Power steering gear
Cam Gear
B21 1979–

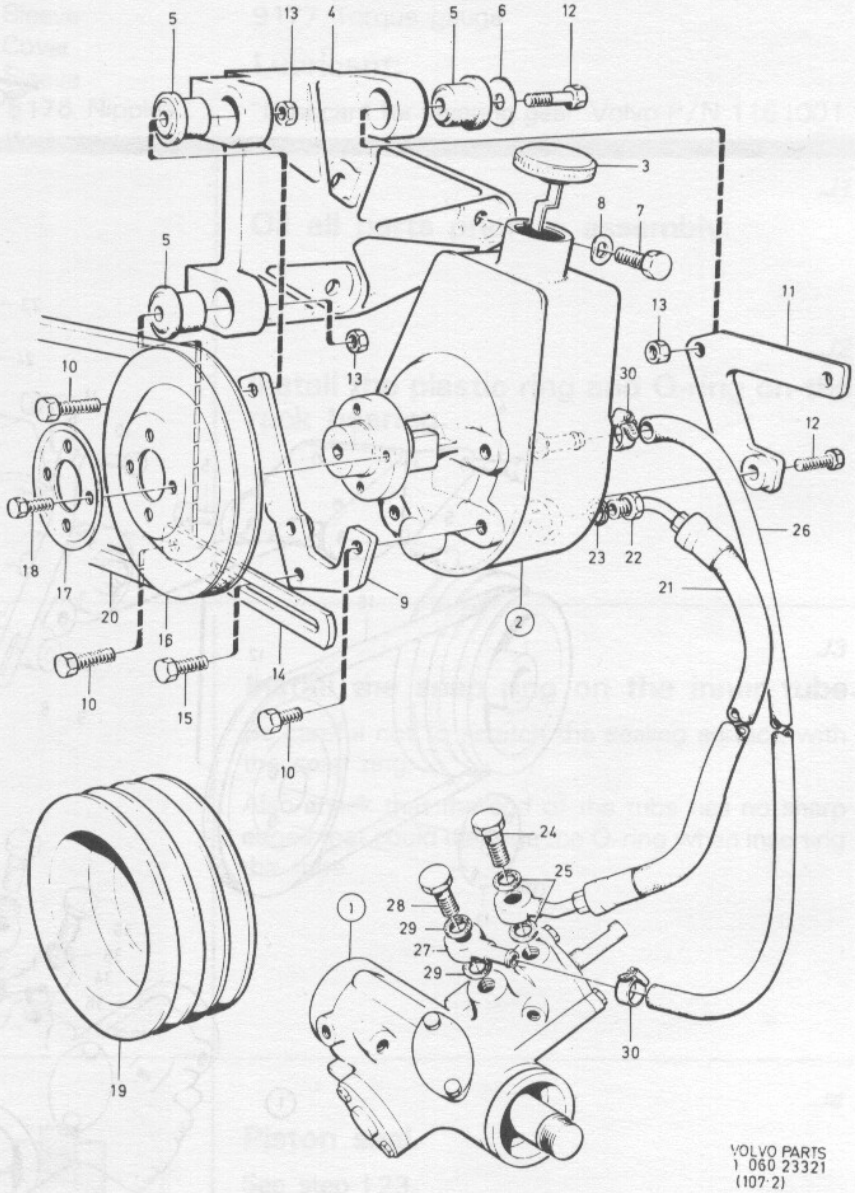


Illustration for reference only

Power steering gear
Cam Gear
B27 1979
B28 1980-

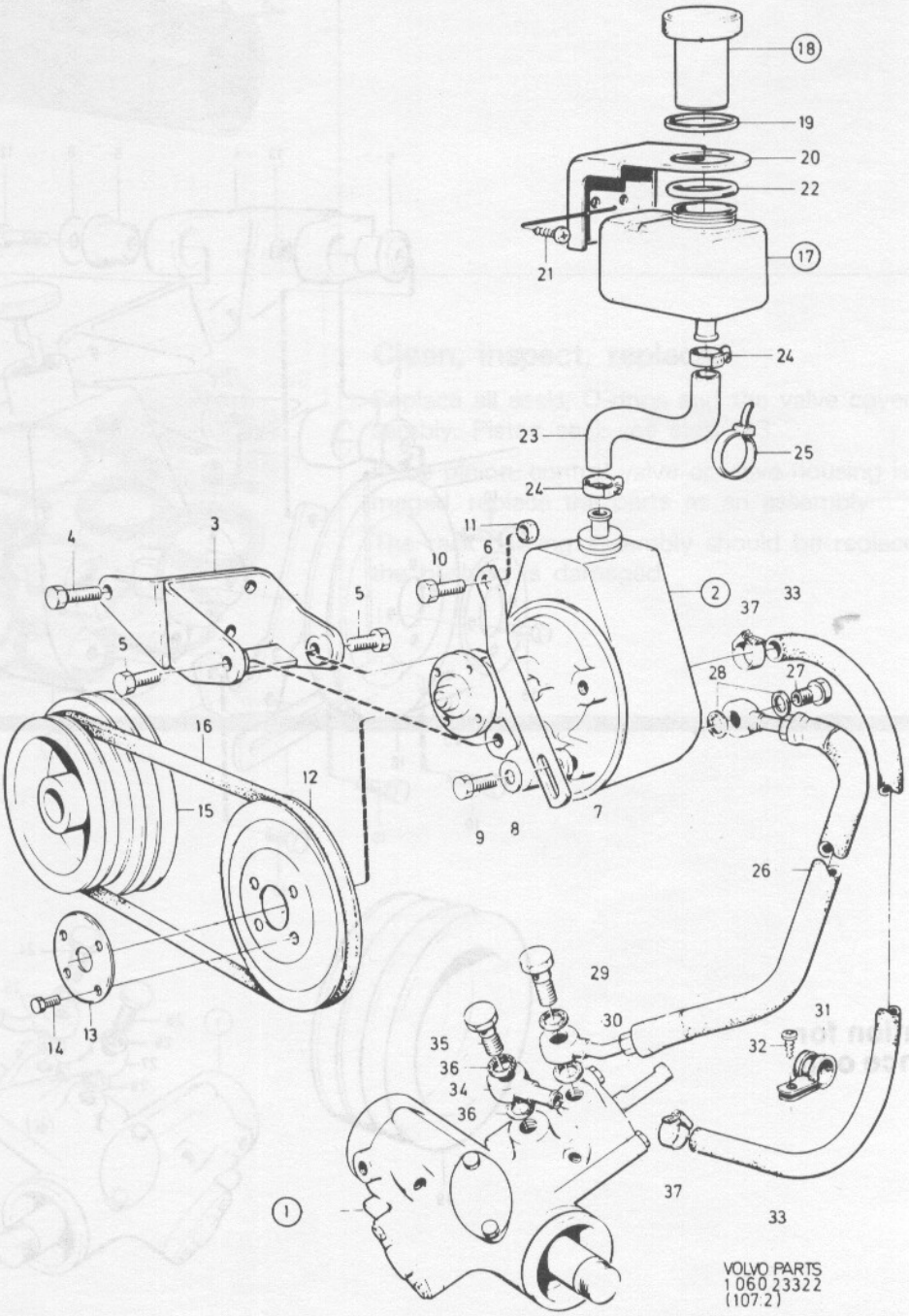


Illustration for reference only

Power steering gear type Cam Gear

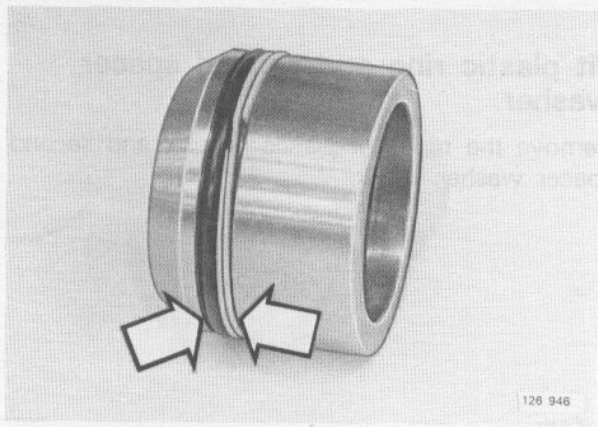
Assembly

Special tools:

1801 Standard handle
2520 Work stand
5046 Fixture
5049 Sleeve
5052 Drift
5053 Sleeve
5054 Cover
5056 Sleeve
5175, 5176 Nipples
5182 Guide
9177 Torque gauge

Lubricant:

"Lubricant for steering gear' Volvo P/N 1161001-1.

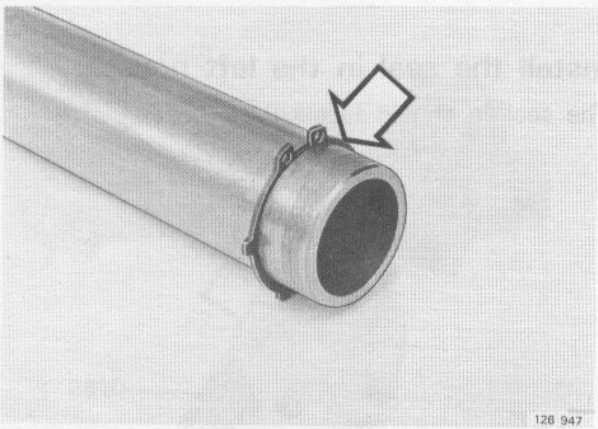


J1

Oil all parts prior to assembly.

J2

Install the plastic ring and O-ring on the rack bearing.

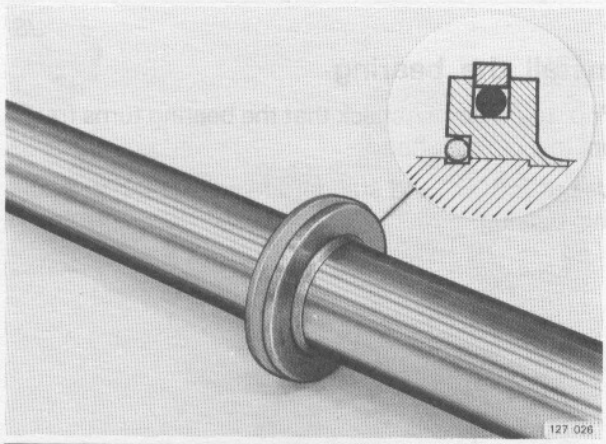


J3

Install the snap ring on the inner tube.

Be careful not to scratch the sealing surface with the snap ring.

Also check that the end of the tube has no sharp edges that could damage the O-ring when inserting the tube.



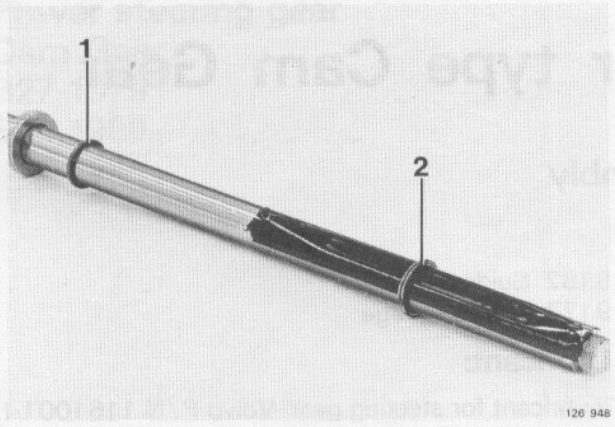
J4

Piston seal.

See step I 23.

First install the O-ring and then the plastic ring.

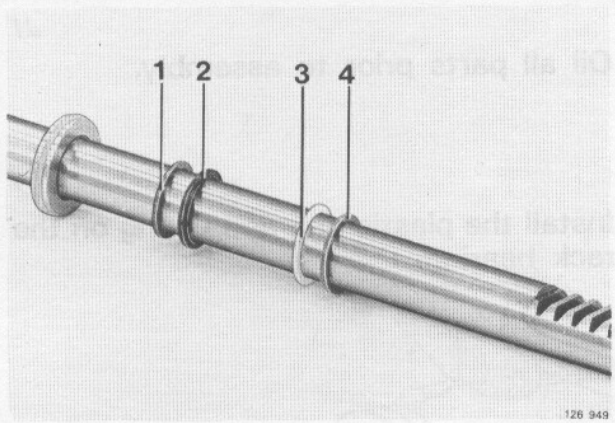
Use the fingers to install the plastic ring. If difficult, heat the ring to 40–50°C = 100–120°F.



J5

Fit spacer and oil seal.

First fit the spacer washer (1) from the rack toothed side. Then cover the rack teeth with tape and fit the oil seal (2).



J6

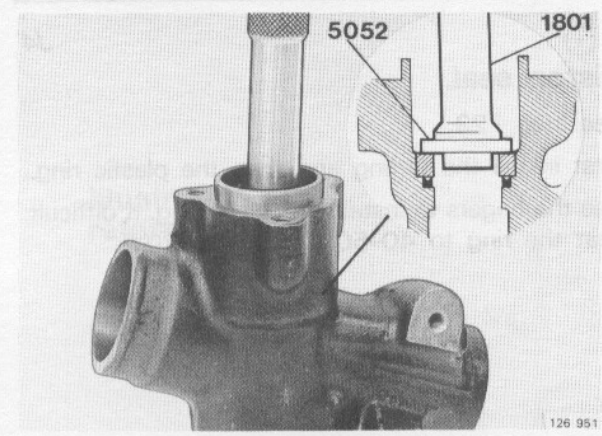
Fit plastic ring and second spacer washer.

Remove the tape. Fit plastic ring (3) and second spacer washer (4).

J7

Install the seal in the left housing.

The seal lip should face UP.

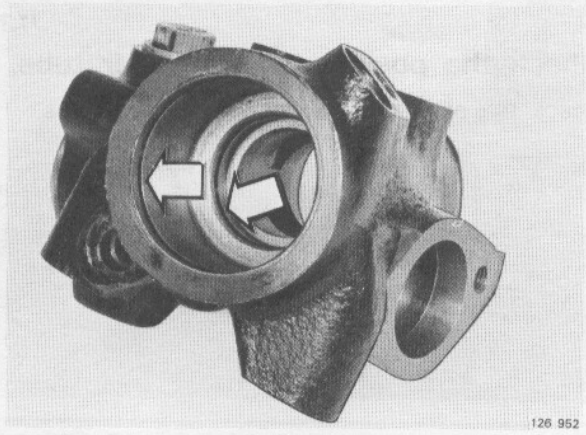


J8

Install the bearing.

Prior to assembly, check that the bearing turns freely on the pinion shaft.

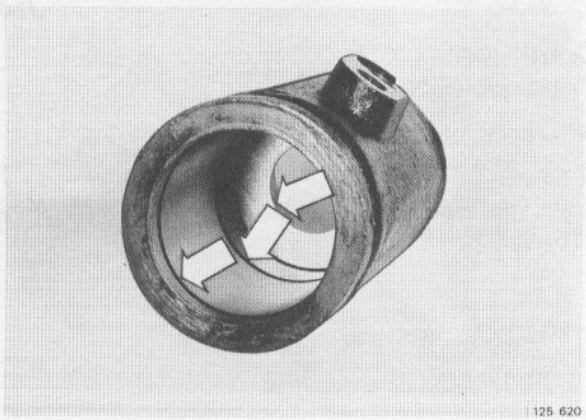
Use drift 5052 and standard handle 1801 to install the bearing.


126 952

J9

Install two O-rings in left side housing.

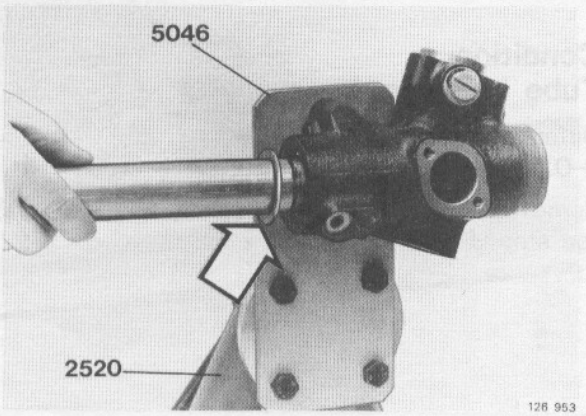
Make sure O-rings protrude above the groove. If not housing must be replaced.


125 620

J10

Install spacer washer and two O-rings in right side housing.

See note above.



126 953

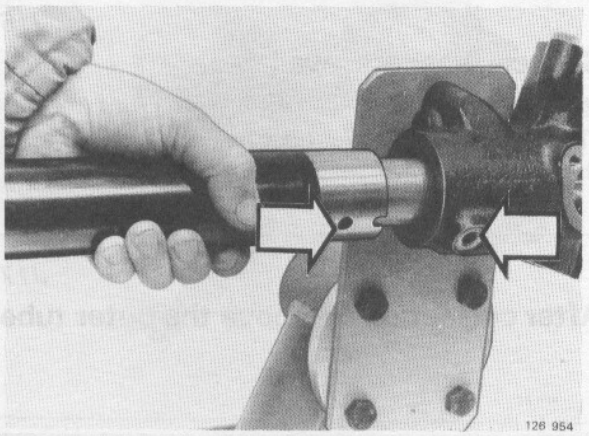
J11

Install the left side housing on the stand.

Use work stand 2520 and fixture 5046.

Install inner tube and spacer washer.

Lubricate the end of the inner tube so that it enters easily and install with spacer washer.

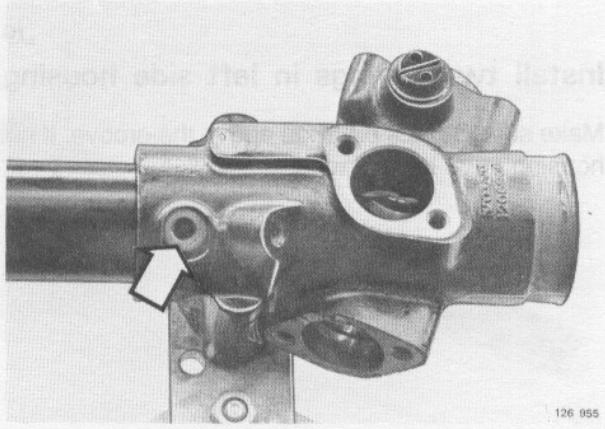

126 954

J12

Install outer tube.

Make sure the tube and the holes have well rounded edges so they do not damage the O-ring.

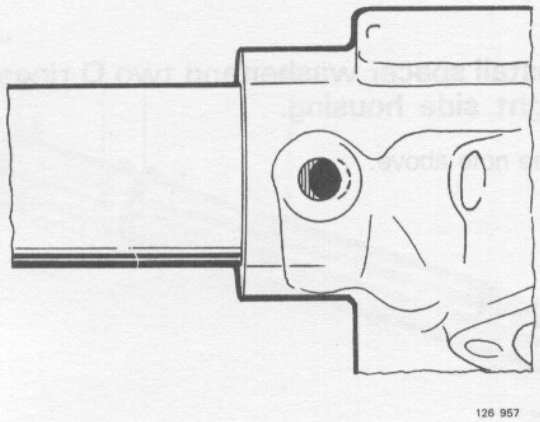
Align the tube so that the screw holes correspond.



J13

Check the position of the outer tube.

Check the alignment of the lock screw holes.

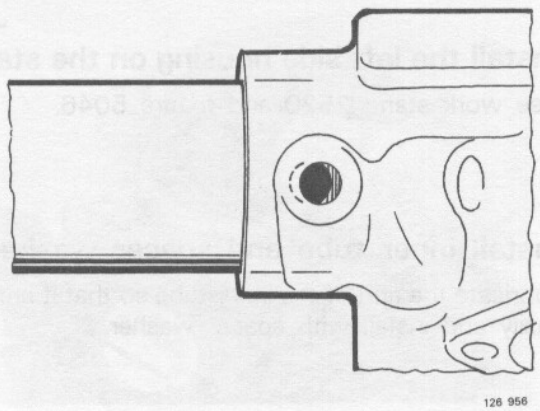


J14

Condition:
Tube hole too far in.

Difference permitted:
0–0.5 mm = 0–0.02".

Remove the tube and add spacer washers, see step J16.



J15

Condition:
Tube hole too far out.

Difference permitted:
0–0.5 mm = 0–0.02".

Remove the tube and try thinner spacer washers, see step J16.

P/N	Thickness
1206978	1.5 mm = 0.06"
84218	0.35 mm = 0.014"
84219	0.10 mm = 0.004"

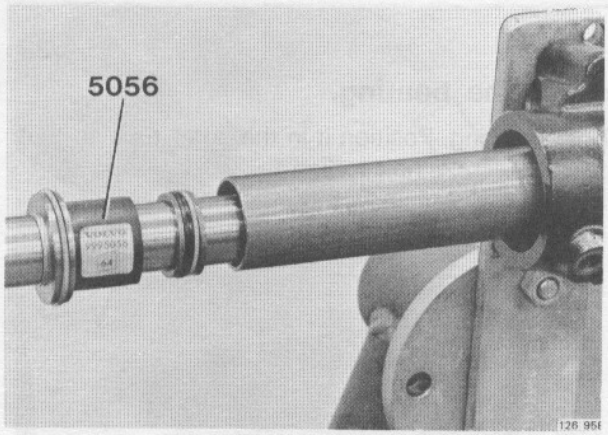
J16

Spacer washers available.

Note:
These spacer washers must be installed between the snap ring and the existing spacer washer.

J17

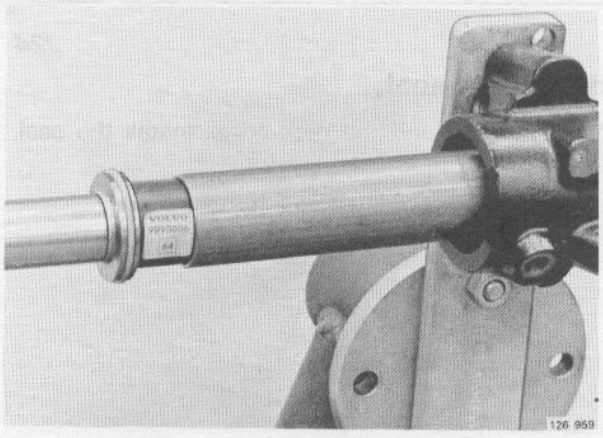
After corrections; remove the outer tube.



J18

Install rack.

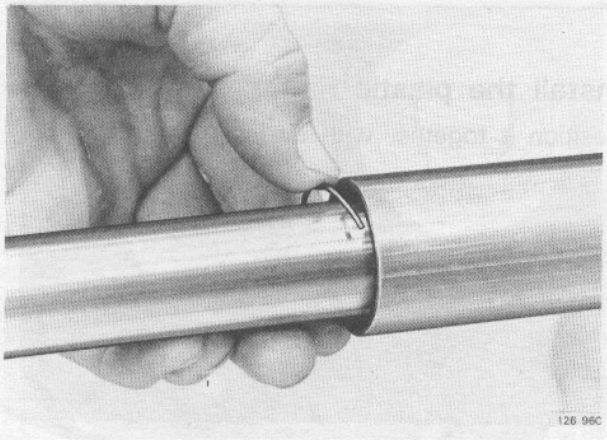
Install the rack with seals and spacers in the inner tube. Position sleeve 5056.



J19

Position seals and spacers.

Use the rack and sleeve 5056 to press in the sleeves and the spacers in the inner tube.



J20

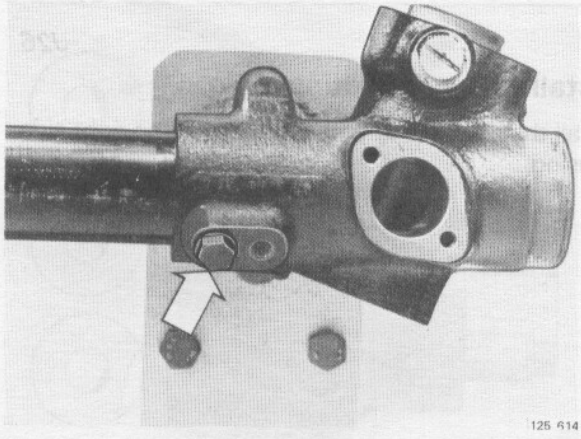
Remove the sleeve.

Pull out the rack a maximum of 100 mm = 4", no more as the rack teeth will damage the seal if pulled out too far.

Let the rack remain in this position.

J21

Install the snap ring for the seal.

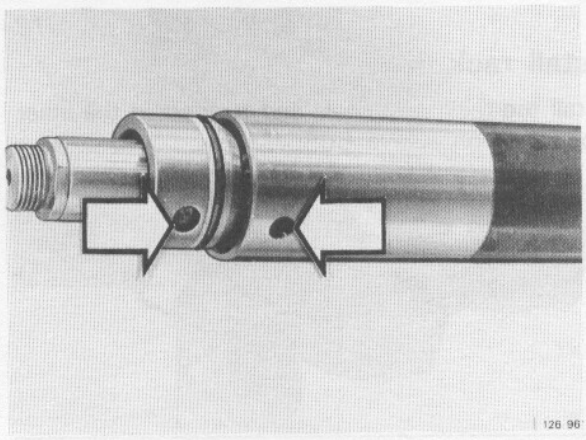


J22

Install the outer tube.

Use the stop screw with the special sealing washer.

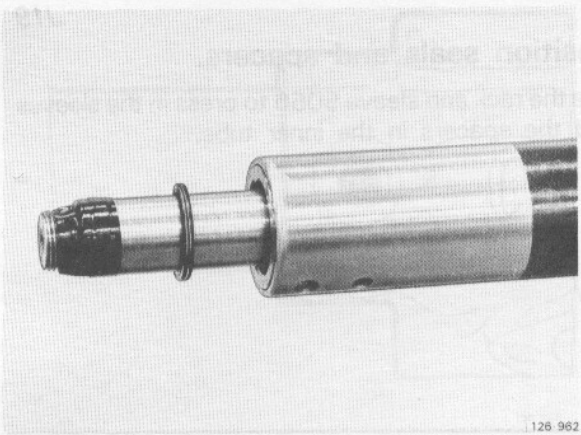
Torque: 19±2 Nm = 14±1.5 ft.lbs.



J23

Install the bearing.

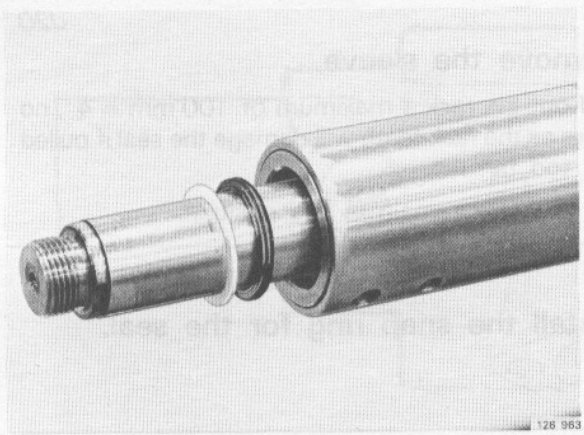
Oil the bearing. Position it in the outer tube so that the stop screw holes align



J24

Install the seal.

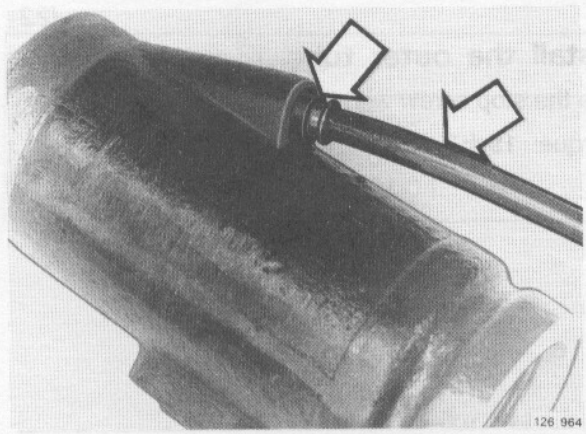
Wrap tape around the rack edge. Install the seal. Remove the tape.



J25

Install the plastic ring.

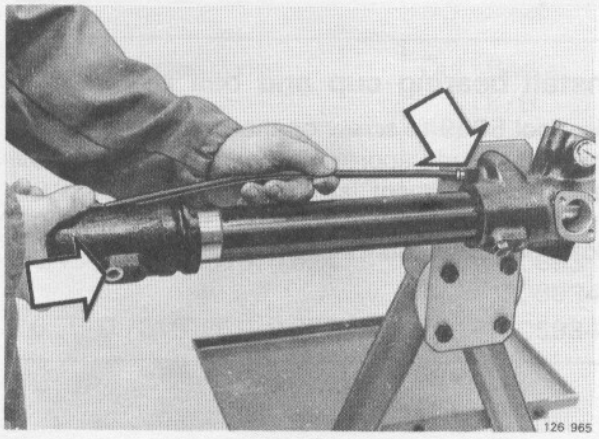
Position it together with the seal in the bearing.



J26

Install the connecting pipe.

Install the connecting pipe with seal in the right side housing.

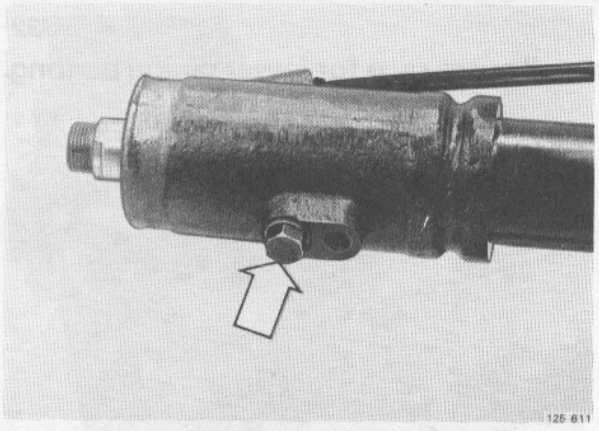


J27

Install right side housing.

Insert right side housing, with connecting pipe and rubber seal. Align hole in housing to correspond with hole for lock bolt.

Make sure edges of tube and stop screw hole are chamfered. Lubricate the end of the tube.



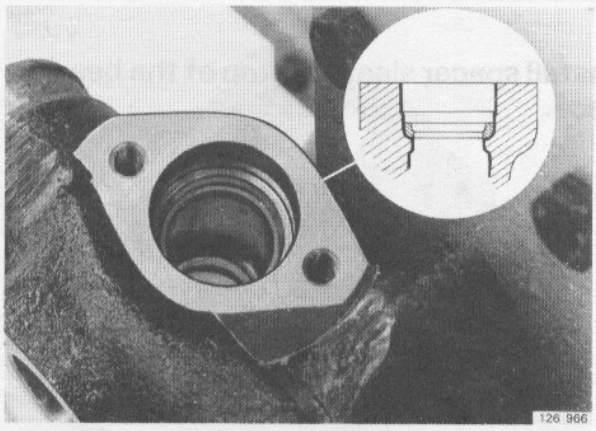
J28

Install the lock bolt.

Use an aluminum washer.

Torque: 19±2 Nm = 14±1.5 ft.lb.

Caution: do not overtighten as this will cause the rack to bind.



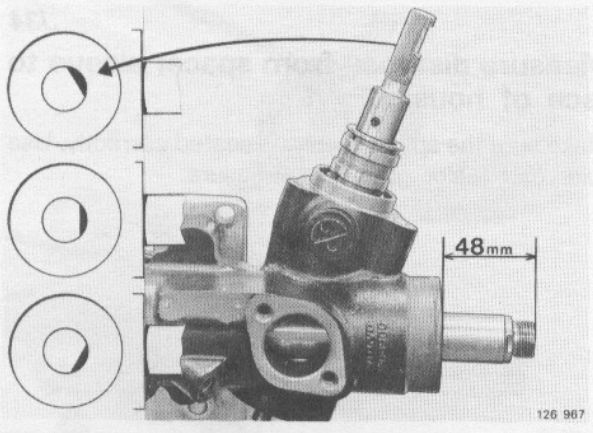
J29

Install outer race for pinion lower bearing.

Only if the bearing is replaced.

Lubricate pinion and rack.

Use grease 1161001-1.



J30

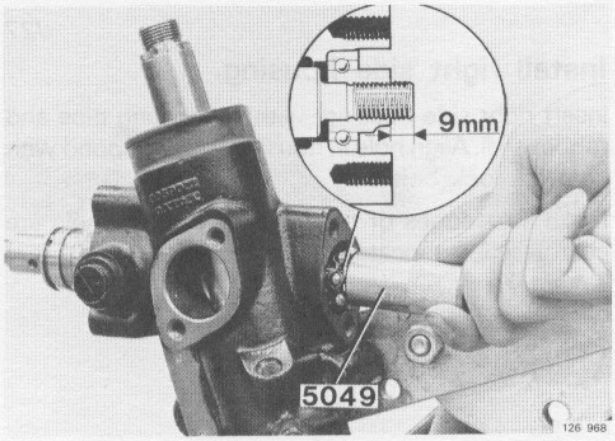
Install the pinion.

The rack should protrude 48 mm = 1.89" with the pinion in place. The pinion flat side should be toward the rack end.

Be careful when installing the pinion, not to damage the valve.

The flat portion for the lock bolt should be in one of the three positions shown.

Make sure rack and pinion engage properly.

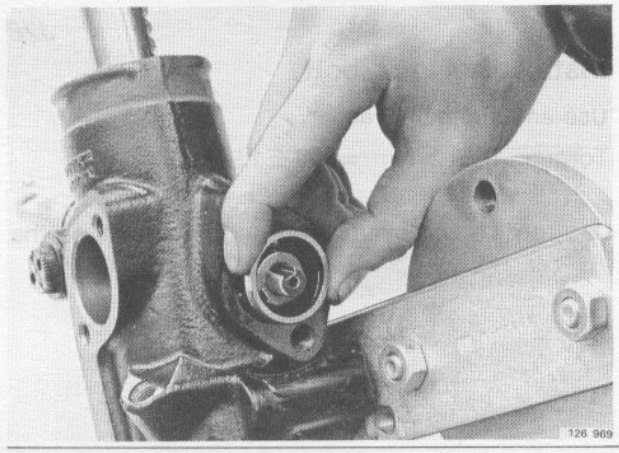


J31

Install bearing cup and ball retainer.

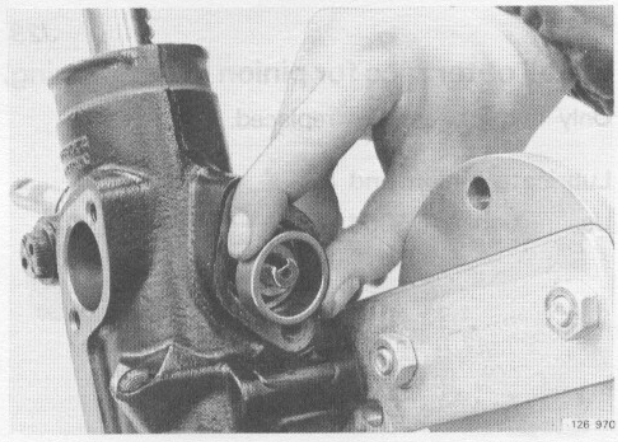
Use tool 5049 to screw on the cup. The shaft end should protrude approx. 9 mm = 23/64". It will facilitate adjustment later on.

Note: be sure to count the turns as per illustration I9.



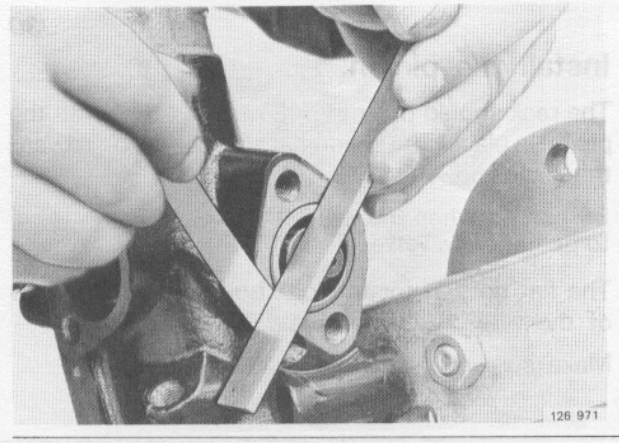
J32

Install outer race for lower pinion bearing.



J33

Install spacer sleeve on top of the bearing race.



J34

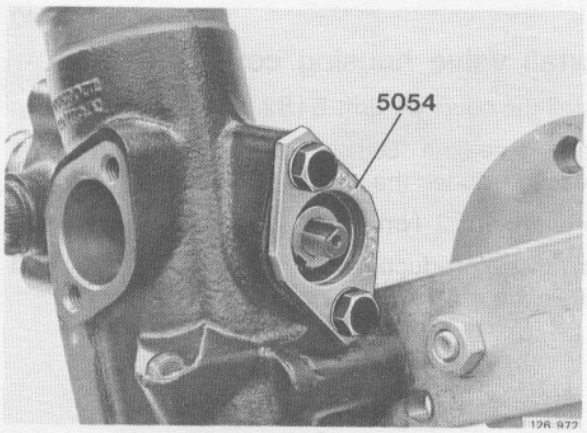
Measure distance from spacer sleeve to face of housing.

Make sure the spacer sleeve is seated correctly. Use ruler and feeler gauge to measure.

For feeler gauge mm	inch	Qty	Gasket P/N
0.20–0.25	0.008–0.010	1	1206931
0.25–0.35	0.010–0.014	1	1206934
0.35–0.45	0.014–0.018	2	1206931
0.45–0.60	0.018–0.024	1	1206931
		1	1206934
0.50–0.70	0.020–0.028	2	1206934

J35

Use chart to determine gasket of correct thickness.

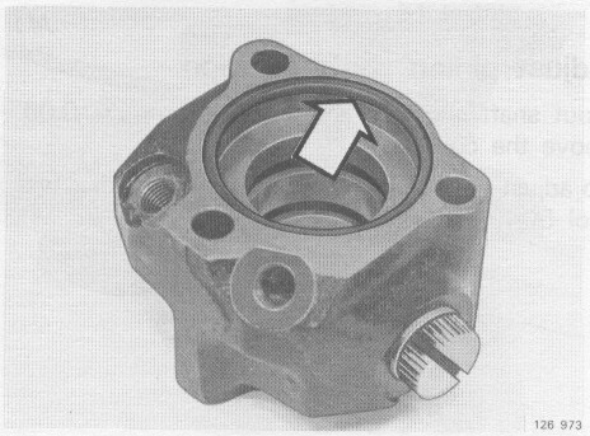


J36

Install gasket.

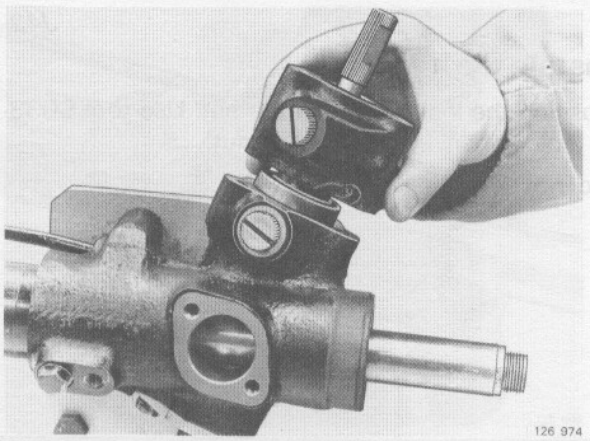
Then install tool 5054.

This tool will then remain in place until adjusting balance procedures are finalized (at op. K28).



J37

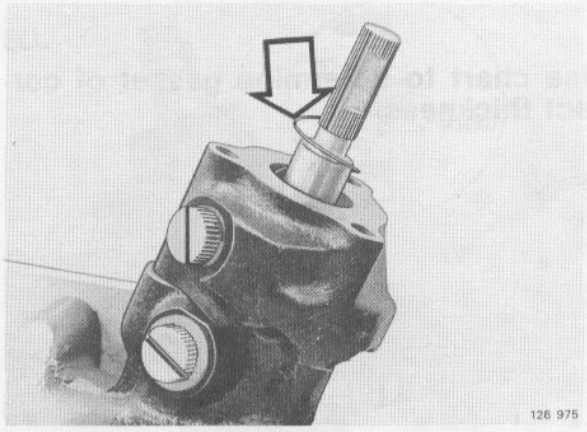
Install the O-ring.



J38

Install the valve housing.

Be careful, not to damage house or valve.



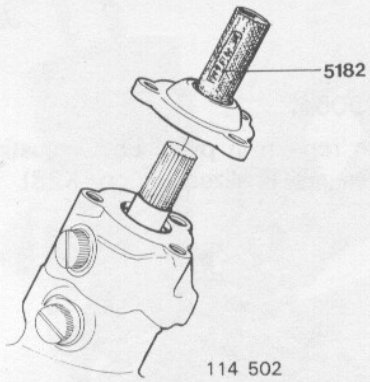
J39

Install coil spring.

Big end first in. Make sure the coil spring cannot get engaged in the uppermost groove of the valve housing.

In case this groove is visible, adjust the valve up by turning the lower bearing with tool 5049.

Note: spring tension is relative to rack noise.



J40

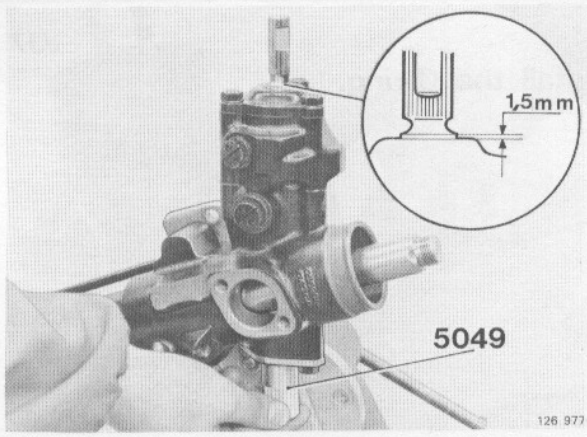
Install valve housing cover.

Install the cover on drift 5182. Install the assembly.

Make sure the coil spring does not become squeezed under the cover.

Torque: 19±2 Nm = 14±1.5 ft.lb.

Note: Late production steering gears are equipped with a dust shield.

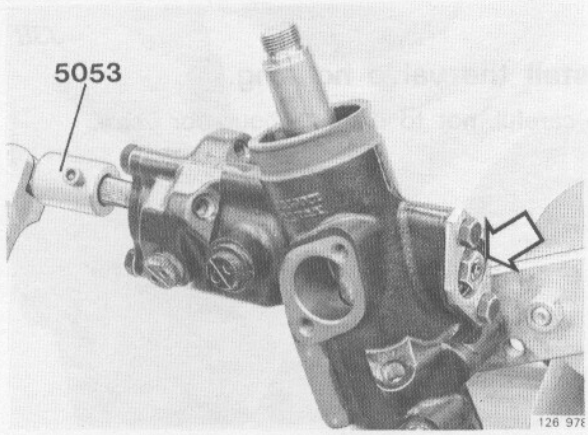


J41

Adjust pinion shaft position.

Input shaft shoulder should be 1.5 mm = 0.06" above the cover face.

To adjust the position, turn the lower bearing with tool 5049.

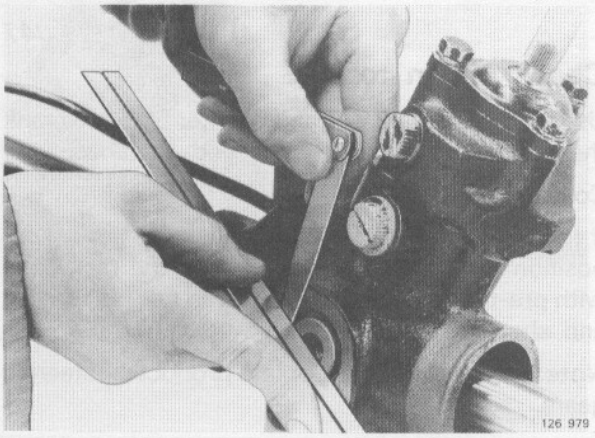


J42

Install shaft nut.

Position the lock plate and the nut. Use tool 5033 to hold when tightening the nut.

Do not lock the lock plate.

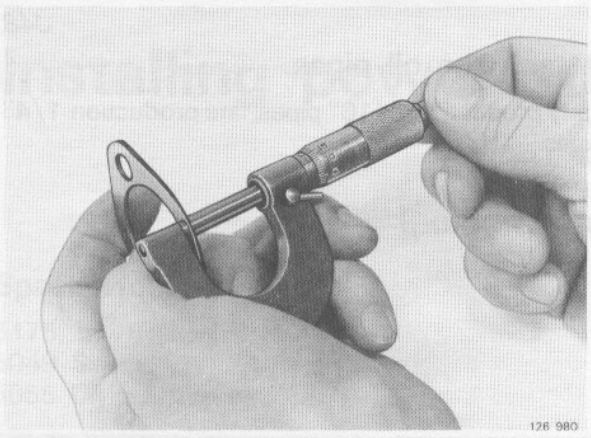


J43

Measure clearance.

Place the pre-tensioning piston, without O-ring, in the housing. Measure clearance between piston and housing.

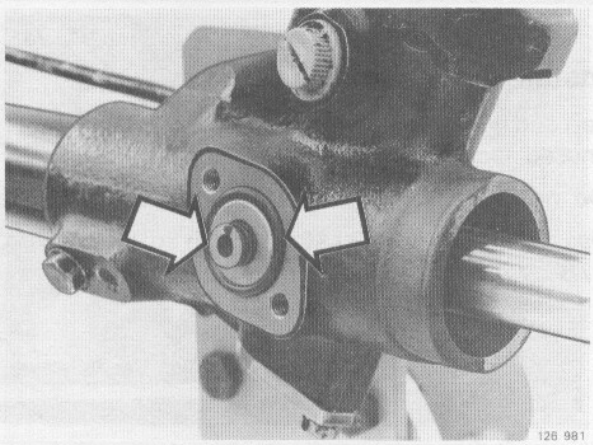
Use ruler and feeler gauge. Press the piston against the rack. Push the rack in and out to determine maximum clearance.



J44

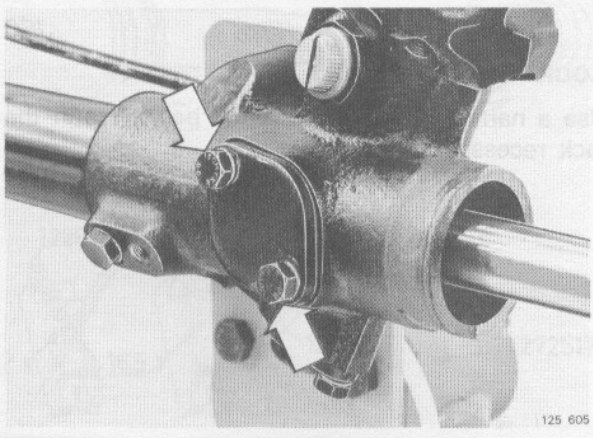
Measure shims.

The shims chosen should equal the clearance measured plus 0.05–0.15 mm = 0.002"–0.006" to obtain a correct play.



J45

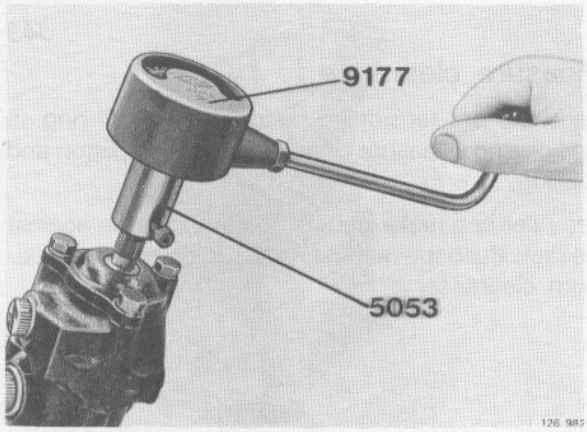
Install spring and O-ring.



J46

Install shims and cover.

Torque: 19±2 Nm = 14±1.5 ft.lb.



J47

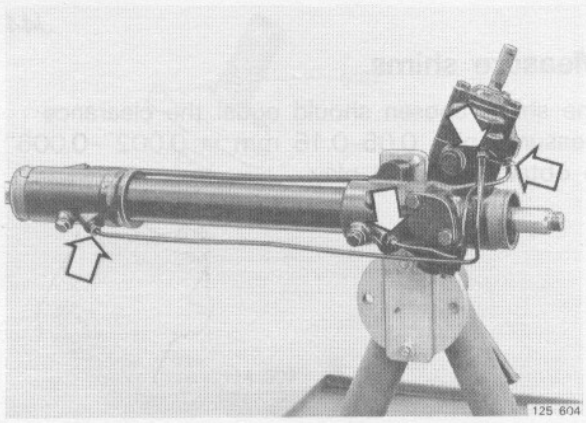
Check pinion torque.

Use torque gauge 9177 and adapter 5053 to crank the rack in and out between end positions.

Correct torque: 0.9–1.7 Nm = 8–15 in.lbs.

If torque in any place is excessive, stop rack in that position and readjust pretension. If the rack jams with pre-tensioning piston removed, rack is warped and should be replaced.

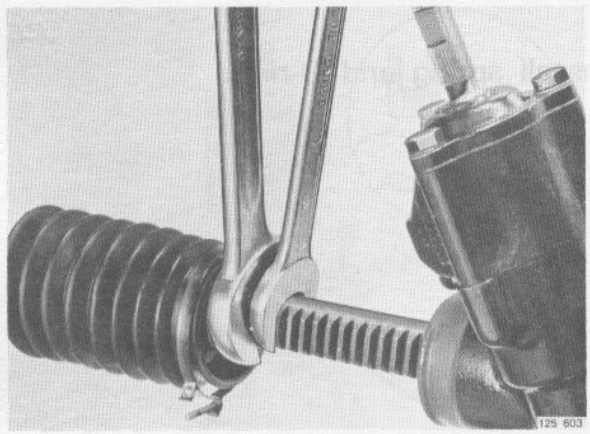
Note: use socket 5179 for late production steering gears.



J48

Attach the oil pipes.

Early production 3/16" pipes, late production 1/4" pipes.



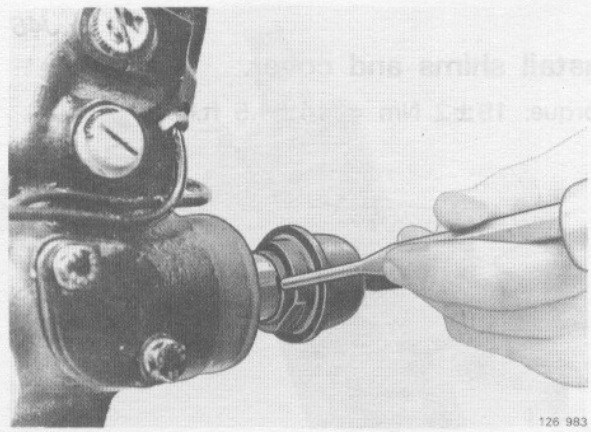
J49

Install the tie rods.

Left and right side tie rods can be swapped to obtain unused lock portion

Do not use a tie rod with broken lock.

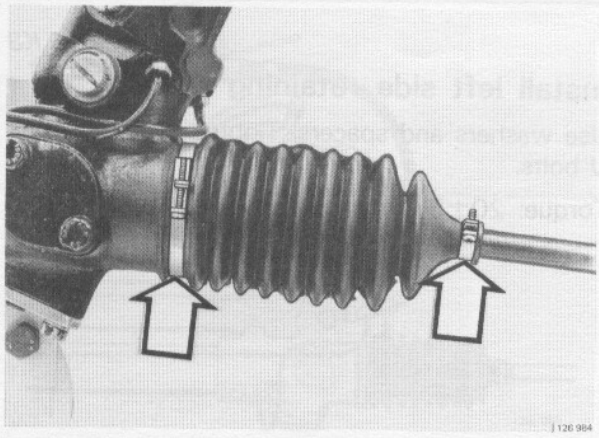
Use a 30 mm = 1–3/16" wrench to turn. Use a 7/8" wrench to hold on the outermost tooth.



J50

Lock the tie rods.

Use a narrow punch to lock the ball joints in the rack recesses.



J51

Install the rubber bellows and tighten the clamps.

J52

Adjusting valve and filling oil and "fluid grease" is made after the steering gear is installed.

Also see operation K31.

Installing power steering gear type Cam Gear

Including adjusting balance

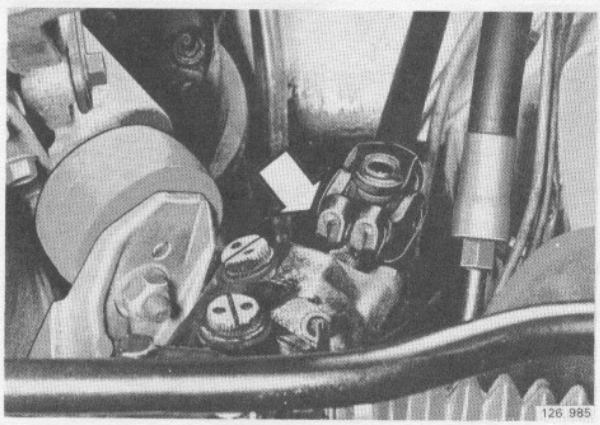
Special tools

5175, 5176 Nipples
5049 Sleeve
5055 Oil pressure gauge

Lubricants:

"Lubricant for steering gear"
Volvo P/N 1161001-1

Automatic Transmission fluid (ATF)



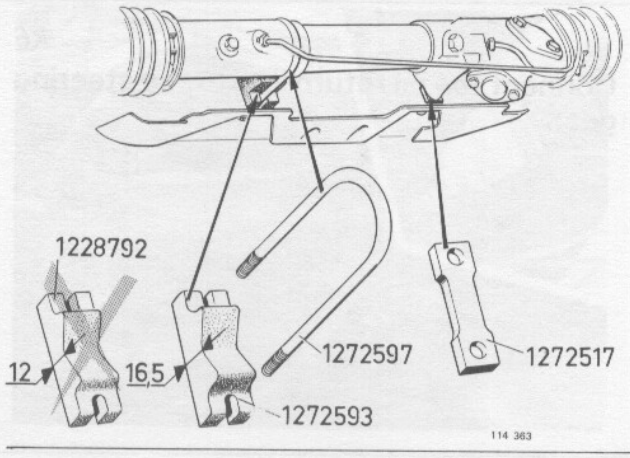
K1

Installing the steering gear.

Position the steering gear while attaching the pinion shaft to the steering shaft. Make sure the pinion shaft recess becomes correctly aligned for the lock bolt.

Note: the dowel pins must be removed if a new steering gear is installed in an older vehicle without dowel pin holes.

To adjust steering shaft, see operations A25–A34.

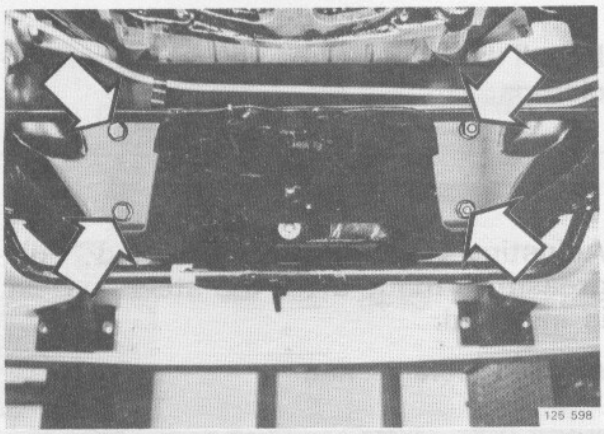


K2

Install right side U-bolt and spacer.

Do not tighten the nuts fully.

Note: spacer block, spacers and U-bolt must be used for late production installations.

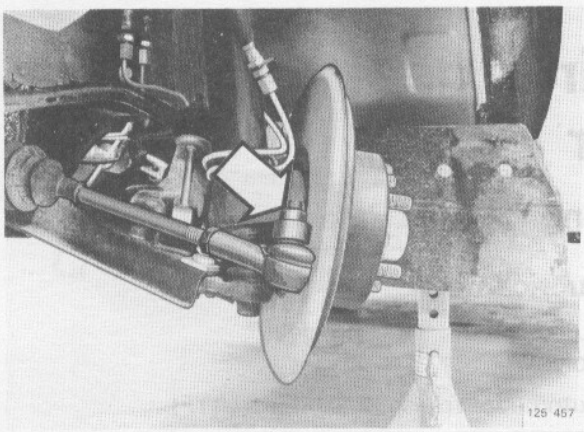


K3

Install left side retaining screws.

Use washers and spacers. Tighten all screws and U-bolts.

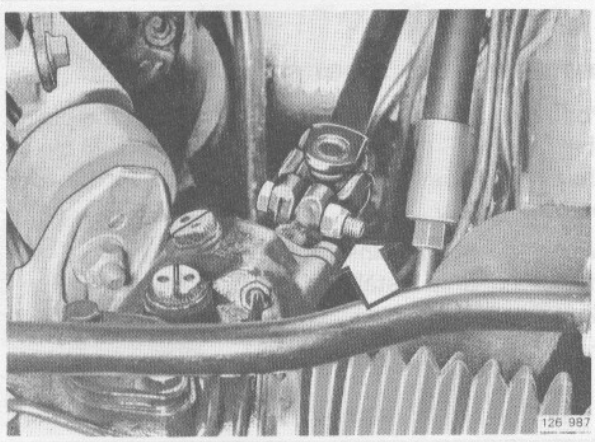
Torque: 20±5 Nm = 14±4 ft.lbs.



K4

Attach the tie rods to the steering arms.

Torque: 60±10 Nm = 44±7 ft.lbs.

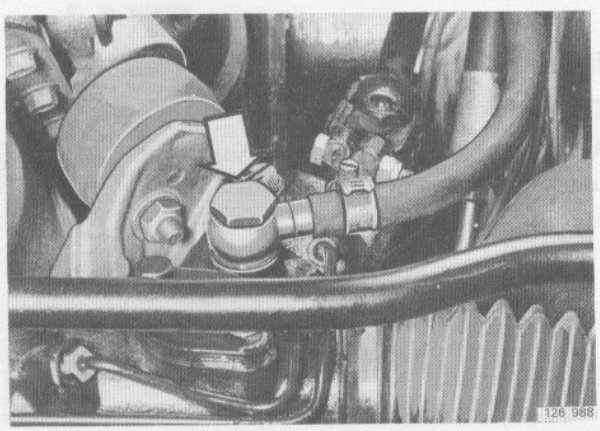


K5

Connect the steering shaft.

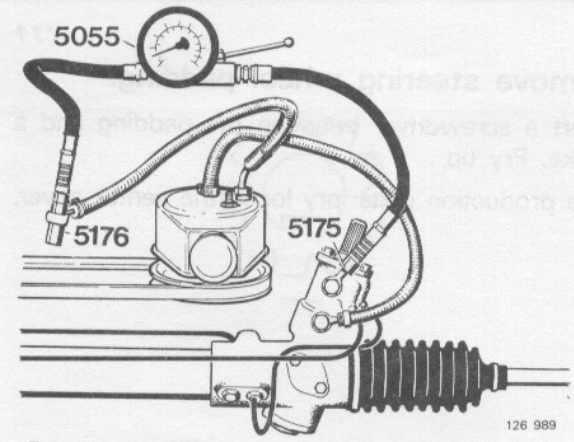
Install the lock bolt. Check that no tension remains in the steering shaft joints. Tighten the nut.

Torque: 25±5 Nm = 18±4 ft.lbs.



K6

Connect the oil return line to the steering gear.



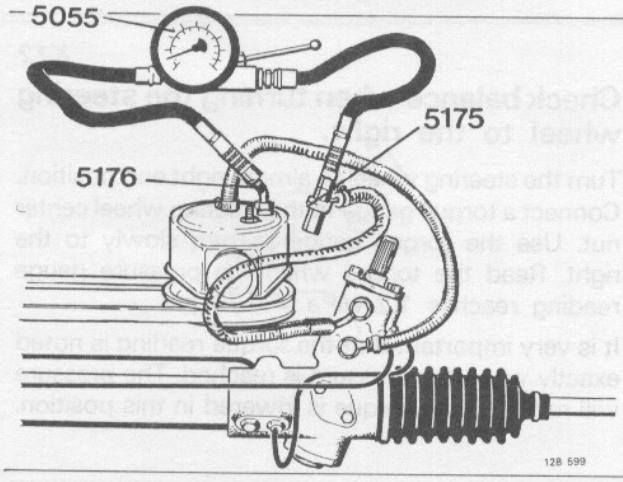
K7

Connect test instrument.

Use nipples 5175 and 5176 to connect test instrument 5055.

The hose from the instrument valve should be connected to the steering gear.

Nipples 5175 and 5176 are used instead of previous nipples 2865 and 2990.

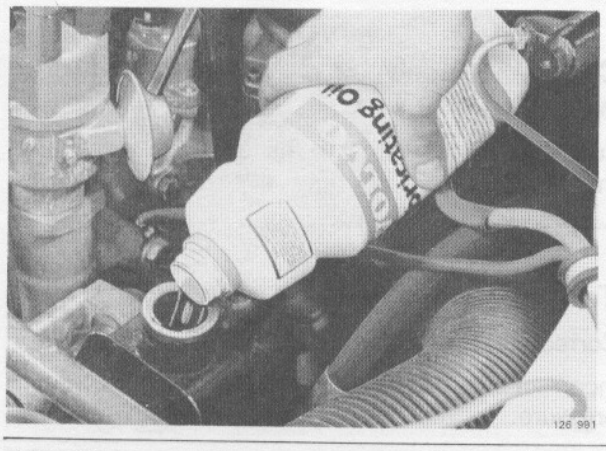


6-cyl. Models:
Connect test instrument 5055 between the power pump and the oil pressure hose.

K8

Position the pressure gauge in front of the windshield.

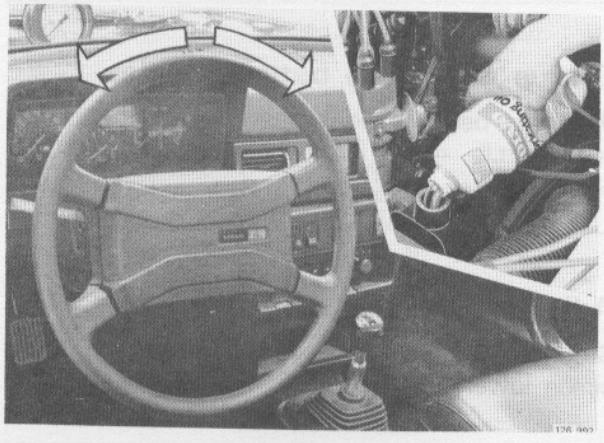
Turn the dial so that it can be easily read from the driver's seat.



K9

Fill oil in power steering oil container.

Fill ATF oil, start engine and idle. Fill until level has stabilized at correct level.

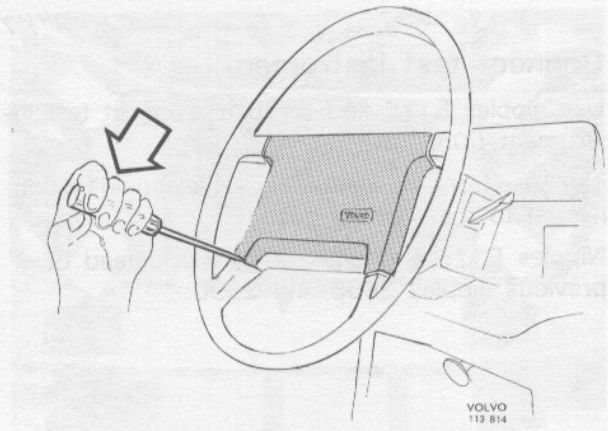


K10

Turn steering wheel slowly to right side and left side end positions.

Turn several times with slow motion to let the pump work with low pressure. Fill oil as necessary. Stop turning wheel when oil in container is almost free from bubbles.

Install the container cover.

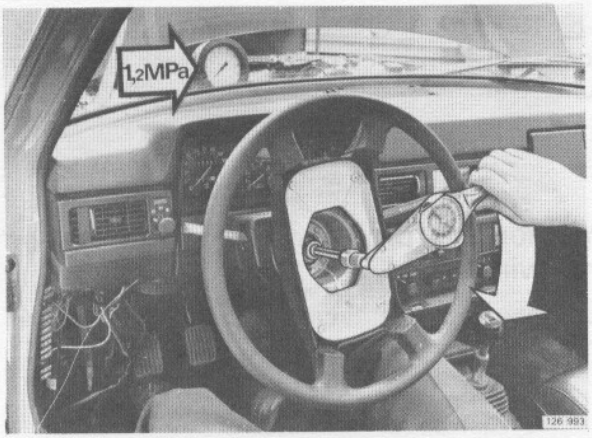


K11

Remove steering wheel padding.

Insert a screwdriver between the padding and a spoke. Pry up.

Late production units: pry loose the center cover.



K12

Check balance when turning the steering wheel to the right.

Turn the steering wheel to almost right end position. Connect a torque gauge to the steering wheel center nut. Use the torque gauge to turn slowly to the right. Read the torque when the pressure gauge reading reaches 1.2 MPa = 170 psi.

It is very important that the torque reading is noted exactly when the pressure is reached. The pressure will remain if the torque is lowered in this position.

K13

Check balance when turning the steering wheel to the left.

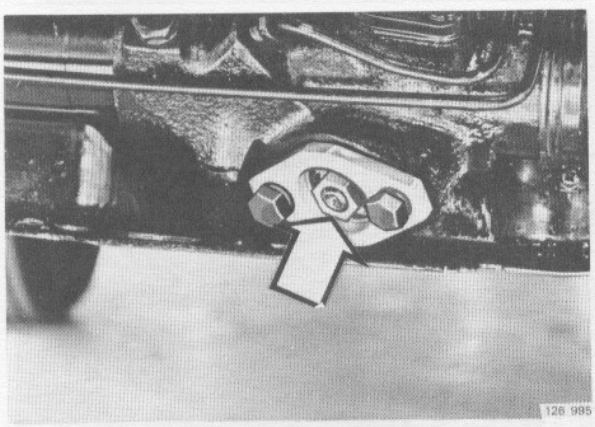
Turn the steering wheel to the left. Read the torque the same way as for right side.

K14

Torque reading.

Correct reading: 3.5–5.0 Nm = 30–40 in.lbs.

Incorrect reading may indicate incorrect pump pressure.



K15

Torque difference between sides.

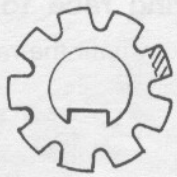
Difference between sides must not exceed 1.0 Nm = 0.73 ft.lb. = 8.8 in.lb.

If difference is excessive, balance must be adjusted.

K16

Adjusting balance.

Stop the engine. Remove nut and lock washer from pinion lower bearing.


126 996

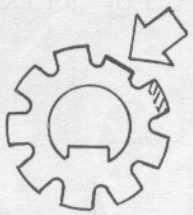
K17

Adjusting balance.

Turn the lower pinion bearing race.

Lock washer in original position provides 9 full adjustment steps, each giving a pressure difference of 1 Nm = 8.8 in.lbs.

Lock washer in reversed position gives 9 additional intermediate steps. The first one giving a pressure difference of 0.5 Nm = 4.4 in.lbs.

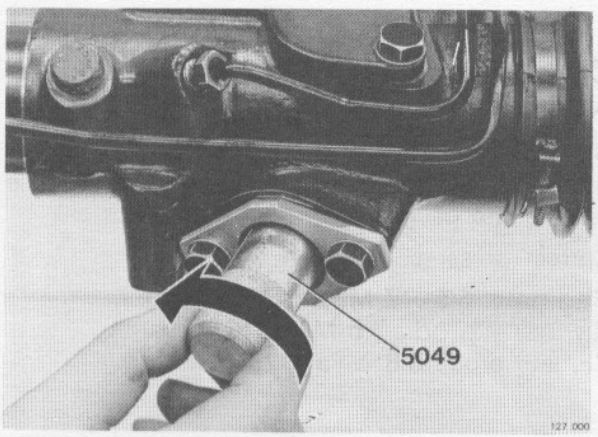

126 997

K18

Lower pressure reading when turning right.

Example: pressure difference is 1 Nm.

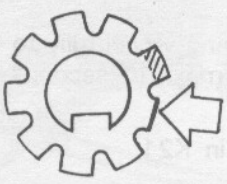
Unfold the lock washer tab. Bend in the next tab, to the left of the unfolded tab.



127 000

Turn the bearing race to the left.

Use tool 5049. Turn until the race recess fits the lock tab.

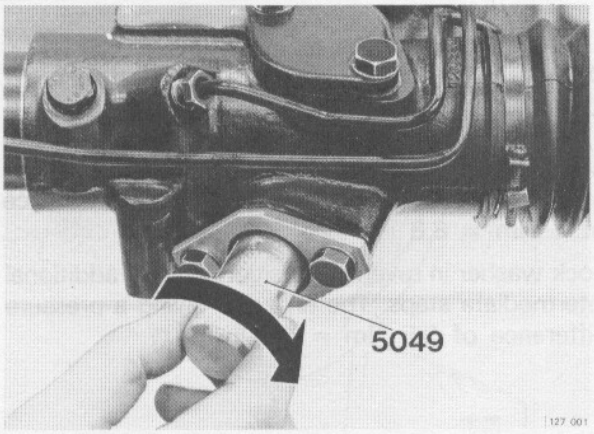

126 999

K19

Lower pressure reading when turning left.

Example: pressure difference is 1 Nm.

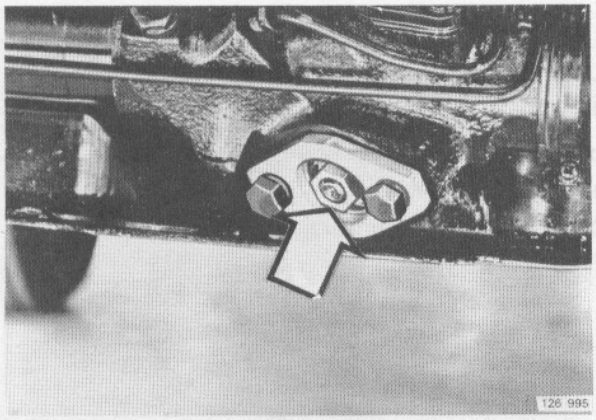
Unfold the lock washer tab. Bend in the next tab, to the right of the unfolded tab.



K19
(cont)

Turn the bearing race to the right.

Use tool 5049. Turn until the race recess fits the lock tab.



K20

Install lock washer and nut.

Tighten the nut but do not lock the washer.

K21

Check pump pressure at left side end position.

Start the engine. Turn the steering wheel fully to the left. Press to left end for max. 10 seconds while reading the gauge.

Correct pressure:

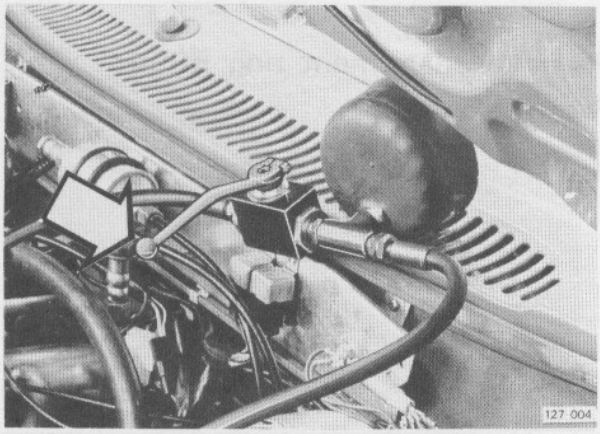
Saginaw: 5.5—7 MPa (780-1000 psi)
ZF, early prod.: 7.5 MPa (1005 psi).
ZF, late prod.: 5.8 MPa (825 psi).

K22

Check pump pressure at right side end position.

Turn the steering wheel fully to the right. Press to right end for max. 10 seconds while reading the gauge.

Pressures as in K21.



K23

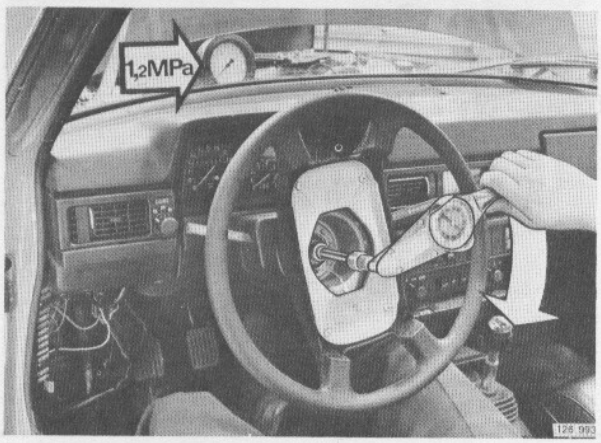
Incorrect pump pressure:

Check pump capacity.
Shut the gauge valve for max. 10 seconds. Pump pressure should reach correct reading, otherwise the pump is defective.

K24

After adjustments:

Recheck balance.



K25

Recheck of balance when turning the steering wheel to the right.

Turn the steering wheel to almost right end position. Connect a torque gauge to the steering wheel center nut. Use the torque gauge to turn slowly to the right. Read the torque when the pressure gauge reading reaches 1.2 MPa = 170 psi.

It is very important that the torque reading is noted exactly when the pressure is reached. The pressure will remain if the torque is lowered in this position.

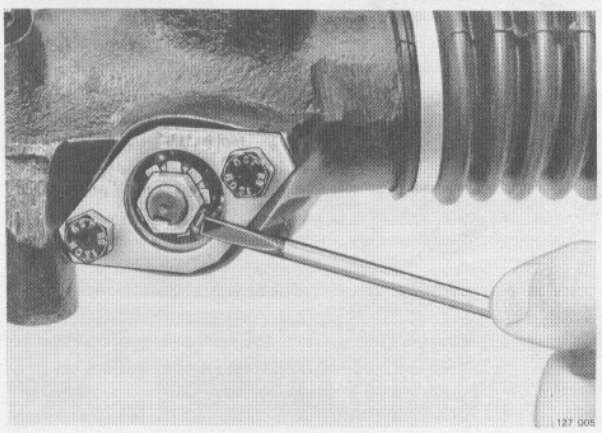
K26

Recheck of balance when turning the steering wheel to the left.

Turn the steering wheel to the left. Read the torque the same way as for right side.

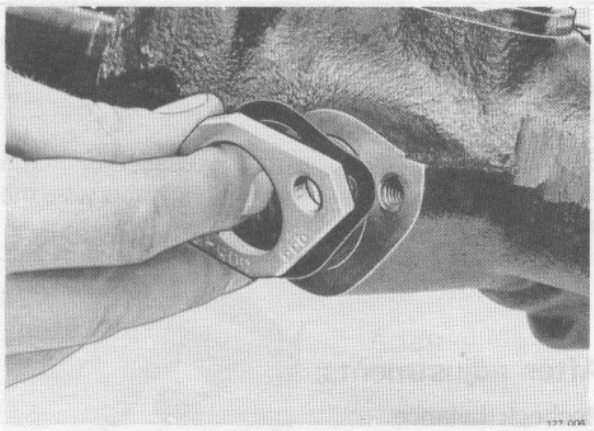
Correct reading: 3.5–5.0 Nm = 30–40 in.lbs.

Difference between sides must not exceed 1.0 Nm = 8.8 in.lbs.



K27

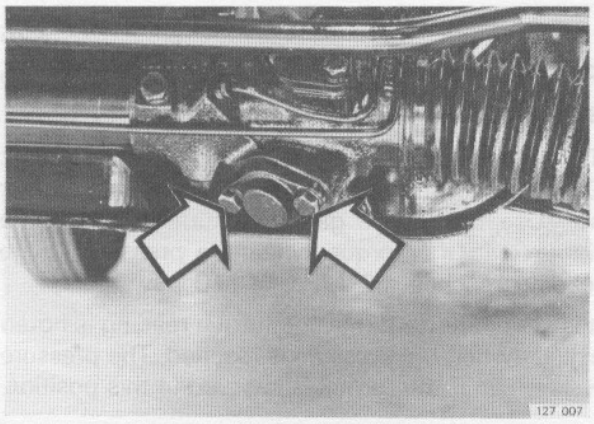
Stop engine. Lock the nut.



K28

Remove adjustment ring 5054.

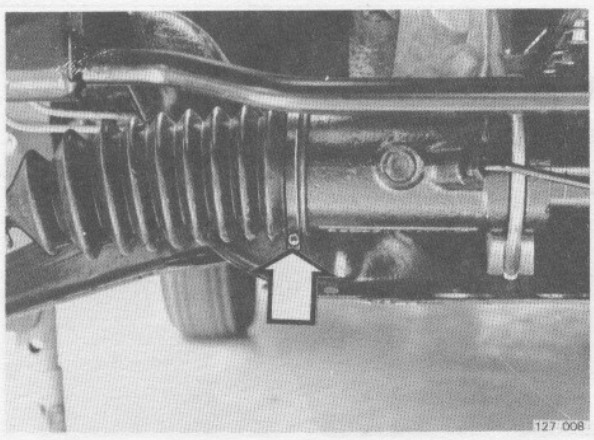
Recover the gasket.



K29

Install pinion cover and cover gasket.

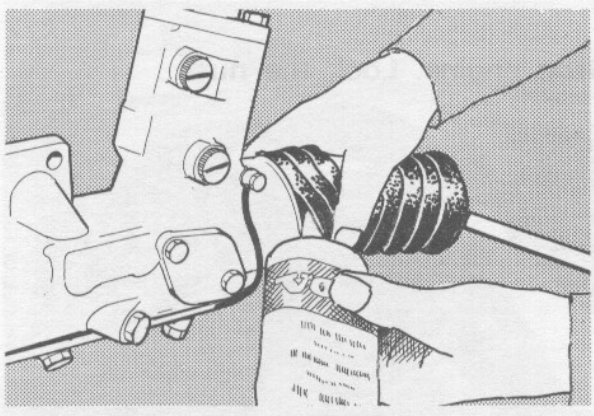
Torque: 19±2 Nm = 14±1.5 ft.lb.



K30

Filling lubricant:

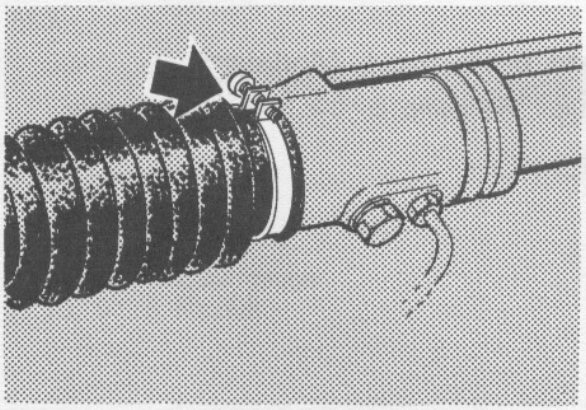
Remove inner clamps from rubber bellows.



K31

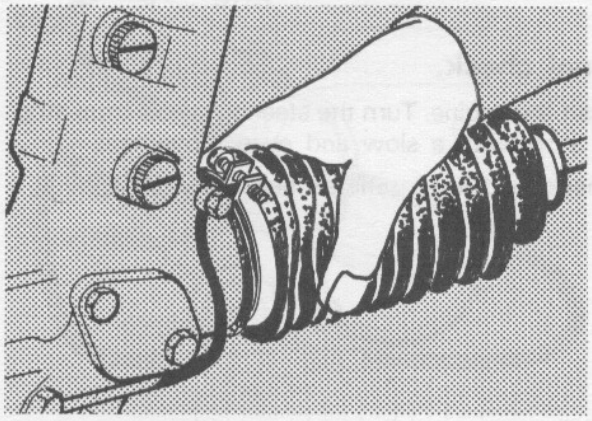
Inject "fluid grease"

Inject approx. 1/4 of the tube content in each rubber bellow.



K32

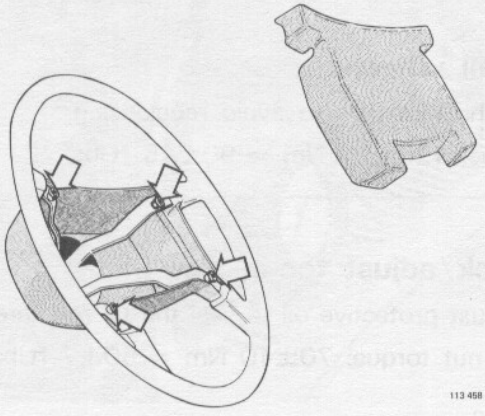
Install the clamps.



K33

Lubricate rack.

Squeeze the rubber bellows to lubricate the rack.

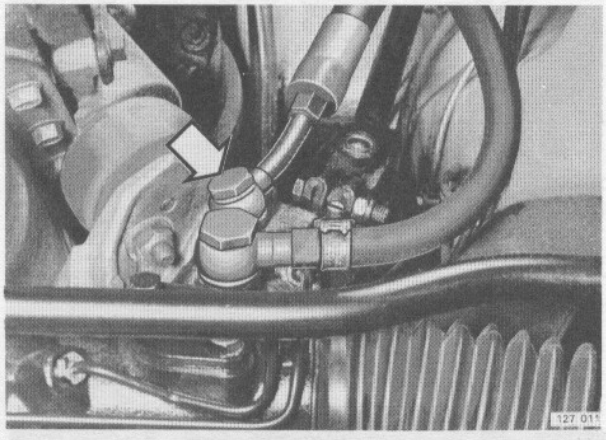


K34

Reinstall the steering wheel padding.

Use vaseline to lubricate the pins. Press padding into position.

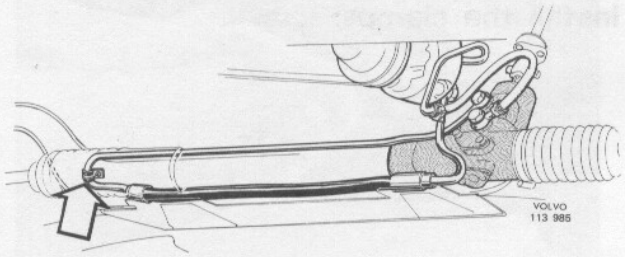
Late prod. models: install center.



K35

Remove the test instrument.

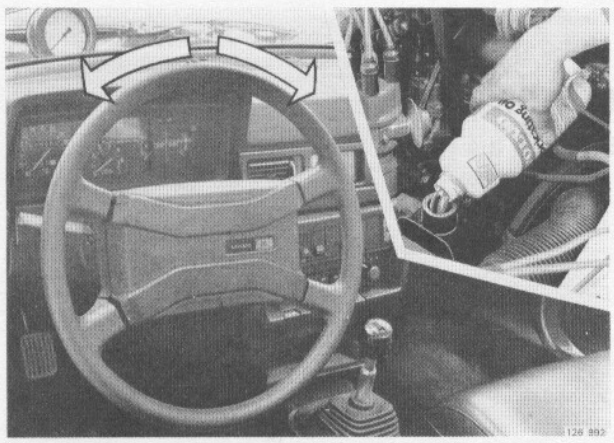
Reconnect the pressure hose at the steering gear.



K36

Late prod. 6-cyl. Models:

Attach the clamp on the front axle member.

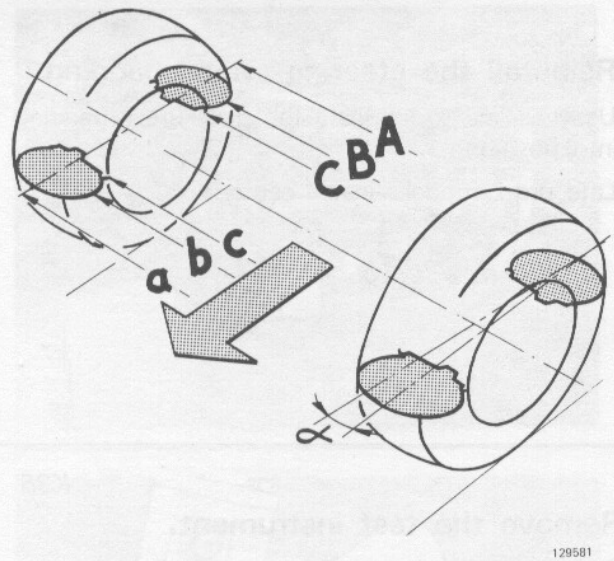


K37

Final check.

Start the engine. Turn the steering wheel from stop to stop, with a slow and even movement.

Check fluid level, refill as necessary. (ATF).



K38

Install wheels.

Use the markings to avoid rebalancing.

Torque: 120±20 Nm = 90±15 ft.lbs.

K39

Check/adjust toe-in.

Use rust protective oil to seal the tie rod threads.

Lock nut torque: 70±10 Nm = 50±7 ft.lbs.

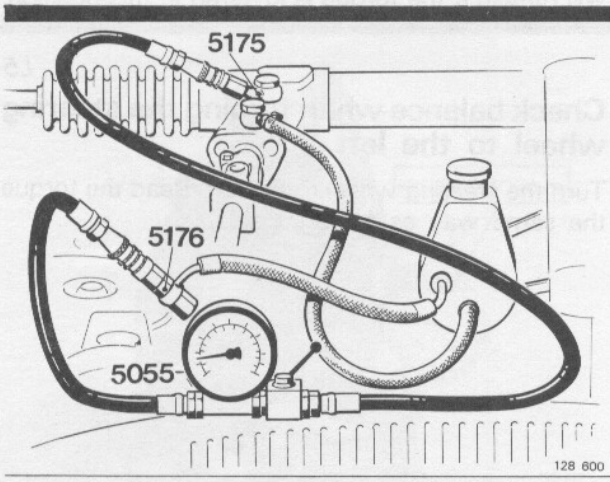
	angle 2 *a*	A-a	B-b	C-c
Manual steering	24'±8'	4.5±1.5 mm 3/16"±1/16"	3.5±1 mm 9/64"±1/32"	2.5±1 mm 3/32"±1/32
Power steering	16'+8'	3.0±1.5 mm 1/8"±1/16"	2.0±1 mm 5/64"±1/32"	1.5±1 mm 1/16"±1/32"

Power steering gear type ZF

Checking balance

Special tools:

5055 Oil pressure gauge
5175, 5176 Nipples



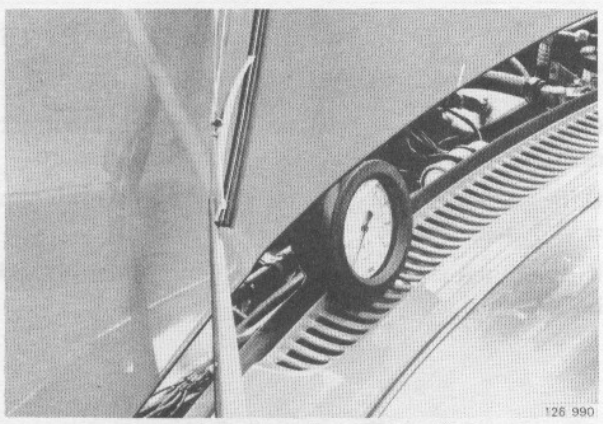
L1

Connect the test instrument.

Use nipples 5175 and 5176 to connect test instrument 5055.

The hose from the instrument valve should be connected to the steering gear.

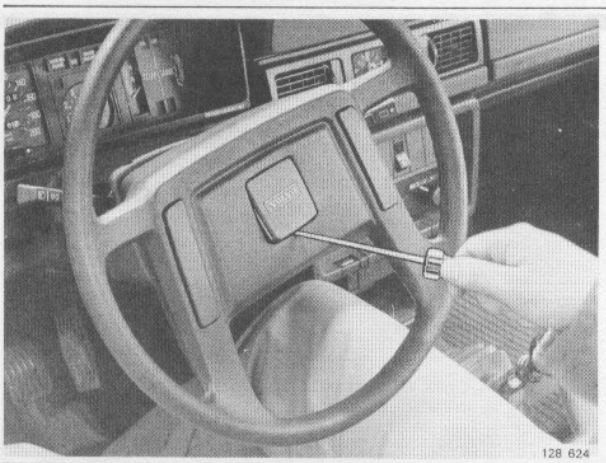
Nipples 5175 and 5176 are used instead of previous nipples 2865 and 2990.



L2

Position the pressure gauge in front of the windshield.

Turn the dial so that it can be easily read from the driver's seat.

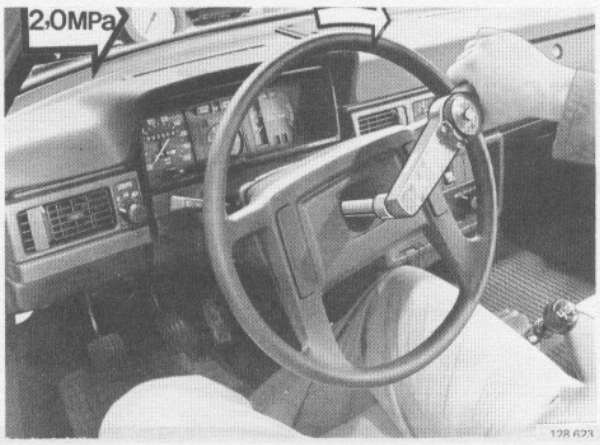


L3

Remove steering wheel padding.

Insert a screwdriver between the padding and a spoke. Pry up.

Late production units: pry loose the center cover.



L4

Check balance when turning the steering wheel to the right.

Start the engine.
Turn steering wheel to almost right end position. connect a torque gauge to the steering wheel center nut. Use the torque gauge to turn slowly to the right. Read the torque when the pressure gauge reading reaches 2.0 MPa = psi.

It is very important that the torque reading is noted exactly when the pressure is reached. The pressure will remain if the torque is lowered in this position.

L5

Check balance when turning the steering wheel to the left.

Turn the steering wheel to the left. Read the torque the same way as for right side.

L6

Torque reading.

Correct reading: 4–4.5 Nm = 35–40 in.lbs. Incorrect reading may indicate incorrect pump pressure.

Difference between sides must not exceed 0.5 Nm = 4.4 in.lbs.

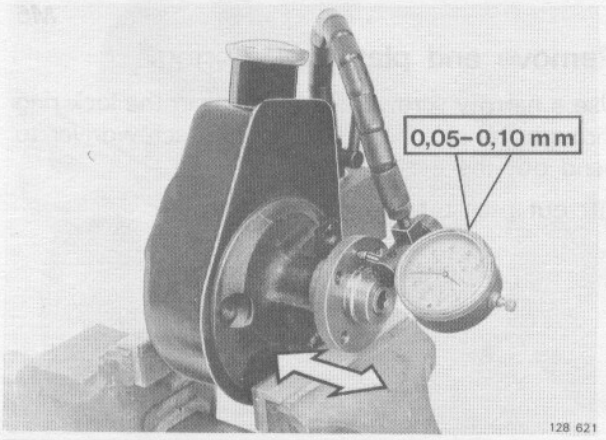
If difference is excessive, the steering gear should be replaced.

Power steering pump Saginaw

Disassembly

Special tools:

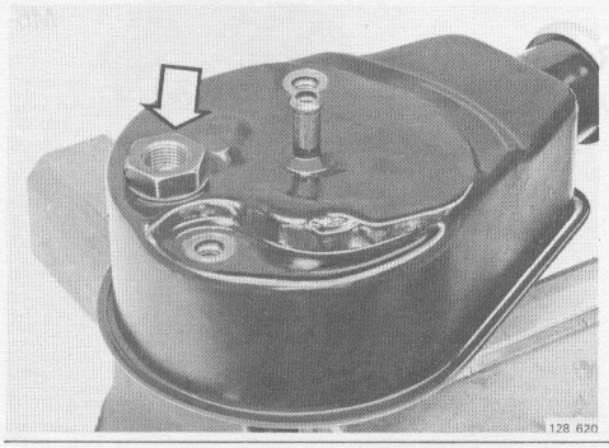
2863 Drift
5047 Puller
5051 Puller



M1

Determine end play.

Remove bracket and pulley. Use a dial gauge to measure end play (note it). Correct play: 0.05–0.10 mm = 0.002–0.004".

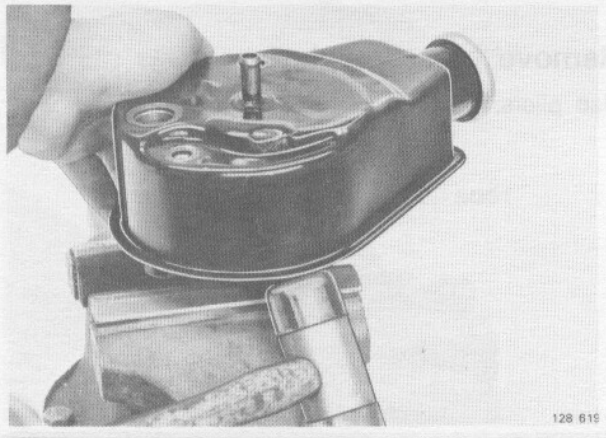


M2

Remove pressure hose fitting.

Put the pump in a vise. Remove the pressure hose fitting.

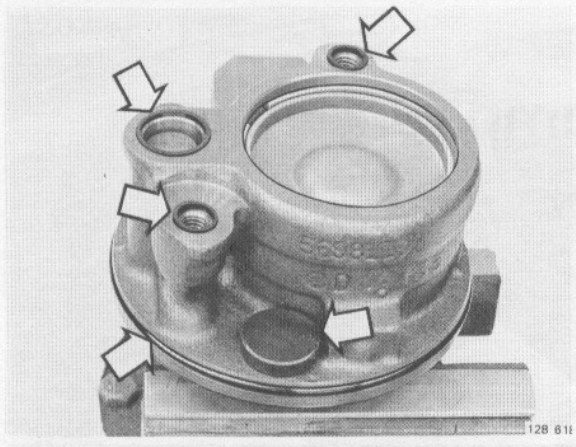
Wrench 25 mm.



M3

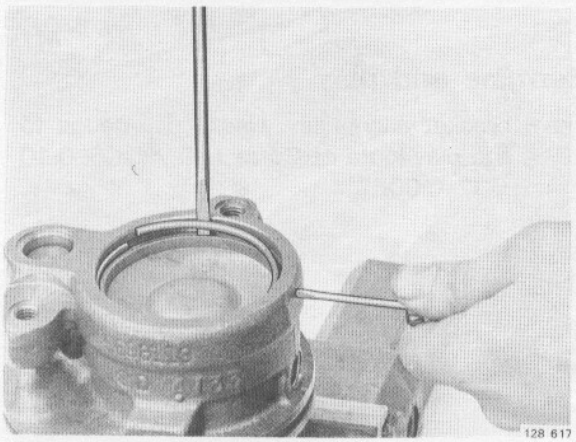
Remove oil reservoir.

Use a soft-tipped hammer. Tap lightly to remove the oil reservoir. Be careful not to damage the oil reservoir.



M4

Remove O-rings and magnet.

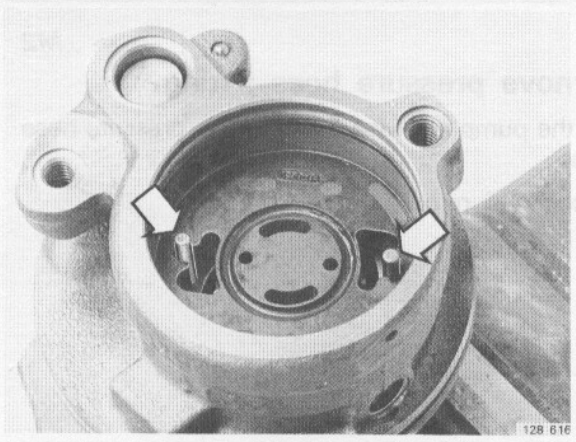


M5

Remove end plate and spring.

Use a narrow screwdriver to press in the lock ring through the side hole. Use another screwdriver to bend out the lock ring.

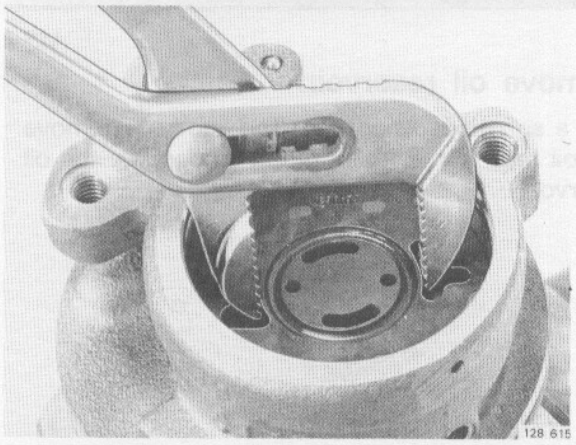
Lift out pressure plate and spring.



M6

Remove the dowel pins.

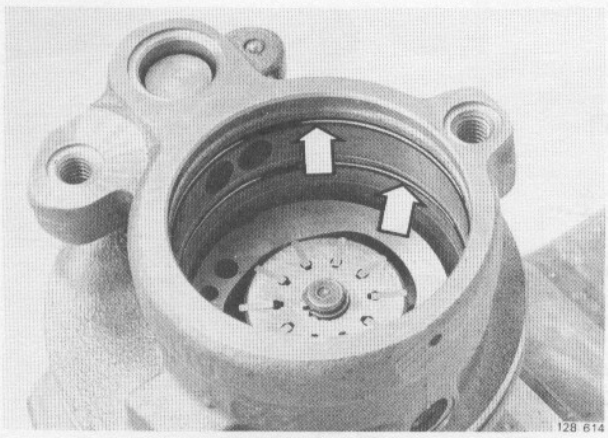
Use pliers.



M7

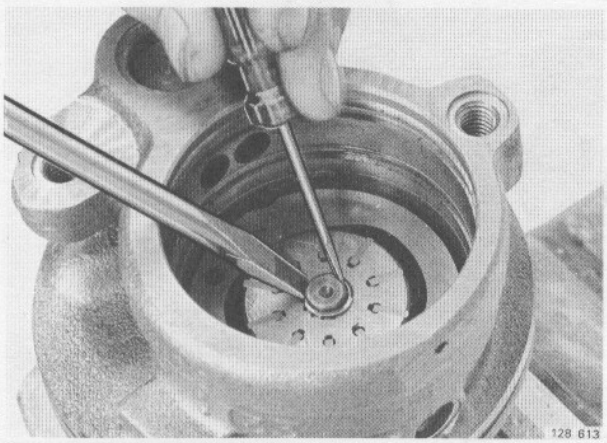
Remove pressure plate.

Use pliers.



M8

Remove the O-rings.

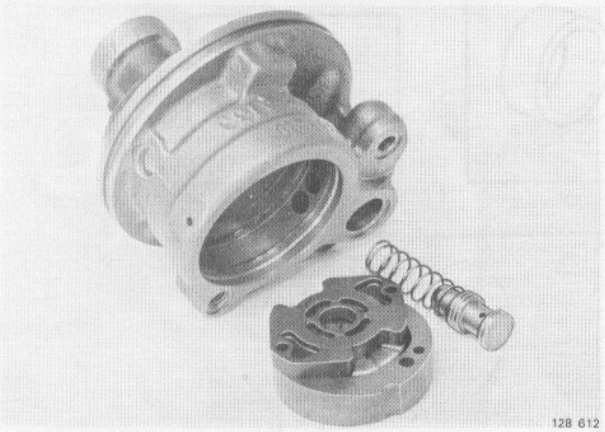


M9

Remove the shaft.

Hold the shaft. Use two screwdrivers to remove the snap ring.

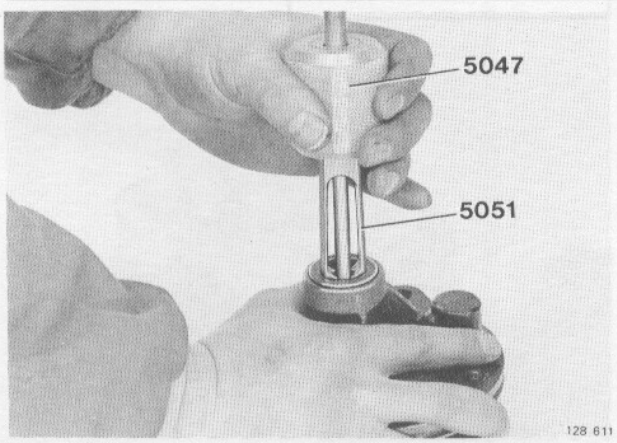
Remove the shaft.



M10

Remove rotor, pump ring, thrust plate and flow control valve.

Turn the housing upside down to remove the parts.

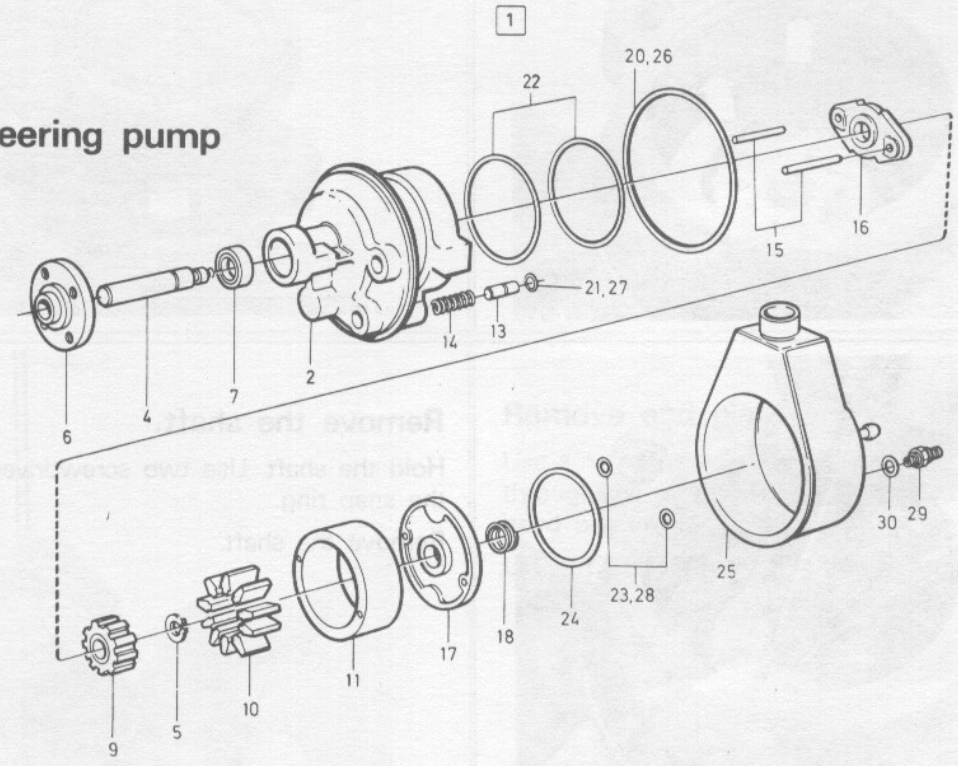


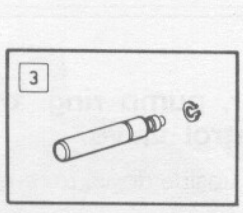
M11

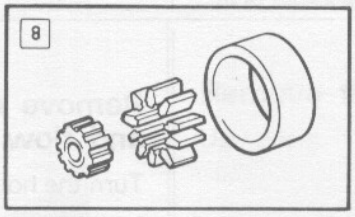
Remove shaft seal.

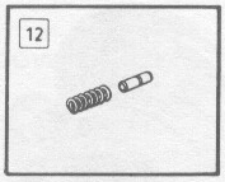
Use pullers 5051 and 5047.

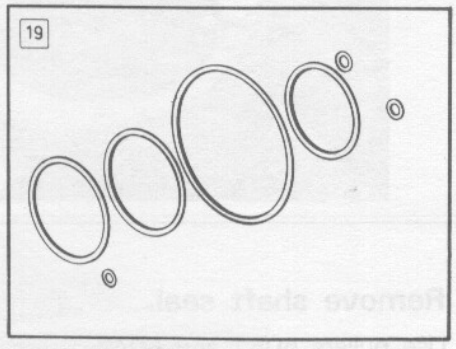
Power steering pump Saginaw

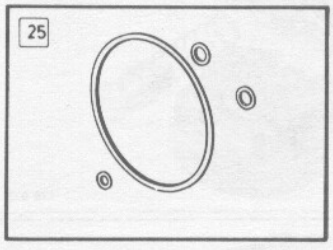




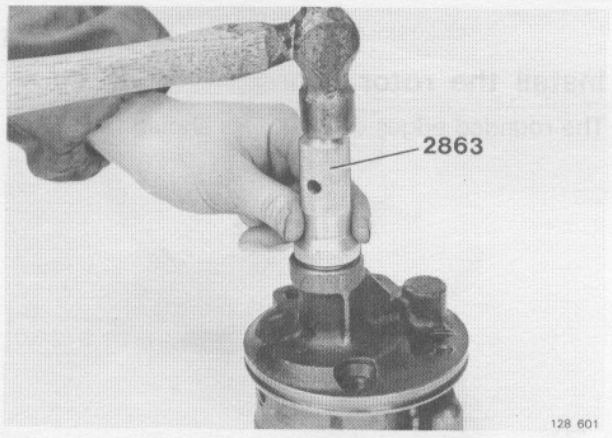








VOLVO PARTS
1 060 23326

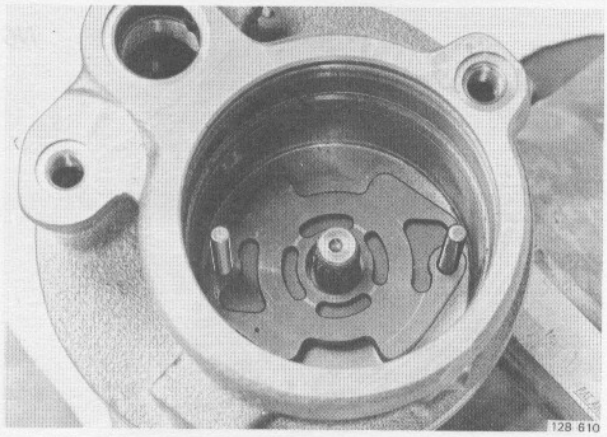


Assembling power steering pump Saginaw

N1

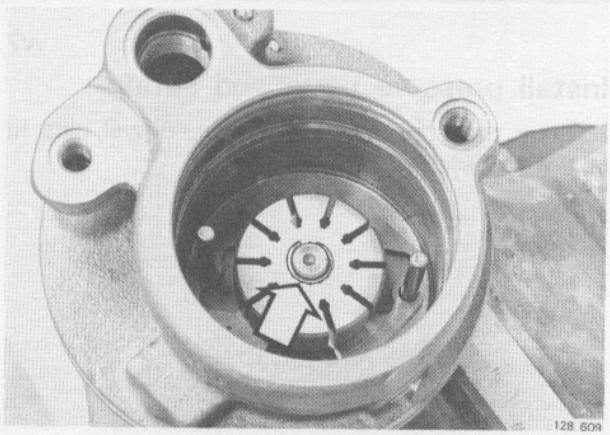
Press in the shaft seal.

Use drift 2863.



N2

Install thrust plate and dowel pins.



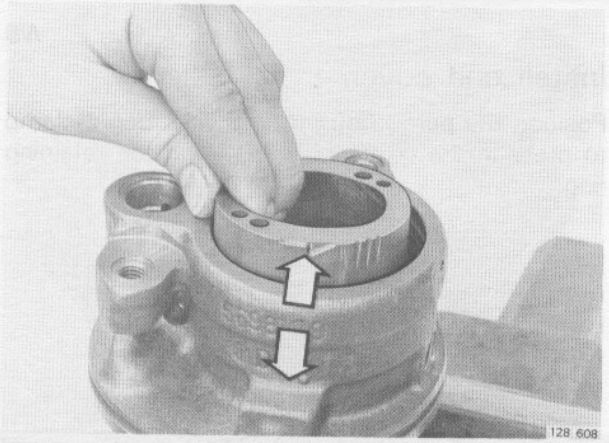
N3

Install rotor.

Install the rotor without vanes. Then install shims to equal the play noted in operation M1 minus 0.10 mm.
Shims available:

P/N	Thickness
1272 634	0.05 mm
1272 635	0.10 mm
1272 636	0.20 mm
1272 637	0.30 mm

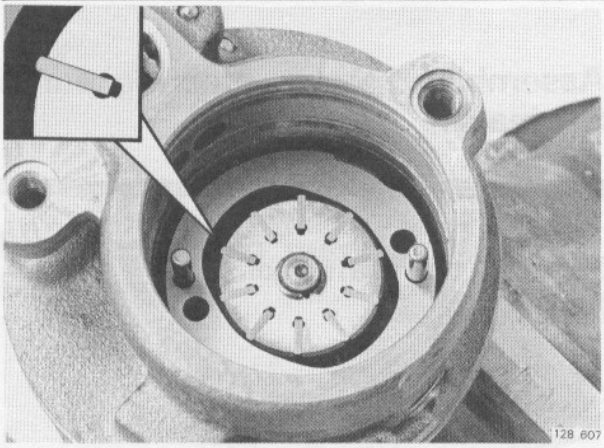
Install the snap ring, rounded edge **IN.**



N4

Install rotor ring.

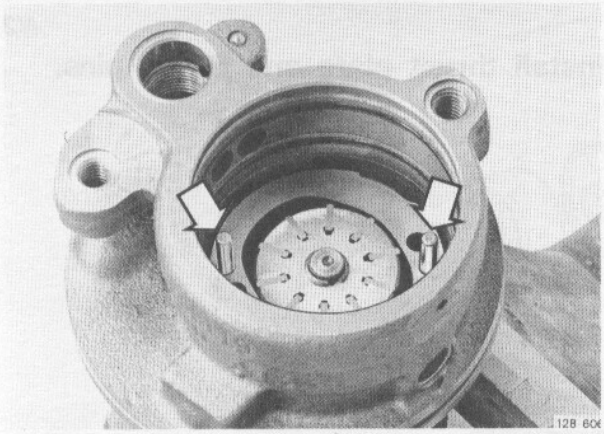
The ring marking **UP** and toward the boss on the housing.



N5

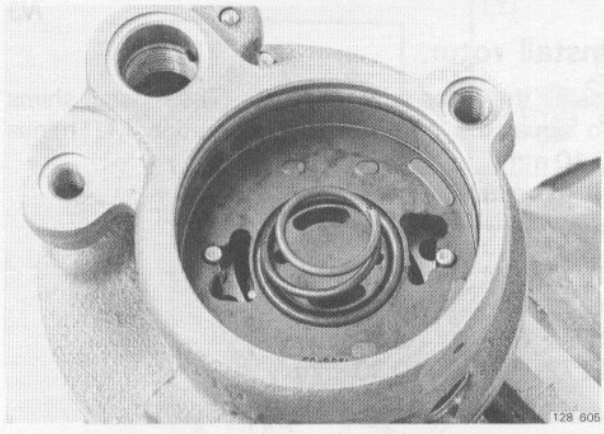
Install the rotor vanes.

The rounded edges of the vanes should face **OUT**.



N6

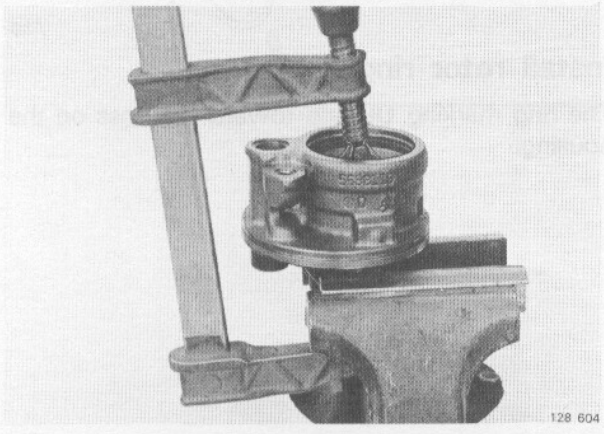
Install the two O-rings.



N7

Install pressure plate and spring.

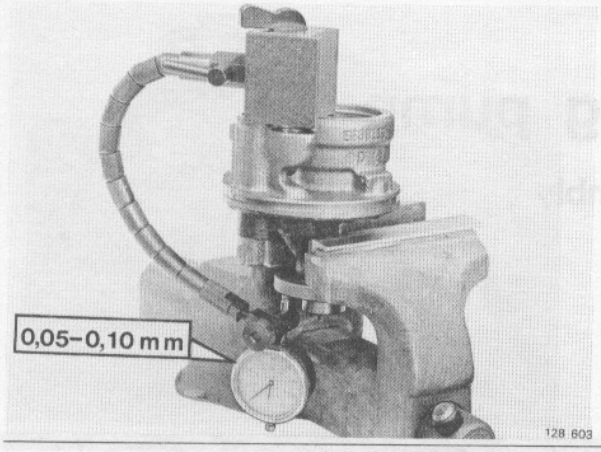
Position the pressure plate so the dowel pins fit in the recesses.



N8

Install end cover.

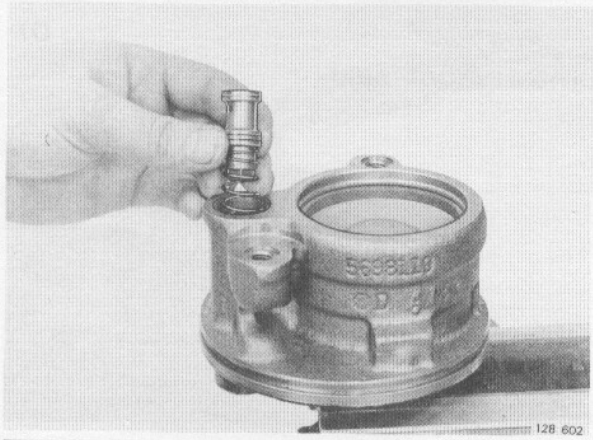
Position the pump housing in a vise. Use a clamp to press in the cover while installing the retaining ring.



N9

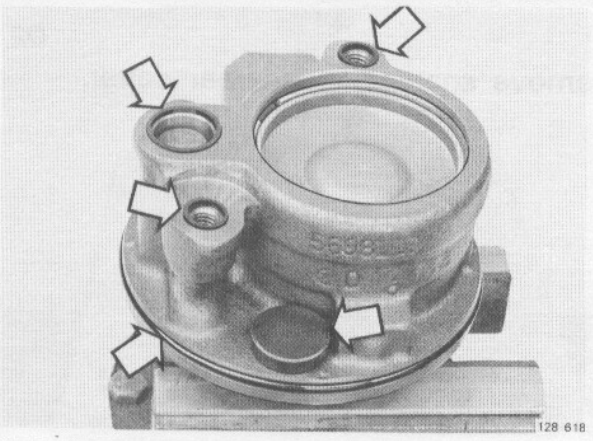
Check end play.

Use dial gauge. Correct end play:
0.05–0.10 mm = 0.002–0.004".



N10

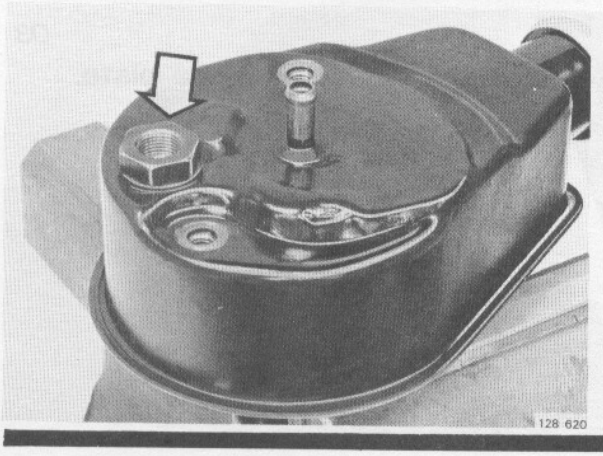
Install flow control valve and spring.



N11

Install O-rings and magnet.

The magnet will collect ferric particles which may be suspended in the oil.



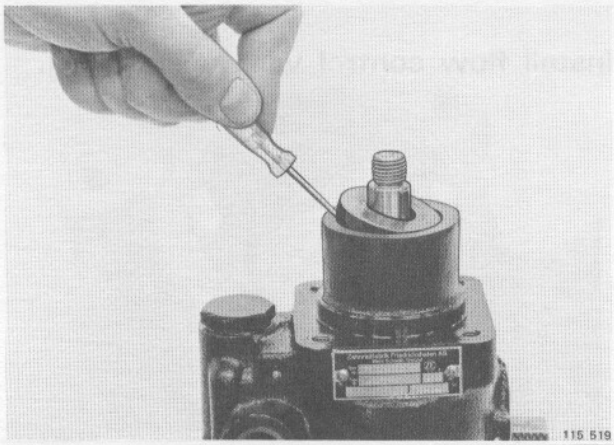
N12

Install the oil reservoir.

Oil the O-rings (ATF). Install the oil reservoir, with a new O-ring.

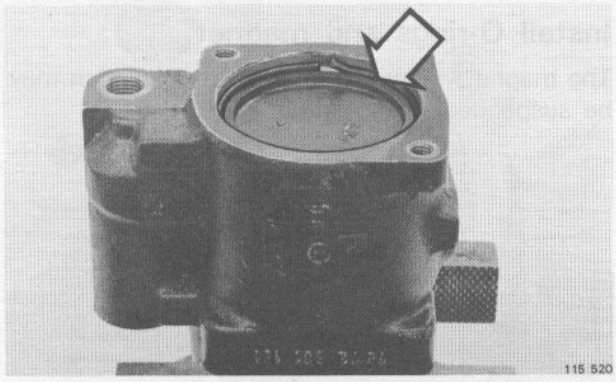
Power steering pump ZF

Disassembly



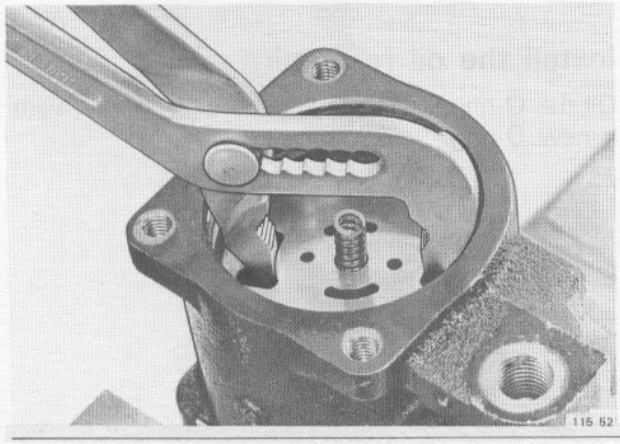
01

Remove front seal.



02

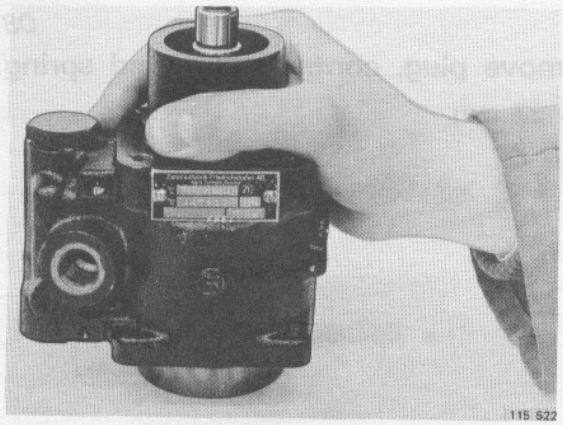
Remove snap ring and rear cover.



03

Remove spring and pressure plate.

Use pliers to remove the pressure plate.

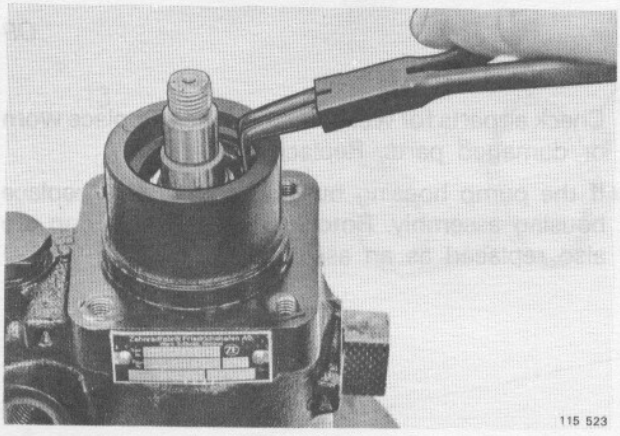


04

Remove rotor and cam ring.

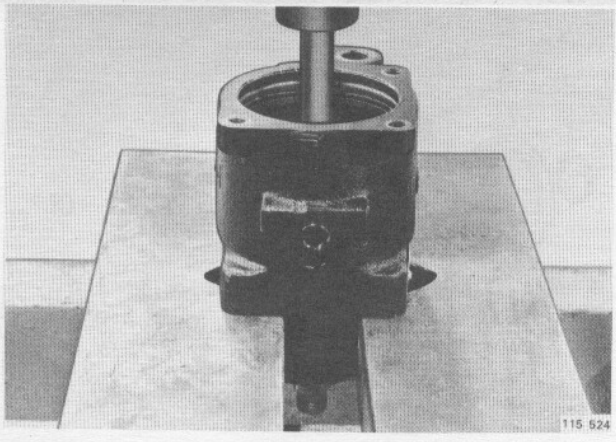
Turn pump over, tap lightly on end until parts fall free.

If the cam ring does not come loose, let it remain until later on.



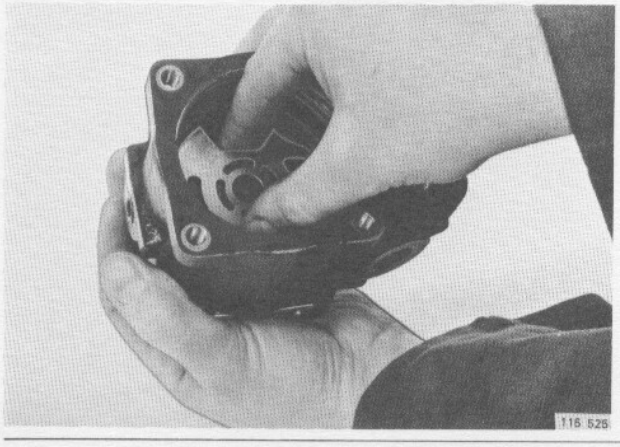
05

Remove ball bearing retaining ring.



06

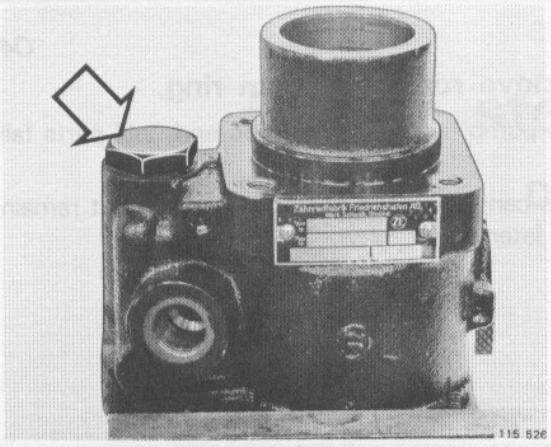
Press out the shaft.



07

Push out thrust ring.

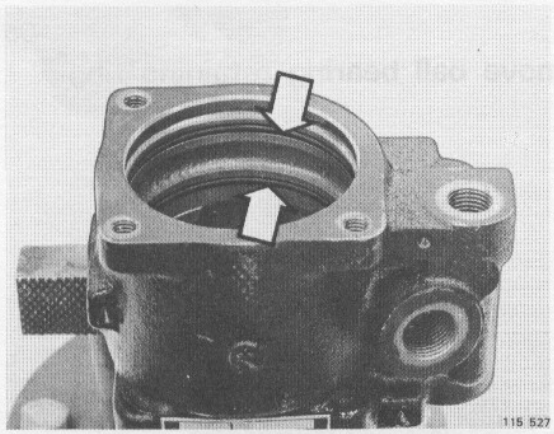
Also push out cam ring, if remaining.



08

Remove plug, control valve and spring.

Hex 27 mm.



09

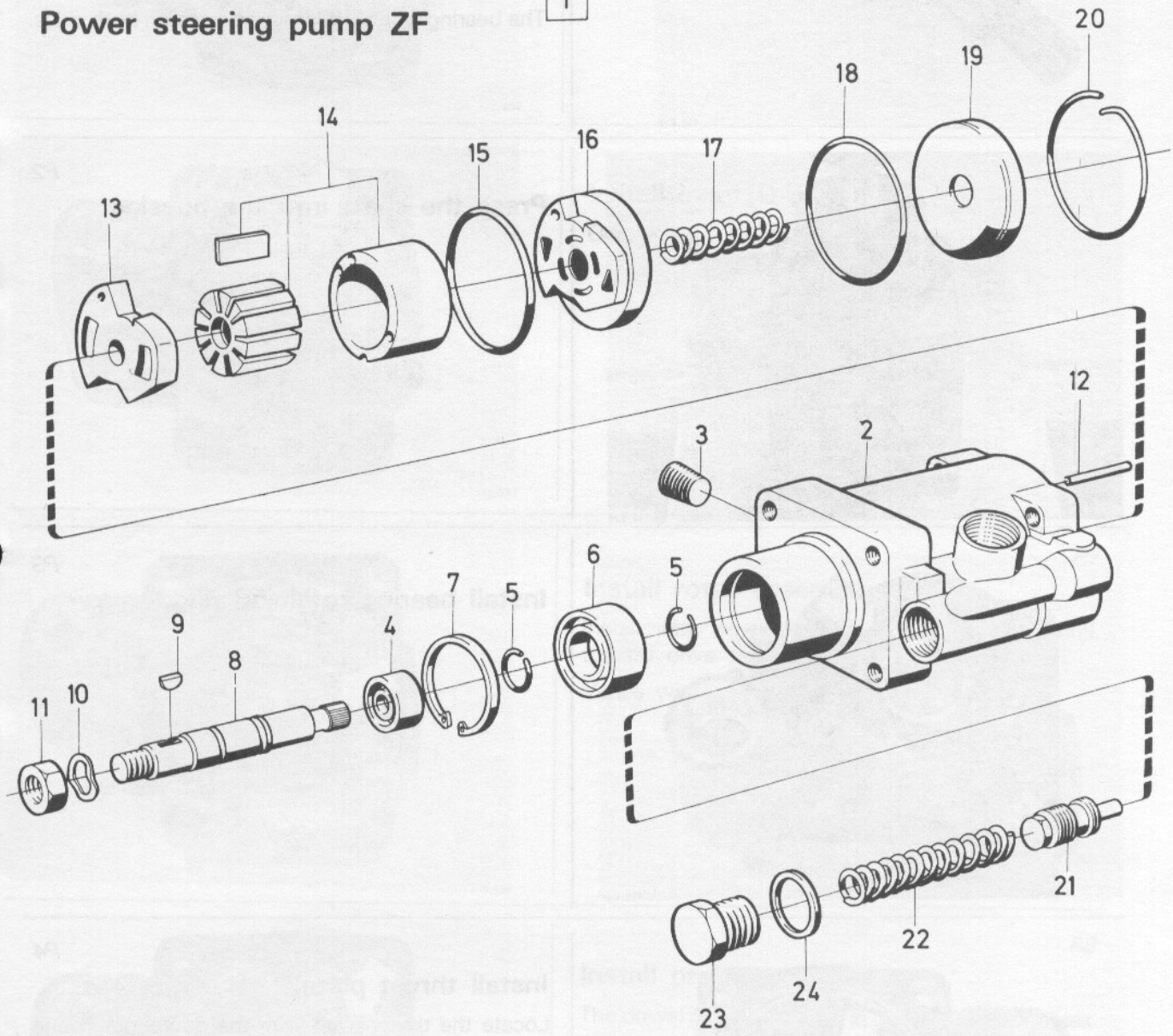
Remove O-rings.

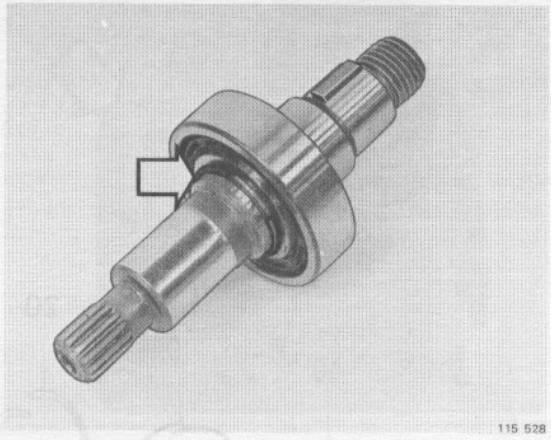
Check all parts for wear and scratches. Replace worn or damaged parts. Replace all O-rings.

If the pump housing bushing is defective, replace housing assembly. Rotor, vanes and cam ring are also replaced as an assembly.

Power steering pump ZF

1



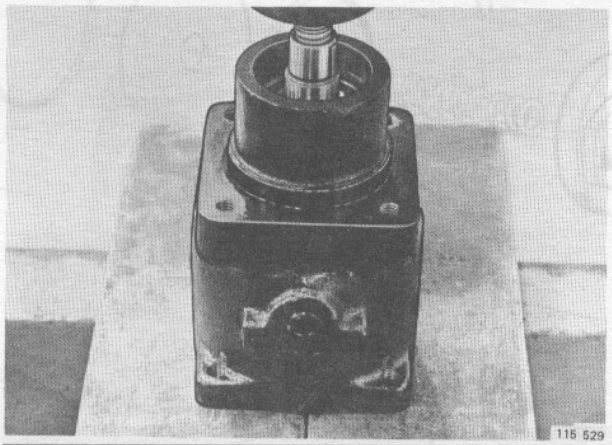

115 528

Assembling power steering pump ZF

P1

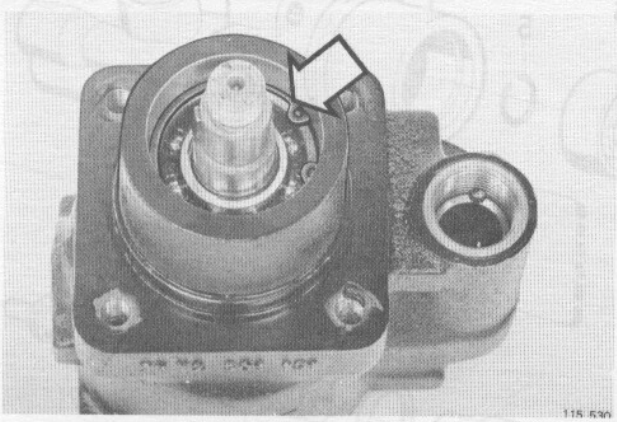
Install bearing on shaft.
(if replaced)

The bearing is retained by snap rings on both sides.


115 529

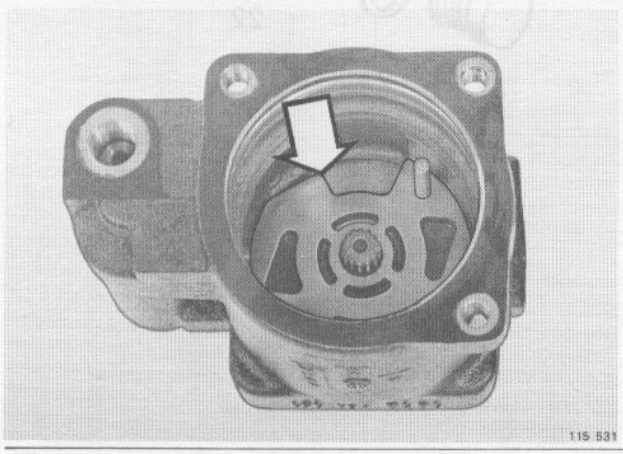
P2

Press the shaft into the housing.



P3

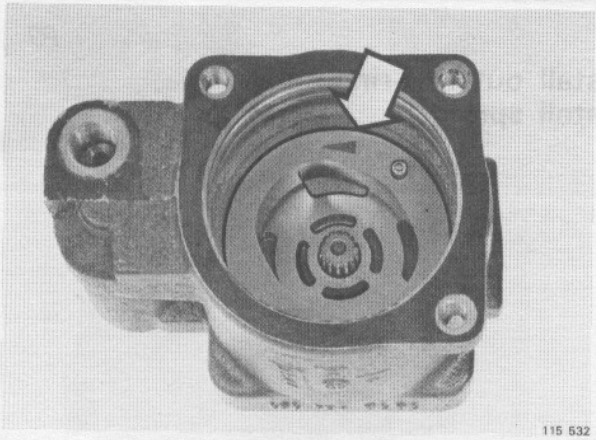
Install bearing retaining ring.


115 531

P4

Install thrust plate.

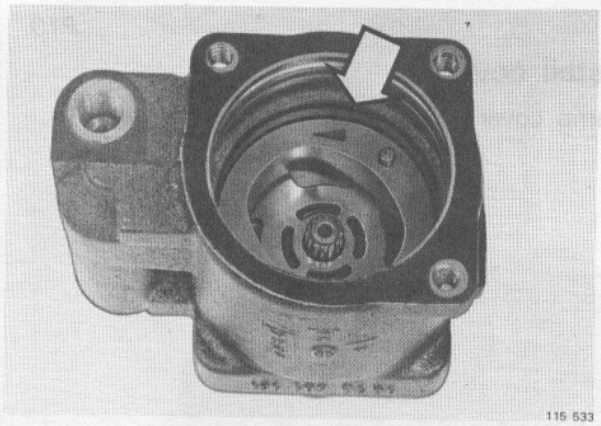
Locate the thrust plate with the dowel pin in one of the holes.



P5

Install the cam ring.

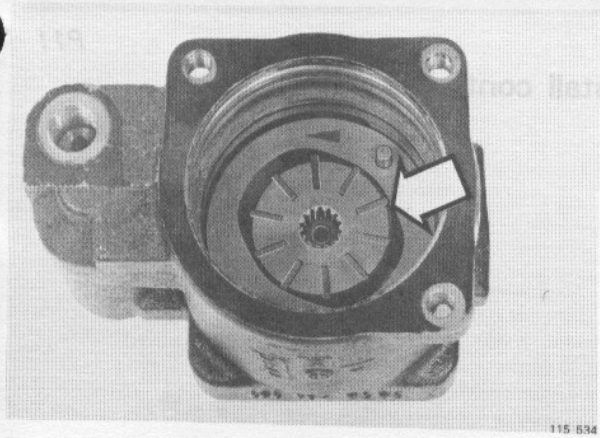
Install on dowel, arrow **UP**.



P6

Install inner O-ring.

One of the O-rings is smaller.

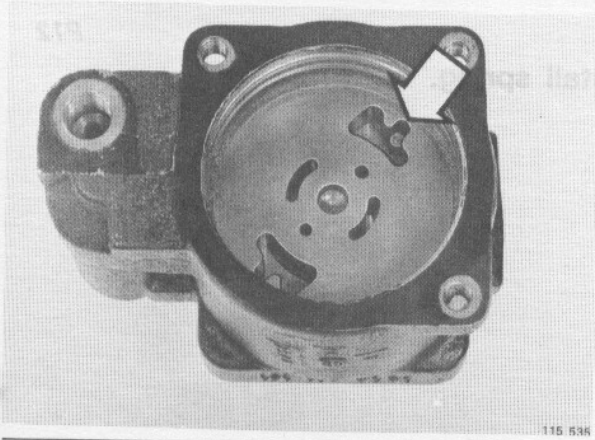


P7

Install rotor assembly.

Install with recessed round shaft hole **DOWN**, toward drive side.

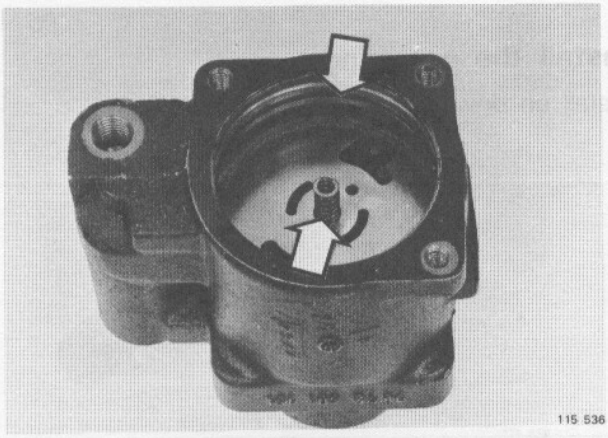
Vanes with rounded ends toward cam ring.



P8

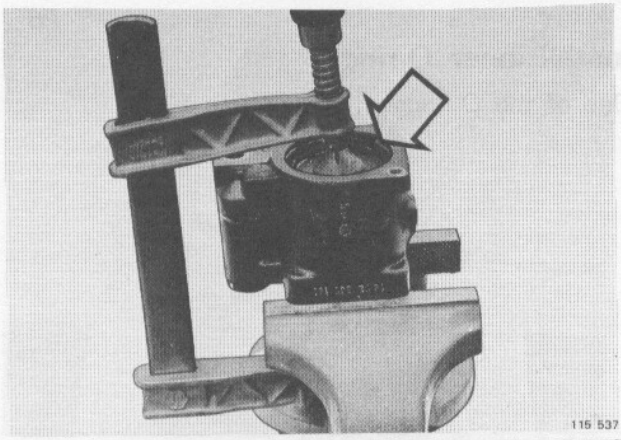
Install pressure plate.

The dowel pin should align in one of the outer holes.



P9

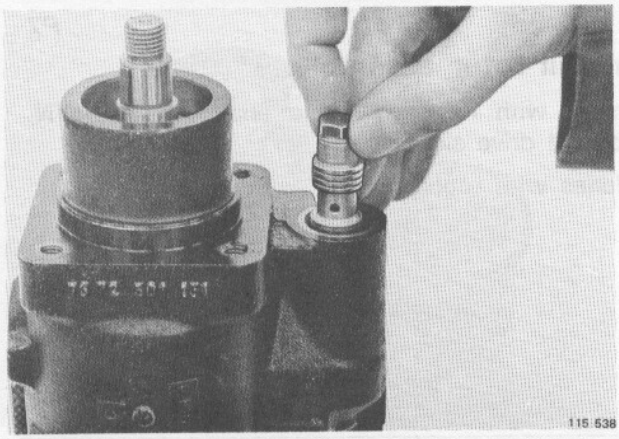
Install outer O-ring.
Install spring.



P10

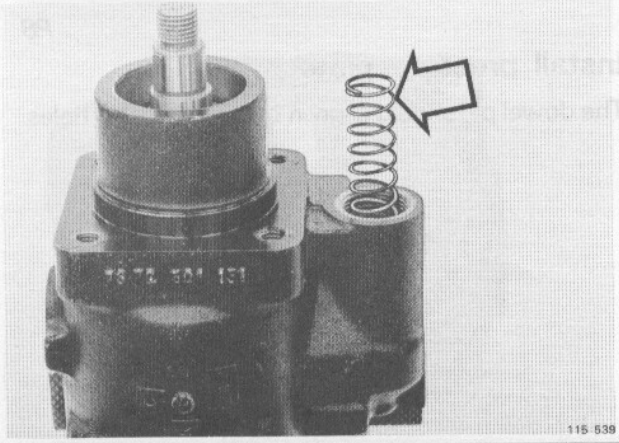
Install cover.

Clamp cover when installing retaining ring.



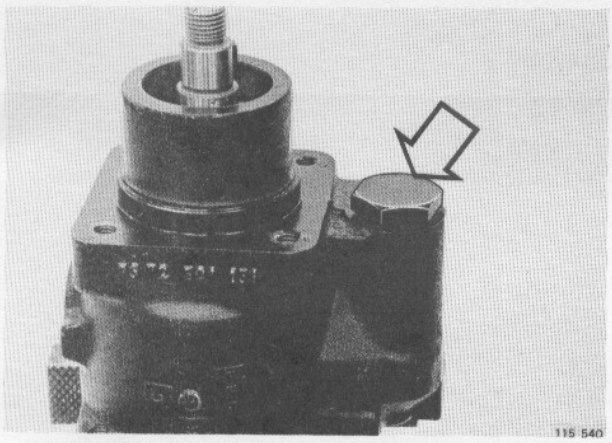
P11

Install control valve.



P12

Install spring.

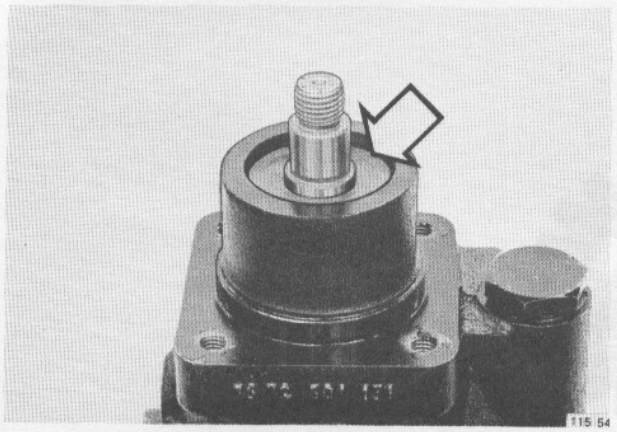


P13

Install the plug

Use a new copper seal.

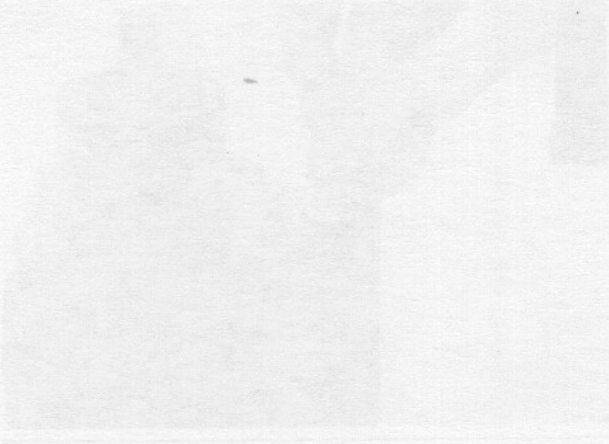
Hex 27 mm.



P14

Install the shaft seal

Tap lightly until the seal is properly seated.



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