BOMAG
FAYAT GROUP

Service - Manual

BW 211 DE-40

S/N 101 583 45 . . . .



Single drum roller

Catalogue number.
008 919 50

06/2012

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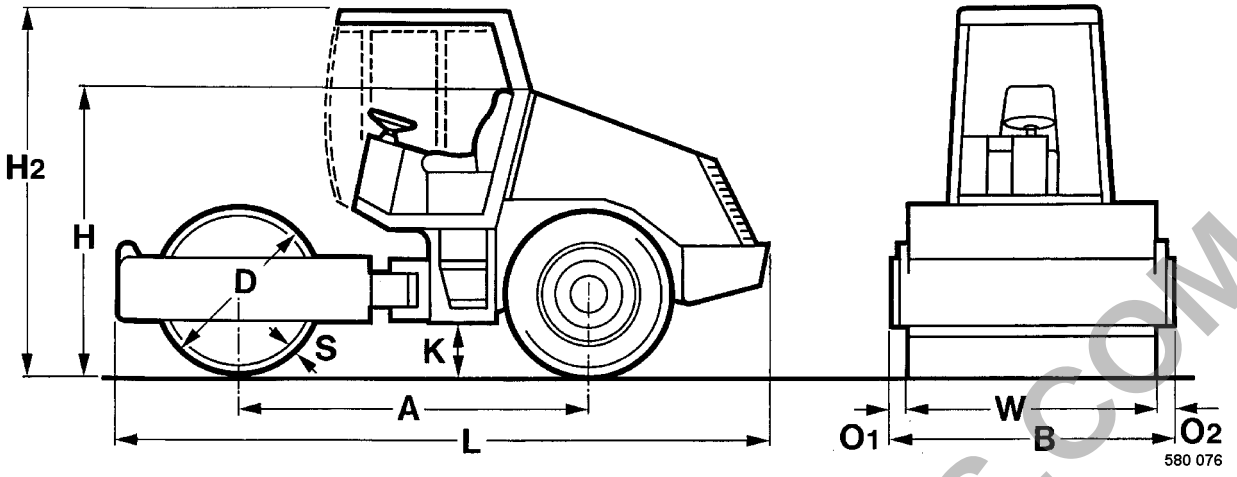


Fig. 12

Dimensions in mm	A	B	D	H	H2*	K	L	O1	O2	S	W
BW 211 DE-40	2960	2250	1500	2268	2972	490	5840	60	60	25	2130

* Depending on tire pressure

*		**BW 211 D-40**
Weights		
Operating weight (CECE) with ROPS and cabin	kg	13000
Axle load, drum (CECE)	kg	8050
Rear axle load (CECE)	kg	4950
Static linear load	kg/cm	27
Travel characteristics		
Travel speed (1)	km/h	0 ... 6
Travel speed (2)	km/h	0 ... 10
Max. gradability (depending on soil)	%	45
Engine		
Engine manufacturer		Deutz
Type		BF4M 1013 EC
Cooling		Water
Number of cylinders		4
Rated power DIN ISO 3046	kW	114
Rated speed	rpm	2200
Fuel		Diesel
Electrical equipment	V	12
Drive system		hydrostatic
Driven axles		2
Permissible ambient temperatures	°C	-20 ... +50
Brake		
Service brake		hydrostatic
Parking brake		hydr.-mech.

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Cover sheet

The cover sheet, see example (Fig. 14), contains general information.

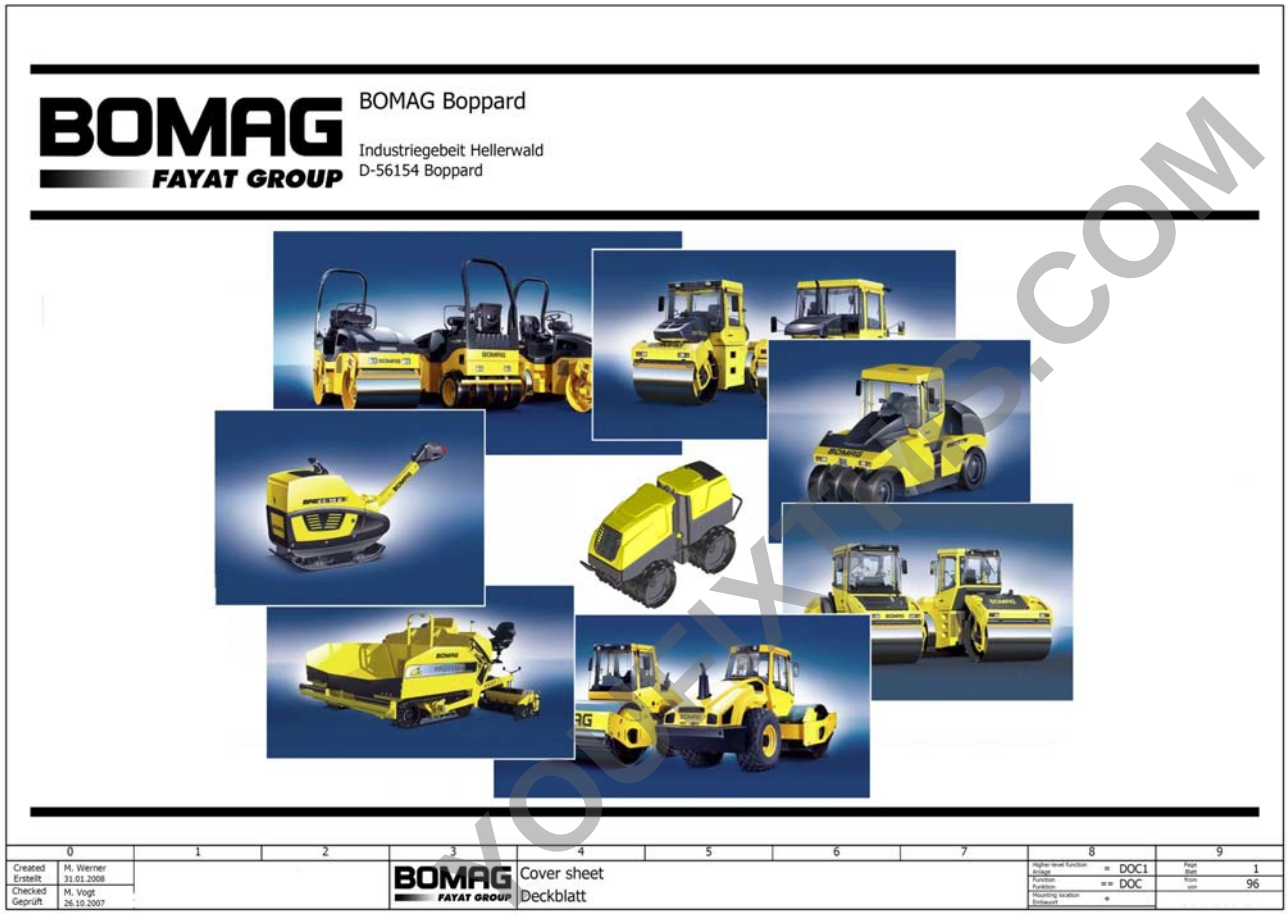


Fig. 14 Example: Cover sheet

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The following statements concerning electric voltage can be made

- electric voltage is the pressure or force applied to free electrons.
- the electric voltage is the cause of electric current
- electric voltage is a result of the equalization attempt of electric charges.

Voltage is measured with a Voltmeter.

Unit, Volt

The electric voltage (U) is measured in Volt (V).

Current

Electric current generally describes the directed movement of charge carriers.

- The charge carriers may either be electrons or ions.
- Electric current can only flow if there is a sufficient amount of free moving charge carriers.
- The higher the number of electrons flowing through a conductor per second, the higher the amperage.

Current is measured with an ammeter.

Unit, Ampere

The electric amperage (I) is measured in Ampere (A).

The technical flow direction is specified from PLUS to MINUS.

i Note

Current actually flows from minus to plus, because the current flow is made up of negatively charged electrons.

But since this was only discovered after the poles of a current source had already been designated, the assumption that current flows from plus to minus was maintained for historic reasons.

Circuit

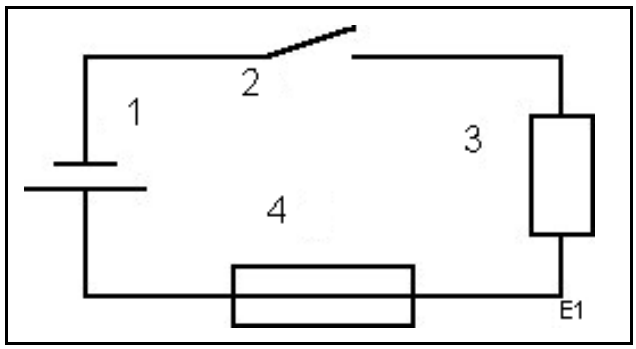


Fig. 3 Circuit

A simple circuit consists of a current source 1 (Fig. 3), a consumer (3) and the connecting wiring.

When the circuit is closed, current can flow.

The circuit can be interrupted or closed with a switch (2).

The system is protected by a fuse (4).

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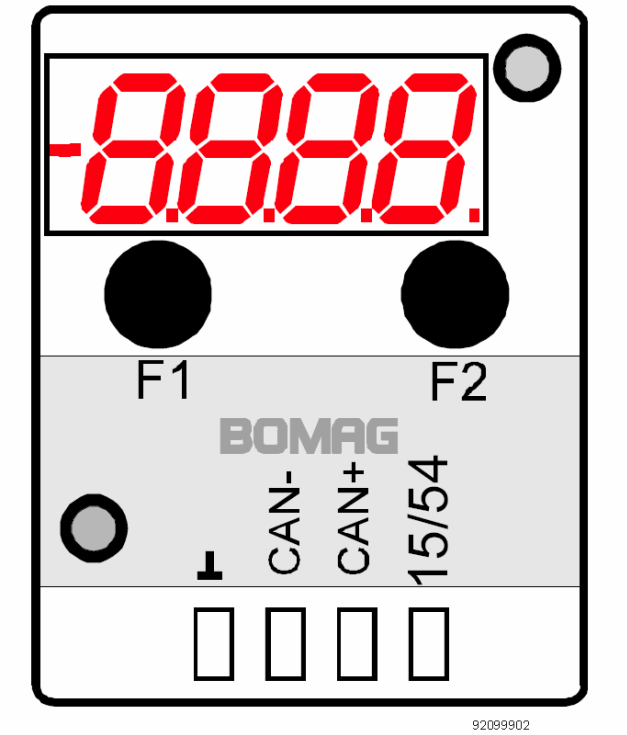


Bild 14

i Hinweis

The documentation "Service Training Electrics MESX" contains also the documentation BEM (BOMAG Evib-meter).

The BOP (BOMAG Operation Panel) is only installed in connection with BVC machines, BEM-machines are equipped wit display module. The display module is used for the output of fault codes and display values, as well as for the input of code numbers.

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7.1 Speedometer module

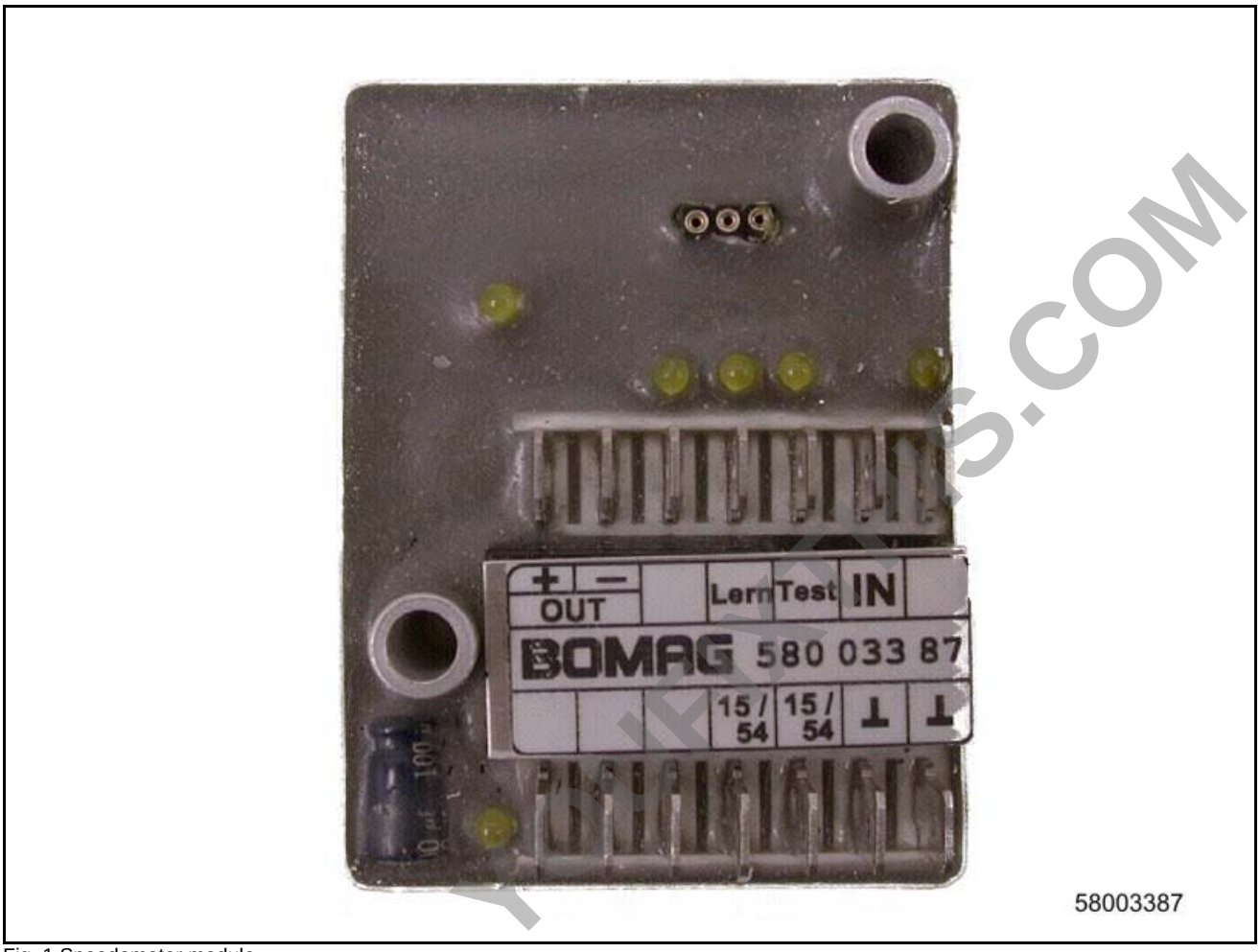


Fig. 1 Speedometer module

Description of function

With the programmable module BM UPM the software realizes a speedometer function. To ensure that the tachometer function is not only realized for one special roller, there is a possibility to adapt the module to any machine with the help of a self-teaching mode.

- Whenever the module is switched on the system runs a self-test by passing through the entire display range in both directions. The display self-test takes approx. 15 seconds.
- After this the module changes to measuring mode. The frequency of the travel pulses of the roller is detected and converted to a proportional output voltage that triggers the display.
- The output signal for the display is a PWM-signal.

Manual testing of the speedometer

When the module is in learning mode a manual display test can be performed via the input "Test". For this purpose the input "IN" must be energized with 12 Volt, whereupon the speedometer is constantly triggered with 3 Volt.

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Closed circuit

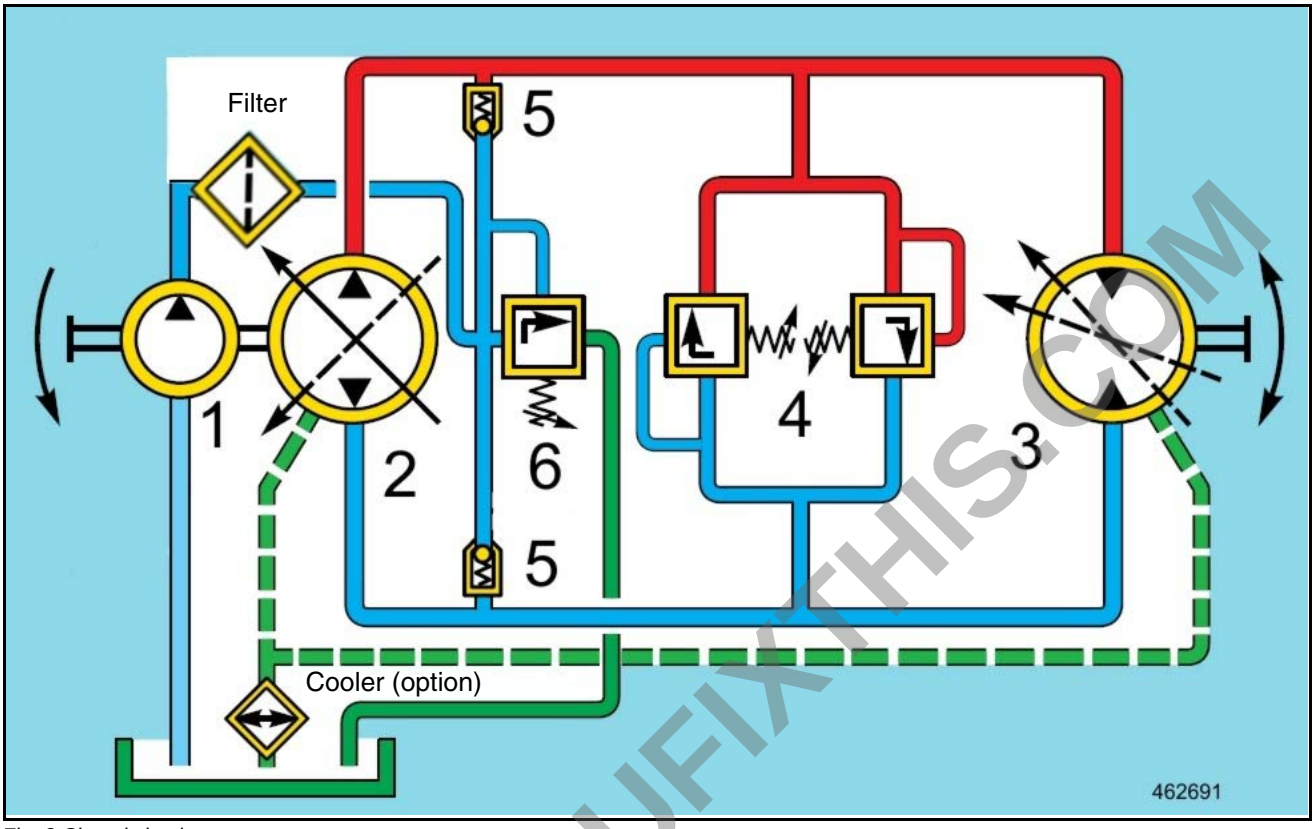


Fig. 2 Closed circuit

One talks about a closed hydraulic system, when the hydraulic oil flows from the **consumer** (3) (Fig. 2) directly back to the **pump** (2).

The closed circuit consists of a high and a low pressure side, depending on the load direction (take-off moment on the consumer).

The high pressure side is protected by **pressure relief valves** (4), which release oil into the low pressure side. The medium remains in the circuit.

Only the permanent leakage on pump and motor needs to be replenished. This is accomplished by a **charge pump** (1), which permanently delivers a sufficient amount of fluid (charge capacity) through a **check valve** (5) into the low pressure side of the closed circuit. Any excess oil delivered by the charge pump, which works in an open circuit, runs through a **charge pressure relief valve** (6) back into the tank. Charging the low pressure side enables the **pump** (2) to work with higher operating data.

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10.1 Special tools, tests and adjustments

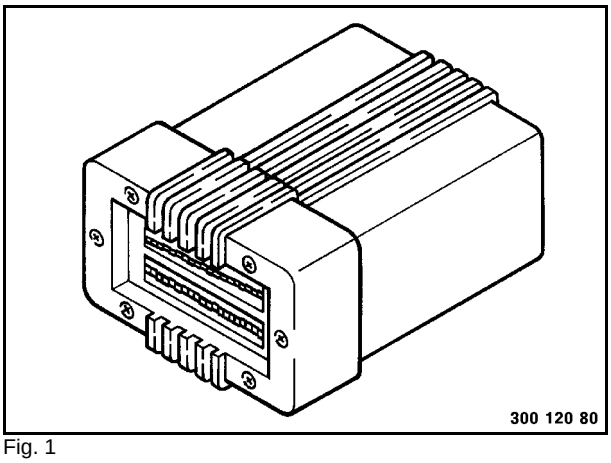


Fig. 1

1. Vibration reed frequency meter

   1000 - 4000 rpm

   17 - 67 Hz

   BOMAG part-no.: 300 120 80


Fig. 2

2. Sirometer (frequency meter)

   800 - 50.000 rpm

   14 - 750 Hz

   BOMAG part-no.: 059 710 02



Fig. 3

3. Anti-freeze tester, quick and accurate measuring, sturdy plastic housing, automatic temperature correction, no after-dripping, instructions for use on unit, reading down to -40 °C. Material: Plastic, Temperature range: down to -40 °C

   BOMAG part-no.: 050 100 75

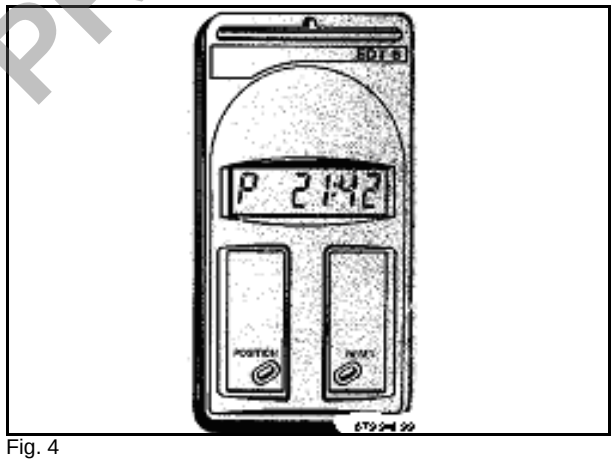


Fig. 4

4. Digital rpm-meter for petrol engines

   BOMAG part-no.: 079 948 99

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11.1 Special tools for flushing

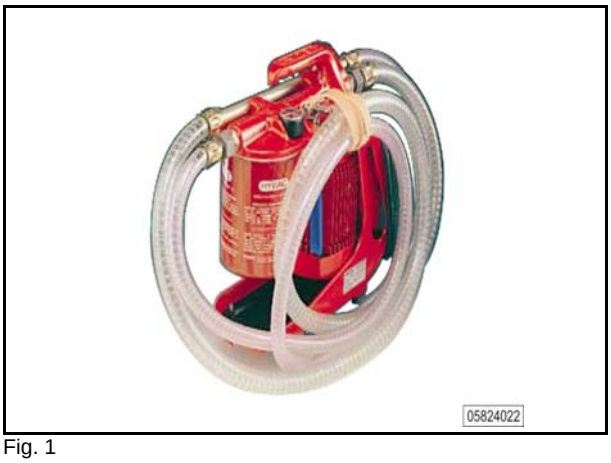


Fig. 1

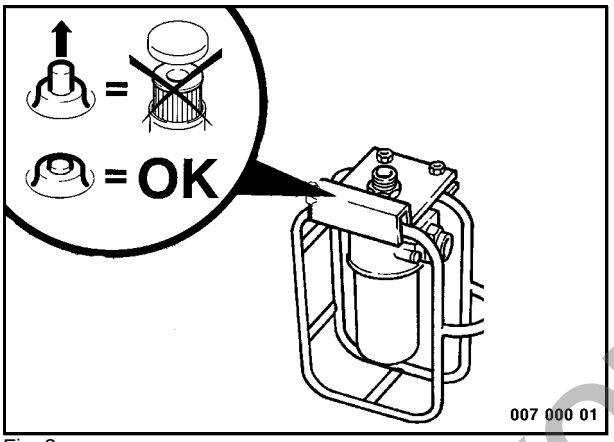


Fig. 2

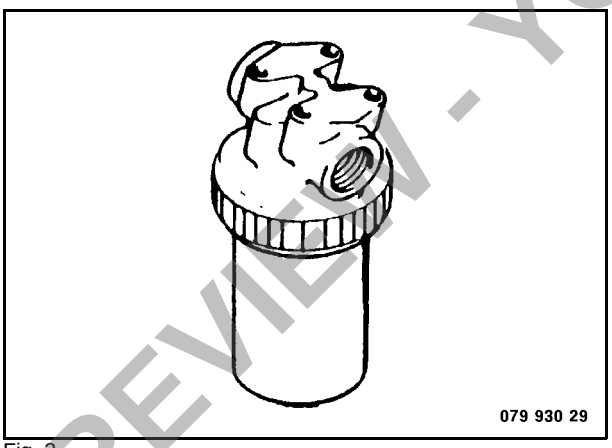


Fig. 3

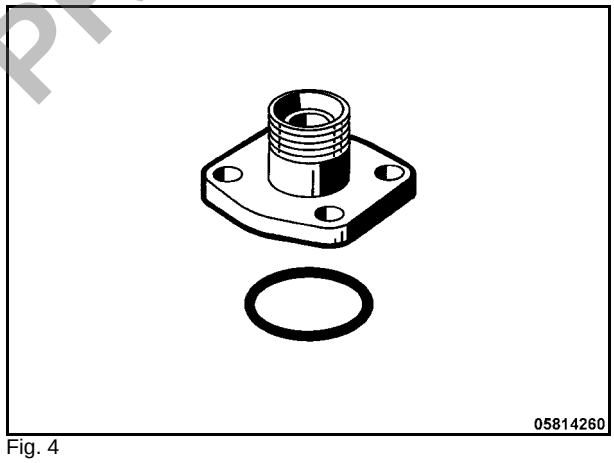


Fig. 4

i Note

The following list informs about special tools for flushing. You should choose the corresponding tool for the work to be carried out.

14. Filling and filtering unit

    BOMAG part-no.: 058 240 22

15. Flushing filter (S connection)

    BOMAG part-no.: 007 000 01

16. Filter element 1µ

    BOMAG part-no.: 079 930 52

17. Flushing hose 20S - 25S (2 pieces)

    BOMAG part-no.: 055 509 19

18. Screw socket R1“ - 25S (2 pieces)

    BOMAG part-no.: 055 400 52

19. Flushing filter (L connection)

    BOMAG part-no.: 079 390 29

20. Filter element

    BOMAG part-no.: 079 390 14

21. Flushing hose 15L (2 pieces)

    BOMAG part-no.: 055 510 09

22. Screw socket R3/4“ -- 15L (2 pieces)

    BOMAG part-no.: 055 400 89

23. SAE-flange 1“ - 20S

    BOMAG part-no.: 058 142 60

24. O-ring

    BOMAG part-no. 062 203 30

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12.1 Physical basics

In order to understand the working principle of an air conditioning system one must first become familiar with the physical basics of such a system.

The four well known physical conditions of water apply also for the refrigerant in the air conditioning system.

1. gaseous (invisible)

2. vaporous

3. liquid

4. solid

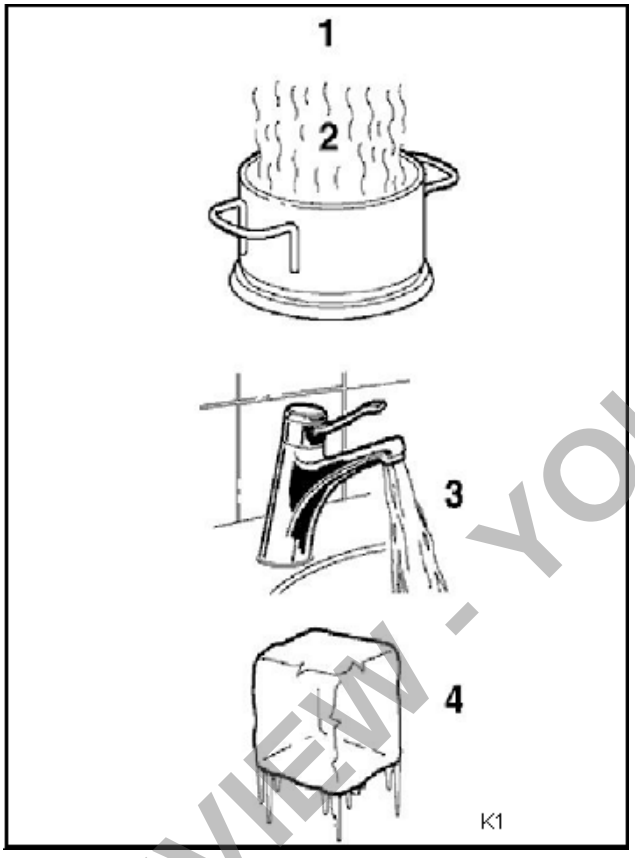


Fig. 1

If the water in a container is heated up (absorption of heat), the rising steam is visible. If the steam is heated up further, due to the absorption of heat, the visible steam will turn into invisible gas. This process is reversible. When withdrawing the heat contained in gaseous water, the gas will turn into steam, then into water and finally into ice.

A - heat absorption

B- Heat dissipation

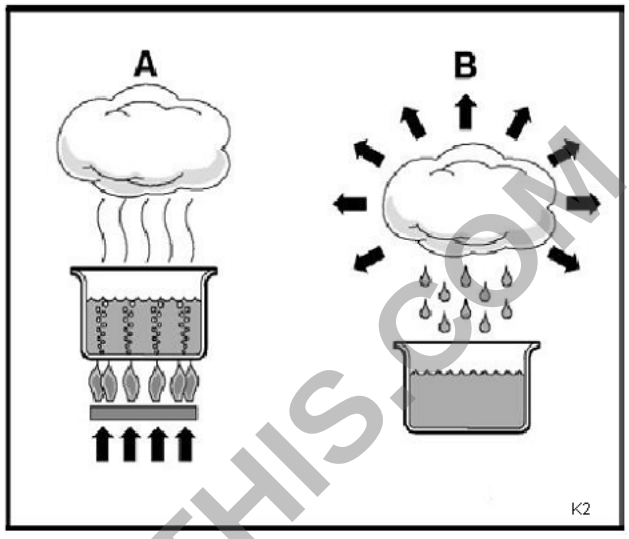


Fig. 2

Heat always flows from the warmer to the colder matter. Any matter consists of a mass of moving molecules. The rapidly moving molecules or a warmer matter dissipate part of their energy to the slower moving molecules with less heat. The movement of the molecules in the warmer matter becomes slower and the molecules in the cooler matter are accelerated. This process continued, until all molecules in the two matters move with identical speed. The matters have then reached an identical temperature and the transfer of heat stops.

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General safety regulations for assembly

When installing the cabin to your machine you must strictly comply with the valid accident prevention instructions or the country specific regulations. However, dangers for persons and property may still arise, if:

- the lifting gear used has a too low bearing capacity
- damaged or worn lifting tackle is used
- unqualified personnel is entrusted with the installation
- the safety instructions are not observed

Each person involved in the installation of the cabin must therefore read and comply with these safety regulations. If necessary, the customer must demand a written confirmation with signature.

Moreover, the following instructions and regulations must obviously also be complied with:

- applicable accident prevention instructions
- generally accepted safety and road traffic regulations
- country specific safety regulations. It is the duty of the operator to be acquainted with these instructions and to apply these accordingly. This applies also for local regulations concerning different types of handling work. Should the recommendations in these instructions be different from the regulations valid in your country, you must comply with the safety regulations valid in your country.

Changes and conversions to the cabin/ machine

Unauthorized changes to the cabin are prohibited for safety reasons.

Original parts and accessories have been specially designed for this machine. We wish to make explicitly clear that we have not tested or approved any parts or accessories not supplied by us. The installation and/ or use of such products may have an adverse effect on the active and/or passive driving safety.

The manufacturer explicitly excludes any liability for damage caused by the use of non-original parts or accessories.

Notes on safety in the assembly instructions

⚠ 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 contains technical information and hints for optimal assembly.

Environment

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

Strictly observe the national regulations for the protection of the environment.

Information and safety stickers/decals on the cabin

Keep stickers/decals in good and legible condition (see spare parts catalogue) and comply with their meaning.

Replace damaged stickers/decals

Work on heating lines

Before starting work on heating pipes relieve any pressure and let them cool down - danger of scalding!

After completing work on the heating system of the machine check all connections and fittings for leaks.

Working on electric parts of the machine

Before starting to work on electric parts of the machine disconnect the battery and cover it with insulating material.

Do not use fuses with higher ampere ratings and do not repair fuses with a piece of wire. Fire hazard.

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15.1 Special tools, drum, single drum rollers

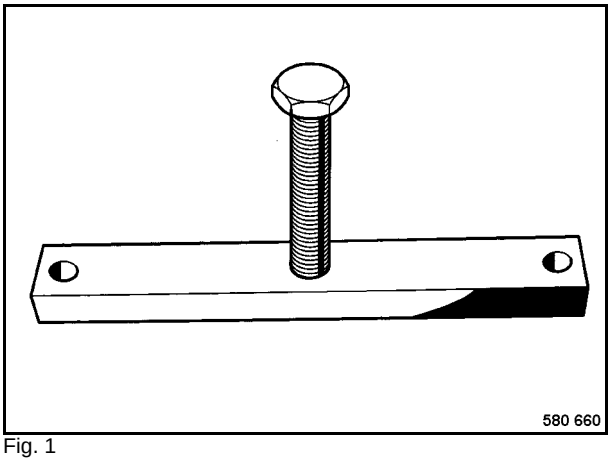


Fig. 1

1. Disassembly device for side plate

   BOMAG part-no.: 007 211 55

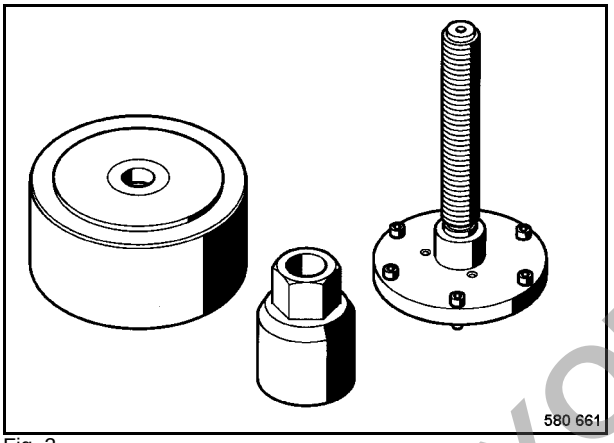


Fig. 2

2. Assembly device for side plate

   BOMAG part-no.: 971 079 21

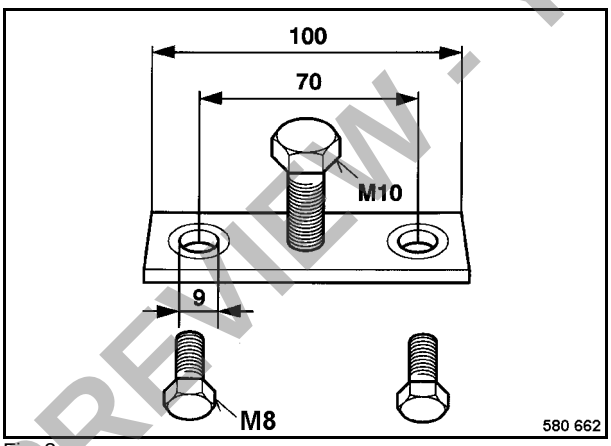


Fig. 3

3. Assembly device for coupling hub and flanged hub

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16.1 Special tools, oscillating articulated joint (BW177 to BW 216)

1. Pressing device for rocker bearings

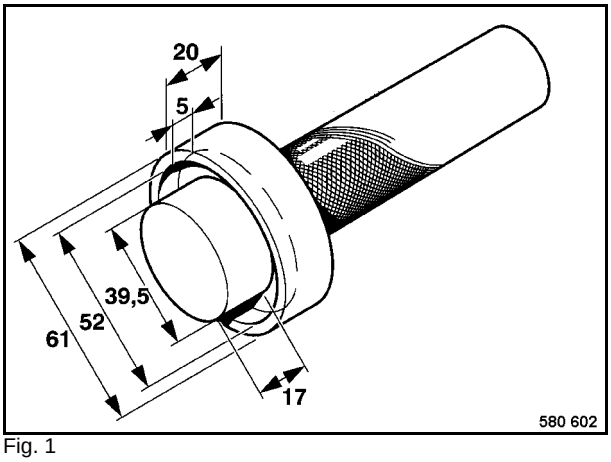


Fig. 1

2. Pressing bushing for outer rocker bearing race

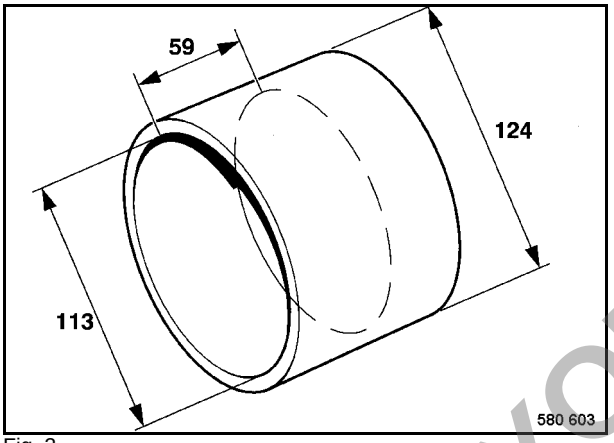


Fig. 2

3. Pressing bushing for inner rocker bearing race

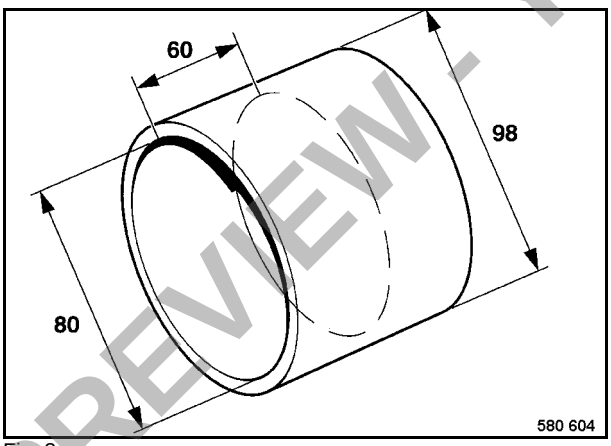


Fig. 3

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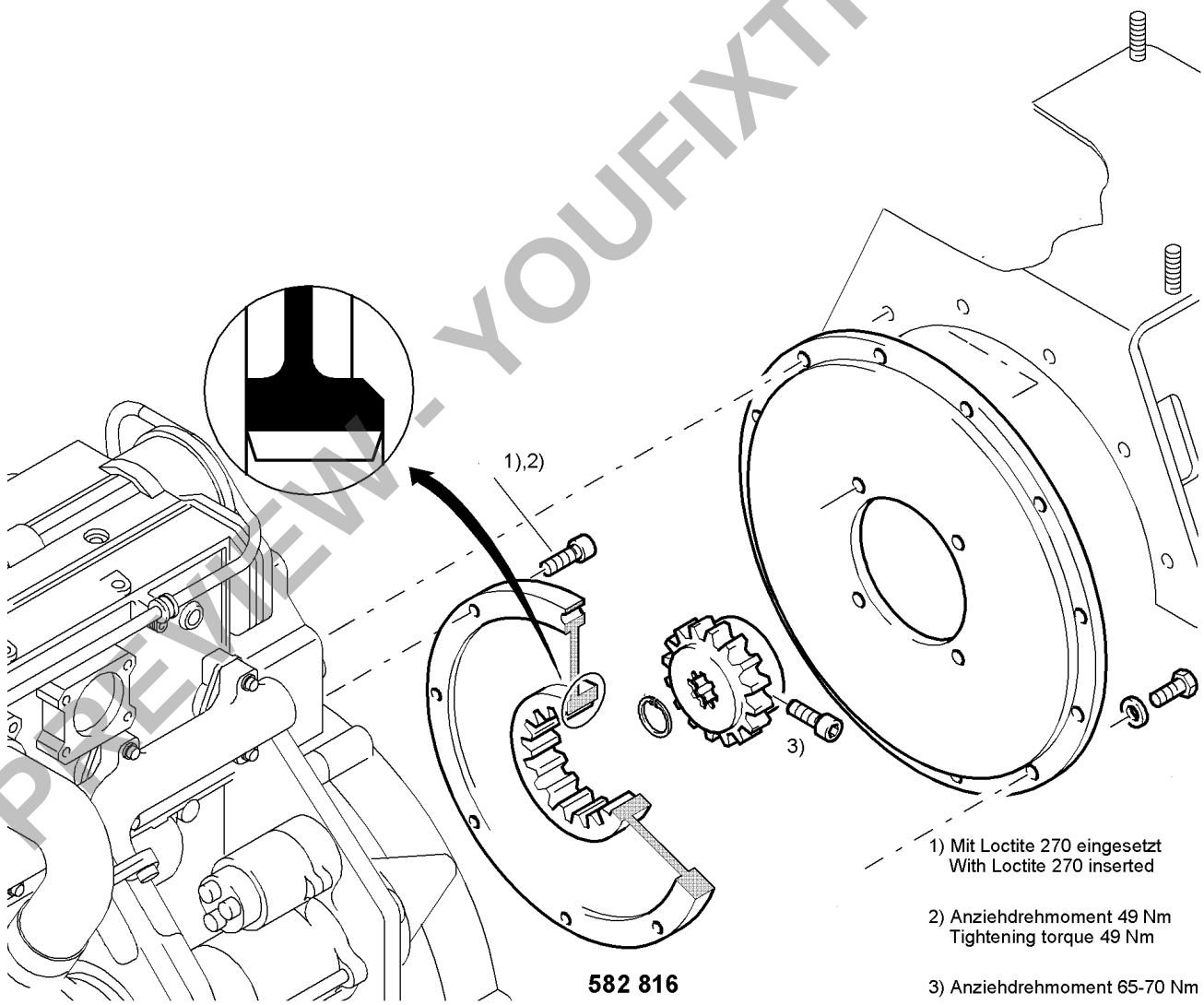


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Genuine Parts

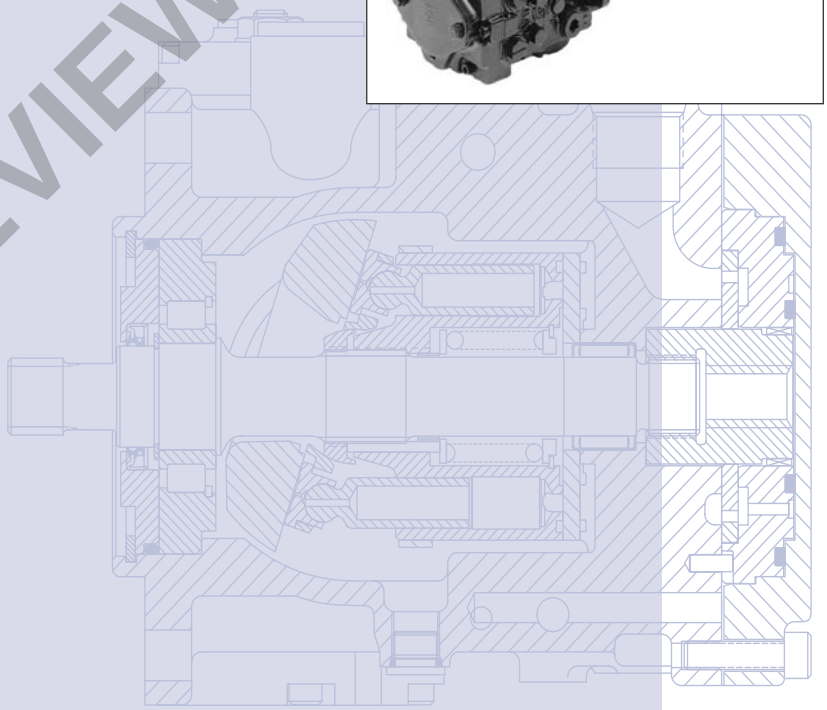
Series 42
Axial Piston Closed Circuit Pumps

Service Manual









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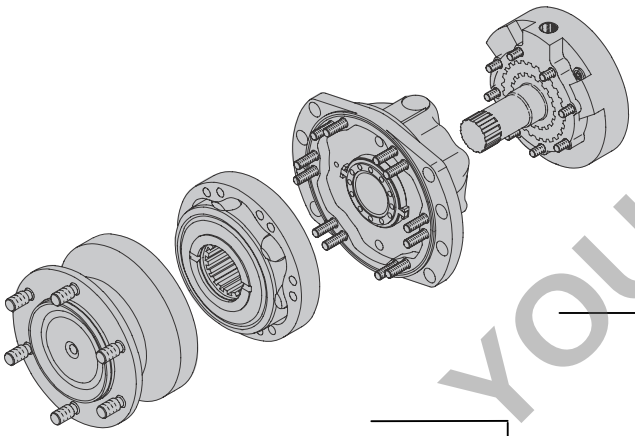
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Moteurs hydrauliques
Hydraulic motors

MS

Réparations
Repairs

	02	03	05	08	11	18
MS	■	■	■	■	■	■
MSE	■	■	■	■	■	■

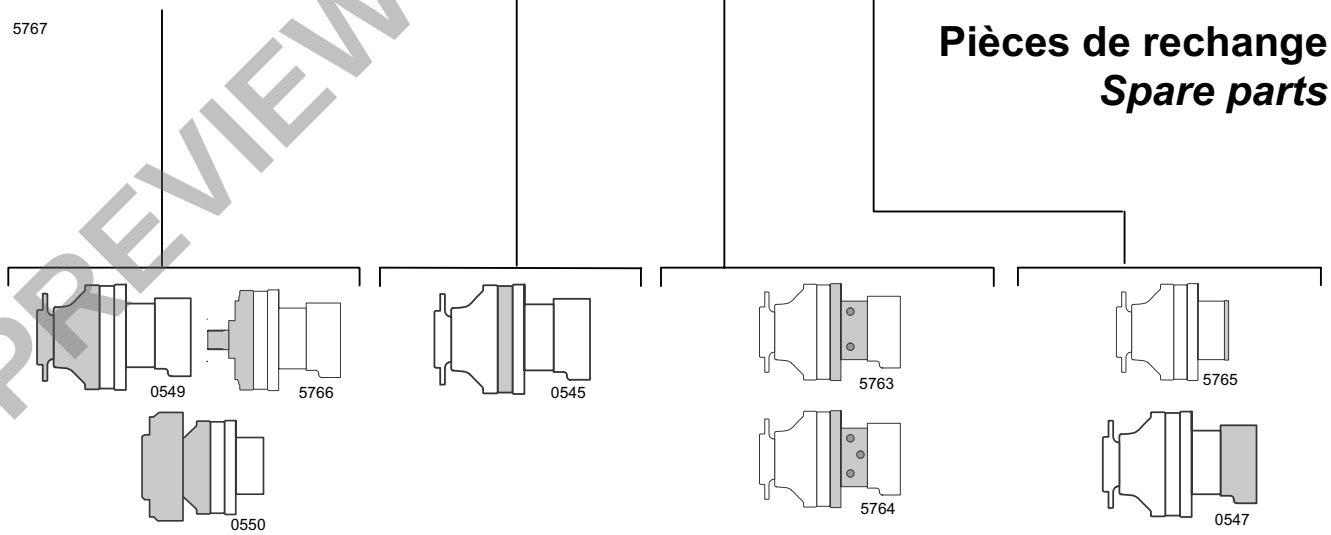


Dépannage
Trouble shooting

Interventions
Maintenance

Réparations
Repairs

Pièces de rechange
Spare parts



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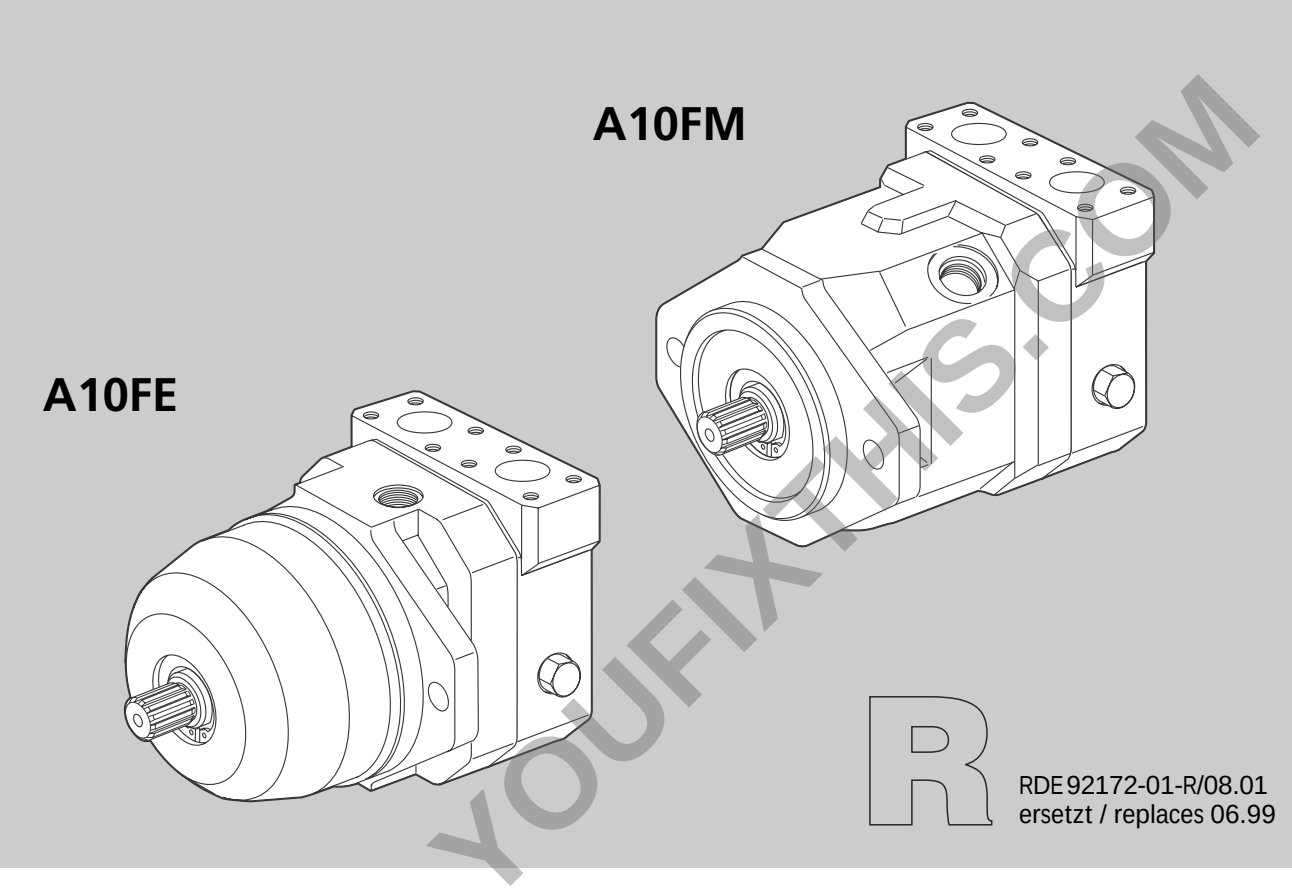
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R

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A10FE 28 - 60 Baureihe 5

Repair instructions - A10FM 28 - 60 Series 5
A10FE 28 - 60 Series 5

Brueninghaus
Hydromatik

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Genuine Parts

Series 51 and 51-1
Bent Axis Motors

Service Manual









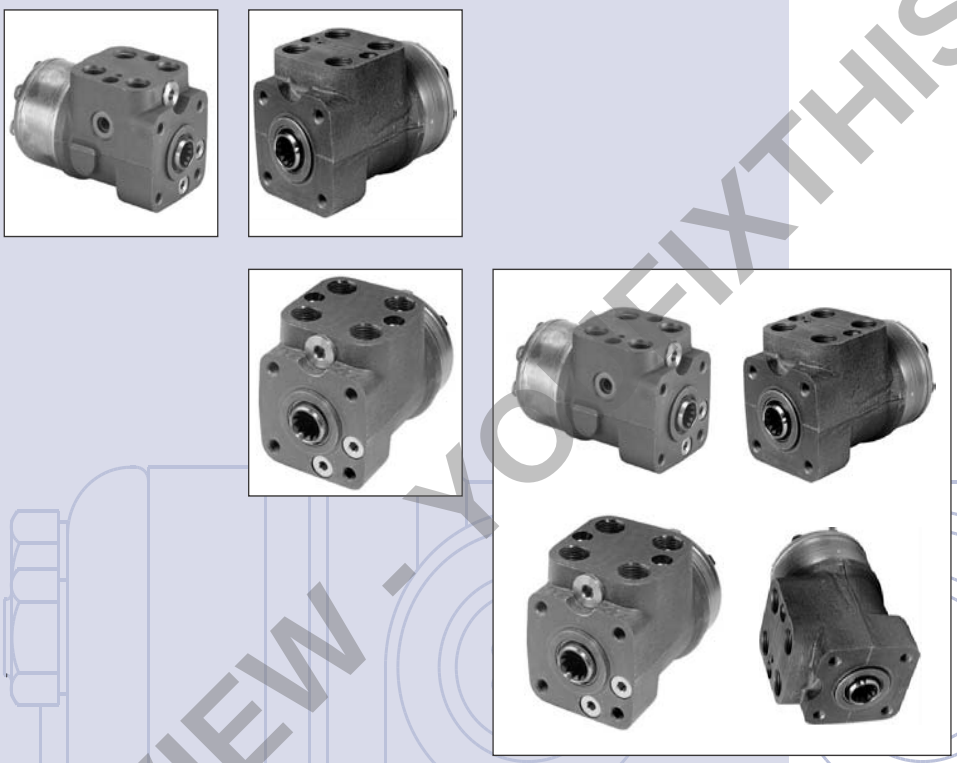
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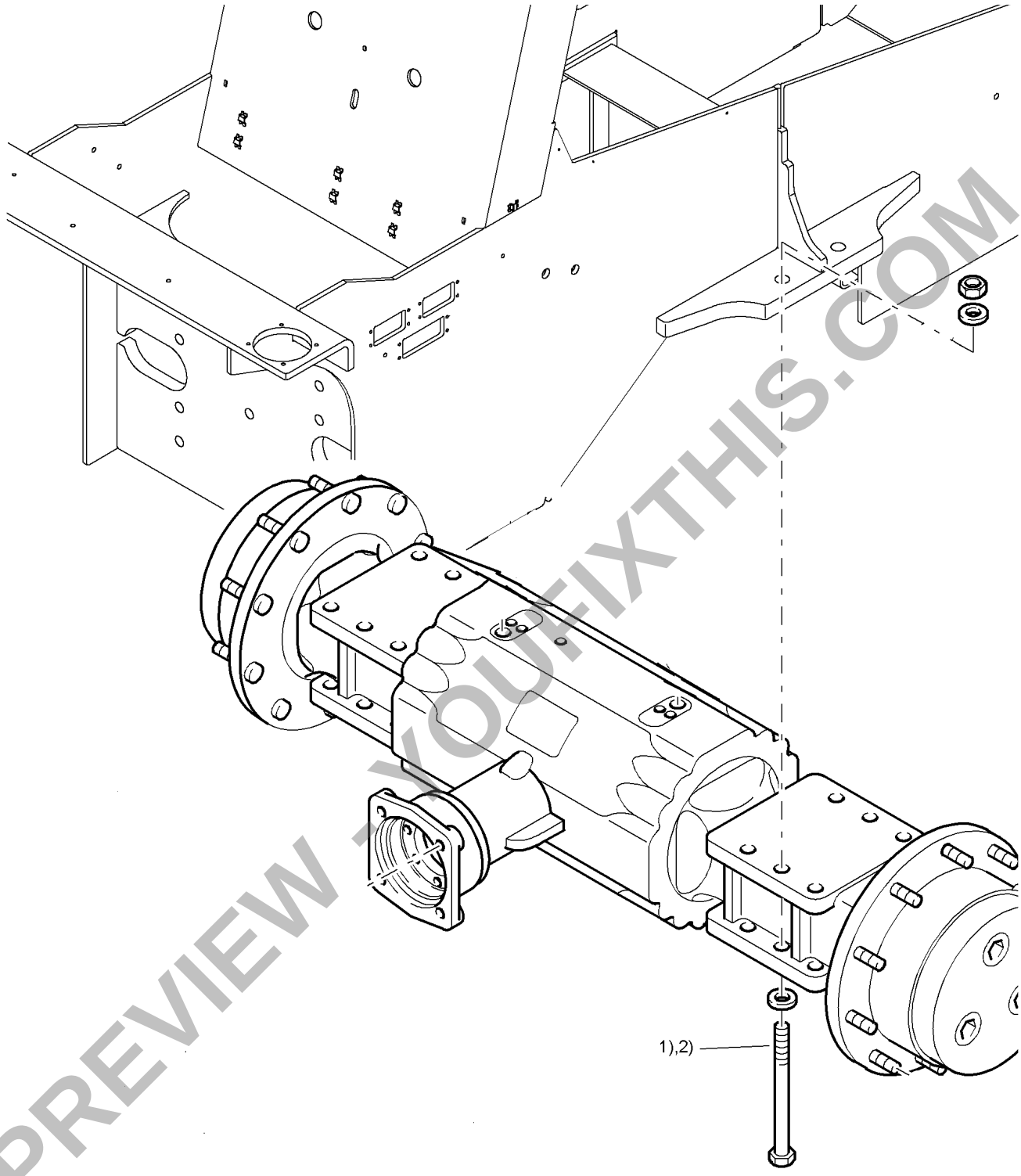
Hydrostatic Steering Unit Type OSPB, OSPC and OSPF

Service Manual



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582 828

1) Mit OKS 240 eingesetzt
With OKS 240 inserted

2) Anziehdrehmoment 800 Nm
Tightening torque 800 Nm

Bild 35

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Werkstatthandbuch

Workshop Manual

Manuel d'Atelier

Manual de Taller

BFM 1012/1013

0312 4018

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DEUTZ

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S/N 101 583 131 002 ⇔ 101 583 131 .... BW 213 PD-4
S/N 101 583 391 023 ⇔ 101 583 391 .... BW 216 D-40
S/N 101 583 401 009 ⇔ 101 583 401 .... BW 216 DH-40
S/N 101 583 411 001 ⇔ 101 583 411 .... BW 218 D-40
S/N 101 583 421 009 ⇔ 101 583 421 .... BW 214 D-4
S/N 101 583 451 001 ⇔ 101 583 451 .... BW 211 DE-40

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