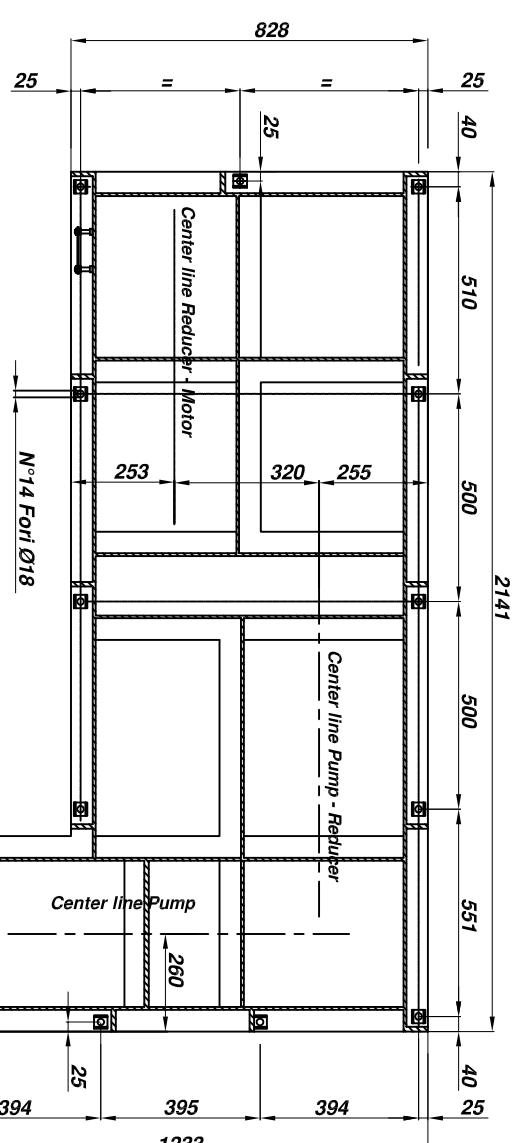
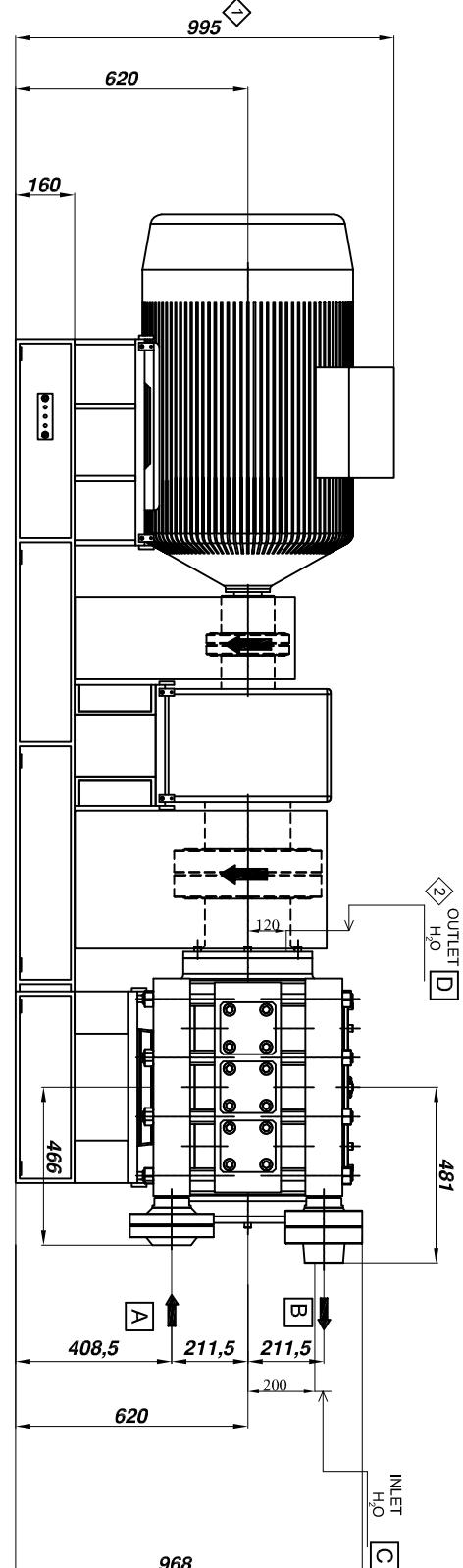


POS.	FLANGE DESCRIPTION	CONNECTIONS
A	SUCTION PUMP (with counter flange 6" ANSI 150RF - A105)	6" ANSI 150 RF (WN sch.40)
B	DISCHARGE PUMP (with counter flange 4" ANSI 600LM - A105)	4" ANSI 600 LF (WN sch.80)
C	INLET WATER FLUSHING - INLET/OUTLET WATER EXCHANGER	1/2" ANSI 150 RF
D	OUTLET WATER FLUSHING	Tubing: N°3 10x7

FLUSHING FLUID:
Water Temperature: 5 - 40 °C
Pressure: 3 - 7 barg / Design 10 barg
Consumption: 100-150 l/h

WEIGHT (kg):	
Nº1 Pump:	1600
Basement:	485
Electric Motor (55 kw)	384
Reducer and couplings:	385

ELECTRIC MOTOR:	Manufacturer: BROOK CROMPTON Type: TU-DF 250M4 B3 P: 55 kW, 380V, 4 poles, 3 ph, 50 Hz
COUPLINGS:	Manufactured: EUROTAS
REDUCER:	Manufacturer: SEF Type: RXP2 808 / B / 11,2 / ECE / N / M1 Ratio: 1 : 11,2



FOUNDATION PLAN

2	ISSUED FOR COSTRUCTION		
1	ISSUED FOR COSTRUCTION		
0	PRELIMINARY		
REVISION Revisione		REVISION HISTORY Storia delle revisioni	
			DRAWN Autore
			DATE Data
The master version of this document is stored as a digital file in a database. Approval process is digitally managed and no signature is visible on the document. L'originale del presente documento risiede in un database digitale; il processo di approvazione è gestito via software e le firme non sono visibili sul documento.			
 Desmet Ballestra s.p.a. MILANO - Italy			
3310-BD-000-LAY			
DRAWING Nr. / Disegno Nr. CUSTOMER Nr. / Nr. Cliente			
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	Desmet Ballestra srl
domestico	MILANO - Italy

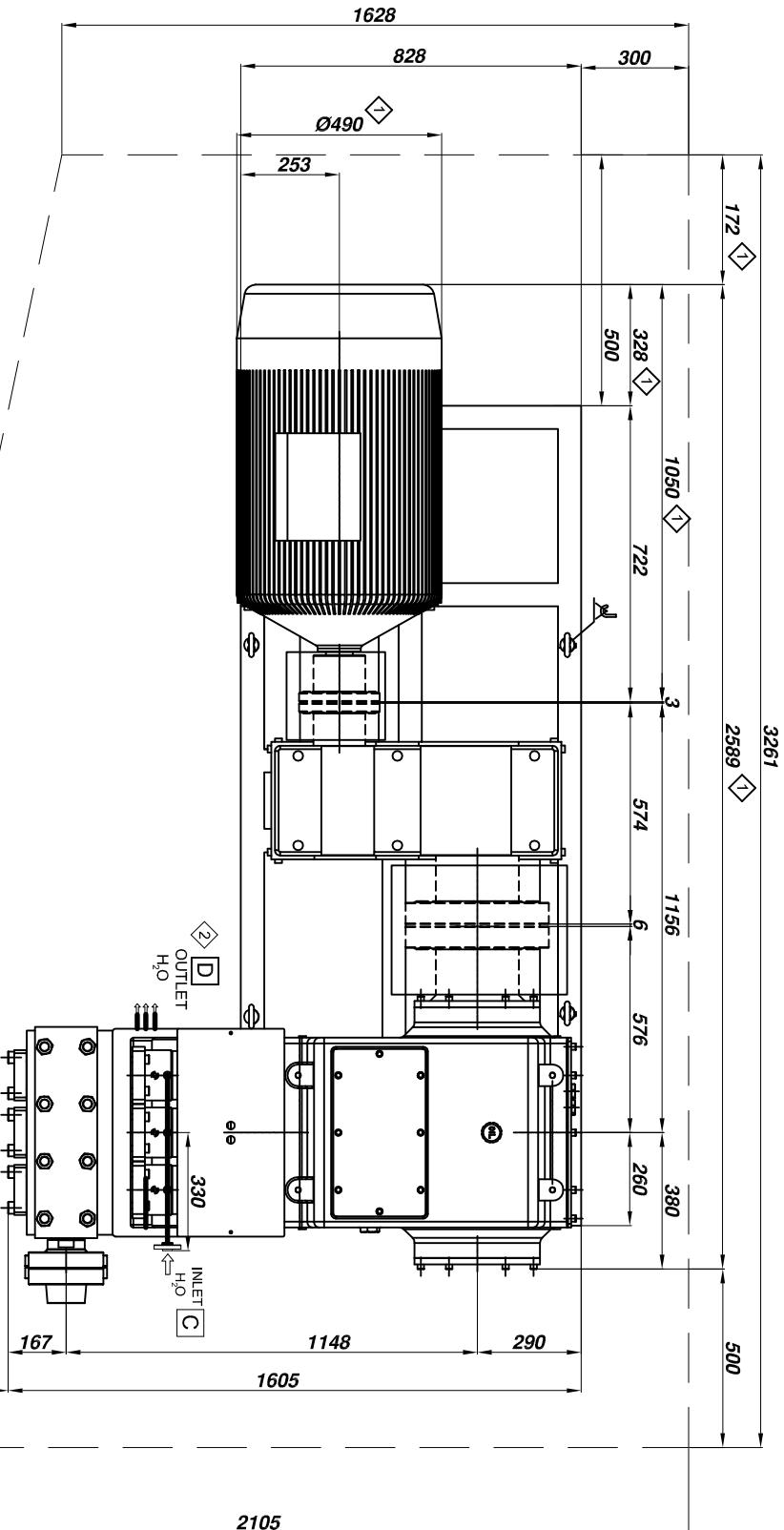
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REVISION Revisione	PRELIMINARY	REVISION H Storia delle
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<p>3. Approval process is digitally managed and no signature is visible on the drawing. The signature is visible on the software and the file is signed with the digital signature.</p>	<p>3. Il processo di approvazione è gestito via software e le firme non sono visibili sul disegno. La firma è visibile nel software e il file è firmato con la firma digitale.</p>	<p>3. Der Approbationsprozess ist digitalisiert und eine Unterschrift ist auf dem Zeichnung nicht sichtbar. Die Unterschrift ist im Software-Tool sichtbar und das Dokument ist mit einer digitalen Signatur versehen.</p>	<p>3. El proceso de aprobación es digitalmente gestionado y no se ve una firma en el dibujo. La firma es visible en el software y el archivo está firmado con la firma digital.</p>

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Certificato di Collaudo*Test Report*

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POMPA / Pump/Pompe				MOTORE / Drive/Moteur																																																																												
TIPO Diam.Pist. X Corsa Pump Type/type Plunger /Stroke				BROOK CROMPTON Type/type TU-DF 250M4 B3																																																																												
N°MATRICOLA Serial no./nr. de série				N°MATRICOLA Serial no./nr. De série																																																																												
N°COLPI- RPM Strokes no./nr. de coups				ITEM- M 63 P3 A RPM/tours																																																																												
PORTATA Lt/h - M 3 / h Capacity/debit lt/h.				12,5 / 125 KW. 55 AMP 99 Volt. 380 Hz.50																																																																												
PRESSIONE ASP / MANDATA MAX. Suct./ Max Pressure/pressure max				RIDUTTORE marca / tipo : GSM Gear reducer made/type RXP2 808 /A																																																																												
TARATURA VALVOLA DI SICUREZZA Safety Valve setting				Rapporto - Ratios 1 : 11,2 N°MATRICOLA Serial no./nr. De série																																																																												
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Procedura N° SA 112 rev.1 Procedure/procédur SA 153 rev.1				Documento SA141 rev.1 Hydrostatic test Document/document																																																																												
Prova di pressione idraulica Bar Hydraulic test no./essai de pression hydraulique nr.				Aspirazione 27 Mandata 120 Suction/aspiration																																																																												
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RPM	Press.aspiraz. Sucti. Pressure	Press. Mandata Disch. Pressure	Portata. Flowrate Débit .M 3/h	Absorbed Power	Poten.rich. Rqrd. Power	Rend.mot: Mot.efficien.	Poten.Ass. Absor.Power	Kw Note (1)																																																																								
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Data / Date	Desmet Ballestra	
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CLIENTE/Customer/Client DESMET-BALLESTRA S.p.a. ITALIA		ORDINE CLIENTE 100123 DEL 03-02-10		DATA Date/Data 22/07/2010	COMMessa Job N%Commande nr. 10006 /10		
POMPA / Pump/Pompe			MOTORE / Drive/Moteur				
TIPO Diam.Pist. X Corsa Pump Type/type Plunger /Stroke			TIPO BROOK CROMPTON Type/type TU-DF 250M4 B3				
N°MATRICOLA Serial no./nr. de série			N°MATRICOLA Serial no./nr. De série			ITEM- M 63 P3 B	
N°COLPI- RPM Strokes no./nr. de coups			N°GIRI 1480 RPM/tours			Suitable for inverter	
PORTATA Lt/h - M 3 / h Capacity/debit lt/h.			KW. 55 AMP 99 Volt. 380 Hz.50			RIDUTTORE marca / tipo : GSM	
PRESSIONE ASP / MANDATA MAX. Suct./ Max Pressure/pression max			Gear reducer made/type RXP2 808 /B Rapporto - Ratios 1 : 11,2				
TARATURA VALVOLA DI SICUREZZA Safety Valve setting			N°MATRICOLA Serial no./nr. De série				
SIGLA POMPA Pump Item			CERTIFICATO Certificate/certicat				
Procedura N° SA 112 rev.1 Procedure/procéduur SA 153 rev.1			Documento SA141 rev.1 Hydrostatic test Document/document				
Prova di pressione idraulica Bar Hydraulic test no./essai de pression hydraulique nr.			Aspirazione 27 Suction/aspiration			Mandata 120 Delivery/refoulement	
RPM	Press.aspiraz. Sucti. Pressure Bar	Press. Mandata Disch. Pressure Bar	Portata. Flowrate .M 3/h	Absorbed Power A	Poten.rich. Rqrđ. Power Kw	Rend.mot: Mot.efficien. n %	Poten.Ass. Absor.Power Kw Note (1)
133	1	0	21,3	30	7,0		7,7
132	1	20	21,0	54	23,7	90	21,3
132	1	40	20,8	71	35,5	91	32,3
131	1	60	20,3	84	44,6	96	42,8
130	1	74	20,2	96	52,9	97	51,3
Prova a giri variabili - Variable speed test							
133	1 100%	74	20,2	96	52,9	97	51,3
99,5	1 75 %	74	15,2	82	43,2	91	39,3
65	1 50 %	74	10,3	61	28,5	90	25,7
30	1 25 %	74	5,4	21	15,3	88	13,5
22,5	1 10 %	74	4,2	20	11,9	85	10,1
NOTE							
Remarks/Notes		Pump temperature rising to 44°C Gear reducer rising to 70 °C with Amb. Temp 32 °C Temp. Pompa a regime 44°C - Riduttore a regime 70 °C con temp amb. 33°C					
DATA Date/Date 22-07-2010		Prova eseguita con H2O durante la prova a temperatura 19 - 44 C Test performed with H ₂ O at temp.12- 38°C/ Essai effectué avec eau a température 19- 44 °C					

Data / Date	Desmet Ballestra
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NOISE TEST: STP3 100 x 120

α Coeff. sonoro medio della sala prove	Sv Superf. totale della sala prove	A Superf. di assorbimento equivalente della sala prove $A = \alpha S_v$
0,5	76	38

Rilievo	Rumore nel punto i	dB
1	L'_{pAi}	76,0
2	L'_{pAi}	77,0
3	L'_{pAi}	77,0
4	L'_{pAi}	78,0
<i>Media del rumore</i>	L'_{pAAv} $L'_{pAAv} = 10 \log\left(\frac{1}{N} \sum_{i=1}^N 10^{0,1L'_{pAi}}\right)$	<u>77,1</u>

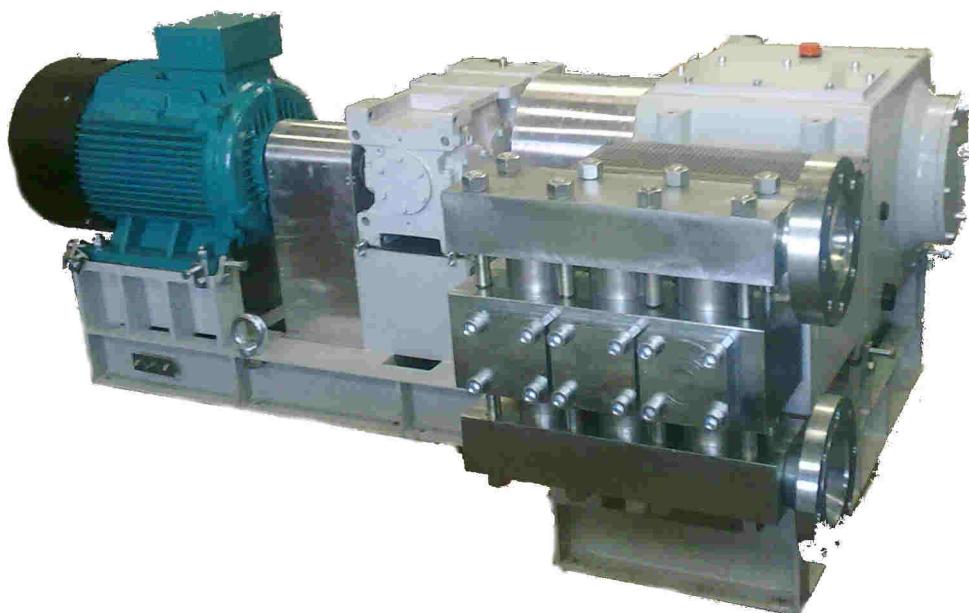
Rilievo	Rumore di fondo nel punto i	dB
1	L''_{pAi}	54,0
2	L''_{pAi}	55,0
3	L''_{pAi}	55,0
4	L''_{pAi}	55,0
<i>Media del rumore di fondo</i>	L''_{pAAv} $L''_{pAAv} = 10 \log\left(\frac{1}{N} \sum_{i=1}^N 10^{0,1L''_{pAi}}\right)$	<u>54,8</u>
<i>Coeff. Correttivo del rumore di fondo</i>	K_{1A} $K_{1A} = -10 \log(1 - 10^{-0,1(L'_{pAAv} - L''_{pAAv})})$	<u>0,0</u>
<i>Coeff. Correttivo del rumore di fondo</i>	K_{2A} $K_{2A} = 10 \log(1 + \frac{4S}{A})$	<u>3,0</u>

MEDIA DEL RUMORE EFFETTIVO	$L_{pAAv} = L'_{pAAv} - K_{1A} - K_{2A}$	<u>74,0</u>
MEDIA DELLA POTENZA SONORA EFFETTIVA	$L_{WAAv} = L_{pAAv} + 10 \log(S / S_0)$	<u>79,6</u>

Superfici di riferimento	Superficie di riferimento	mq
So	Superficie skid	2,60
S	Superficie skid + più surf. Distanza 1 m	9,50

INSTALLATION, OPERATION & MAINTENANCE MANUAL

CLIENTE <i>CUSTOMER - CLIENT</i>	
IMPIANTO <i>PLANT - INSTALLATION</i>	
LOCALITA' <i>SITE - LOCALITE'</i>	CINA
PROGETTO <i>PROJECT - PROJET</i>	
SERVIZIO <i>SERVICE - SERVICE</i>	SLURRY FEEDING
SIGLA <i>ITEM - ITEM</i>	63 P3 A / B / C
TIPO POMPA <i>PUMP TYPE - POMPE TYPE</i>	STP 3 100x120
ORDINE <i>PURCH ORDER - COMMANDE</i>	
DATA <i>DATE - DATE</i>	
COMMESSA <i>WORK ORDER - BON DE TRAVAIL</i>	1E35



INDEX

- 1.0 GENERAL RULES**
- 2.0 DESCRIPTION OF THE MACHINE**
- 3.0 DATA SHEETS**
- 4.0 DRAWINGS**
- 5.0 USE AND FORBIDDEN MANOEUVRES**
- 6.0 MOVEMENT, TRANSPORT AND STORAGE**
 - 6.1. Transport
 - 6.2. Preservation period
- 7.0 INSTALLATION**
 - 7.1. Connection to the hydraulic plant
 - 7.2. Connection to the electric plant
- 8.0 PREPARATION TO THE START-UP**
- 9.0 MAINTENANCE AND REVISION**
 - 9.1. Disassembling of the hydraulic end
 - 9.2. Crankshaft mechanism disassembly
 - 9.3. Crankshaft mechanism reassembly
 - 9.4. Hydraulic end reassembly
 - 9.5. Lubrication

1.0 GENERAL RULES

- The unit must be installed in a safe area, with the guarantee of the necessary escape ways and of the repair of risks deriving from the execution of other operations.
- Preserve this manual for future references.
- It is forbidden the use of the machine outside the field of employment.
- For every doubt or employ which are not contemplated in this manual, you are invited to contact before installation our after-sales service department.
- For any communication always mention the machine model, the serial and job number.
- Exclusively use original spares.

2.0 DESCRIPTION OF THE MACHINE

The pumping unit consists of:

- Horizontal reciprocating pump with plungers series STP3 100 X 120, having technical features as per our enclosed specification.
- Gear reducer, "GSM/SEF" mod. RXP2/808/B/11.2/ECE/N/M1 with oil 220
- Electric motor,"BROOK CROMPTON" mod. TU-DF 250M4 – B3, 380 V, kW 55
- Couplings, "EUROTRAS" mod. E350P – E160P
- Base common to the unit.

5.0 USE AND FORBIDDEN MANOVERES

Not to compromise the people security and the machine integrity it is forbidden:

- to use the machine on conditions different from the design ones;
- temper with or elude all protection and safety devices, particularly the safety valve put on delivery end;
- to operate the machine without protections;
- start the machine without lubricant;
- discharge the oil with the machine operating;
- intercept the delivery side;
- intercept the suction side;

6.0 MOVEMENT, TRANSPORT AND STORAGE

6.1 TRANSPORT

For the lifting of the machines it is suitable to employ slings, placed around the supports provided for this use.

It is recommended the utmost care during the transportation since a damage, with infiltration and stay of the water inside the case could damage the machine, even seriously.

6.2 PRESERVATION PERIOD

The preservation period is represented by the time passing from the forwarding to the time of pump start-up, or periods of inactivity after the installation on the plant.

Two preservation modalities have been defined :

- 1- Short period up to 30 days
- 2- Long period over 30 days

4 –1. The pumps for the short period are forwarded completely installed including the sealings.

After the testing , for the hydraulic end the oil is put in circulation through the valves for at least 4-5 minutes.

The oil used for the test is removed from the crank-mechanism.

4-2 . For the long period the sealings from the cylinder are removed and separately forwarded, in order to prevent the damage of the plungers or the cylinders by electro-chemical phenomena.

After the testing the hydraulic side must be disassembled, carefully cleaned, dried, poured with preserving oil and re-assembled at their place, excluded the sealing.

The crank-mechanism is filled with preserving oil and successively discharged.

7.0 INSTALLATION

The supply comprises a metallic base-plate suitable to house the whole unit. Such a base-plate has the machine supporting planes worked rigorously and therefore they are perfectly parallel between them when the base-plate is placed on a plane surface..

The placement of the metallic base-plate on the foundation must therefore restore the conditions most possibly near to the ones previously described. The maximum mistake of horizontal position admitted in the two directions is 0,1%, whereas the maximum mistake admitted in the parallelism of the various supporting surfaces is 0,05%.

The unit is supplied already assembled on the base-plate.

The machine must be installed in a safe area, accessible just by authorised personnel.

It can be inserted in other machines, providing for the necessary protections.

It must be accessible for a correct maintenance;

- it must be preserved by possible knocks;
- it must be protected by atmospheric agents if externally placed.

7.1 CONNECTION TO THE HYDRAULIC PLANT

The connection of the machine to the plant must be carried out by means of pipings of the same or higher diameter of the suction and delivery connections.

The weight of the pipes or the possible thermal expansions must not load the machine.

Install a safety valve and dampeners suitable to the required service.

7.2 CONNECTION TO THE ELECTRIC PLANT

Generally the protections and the care of the electric motor is up to the customer.

The panel will be carried out according to the rules to be observed at the installation place.

- Check the motor direction of rotation, to prevent the lack of lubrication to the crank-mechanism (see arrow on the drawing and frame);
- Check the correct positioning of the earthing of the motor and of the base-plate.

8.0 PREPARATION TO START-UP

Before the unit start-up check that the plant is correctly finished in all its parts, mechanical and electrical.

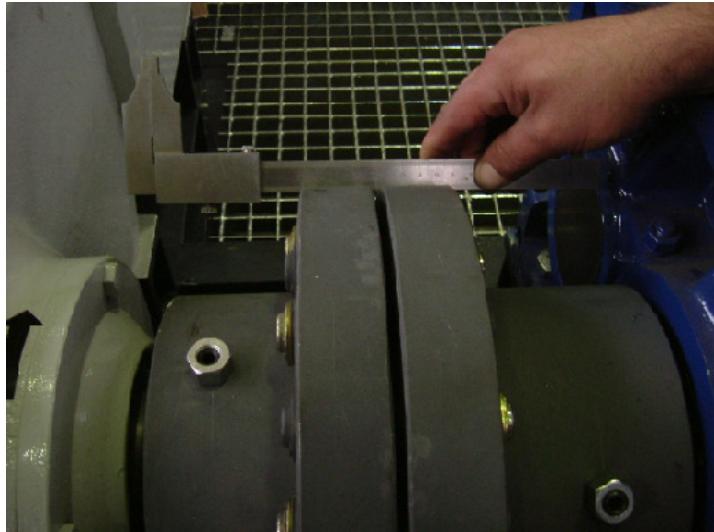
Particularly check that:

- the planned maintenance of all the components has been carried out;
- on all components is restored the level and the correct lubricant type (see instruction manual of the components);
- all the components have been steadily fixed to the base-plant and the bolts of the hydraulic end is tightened;
- all the foreseen safety devices have been assembled and inserted and that their calibration has been correctly carried out;
- all the safety systems are efficient;
- the suction and delivery pipes have been correctly assembled;
- ensure that the motor turns in the correct director of rotation;
- **The packing should be flushed through relevant connections before starting and closed only after pump stopped. Water consumption: 100 - 150 Lt/h (Only if required)**
- after the start-up check that the absorbed current is the foreseen one or little different.





- Check the coupling alignment for slow and fast:
Half coupling Concentricity : < 0,15 mm
Front parallelism error \pm 0,1 mm



9.0 MAINTENANCE AND REVISION

The pumps of STP series are designed in order to obtain the following results:

- utmost steadiness of the unit;
- alignment of all reciprocating motion parts;
- easy maintenance,
- lowest maintenance and operation costs.

In order to obtain the above, the pumps have been designed on the ground of the following criteria:

- a very high safety degree adopted in dimensioning all parts subject to stress
- reduction to the minimum of machine displacement during frame working and hosing of reciprocating motion parts in seats obtained from a unique machine operation during working phase

With the aim of protecting personnel safety, it is necessary during maintenance operations that:

- maintenance is carried out by qualified personnel;
- due to the particular configuration of the pumping unit it is necessary to check the base-plate tightening at the foundation during the assembling and disassembling stages.
- maintenance is carried out when the machine is stopped, turning voltage off;
- voltage cannot be restored by other operator but the one who is doing maintenance;
- discharge and suction gates are closed;
- machine is cooled down to ambient temperature before doing any kind of operations;
- all individual protection devices foreseen by rules in force are used.

9.1 HYDRAULIC END DISASSEMBLY

Check that there is no tension to the motor and that there is no pressure on suction and delivery end, only after having checked these conditions act as follows:

Disassemble hydraulic cylinders and sealings:

With reference to the sectional drawings:

Hydraulic end N°3310-BD-000-SEZ

Crank mechanism N°3230-00-000-SEZ

Then act as follows :

- 1) Bring to low dead point the piston Pos 120
- 2) Loosen and separate the piston from the thrust rod
- 3) Ref. dwg 3230-00-000-SEZ loosen the counter-ring-nut Pos 3 and the ring-nut Pos 4 extract the piston extension Pos 2
- 4) Ref. dwg 3310-BD-000-SEZ loosen the ring-nut Pos 118/119/129
Remove the 4 screws Pos 122 and remove plunger flange Pos. 111
Act with the same procedure with the remaining cylinders/plunger

Disassembling of valve columns: Ref. 3310-BD-000-SEZ

Rif. N° 3225-D0-003-MON BALL VALVE DISASSEMBLING

- 1) Unscrew the screws Pos 102
- 2) Remove the discharge manifold Pos 103



Act with the same procedure with the low discharge manifold

9.2 CRANKSHAFT MECHANISM DISASSEMBLY

Preliminary operations:

- Empty the crankcase from the lubricating oil
- Remove the gear box from the base-plate and the coupling
- Remove the screws which fix the upper and rear cover
- Remove the upper and rear covers paying attention not to damage the gasket in between
- Unscrew the connecting rod fixing screws and remove the caps with relevant half-bushings
- push the cross-head onwards
- keep the three connecting rods on the frame
- extract the blind cover
- remove the screws that fix the exit shaft cover
- extract the shaft
- loosen the splash guard disk and unscrew the plunger joint ring nut
- extract from the frame the connecting rods which will carry together the pin, the connecting rod small end bushing, the cross-head and the rod
- extract the pin, hence disengaging the connecting rod from the cross-head
- to extract the connecting rod small end bushing use the press if necessary

9.3 CRANKSHAFT MECHANISM REASSEMBLY

The reassembly of the crankshaft mechanism is carried out with reverse sequence to the disassembling one, paying attention on the following:

- during crank bushing assembly on connecting rod check that between contact surfaces **THERE IS NO OIL**
- fixing screws of connecting rod to the connecting rod cap will have to be tightened to nominal torque 3 Kgm
- keying of shaft-bearings-frame is done using a jack and having care to centre-position the particulars
- screws that fix power inlet side cover must be properly tightened but not to the extent to cause seeger deformation

- fixing screws of tanks shall be clamped with threads braking loctite
- once assembly is over, oil everything and turn the pump manually and check any possible hardening.

9.4 HYDRAULIC END REASSEMBLY

Hydraulic end reassembly is carried out with reverse sequence to the disassembling one, paying attention to the following:

- assembly of valve seats must be done as shown on the drawing and without reversing the operations;
- Assembly of packings must be done as shown on the drawing having care to position the bladder cut 180° from previous ring and 90° from previous unit;
- grease the OR before assembling them;
- comply with bolts tightening torques stated in the table;
- **RESTORE OIL LEVELS CONSULTING THE ENCLOSED TABLE OF SUGGESTED OILS**

Adjustment of seal packings tightening is very important not only during machine running-in but also when packings are replaced

During starting phase with new packings, adjust the stuffing box ring nuts, letting the main packing drip.

It is important not to leave any space between a bladder ring and the other. Any possible axial clearances of the packings would cause damages to the hydraulic cylinder and to the plunger.

9.5 LUBRICATION

9.5.1

The crank mechanism and the gear reducer of the STP pumps must run in an oil bath the crankcase and gear box must be filled up to the required level with proper lubricating oil.

We suggest use of oils with viscosity from 200 to 240 Cst at 40 °C, with normal ambient temperature; lower or higher viscosity depending on lower or higher temperatures (see D). Selection table 1 shows standard lubricating oils.

Check periodically oil level and replace the lubricating oil after the first 500 hours of work and then every 3000 hours.

9.5.2

Check periodically oil level, replacing it if necessary, and drain any water. Periodically turn shaft several revolutions to keep bearings and other critical surfaces coated. Pump groups, if possible must be wrapped in heavy, moisture-proof sheet made of polythene or similar materials.

TABLE 1

Manufacturer	oil type
ESSO	Nuto 220
SHELL	Tellus C 220
AGIP	Acer 220
MOBIL	Mobilgear 629
TOTAL	Azolla 220
FINA	Solna 220
BP	Energol HB 220

N.B.: The tab. 1 is referred to ambient/site conditions up to -10 °C.

If temperature is up to -20 °C:

manufacturer	oil type
ESSO	Glycolube 220
MOBIL	Glygoil 30
ELF	Reductelf Synthese 220
AGIP Or equivalent	Blasia S-220

Quantity:

Fill in the crankcase with oil of 60 Lts approx. up the the level during the operation.

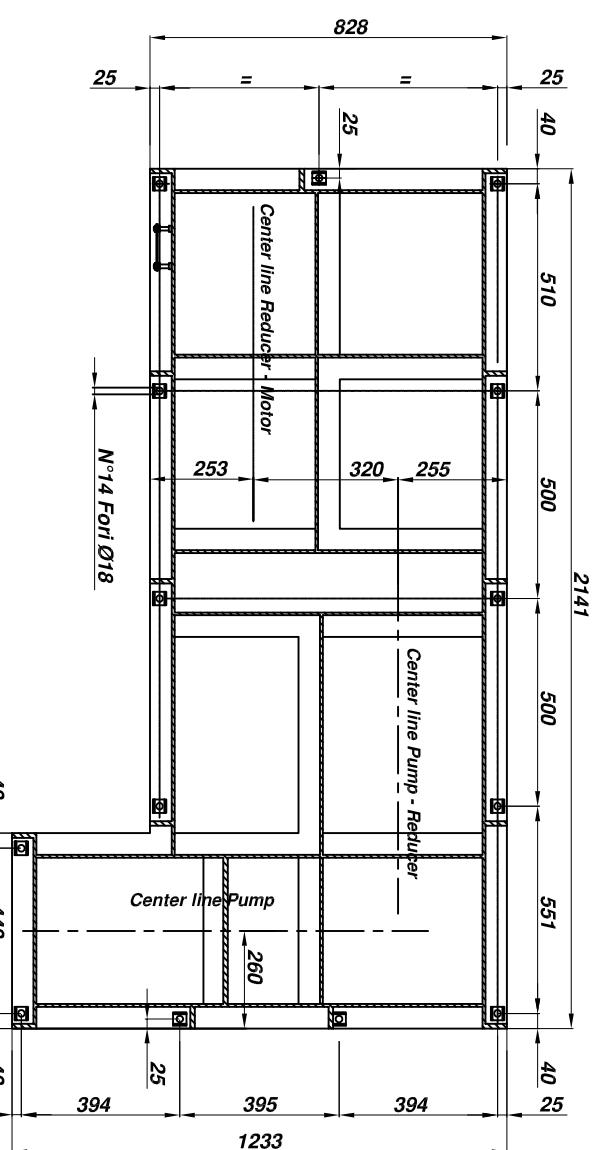
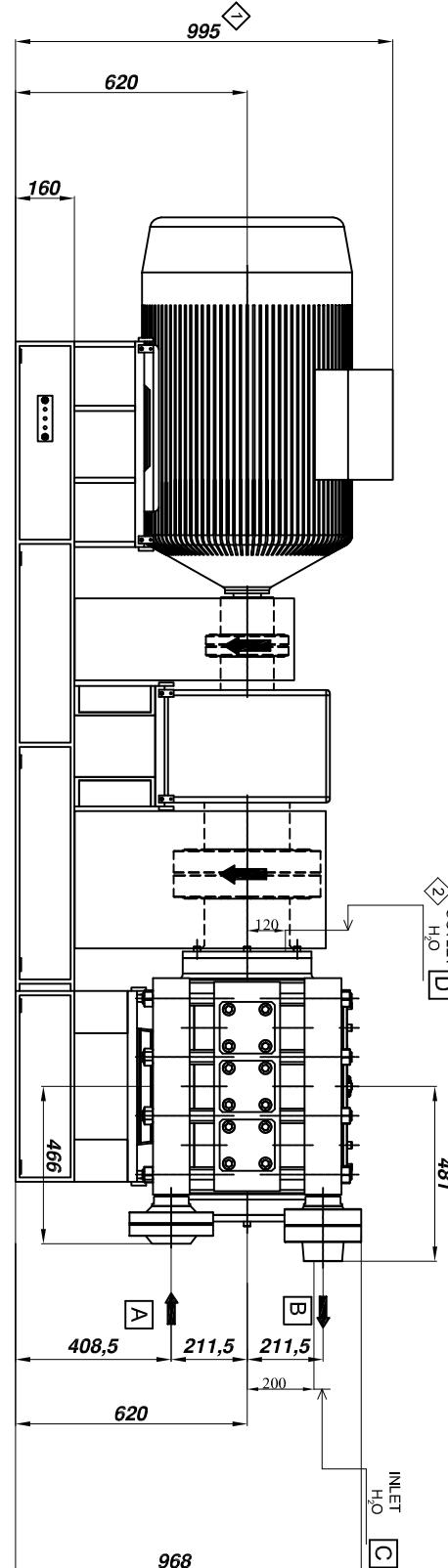
Gear reducer about 9 Lt approx. up the the level during the operation.

POS.	FLANGE DESCRIPTION	CONNECTIONS
A	SUCTION PUMP (with counter flange 6" ANSI 150RF - A105)	6" ANSI 150 RF (WN sch.40)
B	DISCHARGE PUMP (with counter flange 4" ANSI 600LM - A105)	4" ANSI 600 LF (WN sch.80)
C	INLET WATER FLUSHING - INLET/OUTLET WATER EXCHANGER	1/2" ANSI 150 RF
D	OUTLET WATER FLUSHING	Tubing: N°3 10xK7

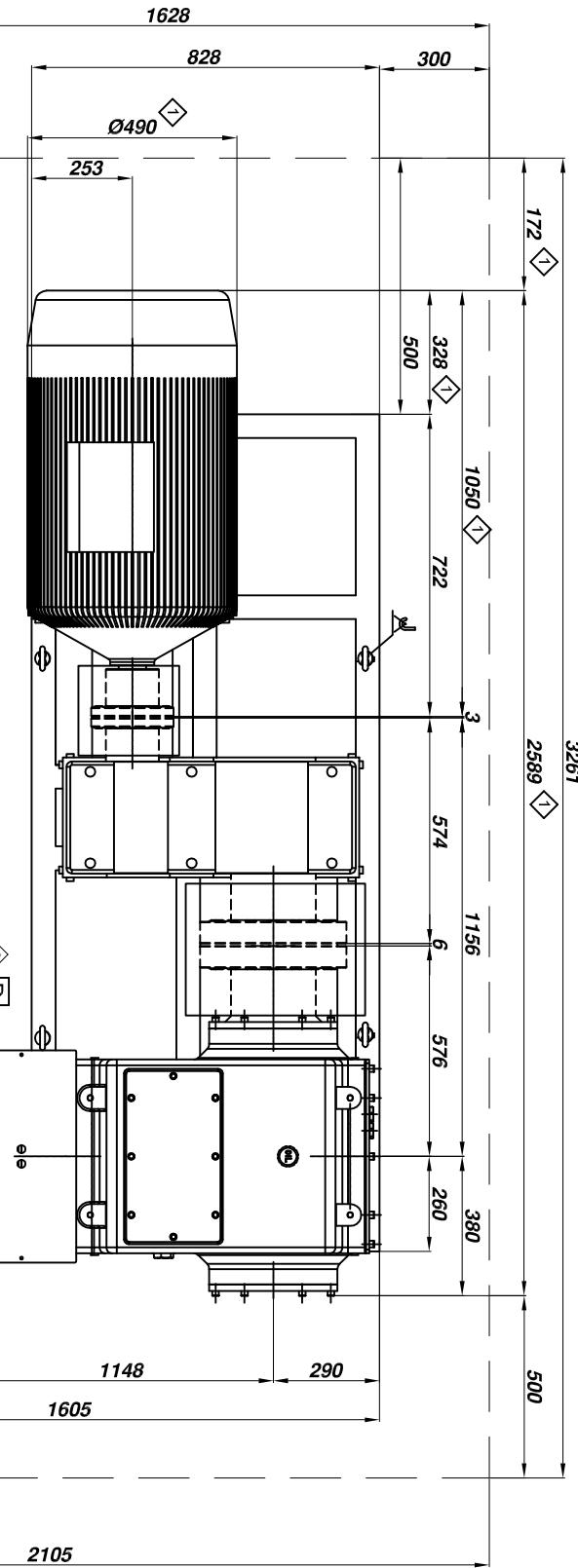
FLUSHING FLUID:
Water Temperature: 5 - 40 °C
Pressure: 3 - 7 barg / Design 10 barg
Consumption: 100-150 l/h

WEIGHT (kg):	1600
N°1 Pump:	485
Basement:	384
Electric Motor (55 kw)	385
Reducer and couplings:	
TOTAL WEIGHT:	2854 Kg

ELECTRIC MOTOR:	Manufacturer: BROOK CROMPTON Type: TU-DF 250M4 B3 P: 55 kw, 380V, 4 poles, 3 ph, 50 Hz
COUPLINGS:	Manufactured: EUROTASS Slow: E350P Fast: E160P
REDUCER:	Manufacturer: SEF Type: RXP2 808 / B / 11,2 / ECE / N / M1 Ratio: 1 : 11,2



FOUNDATION PLAN



2	ISSUED FOR COSTRUCTION	
1	ISSUED FOR CONSTRUCTION	
0	PRELIMINARY	
REVISION	Revisione Storia delle revisioni	DRAWN Autore DATE Data

The master version of this document is stored as a digital file in a database. Approval process is digitally managed and no signature is visible on the document. L'originale del presente documento risiede in un database digitale. Il processo di approvazione è gestito via software e le firme non sono visibili sul documento.

Desmet Ballestra s.p.a.
desmet ballestra

MILANO - Italy

MAINTENANCE AREA



500

500

500

500

500

500

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DRAWING Nr.: Disegno Nr.
3310-BD-000-LAY

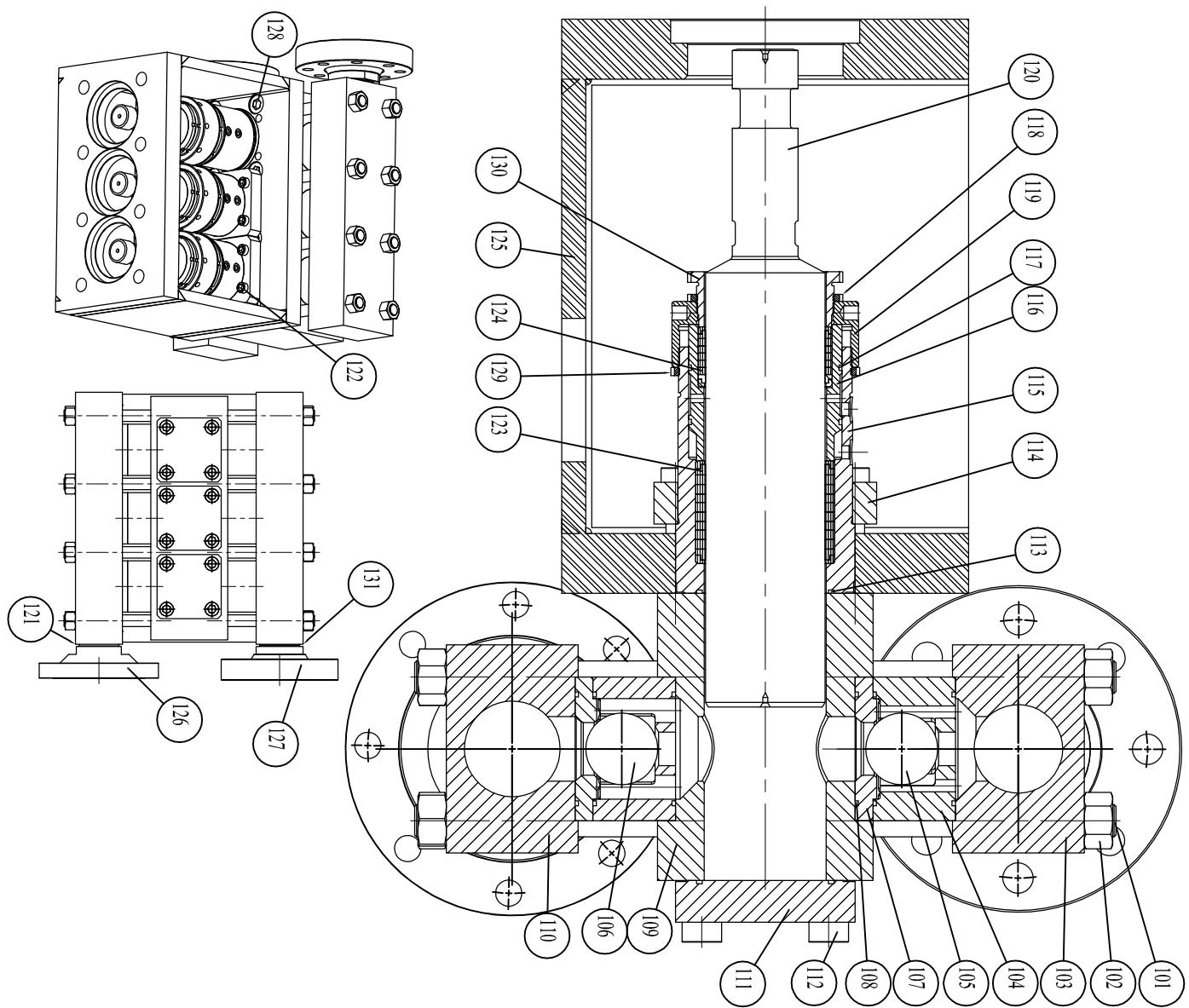
CUSTOMER Nr. / Nr. Cliente
-

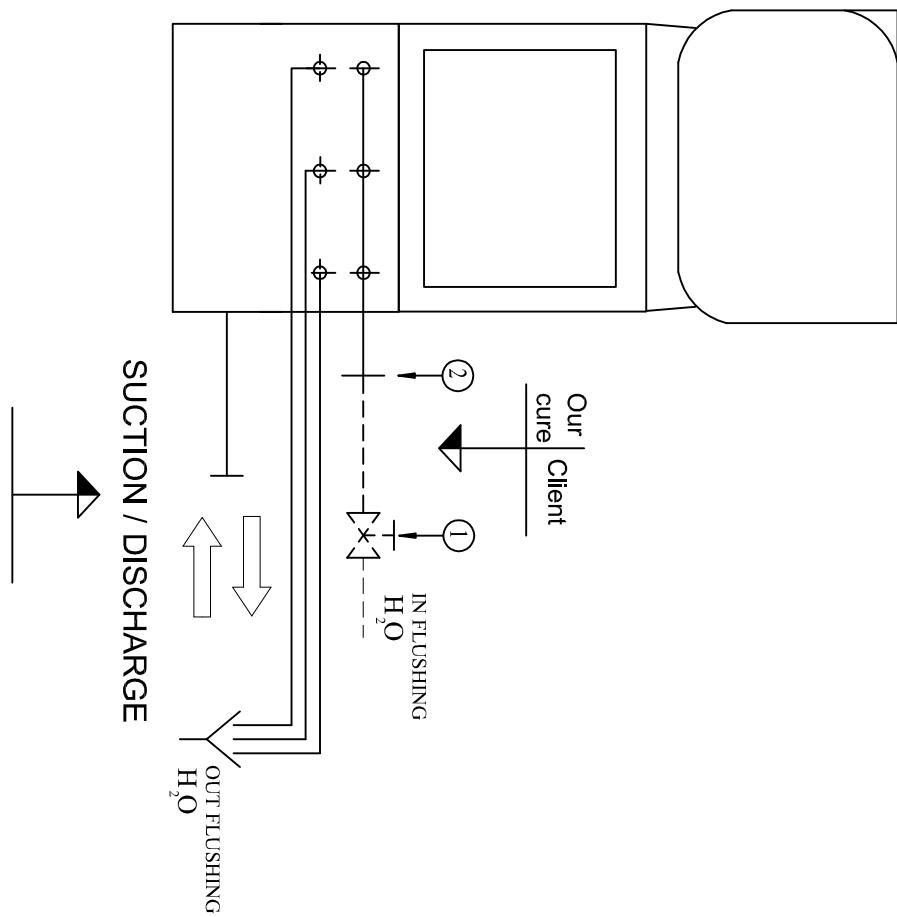
SHEET
Foglio
SHEET/REVISION
Revisione Foglio
2

SCALE
Scala
-

SECTION
Sezione
-

PLANT
Impianto
Item
Title
ITEM PUMP: 63 P3 A / B / C
LAYOUT STP3 100 x 120





Pos.	DESCRIPTION	Material	Note
1	NEEDLE VALVE	Stainless Steel	1/2" NPT-F
2	FLANGE	AISI 304	1/2" ANSI 150 RF

REVISION	ISSUED FOR CONSTRUCTION	DRAWN	DATE
0	Revisions	Autodesk	Data

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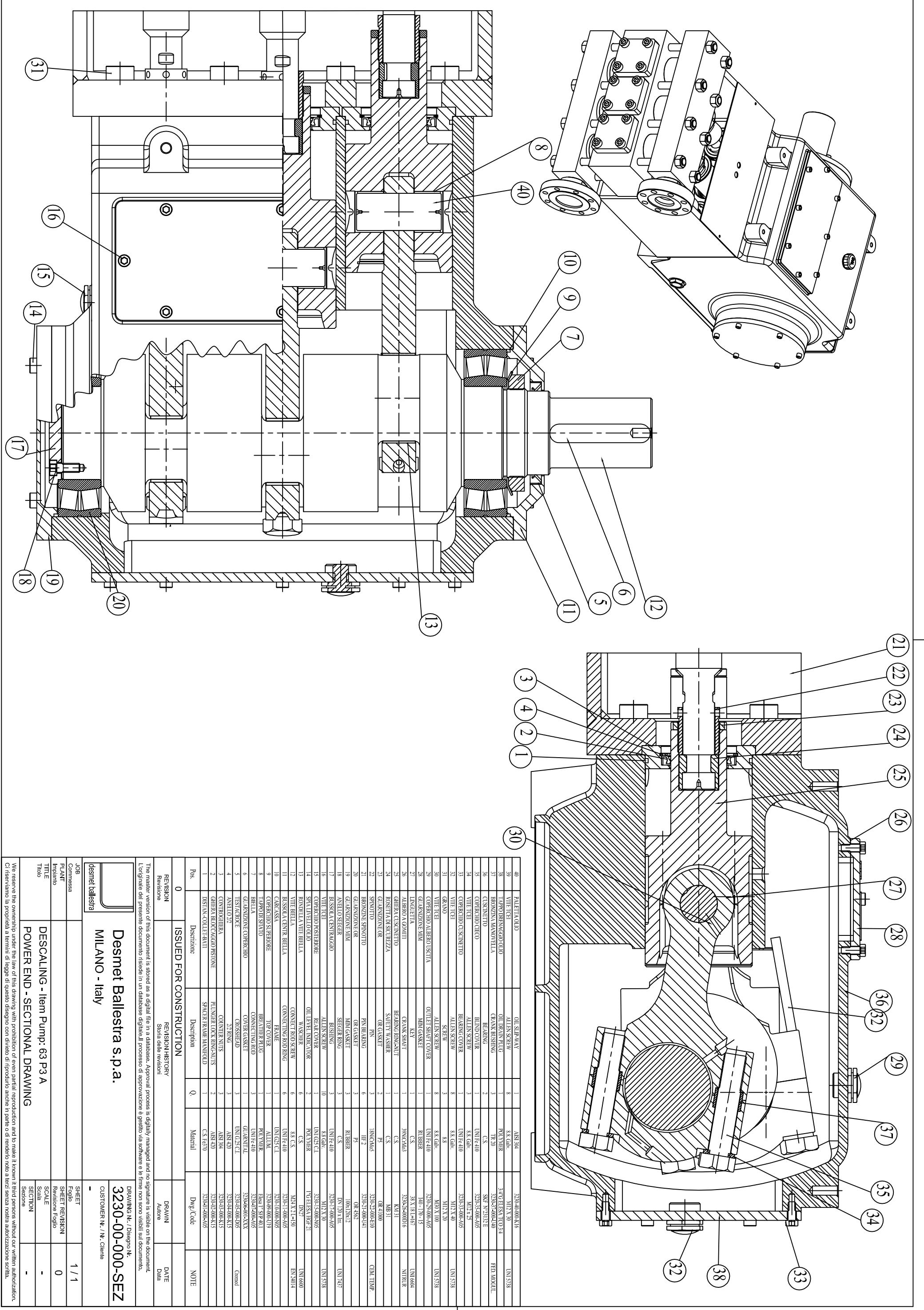
Desmet Ballersta s.p.a.
MILANO - Italy

COD. 1E35
Città messa: F1bb
FLUENT Revisione: 0
Inizio: Scale: -
Title: SECTION:
Data: -
Title: FLUSHING SYSTEM

SHEET / 1 / 1
SHEET / REVISION / 0
Revisione: 0
Scale: -
SECTION: -

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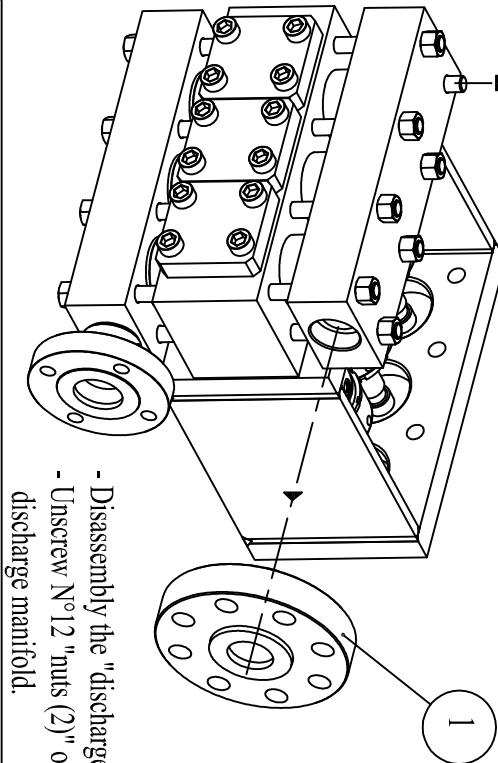
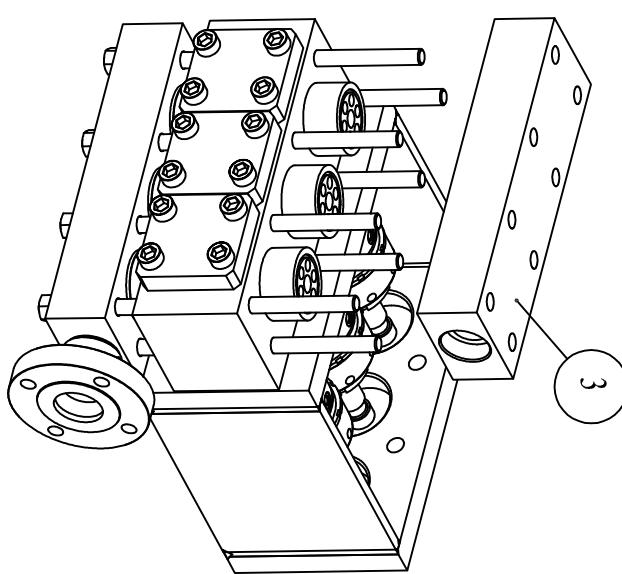
DRAWING N°: Disegno N°:
SAP 3310-BD-100
CUSTOMER N°: N/C Client



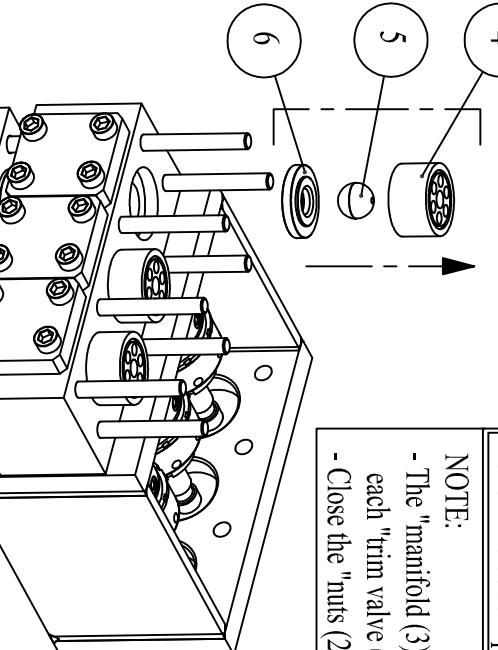
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A B C D E F

1 2 3 4 5 6 7 8



- Disassembly the "discharge flange (1)".
- Unscrew N°12 "nuts (2)" of the discharge manifold.



REASSEMBLING:
For reassembling the hydraulic part you must follow the bottom points inverting the order.

- NOTE:**
- The "manifold (3)" must be in contact with each "trim valve (4,5,6)".
 - Close the "nuts (2)" with cross-order.



- Remove the TRIM VALVES:
- remove the "valve lantern (4)";
- remove the "valve (5)";
- remove the "valve seat (6)".

Repeat these instruction for all valves.

THE INSTRUCTIONS ARE THE SAME OF THE DISCHARGE VALVES

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DRAWING NR. / Disegno Nr.
3225-DO-003-MON

CUSTOMER NR. / Nr. Cliente
-

- Remove The "discharge manifold (3)" as showed in the picture.

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1

2

3



INDICE GENERALE DEI CERTIFICATI GENERAL CERTIFICATION INDEX

POMPA / Pump

item: 63P3 A / B / C

CERTIFICATI MATERIALI /TEST IDRAULICO /CE ATEX DICHIARAZ.

CERTIFICATI MATERIALI 3.1 POMPA

3.1 MATERIALS PUMP CERTIFICATION

COMM. 10006/10

ORDER 100123 of 03/02/10 JOB 1E35

SERVICE : SLURRY FEEDING

Model STP 3 100 X 120

CRANKMECHANISM . n° 3230 -00-000 - SEZ

Description -Descrizione	Dwg. n° N°.Disegno	Materials Materiale	Manufacturer Costruttore	Certificate n° N° Certificato
Frame -Carcassa	3230-10 -000-N05	UNI 5007/69 G 25 Equiv. ASTM A 48-40 B	QUAGLIA & COLOMBO	15.10
Crankshaft -Albero a Gomiti	3230-26-000-D16	UNI 39Ni Cr Mo 3 Equiv. ASTM A 576 Type 9840	Forgiatura Moderna Arese ULTRASONIC TEST	A10-0893 N°135

HYDRAULIC END n° 3310 - BD- 000 - SEZ

Plunger -Pistone	3310-BD-120-K04	AISI 304 + Ceram. ASME S 31803	VALBRUNA	N° MEST 837481/2010
Valve body -Corpo Valvole	3310-BD -109-N05	A 105	Forgiatura Moderna Arese	A10-1167
Valve Seat -Sede Valvole	3310-BD -107-K04	AISI 304	VALBRUNA	N° MEST 784490/2009
Valve Lantern -Lanterna Valvole	3310-BD -104-K04	AISI 304	VALBRUNA	N° MEST 784490/2009
Cylinder -Cilindro (Camera premistoppa)	3310-BD -115-K04	AISI 304	VALBRUNA	N° MEST 879056/2010
Suction Manifold -Collettore di Aspirazione	3310-BD -110-N05	A 105	Forgiatura Moderna Arese	A10-3501
Discharge Manifold -Collettore di Mandata	3310-BD -103-N05	A 105	Forgiatura Moderna Arese	A10-3501
Discharge Flange -Flangia di Mandata	3310-BD -127-2-N05	A 105	Forgiatura Moderna Arese	A10-1001
Suction Flange -Flangia Aspirante	3310-BD -126-2-N05	A 105	Forgiatura Moderna Arese	A10-1002



EC DECLARATION OF CONFORMITY
Under the terms of EC Directive 98/37/EEC, Appendix II p. A

Manufacturer's name:

SABI Pompe e Impianti S.r.l.

Manufacturer's address:

**Via Mercalli 16
20019 Settimo Milanese (MI) Italy**

Declares, that the machine/product:

Denomination:	Reciprocating triplex pump
Model:	STP3 100X120
Serial no:	10006 / 1 / 2 / 3
Manufacture's year	2010

Agrees with the disposal of the others following EC Directives:

73/23/EEC

89/336/EEC modified by 93/31/EEC

Applied harmonized normes:

UNI EN 292-1, UNI EN 292-2/A1, UNI EN 294, UNI EN 349, UNI EN 982 - EN 60204-1, EN 50081-2, EN 50082-2, EN 12639, EN ISO 3744.

Settimo Milanese, 09.07.2009

Tech.Manager Mr. Sergio Bellei



Quaglia & Colombo

CERTIFICATO DI COLLAUDO N. 15.10

CLIENTE : SA-BI POMPE E IMPIANTI S.R.L.

MATERIALE : Ghisa G.25

MODELLO : 3230-10 fusione N. 04 ORDINE 86

DDT 194/BF - 17.06.10

Colata N.	C%	Si%	Mn%	S%	P%	Cu%	Mg%	Mo%
	3,20	1,90	0,85	0,03	0,02			

CARATTERISTICHE MECCANICHE

Provetta N.sez. mmq.	R  N./mm ²	R  N./mm ²	A %	H B
	260			

NOTE : I risultati suddetti sono indicativi delle colate in cui sono stati fusi anche i getti sopra indicati.

SI DICHIARA CHE I PRODOTTI FORNITI SONO CONFORMI AI REQUISITISI DELL'ORDINE

GIUDIZIO : conforme

FONDERIA QUAGLIA & COLOMBO S.R.L.



CERTIFICATO DI COLLAUDO

Inspection certificate / Certificat de recette

EN10204/3.1

N° A10-0984

Del 02/03/10

Foglio 1 di 1

CLIENTE Purchaser/Client	Cod. A0798	ORDINE Order/Commande	MATERIALE Material/Matiere
SABI S.R.L.		10032	39NiCrMo3 UNI EN 10083-3

SPECIFICHE RICHIESTE
Specification request/Specifications technique

DESCRIZIONE MATERIALE Material description	DISEGNO/DIMEN. Drawing/Dimension	COLATA Heat/Coulee	PROVA Test N°	COMM. Prod. order
N° 39NiCrMo3 LAMINATO BONIFICATO	Ø 270 X 915		32322 742	574/7

CARATTERISTICHE MECCANICHE

Mechanical requirements/Caractéristiques mécaniques

PROVA N° Specimen n°	DIREZ. Direction	Ø mm	Lo mm	Min Max	Rp - Yp N/mm²	Rm - Ts N/mm²	A - E %	Z - Ra %	KCU 20°C (J)			
742	long	12,5	50		675	781	19	60,2	59-59-62			

CARATTERISTICHE CHIMICHE

Chemical requirements/Caractéristiques chimiques

COLATA Heat/Coulee	C	Mn	Si	P	S	Cr	Ni	Mo	Al	Cu	V	Nb
	Min.											
32322	0,398	0,67	0,23	0,007	0,027	0,79	0,80	0,17	0,011	0,23	0,006	0,001

Albeni ST P 3

3/3/10

VISUAL AND DIMENSIONAL INSPECTION CONFORMS TO CONTRACTUAL REQUIREMENTS - THE PRODUCTS ARE IN COMPLIANCE WITH THE REQUIREMENTS OF THE ORDER

FORGIATURA MODERNA ARESE SPA DIVISIONE VISA		 Sistema Gestione Qualità Certificato LRC16003
--	--	---

**Forgiatura
Moderna
Arese S.p.A.**

**CERTIFICATO DI CONTROLLO
ULTRASONORO**
Ultrasuonic control certificate

AZIENDA CERTIFICATA
UNI EN ISO 9002-94
CERTIFICATO N° LRC160003
LLOYD'S REGISTER QUALITY
ASSURANCE

N° 135

Del 02/03/2010

Pagina 1

Cliente SABI S.R.L. <i>Customer Client</i>	N° ordine 10032 <i>Order N° Ordre d'achat</i>
Materiale 39NiCrMo3 UNI EN 10083-3 <i>Material A10-0983</i>	Inspection Certificate n° A10-0984 -
N° pezzi (N° pieces/N° pieces)	N° colata (Heat N°, N° coulée)
3	32322
10	267930
N° disegno/Dimensioni (N° drawing/Dimension, N° plan/Dimension)	DIA. MM 270 x 915 DIA. MM 180 x 640
Specifiche ASTM A388 <i>Specification Specification</i>	Estensione dell'esame 100% ALL SURFACES <i>Test area Extension de l'examen</i>
Tecnica dell'esame BY REFLECTION <i>Inspection technique Technique de l'examen</i>	Taratura BY SPECIFICATION <i>Setting Etalonnage</i>
Amplificazione + 6 db <i>Amplification Amplification</i>	
Tipo di apparecchiatura KRAUTKRAMER USN 52 <i>Type of apparatus Type d'appareil</i>	Sonda B2S <i>Probes Palpeurs</i>
	Frequenza 2 MHz <i>Frequency Fréquence</i>
Condizioni superficiali ROUGH <i>Test surface status Etat de surface</i>	Mezzo di accoppiamento CELLULOSE <i>Means of coupling Moyen d'accouplement</i>
Risultati ACC. TO SPECIFICATION <i>Results Resultats</i>	
Controllo eseguito da tecnico qualificato 2° livello <i>Test personnel qualified to level 2</i>	
Note	Albeni STP3./STP2 3/3/10
FORGIATURA MODERNA ARESE SPA DIVISIONE ASA	Forgiatura Moderna Arese Massimiliano Valentino II LEVEL SNCF TO A/EN 473-03

Acciaierie Valbruna S.p.A.



36100 VICENZA (Italia) - Viale della scienza, 25 z.i.
Stab.: 39100 BOLZANO (Italia) - Via A. Volta, 4

Cliente / Restailler/Purchaser/Cient
SABI SRL
VIA MERCALLI, 16
20019-SETTIMO MILANESE-MI

Produttore: ACCIAIERIE VALBRUNA S.P.A.
Hersteller/Item/Usine productrice

Oggetto Prove: - Solubilizzato Pelato
Prüfgegenstand/Item inspected/Finisage

Avviso di Spedizione: A-MI10001259
Lieferanzeige/Packing list/B.L.

Ordine nr: 10021
Bestell/Your order/Commande

Tipo di Elaborazione: E+AOD
Erschmelzungsart/Melting process/Mode d'elaboration

CERTIFICATO DI COLLAUDO ABNAHMEPRUEFZEUGNIS INSPECTION CERTIFICATE CERTIFICAT DE RECEPTION EN 10204 (2005), 3.1

Certificato nr: MEST837481/2010/
Prüfung/Test/Essai

Conferma ordine nr: MI10001167
Werke/Dur Order/Ref nr.

Marchio di Fabbrica:
Zeichen des Lieferwerkes
Trade mark
Sigle de l'usine productrice



Punzone del Collaudatore:
Stempel des Werkssachverständigen
Inspector's stamp/Poinçon de l'assayeur



Specifiche:
Anforderungen / Requirements / Exigences

VAL STOCK 2005 1.4307/304L A

AISI 304

AISI 304L

AMS 5639 H S30400 A

AMS 5647 H S30403 A

AMS-QQ-S-763 B 304 A

AMS-QQ-S-763 B 304L A

ASME SA182 2007 S30400 A 0

ASME SA182 2007 S30403 A (1)

ASME SA193 2007 B8 CLASS1 2

ASME SA276 2007 S30400 A 3

ASME SA276 2007 S30403 A (4)

ASME SA320 2007 B8 CLASS1 5

ASME SA479 2007 S30400 A 6

ASME SA479 2007 S30403 A (7)

ASTM A182 2008A S30400 A 8

ASTM A182 2008A S30403 A 9

ASTM A193 2008B B8 CLASS1

ASTM A262 2002A PRACTICE E

ASTM A276 2008A S30400 A

ASTM A276 2008A S30403 A

ASTM A320 2008 B8 CLASS1

ASTM A479 2008 S30400 A

ASTM A479 2008 S30403

DIN 17440 96 1.4301 A

EN 10088-3 2005 1.4301 A

EN 10088-3 2005 1.4301 A

EN 10269 99 1.4301 AT

EN 10269 99 1.4307 AT

EN 10272 2007 1.4301 A

EN 10272 2007 1.4307 A

NACE MR0175* 2003 S30400 A A

NACE MR0175* 2003 S30403 A (B)

QQ-S-763 F 304 A

QQ-S-763 F 304L A

(0) SEC.II PT.A 2007 EDITION ADD. 2008a

0Chemical analysis only and mechanical properties.

(1) SEC.II PT.A 2007 EDITION ADD. 2008a

1Chemical analysis only and mechanical properties.

(2) SEC.II PT.A 2007 EDITION ADD. 2008a

3SEC.II PT.A 2007 EDITION ADD. 2008a

(4) SEC.II PT.A 2007 EDITION ADD. 2008a

5SEC.II PT.A 2007 EDITION ADD. 2008a

(6) SEC.II PT.A 2007 EDITION ADD. 2008a

7SEC.II PT.A 2007 EDITION ADD. 2008a

(8) Chemical analysis only and mechanical properties.

9Chemical analysis only and mechanical properties

(A) * ISO 15156-3

B* ISO 15156-3

Qualità: 1.4307/304/304L

Werkstoff/Grade/Nuance

Marca: MVAISL MAXIVAL

Markenbezeichnung/Brand/Nuance

Punzonatura: 1.4307/304/304L

Kennzeichnung/Marking/Marque

Pos. nr. Pos. n. Item n. Nr. de poste	Oggetto Gegenstand Product description Descript du produit	Dimensioni - mm Abmessungen Dimension	Tolleranza Toleranz, Allowance Tolerance	Lunghezza - mm Länge Longeur	Colata Schmelze Heat Coulée	Pezzi Stückzahl Places Places	Peso - KG Gewicht Weight Poids	Lotto nr. Losnr. Lot n. Lot nr.
0010	Tondo	100,000	k12	5840 / 5910	248823		366,0	831600741

Sono state soddisfatte tutte le condizioni richieste

Die gestellten Anforderungen sind erfüllt.

The material has been furnished in accordance with the requirements

Le matériel a été trouvé conforme aux exigences

Controllo antimescolanza: OK

Verweichungsprüfung: spectralanalytisch durchgeführt

Antimixing testing performed: OK

Contrôle antimélange fait: r.a.s.

Controllo visivo e dimensionale: soddisfa le esigenze:

Besichtigung und Ausmessen: ohne Bestrandung

Visual inspection and dimensional check:satisfactory

Contrôle visuel et dimensions: satisfaisant

TEST ALLO STATO DI FORNITURA									
Test on delivery condition			Prüfung auf lieferbereitem produkt			test à l'état de fourniture			Prueba sobre el material así como entregado
TEST	Prova/t Spannung Spessor Leg diam Spess Breite Diam Dicke Weit Diam Thikness Larg diam spess mm	°C	Snervamento Streckgrenze Yield Stress Limite elastique Rp 0,2% N/mm2	Snervamento Streckgrenze Yield Stress Limite élastique Rp 1% N/mm2	Resistenza Zugfestigkeit Tensile strength Résistance à traction Rm N/mm2	Allungamento Zugverschleiß Elongation Résistance Aelongation	Z %	RA %	Resilienza Kerbbrucharbeit Impact Value Résistance KV J
V valori richiesti 1 Anforderungen/Required values Valores demandados	min max	210	230	520 680	45	40	-	50	100
A B	10 10	20 20	L L	310 311	343 347	610 617	59 58	61 60	71 70

TEST	min	max	5
B Dimensioni grano x ASTM E112			

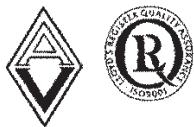
1) L=longitudinale/längs, T=trasversale/quer, Q=Tangenziale/tangential

Vicenza, 18/02/10
VCQ008
(Mod. MCER)

Il collaudatore di stabilimento / der Werkssachverständige / Works inspector / L'agent d'usine
M.Rizzotti

Pagina - 1 di 2

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Stab.: 39100 BOLZANO (Italia) - Via A. Volta, 4

Cliente / Besteller/Purchaser/Client

SABI SRL

VIA MERCALLI, 16

20019-SETTIMO MILANESE-MI

Produttore: ACCIAIERIE VALBRUNA S.P.A.

Herasteller/Item/Usine productrice

Oggetto Prove: - Solubilizzato Pelato

Prüfgegenstand/Item inspected/Finisage

Avviso di Spedizione: A-MI10001259
Lieferanzeige/Packing Isu/B.L.

Ordine nr: 10021
Bestell/Your order/Commande

Tipo di Elaborazione: E+AOD
Eischmelzungsart/Melting process/Mode d' élaboration

CERTIFICATO DI COLLAUDO ABNAHMEPRUEFZEUGNIS INSPECTION CERTIFICATE CERTIFICAT DE RECEPTION EN 10204 (2005), 3.1

Certificato nr: MEST837481/2010/
Prüfung/Test/Essai

Conferma ordine nr: MI10001167
Werks/Our Order/Ref nr.

Marchio di Fabbrica:
Zeichen des Herstellers
Trade mark
Sigle de l' usine productrice



Punzone del Collaudatore:
Stampel des Werkssachverständigen
Inspector's stamp/Pointe de l' assaillant

Analisi chimica

Chemische Zusammensetzung/Chemical Analysis/Analyse chimique

Colata /Heat Schmelze/Coulée	min ~ max 0,030	1,00	2,00	18,00 19,50	1,00	1,00	8,00 10,00	0,040	0,030	0,100	-	-	-	-	-
	C %	Si %	Mn %	Cr %	Mo %	Cu %	Ni %	P %	S %	N %					
248823	0,021	0,68	1,80	18,22	0,48	0,75	8,26	0,028	0,030	0,091					

Intergranular corrosion test per ASTM A262 pract. E: ok.

I.Korrosion nach EN ISO 3651-2A Sensibilisierung : T1 : OK

Corrosion test per EN ISO 3651-2A sensitized T1 : OK

Melted and manufactured in Italy No welding or weld repair Material free from Mercury contamination

We declare that the finished product is checked for radioactive contamination through Portal System when it leaves the production plant.

The Quality Management System is Certified acc. Pressure Equipment Directive [87/23/EC] Annex 1,s.,4.3 by TUEV and LLOYD'S

Vicenza, 18/02/10
VCQ008
(Mod. MCER)

Il collaudatore di stabilimento / der Werkssachverständige / Works Inspector / L' agent d' usine
M.Rizzotto

Pagina - 2 di 2



CERTIFICATO DI COLLAUDO

Inspection certificate / Certificat de recette

N° A10-1167

Del 11/03/10

Foglio 1 di 1

EN10204/3.1

FORGIATURA MODERNA ARESE

Purchaser/Client

Ced. A0798

SABI S.R.L.

SPECIFICHE RICHIESTE
Specification request/Specifications technique

ASTM + NACE MR 01-75

DESCRIZIONE MATERIALE

Material description

N°3 ASTM A105 NORMALIZED AT 900°C

ORDINE

Order/Commande

MATERIALE

Material/Matiere

10057 DEL 08/03/10

ASTM A105 LAST EDITION

DISEGNO/DIMEN. COLATA

Drawing/Dimension

Heat/Coulee

Test N°

Prod. order

PT.245 X 575 X 180 170912 864 814/1

CARATTERISTICHE MECCANICHE

Mechanical requirements/Caractéristiques mécaniques

PROVA N° Specimen n°	DIREZ. Direction	Ø mm	Lo mm	Rp - Yp N/mm²	Rm - Ts N/mm²	A - E %	Z - Ra %	KV -10°C (J) Joule	HB		
									250	485	22
864	long	12,5	50	300	495	25,2	44	36-36-35			145-144-143

CARATTERISTICHE CHIMICHE

Chemical requirements/Caractéristiques chimiques

C	Mn	Si	P	S	Cr	Ni	Mo	Al	Cu	V	Nb	Ceq.
COLATA Min.	0,60	0,10										
Heat/Coulee Max.	0,35	1,05	0,35	0,035	0,040	0,30	0,40	0,12	0,40	0,08	0,02	
170912	0,18	1,16	0,29	0,016	0,016	0,02	0,010	0,010	0,038	0,04	0,001	0,001 0,3829

VISUAL AND DIMENSIONAL INSPECTION CONFORMS TO CONTRACTUAL REQUIREMENTS - THE PRODUCTS ARE IN COMPLIANCE WITH THE REQUIREMENTS OF THE ORDER

FORGIATURA MODERNA ARESE SPA
DIVISIONE ASA



Sistema
Gestione
Qualità
Certificato
LRC16003

**CERTIFICATO DI COLLAUDO**

Inspection certificate / Certificat de recette

EN10204/3.1

N° A10-3501

Del 20/07/10

Poglio I di 1

CLIENTE Purchaser/Client	Cod. A0798	ORDINE Order/Commande	MATERIALE Material/Matiere										
SABI S.R.L.		10017	ASTM A105 LAST EDITION										
SPECIFICHE RICHIESTE Specification request/Spécifications technique													
ASTM + NACE MR 01-75													
DESCRIZIONE MATERIALE Material description		DISEGNO/DIMEN. Drawing/Dimension	COLATA Heat/Couloc	PROVA Test N°	COMM. Prod. order								
N°6 ASTM A105 NORMALIZED AT 900°C		PT.180 X 595 X 110	16245	4029	572/2								
CARATTERISTICHE MECCANICHE Mechanical requirements/Caractéristiques mécaniques						HB							
PROVA N° Specimen n°	DIREZ. Direction	Ø mm	Lu mm	MIn Max	Rp - Yp N/mm²	Rm - Ts N/mm²	A - E %	Z - Ra %	KV -10°C (J) Joule				
4029	long	12,5	50		250	485	22	38				HB 187	
					296	496	27	46,8	39-41-40			145-147-147	
CARATTERISTICHE CHIMICHE Chemical requirements/Caractéristiques chimiques												Ceq.	
COLATA Heat/Couloc	C Min.	Mn Max. 0,35	Si 0,10	P 1,05	S 0,35	Cr 0,035	Ni 0,040	Mo 0,30	Al 0,40	Cu 0,12	V 0,40	Nb 0,08	
16245	0,19	0,99	0,23	0,013	0,010	0,10	0,09	0,011	0,02	0,23	0,032	0,001	0,32 1,00 0,4049

VISUAL AND DIMENSIONAL INSPECTION CONFORMS TO CONTRACTUAL REQUIREMENTS - THE PRODUCTS ARE IN COMPLIANCE WITH THE REQUIREMENTS OF THE ORDER

FORGEATURA MODERNA ANESE SPA
DIVISIONE ASASistema
Gestione
Qualità
Certificato:
LRC16003

Acciaierie Valbruna S.p.A.



36100 VICENZA (Italia) - Viale della scienza, 25 z.i.
Stab.: 39100 BOLZANO (Italia) - Via A. Volta, 4

Cliente / Besteller/Purchaser/Clien
SABI SRL
VIA MERCALLI, 16
20019-SETTIMO MILANESE-MI

Produttore: ACCIAIERIE VALBRUNA S.P.A.
Hersteller/fournisseur/producer

Oggetto Prove: - Solubilizzato Pelato
Prüfgegenstand/Item Inspected/Finisage

Avviso di Spedizione: A-MI09005240
Uferanzeige/Packing list/B.L.

Ordine nr: ORD.TEL.CO
Bestell/Your order/Commande

Tipo di Elaborazione: E+AOD
Eischmelzungsart/Melting process/Mode d'élaboration

CERTIFICATO DI COLLAUDO ABNAHMEPRUEFZEUGNIS INSPECTION CERTIFICATE CERTIFICAT DE RECEPTION EN 10204 (2005), 3.1

Certificato nr: MEST784490/2009/
Prüfung/Test/Essai

Conferma ordine nr: MI09005227
Werks/Our Order/Ref nr.

Marchio di Fabbrica:
Zeichen des Lieferwerkes
Trade mark
Sigle de l'usine productrice



Punzone del Collaudatore:
Stampo des Werkssachverständigen
Inspector's stamp/Emçon de l'assayeur

Specifiche:
Anforderungen / Requirements / Exigences

VAL STOCK 2005 1.4307/304L A

AMS 5639 H S30400 A

AMS-QQ-S-763 B 304L A

ASME SA193 2007 BB CLASS 1 2

ASME SA320 2007 BB CLASS 1 5

ASTM A182 2008A S30400 A 8

ASTM A262 2002A PRACTICE E

ASTM A320 2008 B8/CLASS 1

DIN 17440 96 1.4301 A

EN 10269 99 1.4301 AT

EN 10272 2007 1.4307 A

QQ-S-763 F 304 A

(0) SEC.II PT.A 2007 EDITION

(1) SEC.II PT.A 2007 EDITION

(2) SEC.II PT.A 2007 EDITION

(4) SEC.II PT.A 2007 EDITION

(6) SEC.II PT.A 2007 EDITION

(8) Chemical analysis only and mechanical properties.

(A) * ISO 15156-3

AISI 304

AMS 5647 H S30403 A

ASME SA182 2007 S30400 A 8

ASME SA276 2007 S30400 A 3

ASME SA479 2007 S30400 A 6

ASTM A182 2008A S30403 A 8

ASTM A276 2008 S30400 A

ASTM A479 2006A S30400 A

EN 10088-3 2005 1.4301 A

EN 10269 99 1.4307 AT

NACE MR0175* 2003 S30400 A A

QQ-S-763 F 304L A

AISI 304L

AMS-QQ-S-763 B 304 A

ASME SA182 2007 S30403 A (1)

ASME SA276 2007 S30403 A (4)

ASME SA479 2007 S30403 A (7)

ASTM A193 2008B B8 CLASS1

ASTM A276 2008 S30403 A

ASTM A479 2006A S30403

EN 10088-3 2005 1.4307 A

EN 10272 2007 1.4301 A

NACE MR0175* 2003 S30403 A (8)

0Chemical analysis only and mechanical properties.

1Chemical analysis only and mechanical properties.

3SEC.II PT.A 2007 EDITION

5SEC.II PT.A 2007 EDITION

7SEC.II PT.A 2007 EDITION

9Chemical analysis only and mechanical properties

B* ISO 15156-3

Qualità: 1.4307/304/304L

Werkstoff/Grade/Nuance

Marca: MVAISL MAXIVAL

Markenbezeichnung/Brand/nuance

Pos. nr. Pos. nr. Nr. de poste	Oggetto , Gegenstand : Produkt description Descrip du produit	Dimensioni - mm Abmessungen Dimension Dimensions	Tolleranza Toleranz, Allowance Tolerance	Lunghezza - mm Länge Length Longueur	Colata Schmelze Heat Coulée	Pezzi Stückzahl Pieces Pezzi	Peso - KG Gewicht Weight Poids	Lotto nr. Lohnr. Lot nr.
0020	Tondo	120,000	k12	5105 / 5165	247158		461,0	809900780

Sono state soddisfatte tutte le condizioni richieste

Die gestellten Anforderungen sind erfüllt

The material has been furnished in accordance with the requirements

Le matériel a été trouvé conforme aux exigences

Controllo antimescolanza: OK

Verwechslungsführung: spektralanalytisch durchgeführt

Anmixung testing performed: OK

Controle antimélange fait: I.O.S.

Controllo visivo e dimensionale: soddisfa le esigenze:

Besichtigung und Ausmessung: ohne Beanstandung

Visual inspection and dimensional check:satisfactory

Contrôle visuel et dimensions: satisfaisant

Punzonatura: 1.4307/304/304L

Kennzeichnung/Marking/Marquage

TEST	Provettat/mostraab Spannung/Friction Lang diam Spess. Breite Diam. Dicke, Width Diam. Thickness Lang diam spess mm	°C Posiz. Saggio Probefuge Locality Environment	Snervamento Streckgrenze Yield Stress Limite élastique	Resistenza Zugfestigkeit Tensile strength Resistance à traction	Allungamento Bruchdehnung Elongation Allongement	Strizione Erschütterung Reaktion ol area Shaking		Resilienza Kerbschlagarbeit Impact Value Resistance KV J	Durezza Härte Hardness Dureté HB
						A5 % %	E 4d % %		
Valori richiesti 1 Anforderungen/Required values Values demandées	min max	210	230	520 680	45	40	-	50	100
A	10	20	L	251	289	561	63	74	140
B	10	20	L	258	295	569	62	73	215
TEST				min	max		4		
B	Dimensioni grano x ASTM E112								

1)L=longitudinale/längs, T=trasversale/quer, Q=Tangenziale/tangential

Vicenza, 17/09/09

VCG012
(Mod. MCER)

Il collaudatore di stabilimento / der Werkssachverständige / Works inspector / L'agent d'usine

M.Rizzotto

Pagina - 1 di 2

Acciaierie Valbruna S.p.A.



36100 VICENZA (Italia) - Viale della scienza, 25 z.i.
Stab.: 39100 BOLZANO (Italia) - Via A. Volta, 4

Cliente / Besteller/Purchaser/Clien
SABI SRL
VIA MERCALLI, 16
20019-SETTIMO MILANESE-MI

Produttore: ACCIAIERIE VALBRUNA S.P.A.
Hersteller/Item/Usine productrice

Oggetto Prove: - Solubilizzato Pelato
Prüfgegenstand/Item inspected/Frissage

Avviso di Spedizione: A-MI09005240
Lieferanzeige/Packing Ref.B.L.

Ordine nr: ORD.TEL.CO
Bestell/Your order/Commande

Tipo di Elaborazione: E+AOD
Erschmelzungsart/Melting process/Mode d' élaboration

CERTIFICATO DI COLLAUDO ABNAHMEPRUEFZEUGNIS INSPECTION CERTIFICATE CERTIFICAT DE RECEPTION EN 10204 (2005), 3.1

Certificato nr: MEST784490/2009/
Prüfung/Test/Essai

Conferma ordine nr: MI09005227
WerksOur Order/Ref. nr.

Marchio di Fabbrica:
Zeichen des Lieferwerkes
Trade mark
Sigle de l' usine productrice



Punzone del Collaudatore:
Stempel des Werkssachverständigen
Inspector's stamp/Poinçon de l' assauteur



Analisi chimica

Chemische Zusammensetzung/Chemical Analysis/Analyse chimique

Colata / Heat Schmelze/Coulée	min - max 0,030	1,00	2,00	18,00 18,50	1,00	1,00	8,00 10,00	0,040	0,030	0,100	-	-	-	-	-	-
247158	C % 0,012	Si % 0,55	Mn % 1,77	Cr % 18,40	Mo % 0,42	Cu % 0,53	Ni % 8,18	P % 0,029	S % 0,028	N % 0,092						

Intergranular corrosion test per ASTM A262 pract. E: ok.

I.Korrosion nach EN ISO 3651-2A Sensibilisierung : T1 : OK

Corrosion test per EN ISO 3651-2A sensitized T1 : OK

Melted and manufactured in Italy No welding or weld repair Material free from Mercury contamination

We declare that the finished product is checked for radioactive contamination through Portal System when it leaves the production plant.

The Quality Management System is Certified acc. Pressure Equipment Directive [97/23/EG] Annex 1,a.,4.3 by TUEV and LLOYD'S

Vicenza, 17/09/09
VC0012
(Mod. MCER)

Il collaudatore di stabilimento / der Werkssachverständiger / Works inspector / L' agent d' usine
M.Rizzotto

Pagina - 2 di 2

Acciaierie Valbruna S.p.A.



36100 VICENZA (Italia) - Viale della scienza, 25 z.i.

Stab.: 39100 BOLZANO (Italia) - Via A. Volta, 4

Cliente / Besteller/Purchaser/Client

SABI SRL

VIA MERCALLI, 16

20019-SETTIMO MILANESE-MI

Produttore: ACCIAIERIE VALBRUNA S.P.A.

Hersteller/Name de la société

Oggetto Prove: - Solubilizzato Pelato
Prüfgegenstand/Item Inspected/Finisage

Avviso di Spedizione: A-MI10003945
Lieferanzeige/Packing list/B.L.

Ordine nr: ORD.N.10099
Bestell/Your order/Commande

Tipo di Elaborazione: E+AOD
Erschmelzungsart/Melting process/Mode d'élaboration

CERTIFICATO DI COLLAUDO ABNAHMEPRUEFZEUGNIS INSPECTION CERTIFICATE CERTIFICAT DE RECEPTION EN 10204 (2005), 3.1

Certificato nr: MEST879056/2010/
Prüfung/Test/Essai

Conferma ordine nr: MI10004373
Werks/Our Order/Ref. nr.

Marchio di Fabbrica:
Zeichen des Lieferwerkes
Trade mark
Signe de l'usine/produice



Punzone del Collaudatore:
Stampf das Werkssachverständigen
Inspector's stamp/Pointon de l'assayeur

Specifiche:

Anforderungen / Requirements / Exigences

VAL STOCK 2005 1.4307/304L A

AMS 5639 H S30400 A

AMS-QQ-S-763 B 304L A

ASME SA193 2007 B8 CLASS1 2

ASME SA320 2007 B8 CLASS1 5

ASTM A182 2009A S30400 A 8

ASTM A262 2002A PRACTICE E

ASTM A320 2008 B8 CLASS1

DIN 17440 96 1.4301 A

EN 10269 99 1.4301 AT

EN 10272 2007 1.4307 A

NACE MR0103 2005 S30400 A

QQ-S-763 F 304L A

(0) SEC.II PT.A 2007 EDITION ADD. 2009b

(1) SEC.II PT.A 2007 EDITION ADD. 2009b

(2) SEC.II PT.A 2007 EDITION ADD. 2009b

(4) SEC.II PT.A 2007 EDITION ADD. 2009b

(6) SEC.II PT.A 2007 EDITION ADD. 2009b

(8) Chemical analysis only and mechanical properties.

(A) * ISO 15156-3

AISI 304

AMS 5647 H S30403 A

ASME SA182 2007 S30400 A 8

ASME SA276 2007 S30400 A 3

ASME SA479 2007 S30400 A 6

ASTM A182 2009A S30403 A 9

ASTM A276 2008A S30400 A

ASTM A479 2009 S30400 A

EN 10088-3 2005 1.4301 A

EN 10269 99 1.4307 AT

NACE MR0103 2005 S30400 A

NACE MR0175* 2003 S30403 A 8

AISI 304L

AMS-QQ-S-763 B 304 A

ASME SA182 2007 S30403 A (1)

ASME SA276 2007 S30403 A (4)

ASME SA479 2007 S30403 A (7)

ASTM A193 2009 B8 CLASS1

ASTM A276 2008A S30403 A

ASTM A479 2009 S30403

EN 10088-3 2005 1.4307 A

EN 10272 2007 1.4301 A

NACE MR0103 2005 S30403 A

QQ-S-763 F 304 A

0Chemical analysis only and mechanical properties.

1Chemical analysis only and mechanical properties.

3SEC.II PT.A 2007 EDITION ADD. 2009b

5SEC.II PT.A 2007 EDITION ADD. 2009b

7SEC.II PT.A 2007 EDITION ADD. 2009b

9Chemical analysis only and mechanical properties

B* ISO 15156-3

Qualità: 1.4301/1.4307/304/304L

Werkstoff/Grade/Nuance

Marca: MVAISL MAXIVAL

Markenbezeichnung/Brand/Nuance

Punzonatura: 1.4301/7/304/L

Kennzeichnung/Marking/Marquage

Pos. nr. Pos. nr. Nr. de poste	Oggetto Gegenstand Product description Descrip. du produit	Dimensioni - mm Abmessungen Dimensions	Tolleranza Toleranz Allowance Tolerance	Lunghezza - mm Länge Longueur	Colata Schmelze Heat Coulée	Pezzi Stückzahl Pieces Pièces	Peso - KG Gewicht Weight Poids	Lotto nr. Lose nr. Lot nr.
0020	Tondo	150,000	K12	5393 / 5480	423447		127,0	926100470

Sono state soddisfatte tutte le condizioni richieste

Die gestellten Anforderungen sind erfüllt

The material has been furnished in accordance with the requirements

Le matériaux a été fourni conformément aux exigences

Controllo antimiscelanza: OK

Verwechslungsprüfung: spätanalytisch durchgeführt

Antimixing testing performed: OK

Contrôle antimélange fait: c.s.

Controllo visivo e dimensionale; soddisfa le esigenze:

Betrachtung und Ausmessen: ohne Beanstandung

Visual inspection and dimensional checks: satisfactory

Contrôle visuel et dimensions: satisfaisant

TEST ALLO STATO DI FORNITURA

Test on delivery condition Prüfung auf lieferbereitem produkt test à l'état de fourniture Prueba sobre el material así como entregado

TEST	Provetta/Probenstück Specimen/Échantillon Artikelnr./Art. nro. Part No./No. de pièce	°C Temperatur Temperatur Température	Spiral Spiegel Spiegel Spiegel	Serramento Spannguss Yield Stress Limite élastique Rp 0,2% N/mm2	Resistenza Zugfestigkeit Tensile strength Résistance à traction Rp 1% N/mm2	Allungamento Dehnung Elongation Allongement	Strizione Einschränkung Reduction of area Striction	Resilienza Kehrkraftarbeit Impact Value Résistance KV J	Durezza Härte Dureté HB
TEST									
Valori richiesti 1 Anforderungen/Required values Valeurs demandées	min max	210	230	520 680	45	40	-	50	100
A	10	20	L	263	304	558	60	74	257
B	10	20	L	256	296	553	61	72	262
									261
									165
TEST							min	max	
B	Dimensioni grano x ASTM E112							4	

1)L=longitudinale/längs, T=trasversale/quer, O=tangenziale/tangential

Vicenza, 31/05/10
VCQ012
(Mod. MCER)

Il collaudatore di stabilimento / der Werkssachverständige / Works inspector / L'agent d'usine

M. Rizzotto

Pagina - 1 di 2

Acciaierie Valbruna s.p.a.



36100 VICENZA (Italia) - Viale della scienza, 25 z.i.
Stab.: 39100 BOLZANO (Italia) - Via A. Volta, 4

Cliente / Besteller/Purchaser/Cient
SABI SRL

VIA MERCALLI, 16
20019-SETTIMO MILANESE-MI

Produttore: ACCIAIERIE VALBRUNA S.P.A.
Hersteller/Item/Usine productrice

Oggetto Prove: - Solubilizzato Pelato
Prüfgegenstand/Item Inspected/Préssage

Avviso di Spedizione: A-MI10003945
Lieferanzeige/Packing list/B.L.

Ordine nr: ORD.N.10099
Bestell/Your order/Commande

Tipo di Elaborazione: E+AOD
Erhitzungsart/Melting process/Mode d' élaboration

CERTIFICATO DI COLLAUDO ABNAHMEPRUEFZEUGNIS INSPECTION CERTIFICATE CERTIFICAT DE RECEPTION EN 10204 (2005), 3.1

Certificato nr: MEST879056/2010/
Prüfung/Test/Essai

Conferma ordine nr: MI10004373
Werks/Our Order/Ref nr.

Marchio di Fabbrica:
Zeichen des Lieferwerkes
Trade mark
Sigle de l' usine productrice



Punzone del Collaudatore:
Stampel des Werkssachverständigen
Inspector's stamp/Pointon de l' assauteur



Analisi chimica

Chemische Zusammensetzung/Chemical Analysis/Analyse chimique

Colata /Heat Schmelze/Coulée	min - max 0,030	1,00	2,00	18,00 19,50	1,00	1,00	8,00 10,00	0,040	0,030	0,100	-	-	-	-	-
	C %	Si %	Mn %	Cr %	Mo %	Cu %	Ni %	P %	S %	N %					
423447	0,014	0,60	2,00	18,21	0,41	0,52	8,56	0,030	0,024	0,087					

Intergranular corrosion test per ASTM A262 pract. E: ok.

I.Korrosion nach EN ISO 3651-2A Sensibilisierung : T1 : OK

Corrosion test per EN ISO 3651-2A sensitized T1 : OK

Melted and manufactured in Italy No welding or weld repair Material free from Mercury contamination

We declare that the finished product is checked for radioactive contamination through Portal System when it leaves the production plant.

The Quality Management System is Certified acc. Pressure Equipment Directive [97/23/EC] Annex 1,s.,4.3 by TUEV and LLOYD'S

Vicenza, 31/05/10
VC0012
(Mod. MCER)

Il collaudatore di stabilimento / der Werkssachverständige / Works inspector / L' agent d' usine

M.Rizzotto *Rizzotto*

Pagina - 2 di 2



CERTIFICATO DI COLLAUDO

Inspection certificate / Certificat de recette

N° A10-1002

Del 03/03/10

Foglio 1 di 1

EN10204/3.1

CLIENTE
Purchaser/Client

Cod. A0798

ORDINE
Order/Commande

MATERIALE
Material/Matiere

SABI S.R.L.

10017

ASTM A105 LAST EDITION

SPECIFICHE RICHIESTE

Specification request/Specifications technique

ASTM + NACE MR 01-75

DESCRIZIONE MATERIALE

Material description

N°3 ASTM A105 ROLLED BAR, NORMALIZED AT 900°C

DISEGNO/DIMEN. COLATA PROVA COMM.

Drawing/Dimension

Heat/Coulee

Test N°

Prod. order

Ø 220 X 115

920116

753

572/6

CARATTERISTICHE MECCANICHE

Mechanical requirements/Caracteristiques mecaniques

PROVA N° Specimen n°	DIREZ. Direction	Ø mm	Lo mm	Min Max	Rp - Yp N/mm²	Rm - Ts N/mm²	A - E %	Z - Ra %	KV -10°C (J) Joule	HB
					250	485	22	30		
753	long	12,5	50		300	498	26,3	48	36 - 38 - 36	HB 187 145-145-146

CARATTERISTICHE CHIMICHE

Chemical requirements/Caracteristiques chimiques

	C	Mn	Si	P	S	Cr	Ni	Mo	Al	Cu	V	Nb	Ceq.
COLATA	Min.	0,60	0,10										
Heat/Coulee	Max.	0,35	1,05	0,35	0,035	0,040	0,30	0,40	0,12	0,40	0,08	0,02	
920116		0,19	1,10	0,20	0,015	0,035	0,01	0,01	0,04	0,020	0,200	0,001	0,001 0,3975

F. leggez despinz
cam. 10006/10

VISUAL AND DIMENSIONAL INSPECTION CONFORMS TO CONTRACTUAL REQUIREMENTS - THE PRODUCTS ARE IN COMPLIANCE WITH THE REQUIREMENTS OF THE ORDER

FORGIATURA MODERNA ARESE S.p.A.
DIVISIONE CASA





CERTIFICATO DI COLLAUDO

Inspection certificate / Certificat de recette

EN10204/3.1

N° A10-1001

Del 03/03/10

Foglio 1 di 1

CLIENTE
Purchaser/Client

Cod. A0798

ORDINE
Order/Commande

MATERIALE
Material/Matiere

SABI S.R.L.

10017

ASTM A105 LAST EDITION

SPECIFICHE RICHIESTE
Specification request/Specifications technique

ASTM + NACE MR 01-75

DESCRIZIONE MATERIALE

Material description

N°3 ASTM A105 ROLLED BAR, NORMALIZED AT 900°C

DISEGNO/DIMEN.

Drawing/Dimension

Heat/Coulee

Test N°

Prod. order

Ø 160 X 115

21091

752

572/5

CARATTERISTICHE MECCANICHE

Mechanical requirements/Caractéristiques mécaniques

Rp - Yp	Rm - Ts	A - E	Z - Ra	KV -10°C (J)
N/mm ²	N/mm ²	%	%	Jondre
250	485	22	30	

HB

PROVA N°	DIREZ. Specimen n°	Ø mm	L ₀ mm	Min Max	Rp - Yp N/mm ²	Rm - Ts N/mm ²	A - E %	Z - Ra %	KV -10°C (J) Jondre	HB
					250	485	22	30		HB 187
752	long	12,5	50		288	496	28	48	34-35-36	142-144-144

CARATTERISTICHE CHIMICHE

Chemical requirements/Caractéristiques chimiques

COLATA	C	Mn	Si	P	S	Cr	Ni	Mo	Al	Cu	V	Nb	Ceq.
Heat/Coulee	Min.	0,60	0,10										
	Max.	0,35	1,05	0,35	0,035	0,040	0,30	0,40	0,12	0,40	0,08	0,02	
21091		0,20	1,06	0,23	0,009	0,002	0,05	0,07	0,01	0,029	0,19	0,001	0,001 0,4062

tel degli ie presenti SFP 3
con 10006/10

VISUAL AND DIMENSIONAL INSPECTION CONFORMS TO CONTRACTUAL REQUIREMENTS - THE PRODUCTS ARE IN COMPLIANCE WITH THE REQUIREMENTS OF THE ORDER

FORGIATURA MODERNA ARESE S.p.A.
DIVISIONE ASA

