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MSI 20 G
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MSI 30 G

REPAIR MANUAL

FOREWORD

This repair manual describes the description, construction, trouble shooting, removal, disassembly, inspection and repair, assembly and installation of the various components of the 4Y model engine equipped on the Toyota Forklift Trucks.

You are encouraged to become thoroughly familiar with this manual so as to make the most of the outstanding performance and durability features of these vehicles mounted with the 4Y engine and to perform the proper servicing to maintain them in tip-top running condition.

This repair manual contains the latest information available as of August 1986.
For any changes thereafter, you are asked to consult the Parts & Service News.
Toyota reserves the right to make changes in specifications and descriptions without incurring any obligation and without previous notice.

TOYOTA MOTOR CORPORATION

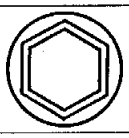
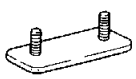
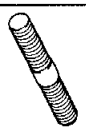
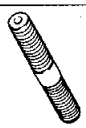
STANDARD BOLT AND NUT TIGHTENING TORQUE JUDGEMENT

Standard bolt and nut tightening torques are not indicated; therefore tightening torque must be judged as below:

1. Find out the type of the bolt from the list below.
   Then, find the bolt tightening torque from the table.
2. The nut tightening torque can be judged from the bolt type. (See the table.)

LIST OF BOLT TYPES AND STRENGTH

1. Judging by part

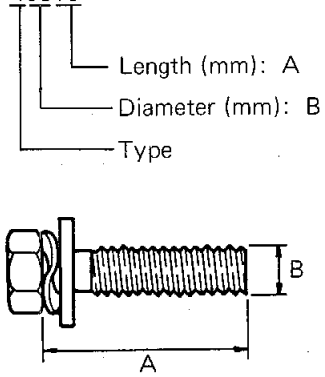
Shape and description			Type
Hexagon bolt		Number in relief or hallmark on the head	4 = 4T 5 = 5T 6 = 6T 7 = 7T
Standard bottom surface		No mark	4T
Hexagon bolt (Collared bottom)		No mark	4T
Hexagon bolt (Standard bottom surface)		Two relief lines on the head	5T
Hexagon bolt (Collared bottom)		Two relief lines on the head	6T
Hexagon bolt		Three relief lines on the head	7T
Welded bolt			4T
Welding bolt		No mark	4T
Stud bolt		Approximately 2mm (0.08 in.) hollow on either or both ends	6T

BAHS28

2. Judging by part No.

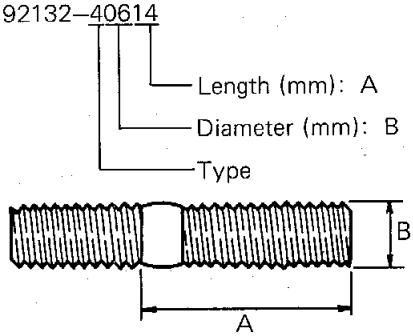
Hexagon bolt

Sample number
91111–40610



Stud bolt

Sample number
92132–40614



BAHS25

ENGINE OVERHAUL

CYLINDER HEAD INSPECTION AND CLEANING

1. Piston and cylinder block top surface cleaning
   (1) Rotate the crankshaft to bring each piston to the top dead center. Use a gasket scraper and remove the carbon deposit on top of the piston.
   (2) Use the scraper and remove the gasket adhering on the cylinder block top surface.
   (3) Use an air gun to blow off oil and foreign matters from bolt holes.

   Caution:
   Use cloth to prevent splashing of oil.

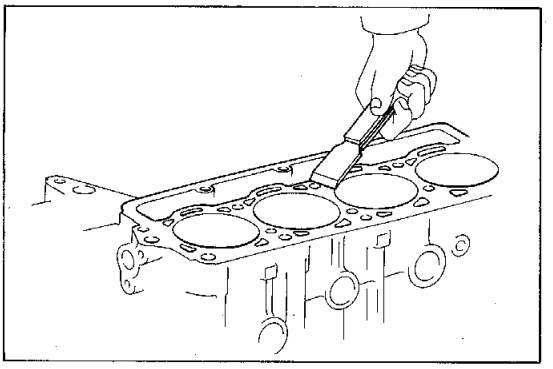
2. Cylinder head gasket removal
   (1) Use the scraper and clean the cylinder head bottom surface and manifold installation surface.

   Caution:
   Do not damage the cylinder head during cleaning.

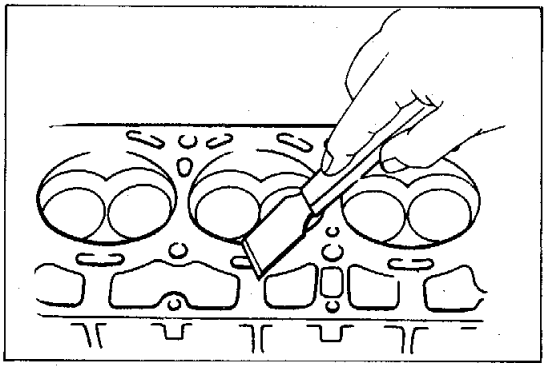
3. Cylinder head combustion chamber cleaning
   (1) Use a wire brush to remove the carbon from the combustion chambers.

   Caution:
   Do not damage the surface to be in contact with the head gasket.

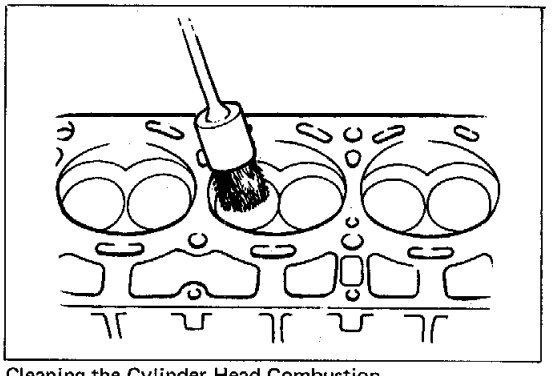
4. Valve guide bush cleaning
   (1) Use a solvent and clean the inner surface of the valve guide bush.



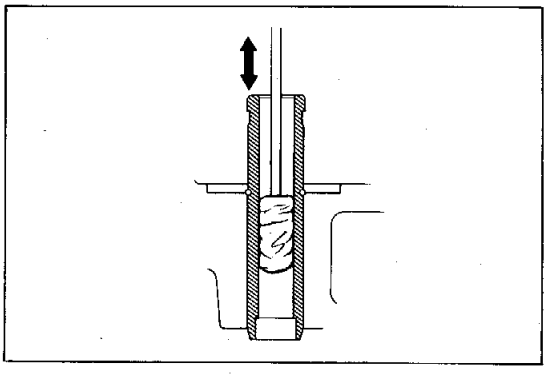
Cleaning the Cylinder Block EM2532



Cleaning the Cylinder Head EM2412

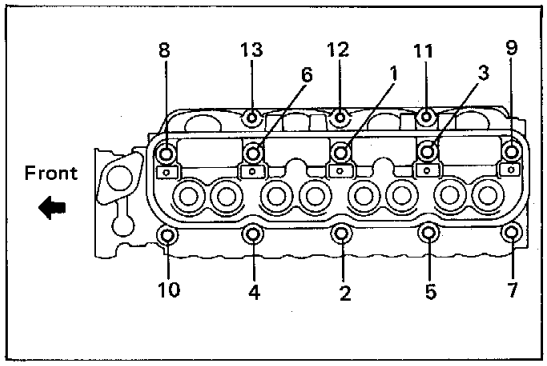


Cleaning the Cylinder Head Combustion Chambers EM2411



Cleaning the Valve Guide Bush EM0028

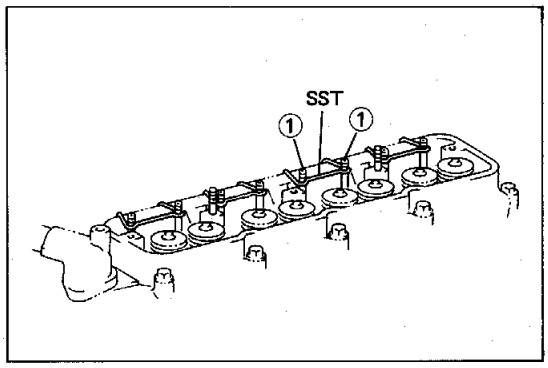
(4) Evenly tighten 13 cylinder head bolts in the illustrated order in several steps.
T = 9.0 kg-m (65 ft-lb)
(M12)
T = 1.95 kg-m (14 ft-lb)
(M8)



Tightening the Cylinder Head Bolts EM2416

2. Push rod and valve rocker shaft ASSY installation
(1) Install each push rod ① at its original position before removal.
(2) Use the SST and position the push rods as illustrated.
SST 09270-71010

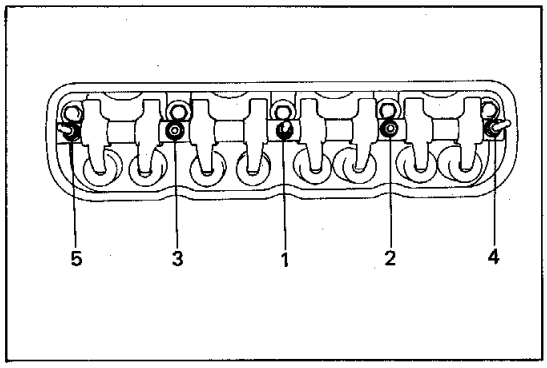
Caution:
Check that the push rod is surely in the lifter push rod seat portion.



Installing the Push Rods EM2392

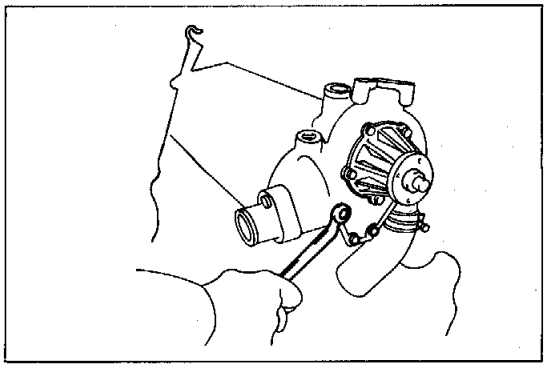
(3) Install the valve rocker shaft ASSY to the cylinder head.
(4) Evenly tighten 3 bolts and 2 nuts in the illustrated order in several steps.
T = 2.40 kg-m (17 ft-lb)

Caution:
Keep the push rods from leaving the rocker arm, and tighten the bolts and nuts.



Installing the Valve Rocker Shaft ASSY EM2417

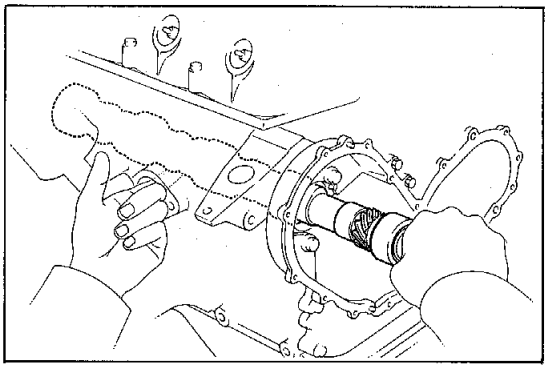
3. Water pump ASSY installation
(1) Install a new gasket.
(2) Install the water pump ASSY.
(3) Tighten 4 set bolts.
T = 1.85 kg-m (13 ft-lb)
(4) Install the water inlet hose.



Installing the Water Pump ASSY KAJS6

19. Thrust plate and camshaft removal
    (1) Remove two bolts, and remove the thrust plate.
    (2) Extract the cam shaft.

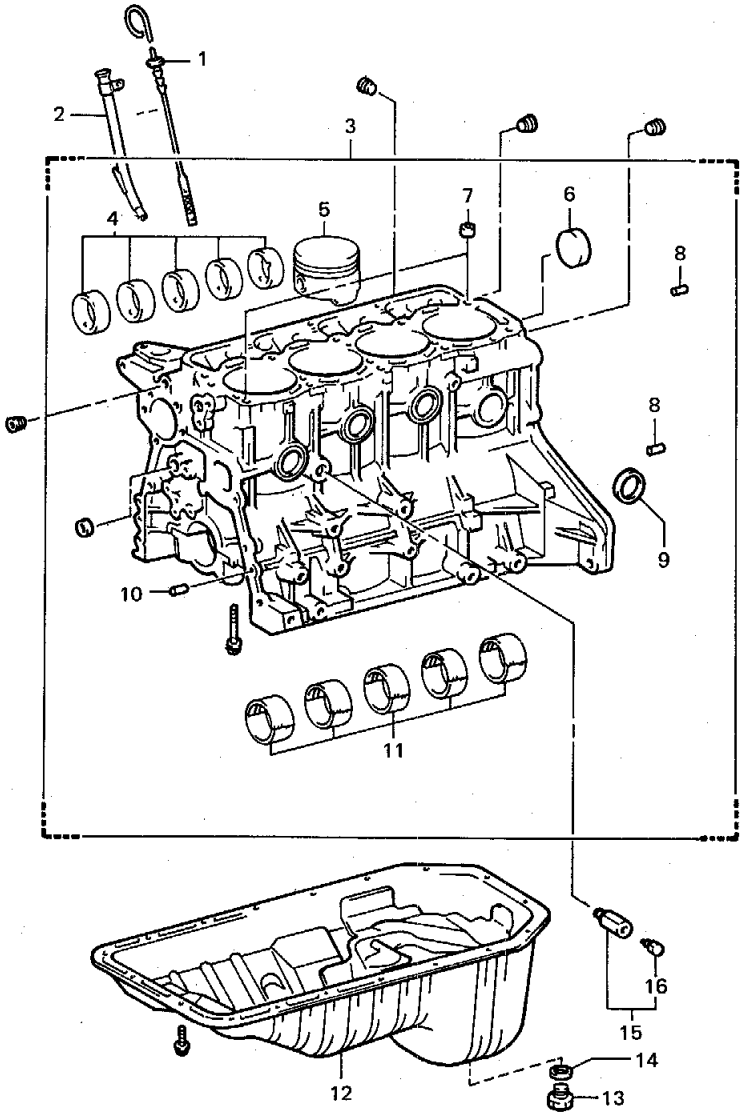
    Caution:
    Do not damage the camshaft bearing.



Removing the Camshaft **KAJS13**

CYLINDER BLOCK

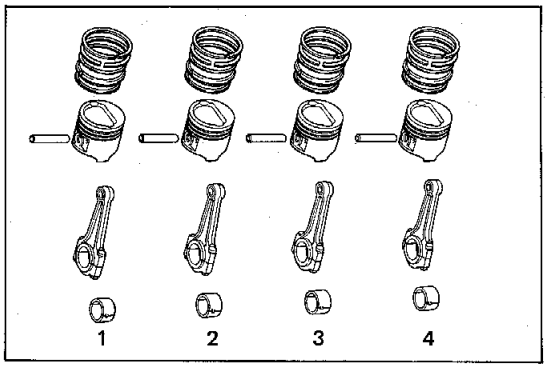
COMPONENTS



1. Oil level gauge SUB-ASSY
2. Oil level gauge guide
3. Cylinder block SUB-ASSY
4. Camshaft bearing set
5. Piston SUB-ASSY
6. Tight plug No. 1
7. Ring pin
8. Straight pin
9. Tight plug No. 2
10. Straight pin
11. Crankshaft bearing
12. Oil pan SUB-ASSY
13. Plug
14. Gasket
15. Drain cock SUB-ASSY
16. Drain cock plug

Cylinder Block Components KAJM7

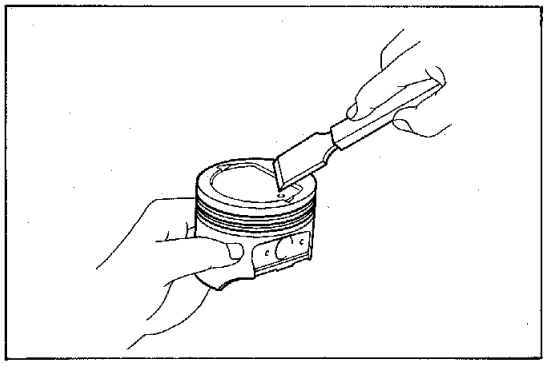
(2) Arrange the removed pistons, piston pins, piston rings and connecting rodes in the order of the corresponding cylinders.



Arranging the Pistons, Piston Pins, Rings and Rods EM1403

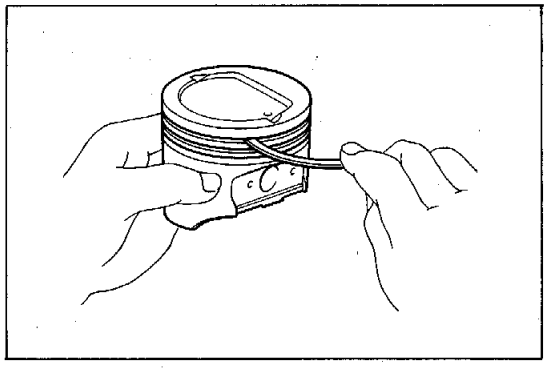
PISTON AND CONNECTING ROD INSPECTION

1. Piston cleaning
   (1) Use a scraper and remove the carbon from the top surface of each piston.



Cleaning the Piston (1) EM2550

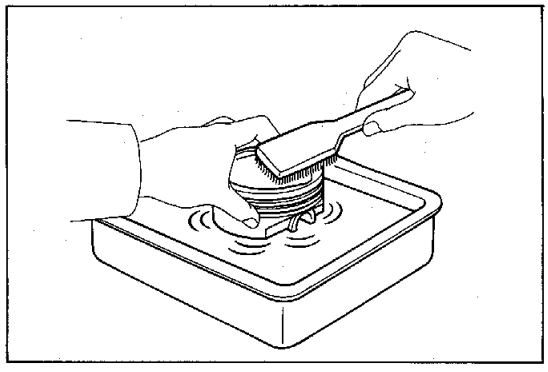
(2) Remove the carbon from each ring groove with an unnecessary piston ring.



Cleaning the Piston EM2336

(3) Wash each piston with a solvent.

Caution:
Do not use a hard wire brush.



Washing the Piston EM2551

CYLINDER BLOCK ASSEMBLY

Caution:
- Thoroughly clean the parts to be assembled.
- Coat engine oil on the sliding contact and rotating surfaces before assembly.
- Replace gaskets, oil seal and other non-reusable parts with new ones.

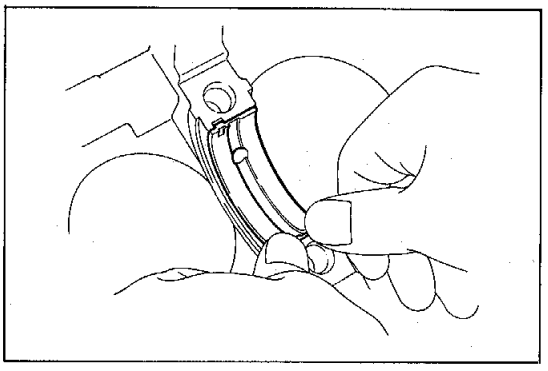
1. Crankshaft bearing installation

Caution:
Keep the bearing outer surfaces (in contact with the cylinder block or bearing caps) free from oil.

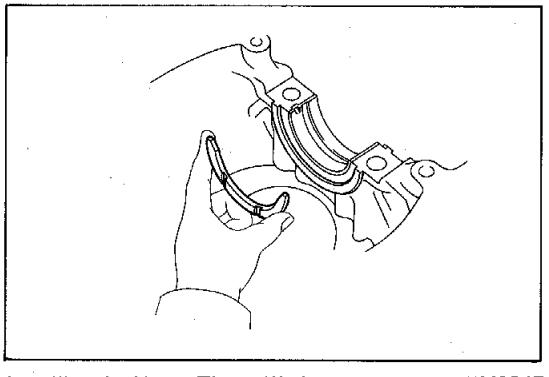
(1) Install the upper bearing having an oil groove on the whole periphery, with the cylinder block oil hole and lock groove as the guide.

(2) Install the lower bearing by fitting with the bearing cap lock groove.

(3) Install the upper thrust washer to the No. 3 journal supporting portion, with the oil grooves facing outward.



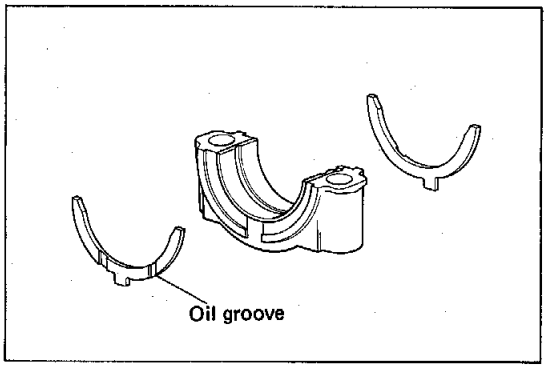
Crankshaft Bearing Installation EM0388



Installing the Upper Thrust Washer EM0247

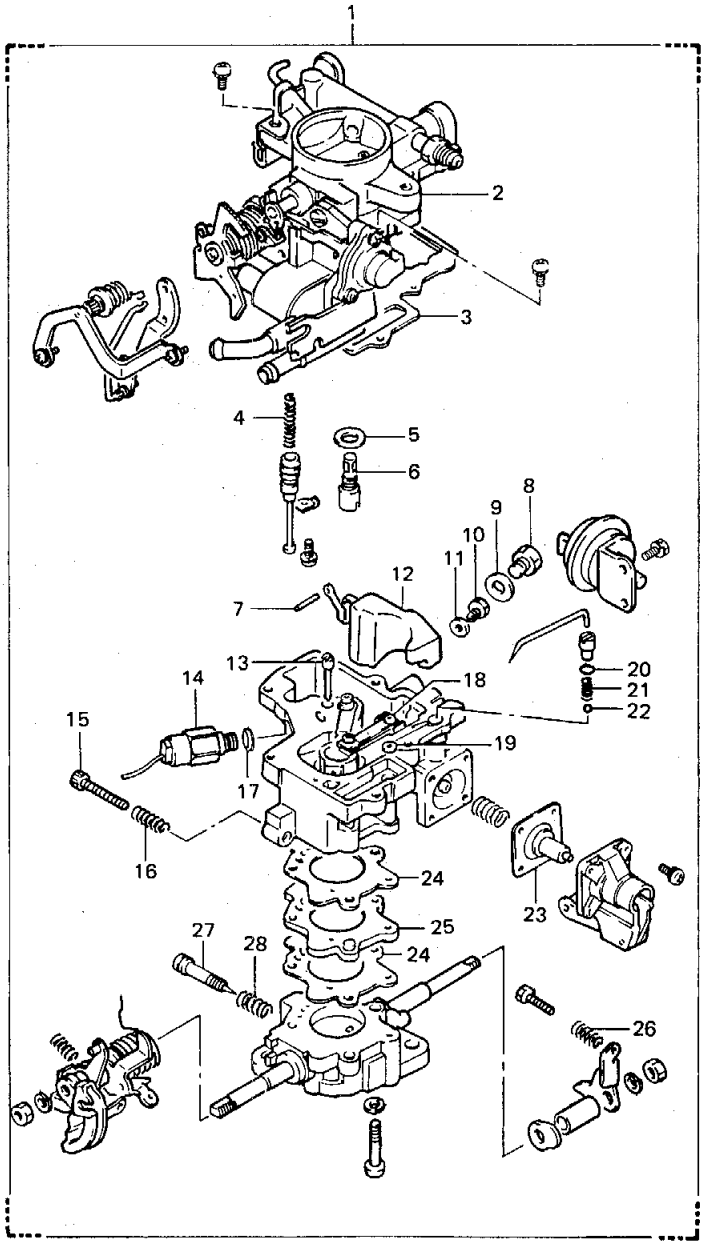
(4) Install the lower thrust washer to the No. 3 bearing cap, with the oil grooves facing outward.

Reference:
Coat engine oil on the rear face of the thrust washer to prevent falling.



Installing the Lower Thrust Washer EM1703

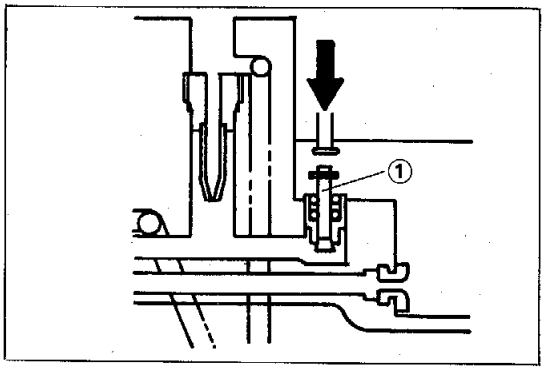
COMPONENTS



1. Carburetor ASSY
2. Air horn
3. Air horn gasket
4. Spring
5. Needle valve seat gasket
6. Needle valve
7. Float lever pin
8. Main passage plug
9. Gasket
10. Main jet
11. Gasket
12. Float
13. Slow jet
14. Solenoid valve
15. Throttle adjusting screw
16. Spring
17. Gasket
18. Hot idle compensator
19. Gasket
20. O-ring
21. Spring
22. Steel ball
23. Accelerating pump diaphragm
24. Gasket
25. Insulator
26. Spring
27. Idle adjusting screw
28. Spring

Carburetor Components KAJM9

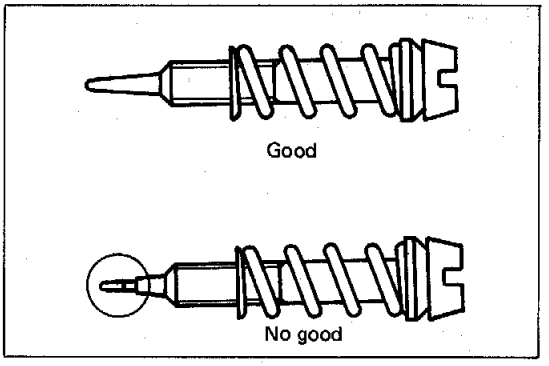
7. Power valve sliding inspection
   (1) Push the power valve rod ① lightly with a finger, and check that it slides smoothly.



Inspecting the Power Valve Sliding Status KAJS39

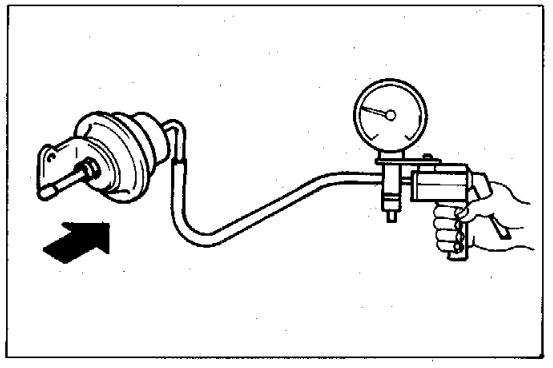
8. Idle adjusting screw inspection
   (1) Check that the tapered portion of the idle adjusting screw is not stepped and that the threaded portion is not damaged.

9. Throttle valve and shaft inspection
   (1) Operate the throttle lever, and check that the throttle shaft slides smoothly.



Inspecting the Idle Adjusting Screw KAJS40

10. Idle-up actuator inspection
    (1) Check that the rod moves when a negative pressure is applied to the diaphram chamber.
    (2) Check that the rod quickly returns to the original position when the negative pressure is set from the state in (1) to zero.



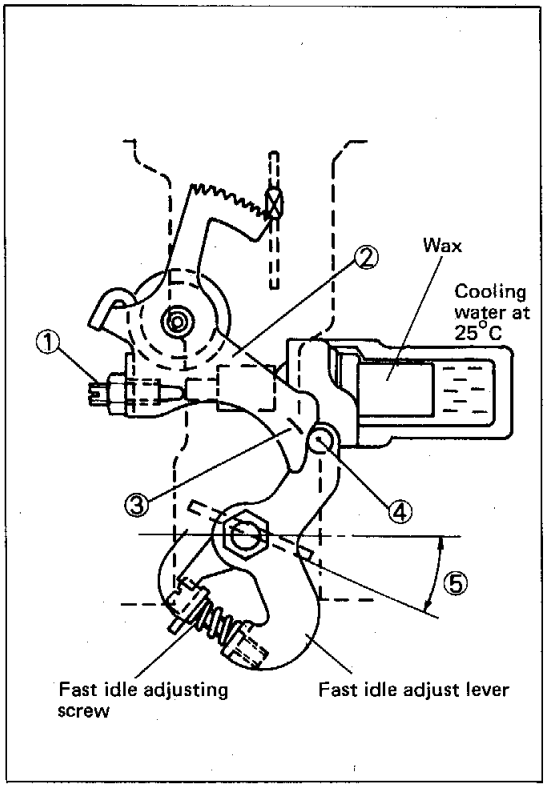
Inspecting the Idle-up Actuator KAJS41

FAST IDLE CAM ADJUSTMENT

Caution:
- Adjust the fast idle cam when the ambient temperature is 25 ± 2°.
- Do not make adjustment unless it is absolutely necessary.

1. Turn the adjust screw ① to bring the I mark ③ on the fast idle cam ② to the center of the fast adjust lever roller pin ④. Tighten the lock nut.

2. After I mark alignment, adjust the fast idle opening angle ⑤ (See to 3-24)



Adjusting the Fast Idle Cam KAJS48

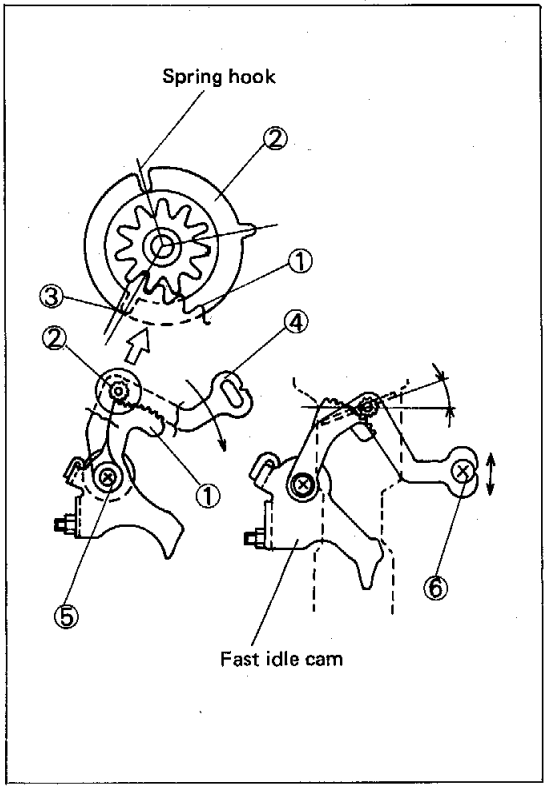
CHOKE VALVE ADJUSTMENT

Caution:
Do not make adjustment unless it is absolutely necessary.

1. After I mark alignment, match the rack ① and pinion ② positions when the ambient temperature is 25 ± 2°C.

2. Turn the pinion until the leftmost tooth of the rack matches the pinion teeth on both sides of the matching mark ③.

3. Turn the pinion lever ④ clockwise until the choke lever is at 16 to 21° degrees from the horizontal level. Tighten set screws ⑤ and ⑥.

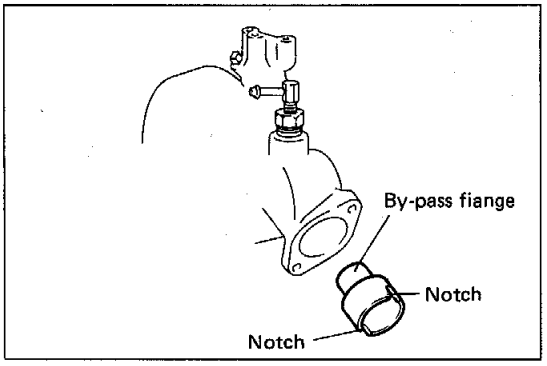


Adjusting the Choke Valve KAJS49

PCV SYSTEM

2. Water bypass flange installation
   (1) Drive in the bypass flange to the water pump inlet portion. The notch on the flange shall face the inlet mounting bolt hole direction.

3. Thermostat installation
   (See page 5-5.)



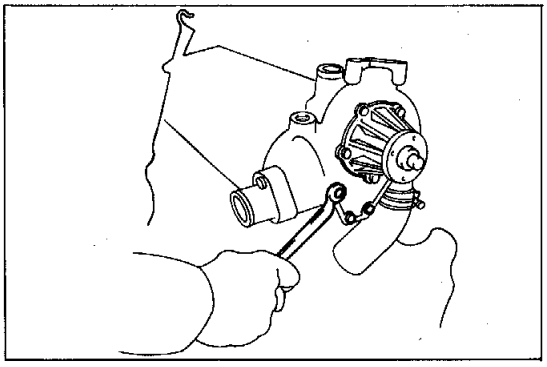
Installing the Water Bypass Flange KAJS92

4. Water pump installation
   (1) Remove the old gasket adhered on the water pump and cylinder block.
   (2) Install the water pump with a new gasket in-between, and tighten four set bolts.
   T = 1.85 kg-m
   (3) Connect the water inlet hose to the water pump.
   (4) Install the water outlet pipe union bolt.

5. Radiator outlet hose installation
   Fan pulley, V-belt and fan installation.
   See page 1-3 for V-belt adjustment.

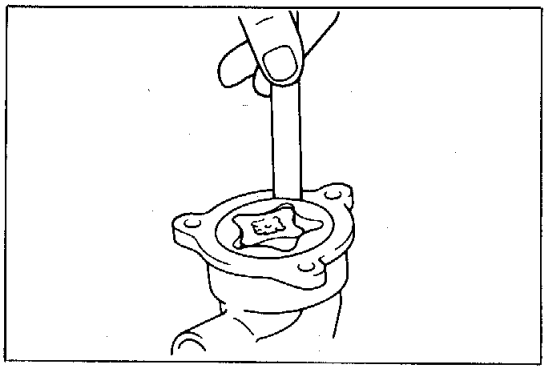
6. Coolant filling
   (See page 5-5.)

7. Water leak check



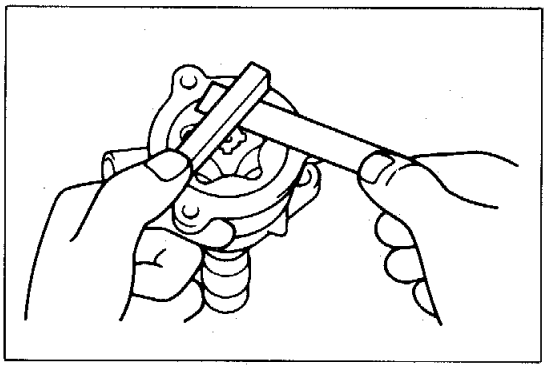
Installing the Water Pump Cover KAJS66

4. Drive and driven rotor inspection
   (1) Use a thickness gauge, and measure the clearance between the driven rotor and pump body.
   Standard:
   0.1 – 0.15 mm (0.0039 – 0.0059 in.)
   Limit: 0.2 mm (0.008 in.)
   If the clearance exceeds the limit, replace the rotors as a set.
   If necessary, replace the whole oil pump ASSY.



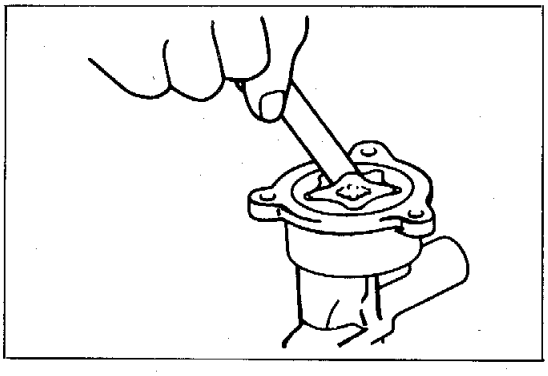
Measuring the Clearance between Driven Rotor and Body LU0300

   (2) Use a straight edge and thickness gauge, and measure the rotor side clearance.
   Standard:
   0.03 – 0.07 mm (0.0012 – 0.0028 in.)
   Limit: 0.15 mm (0.0059 in.)
   If the clearance exceeds the limit, replace the rotors as a set.
   If necessary, replace the whole oil pump ASSY.



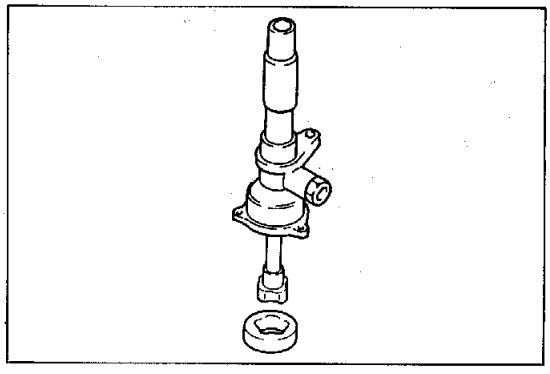
Measuring the Rotor Side Clearance LU0302

   (3) Use the thickness gauge and measure the tip clearance between the drive and driven rotors.
   Standard:
   0.07 – 0.12 mm (0.0028 – 0.0047 in.)
   Limit: 0.02 mm (0.008 in.)
   If the clearance exceeds the limit, replace the rotors as a set.
   If necessary, replace the whole oil pump ASSY.



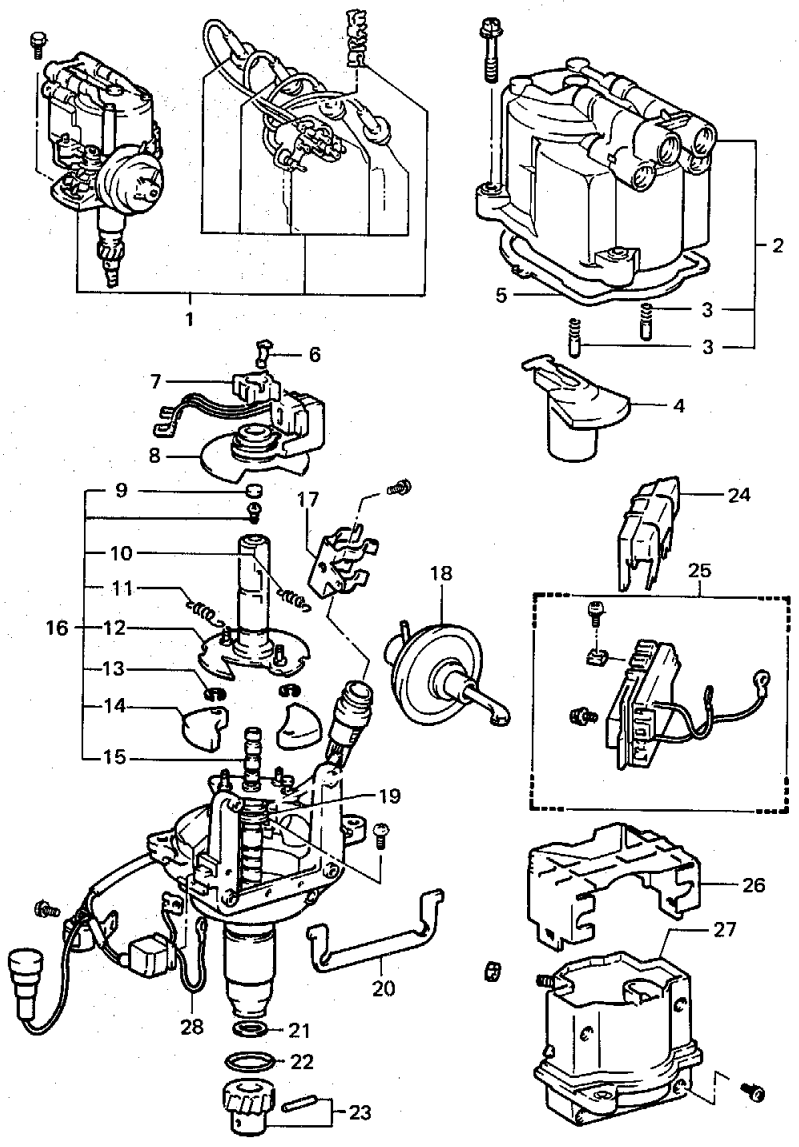
Measuring the Rotor Tip Clearance LU0301

5. Drive and driven rotor removal
   (1) Remove the drive and driven rotors from the pump body.



Removing the Rotors KAJS71

COMPONENTS



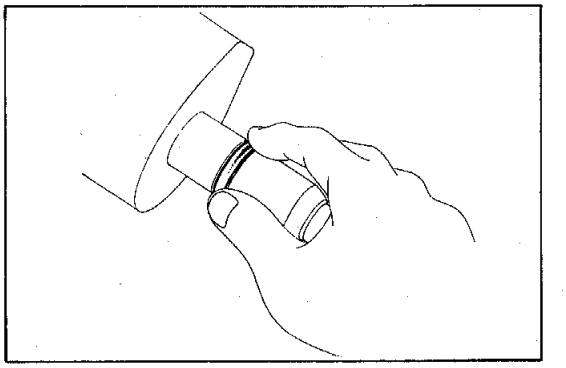
1. Distributor ASSY
2. Distributor cap
3. Cap center piece
4. Distributor rotor
5. Packing
6. Rotor set spring
7. Signal rotor
8. Signal generator ASSY
9. Cap
10. Governor spring A
11. Governor spring B
12. Signal rotor shaft
13. Snap ring
14. Governor weight
15. Governor shaft
16. Governor ASSY
17. Cord clamp
18. Vacuum advancer
19. Washer
20. Packing
21. Washer
22. O-ring
23. Spiral gear
24. Igniter dust cover
25. Igniter
26. Ignition coil dust cover
27. Ignition coil
28. Distributor wire

Distributor Components KAJM14

14. Distributor cap with resistive cord installation
    (1) Install the gasket to the distributor housing.
    (2) Install the distributor cap and tighten 3 screws.

15. Install new O-ring to the housing.

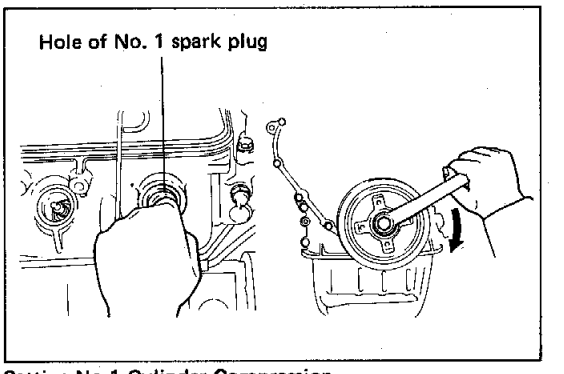
    Note:
    Coat engine oil thinly on the O-ring.



Installing the O-ring IG0522

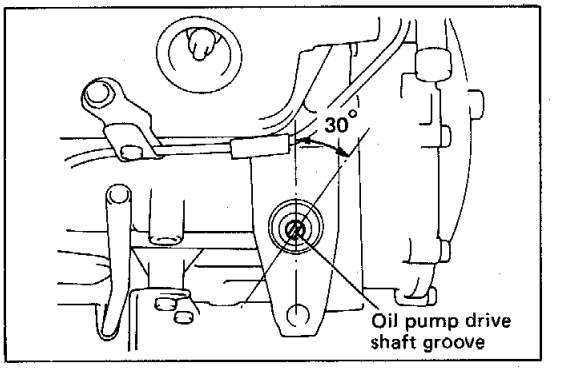
DISTRIBUTOR INSTALLATION

1. Set No. 1 cylinder compression TDC as follows:
    (1) Remove No. 1 spark plug.
    (2) Cover the hole of No. 1 spark plug with a finger tip. Turn the crankshaft clockwise. When pressure is felt, No. 1 cylinder is at the compression TDC.
    (3) Install No. 1 spark plug.



Setting No.1 Cylinder Compression Top Dead Center IG0082, KAJS86

2. Oil pump drive shaft groove setting
    (1) Set the shaft groove to point about 1 o'clock (30°) direction as viewed from above.

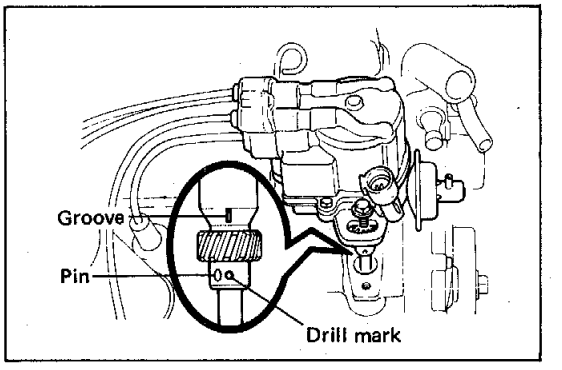


Oil Pump Drive Shaft Groove Position IG0084

3. Distributor installation
    (1) Align the housing groove with the spiral gear drill mark. (Do not align with the spiral gear straight pin.)
    (2) Insert the distributor parallel with the engine.

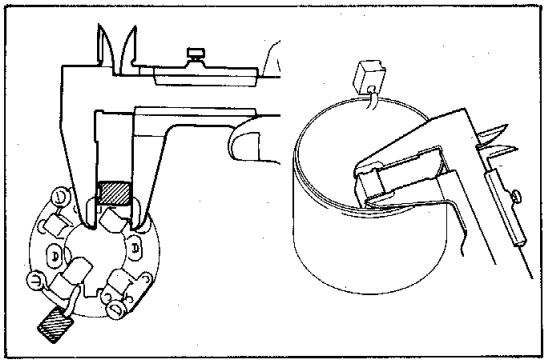
    Caution:
    Insert the distributor by nearly aligning the block installation screw hole with the center of installation flange groove.

    (3) Temporarily tighten the set bolts.



Installing the Distributor IG0087

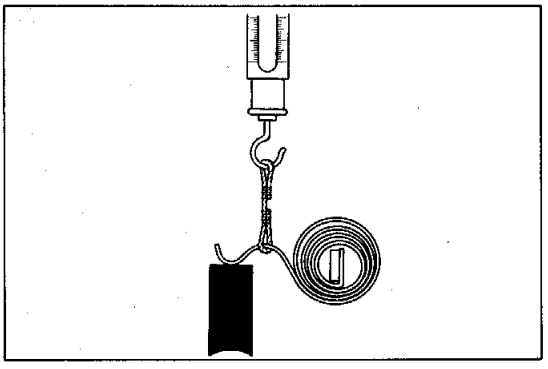
7. Brush test
   (1) Inspect roughening of the contact surface and the brush length.
   Standard: 15 mm (0.591 in.)
   Limit: 10 mm (0.394 in.)



Inspecting the Brush ST0017,0018

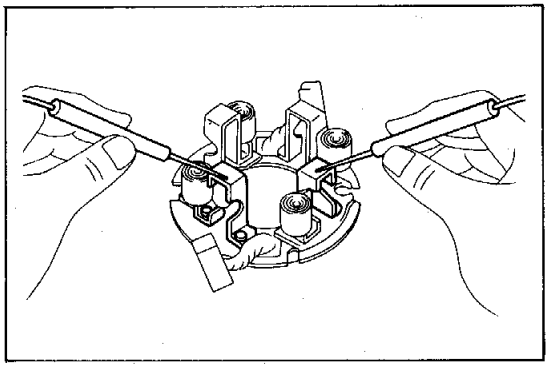
   (2) For contact surface repair or brush replacement, wrap sand paper around the commutator to correct the brush surface.

8. Brush spring inspection
   (1) Check the brush spring for smooth movement. Measure the installed load.
   Standard: 1785 – 2415 g (3.93 – 5.32 lb)



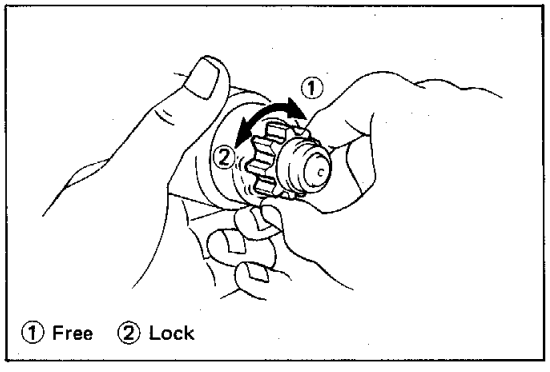
Inspecting the Brush Spring ST0019

9. Brush holder inspection
   (1) Inspect the insulation between the positive and negative brushes.
   Standard: No conduction



Inspecting the Brush Holder ST0062

10. Clutch and gear inspection
   (1) Inspect wear and damages of the gear.
   (2) Check that the gear is locked when rotated in the driving direction (counterclockwise). Check that the gear movement is smooth when turned in the opposite (clockwise) direction.

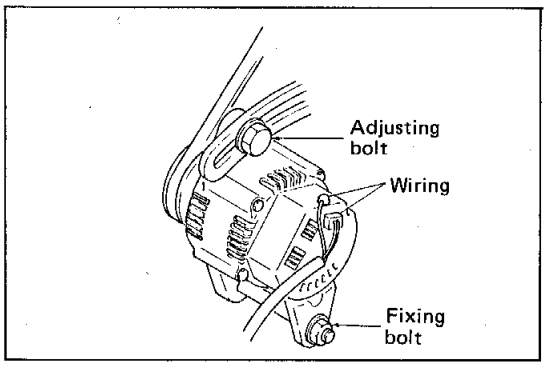


Inspecting the Clutch & Gear ST0020

Caution:
The following description explains removal and installation procedures of the alternator ASSY on the vehicle.

REMOVAL

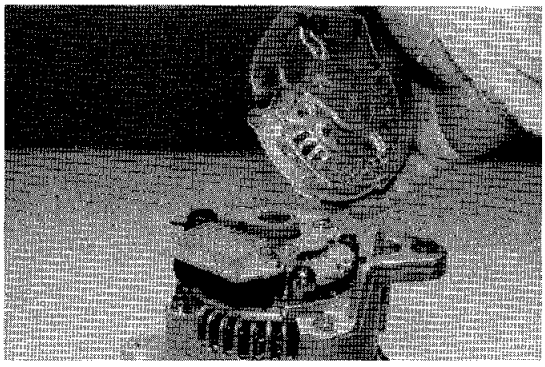
1. Battery negative terminal removal
2. Alternator wiring disconnection.
3. V belt loosening
4. Alternator ASSY removal



Alternator ASSY KAJS83

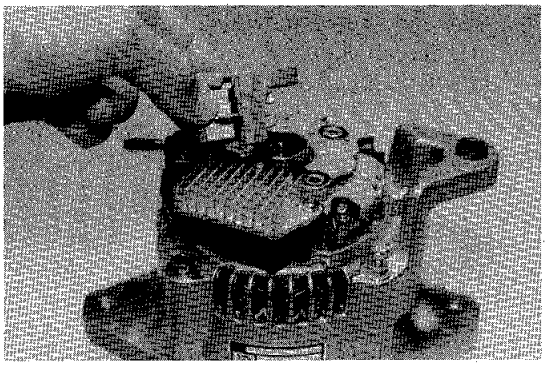
DISASSEMBLY

1. Terminal insulator removal
2. Rear end cover removal
   (1) Screws (3 pcs.)
   (2) Rear end cover



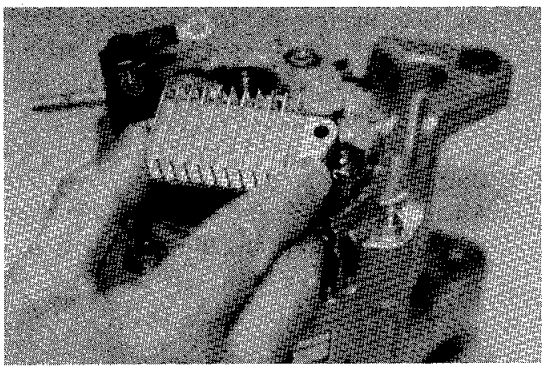
Removing the Rear End Cover KAH21-7

3. Brush holder SUB-ASSY removal
   (1) Screws (2 pcs.)
   (2) Brush holder SUB-ASSY

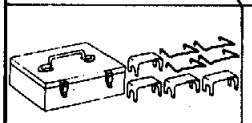
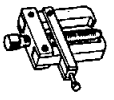
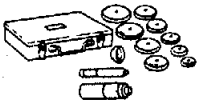
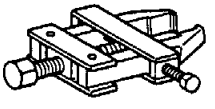
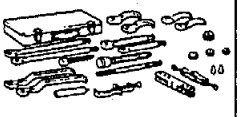


Removing the Brush Holder SUB-ASSY KAH21-12

4. IC regulator ASSY removal
   (1) Screw (3 pcs.)
   (2) IC regulator ASSY



Removing the IC Regulator KAH21-16

SST Description Section / SST Part Name / SST Part Nunber / SST			1	2	3	5	6	8	9
	09270-71010	Tool set, rocker arm support		○					
	09276-71010	Tool, valve lifter		○					
	09286-46011	Puller, injection pump spline shaft						○	
	09381-41950-71	Replacer, H.S.T. pump bearing		○					○
	09410-40120-71	Replacer, steering worm bearing		○					
	09608-35014	Tool set, axle hub and drive pinion bearing		○					
	09820-00021	Puller, alternator rear bearing							○
	09860-11011	Carburetor driver set			○				
	09950-20017	Puller, universal		○					

Commutator	Ellipticity mm (in.)	Standard	0.02 (0.0008)
		Limit	0.05 (0.0020)
	Outside diameter mm (in.)	Standard	30 (1.18)
		Limit	29 (1.14)
	Undercut mm (in.)	Standard	0.5 – 0.8 (0.020 – 0.031)
		Limit	0.2 (0.008)
Brush	Length mm (in.)	Standard	15 (0.591)
		Limit	10 (0.394)
	Spring installed load g (lb)	Standard	1785 – 2415 (3.93 – 5.32)

CHARGING SYSTEM

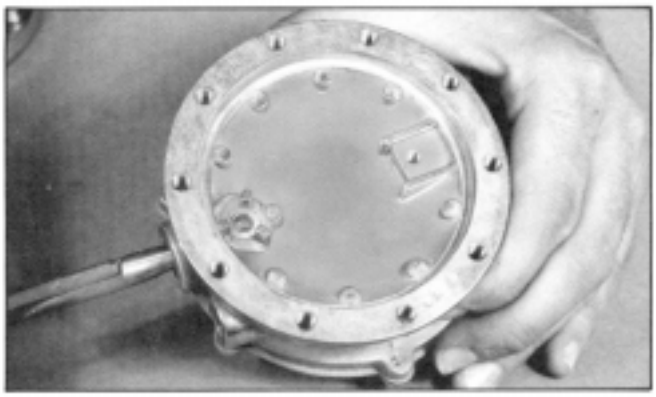
ALTERNATOR

Nominal voltage V			12
Maximum output A			35
Unloaded characteristics	Adjusted voltage V	Standard	14.2 – 14.8
	Adjusted current A	Standard	10 or less
Brush length mm (in.)		Standard	10.5 (0.413)
		Limit	1.5 (0.059)
Slip ring outside diameter mm (in.)		Standard	14.4 (0.567)
		Limit	14.0 (0.551)
Rotor coil resistance Ω			2.9 Ω or less
Resistance between stator coil and each phase		Standard	0.1 MΩ or more
Resistance between slip ring and rotor core		Standard	1 Ω

CONTENTS

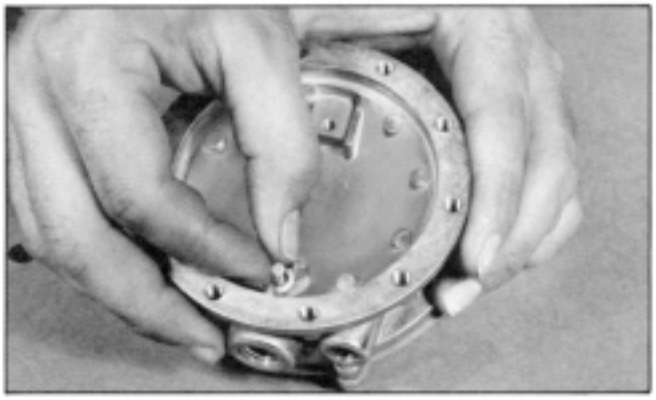
VACUUM FUELOCK FILTER REPAIR METHOD
VFF30
12-3-2 EN

20 / 02 / 2002



21. Insert seal retainer washer in slot to hold "O" ring in place.

22. Insertion of valve operating pin will retain washer and "O" ring in place.



23. Insert pin, lubricated with silicone grease, through hole in retainer washer and "O" ring. Again rotate head of pin gently in a circular motion to ease pin into place through washer, "O" ring and body housing.

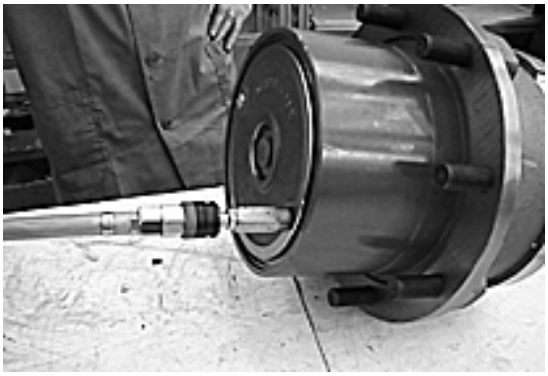
24. Shows valve operating pin in place in valve jet.

CONTENTS

WHEEL DRIVE GEAR 207094

30-3-61EN

03 / 09 / 1998

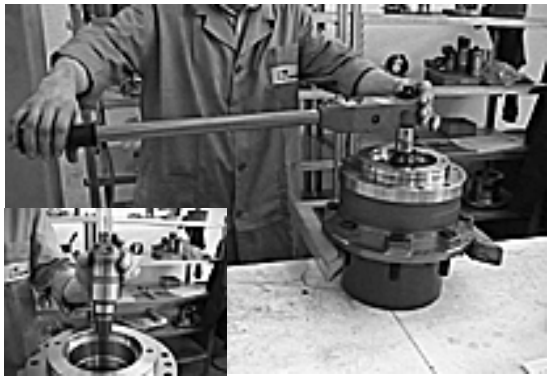


Mount a proper fitting into the hole that is still open on the cover to connect the drive gear to the compressed air supply at a pressure of 0.5 bar. Then use the specific instruments designed to check the pressure inside the reducer and check for any leaks.

After the test, if a leak was found in the oil sump, the water immersion test must be performed to locate the leak.
The immersion test can also be carried out as the only alternative test if specific instruments are not available to check the pressure. Just leave the drive gear attached to the compressed air tube and always at a pressure of 0.5 bar.
Then immerse the drive gear with the relative connections, into a tank of water and note if any air bubbles rise to the surface.
If so, this means that the drive gear leaks. Therefore, find the point where the air comes out of the drive gear, remove the water and take the necessary actions.

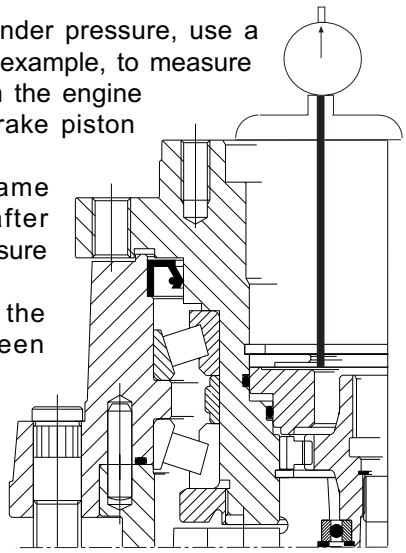
5.3 Wheel drive gear braking torque test:

Lock the hub-ring gear of the wheel drive gear with the motor side facing up.



Check the torque using a special torque wrench with precision +/- 4% that is properly connected to the brake shaft.
With the brake closed: the brake must slide with an applied torque of 220 Nm with a tolerance of +/- 10%..

With the brake under pressure, use a depth gauge, for example, to measure the distance from the engine surface to the brake piston surface.
Repeat the same operation after releasing the pressure on the brake.
Then determine the difference between the two values measured.
The result must be $1.5^{+/-0.5}$mm.

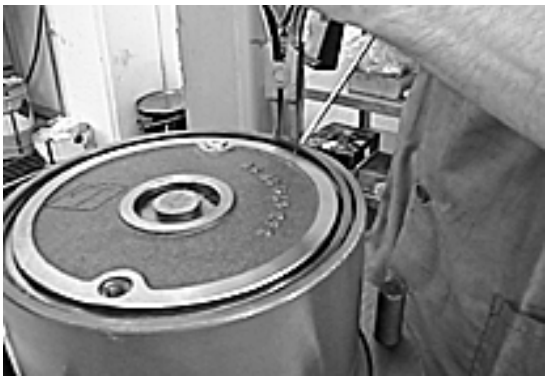


ATTENTION: if the measured value does not comply with the rating, this means that : a part was mounted incorrectly , thus review the assembly procedure, or there is an incorrect spacing dimension of the parts that are needed to obtain this value. In this case, contact the "S.A.V." service department.

6. WHEEL DRIVE GEAR DISASSEMBLY:

In general, there is nothing particularly difficult about disassembling our drive gears - just reverse the assembly steps and try not to ruin the parts comprising the unit. Only in some cases is it necessary to be familiar with or have the necessary instructions.
For this type of drive gear, in order to work on the "brake" part or the "reduction" part, it is not necessary to disassemble the drive gear from the middle: it is necessary in order to work on the "bearing" part or "seal" part.
Drain the lubricating oil from the wheel drive gear, removing the plugs on the cover M10x1 DIN 908.

6.1 "Reduction" unit disassembly:



Remove the retaining ring BR D.205 from its seat that keeps the cover locked.

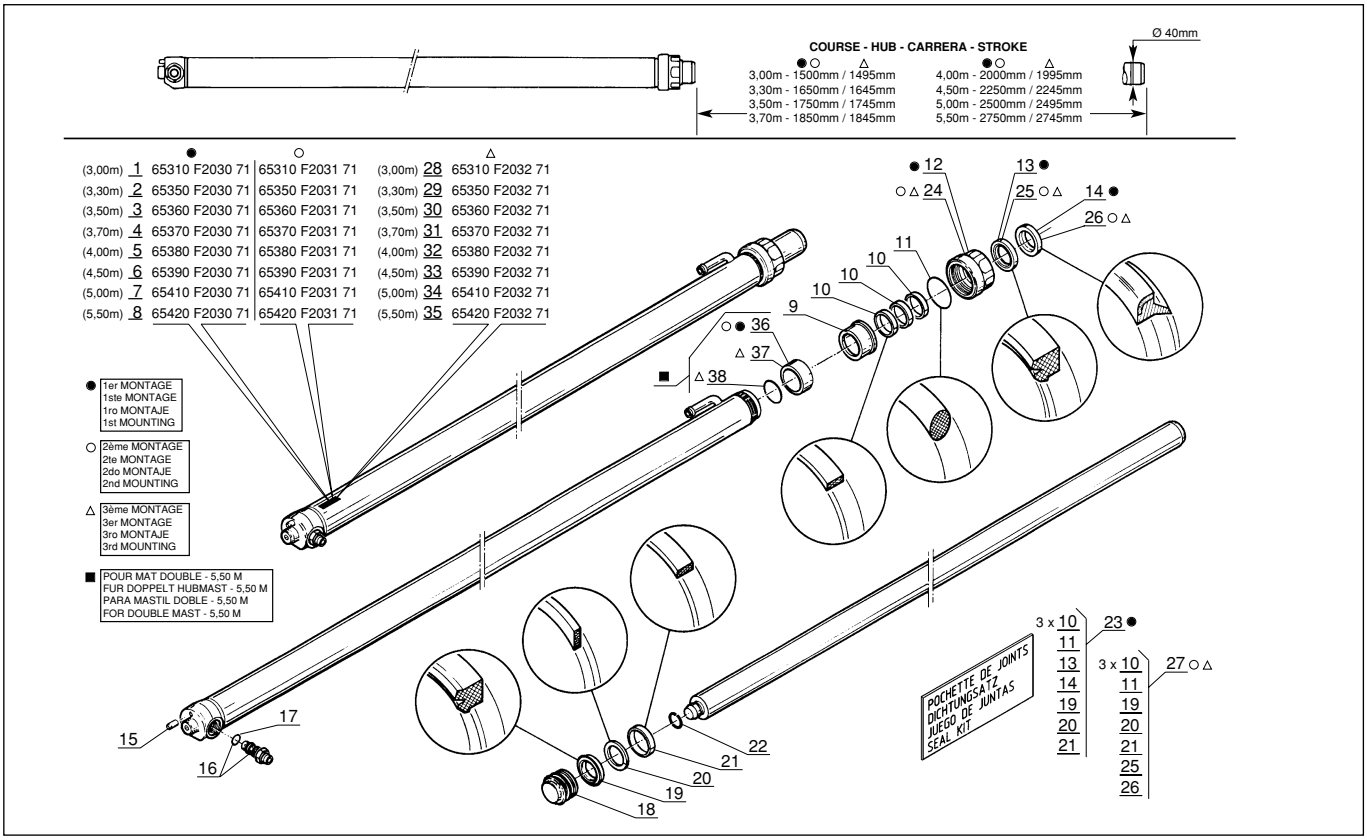
CYLINDER DISASSEMBLY

70-3-80-M43 EN

20 / 12 / 2001

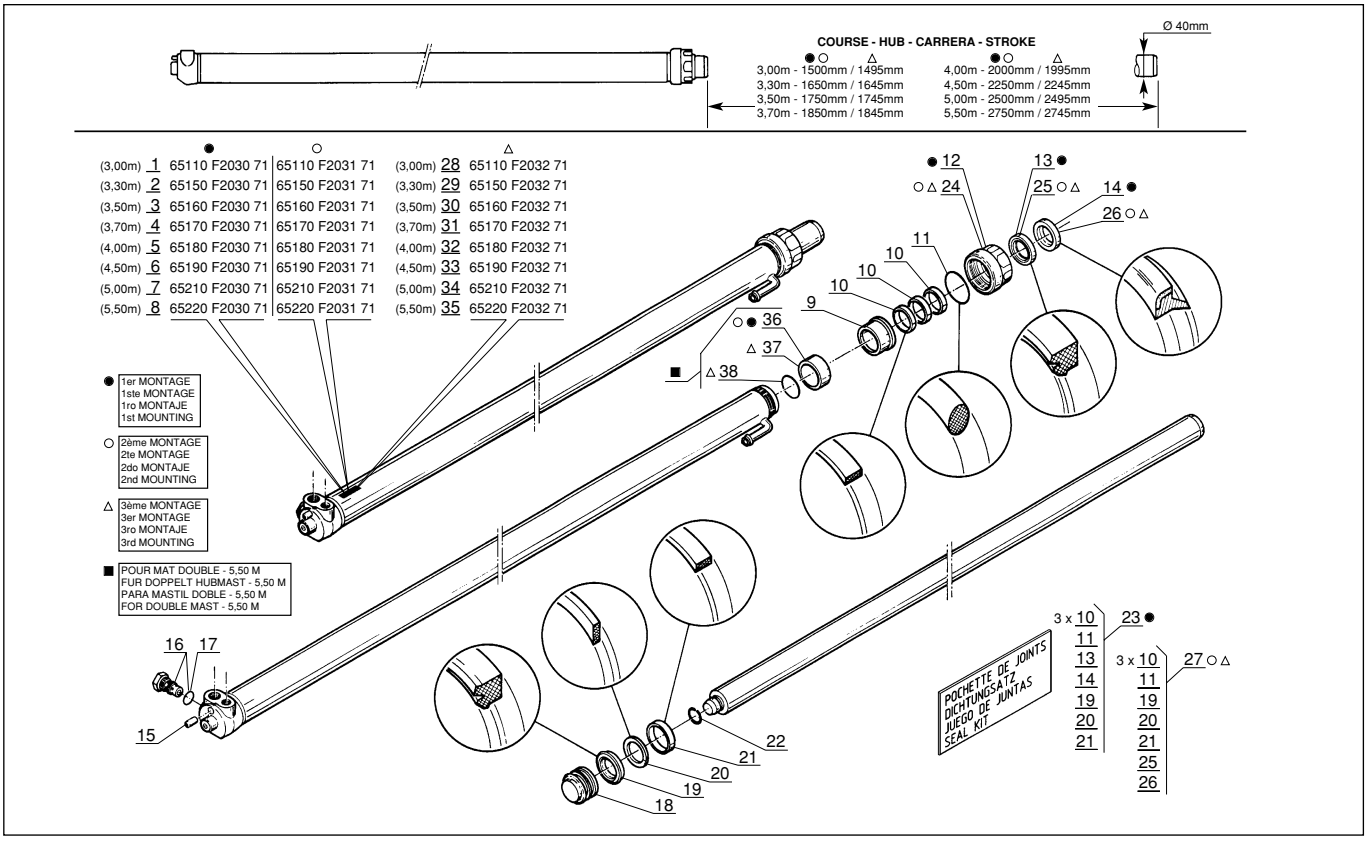
L.H. LIFTING CYLINDER

MSI 20 / 25 / 30 G + BUGGIE



R.H. LIFTING CYLINDER

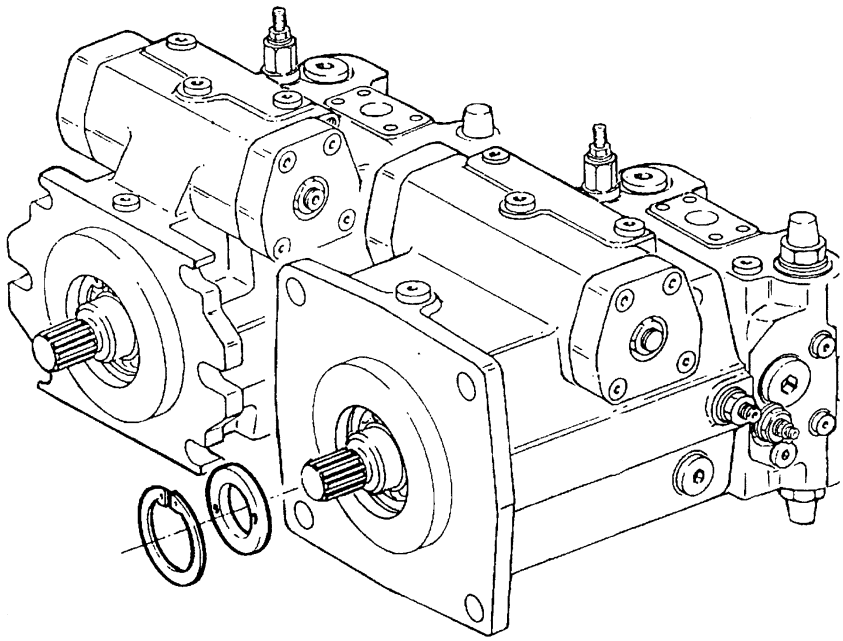
MSI 20 / 25 / 30 G + BUGGIE

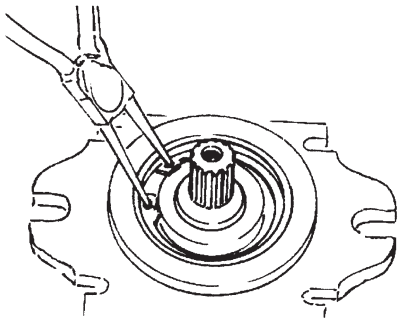


GROUP 75

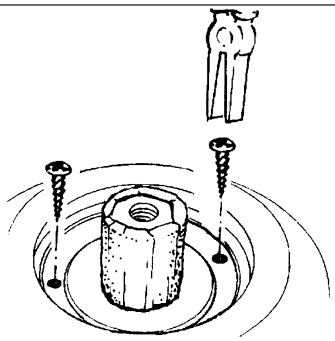
HYDROSTATIC

Sealing of the drive shaft

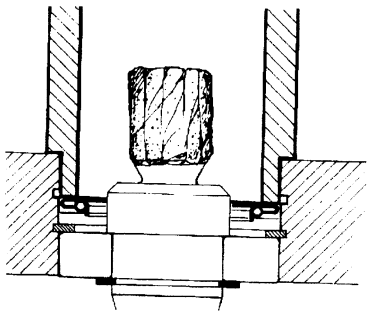




Protecting the drive shaft.
Remove retaining ring.

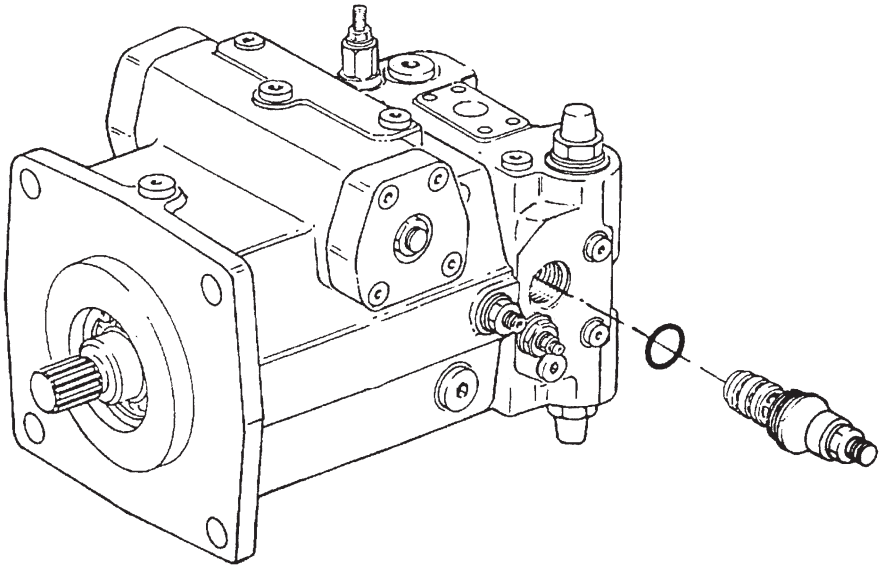


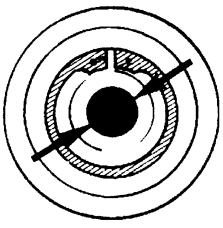
Screw in sheet metal screw into the holes fitted with rubber.
Pull out shaft seal with pliers.



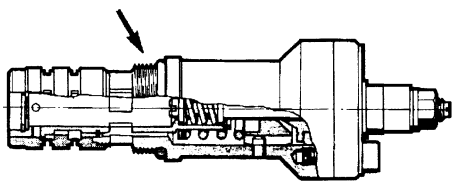
Press-in shaft seal with bush to stop.
Assemble retaining ring.

Sealing of the regulator valve



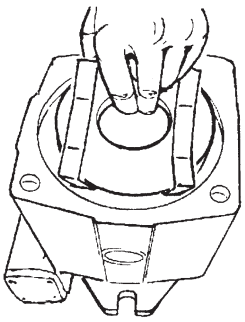


Inspect orifice.
No damage.



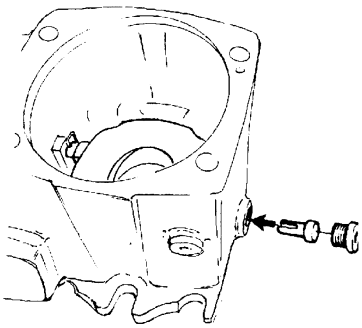
Cover threads.
Insert O-ring.

Installation of the rotary group

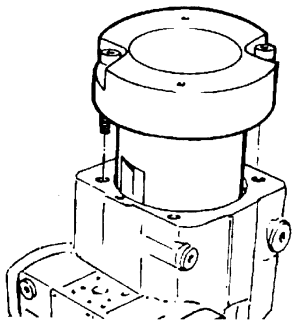


Insert completely swivel cradle into the housing.
Pay attention for correct seat of the swivel cradle in the housing.

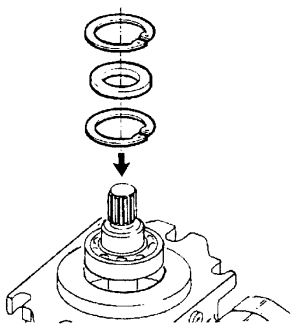
⚠ Remove auuxiliary device.



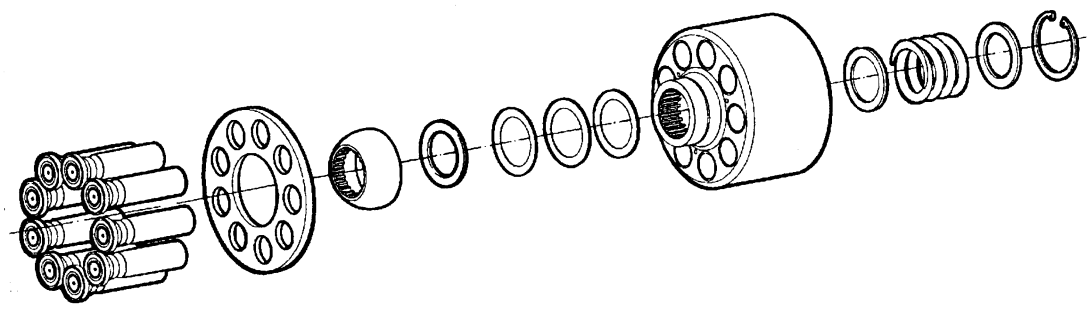
Assemble articulating pins.



Assemble device for fixation of the swivel cradle.

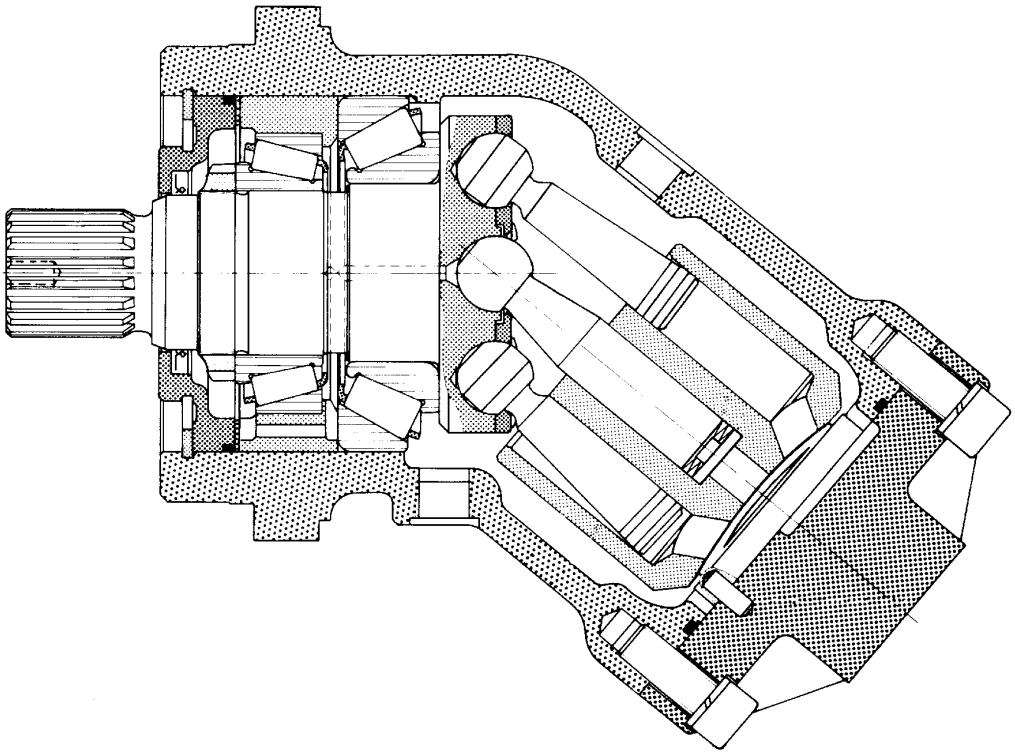


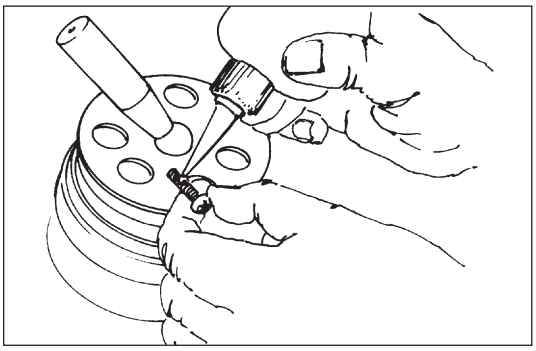
Assemble drive shaft with bearings and radial seal rings.



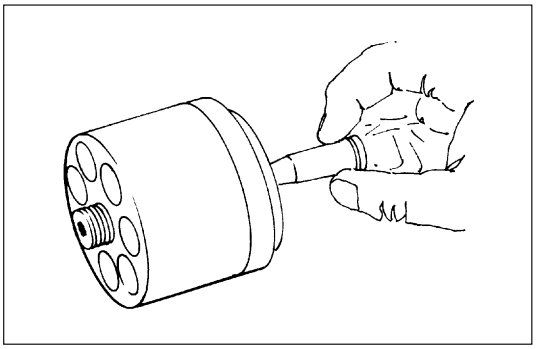
REPAIRS

MOTOR A2FE

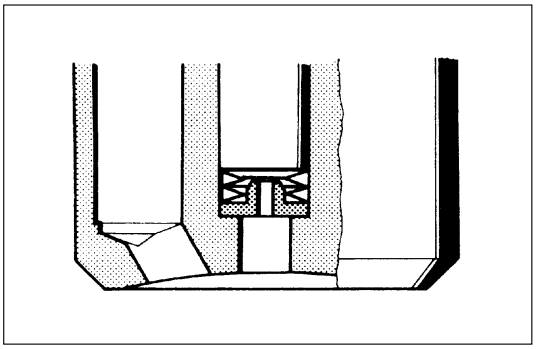




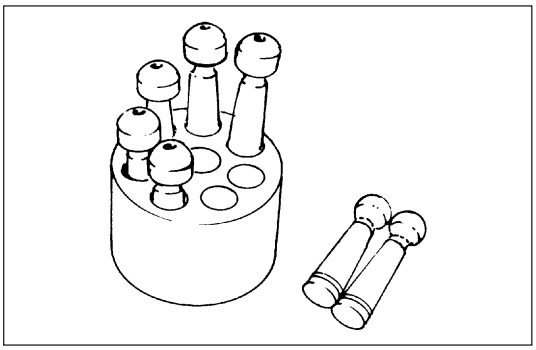
36 Apply a small amount of Loctite to the screws only.



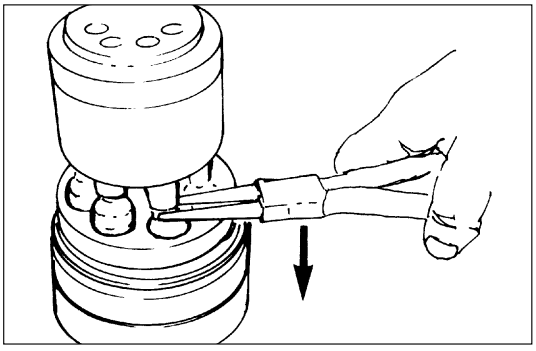
37 Assemble the shoes and the Belleville washers with grease (use a screwdriver).



38 Ensure that all parts are correctly fitted.

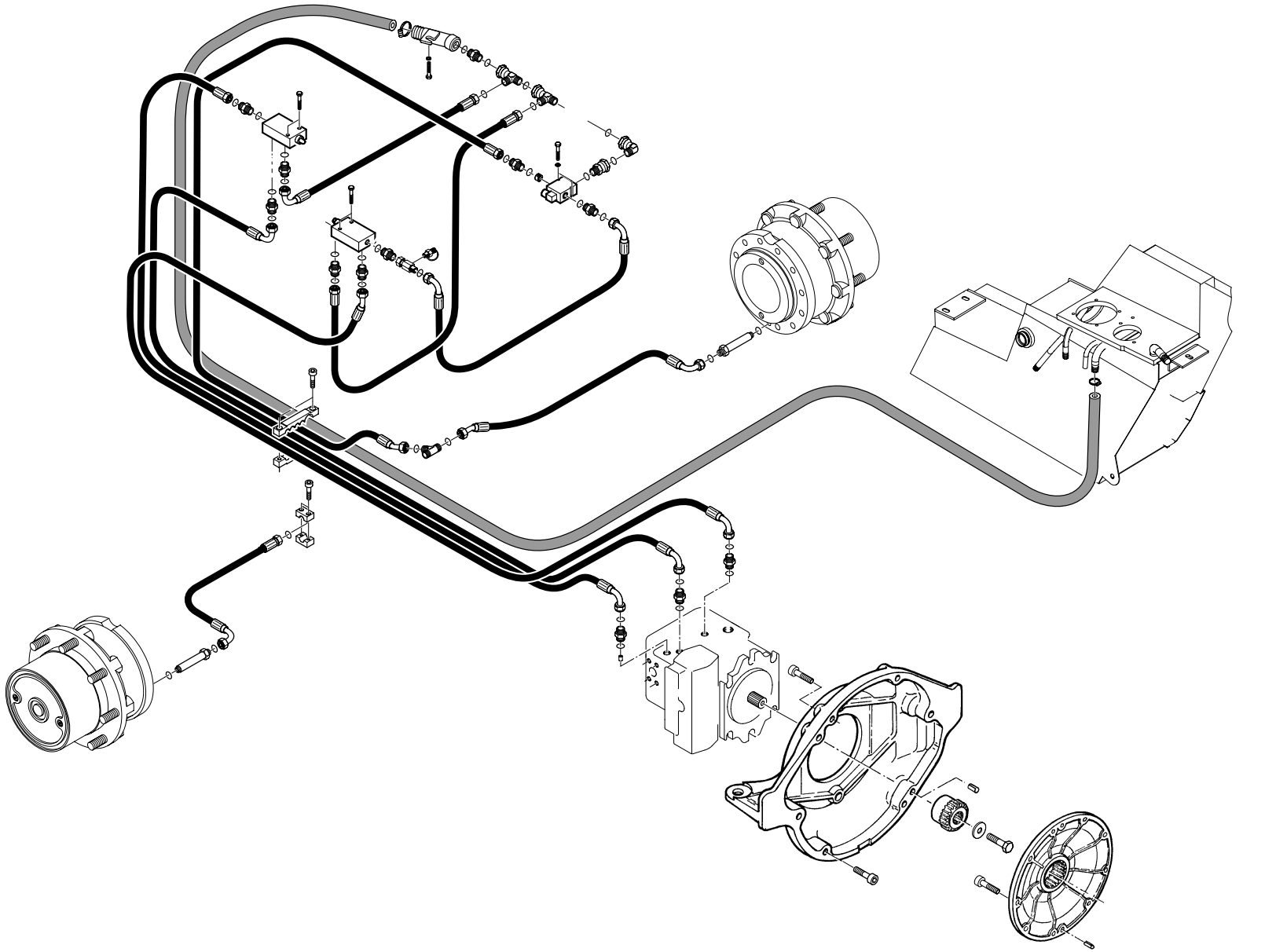


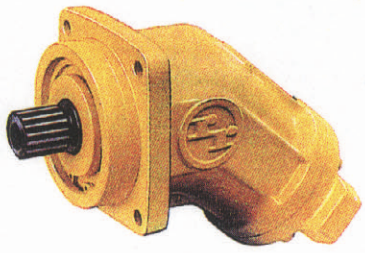
39 Fit the pistons.

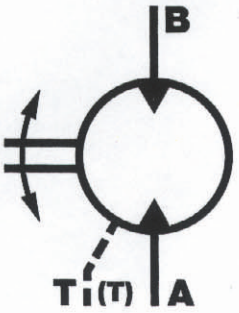


40 Press the pistons firmly into the collars with the cylinder block held centrally.

HYROSTATIC TRANSMISSION CIRCUIT





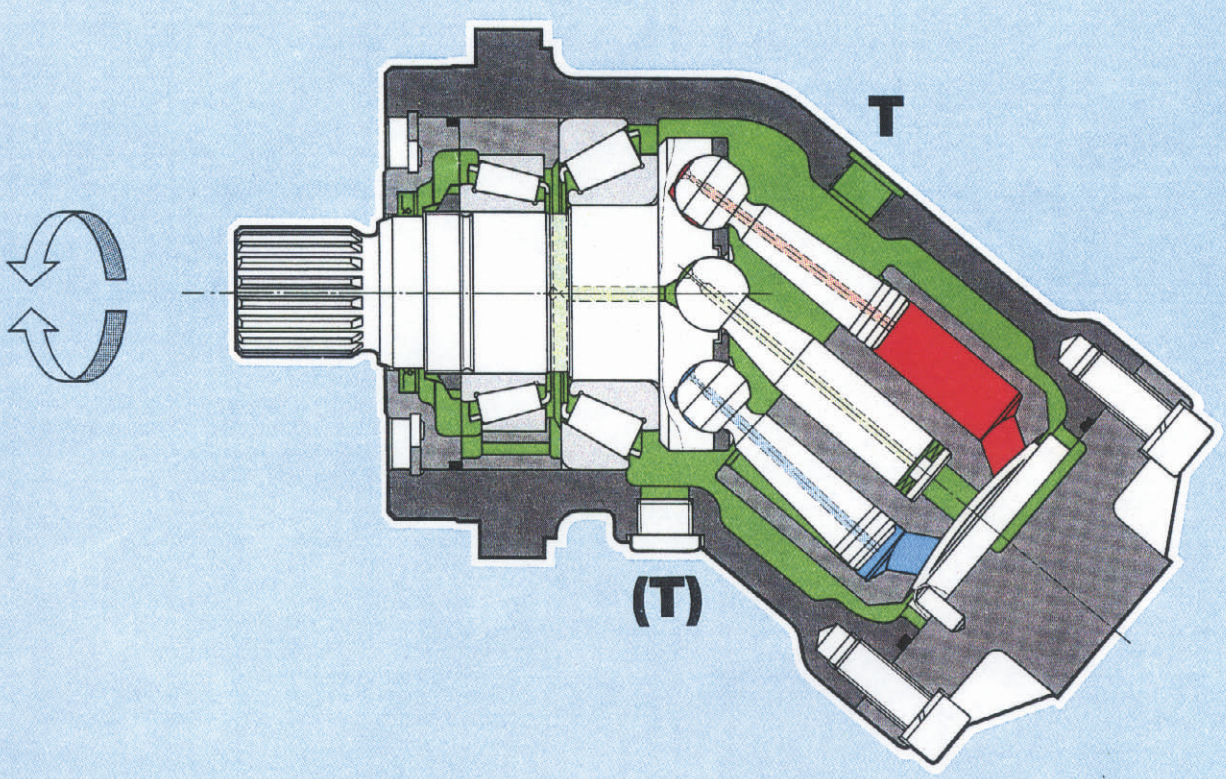


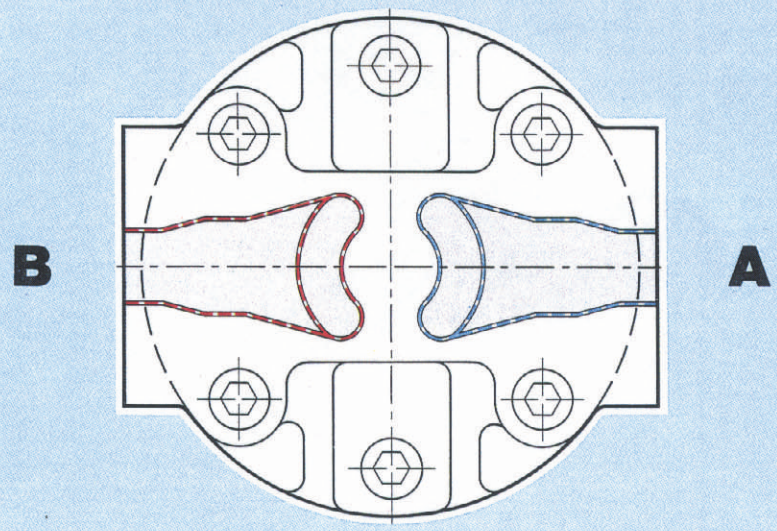
MANNESMANN REXROTH

Hydromatik
Brueninghaus Hydraulik

A2FM

Moteur à cylindrée fixe





Hochdruck High Pressure Haute pression Alta pressione Alta presion	Högtryck высокое давление ciśnienie wysokie 高压 ضغط عالي	Niederdruck Return Line Pressure Basse pression Bassa pressione Baja presion	Lågtryck низкое давление ciśnienie niskie 低压 ضغط واطئ	Saugdruck Suction Pressure Pression d'aspiration Pressione d'aspirazione Presion des aspiracion	Sugtryck давление всасывания ciśnienie ssania 吸油口压力 ضغط المص	Lecköldruck Case Drain Pressure Pression de drainage Pressione di trafilamento Presion de drenaje	Dräneringstryck давление утечки ciśnienie odprowadzania przecieków 泄油口压力 ضغط الزيت المصرب	Steuerdruck Pilot Pressure Pression de pilotage Pressione di pilotaggio Presion de pilotaje	Styrtryck управляющее давление ciśnienie sterowania 操纵压力 ضغط التحريك	Stelldruck Control Pressure Pression de commande Pressione di posizionamento Presion de taraje	Ställtryck установочное давление ciśnienie nastawcze 调节压力 ضغط التنظيم

Pressure relief valve adjustment :

- Remove the lead seal A.
- Take off the cap B.
- Loosen the locknut D.
- Adjust the screw E to increase the pressure.
- Refit the cap having installed a new lead seal.

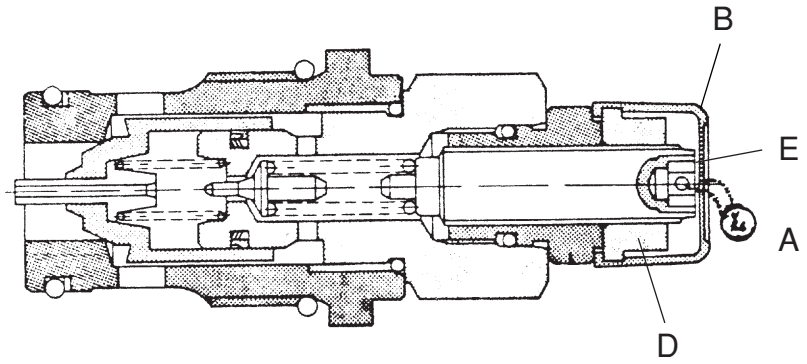


FIG. 2 :
- Adjust the screw 03 for secure a dimension E=6mm (brake pedal released).
- Tighten the locknut 02.
- Adjust the proximity detector 37 for secure a dimension B=3mm
- Tighten the locknut 02.

FIG. 3 :
- Adjust the braking boss 06. Dimension C = approximately 13 mm (in relation to the TH7 body 16).
- Fine down the adjustment to obtain a pressure reading on the gauge of 25 to 30 bar (engine idling speed $900 \pm \begin{smallmatrix}50\\0\end{smallmatrix}$ rpm).

- Tighten the locknut 17.

FIG. 2

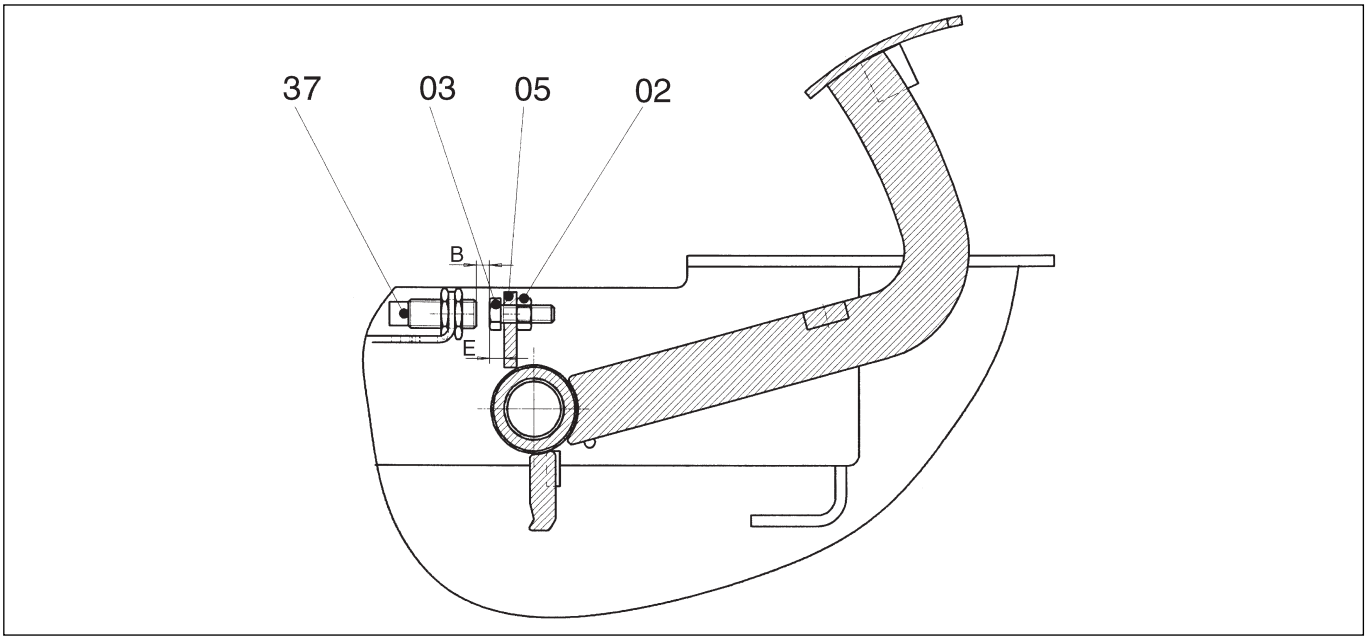


FIG. 3