1 - applicare un attrezzo che misuri i giri motore sul motore.
- 2 - Avviare il motore e portarlo ad un regime di 1500 g/1'.
- 3 - Verificare se i giri sul cronografo elettronico corrispondono a quelli del nostro applicato.
- 4 - Nel caso di giri diversi regolare il cronografo elettronico fino ad egualare i giri tra i due rilevatori.



- Regolazione contagiri.

IMPIANTO ELETTRICO 85

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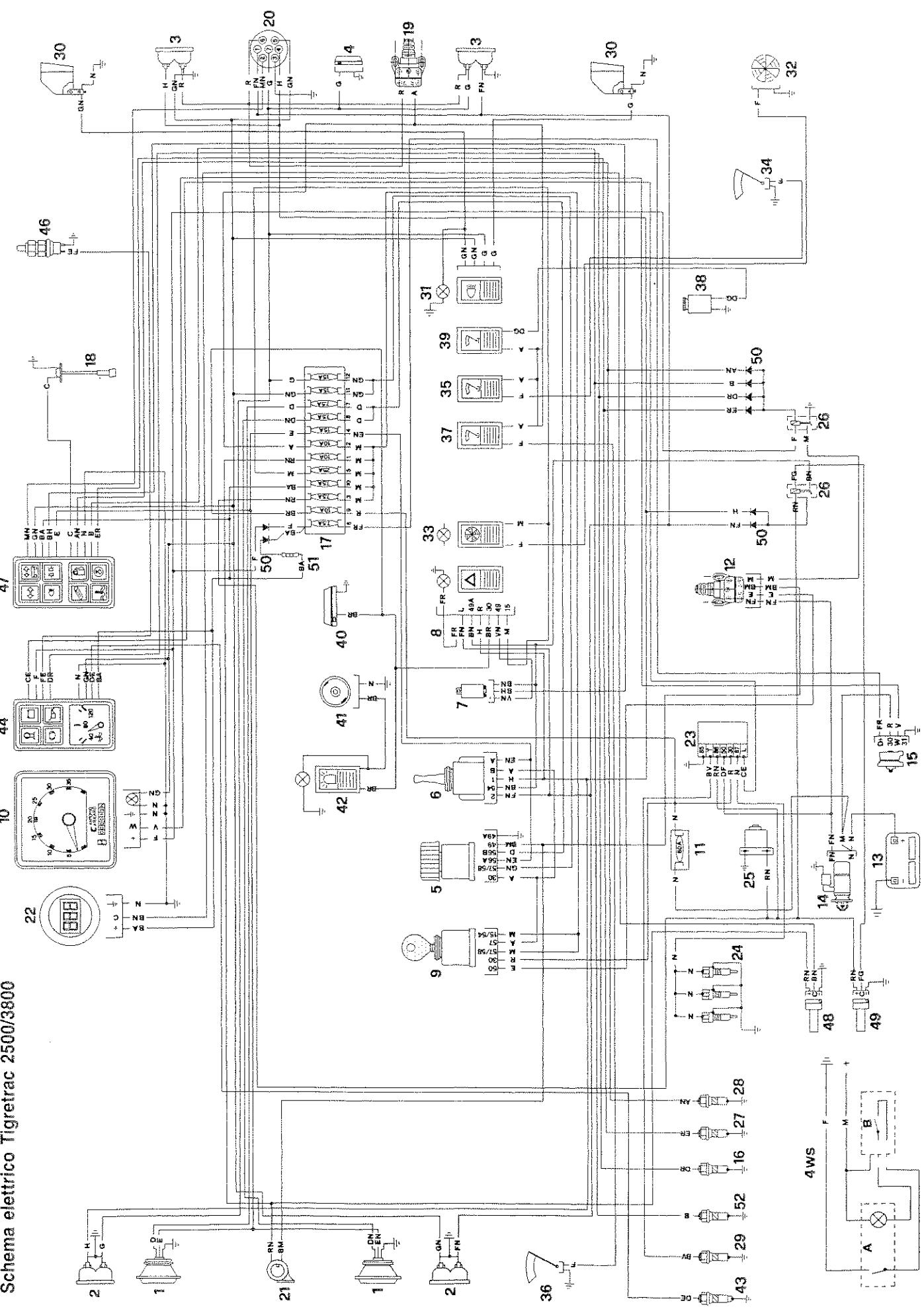


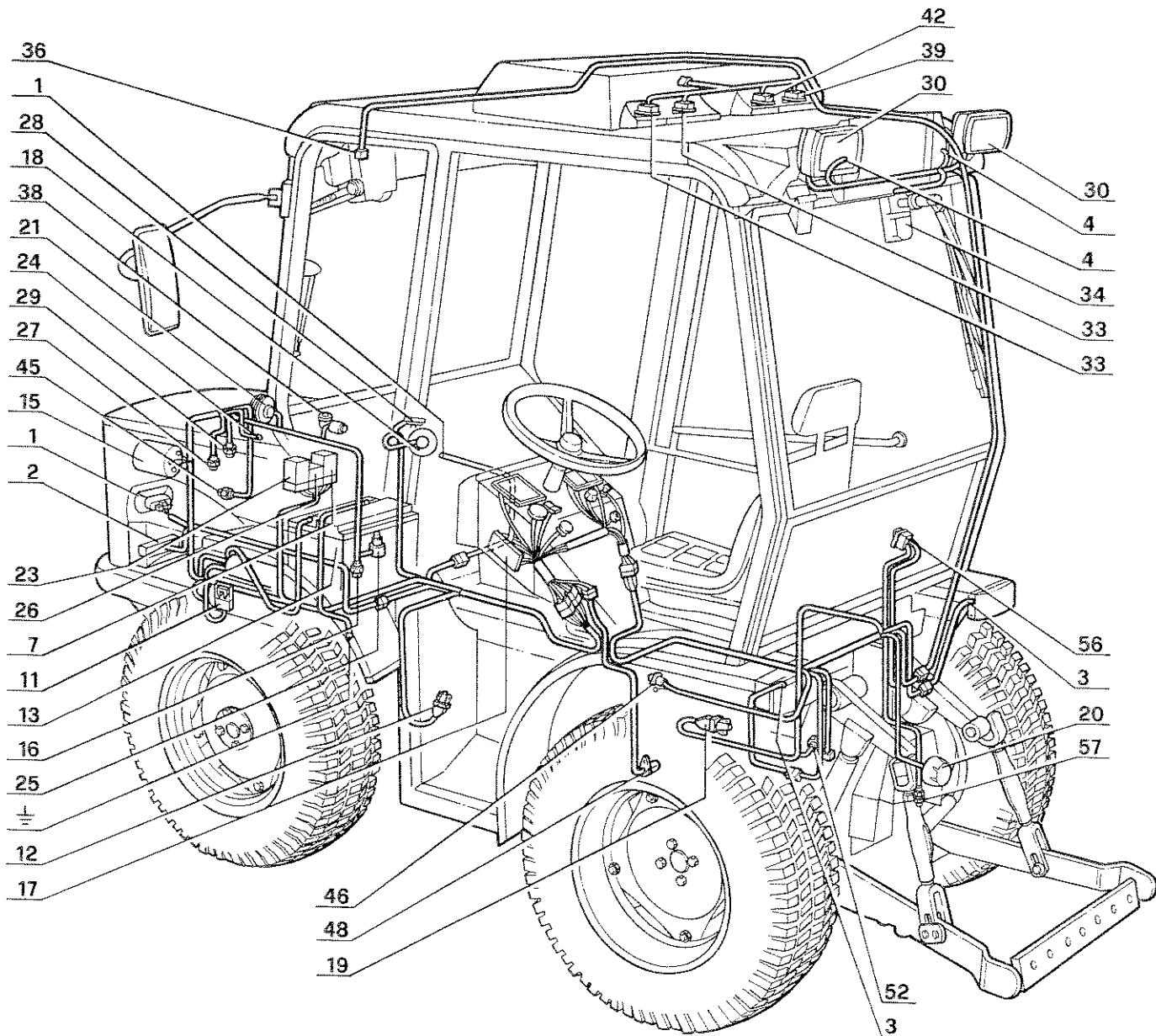
Schema elettrico Superpark 3800



IMPIANTO ELETTRICO 85

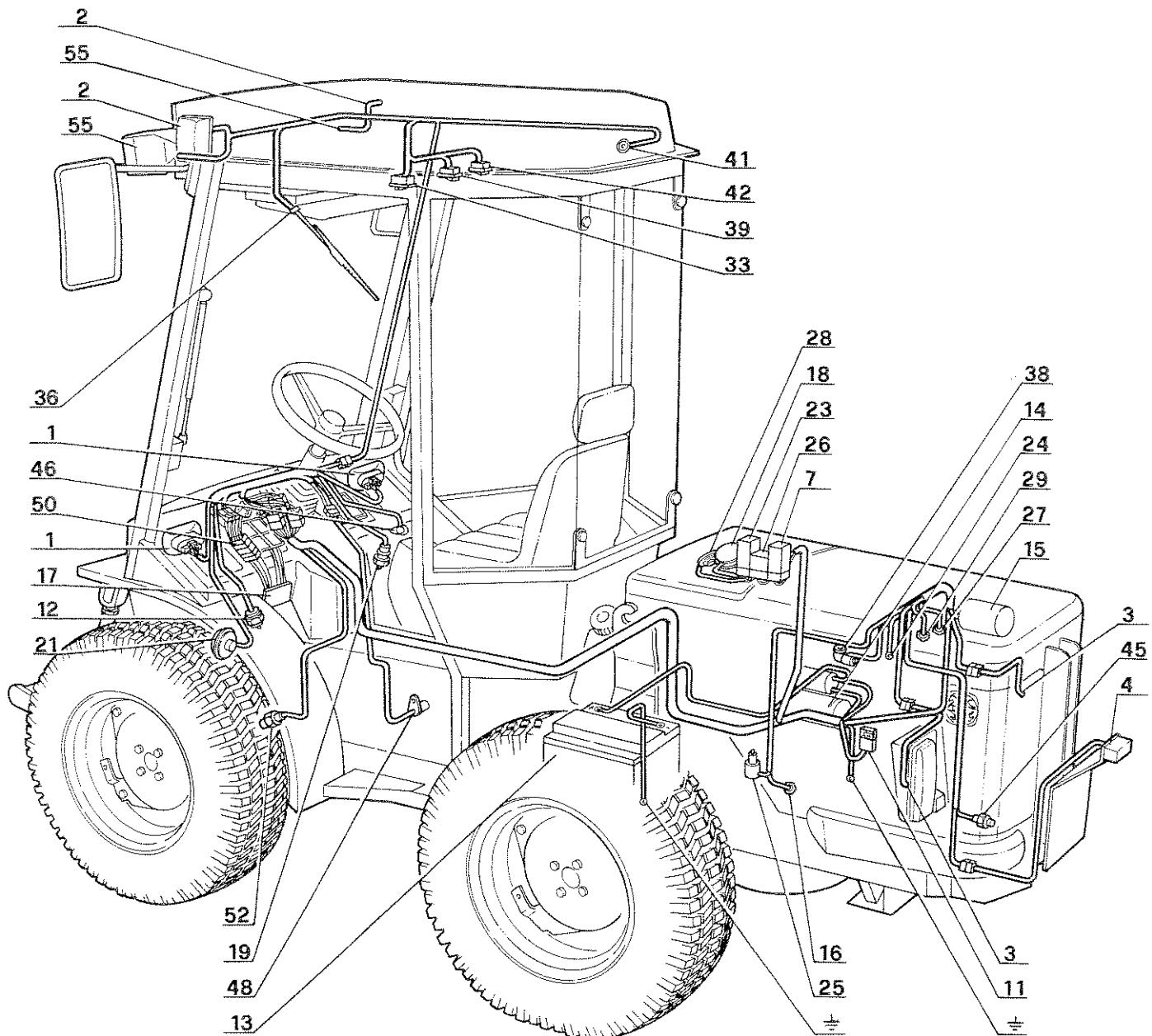
Schema elettrico Tigretrac 2500/3800



**Ubicazione impianto elettrico Tigretrac 3800**



Ubicazione impianto elettrico Superpark 3800





Legenda schemi impianti elettrici

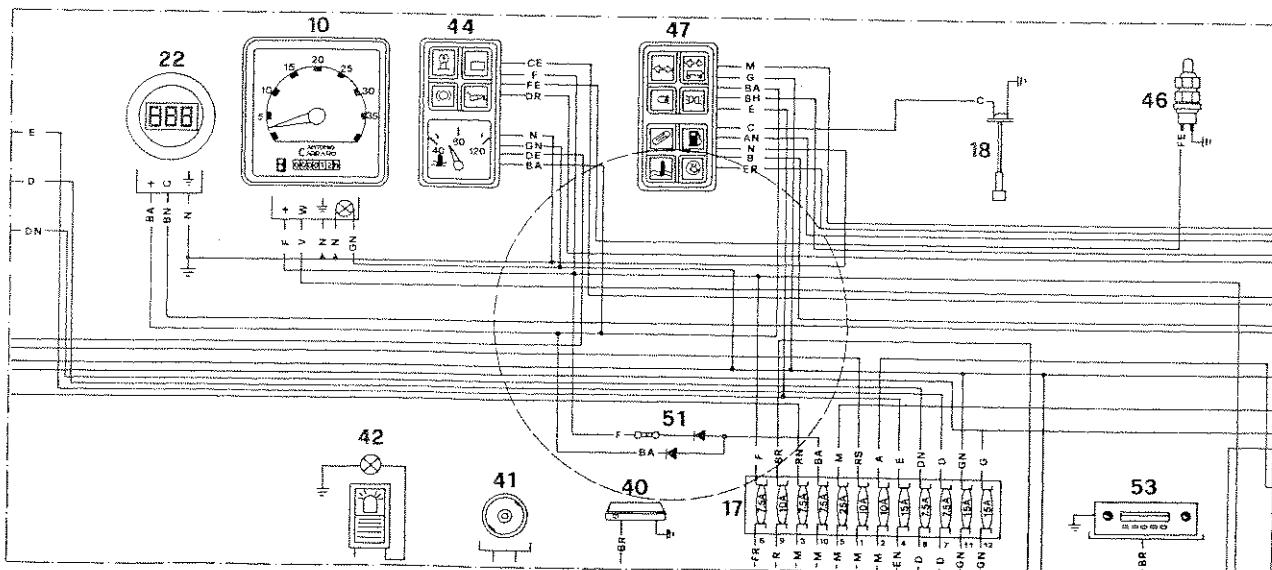
- 1 - Gruppi ottici anteriori.
- 2 - Fanali direzione anteriori Dx-Sx.
- 3 - Fanali di posizione e direzione posteriori Dx-Sx + Stop.
- 4 - Fanale targa.
- 5 - Quadretto distributori luci più avvisatore acustico.
- 6 - Deviatore frecce.
- 7 - Intermittenza frecce.
- 8 - Interruttore emergenza.
- 9 - Interruttore di avviamento.
- 10 - Cronotachigiometro.
- 11 - Fusibile generale.
- 12 - Interruttore consenso di avviamento.
- 13 - Batteria.
- 14 - Motorino di avviamento.
- 15 - Alternatore.
- 16 - Interruttore insufficienza pressione olio motore.
- 17 - Quadro fusibili.
- 18 - Interruttore insufficienza carburante.
- 19 - Interruttore luci stop.
- 20 - Presa a 7 poli.
- 21 - Clacson o tromba.
- 22 - Tachimetro digitale.
- 23 - Centralina di preriscaldo candelette.
- 24 - Candelette.
- 25 - Interruttore elettrostop.
- 26 - Relay.
- 27 - Interruttore termometrico spia temperatura acqua.
- 28 - Interruttore pneumatico per intasamento filtro aria.
- 29 - Interruttore con termistore per centralina preriscaldo candelette.
- 30 - Faro di lavoro posteriore Dx e Sx.

- 31 - Interruttore comando faro di lavoro.
- 32 - Ventilatore.
- 33 - Interruttore comando ventilazione.
- 34 - Motorino tergilavoro posteriore.
- 35 - Interruttore comando tergilavoro posteriore.
- 36 - Motorino tergilavoro anteriore.
- 37 - Interruttore comando tergilavoro anteriore.
- 38 - Pompa per spruzzo lavavetri.
- 39 - Interruttore comando spruzzo lavavetri.
- 40 - Luce di cortesia interno cabina.
- 41 - Presa unipolare per collegamento lampada rotante.
- 42 - Interruttore comando lampada rotante.
- 43 - Termometro elettrico per temperatura acqua motore.
- 44 - Combinato per termometro elettrico per temperatura acqua e spie di controllo.
- 45 - Trasmettitore di rilevamento temperatura acqua.
- 46 - Interruttore spia freno a mano.
- 47 - Combinato con spie di controllo.
- 48 - Sensore di prossimità per tachimetro.
- 49 - Sensore di prossimità per cassonetto raccoglitrice.
- 50 - Diodi.
- 51 - Resistenza 3 W e 2 diodi.
- 52 - Interruttore elettrico per intasamento olio idrostatico.
- 53 - Autoradio.
- 54 - Interruttore scambio gruppi ottici superiori e inferiori.
- 55 - Gruppi ottici superiori.
- 56 - Int. controllo allineamento ruote post. su 4 WS.
- 57 - Sensore per controllo allineamento ruote su 4 WS.

Codice colori cavi

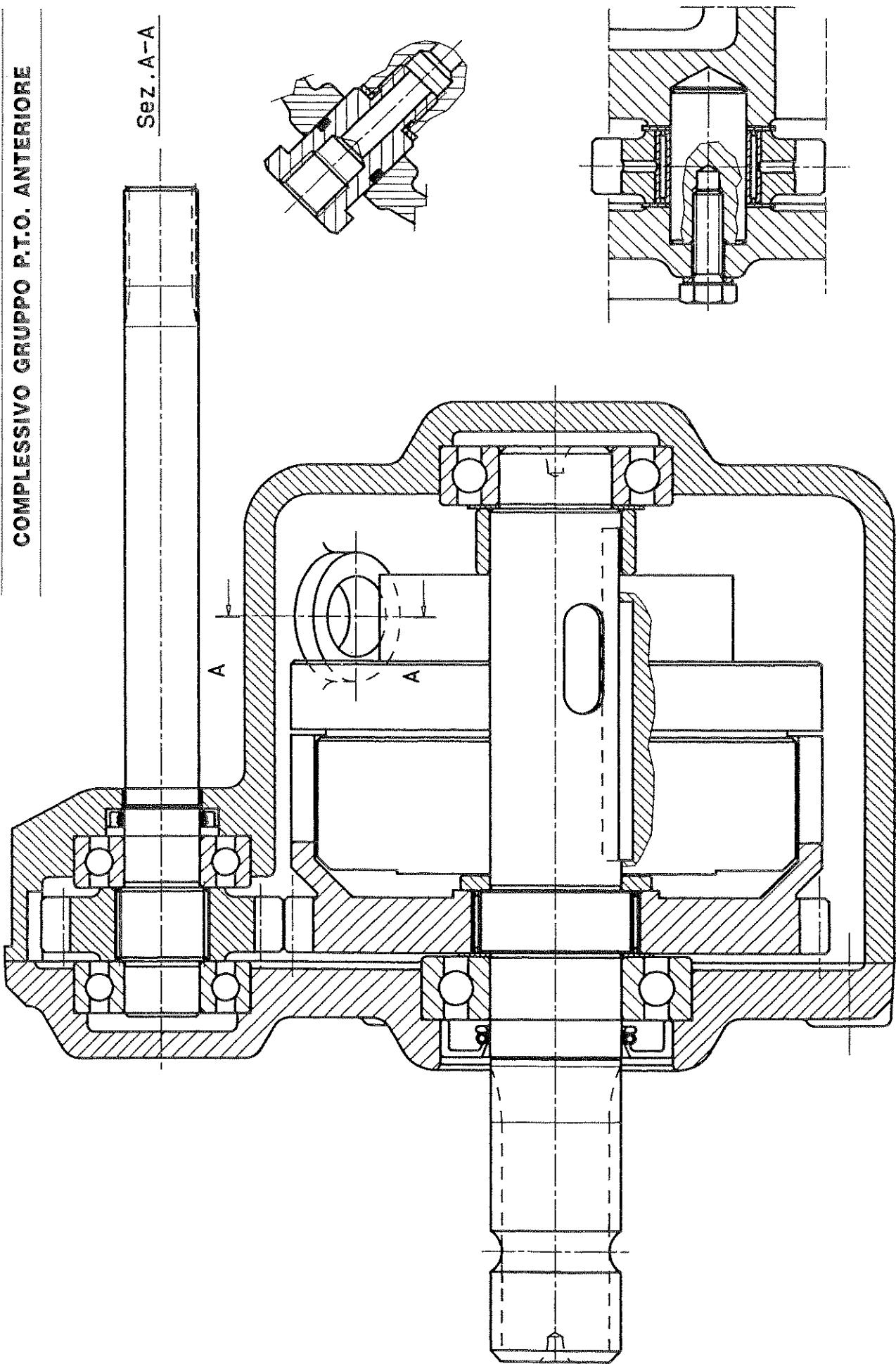
A arancio	D grigio	G giallo	N nero
B bianco	E verde	H azzurro	R rosso
C rosa	F blu	M marrone	V viola

Aggiornamento impianti elettrici



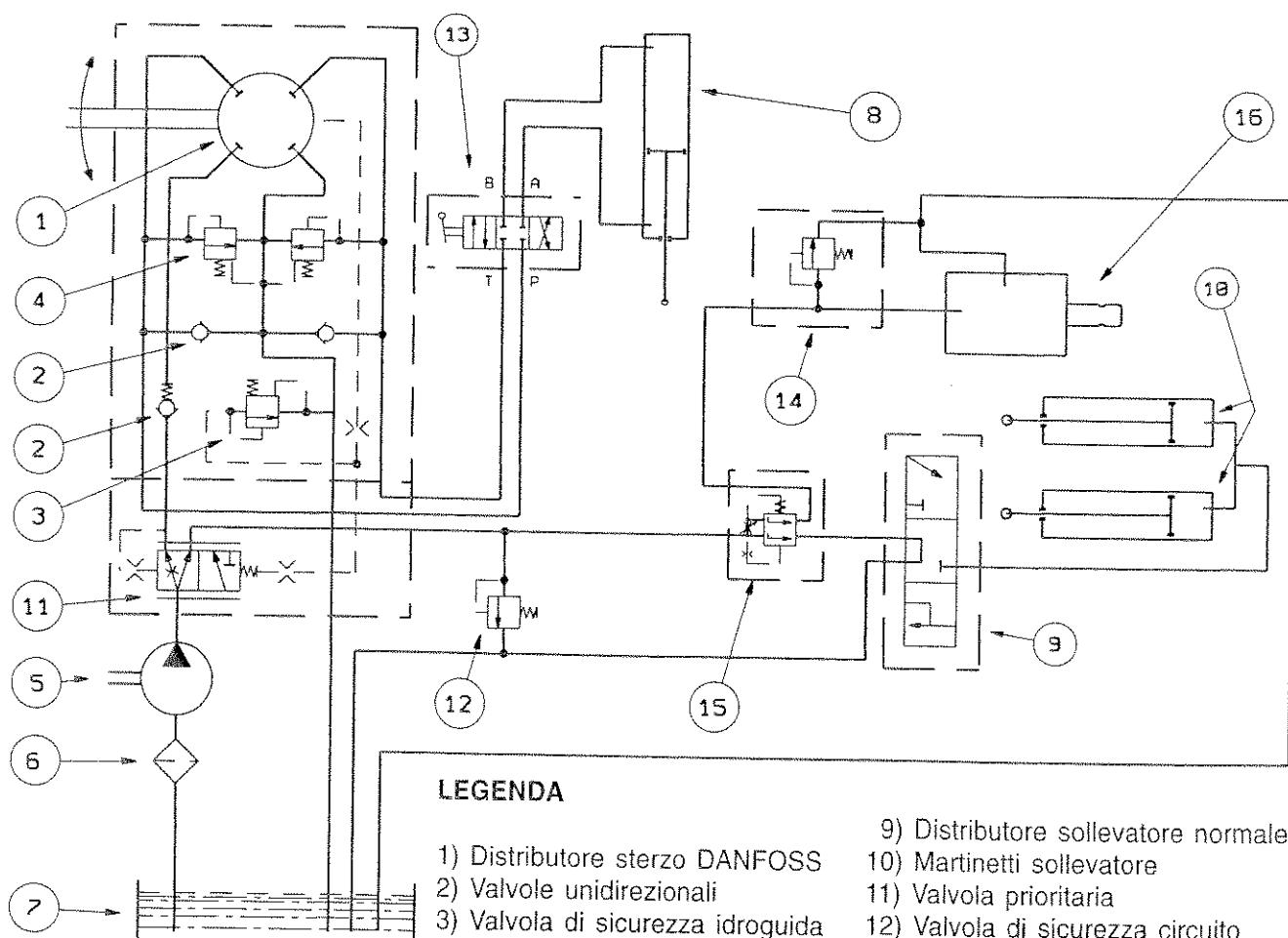
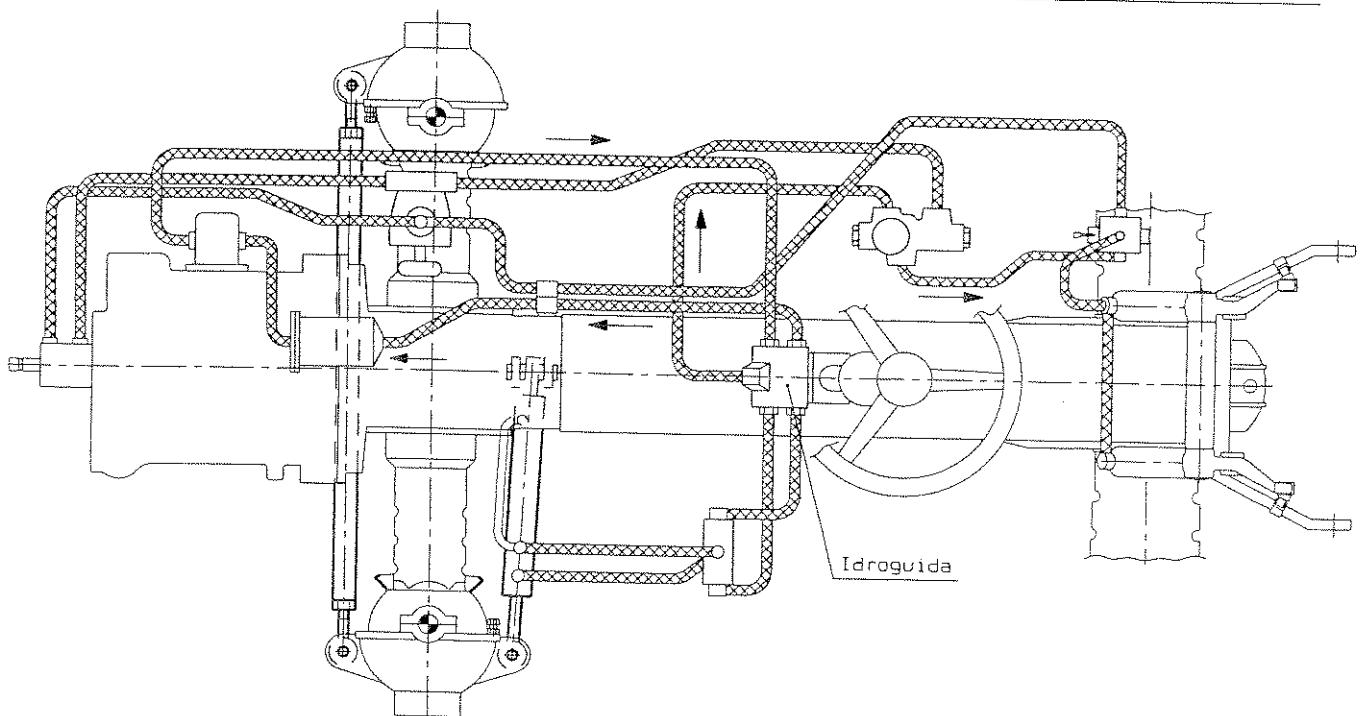


COMPLESSIVO GRUPPO P.T.O. ANTERIORE





SCHEMA IDRAULICO SOLLEVAMENTO+GRUPPO P.T.O. ANTERIORE



LEGENDA

- 1) Distributore sterzo DANFOSS
- 2) Valvole unidirezionali
- 3) Valvola di sicurezza idroguida
- 4) Valvole antiurto
- 5) Pompa oleodinamica
- 6) Filtro olio
- 7) Serbatoio olio
- 8) Martinetti sterzo
- 9) Distributore sollevatore normale
- 10) Martinetti sollevatore
- 11) Valvola prioritaria
- 12) Valvola di sicurezza circuito attrezzi
- 13) Deviatore
- 14) Valvola di massima
- 15) Regolatore di flusso prioritario
- 16) Scatola P.T.O.



PRESA DI POTENZA ANTERIORE

La frizione della presa di potenza è di tipo multidisco in bagno d'olio con innesto idraulico.

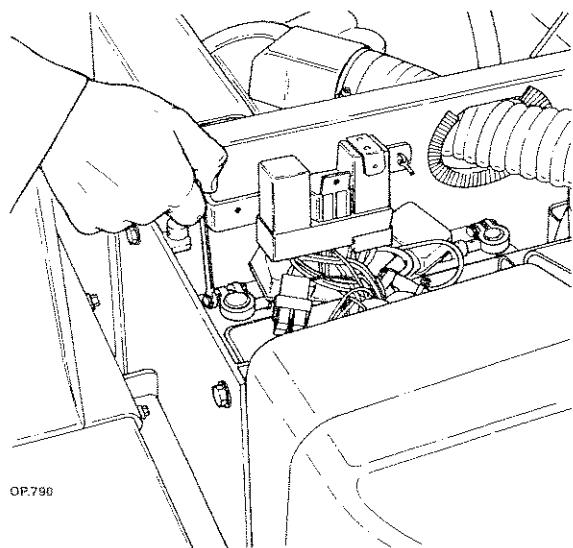
La presa di potenza anteriore è collegata direttamente all'albero motore; il rapporto di riduzione è di 1÷2,5.

L'olio utilizzato per il funzionamento è lo stesso dell'impianto idraulico usato dal trattore.

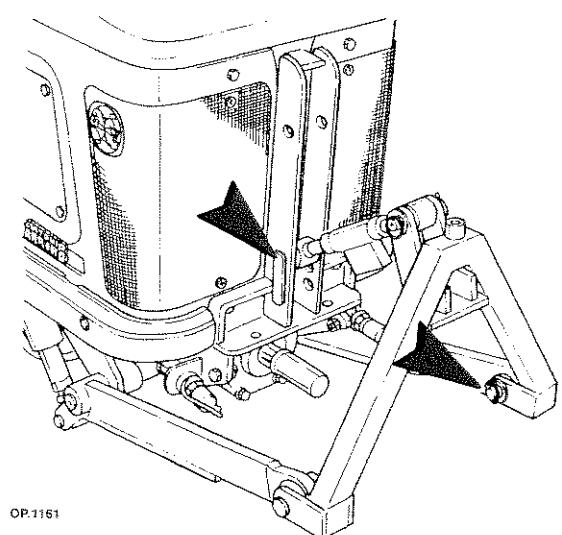
Il comando è mediante manopola di commutazione.

Stacco e riattacco gruppo PTO anteriore

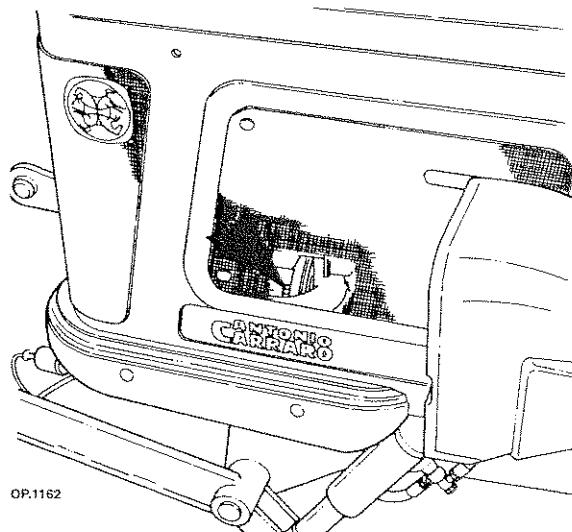
Per eseguire lo stacco del gruppo PTO procedere come segue:



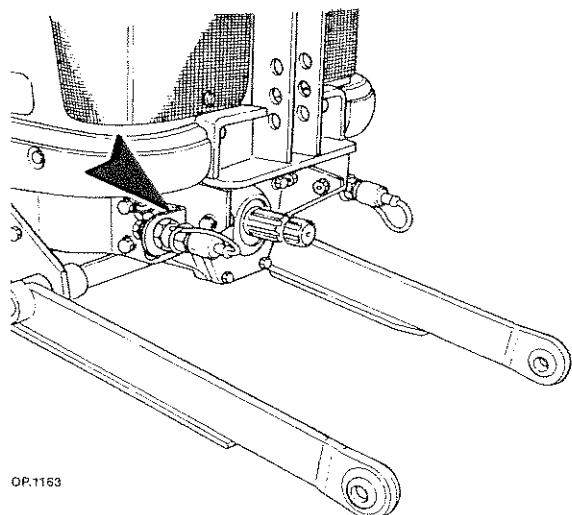
1 - staccare un cavo della batteria ed isolarlo.



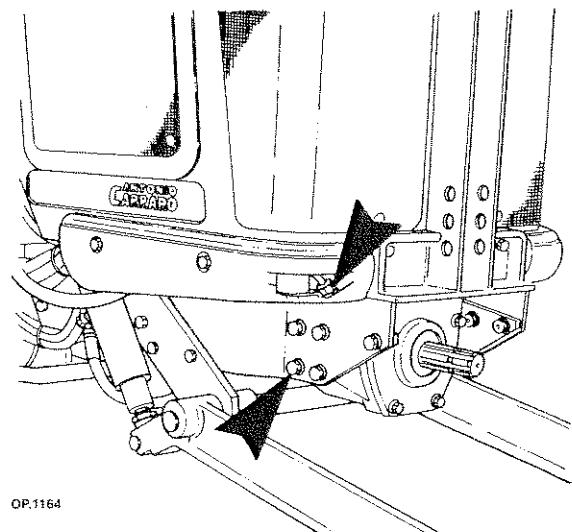
2 - Togliere il supporto attrezzi.



3 - Svitare le viti della flangia di trascinamento sull'albero motore.



4 - Svitare le viti e togliere il supporto presa idraulica.



5 - Svitare i raccordi tubi mandata e scarico e tappare i fori con adeguati tappi.

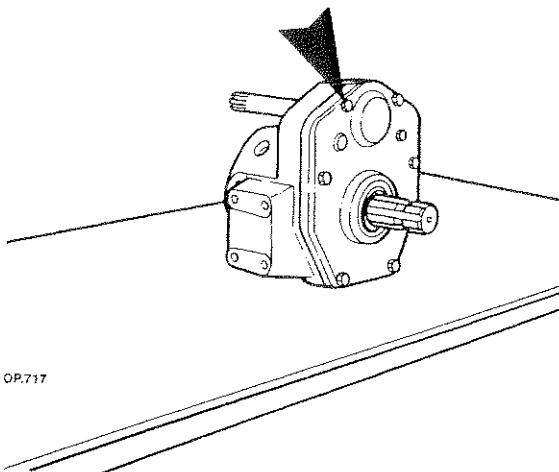
6 - Svitare le viti di sostegno gruppo PTO e sfilarlo.



Riattacco

Procedere al riattacco considerando le seguenti avvertenze:

- a - procedere nell'ordine inverso dello stacco invertendo le operazioni;
- b - ingassare i profili scanalati di giunzione moto;
- c - attenersi alle coppie di serraggio elencate a pag. 4.



OP.717

4 - Svitare le viti del coperchio gruppo.



ATTENZIONE - PERICOLO



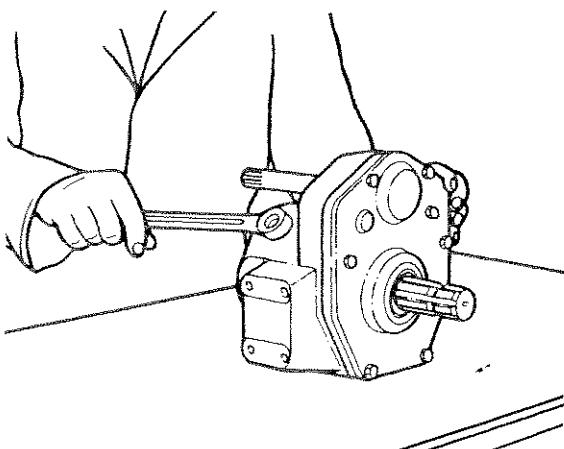
Eseguire le operazioni osservando scrupolosamente le misure di prevenzione.

- Per lo smaltimento di oli attenersi alle norme antinquinamento.
- Evitare di inquinare l'ambiente.

Smontaggio - montaggio gruppo PTO anteriore

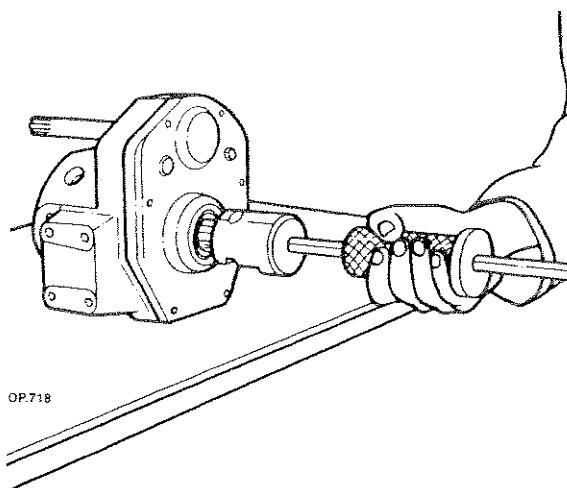
Per lo smontaggio dei vari componenti il gruppo PTO procedere come segue:

- 1 - adagiare il gruppo PTO sopra ad un banco.
- 2 - Scaricare l'olio in un apposito recipiente.



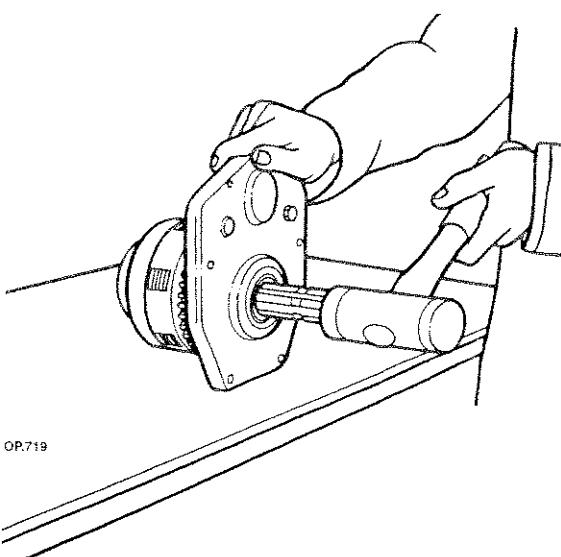
OP.716

- 3 - Svitare il manicotto di collegamento impianto idraulico al gruppo frizione.



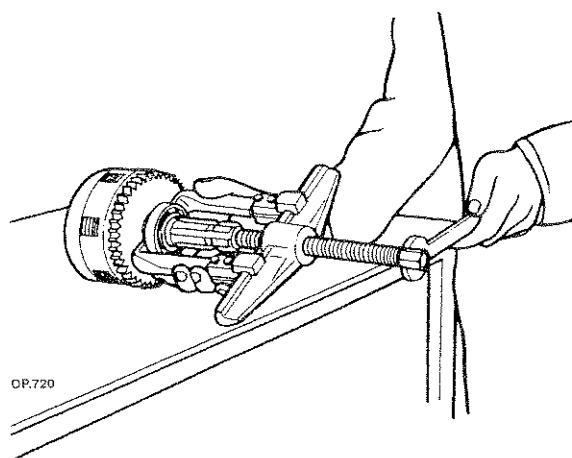
OP.718

- 5 - Con l'adattatore AT 27981124 ed estrattore a massa battente AT 27981047 togliere il coperchio del gruppo.

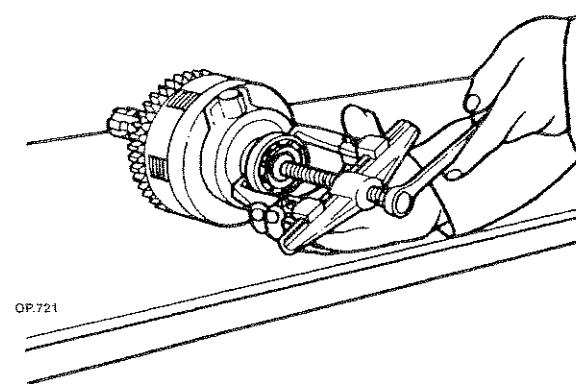


OP.719

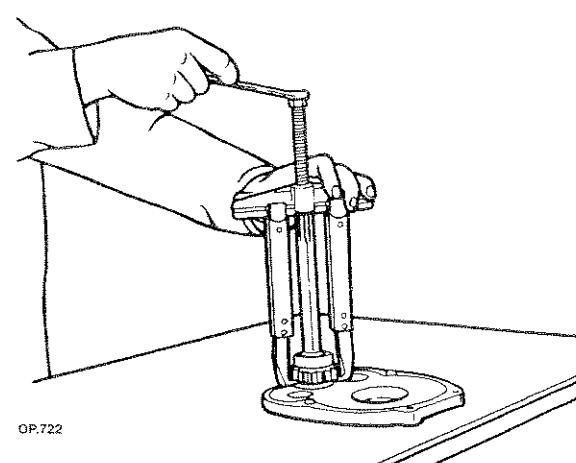
- 6 - Con un adeguato martello togliere il gruppo frizione dal coperchio.



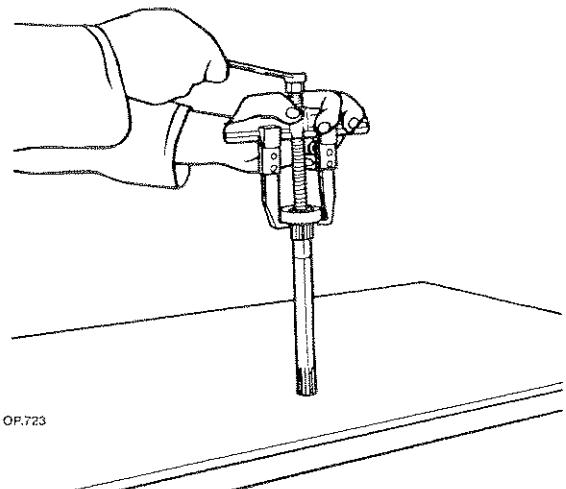
7 - Togliere il cuscinetto utilizzando l'estratore universale AT 37981247 (grande).



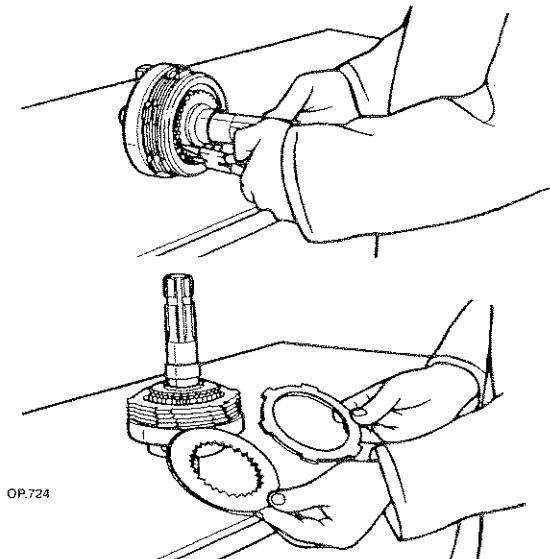
8 - Togliere il cuscinetto utilizzando l'estratore universale AT 37981257 (piccolo).



9 - Togliere il cuscinetto utilizzando l'estratore universale AT 37981257 e griffe lunghe AT 37981311.



10 - Togliere il cuscinetto utilizzando l'estratore universale AT 37981257.

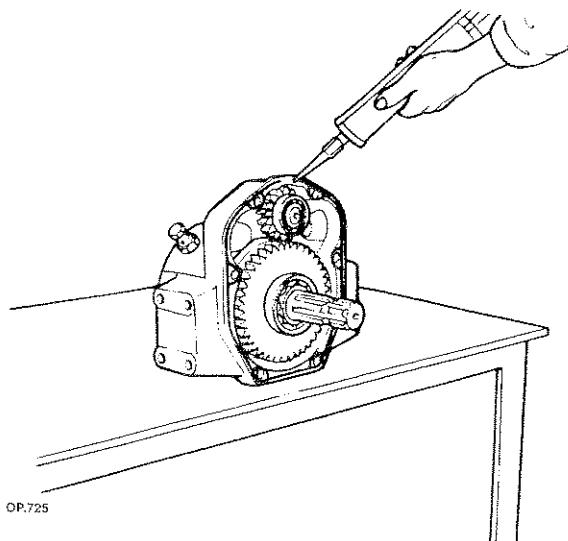


11 - Smontare il gruppo frizione e verificare che le superfici di strisciamento dei dischi frizione non siano usurate o strappate, in caso contrario si consiglia la sostituzione.

Montaggio

Procedere al montaggio del gruppo considerando le seguenti avvertenze:

- a - procedere invertendo le operazioni dello smontaggio;
- b - attenersi alle illustrazioni per l'orientamento dei vari componenti;
- c - effettuare un'accurata pulizia delle superfici da accoppiare;
- d - applicare un cordone di mastice di tenuta

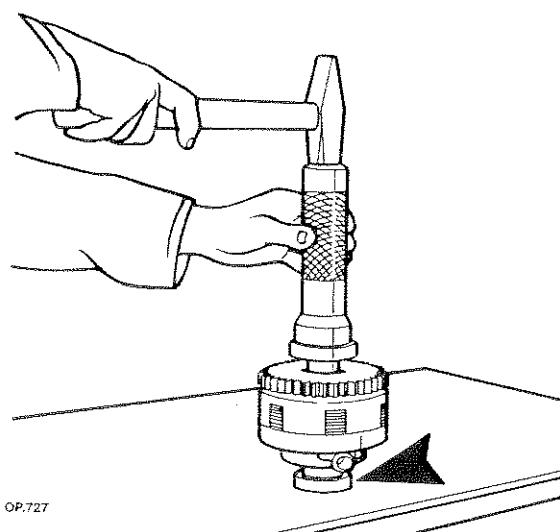


OP.725

del diametro di circa 3 mm seguendo il tracciato indicato nel disegno;

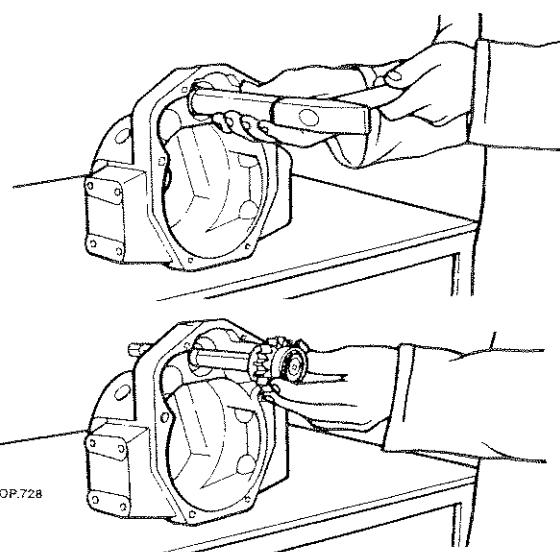
e - attenersi alle coppie di serraggio elencate a pag. 4;

f - considerare le seguenti operazioni:

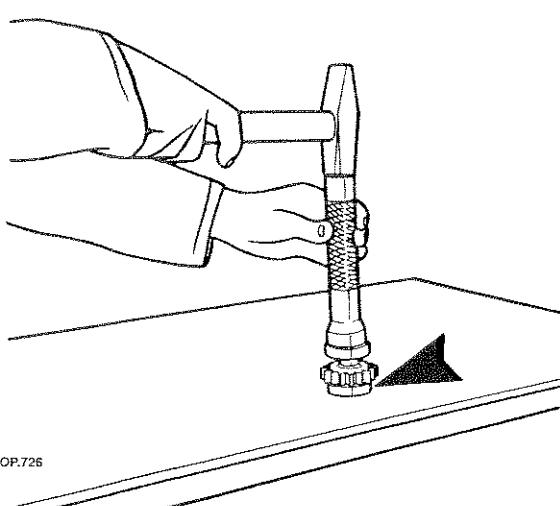


OP.727

12.2 - Montare i cuscinetti sull'albero PTO servendosi dell'attrezzo AT 37981014.

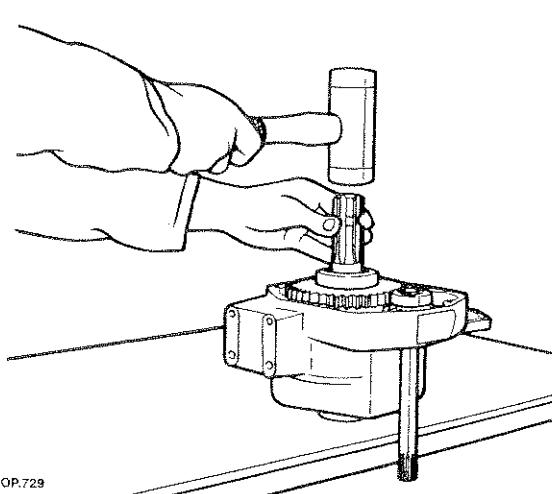


12.3 - Montare l'anello di tenuta con l'attrezzo AT 37981299 e infilare l'albero primario con l'adattatore AT 37981020.



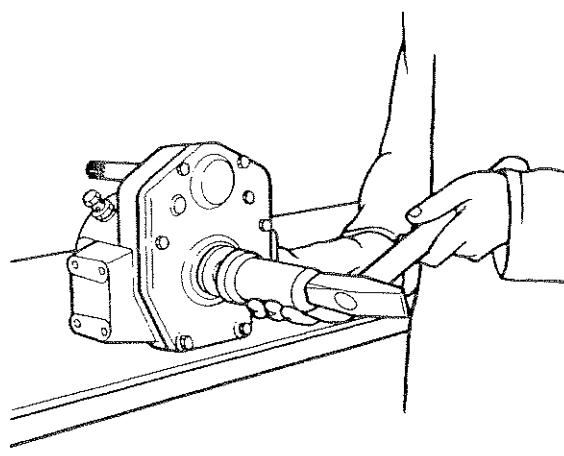
OP.726

12.1 - Montare i cuscinetti sull'albero primario servendosi dell'attrezzo AT 37981298.



OP.729

12.4 - Montare il gruppo frizione con un adeguato martello.



OP.730

12.5 - Montare l'anello di tenuta servendosi dell'attrezzo AT 37981301 e dell'adattatore AT 37981300 e mettendo della loctite sulla sede dell'anello di tenuta.



ATTENZIONE - PERICOLO



Eseguire le operazioni osservando scrupolosamente le misure di prevenzione.

- Non disperdere nell'ambiente i fluidi esausti, le cartucce dei filtri usate, olii, grassi lubrificanti ed elementi usati per la pulizia degli stessi.

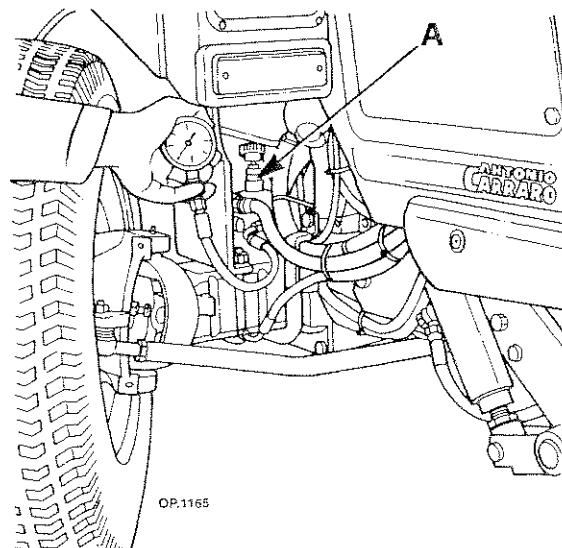
Affidarsi esclusivamente ai centri di raccolta oli esausti regolarmente autorizzati.

Evitare di inquinare l'ambiente.

Controllo della pressione di azionamento del gruppo frizione

Per effettuare il controllo della pressione di azionamento gruppo frizione procedere come segue:

- 1 - Spegnere il motore e smontare un raccordo di collegamento tubazioni di mandata olio al gruppo PTO anteriore.



- 2 - Montare al posto del raccordo originale precedentemente smontato l'adattatore AT 37981259 collegato al manometro con scala da 0-100 Bar AT 37981190 e il tubo al gruppo PTO.

- 3 - Avviare il motore, portarlo ad un regime di 1500 g/i e azionare la manopola di commutazione; in queste condizioni il manometro deve indicare una pressione prescritta di 13 ± 1 bar (Kg/cmu).

In caso di pressione diversa da quella prescritta è possibile effettuare la registrazione agendo sulla valvola (vedi punto A).

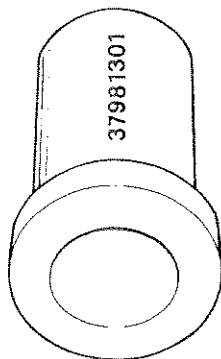


ATTENZIONE - PERICOLO

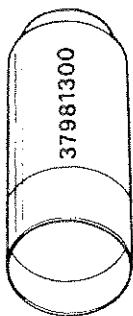


Eseguire le operazioni osservando scrupolosamente le misure di prevenzione.

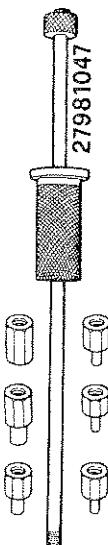
- Non eseguire nessun intervento sul trattore quando il motore è in moto, a meno che non sia previsto.



AT.117



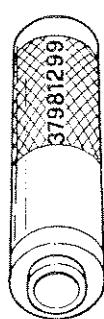
AT.118



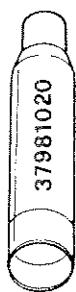
AT.004

1 - Tampone AT 379811301 per il montaggio della guarnizione di tenuta albero PTO e adattatore.

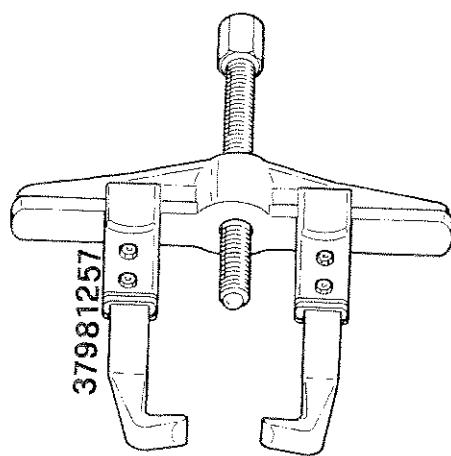
4 - Estrattore a massa battente con adattatori.



AT.119



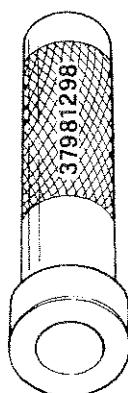
AT.120



AT.007

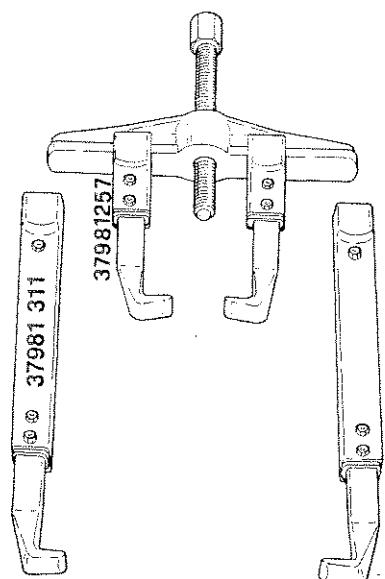
2 - Tampone AT 37981299 per il montaggio della guarnizione di tenuta albero primario PTO e adattatore.

5 - Estrattore universale.



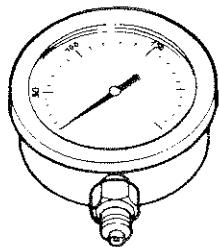
AT.121

3 - Tampone per il montaggio di cuscinetti.



AT.123

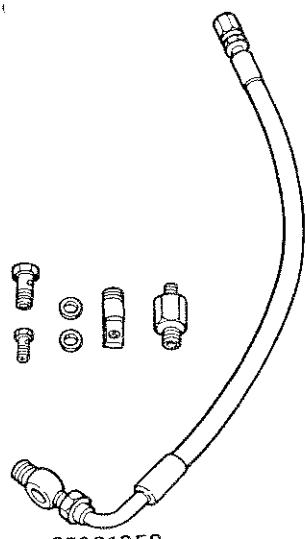
6 - Estrattore universale + staffe lunghe.



37981190

AT.210

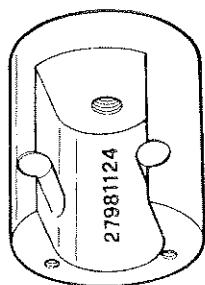
7 - Manometro misuratore pressione.



AT.081

37981259

8 - Adattatore per misurare la pressione.



AT.039

9 - Adattatore per estrattore a massa battente.



UNITÀ DI MISURA DI USO CORRENTE IN CAMPO AUTOASSISTENZIALE E RELATIVI FATTORI ASSOLUTI DI CONVERSIONE

Grandezza	Unità in corso		moltiplicare per dividere	Unità SI	
	Denominazione	Simbolo		Denominazione	Simbolo
Angolo	grado	°	1	grado	°
	primo	'	1	primo	'
	secondo	"	1	secondo	"
Lunghezza	millimetro	mm	1	millimetro	mm
	metro	m	1	metro	m
	kilometro	km	1	kilometro	km
	pollice	in	25.4	millimetro	mm
	piede	ft	0.3047		
	yarda	yd	0.9144	metro	m
	miglia (Statute)	mile	1.6093	kilometro	km
Area	millimetro quadrato	mm ²	1	millimetro quadrato	mm ²
	metro quadrato	m ²	1	metro quadrato	m ²
	pollice quadrato	sq in	645.612	millimetro quadrato	mm ²
	piede quadrato	sq ft	0.0929	metro quadrato	m ²
	yarda quadrata	sq yd	0.8361		
Volume	metro cubo	m ³	1	metro cubo	m ³
	pollice cubo	cu in	16.3880	centimetro cubo	cm ³
	piede cubo	cu ft	28.3205	decimetro cubo	dm ³
Forza	kilogrammoforza	kg	9.8066	newton	N
	libbra	lb	4.4482		
Corrente elettrica	ampère	A	1	ampère	A
Potenziale elettrico	volt	V	1	volt	V
Impedenza Resistenza Reattanza	ohm	Ω	1 1	ohm	Ω
Capacità elettrica	farad	F (Farad)	1	farad	F
Frequenza	hertz	Hz	1	hertz	Hz
Velocità angolare	giri/secondo	giri/sec	1	giri/secondo	giri/s
	giri/minuto	giri/min	1	giri/minuto	giri/min



Grandezza	Unità in corso		multiplicare dividere	Unità SI		
	Denominazione	Simbolo		Denominazione	Simbolo	
Velocità	kilometro/ora	km/h	1	kilometro/ora	km/h	
	miglia/ora	MPH	1.6092			
Coppia - Momento	kilogrammetro	kgm	9.8066	newton - metro	N - m	
	kilogrammocentimetro	kgcm	0.1019			
	piede - libera	ft-lb	1.3558			
Sollecitazione	kilogrammo	kg/cm ²	0.0980	newton	N/mm ²	
	centimetro quadrato					
	libbra	p.s.i.	0.0068	millimetro quadrato		
	pollice quadrato					
Pressione	kilogrammo	kg. cm ²	0.9806	bar	bar	
	centimetro quadrato					
	atmosfera	atm	1.0132	millibar		
	millimetro di acqua	mm H ₂ O	0.0980			
	millimetro di mercurio	mm Hg	1.3332			
	libbra	p.s.i.	0.0689	bar		
	pollice quadrato					
Flessibilità	millimetro	mm/100 kg	0.1019	millimetro	mm/100N	
	100 kilogrammi					
	pollice	in/100 lb	57.0125	100 newton		
	100 libbre					
Capacità	litro	1	1	decimetro cubo	dm ³	
	pinta	pts	0.5682			
	gallone	imp. gal.	4.5458			
	uncia fluida	fl oz	28.4090			
Tempo	secondo	sec	1	secondo	s	
Peso (inteso come massa di un corpo)	grammo	g	1	grammo	g	
	kilogrammo	kg	1	kilogrammo	kg	
	uncia	oz	28.35270	grammo	g	
	libbra	lb	0.4535	kilogrammo	kg	
Potenza	cavallo	CV	0.7354	kilowatt	kW	
	cavallo	HP	0.7457			
Carica elettrica (batteria)	ampère ora	Ah	1	ampère - ora	Ah	
Carica elettrica (condensatore)			3.5999	kilocoulomb	kC	
Temperatura (*)	centigrado	°C	1	centigrado	°C	

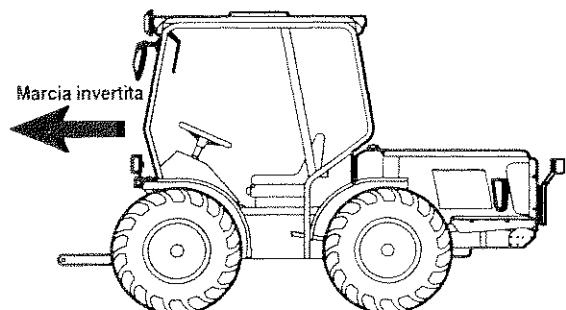
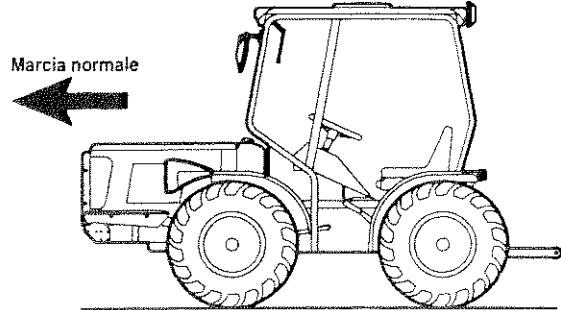
(*) °F (fahrenheit) = 1.8 °C - 32; °C = $\frac{°F - 32}{1.8}$

ALCUNE UNITÀ FONDAMENTALI

Grandezza	Unità SI	Simbolo	Definizione	Dati rilevati da:
LUNGHEZZA	metro	m	Il metro è la lunghezza uguale a 1 650 763,73 lunghezze d'onda nel vuoto, della radiazione corrispondente alla transizione fra i livelli $2p_{10}$ e $5d_6$ dell'atomo di cromo 86.	Istituto di Metrologia Gustavo Colonna del CNR - Torino
MASSA	Kilogrammo	Kg	Il Kilogrammo è la massa del prototipo internazionale conservato al Pavillon de Breteuil (Sevres).	Il prototipo internazionale a un cilindro di platino-iridio rispetto al quale vengono tarati per confronto mediante bilanci i campioni nazionali con una incertezza valutabile in $2 \cdot 10^{-9}$. Da questi ultimi anch'essi di platino-iridio, si ricavano campioni di lavoro che possono essere di acciaio inossidabile o di altre leghe.
TEMPO	secondo	s	Il secondo è l'intervallo di tempo che contiene 9 192 631 770 periodi della radiazione corrispondente alla transizione tra i due livelli iperrini dello stato fondamentale dell'atomo di cesio 133.	Il secondo è realizzato accordando un oscillatore sulla frequenza di risonanza dell'atomo di cesio 133. Quando sono avvenuti 9 192 631 770 oscillazioni, l'orologio indica che è trascorso un intervallo di tempo pari a un s. L'incertezza con cui si possono misurare intervalli di tempo maggiori di 100 s è valutabile in $4 \cdot 10^{-12}$.
CORRENTE ELETTRICA	ampere	A	L'ampere è l'intensità elettrica che, mantenuta costante in due conduttori rettilinei, paralleli, di lunghezza infinita, di sezione circolare trascurabile e posti alla distanza di 1 m uno dall'altro nel vuoto produce tra i due conduttori la forza di $2 \cdot 10^{-7}$ N su ogni metro di lunghezza.	L'ampere si realizza ricorrendo ad una bilancia elettromagnetica, mediante la quale, nota l'accelerazione di gravità locale e con riferimento al campione di massa, si misura la forza di interazione fra una bobina fissa e una mobile e da essa si calcola il valore della corrente elettrica nelle bobine, con una incertezza valutabile in $4 \cdot 10^{-12}$.
TEMPERATURA TERMODINAMICA	Kelvin	K	Il Kelvin è la frazione (1/273,16) della temperatura termodinamica del punto triplo dell'acqua.	La temperatura termodinamica del punto triplo dell'acqua, caratterizzata dalla coesistenza in equilibrio delle tre fasi solido, liquido, vapore, si ottiene in celle di vetro sigillate contenenti acqua di grande purezza, celle che consentono di realizzare il Kelvin con una incertezza valutabile in $4 \cdot 10^{-7}$.

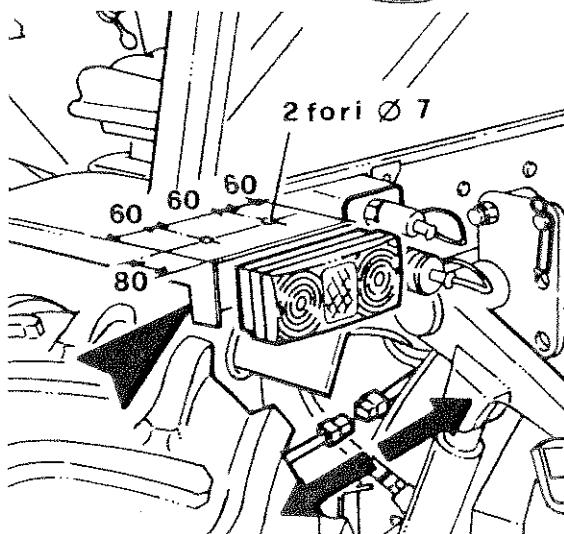


CIRCOLAZIONE SU STRADA A MARCIA INVERTITA

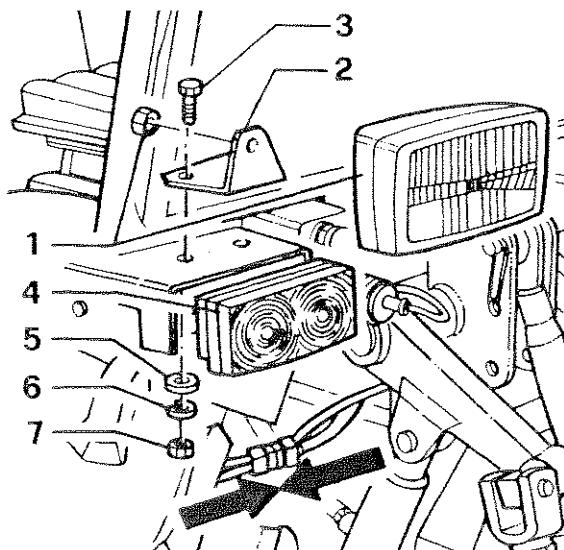


- Descrizione per eseguire la trasformazione dei dispositivi di illuminazione e di segnalazione visiva per circolazione su strada a marcia invertita.

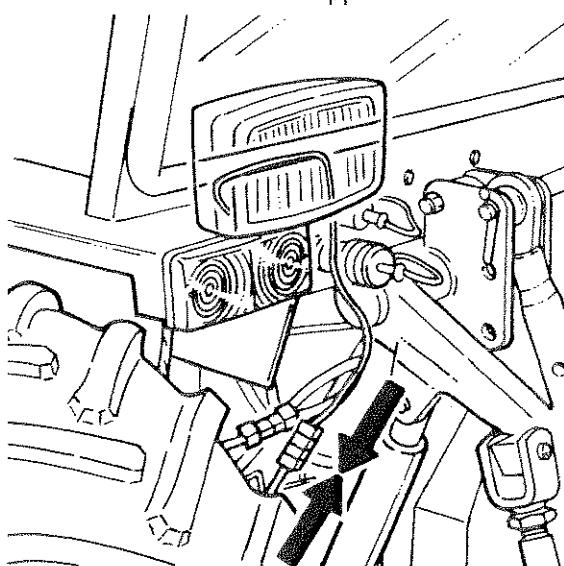
Per eseguire tali operazioni procedere come segue:



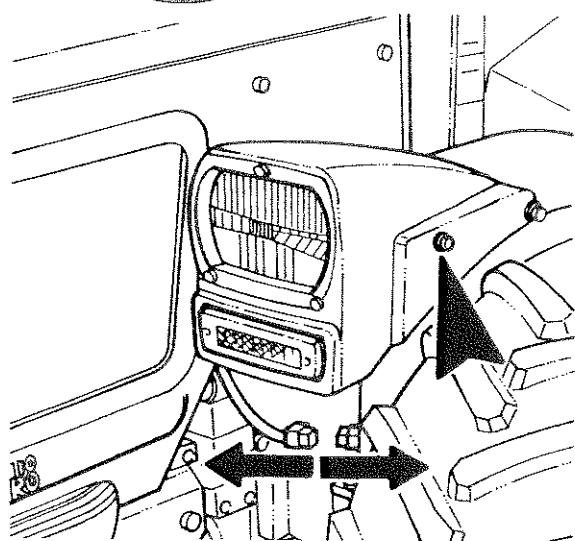
1 - Togliere il fanalino posteriore ed eseguire due fori $\varnothing 7$ sul parafango seguendo lo schema



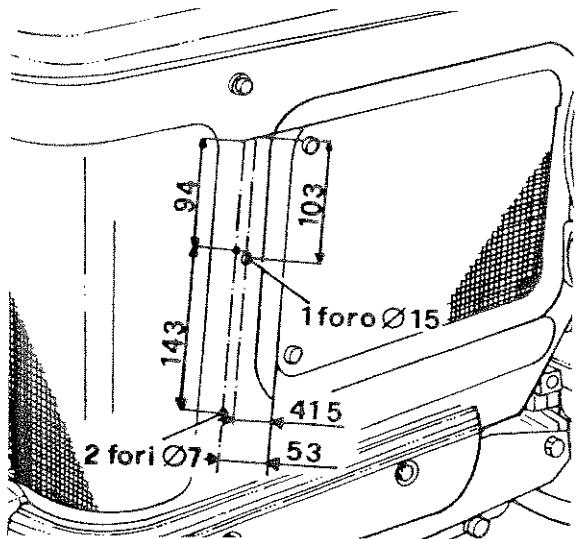
2 - Montare il fanalino anteriore 4 con luce direzionale (gialla) all'esterno e il proiettore anteriore 1 con relativo supporto.



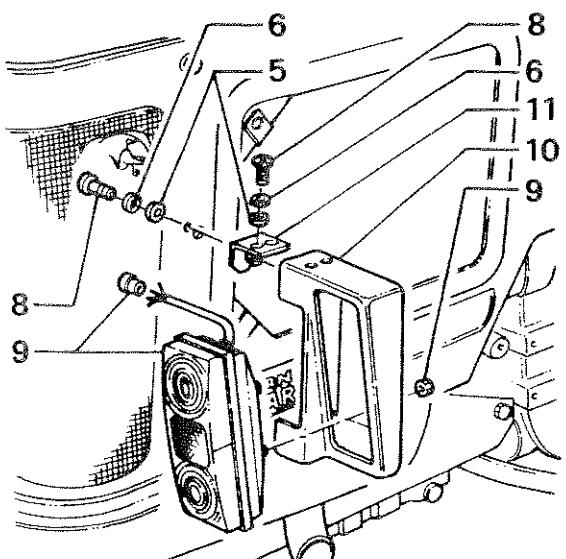
3 - Posizionare il cavo del proiettore secondo lo schema ed eseguire le connessioni.



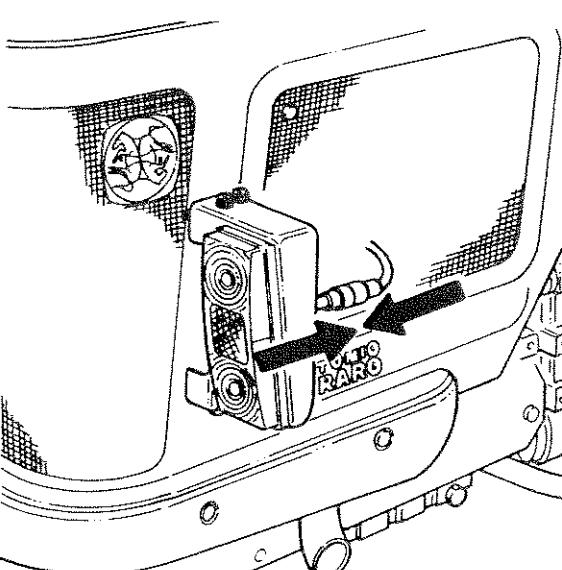
4 - Staccare la connessione elettrica e togliere il supporto completo di proiettori anteriori e fanalino direzionale.



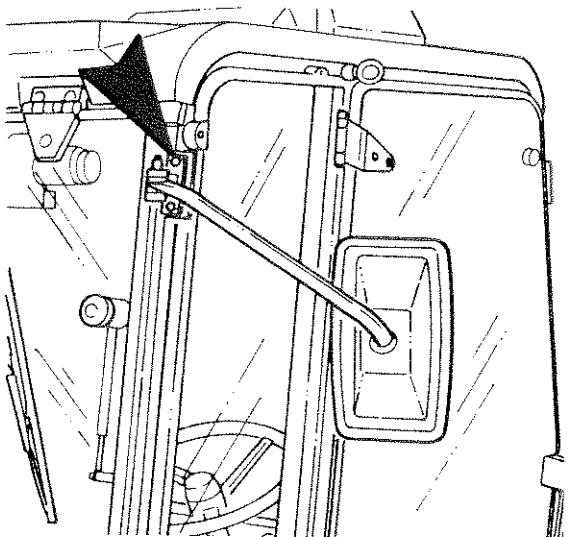
5 - Togliere la mascherina di protezione ed eseguire due fori Ø 7 e uno Ø 15 seguendo lo schema.



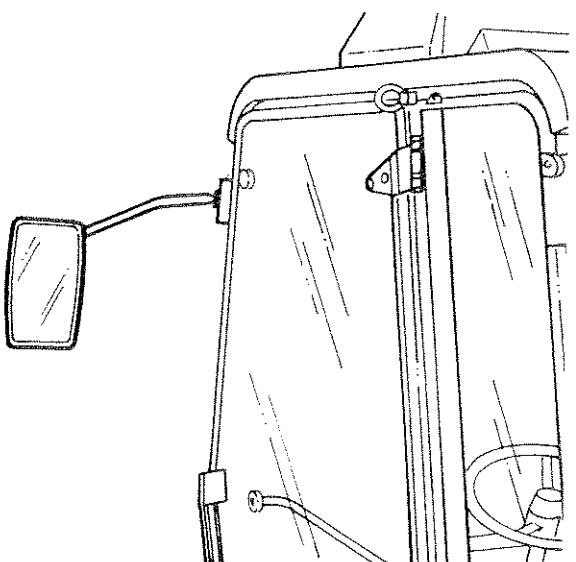
6 - Montare il fanalino posteriore con luce di posizione (rossa) in basso.



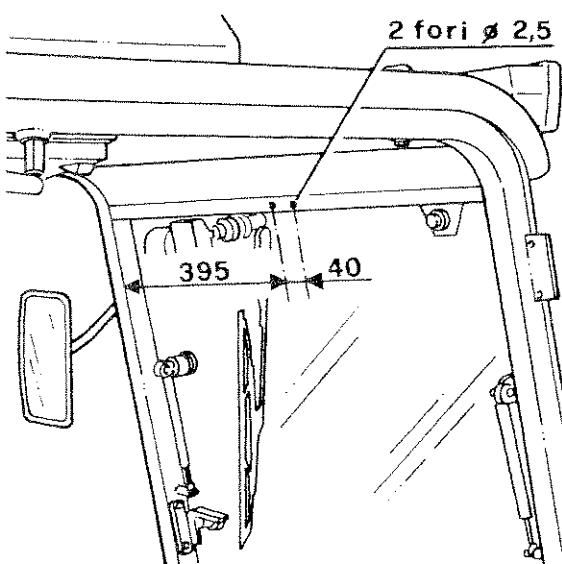
7 - Eseguire la connessione elettrica.



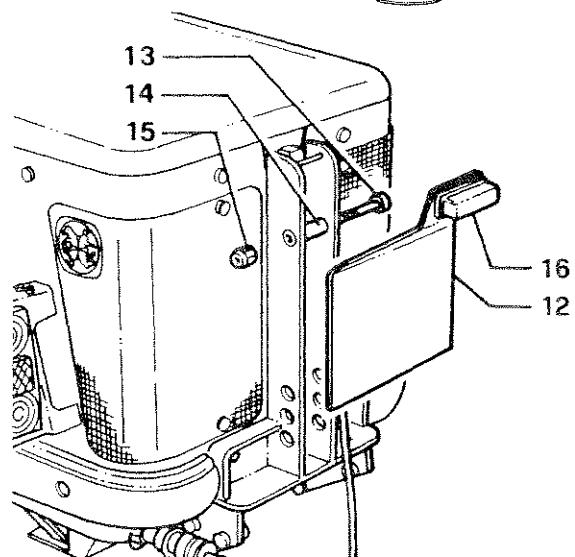
8 - Svitare le viti e togliere lo specchio retrovisore.



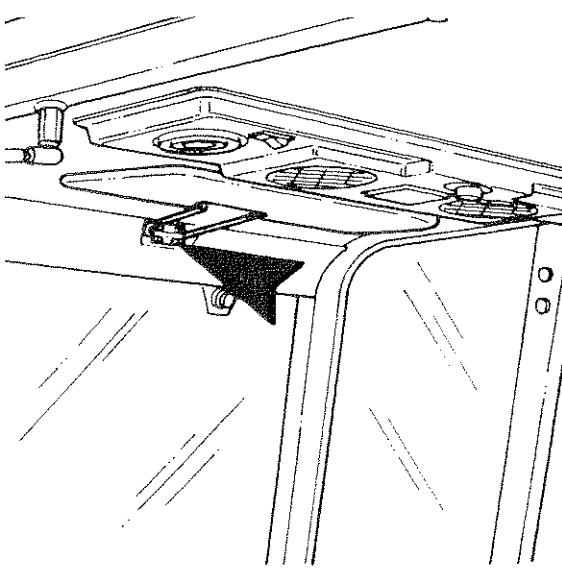
9 - Montare lo specchio retrovisore nella posizione a marcia invertita.



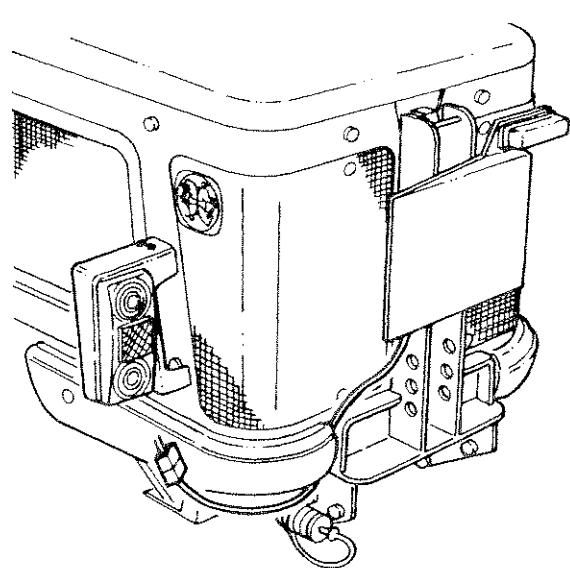
10 - Eseguire due fori Ø 2,5 seguendo lo schema.



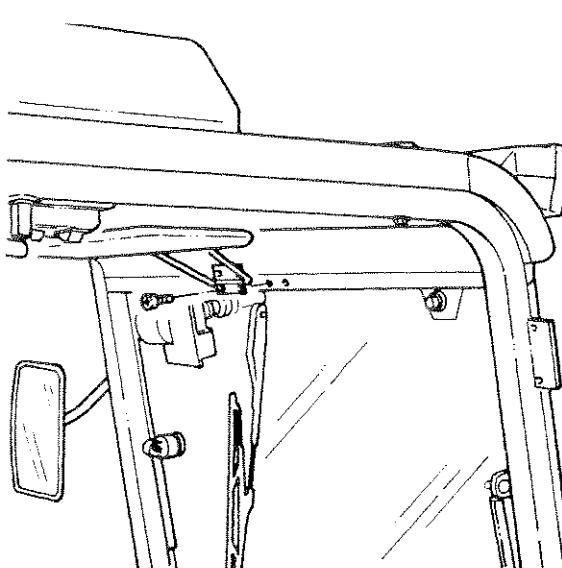
13 - Montare il supporto targa posteriore con il relativo fanalino.



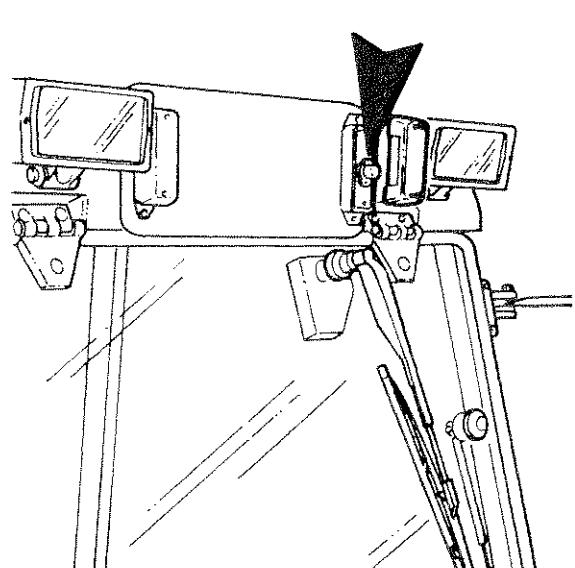
11 - Svitare le viti e togliere l'aletta parasole.



14 - Eseguire la connessione elettrica.



12 - Montare l'aletta parasole nella posizione a marcia invertita.



15 - Svitare le viti e togliere entrambi le lampadine del portatarga "anteriore".

**Note**

Ad installazione ultimata, prima della messa in esercizio del trattore, è necessario verificare la funzionalità dell'impianto, e regolare i proiettori anteriori 1 conformemente alle norme di circolazione.

**ATTENZIONE - PERICOLO**

Eseguire le operazioni osservando scrupolosamente le misure di prevenzione.
Non eseguire nessun intervento sul trattore quando il motore è in moto.

Legenda - Kit per applicare la fanaleria a marcia invertita.

Articolo Riferimento	Quantità	Codice	Descrizione articolo
-	1	16701121	Kit per applicazione fanaleria posteriore
1	2	46706058	Proiettori anteriori NIOX
2	2	34909757	Supporto per proiettori NIOX
3	4	46966008	Vite M6x20
4	2	46706052	Fanalino anteriore posizione freccia
5	16	6205542	Rondella piana D.6 UNI 6592
6	16	6206532	Rondella Grower D.6 UNI 1751
7	4	6197558	Dado M6 alto UNI 5587
8	12	46966012	Vite M6x14 UNI7687
9	2	46706027	Fanalino posteriore posizione-stop-freccia
10 S	1	46706030	Supporto sx fanalino posteriore
10 D	1	46706031	Supporto dx fanalino posteriore
11 S	2	34904556	Angolare supporto sx fanalino posteriore
11 D	2	34904557	Angolare supporto dx fanalino posteriore
12	1	35018023	Portatarga
13	1	46960053	Vite
14	1	32205265	Bussola
15	1	6198503	Dado
16	1	46706012	Fanalino completo

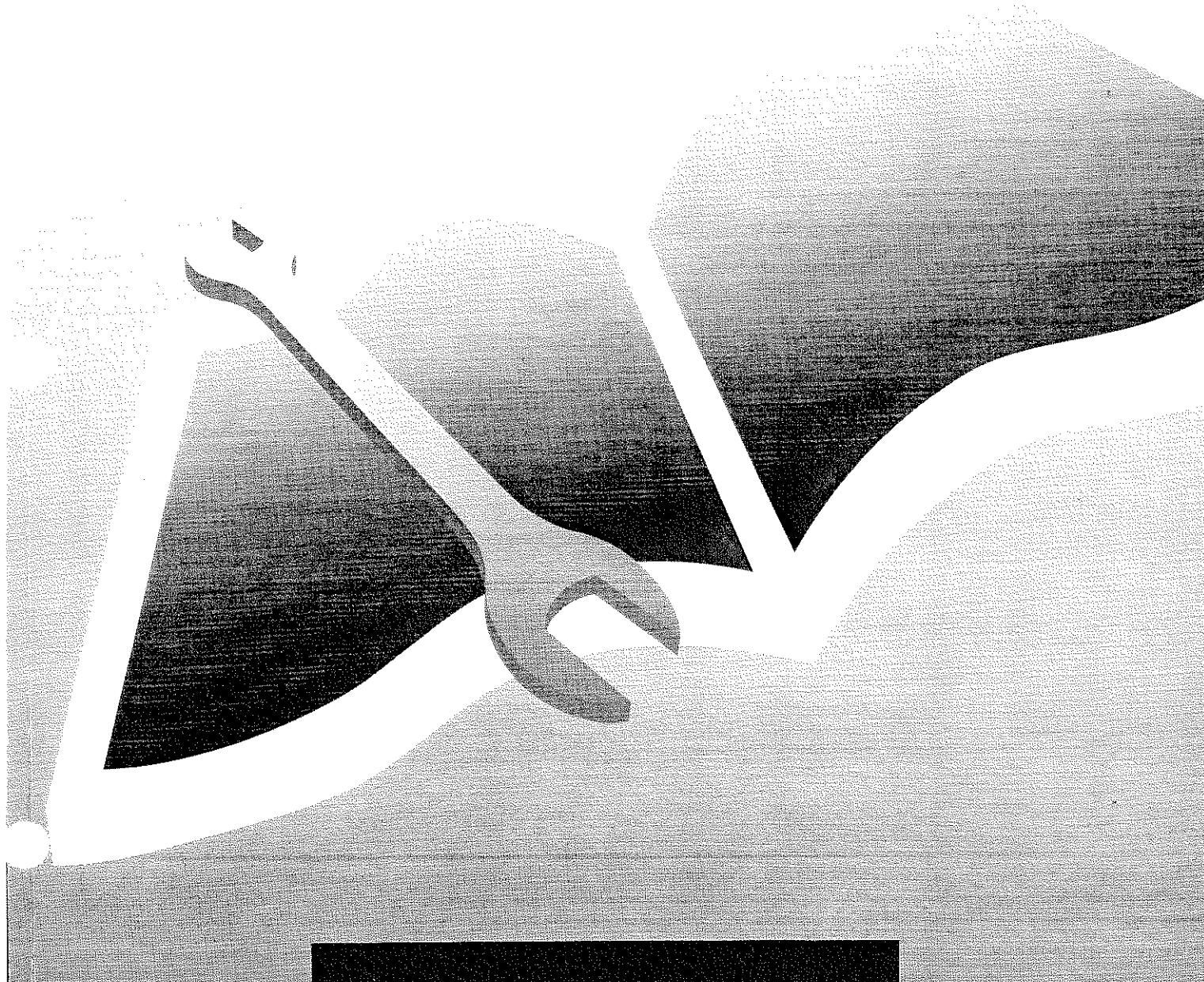
Nota: questa applicazione o trasformazione è stata prevista su tutti i Tigretrac della serie 30 dalla matricola n. 02457.



Technical

assistance manual

Series 30



Technical assistance manual

Series 30

TIGRETRAC 2500 HST
TIGRETRAC 3800 HST
TIGRETRAC 3800 HST 4WS
SUPERPARK 3800 HST



For this edition are responsible the Service Departments
of the Antonio Carraro spa

Brochure Cod. 4 7310 026

Drawings: R.B.S. studio
Composition: Fili Zampieron

INTRODUCTION



INTRODUCTION

Antonio CARRARO S.p.A has put much effort in to writing this shop manual regarding Tigro-ne-Superpark series 30 to inform on how to operate on the tractor in order to save you time and maximize product understanding. This manual also contains all the information relating to the tractors, outlining in particular adjustment operations, detachment and attachment as well as disassembly and assembly instructions.

To improve and to facilitate comprehension, this manual has been supplied with a great number of figures that show not only the detachment and attachment operations, disassembly and assembly procedures as well as adjustment, but also mighlights on the tools and the gauging instruments used. Many drawings and diagrams allow a full view of the tractor components and their operation, offering a clear picture and ease, reference for the person in charge of repairing the tractor.

Safety and accident prevention

Most accidents and injuries that take place in shops are caused by the non-observance of some simple and fundamental safety and accident prevention rules.

The fundamental safety and accident prevention rules do not mean "interfering with productive process in shops but on the contrary they improve man's performances and that of the machine, to the advantage of the single worker and of the whole community".

Data contained in this manual are merely indicative and may not be up-to-date consequently to the modifications adopted by the Manufacturer, at any time, for technical or commercial reasons not to mention for the compliance to the requirements in the different countries.

General safety and accident prevention rules

Strictly observe the triangular danger sign found in this manual: it warns of situations or group of circumstances that can cause damages both to both people and things.

General information

- Perform operations by strictly observing safety and accident prevention measures.
- Do not wear loose clothing, wrist watches, rings, etc. We suggest wearing work clothing and safety equipment such as gloves, goggles and safety shoes.
- Use tools to align holes and slots.
- For overhead hoisting, do not exceed work load limits.
- Dispose of oils in compliance with environmental regulations.

Avoid polluting the environment.

- Do not use gasoline, diesel oil or other flammable liquids to degrease or wash parts but use commercial and non-toxic solvents.
- Wear gloves to handle metal cords or chains.
- Handle hydraulic oil with care since it is poisonous and corrodes paint.
- Do not perform any servicing on the tractor while engine is running, if not indicated otherwise.
- Watch out for shearing
- Watch out for squeezing
- Watch out for tangling
- Watch out for collision
- Watch out for projection of fluids at high pressure.

- Disconnect battery before attempting any servicing.
- Do not operate tractor in closed premises. Dispose of waste fluids, used filter cartridges, oils, lubricants and grease cleaners in the most suitable way and in compliance with regulations in force.

The collection of waste oils must be performed by authorized plants.

Keep environment clean.

- Operations that require special care may be hazardous for the operator if not correctly performed.



TABLE OF CONTENTS

	GROUP	Page
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- Lubricants	5	
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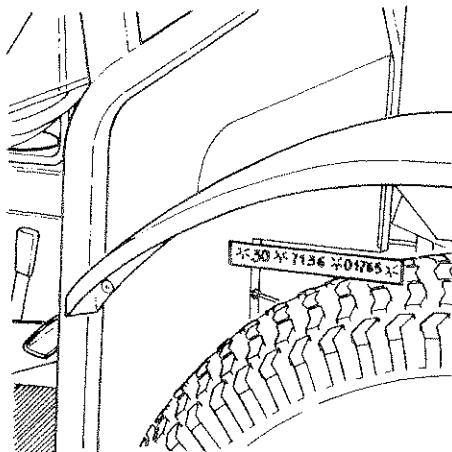


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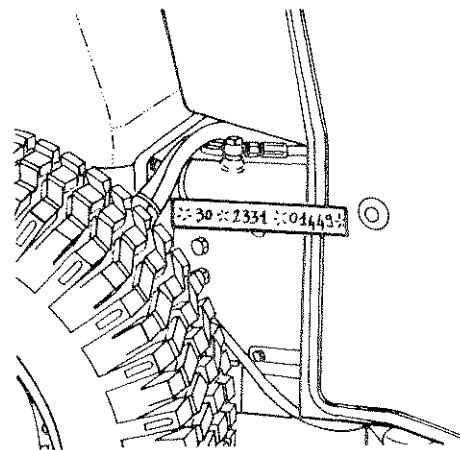


IDENTIFICATION DATA

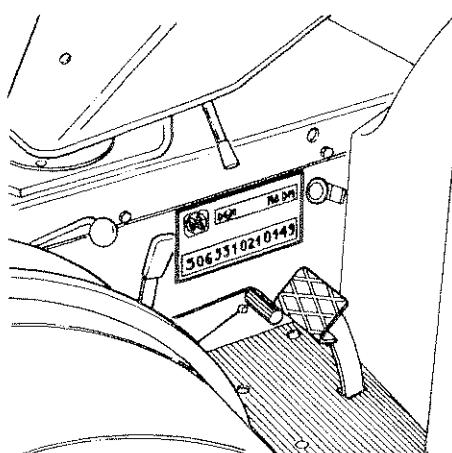
Location of general identification plate.



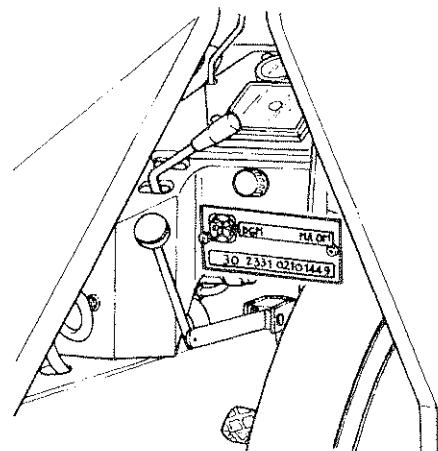
1 - Tigretrac HST: type and number of body



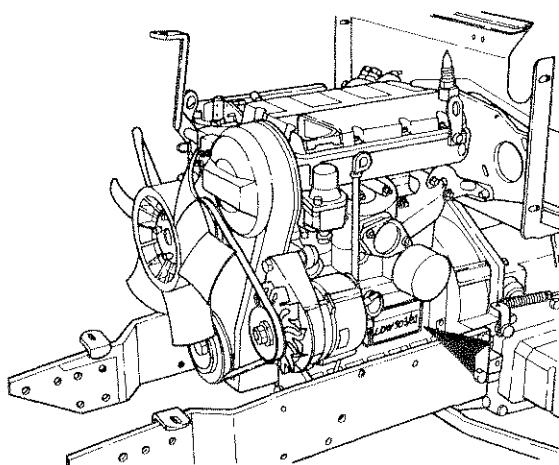
2 - Superpark HST: type and number of body



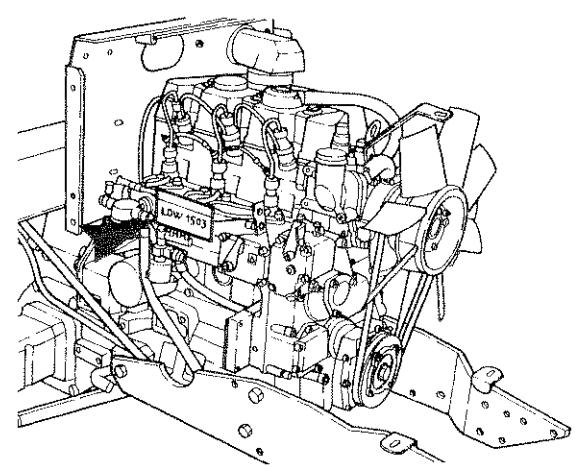
3 - Tigretrac HST: identification plate



4 - Superpark HST: identification plate



5 - Type and engine identification number



6 - Type and engine identification number

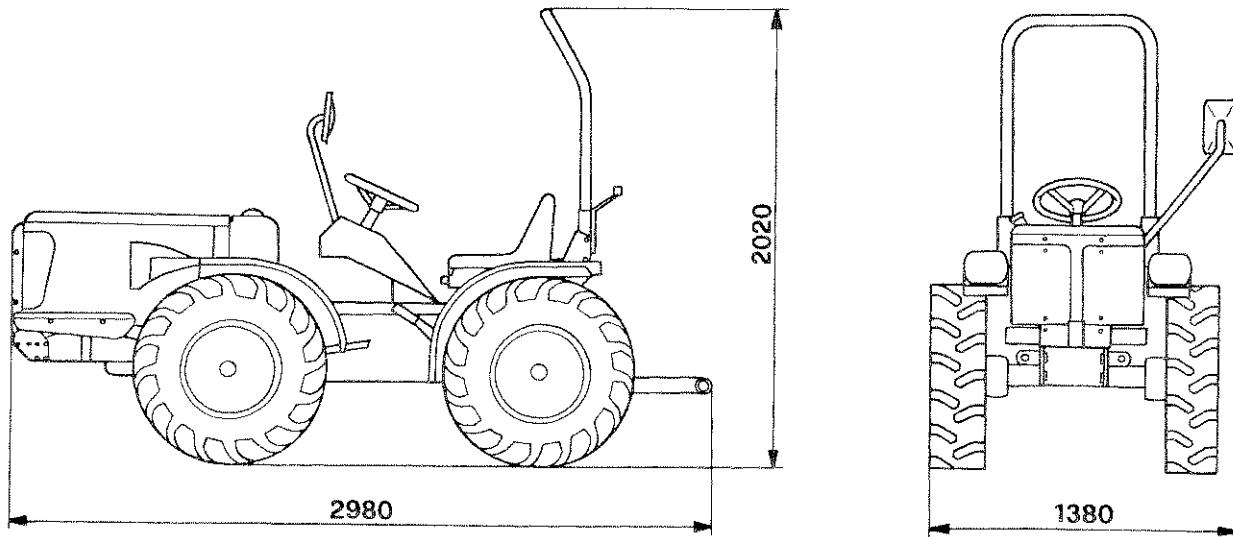
SPARE PARTS

When ordering spare parts please supply the following:

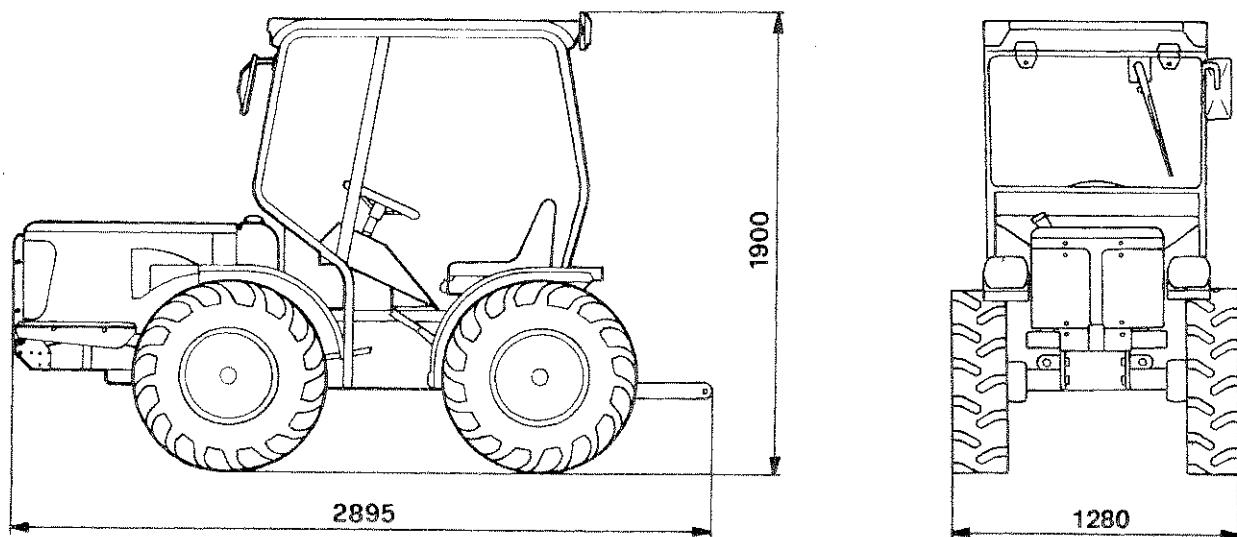
- 1) Serial number of tractor.
- 2) Name of part and code number.



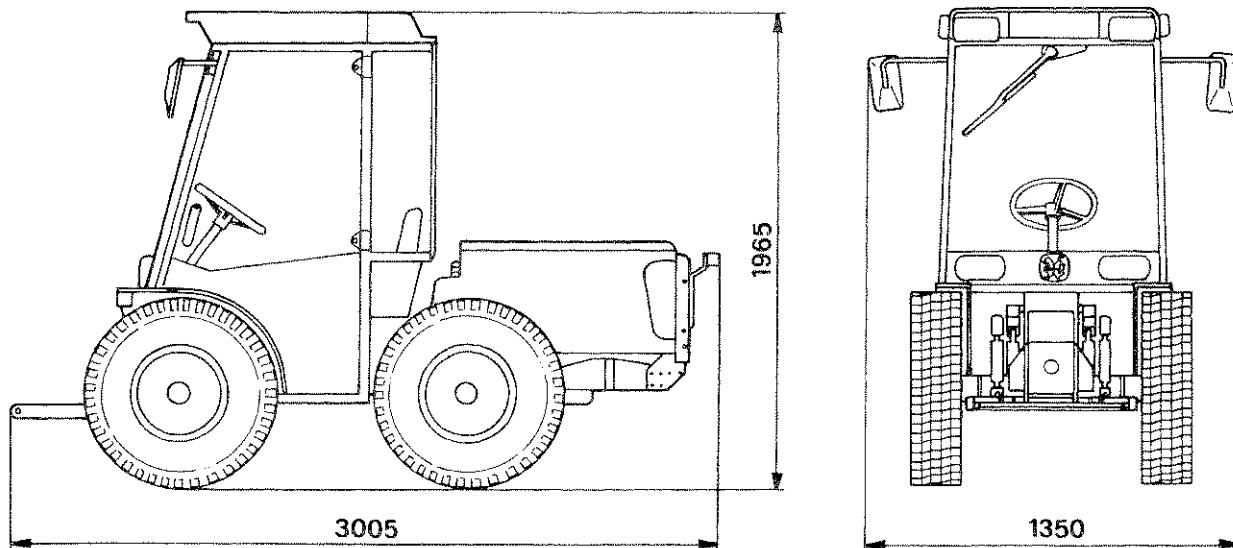
GENERAL DIMENSIONS



- Main dimensions of Tigretrac with roll bar



- Main dimensions of Tigretrac with cab frame



- Main dimensions of Superpark



Weights

Tractor in running order (with full tank and driver)

	Total weight	Weight of front axle	Weight of rear axle	Standard wheels (price-list)
Tigretrac 2500 HST	a 1008	550	458	6.50-16
	b 1080	616	464	
	c 1180	660	520	
Tigretrac 3800 HST	a 1062	644	418	6.50-16
	b 1134	704	430	
	c 1236	738	498	
Tigretrac 3800 HST 4 WS	b 1178	688	490	6.50-16
	c 1280	740	540	
Superpark 3800 HST	b 1090	370	720	28x9.00-15
	c 1188	406	782	

a = Tractor with roll bar

b = Tractor with cab frame (open)

c = Tractor with cab frame (closed)

TOPPING-UP

Parts to be topped-up	QUANTITY (LT)		Fuel
	LDW 903	LDW 1503	
Fuel tank	30	30	Diesel oil
Radiator, engine	2,7	2,7	GISTEDA-FLÙ
Front transmission box and hydraulic circuit	6,5	6,5	15/40 ESSO UNIFARM
Rear gearbox and hydrostatic circuit	8,5	8,5	10/30 ESSO UNIFARM
Windscreen cleaner tank	0,5	0,5	water
Engine sump and oil filter	2	4,15	15/40 ESSO UNIFARM

ENGINE FEATURES

Lombardini

Type of engine	LDW 903 FOCS	LDW 1503 CHD
Cylinders Nr.	3	3
Bore mm	72	88
Stroke cm	75	85
Engine power cm ³	916	1551
RPM	3000	3000
Power KW/CV	15.5/21	26.5/36
Max. torque Nm (rpm)	56.6/2200	99/2100
Cooling	Water	Water

**DRIVING TORQUES**

Indicative values for maximum driving torques in Nm - Kgm

Expected friction factor = 0.14

NAME	RESISTANCE CLASS					
Diameter x p (mm)	Nm	Kgm	Nm	Kgm	Nm	Kgm
M 5 x 0.8	5.9	0.6	7.84	0.8	9.9	1.01
M 6 x 1	10.1	1.03	14.3	1.46	17.2	1.75
M 8 x 1	25.5	2.6	36.3	3.7	43.1	4.4
M 8 x 1.25	24.3	2.48	34.2	3.49	41.1	4.19
M 10 x 1.25	50.9	5.2	71.5	7.3	85.3	8.7
M 10 x 1.5	48.7	4.97	68.6	7	82	8.37
M 12 x 1.5	87.2	8.9	122.5	12.5	147	15
M 12 x 1.75	82.9	8.46	116.6	11.9	140.1	14.3
M 14 x 1.5	140.1	14.30	196	20	235.2	24
M 14 x 2	131.9	13.46	195.2	19.92	222.5	22.70
M 16 x 1.5	210.7	21.5	294	30	352.8	36
M 16 x 2	199.9	20.4	282.2	28.80	339.1	34.6
M 18 x 1.5	303.8	31	421.4	43	509.6	52

Special screws

Description	Pitch diameter - mm	Driving torque Nm.	Kgm.
Differential box ring gear fastening screws	M 10 x 1.25	83	8.5
Wheel fastening nuts or screws	M 14 x 1.5	137	14
Front axle semishaft fastening nuts	M 18 x 1.5	88	9
Hydrostatic unit maximum valve cap	—	68.6	7
Hydrostatic unit feed valve cap	—	39.3	4

UNIONS - NIPPLES (with Cu washer)

RATED DIAMETER	HEX KEY (mm)	DRIVING TORQUE Nm Kgm	
M14x1.5	17-19	44	4.5
M16x1.5	22-24	59	6.0
M18x1.5	24-27	59	6.0
M20x1.5	27	59	6.0
GAS 1/4"	17-19	44	4.5
GAS 3/8"	22-24	59	6
GAS 1/2"	27	59	6



LUBRICANTS

- ESSO UNIFARM 15W 40 oil
 - Front gear box (hydraulic system tank)
 - Engine (Diesel)
- ESSO UNIFARM 10W 30 oil
 - Rear gear box (speed gear and hydrostatic tank)
- FIAT ZETA 2 GREASE
 - Splined section bars
 - Joints - Semishafts
- GP GREASE
 - On different greasing points (greasing nipples)
- TECNOLUBE POLIMER 400 GREASE
 - Bushings
 - Roller bearing cages
- ESSO BEACON 2 GREASE
 - Accelerator drive wires - locking

- GISTEDA-FLU ANTIFREEZE LIQUID FEATURES

Use Percentage:

- 18% GISTEDA FLU for temperatures up to - 8°C
- 28% GISTEDA FLU for temperatures up to - 13°C
- 36% GISTEDA FLU for temperatures up to - 20°C
- 40% GISTEDA FLU for temperatures up to - 24°C
- 50% GISTEDA FLU for temperatures up to - 38°C

THREAD LOCKERS AND RETAINERS

For the assembly use the products indicated or other having equivalent features:

RTV 1473 BLACK ANGST-PFISTER DOPE
joints - packings
speed gear box cover
covers - front axles - rear axles
flanges - covers

LOCTITE 242
Average locking and sealing of threaded parts in general
naphtha tank support screws
anchoring dowels - joints

LOCTITE 270
High resistance fastening, locking and sealing of stud bolts, nuts and screws
brake jaws stop plate stud bolts

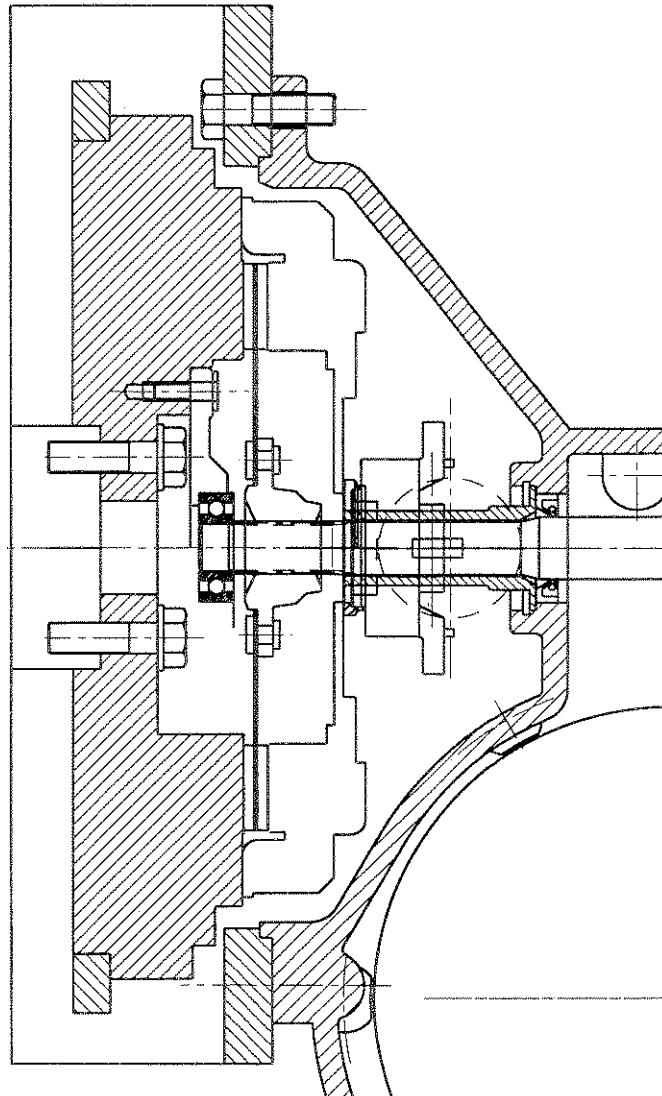
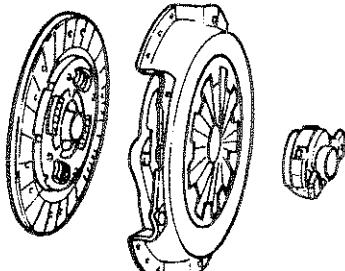
LOCTITE 510
Sealing of surfaces
naphtha tank float packing
Non-threaded plugs

Better - AREXONS
liquid packing
threaded plugs
water temperature indicator on engine-radiator



Disc and gearbox-clutch mechanism

OP.1166



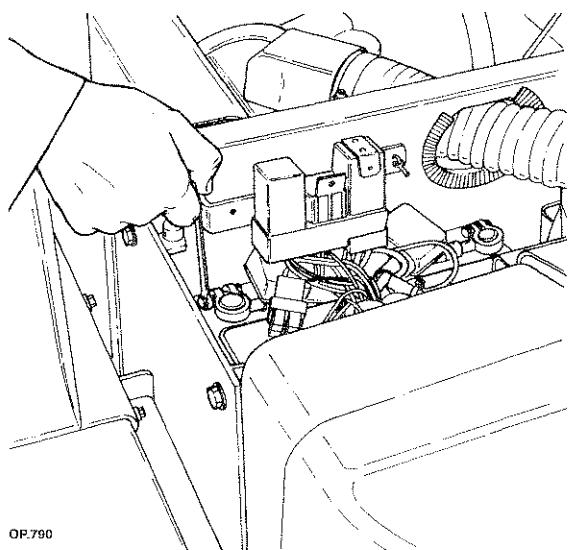
- Engine clutch assembly

Technical features

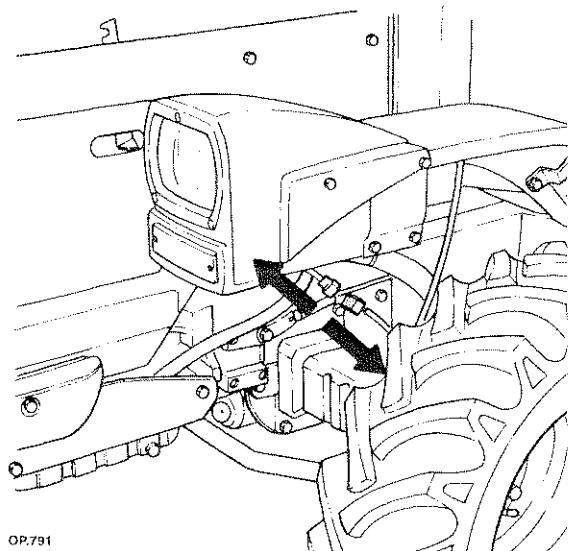
Tractor type		2500 - 3800
Type of clutch	code name	40211010 VALEO 176676 AD
Clutch mechanism	code name	40210004 VALEO 742906 FD
Thrust bearing	code	5073504
Disc diameter	mm	181,5
Rated thickness	mm	8,6 ± 0,1
Admitted thickness of disc	mm	6,0
Type of friction material		VALEO F 202

Disconnecting - connecting

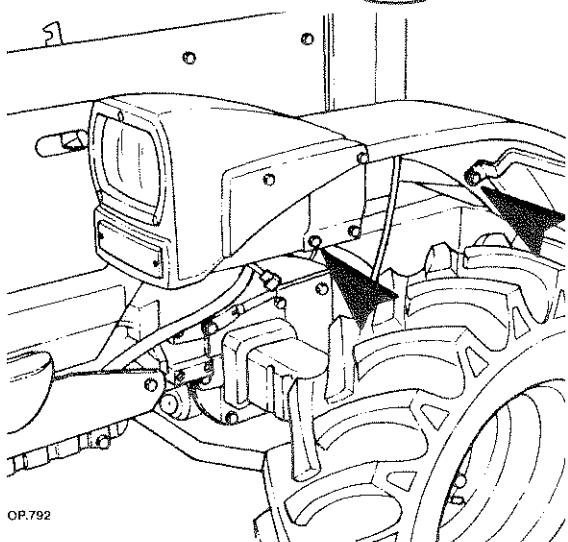
Clutch is accessed by separating the whole engine from the transmission box.



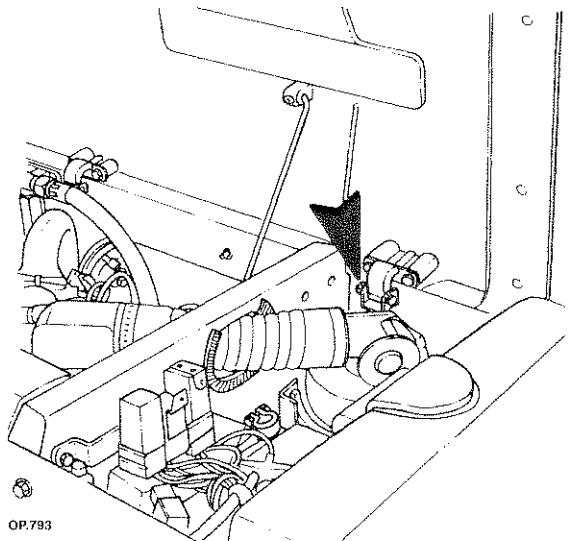
1 - Loosen the cable from the battery and insulate it.



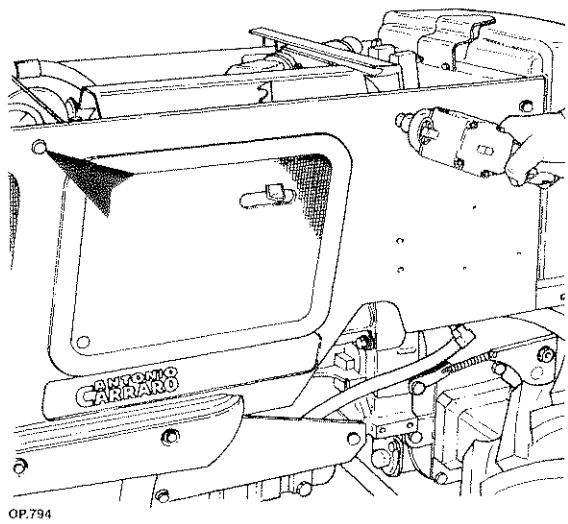
2 - Remove the electrical connections from the lights.



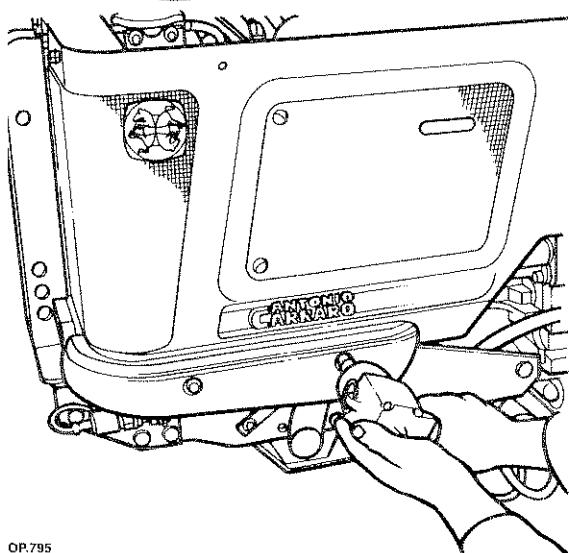
3 - Loosen the screws and remove the front fenders.



4 - Loosen the screws and remove the casing (hood).

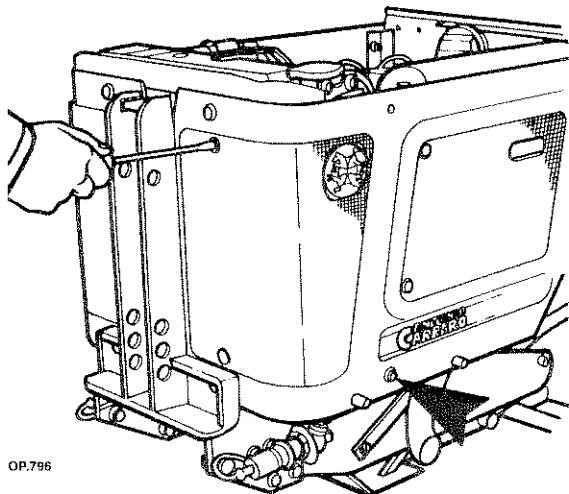


5 - Loosen the screws and remove the muffler hood and hood fastening.



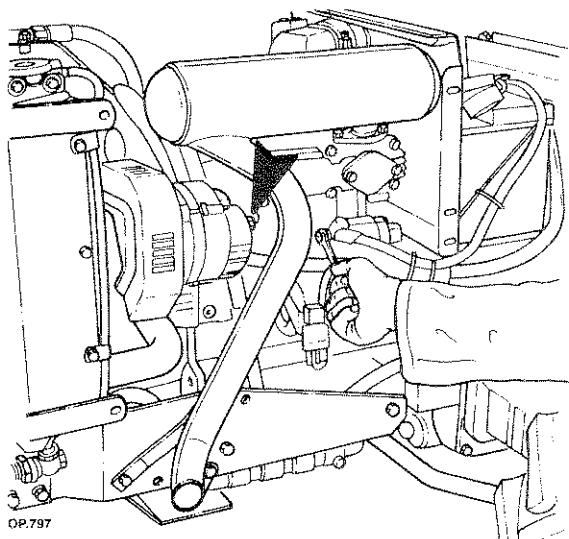
OP.795

- 6 - Loosen the screws and remove the fenders.
7 - Remove the windshield washer tank (Superpark only).

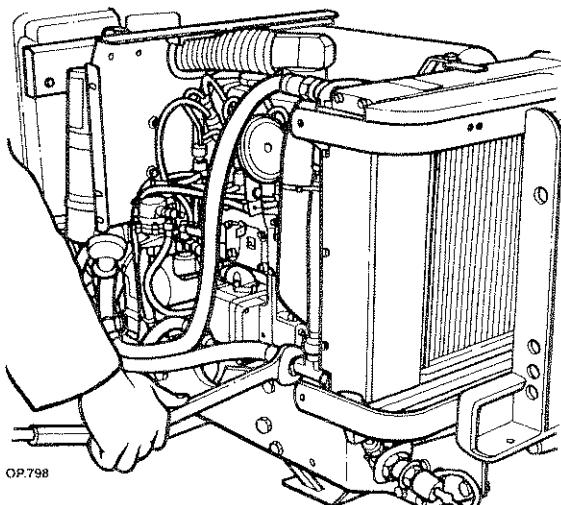


OP.796

- 8 - Detach the front grille, loosen the screws and remove the r.h. and l.h. sides.

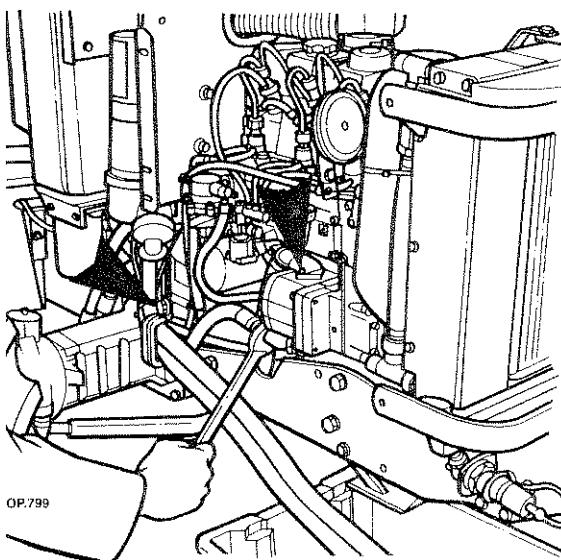


- 9 - Detach the relay support and the electrical connections on the engine.



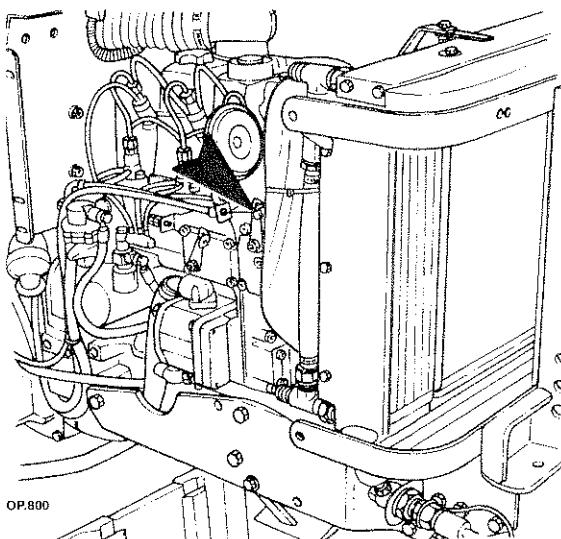
OP.798

- 10 - Loosen the hydraulic tube unions of the exchanger and plug holes with stoppers.

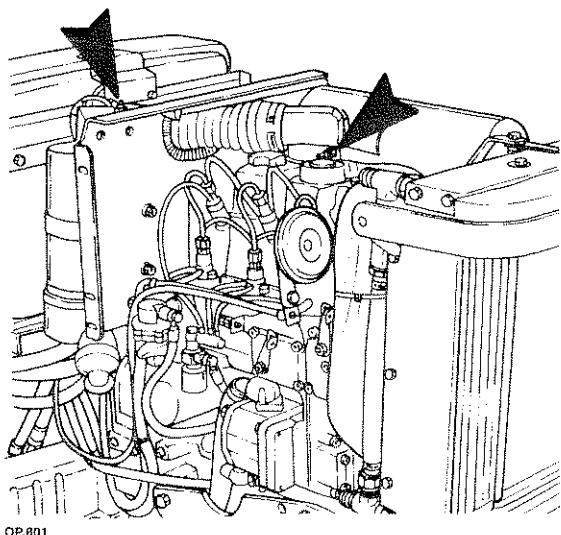


OP.799

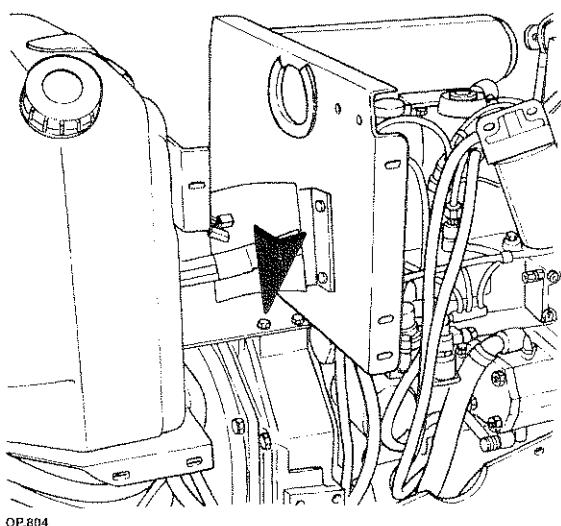
- 11 - Detach the delivery and suction tubes of the hydraulic pump as well as the retainer hose clamps.



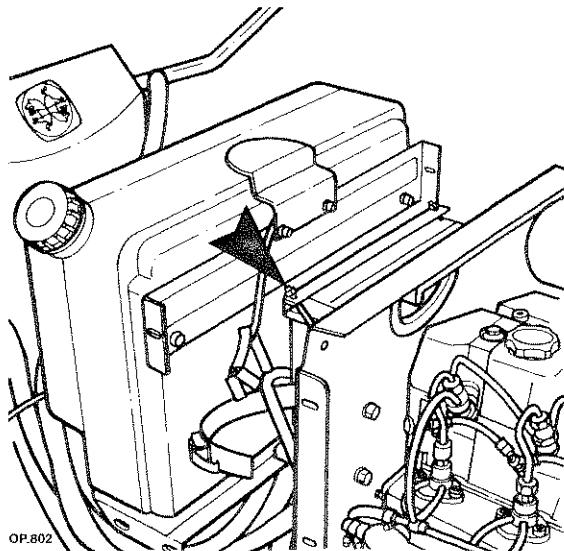
- 12 - Loosen the terminals and remove the accelerator needle.



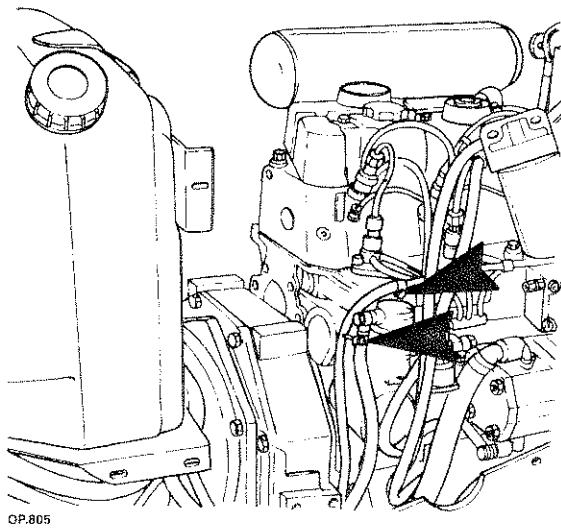
13 - Loosen the suction tube and filter hose clamps and remove the whole suction tube.



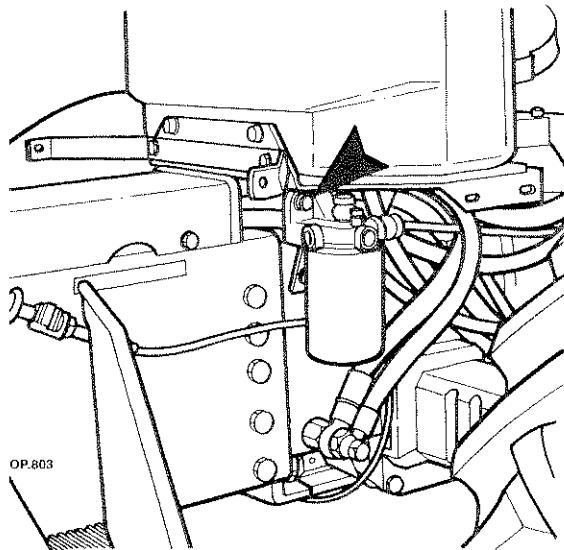
16 - Loosen the screws and remove the side wall (remove the discharge end on 2500).



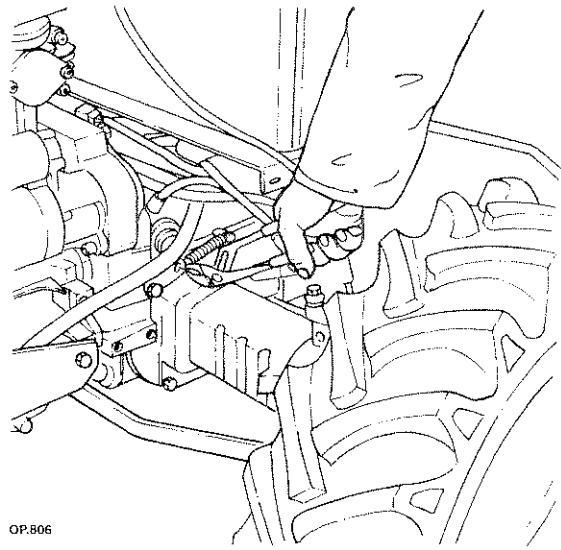
14 - Loosen the couplings and remove the battery.



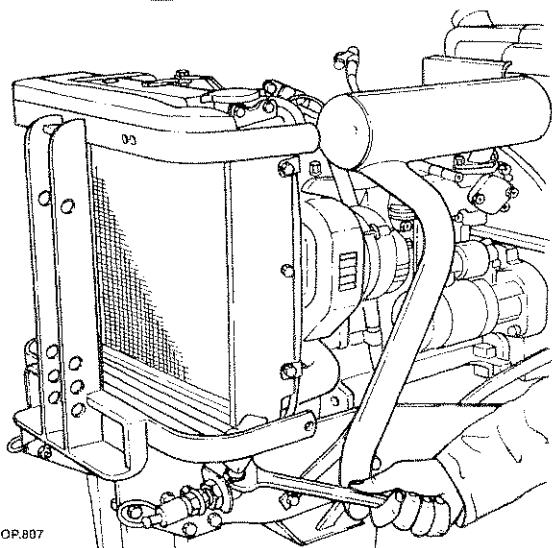
17 - Loosen the hose clamps and remove the naphtha tubes of the pump A.C. and the injector pump.



15 - Loosen the screws and remove the naphtha filter.

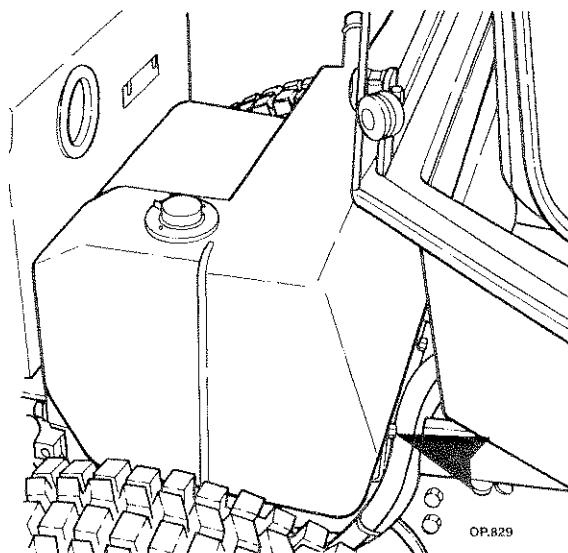


18 - Remove the clutch pedal return spring.



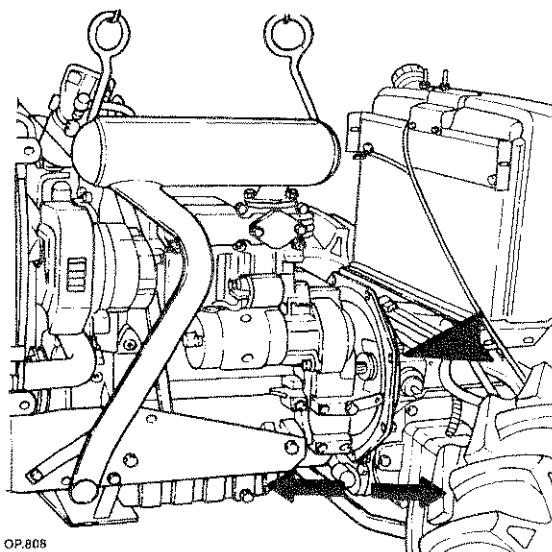
OP.807

19 - Loosen the hydraulic inlet couplings.

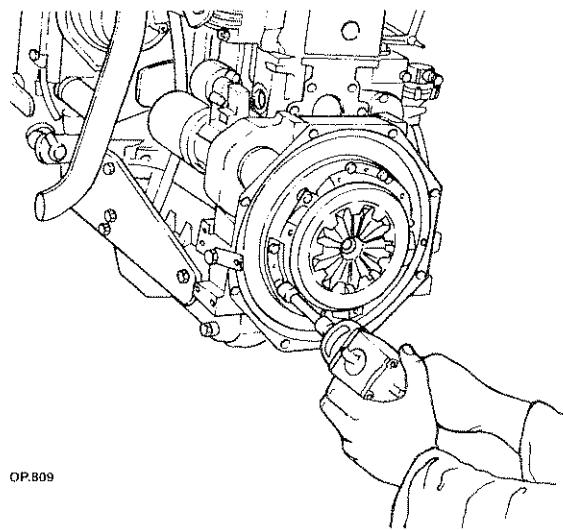


OP.829

20 - Loosen and remove the tank (only Superpark).



21 - Anchor the engine, loosen the screws and separate the engine from the transmission box.



OP.809

22 - Loosen the screws and detach the clutch disc mechanism from the engine flywheel.



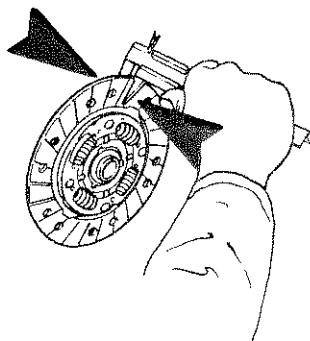
WARNING - DANGER

Perform operations by strictly observing accident prevention regulations.

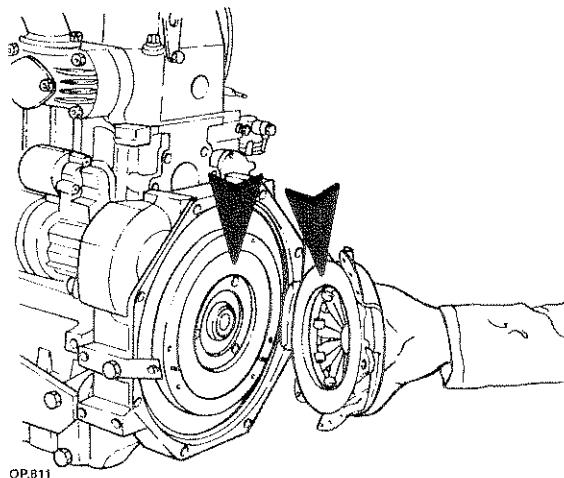
- Do not use gasoline, diesel oil or other flammable liquids to degrease or clean parts but use commercial non-toxic solvents instead.

CHECKING THE CLUTCH

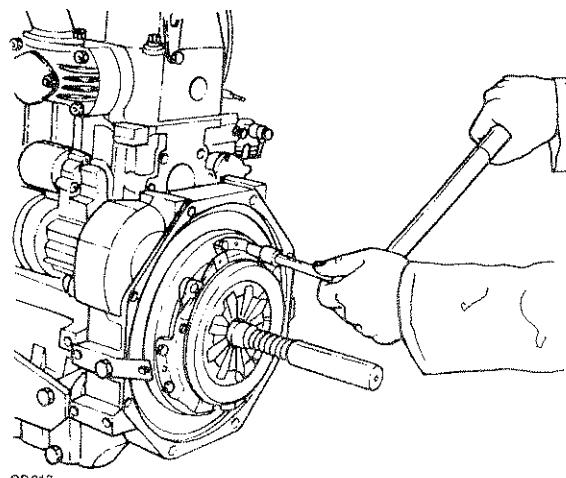
1 - Check that the friction packings of the driven disc are not excessively worn out and that they are not scored.



OP.810



OP.811



OP.813

2 - Make sure that the sliding surfaces of the disc thrusting plate and the engine flywheel are not scored nor burnt.

If they are, we suggest to replace the disc and the clutch mechanism and to grind the flywheel.

b - Mount the clutch onto the flywheel using tool no. 27981072 to align the driven disc.

c - Observe the driving torques listed at pages 4.

d - Re-assemble the whole by proceeding inversely as to the description for the disassembly.

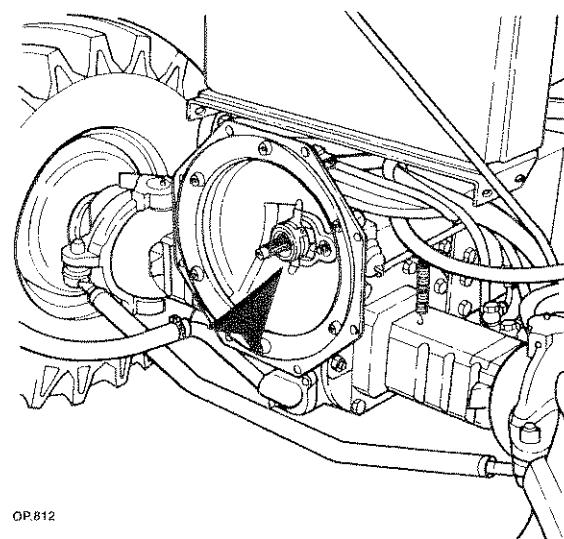
e - Grease the thrust bearing fork driving shaft and the hub on which it slides.

CONNECTING THE CLUTCH

Before connecting the clutch again, first check:

a - the conditions of the thrust bearings and that of the drive shaft support bearing on the main gearbox or on the flange of the engine shaft.

These bearings must not be damaged nor be noisy. If they are, then they should be replaced.



OP.812



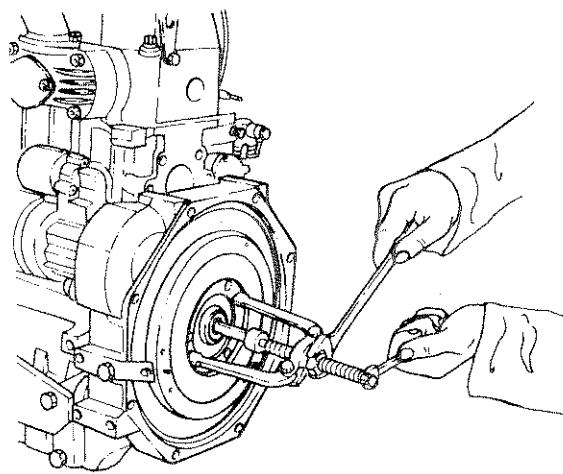
WARNING - DANGER



Perform operations by strictly observing accident prevention regulations.

- Use tools to align holes and slots not hands.

DISCONNECTING AND CONNECTING THE BEARING



OP.814

1 - Remove the bearing with extractor AT 37981216 and adapter AT37981222.

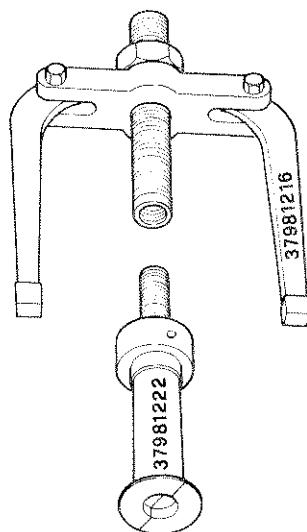
2 - Mount bearing using a suitable pad.



ADJUSTMENT OF THE CLUTCH PEDAL TRAVEL

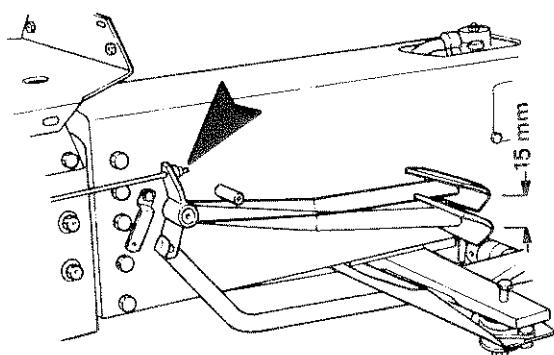
The idle stroke of the clutch pedal is abt 15 mm long corresponding to a space of abt 1 mm that is present between the thrust bearing and the friction ring of the flange that controls the disengagement of the clutch. Should the idle stroke be less than the one said due to the wear of the driven disc, it is then necessary to restore the original operating conditions by adjusting the tie-rods or push-rods.

CLUTCH EQUIPMENT



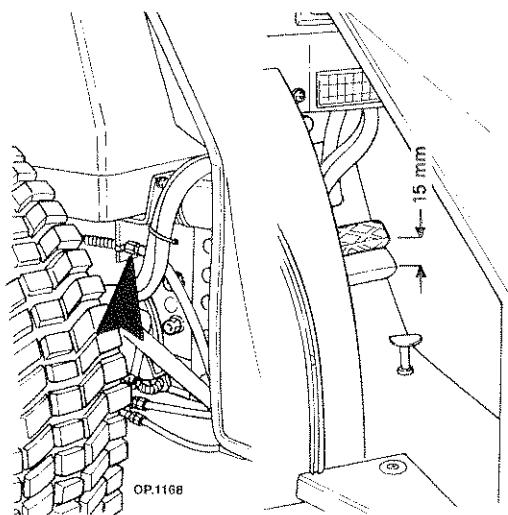
AT.001

1 - Combined puller to remove the bearing from the engine shaft AT. 36981216 ~ AT. 37981222.

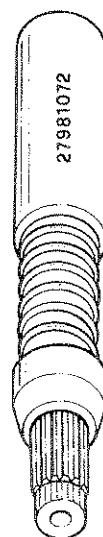


OP.1167

- Checking and adjustment of the play of the Tigretrac clutch.



- Checking and adjustment of the play of the Superpark clutch.



AT.190

2 - Tool for the alignment of the clutch unit to the gear engine axis.

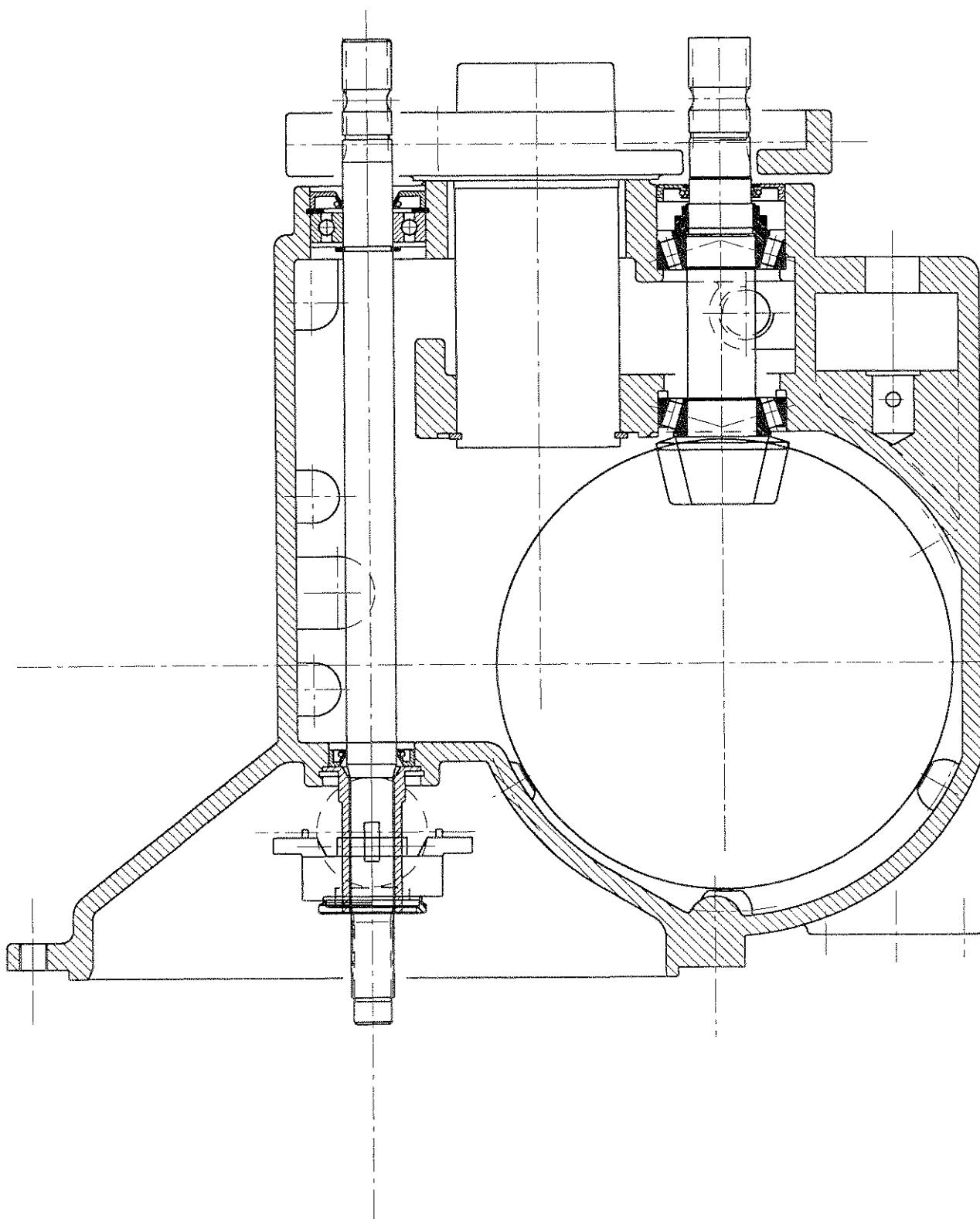
**CLUTCH**

Troubleshooting

Trouble	Probable cause	Check	Solution
Clutch slips.	Lubricant on clutch disc.	Check seal rings of main engine shaft.	Clean parts in contact with clutch seals with petrol and replace packings.
	Worn out clutch disc.	Check thickness of clutch disc and the operating condition of the clutch mechanism.	Replace disc and mechanism.
	Faulty clutch mechanism	Check mechanical controls, cables and sheathings.	Adjust the clutch pedal stroke. Replace mechanism together with disc.
The clutch does not disengage while engine is running and the gears do not engage smoothly.	Deformed surface of disc.	Check the efficiency of the disc and look for burns on the contact surface of the disk (engine flywheel and mechanism).	Replace disc and clutch mechanism and recondition the engine flywheel.
Noisy clutch.	Faulty clutch or worn out parts.	Check clutch disc Flexible coupling springs.	Replace disc.
Hard clutch pedal.	Seizing of the pump piston. Hardening of the outer controls. hardening of the pedal hinge.	Check the hinges and lubricate.	Lubricate controls.



FRONT DRIVE ASSEMBLY



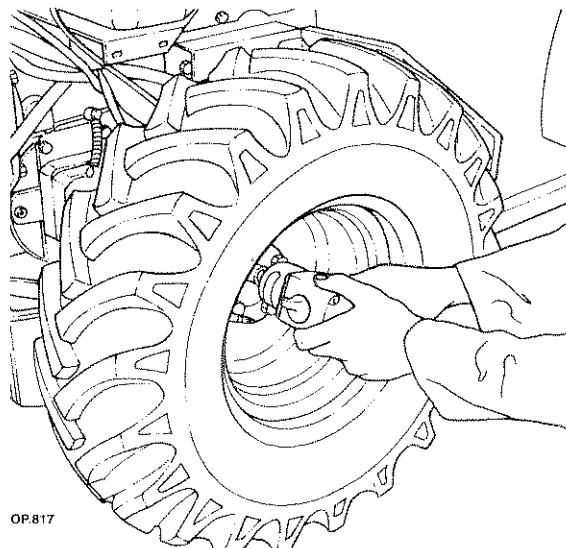


FRONT DRIVE

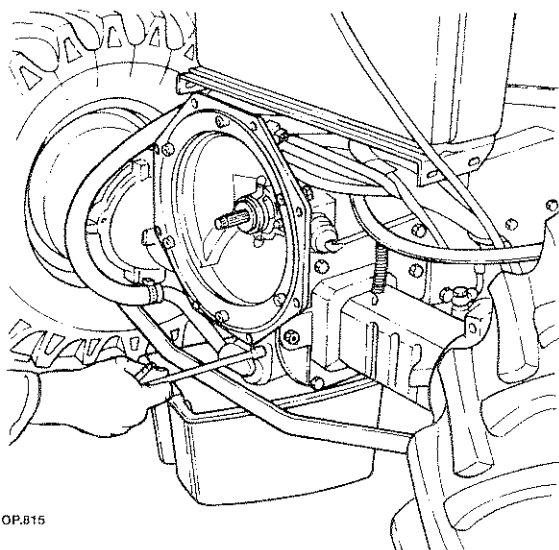
Disconnection and connection**A - Tigretrac**

To have access to the front drive proceed as follows:

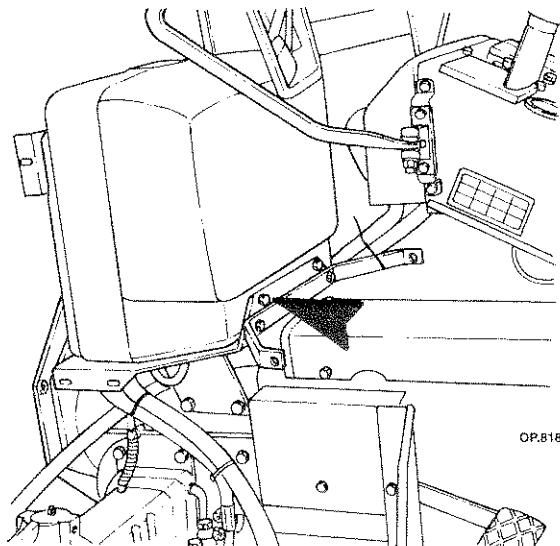
1 - Proceed as indicated in the pictures regarding the disconnection of the clutch unit steps 1 - 20 page 7 - 8 - 9 - 10.



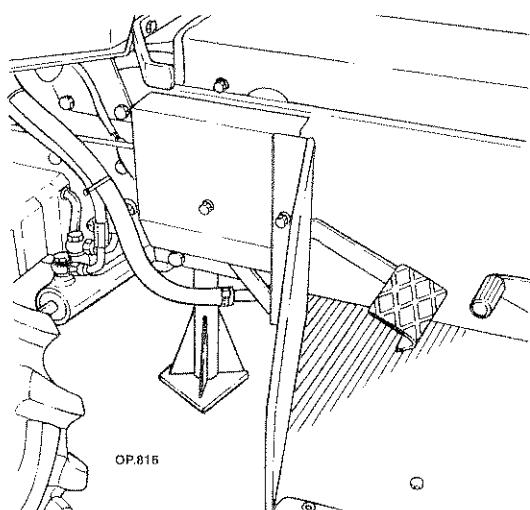
4 - Loosen the screws and remove the front wheels.



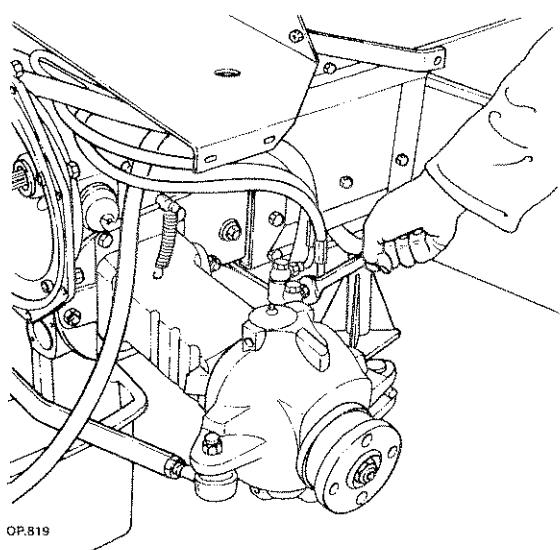
2 - Loosen the screws and remove the hydraulic system filter. To drain, collect the oil in a specific container.



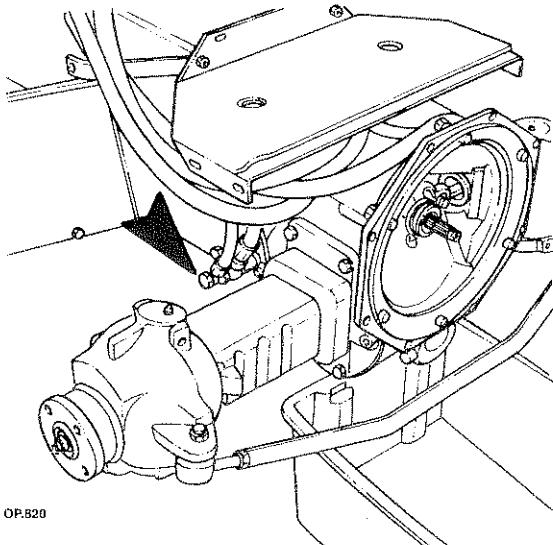
5 - Loosen the screws and remove the naphtha tank.



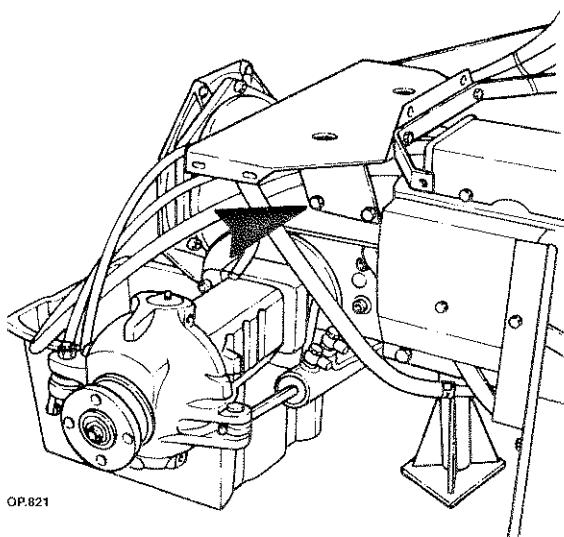
3 - Place a horse underneath the central drive on the front side.



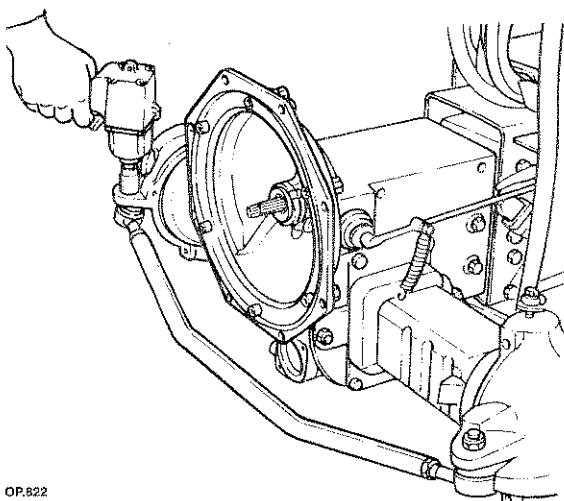
6 - Loosen the union on the steering cylinders and plug holes with plastic stoppers.



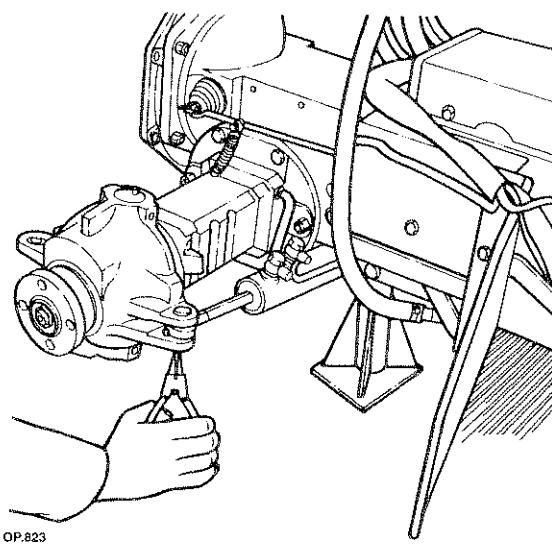
7 - Loosen the hydraulic system drain unions.



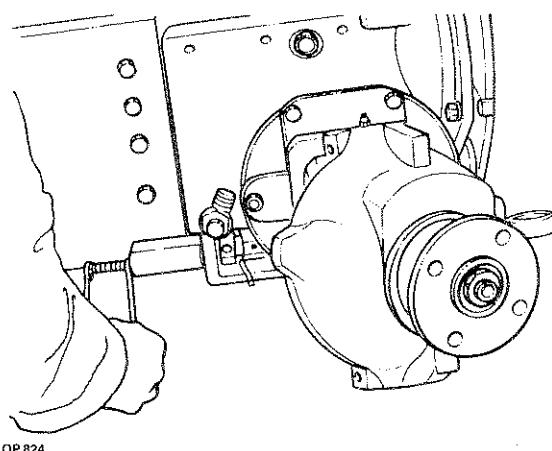
8 - Loosen the screws and remove the tank support.



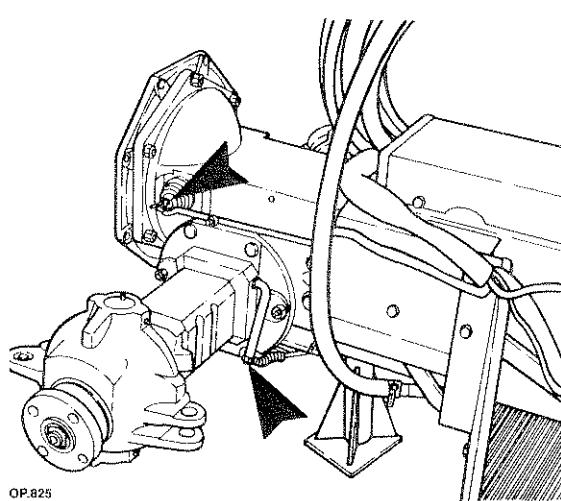
9 - Loosen the nuts and remove the steering coupling bar.



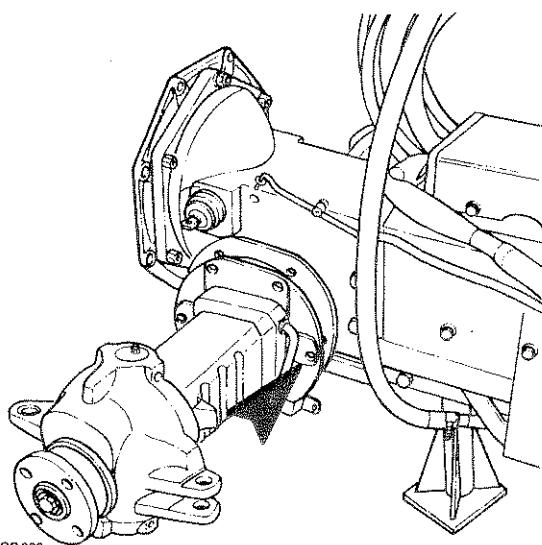
10 - Remove the spring pin and the hydrodrive cylinder pin spring retainer ring.



11 - Remove the pin from the transmission box using the tool AT 2.7981.314.



12 - Loosen the terminal and remove the locking wire and remove the clutch rod retainer split pin.



13 - Loosen the screws and remove the axle on the differential locking side along with possible adjustment shims.

14 - Loosen the screws and remove the opposite axle along with the complete differential unit.



WARNING - DANGER

Perform operations by strictly observing accident prevention regulations.

- Wear safety clothing such as, gloves and safety shoes.
- Do not align slots with hands but use specific tools instead.
- Use suitable hoisting means.



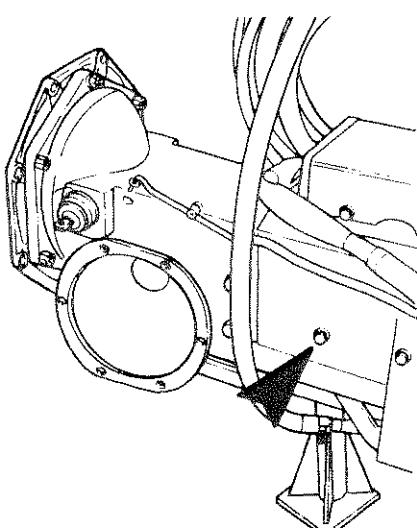
WARNING - DANGER

Keep environment clean. Dispose of waste fluids, used filter cartridges, oils, lubricants and grease cleaners in the most suitable way and in compliance with regulations in force. The collection of waste oils must be performed by authorized plants.

B - Superpark

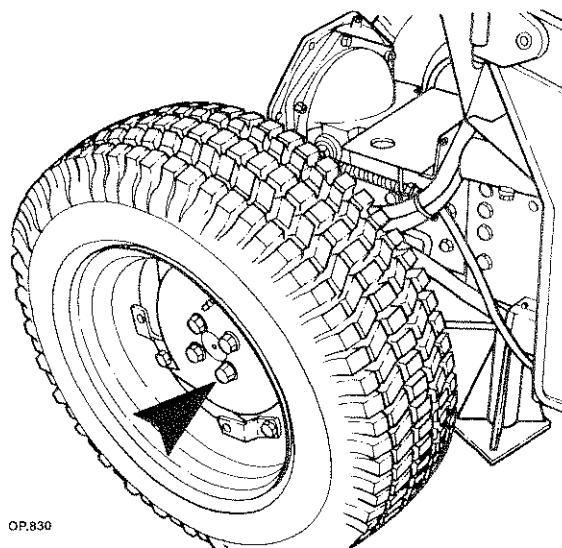
Proceed as indicated in the pictures regarding Tigretrac steps 1 - 3 page 15.

OP.827

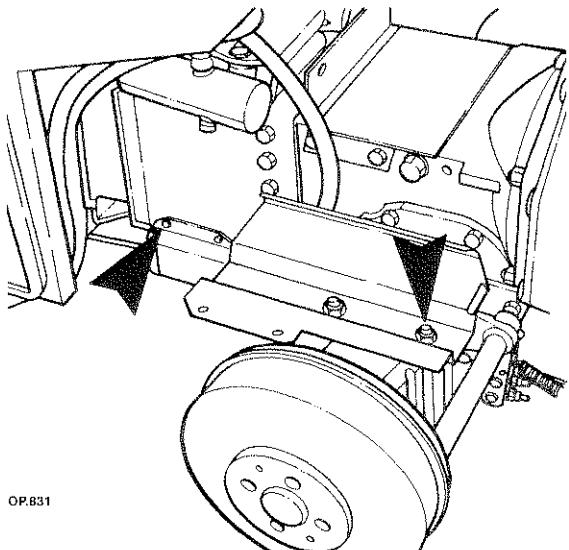


15 - Loosen the clutch pedal protection.

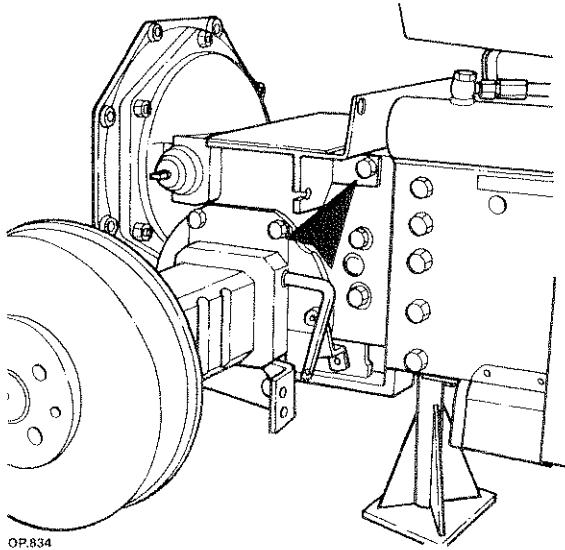
OP.830



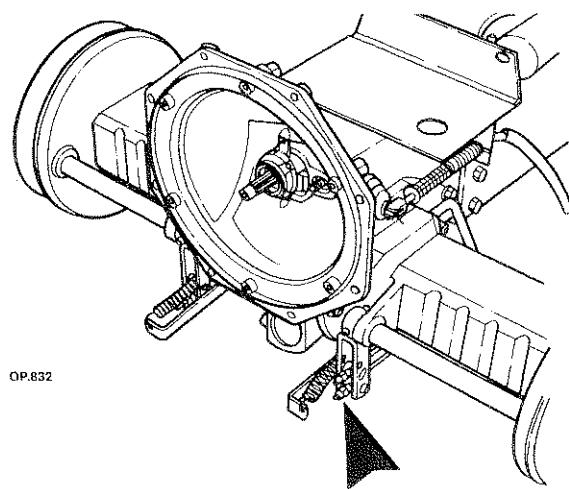
4 - Loosen the screws and the nuts and remove the wheels.



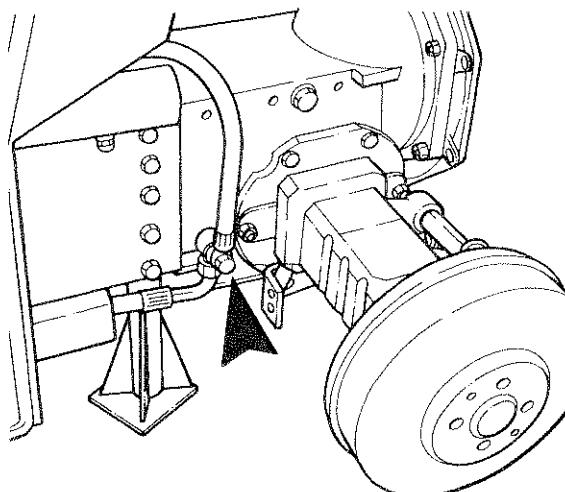
5 - Loosen the screws and remove the battery supports and the tube protections.



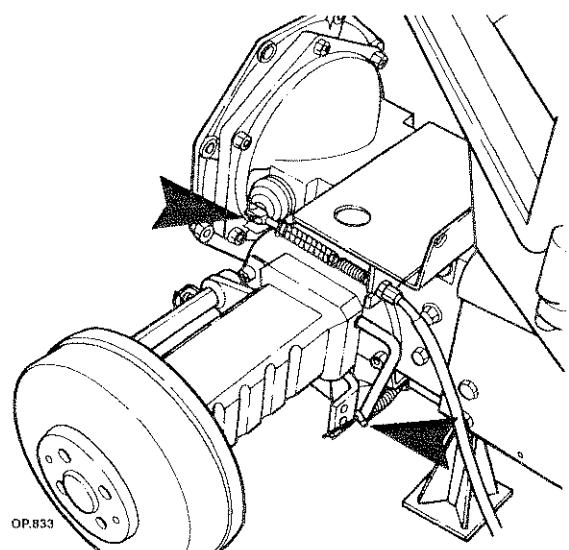
8 - Loosen the screws and remove the support of the tank.



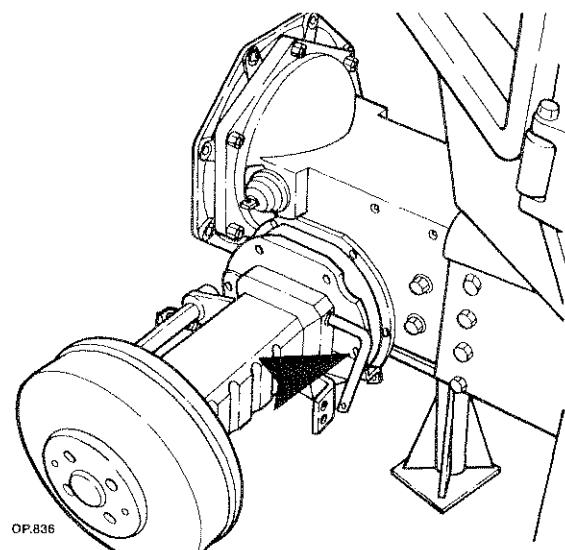
6 - Loosen the nuts and the lock nuts of the hand brake and service brake cords and partly remove the wires and the sheathings.



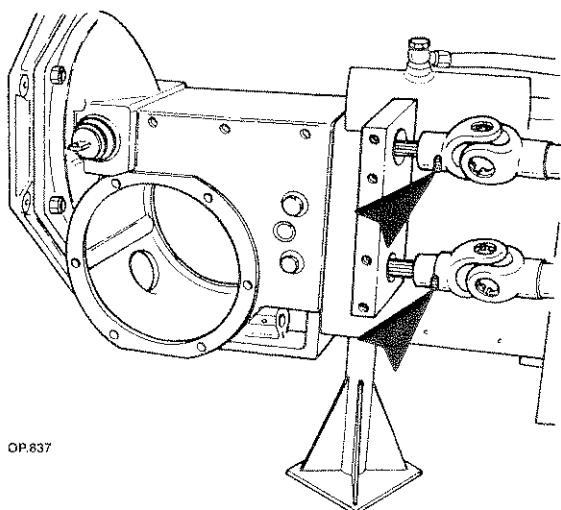
9 - Loosen the hydraulic system tank.



7 - Loosen the clamp and remove the split pin of the clutch cord.

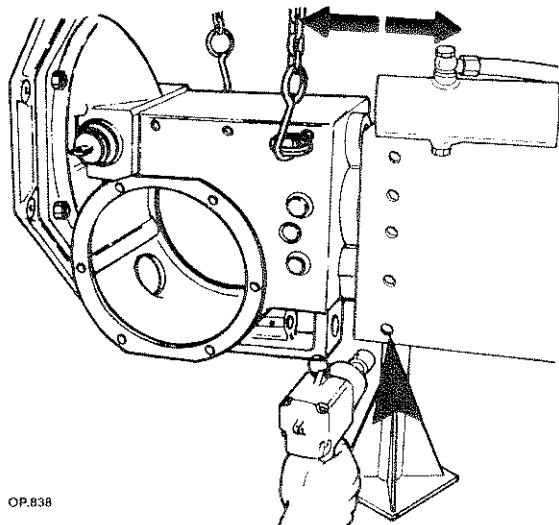


10 - Loosen the screws and remove the r.h. and l.h. axle along with the shims and differential unit.



OP.837

11 - Loosen the fastening dowels bolts of the central joints.



OP.838

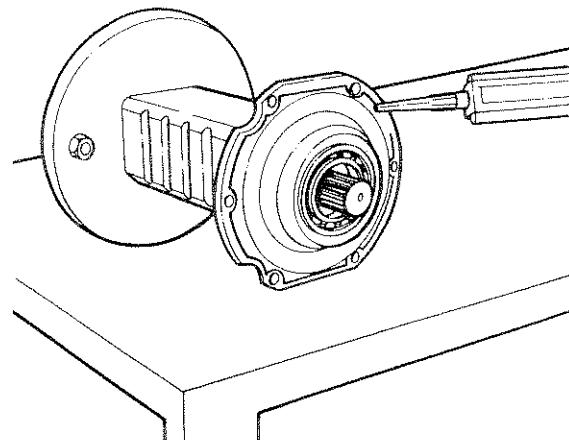
12 - Loosen the fastening screws of the front unit to the central body and remove the rear transmission box for the Superpark.

Connecting

A Tigretrac - B Superpark

Proceed to the connection of the front transmission, bearing in mind the following instructions:

- a - Proceed inversely as to the disconnection steps A - B.
- b - Observe the driving torques listed at page 4.
- c - Clean all parts to be mated carefully.
- d - Apply a 3 mm string of gasket forming compound following the path indicated in the figure.



OP.839

- application of gasket forming compound

- e - mount the dowels fastening the universal joints with Loctite 242 (average strong thread lock).



WARNING - DANGER



Perform operations by strictly observing accident prevention regulations.

- Do not use gasoline, diesel oil or other flammable liquids to degrease or clean parts but use commercial non-toxic solvents instead.

Keep environment clean. Dispose of waste fluids, used filter cartridges, oils, lubricants and grease cleaners in the most suitable way and in compliance with regulations in force. The collection of waste oils must be performed by authorized plants.

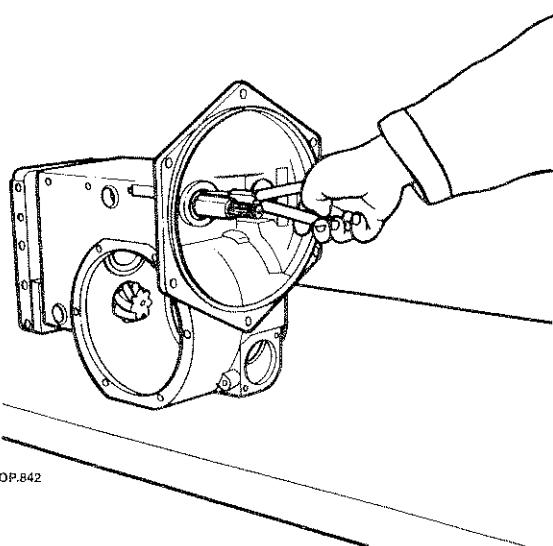


Disassembly - Assembly

Front transmission for the Tigretrac and rear transmission of the Superpark

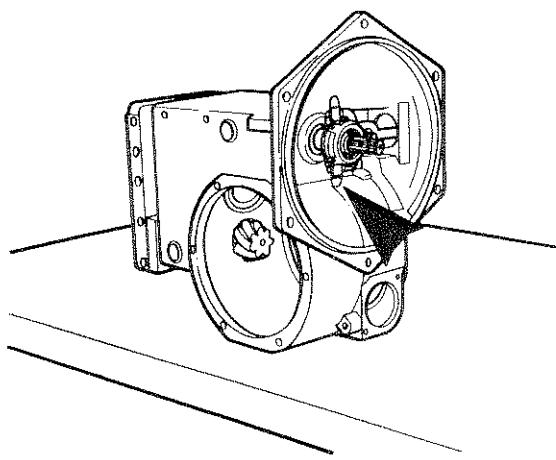
For the dismantling of the different components from the transmission box, proceed as follows:

- 1 - Clamp the box onto a horse or place it over a work bench.



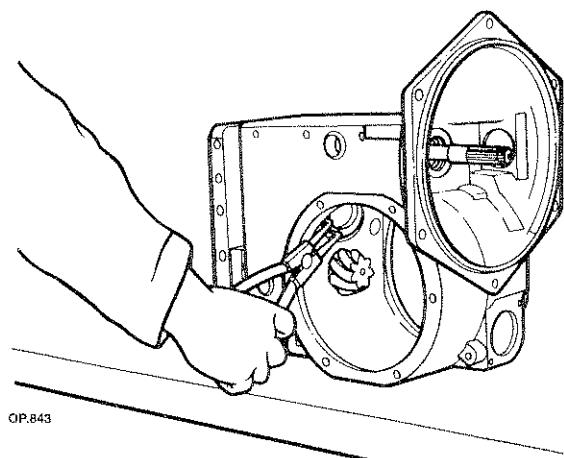
OP.842

- 4 - Remove the retainer ring and remove the clutch thrust bearing guide.



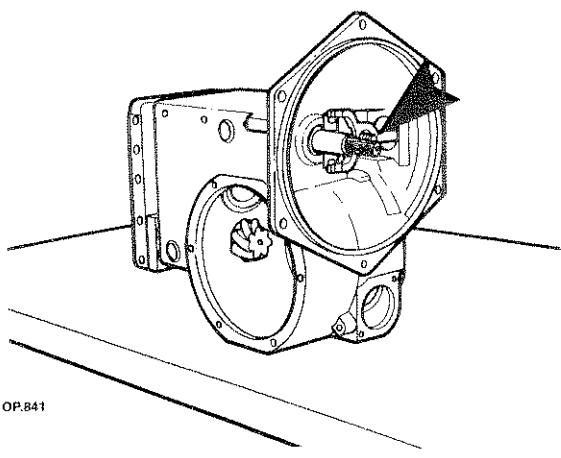
OP.840

- 2 - Remove the retainer clip and remove the clutch disengagement bearing.



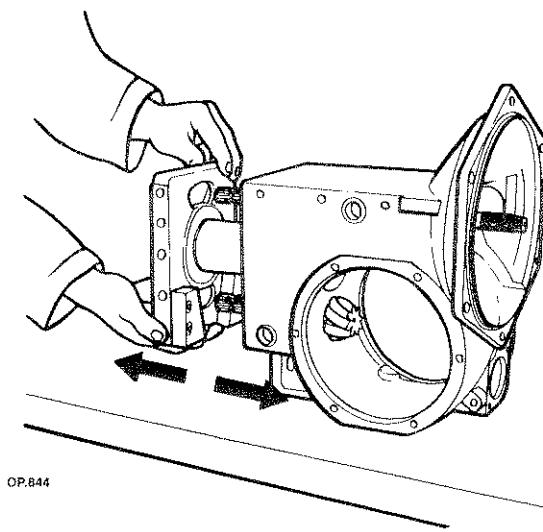
OP.843

- 5 - Remove the central articulation flange retainer spring ring.



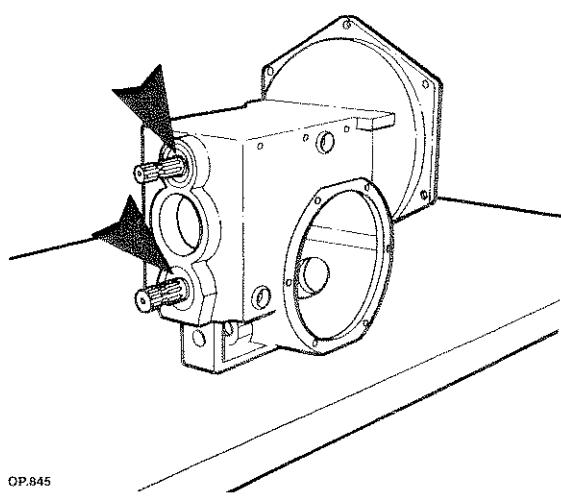
OP.841

- 3 - Loosen the screw and remove the clutch lever.

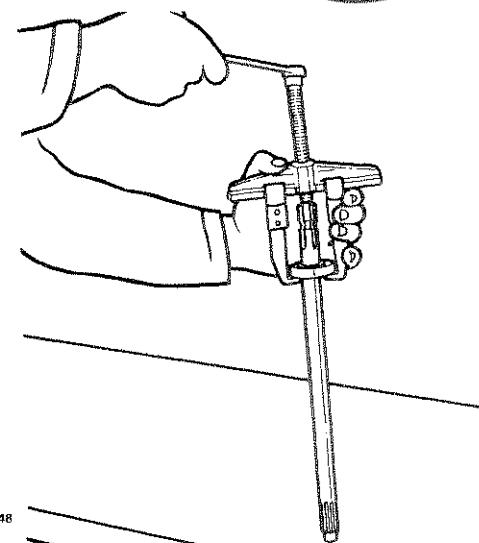


OP.844

- 6 - Remove the central articulation flange.



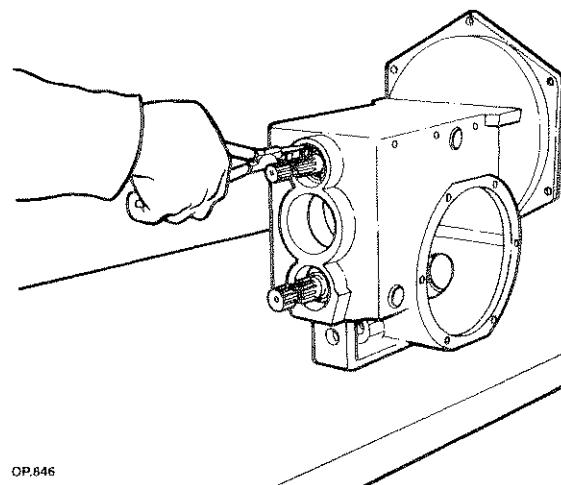
OP.845



OP.848

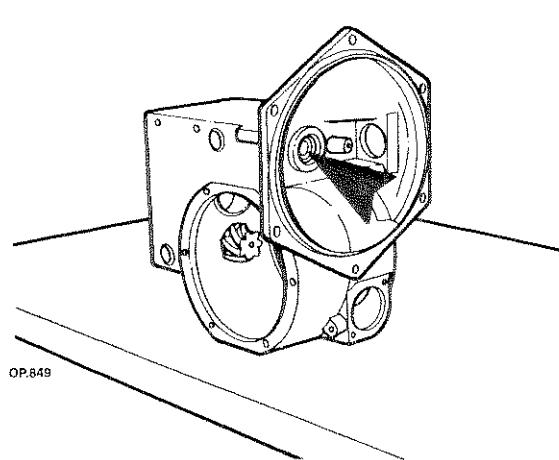
7 - Remove the main shaft and pinion seal rings.

10 - Remove the bearing using the universal puller AT 37981257.



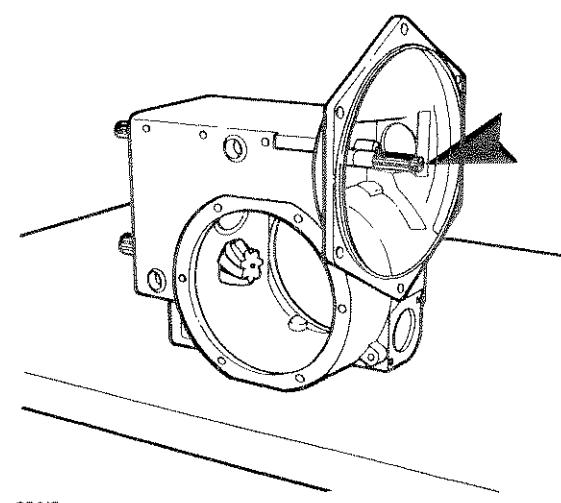
OP.846

8 - Remove the main shaft retainer ring.



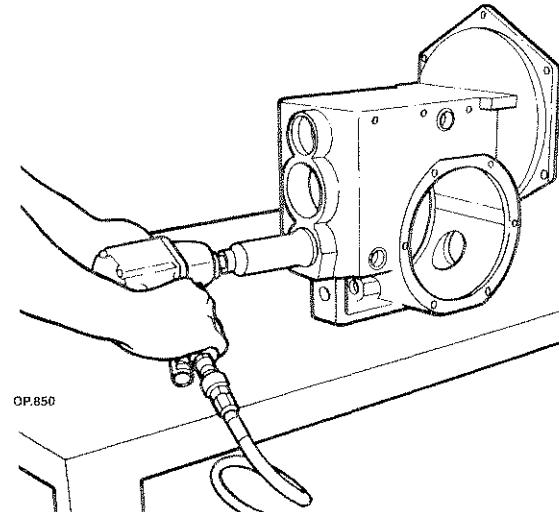
OP.849

11 - Remove the main shaft seal ring.



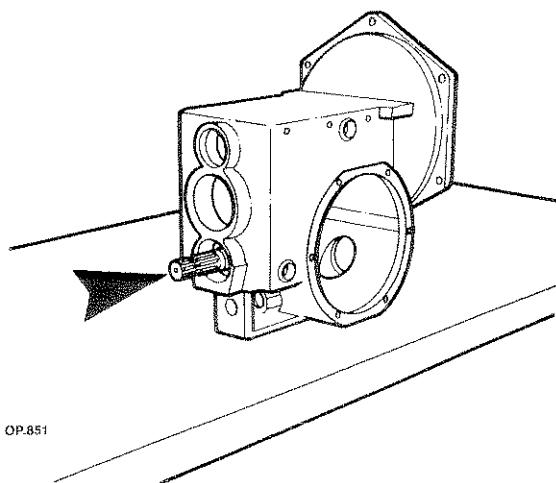
OP.847

9 - Remove the main shaft with the help of a hammer.

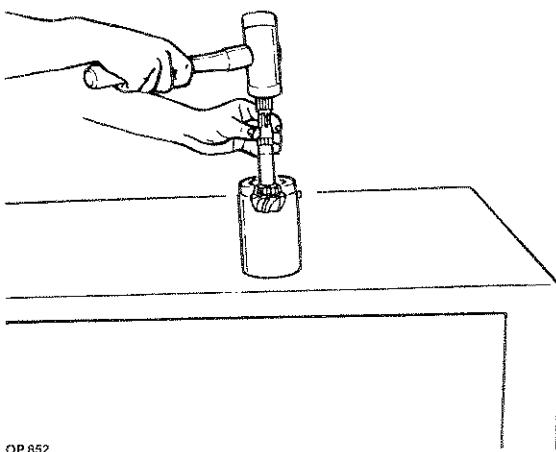


OP.850

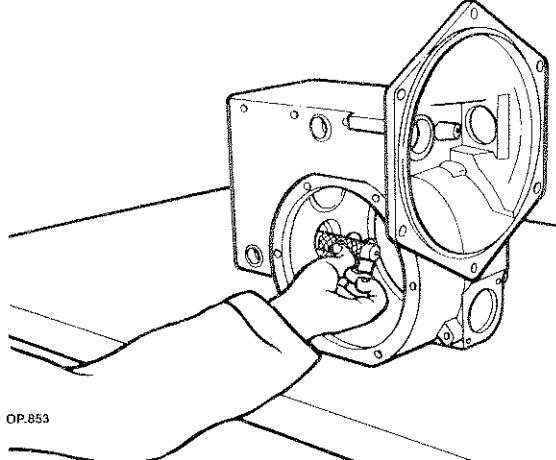
12 - Loosen the pinion bearing fastening ring nut with tool AT 37981306.



13 - Remove the pinion along with the inner housing of the pinion rear bearing.



14 - Remove the bearing on the pinion with tool AT 37981314.



15 - Remove the housing of the bearings on the gearbox with the help of the driver AT 37981278 along with pinion bearing shims.

16 - Make sure not to invert the pinion bearings since the pinion adjustment thickness also depends on the bearing.



WARNING - DANGER



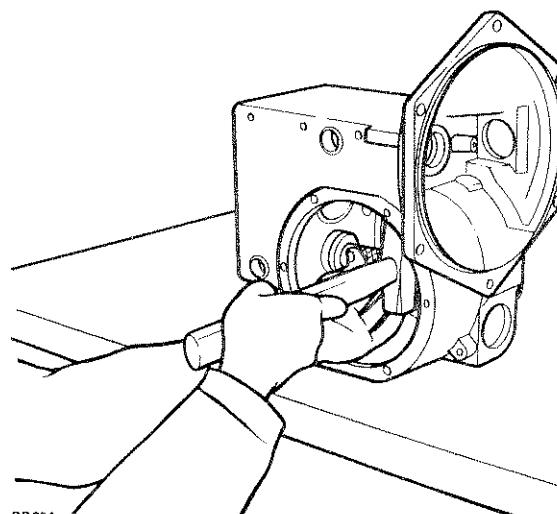
Perform operations by strictly observing accident prevention regulations.

- Do not use gasoline, diesel oil or other flammable liquids to degrease or clean parts but use commercial non-toxic solvents instead.

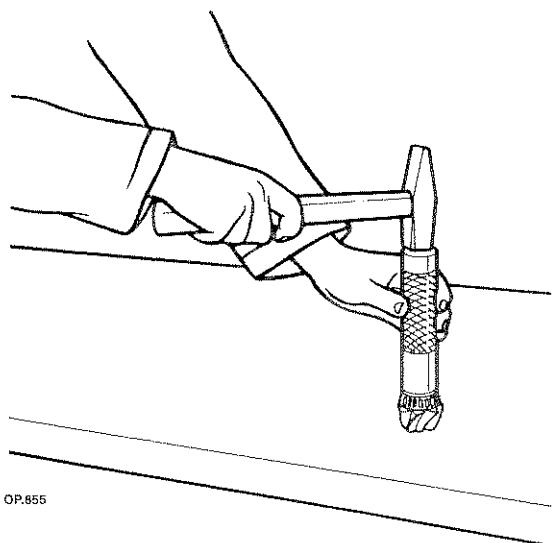
ASSEMBLY

Proceed to the assembly, bearing in mind the following instructions:

- a - clean guard carefully, especially the inside.
- b - oil and grease the O-ring and the seal rings.
- c - proceed inversely as to the dismantling.
- d - follow the pictures on page 14 for location of the different components.
- e - observe the driving torque listed at page 4.
- f - consider the following operations.

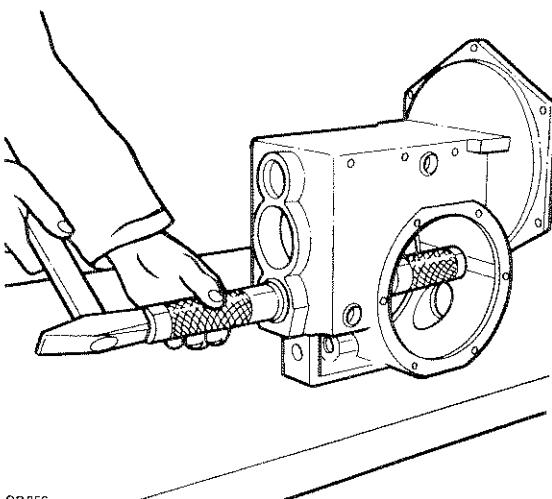


1 - Mount the housing of the pinion bearings with the help of tool AT 37981277.



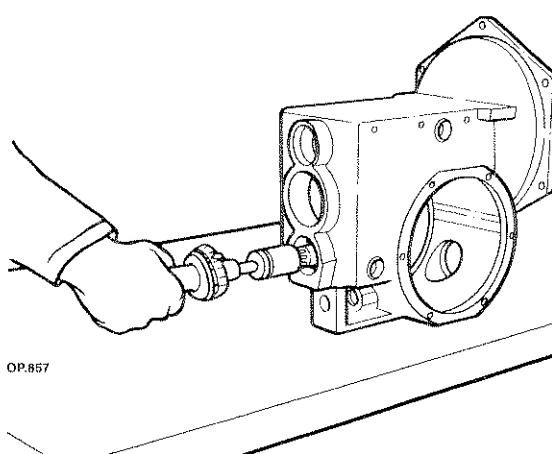
OP.855

2 - Mount the bearings on the pinion with the help of tool AT 37981271.



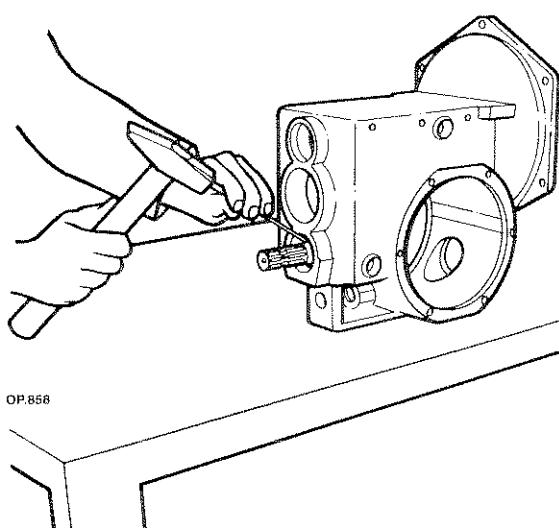
OP.856

3 - Insert the pinion on the box, position tool AT 27981273 and install the rear bearing with tool AT 37981271.



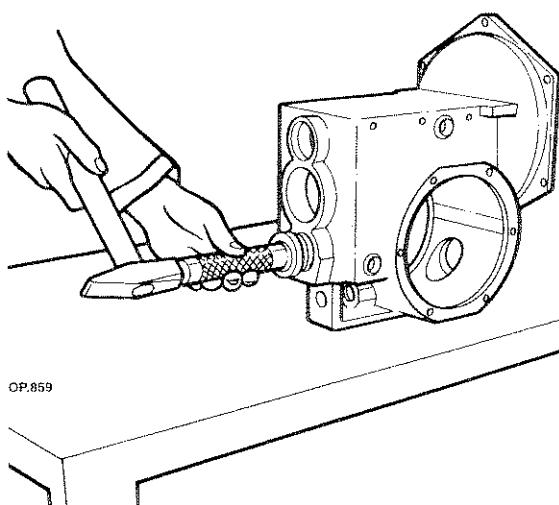
OP.857

4 - Fasten the ring nut with tool AT 37981306 until you achieve a rotating torque of the pinion of 250 - 300 Ncm with torquemeter AT 37981196 and adapter AT 37981281.



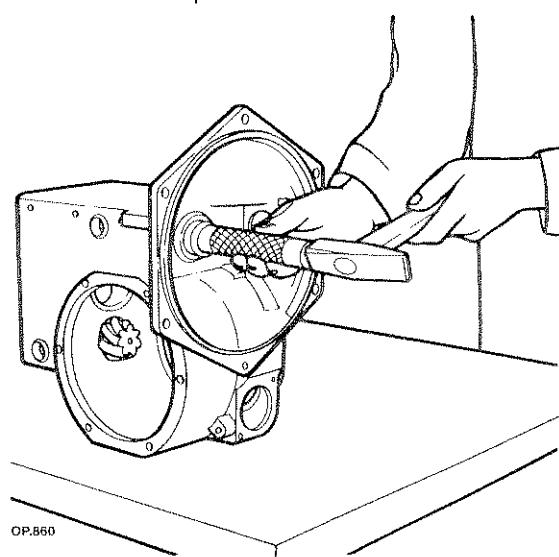
OP.858

5 - Dent the ring nut carefully.



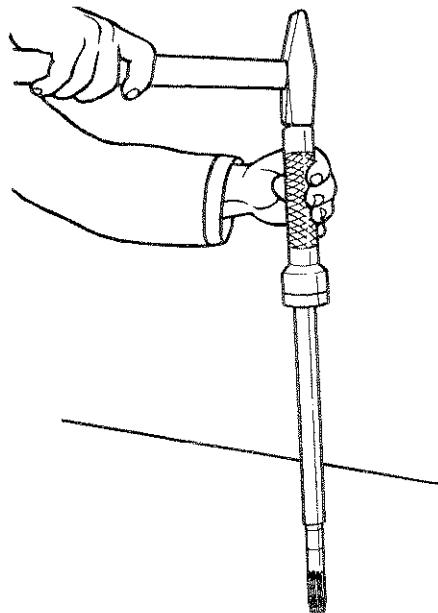
OP.859

6 - Mount the seal ring with bushing AT 37981021 and planer AT 37981275.

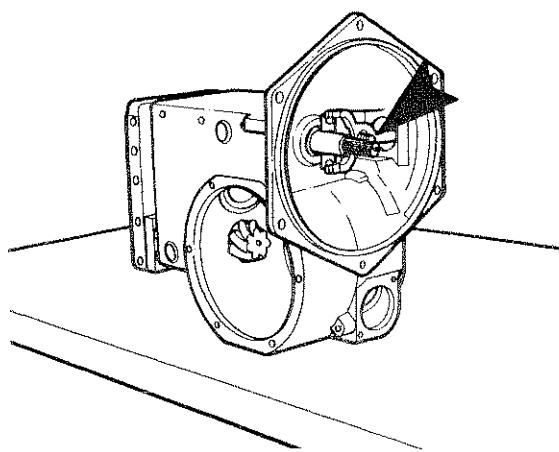


OP.860

7 - Mount the seal ring of the main shaft with planer AT 37981279.

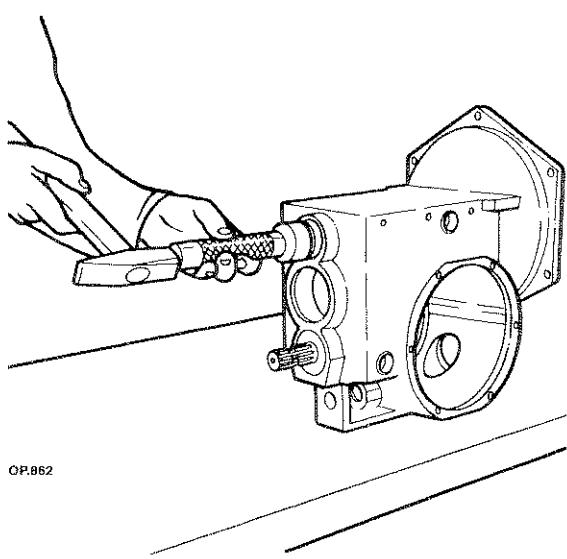


8 - Mount the bearing on the main shaft with driver AT 37981276.



OP.841

11 - Before inserting the thrust bearing, grease the sleeve where the bearing and the splined shaft slide.

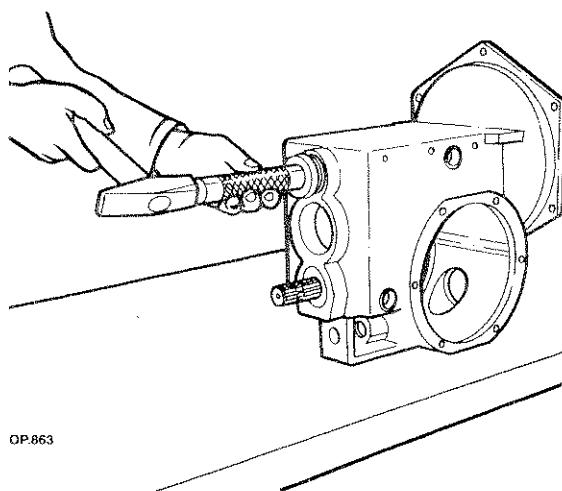


9 - Mount the main shaft with tool AT 37981276.

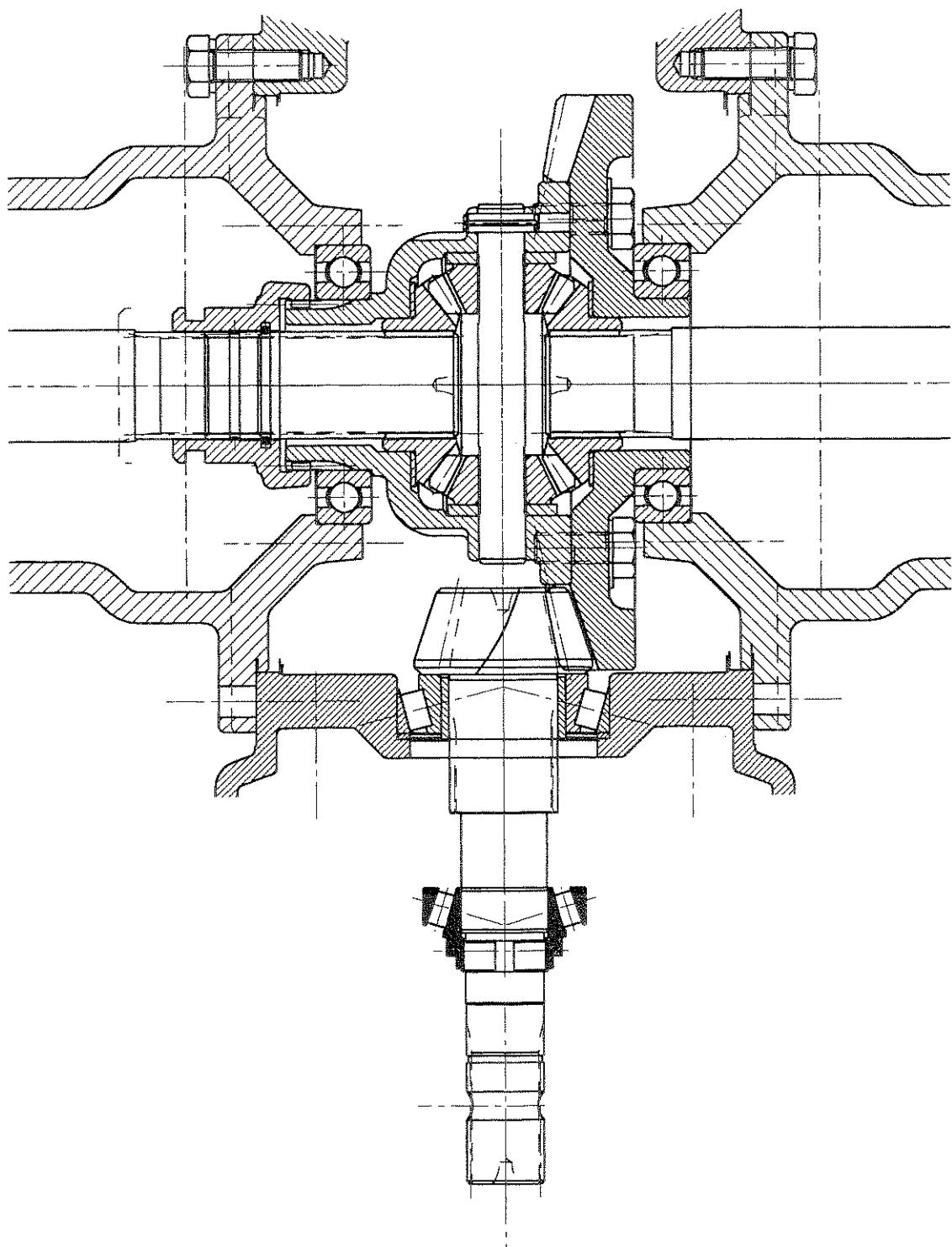
WARNING - DANGER

Perform operations by strictly observing accident prevention regulations.

- Wear safety clothing such as, gloves and safety shoes.
- Do not align slots with hands but use specific tools instead.



10 - Mount the seal ring using driver AT 37981274 and adapter AT 37981020.

**DIFFERENTIAL UNIT ASSEMBLY**



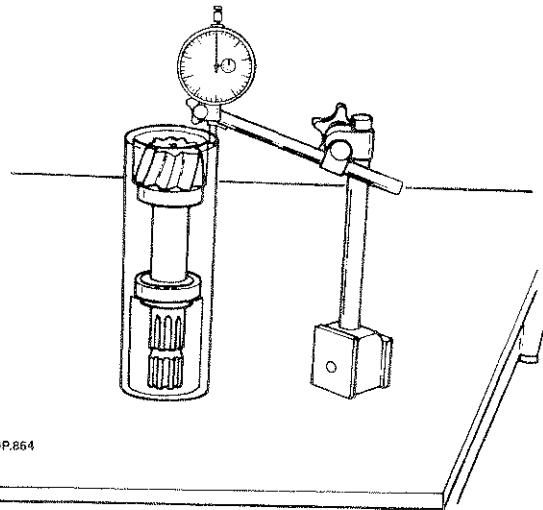
DIFFERENTIAL UNIT

Adjustment of the crown wheel and pinion.

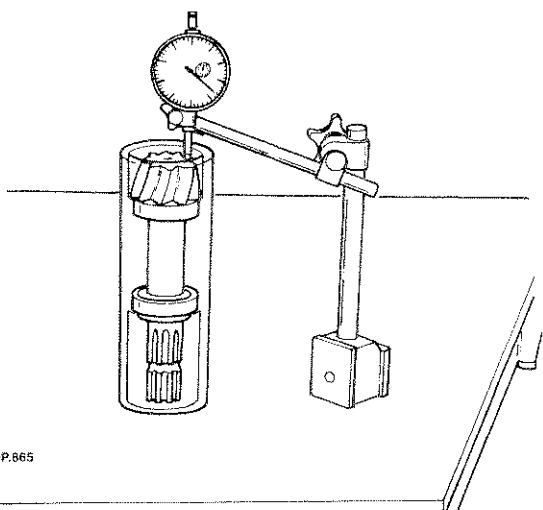
A - Calculation of the thickness of the support ring of the bevel pinion bearing.

The value of said thickness is determined by measuring the height of the pinion head on tool AT 37981282; insert the pinion on the tool AT 37981282 with the bearings, turn ring nut slightly in order to create a revolving momentum.

Use a dial gauge, place the rod (feeler pin)



on a tool and zero set it then place it on the pinion head. The value read must be sub-



tracted from the centesimal value written with an engraver on the head of the pinion.

If (A) is the value measured by the dial gauge and (B) is the one printed by the manufacturer on the pinion, the thickness (S) of the support ring to be mounted is given by the following equation:

$$\begin{aligned} S &= A-(+B) = A-B \\ &/ \\ S &= A-(\pm B) = \\ &\backslash \\ S &= A-(-B) = A+B \end{aligned}$$

Example:

A = 2.70 (value read on dial gauge)
B = -0.15 (centesimal dimensions marked on the pinion by the manufacturer)

$$\begin{aligned} \text{thickness } S &= A-(+/-B) \\ &| \\ &= 2.70 - (-0.15) \\ &| \\ &= 2.70 + 0.15 \\ &| \\ &= 2.85 \end{aligned}$$

In this case a 1.85 mm thick ring must be mounted (underneath the pinion bearing). If necessary round off to the highest figure within 0.05 mm.

Therefore the shim to be mounted is 1.9 mm thick.

Note:

The support ring of the roller bearing on the pinion is supplied as spare part:
mm 1.7 - 1.8 - 1.9 - 2 - 2.1 - 2.2 - 2.3.

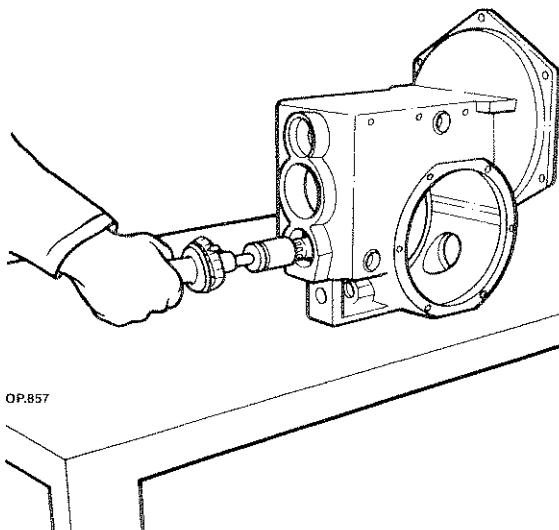


B. Pinion bearing preloading

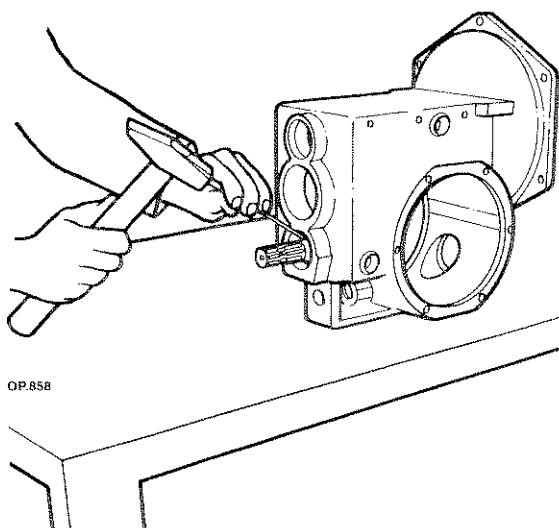
To perform the preloading of the bevel roller bearing of the pinion proceed as follows:

1 - Tighten the ring nut with a driving torque of 8 - 10 Kgm (78-98 Nm).

2 - Rotate the pinion a few turns so that the bearings are properly positioned in their seat.

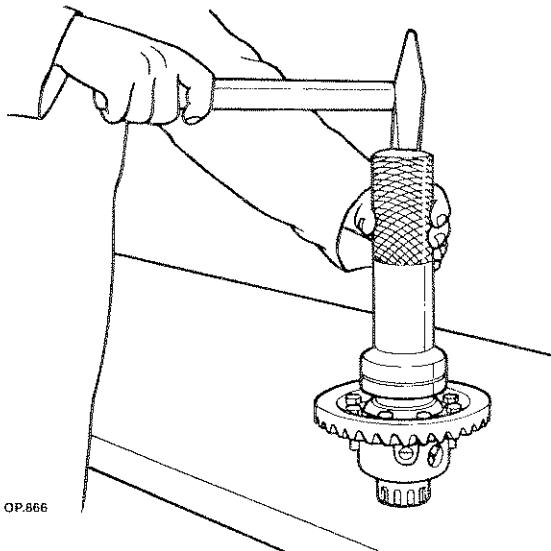


3 - Loosen the ring nut and tighten it again with the tool AT 37981306 until you reach a rotating resistance of the pinion equal to 250 - 300 Ncm (0,25 - 0,3 Kgm) with torquemeter AT 37981196 and adapter AT37981281.

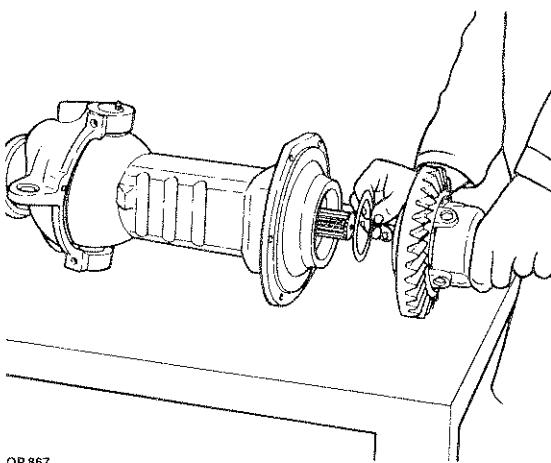


Dent the ring nut.

C) Adjustment of backlash between the ring gear and the pinion and preloading of the differential box bearings



1 - Mount the bearing on the differential box using the driver AT 37981093



2 - Insert between the differential support and the unit a rated thickness (PS 0.2 mm).

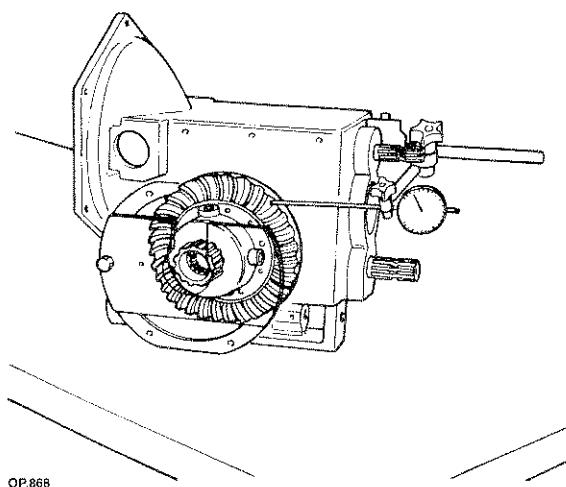
3 - Insert the differential unit on the support with the help of a hammer (plastic or copper).

4 - Mount the differential unit in the transmission box without applying any sealing agent nor fastening it with the screws.



5 - Apply on the side opposite the transmission box the tool AT necessary to align the differential unit with the box and slightly preload the differential bearing.

6 - Apply a centesimal dial gauge with magnetic base over the transmission box, with rod placed as perpendicularly as possible and resting on the edge of a tooth of the ring gear.



7 - Check the backlash by offsetting it by 120° and comparing the average of the three values with the normally set play (0.15 - 0.23).

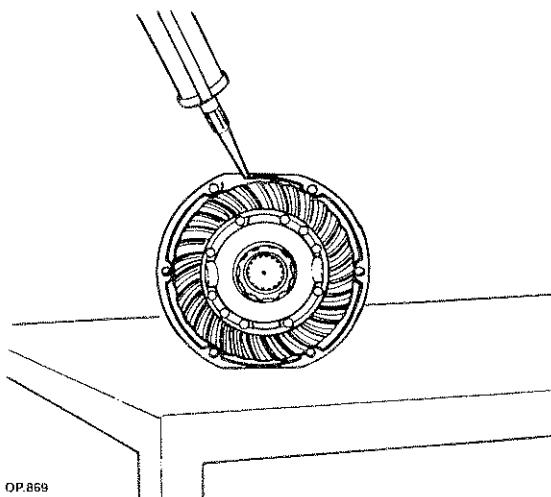
8 - If the value measured is higher or lower than the set value, it is then necessary to increase or decrease the value of the rated thickness (PS 0.2).

Note:

Adding a thickness (PS) of 0.1 mm the play between the teeth of the ring gear and pinion is reduced 0.07 mm, whereas by removing a thickness of 0.1 mm the play increases 0.07 mm. The thickness PS is supplied with spares: 0.1 - 0.2 - 0.3 - 0.5 mm.

9 - Remove the differential support and mount the calculated thickness.

10 - Mount the differential support assembly onto the transmission box after having cleaned and degreased the surfaces to be mated and having applied a 3 mm string of gasket forming compound following the path indicated in the figure.



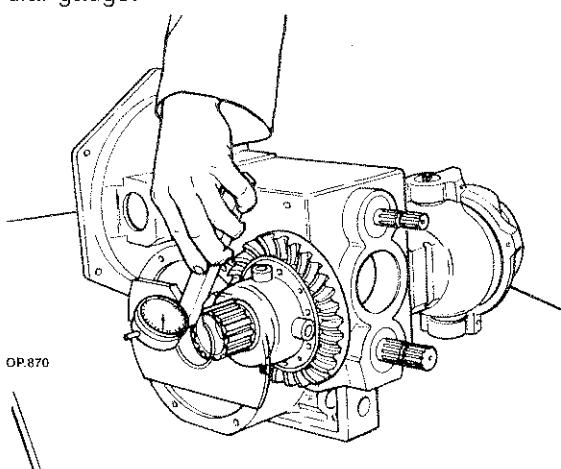
- diagram showing application of gasket forming compound.

11 - Observe the driving torque listed at page 4.

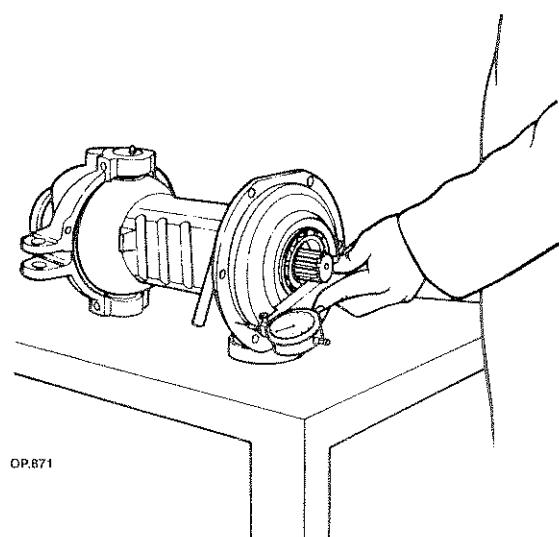
12 - Check the backlash between the ring gear and pinion with normal set play of 0.15 - 0.23 mm.

D) Differential box bearing preloading

13 - Position the centesimal dial gauge with support AT 27981215 on the mating surface between the support and the box, so that the feeler pin is directly on the seat of the bearing on the differential box and zero-set the dial gauge.



Now position the gauge directly on the bearing of the differential box support so that the feeler pin is in contact with the mating surface of the box.



14 - Perform measurement by offsetting it by 120° and the average of the three values Gm added to a preload of 0.1 mm will give you the thickness S to be mounted between the differential box and the bearing of the differential support.
If necessary round off to the highest figure within 0.05 mm.

Example:

Gm = 0.25 average of values read on dial gauge

0.1 mm = major value to increase the preloading of the bearings.

$$\text{Thickness } S = Gm + 0.1$$

$$\begin{array}{r} | \\ = 0.25 + 0.1 \\ | \\ = 0.35 \end{array}$$

round off to the highest figure 0.05 mm.

In this case you need to mount two 0.2 mm shims = 0.4 mm.



WARNING - DANGER



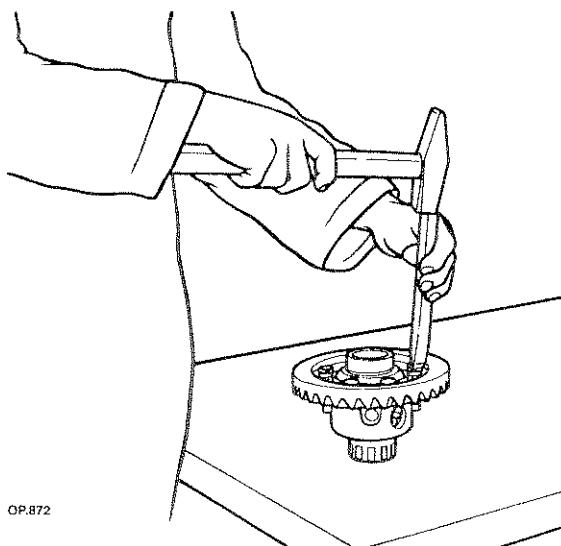
Perform operations by strictly observing accident prevention regulations.

Keep environment clean. Dispose of waste fluids, used filter cartridges, oils, lubricants and grease cleaners in the most suitable way and in compliance with regulations in force.

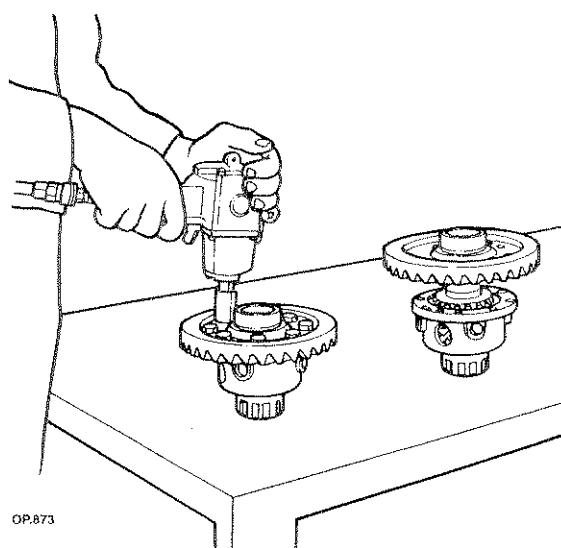
DIFFERENTIAL

Disassembly - Assembly

When unit is detached from the transmission box proceed as follows:



1 - Straighten the screw stop plates.

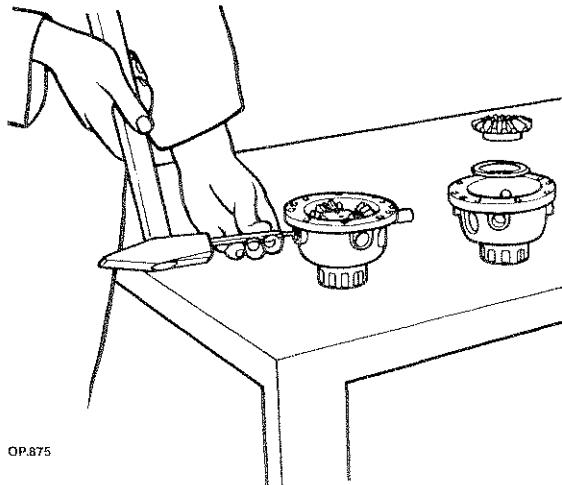


2 - Loosen the screws fastening the bevel ring gear.



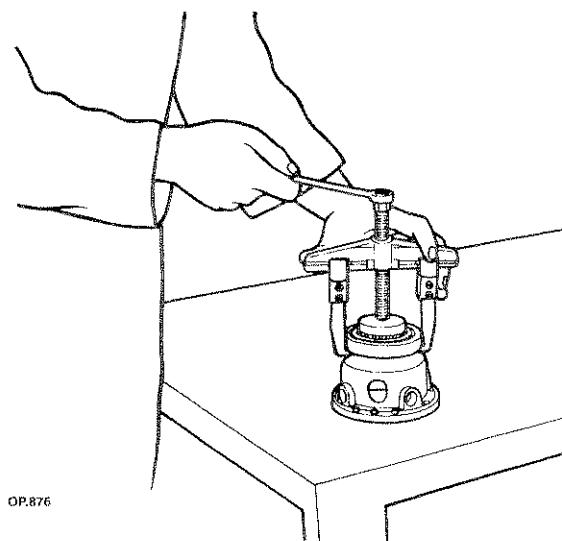
OP.874

3 - Remove the spring pins.



OP.875

4 - Remove the pins, along with the side pinions, the scraper fifth wheels and crown wheels.



OP.876

5 - Remove the bearing with universal puller AT 37981247 and adapter AT 37981214.

ASSEMBLY

Proceed as follows:

a - proceed inversely as to the disassembly operations.

b - refer to drawings for location of different parts.

c - make sure that the groove of the spring pins is oriented towards the stress point so that spring is under strain.

d - tighten the screws with a driving torque of 8.5 Kg. (83 Nm).

e - check the axial play of the crown wheels.



WARNING - DANGER



Perform operations by strictly observing accident prevention regulations.

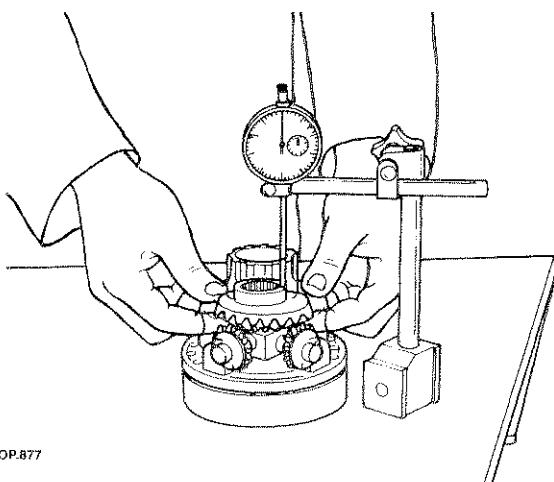
- When disposing oil follow environment control regulations.

Keep environment clean.

Checking the crown wheels axial play

To check the axial play of the crown wheels proceed as follows:

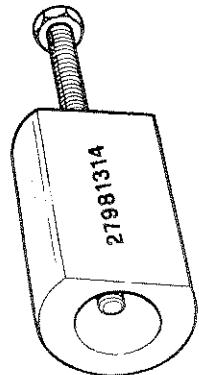
1 - Position the feeler pin of the centesimal dial gauge.



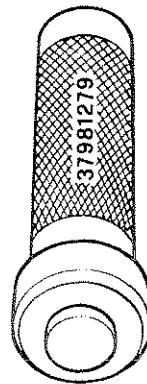
OP.877

2 - Move the crown wheel until it touches the side pinion and then push it against the differential box measuring on the centesimal dial gauge the axial play.

3 - The axial displacement for each crown wheel should be 0.15 - 0.30 mm.



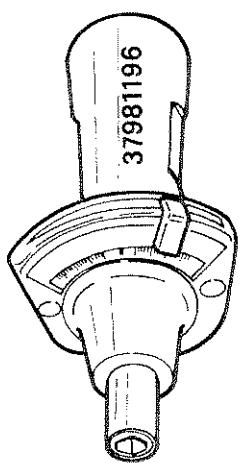
AT.191



AT.192

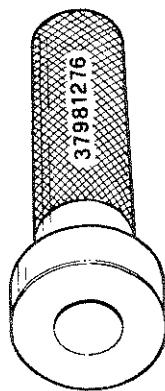
1 - Steering cylinder pin extractor

4 - Drive for the assembly of the seal ring of the main shaft



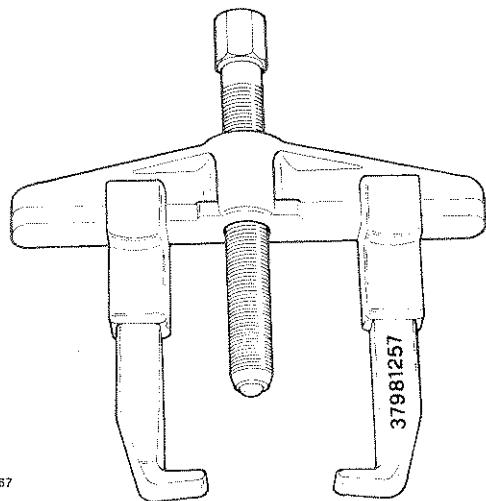
AT.020

2 - Torquemeter Ncm



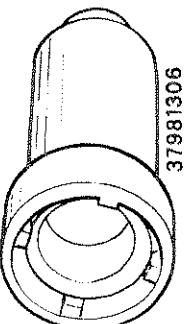
AT.193

5 - Driver for the assembly of the main shaft bearing



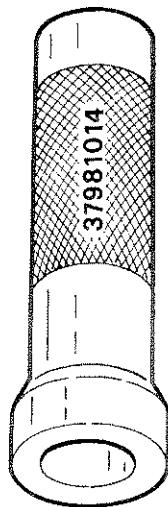
AT.067

3 - Universal puller



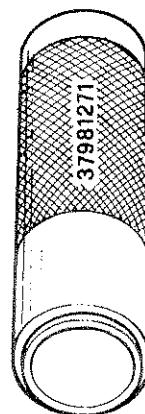
AT.194

6 - Key for the fastening of the differential pinion ring nut



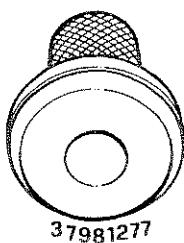
AT.023

7 - Driver for assembly of bearings



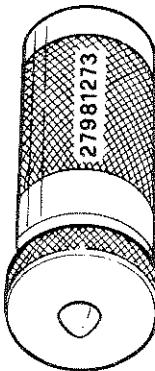
AT.198

10 - Driver for the assembly of the bearing of the differential pinion



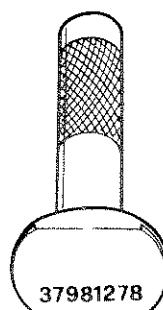
AT.196

8 - Driver for assembly of pinion bearing housing



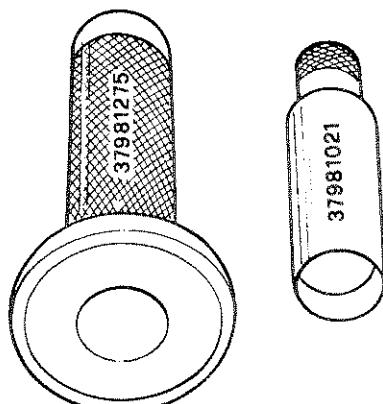
AT.199

11 - Tool for the mounting of the pinion rear bearing



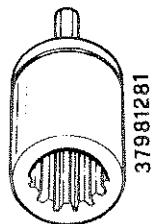
AT.197

9 - Driver for the disassembly of the pinion bearing housing.

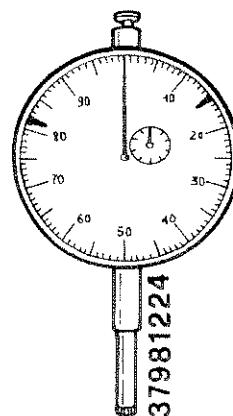


AT.200

12 - Driver and adapter for the mounting of the seal ring



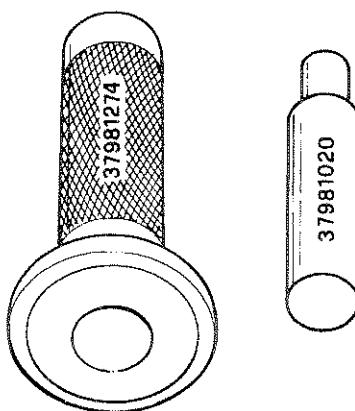
AT.201



AT.026

13 - Key for the control of the pinion rotating torque

16 - Centesimal dial gauge.



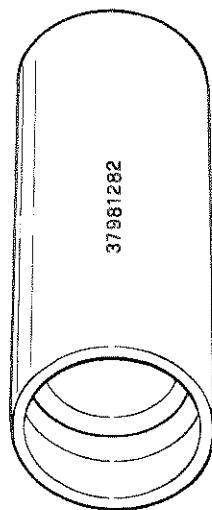
AT.202



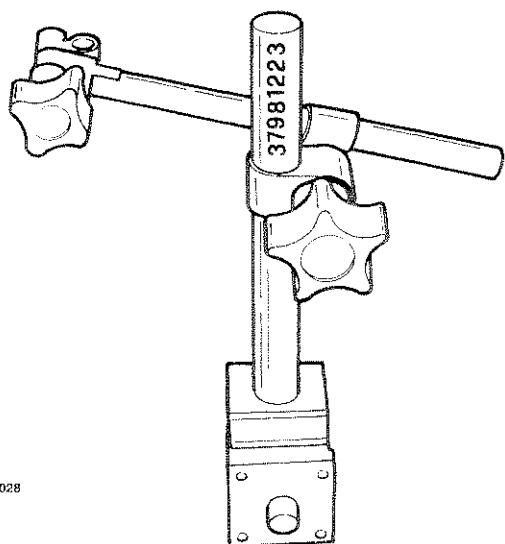
AT.027

14 - Driver and adapter for the mounting of the seal ring

17 - Extension for centesimal dial gauge.



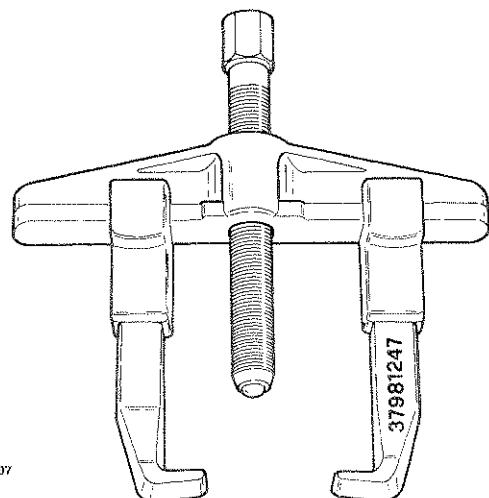
AT.203



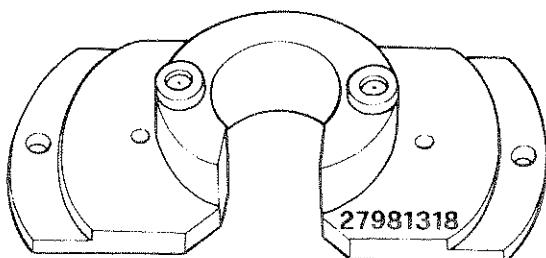
AT.028

15 - Tool to determine the thickness of the pinion bearing.

18 - Magnetic support for centesimal dial gauge.



AT.007



AT.204

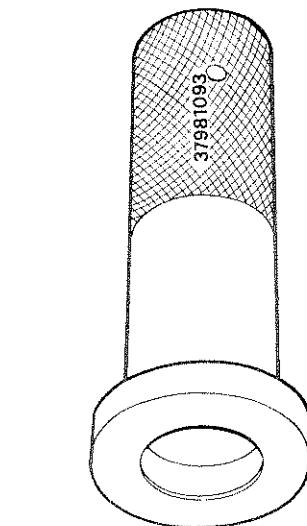
19 - Universal puller.

22 - Tool for the alignment of the differential unit



AT.032

20 - Adapter to extract the differential box bearing.



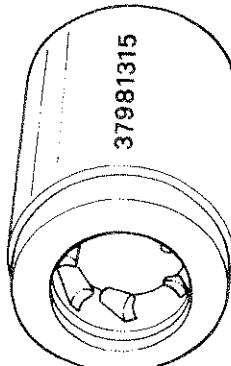
AT.045

23 - Driver for the assembly of the differential box bearing



AT.031

21 - Dial gauge support

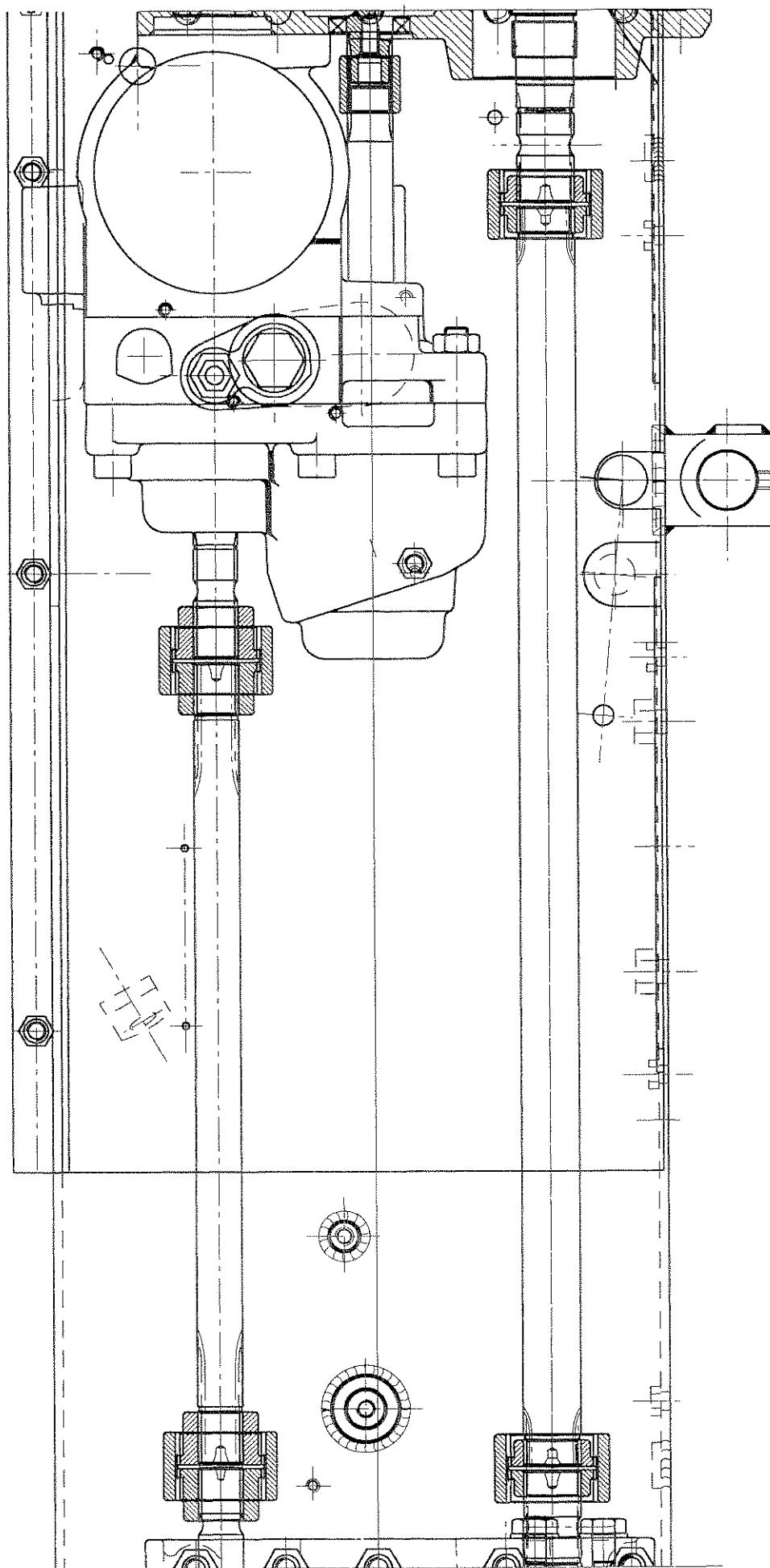


AT.195

24 - Driver for the removal of the pinion bearing

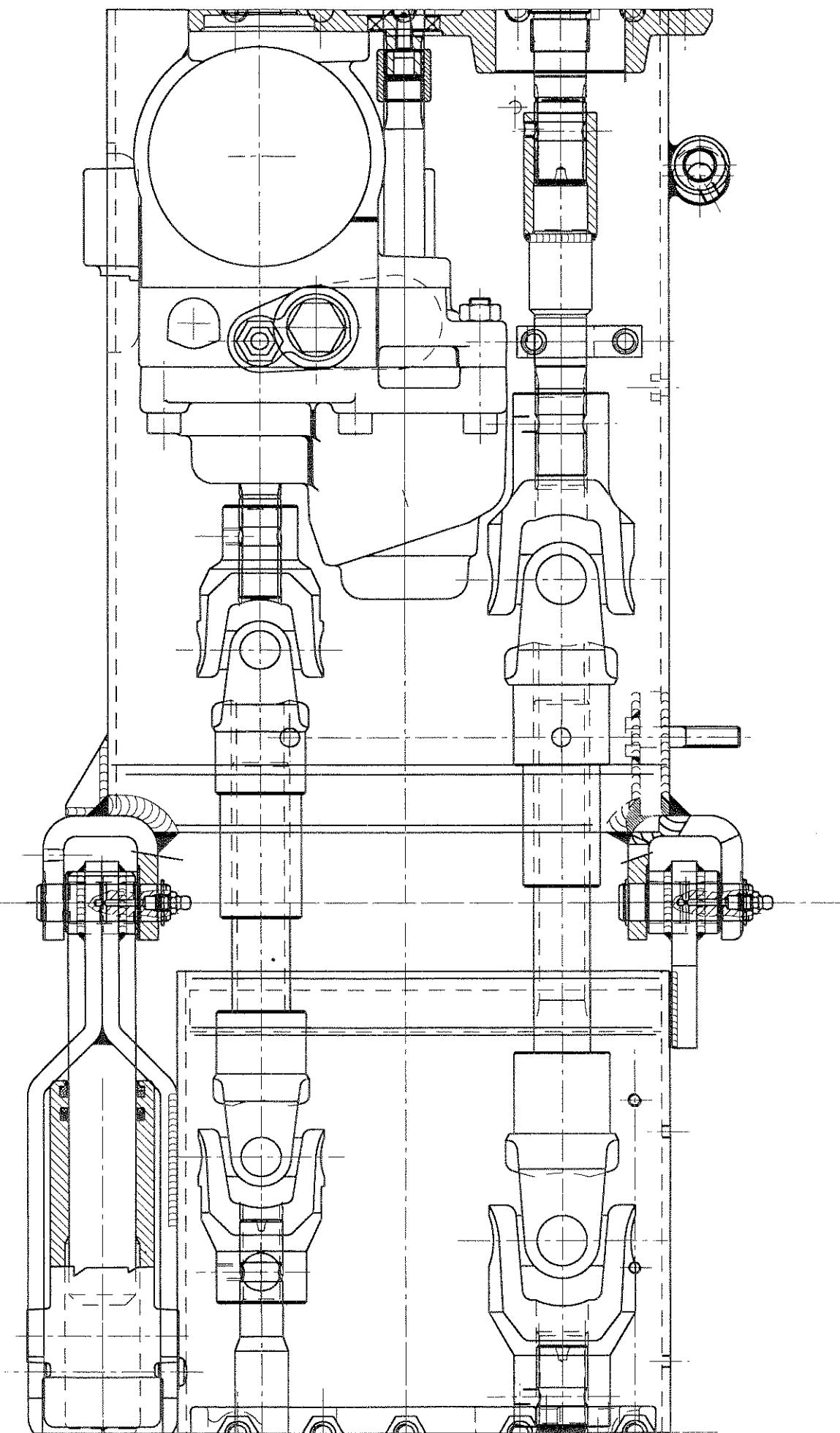


TIGRETRAC CENTRAL TRANSMISSION ASSEMBLY





SUPERPARK CENTRAL TRANSMISSION ASSEMBLY





Central transmission - Hydrostatic unit

The hydrostatic unit features two bodies, one on top of the other, made up of:

- 1 - Pump with axial pistons with fixed engine power (max. 28 cm³) rotating unit with 9 pistons.
- 2 - Engine with axial pistons with fixed engine power (28 cm³) rotating unit with 9 pistons.
Inside the unit is housed the maximum level valve, the feed valves and the servocontrol for the variation of the pump.

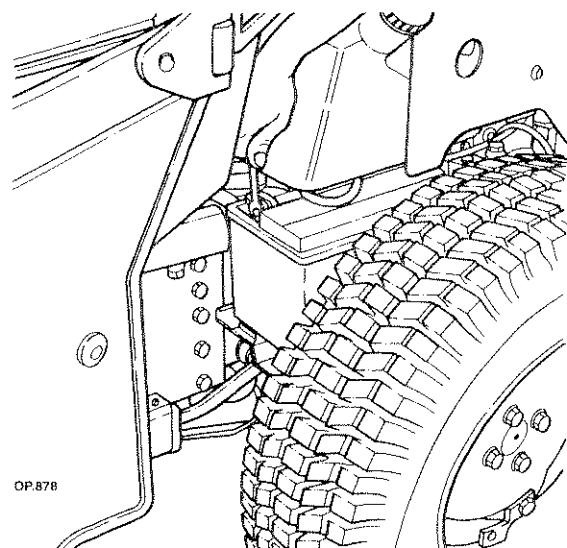
Technical features

HYDROSTATIC UNIT	PUMP	ENGINE
Engine power	28 cm ³	28 cm ³
Engine power of boosting pump	9 cm ³	9 cm ³
Max. speed of non-stop rotation	3600 min ⁻¹	3600 min ⁻¹
Minimum rotation speed	500 min ⁻¹	500 min ⁻¹
Peak pressure	300 bar	300 bar
Boosting pressure	15-30 bar	15-30 bar
Oil continuous max. temperature	80 °C	80 °C
Recommended filtering	10 micron	10 micron

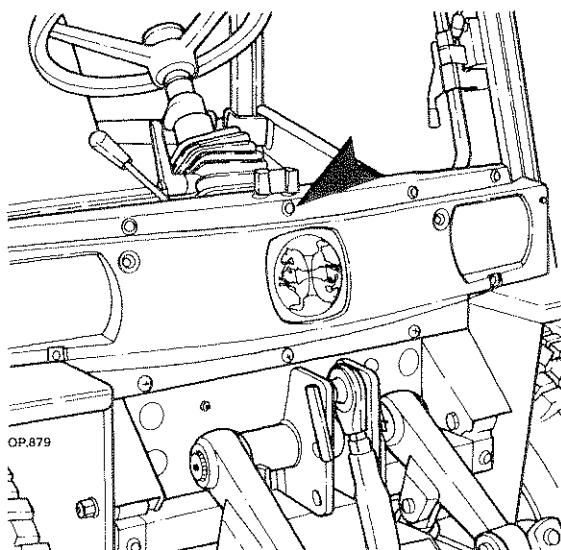
Instructions for disconnection and connection

Superpark

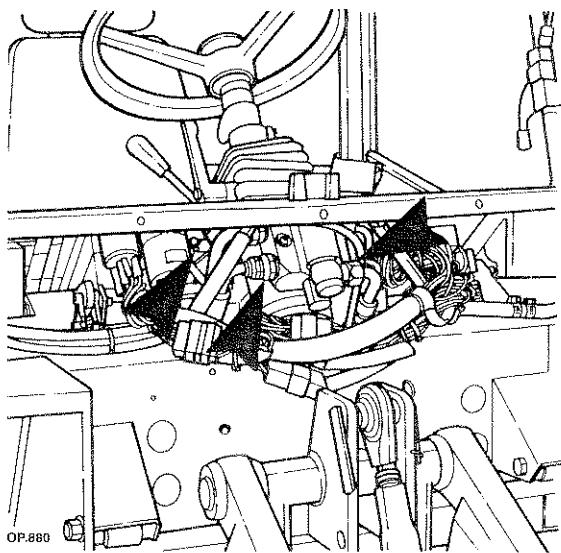
To have access to the hydrostatic unit you need to:



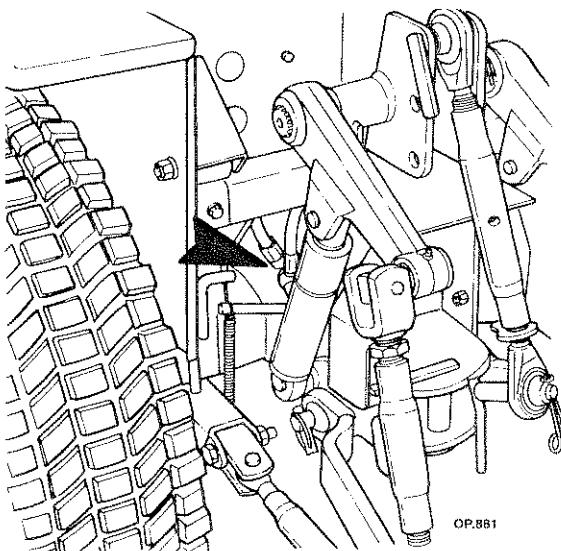
- 1 - Detach the positive wire of the battery and insulate it.



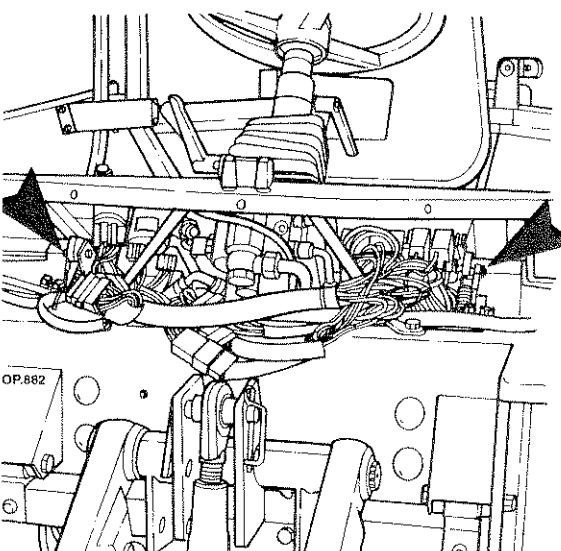
- 2 - Loosen the screws and remove the lights grille disconnecting the electric wires.



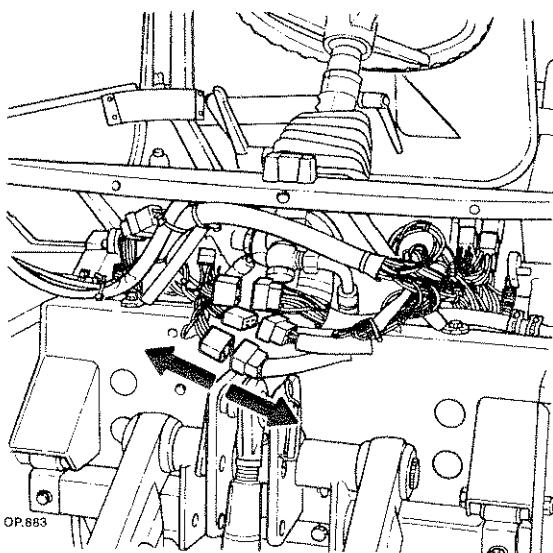
3 - Loosen the accelerator wire clamp and loosen the distributor delivery tubes and of the hydrodrive drain.



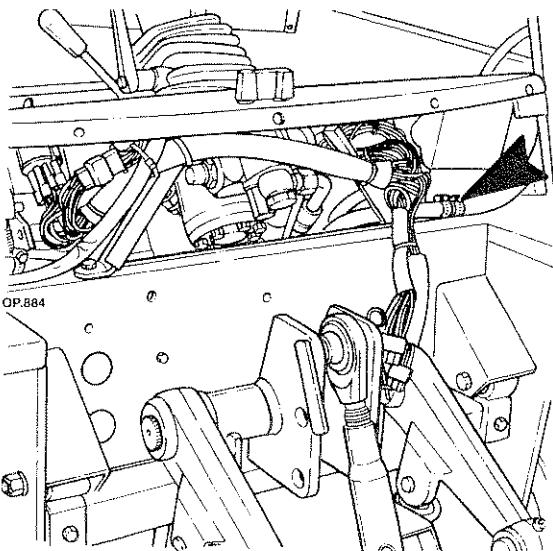
4 - Loosen the delivery cylinder tubes and plug holes with stoppers.



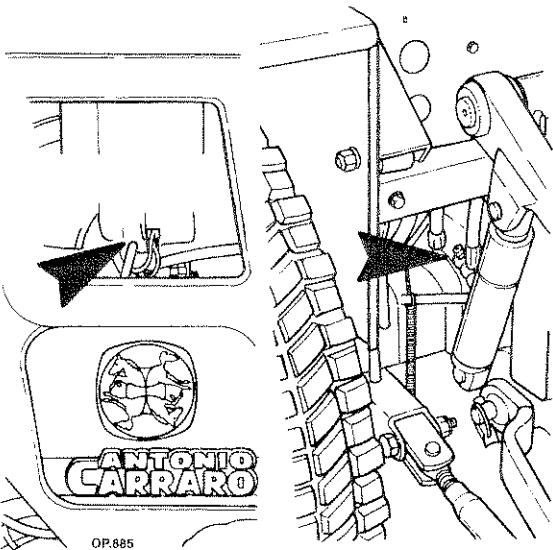
5 - Remove the seal rings and disconnect the service, emergency and parking brakes.



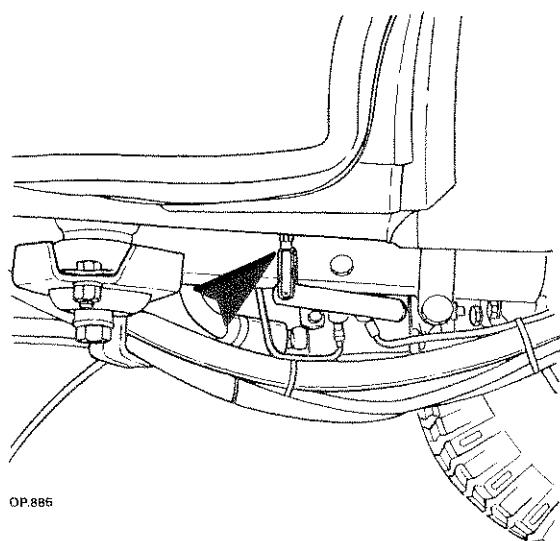
6 - Disconnect the rear electrical connections.



7 - Loosen the tube clamps and remove the cab heating tubes then plug holes with stoppers.



8 - Loosen the clamps locking the wires and traction disengagements then remove them partly - disconnect the windscreens pump tube.



OP.886

9 - Remove the control fork (speedfix).

10 - Disconnect the Km counter connector and that of the gearbox oil filter warning light.

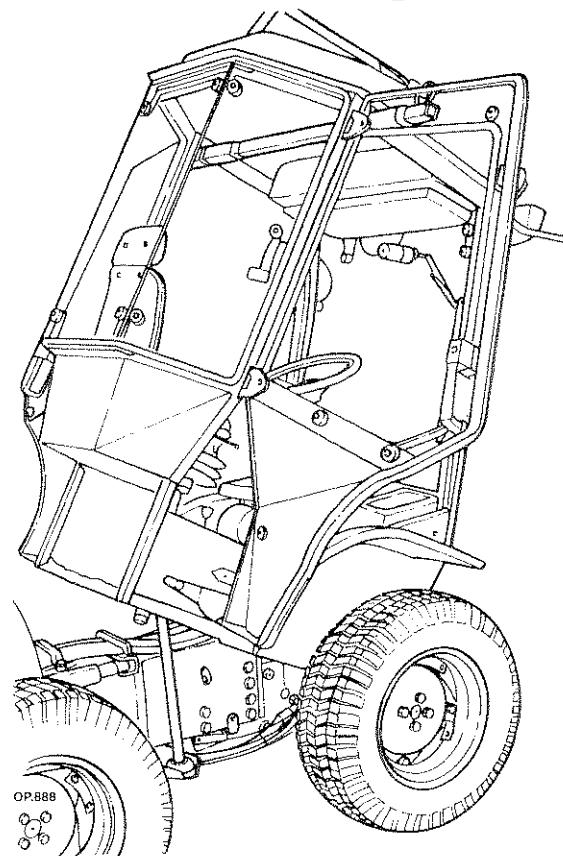


WARNING - DANGER



Perform operations by strictly observing accident prevention regulations.

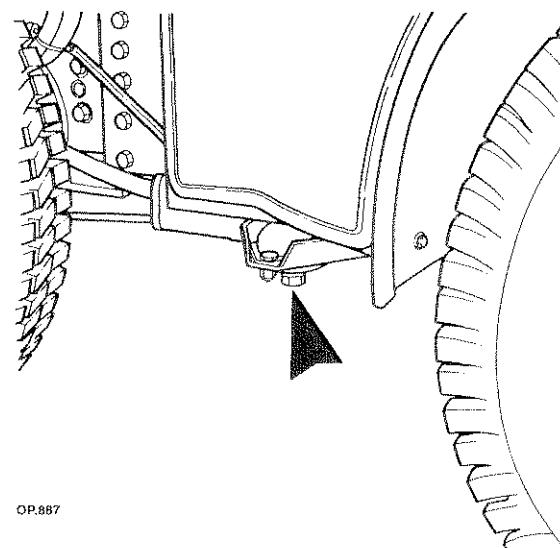
- Use suitable hoisting means.
- Wear gloves to handle metal cords or chains.



12 - Sling the cab from the back with the help of a hoist and lift it so that you can place a safety screw down jack.

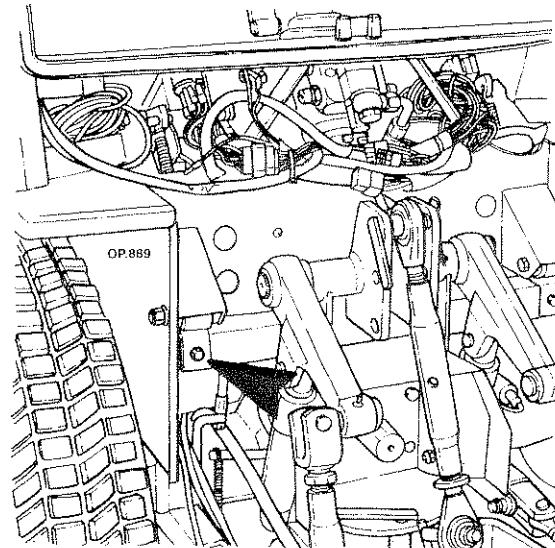
13 - Remove the stop rings and disconnect the PTO rod and forward gear.

14 - Remove the screw down jack and lower the cab.

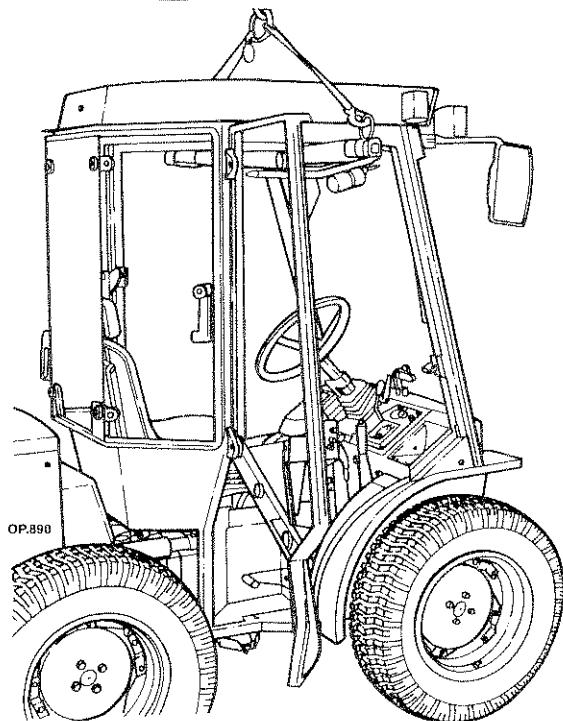


OP.887

11 - Loosen the silent block bolts of the cab rear.



15 - Loosen the bolts of the cab front supports.



16 - Remove the cab completely.



WARNING - DANGER



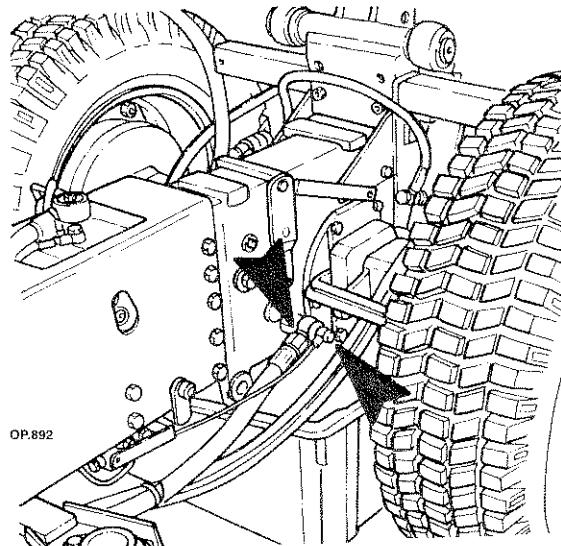
Perform operations by strictly observing accident prevention regulations.

- Wear safety clothing such as gloves and safety shoes.

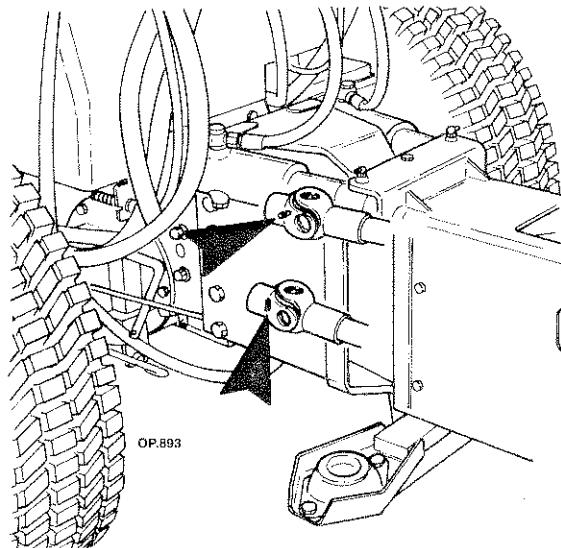
Watch out for shearing,

Watch out for squeezing,

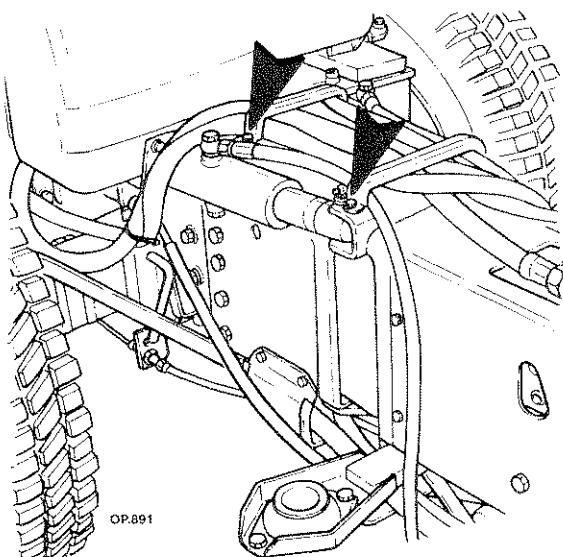
Watch out for tangling.



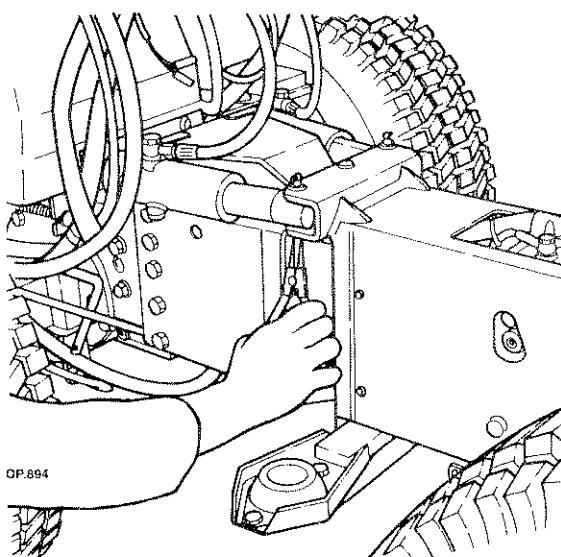
18 - Loosen the unions and drain oil into the special container.



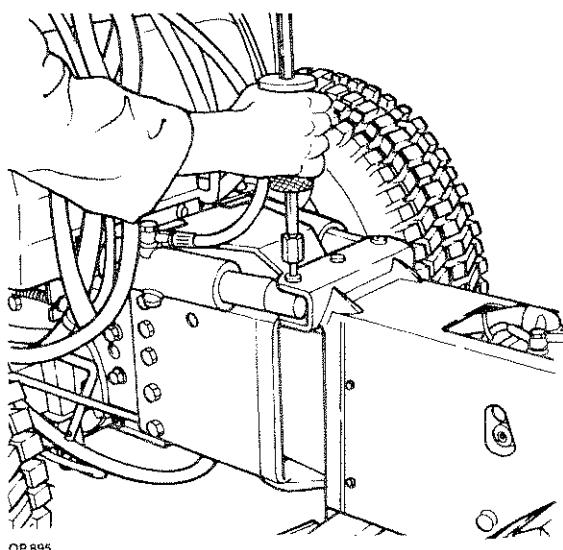
19 - Loosen the joint anchoring dowels and remove them.



17 - Loosen the screws and remove the tube clamps.

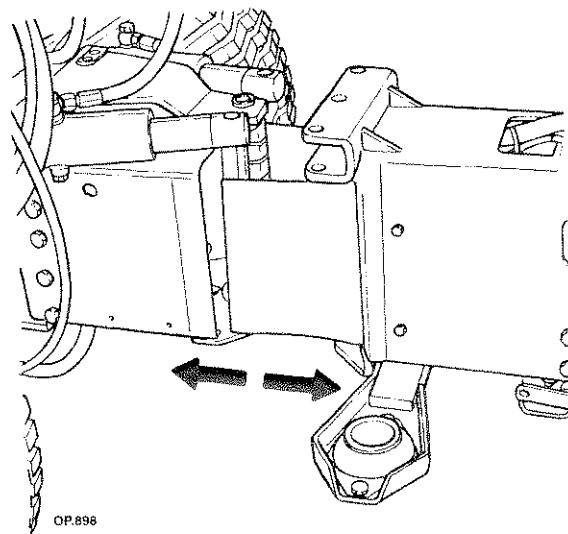


20 - Remove the spring rings on the hydro-drive cylinder pins.

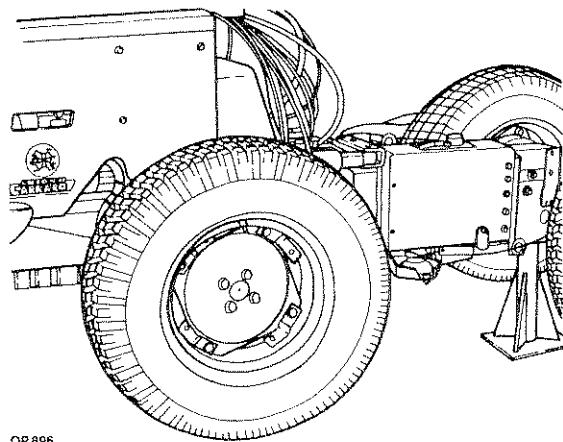


OP.895

21 - Replace the greaser with the adapter AT 27981047 and the puller AT 27981047 and remove the hydrodrive cylinder pins.

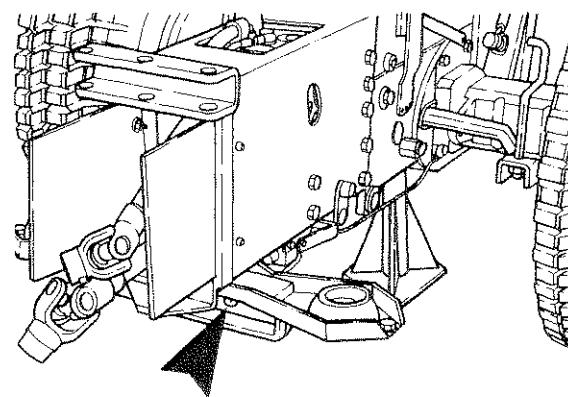


24 - Separate the front forecarriage from the rear one.



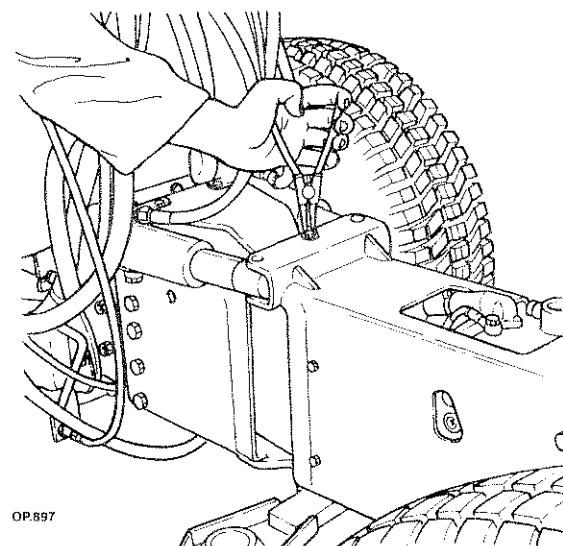
OP.896

22 - Place a mobile horse underneath the engine and a fixed one underneath the gearbox on the rear end.



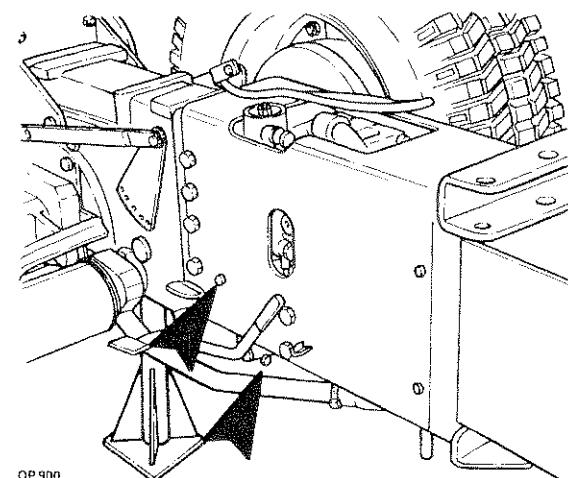
OP.899

25 - Loosen the screws and remove the cab support.



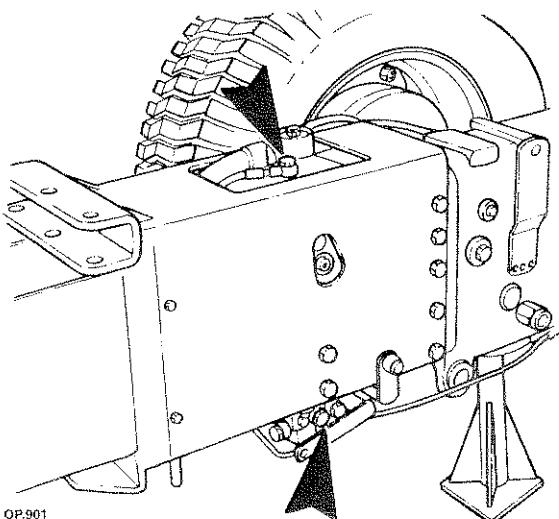
OP.897

23 - Remove the spring rings and with the help of a planer remove the central articulation pins.

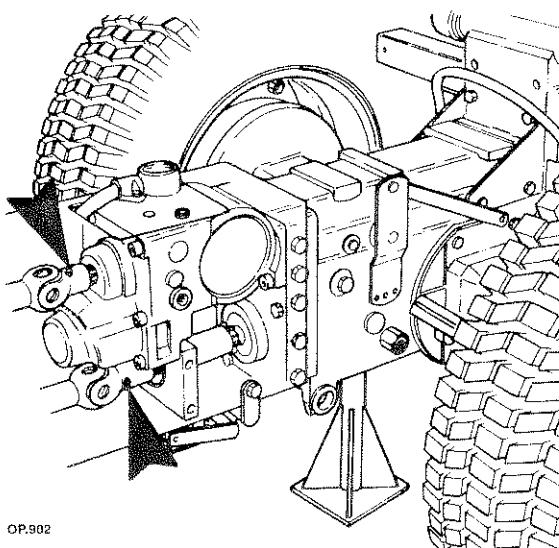


OP.900

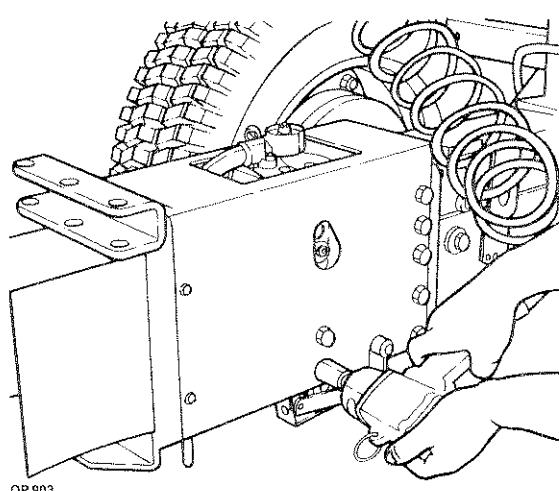
26 - Loosen and remove the locking control.



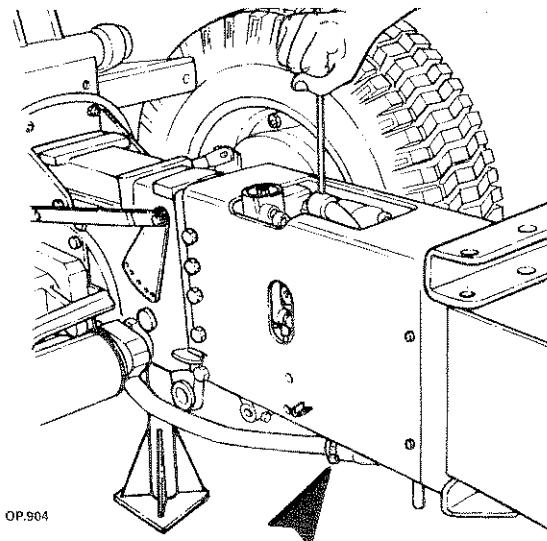
27 - Loosen the unions of the joystick connection tube.



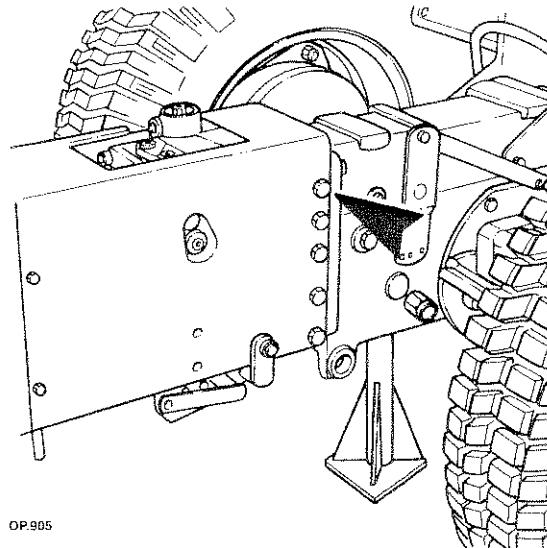
28 - Loosen the joint anchoring dowels and remove them.



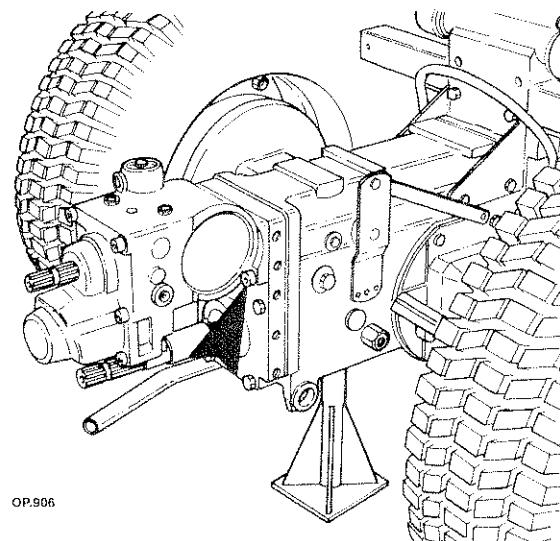
29 - Loosen the screws of the extension support and withdraw it from the body by tilting it.



30 - Loosen the tube clamps and remove the tube connecting the hydrostatic unit to the speed gear.



31 - Loosen the screws and remove the central body.



32 - Loosen the screws and remove the hydrostatic unit.

**WARNING - DANGER**

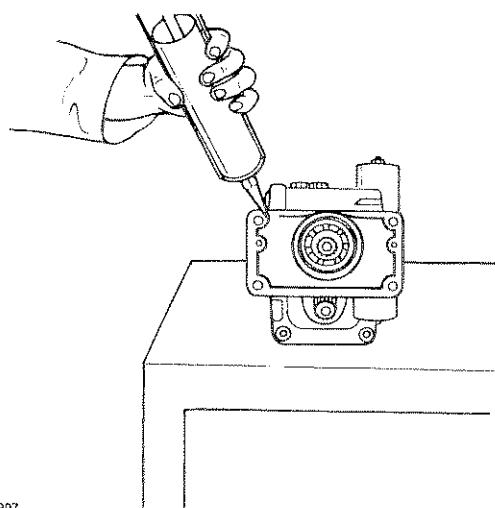
Perform operations by strictly observing accident prevention regulations.

- Use tools to align holes and slots not hands.

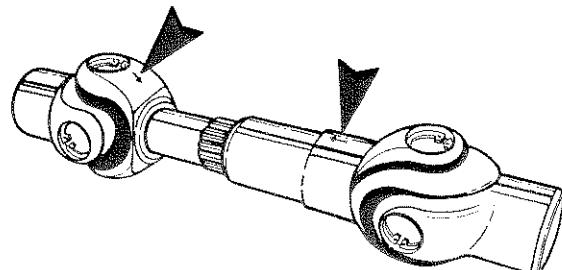
Connecting

Proceed to the connection bearing in mind the following instructions:

- a** - reverse the disconnection operations.
- b** - follow the pictures for location of the different components.
- c** - observe the driving torque listed at page 4.
- d** - before inserting the extensions or the universal joints, accurately grease the grooved contours (regarding the type of grease to use refer to page 5).
- e** - tighten the anchoring dowels of the extensions or the joints with the help of Loc-tite 242 (average strong thread lock).
- f** - clean carefully, especially the surfaces to be mated. Apply a 3 mm string of gasket forming compound following the path indicated in the figure:

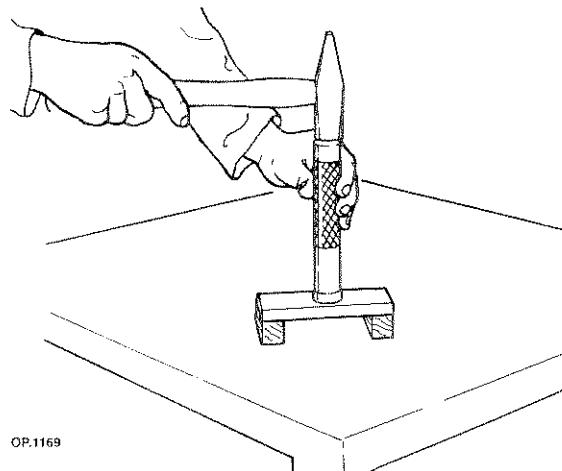


Application diagram of gasket forming compound



OP.054

- g** - check the alignment of the central anchoring joint.



OP.1169

- h** - use driver AT 37981312 to remove and to mount the roller housing on the central plate.

- i** - clean all parts that will be in contact with the hydraulic oil of the circuit thoroughly (tank - tubes - heat exchanger).

- j** - make sure that there are no obstacles that hinder the regular suction of the pump of the hydrostatic unit (stoppers).

- m** - replace the oil filter cartridge.

- n** - do not start engine and start the hydrostatic unit before having filled the hydraulic circuit with oil (new).

- o** - fill the tank (speed gear) with oil, see page 5.

- p** - fill the hydrostatic unit with oil, see page 5, through one of the drain holes.

**WARNING - DANGER**

Perform operations by strictly observing accident prevention regulations.

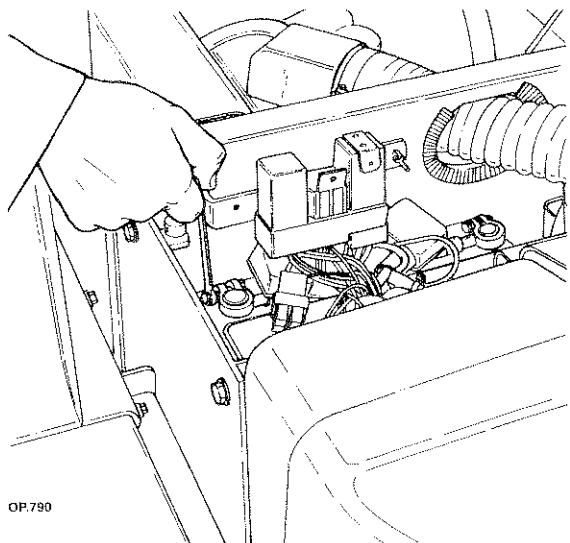
- Do not use gasoline, diesel oil or other flammable liquids to degrease or clean parts but use commercial non-toxic solvents instead.

Keep environment clean. Dispose of waste fluids, used filter cartridges, oils, lubricants and grease cleaners in the most suitable way and in compliance with regulations in force.

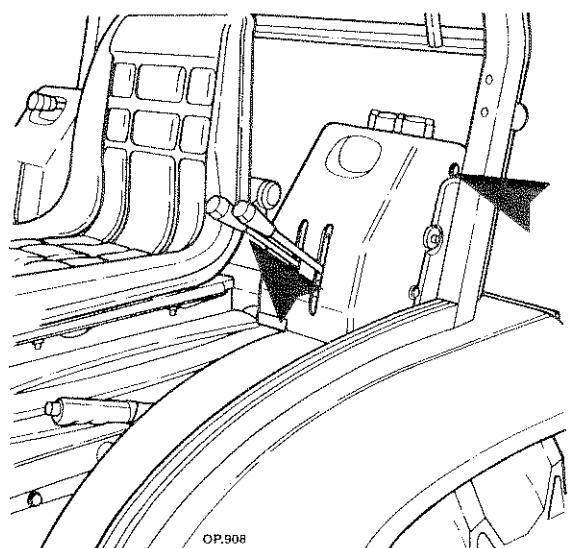
The collection of waste oils must be performed by authorized plants.

Tigretrac with cab (with 4 uprights)

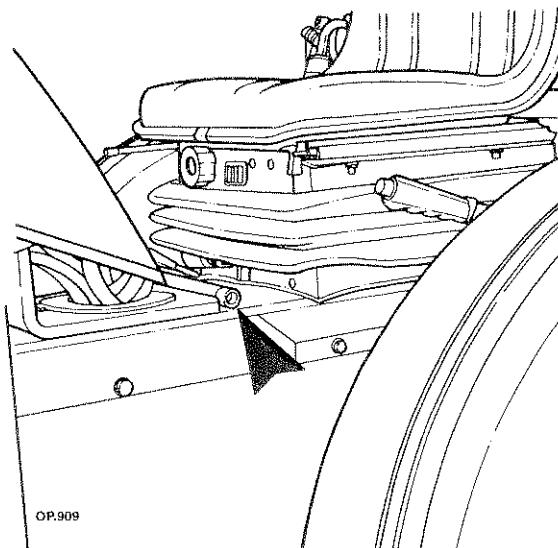
To have access to the hydrostatic unit you need to:



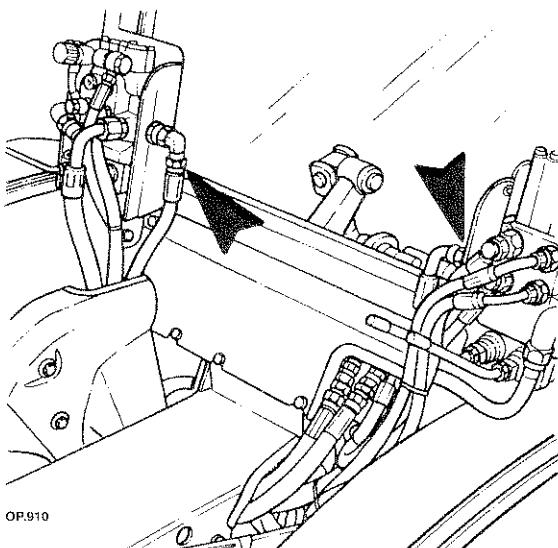
1 - Disconnect the battery wire and insulate it.



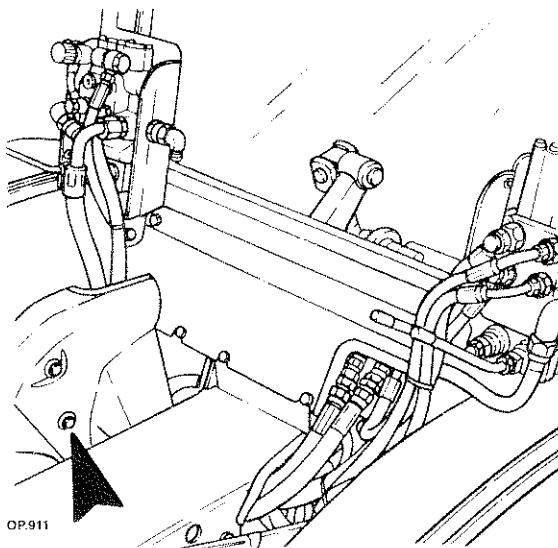
2 - Remove the distributor lever handgrip and the distributor protections.



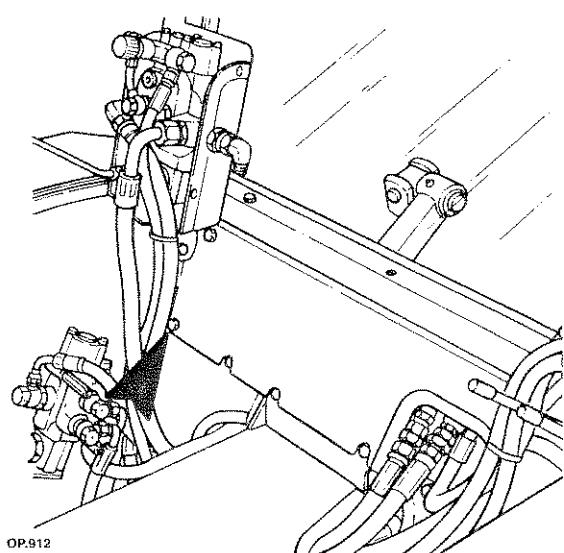
3 - Loosen and remove the whole seat.



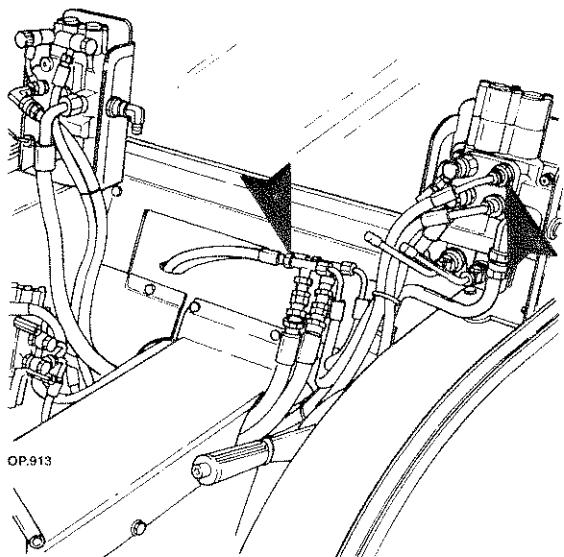
4 - Loosen the unions and remove the delivery tube (connection to distributors).



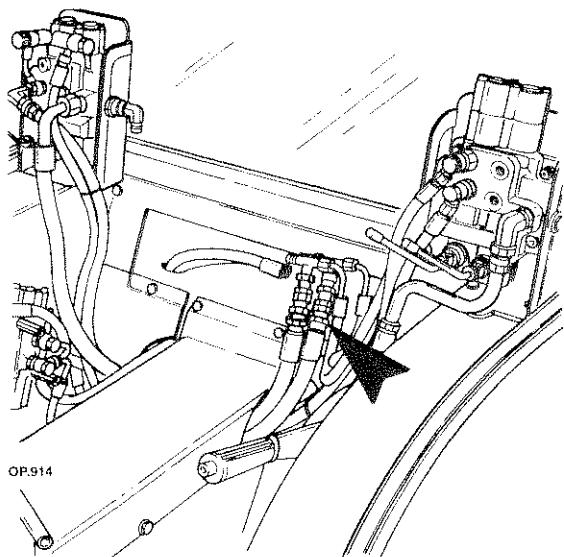
5 - Loosen the screws and remove the protections of the deviator 2 - 4 steering wheels.



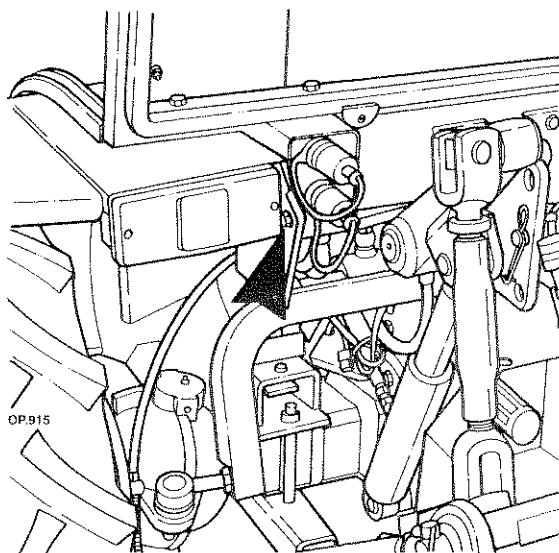
6 - Loosen the screws and remove the protections.



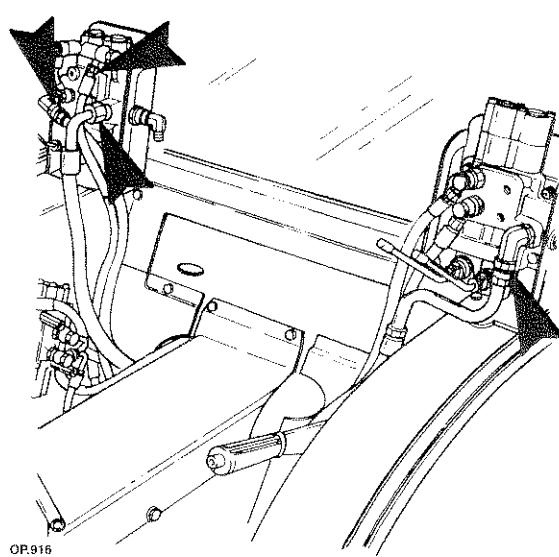
7 - Loosen the rear hydraulic coupling connectors.



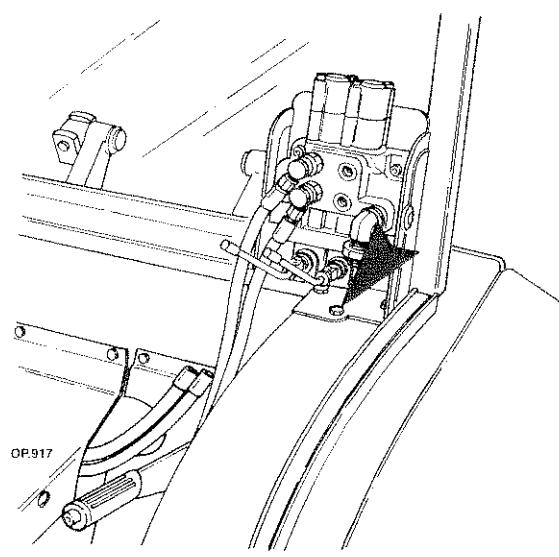
8 - Loosen the front hydraulic coupling connectors.



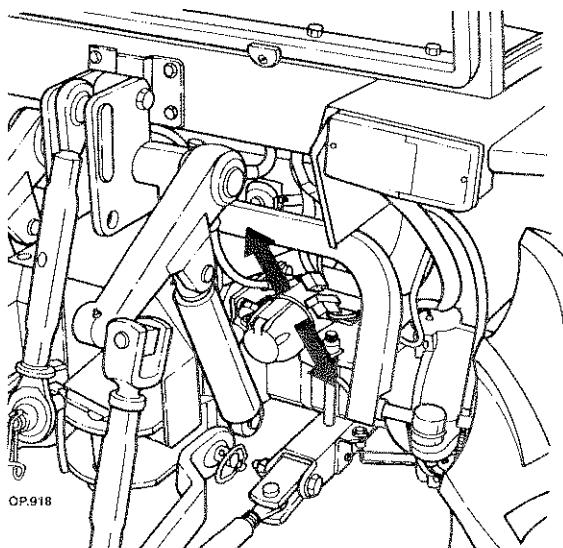
9 - Loosen the hydraulic coupling supports and remove them.



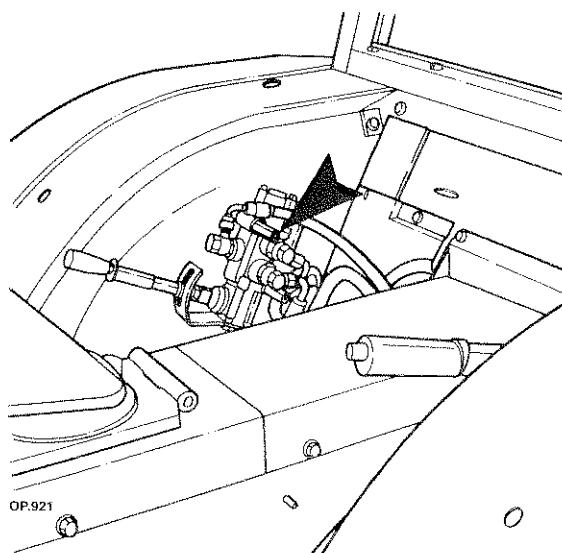
10 - Loosen the delivery - drain tub unions.



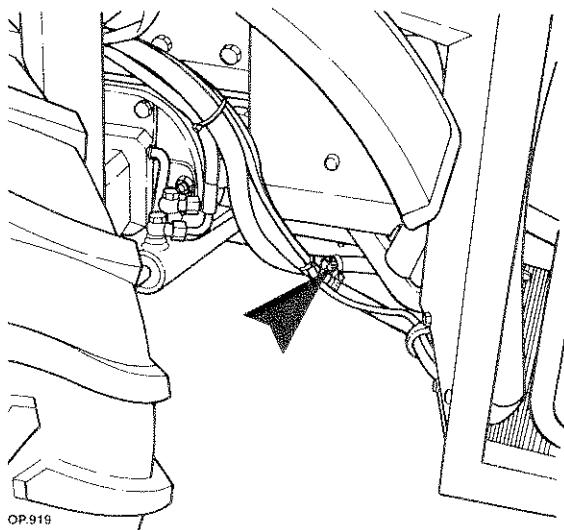
11 - Loosen the screws and remove the distributors and relative supports.



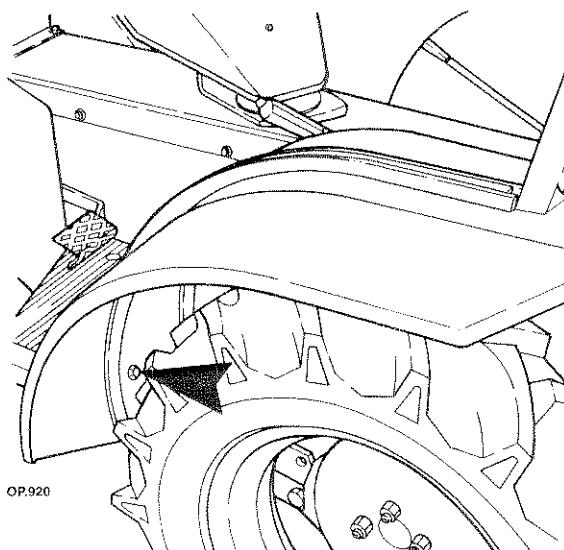
12 - Disconnect the electrical connections of the cab.



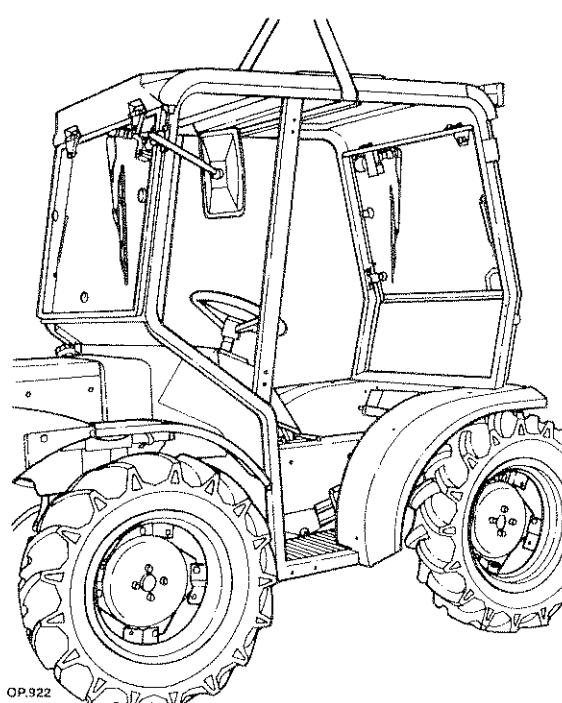
15 - Loosen the screws and remove the deviator for the 4 steering wheels.



13 - Loosen the tube clamps and disconnect the cab heating tubes then plug holes with stoppers.



14 - Loosen the screws and remove the door stops on the rear fenders (with cab closed).

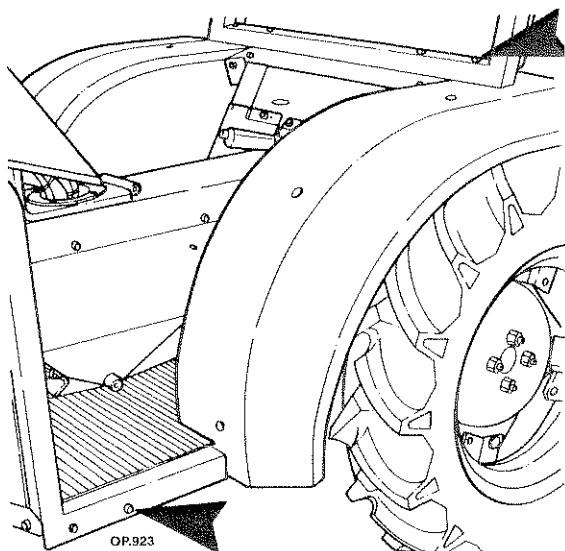


16 - Sling the cab from the back with the help of a hoist.

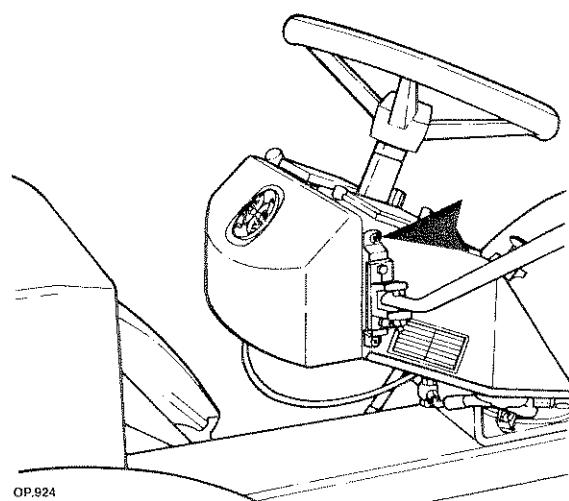
WARNING - DANGER

Perform operations by strictly observing accident prevention regulations.

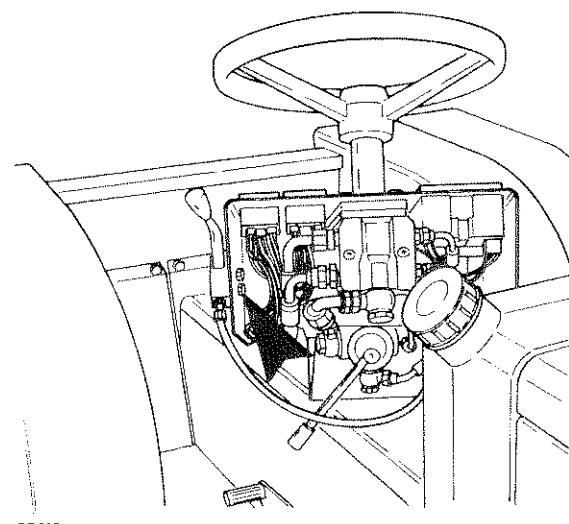
- Use suitable hoisting means.
- Wear gloves to handle metal cords or chains.



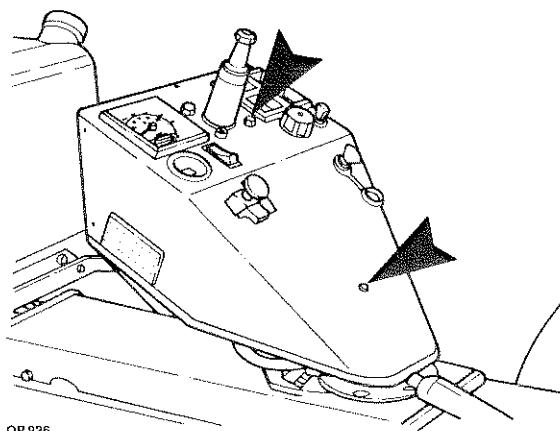
17 - Loosen the safety frame support screws and separate them from the trailer.



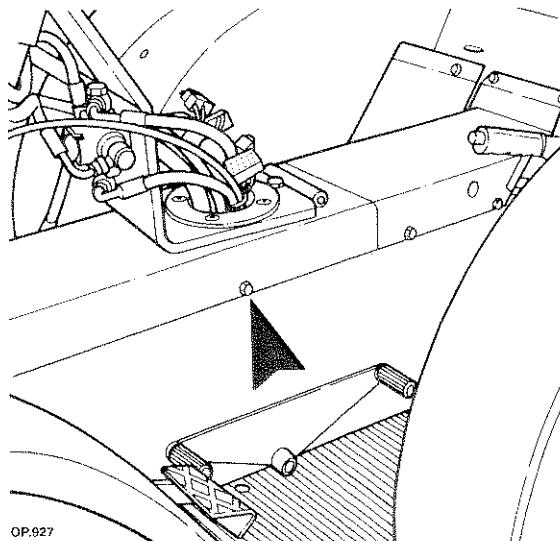
18 - Loosen the screws and remove the cover of the dashboard.



19 - Loosen the screws and remove the gas pedal and the steering wheel.



20 - Loosen the clamp and remove the traction disengagement wire, detach the electrical connections, loosen the screws and remove the dashboard.



21 - Loosen the screws and remove the revolving platform support, removing the rear electric line and that of the km counter, placing it on the side of the diesel engine.

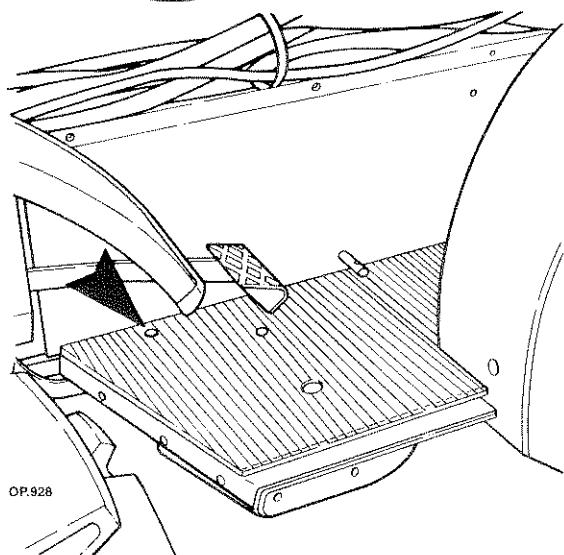
22 - Remove the spring pins and remove the front - rear of the PTO and speed selector.



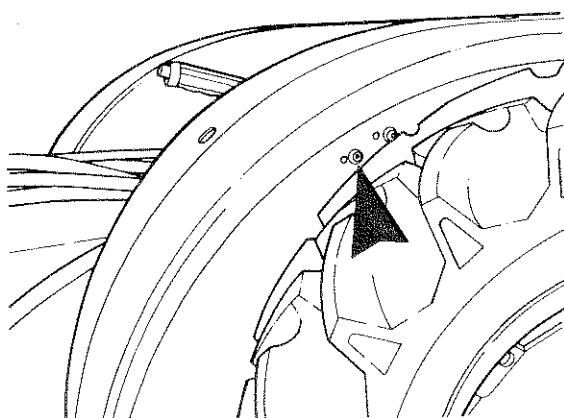
WARNING - DANGER



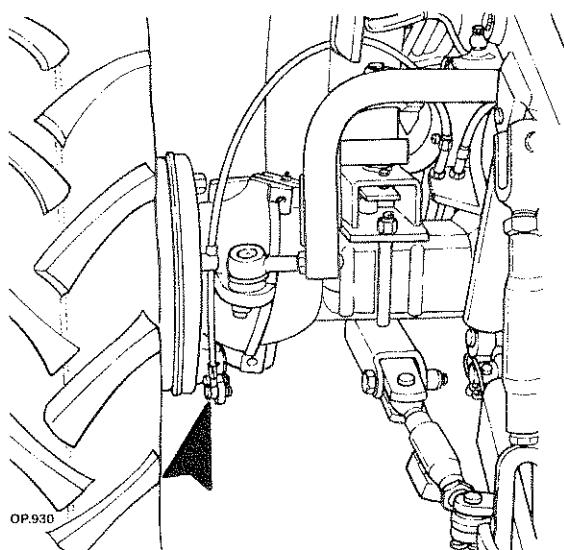
Keep environment clean. Dispose of waste fluids, used filter cartridges, oils, lubricants and grease cleaners in the most suitable way and in compliance with regulations in force. The collection of waste oils must be performed by authorized plants.



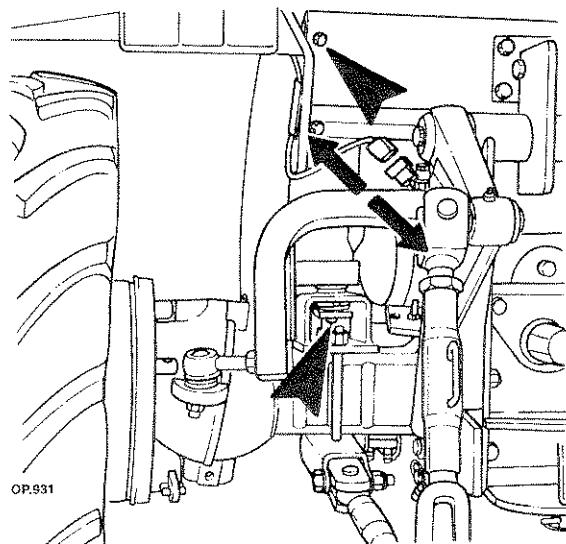
23 - Loosen the screws and remove the body cover sides and footrest.



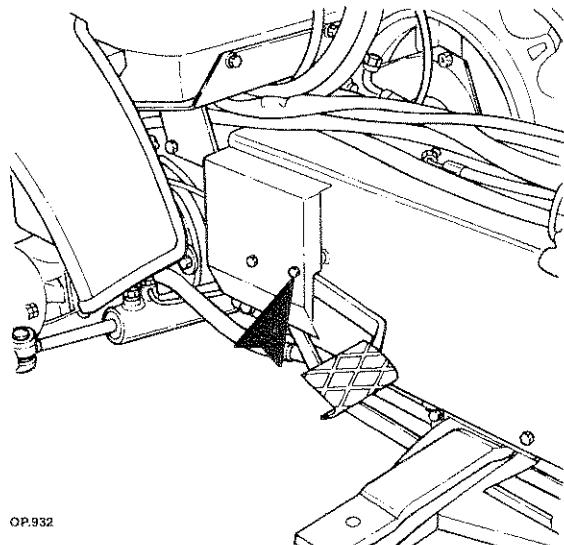
24 - Loosen the screws and remove the hand brake support.



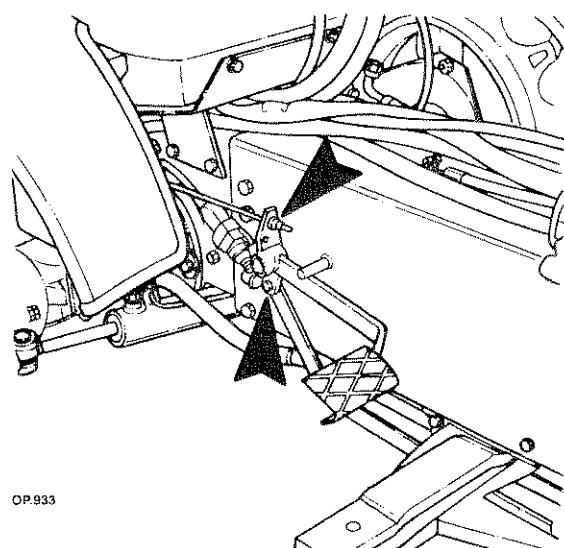
25 - Remove the retainer rings and release the brake wires.



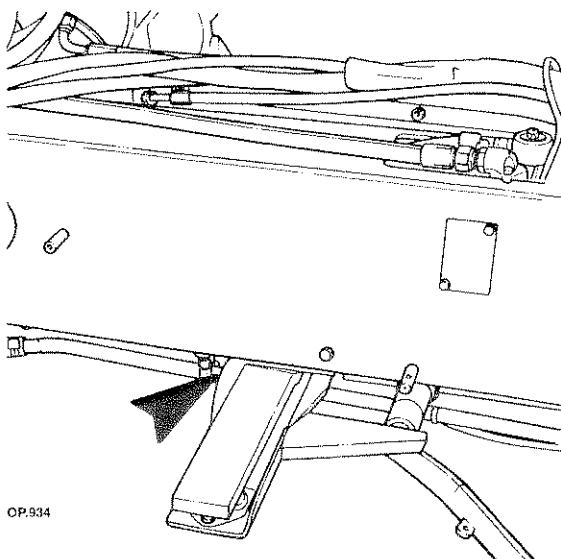
26 - Loosen the screws and remove the r.h. and l.h. rear fender by detaching the electrical connections.



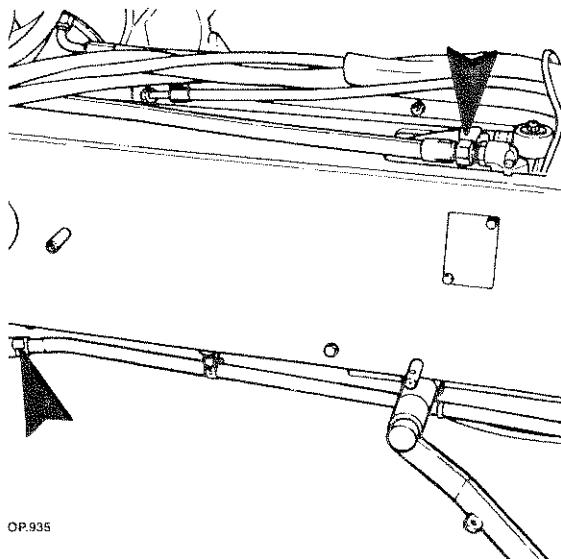
27 - Remove the cover of the clutch pedal.



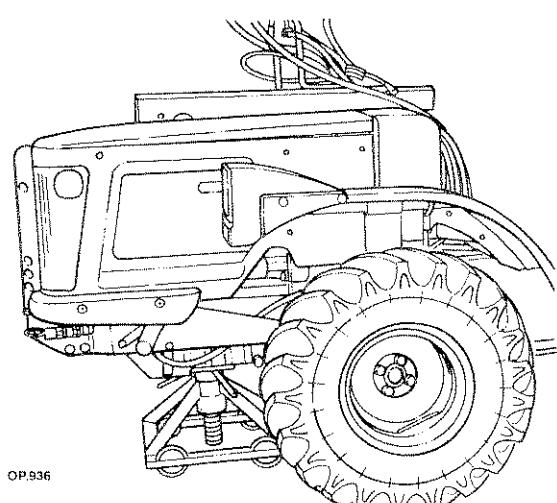
28 - Loosen the nut and remove the double control clutch retainer ring by removing the whole pedal.



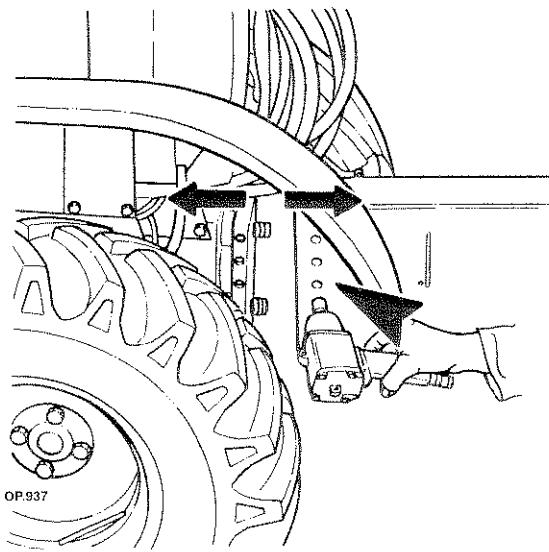
29 - Loosen the screws and remove the frame carrier cross-bar.



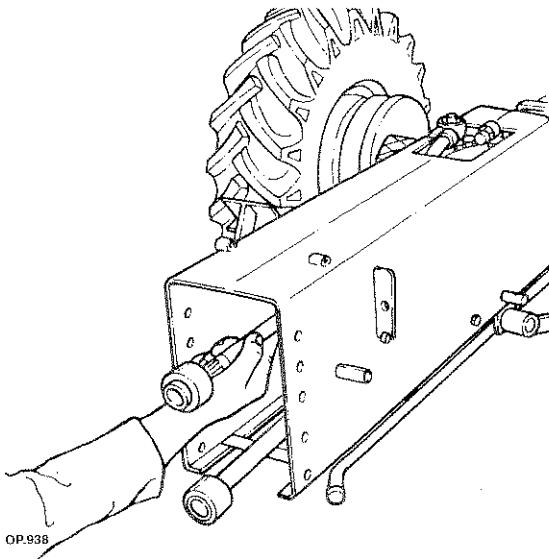
30 - Loosen the tube clamp and the hydrostatic engine connection tube union.



31 - Place a mobile horse underneath the engine and a fixed one underneath the gearbox on the front end.



32 - Loosen the screws and separate the fore carriage from the rear unit.



33 - Remove the central extensions.

34 - Loosen the screws and remove the lower protections on the central body.

35 - Remove the split pins and detach the brake connection tie-rods.

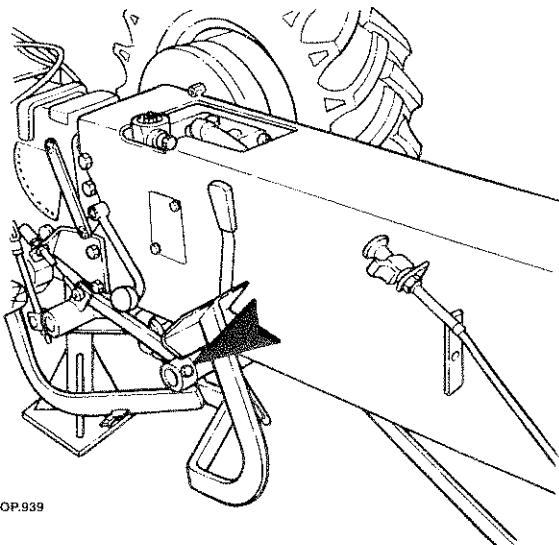


WARNING - DANGER

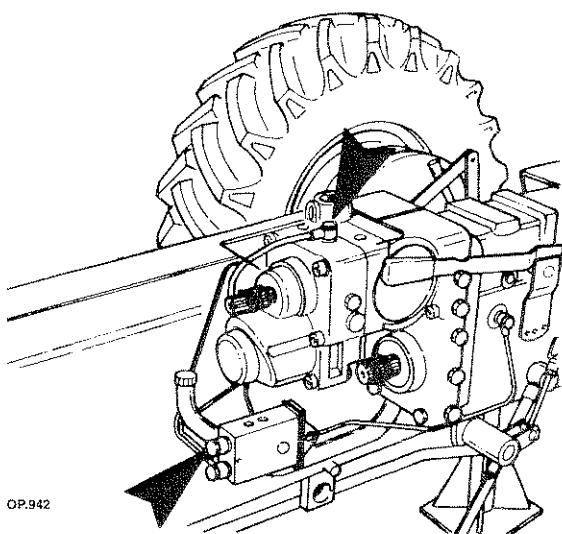


Perform operations by strictly observing accident prevention regulations.

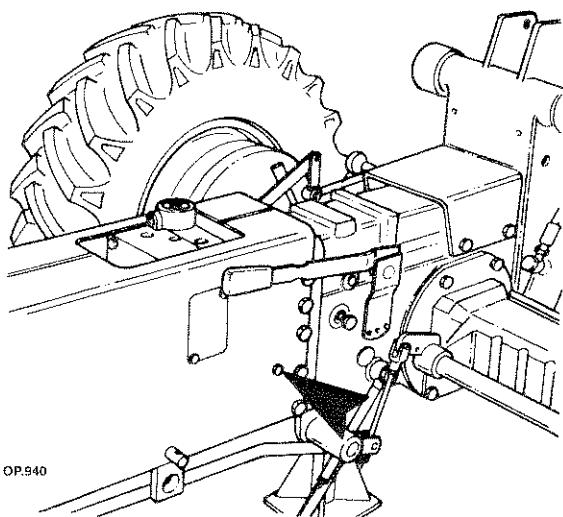
- Wear safety clothing such as, gloves and safety shoes.
- Do not align slots with hands but use specific tools instead.



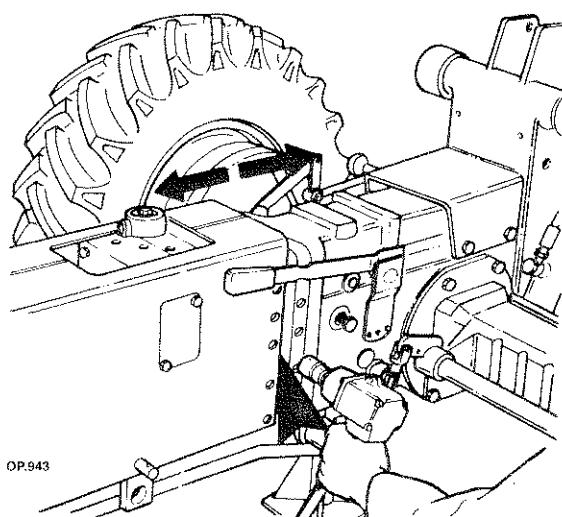
36 - Remove the spring pin and withdraw the brake pedals.



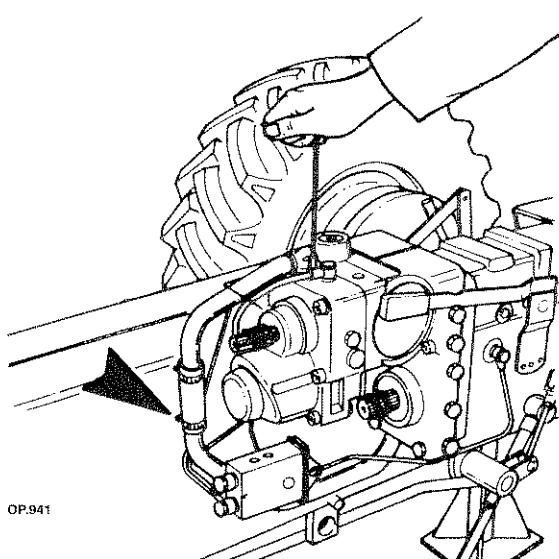
39 - Loosen the unions of the joystick connection tube.



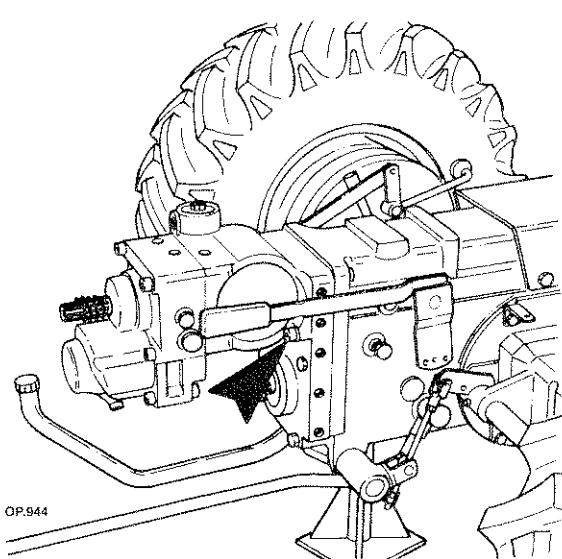
37 - Loosen the nut and remove the km counter.



40 - Loosen the screws and withdraw the central body.



38 - Loosen the tube clamp and remove the oil suction tube.



41 - Loosen the screws and withdraw the hydrostatic unit.

**WARNING - DANGER**

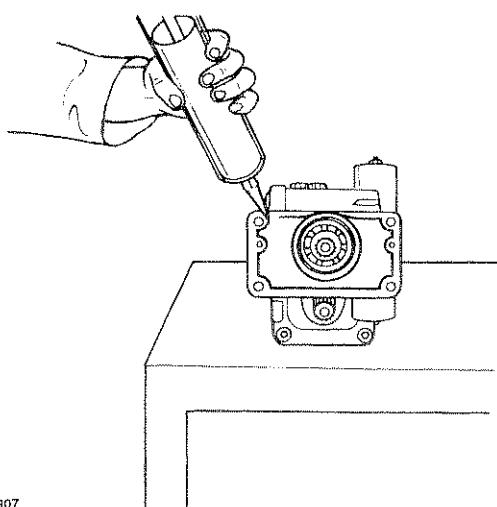
Perform operations by strictly observing accident prevention regulations.

- Use tools to align holes and slots not hands.

Connecting

Proceed to the connection, bearing in mind the following instructions:

- a** - reverse the disconnection operations.
- b** - follow the pictures for location of the different components.
- c** - observe the driving torque listed at page 4.
- d** - before inserting the extensions or the universal joints, accurately grease the grooved contours (regarding the type of grease to use refer to page 5).
- e** - clean carefully, especially the surfaces to be mated. Apply a 3 mm string of gasket forming compound following the path indicated in the figure:



OP.907

Application diagram of gasket forming compound

- f** - clean all parts that will be in contact with the hydraulic oil of the circuit thoroughly (tank - tubes - heat exchanger).

g - make sure that there are no obstacles that hinder the regular suction of the pump of the hydrostatic unit (stoppers).

h - replace the oil filter cartridge.

i - do not start the diesel engine and actuate the hydrostatic unit before having filled the hydraulic circuit with oil (new).

j - fill the tank (speed gear) with oil, see page 5.

m - fill the hydrostatic unit with oil, see page 5, through one of the drain holes.

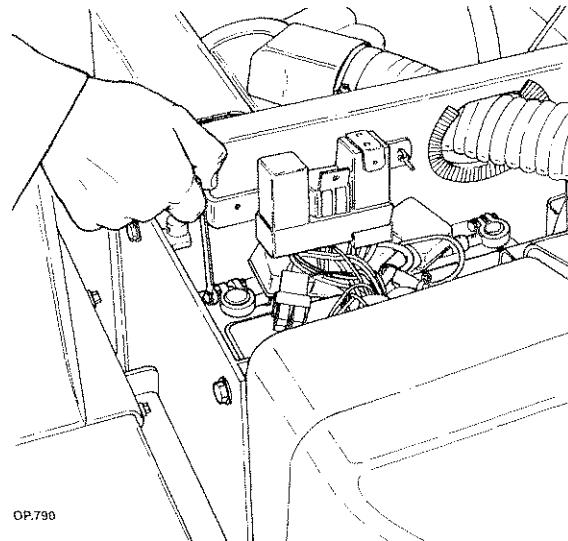
**WARNING - DANGER**

Perform operations by strictly observing accident prevention regulations.

- Do not use gasoline, diesel oil or other flammable liquids to degrease or clean parts but use commercial non-toxic solvents instead.
- Keep environment clean. Dispose of waste fluids, used filter cartridges, oils, lubricants and grease cleaners in the most suitable way and in compliance with regulations in force.
- The collection of waste oils must be performed by authorized plants.

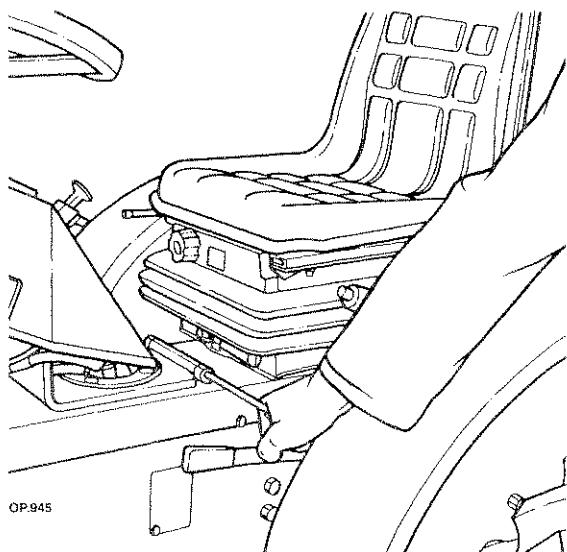
Tigretrac with roll bar

To have access to the hydrostatic unit you need to:

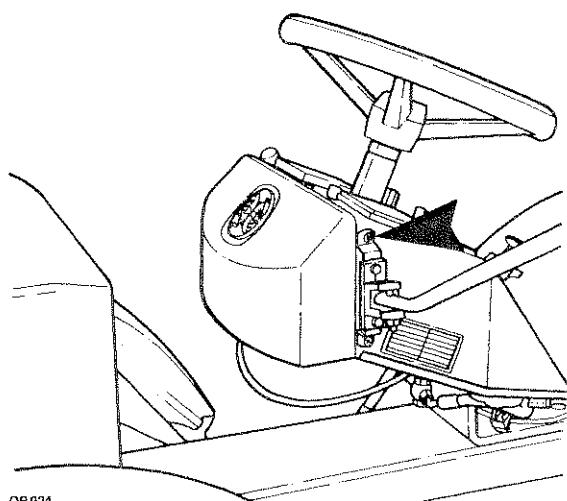


OP.790

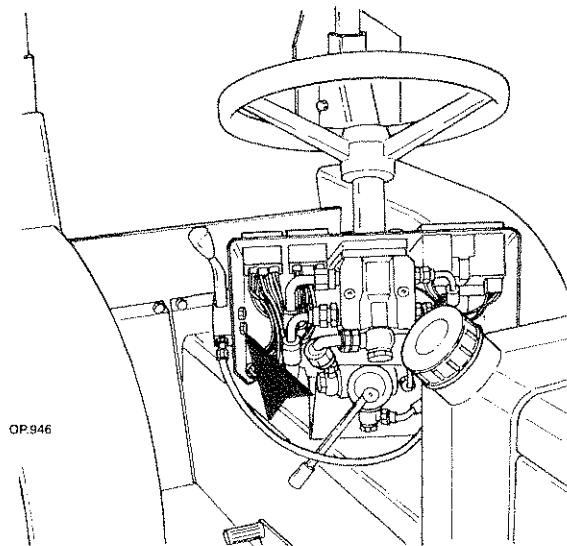
- 1** - disconnect the battery wire and insulate it.



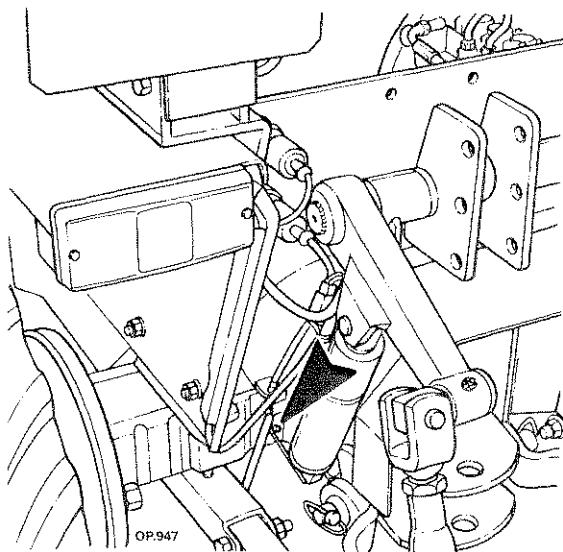
2 - Loosen the screws and remove the whole seat.



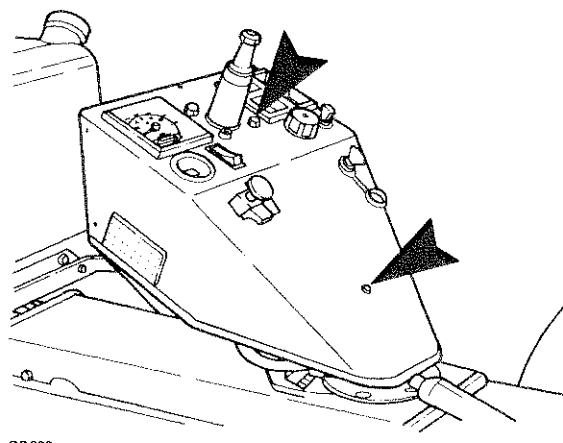
3 - Loosen the screws and remove the dashboard cover.



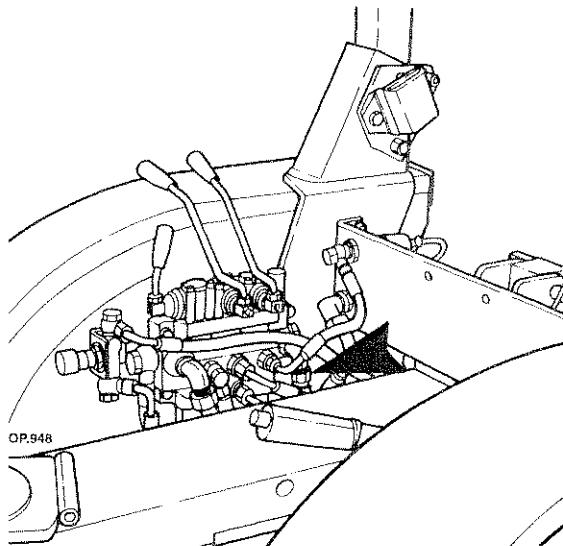
4 - Loosen the screws and remove the gas and steering wheel lever.



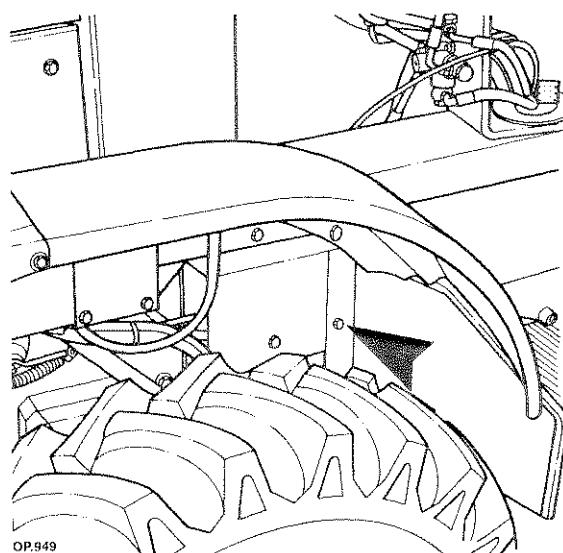
5 - Loosen the clamps and remove the traction disengagement wires and differential locking engagement.



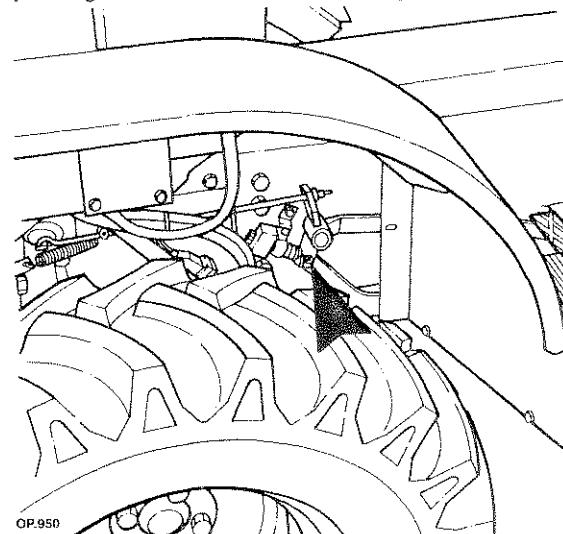
6 - Loosen the dashboard support screws, detach the electric connection and withdraw it.



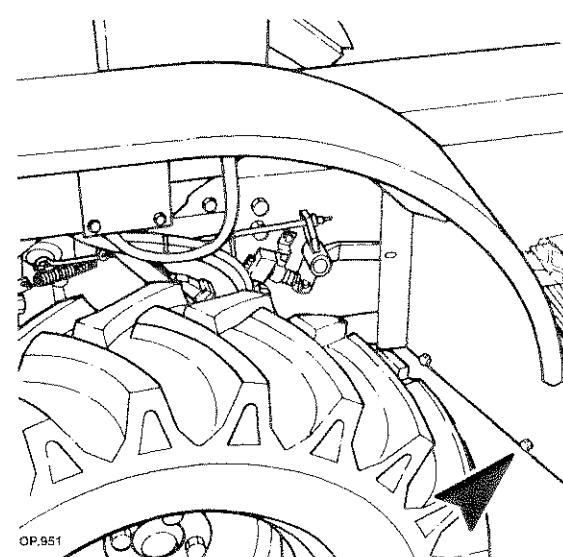
7 - Loosen the tube on the distributor and plug holes with stoppers.



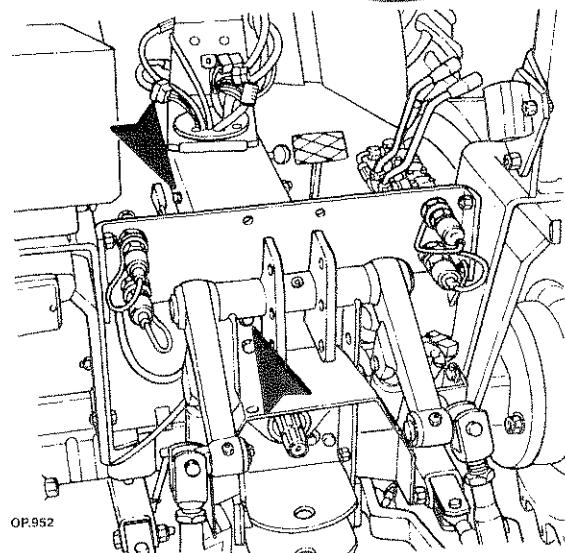
8 - Loosen the screws and remove the cover of the revolving platform removing the rear electric line and that of the km counter by placing it towards the diesel engine.



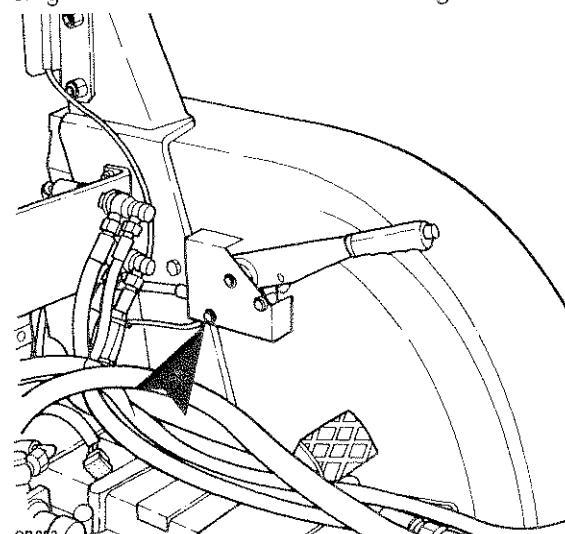
9 - Remove the split pins and detach the double control clutch.



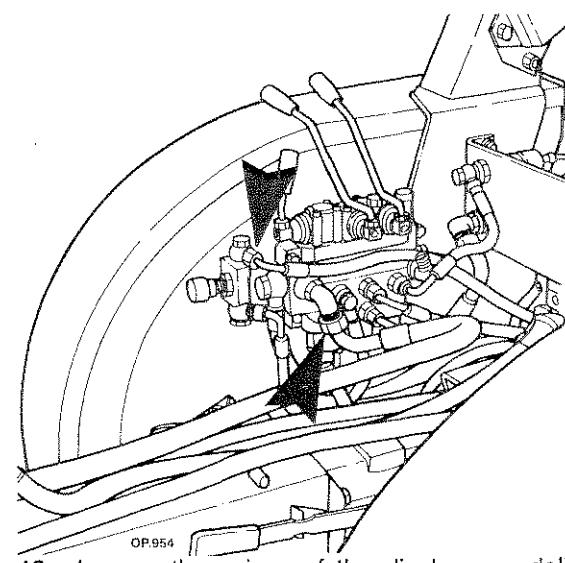
10 - Loosen the screws, remove the footrest protection and the clutch pedal.



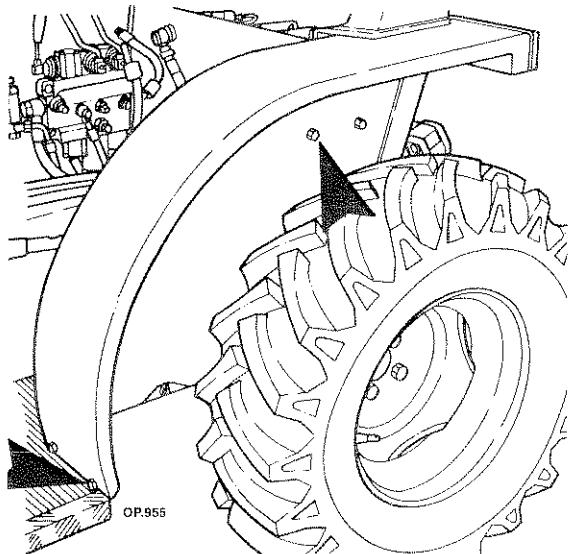
11 - Loosen the screws and remove the revolving platform support, removing the rear electric line and that of the km counter, placing it on the side of the diesel engine.



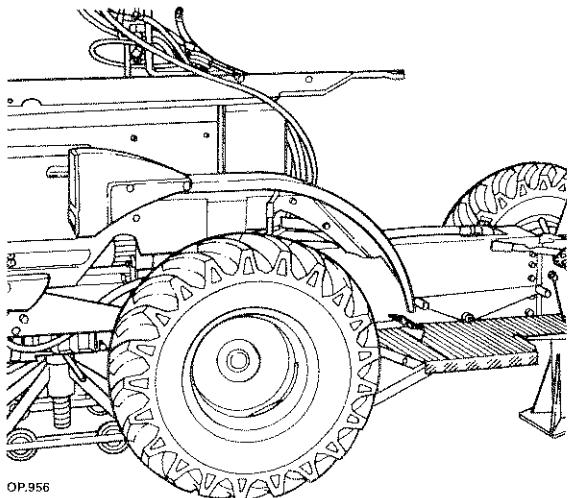
12 - Loosen the screws and remove the hand brake.



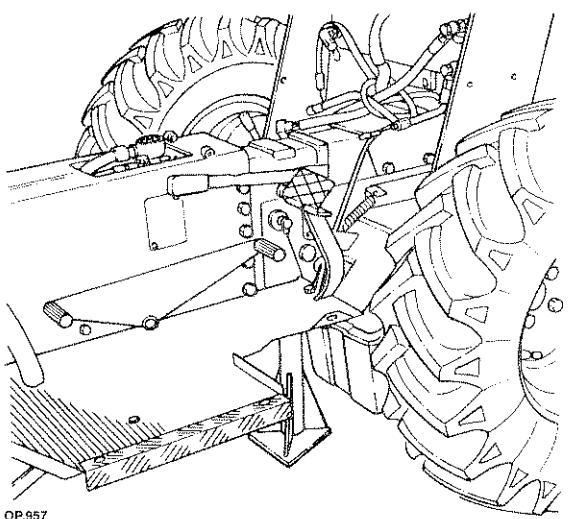
13 - Loosen the unions of the discharge-delivery tube and of the cylinders and hydraulic couplings and then plug holes with stoppers.



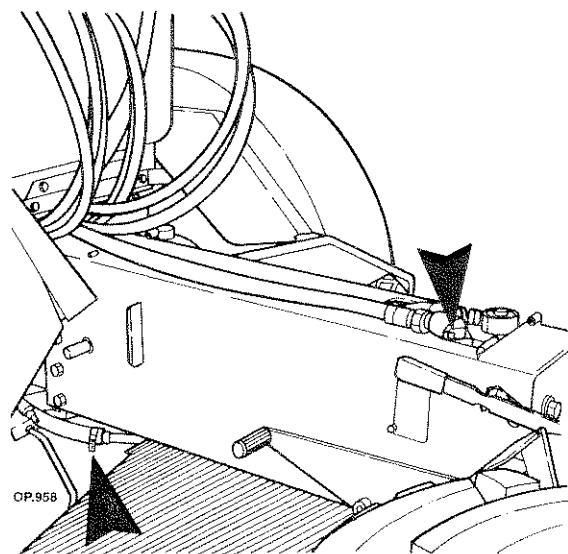
14 - Loosen the screws and remove the rear fenders.



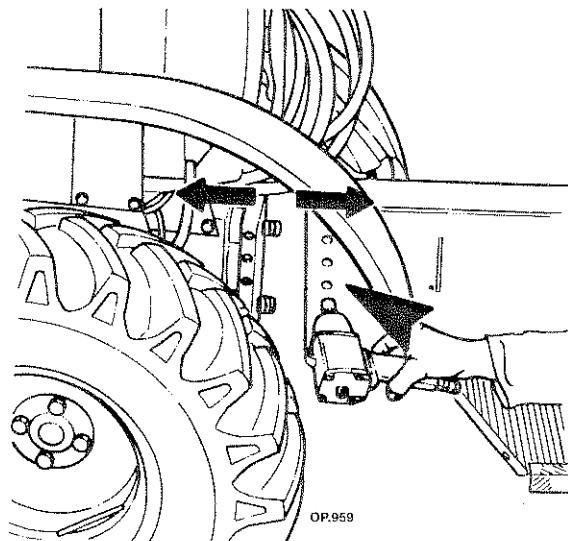
15 - Place a mobile horse underneath the engine and a fixed one underneath the gearbox on the front end.



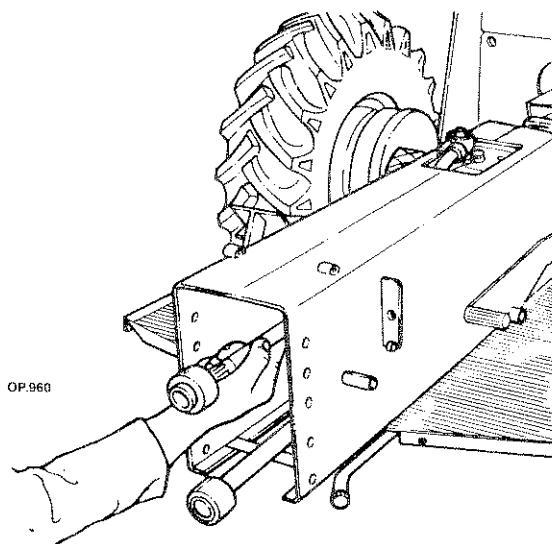
16 - Discharge oil in a special container.



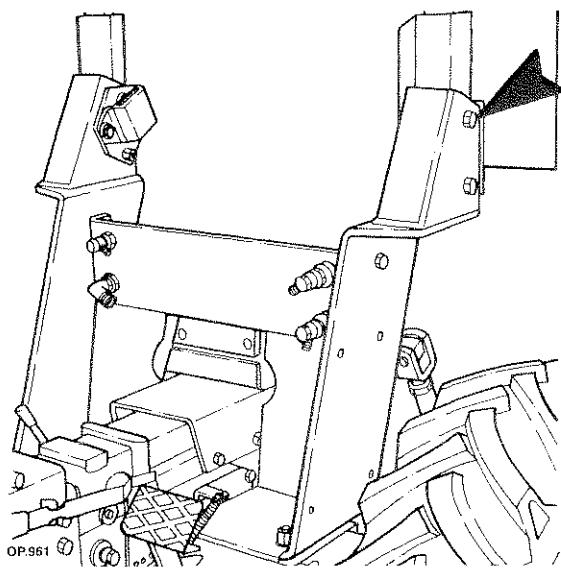
17 - Loosen the clamps and the tube unions of the exchanger hydrostatic unit.



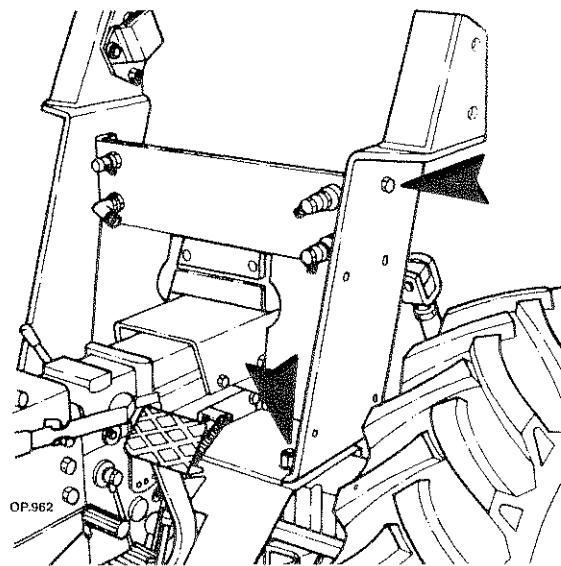
18 - Loosen the screws and separate the forecarriage form the rear hydrostatic unit gear change.



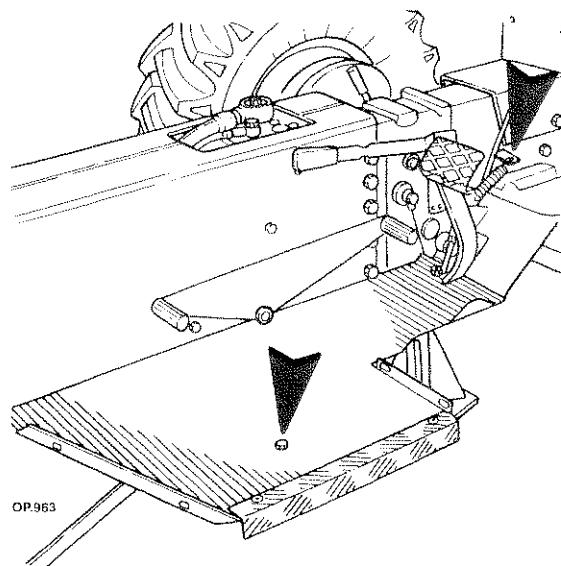
19 - Remove the central extensions.



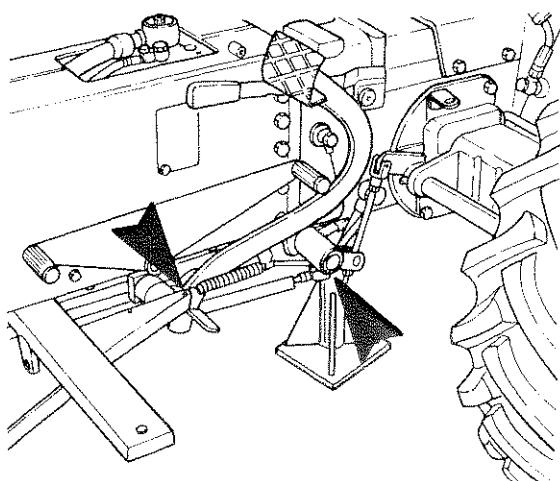
20 - Loosen the screws of the roll bar.



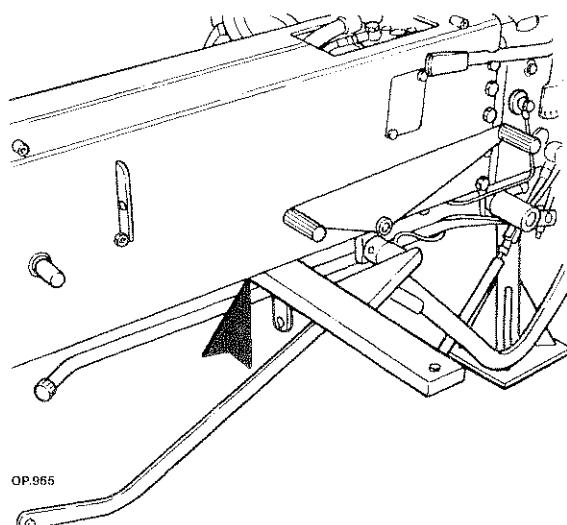
21 - Loosen the screws of the roll bar support.



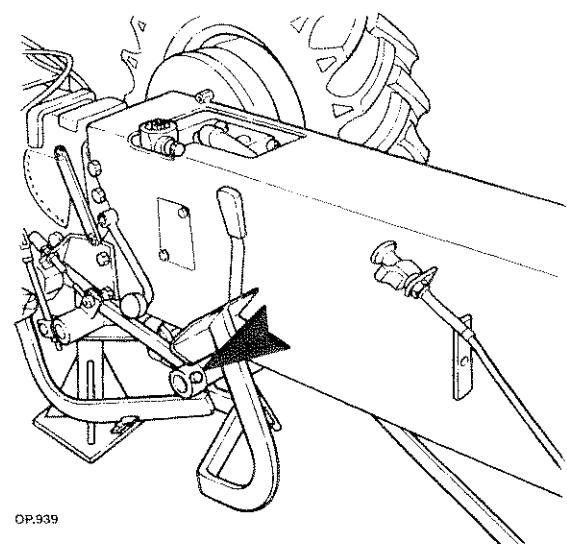
22 - Remove the brake pedal return spring and loosen the screws then remove the footrest.



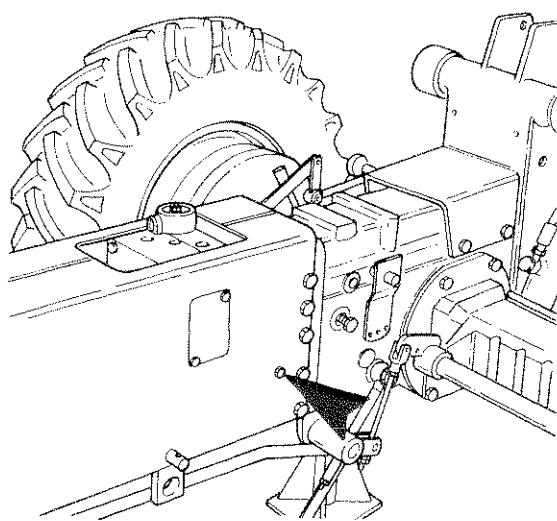
23 - Remove the split pins and detach the brake connection tie-rods.



24 - Loosen the screws and remove the footrest support.

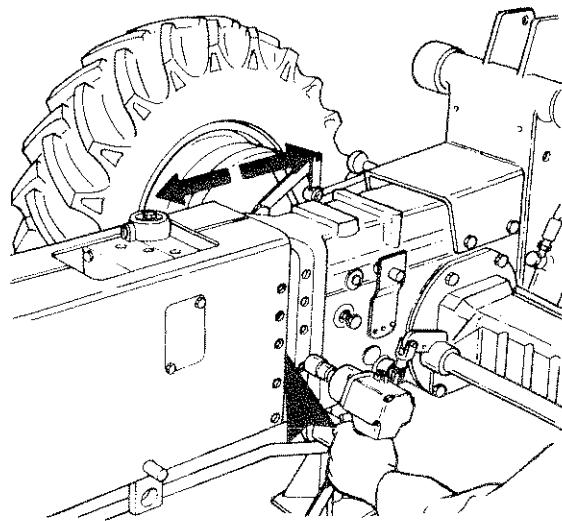


25 - Remove the spring pin and remove the brake pedal.



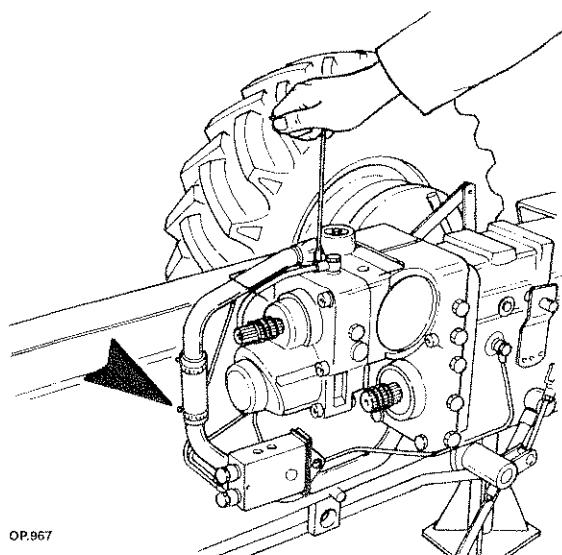
OP.966

26 - Loosen the nut and remove the km counter.



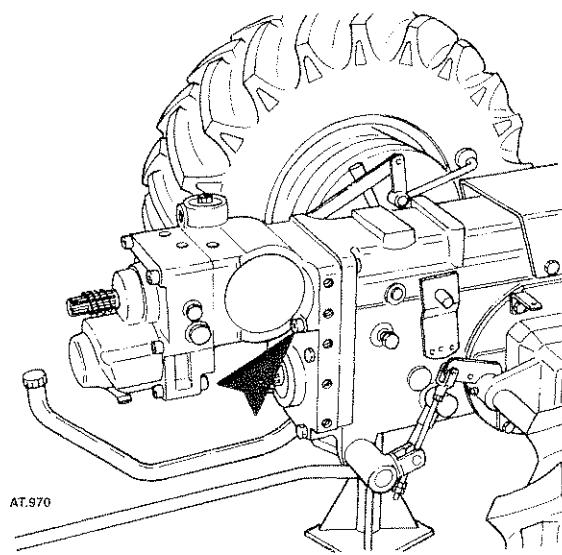
OP.969

29 - Loosen the screws and remove the central body.



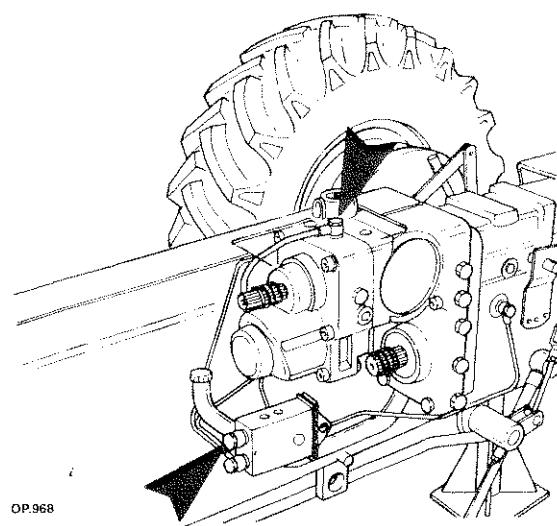
OP.967

27 - Loosen the tube clamp and remove the oil suction tube.



AT.970

30 - Loosen the screws and withdraw the hydrostatic unit.



OP.968

28 - Loosen the unions and remove the tubes from the joystick.



WARNING - DANGER



Perform operations by strictly observing accident prevention regulations.
- Wear safety clothing such as, gloves and safety shoes.



WARNING - DANGER



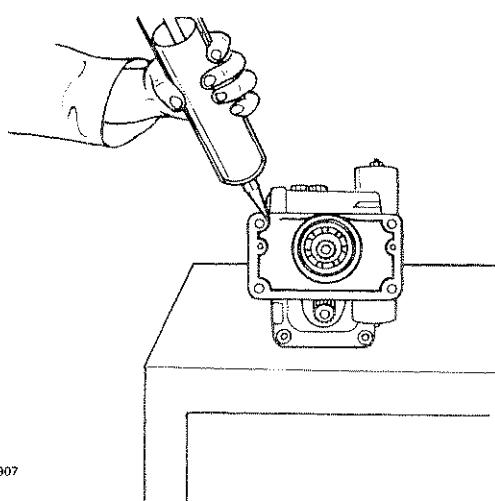
Perform operations by strictly observing accident prevention regulations.

- Use tools to align holes and slots not hands.

Connecting

Proceed to the connection , bearing in mind the following instructions:

- a. reverse the disconnection operations.
- b. follow the pictures for location of the different components.
- c. observe the driving torque listed at page 4.
- d. before inserting the extensions or the universal joints, accurately grease the grooved contours (regarding the type of grease to use refer to page 5).
- e. clean carefully, especially the surfaces to be mated. Apply a 3 mm string of gasket forming compound following the path indicated in the figure:



Application diagram of gasket forming compound

f - clean all parts that will be in contact with the hydraulic oil of the circuit thoroughly (tank - tubes - heat exchanger).

g - make sure that there are no obstacles that hinder the regular suction of the pump of the hydrostatic unit (stoppers).

h - replace the oil filter cartridge.

i - do not start the diesel engine and actuate the hydrostatic unit before having filled the hydraulic circuit with oil (new).

j - fill the tank (speed gear) with oil, see page 5.

m - fill the hydrostatic unit with oil, see page 5, through one of the drain holes.



WARNING - DANGER



Perform operations by strictly observing accident prevention regulations.

- Do not use gasoline, diesel oil or other flammable liquids to degrease or clean parts but use commercial non-toxic solvents instead.

Keep environment clean. Dispose of waste fluids, used filter cartridges, oils, lubricants and grease cleaners in the most suitable way and in compliance with regulations in force. The collection of waste oils must be performed by authorized plants.

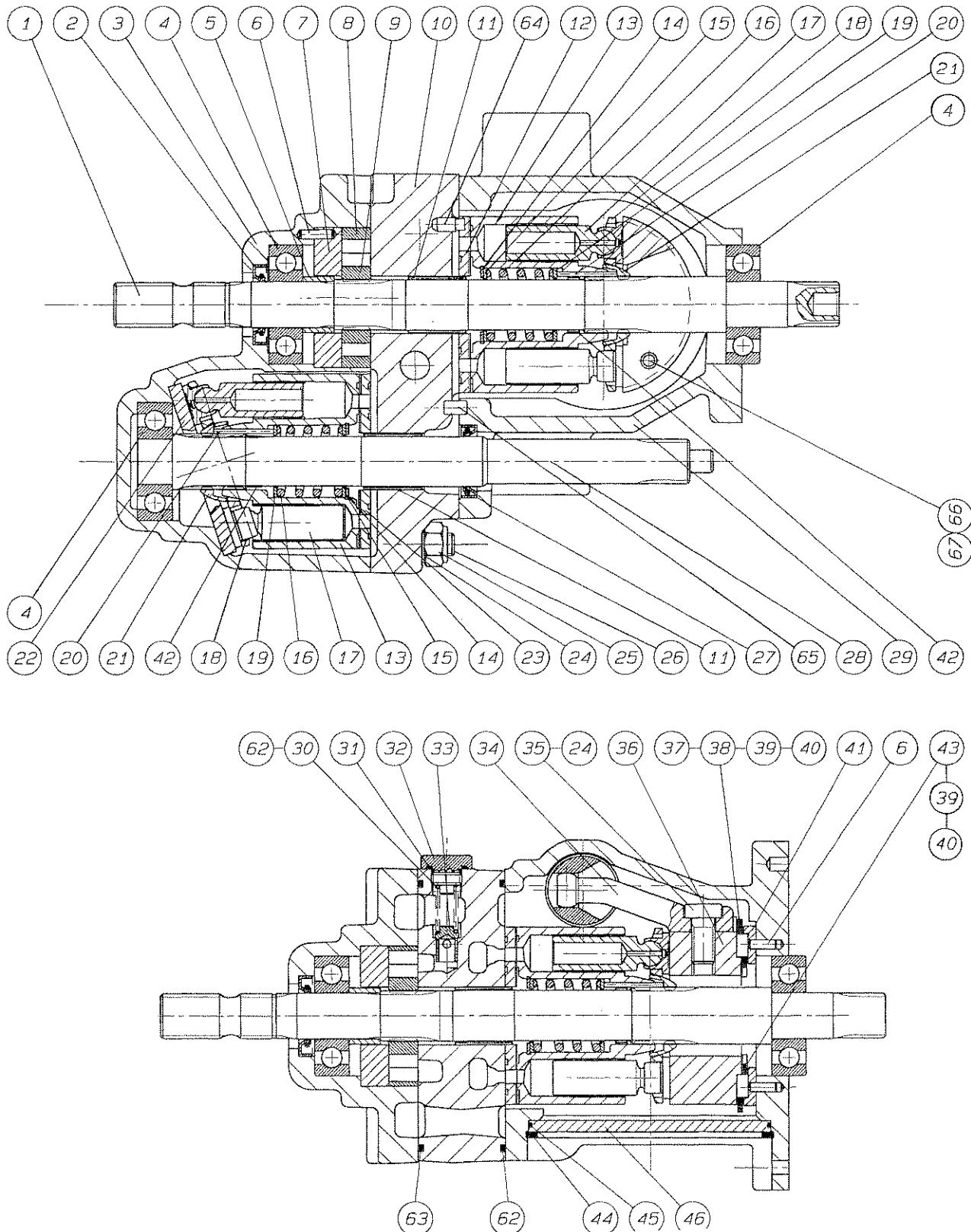
NOTE:

To join the front transmission with the rear one you must:

- 1 - Key the shaft or upper joint.
- 2 - Key the shaft or lower joint as you possibly can.
- 3 - Lift an axle until you can rotate a wheel and recover a few turns on the front and rear transmission.
- 4 - Join the whole.



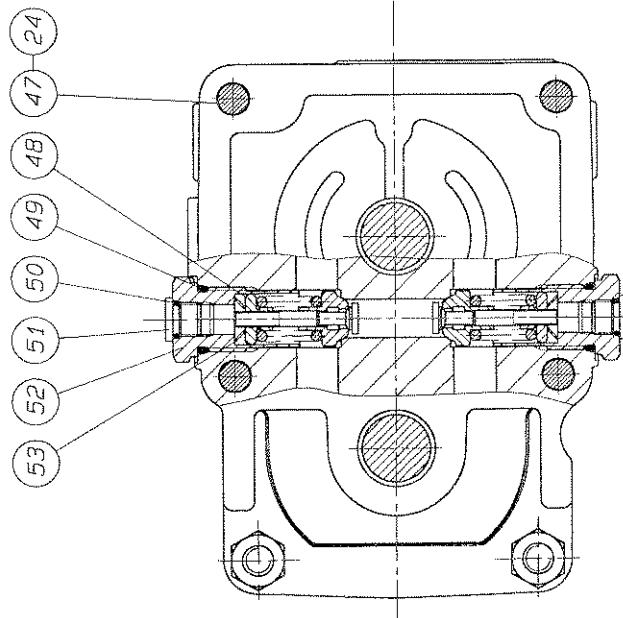
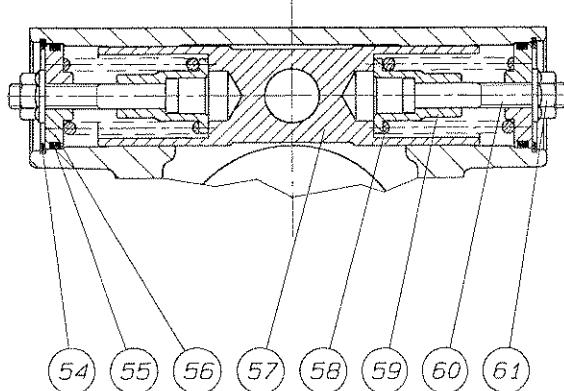
CGS28 HYDROSTATIC UNIT SECTION





Cross section of the maximum pressure valves

Cross section of the servo control



POS. DESCRIPTION

001.	PUMP SHAFT CGS28	035	TCEI SCREW M10X20 DIN7984 (T.RIB.)
002.	SEAL RING BAB1SL 20X35X6-6.5	036	OSCILLATING BODY CGS28
003.	MOTOR CASING CGS28	037	PERFORATED PLUG STEI M10X12 2.1
004.	BALL BEARING 6304 QEVB277 (20X52X15)	038	R.H. ROLLER HOUSING UNIT M4PV58
005.	FEED PUMP CENTRAL SPACER CGS28	039	BEARING WIRE T30-M4PV58
006.	PIN 4X14 H8 UNI707	040	PERFORATED ROLLER FOR HOUSING PHASE T30
007.	FEED PUMP CENTRING CGS28	041	ROLLER SLIDING SEMISHELL PV30
008.	OUTER ROTOR H12.5 CGS28	042	PIN STOP BAND SPRING PV20
009.	INNER ROTOR H12.5 CGS28	043	L.H. ROLLER HOUSING UNIT M4PV58
010.	INTERMEDIATE DISTRIBUTOR CGS28	044	INTERMEDIATE SPRING RING D. 107 BR107INA
011.	BUSHING MBI CB85-2225 D 22X25	045	O-RING 1.78X101.32 2-045 COVER CGS28 COVER M5PV75-100
012.	DISTRIBUTOR PLATE M4PV28-CGS228 SX	046	PUMP CLOSING COVER CGS28
013.	CYLINDER BLOCK UNIT M4PV28	047	TCEI SCREW M10X70 UNI5931
014.	INTERMEDIATE SPRING SNAP RING 32 UNI7437	048	HP MAX.PRESSURE VALVE 300 BAR
015.	SPACER 26X32X1.5 CYLINDER BLOCK T20	049	OR 2.62X17.12 90XSH 2-115 VALMAX
016.	CYLINDER BLOCK SPRING T20	050	OR 1.83X8.92 3-904 90XSH SAE 7/16" UNF
017.	COMPLETE PISTON UNIT M4PV28	051	PLUG TCEI SAE 7/16" - 20 - UNF
018.	PAD PRESSING PLATE M4PV28	052	VALVE PLUG MT WITH PRESSURE COUPLING
019.	CYLINDER BLOCK WASHER PV20 23X32X1.5	053	TAPERED SPRING MAX. VALVE SPECIAL WIRE DO.8
020.	ROLLER 2X27 (MF20)	054	INNER SPRING SNAP RING 35 UNI7437
021.	BALL JOINT M4PV28	055	O-RING 2.62X28.24 2-122 SIDE CLAMPING COVER CGS28
022.	THRUST PLATE M4MF28	056	LOCKING DISK SC CGS28
023.	DISTRIBUTOR PLATE M4MF28	057	SERVOCONTROL PINSTON CGS28
024.	WASHER SCHNORR 10	058	SERVOCONTROL PISTON SERVO CGS28
025.	SELF-LOCKING NUT M10	059	PISTON ADJUSTMENT SCREW SC T30
026.	SCREW TCEI M10X55 UNI5931	060	SEAL RING DSL 8
027.	SEAL RING BABSL 22X32X7-7.5	061	O-RING 2.62X139.37 2-161 DISTRIBUTOR CGS28
028.	MOTOR SHAFT CGS28	062	FLAT WASHER 4.3X9 UNI6592-69
029.	PUMP BODY CGS28	063	O-RING 2.62X152.07 2-163 DISTRIBUTOR CGS28
030.	ZERO-SETTING SPRING PV20	064	DISTRIBUTOR PLATE PIN T20
031.	O-RING 1.78 X 142 - 015 90XSH PLUG FEED VALVE 1/4	065	PIN 6X10 H8 UNI1707
032.	PLUG 174 GAS FEED VALVE M4PV58 NEW	066	HOUSING PHASE PIN BUSHING
033.	FEED VALVE PISTON M4PV58 NEW	067	HOUSING PHASE PIN M4PV58
034.	OSCILLATING CONTROL VALVE CGS28		



Disassembly - Assembly of the hydrostatic unit

Before proceeding to the dismantling of the hydrostatic unit it is important to observe the following information:

a - Carefully clean the outside of the unit and prevent dust, dirt etc.. from penetrating inside the unit.

b - Place parts of the unit onto a clean work surface and make sure not to mix them up.

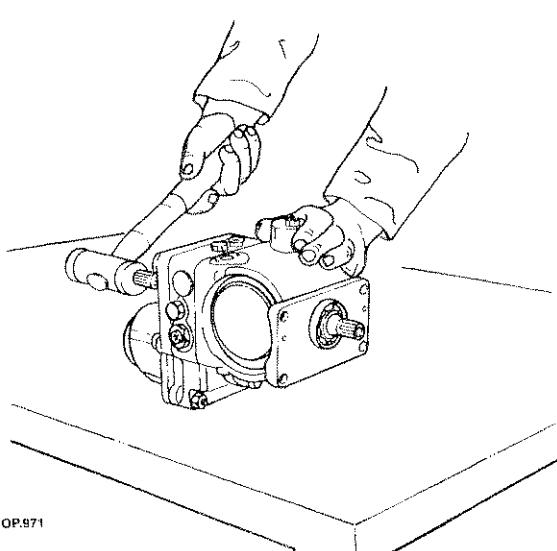
c - Do not use rags or cloth to clean parts but use special cleaning paper.

d - Keep environment clean. Dispose of waste fluids, used filter cartridges, oils, lubricants and grease cleaners in the most suitable way and in compliance with regulations in force.

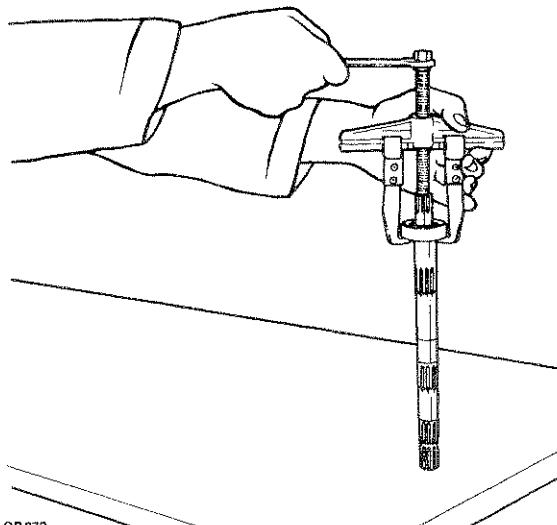
The collection of waste oils must be performed by authorized plants.

e - Proceed as follows:

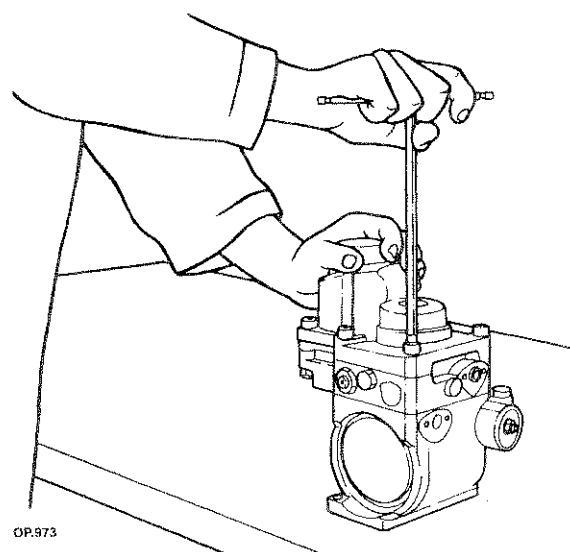
1 - Place the unit on a work bench



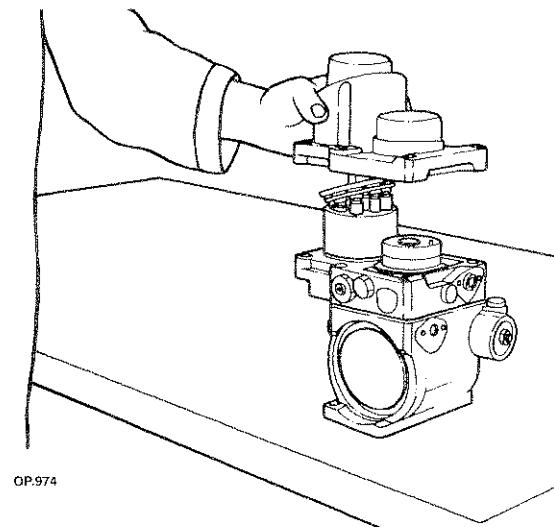
2 - Remove shaft with a hammer



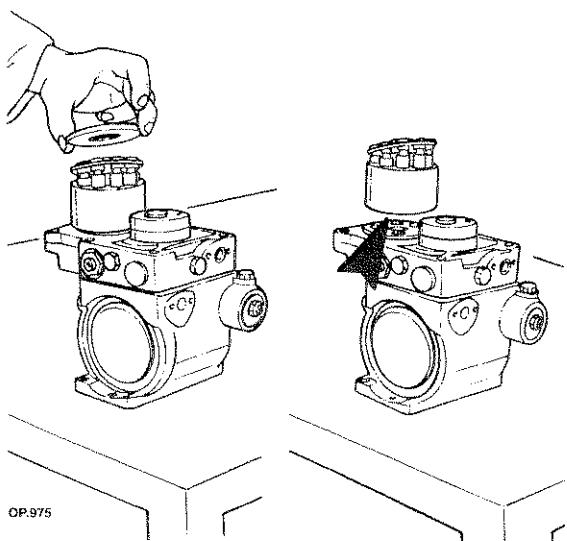
3 - Remove the bearing on the main shaft using the universal puller AT 37981257.



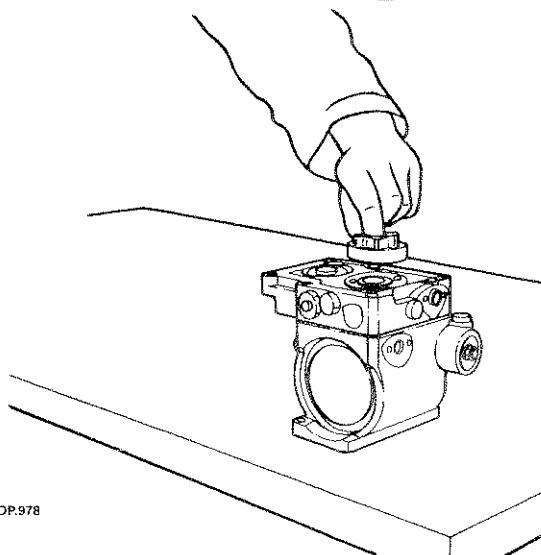
4 - Place the vertical unit and loosen the screws.



5 - Remove the motor casing from the top and make sure that all the elements don't fall or get damaged.

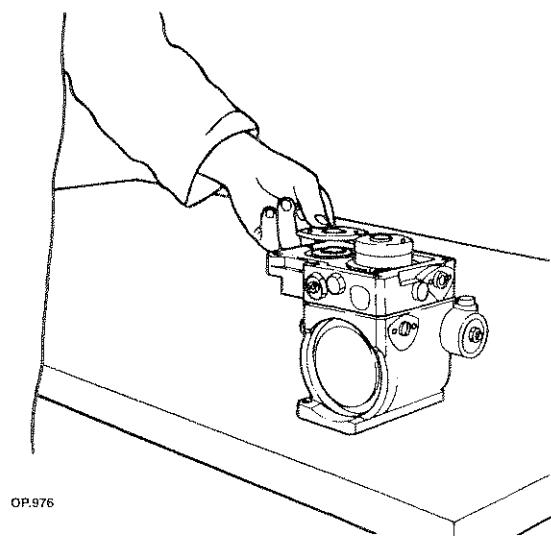


OP.975

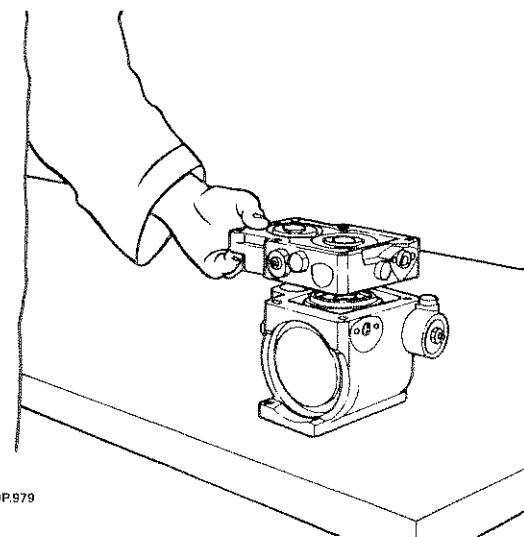


OP.978

6 - Remove the inclined plate and the rotating unit of the engine resting it on a flat and clean surface.



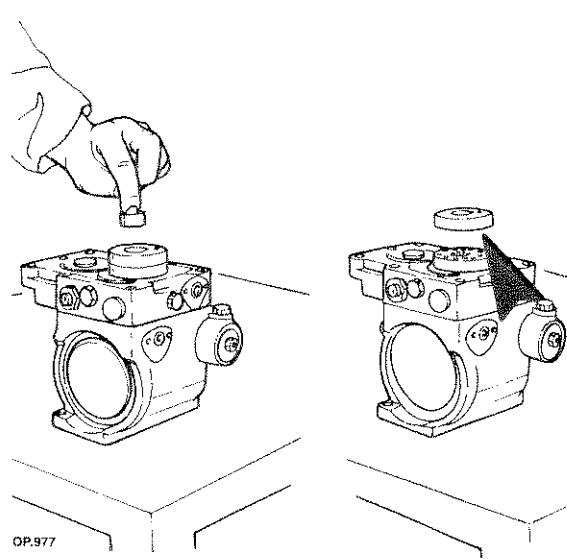
OP.976



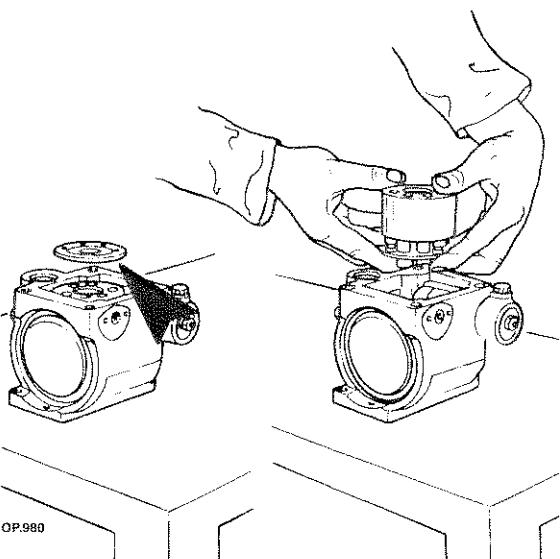
OP.979

7 - Remove the distributor plate, clean it and rest it on a flat and clean surface.

10 - Remove the distributor block and make sure that the plate of the rotating block does not remain attached.



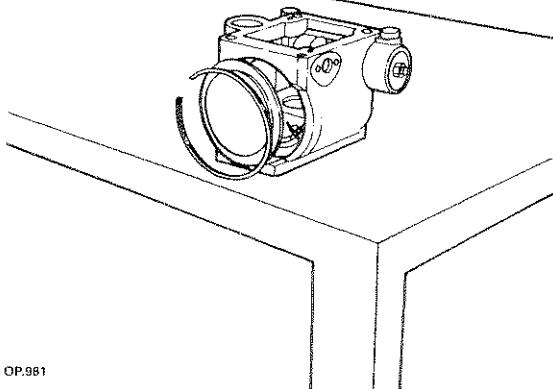
OP.977



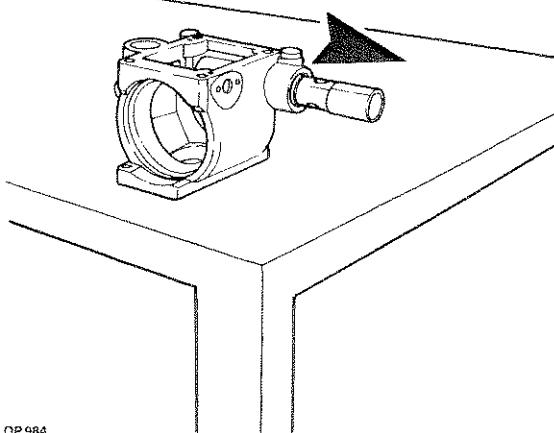
OP.980

8 - Remove the spacer and the centring of the feed pump.

11 - Remove the plate and the whole rotating block.

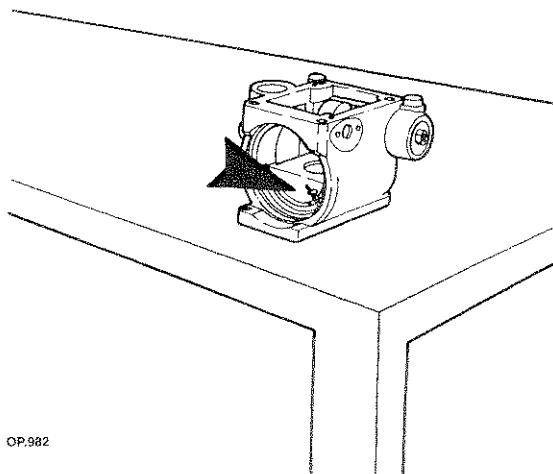


OP.981



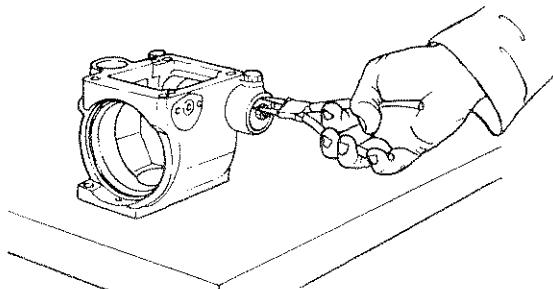
OP.984

12 - Remove the snap ring with the help of a screwdriver with flat tip and remove the cover.



OP.982

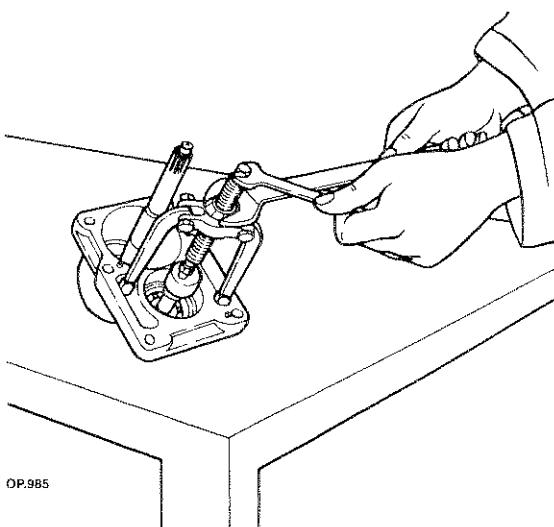
13 - Remove the oscillator and pay attention not to damage the housing phase wires, remove the two semishells and relative centring pins.



OP.983

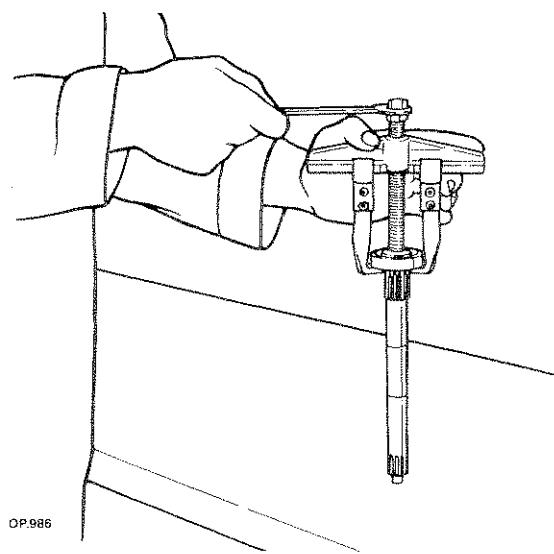
14 - Remove the two seal rings and withdraw the two servocontrol adjustment units.

15 - Withdraw the servocontrol cylinder.



OP.985

16 - Remove the bearing using the extractor with jaws AT 37981216 and the adapter AT 37981222 - AT 37981222.



OP.986

17 - Remove the bearing with the universal puller AT 37981257.

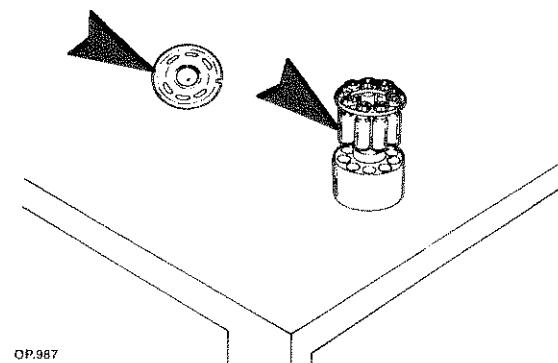


Note - Warning

It is important to check thoroughly the different parts of the pump and of the engine, once the unit has been totally disassembled. Neat and orderly components guarantee a good efficiency and long life of the transmission. Worn out parts cause inefficient functioning and reduce power due to oil leaks inside the pump with consequent overheating of the oil and waste of fuel during running of machine.

CHECKING THE DISTRIBUTOR PLATE - THE PISTON CYLINDER BLOCK AND PADS

See drawing on page 58-59 no. 12-23-13-17.



OP.987

The distributor plate is in stainless steel; scratches on the surfaces observed in the space between the two distribution slots are normally caused by solid and abrasive particles contained in the hydraulic fluid. Parts with badly scratched surfaces (you can feel with fingers) do not ensure effective tightness. These parts must either be lapped or replaced, depending on how badly they are worn out.

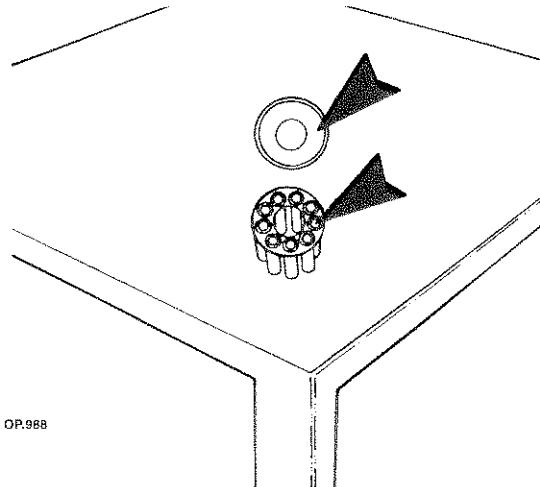
The surface of the cylinder block that rotates in contact with the distributor place is submitted to the same considerations explained in the previous chapter. Moreover, the piston sliding bushings and backlash must also be carefully checked.

In case these parts are badly scratched or that they present excessive play, the whole block must be replaced.

Each piston ends with a spherical articulation that houses the sliding pad on the oscillator. Slid and abrasive particles cause scratching of the pad and the piston. Should the latter be badly scratched then they must be replaced, if they are not then they simply need to be ground.

CHECKING THE OSCILLATING SEMI-SPHERE PAD PRESSING DISC AND THE INCLINED PLATE

See drawing page 58 - 59 no. 18 - 21 - 36 - 22.



OP.988

Altering of the original colour of the plate pressing disc indicates that the unit has been working at extremely high temperatures and this may cause deformation and excessive wear of the rotating unit and of the oscillation semi-sphere.

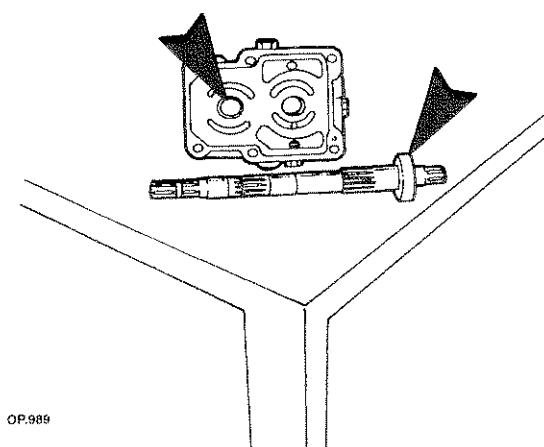


The disc must however be replaced when on the area in contact with the pistons and in contact with the semi-sphere are felt with fingers ring-like scratches due to particles and wear.

The disc must also be replaced in case you feel, with finger nail, wear marks, such as scoring or seizing due to particles contained in oil, overheating or faulty hydrostatic sustentation of the pistons. Check that the sliding part of the oscillator on the roller housings is not damaged.

CHECKING DISTRIBUTOR BUSHING AND BEARING SHAFT

See drawing on page 58 - 59 no. 11 - 1 - 28 - 4.



Check that the bushing inside the distributor where the shafts rotate does not present wear marks on the anti-friction material, scoring or excessive play with the shaft.

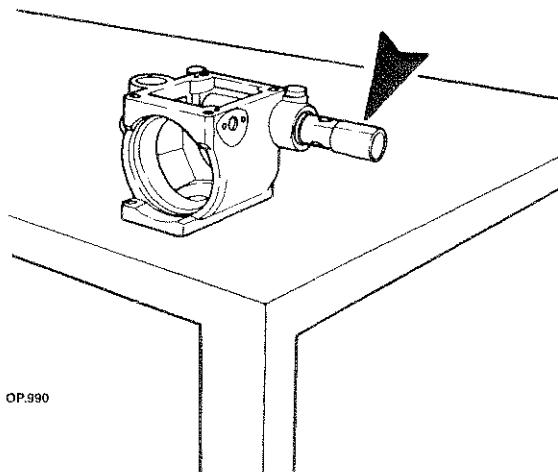
Check that on the part of the shaft that slides inside the bushing there are no wear marks or scoring.

Check that the groove on the shaft that transmits the drive to the cylinder block is not to worn out.

Check that the bearing rollers and relative tracks do not present obvious wear signs or scoring.

CHECKING THE SERVO-CONTROL

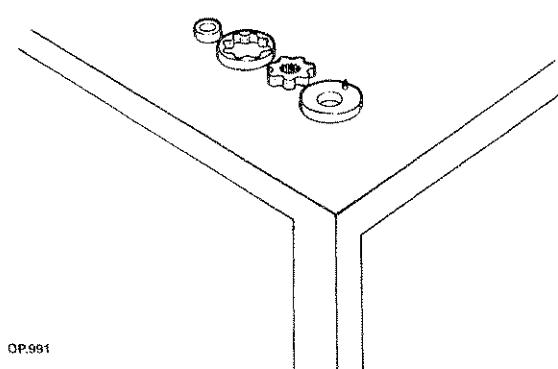
See drawing page 59.



Make sure that the piston does not present scratching that can be felt with finger nail; check that the seal areas of the servo-control body are not damaged and that the play between the servo-control and the piston is very limited but must still allow it to slide smoothly.

CHECKING THE BOOSTER PUMP

See drawing on page 58 - 59 no. 7-8-9

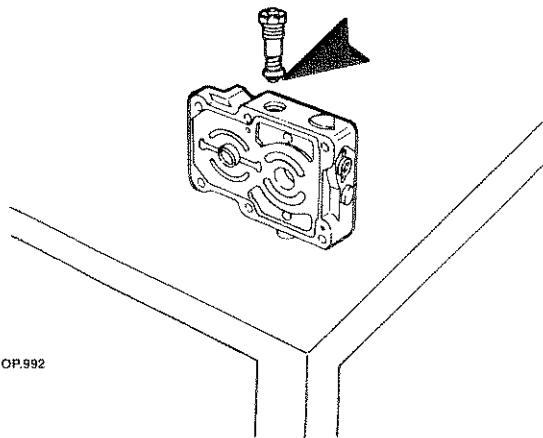


The surfaces of the booster pump rotors must not be scratched; they must have a slight radial play (that is when one is inside the other) and minimum play between outer rotor and the body. Check with finger nail that there are no bad wear marks on the centring disc 7 and the sliding surface of the distributor.



CHECKING MAXIMUM PRESSURE VALVE

See drawing on page 59.



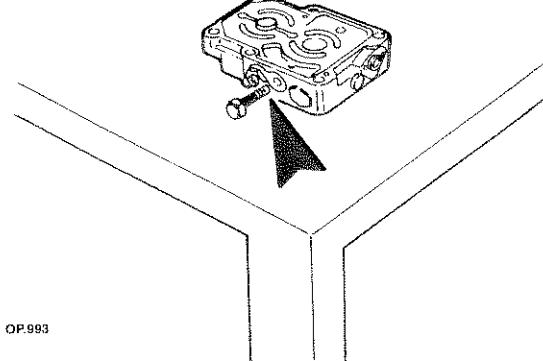
The maximum pressure valve have a fixed factory setting that cannot be modified.

The standard value is 300 bar.

Make sure that there are no dents nor scratches on the inner seat of the distributor that may cause the blow-by inside the valve seat. Replace the distributor in case the housing of the seal is damaged.

CHECKING THE FEED VALVE

See drawing page 58 - 59 no. 60-30-31-32-33.



Make sure that the cylindrical part of the shutter is not worn out and that it is not dented nor scratched and that the spring and other parts are not damaged nor deformed. If they are, then the whole valve should be replaced.

Check that the seal housing of the shutter on the distributor is not dented nor deformed. If the seat is worn out replace the distributor.



WARNING - DANGER

Perform operations by strictly observing accident prevention regulations.

- Use tools to align holes and slots not hands.

ASSEMBLY

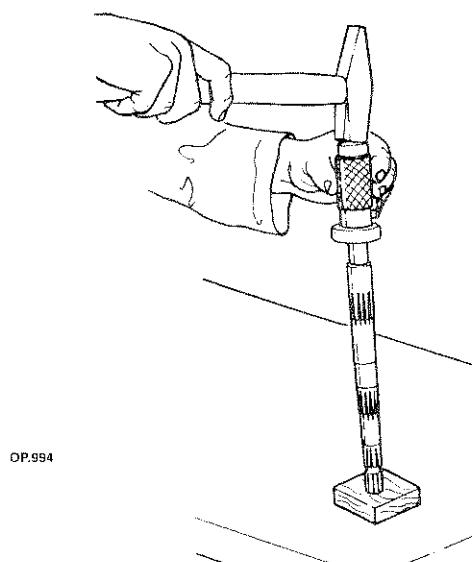
Proceed to the assembly, bearing in mind the following instructions:

a - proceed inversely as to the disassembly operations.

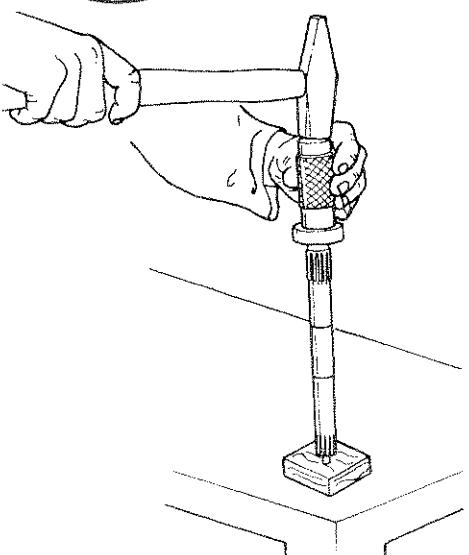
b - observe the pictures page 58 - 59 for location of the different components

c - observe driving torques listed at page 4

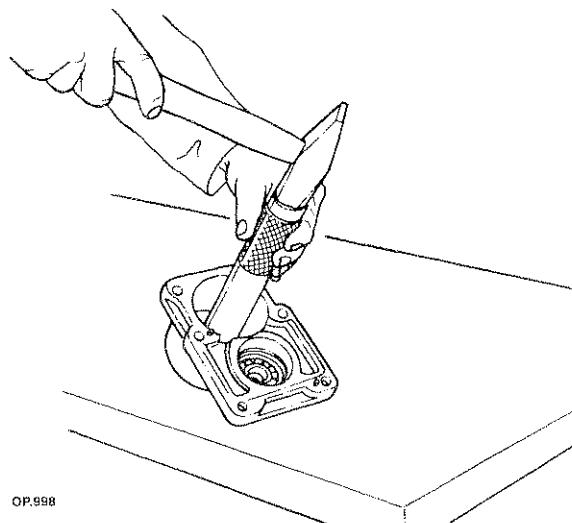
d - bear in mind the following:



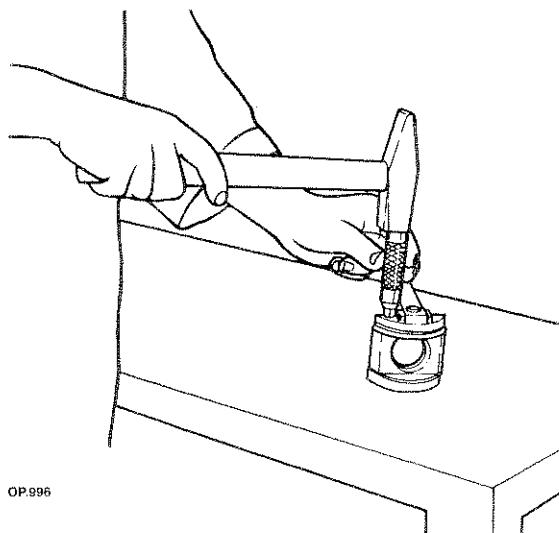
- 1 - Mount the bearing on the pump shaft with driver AT 37981319.



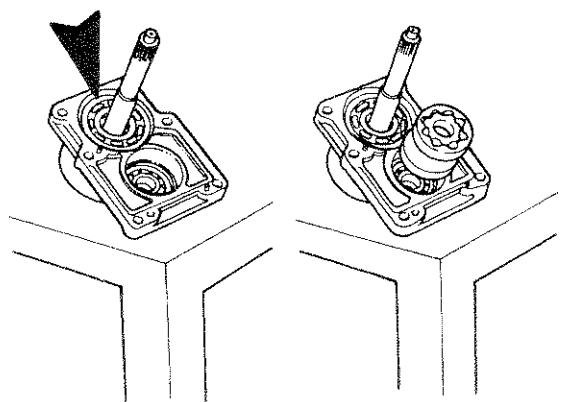
2 - Mount the bearing on the engine shaft with driver AT 37981319.



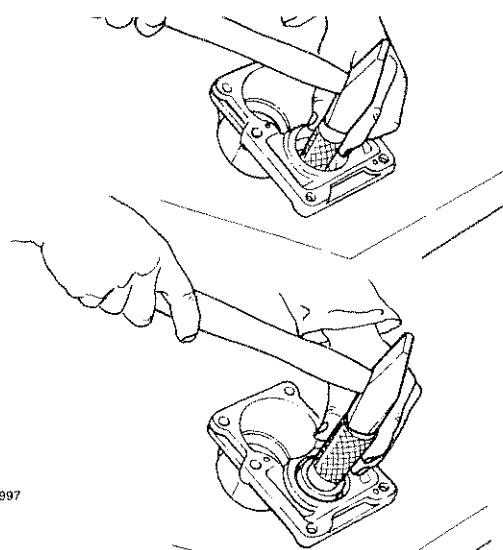
5 - Mount the engine shaft along with bushing using driver AT 37981323.



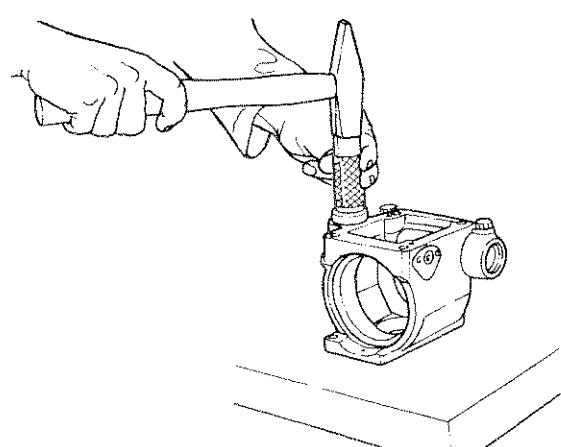
3 - Mount the two slide bushings of the oscillator with the help of driver AT 37981320.



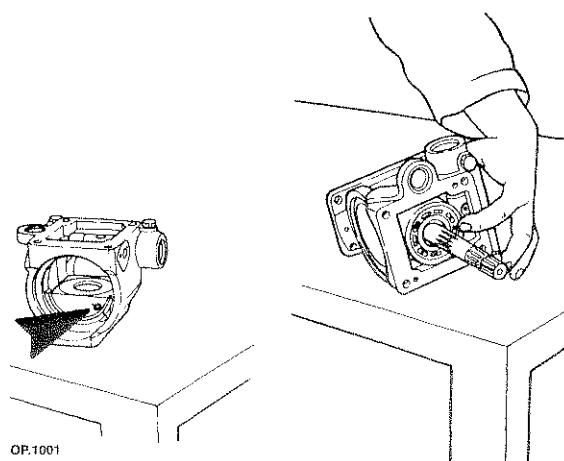
6 - Insert the rotating unit of the engine and the feed pump unit.



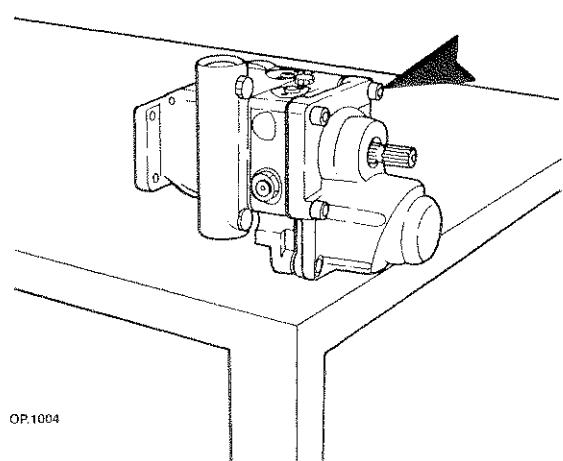
4 - Mount the seal ring with driver AT 37981321 and the bearing with driver at 37981322.



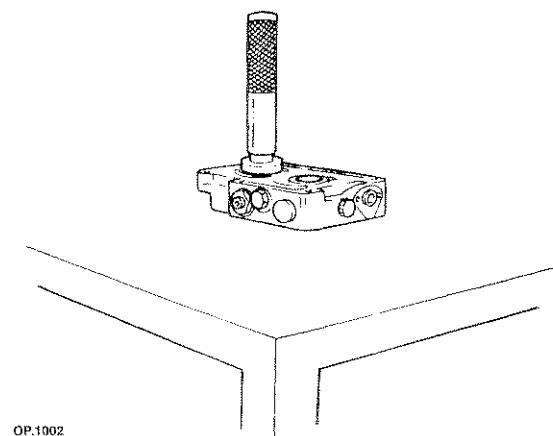
7 - Mount the seal ring with driver AT 37981324.



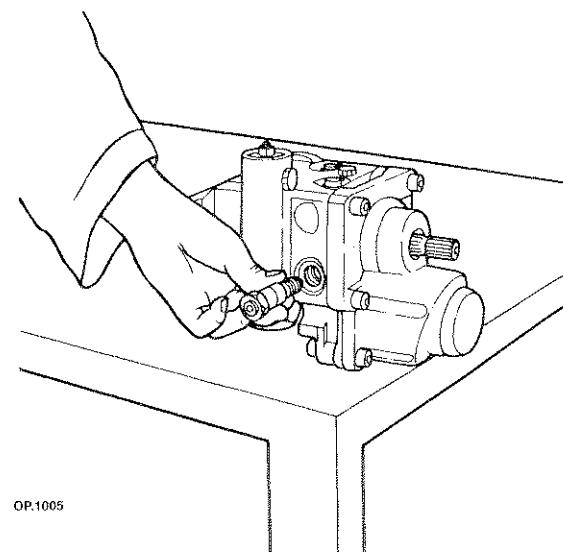
8 - Mount the whole oscillating unit, oil all oscillating surfaces thoroughly and insert the shaft and the whole rotating unit.



12 - Put the three units together and make all surfaces meet then fasten together by means of screws.

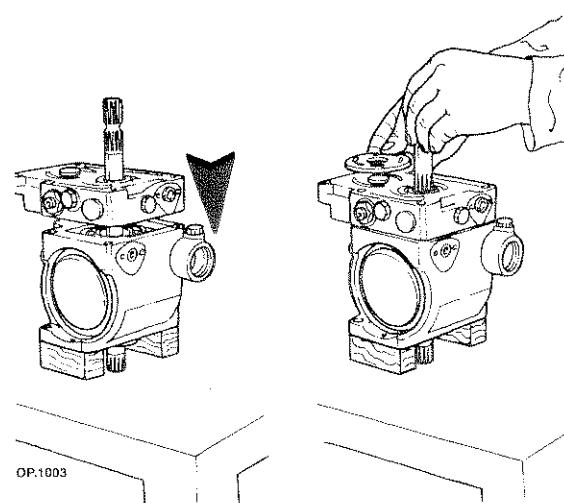


9 - Mount the bushing on the pump side as well as on the engine side with driver AT 37981325.



13 - Mount the maximum pressure valve.

14 - Insert a splined sleeve at the end of the pump shaft and test if it rotates freely.



10 - Mount the O-rings on the intermediate distributor and insert it on the pump body.

11 - Mount and centre on both sides the pump and engine plates.



WARNING - DANGER



Perform operations by strictly observing accident prevention regulations.

- Do not use gasoline, diesel oil or other flammable liquids to degrease or clean parts but use commercial non-toxic solvents instead.



Hydrostatic unit

Troubleshooting

Trouble	Possible cause	Solution
With the control joystick (on the pedal) on zero position and the slow gear engaged the vehicle moves anyway.	<ul style="list-style-type: none"> - Remnant pressure in the control joystick. - Pump zero-setting not accurate. 	<ul style="list-style-type: none"> - Disconnect the joystick that controls the hydrostatic unit and check if movement persists. Repair or replace the joystick. - Set pump zero-setting again.
The oil in the hydrostatic system tends to overheat during normal running of the vehicle.	<ul style="list-style-type: none"> - Low oil level in tank. - Heat exchanger clogged or faulty. - Clogged suction filter or difficulty in the suction. - Excessive work load. 	<ul style="list-style-type: none"> - Check the oil level and top up if necessary. - Clean the radiant surface of the heat exchanger and make sure that fan operates properly. - Check the suction filter and replace it if necessary. - Reduce work load.
<ul style="list-style-type: none"> - The vehicle doesn't move regularly. - The vehicle jerks. - Poor hauling force of the vehicle. 	<ul style="list-style-type: none"> - Low oil level in tank. - Clogged suction filter or difficulty in the suction. - Low boosting pressure. - Clogged maximum level valve. 	<ul style="list-style-type: none"> - Check oil level and top up if necessary. - Check the suction filter and replace it if necessary. - Check boosting pressure. - Check and clean valve.
<ul style="list-style-type: none"> - The vehicle moves regularly forward and back only. - The vehicle doesn't move at all even when servo-control is actuated. 	<ul style="list-style-type: none"> - Faulty servo-control. - Clogged maximum valve on one or both sides. - Low oil level in the tank. - Clogged suction filter or difficulty in the suction. - High oil temperature. - Low boosting pressure. - Wear of components. 	<ul style="list-style-type: none"> - Exchange tubes from servo-control and check if trouble persists in the same direction. If otherwise, replace or repair the servo-control. - Check oil level in tank and top up if necessary. - Check the suction filter and replace it if necessary. - Check boosting pressure. - Check and clean valve. - Check performance of unit and if necessary replace and overhaul the whole unit.

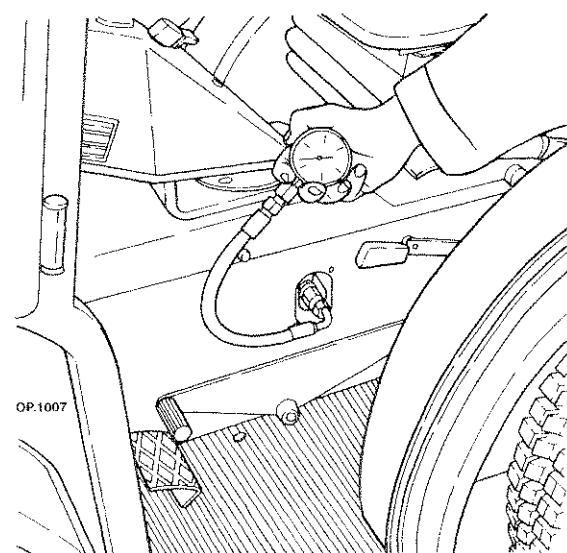
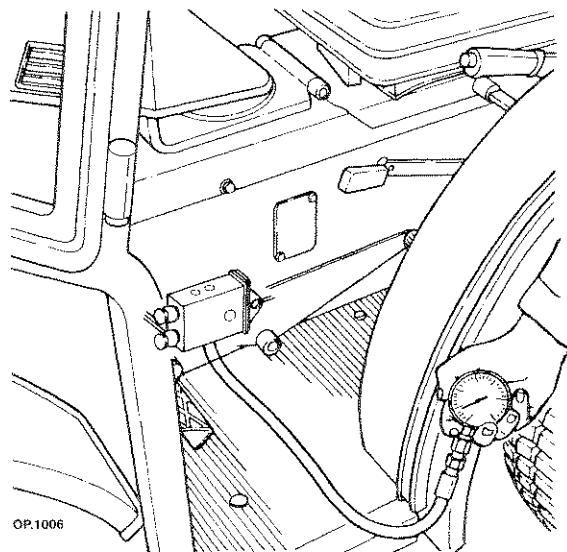


CHECKING PRESSURES OF HYDROSTATIC UNIT

Check boosting pressure.

To check the boosting pressure of the pump, proceed as follows:

- 1 - Switch off the diesel engine and install a pressure gauge on the boosting pressure coupling AT 37981190 and adapter AT 37981259.

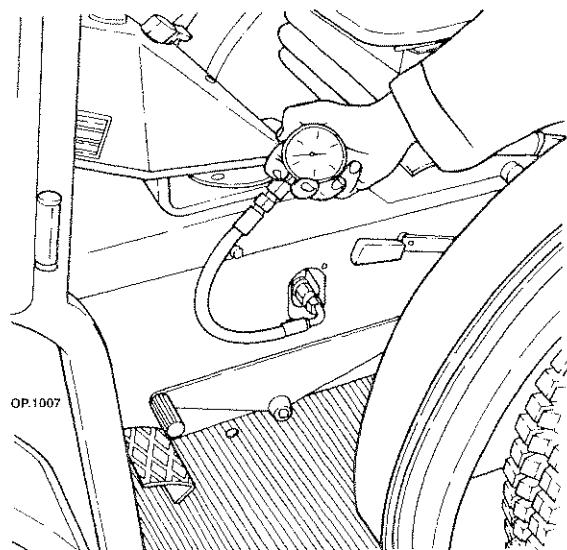


- 2 - Start diesel engine and let it run at a speed of 2500 rpm with pump and zero engine power. With oil temperature at 50°, check that feed pressure is at 25 bar about.

Checking the maximum level valve.

To check the pressure of the maximum level valve, proceed as follows:

- 1 - Switch off the diesel engine and install a pressure gauge on the boosting pressure couplings AT 37981190 and adapter AT 37981259 available on the plugs of the maximum level valve.



- 2 - Start diesel engine and let it run at a speed of 2500 rpm with pump and zero engine power with oil temperature at 50°.

- 3 - Brake suddenly but make sure that there are no obstacles nor people in front or behind vehicle.

- 4 - Engage the high speed gear and actuate the pump until you hear the release of the maximum level valves (the typical noise of this operation clearly indicates that the valves have opened).

Maximum peak pressure 300 bar.

- 5 - Testing should be done fairly quickly to prevent overheating the oil.

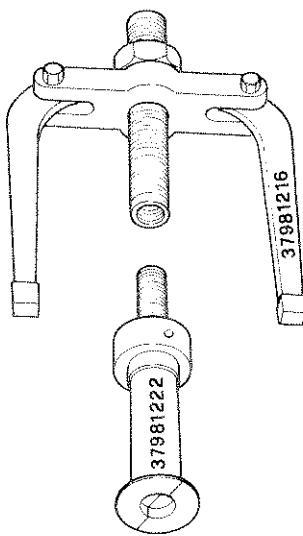


WARNING - DANGER

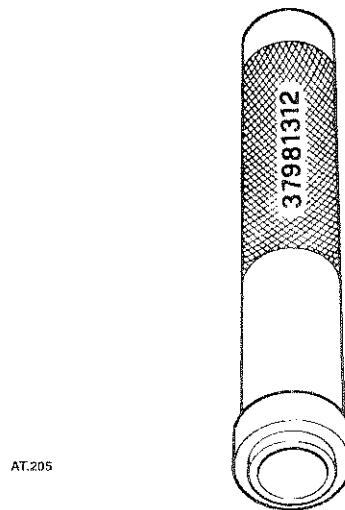


Perform operations by strictly observing accident prevention regulations.

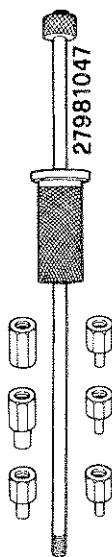
- Watch out for projection of fluids at high pressure.



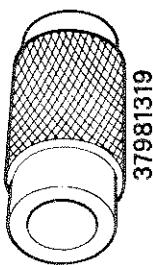
1 - Combined puller to extract bearings.



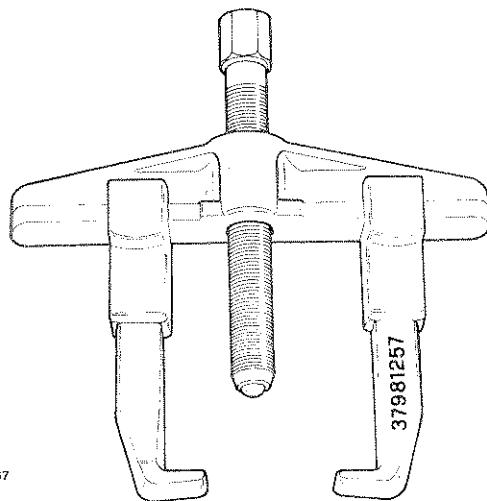
4 - Driver for mounting and removing the roller casing of the central plate of the Superpark.



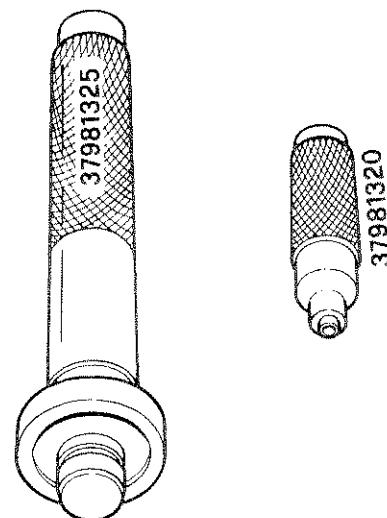
2 - Puller and adapter



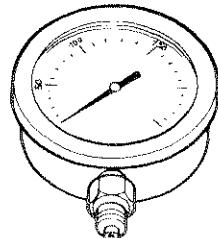
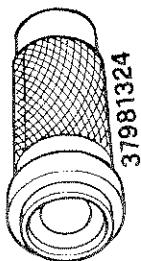
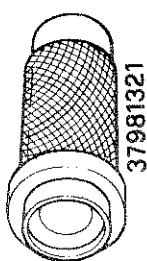
5 - Driver for assembly of bearings of hydrostatic unit.



3 - Universal puller



6 - Driver for assembly of bushings on the hydrostatic unit.



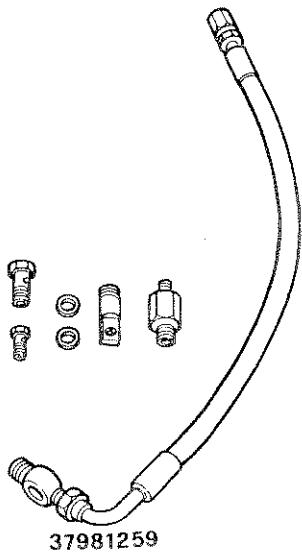
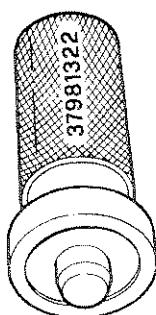
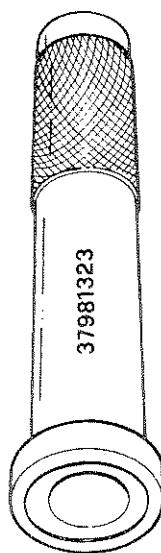
AT.208

7 - Drivers for the assembly of seal packings on the hydrostatic unit.

AT.211

10 - Pressure gauge from 0-600 bar. Pressure measurer.

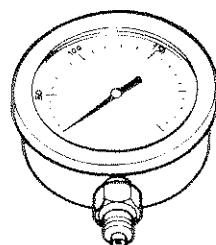
AT.209



AT.061

8 - Drivers for the assembly of the bearings on the hydrostatic unit.

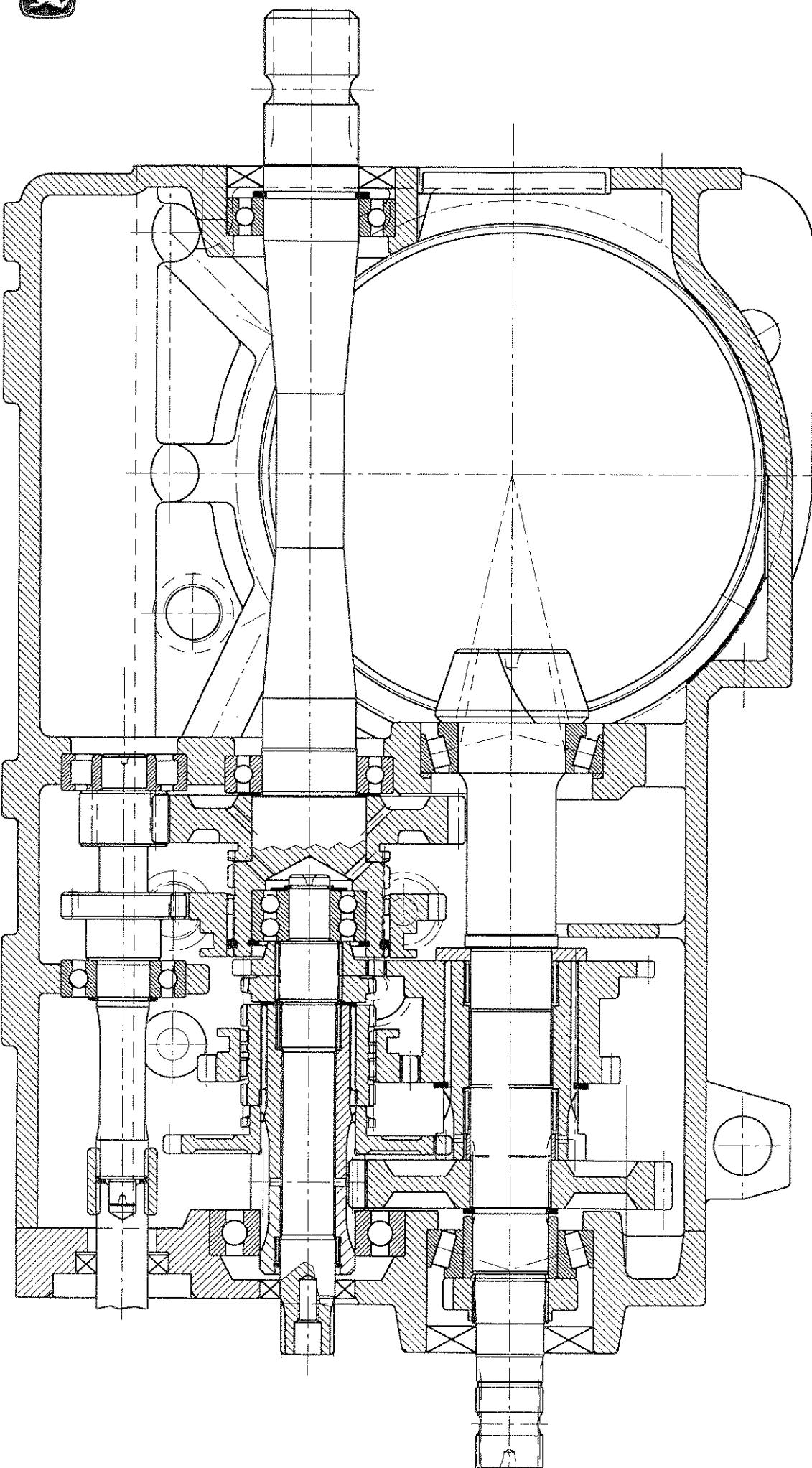
11 - Adapter for measuring pressure.



37981190

AT.210

9 - Pressure gauge from 0-100 bar pressure measurer





TIGRETRAC REAR TRANSMISSION

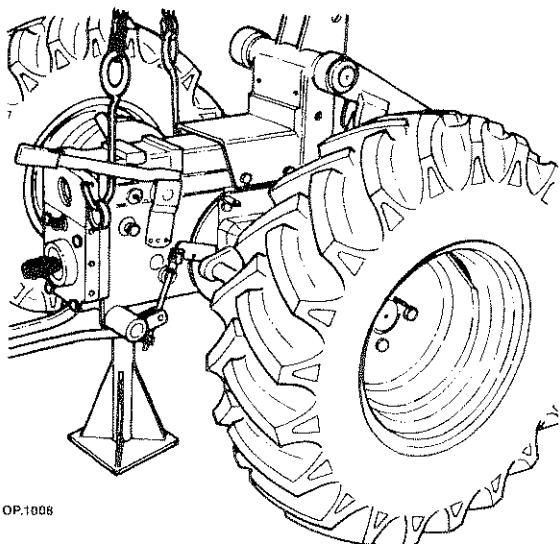
SUPERPARK REAR TRANSMISSION

Disconnecting - connecting instructions

Tigretrac - Superpark

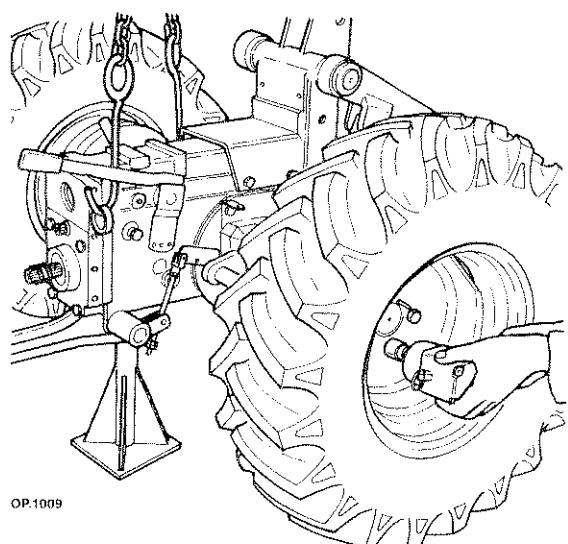
To have access to the rear transmission unit (speed change) you need to:

- 1 - Proceed similarly as to the description regarding the disconnecting and connection of the central transmission.



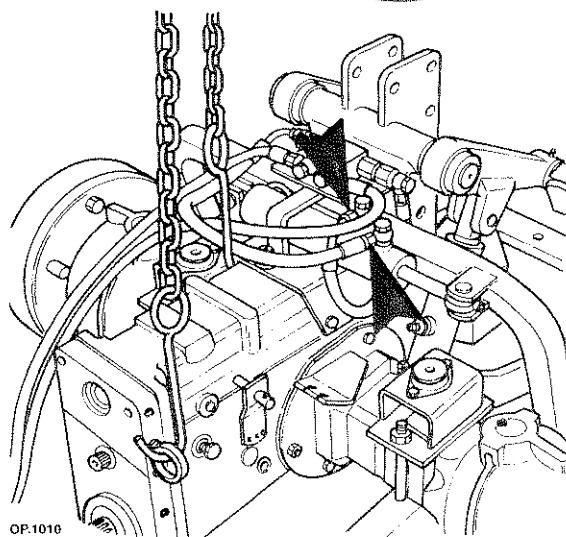
OP.1008

- 2 - Hook a rope to the hoist and fasten it to the speed change gearbox.



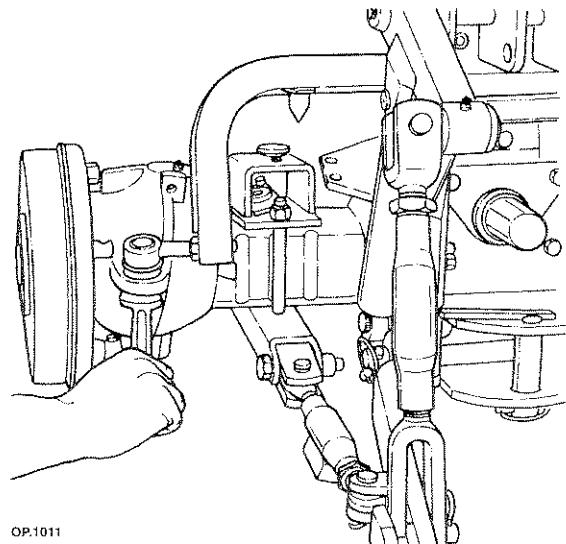
OP.1009

- 3 - Loosen the screws and remove wheels.



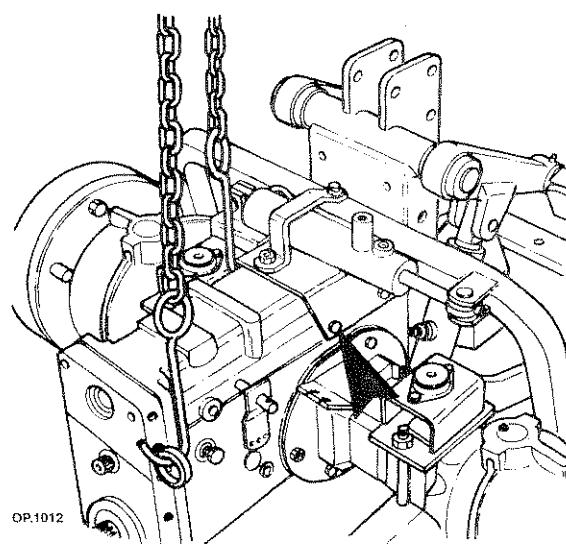
OP.1010

- 4 - Loosen the steering cylinder tube unions, loosen the screws and remove the valve and the steering valve support.



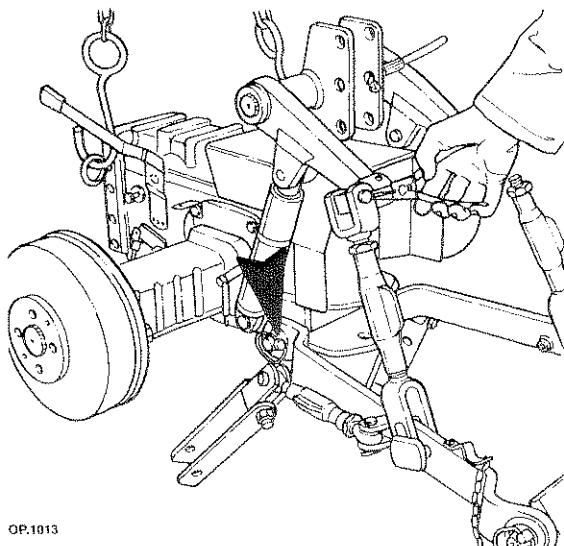
OP.1011

- 5 - Loosen the nuts on both ends of the steering coupling bar.



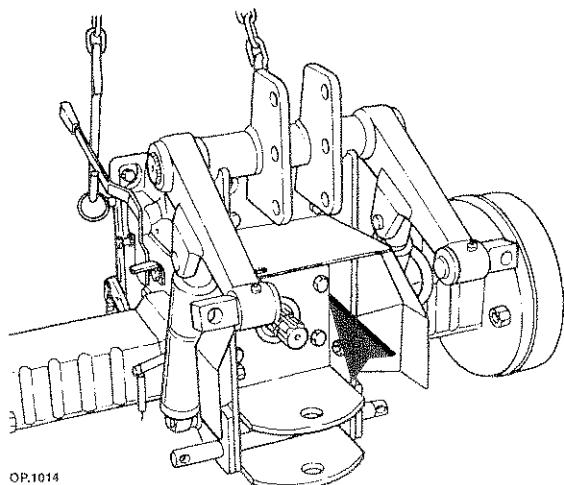
OP.1012

- 6 - Loosen the screws and remove the steering cylinder support and the coupling bar.

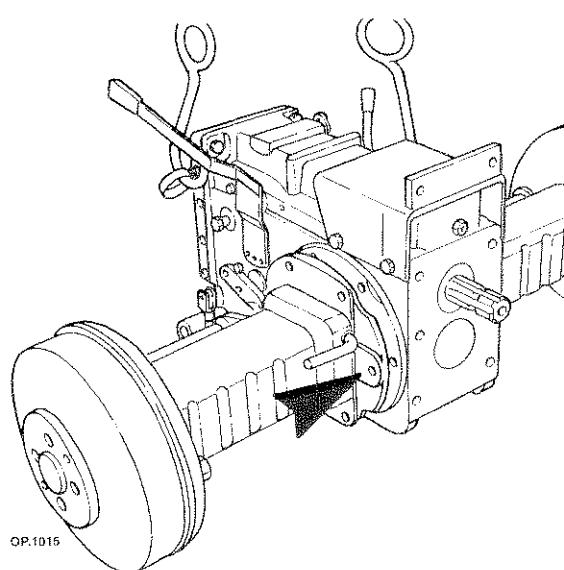


OP.1013

7 - Disconnect the tie-rods of the hoisting arms and remove the hoisting bars.



8 - Loosen the screws and remove the upper hoisting cover.



9 - Loosen the screws and remove the axles.



WARNING - DANGER

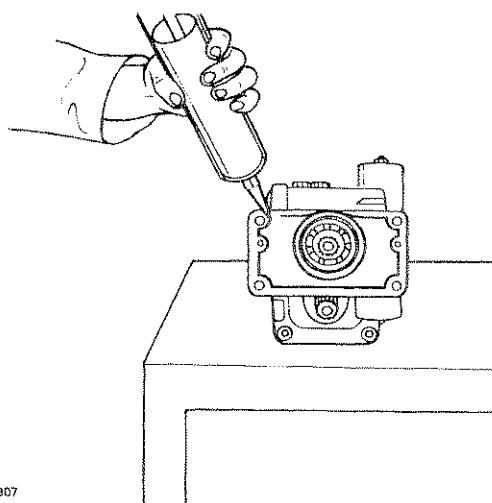
Perform operations by strictly observing accident prevention regulations.

- Use tools to align holes and slots not hands.

Connecting

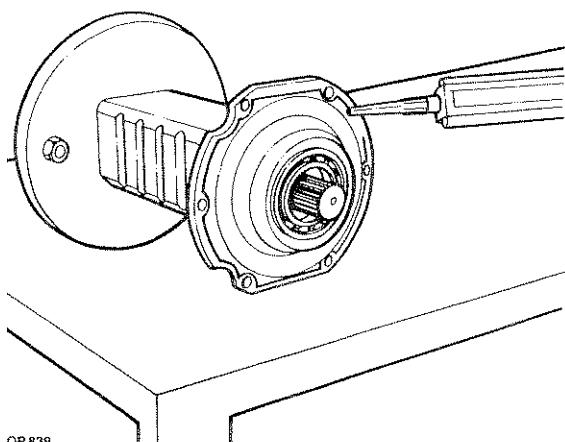
Proceed to the connection, bearing in mind the following instructions:

- a - reverse the disconnection operations.
- b - follow the pictures for location of the different components.
- c - observe the driving torque listed at page 4.
- d - before inserting the extensions or the universal joints, accurately grease the grooved contours (regarding the type of grease to use refer to page 5).
- e - tighten the anchoring dowels of the extensions or the joints with the help of Loc-tite 242 (average strong thread lock).
- f - clean carefully, especially the surfaces to be mated. Apply a 3 mm string of gasket forming compound following the path indicated in the figure:

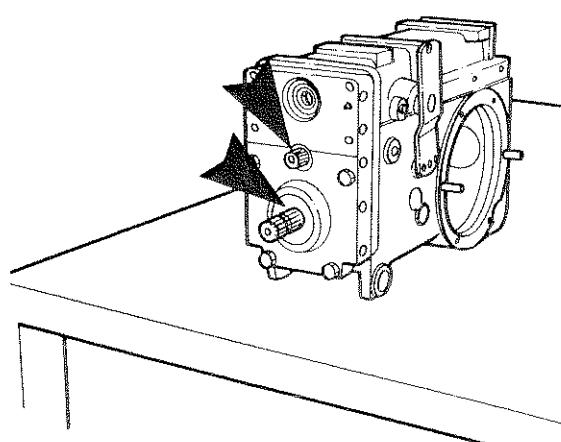


OP.907

Application diagram of gasket forming compound



OP.839



OP.1016

2 - Remove the seal ring.

g - clean all parts that will be in contact with the hydraulic oil of the circuit thoroughly (tank - tubes - heat exchanger).

h - make sure that there are no obstacles that hinder the regular suction of the pump of the hydrostatic unit (stoppers).

i - replace the oil filter cartridge.

j - do not start engine and start the hydrostatic unit before having filled the hydraulic circuit with oil (new).

m - fill the tank (speed gear) with oil, see page 5.

n - fill the hydrostatic unit with oil, see page 5, through one of the drain holes.



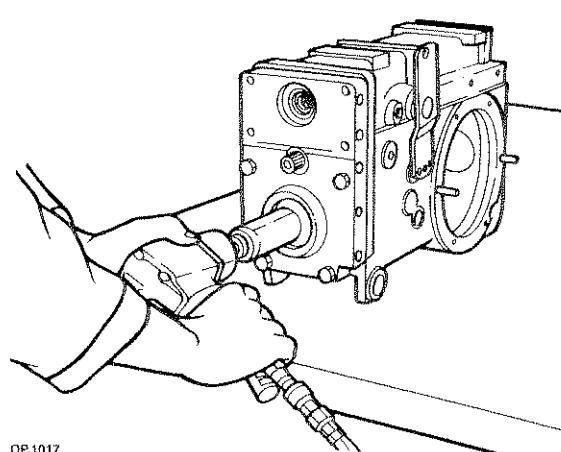
WARNING - DANGER



Perform operations by strictly observing accident prevention regulations.

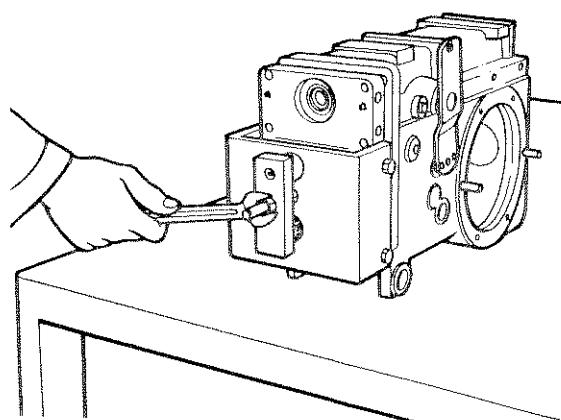
- Do not use gasoline, diesel oil or other flammable liquids to degrease or clean parts but use commercial non-toxic solvents instead.

Keep environment clean. Dispose of waste fluids, used filter cartridges, oils, lubricants and grease cleaners in the most suitable way and in compliance with regulations in force. The collection of waste oils must be performed by authorized plants.



OP.1017

3 - Loosen the ring nut of the pinion with the help of tool AT 37981280.



OP.1018

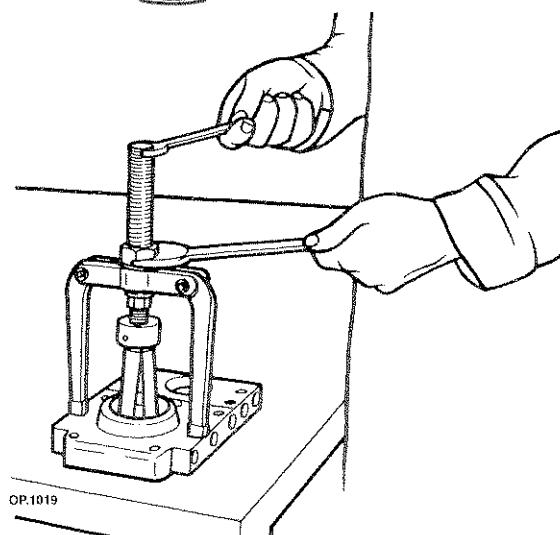
4 - Loosen the screws and using the puller AT 27981286 remove the gear change cover.

SPEED CHANGE GEAR

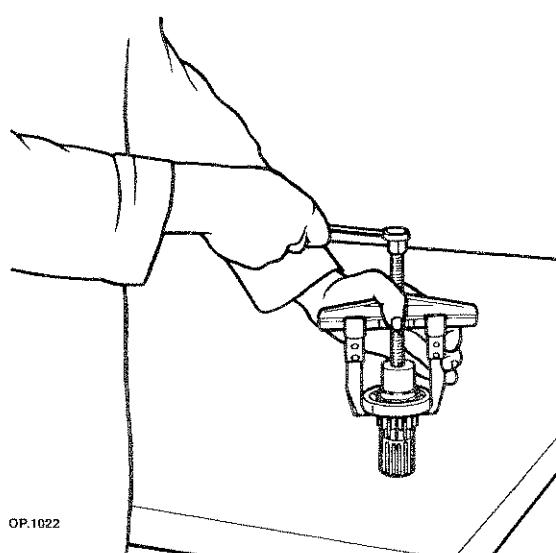
Disassembly - Assembly

To disassemble the different parts of the speed change gear, proceed as follows:

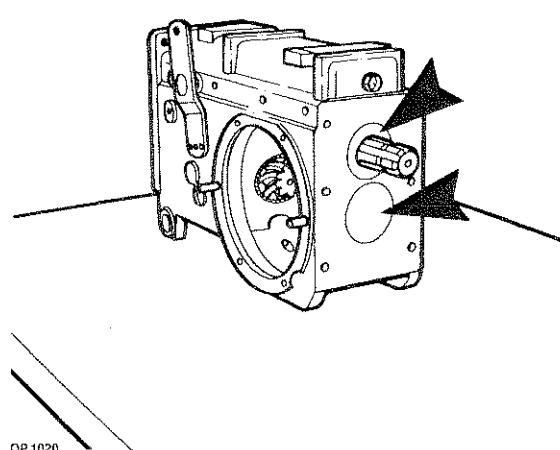
1 - clamp the transmission box on a threstle or on a work bench.



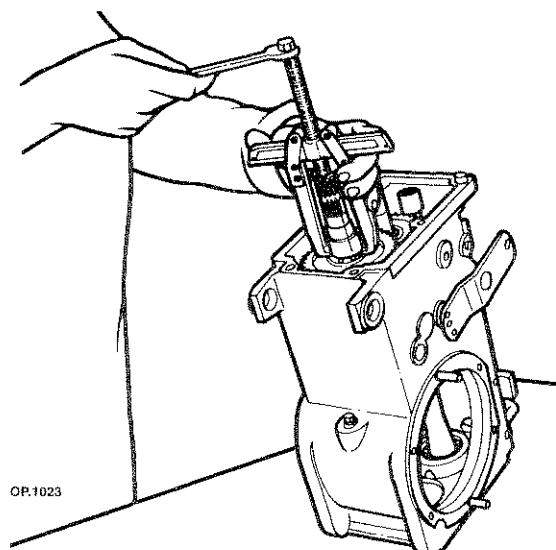
5 - Remove the seat of the rear pinion bearing with puller AT 37981216 and adapter AT 37981222.



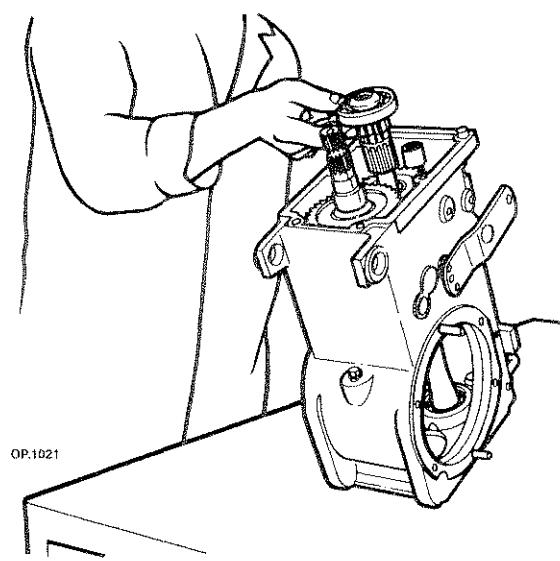
8 - Remove the bearing from the shaft with the help of adapter AT 37981257 and adapter AT 37981265.



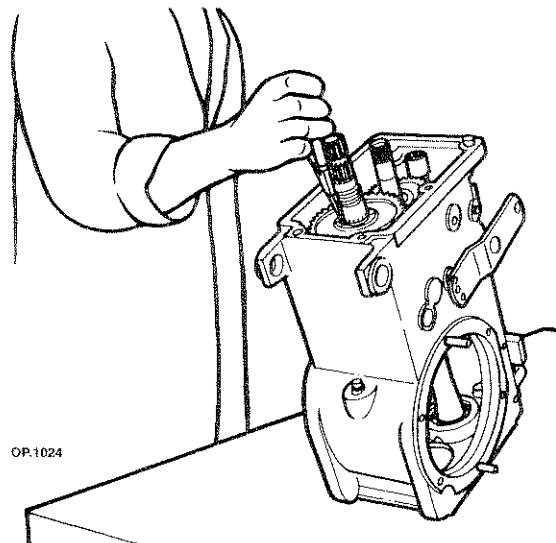
6 - Remove the seal ring of the PTO and the plug.



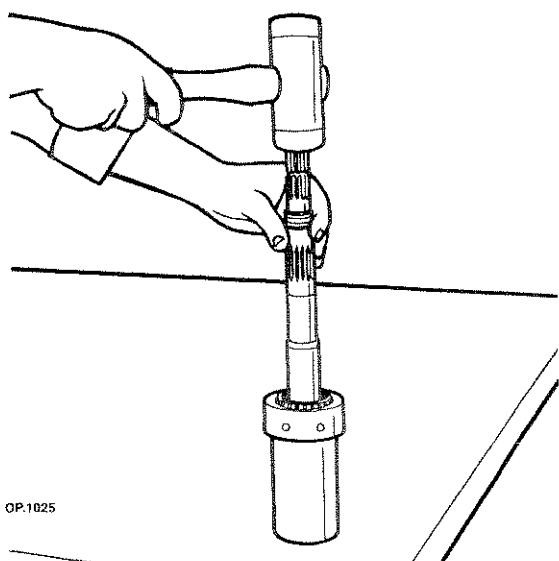
9 - Remove the reduction gear with the help of the universal puller AT 37981257.



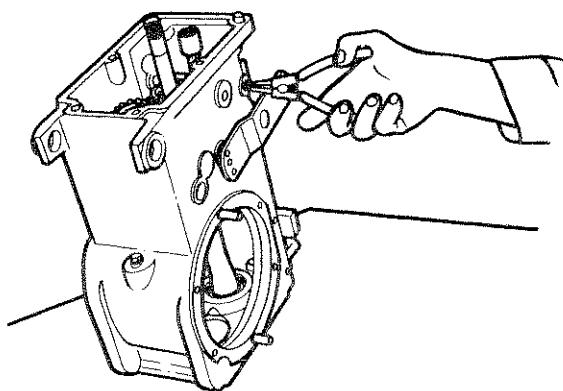
7 - Remove the drive gear shaft of the final reduction gear.



10 - Remove the spring retainer ring and remove the drive gear of the final reduction gear.

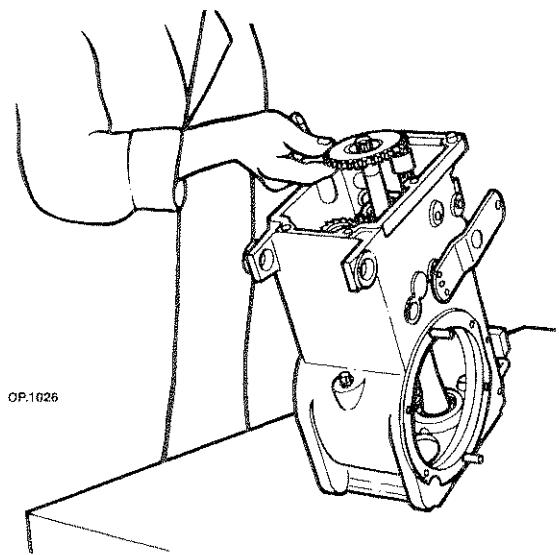


OP.1025



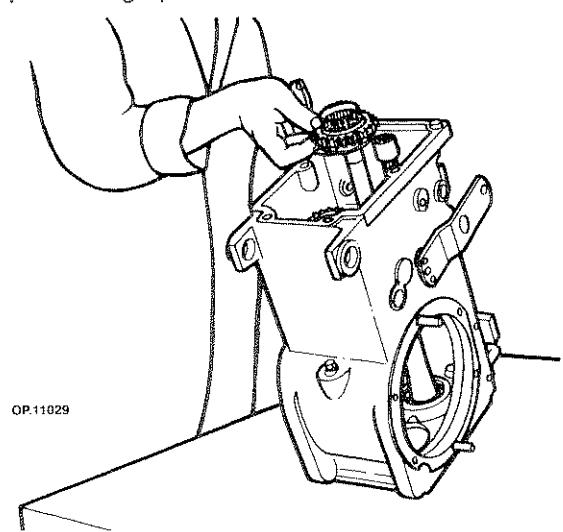
OP.1028

11 - Remove the pinion and remove the bearing with driver AT 27981287.



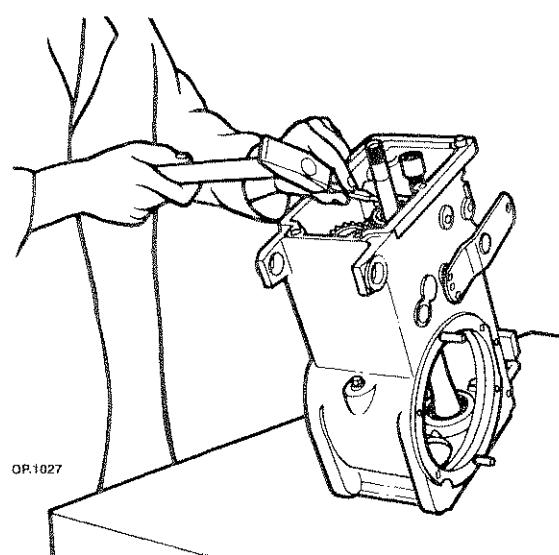
OP.1026

12 - Remove the slow gear.



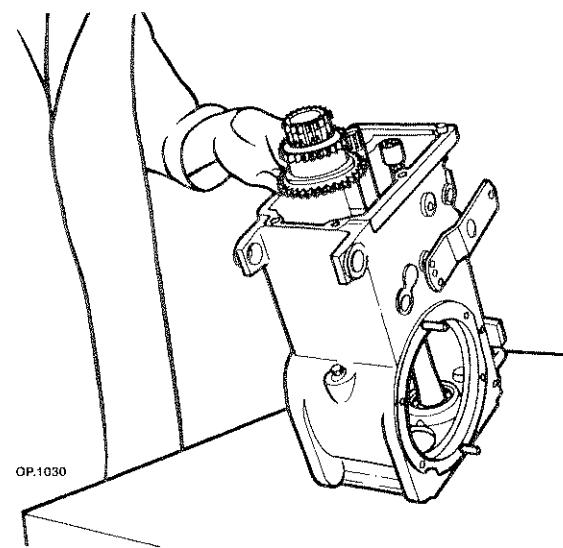
OP.11029

15 - Remove the fast-slow-regular speed engagement sleeve gear.



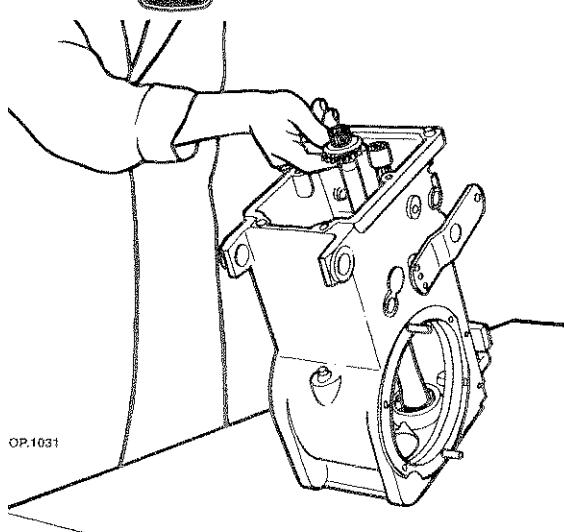
OP.1027

13 - Remove the spring pin from the speed engagement fork.

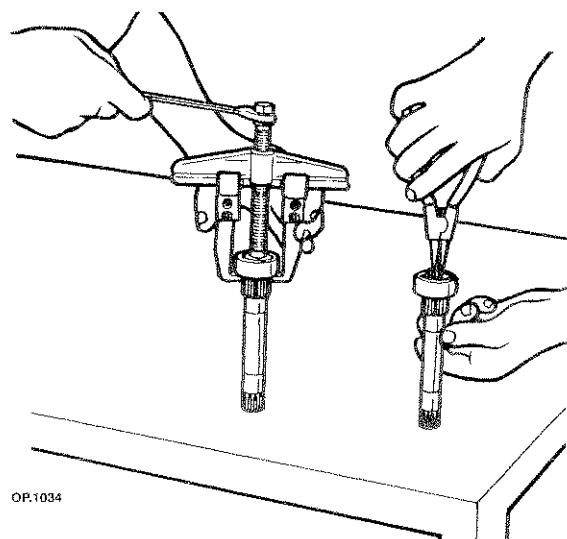


OP.1030

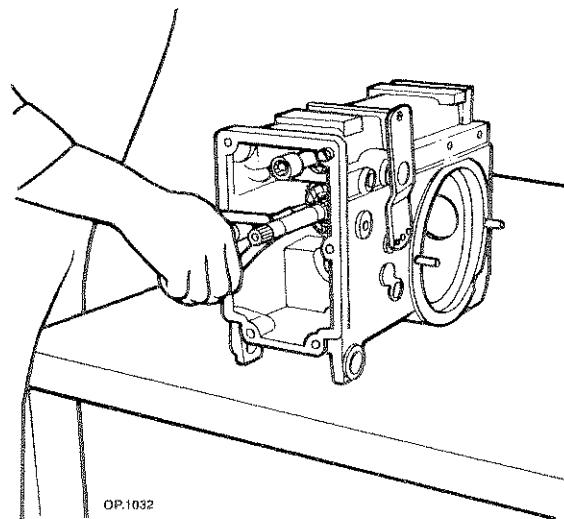
16 - Remove the L.N.V. driven unit along with the roller housings, spacers and shims.



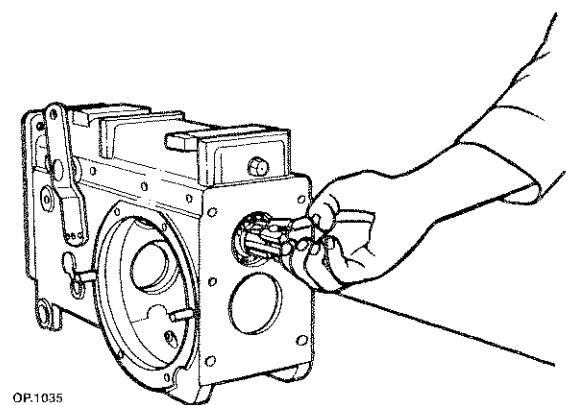
17 - Remove the roller housing on the drive shaft, the AS shims, the drive sleeve and the Fast speed drive gear.



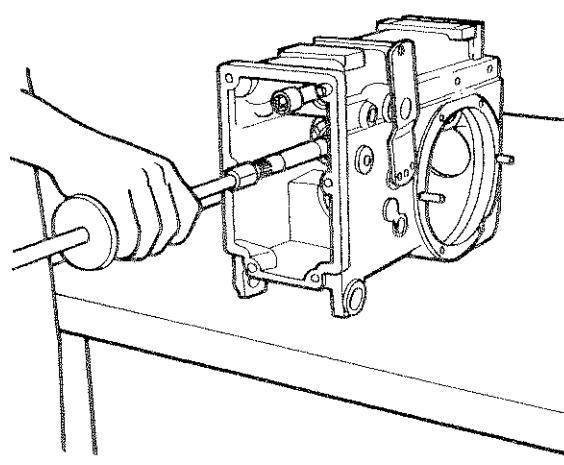
20 - Remove the retainer ring and remove the bearing using the puller AT 37981257.



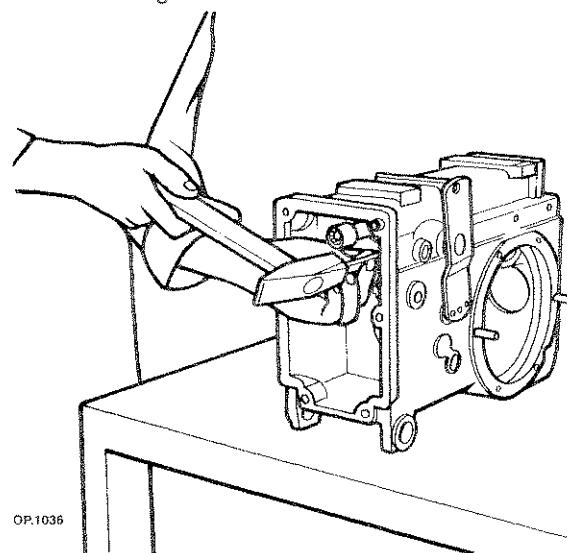
18 - Remove the retainer ring on the PTO shaft.



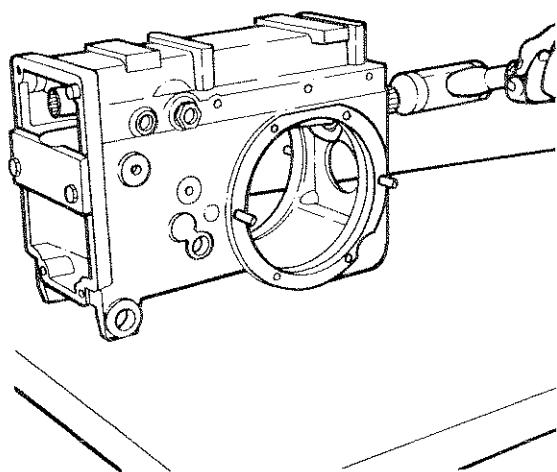
21 - Remove the retainer ring of the PTO shaft bearing.



19 - Remove the main shaft with puller AT 27981047 and the adapter.

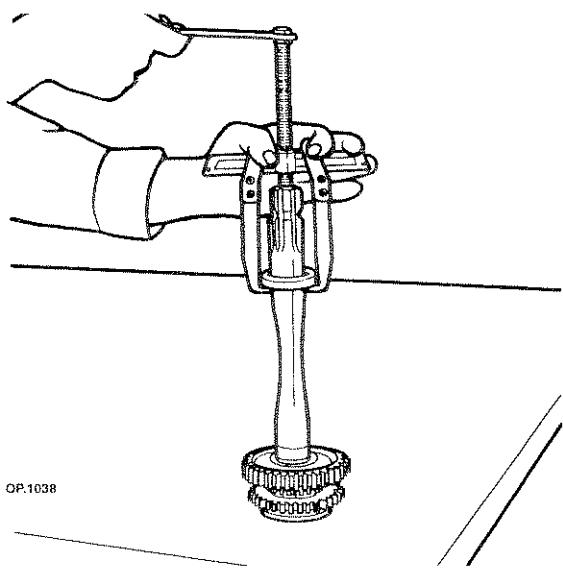


22 - Remove the spring pin and remove the PTO selection shaft.



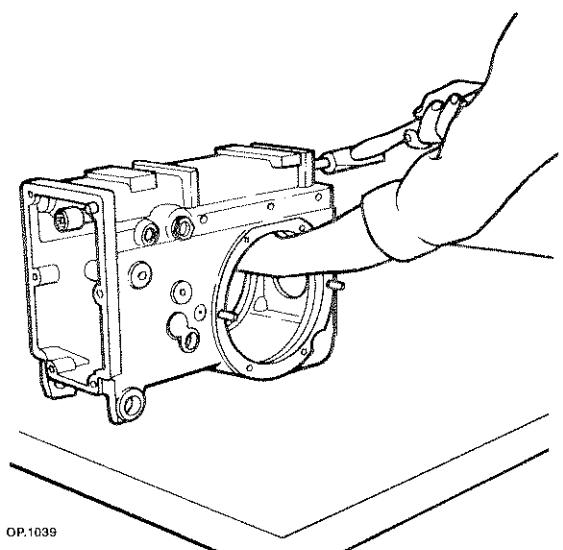
OP.1037

23 - Place the PTO gear retainer tool AT 37981302 and with the help of a mallet remove the PTO shaft.



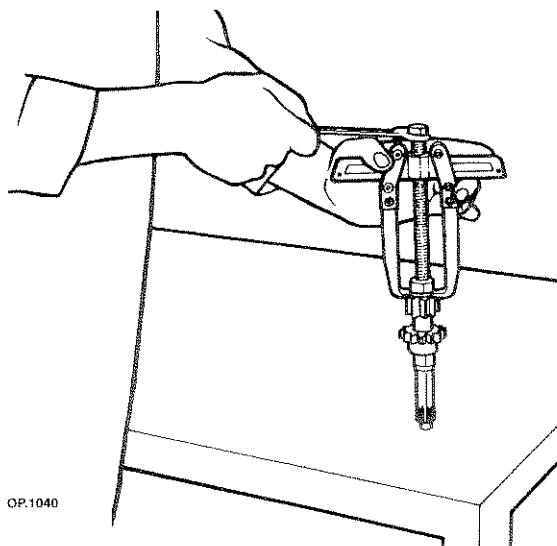
OP.1038

24 - Remove the bearing from the PTO shaft using the universal puller AT 37981257.



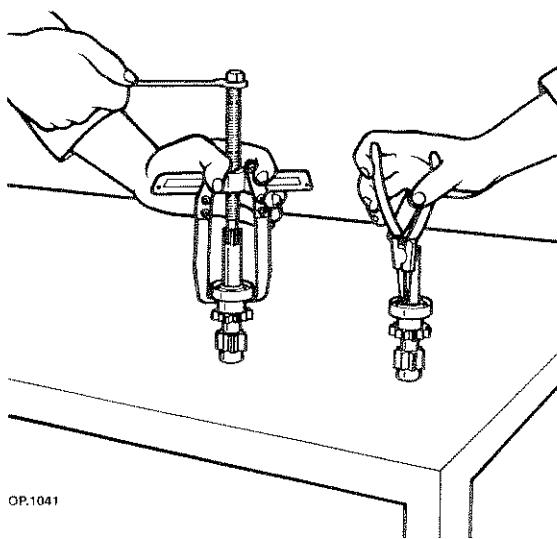
OP.1039

25 - Loosen and remove the oil filler cap of the change gear and with the help of a pin remove the PTO main shaft.



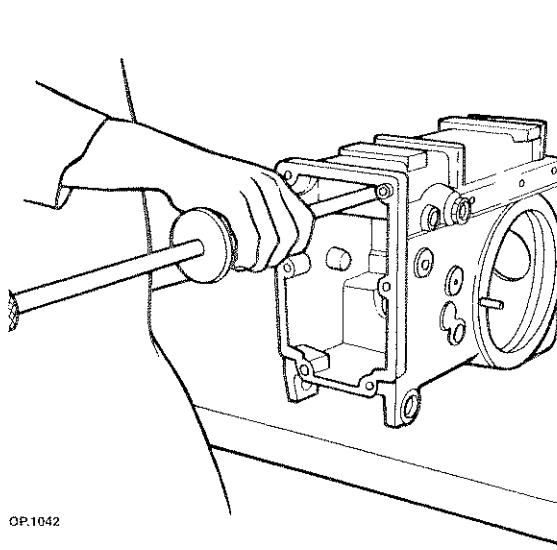
OP.1040

26 - With the help of puller AT 37981257, remove the seat of the bearing.



OP.1041

27 - Remove the retainer ring and remove the bearing with puller AT 37981257.

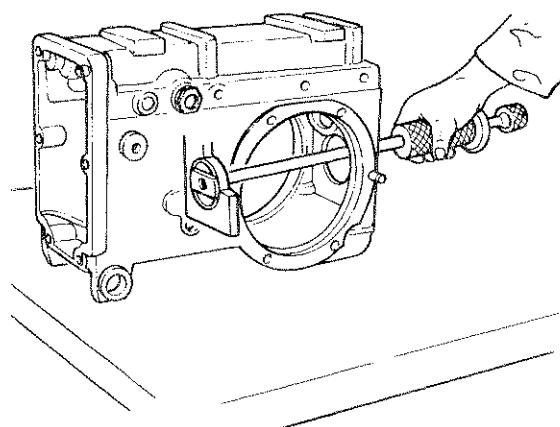


OP.1042

28 - With the help of puller AT 27981047 and adapter AT37981297, remove the bearing housing.



ASSEMBLY



OP.1043

29 - With the help of a puller AT 27981047 and adapter at 37981296, remove the housing of the pinion bearing.



WARNING - DANGER



Operations that require special care may be hazardous for the operator if not correctly performed.

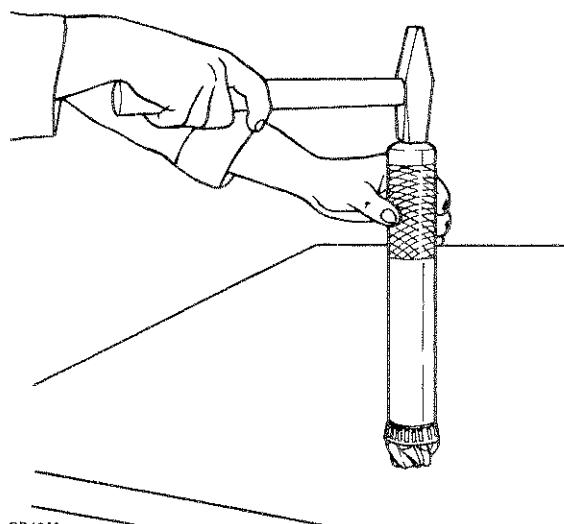
Spring pins:

When mounting the spring pins, make sure that the groove of the spring pins is oriented towards the stress point so that spring is under strain.

Spiral spring pins instead, do not require any orientation.

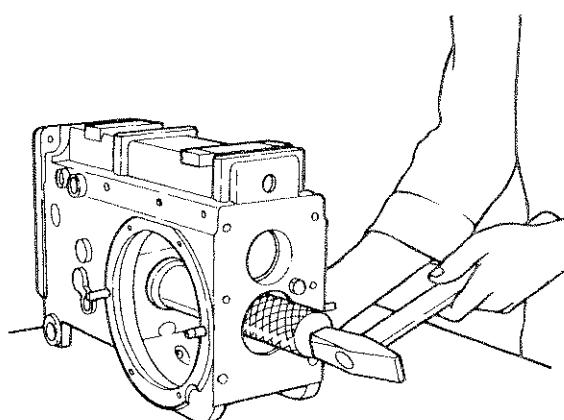
Proceed to the assembly, bearing in mind the following instructions:

- a** - proceed inversely as to the disassembly operations mentioned beforehand.
- b** - follow the pictures for location of the different components.
- c** - observe the driving torque listed at page 4.
- d** - oil and grease the O-rings and seal packings.
- e** - clean and accurately degrease the surfaces to be mated and apply a 3 mm string of gasket forming compound following the path indicated in the figure:
- f** - Follow the operations below:



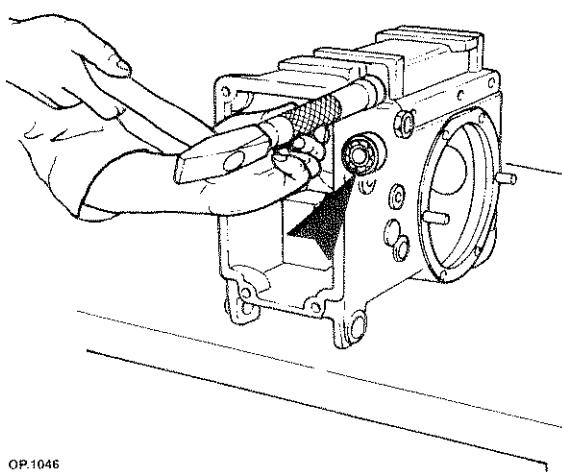
OP.1044

- 1** - Mount the bearing on the pinion shaft with driver AT 37981145.



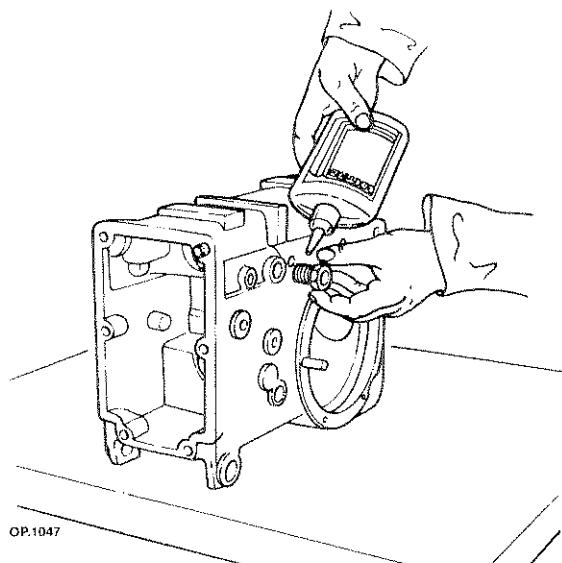
OP.1045

- 2** - Mount the bearing housing and relative shim using the driver AT 37981095.



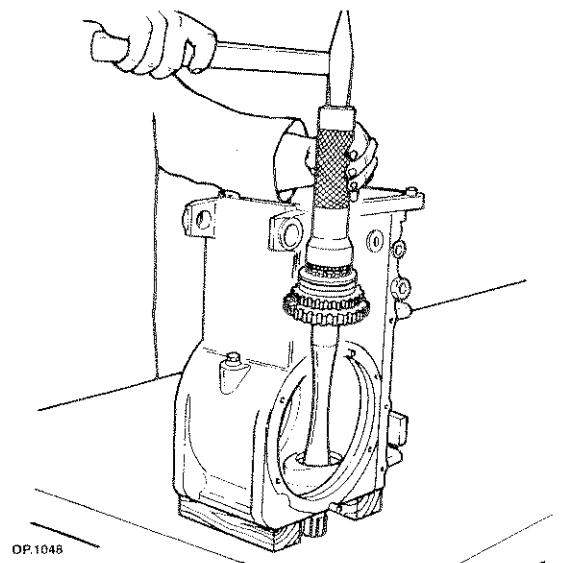
OP.1046

3 - Mount the bearings of the PTO shafts with driver AT 37981276.



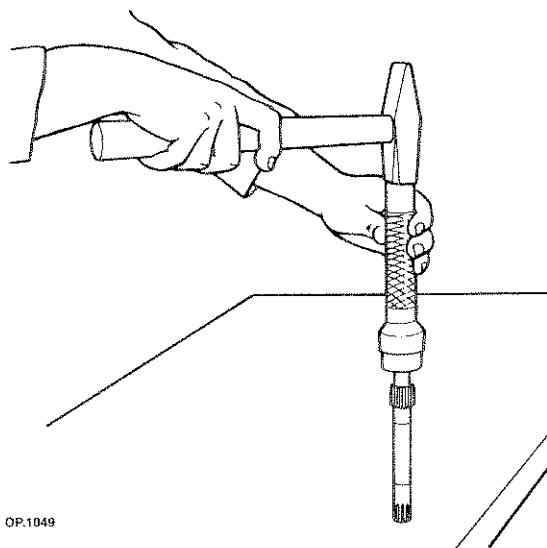
OP.1047

4 - Tighten the PTO engagement bushing with average strong Loctite.



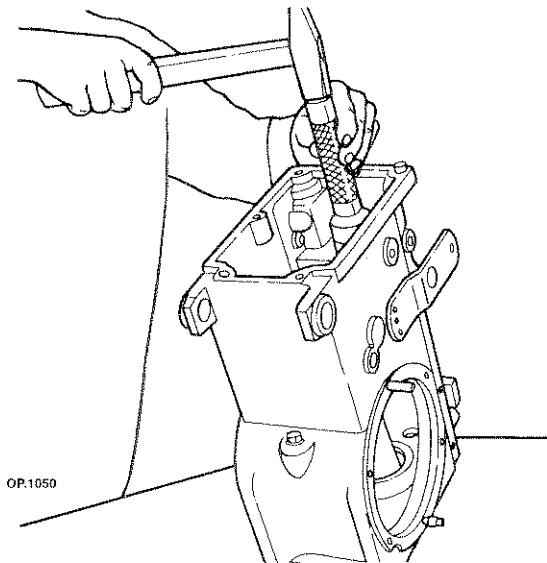
OP.1048

5 - Mount the shaft of the PTO using driver AT 37981014.



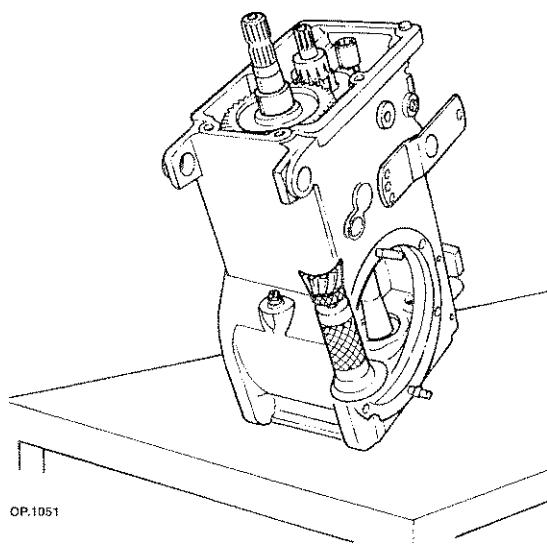
OP.1049

6 - Mount the bearing on the main shaft using driver AT 37981276.



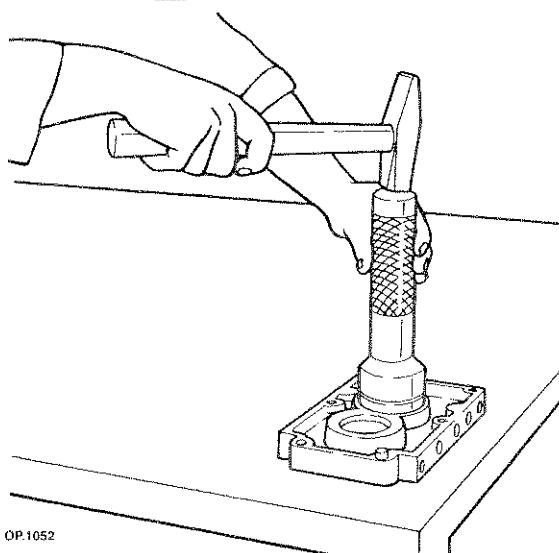
OP.1050

7 - Mount the main shaft and bearing using driver AT 37981276.

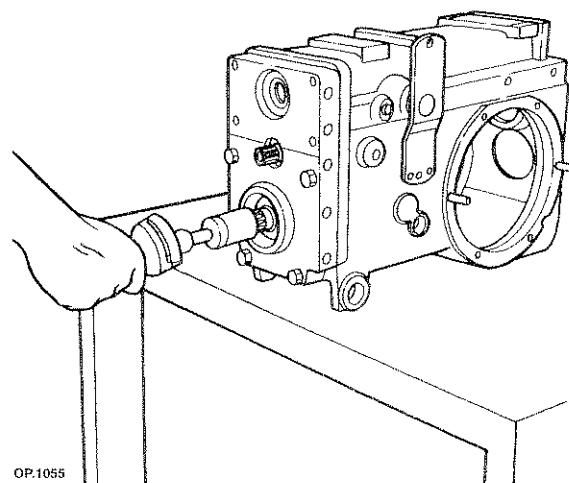


OP.1051

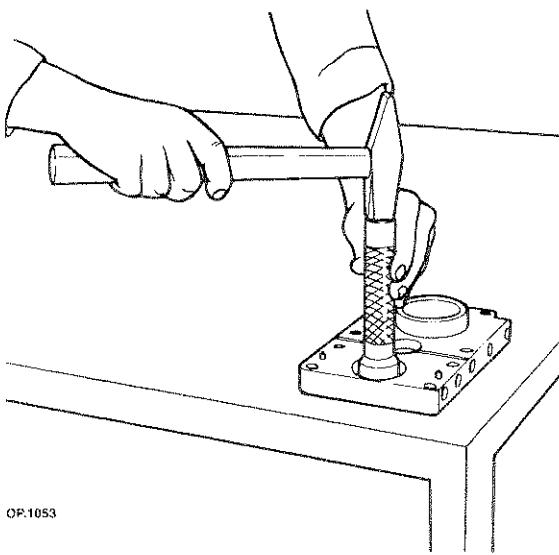
8 - Insert the pinion positioning it with adapter AT 27981109.



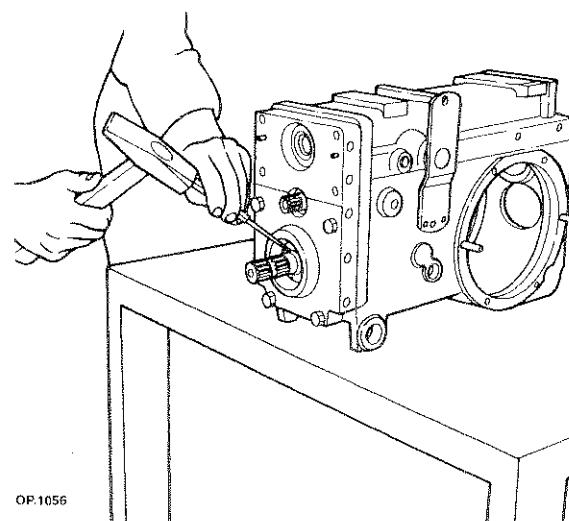
9 - Mount the bearing on the change gear cover with the help of driver AT 37981012.



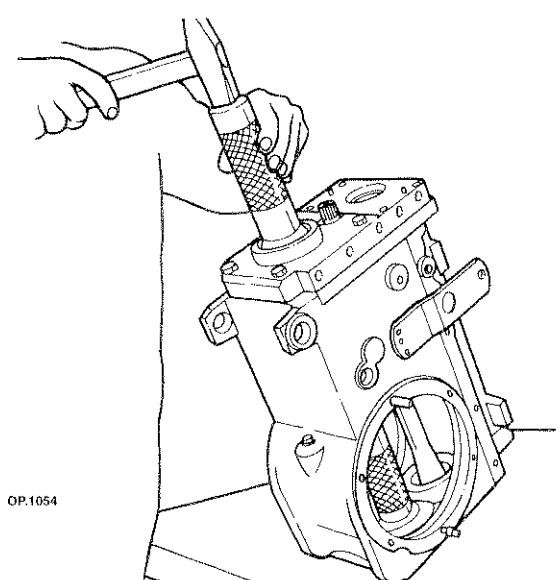
12 - Check the pinion rotating torque and fasten the ring nut as in page 85 - bevel gear bearing preloading.



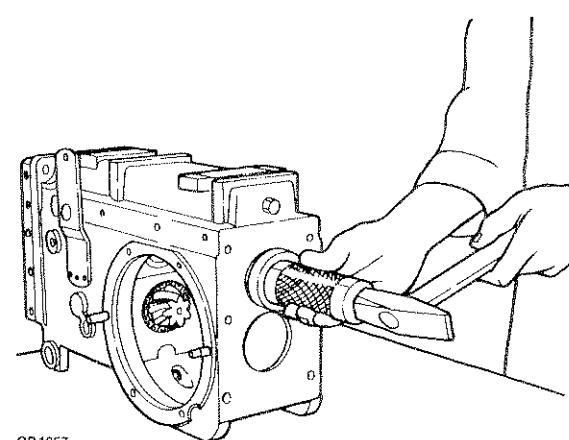
10 - Mount the seal packing using driver AT 37981279.



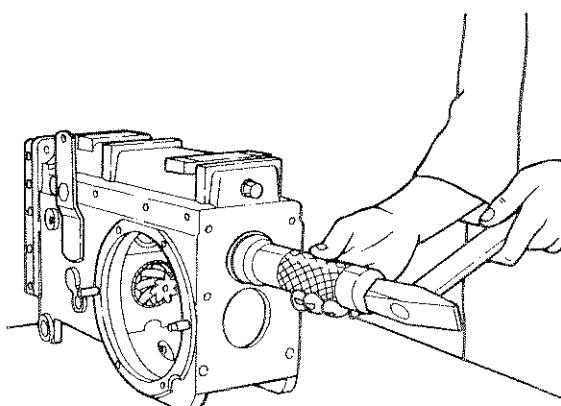
13 - Dent the ring nut.



11 - Mount bearing and pinion bushing using driver AT 37981014.

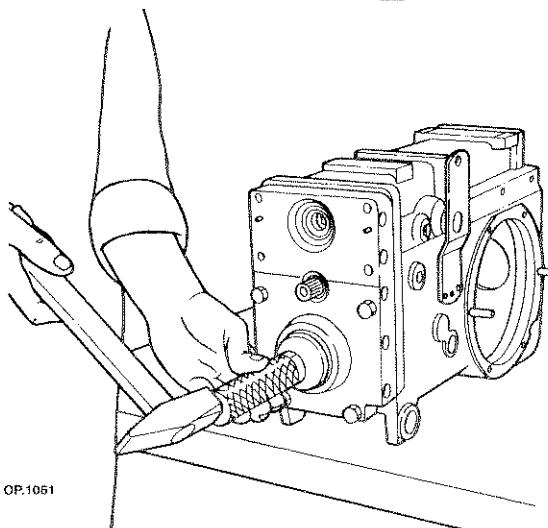


14 - Mount the PTO rear bearing using the driver AT 37981014.



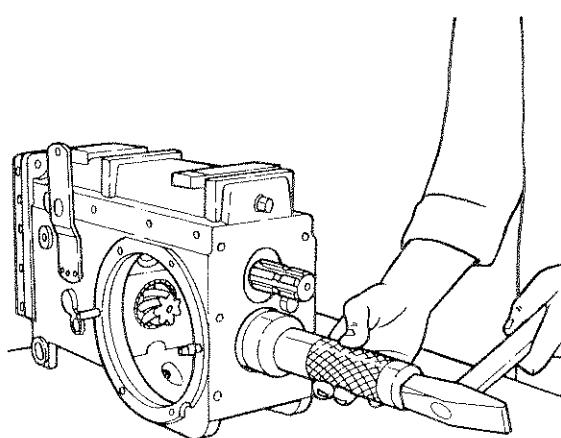
OP.1058

15 - Mount the packing using driver AT 37981292 and adapter AT 37981291.



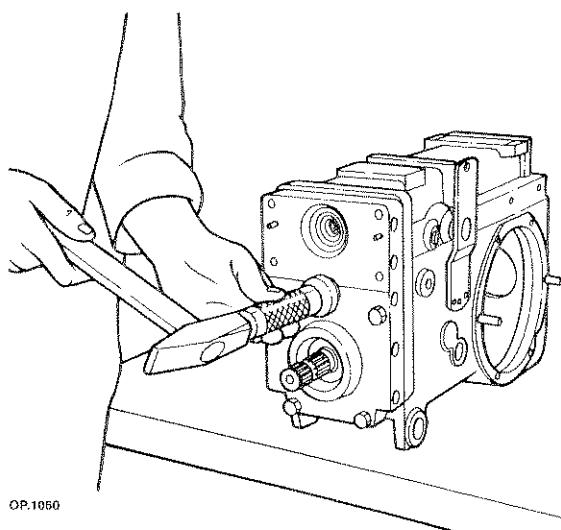
OP.1061

18 - Mount the pinion seal with driver AT 37981289 and adapter at 37981288.



OP.1059

16 - Mount the plug with driver AT 37981012.



17 - Mount the main shaft packing with driver AT 37981090 and adapter AT 37981020.

WARNING - DANGER

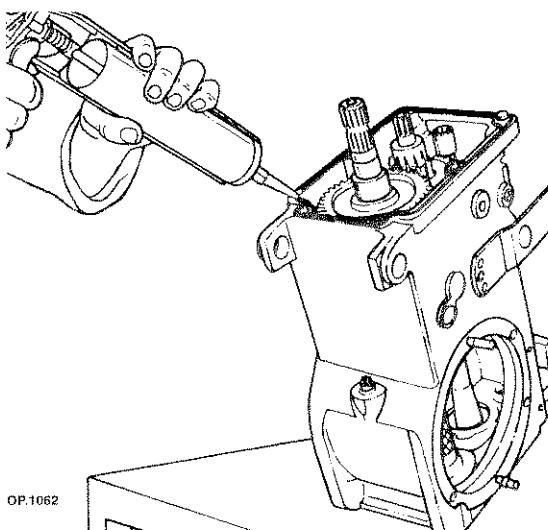
Perform operations by strictly observing accident prevention regulations.

- Do not use gasoline, diesel oil or other flammable liquids to degrease or clean parts but use commercial non-toxic solvents instead. Dispose of waste fluids, used filter cartridges, oils, lubricants and grease cleaners in the most suitable way and in compliance with regulations in force.

The collection of waste oils must be performed by authorized plants.

Keep environment clean.

- Operations that require special care may be hazardous for the operator if not correctly performed.



Application diagram of gasket forming compound.



DIFFERENTIAL UNIT

Adjustment of the crown wheel and pinion.

A - Calculation of the thickness of the support ring of the bevel pinion bearing.

The value of said thickness is determined by measuring the height of the pinion head on tool AT 37981283; insert the pinion on the tool AT 37981283 with the bearings, turn ring nut slightly in order to create a revolving momentum (200 Ncm).

Use a dial gauge, place the rod

The value read must be subtracted from the centesimal value written with an engraver on the head of the pinion.

If (A) is the value measured by the dial gauge and (B) is the one printed by the manufacturer on the pinion, the thickness (S) of the support ring to be mounted is given by the following equation:

$$S = A - (+B) = A - B$$

/

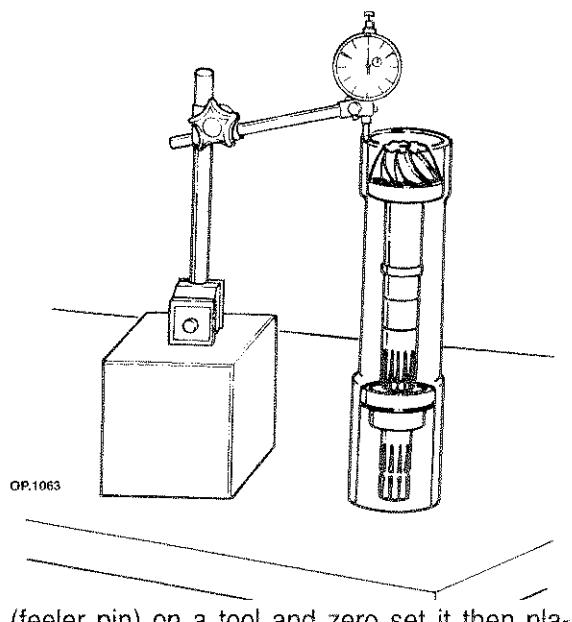
$$S = A - (\pm B) =$$

\

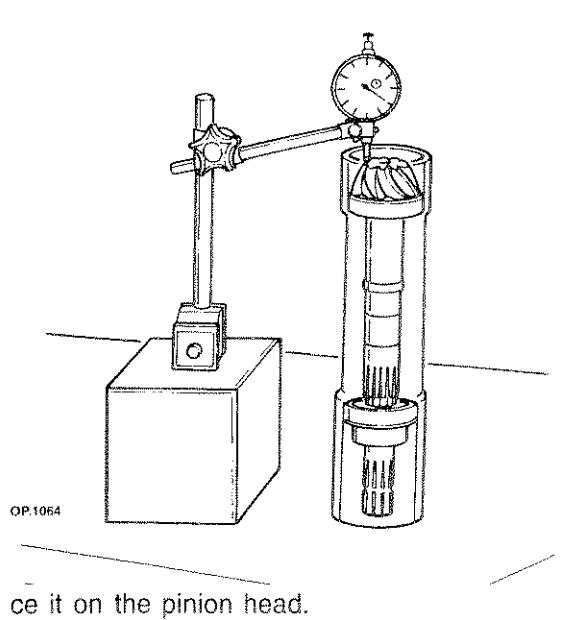
$$S = A - (-B) = A + B$$

Example:

$A = 1.70$ (value read on dial gauge)
 $B = 0.15$ (centesimal dimensions marked on the pinion by the manufacturer)



$$\begin{aligned} \text{thickness } S &= A - (+/-B) \\ &= 1.70 - (-0.15) \\ &= 1.70 + 0.15 \\ &= 1.85 \end{aligned}$$



In this case a 1.85 mm thick ring must be mounted (underneath the pinion bearing). If necessary round off to the highest figure within 0.05 mm.

Therefore the shim to be mounted is 1.9 mm thick.

Note:

The support ring of the roller bearing on the pinion is supplied as spare part:
mm 1.7 - 1.8 - 1.9 - 2 - 2.1 - 2.2 - 2.3.



B. Pinion bearing preloading

To perform the preloading of the bevel roller bearing of the pinion proceed as follows:

1 - Tighten the ring nut with a driving torque of 8 - 10 Kgm (78-98 Nm).

2 - Rotate the pinion a few turns so that the bearings are properly positioned in their seat.

3 - Loosen the ring nut.

4 - Measure the rotating torque (R) necessary to rotate the pinion with all its gearings.

E.g.

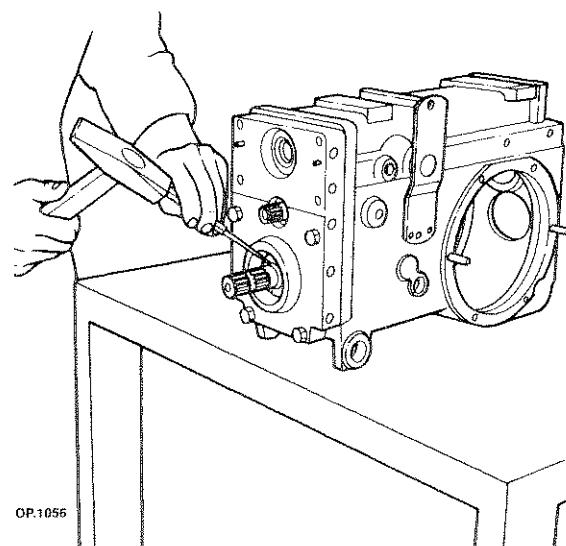
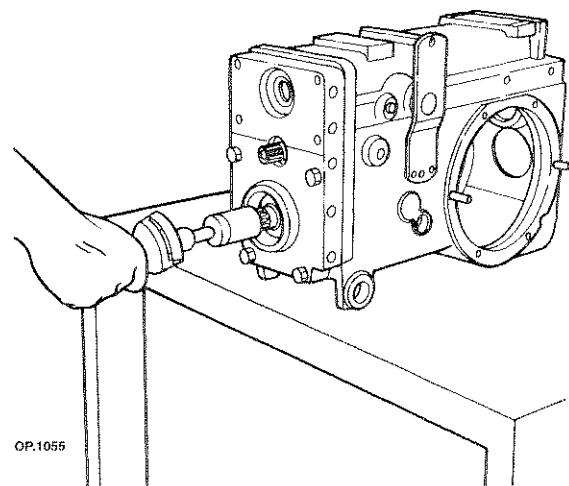
$R = 150 \text{ Ncm}$ value read on the torquemeter before fastening the ring nut.

$300 \text{ Ncm} = \text{theoretical preloading value of the bevel roller bearings of the pinion.}$

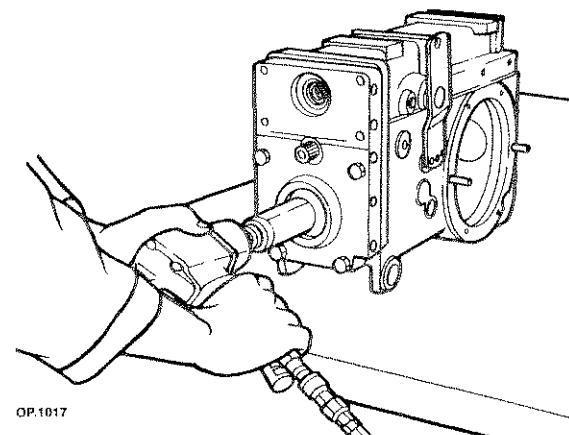
$RT = \text{rotating resistance of the pinion mounted on the change gear (complete).}$

$$\begin{aligned} RT &= 300 + R \\ &= 300 + 150 \\ &= 450 \text{ Ncm} \end{aligned}$$

In this case the ring nut must be fastened until you achieve a rotating resistance of the pinion which is equal to 450 Ncm (0.45 Kgm).



6 - Dent the ring nut.



5 - Tighten the ring nut with tool AT 37981280 until you achieve a rotating resistance of the pinion $RT = (300 \text{ Ncm}) + R$ with torquemeter 37981196 and adapter AT 37981281.



WARNING - DANGER

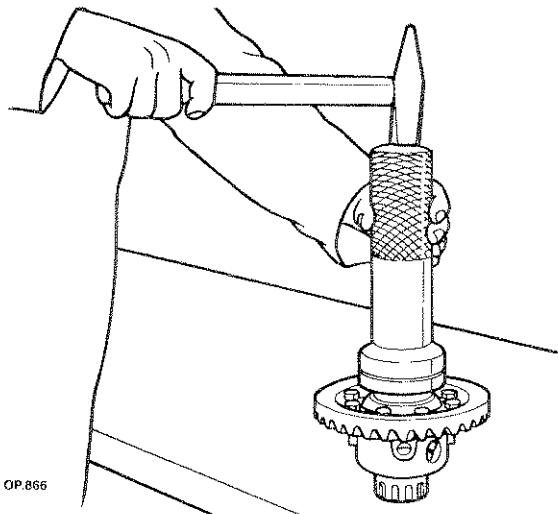


Perform operations by strictly observing accident prevention regulations.

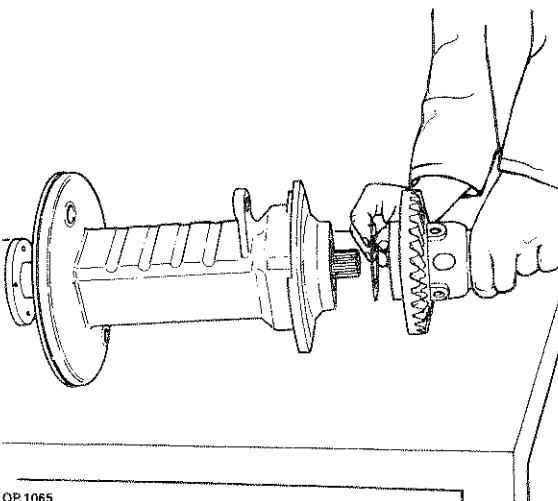
- Wear safety clothing such as gloves and safety shoes.
- Watch out for shearing,
- Watch out for squeezing,
- Watch out for tangling.



C) Adjustment of backlash between the ring gear and the pinion and preloading of the differential box bearings



1 - Mount the bearing on the differential box using the driver AT 37981093



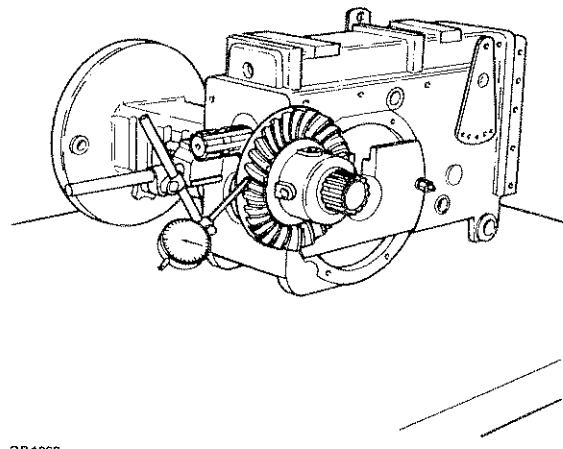
2 - Insert between the differential support and the unit a rated thickness (PS 0.2 mm).

3 - Insert the differential unit on the support with the help of a hammer (plastic or copper).

4 - Mount the differential unit in the transmission box without applying any sealing agent nor fastening it with the screws.

5 - Apply on the side opposite the transmission box the tool AT 27981318 necessary to align the differential unit with the box and slightly preloading the differential bearing.

6 - Apply a centesimal dial gauge with magnetic base over the transmission box, with rod placed as perpendicularly as possible and resting on the edge of a tooth of the ring gear.



7 - Check the backlash by offsetting it by 120° and comparing the average of the three values with the normally set play (0.15 - 0.23).

8 - If the value measured is higher or lower than the set value, it is then necessary to increase or decrease the value of the rated thickness (PS 0.2).

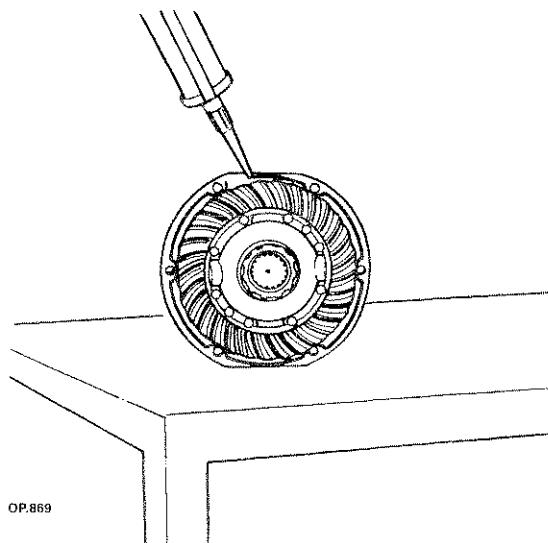
Note:

Adding a thickness (PS) of 0.1 mm the play between the teeth of the ring gear and pinion is reduced 0.07 mm, whereas by removing a thickness of 0.1 mm the play increases 0.07 mm. The thickness PS is supplied with spares: 0.1 - 0.2 - 0.3 - 0.5 mm.

9 - Remove the differential support and mount the calculated thickness.



10 - Mount the differential support assembly onto the transmission box after having cleaned and degreased the surfaces to be mated and having applied a 3 mm string of gasket forming compound following the path indicated in the figure.



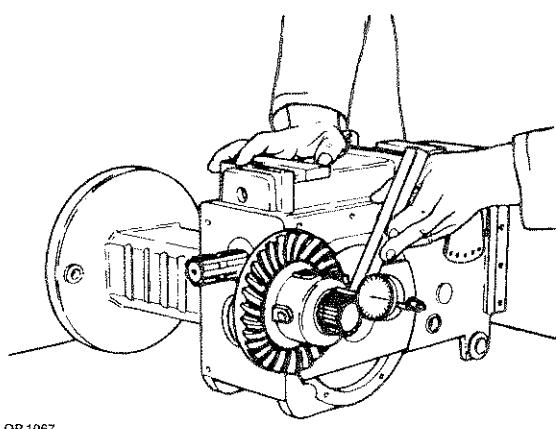
- diagram showing application of gasket forming compound.

11 - Observe the driving torque listed at page 4.

12 - Check the backlash between the ring gear and pinion with normal set play of 0.15 - 0.23 mm.

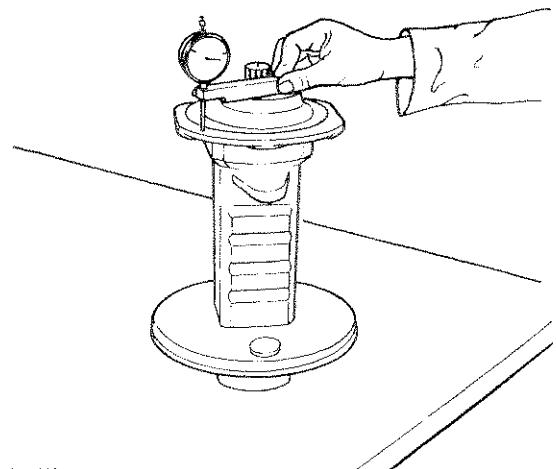
D) Differential box bearing preloading

13. Position the centesimal dial gauge with support AT 27981215 on the mating surface between the support and the box, so that the feeler pin is directly on the seat of the bearing on the differential box and zero-set the dial gauge.



OP.1067

Now position the gauge directly on the bearing of the differential box support so that the feeler pin is in contact with the mating surface of the box.



OP.1068

14 - Perform measurement by offsetting it by 120° and the average of the three values G_m added to a preload of 0.1 mm will give you the thickness S to be mounted between the differential box and the bearing of the differential support.

If necessary round off to the highest figure within 0.05 mm.

Example:

$G_m = 0.25$ average of values read on dial gauge

0.1 mm = major value to increase the preloading of the bearings.

$$\begin{aligned} \text{Thickness } S &= G_m + 0.1 \\ &= 0.25 + 0.1 \\ &= 0.35 \end{aligned}$$

round off to the highest figure 0.05 mm.

In this case you need to mound two 0.2 mm shims = 0.4 mm.



WARNING - DANGER



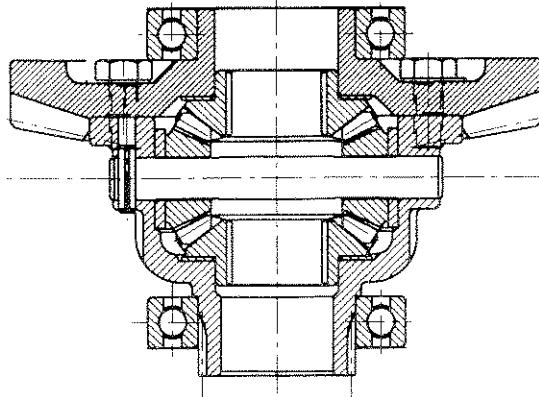
Perform operations by strictly observing accident prevention regulations.



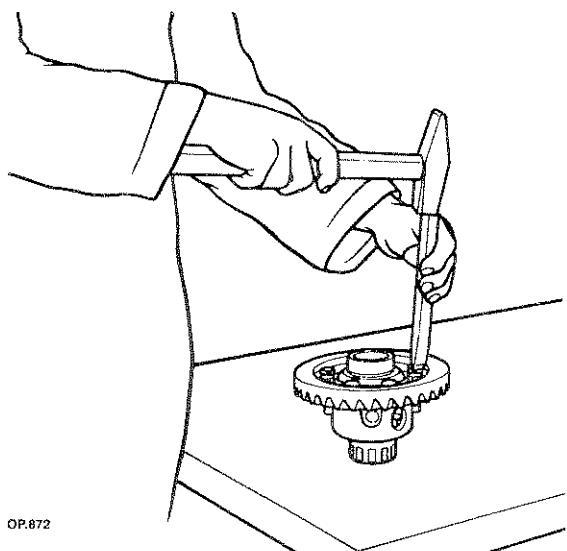
DIFFERENTIAL

Disassembly - Assembly

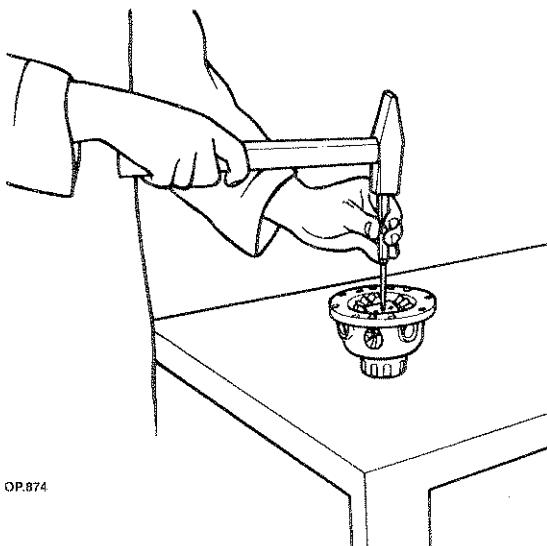
When unit is detached from the transmission box proceed as follows:



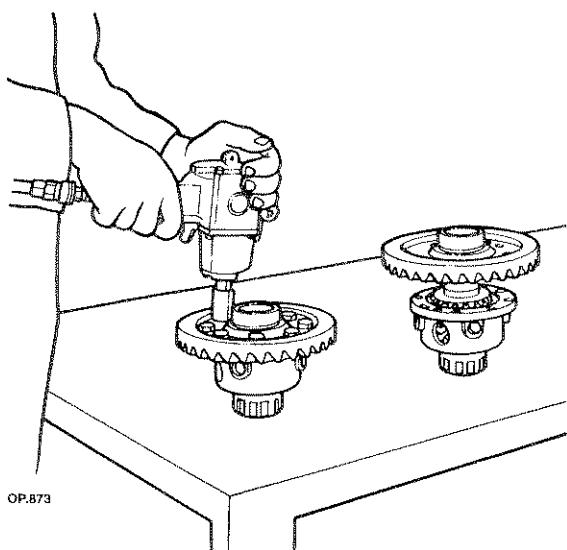
OP.1170



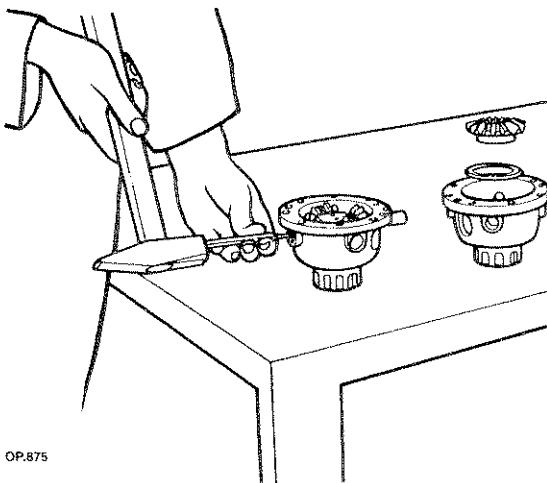
1 - Straighten the screw stop plates.



3 - Remove the spring pins.



2 - Loosen the screws fastening the bevel ring gear.



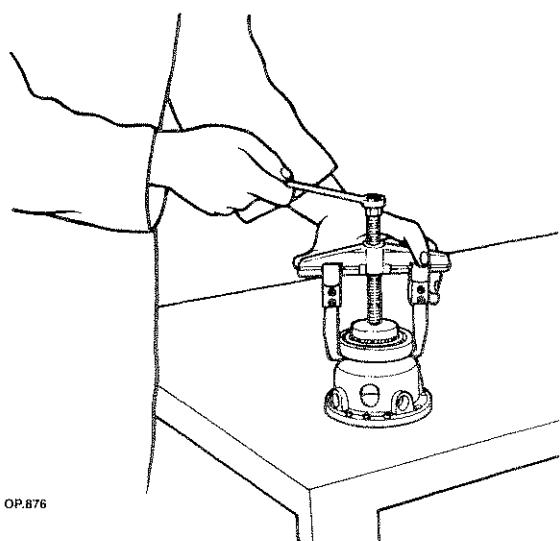
4 - Remove the pins, along with the side pinions, the scraper fifth wheels and crown wheels.



Checking the crown wheels axial play

To check the axial play of the crown wheels proceed as follows:

- 1 - Position the feeler pin of the centesimal dial gauge.



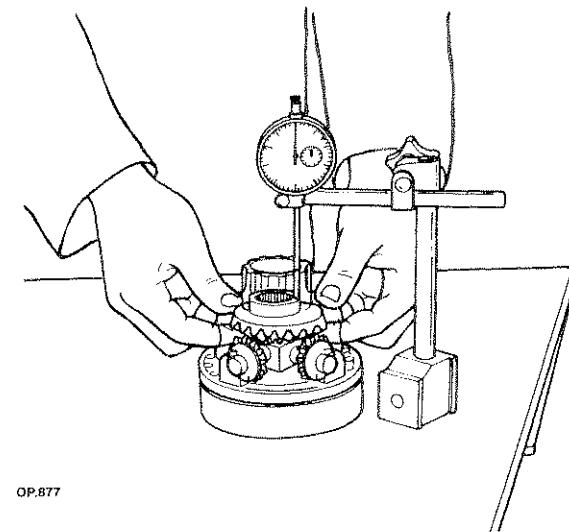
- 5 - Remove the bearing with universal puller AT 37981247 and adapter AT 37981214.



WARNING - DANGER

Keep environment clean. Dispose of oil in compliance with regulations in force.

The collection of waste oils must be performed by authorized plants.



- 2 - Move the crown wheel until it touches the side pinion and then push it against the differential box measuring on the centesimal dial gauge the axial play.

- 3 - The axial displacement for each crown wheel should be 0.15 - 0.30 mm.

ASSEMBLY

Proceed as follows:

- a - proceed inversely as to the disassembly operations.
- b - refer to drawings for location of different parts.
- c - make sure that the groove of the spring pins is oriented towards the stress point so that the spring is under strain.
- d - tighten the screws with a driving torque of 8.5 Kg. (83 Nm).
- e - check the axial play of the crown wheels.

Spring pins:

When mounting the spring pins, make sure that the groove of the spring pins is oriented towards the stress point so that the spring is under strain.

Spiral spring pins instead, do not require any orientation.



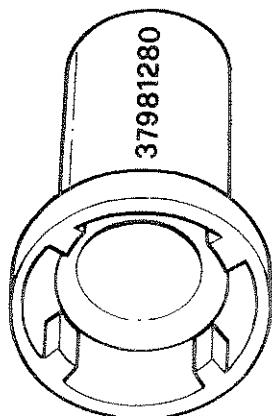
WARNING - DANGER

Perform operations by strictly observing accident prevention regulations.

- Wear safety clothing such as, gloves and safety shoes.
- Do not align slots with hands but use specific tools instead.

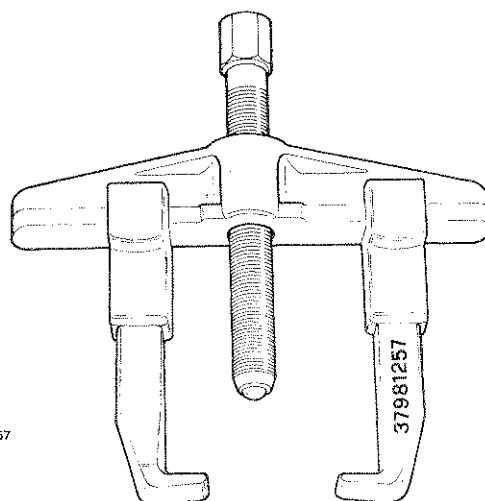


AT.212



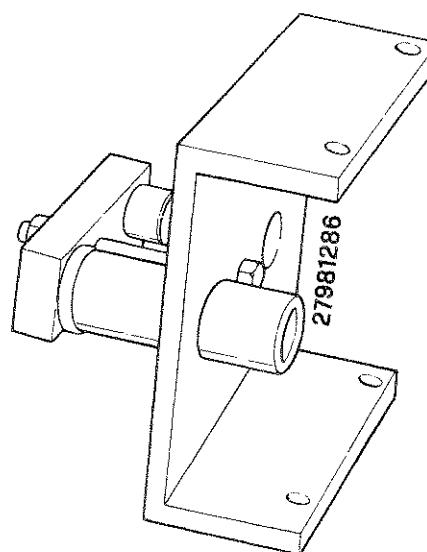
1 - Tool for pinion ring nut

AT.067



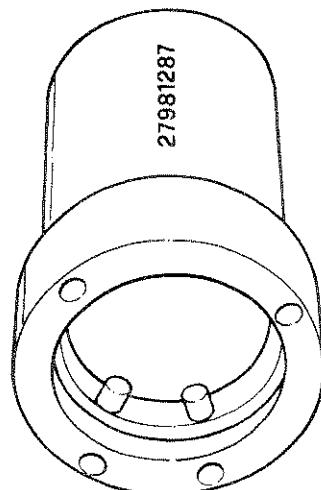
4 - Universal extractor

AT.213



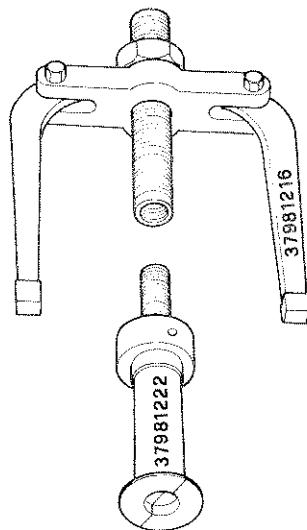
2 - Change gear cover puller.

AT.214



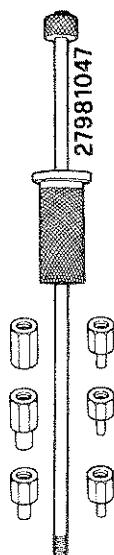
5 - Driver for removal of pinion bearing housing.

AT.001

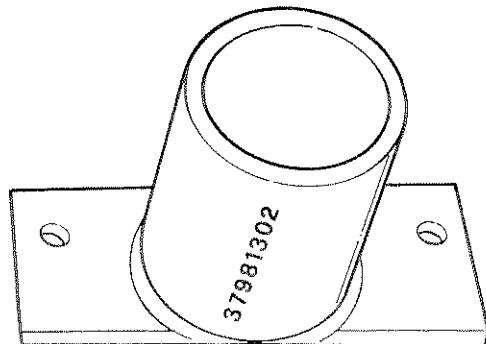


3 - Combined extractor AT 36981216 AT 37981222.

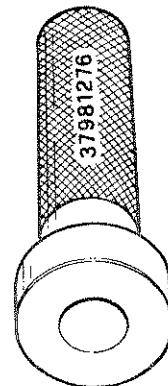
AT.004



6 - Puller with adapter.



AT.215



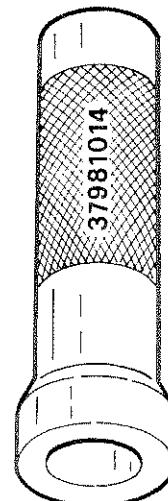
AT.193

7 - Tool for removal of PTO shaft

10 - Driver for assembly of bearings



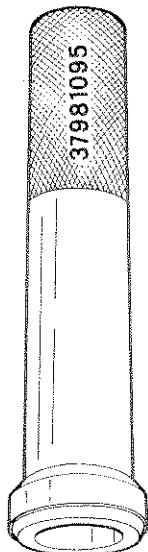
AT.015



AT.023

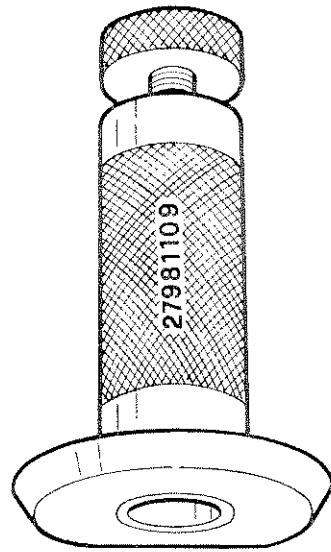
8 - Driver for assembly of tapered roller bearing

11 - Driver for assembly of bearings



AT.017

9 - Driver for mounting of tapered roller bearing housing

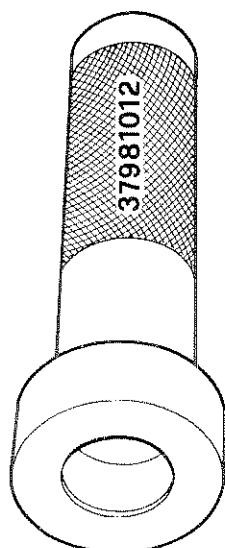


AT.018

12 - Differential pinion stop

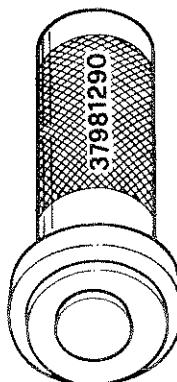


AT.037



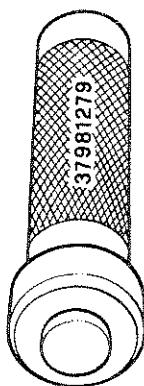
13 - Driver for mounting of bearings

AT.219



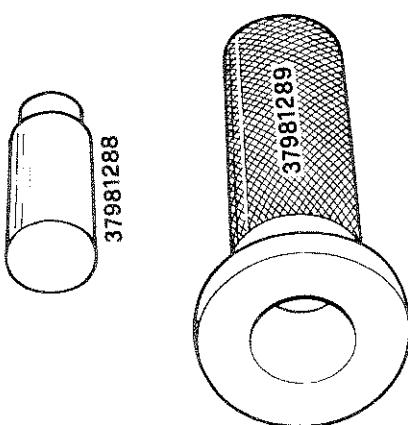
16 - Driver and adapter for mounting of packing

AT.192



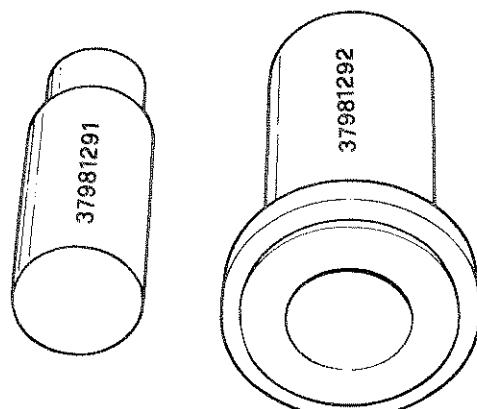
14 - Driver for mounting of main shaft seal ring

AT.220



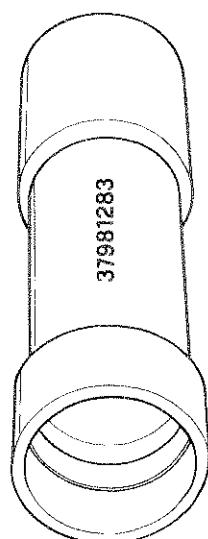
17 - Driver and adapter for mounting of packing

AT.218

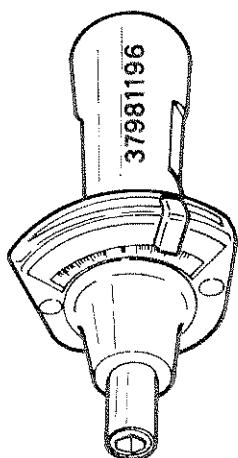


15 - Driver and adapter for mounting of packing

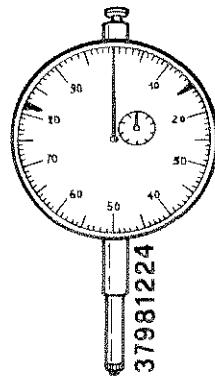
AT.221



18 - Tool to determine the thickness of the pinion bearing



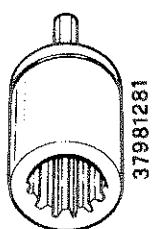
AT.020



AT.026

19 - Torquemeter Ncm

22 - Centesimal gauge



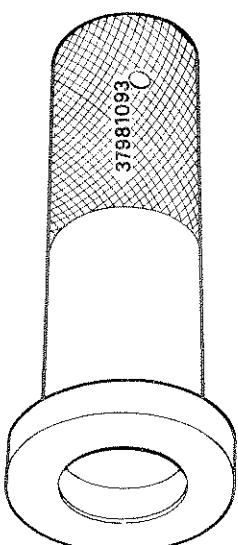
AT.021

20 - Tool for the control of the pinion rotating torque



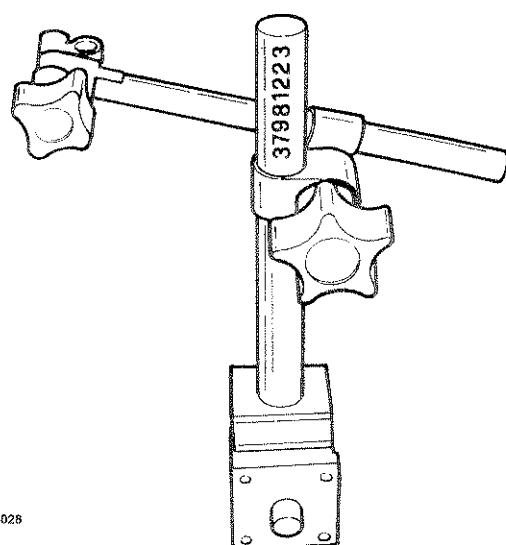
AT.027

23 - Extension for centesimal gauge



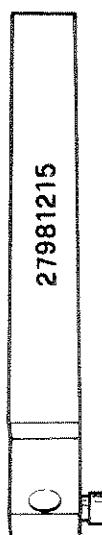
AT.045

21 - Driver for bearings

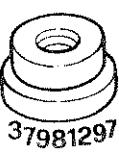


AT.028

24 - Magnetic support for centesimal gauge



AT.031



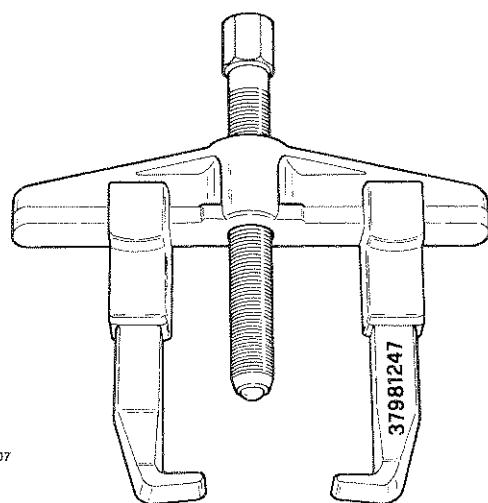
AT.223



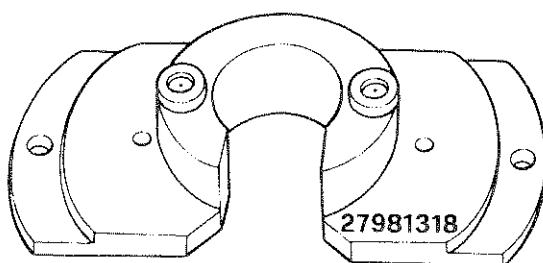
37981296

25 - Support for centesimal gauge

28 - Adapter for removal of driver



AT.007



AT.204

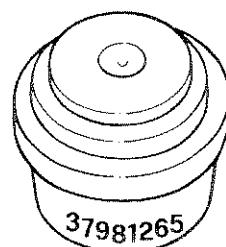
26 - Universal puller

29 - Tool for alignment differential unit



AT.032

27 - Adapter for removal of differential box bearing

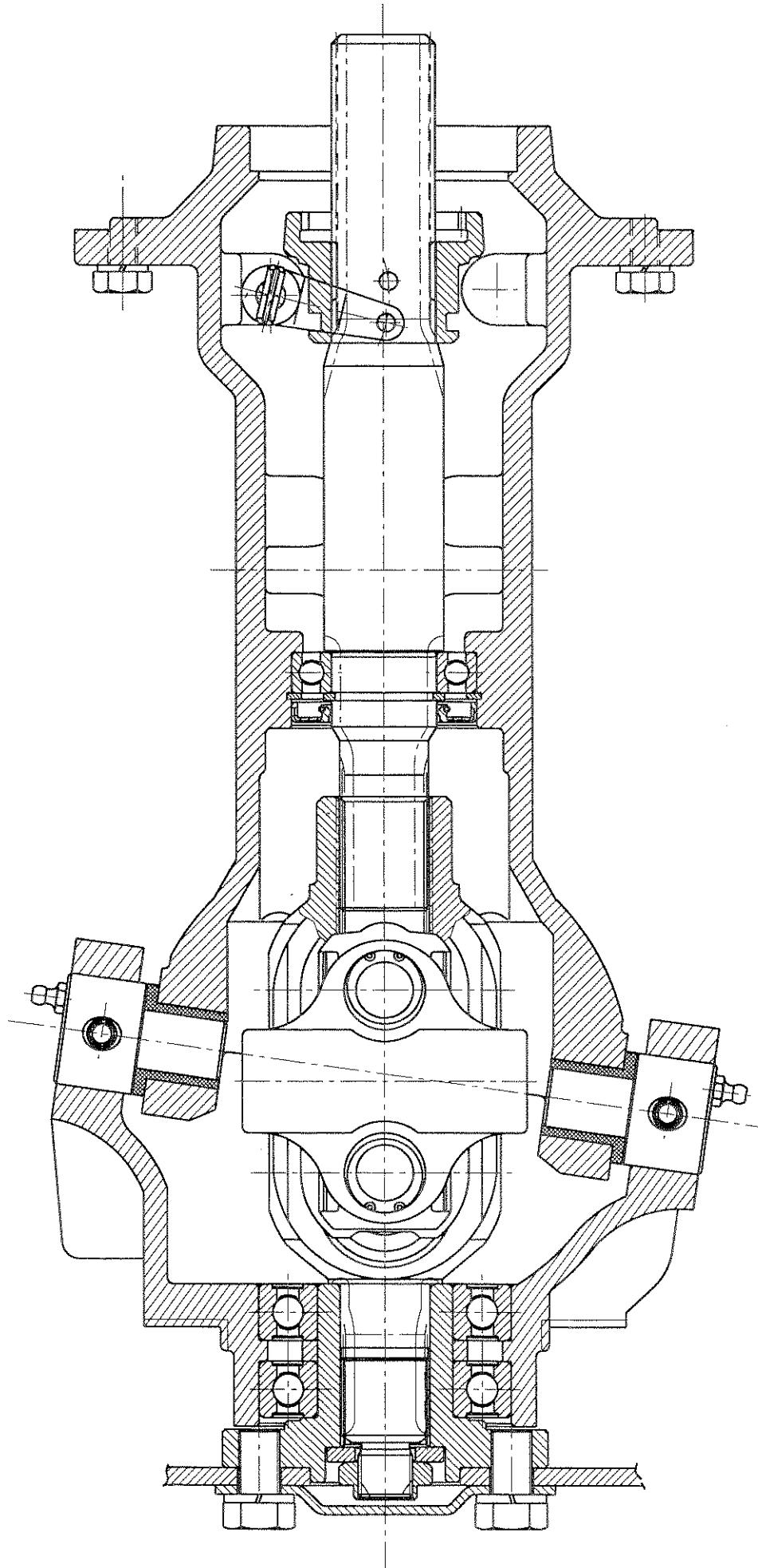


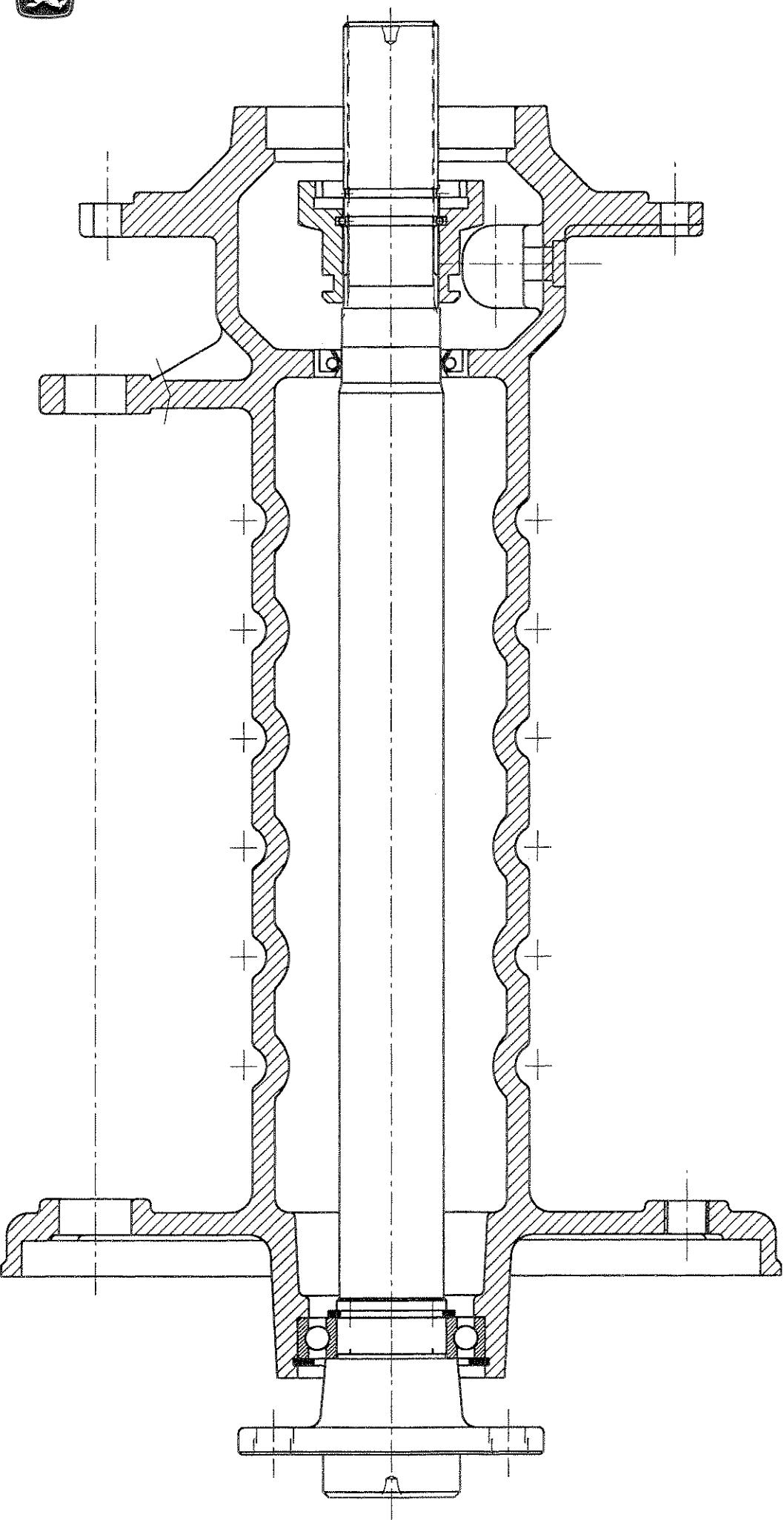
AT.094

30 - Adapter for universal puller



FRONT AXLE ASSEMBLY





REAR AXLE ASSEMBLY

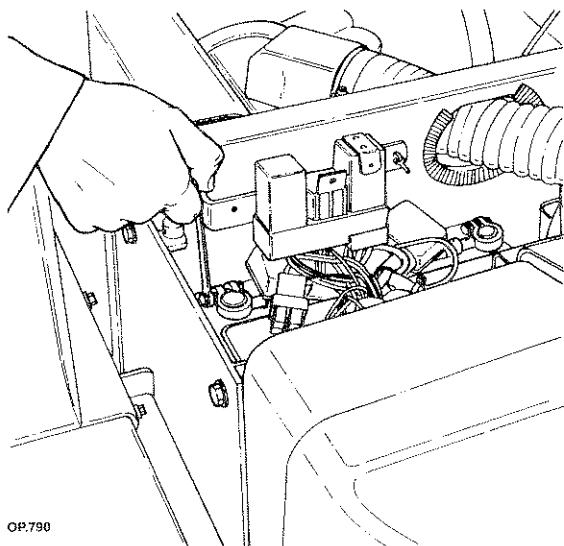


FRONT AXLE

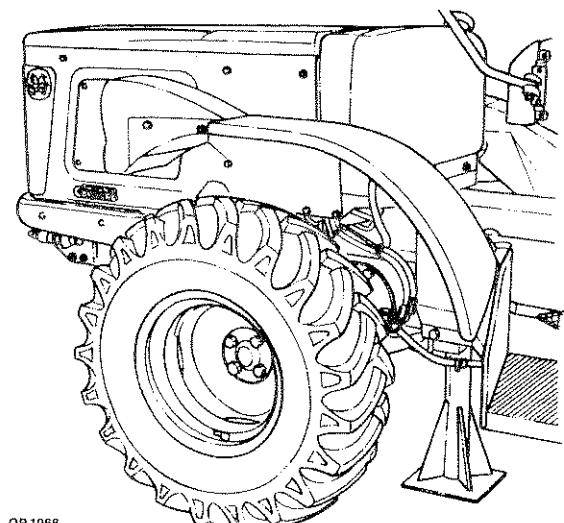
Disconnecting and connecting

Tigretrac

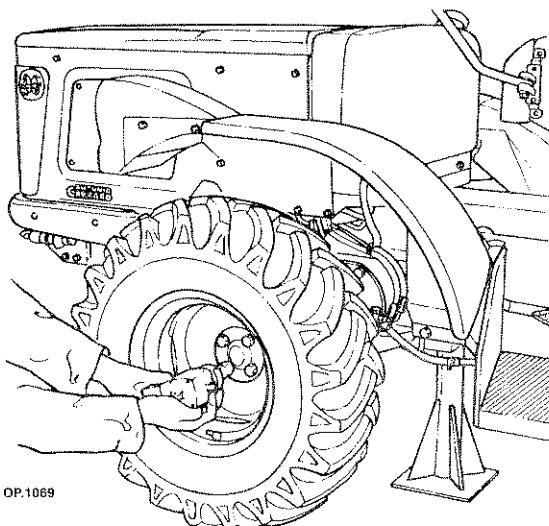
To have access to the front axle unit proceed as follows:



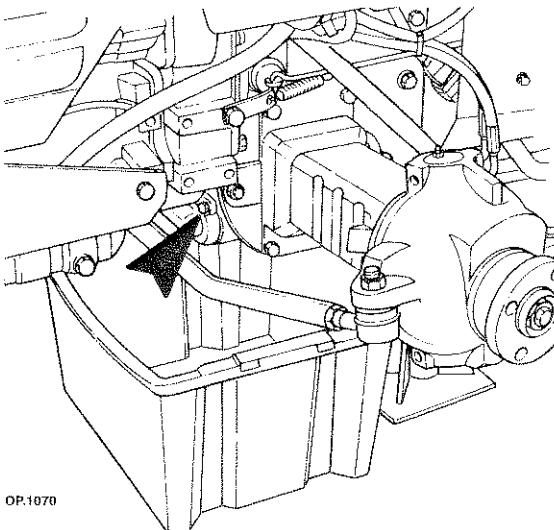
- 1 - Disconnect the battery wire and insulate it.



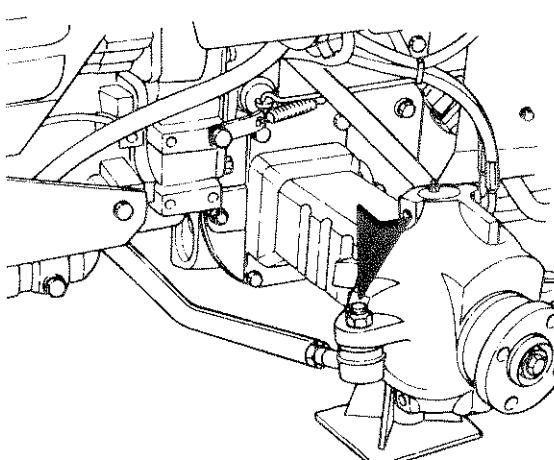
- 2 - Place a fixed horse underneath the central transmission- front side.



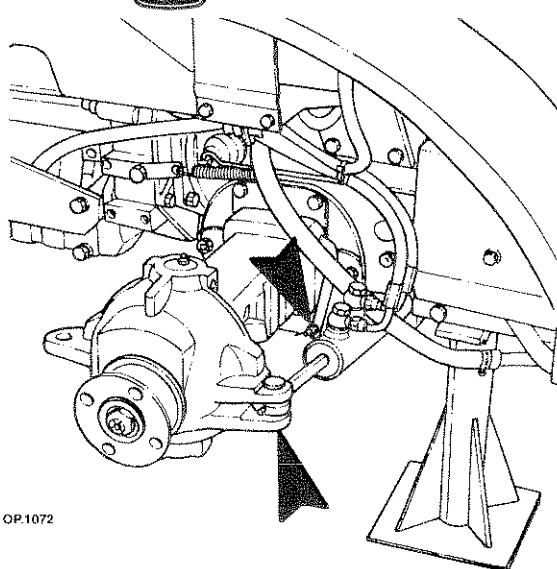
- 3 - Loosen the screws and remove the front wheels.



- 4 - Loosen the screws and remove the hydraulic oil suction filter cover and drain oil inside the special container.

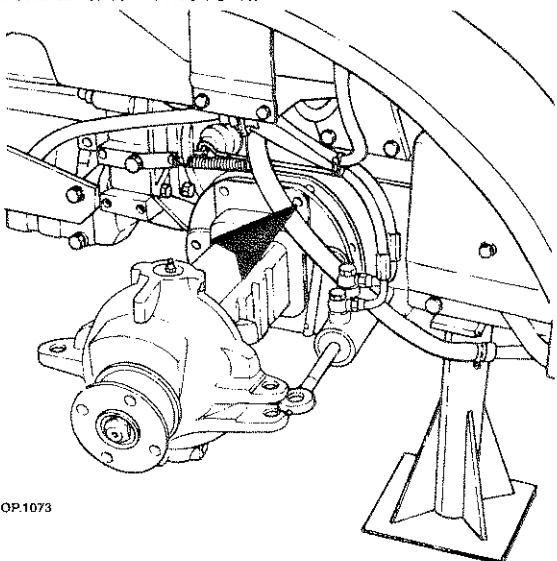


- 5 - Loosen the fastening nuts of the coupling bar of the steering and remove it.



6 - Remove the spring ring and remove the cylinder pin of the steering using a special push rod.

7 - Loosen the wire clamp locking the differential and remove it.



8 - Loosen the screws of the axle with differential clamping and remove it from the transmission box recovering the adjustment shims of the differential box.

9 - Loosen the axle screws opposite the differential locking and remove it together with the whole differential box.



WARNING - DANGER

Perform operations by strictly observing accident prevention regulations.

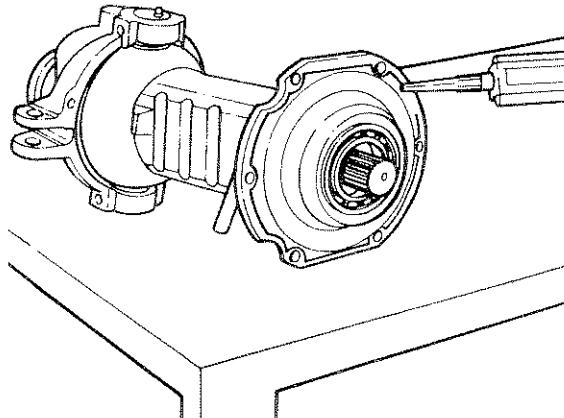
- Do not use gasoline, diesel oil or other flammable liquids to degrease or clean parts but use commercial non-toxic solvents instead.



Connection

Proceed to the connection, bearing in mind the following instructions:

- a - clean all parts to be mated carefully.
- b - apply a 3 mm string of gasket forming compound following the path indicated in the figure.



OP.1074

- application of gasket forming compound

c - observe the driving torques listed at page 4

d - proceed inversely as to the disconnection.

e - accurately clean the oil filter and clean all parts of the system that are in contact with the hydraulic oil of the circuit.



WARNING - DANGER



Perform operations by strictly observing accident prevention regulations.

- Use suitable hoisting means.

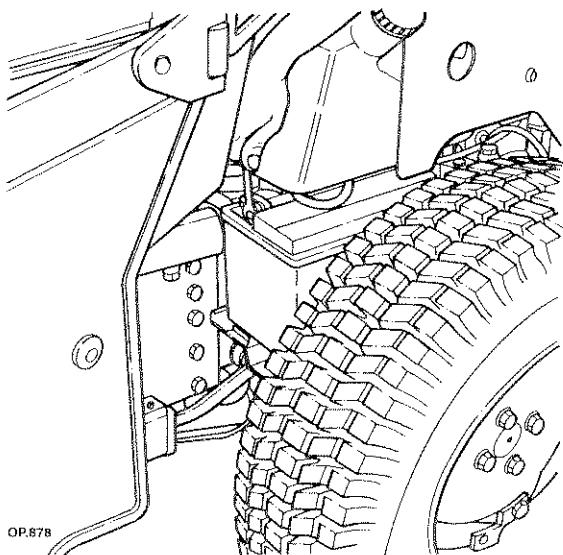


FRONT AXLE

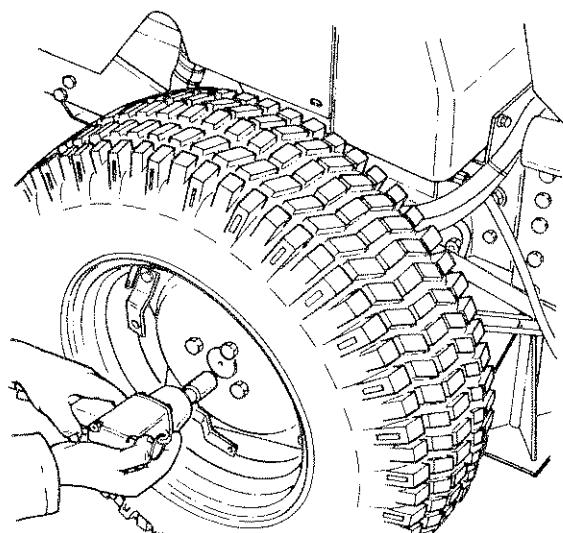
Disconnecting and connecting

Superpark

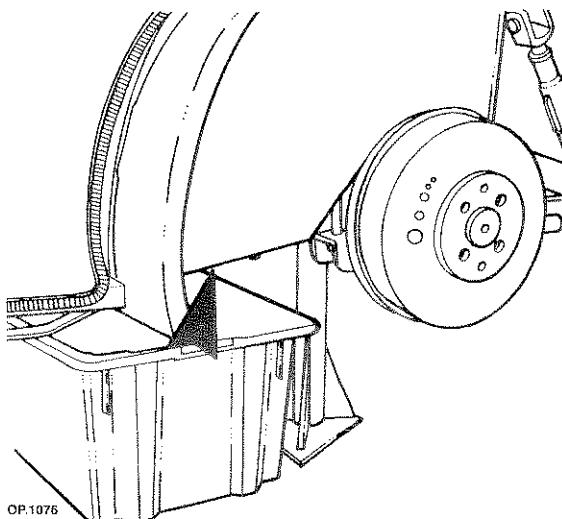
To have access to the front axle unit proceed as follows:



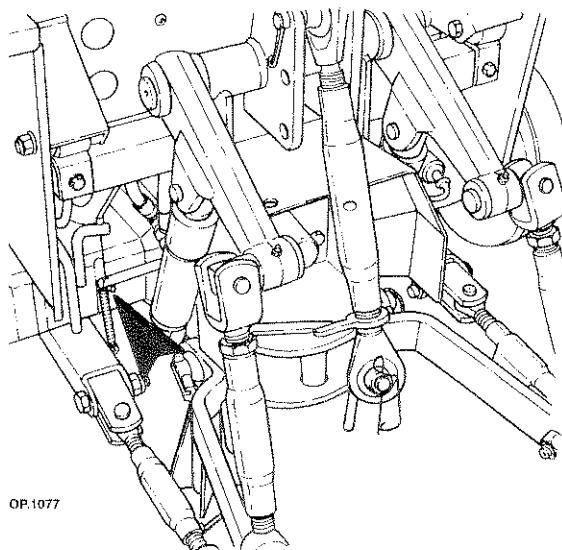
- 1 - Disconnect the battery wire and insulate it.



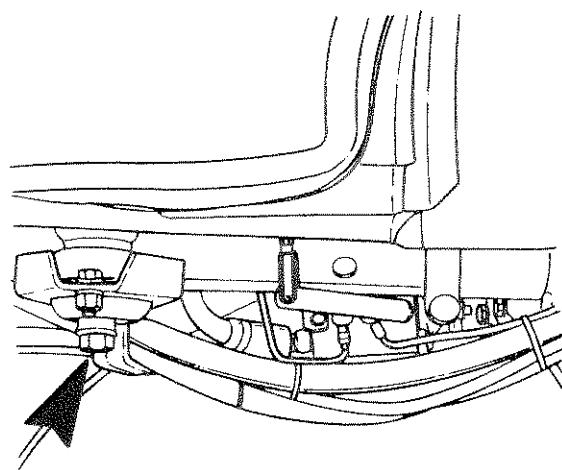
- 2 - Place a fixed horse underneath the central transmission.
- 3 - Loosen the screws and remove the front wheels.



- 4 - Loosen the gearbox oil drain plug and drain oil in a special container.



- 5 - Loosen the wire clamps of the differential locking control and the disengagement of the traction.

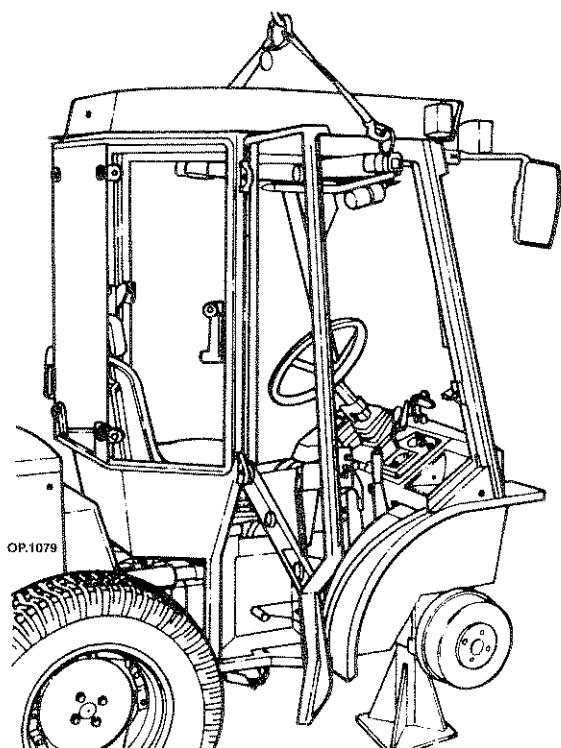


- 6 - Loosen the cab supporting screws.
- 7 - Remove the speed-fix control fork.

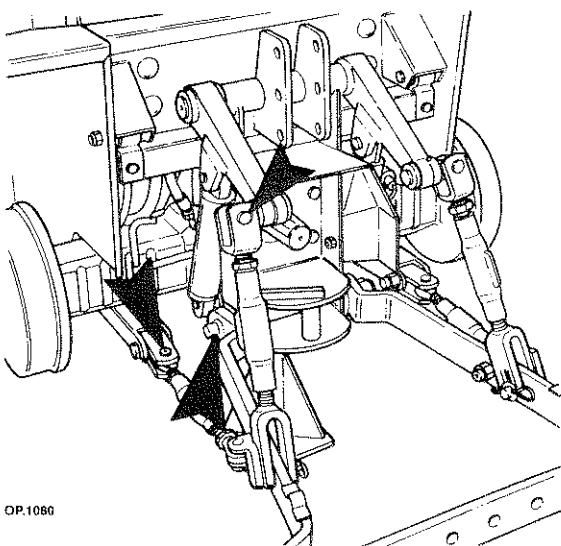
**WARNING - DANGER**

Perform operations by strictly observing accident prevention regulations.

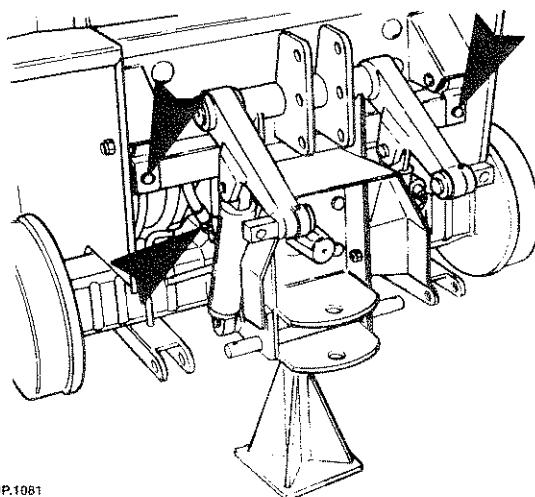
- Use suitable hoisting means.
- Wear gloves to handle metal cords or chains.



- 8** - Sling the back of the cab with a cord and hook it to a hoist and hoist it high enough to place a wooden 30 mm spacer between the cab and the silent bloc.

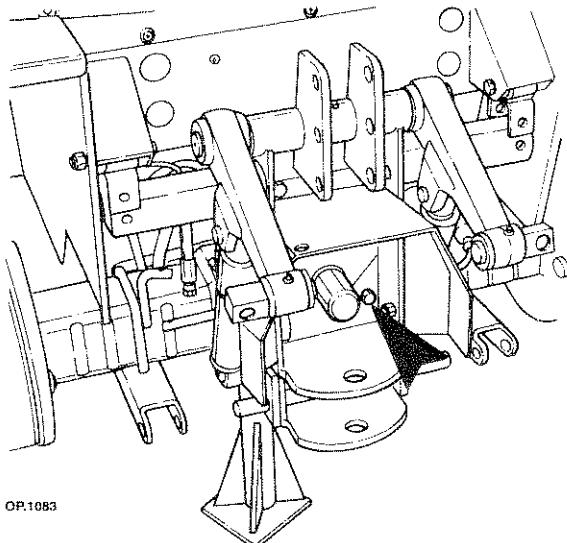


- 9** - Disconnect the tie-rods and the hoisting bars.



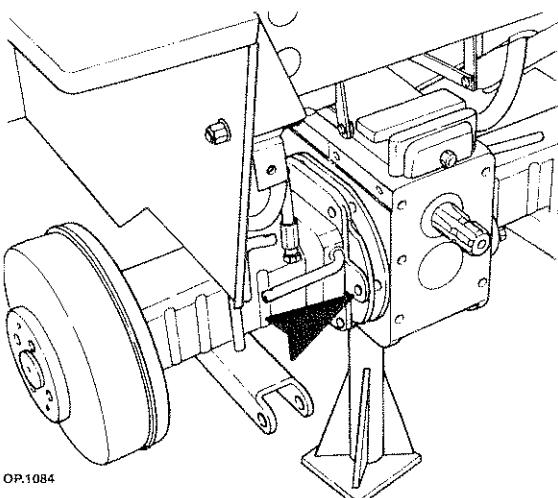
OP.1081

- 10** - Loosen the unions of the hoisting cylinders delivery tubes and plug them.
11 - Loosen the front cab supporting screws.



OP.1083

- 12** - Loosen the screws and remove the hoisting support cover and the cab.



OP.1084

- 13** - Loosen the screws of the axle with differential locking and remove the adjustment shims of the differential box.



14 - Loosen the screws of the axle opposite the differential locking and remove the whole differential box.



WARNING - DANGER



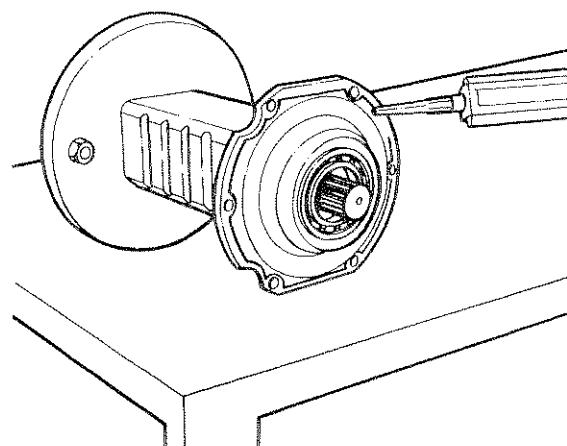
Perform operations by strictly observing accident prevention regulations.

- Do not use gasoline, diesel oil or other flammable liquids to degrease or clean parts but use commercial non-toxic solvents instead.

Connection

a - clean carefully, especially the surfaces to be mated.

b - apply a 3 mm string of gasket forming compound following the path indicated in the figure:



OP.839

Application diagram of gasket forming compound

c - observe the driving torques listed at page 4.

d - proceed inversely as to the disconnection.

e - accurately clean the oil filter and clean all parts of the system that are in contact with the hydraulic oil of the circuit.



WARNING - DANGER



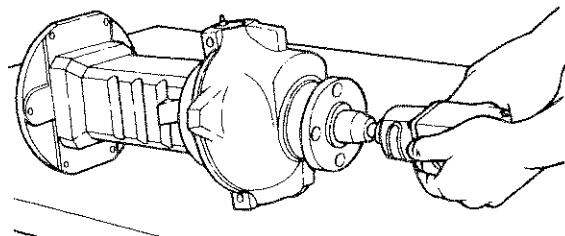
Keep environment clean. Dispose of waste fluids, used filter cartridges, oils, lubricants and grease cleaners in the most suitable way and in compliance with regulations in force. The collection of waste oils must be performed by authorized plants.

Disassembly - assembly

Tigretrac

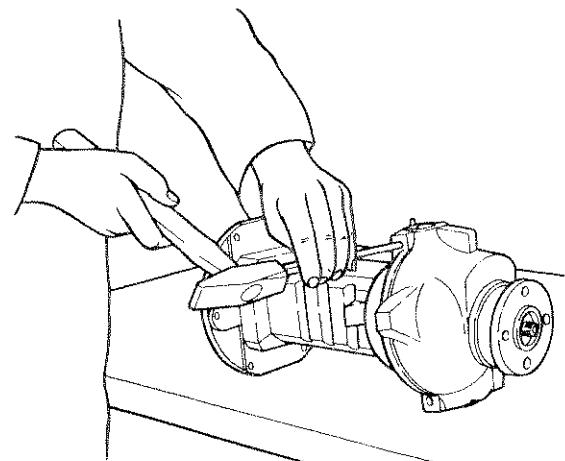
For the disassembly of the front axle proceed as follows:

1 - Loosen the axle unit over a workbench.



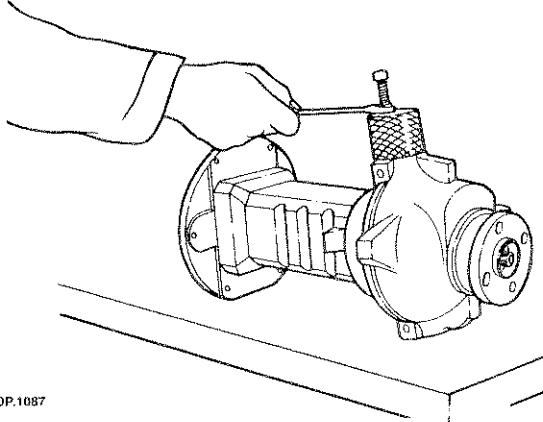
OP.1085

2 - Loosen the nut of the universal semishaft.



OP.1086

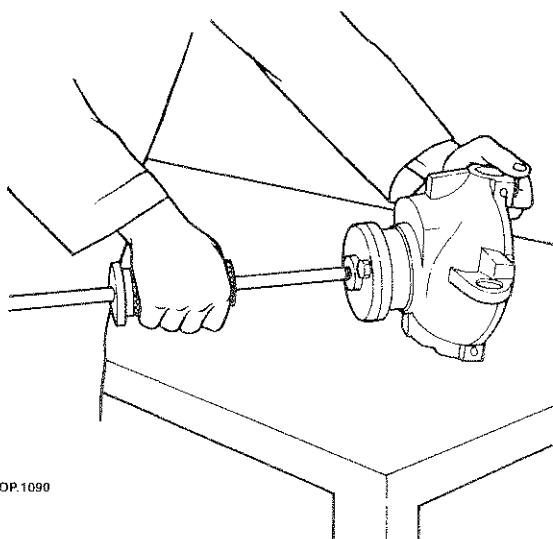
3 - Remove the spring retainer pins of the articulation pins.



OP.1087

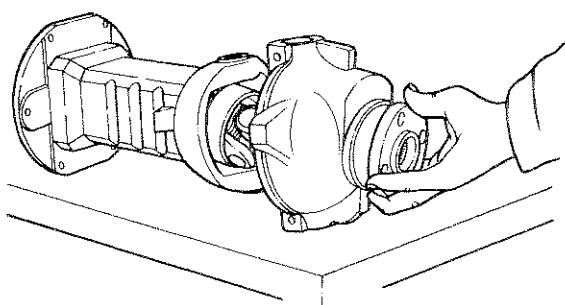
4 - Remove the grease nipples from the bushing.

5 - Replace the greaser nipple with the tool AT 37981044 and remove the bushings - pins.



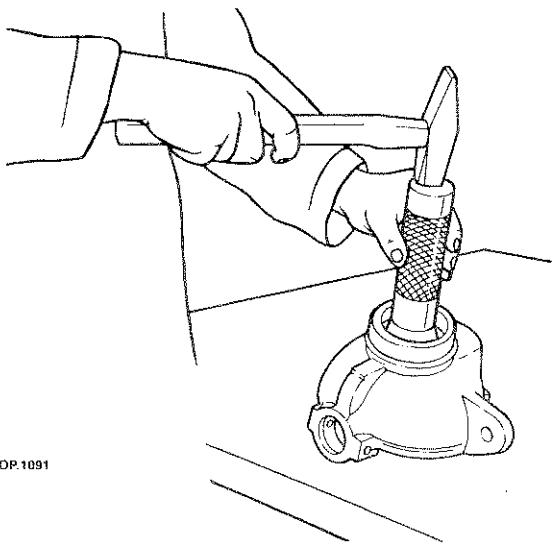
OP.1090

8 - Remove the wheel hub with puller AT 27981047 and adapter AT 37981270.



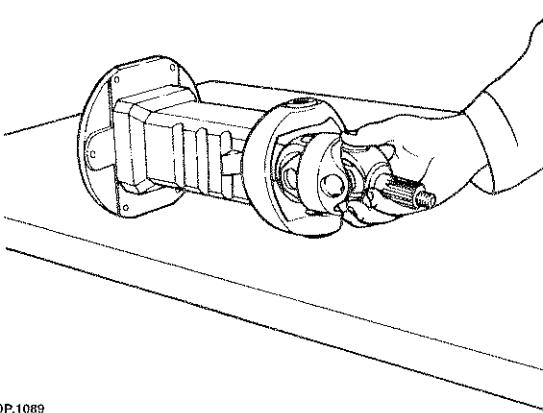
OP.1088

6 - Separate the hub from the axle steering.



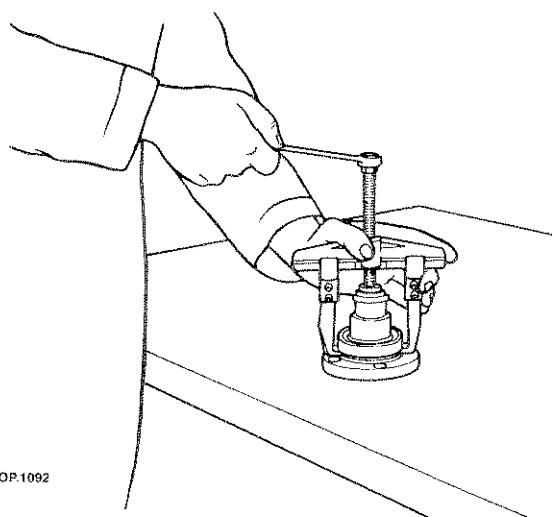
OP.1091

9 - Remove the bearing using a driver AT 37981014.



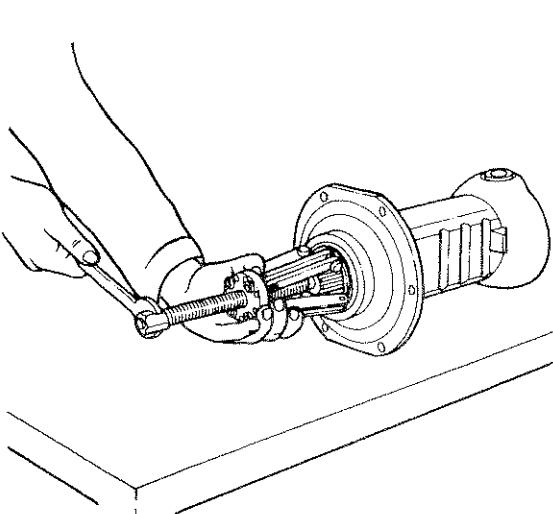
OP.1089

7 - Remove the universal joint.



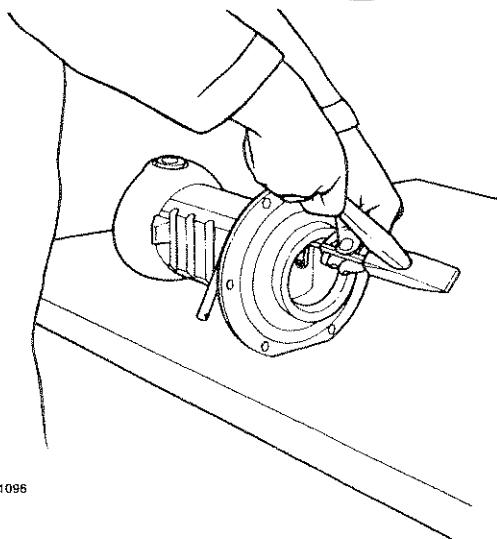
OP.1092

10 - Remove the bearing with tool AT 37981257 and adapter AT 37981265.



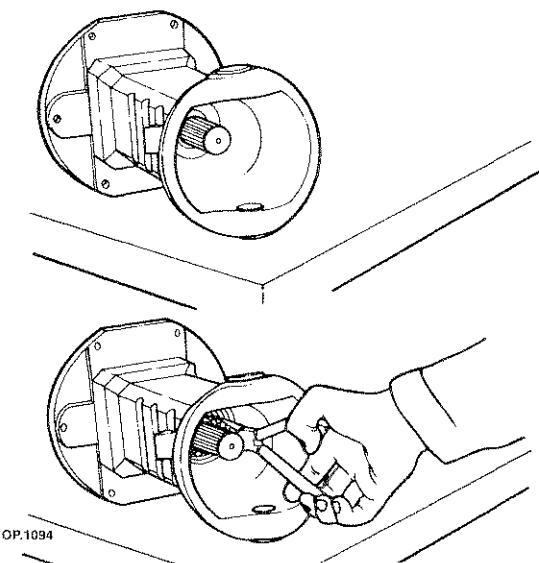
OP.1093

11 - Remove the bearing with puller AT 37981261.



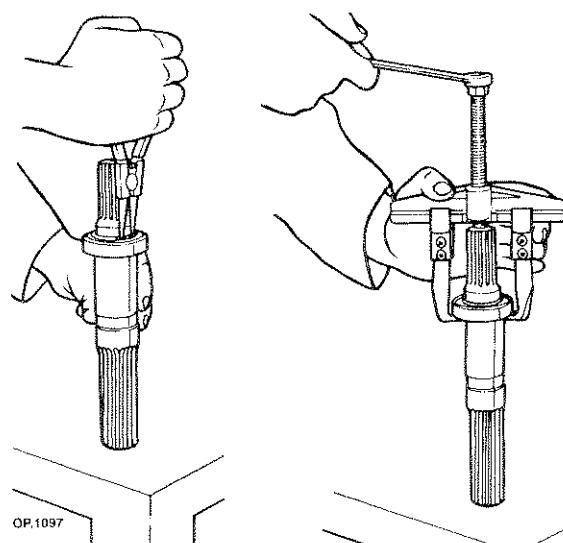
OP.1095

14 - Remove the spring pin and remove the shaft that controls the locking along with the engagement fork.



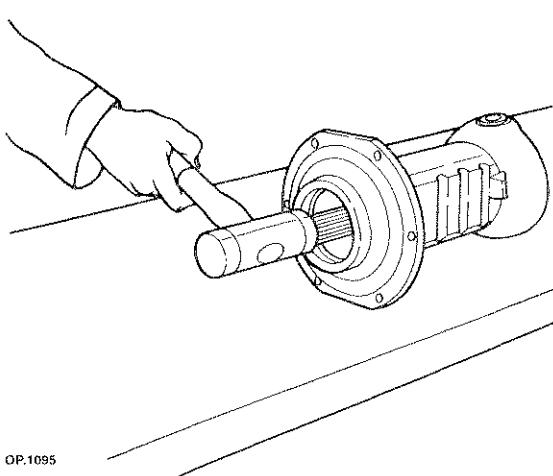
OP.1094

12 - Remove the packing and remove the shaft retainer ring.



OP.1097

15 - Remove the retainer ring and remove the bearing with the puller AT 37981257.



OP.1095

13 - Remove the shaft along with the locking engagement.



WARNING - DANGER



Perform operations by strictly observing accident prevention regulations.

- Wear safety clothing such as, gloves and safety shoes.



ASSEMBLY

Proceed to the assembly of the unit, bearing in mind the following instructions:

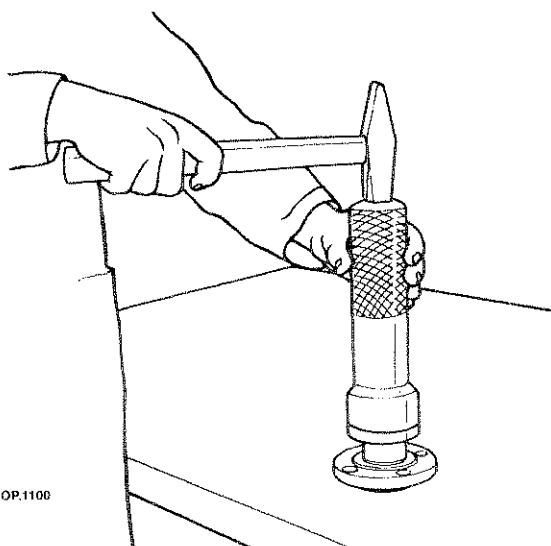
a - proceed inversely as to the disassembly operations.

b - observe the pictures for the location of the different components.

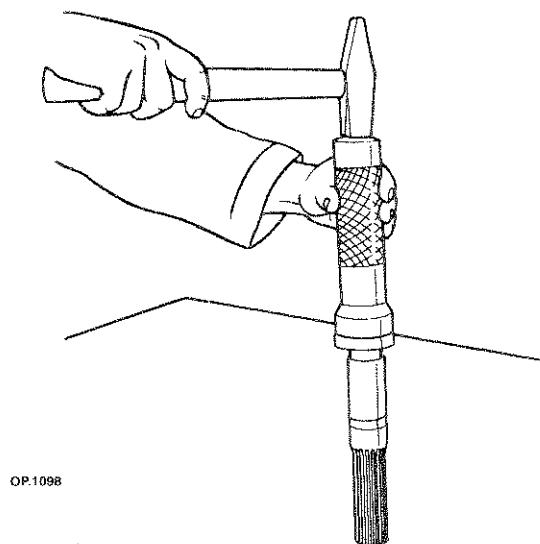
c - observe the driving torques listed at page 4.

d - dent the universal shaft nut.

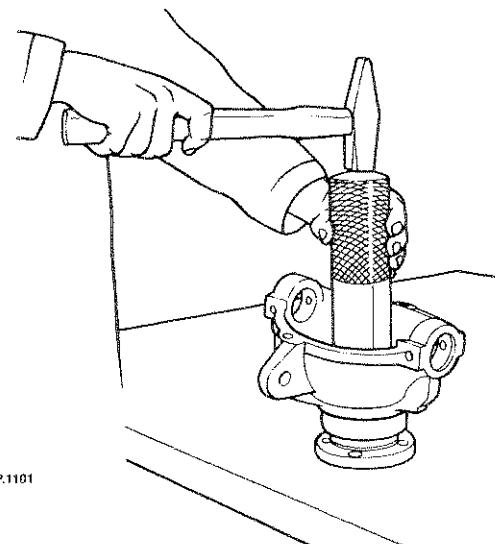
e - follow the operations below:



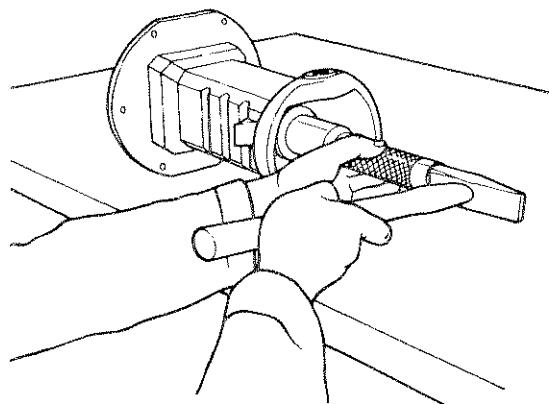
3 - Mount the bearing on the wheel hub with driver AT 37981328.



1 - Mount the bearing on the shaft with driver AT 37981014.



4 - Mount the bearing with driver AT 37981328.



2 - Mount the packing with driver AT 37981326 and the adapter AT 37981327.



WARNING - DANGER

Keep environment clean. Dispose of waste fluids, used filter cartridges, oils, lubricants and grease cleaners in the most suitable way and in compliance with regulations in force. The collection of waste oils must be performed by authorized plants.



**WARNING - DANGER**

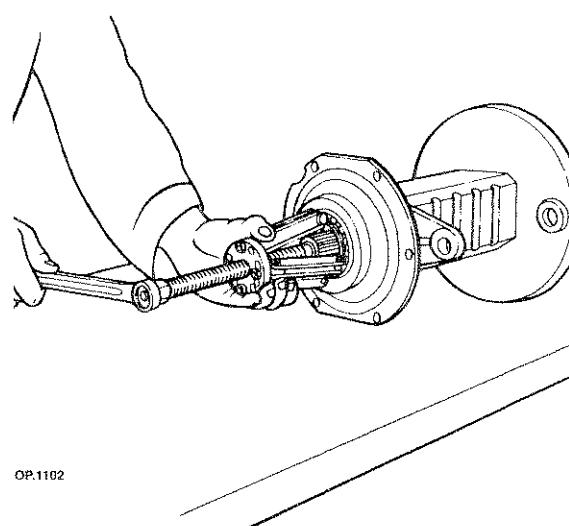
Perform operations by strictly observing accident prevention regulations.

- Operations that require special care may be hazardous for the operator if not correctly performed.

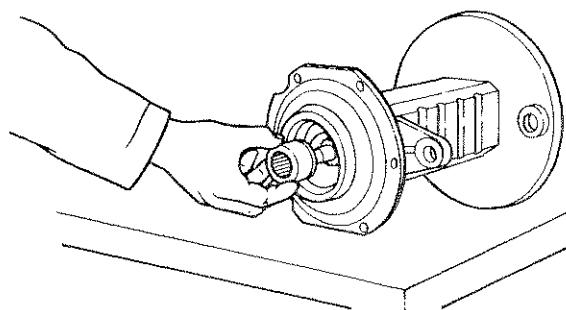
Superpark**Disassembly**

To disassemble the front axle, proceed as follows:

1 - Place the axle over a bench.

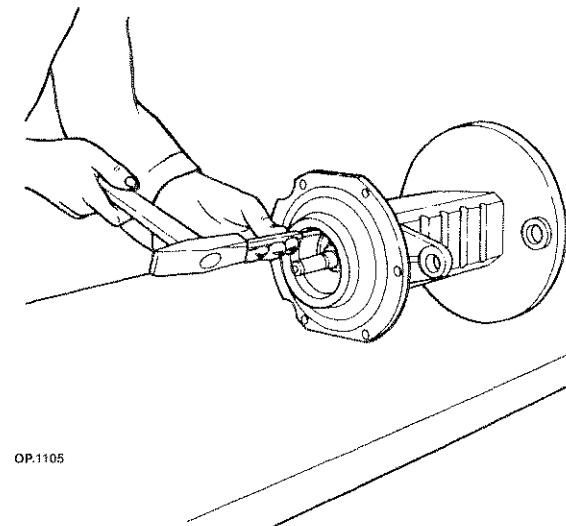


OP.1102



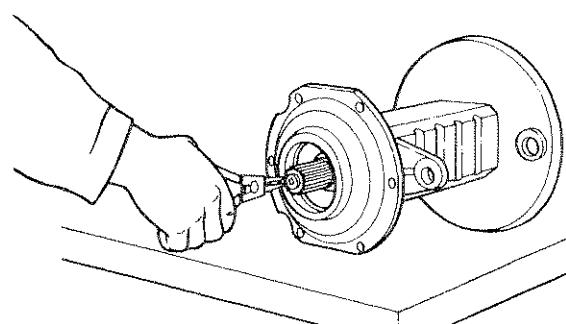
OP.1104

4 - Remove the traction engagement sleeve along with the control pads.



OP.1105

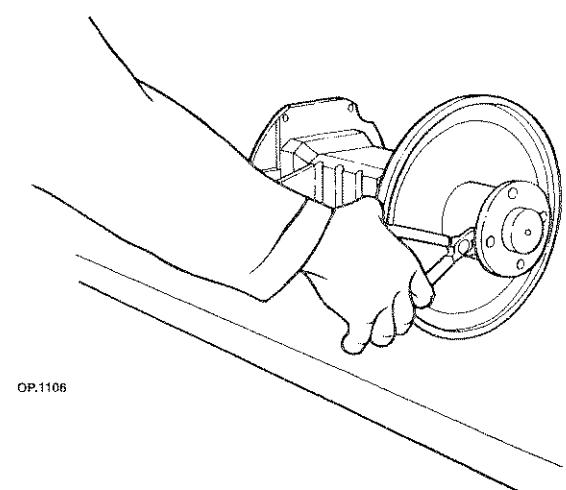
2 - Remove the bearing using the puller AT 37981261.



OP.1103

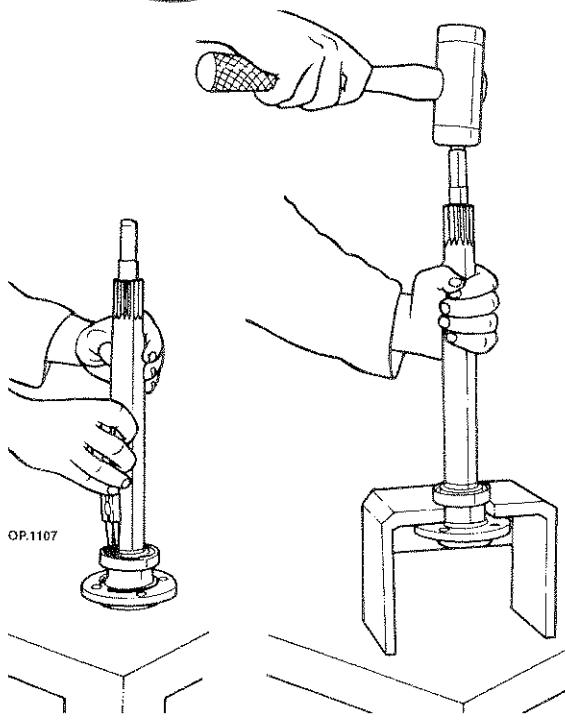
3 - Remove the spring ring and remove the drive sleeve.

5 - Remove the spring pin and remove the shaft along with the control fork.



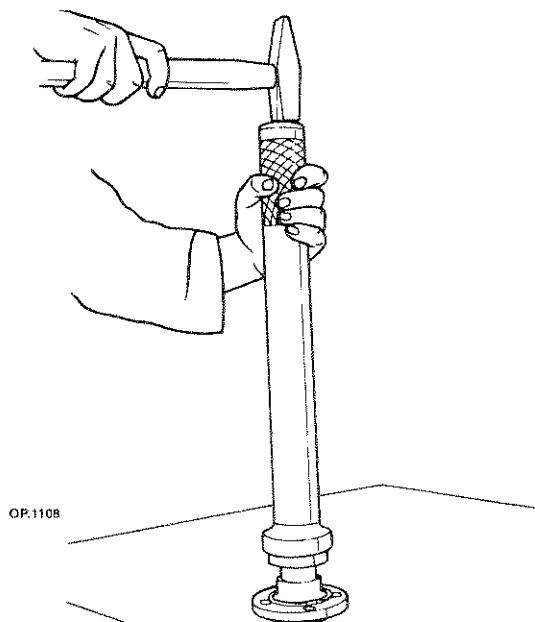
OP.1106

6 - Remove the retainer ring and remove the whole semishift.

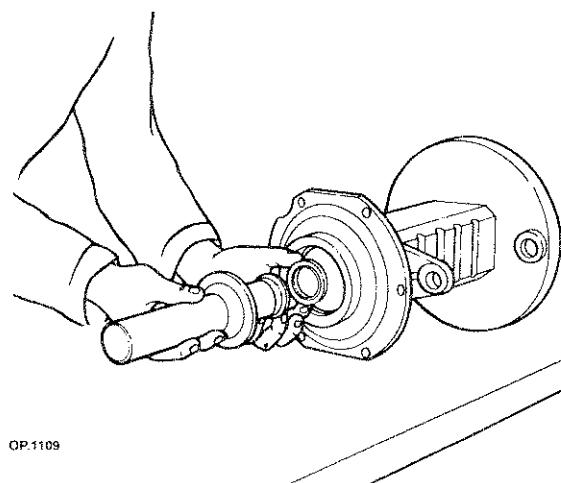


7 - Remove the bearing retainer ring.

8 - Remove the bearing with tool AT 37981316.



1 - Mount the semishift bearing using the driver AT 37981092.



2 - Mount seal using the driver AT 37981329.

Assembly

- a - proceed inversely as to the disassembly operations.
- b - observe the pictures for the location of the different components.
- c - observe the driving torques listed at page 4.
- d - Follow the following operations:



Perform operations by strictly observing accident prevention regulations.

- Do not use gasoline, diesel oil or other flammable liquids to degrease or clean parts but use commercial non-toxic solvents instead.

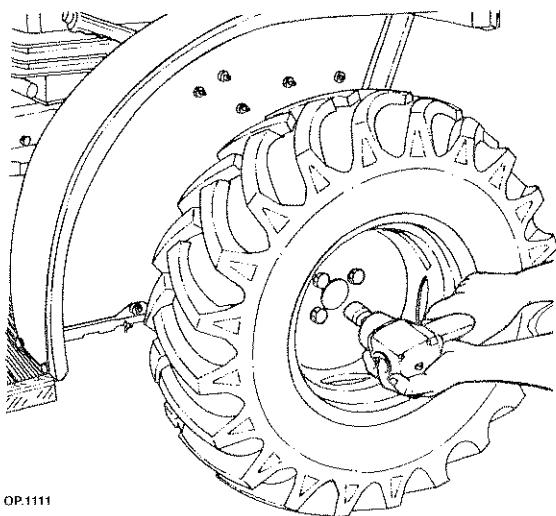


REAR AXLE

Disconnecting and connecting

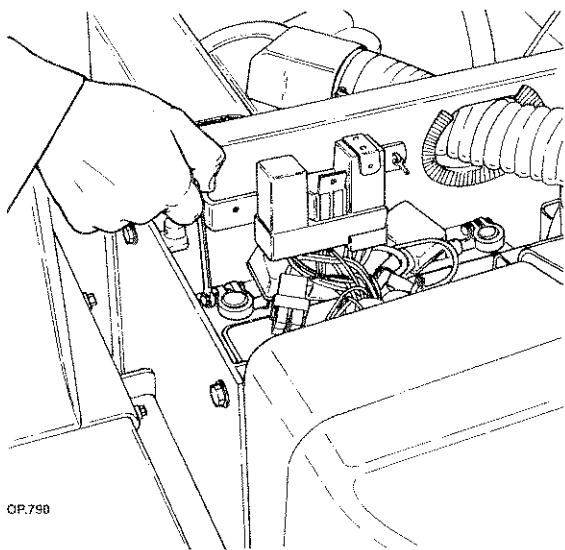
A - Tigretrac

To have access to the rear axle proceed as follows:



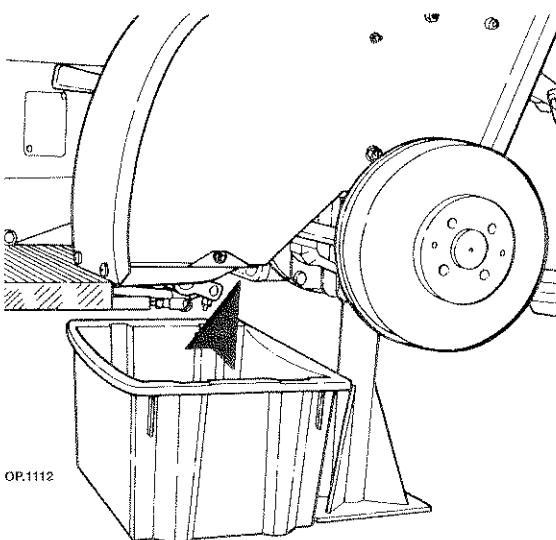
OP.1111

- 3 - Loosen the screws and remove the rear wheels.



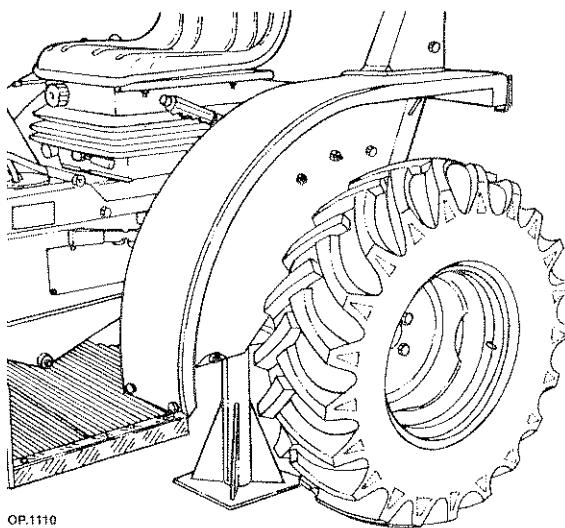
OP.790

- 1 - Disconnect the battery wire and insulate it.



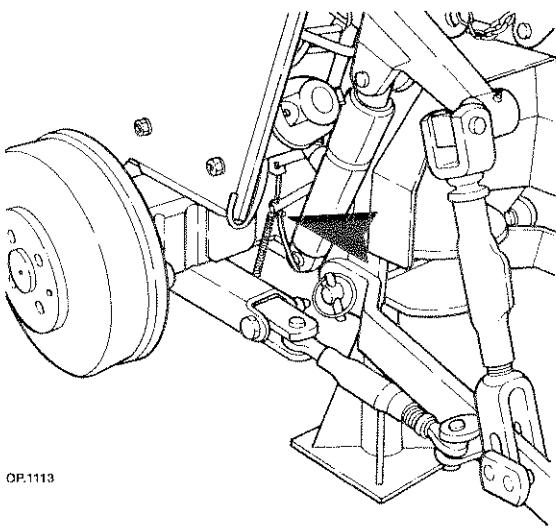
OP.1112

- 4 - Loosen the plug and drain oil in a special container.



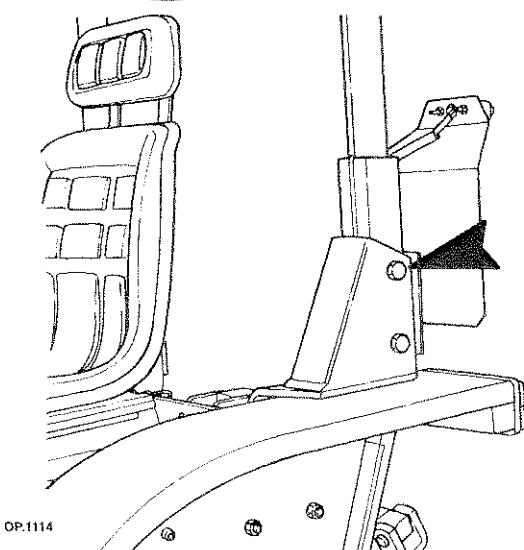
OP.1110

- 2 - Place a horse underneath the transmission - rear end.

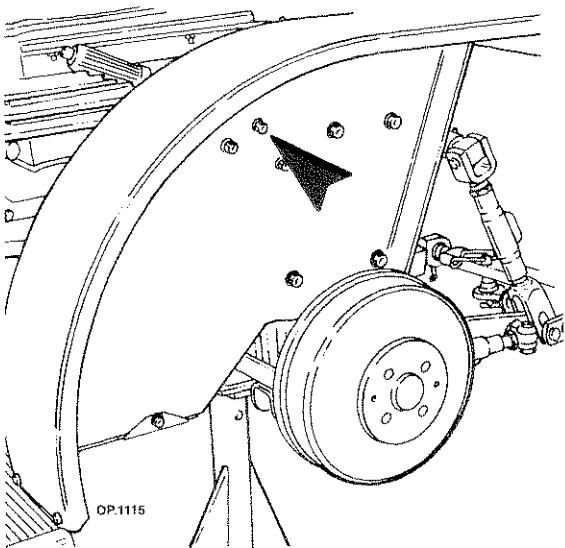


OP.1113

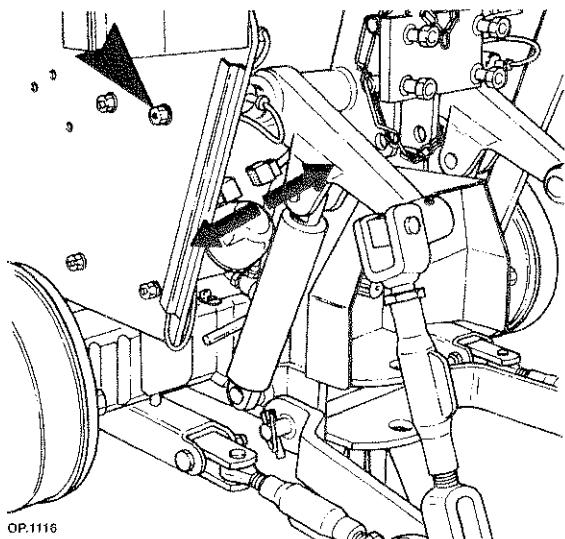
- 5 - Loosen the traction disengagement wire clamp and remove wire.



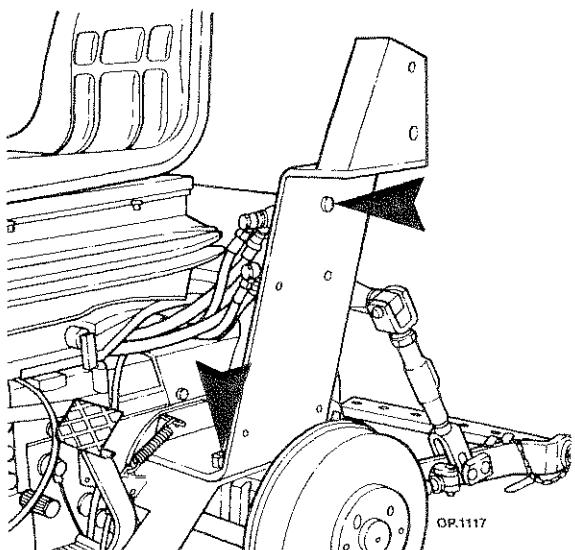
6 - Loosen the screws and remove the number plate support and the roll bar.



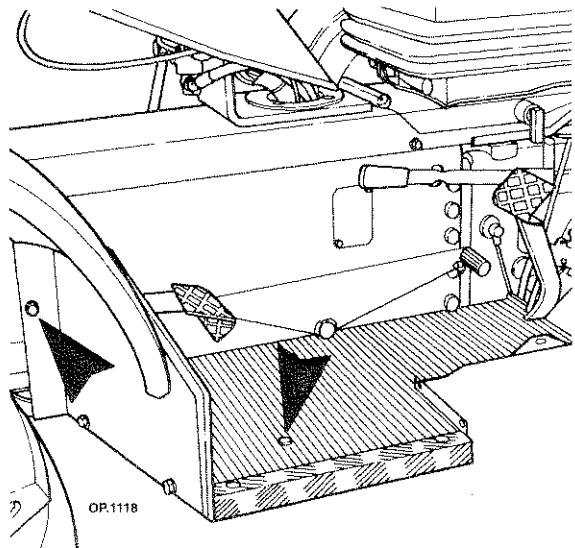
7 - Loosen the screws and remove the hand-brake support.



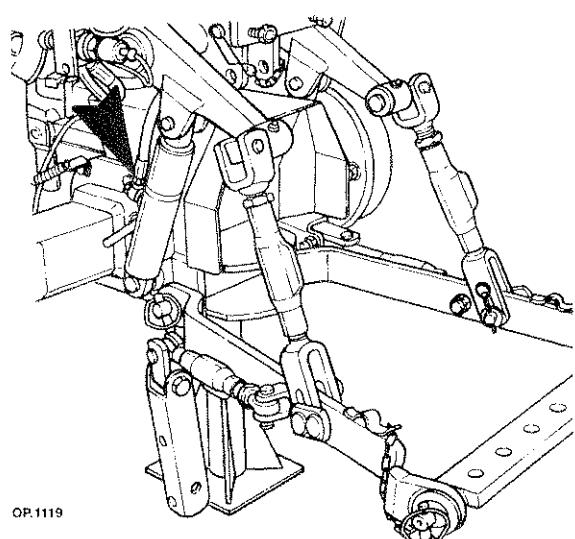
8 - Disconnect the electrical connection on the fenders and loosen the screws and remove the fenders.



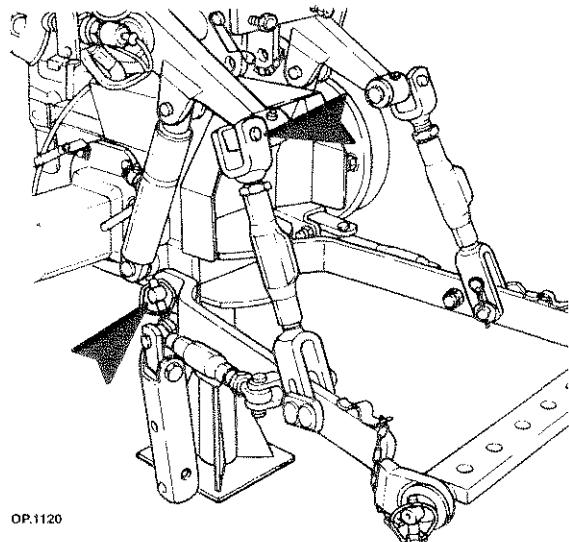
9 - Loosen the screws and remove the roll bar supports.



10 - Loosen the screws and remove the footrests.

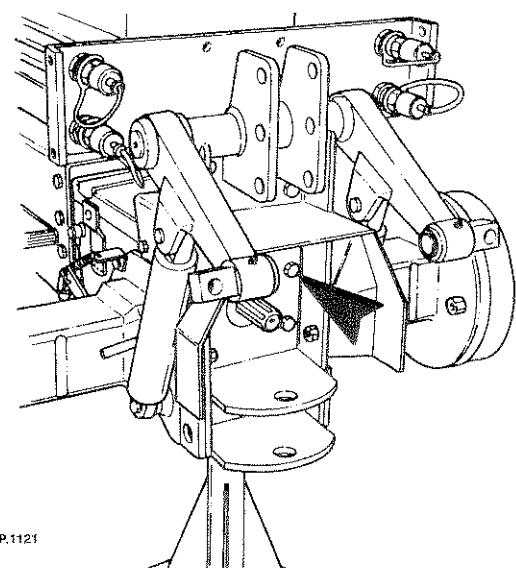


12 - Loosen the unions of the hoisting tubes and plug holes.



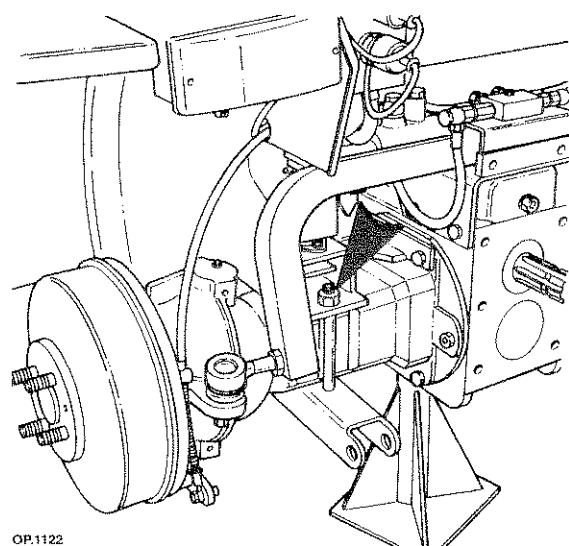
OP.1120

13 - Disconnect the tie-rods and the hoisting bars.



OP.1121

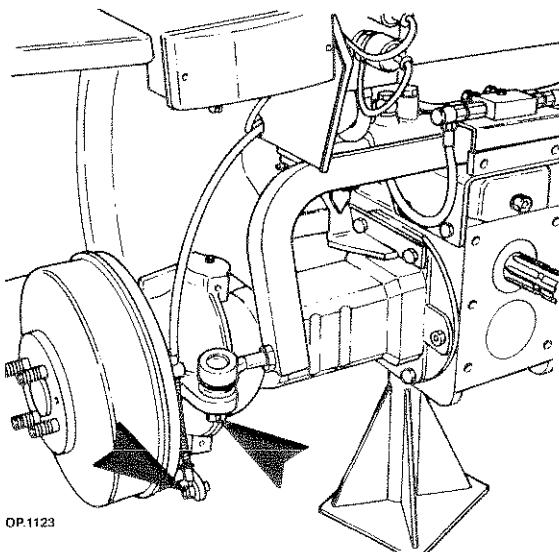
14 - Loosen the screws and remove the rear upper hoisting cover.



OP.1122

For Tigretrac only with frame and 4WS

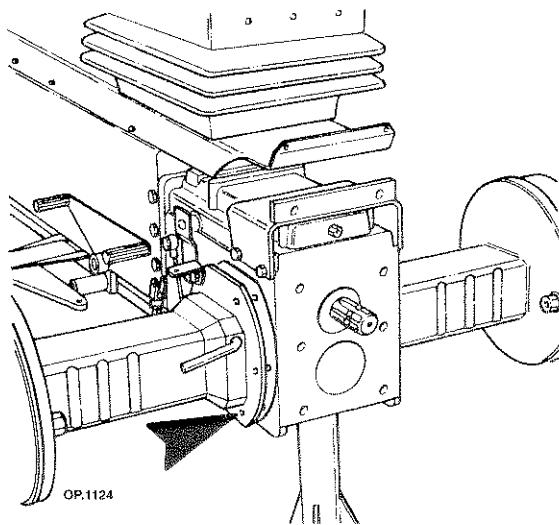
14.1 - Loosen the bolts and remove the roll bar supports.



OP.1123

14.2 - Remove the rings and remove the brake wires.

14.3 - Loosen the nuts and remove the bar ends of the steering coupling.



15 - Loosen the axle with differential lock and remove it from the transmission box along with the adjustment shims of the differential box.

16 - Loosen the axle screws opposite the differential along with the complete differential unit.



WARNING - DANGER



Perform operations by strictly observing accident prevention regulations.

- Use suitable hoisting means.

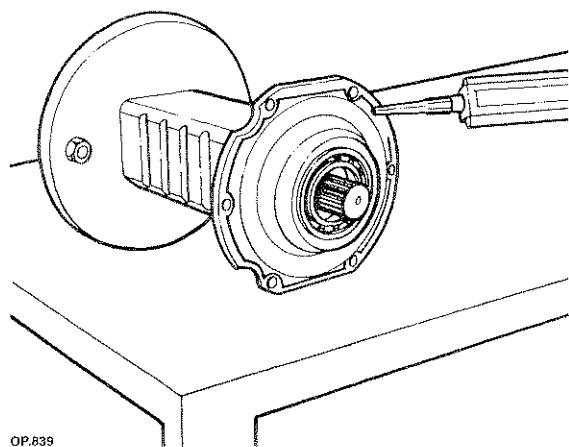
**WARNING - DANGER**

Keep environment clean. Dispose of waste fluids, used filter cartridges, oils, lubricants and grease cleaners in the most suitable way and in compliance with regulations in force. The collection of waste oils must be performed by authorized plants.

Connection

Proceed to the connection, bearing in mind the following instructions:

- a** - clean all parts to be mated carefully.
- b** - apply a 3 mm string of gasket forming compound following the path indicated in the figure.



- application of gasket forming compound

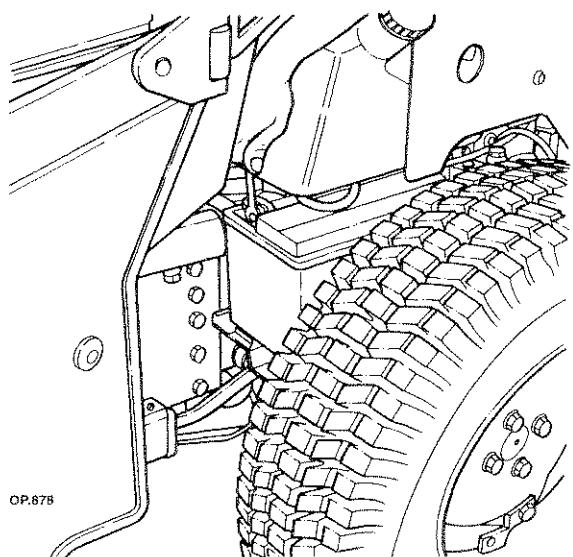
c - observe the driving torques listed at page 4

d - proceed inversely as to the disconnection.

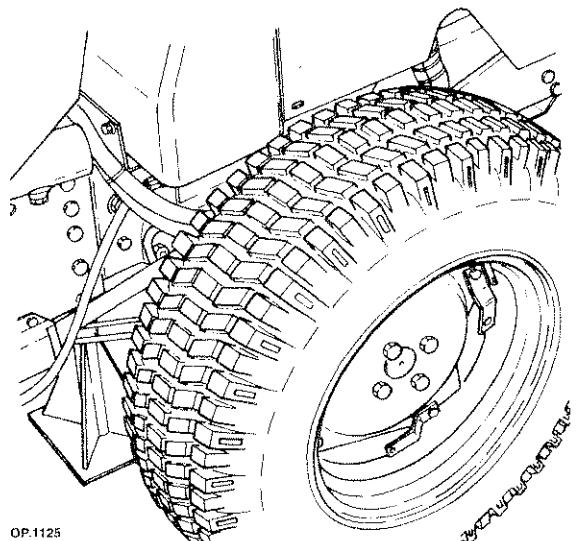
e. accurately clean the oil filter and clean all parts of the system that are in contact with the hydraulic oil of the circuit.

REAR AXLE**Disconnecting and connecting****B - Superpark**

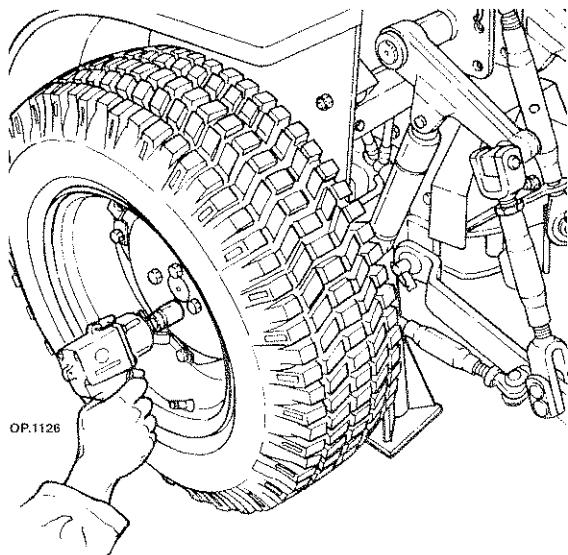
To have access to the front axle unit proceed as follows:



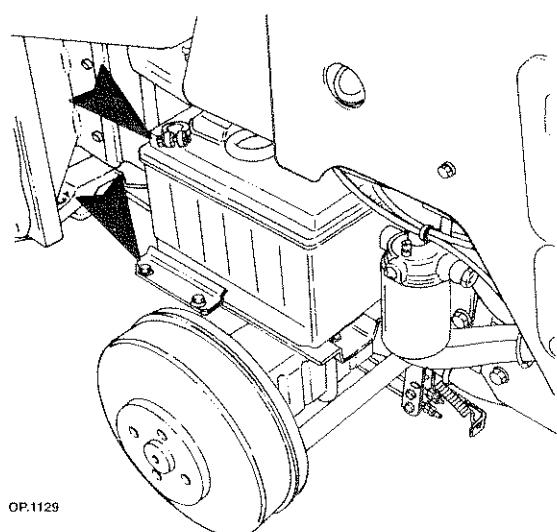
1 - Disconnect the battery wire and insulate it.



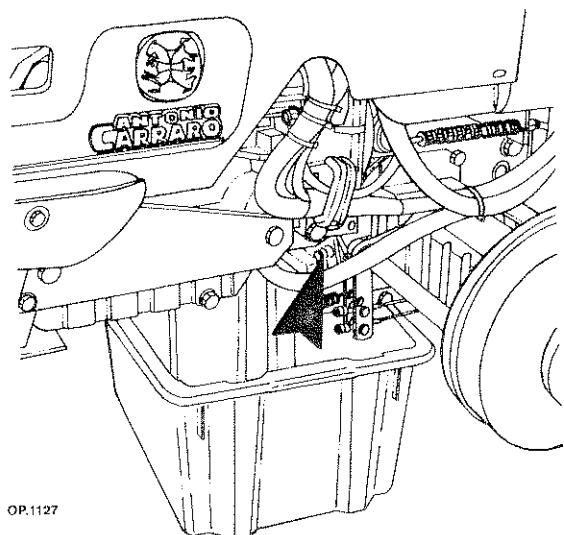
2 - Place a fixed horse underneath the central transmission - rear end.



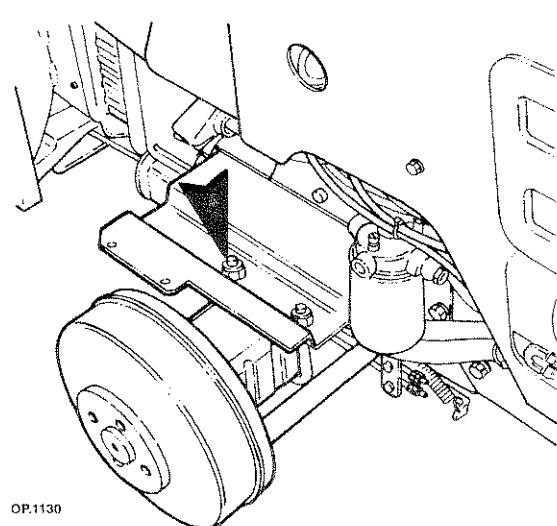
3 - Loosen the screws and remove the wheels.



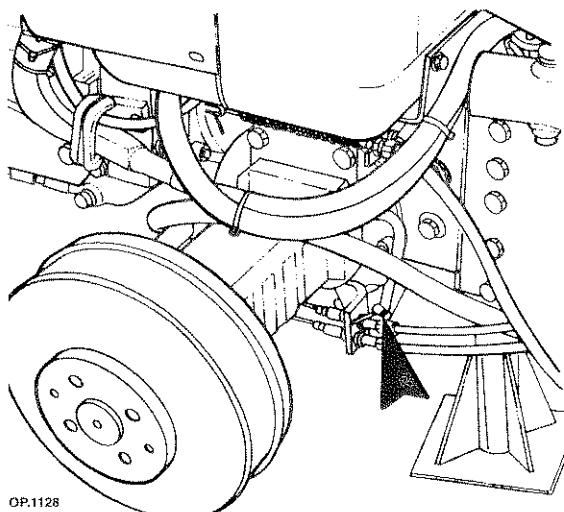
6 - Disconnect the clamp and the support and remove the battery.



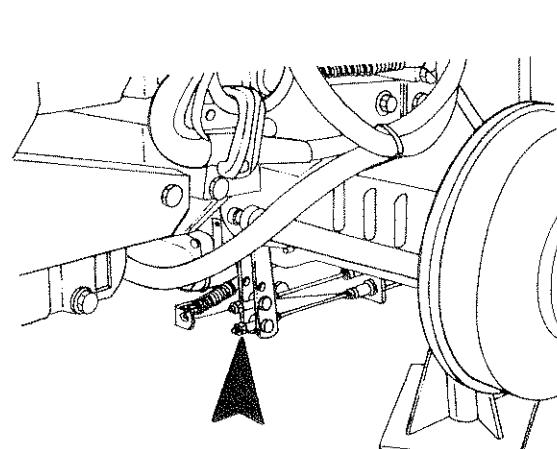
4 - Loosen the screws and remove the cover of the hydraulic oil suction filter and drain oil in a special container.



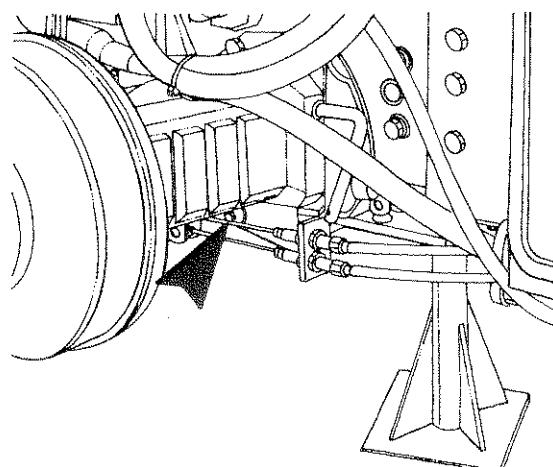
7 - Loosen the nuts and remove the battery supports.



5 - Loosen the clamp and remove the differential locking control wire.

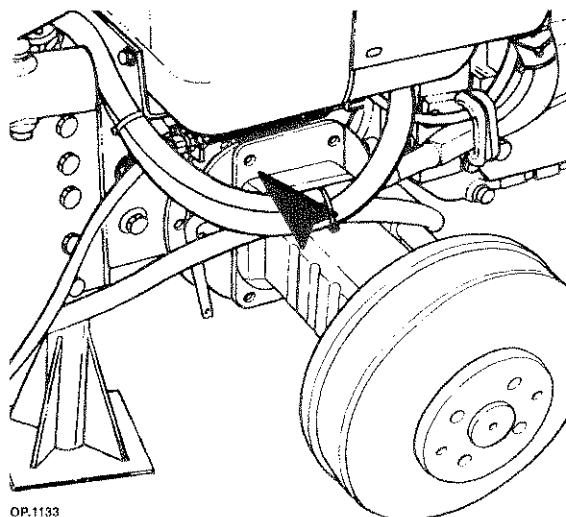


8 - Loosen the nuts and the lock nuts and remove the brake control wires.



OP.1132

9 - Loosen the screws and remove the supports that clamp the brake control sheath.



OP.1133

10 - Loosen the screws of the axle with differential lock and remove it from the transmission box along with the differential box adjustment shims.

11 - Loosen the axle screws opposite the differential locking and remove it along with the whole differential unit.



WARNING - DANGER



Perform operations by strictly observing accident prevention regulations.

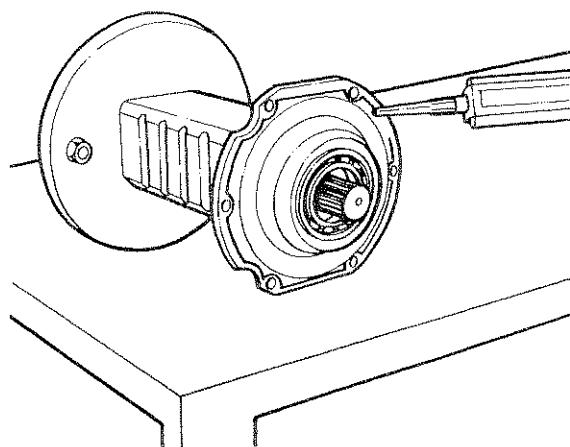
- Wear safety clothing such as, gloves and safety shoes.
- Use suitable hoisting means.

Connection

Proceed to the connection, bearing in mind the following instructions:

a - clean all parts to be mated carefully.

b - apply a 3 mm string of gasket forming compound following the path indicated in the figure.



OP.839

c - application of gasket forming compound

d - observe the driving torques listed at page 4

e - proceed inversely as to the disconnection.

f - accurately clean the oil filter and clean all parts of the system that are in contact with the hydraulic oil of the circuit.



WARNING - DANGER

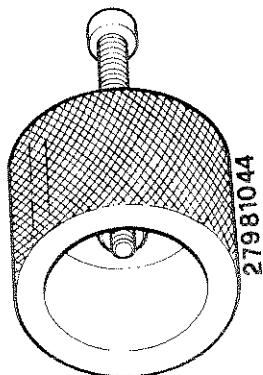


Keep environment clean. Dispose of waste fluids, used filter cartridges, oils, lubricants and grease cleaners in the most suitable way and in compliance with regulations in force. The collection of waste oils must be performed by authorized plants.

Disassembly - assembly

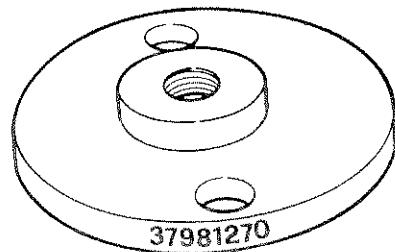
Tigretrac - Superpark

Follow the description given for the Superpark front axle.
See page 105-106.



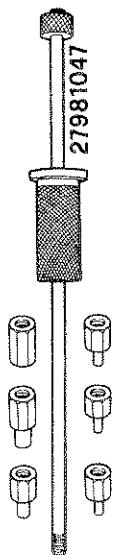
AT.224

1 - Puller for axle pin-bushings



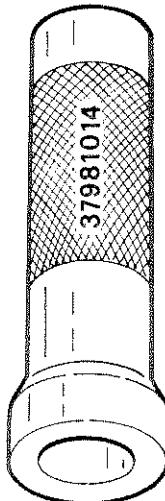
AT.225

4 - Adapter for puller.



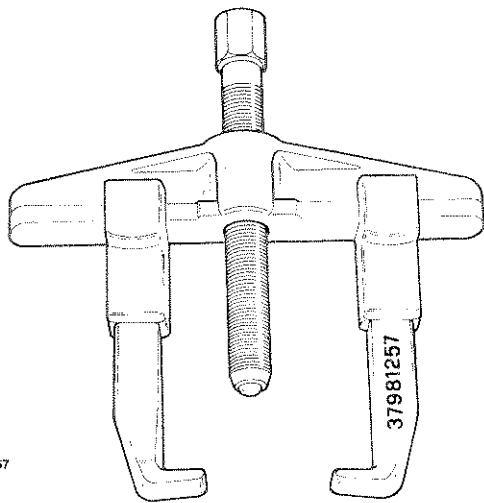
AT.004

2 - Puller for driver with adapter.



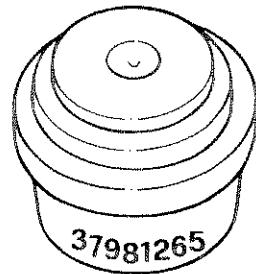
AT.023

5 - Driver for mounting of bearings.



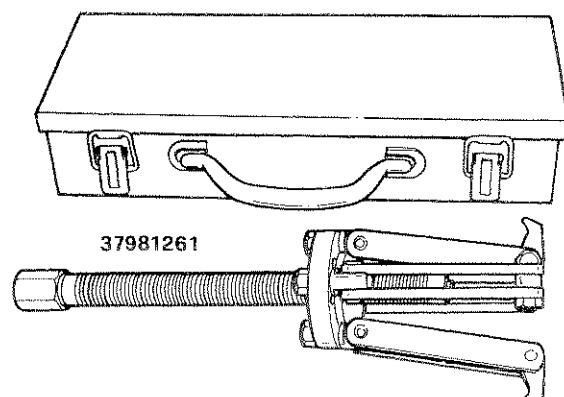
AT.067

3 - Universal puller.



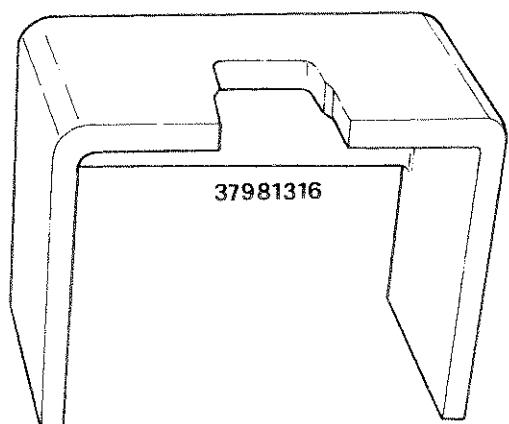
AT.094

6 - Adapter for universal puller.



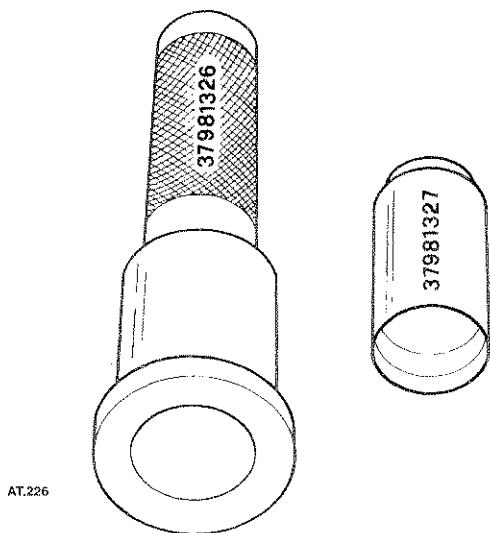
AT.060

7 - Universal puller.



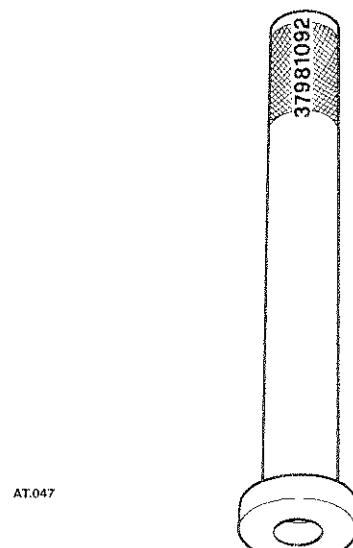
AT.228

10 - Tool for removal of axle shaft bearings.



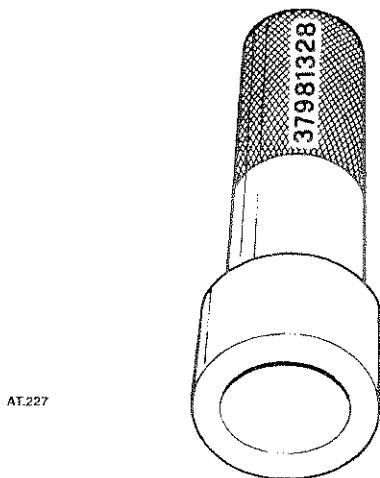
AT.226

8 - Driver and adapter for mounting of packing.



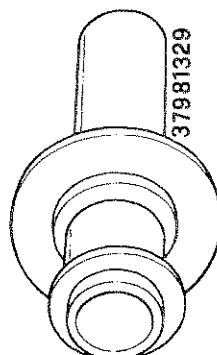
AT.047

11 - Driver for the mounting of the axle shaft bearings.



AT.227

9 - Driver for axle shaft bearing.



AT.229

12 - Driver for the mounting of the seal ring.

BRAKES

Shoe type brakes operate inside the drums applied to the rear wheel hubs.

Brakes	Brakes			Drum diameter
	Service	Emergency	Parking	
Tigretrac Superpark	Expansion-type with mechanical transmission, controlled by a single pedal.	Expansion-type with mechanical transmission actuated by means of a hand lever with simultaneous reaction on shoes.	It is the same as the emergency device, locked in braking position by means of a non-reversible motion device.	252

Friction material: braking surface $(23 \times 5) \times 4 = 460 \text{ cm}^2$ S.R.

Brand and type: Ferodo 380 4 F asbestos-free

Troubleshooting

Troubles	Probable cause	Rimedi
Poor braking	1) Damaged, worn out or excessively smooth friction material 2) Brakes need adjustment	Replace shoes Adjust brakes
Control pedal stroke too long	1) Brakes need adjustment 2) Damaged friction material of the shoes	Adjust Replace shoes
Unbalanced braking	1) Brakes need adjustment 2) Tie-rods need adjustment	Adjust Adjust
Parking brake hard to actuate	1) Rusty connection shaft	Remove parts and grease them
When parking brake is disengaged, the tractor remains locked	1) Hindrance in the return stroke of the tie-rod	Remove hindrances

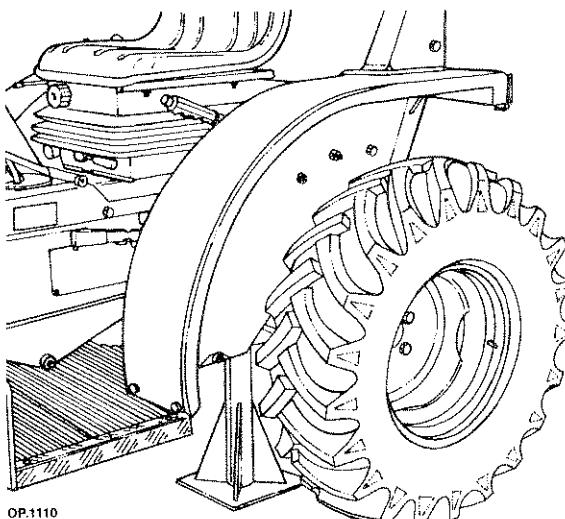


BRAKES

Disconnecting and connecting

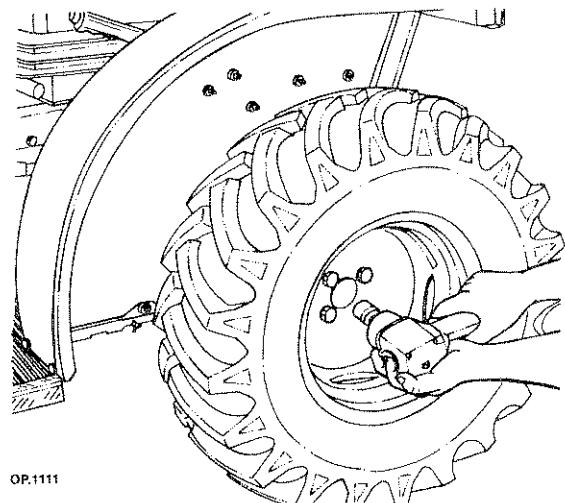
Tigretrac - Superpark

To have access to the brakes proceed as follows:



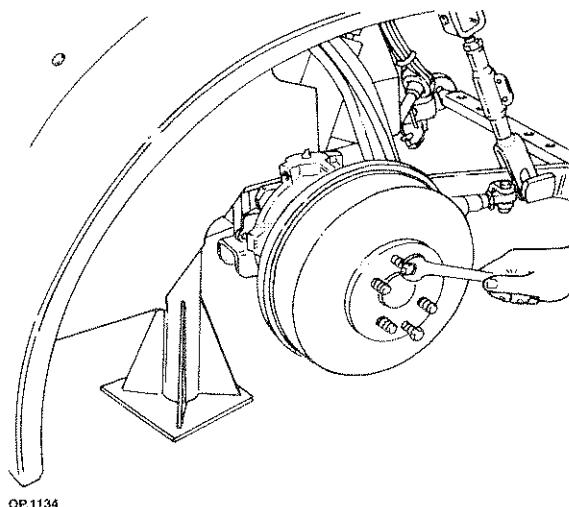
OP.1110

1 - Place a fixed horse underneath the transmission - rear end.



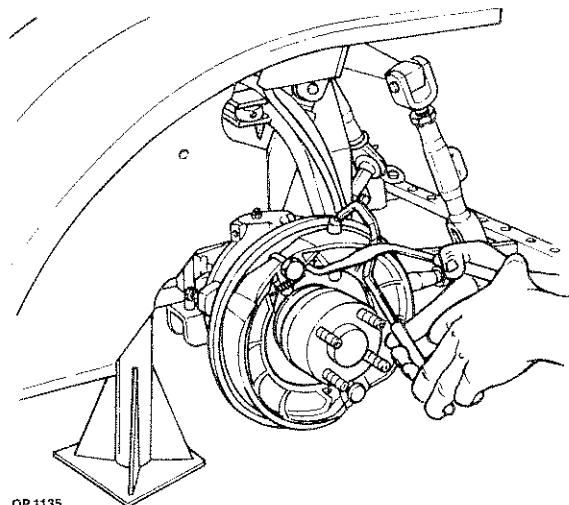
OP.1111

2 - Loosen the screws and remove the rear wheels.



OP.1134

3 - Tighten two screws M 10 and remove the drum.



OP.1135

4 - Remove the return springs using the Beta pliers 1471/330.



WARNING - DANGER



Perform operations by strictly observing accident prevention regulations.

- Wear safety clothing such as, gloves and safety shoes.

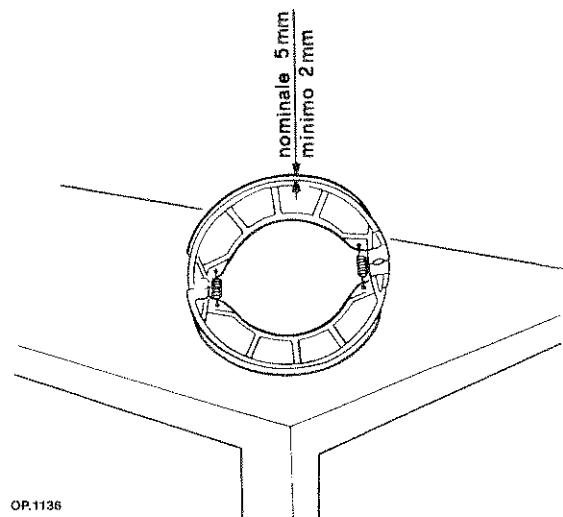


Connection

Proceed to the connection of the unit considering the following instructions:

a - Reassemble by proceeding inversely as to the disconnection.

b - Check that the friction packings are not too worn out and that they are not scratched. If they are, replace them.

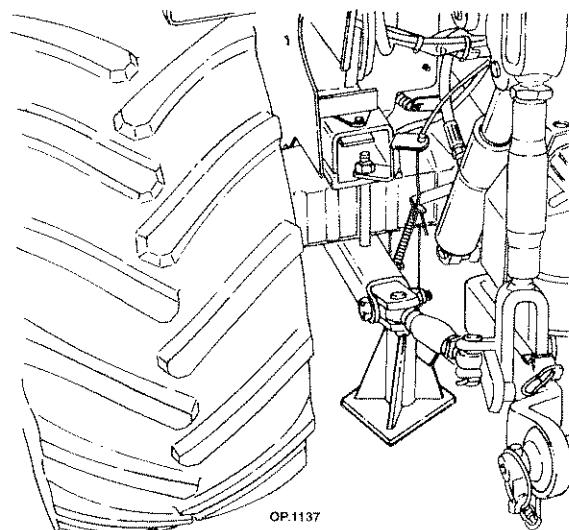


- Checking the friction packing rated dimension.

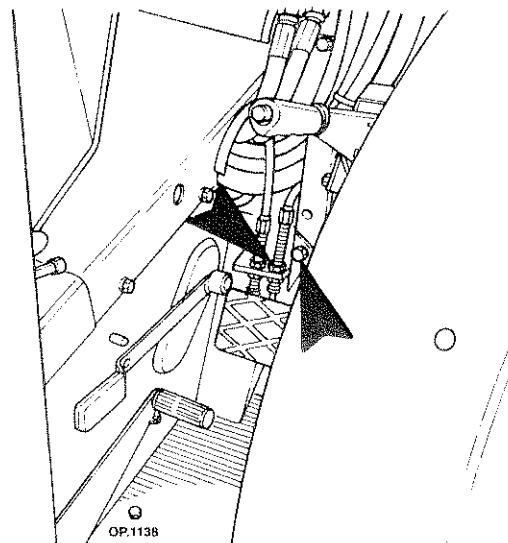
c - Accurately clean before assembling the parts and grease the controls (only the commands).

Brake adjustment

To adjust brakes, proceed as follows:



1 - Place fixed horses underneath the axles.



2 - Loosen the screws and remove the protection in order to reach the 4WS Tigretrac brake adjustments.

3 - Move the shoes towards the drum by means of the tie-rods or adjustment cables.

4 - Actuate the foot pedal with a force of 500 - 600 N (50.9 - 61 Kg) so that the shoes perfectly fit as to the drum.

5 - Move shoes against the drum by means of the tie-rod or cord for the adjustment of the brakes until shoes slide on the drum.

6 - Turn the adjustment in the opposite direction so as to free the shoes from the drum.

7 - Correct balancing of the brakes.

Adjustment of brake hand control stroke

To adjust the stroke of the parking brake lever, proceed as follows:

1 - Block the parking brake with a force of 400 - 500 N (40.7 - 50.9 Kg.) so controls and brake shoes fit into place.

2 - Tighten to loosen the adjustment until the control lever performs 4 - 5 clicks when exerting a force of 400 - 500 N (40.7 - 50.9 Kg).



Hydrostatic steering

The hydrostatic steering gear consists in the capacity of conferring to the wheels an angular displacement proportional to the rotation of the steering wheel making use of a determined quantity of oil delivered by the hydrodrive to the jack (steering cylinder). This means that there are no mechanical connections between the steering wheel and the wheels but only flexible hoses that link the hydrodrive to the steering cylinders.

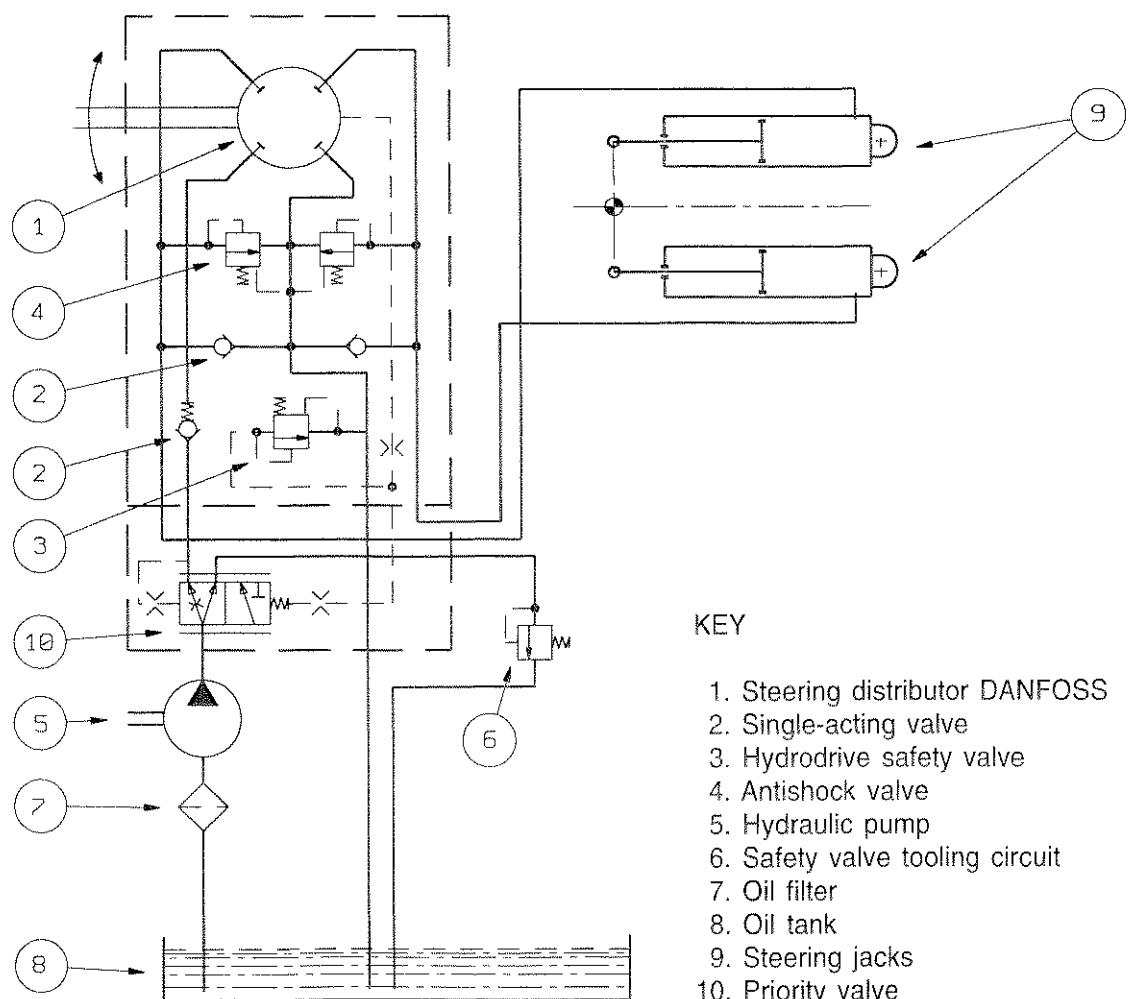
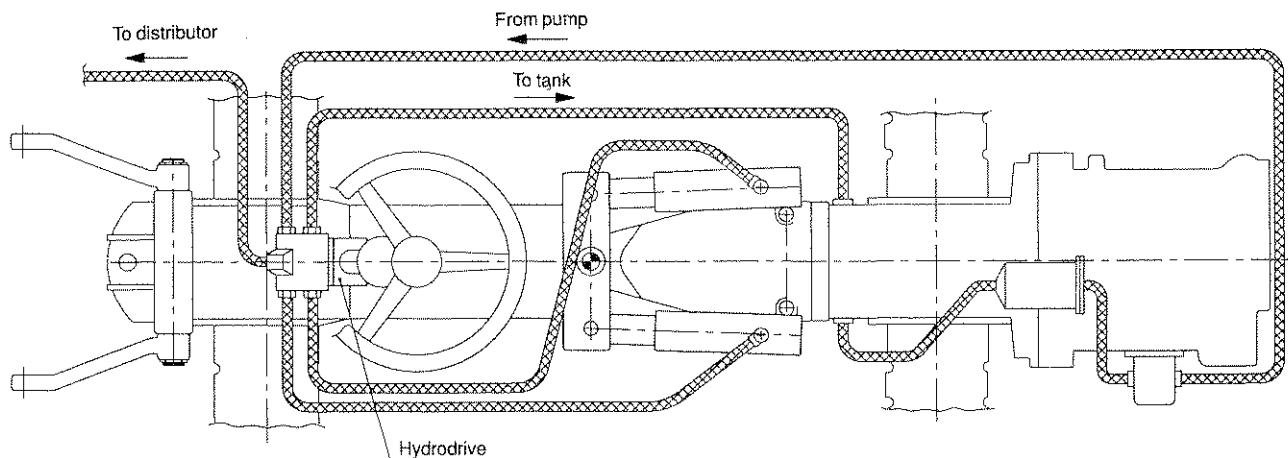
Hydrodrive

Technical features

	Tigretrac 2500	Tigretrac 3800	Tigretrac 3800 4WS	Superpark 3800
Brand	DANFOSS	DANFOSS	DANFOSS	DANFOSS
Hydrodrive	Type	OSPC 50 LS/150-3133	OSPC 50 LS/150-3133	OSPC 100 LS/150-3133
	Code	40805006	40805006	40805006
Priority valve - Priority		OLSA 40/152 B 0119		
Overpressure valve setting	130 Bar	130 Bar	130 Bar	130 Bar
Antishock valve setting	200 Bar	200 Bar	200 Bar	200 Bar
Jack diameter	15/40	15/40	15/40	40
Jack stroke	163	163	163	118
Steering wheel revolution	4.1 3.5	4.1 3.5	4.1 3.5	3
Toe-in		mm 0-2		

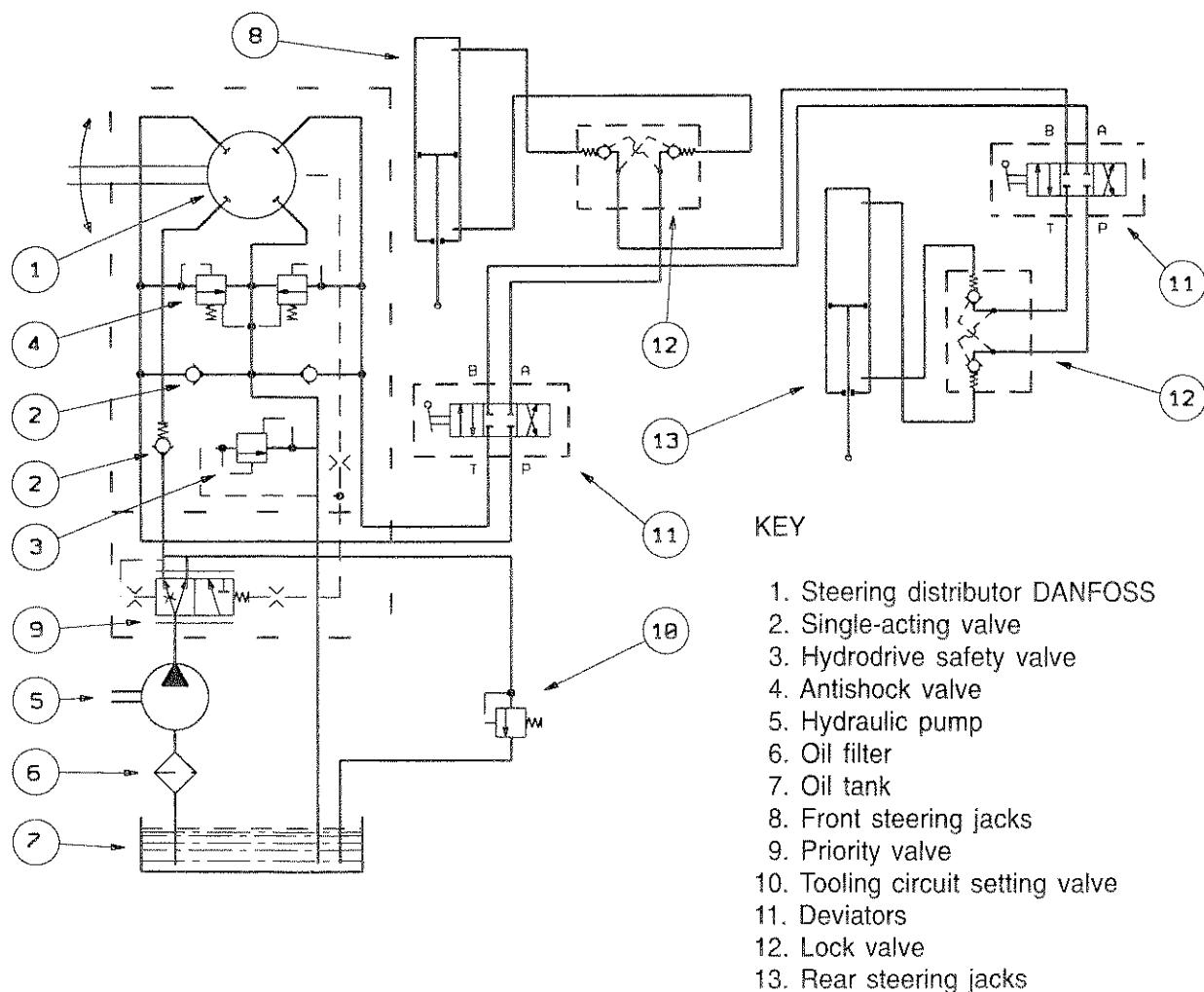
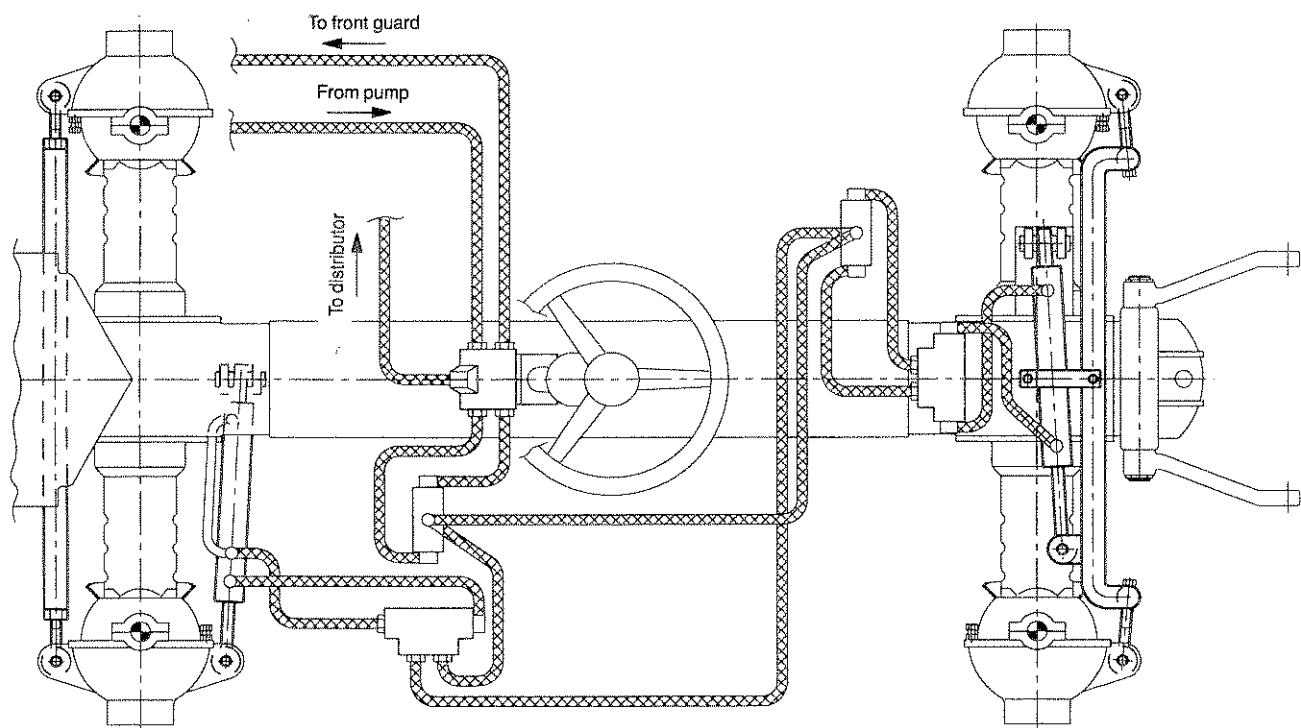


HYDRAULIC DIAGRAM STEERING - SUPERPARK 3800



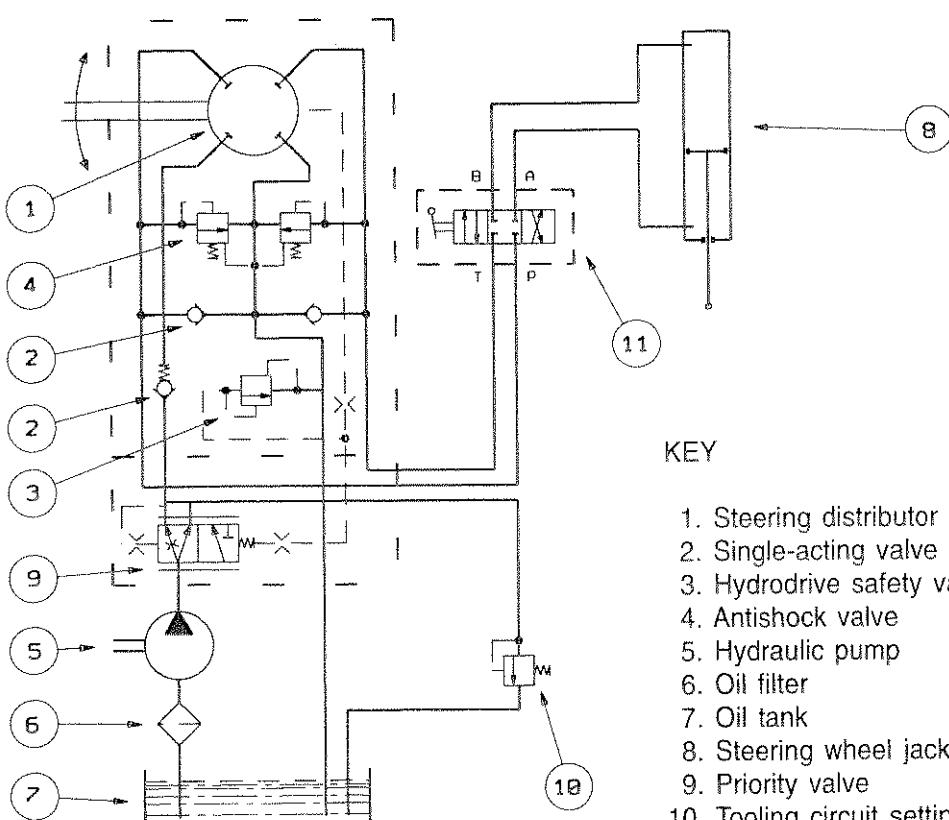
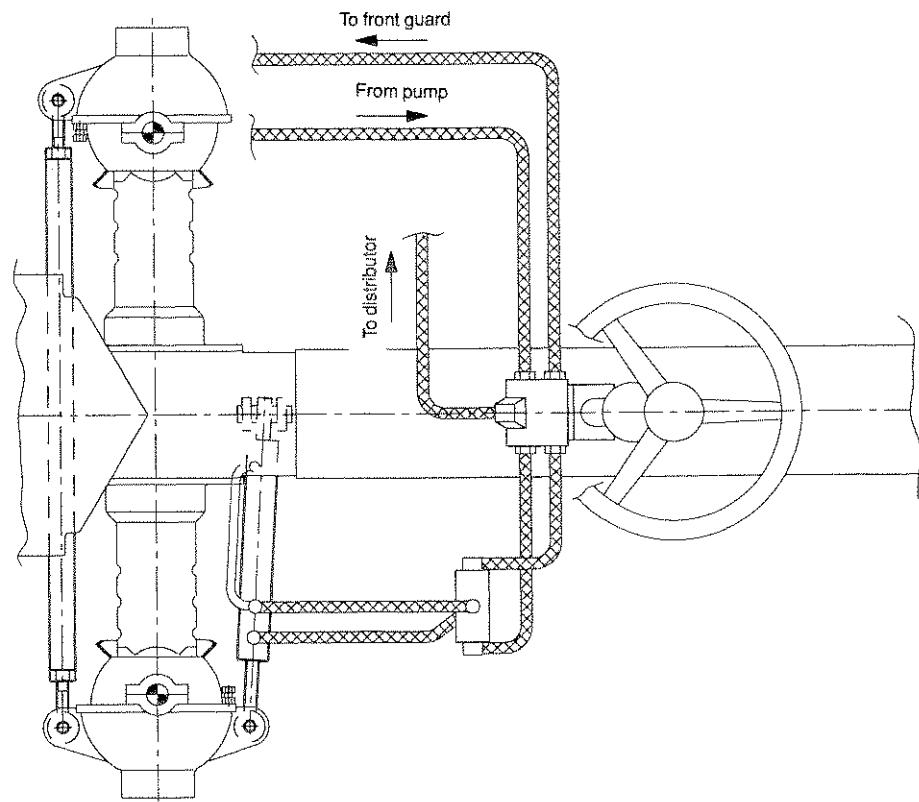


HYDRAULIC DIAGRAM STEERING - TIGRETRAC 3800 4WS





HYDRAULIC DIAGRAM STEERING - TIGRETRAC 3800



KEY

1. Steering distributor DANFOSS
2. Single-acting valve
3. Hydrodrive safety valve
4. Antishock valve
5. Hydraulic pump
6. Oil filter
7. Oil tank
8. Steering wheel jacks
9. Priority valve
10. Tooling circuit setting valve
11. Deviator

**HYDRODRIVE****Troubleshooting**

Trouble	Cause possibili	Rimedi
The steering wheel is hard to turn	1) Faulty hydraulic pump 2) The hydrodrive needs setting 3) Hardening of the steering column due to seizing or oxidation.	Replace the hydraulic pump. Setting of the hydrodrive. Replace or remove cause by lubricating it.
Oil leak in the hydrodrive unit	1) Loose pipes. 2) Faulty washer or O-ring. 3) faulty O-rings.	Tighten unions. Replace washers or packings. Replace packings
The tractor does not follow the steering direction	1) Air in the hydraulic circuit. 2) Worn out seal rings. 3) Cylinder safety or return open valves due to dirt deposit or damaged.	Eliminate causes for air seepage. Replace packings. Eliminate dirt and clean filter or replace the distributor.
The tractor doesn't turn	1) Check the oil level in the front transmission box. 2) Damaged hydraulic pump for hydrodrive and hoisting.	Restore level. Replace pump.

Note: In case of faulty operation of the hydrodrive unit refer to the Danfoss manual.



WARNING - DANGER

Perform operations by strictly observing accident prevention regulations.

- Wear safety clothing such as gloves and safety shoes.

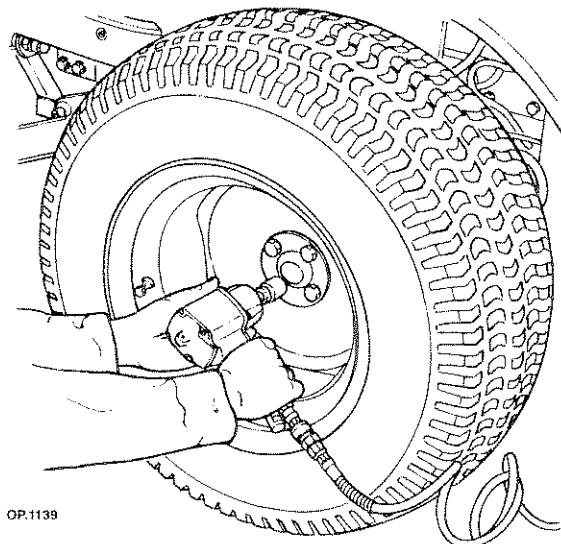
Watch out for shearing, Watch out for squeezing, Watch out for tangling, Watch out for collision, Watch out for projection of fluids at high pressure.

Steering cylinder

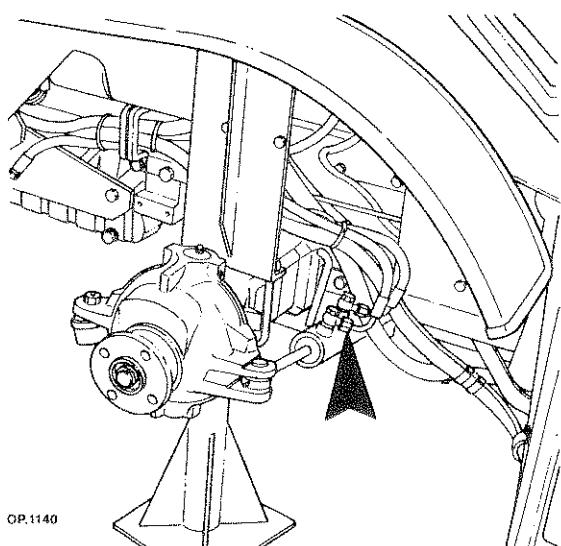
Overhauling - replacing the O-ring

TIGRETRAC

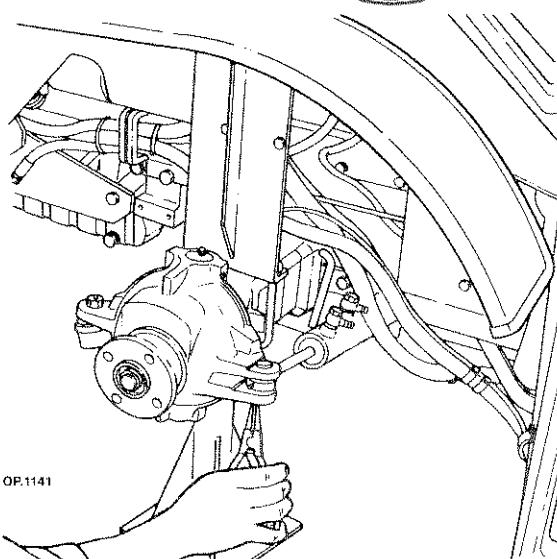
To overhaul the steering cylinder, proceed as follows:



- 1 - Place a fixed horse underneath the axle, loosen the screws and remove the wheel.



- 2 - Loosen the unions of the oil tubes and plug the holes with stoppers.



- 3 - Remove the spring ring and remove the anchoring pin.

- 4 - Use the puller AT 37981314, remove the steering cylinder pin and remove the whole cylinder.



OP.1171

- Tigretrac hydrodrive cylinder

- 5 - Remove the spring ring and remove the assembled rod.

- 6 - Replace the damaged O-ring.

- 7 - Drain cylinder oil.

- 8 - Reassemble following the operations below:

- a - clean accurately

- b - oil O-rings packings, before assembly

- c - proceed inversely as to the disassembly operations

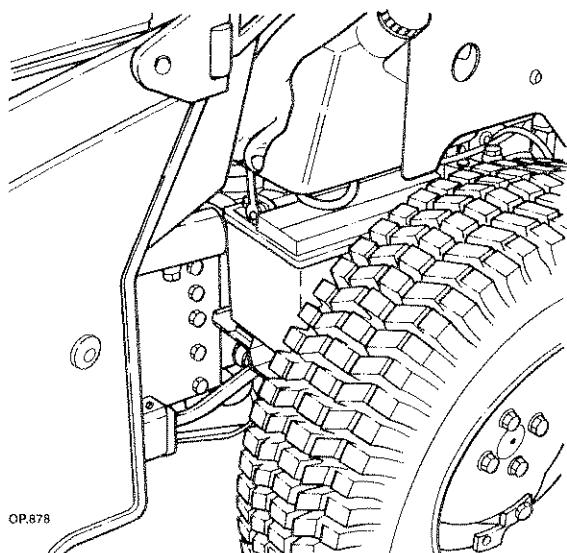
**WARNING - DANGER**

Perform operations by strictly observing accident prevention regulations.

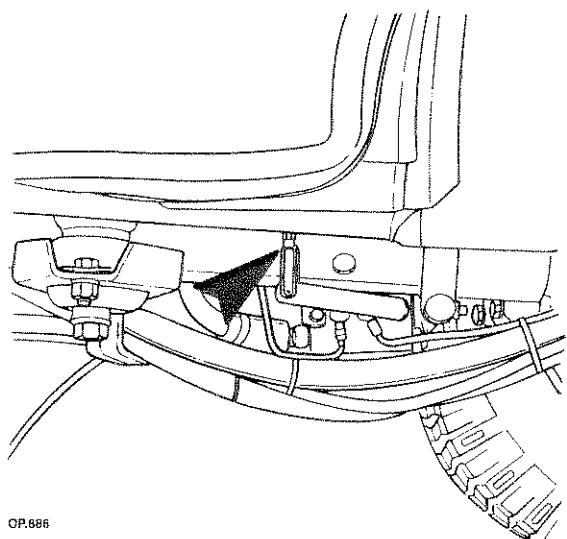
- Wear safety clothing such as, gloves and safety shoes.
- Do not align slots with hands but use specific tools instead.

Steering cylinder**Overhauling - replacing the O-ring****SUPERPARK**

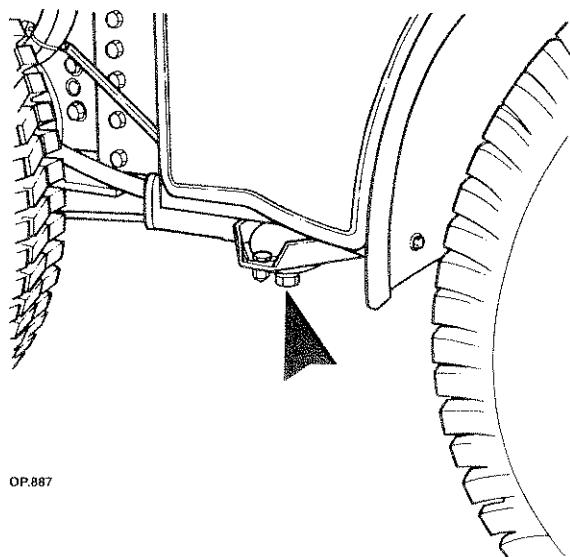
To overhaul the steering cylinder, proceed as follows:



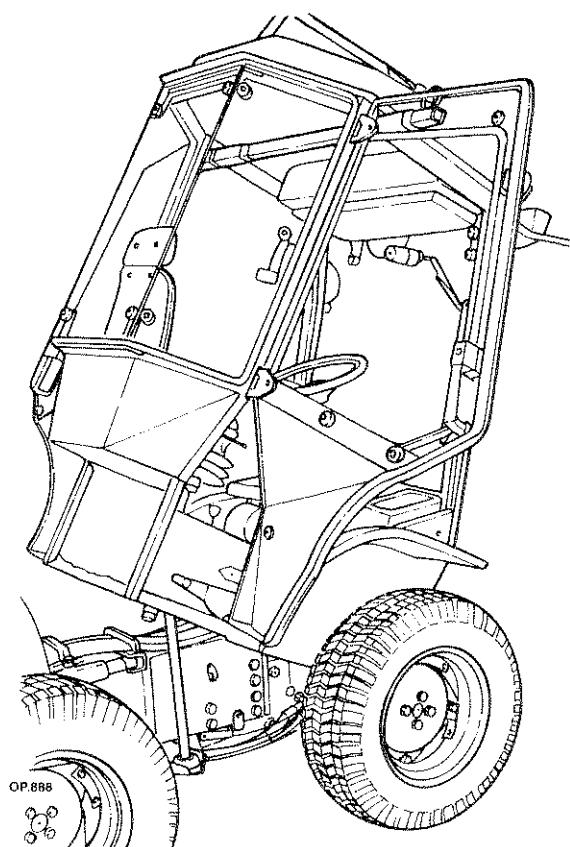
- 1 - Disconnect the positive wire from the battery and insulate it.



- 2 - Remove the control fork (speed-fix).



- 3 - Loosen the bolts of the rear silent bloc behind the cab.

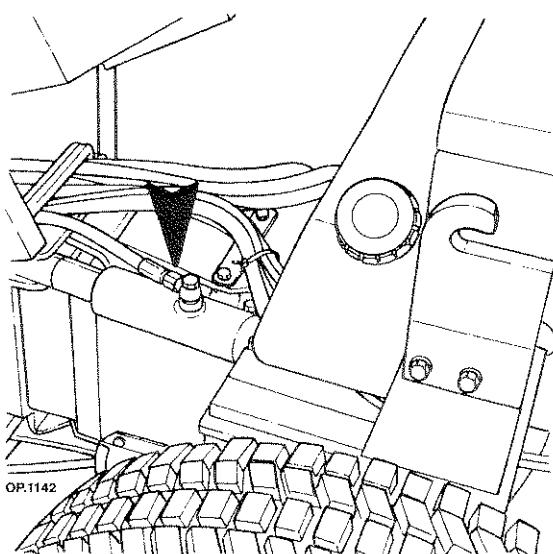


- 4 - Sling the cab at the back and hook it to a hoist and lift it high enough to place a safety push rod.

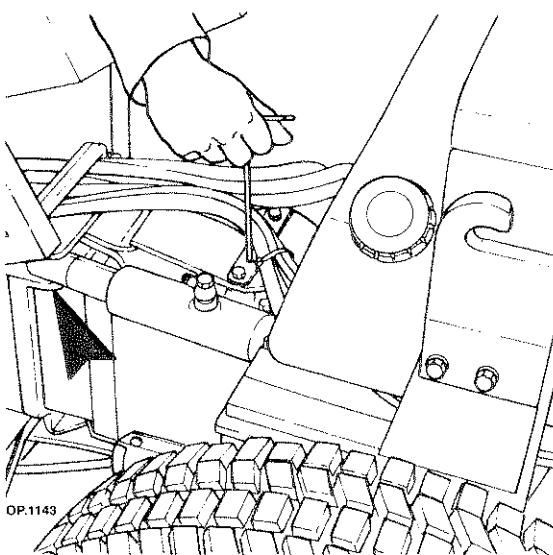
**WARNING - DANGER**

Perform operations by strictly observing accident prevention regulations.

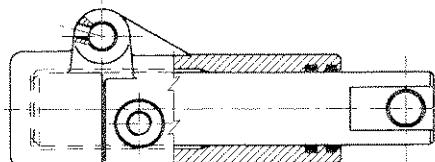
- Use suitable hoisting means.
- Wear gloves to handle metal cords or chains.



5 - Loosen the union of the hydrodrive cylinder tubes and plug holes with plastic stoppers.



6 - Remove the retainer pins and remove the steering cylinder.



OP.1172

Superpark hydrodrive cylinder

7 - Remove the rod along with the oil remaining in the cylinder.

8 - Replace the damaged O-ring.

9 - Proceed to the assembly, taking into account the following operations:

a - clean accurately

b - oil O-rings packings, before assembly

c - proceed inversely as to the disassembly operations

d - observe the driving torques listed at page 4.



WARNING - DANGER

Keep environment clean. Dispose of waste fluids, used filter cartridges, oils, lubricants and grease cleaners in the most suitable way and in compliance with regulations in force. The collection of waste oils must be performed by authorized plants.



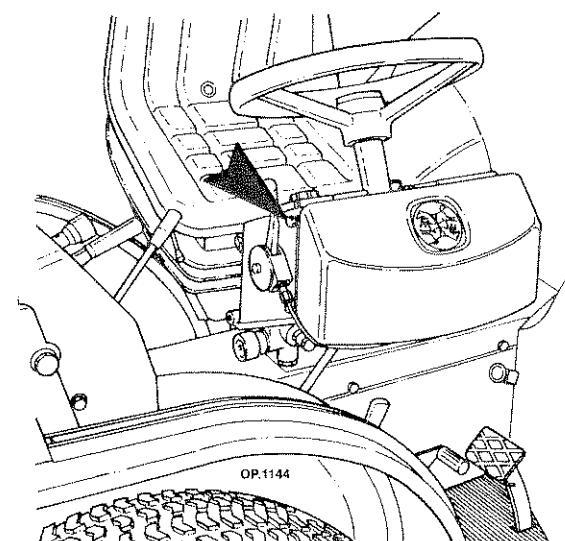
Hydrostatic drive distributor

Disconnecting and connecting

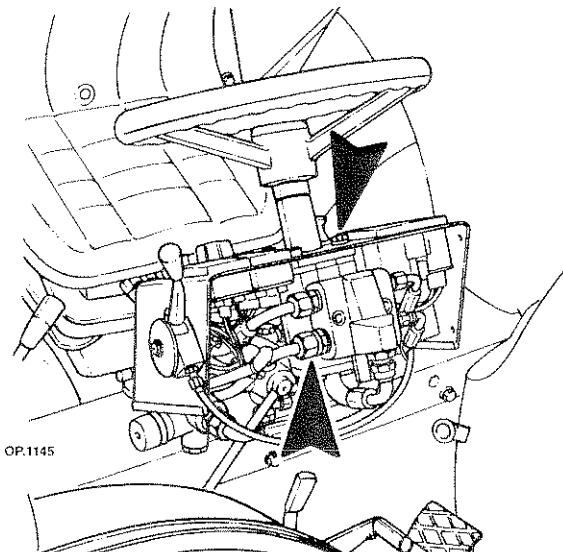
To disconnect the hydrodrive distributor, proceed as follows:

1 - Disconnect the positive wire of the battery and insulate it.

Tigretrac



2 - Loosen the screws and remove the cover.



- 3 - Loosen the five delivery and oil return pipe fittings from the hydrodrive distributors and plug holes with suitable plastic stoppers.
- 4 - Loosen the fastening screws of the hydrodrive distributor that lead to the steering column.
- 5 - Reach in for the hydrodrive distributor.



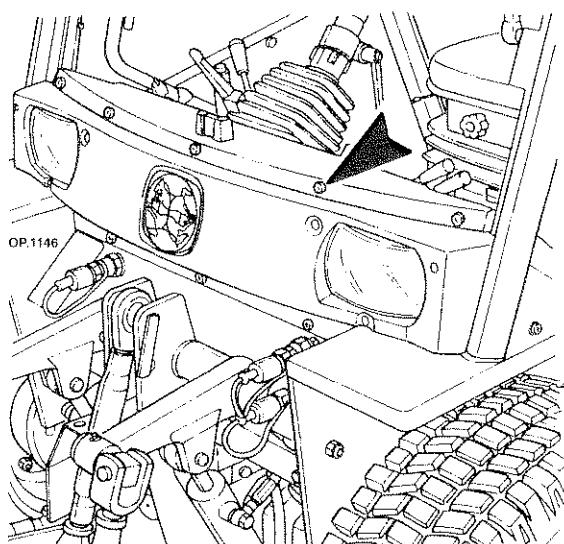
WARNING - DANGER



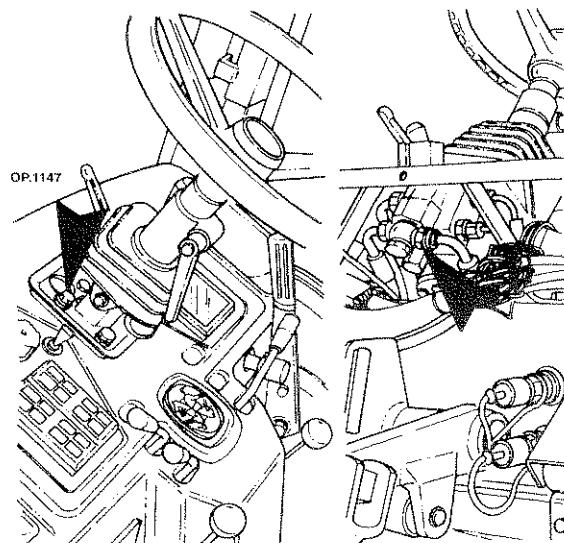
Perform operations by strictly observing accident prevention regulations.

- Watch out for projection of fluids at high pressure.

Superpark



- 2 - Loosen the screws and remove the dashboard that houses the lights.



- 3 - Loosen the five delivery and oil return pipe fittings from the hydrodrive distributors and plug holes with suitable plastic stoppers.
- 4 - Loosen the fastening screws of the hydrodrive distributor that lead to the steering column.
- 5 - Reach in for the hydrodrive distributor.

Re-assembly

Hydrostatic drive distributor

Tigretrac - Superpark

- 4 - Connect the hydrodrive distributor, taking into account the following operations.
 - a - proceed inversely as to the disconnection operations
 - b - remember to remove the stoppers
 - c - observe the driving torques listed at page 4.

Disassembly and assembly

Hydrostatic drive distributors

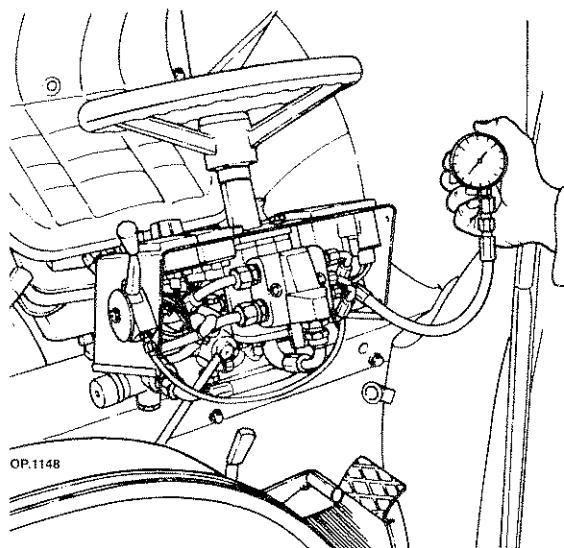
See Danfoss manual



Hydrodrive overpressure valve control

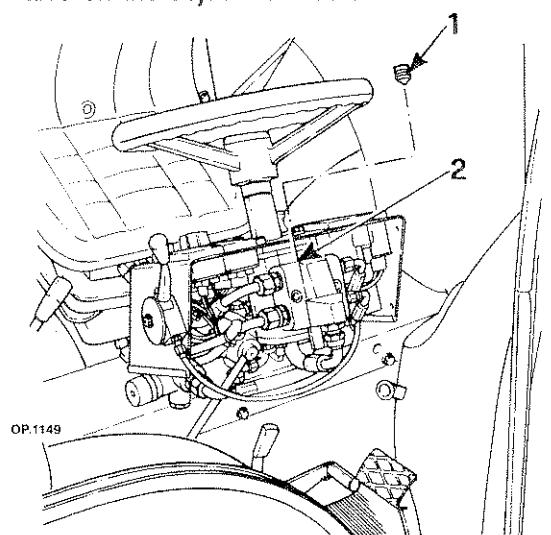
To check overpressure of the hydrodrive, proceed as follows:

- 1 - Switch off the engine and disconnect one of the oil delivery tube to the cylinder.
- 2 - Replace the above fitting with adapter AT 37981259 and the pressure gauge AT 37981258.



3 - Start the engine, accelerate until it reaches 1500 rpm and turn the steering wheel to full steering lock ; in this position the overpressure valve steps in and on the pressure gauge you can read the actual pressure.

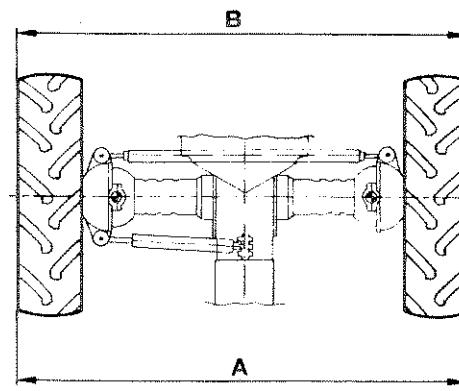
4 - In case the pressure read differs from the prescribed pressure it is possible to set the valve on the adjustment screw.



- Pressure adjustment in the hydraulic circuit.

Checking the toe-in of front wheels

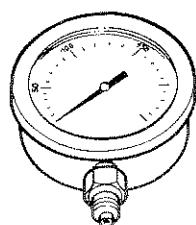
Check the toe-in considering that, when wheels are straight they must be parallel to the lengthwise axis of the tractor or with a minimum margin of +/- 2 mm.



Checking toe-in

To check the exact value of the toe-in, proceed as follows:

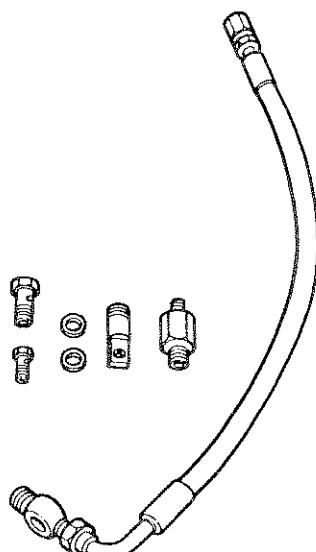
- 1 - Position the steering wheel at half stroke.
- 2 - Check that the wheels are parallel to the lengthwise axis of the tractor.
- 3 - Place a ruler on the outer side of the r.h. wheel and one on the l.h. side on the horizontal plane and passing through the centre of the wheel.
- 4 - measure the distance A and the distance B. Make sure that these two measurements are the same or greater up to a maximum of 2 mm and less than a minimum of 2 mm.
- 5 - Correct measurement by operating on the wheel coupling bar.



37981258

AT.080

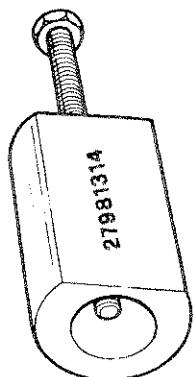
1 - Pressure gauge



AT.081

37981259

2 - Pressure gauge adapter



AT.191

3 - Steering cylinder puller.

**HYDRAULIC HOISTING DEVICE**

The hydraulic hoisting device with controlled positioning and return, controls the traction force, the work position and the dropping speed of the implement.

The standard hydraulic hoisting device is equipped with an open centre distributor.

For both circuits the oil is collected from the front transmission box by a pump and filtered through a recyclable filter then it is pressurized in the circuits.

Technical features**Hydraulic hoisting device**

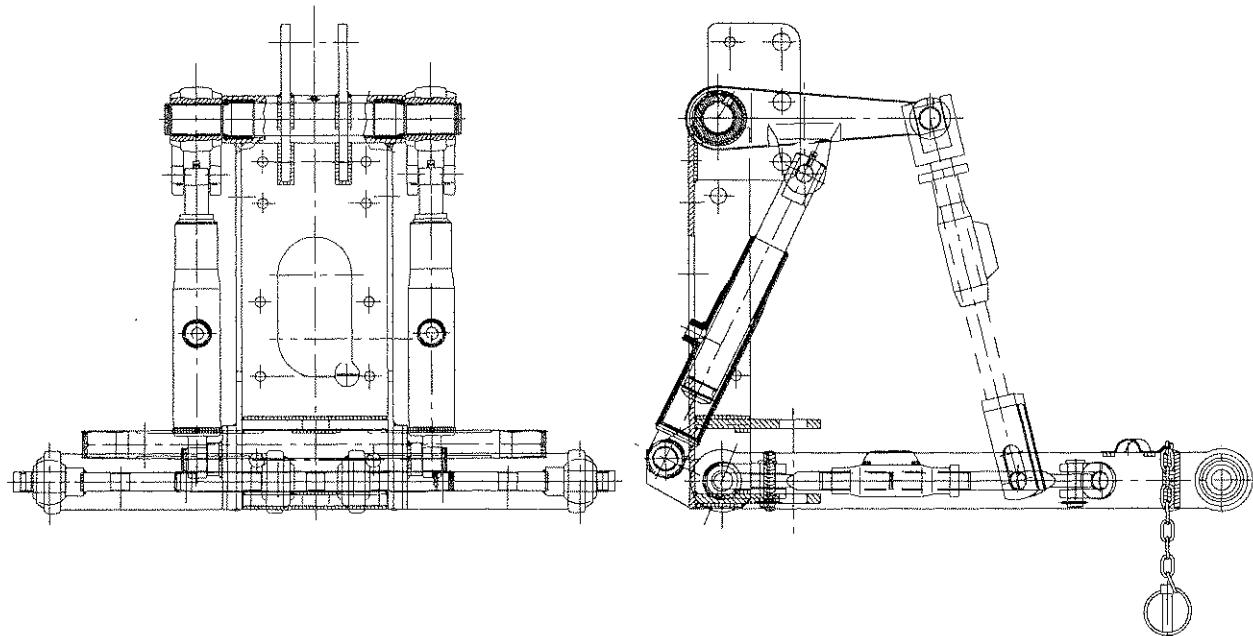
Hoisting device	Standard	Standard	Standard
Type	MD B4 100 M 140 K 01	MD B4 100 M 140 K 01	MD B4 100 M 140 K 01
Brand	DIN OIL IDROIRMA	DIN OIL IDROIRMA	DIN OIL IDROIRMA
Code	4 152 509	4 152 509	4 152 505
Maximum pressure valve setting	110-120 BAR	135 BAR	135 BAR
Type of tractor	Tigretrac 2500	Tigretrac 3800	Superpark 3800

Hydraulic pump

Hydraulic pump	HLPS/X 170 C AM2/24S 100	HLPD/L 211 C
Brand	Lamborghini Idroirma	Lamborghini
Code	2151535	2151536
cm ³ /revolution	7 6,8	11
Type of tractor	Tigretrac 2500	Tigretrac 3800 Superpark 3800

Jack - elevator cylinder

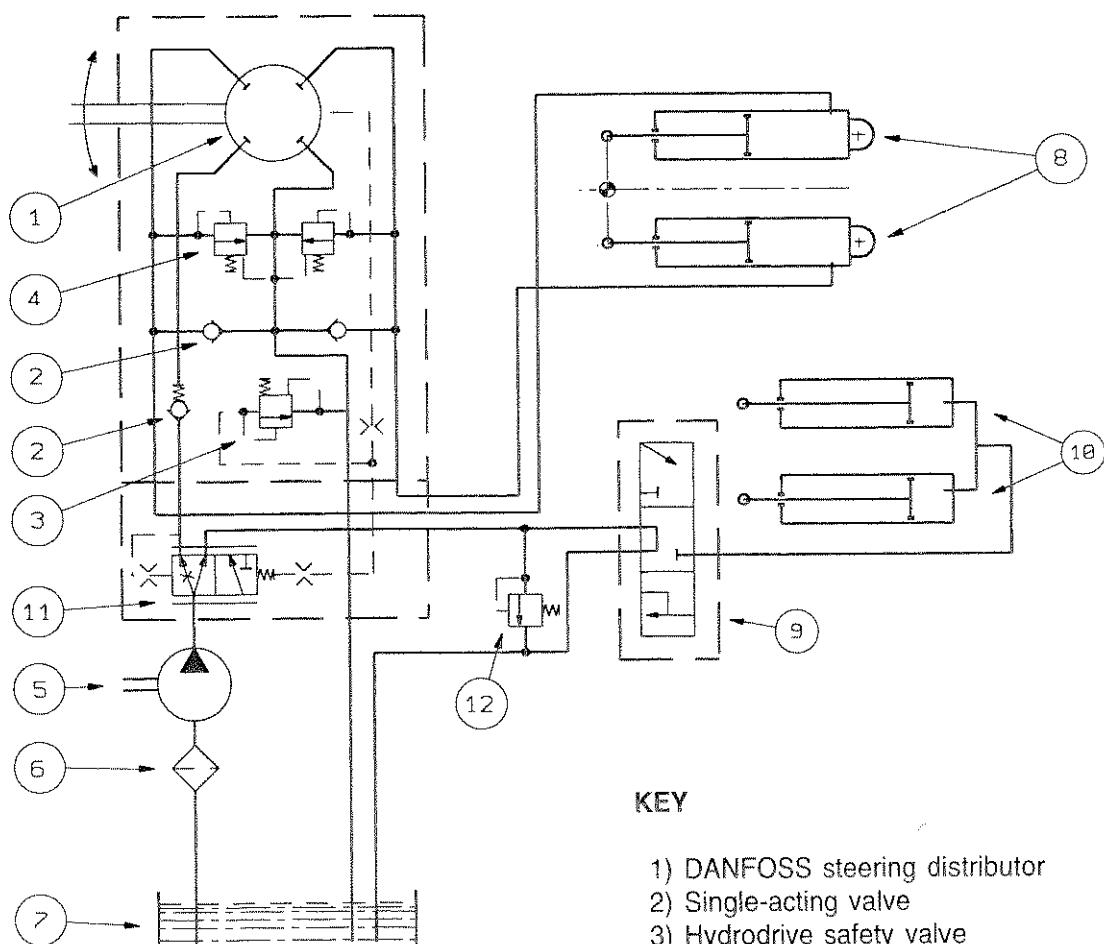
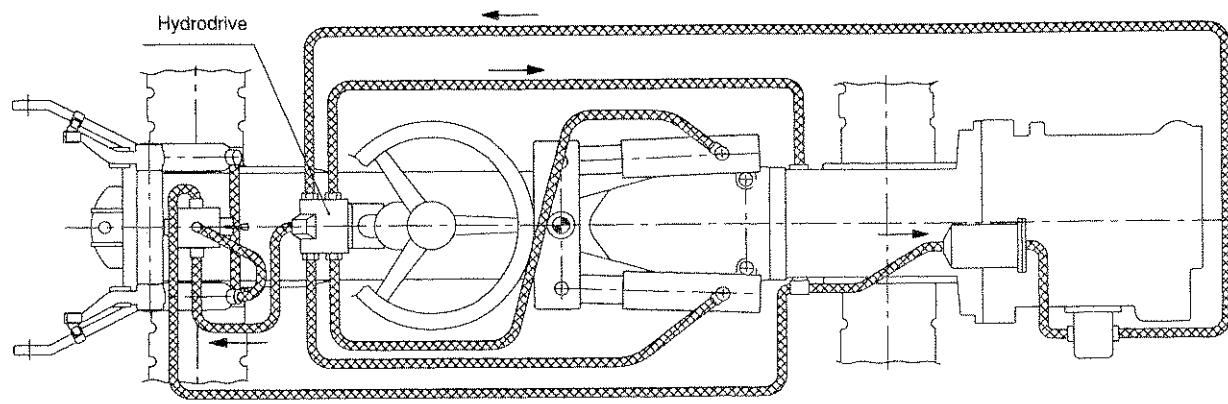
Jack code	23401009
Stroke	146
rod diameter	35
Type of tractor	Tigretrac Superpark

**HYDRAULIC SYSTEM****Troubleshooting**

Troubles	Possible causes	Solutions
The hoisting does not take place or it takes place too slow.	1) Check the hoisting device is not overloaded. 2) Check proper operation of the pump. 3) Check the setting of the safety valve. 4) Check the oil level. 5) Check the efficiency of the oil filter.	Replace pump. Check the setting. Restore oil level. Clean the oil filter.
The hoisting device does not hoist.	1) Clogged oil filter. 2) Inefficient hydraulic pump.- 3) Lack of oil in the tank.	Clean filter. Replace pump. Restore oil level and check for leaks.



SUPERPARK 3800 HYDRAULIC HOISTING DEVICE DIAGRAM

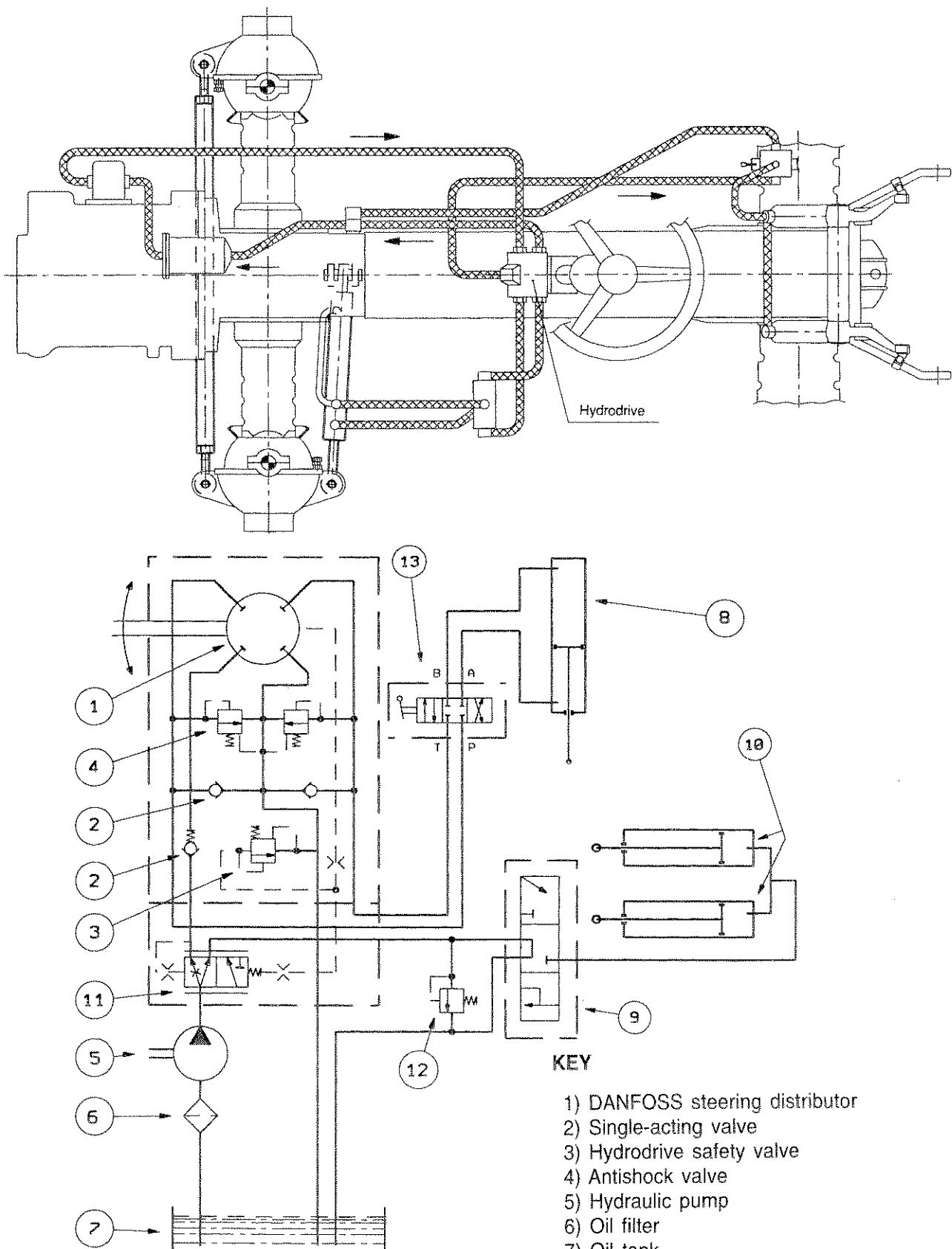


KEY

- 1) DANFOSS steering distributor
- 2) Single-acting valve
- 3) Hydrodrive safety valve
- 4) Antishock valve
- 5) Hydraulic pump
- 6) Oil filter
- 7) Oil tank
- 8) Steering jack
- 9) Standard hoisting device distributor
- 10) Hoisting device jack
- 11) Priority valve
- 12) Equipment circuit safety valve



TIGRETRAC 3800 HYDRAULIC HOISTING DEVICE DIAGRAM



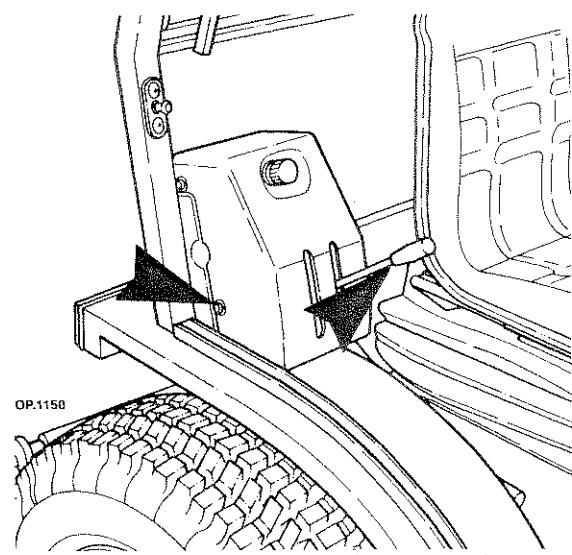
- KEY**
- 1) DANFOSS steering distributor
 - 2) Single-acting valve
 - 3) Hydrodrive safety valve
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 - 5) Hydraulic pump
 - 6) Oil filter
 - 7) Oil tank
 - 8) Steering jack
 - 9) Standard hoisting device distributor
 - 10) Hoisting device jack
 - 11) Priority valve
 - 12) Equipment circuit safety valve
 - 13) Deviator

**WARNING - DANGER**

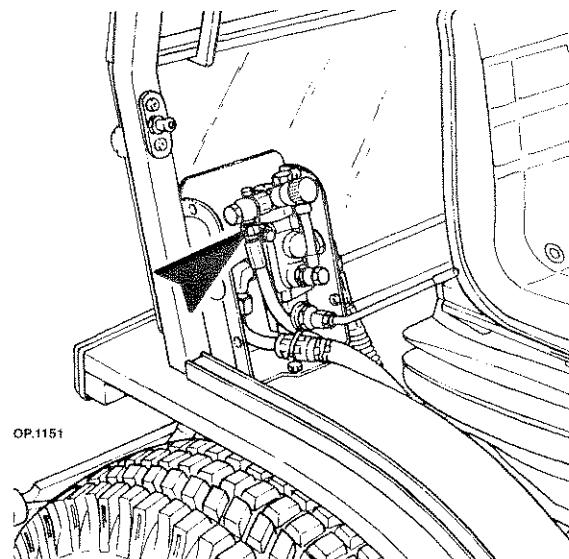
Keep environment clean. Dispose of waste fluids, used filter cartridges, oils, lubricants and grease cleaners in the most suitable way and in compliance with regulations in force. The collection of waste oils must be performed by authorized plants.

HOISTING DISTRIBUTOR**Disconnecting - Connecting**

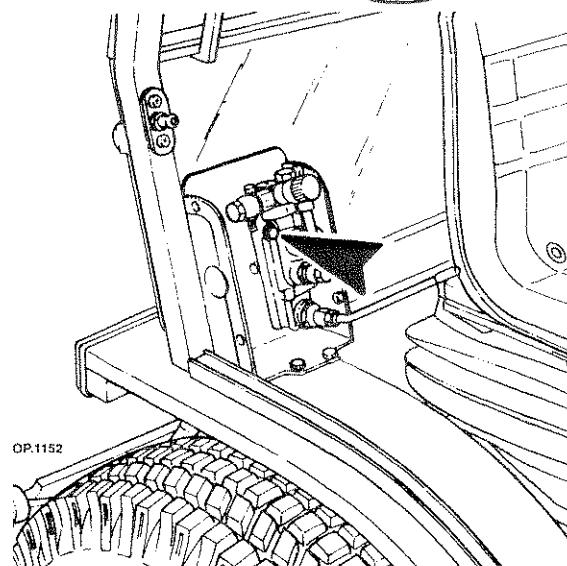
To disconnect the distributor of the hoisting device, proceed as follows:

Tigretrac

1 - Loosen the screws and remove the protections of the distributor and remove the distributor lever knobs.



2 - Loosen the oil delivery unions and plug holes with stoppers.



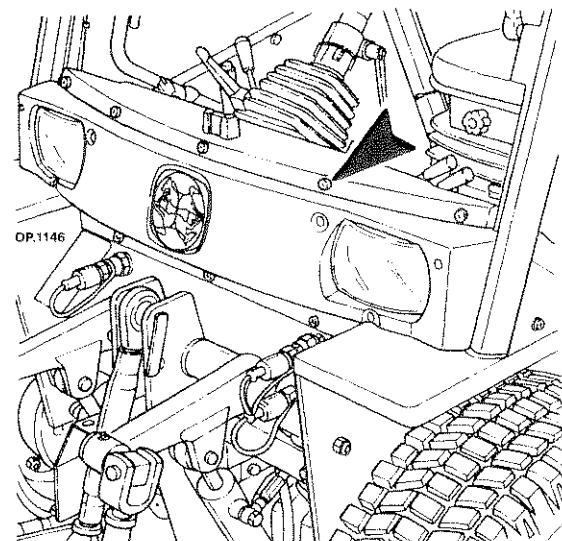
3 - Loosen the screws fastening the hoisting distributor.

4 - Take the hoisting distributor out.

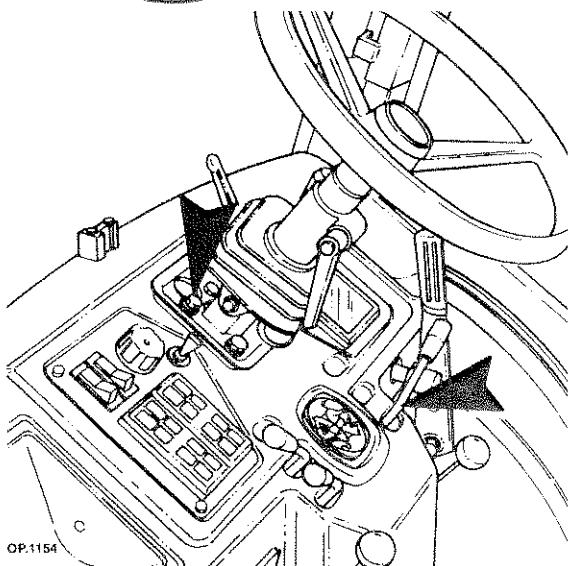
**WARNING - DANGER**

Perform operations by strictly observing accident prevention regulations.

- Watch out for projection of fluids at high pressure.

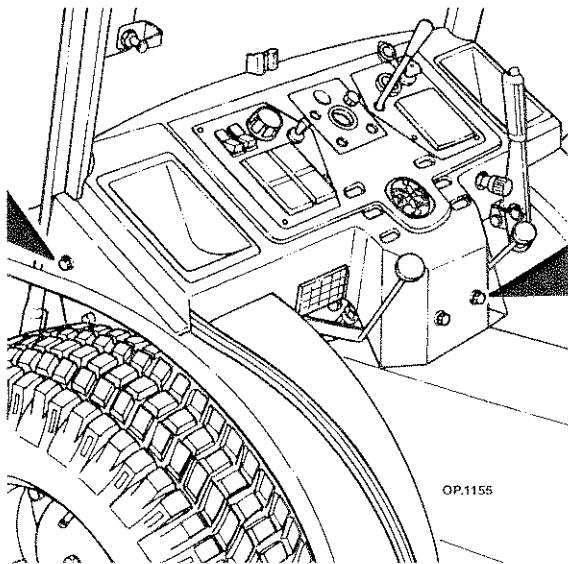
Superpark

1 - Loosen the screws and remove the cover of the dashboard housing the lights.

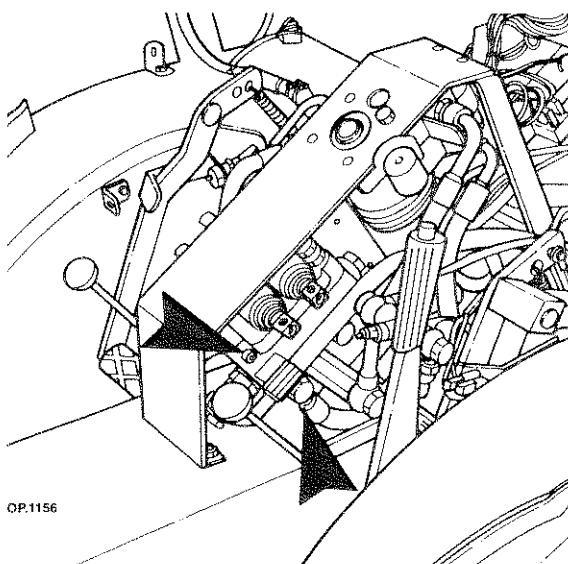


2 - Loosen the screws and remove the whole steering column.

3 - Remove the distributor control knobs.



4 - Loosen the screws and remove the instrument console.



5 - Loosen the oil delivery tubes and drain oil inside a special container.

6 - Loosen the distributor fastening screws and take it out.

Connecting

Hoisting distributor

Tigretrac - Superpark

Connect the distributor following the instructions below:

a - proceed inversely as to the disconnecting operations

b - remember to remove the plugs from the tubes.

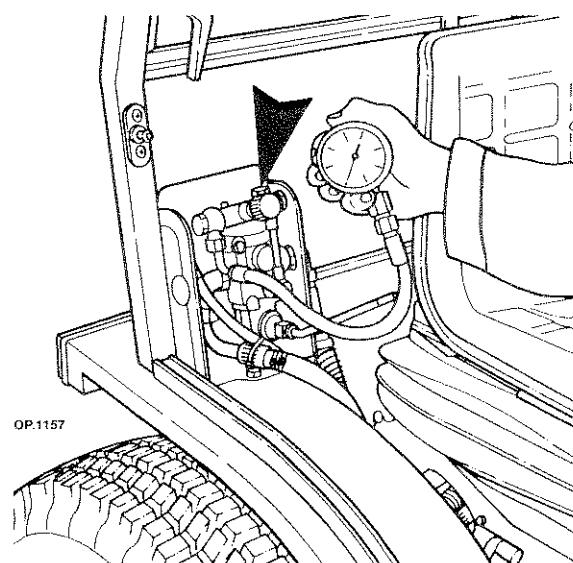
c - observe driving torques listed at page 4.

CHECKING OVERPRESSURE VALVE

To check the overpressure of the hydraulic system for hoisting device proceed as follows:

1 - Switch off motor. Detach one of the oil delivery tubes to the hoisting cylinders.

2 - Replace the original fitting with the adapter AT 37981259 and the pressure gauge AT 37981258.

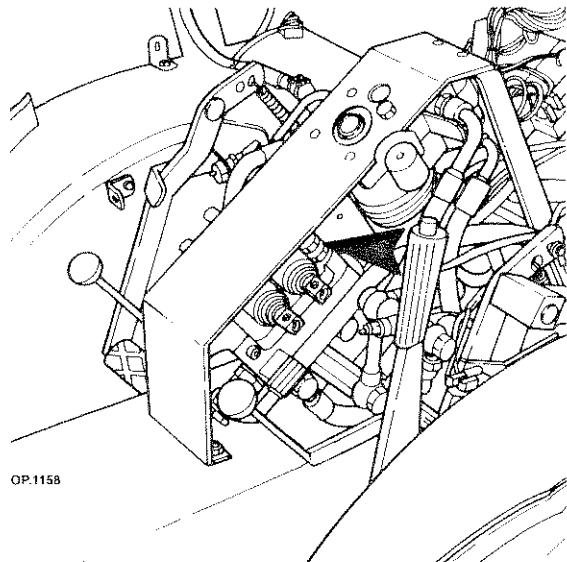


- Check pressure
- Pressure adjustment screws



3 - Start the engine, accelerate until it reaches 1500 rpm and lift the hoisting device until jacks reach end-of-stroke; in this position the overpressure valve steps in and on the pressure gauge you can read the actual pressure.

4 - In case the pressure read differs from the prescribed pressure it is possible to set the valve on the adjustment screw located on the valve gear.



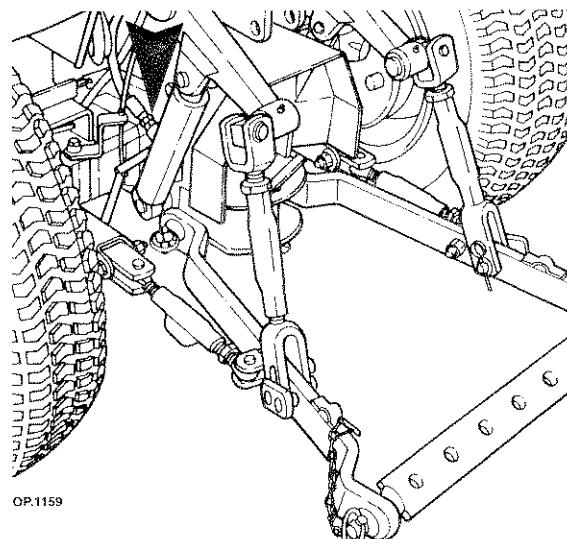
- Pressure adjustment screws (Superpark)

HOISTING DEVICE CYLINDER

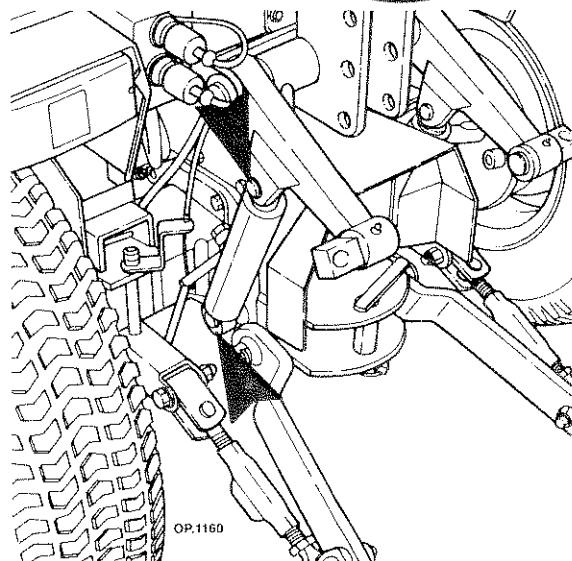
Disconnect - connect

To disconnect the hoisting device cylinder, proceed as follows:

1 - Lower the hoisting device.



2 - Loosen the cylinder tubes and plug the holes.



3 - Remove the retainer ring on the cylinder.

4 - Remove the rings on the cylinder rod retainer pin.

5 - Remove the pin.

6 - Remove the hoisting cylinder.

7 - Connect the hoisting device cylinder, taking into account the following operations:

a - proceed inversely as to the disconnection operations

b - grease bushings and splined section bars.

c - observe the driving torques listed at page 4.



WARNING - DANGER



Perform operations by strictly observing accident prevention regulations.

- Wear safety clothing such as gloves and safety shoes.

Watch out for shearing,

Watch out for squeezing,

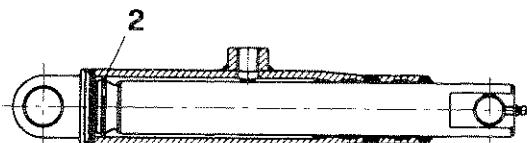
Watch out for tangling.

**Disconnection and connection****Equipment AT 80**

To remove the cylinder rod, you must:

1 - Move the rod until it meets with the spring retainer ring towards the oil inlet hole inside the cylinder.

2 - Move ring (2) from the slot with the help of a screwdriver until it fits inside the race.



OP.1173

- hoisting cylinder

3 - Remove the rod.

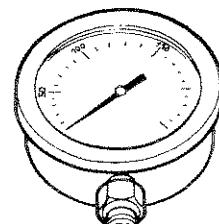
4 - Replace the damages O-rings

5 - Proceed to the assembly, taking into account the following operations:

a - clean carefully.

b - oil the O-rings.

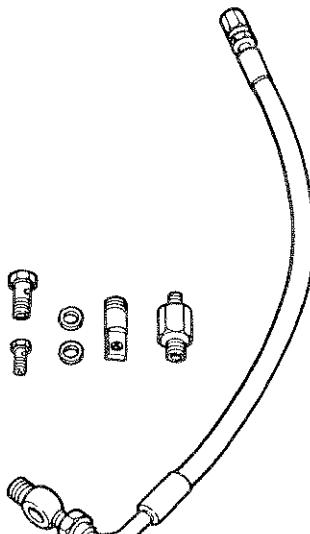
c - proceed inversely as to the disconnection operations.



37981258

AT.080

1 - Pressure measuring gauge



AT.081

37981259

2 - Adapter for pressure gauge.



WARNING - DANGER



Keep environment clean. Dispose of waste fluids, used filter cartridges, oils, lubricants and grease cleaners in the most suitable way and in compliance with regulations in force. The collection of waste oils must be performed by authorized plants.



ELECTRIC SYSTEM

Automobile-type electrical system. It mainly consists of:

a battery, an alternator, a starter, light and indicator system, a fascia panel with control gauges and switches.

It is divided into twelve lines protected by fuses with a main fuse located downstream.

The system operates on 12V.

Technical features

Battery

Type of tractor	Tigretrac 2500	Tigretrac - Superpark 3800
Rated voltage	V 12	12
Rated capacity	Ah 48	70
Discharge intensity	A 230	420
Dimensions	mm 225x220x135	278x190x175
Code	46705005	46705001

Starter

Type of tractor	Tigretrac 2500	Tigretrac - Superpark 3800
Voltage	V 12	12
Rated voltage V	KW 1,1	2,2
Control	Electromagnetic	
Engagement	With traverse and engagement of the pinion	

Alternator

Type of tractor	Tigretrac 2500	Tigretrac - Superpark 3800
Type of alternator	Self-rectifying three-phase type.	
Rated voltage delivered	V 13÷14	
Current intensity delivered	A 33	45
Voltage regulator	Electronic built-in the alternator	

**Fuse valves**

Before replacing a blown out valve with another featuring the same amperage, look for the cause of the trouble.

General fuses

60 amp fuses for tractors 2500 - 3800

Fuse valve	Protected circuits	Fuse amperes
1	Front r.h. and rear l.h. sidelights - L.h. work spotlight - numberplate light	15
2	Front l.h. and rear r.h. sidelights - R.h. work spotlight	15
3	Speedometer warning light	7,5
4	Lampalarm - radio - courtesy light (flashing)	10
5	L.h. lower beam	7,5
6	R.h. lower beam	7,5
7	Time and rev. counter - battery gauge - alarm relays	7,5
8	Alarm light - heater	25
9	R.h. and L.h. + warning light upper beam	15
10	Spark plug relays - electrostop - AT warning light body C 1100	7,5
11	Stop - wipers - windshield cleaner	10
12	Horn - Km counter sensor	10

Digital speedometer

The LCD digital speedometer does not require any adjustment.

General technical features

Operation data: Indication field 0-40 Km/h

Rated voltage 12V

Accuracy +/- 0.1 Km/h

Control signal:Honeywell impulse generator

- 1 GT 101DC coupled with phonic wheel
- 10 teeth

**Lighting - indicator system**

Two asymmetrical headlight with lower and upper beams, with double-filament light 45/40 W..

Two front lights including:

- sidelight (5W light) with white lens;
- indicator light (21W light) with orange lens.

Two rear lights including:

- sidelights and stop lights (5/21 W light) with red lens;
- indicator light (21 W light) with orange lens;
- two rear red reflectors.

Number plate light (5W)

Set of optical indicators with 1, 2/3 W for:

- Alternator loading (red light)

Engine oil pressure low (red light)

- Lack of fuel (red light)

- Handbrake engagement (red light)

- Preheating spark plug switching on (yellow light)

- Dry air filter clogging (red light)

- Switching on of work rear lights (green light)

- Switching on of sidelights (green light)

- Switching on of upper beams (blue light)

- Switching on of tractor indicator lights (green light)

- Switching on of trailer indicator lights (green light)

- Switching on of emergency lights (red light)

- Clogging of hydrostatic oil filter (yellow light)

- High engine water temperature (red light)

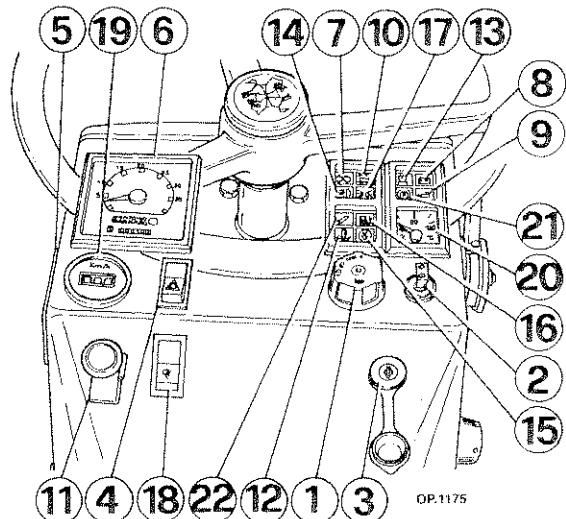
Start switch

Switch position	Apparatus engaged
Position 0	No circuit is energized except for the single-pole outlet and lampalarm control (removable key).
Position 1	Starts engine. Operation of the indicators and of the control instruments. Various users energized (key not removable).
Position 2	Starts engine (the key, when released, automatically returns to position 1).
Position P	The light circuit is energized, lighting of dashboard, sidelights, parking lights, number plate and lampalarm control (removable key).

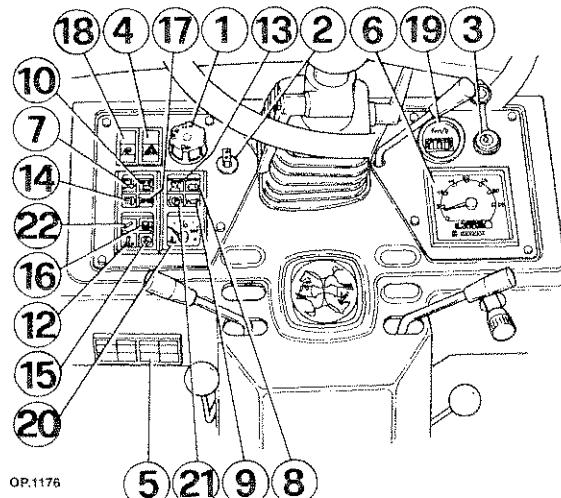
SAFETY FUNCTIONS

Actuation of the buzzer due to the stepping in of the water temperature, oil pressure and air filter clogging warning lights.

It operates simultaneously with the horn and the warning light to indicate the cause and location of the problem; to switch off the horn simply stop and strike the clutch pedal.

**CONSOLE WITH CONTROL INSTRUMENTS**

- 1 - Light switch and buzzer
- 2 - Indicator and warning light
- 3 - Start switch
- 4 - Lampalarm switch
- 5 - Protection fuses
- 6 - The time, revolution meter indicates the number of revolutions of the engine and PTO, the speed in Km/h and the functioning hours of vehicle.
- 7 - Indicator lights
- 8 - Battery warning light (red)
- 9 - Oil pressure warning light
- 10 - Trailer indicator lights
- 11 - Traction disengagement knob
- 12 - Water temperature warning light
- 13 - Pre-heater warning light
- 14 - Upper beams lamp
- 15 - Air filter clogged warning light
- 16 - Fuel gauge
- 17 - Sidelights switch
- 18 - Work spotlights switch
- 19 - Digital speedometer
- 20 - Water temperature gauge
- 21 - Parking brake light
- 22 - Hydrostatic oil filter clogging warning light



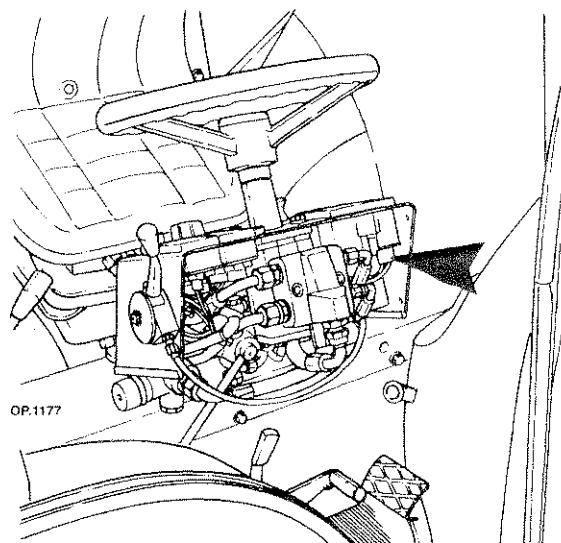
- 11 - Traction disengagement knob
- 12 - Water temperature warning light
- 13 - Pre-heater warning light
- 14 - Upper beams lamp
- 15 - Air filter clogged warning light
- 16 - Fuel gauge
- 17 - Sidelights switch
- 18 - Work spotlights switch
- 19 - Digital speedometer
- 20 - Water temperature gauge
- 21 - Parking brake light
- 22 - Hydrostatic oil filter clogging warning light

Adjustment of engine rpm counter

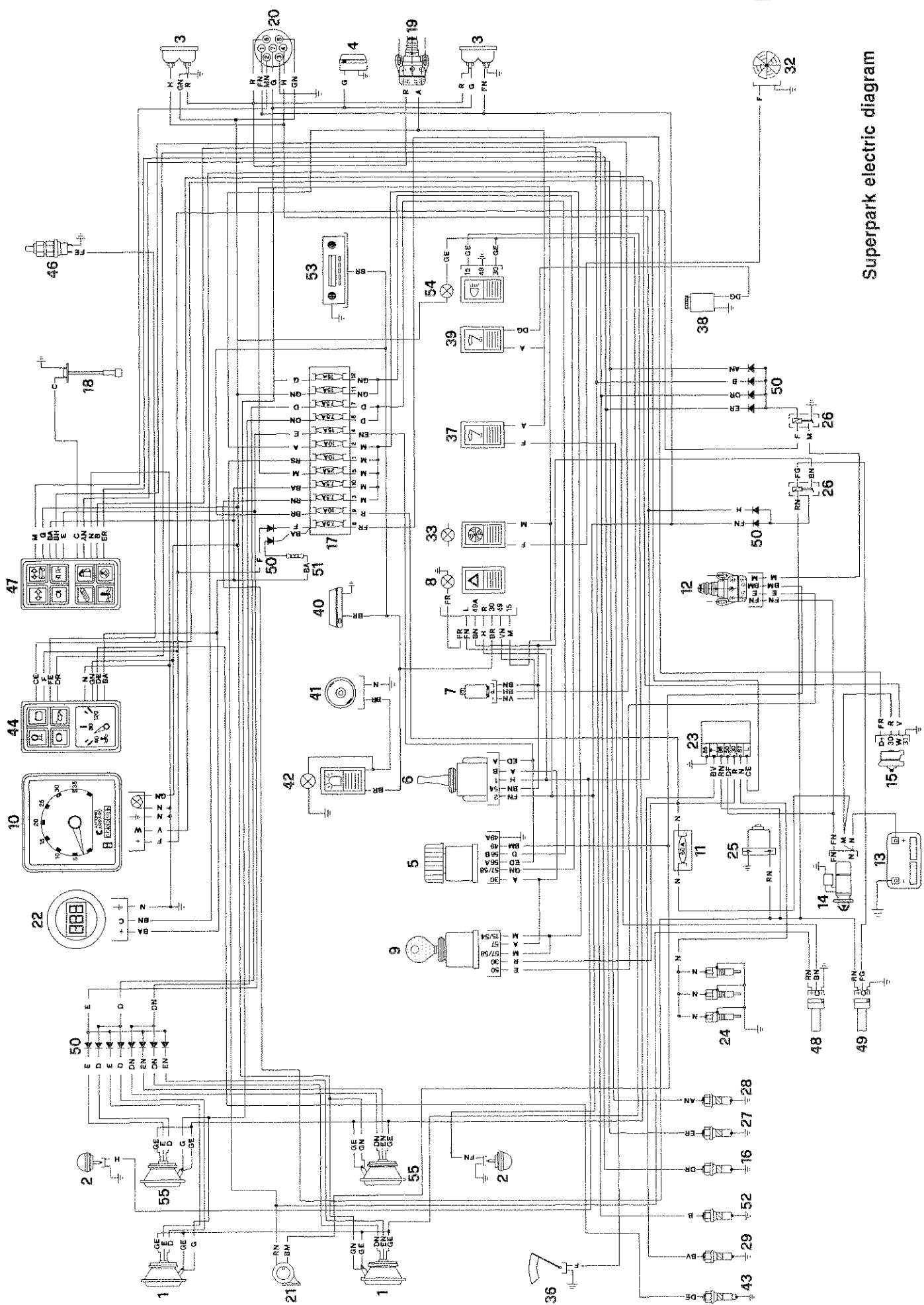
The time, revolution meter indicates the number of revolutions of the engine and PTO, the speed in Km/h and the functioning hours of vehicle.

To set the rpm meter to the revolutions of the engine, proceed as follows:

- 1 - Apply an implement that measures the engine revolutions.
- 2 - Start the engine and make it run at a speed of 1500 rpm.
- 3 - Check that the time, revolution meter indicates the above mentioned values.
- 4 - In case rpm are different, adjust the time, revolution meter as you can see in the drawing until rpm's are the same on both instruments.



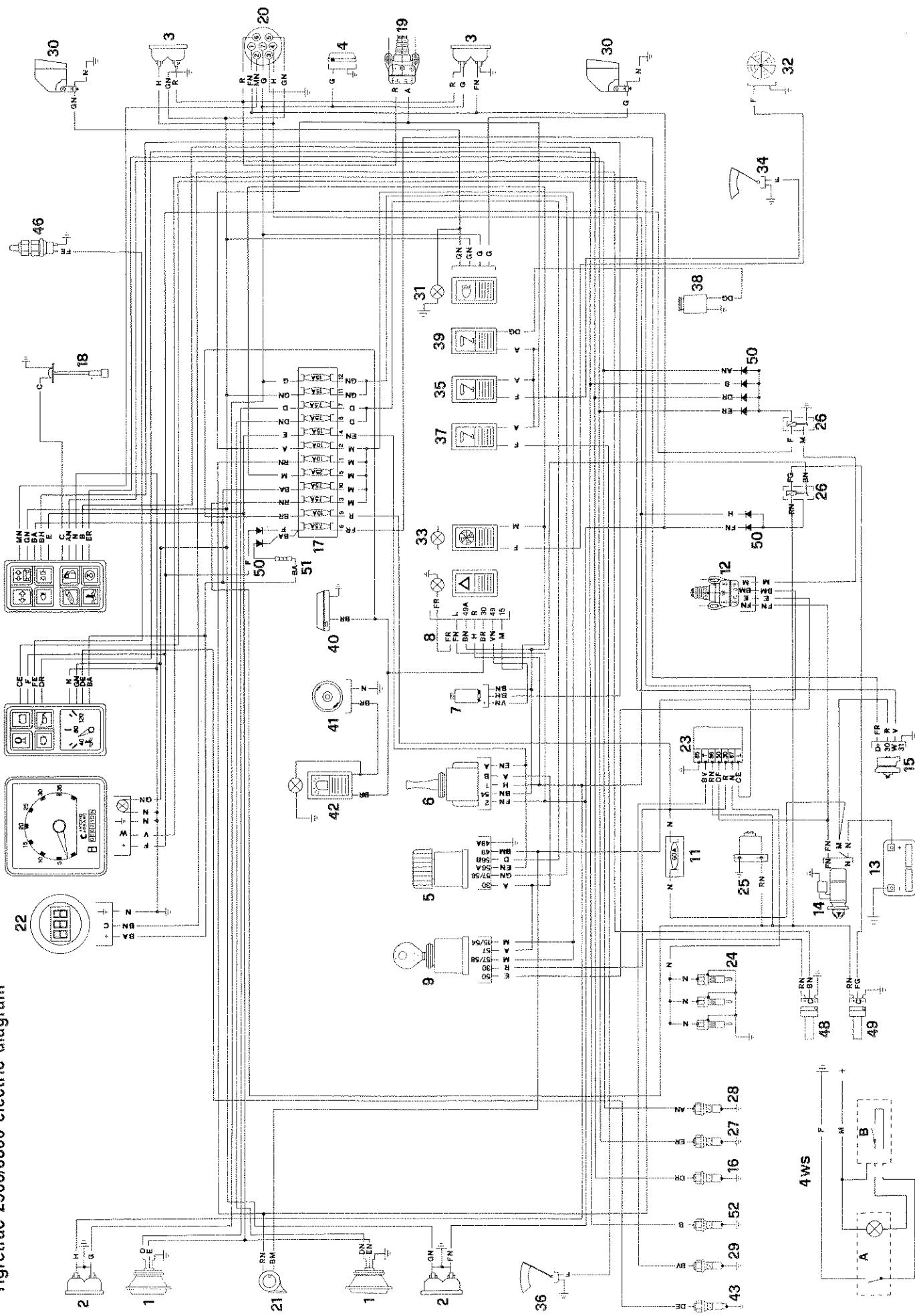
- RPM counter adjustment.



Superpark electric diagram

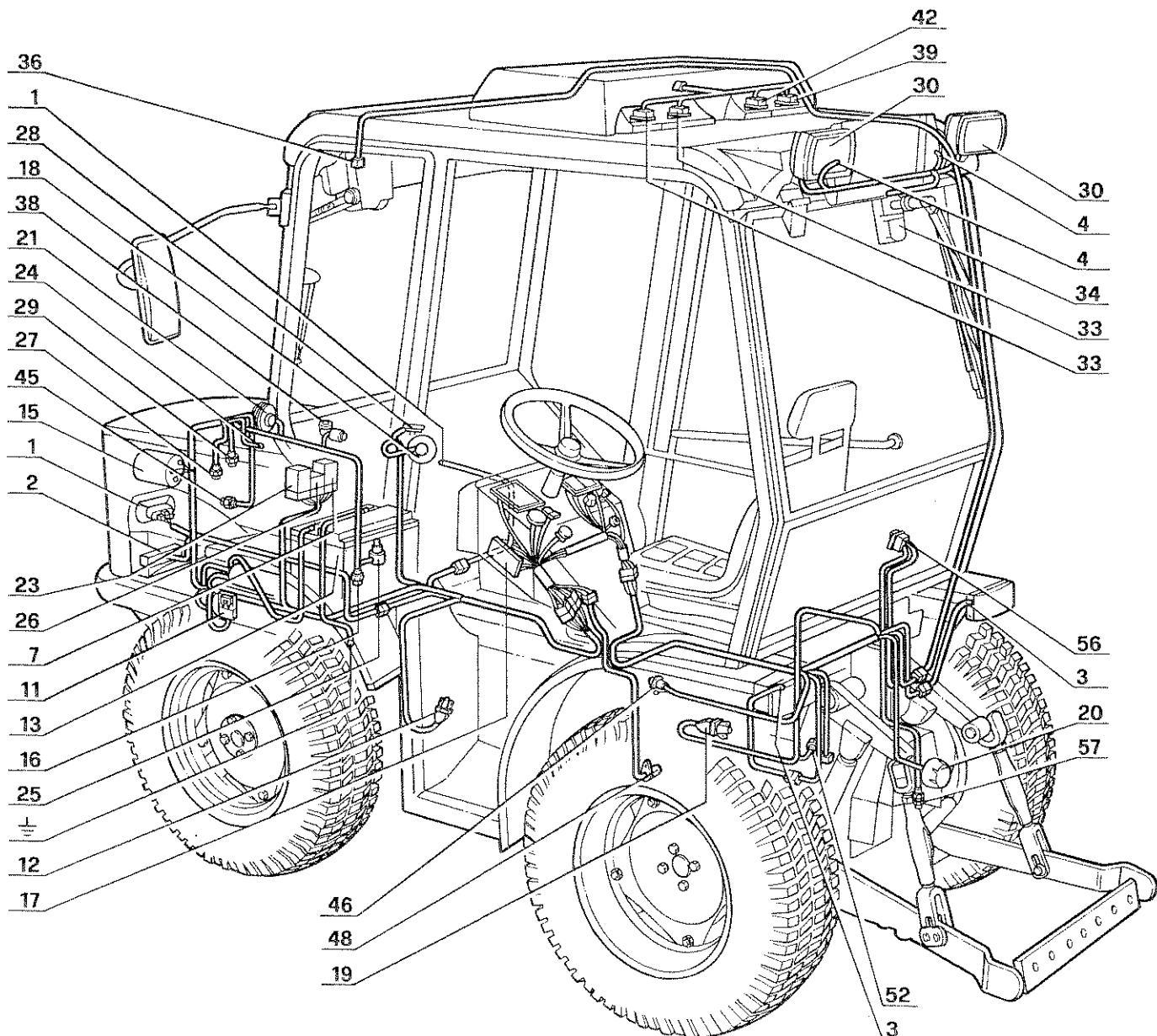


Tigretrac 2500/3800 electric diagram



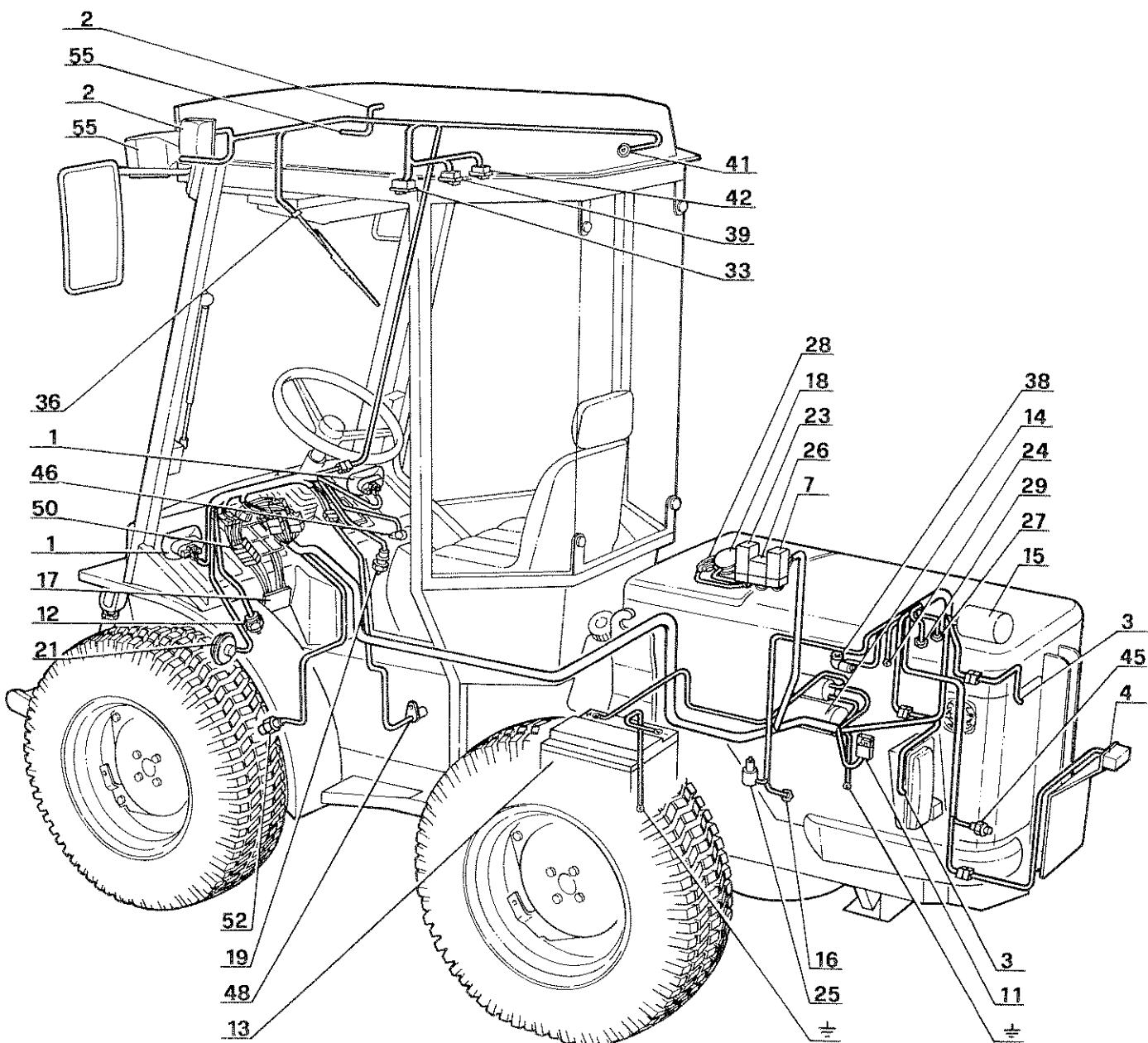


Location of Tigretrac electric system





Location of Superpark electric system





Electric system diagram key

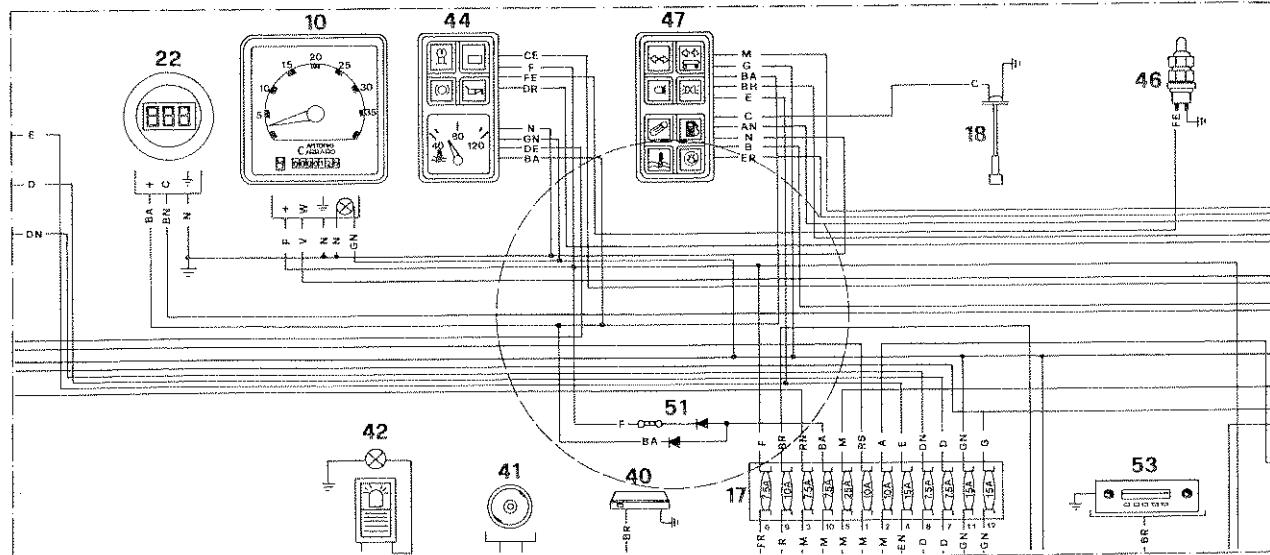
- 1 - Front optical units
- 2 - R.h. - L.h. front turn indicators and sidelights
- 3 - R.h. - L.h. + Stop rear turn indicators and sidelights
- 4 - Number plate lamp
- 5 - Light Distribution panel plus buzzer
- 6 - Indicator switch
- 7 - Hazard flasher switch
- 8 - Emergency switch
- 9 - Start switch
- 10 - Time, rpm meter
- 11 - General fuse
- 12 - Start enable switch
- 13 - Battery
- 14 - Starter
- 15 - Alternator
- 16 - Oil gauge
- 17 - Fuse panel
- 18 - Fuel gauge
- 19 - Stop lights switch
- 20 - 7-pole outlet
- 21 - Horn
- 22 - Digital speedometer
- 23 - Spark plug preheating unit
- 24 - Spark plugs
- 25 - Electrostop switch
- 26 - Relay
- 27 - Water gauge
- 28 - Air filter switch
- 29 - Switch with thermistor for spark plug unit

- 30 - R.h. - L.h. rear work beam
- 31 - Work spotlight switch
- 32 - Fan
- 33 - Fan switch
- 34 - Rear wiper motor
- 35 - Rear wiper switch
- 36 - Front wiper motor
- 37 - Front wiper switch
- 38 - Pump for windshield wiper
- 39 - Windshield wiper switch
- 40 - Cab courtesy light
- 41 - Single-pole plug for connection of rotating light
- 42 - Rotating light switch
- 43 - Electric thermometer for engine water temperature
- 44 - Electric thermometer for water temperature and control lights
- 45 - Water temperature measuring transmitter
- 46 - Hand brake light switch
- 47 - Control lights
- 48 - Proximity sensor for speedometer
- 49 - Proximity sensor for body
- 50 - Diodes
- 51 - Resistance 3W and 2 diodes
- 52 - Electric switch for hydrostatic oil
- 53 - Radio
- 54 - Upper and lower optical units exchange switch
- 55 - Upper optical units
- 56 - Rear wheels alignment control switch on 4WS
- 57 - Sensor for wheel alignment control on 4 SW

Cable colour-coding

A	Orange	D	Grey	G	Yellow	N	Black
B	White	E	Green	H	Sky blue	R	Red
C	Pink	F	Dark blue	M	Brown	V	Violet

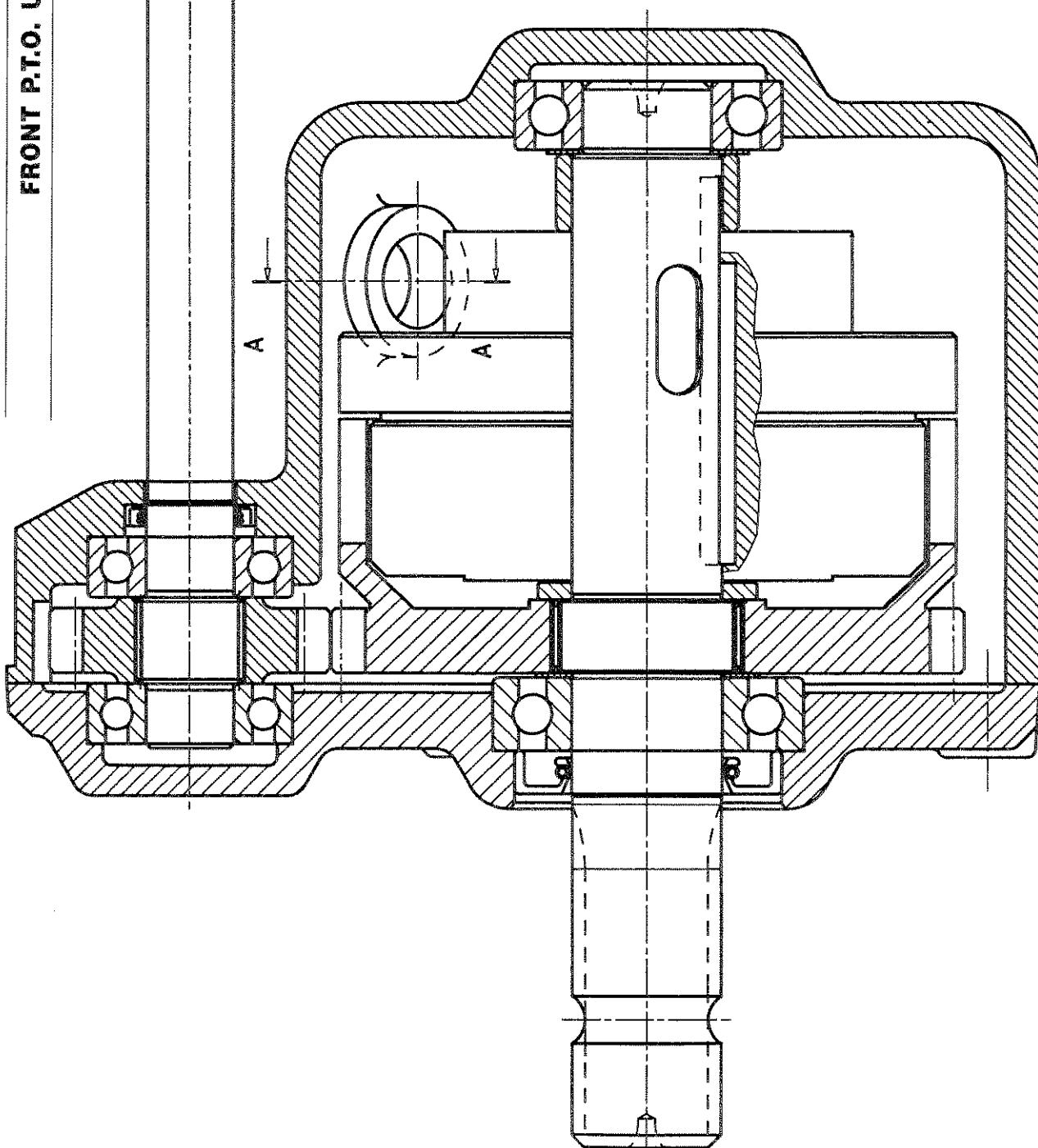
Updating the electrical plants





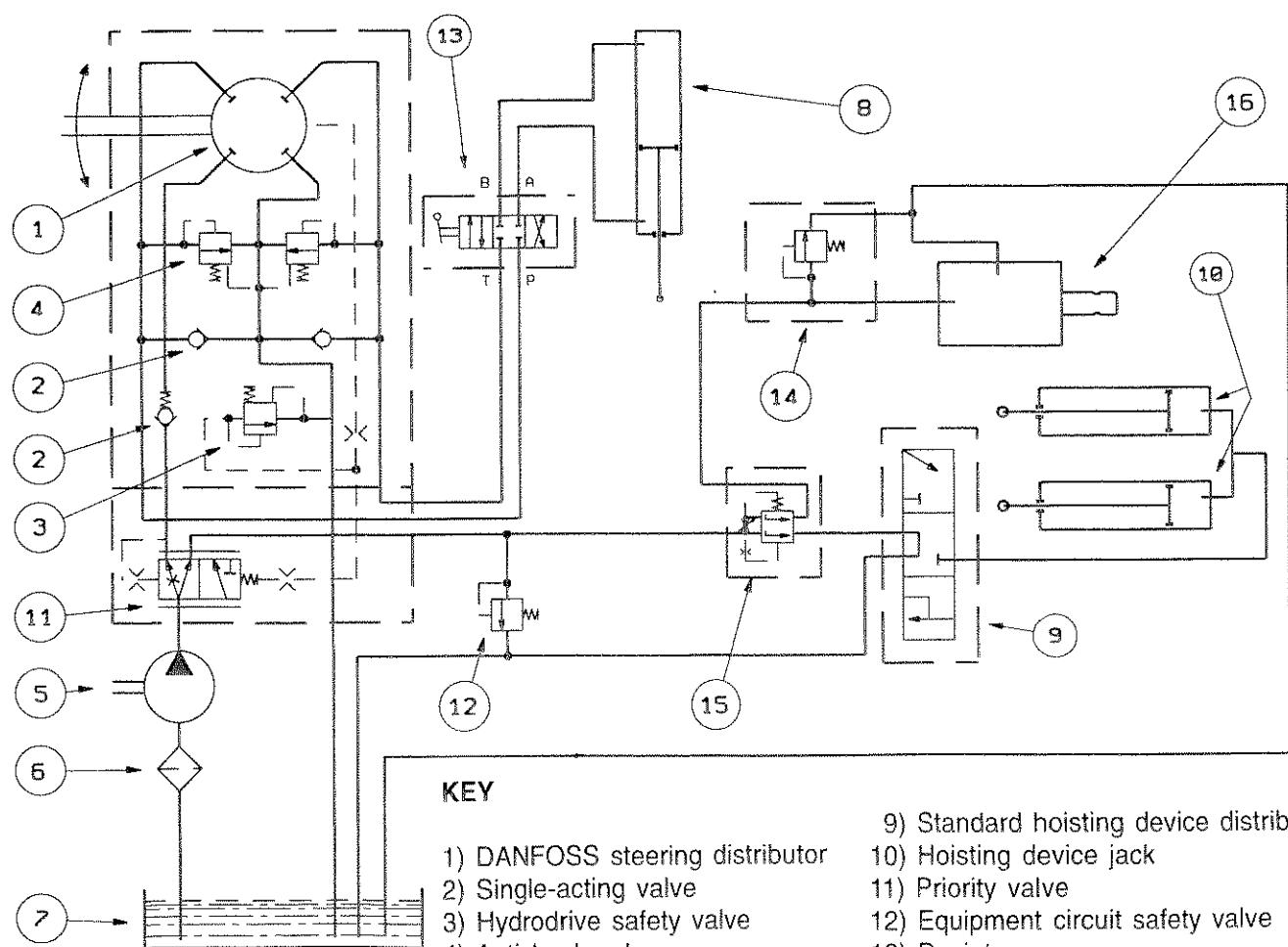
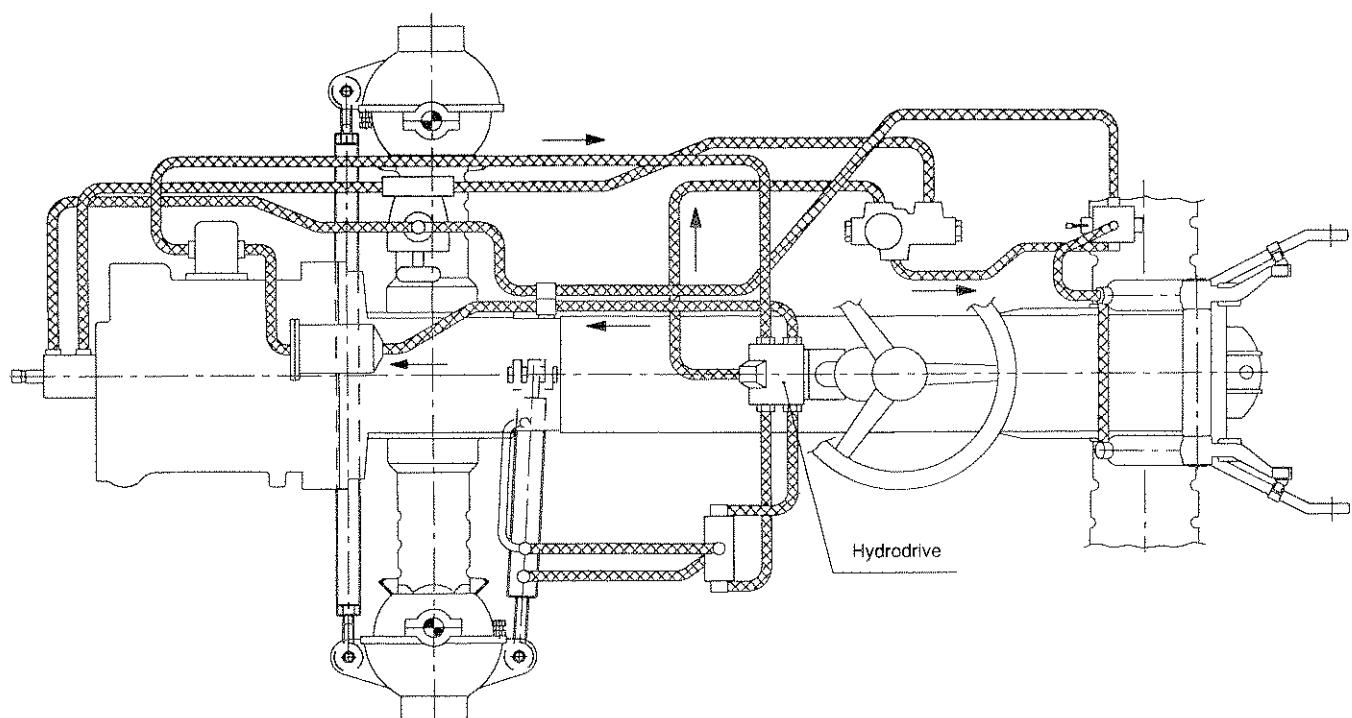
FRONT P.T.O. UNIT ASSEMBLY

Sez. A-A





HYDRAULIC DIAGRAM OF HOISTING DEVICE + FRONT P.T.O. UNIT



KEY

- 1) DANFOSS steering distributor
- 2) Single-acting valve
- 3) Hydrodrive safety valve
- 4) Antishock valve
- 5) Hydraulic pump
- 6) Oil filter
- 7) Oil tank
- 8) Steering jack
- 9) Standard hoisting device distributor
- 10) Hoisting device jack
- 11) Priority valve
- 12) Equipment circuit safety valve
- 13) Deviator
- 14) Maximum level valve
- 15) Priority flow regulator
- 16) P.T.O. box

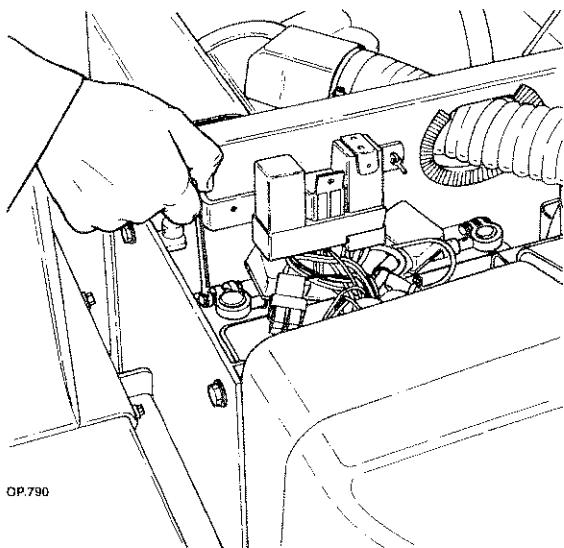


FRONT P.T.O.

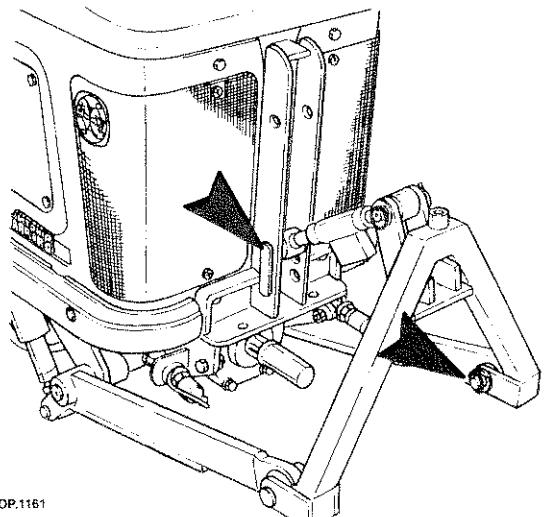
The P.T.O. clutch is multi-disc type clutch in oil bath with hydraulic engagement.
 The front P.T.O. is directly combined to the engine shaft; the reduction ratio is 1 - 2.5.
 The oil used for the operation is the same one used for the hydraulic system of the tractor.
 The P.T.O. clutch is controlled by means of a knob.

Disconnecting and connecting the front PTO unit.

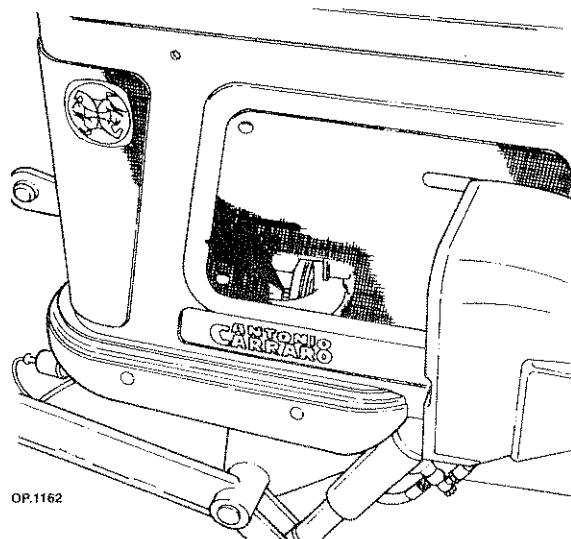
To disconnect the PTO unit, proceed as follows:



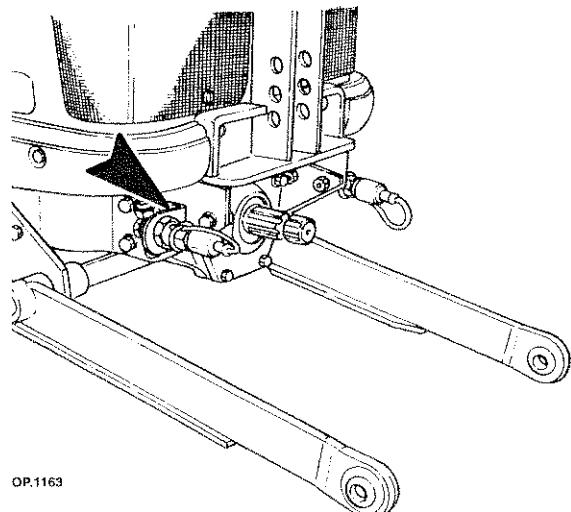
1 - Disconnect the battery wire and insulate it.



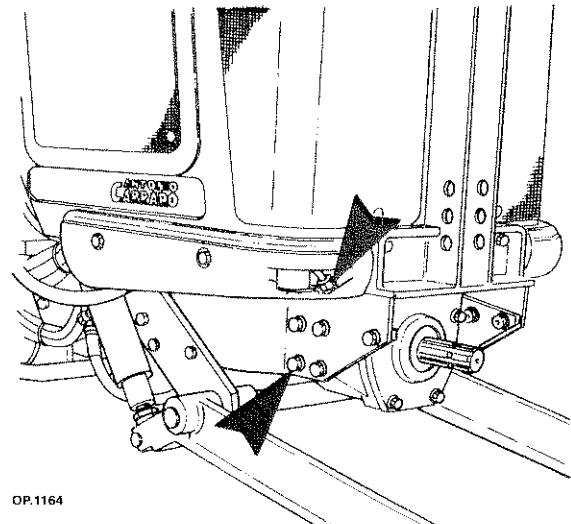
2 - Remove the implement support.



3 - Loosen the screws of the flange on the engine shaft.



4 - Loosen the screws and remove the hydraulic support.



5 - Loosen the delivery tube unions and plug holes with plugs.

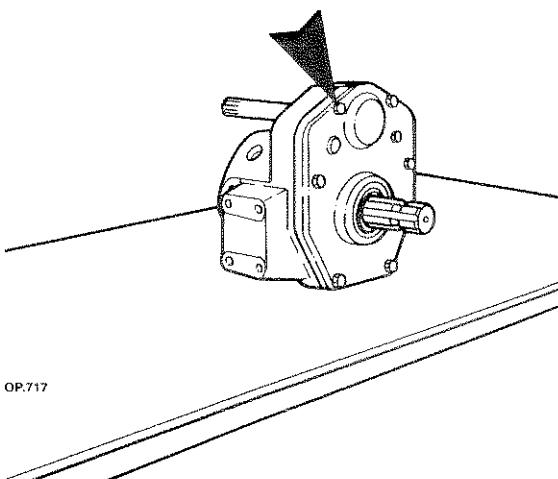
6 - Loosen the PTO unit support screws and remove them.



Connecting

Proceed to the connection, taking into consideration the following instructions:

- a - proceed inversely as to the disconnection
- b - grease the grooved contours of the drive couplings
- c - observe the clamping torques listed at page 4.



OP.717

- 4 - Loosen the screws of the unit cover.



WARNING - DANGER

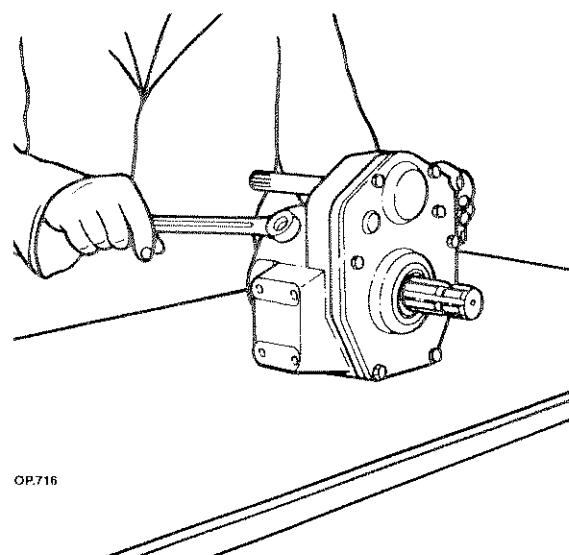


Keep environment clean. Dispose of waste fluids, used filter cartridges, oils, lubricants and grease cleaners in the most suitable way and in compliance with regulations in force. The collection of waste oils must be performed by authorized plants.

Disassembly and assembly of the front PTO unit

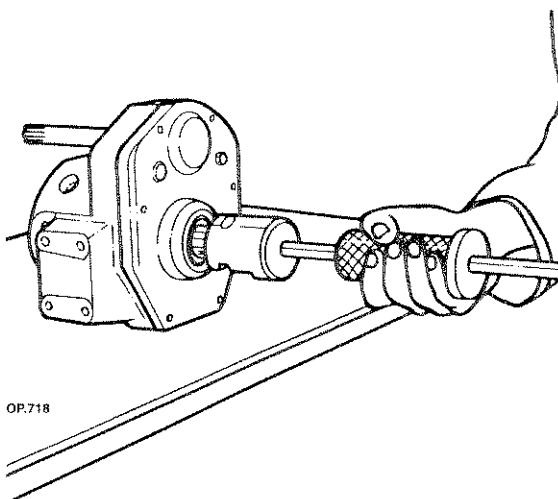
For the disassembly of the different components of the PTO unit, proceed as follows:

- 1 - Place the PTO unit on a work bench.
- 2 - Drain oil inside a special container.



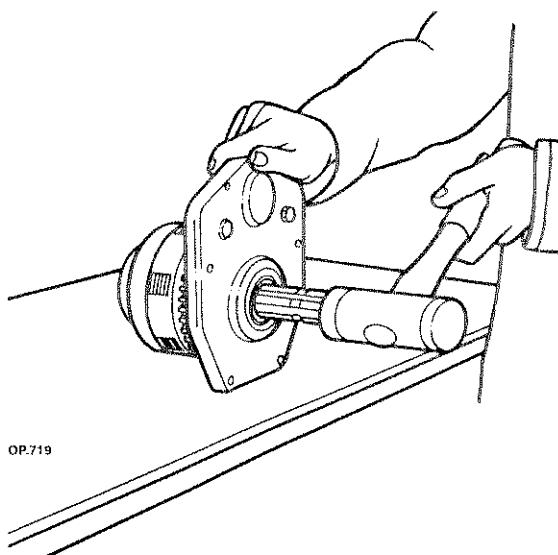
OP.716

- 3 - Loosen the sleeve that connects the hydraulic system to the clutch unit.



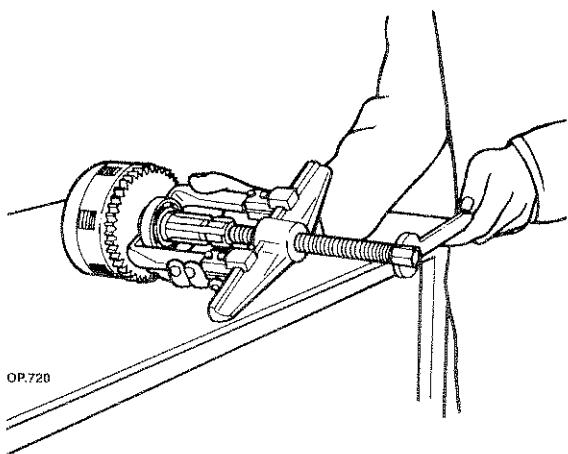
OP.718

- 5 - With the help of the adapter AT 27981124 and the puller AT 27981047, remove the cover of the unit.

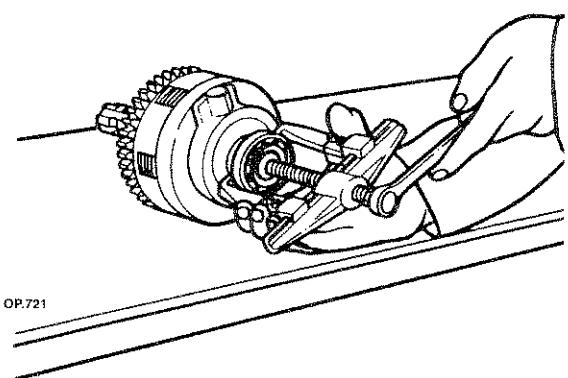


OP.719

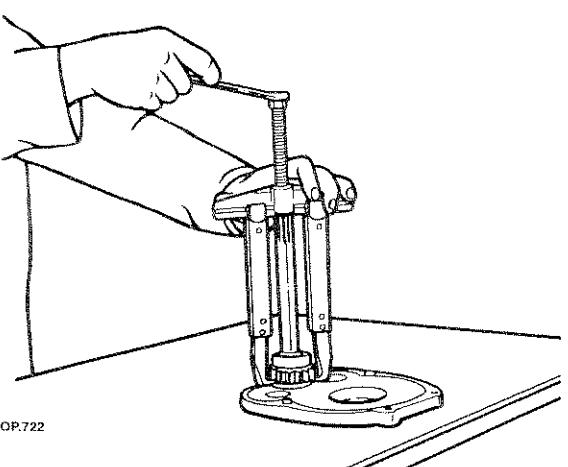
- 6 - With the help of a hammer, remove the clutch unit from the cover.



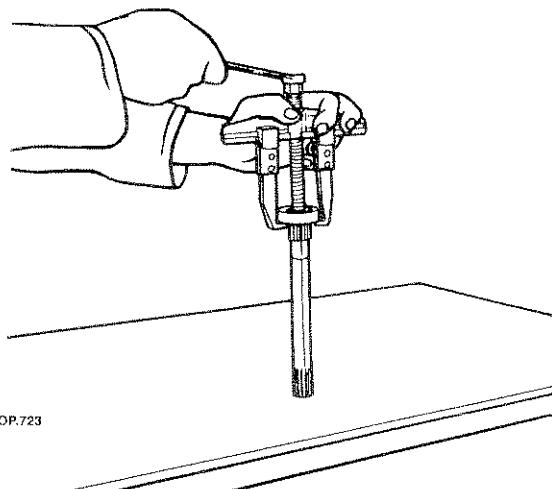
7 - Remove the bearing using the universal puller AT 37981247 (large).



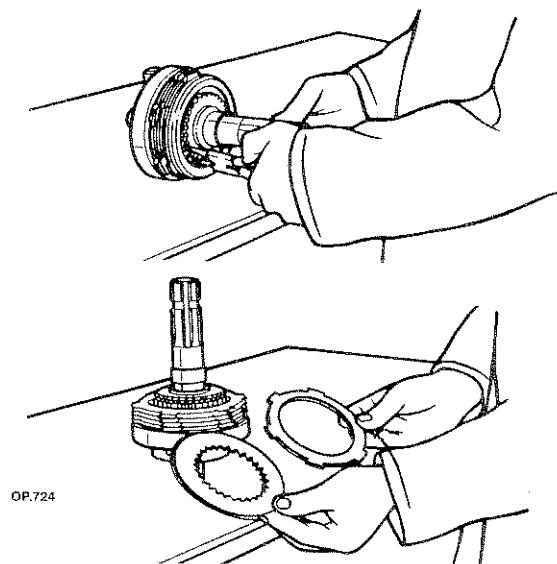
8 - Remove the bearing with the help of the puller AT 37981257 (small).



9 - Remove the bearing with the universal puller AT 37981257 and the long jaws AT 37981311.



10 - Remove the bearing with the universal puller AT 37981257.

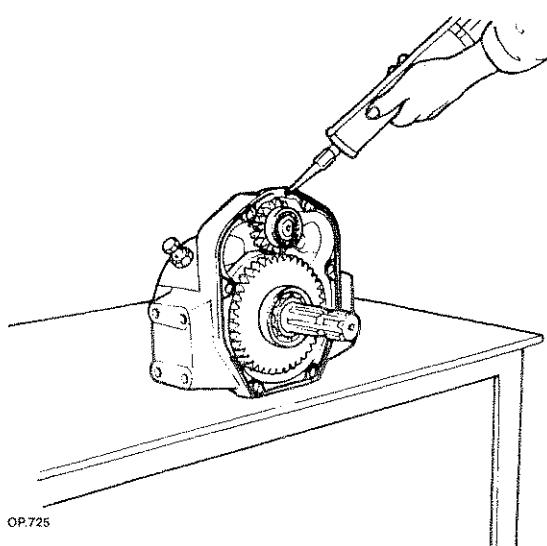


11 - Dismantle the clutch unit and check if the sliding surfaces of the clutch discs are worn out or torn, if they are they must be replaced.

Assembly

Assemble the unit , considering the following instructions:

- a - Proceed to the connection, bearing in mind the following instructions:
- b - refer to pictures for location of the different components.
- c - clean all parts to be mated carefully.
- d - apply a 3 mm string of gasket forming



compound following the path indicated in the figure.

e - observe the driving torques listed at page 4

f - consider the following operations:

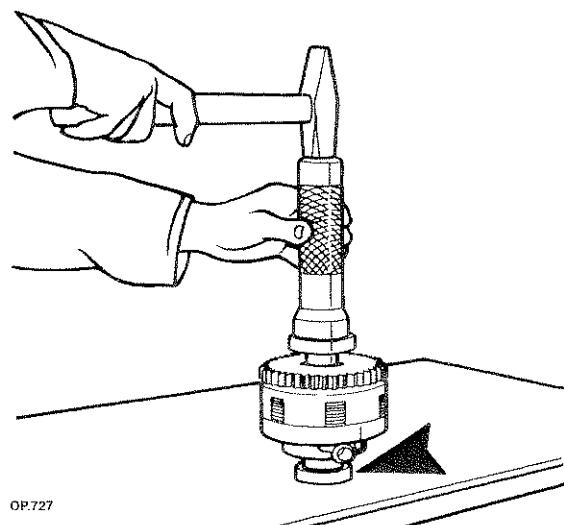


WARNING - DANGER

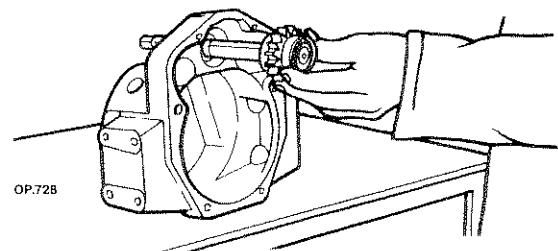
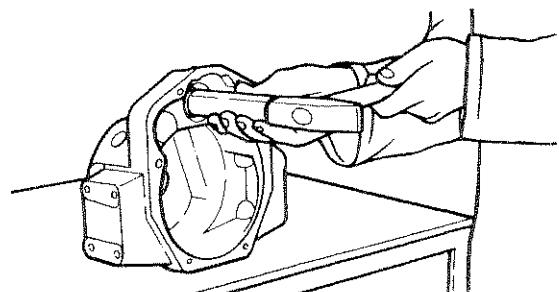


Perform operations by strictly observing accident prevention regulations.

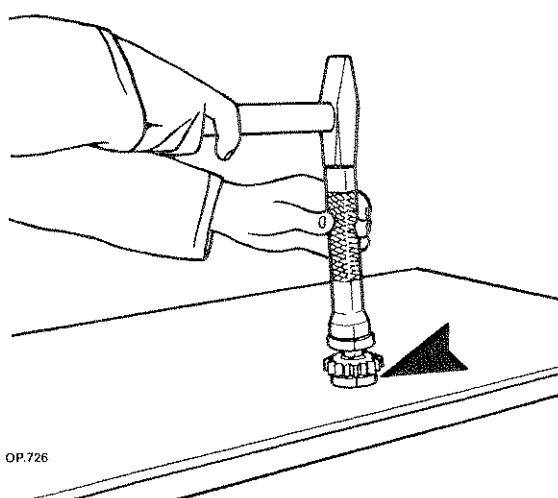
- Do not use gasoline, diesel oil or other flammable liquids to degrease or clean parts but use commercial non-toxic solvents instead.



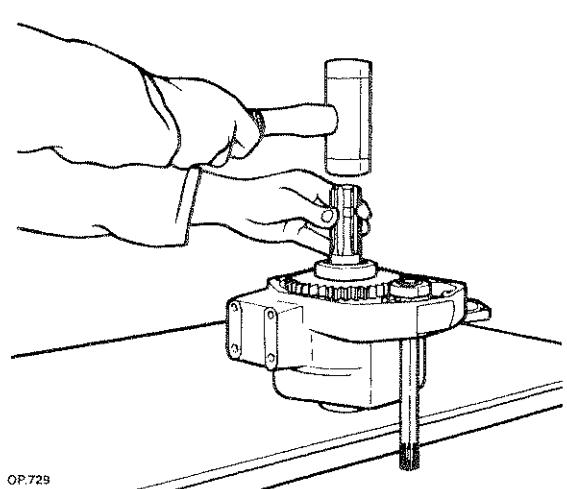
12.2 - Mount the bearings on the PTO shaft with tool AT 37981014.



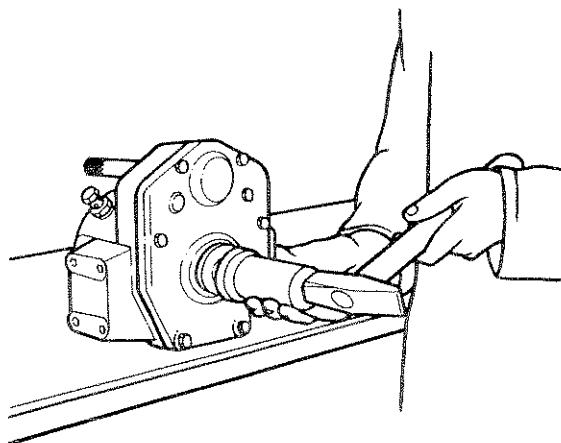
12.3 - Mount the seal ring with tool AT 37981299 and insert the main shaft with adapter AT 37981020.



12.1 - Mount the bearings on the main shaft with tool AT 37981298.



12.4 - Mount the clutch unit with a hammer.



OP.730

12.5 - Mount the seal ring with the help of tool AT 37981301 and adapter AT 37981300 and adding some Loctite inside the seal ring housing.



WARNING - DANGER



Perform operations by strictly observing accident prevention regulations.

- Do not use gasoline, diesel oil or other flammable liquids to degrease or clean parts but use commercial non-toxic solvents instead.

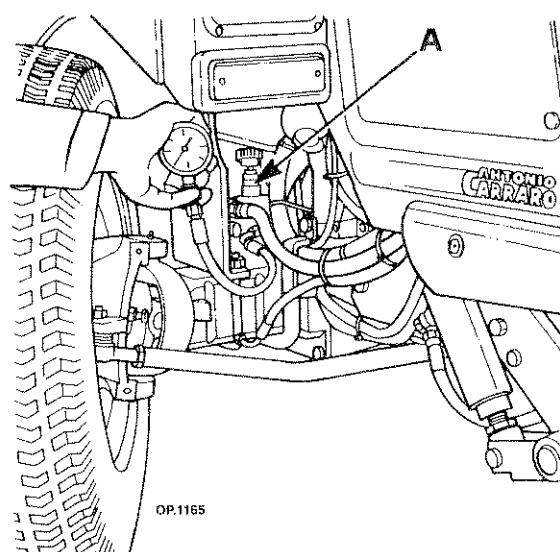
The collection of waste oils must be performed by authorized plants.

Keep environment clean.

Checking the actuation pressure of the clutch unit

Check actuation pressure of the clutch unit as follows:

- 1 - Switch off the motor and dismantle the oil tube connection union of the front PTO unit.



- 2 - Replace the original fitting with the adapter AT 37981259 and the pressure gauge AT 37981259 connected to the pressure gauge with scale ranging from 0 - 100 Bar AT 37981190 and the tube to the PTO unit.

- 3 - Start engine and make it run at a speed of 1500 rpm and actuate the control knob; in this condition the pressure gauge must indicate a pressure of 13+/-1 bar (Kg/cmu).

In case the pressure differs from the prescribed one adjust it with the help of the valve (see point A).

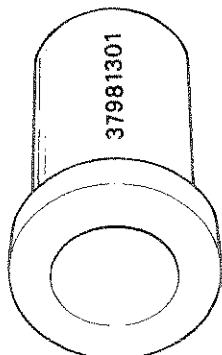


WARNING - DANGER

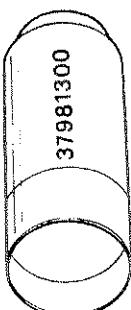


Perform operations by strictly observing safety and accident prevention measures.

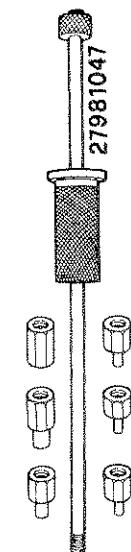
Do not attempt any servicing on tractor unless motor is stopped, except when otherwise specified.



AT.117



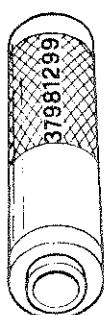
AT.118



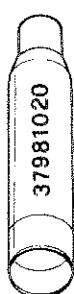
AT.004

1 - Driver AT 379811301 for the assembly of the packings on the PTO shaft and adapter.

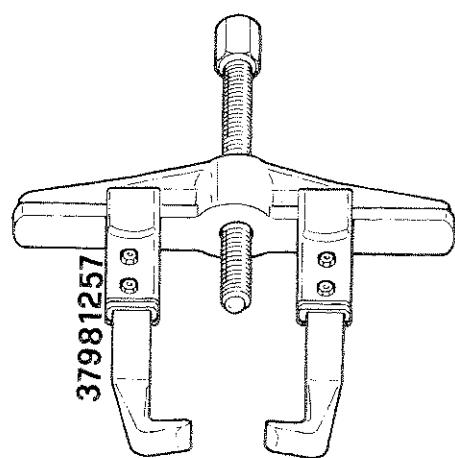
4 - Puller with adapter.



AT.119



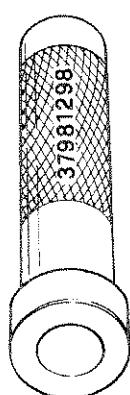
AT.120



AT.007

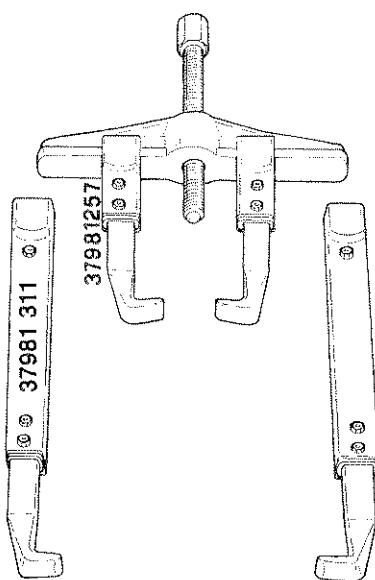
2 - Driver AT 37981299 for the assembly of the PTO main shaft packing and adapter.

5 - Universal puller.



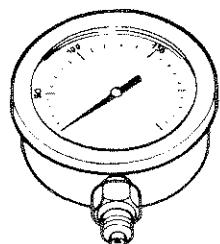
AT.121

3 - Driver for the mounting of bearings.



AT.123

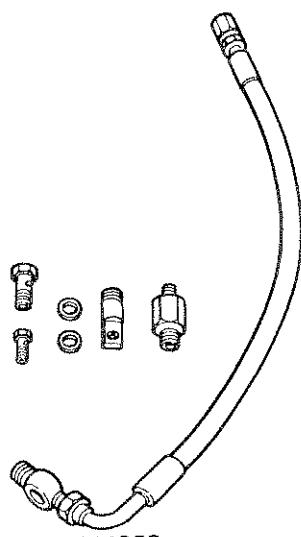
6 - Universal puller.



37981190

AT.210

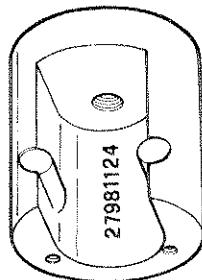
7 - Pressure gauge



AT.081

37981259

8 - Adapter for pressure gauge



AT.039

9 - Adapter for puller


MEASUREMENT UNIT CURRENTLY USED IN THE AUTO SERVICING FIELD AND RELATIVE ABSOLUTE CONVERSION FACTORS

Size	Unit used		multiply divide	IS unit	
	Name	Symbol		Name	Symbol
Angle	degree	°	1	degree	°
	first	'	1	first	'
	second	"	1	second	"
Length	millimetre	mm	1	millimetre	mm
	metre	m	1	metre	m
	kilometre	km	1	kilometre	km
	inch	in	25.4	millimetre	mm
	foot	ft	0.3047		
	yard	yd	0.9144	metre	m
	mile (USA)	mile	1.6093	kilometre	km
Area	square millimetre	mm ²	1	square millimetre	mm ²
	square metre	m ²	1	square metre	m ²
	square inch	sq in	645.612	square millimetre	mm ²
	square foot	sq ft	0.0929	square metre	m ²
	square yard	sq yd	0.8361		
Volume	cubic metre	m ³	1	cubic metre	m ³
	cubic inch	cu in	16.3880	cubic centimetre	cm ³
	cubic foot	cu ft	28.3205	cubic decimetre	dm ³
Power	kilogram power	kg	9.8066	Newton	N
	pounds	lb	4.4482		
Electric current	ampere	A	1	ampere	A
Electric power	volt	V	1	volt	V
Impedance Resistance Reactance	ohm	Ω	1	ohm	Ω
Electrical capacity	Farad	F (Farad)	1	farad	F
Frequency	hertz	Hz	1	hertz	Hz
Angle speed	revolutions/sec	rps	1	revolutions/sec	rps
	revolutions/minute	rpm	1	revolutions/minute	rpm



Size	Unit used		multiply divide	IS unit		
				Name	Symbol	
Speed	kilometre/hour	km/h	1	kilometre/hour	km/h	
	mile/hour	MPH	1.6092			
Torque - Moment	kilogram-metre	kgm	9.8066	Newton ~ metre	N ~ m	
	kilogram-centimetre	kgcm	0.1019			
	foot - pound	ft-lb	1.3558			
Stress	kilogram	kg/cm ²	0.0980	Newton	N/mm ²	
	square centimetre					
	pound	p.s.i.	0.0068	Square millimetre		
	square inch					
Pressure	kilogram	kg. cm ²	0.9806	bar	bar	
	square centimetre					
	atmosphere	atm	1.0132	millibar		
	millimetres of water	mm H ₂ O	0.0980			
	millimetres of mercury	mm Hg	1.3332	bar	mbar	
	pound	p.s.i.	0.0689			
Flexibility	square inch					
	millimetre	mm/100 kg	0.1019	millimetre	mm/100N	
	100 kilograms					
	inch	in/100 lb	57.0125	100 Newton		
Capacity	100 pounds					
	litre	l	1	cubic decimetre	dm ³	
	pint	pts	0.5682			
	gallon	imp. gal.	4.5458			
Time	fluid ounce	fl oz	28.4090	cubic centimetre	cm ³	
	second	sec	1	second	s	
	gram	g	1	gram	g	
	kilogram	kg	1	kilogram	kg	
Weight (as body mass)	ounce	oz	28.35270	gram	g	
	pound	lb	0.4535	kilogram	kg	
	horsepower	CV	0.7354	Kilowatt	kW	
	horsepower	HP	0.7457			
Electric charge (battery)	ampere/hour	Ah	1	ampere/hr	Ah	
			3.5999	kilo coulomb	kC	
Temperature (*)	centigrade	°C	1	centigrade	°C	

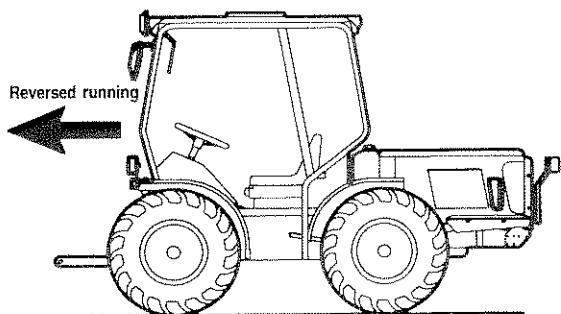
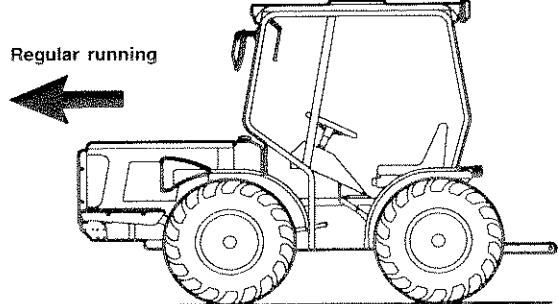
(*) °F (fahrenheit) = 1.8 °C - 32; °C = $\frac{°F - 32}{1.8}$

SOME FUNDAMENTAL UNITS

	SI unit	Symbol	Definition	Data from:
LENGTH	meter	m	The basic SI unit of length; equal to 1 650 763.1 times the wavelength of the orange light emitted when a gas consisting of the pure Krypt 86 is excited in an electrical discharge.	<p>The "metre" is generated with the radiation emitted from the Krypton 86 sample light. With interferometric techniques, it is possible to count the number of wavelengths contained in the unknown length. The estimated uncertainty is 4×10^{-9}.</p>
MASS	kilogram	kg	The basic SI unit of mass, equal to the mass of the international prototype stored at the Pavillon de Breteuil (Sèvres, France).	<p>The international prototype consists of a platinum-iridium cylinder on which are based national samples with an estimated uncertainty of 2×10^{-9}. Work samples, in stainless steel or other alloys, are then obtained from the national samples (also in platinum-iridium).</p>
TIME	second	s	The basic SI unit of time: the duration of 9 192 631 770 periods of radiation corresponding to the transition between two hyperfine levels of the ground state of caesium -133.	<p>A "second" is generated by tuning an oscillator on the resonance frequency of the caesium -133 atom. When 9 192 631 770 oscillations are produced, the clock indicates that a time period equal to a second has elapsed. The uncertainty with which it is possible to measure the time periods greater than 100s with an estimated uncertainty of 1×10^{-12}.</p>
ELECTRIC CURRENT	ampere	A	The basic SI unit of electric current; the constant current that, when maintained in two parallel conductors maintained in two parallel conductors of infinite length and negligible cross section placed 1 metre apart in free space, produces a force of 2×10^{-7} newton per metre between them.	<p>An "ampere" is generated by using an electromagnetic scale, on which, known the local gravity acceleration and with reference to the mass sample, it is possible to measure the interactional force between the fixed coil and a movable one and from which you can calculate the value of electric current in the coil, with an estimated uncertainty of 4×10^{-12}.</p>
THERMODYNAMIC TEMPERATURE	Kelvin	K	The basic SI unit of thermodynamic temperature; the fraction (1/273.16) of the thermodynamic temperature of the triple point of water.	<p>The thermodynamic temperature of the triple point of water, characterised by the coexistence in equilibrium of the three phases; solid, liquid, steam is achieved in airtight glass bulbs containing extremely pure water, bulbs that allow the generation of the Kelvin with an estimated uncertainty of 4×10^{-7}.</p>

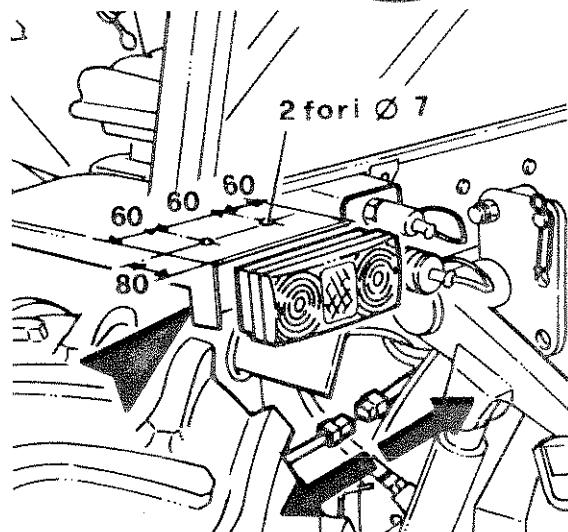


ROAD CIRCULATION WITH REVERSED GEAR

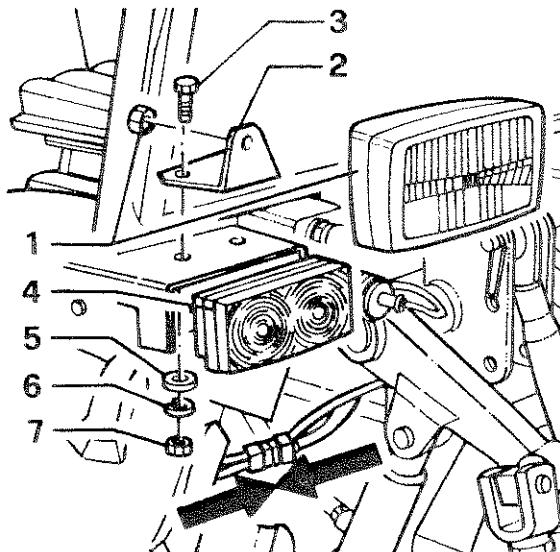


- Instructions to be followed to change lights and indicators when circulating on roads with reversed gear.

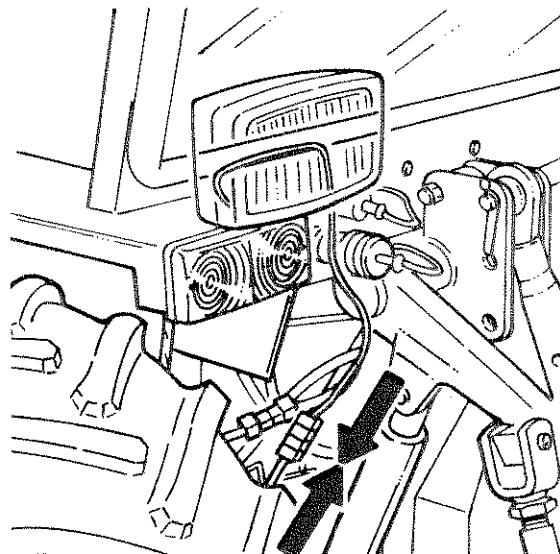
Proceed as follows:



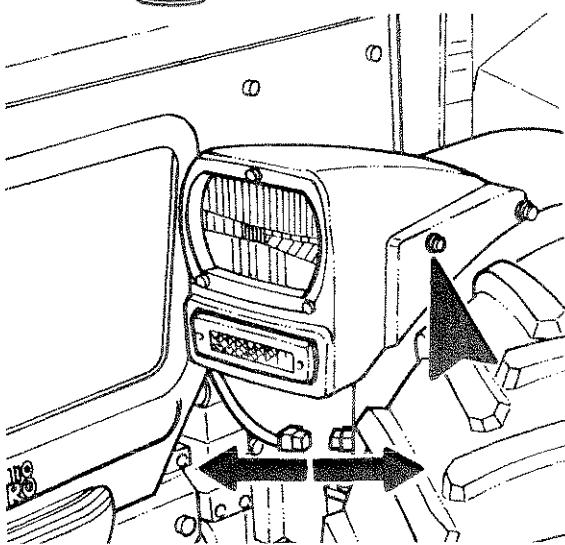
1 - Remove the rear light and drill two holes Ø 7 on the bumper as shown in the figure.



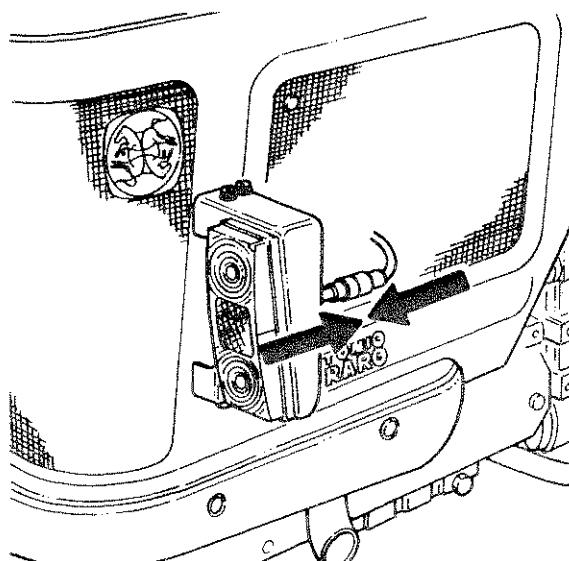
2 - Mount the front indicator and sidelight and the front headlight with relative support.



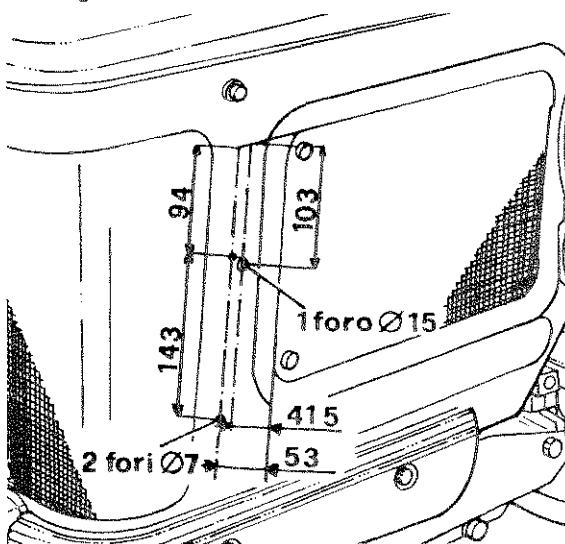
3 - Position the wire of the headlight according to the diagram and connect.



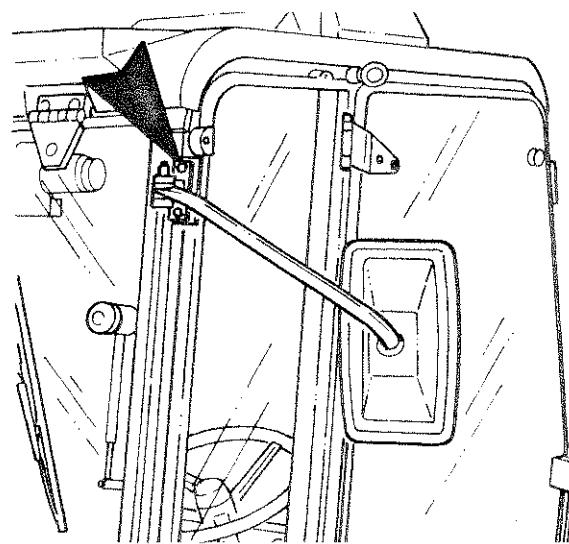
4 - Disconnect the electrical connections and remove the whole unit supporting the front headlights and turn indicator.



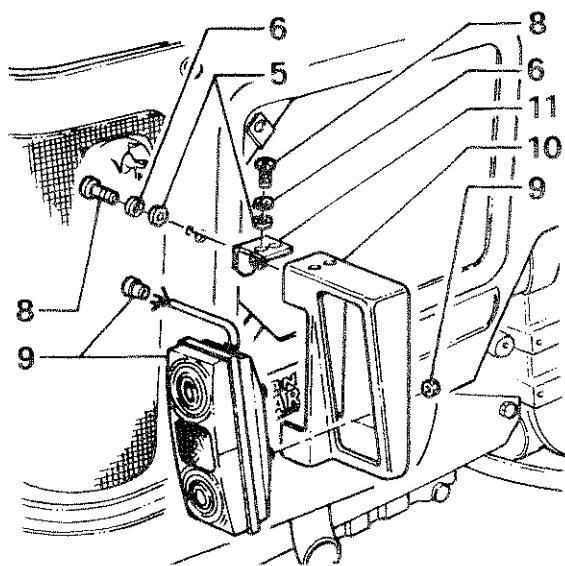
7 - Connect wires.



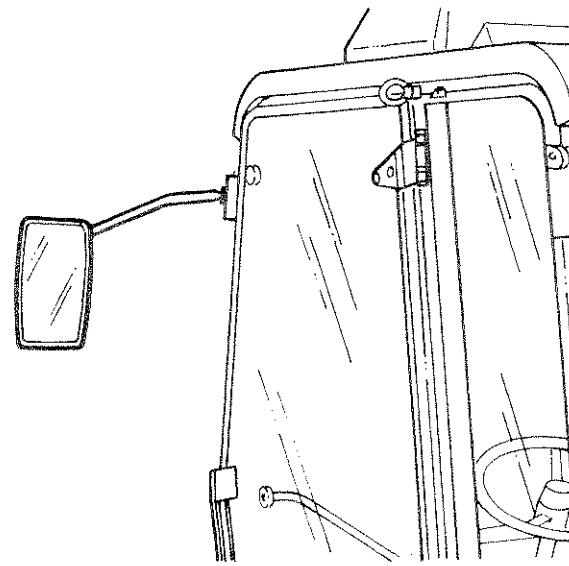
5 - Remove the protection grille and drill two holes; Ø 7 and Ø 15 as shown in the diagram.



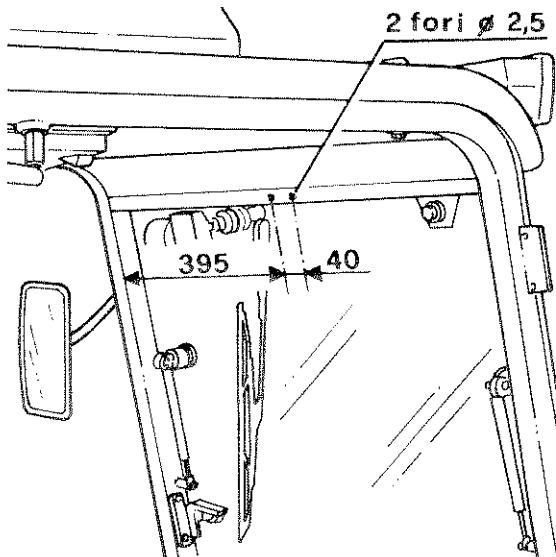
8 - Loosen the screws and remove the rearview mirror.



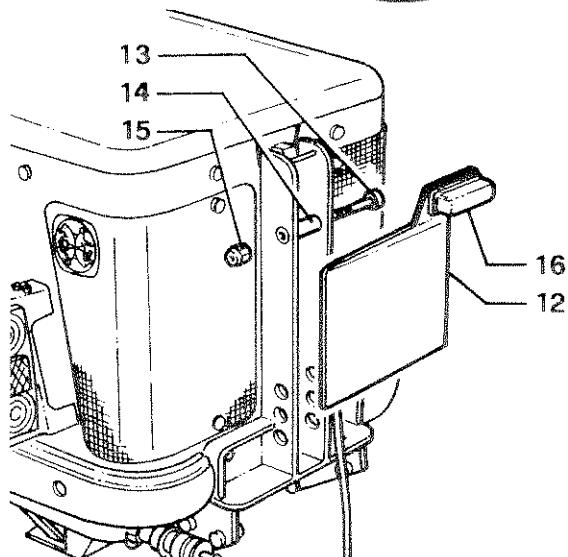
6 - Mount the rear stop and sidelight with reflector.



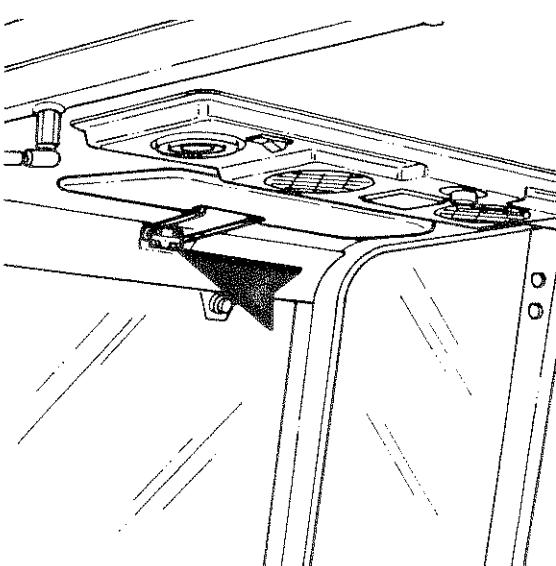
9 - Mount the rearview mirror in the reversed drive position.



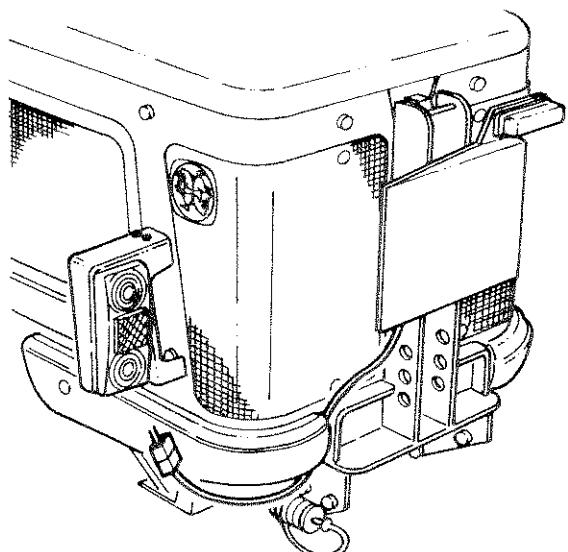
10 - Drill two holes 2.5 as per diagram.



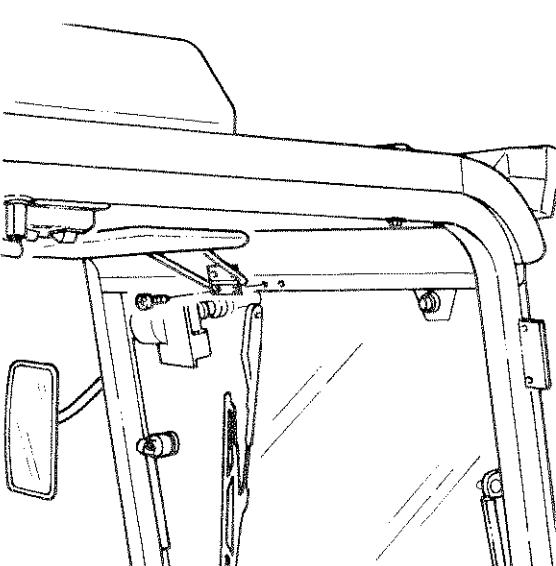
13 - Mount the rear number plate support together with light.



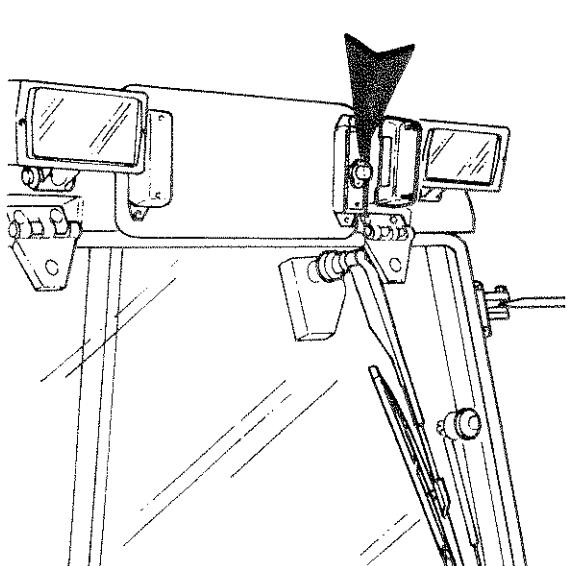
11 - Loosen the screws and remove the padded visor.



14 - Connect wires.



12 - Mount the padded visor in the revered drive position.



15 - Loosen screws and remove both the lights of the "front" number-plate lights.

**Note**

When installation has been completed, check the efficiency of the lighting system before using the tractor, and adjust the front headlight 1 in compliance with the road circulation regulations in force.

**WARNING - DANGER**

Perform operations by strictly observing safety and accident prevention measures.
Do not attempt any servicing on tractor unless motor is stopped, except when otherwise specified.

Key - Kit for the application of the lights with reversed drive

Ref. Item	Quantity	Code	Description of item
-	1	16701121	Kit for the application of rear lights
1	2	46706058	NIOX front headlights
2	2	34909757	Support for NIOX headlights
3	4	46966008	Screw M6x20
4	2	46706052	Front light turn indicator
5	16	6205542	Flat washer D.6 UNI 6592
6	16	6206532	Grower washer D.6 UNI 1751
7	4	6197558	Nut M6 high UNI 5587
8	12	46966012	Screw M6x14 UNI7687
9	2	46706027	Turn indicator-stop parking rear light
10 S	1	46706030	Rear light l.h. support
10 D	1	46706031	Rear light r.h. support
11 S	2	34904556	Rear light l.h. support angle
11 D	2	34904557	Rear light r.h. support angle
12	1	35018023	Number plate bracket
13	1	46960053	Screw
14	1	32205265	Bushing
15	1	6198503	Nut
16	1	46706012	Complete number plate lamp (lights - 5 fastening nuts - 750 mm cable with male Faston connectors and relative 2-pole connector).

Note: This application has been designed for all Tigretrac series 30 serial no. 02457.



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