INDEX

Supplements for Group R: Rear Axle and Transmission

Change in Transmission Front Suspension

The change effects all vehicles after identification No. (chassis No.):

Coupe	110 407
Cabriolet/Hardtop	153 023
Roadster	87 492

Beginning with transmission No. 35 001 a gear box cover with two support brackets is used, which connects the transmission by way of two rubber cushions to the rear suspension tube. The torque rod of the centrally supported transmission is no longer required and is omitted.

The installation of the transmission is accomplished in the same sequence as in section R, operation 1 RA, observing the following points in particular:

1. Before installation the two rubber mounts with sockets must be installed on the brackets of the gear box cover.

2. When engaging the transmission supports into the mounts on the body, note that the body section lies between the two clamping plates.

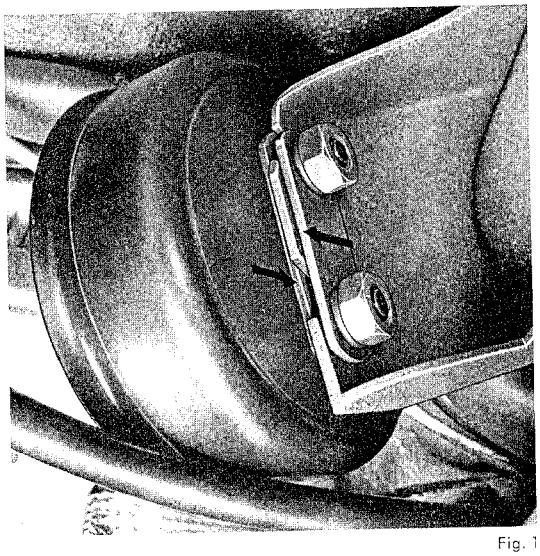


Fig. 1

Throttle Linkage

The throttle cable bell crank has been mounted on the bearing plate (intermediate plate) instead of the cover. For this reason an extension is required between the cable and bell crank.

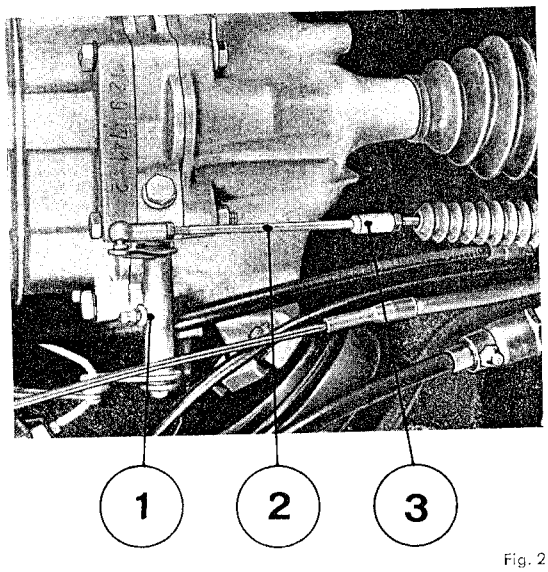


Fig. 2

① Bell crank
② Connector
③ Extension

Removing and Installing Gear Shift Shaft

The removal and installation of the shift linkage is accomplished in the same sequence as in section R, operation 21 RA, observing the following points in particular:

1. After removing the shift lever and base remove the shift shaft guide and tensioner by removing the allen head screws.

2. The shift shaft can be pulled forward and out of the floor tunnel after disconnecting the shaft from the rear shift link.

3. The installation is accomplished in the reverse order of removal.

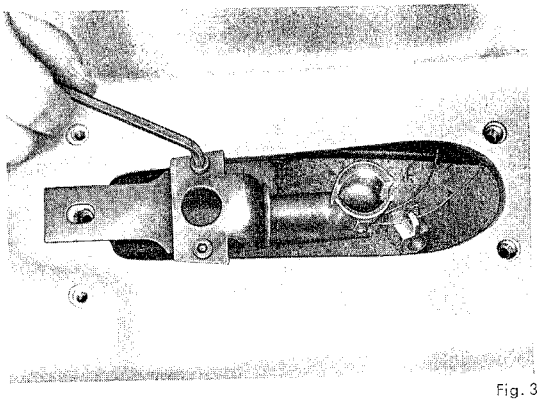


Fig. 3

Shift Linkage Connector

A sliding coupling has been incorporated in the rubber connector of the shift linkage to absorb the axial movement normally transmitted from the gear box to the shift shaft.

Note

The adjustment of the shift linkage is to be performed as in section R, operation 21 RA.
Incorrect adjustment renders the sliding coupling useless.

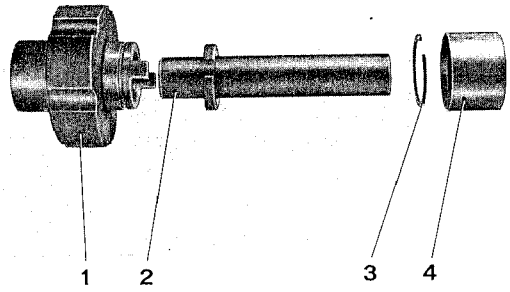


Fig. 4

Old type connector

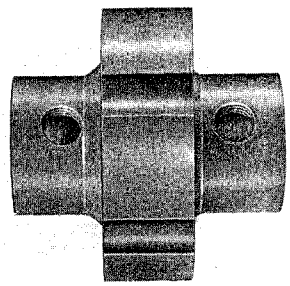


Fig. 5

Only complete couplings can be delivered.

① Rubber connector
② Sliding section
③ Lock ring
④ Collar

TRANSMISSION 741

(two point front suspension)

Section View

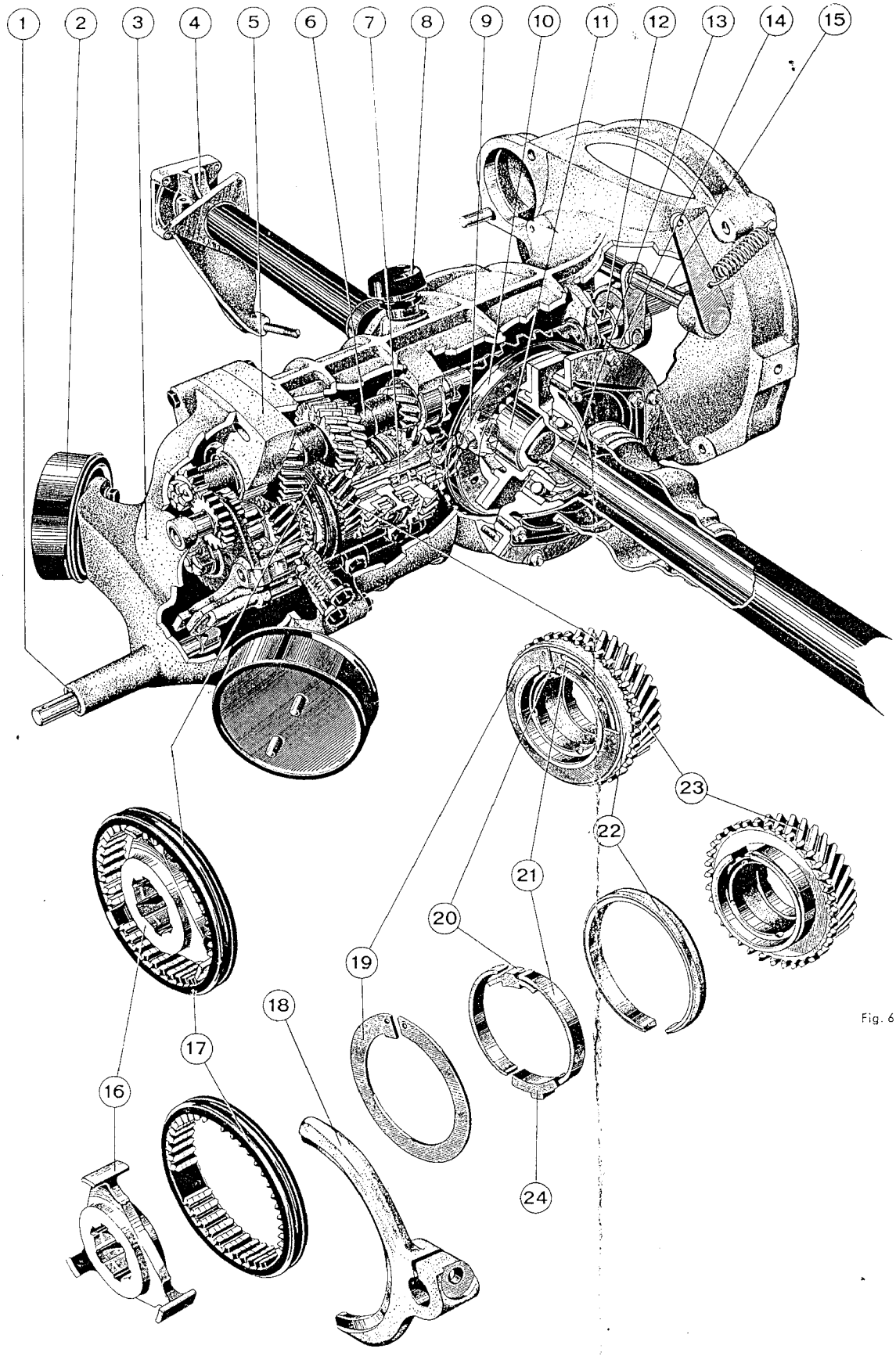


Fig. 6

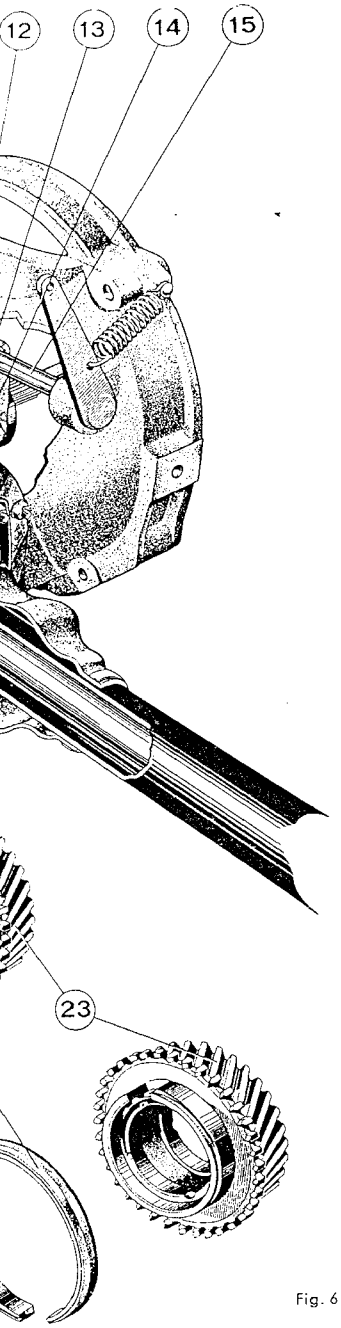


Fig. 6

Porsche Rear Axle and Lock Synchronized Gearbox, Type 741

(Section View)

① Oil Seal
② Front transmission mounting
③ Gearbox cover
④ Axle tube end flange with shock absorber extension
⑤ Intermediate plate
⑥ Main shaft
⑦ Pinion shaft and pinion
⑧ Breather
⑨ Differential pinion
⑩ Ring gear
⑪ Differential side gear
⑫ Clutch release bearing guide
⑬ Rear axle shaft
⑭ Clutch release bearing
⑮ Clutch release pivot shaft
⑯ Spider
⑰ Sliding sleeve
⑱ Selector fork
⑲ Lock ring
⑳ Brake band stop
㉑ Brake band
㉒ Synchronizing ring
㉓ Third gear on pinion shaft with synchronizing element
㉔ Slider

Special Gear Combinations

Converting the Pinion Shaft

For competition events it may become necessary to install a gear set to match the particular circuit. In the following, the various changes required to use a third gear in the place of a fourth gear are shown. The disassembly and assembly of the pinion shaft is accomplished in the same sequence as in section R, operation 3 and 6 RA, observing the following points in particular:

1. Carefully select the correct ratio and note that both gear wheels have the same pairing number. Always keep needle bearings, bearing sleeve, and gear as a unit. Do not use different gear wheels on a needle bearing which has run in another gear.

2. Install new fourth gear inner bearing race (bearing sleeve) and install needle bearing for third gear. This bearing has a smaller cage as shown in Fig. 7.

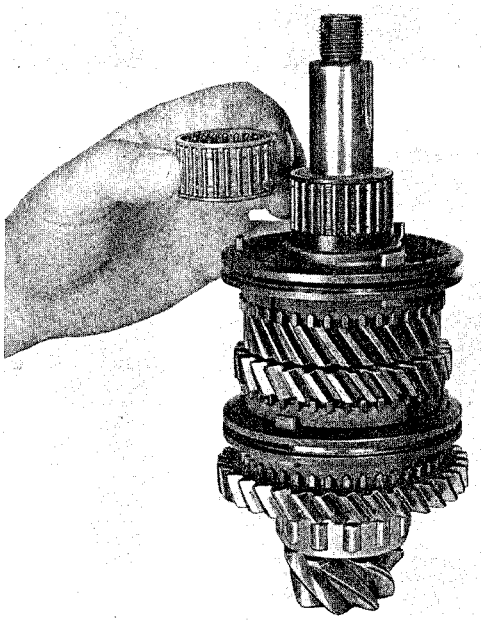


Fig. 7

3. In case of gears where the sliding sleeve will not pass over the gear teeth as in the case of 3 E, install the sliding sleeve before mounting the gear.

4. Install gear with synchronizing components.

5. Install cup shaped spacer washer on shaft.

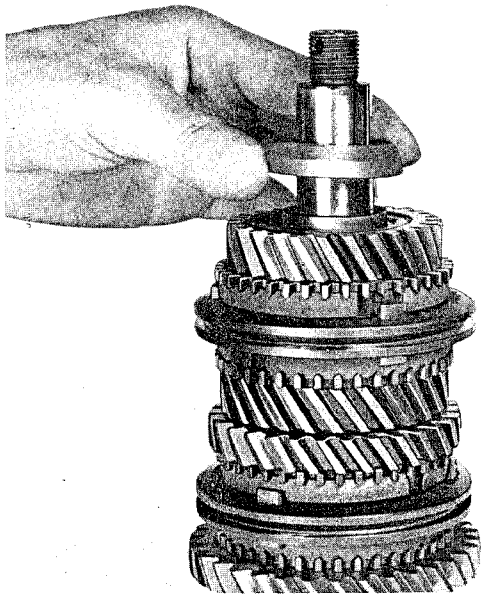


Fig. 8

6. To tighten pinion shaft nut using stand P 31 with P 31a, engage third gear.

Note

Type 741 transmission after No. 33 392 can be converted easily as described in the foregoing section. The differences lie in that a third gear needle bearing is used on a fourth gear innner race, a third gear is used in place of the fourth gear, and a cup shaped spacer washer is used in place of the flat spacer and thrust washer. The changes on the main shaft are that a third gear wheel is used in place of the fourth gear. This gear is narrower than the gear normally used and therefore requires a spacer ring.

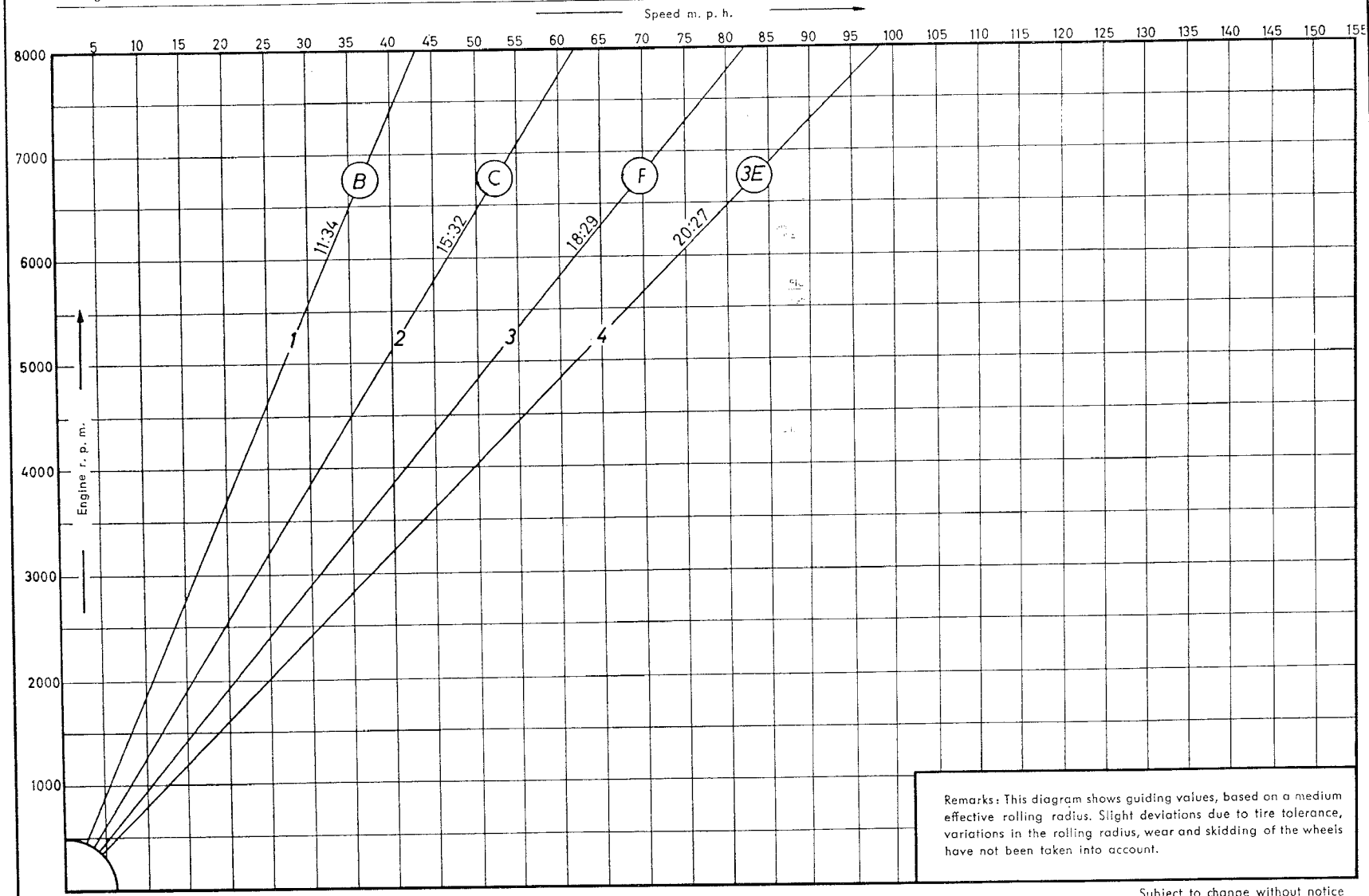
PORSCHE

Transmission Diagram

Type 356 B/1600 GS-Carrera GT (Gran Turismo) Special gear ratio for hill climbing

Tires: 165-15 or 5.90-15

Bevel gear Crown wheel ratio 7 to 31



Remarks: This diagram shows guiding values, based on a medium effective rolling radius. Slight deviations due to tire tolerance, variations in the rolling radius, wear and skidding of the wheels have not been taken into account.

Subject to change without notice

SR 7

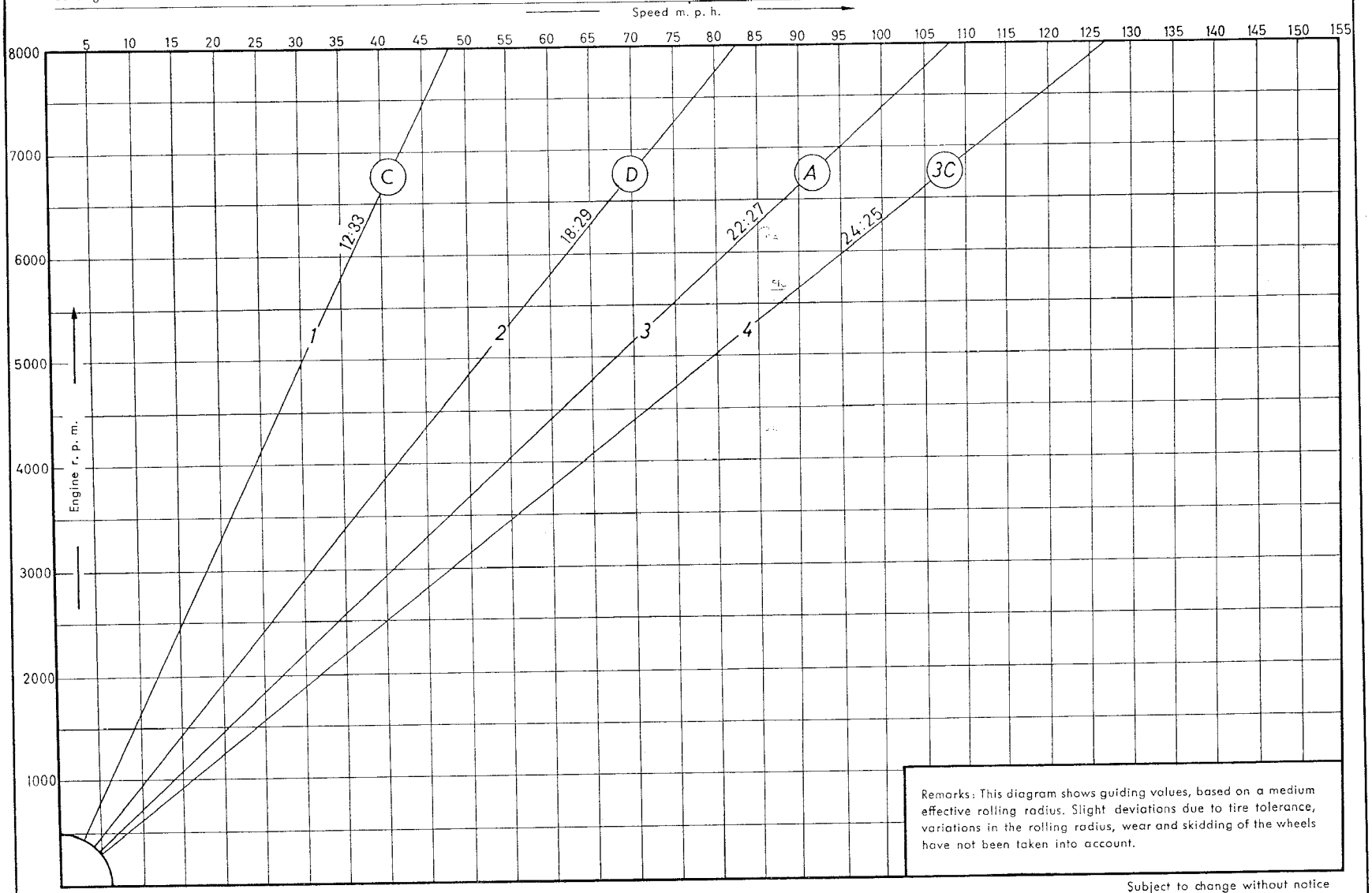
PORSCHE

Transmission Diagram

Type 356 B/1600 GS-Carrera GT (Gran Turismo) Special gear ratio for the Nürburgring

Bevel gear Crown wheel ratio 7 to 31

Tires: 165-15 or 5.90-15



Remarks: This diagram shows guiding values, based on a medium effective rolling radius. Slight deviations due to tire tolerance, variations in the rolling radius, wear and skidding of the wheels have not been taken into account.

Subject to change without notice

SR 9

TYPE 741 TRANSMISSION

Commencing with transmission Serial No. 50 001

Shown below for comparison with the previous version are modifications incorporated into transmissions beginning with serial No. 50 001. Service operations outlined in the 356 B Service Manual and supplements are not affected by these changes.

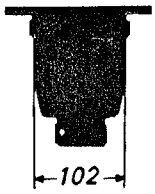
Up to Transmission No. 49 500		Beginning with Transmission No. 50 001	
Nomenclature, Part Number, and Interchangeability	Characteristic	Nomenclature, Part Number, and Interchangeability	Characteristic
Brake band segment 716.302.316.02 interchangeable with 741.302.316.00, but only in conjunction with stop 741.302.317.00		Brake band segment 741.302.316.00	
Stop 716.302.317.02 inter - changeable with 741.302.317.00 but only in conjunction with brake band segment 741.302.316.00		Stop 741.302.317.00	
Locking ring 716.302.321.01		Locking ring 741.302.311.00 reinforced	

Second Edition of this page, November 1961

TYPE 741 TRANSMISSION

Beginning with transmission Serial No. 51017

Shown below for comparison with type 741 transmission up to transmission No. 51016 are modifications incorporated into transmissions beginning with transmission No. 51017. Service operations outlined in the 356 B Service Manual and supplements are not affected by these changes.

Up to Transmission No. 51016		Beginning with transmission No. 51017	
Nomenclature, Part Number, and Interchangeability	Characteristic	Nomenclature, Part Number, and Interchangeability	Characteristic
Gearbox housing 741. 301. 010. 00 light alloy casting	See text	Gearbox housing 741. 301. 010. 00 light alloy casting with infused cast iron bearing seat inserts	See text
Intermediate plate 741.301.221.01 light alloy casting	See text	Intermediate plate 741.301.221.01 light alloy casting for gearbox 741/0A and 741/2A. Intermediate plate 741.301.221.10 cast iron for gearbox 741/8A	See text
Input shaft 519.20.249, 1st speed with 11 teeth. (Usable only with differential housing 519.32.101)		Input shaft 741.302.101.10, 1st speed with 11 teeth	
Differential housing 519. 32. 101		Differential housing 741.332.101.00 usable only with input shaft 741.301.101.10 *	
No. 2 gear for 1st speed, gear tooth width 10,8 mm		No. 2 gear for 1st speed, gear tooth width 12.4 mm. This gear cannot be installed in gearbox housings preceding No. 51 017 *	

* For the present only installed in cars with engine type 1600 S-90

SERVO-THRUST SYNCHRONIZATION

Beginning with Gearbox No. 50 001

Figure 1 shows, in addition to component parts numbered 1 through 8, a cross-sectional view of the Porsche servo-thrust synchronization with the two corresponding gears, either of which couples with the output shaft by pushing the sliding sleeve to left or right, respectively.

The clutch carrier (3) is firmly attached to the gear and carries the synchronizing ring (4), slider (5a), stop (6), and the two brake band segments (7). The assembly is kept in place by the locking ring (8). Located between the two gears, which rotate freely on the output shaft, is the sliding sleeve (1); the sleeve is free to move sideways even though it is in constant lock with the output shaft by way of the three-pronged spider (2).

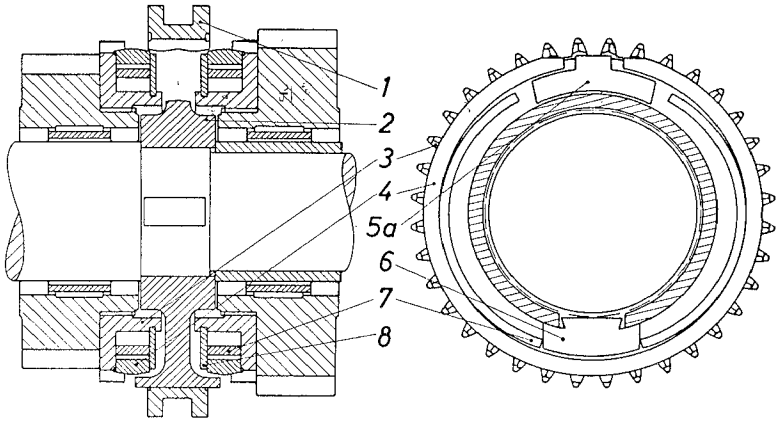


Fig. 1

The Porsche synchronization operates on the servo-thrust principle. The frictional force, which is created by pushing the sliding sleeve onto the synchronizing ring, is multiplied by the servo-thrust mechanism located within the synchronizing ring without creating additional resistance to the gearshift lever. The synchronization components automatically control the extent of the servo action required in each particular instance, thus resulting in quick shifts with little effort.

When a shift is made with the gears at standstill, the selector fork moves the synchronizing ring from the center position and engages it with the gear teeth in the synchromesh drive ring of the respective gear. In the above process the synchronizing ring compresses to fit inside the sliding sleeve and then comes to rest in a groove machined on the inner surface of the sliding sleeve. This requires only the amount of force needed to overcome the static resistance of the synchronizing ring, which results from the tension of the ring and the angle inclination of the cone.

It is not possible to push the sliding sleeve beyond the clutch carrier because the travel space between gearbox front cover and the intermediate plate has been appropriately limited and, in addition, gears of the 1st and 2nd speed are larger than the inside diameter of the sliding sleeve.

When a shift is made with the car in motion, entirely different conditions prevail. The synchronizing mechanism must equalize the difference in rotation speed existing between the output shaft and gear 2 (countergear) of the gear to be engaged; it must also prevent that the sliding sleeve comes into contact with the toothed drive ring on the clutch carrier prior to equalization of the rotation speed.

The mechanical connection between the engine and gearbox must be positively broken whenever shifts are made; that is to say, the clutch must be fully disengaged. This is necessary because the clutch plate represents part of the mass to be synchronized and, thus, must be accelerated or slowed down, as the case may be.

As illustrated in Fig. 2. the friction contact between the sliding sleeve (1) and the synchronizing ring (4) causes the synchronizing ring to slip somewhat, with one of its ends coming to rest against the slider (5a). The slider pushes against one of the brake band segments (7) which, in turn, presses against the inner surface of the sliding sleeve (4), with the stop (6) acting as its anchor. As a result, radial thrust is exerted upon the sliding sleeve (4) by the brake band segment (7) and by the stop which pivots on its base.

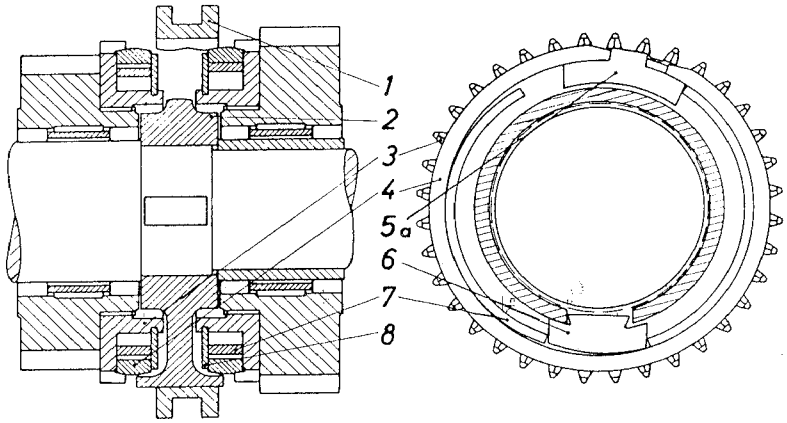


Fig. 2

At the beginning of the synchronization process, the frictional forces existing between the sliding sleeve and synchronizing ring were caused only by the spring tension of the synchronizing ring. As the synchronization process continued, the servo-thrust mechanism came into action and began to exert an additional and increasing radial thrust upon the synchronizing ring.

Thus, the synchronization utilizes a servo-thrust coming from within and exerted upon the sliding sleeve via the brake band segments. The servo-thrust mechanism is so designed that the servo effect governs itself and prevents a self-lock.

As long as there is a difference in rotation speed between the sliding sleeve, with its coupled output shaft, and the gear to be engaged, the radial thrust of the servo mechanism prevents a reduction of the diameter of the synchronizing ring and, in this way, prevents an engagement of the sliding sleeve. On the other hand, the frictional forces at the synchronizing surfaces decrease in proportion to a decrease in rotation speed difference existing between the sliding sleeve and respective gear.

When rotation speed of both parts equalize, the servo-thrust mechanism relaxes, the brake band segment is relieved and creases to exert resistance towards the necessary diameter reduction of the synchronizing ring, thus making it possible to push the sliding sleeve over the synchronizing ring with very little effort until the synchronizing ring is caught in the arresting groove inside the sliding sleeve (Ref. Fig. 3). A shift lock in respective gear positions is no longer necessary.

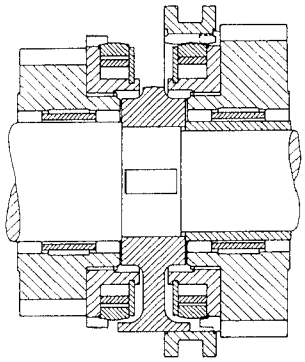


Fig. 3

All forward speeds of the gearbox are equipped with identical synchronization and servo-thrust components, with the exception of the 1st speed which is used for starting. Care was taken to ensure that the frequently shifted 1st speed engages with little effort when the car is not in motion. This has been accomplished by installing in the synchronization mechanism of the 1st gear only one brake band segment and by changing the shape of the slider.

Figure 4 illustrates the synchronization at time of engagement of 1st speed, with engine running and car standing still. Due to the fact that the idle rpm of the engine are low and the clutch plate rpm drop after clutch is disengaged, it is very easy for the synchronization mechanism to slow down the gear for engagement. The slipping synchronizing ring with one end presses the slider which rests with its tab against the clutch carrier. Since the tab is slanted, the slider is raised against the inner surface of the synchronizing ring whose frictional contact is increased just enough to permit a clash-free, effortless engagement of the gear.

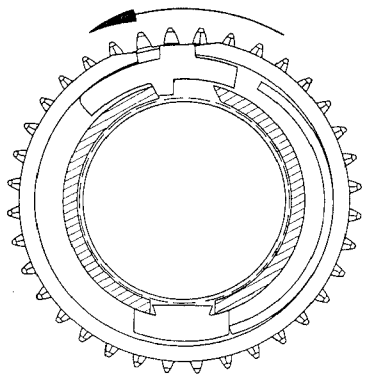


Fig. 4

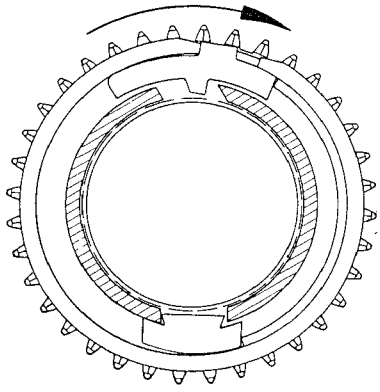


Fig. 5

Figure 5 illustrates the synchronization mechanism at time of engagement of 1st speed with car in motion. Contrary to engagement of 1st speed with car standing still, the gear is not slowed down but has to be accelerated. Therefore, the normal brake band segment has been installed on the side of the servo-thrust mechanism which is to function in this case to ensure the full benefit of the servo-thrust effect obtained in all other gears.

INTERCHANGEABILITY OF INPUT SHAFTS

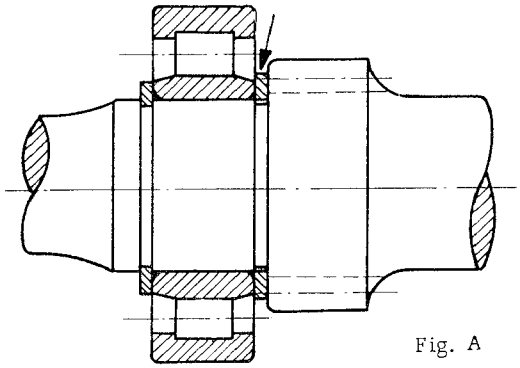


Fig. A

Fig. A illustrates the standard location of an intermediate ring between gear 1 for the 1st speed on the input shaft 741.302.101.10 and the roller bearing, from transmission No. 51017.

The intermediate ring has spare part No. 741.302.296.00.

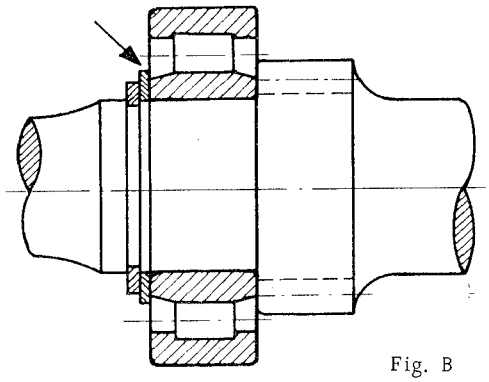


Fig. B

Fig. B illustrates the location of the intermediate ring when installed with input shaft 741.302.101.10 in a transmission housing 644.20.010 or 716.301.010 or 741.301.010.00.

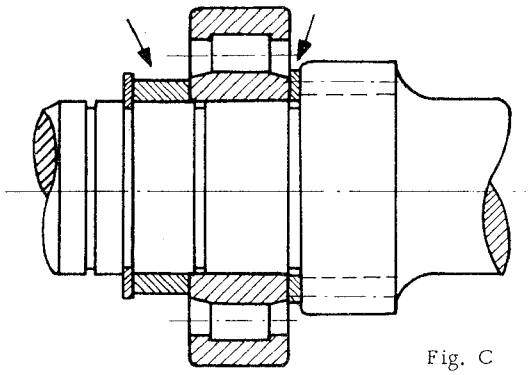


Fig. C

Fig. C illustrates the location of the intermediate ring and distance ring, when installed with input shaft 519.20.249 in a transmission housing 741.301.010.10.

The distance ring has spare part No. 644.20.209.

TRANSMISSION 741

Starting with gearbox No. 50 001

Section View

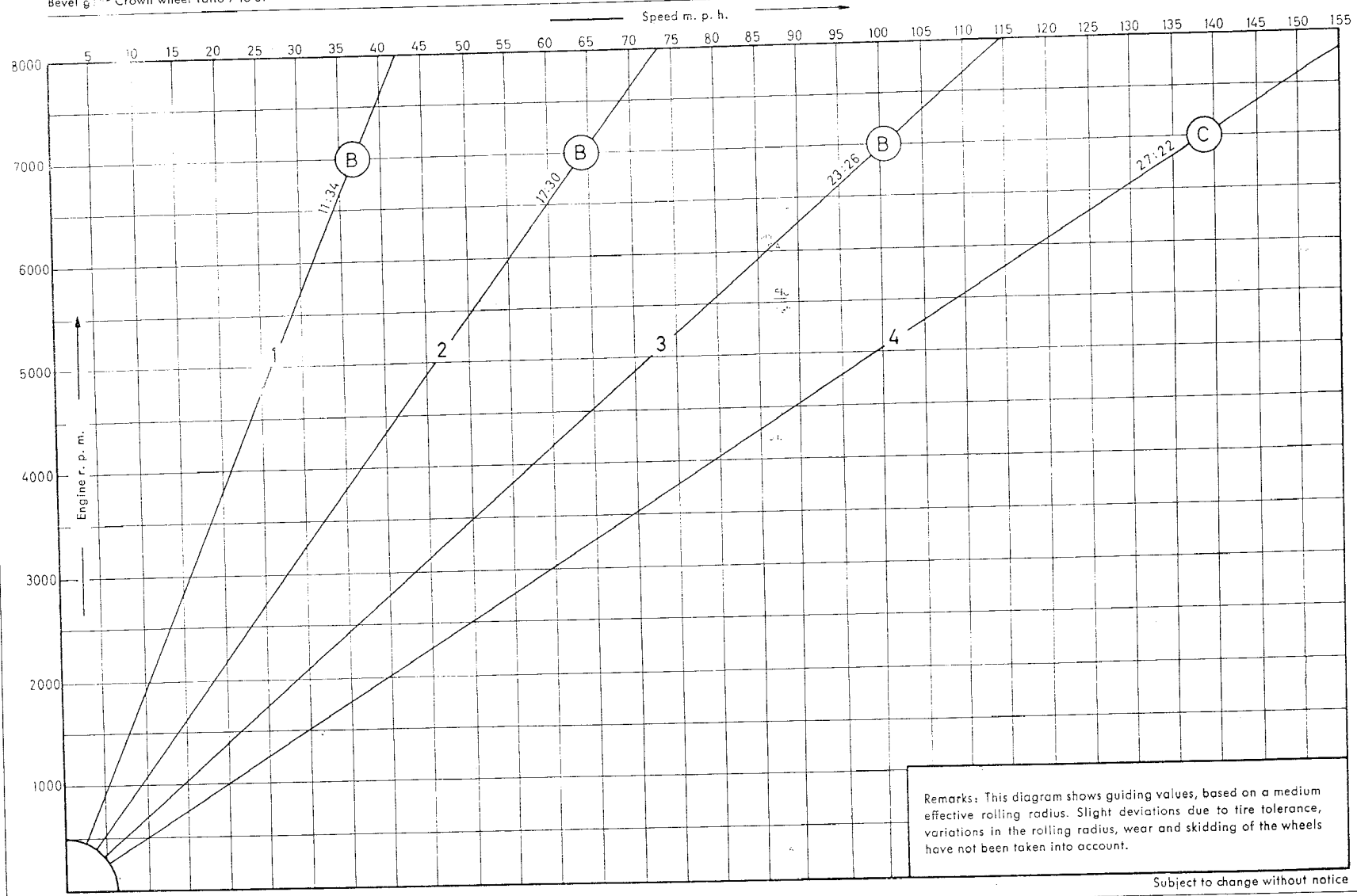
PORSCHE

Type 356 B / 1600, - / 1600 S Coupé, Cabriolet, Hardtop, Roadster
Equipment for Europe

Transmission Diagram
741 / 0 A

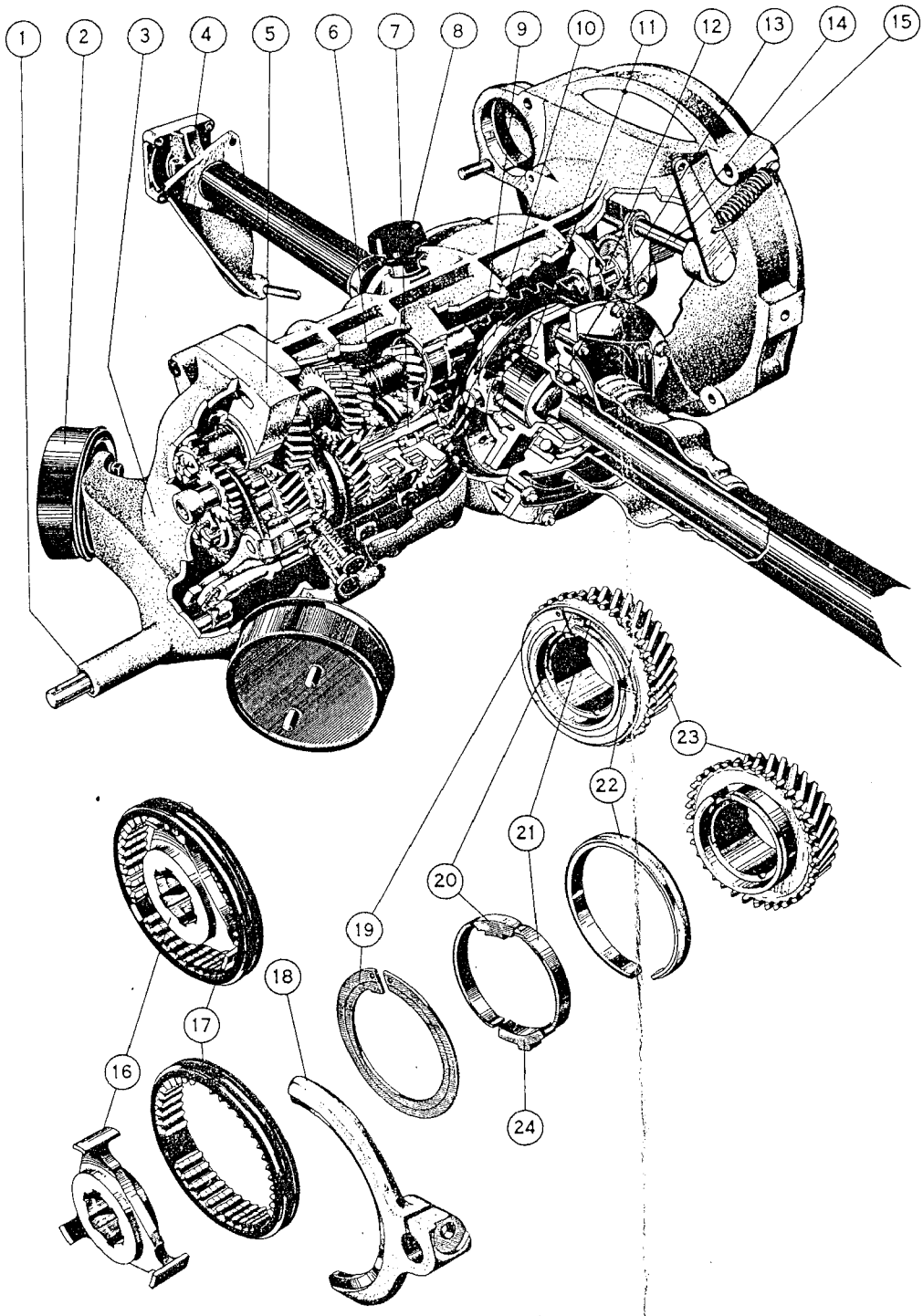
Tires: 5.60 – 15

Bevel g[illegible] Crown wheel ratio 7 to 31



Remarks: This diagram shows guiding values, based on a medium effective rolling radius. Slight deviations due to tire tolerance, variations in the rolling radius, wear and skidding of the wheels have not been taken into account.

Subject to change without notice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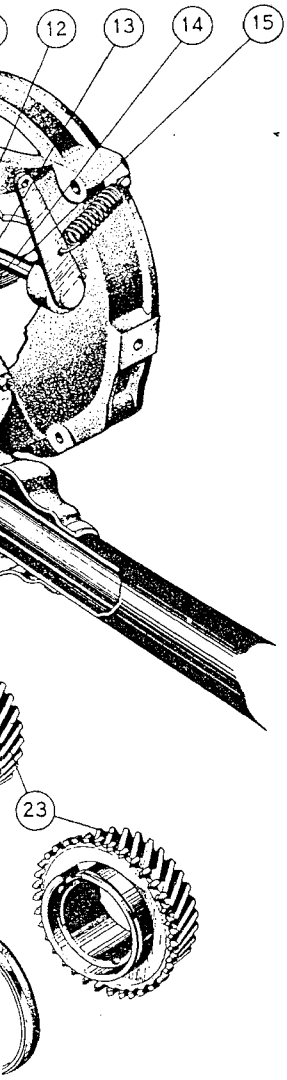


Porsche Rear Axle and Lock Synchronized Gearbox, Type 741

(Section View)

① Oil Seal
② Front transmission mounting
③ Gearbox cover
④ Axle tube end flange with shock absorber extension
⑤ Intermediate plate
⑥ Main shaft
⑦ Pinion shaft and pinion
⑧ Breather
⑨ Differential pinion
⑩ Ring gear
⑪ Differential side gear
⑫ Clutch release bearing guide
⑬ Rear axle shaft
⑭ Clutch release bearing
⑮ Clutch release pivot shaft
⑯ Spider
⑰ Sliding sleeve
⑱ Selector fork
⑲ Lock ring
⑳ Brake band stop
㉑ Brake band
㉒ Synchronizing ring
㉓ Third gear on pinion shaft with synchronizing element
㉔ Slider

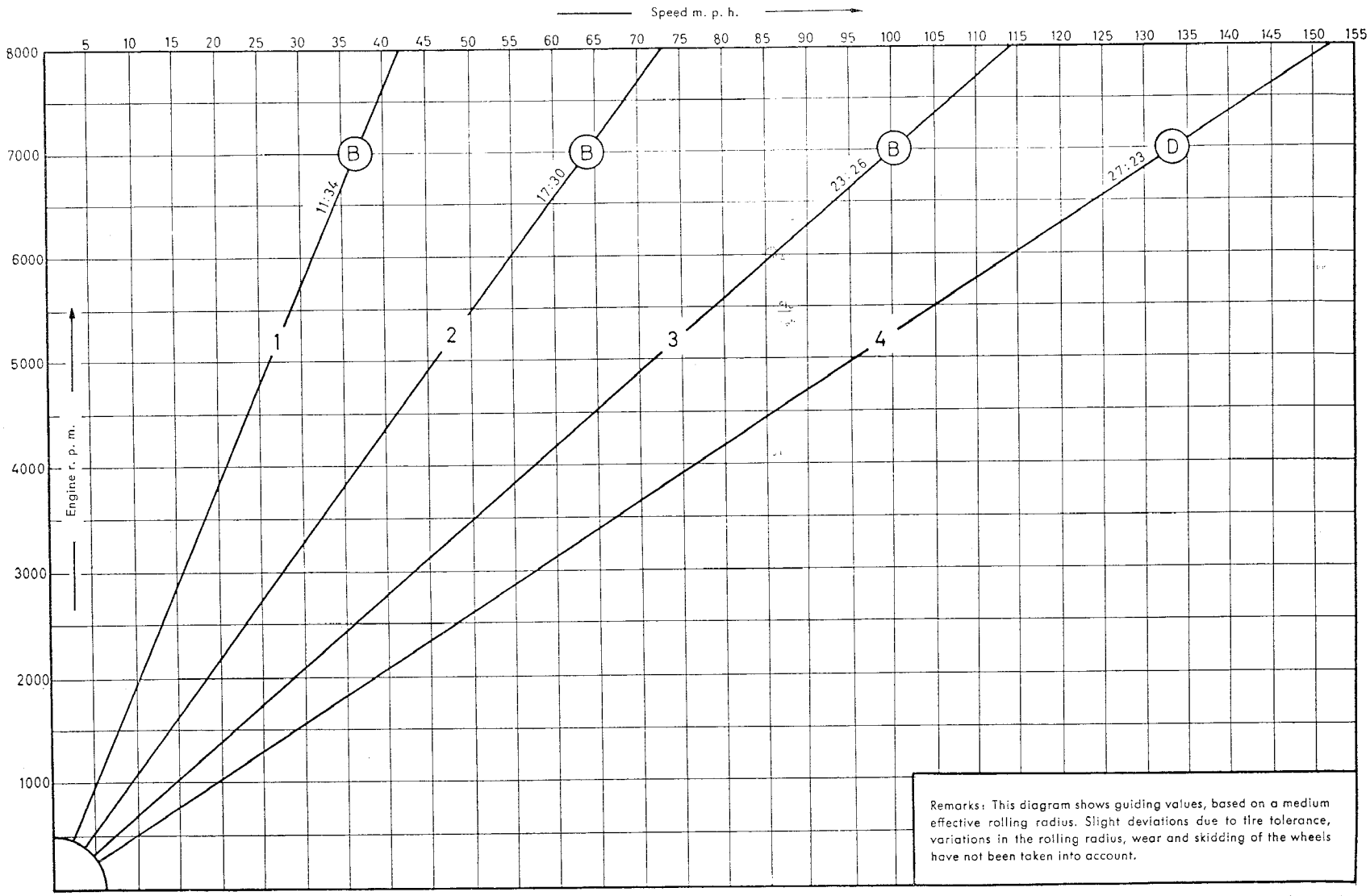
PORSCHE

Type 356 B / 1600, - / 1600 S Coupé, Cabriolet, Hardtop, Roadster
Equipment for USA

Transmission Diagram
741 / 2 A

Bevel gear Crown wheel ratio 7 to 31

Tires: 5.60 – 15



Remarks: This diagram shows guiding values, based on a medium effective rolling radius. Slight deviations due to tire tolerance, variations in the rolling radius, wear and skidding of the wheels have not been taken into account.

Subject to change without notice

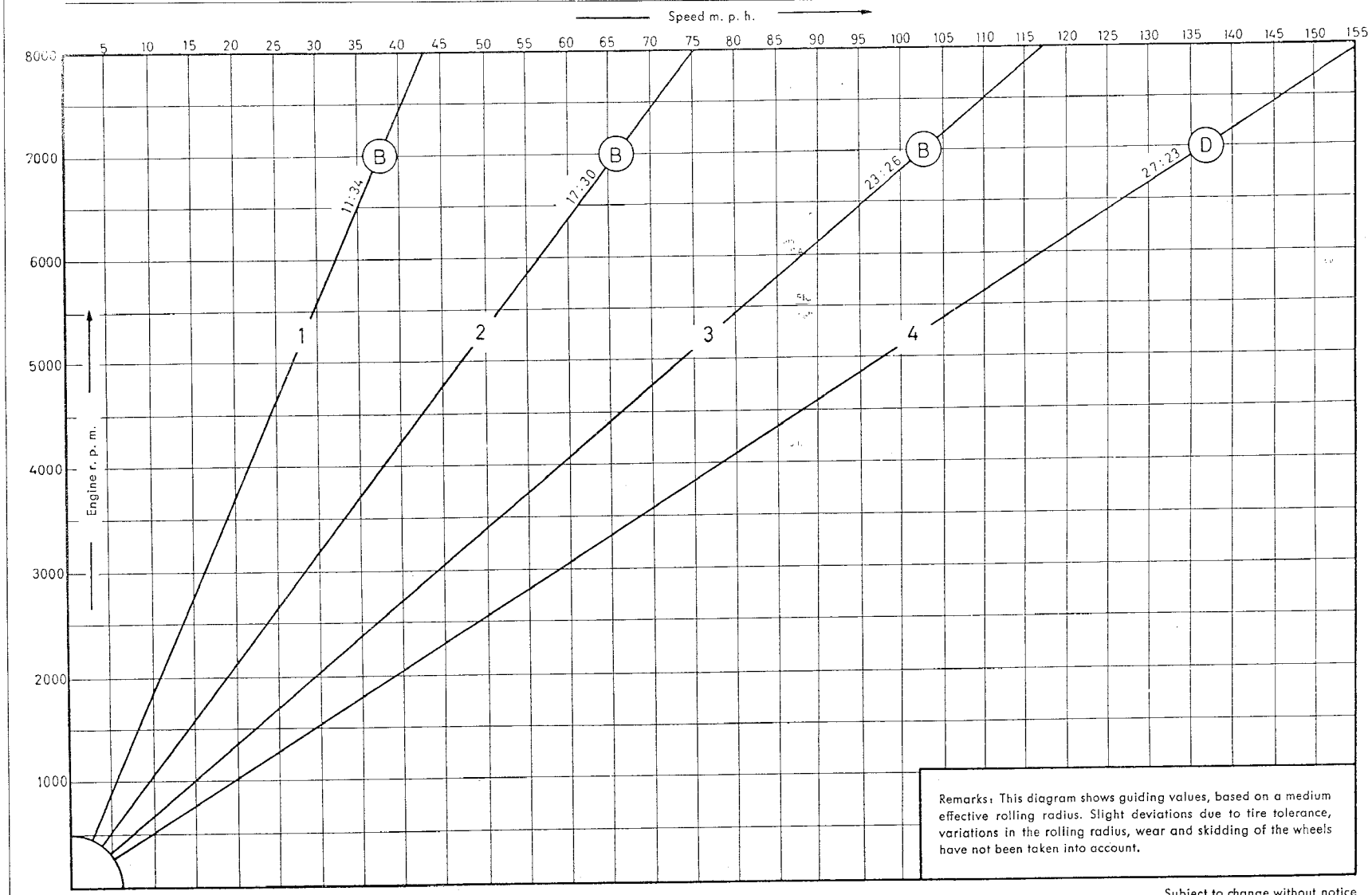
PORSCHE

Type 356 B / 1600 S-90 Coupé, Cabriolet, Hardtop, Roadster
Equipment for Europe and USA

Transmission Diagram
741/2 A

Bevel gear Crown wheel ratio 7 to 31

Tires: 165–15



Remarks: This diagram shows guiding values, based on a medium effective rolling radius. Slight deviations due to tire tolerance, variations in the rolling radius, wear and skidding of the wheels have not been taken into account.

Subject to change without notice

ZF (AXIAL SELF SERVO) LIMITED SLIP DIFFERENTIAL

Description

The ZF limited slip differential is a self activating curved track geared unit which retards differential rotation by friction brakes. In place of pinions and side gears a driver plate runs between two curved track elements. The sliding studs of the driver plate exert high axial force on the curved tracks when transmitting power. The hemispherical ends of the sliding studs effect a high pressure angle on the curved tracks thereby pressing them against the differential carrier. This pressure supplies the braking force which prevents differential movement of the two curved tracks. The difference in the number of curves on the two tracks allows the two elements to rotate in opposite directions as a customary differential gear. One track has eight and the other nine curves.

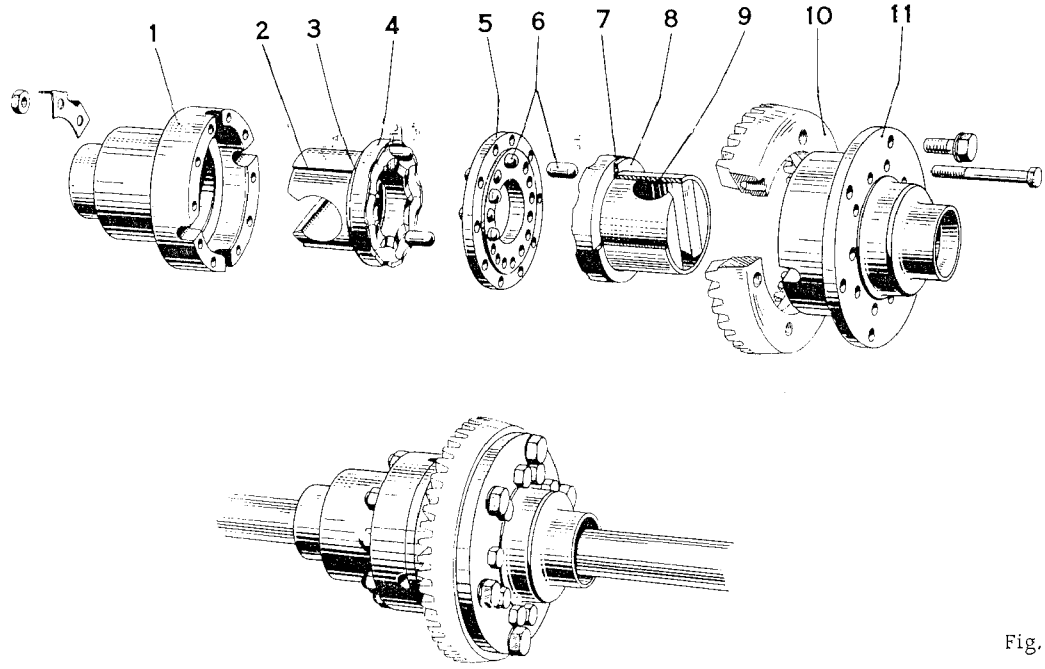
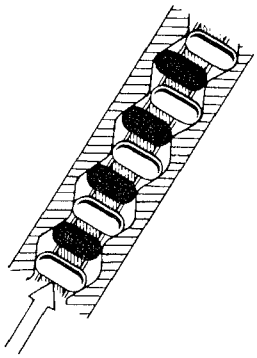


Fig. 7

1. Carrier half without flange
2. Axle joint body
3. Brake ring
4. Curved track element
5. Driver plate
6. Slidingstud
7. Curved track element
8. Brake ring
9. Axle joint body
10. Ring gear
11. Carrier half with flange

The torque from the ring gear is transmitted through the differential carrier, which is composed of two halves and the driver plate, to the sliding studs running in the curved tracks. Since the curved tracks have a different number of curves they do not have parallel surfaces. For this reason the sliding studs are prevented from advancing past the curved tracks effecting rotation of the axle shafts together with the driver plate. Under full load the differential becomes practically locked through the high axial force on the brake rings while under light loads such as when negotiating certain portions of a sharp curve the wheels are free to rotate differentially. Driving under half power through curves such as in city driving, places very high demands on the curved tracks and brake rings and is not recommended.

Section view of a linear development of the curved tracks, driver plate and sliding studs



The black studs transmit power when force is in direction shown

Fig. 8

Characteristics

1. Permits differential rotation of the wheels in curves.
2. Transmits equal rotation to both wheels under power.
3. Prevents independent wheel spin in the event of poor traction.
4. Independent wheel spin occurs only when one wheel has no traction or is off the ground for a greater time whereby the force necessary for the differential brake ceases. Short periods of poor traction such as intermittent wheel lift are spanned by the unit before the braking effect has time to dissipate since the inertia of the free wheel is sufficient to activate the brake.

ZF LIMITED SLIP DIFFERENTIAL

Removal and installation

The ZF limited slip differential is removed and installed in the same manner as described in section Rear axle item 8 RA of the 356B Shop Manual.

Disassembly

1. Free safety taps of through bolts.
2. Remove through bolts and open the differential carrier.
3. Clean all parts in cleaning solvent.

Assembly

1. Inspect cleaned parts for wear and material failures. The sliding studs must not vary in length more than 0, 05 mm (. 002 in).
2. Apply molykote G paste lubricant to the curved tracks and sliding studs. Parts must first be free of oil.
3. Insert sliding studs in the driver plate.
4. Install brake rings on the axle joint bodies and place in differential carrier. Assemble carrier halves to driver plate fasten through bolts.
5. Measure the total axial play of the axle joint bodies within the carrier halves. Permissible play 0, 2 to max. 0, 3 mm (. 008 to . 012 in). If play is excessive use thicker brake rings to obtain the correct play.
6. With the correct axial play the differential gear must turn freely by hand.
7. When the differential is completely assembled check rotational play by holding one axle joint body fixed with the carrier housing and rotating the opposite joint. Free travel observed through the carrier housing openings should be from 1 to 1, 2 mm (. 040 to . 047 in) measured on the outer circumference of the curved track.
8. Tighten the nuts of the connecting screws with a tension wrench to Md = 2, 3 - 2, 5 mkg (ft lb = 16, 6 - 18) and secure with securing strip.

Note:

Through wear of the curved track the rotational play can become as great as 3 to 4 mm without affecting the function of the differential. However, such play will cause noises during power reversal which have no effect on the functioning of the unit.

Gear Lubricant:

The proper lubricant is SAE 90 Hypoid Gear Lubricant.

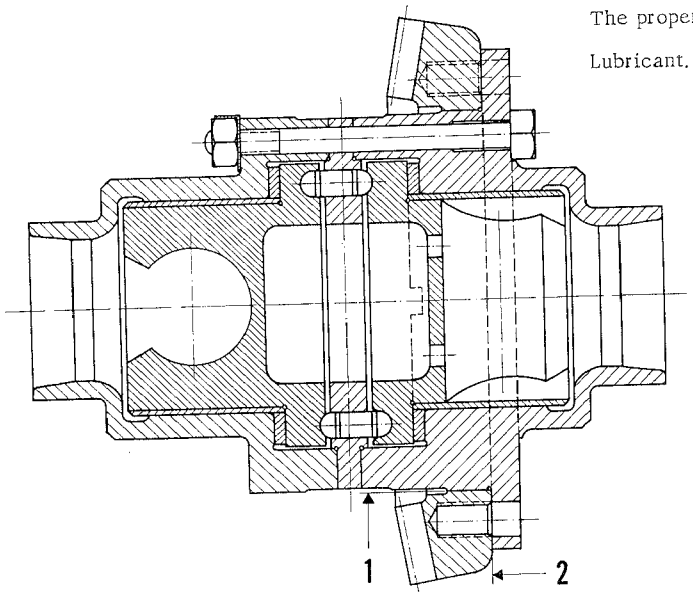


Fig. 9

1. Eccentricitiy max. 0, 05 mm (. 002 in)
2. Wobble max. 0, 003 mm (. 0012 in)

REAR WHEEL SUSPENSION 356 C

Torsion bars of different specifications are installed in the following cars, beginning with chassis serial numbers as indicated:

Coupe 126 001 and 215 001, respectively
Cabriolet 159 001 (except Carrera 356 C/2000 GS and 356 C/2000 GS/GT).

General Characteristics

The utilization of torsion bars of different specifications resulted in improved driving comfort and road holding qualities. In comparison, the new suspension is softer than that in Type 356 B. Attached to each axle tube suspension flange and radius arm is a progressively acting rubber buffer which absorbs axle shock in the upper part of axle deflection.

A compensating spring may be installed upon request, whereby it is no longer necessary to replace the torsion bars, requiring only a readjustment to proper specifications.

Torsion Bars

The torsion bars have a length of 552 mm (21.73 in.), as compared with the previously used length of 627 mm (24.69 in.); the diameter is 22 mm (.866 in.) as compared with 24 mm (.945 in.) and 23 mm (.906 in.) bars previously used.

Note:

The torsion bars are pre-stressed during manufacture. Therefore, right and left torsion bars are not interchangeable. To provide means for positive identification, the right and left torsion bars are marked with an "R" and "L", respectively.

Removing and Installing Torsion Bars

Removal

1. Place car on stands in level position, remove rear wheels.
2. Preload radius arm with compressing tool (P 53a) so that the load is off the shockabsorber.
3. Remove shockabsorber.
4. Pry open sheetmetal brake hose retainer and remove brake hose clamp from axle tube.
5. Remove the three hex bolts which hold axle tube suspension flange. Move rubber buffer and support flange to rear and let hang on hand brake cable.
6. Push axle tube rearward, away from the radius arm.
7. Remove compressing tool (P 53a).
8. Remove radius arm cover retaining bolts and withdraw cover.

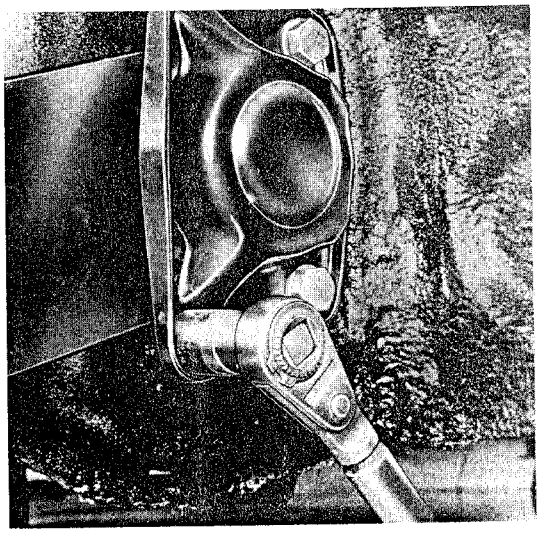


Fig. 1

9. Withdraw rubber bushing.
10. Remove radius arm and inner rubber bushing.
11. Remove torsion bar through hole provided in the body.

Note:

In instances where the torsion bar has sheared off, the remaining stub can be forced out of its splined seat by first removing the torsion bar on the opposite side and then pushing through with a steel rod.

Installation

Reassembly is accomplished in reversed order of the above, by noting the following points:

1. Check the torsion bar for damaged splines, chipped paint finish, and especially rust spots; replace if necessary.
2. Lubricate torsion bar splines.
3. Insert the torsion bar and radius arm, making certain that the proper bar is being installed ("R" and "L" markings), and adjust (see page SR 33).

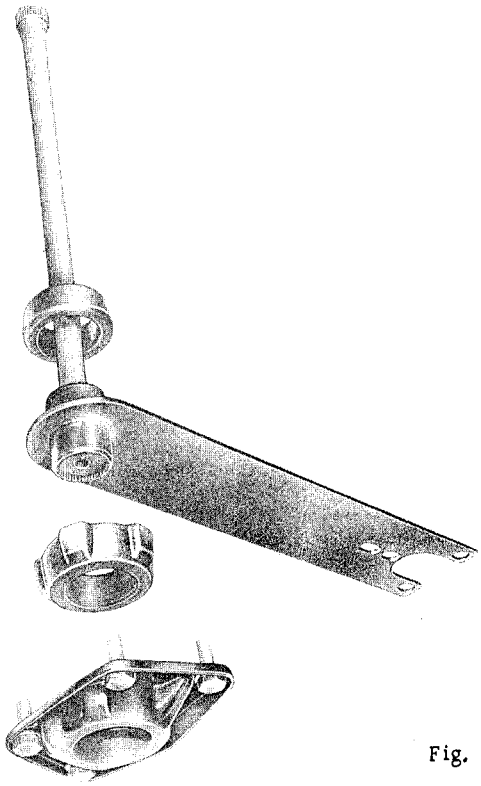


Fig. 2

4. Apply flaked graphite to rubber bushing and install.
5. Raise radius arm with compressing tool (P 53) until the lower edge of arm is above the lower stop. Drive radius arm into place with a copper mallet.
6. Install outer rubber bushing. Make sure that the four protruding ribs fit properly into the depressions within the radius arm cover.

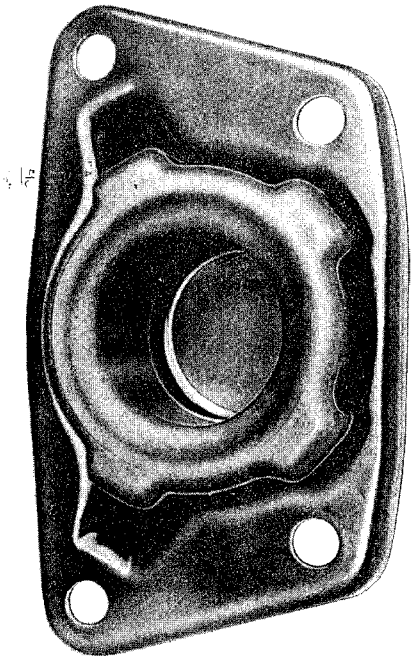


Fig. 3

7. Tighten cover retaining bolts.

Adjusting Rear Wheel Suspension

Exact adjustment of the torsion bars is accomplished by measuring the angle of inclination of the radius arm in relation of the horizontal plane of the car; the radius arm must not be under load.

Make sure that the chassis is standing in level position by placing the protractor (VW 245a) on the floor tunnel. Readings for the slacked radius arm are as follows:

Type 356 C/1600 C and 1600 SC:

Coupe and Cabriolet

21° 30' without compensating spring

17° with compensating spring

(optional equipment)

Type 356 C/2000 GS, with compensating spring (rear suspension 356 B)

Coupe and Cabriolet

19°

Camber: + 10' to + 1° 30' (car empty)

Type 356 C/2000 GS/GT (with compensating spring)

(rear suspension 356 B)

Coupe

13°

Camber: - 30' to - 1° 30' (car empty)

It is essential that both radius arms are adjusted to identical readings to ensure that the suspension is properly aligned and can function satisfactorily under all normal loads since this affects the car's roadability. If adjustment was required on one side only, the other side should be checked as well and readjusted if necessary.

Adjustments are performed as follows:

1. Insert the torsion bar so that its splines engage those within the socket in the frame.
2. Slide radius arm onto the splined outer end of the torsion bar.
3. Hang protractor (VW 245a) on slacked radius arm.
4. Set protractor pendulum so that bubble lines up in the center.

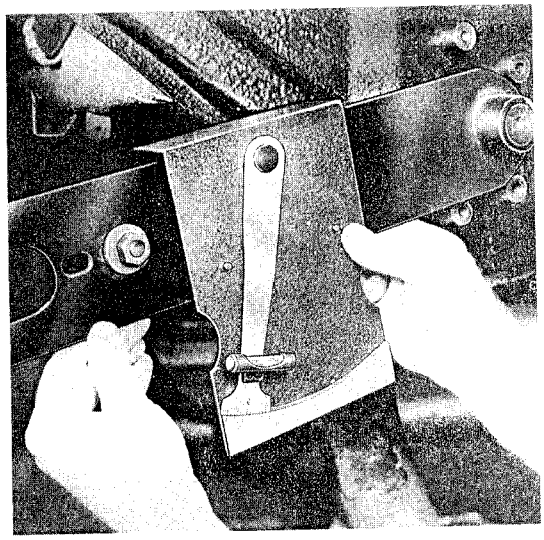


Fig. 4

If the protractor reading reveals an excessive tolerance deviation from the specified value, position of the radius arm must be corrected. Due to an unequal number of splines on the torsion bar ends, it is possible to finely adjust the radius arm angle, that is,

inside end (car's center) has 40 splines
outside end has 44 splines.

When the torsion bar is reset by one spline, it turns 9°; when the radius arm is reset by one spline, an angle difference of approximately 8° 10' results. This makes possible minimal changes of 50'. Should it not be possible to achieve an equal setting on both radius arms, the adjusting procedure should be repeated by using a different radius arm until the required angle of inclination is obtained.

Note:

The alignment of rear wheels can be correctly chekked only on the optical wheel alignment ramp (see page W 5, Group W, basic volume of 356 B Workshop Manuel).

REAR AXLE PIVOT STOP

Type 356 C

General

An axle pivot stop has been introduced in conjunction with the recalibrated rear wheel suspension. The pivot stop is located adjacent to the rubber buffer. It is the purpose of the pivot stop to limit vertical axle travel and thus protect the shockabsorber (fig. 1).

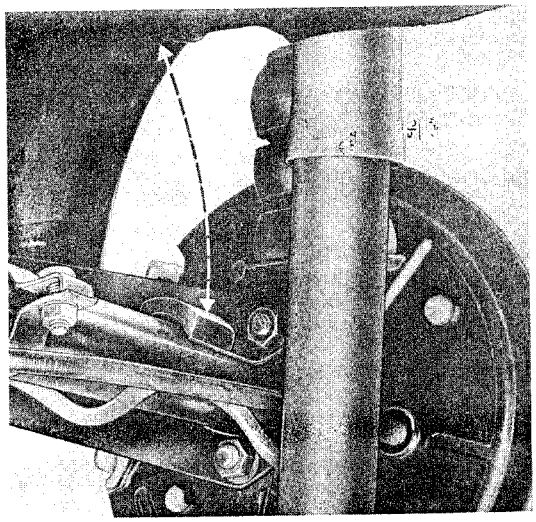


Fig. 1

The pivot stop should be replaced when the rubber pad shows signs of considerable wear and the possibility of hard, metallic impact is imminent.

Removal

1. Raise car and remove rear wheels.
2. Preload radius arm with the compressing tool (P 53a) until the load is off the shockabsorber.
3. Remove shockabsorber.
4. Remove pivot stop retaining nut and pull bolt out.
5. Carefully detach pivot stop from the rubber buffer support (spot-welded).

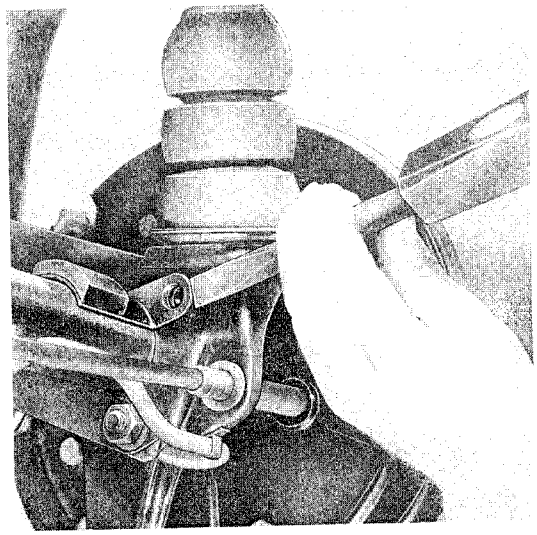


Fig. 2

6. Remove spot weld remnants and grit.

Installation

Install in reversed order of the above. The new pivot stop does not require welding since the bolt attachment is sufficient.