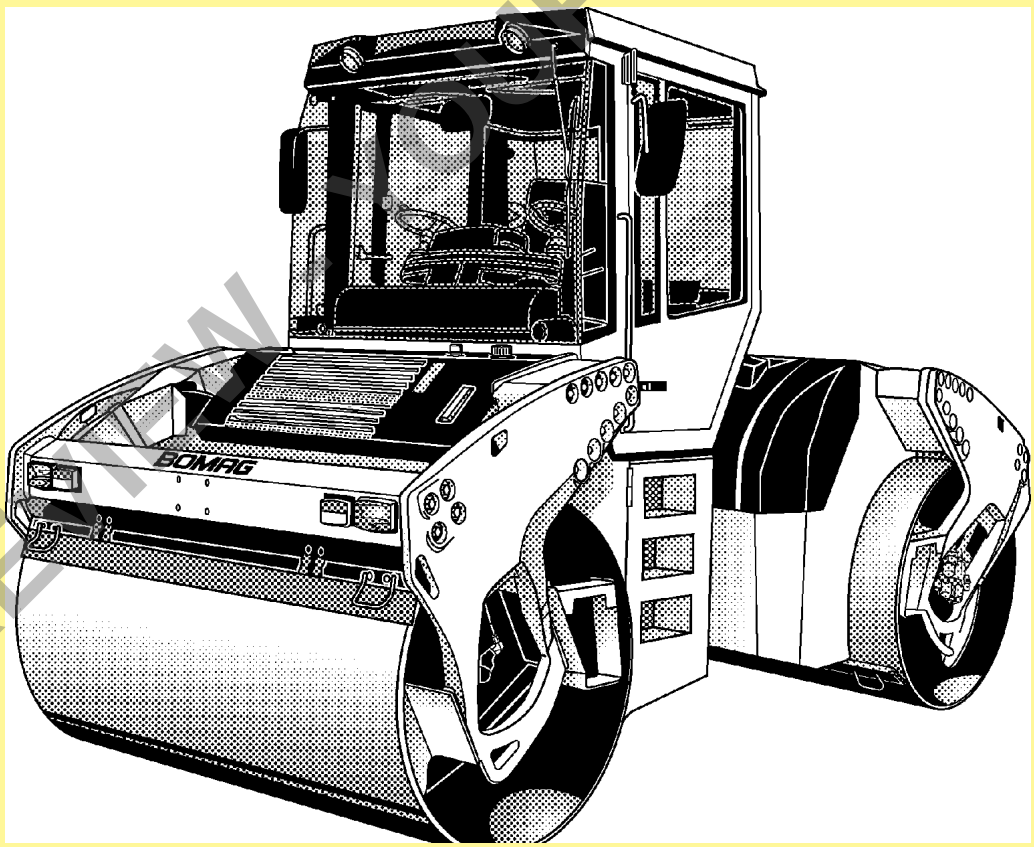
BOMAG

Service - Manual

BW 190 AD-4 AM

BW 203 AD-4 AM

S/N 101 920 26 ....> S/N 101 920 25 ....>



Tandem Vibratory Roller

Asphalt Manager

Catalogue number.
008 911 27

07/2008

PREVIEW - YOUFIXTHIS.COM

Download full manual at youfixthis.com

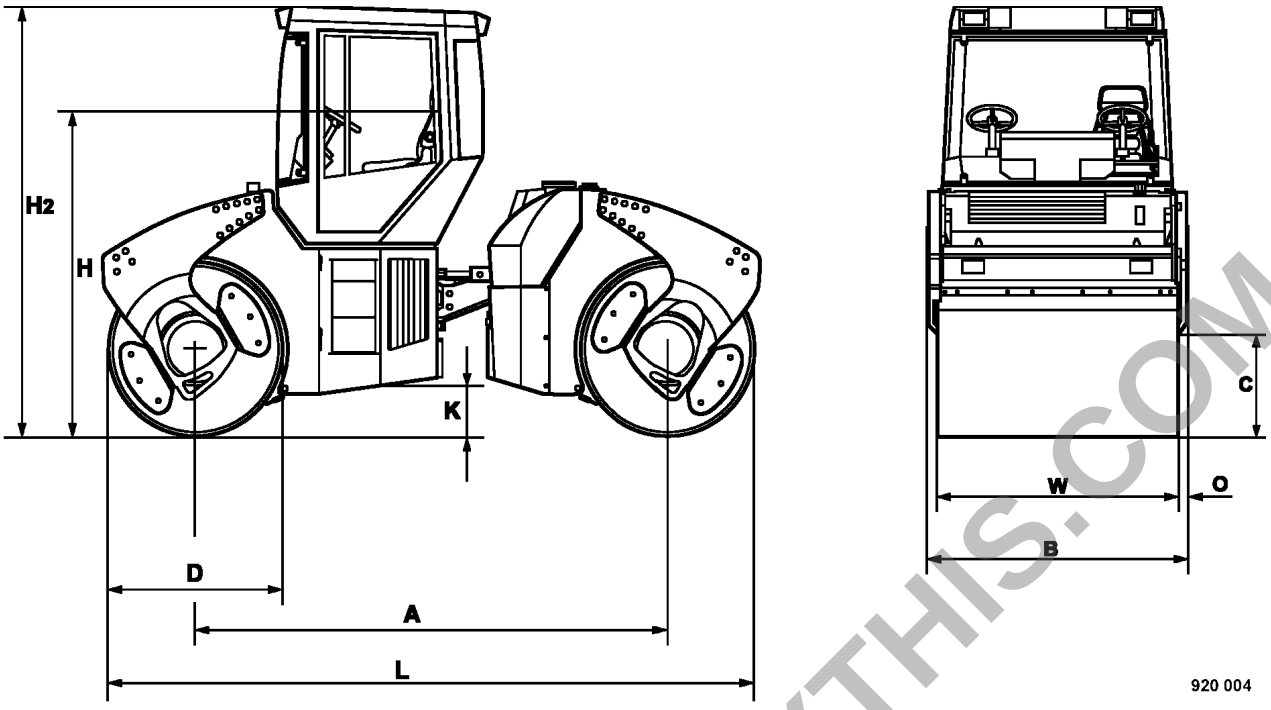


Fig. 12

Dimensions in mm	A	B	C	D	H	H2	K	L	O	W
BW 190 AD-4	3300	2160	700	1220	2300	3000	350	4520	80	2000

1

BW 190 AD-4

Weights

Operating weight (CECE)	kg	11880 incl. 600 kg ballast
Operating weight (CECE) with ROPS	kg	12200
Front axle load (CECE)	kg	6100
Rear axle load (CECE)	kg	5780
Static linear load front (CECE)	kg/cm	30.5
Static linear load rear (CECE)	kg/cm	29

Dimensions

Oscillation angle	+/-°	6
Inner track radius	mm	4240

Travel characteristics

Travel speed (1)	km/h	0-5,7
Travel speed (2)	km/h	0-11,3
Max. gradability without/with vibration (soil dependent)	%	40/35

Drive

Engine manufacturer		Deutz
Type		BF4M 2012
Cooling		Water
Number of cylinders		4
Rated power ISO 9249	kW (PS)	98

PREVIEW - YOUFIXTHIS.COM

Download full manual at youfixthis.com

3.1 General notes on maintenance

When servicing the machine pay careful attention to all applicable safety instructions.

Thorough maintenance of the machine ensures maximum reliability and prolongs the lifetime of important components. The necessary effort can by no means be compared with the faults which may occur when not observing these instructions.

The terms left/right are always related to travel direction forward.

- Clean machine and engine thoroughly before starting maintenance work.
- For maintenance work park the machine on level ground.
- Maintenance work must generally be carried out with the engine shut down.
- Depressurize hydraulic lines before working on them.
- Disconnect the battery and cover it with insulation material before starting to work on electrical components.
- Always attach the articulation lock (transport lock) before starting to work in the articulation area of the machine.

Environment

During maintenance work catch all oils and fuels and do not let them seep into the ground or into the sewage system. Dispose of oils and fuel environmentally.

Store used filters in a special waste container and dispose of environmentally.

Always catch biodegradable oil separately.

Notes on the fuel system

The lifetime of the diesel engine is decisively depending on the cleanliness of the fuel.

- Keep the engine free of dirt and water as this could damage the injection elements of the engine.
- When choosing the storage location for fuel make sure that spilled fuel will not harm the environment.
- Do not let the suction hose disturb the sludge on the bottom of the drum.
- Fuel left in the fuel drum is not suitable for the engine and should only be used for cleaning purposes.

Notes on the engine performance

Combustion air and fuel injection rates of the diesel engine have been carefully adjusted and determine the engine's performance and temperature level as well as the quality of the exhaust gas.

If your machine has to work permanently in "thin air" (at high altitudes) and with full load you should consult or service department or the service department of the engine manufacturer.

Notes on the hydraulic system

When servicing the hydraulic system cleanliness if of utmost importance. make sure that no dirt or other contaminating systems can enter the system. Small particles can flute valves, cause pumps to seize and block restrictors and pilot bores, thereby causing costly repairs.

- If during the daily oil level check the oil level is found to have dropped, check all lines, hoses and components for leakages.
- Seal leakages immediately. If necessary inform the responsible service department.
- Always use the filling and filtering unit (BOMAG part-no. 007 610 01) to fill the hydraulic system. This unit is equipped with a fine filter which cleans the hydraulic oil and prolongs the lifetime of the filter.
- Clean fittings, filler caps and their immediate surrounding area before removing them, so that no dirt can fall in.
- Do not leave the tank opening unnecessarily open, cover it so that no dirt can fall in.

PREVIEW - YOUFIXTHIS.COM

Download full manual at youfixthis.com

5.1 Special tools, tests and adjustments

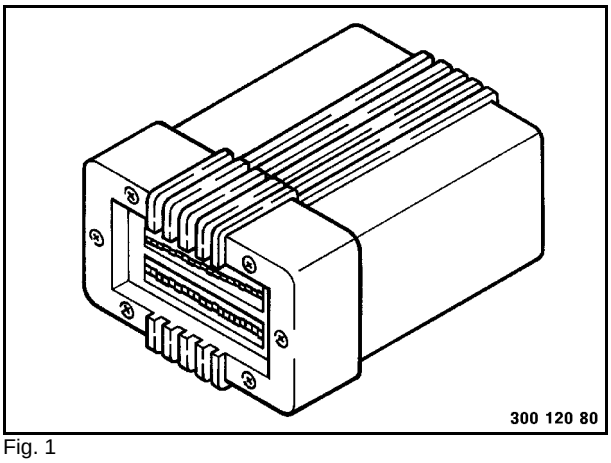


Fig. 1

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

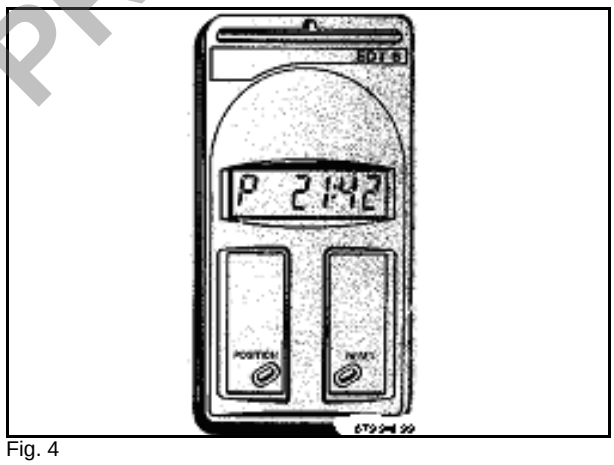


Fig. 4

4. Digital rpm-meter for petrol engines

   BOMAG part-no.: 079 948 99

PREVIEW - YOUFIXTHIS.COM

Download full manual at youfixthis.com

6.1 Special tools for flushing

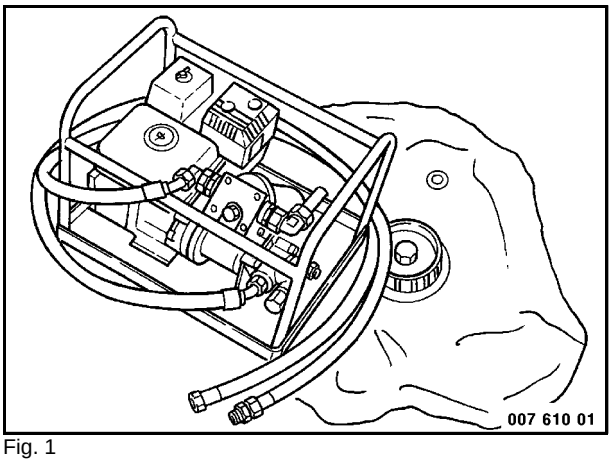


Fig. 1

1. Filling and filtering unit with oil bag

   BOMAG part-no.: 007 610 01

2. Filter element

   BOMAG part-no.: 079 930 35

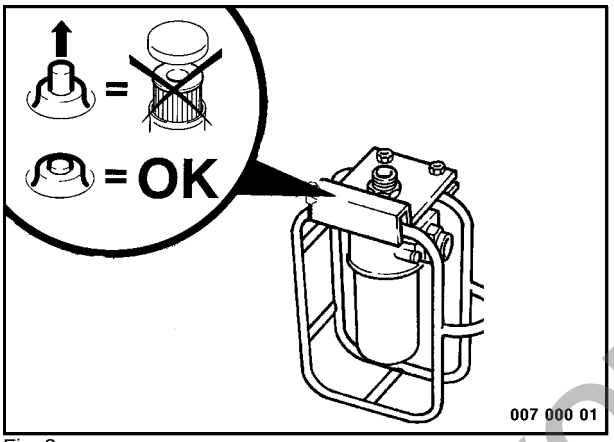


Fig. 2

3. Flushing filter (S connection)

   BOMAG part-no.: 007 000 01

4. Filter element 1µ

   BOMAG part-no.: 079 930 52

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

   BOMAG part-no.: 055 509 19

6. Screw socket R1“ - 25S (2 pieces)

   BOMAG part-no.: 055 400 52

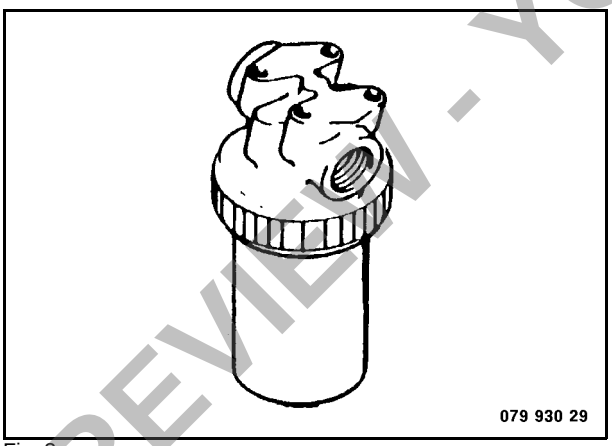


Fig. 3

7. Flushing filter (L connection)

   BOMAG part-no.: 079 390 29

8. Filter element

   BOMAG part-no.: 079 390 14

9. Flushing hose 15L (2 pieces)

   BOMAG part-no.: 055 510 09

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

    BOMAG part-no.: 055 400 89

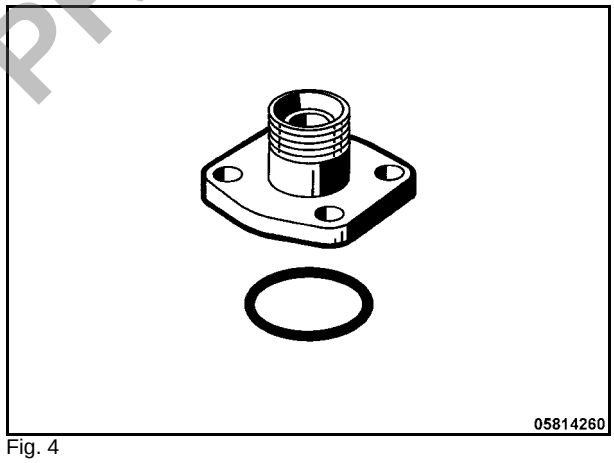


Fig. 4

11. SAE-flange 1“ - 20S

    BOMAG part-no.: 058 142 60

12. O-ring

    BOMAG part-no. 062 203 30

PREVIEW - YOUFIXTHIS.COM

Download full manual at youfixthis.com

7.1 Understanding circuit diagrams

Wiring diagrams are graphical representations of circuitry conditions, related to the electrical system. They do not contain any information about the actual type of wiring, they only serve the purpose of visualizing the circuitry logics.

The wiring diagram is indispensable for effective and systematic trouble shooting in the vehicle wiring system. This plan provides the following information:

- Number and type of individual elements in the examined electric circuit, such as plug connectors, fuses, switches, consumers, relays, ...
- The sequence in which current flows through the individual elements in the electric circuit.
- Connections between the examined, faulty electric circuit and other circuits in the vehicle wiring system.
- Pin assignment of plug-and-socket connections.

Structure

- Table of contents (Fig. 7)
- Function groups (Fig. 8)
- List of components (Fig. 10)

PREVIEW - YOUFIXTHIS.COM

Download full manual at youfixthis.com

8.1 Special tools, electrics

Measuring equipment

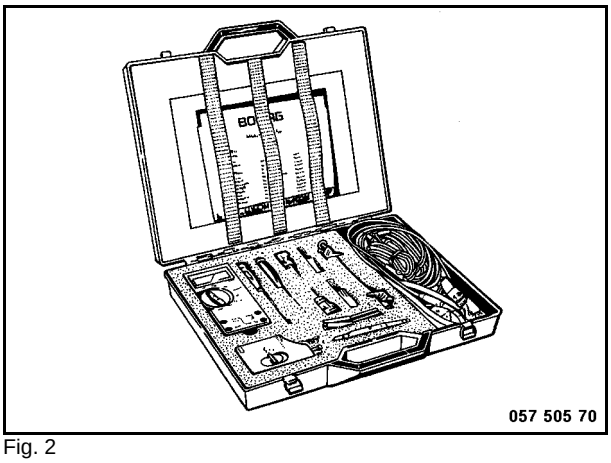


Fig. 2

15. Electric test case

    BOMAG part-no.: 057 505 70

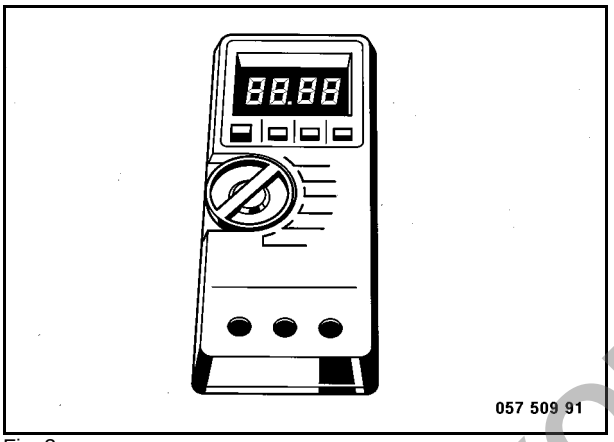
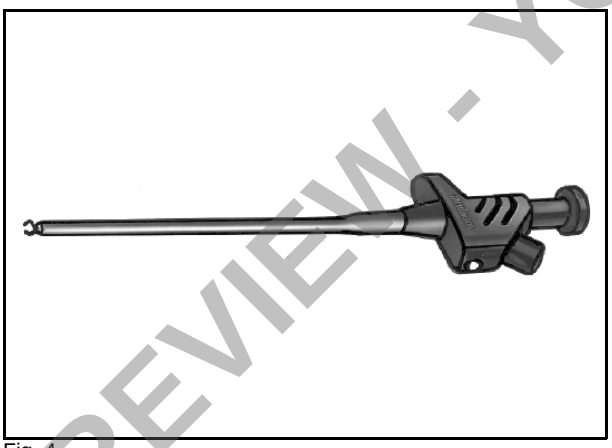


Fig. 3

16. Multimeter

    BOMAG part-no.: 057 509 91

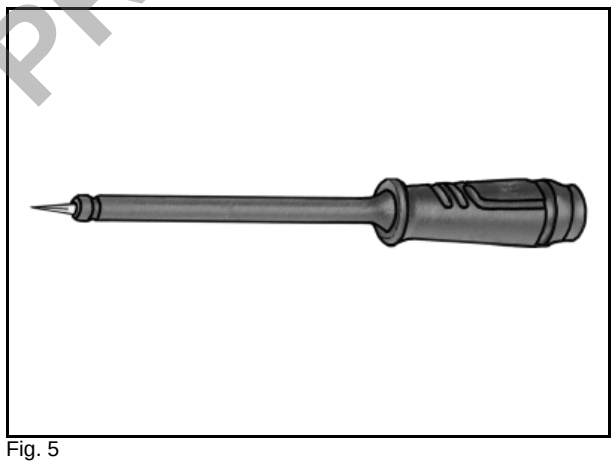

Fig. 4

17. Test prod black, with flexible insulated shaft and button operated gripper with 4 mm bushing, length 157 mm.

    BOMAG part-no.: 079 900 53

18. Test prod red, with flexible insulated shaft and button operated gripper with 4 mm bushing, length 157 mm.

    BOMAG part-no.: 079 900 54


Fig. 5

19. Test prod black, with elastic insulated shaft 4 mm bushing, length 97.5 mm.

    BOMAG part-no.: 079 900 51

20. Test prod red, with elastic insulated shaft 4 mm bushing, length 97.5 mm.

    BOMAG part-no.: 079 900 52

PREVIEW - YOUFIXTHIS.COM

Download full manual at youfixthis.com

BOMAG

Service Training Electrics

BAM

PREVIEW - YOUFIXTHIS.COM

P/N 008 097 11 **Version 3.04**

Status: 30.05.2006
Author: T.Löw / TE
Dateiname: p:\schulung\elektrik\tandem\bam\englisch\00809711_schulung elektrik bam_v3.04_gb.doc

Download full manual at youfixthis.com

BOMAG

Service Training



Tandem Rollers
BW 161 AD-4, BW 202 AD-4

Part-No. 008 099 81 12/2003

PREVIEW YOUFIXTHIS.COM

Download full manual at youfixthis.com

11.1 General information on diesel engine

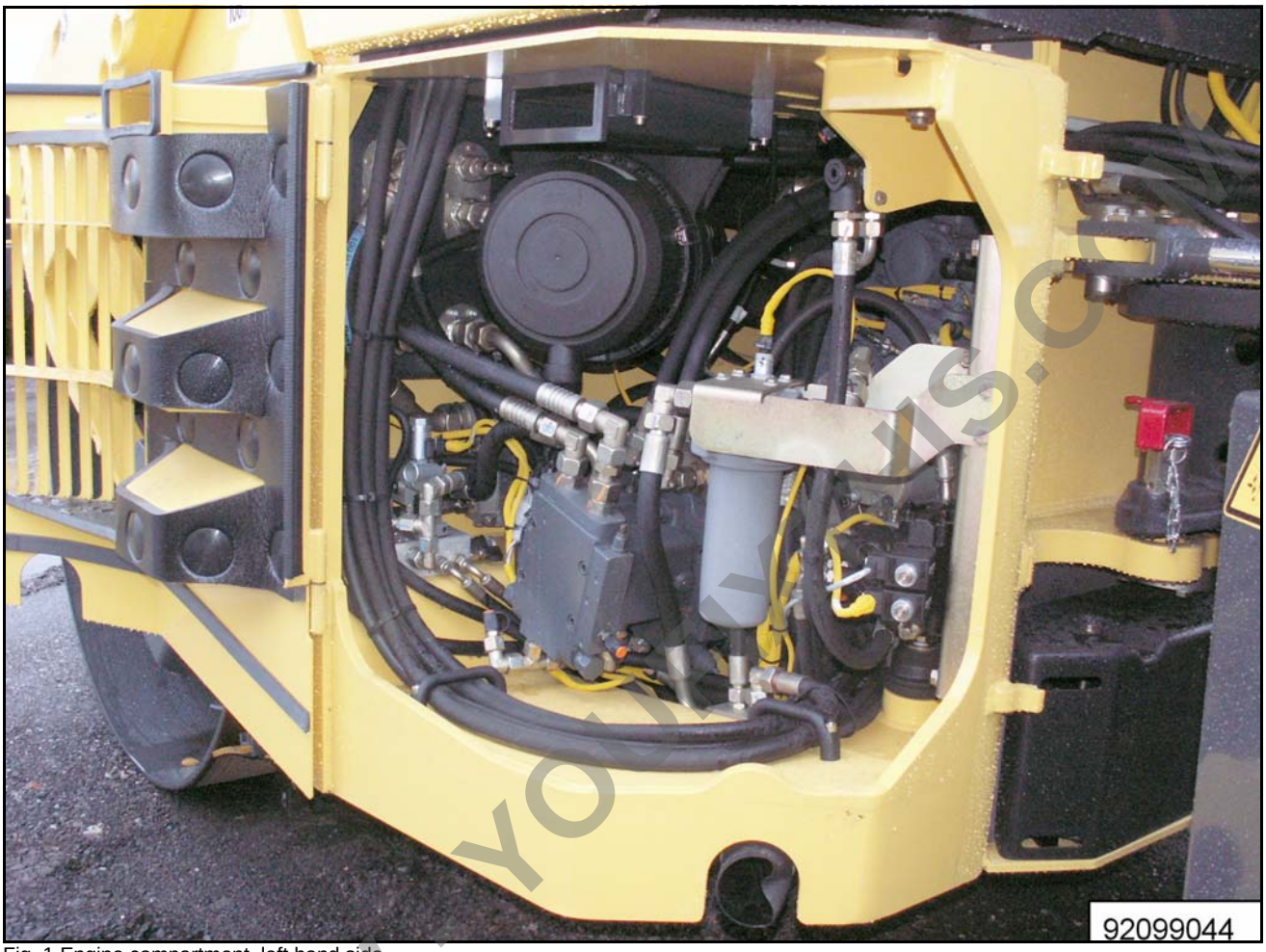


Fig. 1 Engine compartment, left hand side

Tandem rollers BW161 AD/AC-4 are powered by Deutz diesel engine series BF4M 2012 without intercooler.

Tandem rollers BW190/202/203 AD-4 and BW161 ADH-4 are powered by Deutz diesel engines series BF4M 2012 C with intercooler. The intercooler reduces the thermal load on the engine, the exhaust temperature and the fuel consumption and thus enables a higher power output.

The engines are characterized by the following positive features:

- short and compact design
- low noise level
- almost vibration free operation
- low fuel consumption
- low exhaust emissions (EPA II)
- high power reserves and
- excellent access to all service locations.

PREVIEW youfixthis.com

Download full manual at youfixthis.com

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

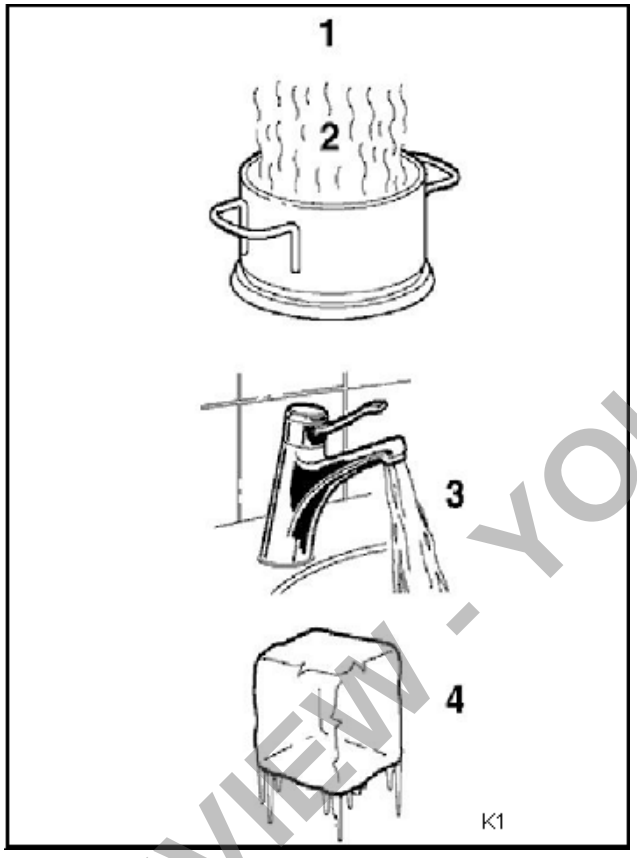


Fig. 1

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

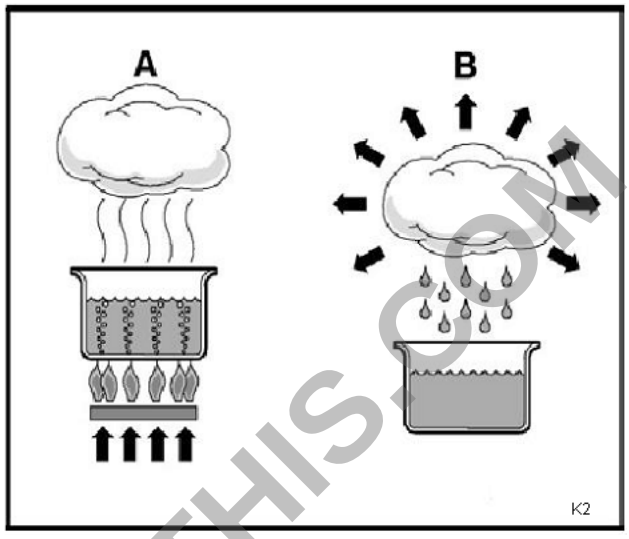
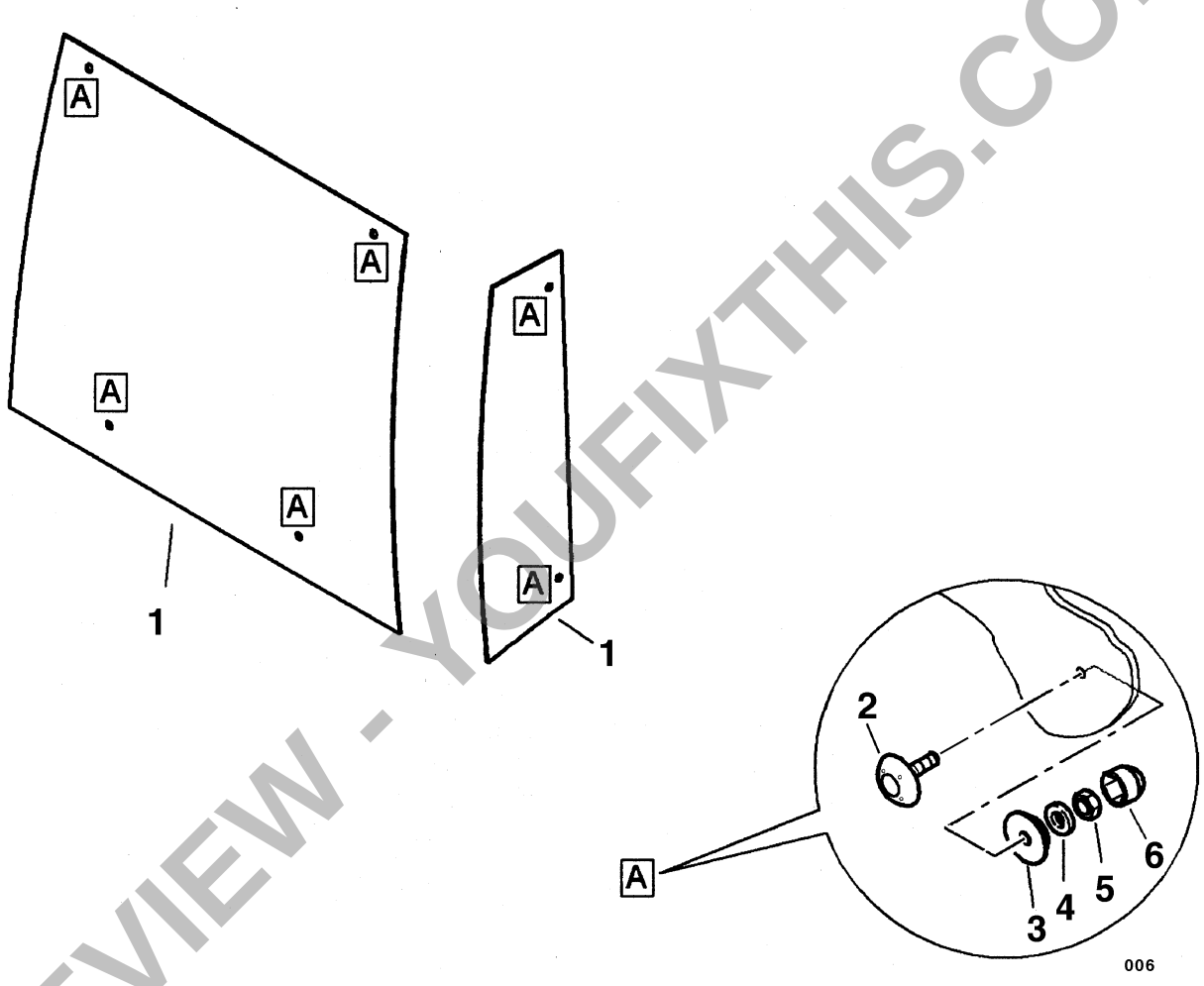


Fig. 2

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.

PREVIEW - YOUFIXTHIS.COM

Download full manual at youfixthis.com



PREVIEW - YOUFIXTHIS.COM

Fig. 1

1 Glass panes
2 Fastening element
3 Fixing washer and spacer
4 Washer
5 Hexagon nut, self locking
6 Protective cap

Download full manual at youfixthis.com

16.1 Special tools, drum (BW161-4 to BW 203-4)

1. Lifting device for vibrator unit

   BOMAG part-no. 007 215 08

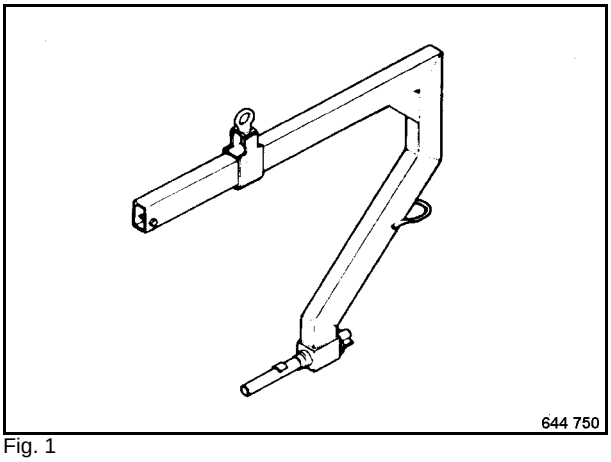


Fig. 1

2. Guide bolts M16 x 270



Fig. 2

3. Guide bolts M12 x 270



Fig. 3

PREVIEW - YOUFIXTHIS.COM

Download full manual at youfixthis.com

17.1 Repair overview oscillating articulated joint

1) Zur Montageerleichterung Fügeflächen
mit Gleitlack OKS 571 00970026
eingesetzt - ohne Fett

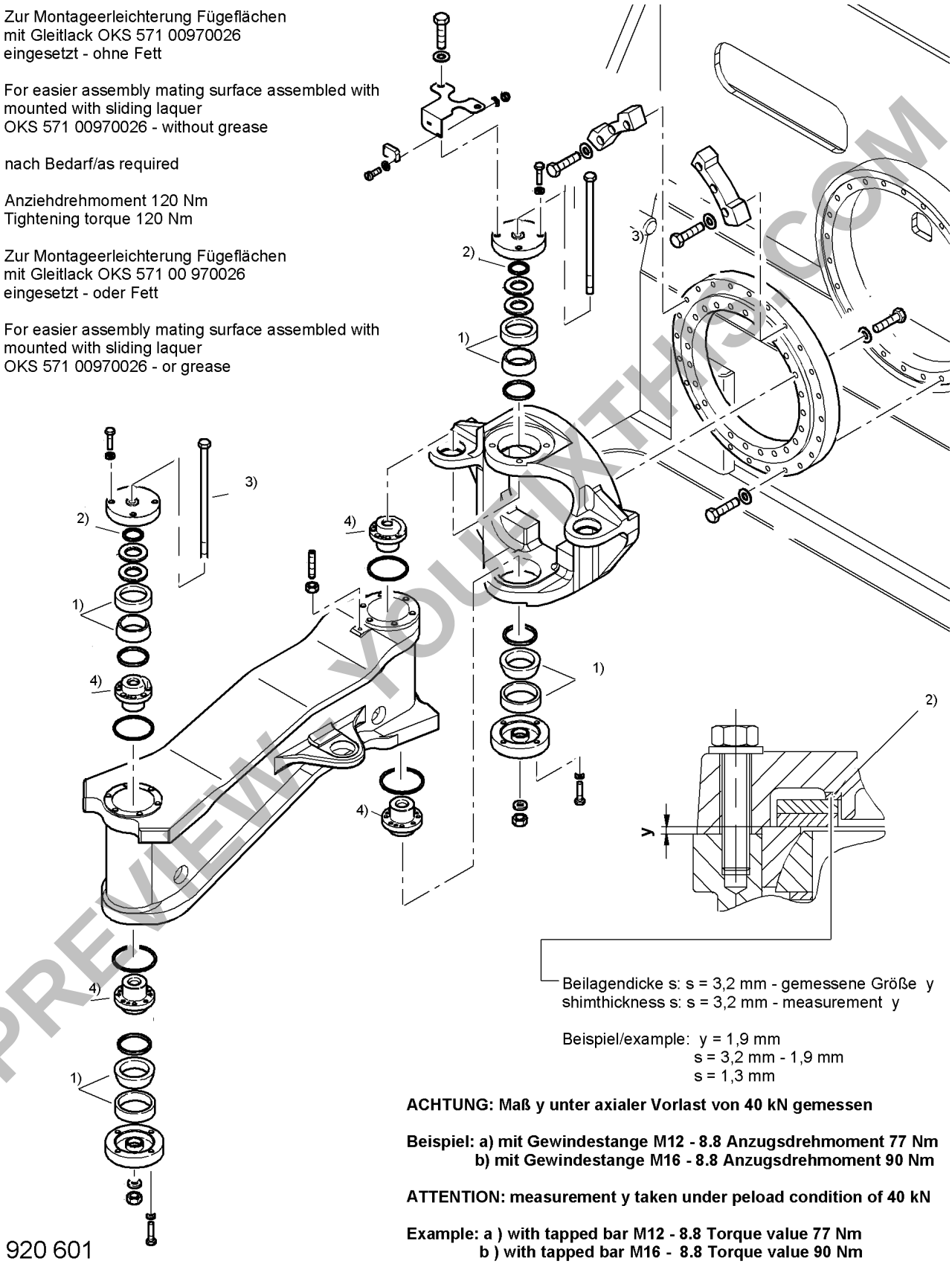
For easier assembly mating surface assembled with
mounted with sliding laquer
OKS 571 00970026 - without grease

2) nach Bedarf/as required

3) Anziehdrehmoment 120 Nm
Tightening torque 120 Nm

4) Zur Montageerleichterung Fügeflächen
mit Gleitlack OKS 571 00 970026
eingesetzt - oder Fett

For easier assembly mating surface assembled with
mounted with sliding laquer
OKS 571 00970026 - or grease



920 601

Beilagendicke s: s = 3,2 mm - gemessene Größe y
shimthickness s: s = 3,2 mm - measurement y

Beispiel/example: y = 1,9 mm
s = 3,2 mm - 1,9 mm
s = 1,3 mm

ACHTUNG: Maß y unter axialer Vorlast von 40 kN gemessen

Beispiel: a) mit Gewindestange M12 - 8.8 Anzugsdrehmoment 77 Nm
b) mit Gewindestange M16 - 8.8 Anzugsdrehmoment 90 Nm

ATTENTION: measurement y taken under peload condition of 40 kN

Example: a) with tapped bar M12 - 8.8 Torque value 77 Nm
b) with tapped bar M16 - 8.8 Torque value 90 Nm

PREVIEW - YOUFIXTHIS.COM

Download full manual at youfixthis.com

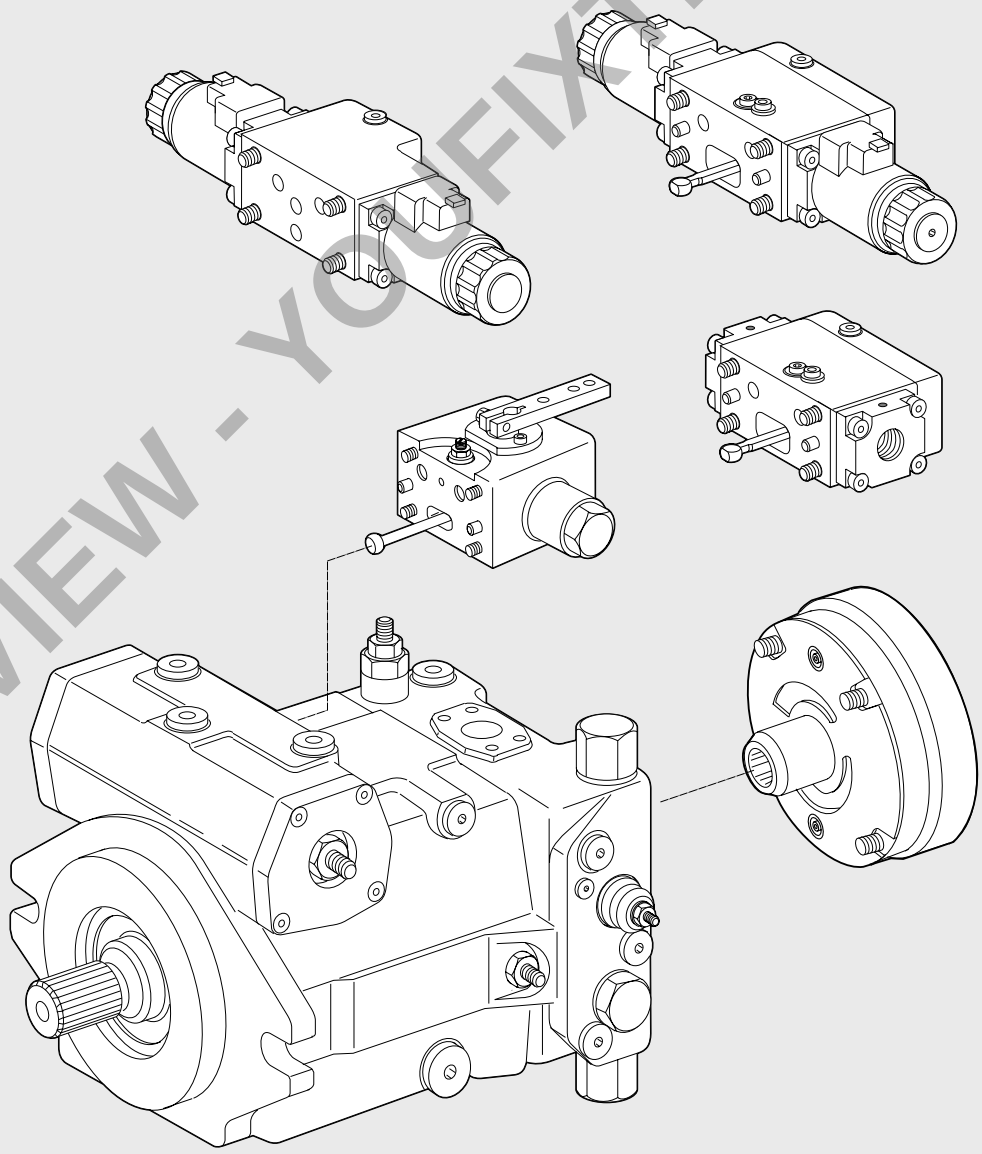
Rexroth
Bosch Group

Verstellpumpe A4VG 40–56
Variable Pump A4VG 40–56
Baureihe / Series 32

RDE 92003-11-R/02.08
ersetzt/replaces 12.05

R1

Reparaturanleitung / Repair Manual
Baugruppen / Assembly Groups



PREVIEW - YOUFIXTHIS.COM

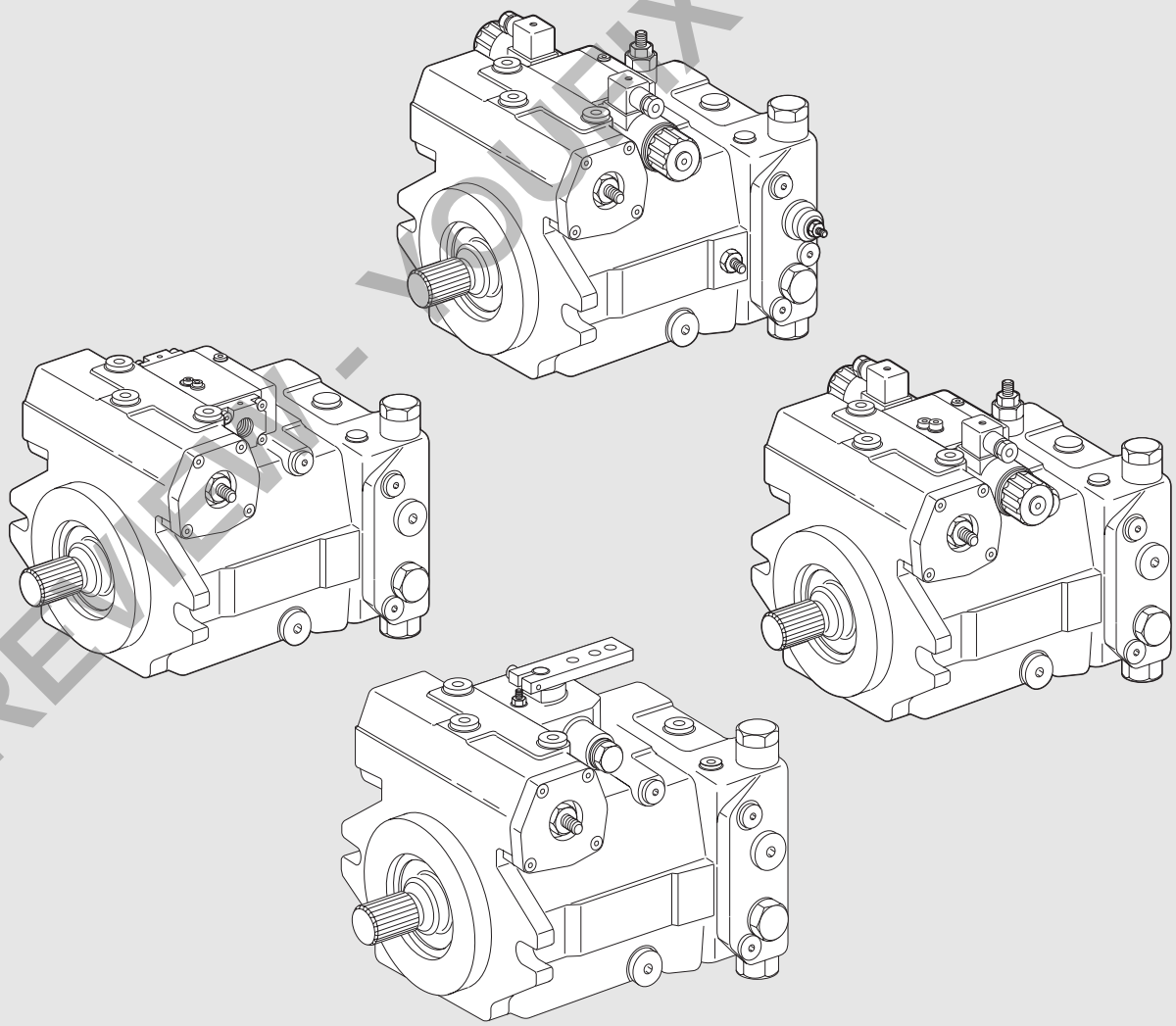
Download full manual at youfixthis.com

Rexroth
Bosch Group

Verstellpumpe A10VG 28/63
Variable Pump A10VG 28/63
Baureihe/Series 10

RDE 92 750-01-R/03.03
ersetzt/replaces 10.02

Reparaturanleitung / Repair Instructions



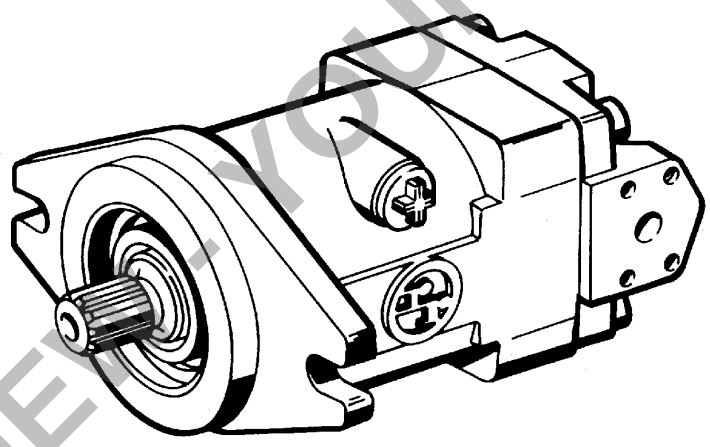
PREVIEW - YOUFIXTHIS.COM

Download full manual at youfixthis.com

BOMAG

Instructions for repair

A4FM22/31W - A4FM28/31W



A4FM 001

Vibration motor

008 196 64 03/1997

PREVIEW - YOUFIXTHIS.COM

Download full manual at youfixthis.com

BONFIGLIOLI

BONFIGLIOLI TRASMITAL

RIDUTTORE PER COMANDO RULLO
DRUM DRIVE

7 06 C 2 B S006A 11 A 44 H1 5*W40 U26

CODICE
CODE 2T260808200

PREVIEW - YOUFIXTHIS.COM

Manuale di installazione, uso e manutenzione

Installation, operation and maintenance manual

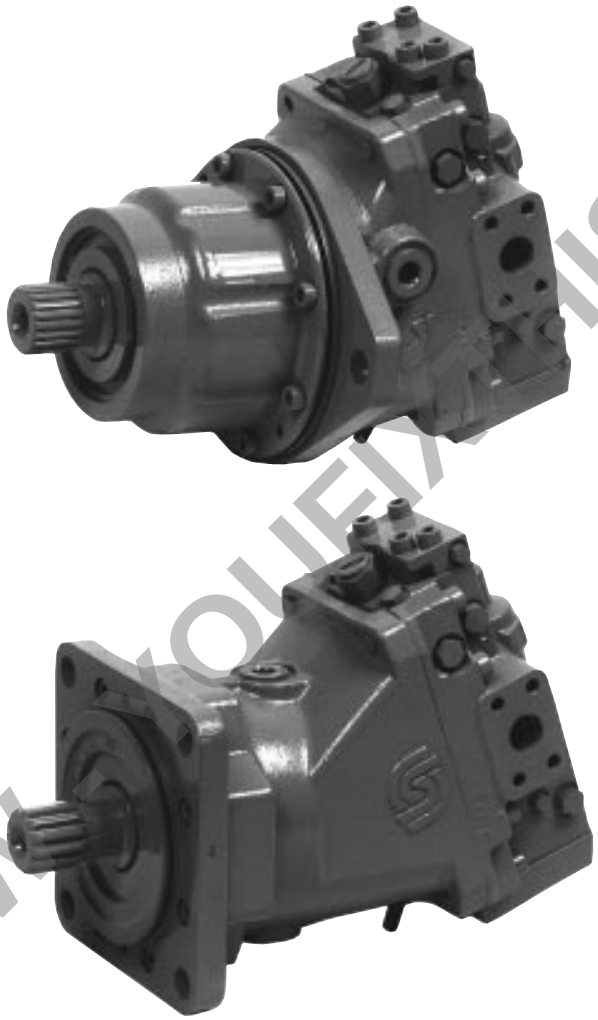
CERTIFIED QUALITY SYSTEM UNI EN ISO 9001 SINCERT DNV TÜV ISO 9001

Emissione: *Issue:*	07/2005
Aggiornamento - data: *Revision - date:*	0.0 - 06/07/2005
Ufficio tecnico commerciale: *Technical and commercial dept:*	**Compilatore:** ***Prepared by:*** ..... **Approvato da:** ***Approved by:*** .....

Download full manual at youfixthis.com

SAUER SUNDSTRAND

Series 51



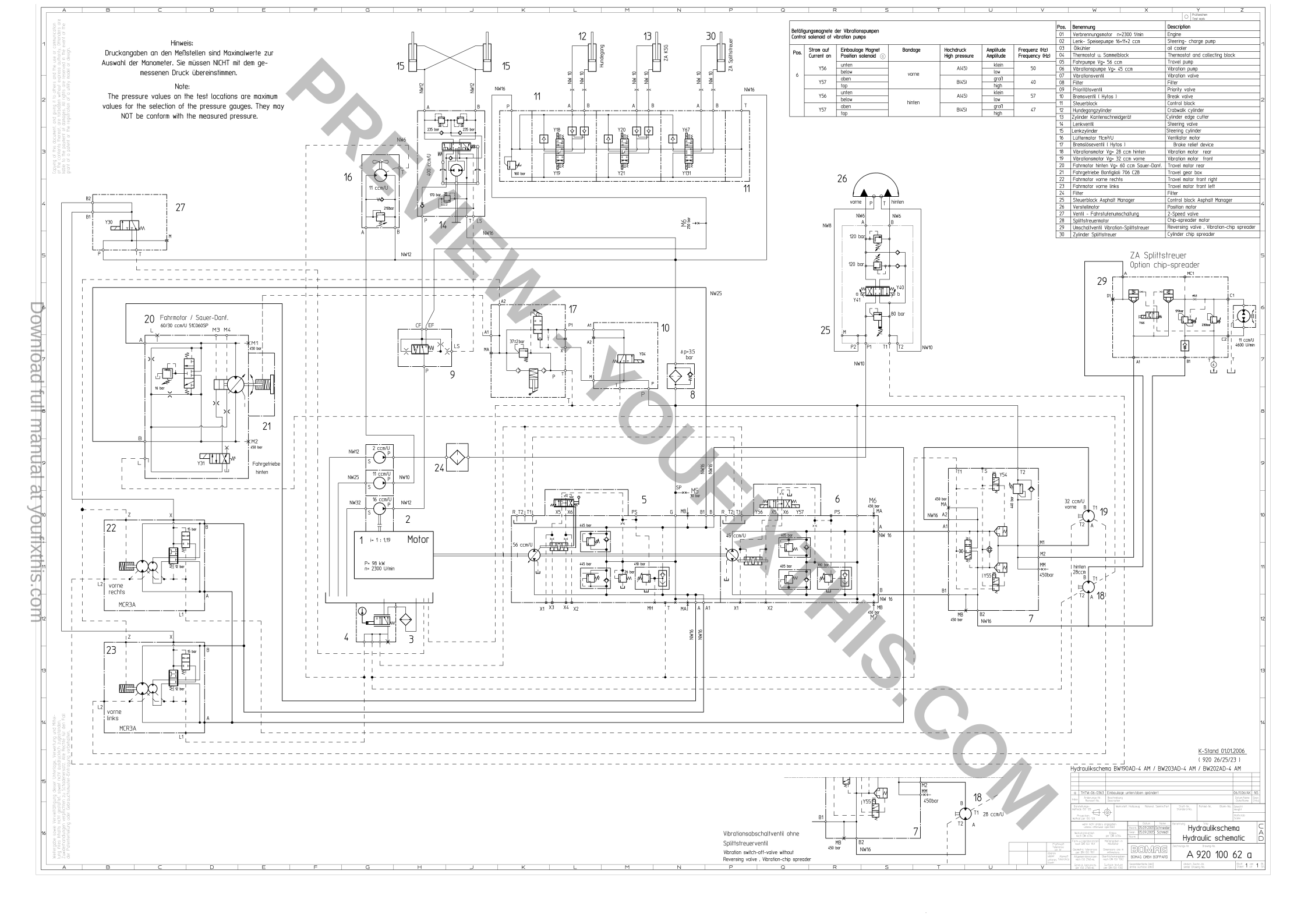
Bent Axis

Variable Motors

Service Manual

PREVIEW YOUFIXTHIS.COM

Download full manual at youfixthis.com



PREVIEW YOUFIXTHIS.COM
Download full manual at youfixthis.com

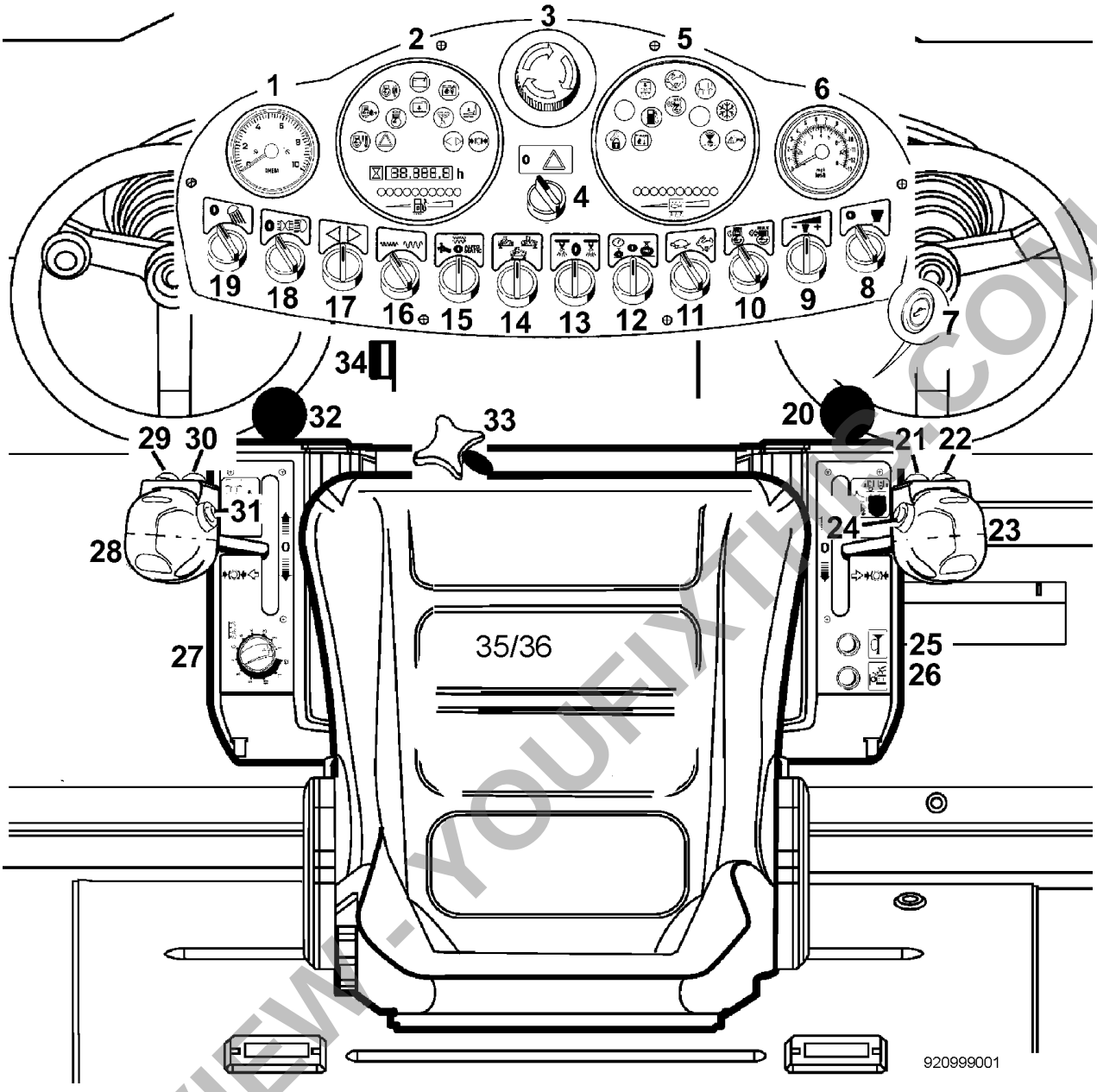


Fig. 1

Pos.	Designation in circuit diagram	Designation in circuit diagram
1	P34 / E73	Evib-meter / illumination Evib-meter
2	A15	Monitoring board
3	S01	Emergency stop switch
4	S14	Hazard light switch
5	A15	Monitoring board
6	P04 / E04	Speedometer / illumination of speedometer
7	S00	Start switch
8	S73	Switch for chip spreader
9	S74	Switch, chip quantity
10	S120	Switch, engine speed
11	S02 (BW161-4 family)	Travel speed range selector
12	S19	Switch, emulsion sprinkling system
13	S114	Switch for water pump
14	S36	Switch, vibration front / both / rear
15	S08	Switch, vibration manual / automatic

PREVIEW - YOUFIXTHIS.COM

Download full manual at youfixthis.com

	7.8 Series / parallel connection	121
	7.9 Ohm's law	123
	7.10 Electrical energy	123
	7.11 Formula diagram	124
	7.12 Metrology	125
	7.13 Diodes, relays, fuses	128
	7.14 Batteries	131
	7.15 Three-phase generator	134
	7.16 Electric starter	142
	7.17 Telemecanique switch	145
	7.18 Inductive proximity switches	148
	7.19 Angle sensors	149
	7.20 Plug connectors	151
	7.21 Magnetic coil plug	152
	7.22 Deutsch plug, series DT and DTM	154
	7.23 Plugs and terminals in spring clamping technology	161
	7.24 Electric modules	164
Special tools, electrics		**165**
	8.1 Special tools, electrics	166
Electronic modules		**175**
	9.1 BAM	177
	9.2 Electrics module A03	235
	9.3 Electrics module A68	263
	9.4 Electrics module A71	279
	9.5 Heating/air conditioning control	293
Service Training		**299**
	10.1 Service Training	301
	10.2 Asphalt Manager	377
Engine		**431**
	11.1 General information on diesel engine	432
	11.2 Service side	434
	11.3 Starter side	435
	11.4 Lubrication oil circuit	436
	11.5 Oil pressure switch and low oil pressure circuitry	438
	11.6 Coolant circuit	440
	11.7 Coolant temperature switch	442
	11.8 Disassembling and assembling the coolant temperature switch	443
	11.9 Replacing the thermostat	444
	11.10 Checking the thermostat in disassembled state	445
	11.11 Three-phase generator	446
	11.12 Fuel supply	448
	11.13 Injection system	451
	11.14 Injection pump replacement during service	452
	11.15 Injection valve replacement during service	461
	11.16 Checking / repairing injection valves	464
	11.17 Fuel filter	469
	11.18 Checking the compression	471

PREVIEW - YOUFIXTHIS.COM

Download full manual at youfixthis.com

BOMAG Service Training

Maintenance

The products of series BW 161/202 AD-4 are high performance machines for the extremely difficult use in asphalt compaction and earth work. To be able to meet these demands the machines must always be ready to be loaded up to their limits. Furthermore, all safety installations, protections and guards must always be in place and fully functional.

Thorough maintenance of the machine is therefore mandatory. This not only guarantees a remarkably higher functional safety, but also prolongs the lifetime of the machine and of important components.

The time required for thorough maintenance is only minor when being compared with the malfunctions and faults that may occur if these instructions are not observed.

The maintenance intervals are given in operating hours. It is quite obvious that with each maintenance interval all the work for shorter preceding intervals must also be performed. During the 2000 hours interval you must also perform the work described for the service intervals after 50, 250 and 500 hours.

During maintenance work you must only use the fuels and lubricants mentioned in the table of fuels and lubricants (oils, fuels, grease etc.).

This training manual is handed out together with the presently valid operation and maintenance manual. For the individual maintenance intervals and the description of the maintenance work involved please refer to these maintenance instructions.

PREVIEW - YOUFIXTHIS.COM

Download full manual at youfixthis.com

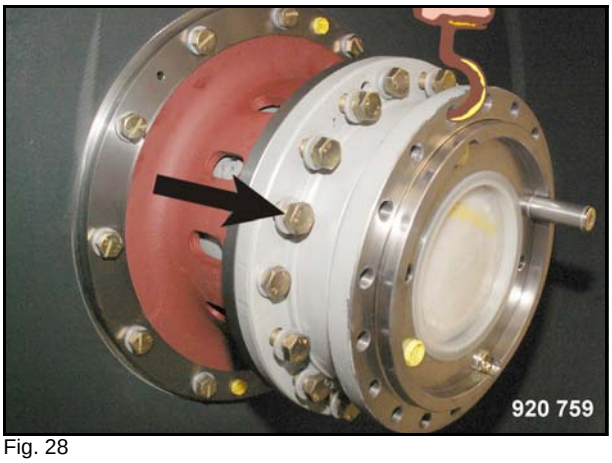


Fig. 28

60. Attach the lifting tackle to the travel gear (Fig. 28).

⚠ Danger

Danger of squashing!

Do not stand or work under suspended loads!

61. Unscrew the travel gear fastening screws.



Fig. 29

62. Remove the travel gear (Fig. 29).

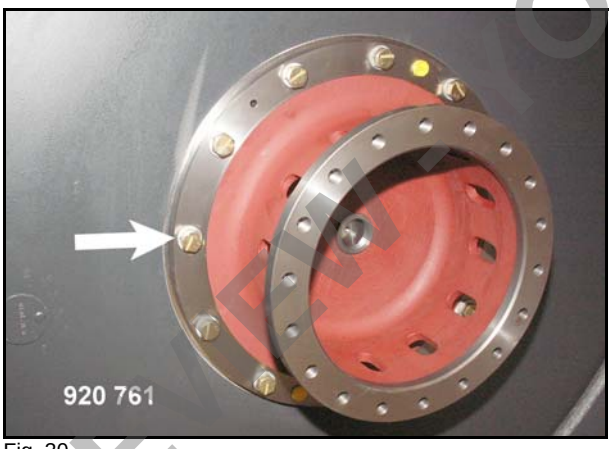


Fig. 30

63. Unscrew the fastening screws from the travel gear flange (Fig. 30).

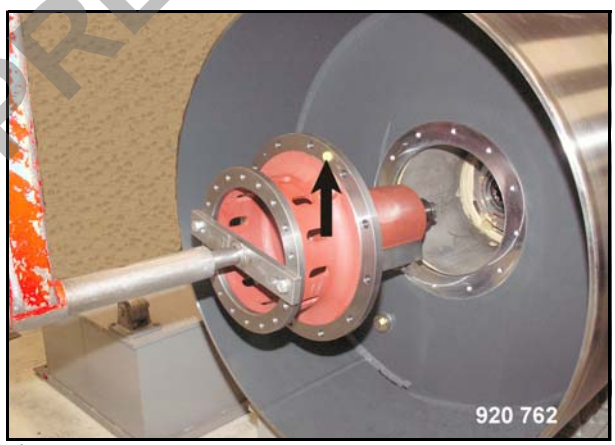


Fig. 31

64. Attach the lifting tackle to the exciter unit (Fig. 31).

⚠ Danger

Danger of squashing!

Do not stand or work under suspended loads!

Hold the exciter unit in horizontal position. Take care that the exciter unit does not slip out of the travel bearing flange.

65. Force the exciter unit out of the drum using two forcing screws .

66. Lift out the exciter unit and lay it down safely.

PREVIEW - YOUFIXTHIS.COM

Download full manual at youfixthis.com

Nelle pagine seguenti vengono riportate tutte le fasi di smontaggio e rimontaggio del riduttore: rispettarle scrupolosamente.
Eseguire questi interventi adottando tutte le necessarie precauzioni, come ad esempio:

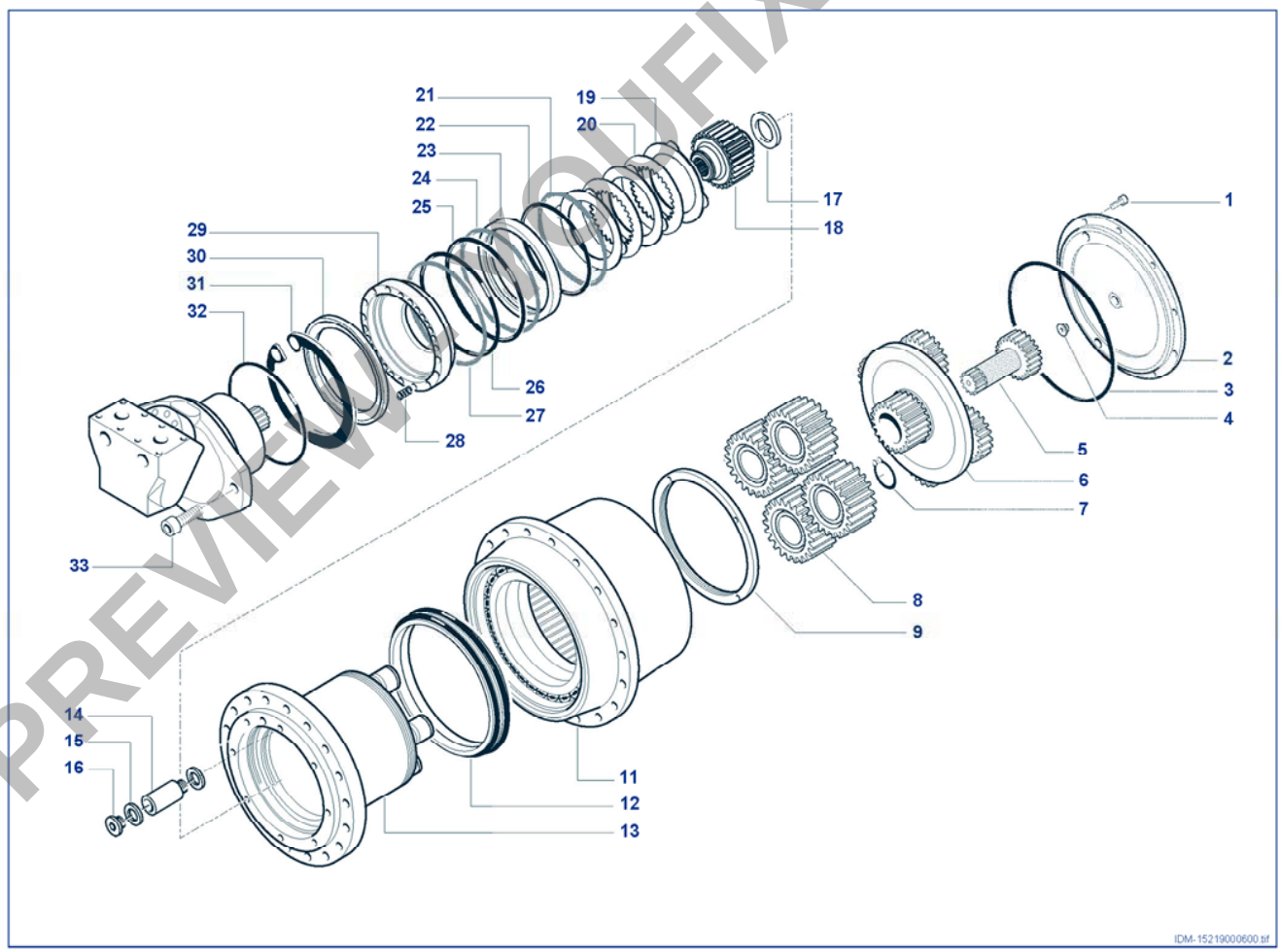
1. chiudere tutti gli attacchi all'impianto oleodinamico sul riduttore per evitare l'introduzione accidentale di corpi estranei nel circuito e nel riduttore.
2. fare attenzione che le superfici di accoppiamento non vengano danneggiate.
3. eseguire la movimentazione in modo che non crei pericoli per la sicurezza delle persone e garantisca l'integrità del riduttore.
4. predisporre la zona di lavoro al fine di rispettare le leggi in materia di sicurezza e salute nei posti di lavoro.

NOTA: di seguito sono indicate tutte le fasi per eseguire questi interventi. I numeri fra parentesi nel testo, corrispondono ai riferimenti riportati nel seguente disegno esploso.

In the following pages all the procedures for disassembling and reassembling the gearbox are given, it is important to strictly adhere to them. Proceed with these operations using all the necessary safety measures, like for example:

1. *Plug all the Hydraulic ports on the gearbox to avoid the introduction of any foreign particles in the circuit and the gearbox.*
2. *Making sure that the coupling surfaces are not damaged.*
3. *Following the handling so as to be sure that there are no risks for human safety and to guarantee the reliability of the gearbox.*
4. *Making available a work area that is in line with work and health safety in the workplace guidelines.*

NOTE: Below are all the steps to follow during these operations. Numbers in brackets in the text correspond to the references in the exploded view.



PREVIEW YOUFIXTHIS.COM

Download full manual at youfixthis.com

PREVIEW ONLY

You're viewing 25 of 1234 pages

The full manual includes:

- All 1234 pages, complete
- Searchable PDF (find any keyword)
- No watermarks
- Instant download
- Print-ready quality

GET FULL MANUAL NOW

Bomag BW 190 AD-4 AM, BW 203 AD-4 AM Service Manual

Scan or click anywhere
youfixthis.com

Click anywhere on this page to get the full manual