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2.5 Maintenance chart

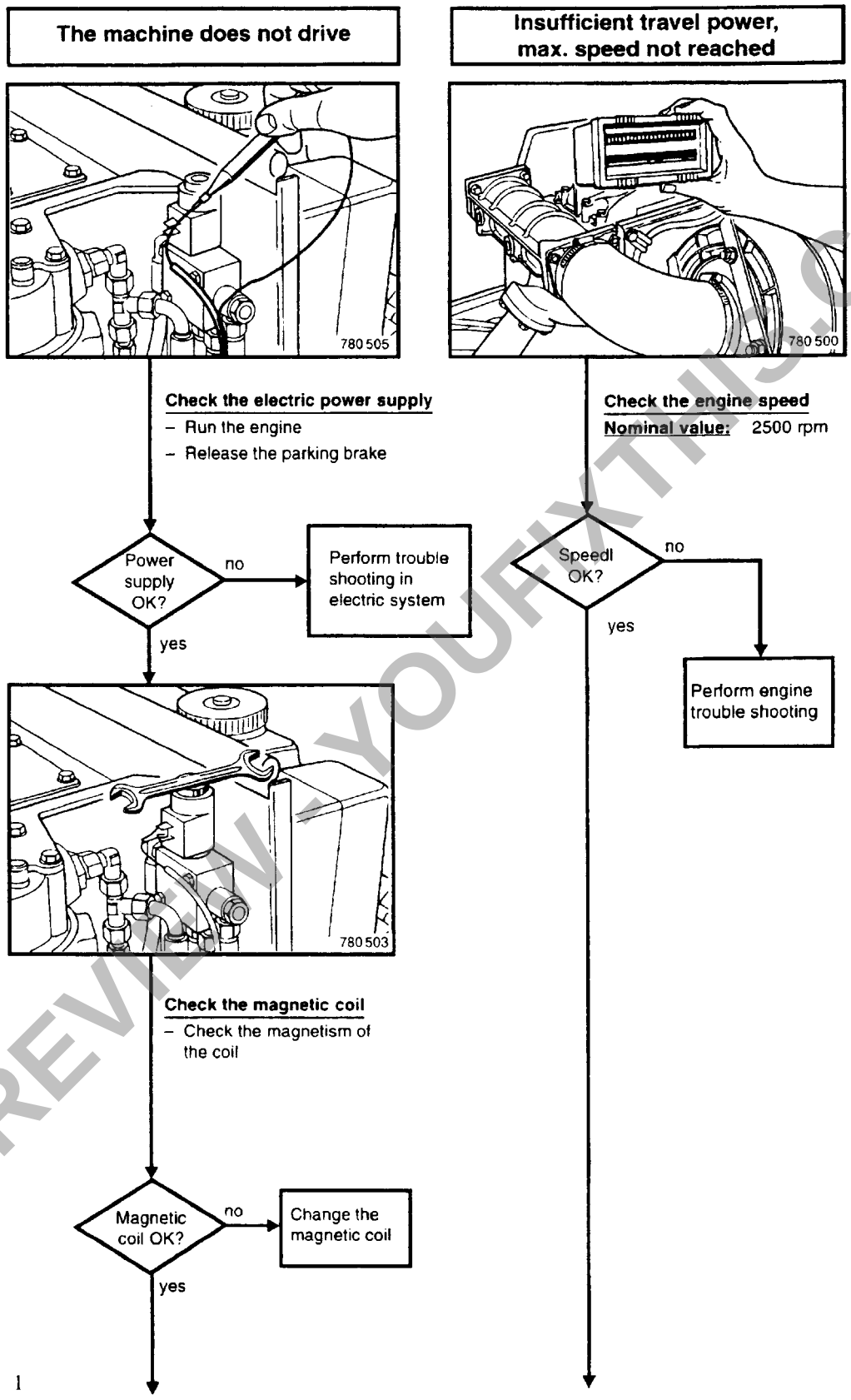
With all maintenance intervals perform also the work for shorter preceding service intervals.

No.	Designation	Note
Every 10 operating hours		
5.6	Check the engine oil level	Observe the dipstick marks
5.7	Checking the dry air filter	
5.8	Check the hydraulic oil level	Observe the dipstick marks
5.9	Checking the hydraulic oil filter element	
5.10	Check the fuel level	
5.11	Checking the water level in the sprinkler system	Winter: Anti-freeze mixture
Every 50 operating hours		
5.12	Checking the emulsion level	
5.13	Grease the articulated joint	High pressure grease
Every 250 operating hours		
5.14	Clean cooling fins and engine oil cooler	
5.15	Cleaning the hydraulic oil cooler	
5.16	Adjust the scrapers	
Every 500 operating hours		
5.17	Service the battery	distilled water, pole grease
5.18	Drain the sludge from the fuel tank	
Every 1000 operating hours		
5.19	Changing the engine oil (at least 1x per year)**	Observe the dipstick marks
5.20	Change the engine oil filter cartridge	
5.21	Checking the valve clearance	
5.22	Check the V-belt tension	
5.23	Change the fuel pre-filter cartridge	
5.24	Change the fuel filter cartridge	
Every 2000 operating hours		
5.25	Change the hydraulic oil*** screen filter (at least after 2 years)	Observe the dipstick marks
5.26	Change the hydraulic oil filter element****	
Every 3000 operating hours		
5.27	Check the injection valves	
Every 5000 operating hours		
5.28	Replace toothed belts, timing belt and toothed belt for hydraulic pump	at the latest after 5 years

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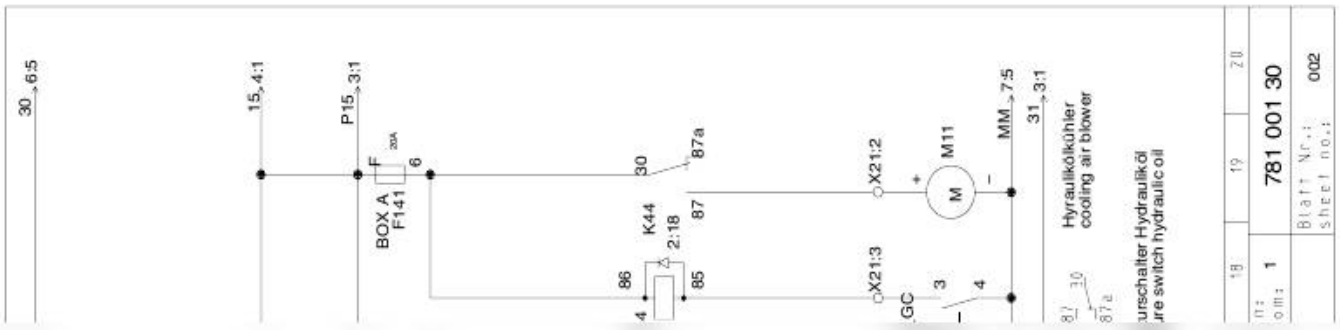
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5.2 Trouble shooting diagram



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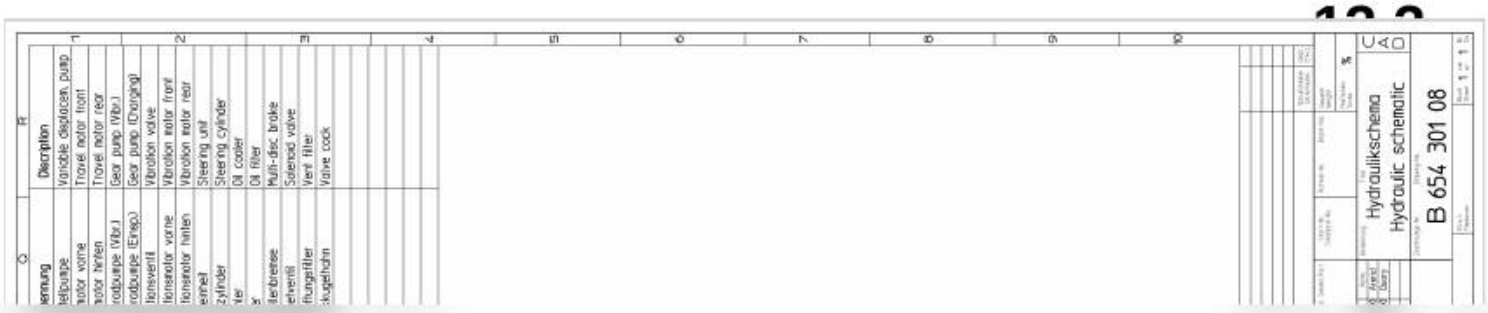
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10.3 Removing and installing the drum

Removing the drum

i Note

The procedures for the removal of front and rear drums are identical. The following instructions describe the removal of the front drum, however, the work steps apply also for the removal of the rear drum.

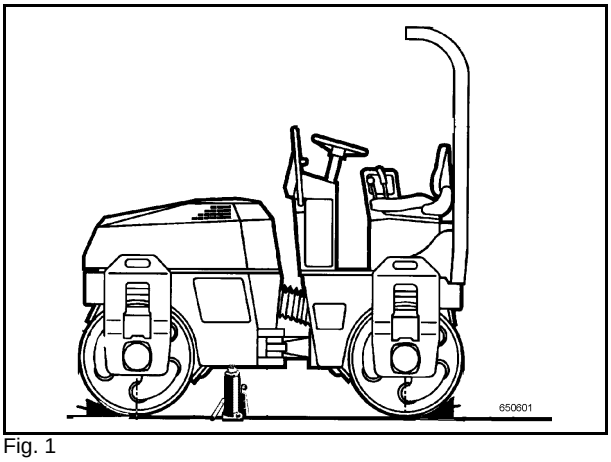


Fig. 1

1. Jack the the machine up (Fig. 1) and support it safely, so that the rubber buffers on the drive disc are unloaded.

⚠ Danger

Danger of accident!

Block front and rear drums with wedges against rolling!

Do not work in the articulation area of the roller while the engine is running.

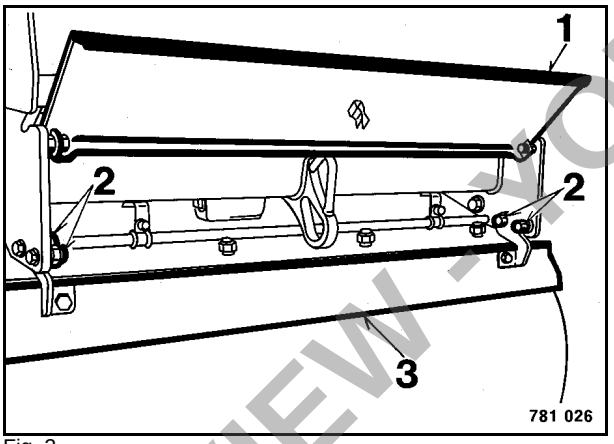


Fig. 2

⚠ Caution

Do not start the engine during repair work!

2. Open flap 1 (Fig. 2).
3. Unscrew the hexagon screws (2) to remove the scrapers (3).

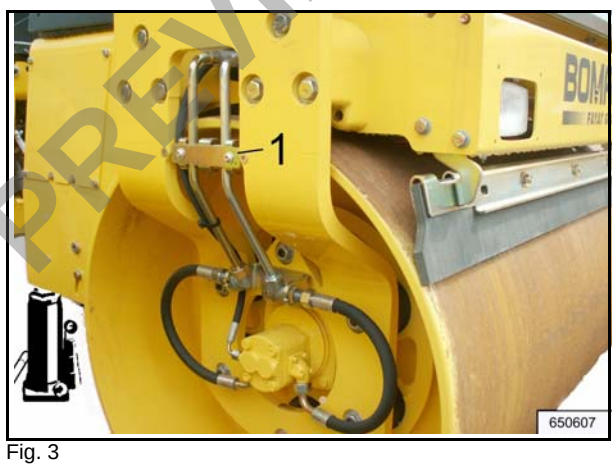


Fig. 3

Vibration motor side

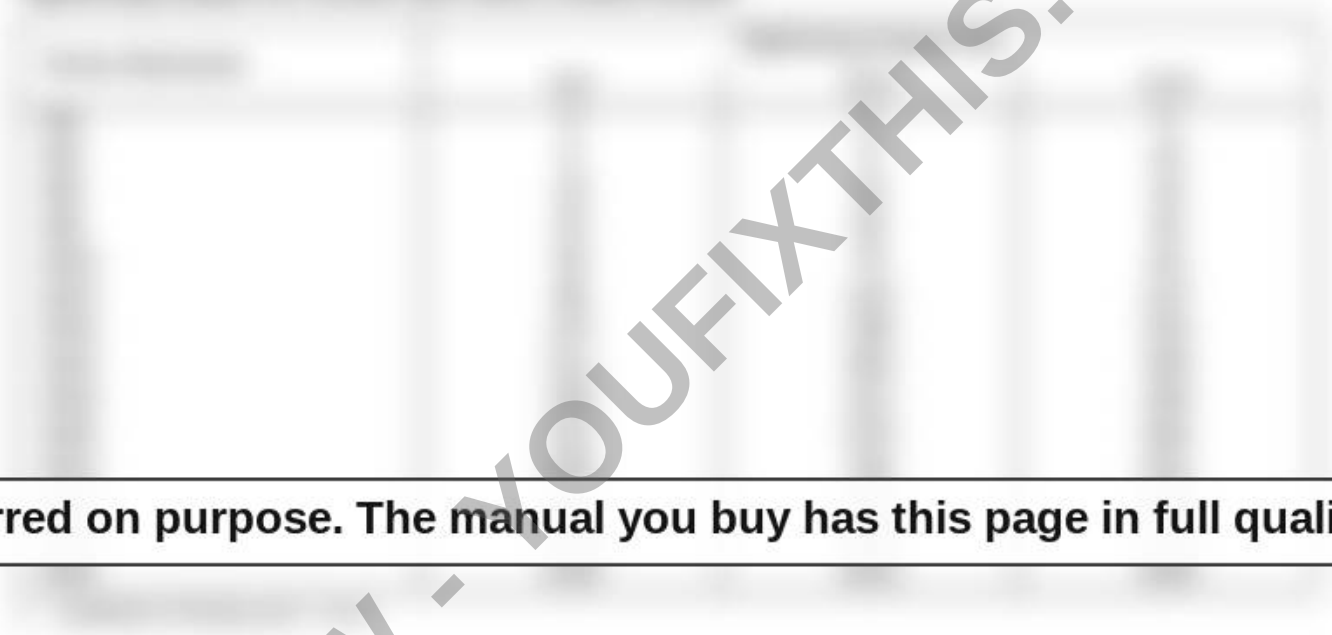
4. Disassemble the bracket 1 (Fig. 3).

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The values specified in the table apply for screws:

- black oiled
- with surface protection A4C
- with surface protection DACROMET





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Important notes

These safety regulations must be read and applied by every person involved in the repair of this machine. The applicable accident prevention instructions and the safety regulations in the operating and maintenance instructions must be additionally observed.

Repair work shall only performed by appropriately trained personnel or by the after sales service of BOMAG.

Any suggestions, safety precautions and warnings in this section are intended as a mnemonic aid for well trained and experienced expert mechanics. This manual should not be considered a bible on workshop safety.

Workshop equipment and facilities as well as the use and waste disposal of solvent, fluids, gases and chemicals are subject to legal regulations, which are intended to provide a minimum on safety. It is obviously your own responsibility to know and adhere to these regulations.

This manual contain headers like "Note", "Attention", "Danger" and "Environment", which must be strictly complied with in order to avoid dangers for health and for the environment.

⚠ Danger

Paragraphs marked like this highlight possible dangers for persons.

⚠ Caution

Paragraphs marked like this highlight possible dangers for machines or parts of the machine.

i Note

Paragraphs marked like this contain technical information for the optimal economical use of the machine.

Environment

Paragraphs marked like this point out practices for safe and environmental disposal of fuels and lubricants as well as replacement parts.

Observe the regulations for the protection of the environment.

General

- Before starting repair work stand the machine on level and solid ground.
- Always secure the machine against unintended rolling.
- Secure the engine reliably against unintentional starting.
- Mark a machine that is defective or being repaired by attaching a clearly visible warning tag to the steering wheel.
- On machines with articulated joint keep the articulated joint locked during work.
- Use protective clothes like hard hat, safety boots and gloves.
- Keep unauthorized persons away from the machine during repair work.
- Tools, lifting gear, lifting tackle, supports and other auxiliary equipment must be fully functional and in safe condition.
- Use only safe and approved lifting gear of sifficient load bearing capacity to remove and install parts or components from and to the machine.
- Be careful with cleansing agents. Do not use easily inflammable or harmful substances, such as gasoline or paint thinners for cleaning.
- Cleaning or repair work on the fuel tank is very dangerous. Do not smoke or allow any ignitable sparks or open fire in the vicinity when cleaning or repairing a tank. .
- When performing welding work strictly comply with the respective welding instructions.

Precautions and codes of conduct for welding work

Welding work should only be performed by specially instructed expert personnel.

⚠ Danger

Electric shock!

Sparks, fire hazard, burning of skin!

Infrared or ultraviolet radiation (arc), flashing of eyes!

Health hazard caused by welding work on highly alloyed work pieces, metal coatings, paint coatings, plastic coatings, oil containing dirt deposits, grease or solvent residues, etc.!

- Check welding equipment and cables for damage before use (also the validity of inspection stickers).
- Ensure good conductivity between earth cable and work piece.
- Start the extraction fan before starting work and guide with the progressing work as required.
- Always isolate the burner when laying it down (remove possible electrode residues).
- Protect cables from being damaged, use cables with insulated couplings.
- Ensure sufficient fire protection, keep a fire extinguisher at hand.

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General notes on trouble shooting in hydraulic systems

The following tests are performed for fault diagnostics and should enable you to encircle a fault in the hydraulic system.

At this point it is assumed that there is no fault in the electric system, i.e. trouble shooting in the electric system has already been performed.

In some cases these tests may also be conducted to identify faults on hydraulic components of the power transmission system.

On the basis of preliminary tests the individual measurements have the purpose to limit the cause of the fault first of all to a general area and then to determine exactly which oil circuit or hydraulic component is not working correctly.

Important points for trouble shooting and fault rectification

⚠ Danger

Danger of injury!

Do not touch rotating parts of the engine.

When working on the travel pump and performing tests in the travel circuit block the drums with suitable wheel chocks.

Hydraulic oil escaping under pressure can penetrate the skin and cause severe injury. You should therefore relieve the pressure in the system before disconnecting any lines. Before repressurizing the system make sure that all line connections and ports are in perfect condition.

When being injured by hydraulic oil consult a physician immediately, as otherwise this may cause severe infections.

⚠ Caution

It is not recommended to open or repair hydraulic units and components without comprehensive knowledge.

Risk of damage to pressure gauges if incorrectly connected.

When performing trouble shooting it is assumed that the machine is correctly equipped and connected, that connections and hoses are free of faults and that setscrews have not been deadjusted without permission.

Progressive tests drawn up in the trouble shooting diagram lead to the detection of faults and their rectification by trained personnel.

- Ensure strict cleanliness, clean ports and fittings before disconnecting.
- Cover all openings and ports or close with plugs.
- Check the hydraulic oil level before and after the work.
- Use only clean oil according to specification.
- Check the hydraulic system for leaks, find and rectify the cause.
- Ensure strict cleanliness, clean ports and fittings before disconnecting.
- Fill new hydraulic units with hydraulic oil before starting operation.
- After changing a component thoroughly flush and bleed the hydraulic system.
- AS far as possible conduct all measurements at operating temperature 40 ... 50 °C.
- After changing a component check charge and high pressure, if necessary check the rotational speed.

Hydraulic hoses

⚠ Danger

Danger of injury

Hydraulic hoses must be visually inspected at regular intervals.

Hydraulic hoses must be immediately replaced if:

- the outer layer is damaged down to the inlay (e.g. chafing, cuts, cracks, etc.)
- the outer layer is brittle (formation of cracks in the hose material)
- the hose shows deformations in pressurized and depressurized condition, which do not comply with the genuine shape of the hydraulic hose
- the hose shows deformations in bends, e.g. squeezing, buckling, layer separation, formation of blisters
- the hose is leaking
- the hydraulic hose has separated from the fitting
- the fitting shows corrosion that impairs both function and strength
- the fitting is deformed in a way that both function and strength are affected
- the storage time and utilization period has expired.

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Trouble shooting "Starter"

The most frequent fault is definitely a fully discharged battery.

If the starter rotates too slowly, either the brushes are partly worn off, or parts of the exciter or armature winding is shorted. In some cases oxidized electric contacts or a soiled ground connection causing extremely high voltage losses in the overall starter system are the cause of problems.

If the starter only emits a clicking sound,- either the magnetic switch is defect / soiled (dismantle and clean))- the main contacts on the magnetic switch are worn off / soiled (scrape off carefully with a file and clean)- the starter motor is defective / soiled (remove armature and clean), cover cleaned, moveable parts with grease.

Frequently a jammed return mechanism is the reason for a starter failure.

Occasionally worn contacts are found on the magnetic return switch

Defects on the actual starter motor including pinion and carbon brushes are very rare.

With a trouble shooting chart the faults in the starter system can be narrowed down. The starter system can only work when many conditions are fulfilled at the same time.

- Immobilizer deactivated?
- Ignition switch OK?
- Travel lever in correct position?
- Emergency stop not actuated?
- Battery sufficiently charged?
- Battery poles OK?
- Main battery fuse OK?
- Main battery switch closed?
- Main starter cable (terminal 30) OK?
- Starter control cable (terminal 50) OK, voltage drop?
- Ground cable OK?
- Switching of magnetic switches OK?

The sequence of these tests is generally of no significance. It mainly depends on:

- the experience of the specialist
- the failure probability of the component to be tested and the testing effort for the respective part.

Only if all criteria mentioned above are OK, the fault must be in the starter itself. In this case it can be repaired or replaced.

Testing and measuring the electric starter

i Note

The highest current flows when the starter is blocked! (Short circuit current in starter). This is the case when the pinion is engaged and the starter has the duty to accelerate the flywheel to starting speed.

Function test with starter installed

- Initiate the starting process and measure the voltage on the pickup solenoid switch (50a). At least 10.8 Volt should be applied.
- When operating the starter switch the magnetic switch must engage in the flywheel ring gear (noticeable clicking sound) and release the starting current to the starter. On most magnetic switches the voltage can be measured with the multimeter. If this does not happen even though voltage is applied, replace the magnetic switch.

Function tests with disassembled starter

⚠ Caution

Before removing the starter you must disconnect the ground cable from the minus pole of the battery while the ignition is switched off.

- Check the wear on the carbon brushes and their contact pressure.
- Check the collector, it must not have electrical contact with the rotor shaft.
- Check the drive pinion for excessive wear.
- The return mechanism should not be tight, if necessary grease amply with silicon grease (Bosch PZ 2 V3) or a comparable grease.
- Measure the resistance of the magnetic switch main contact in disengaged condition. Maximum value 0.2 OHM Ω

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9.2 Flushing - general

⚠ Caution

Solid particles in the circuit will very quickly cause damage to machine components.

Environment

Environmental damage

Catch running out hydraulic oil and dispose of environmentally.

Changing a component

⚠ Caution

Always flush the complete oil circuit after you have replaced a component.

Chips (abrasion) in the oil

- Open and clean all components in the oil circuit, replace if necessary.
- Clean all high pressure hoses in the oil circuit, replace if necessary.
- If abrasion is found in the travel circuit you should also flush the vibration circuit.
- If abrasion is found in the vibration circuit you should also flush the travel circuit.

Before flushing

Change the filter element

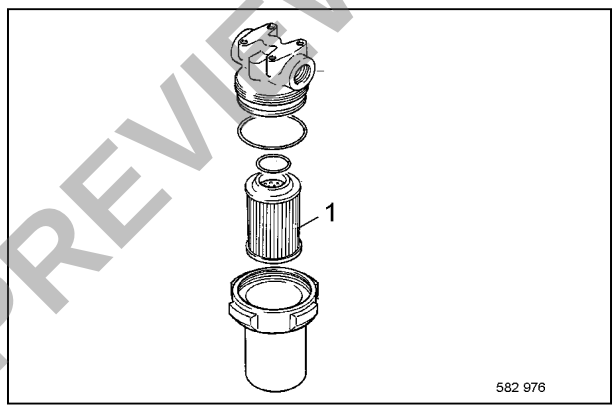


Fig. 1

- Change the hydraulic oil filter element (1).

Clean the hydraulic tank

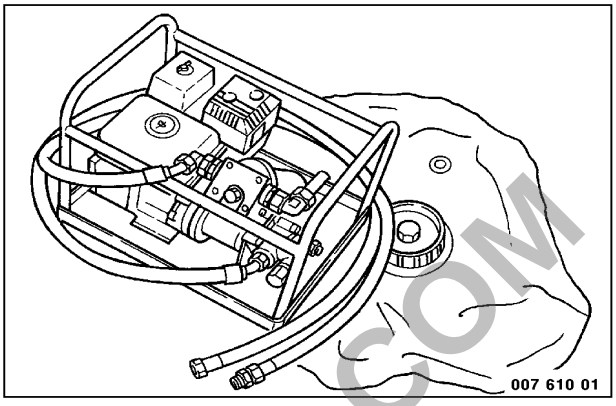


Fig. 2

⚠ Caution

Change the oil in case of excessive contamination, oil discoloration or if the oil change interval is almost due.

- Filter the tank content with the filling and filtering unit and pump it into the oil bag.
- Mark all hoses and disconnect them from the hydraulic oil tank.
- Clean the oil tank thoroughly from inside, if necessary remove the complete tank cover.
- Reconnect all hoses.
- Fill the hydraulic oil tank again with the filling and filtering unit.

Bleeding

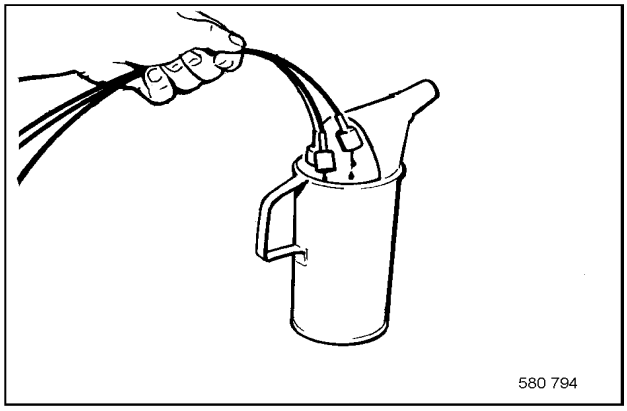


Fig. 3

- Always bleed closed hydraulic circuits if lines had been removed or connected.

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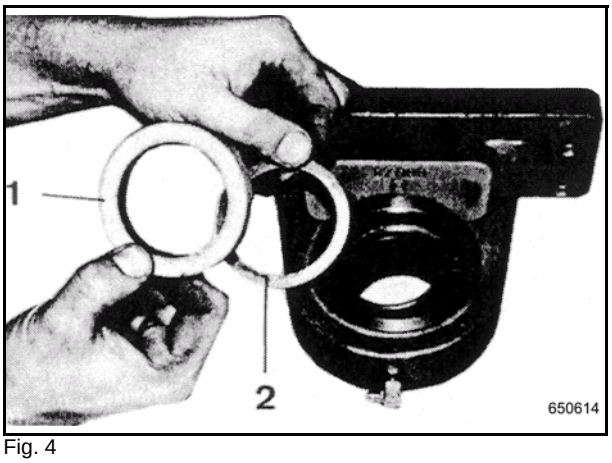


Fig. 4

4. Take sealing rings 1 (Fig. 4) and supporting discs (2) out of the bearing blocks or off the shaft journals.

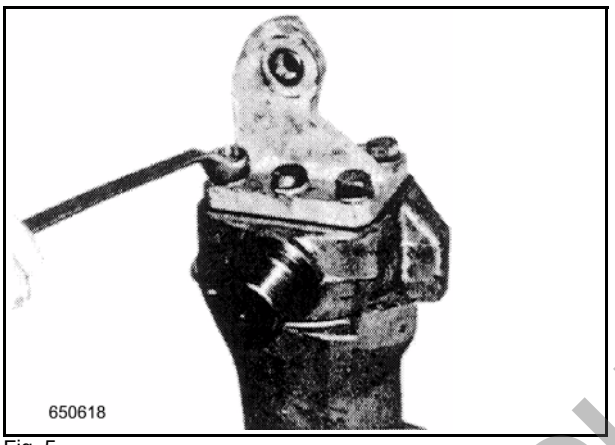


Fig. 5

5. Unscrew the fastening screws (Fig. 5) and remove the cylinder eye.

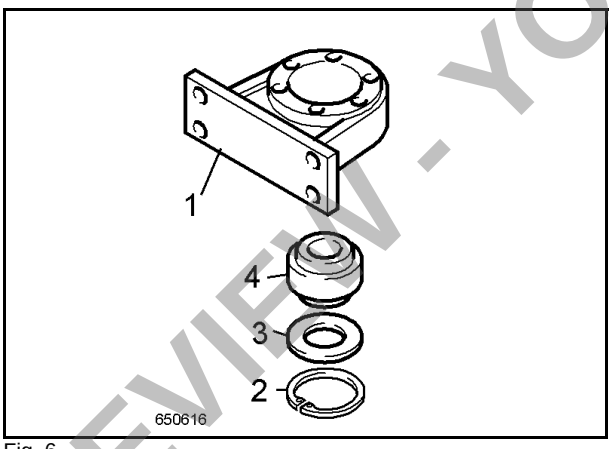


Fig. 6

6. Remove circlip 2 (Fig. 6) and backing disc (3).
7. Knock the rocker bearing (4) out of the bearing block (1).

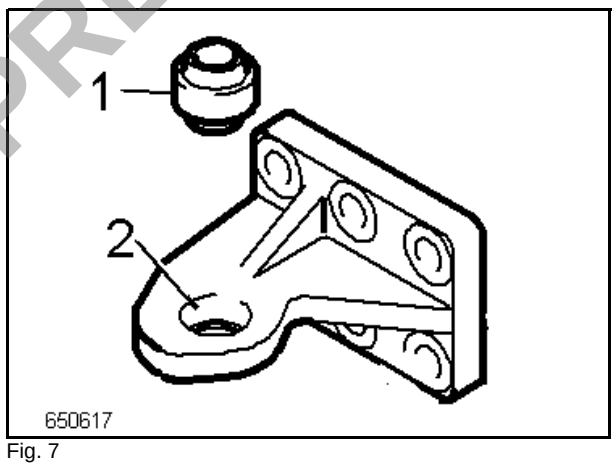


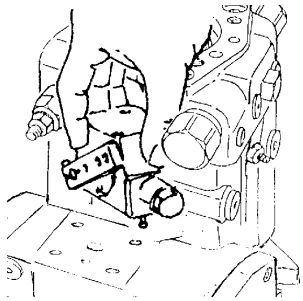
Fig. 7

8. Knock the rocker bearing 1 (Fig. 7) out of the cylinder eye (2).

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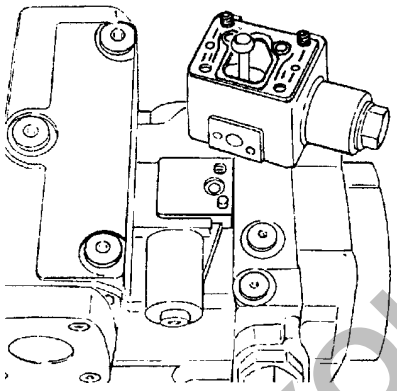
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Pumpe montieren
Assembly of the pump



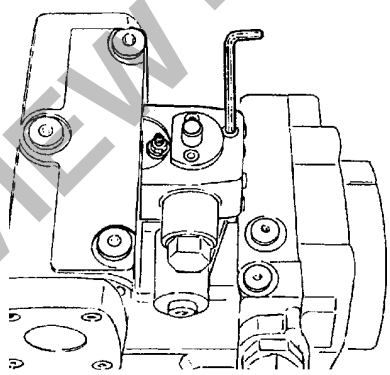
Ansteuergerät mit Dichtung montieren.

Fit control device with seal.



Dichtung mit zwei Befestigungschrauben zentrieren und Ansteuergerät einbauen.
Alle vier Schrauben mit halbem Drehmoment anziehen.

Centre the seal using two fixing screws and fit the control unit.
Tighten all four screws to half of specified torque.



Fünfte Schraube einsetzen und mit Drehmoment = 10,4 Nm festziehen.
Restliche vier Schrauben nach Drehmoment festziehen.

Fit the fifth screw and tighten to a torque of 10,4 Nm.
Then tighten the other four screws to there correct torque.

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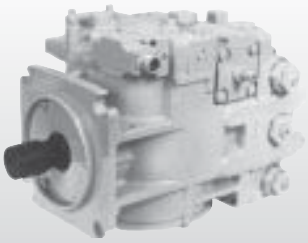
Hydraulic Power Systems

SAUER-SUNDSTRAND Hydraulic Power Systems - Market Leaders Worldwide

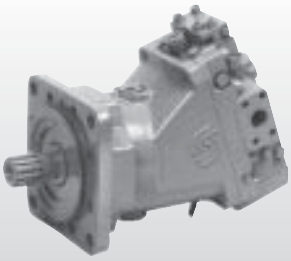
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SAUER-SUNDSTRAND specializes in integrating a full range of system components to provide vehicle designers with the most advanced total-design system.

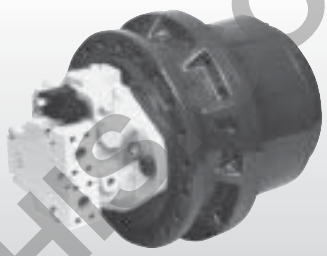
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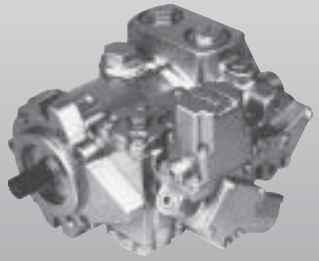
Heavy Duty Axial Piston Pumps and Motors



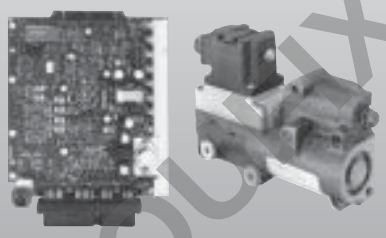
Heavy Duty Bent Axis Variable Motors



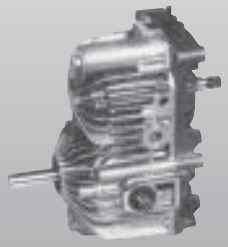
Cartridge Motors/ Compact Wheel Drives



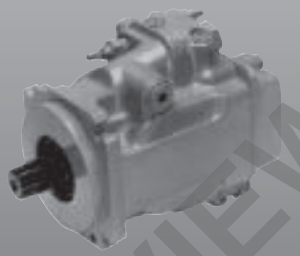
Medium Duty Axial Piston Pumps and Motors



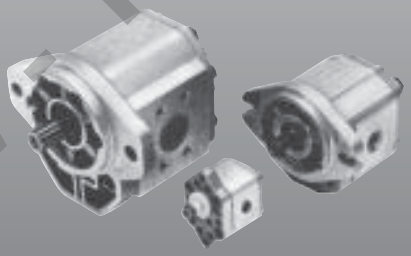
Mikrocontrollers and Electrohydraulic Controls



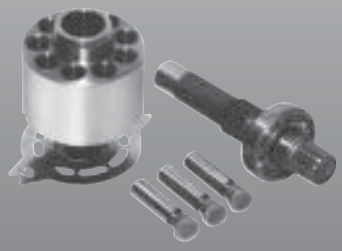
Hydrostatic Transmissions Packages



Open Circuit Axial Piston Pumps



Gear Pumps and Motors



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Nummer	Bezeichnung
● 100	Komplette Bremse
101	Bremsgehäuse
102	Schraube
106	O-Ring
107	Kolben
108	Tellerfeder
109	Sicherungsring
110	Welle
111	Dichtsatz Bremswelle
112	Schraube
113	Dichtungsring
135	Satz Bremslamellen
141	Schutzkappe
142	Stopfen
143	O-Ring
● 150	Drehzahlsensor-Vorbereitung
152	Scheibe
153	Scheibe
● 160	Kompletter Sensor
161	Sensor
162	Mutter
163	Scheibe
164	Dichtung

● Als Satz lieferbare Baugruppe

Item	*Description*
● *100*	*Brake assembly*
101	*Brake body*
102	*Screw*
106	*O-ring*
107	*Brake piston*
108	*Spring washer*
109	*Snap ring*
110	*Brake shaft*
111	*Seal*
112	*Screw*
113	*Seal washer*
135	*Brake kit*
141	*Cover*
142	*Plug*
143	*O-ring*
● *150*	*Speed sensor predisposition*
152	*Washer*
153	*Washer*
● *160*	*Speed sensor assembly*
161	*Speed sensor part*
162	*Nut*
163	*Washer*
164	*Seal*

● *Sub-assembly sold assembled*

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