BOMAG

FAYAT GROUP

Service Manual

BW 219 DH-5 / BW 219 PDH-5 / BW 226 DH-5 / BW 226 PDH-5



S-586-0196

S/N 101 586 33 1001> / S/N 101 586 37 1001> / S/N 101 586 40 1001> / S/N 101 586 42 1001>

Single drum roller

008 400 76 EN

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2.1.1 Technical data

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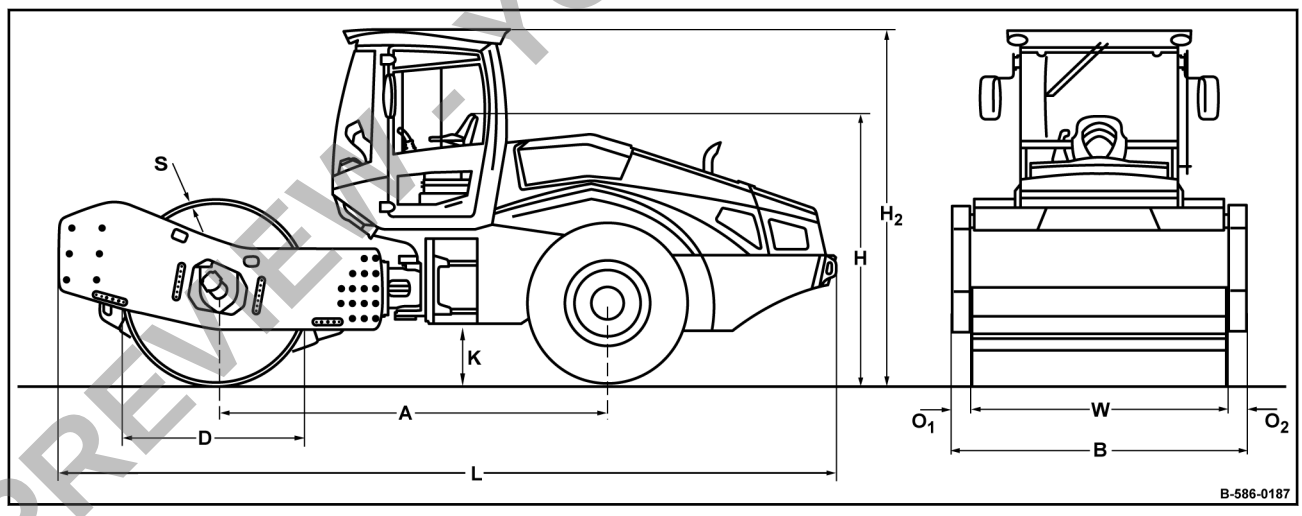


Fig. 52

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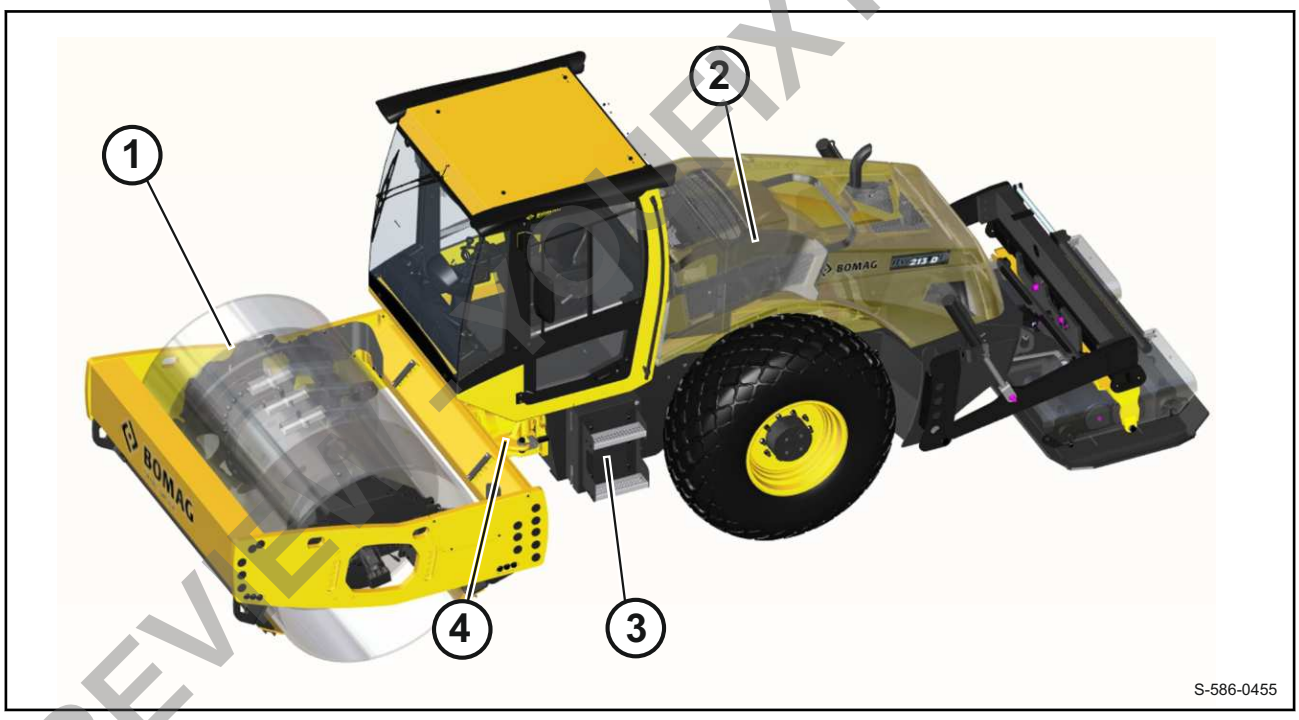


Fig. 57: with attachment plates

1 Drum
2 Diesel engine
3 Central electrics
4 Articulated joint

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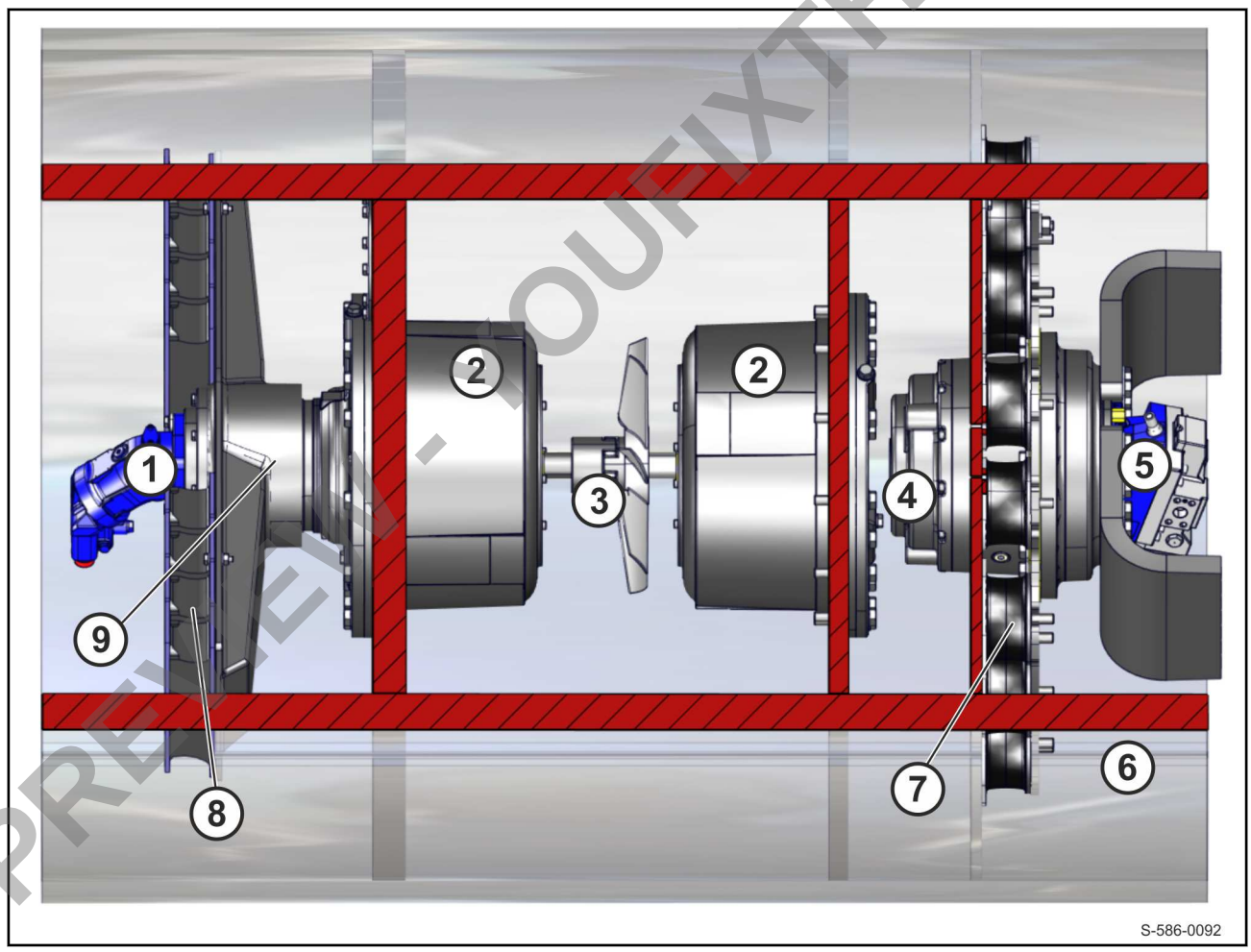


Fig. 376

1 Vibration motor
2 Exciter unit
3 Clutch
4 Travel gear

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6.3 Oscillating articulated joint

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6.3.1 Overview

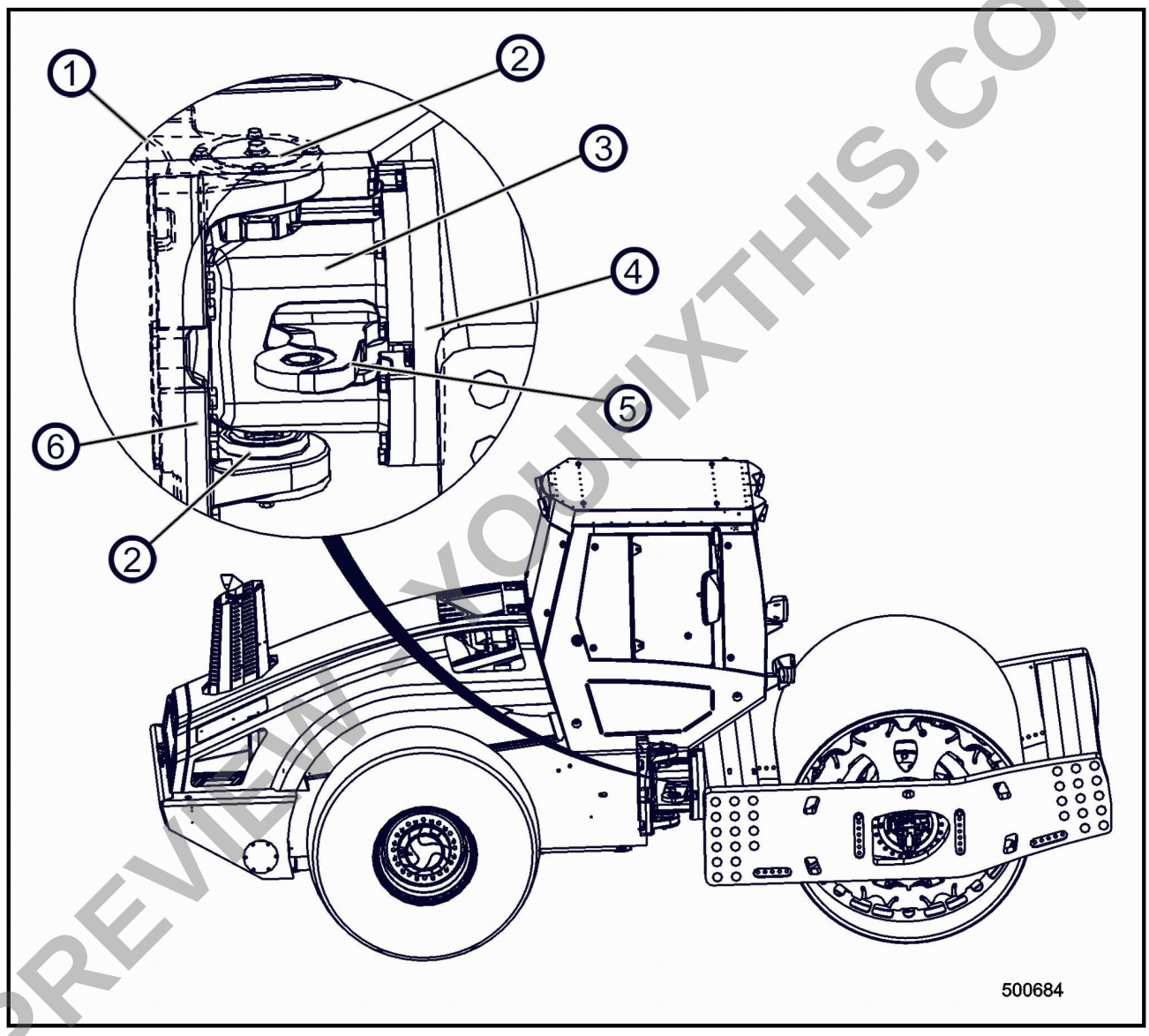


Fig. 604

1 Oscillating articulated joint
2 Bearing cover
3 Housing
4 Cover
5 Carrier
6 Console

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6.7.1 Safety

General safety regulations for assembly

When installing the cabin to your BOMAG 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 adhered to:

- 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



WARNING!

Paragraphs marked like this highlight possible dangers for persons.

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7.1 Preliminary remarks

Malfunctions are frequently caused by incorrect operation of the machine or insufficient maintenance. Whenever a fault occurs you should therefore thoroughly read these instructions on correct operation and maintenance.

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7.4.1 Starting the engine with jump leads

NOTICE!

A wrong connection will cause severe damage in the electric system.

– Bridge the machine only with a 12 Volt auxiliary battery.

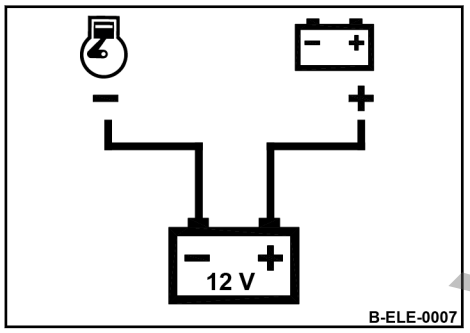


Fig. 767

1. Connect the plus pole of the external battery first with the plus pole of the vehicle battery using the first jump lead.
2. Then connect the second battery cable first to the minus pole of the current supplying auxiliary battery and then to engine or chassis ground, as far away from the battery as possible.
3. Start the engine.

NOTICE!

Danger of damage to the electronic system!

If no powerful consuming device is switched on, voltage peaks may occur when separating the connecting cables between the batteries, which could damage electrical components.

4. Once the engine is running switch on a powerful consumer (working light, etc.).
5. After starting disconnect the negative poles first and the positive poles after.
6. Switch off the consumer.

7.4.2 Engine malfunctions

Fault	Possible cause	Remedy
Engine does not start or starts poorly	Fuel tank empty	Refuel, bleed the fuel system
	Temperature below starting limit	Check
	Cold starting device	Check, replace if necessary
	Engine oil with wrong SAE viscosity class	Changing the engine oil

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7.5.1 Insufficient hydraulic power

Trouble shooting charge pressure, example travel circuit

If the charge pressure is not inside the nominal range, no high pressure can be built up in the system.

Diesel engine running, travel lever position "0"

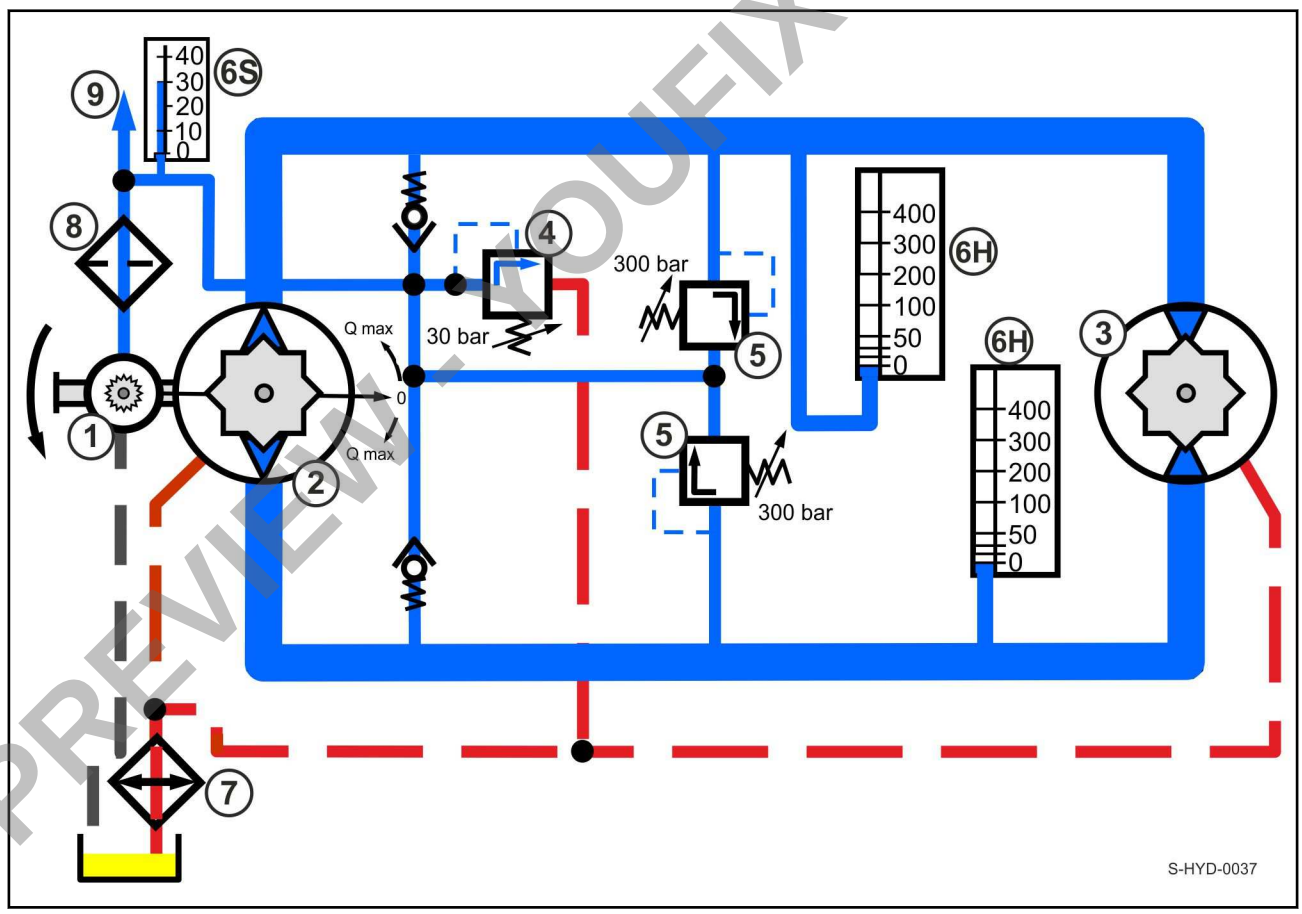


Fig. 770: Charge pressure (6S) present

1 Charge pump
2 Variable displacement pump
3 Hydraulic motor

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8.1 Special tools, electrics

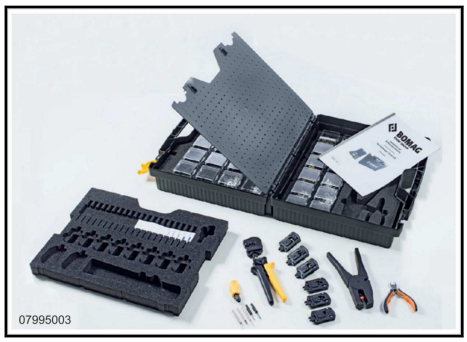


Fig. 798: Special pliers

Special pliers tool kit

The contacts are not included in the kit. Depending on the contact to be crimped, the matching tool head must be attached to the handle.

BOMAG part-no.: 079 950 03

- Comprising:
  - Different tool heads
  - Unlocking tools
  - Manual
  - Operating manual and plastic boxes for storing different contacts

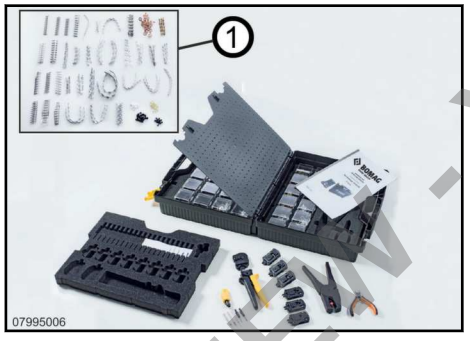


Fig. 799: Equipment kit (1)

Equipment kit for special pliers tool kit

BOMAG part-no.: 079 950 06



Fig. 800: Measuring set

Measuring set

BOMAG part-no.: 836 011 68

- Comprising:
  - Clamp multimeter
  - Measuring adapter
  - Measurement lines
  - Screwdriver
  - Other accessories

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Validity of circuit diagrams

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  101 586 16 1001 ⇒ 101 586 16 1107
- *BW 213 PDH-5*
  101 586 18 1001 ⇒ 101 586 18 1021
- *BW 213 BVC-5*
  101 586 20 1001 ⇒ 101 586 20 1032
- *BW 213 PDH-5 + P*
  101 586 22 1001 ⇒ 101 586 22 1021
- *BW 213 BVC-5 + P*
  101 586 23 1001 ⇒ 101 586 23 1024
- *BW 216 D-5*
  101 586 25 1001 ⇒ 101 586 25 1012
- *BW 216 DH-5*
  101 586 27 1001 ⇒ 101 586 27 1012
- *BW 216 PDH-5*
  101 586 30 1001 ⇒ 101 586 30 1001
- *BW 219 D-5*
  101 586 31 1001 ⇒ 101 586 31 1005
- *BW 219 DH-5*
  101 586 33 1001 ⇒ 101 586 33 1020
- *BW 219 PH-5*
  101 586 37 1001 ⇒ 101 586 37 1003
- *BW 219 BVC-5*
  101 586 39 1001 ⇒ 101 586 39 1004
- *BW 226 DH-5*
  101 586 40 1001 ⇒ 101 586 40 1003
- *BW 226 DH-5*
  101 586 42 1001 ⇒ 101 586 42 1001
- *BW 226 RC-5*
  101 586 46 1001 ⇒ 101 586 46 1001

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4	Fahrkreis DH	Fahrkreis DH	22.08.2017	hagen	
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8	Rückläufe	Return flows	01.02.2016	hagen	
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Identification of externally supplied documentation

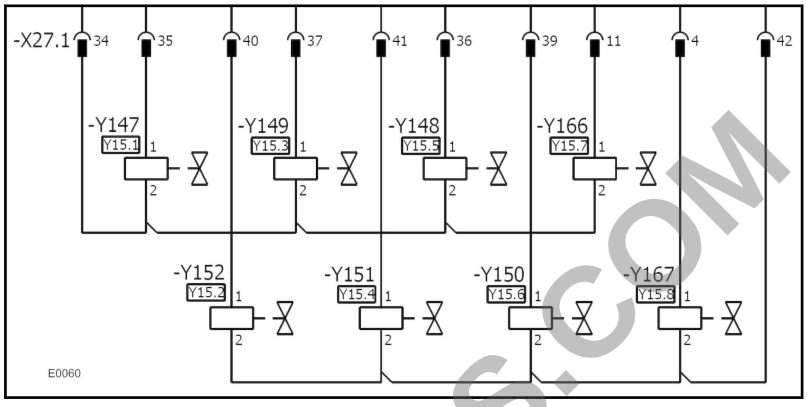


Fig. 99: Example: Identification of externally supplied documentation

In industrial technology of today it is quite common to integrate externally supplied electric sub-systems into the projecting of machines. These systems may be composed of various components and wirings. For easier differentiation of BOMAG designation and manufacturer identification the latter appears under the BOMAG designation with a text frame and a reduced character height.

PLC box representation (-A66)

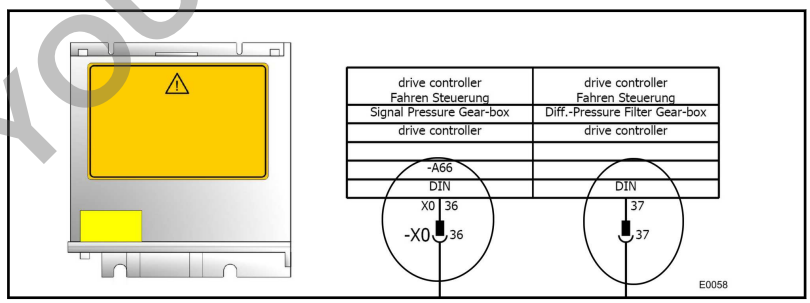


Fig. 100: PLC box representation

The PLC box representation of connecting pins uses a table with associated connecting plugs, which are used in connection with the machine functions. The table symbols can be arranged in a line, if necessary. Connections which are not used do not need to be represented. The PLC box representation enables the representation of further reaching functional descriptions to the individual component connections.

The PLC box representation is mainly used for controls with BOMAG software, or for electronic devices which were specified accordingly, and where information on the assignment of signals is available.

Identification of similar, adjacent circuit symbols

In circuit diagrams, symbols of the same type are often arranged in series or close to each other. In such cases it is common practice to reduce the identification on the subsequent symbol to the criteria, which are different from the previous symbol on the left.

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PIN Display	Signal description	Nominal values (voltage / current)
X33:16	not used	
X33:17	not used	
X33:18	not used	
X33:19	not used	
X33:20	not used	
X33:21	Interface **CAN-Bus 1** Wire **+**, is used for communication with MESX, ESX, the cabin module and with the immobilizer.	Measurement not possible!
X33:22	Interface **CAN-Bus 1** Wire **-**, is used for communication with MESX, ESX, the cabin module and with the immobilizer.	Measurement not possible!
X33:23	not used	
X33:24	not used	
X33:25	Ground connection	0 V (measured against ground)
X33:26	Voltage supply (permanent voltage “ignition on”)	Electronics working ☞ approx. 12 V Electronics not working ☞ 0 V

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3. Replace damaged hydraulic hoses immediately, fasten these properly and avoid chafing.
4. Only operate the machine after it has been repaired.

5.6.4 Every 1000 operating hours

5.6.4.1 Replacing the hydraulic oil filter

Perform this maintenance work at the latest after one year.

NOTICE!

Components may get damaged!

- If the filter has to be changed together with the hydraulic oil, the filter must only be changed after the oil change and after the test run.
- Do not use the oil in the filter bowl again.
- Apart from the normal oil change intervals, the filter element must also be changed after major repairs in the hydraulic system.

Protective equipment:
- Working clothes
- Protective gloves

1. Park the machine in secured condition *Chapter 1.3.4 „Parking the machine in secured condition“ on page 61*.
2. Allow the engine to cool down.
3. Unscrew filter bowl (4) and take it off with filter element (3).

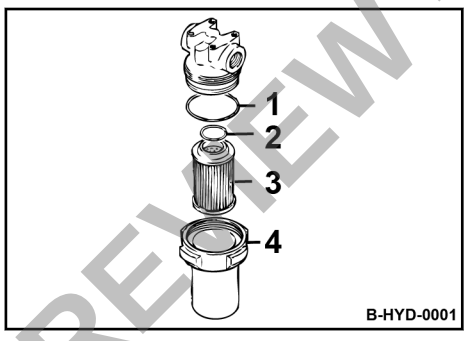


Fig. 260

NOTICE!

Negligence may cause destruction to the entire hydraulic system!

- Visible dirt may be an early sign for the failure of system components and indicate the possible failure of components.
- In this case determine the cause and replace or repair the defective components, if necessary.
- Do not clean or reuse the filter element.

4. Take out the old filter element and clean the filter bowl.
5. Clean the thread on the filter bowl.
6. Reassemble the filter bowl with a new filter element and new O-rings (1, 2).
7. After a short test run check the filter for leaks.
8. Dispose of oil and filter in an environmentally friendly way.

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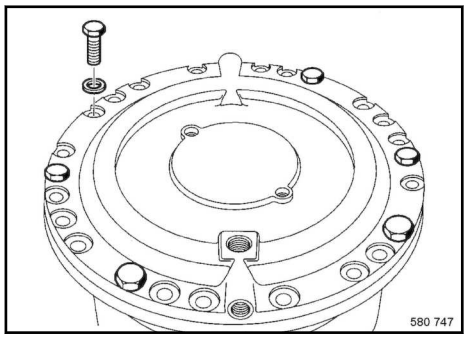


Fig. 478

18. Turn the screws into the tapped bores of the flanged housing and tighten them.

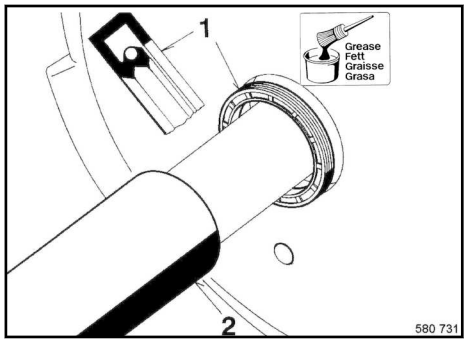


Fig. 479

19. Apply some grease to the sealing lip of radial seal (1).

20. Slide the radial seal with the sealing lip forward over the shaft and drive it completely into the flanged housing, using a suitable tube (2).

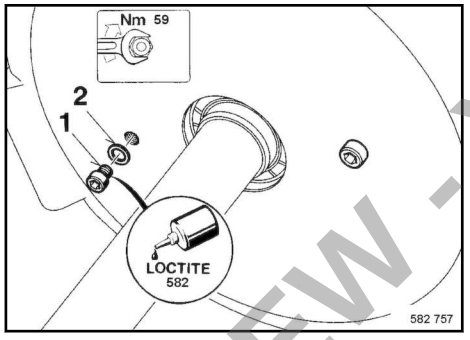


Fig. 480

21. Cover the thread of screw (1) with a screw retention agent (e.g. Loctite CVX strong, blue, 582).

22. Slide on the new U-seal ring (2), turn in and tighten the screws.

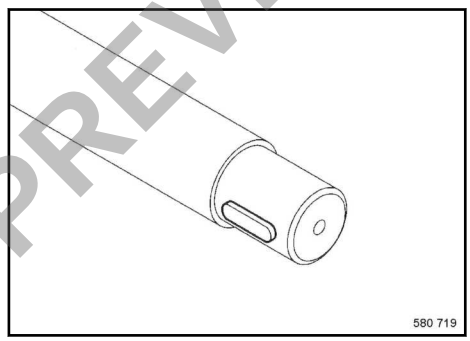


Fig. 481

23. Insert the fitting key into the key way of the shaft.

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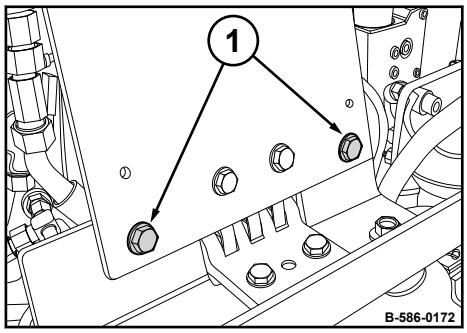


Fig. 738

4. Screw in and tighten the two outer screws (1) on the right side of the cross-member.

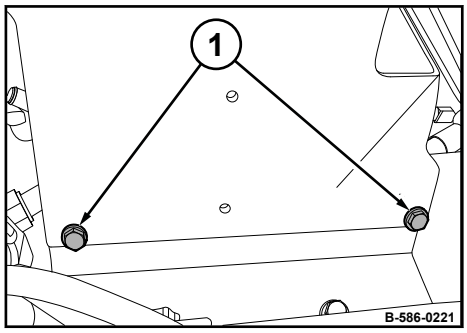


Fig. 739

5. Screw in and tighten the two screws (1) on the left side of the cross-member.

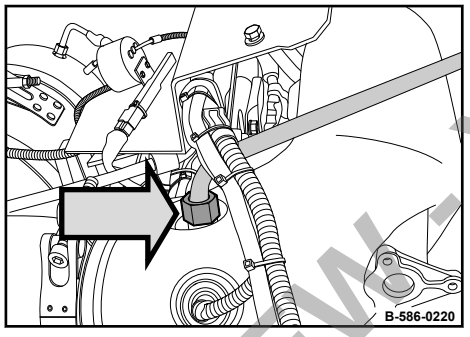


Fig. 740

6. Screw on the pipe to the sensor and tighten it.

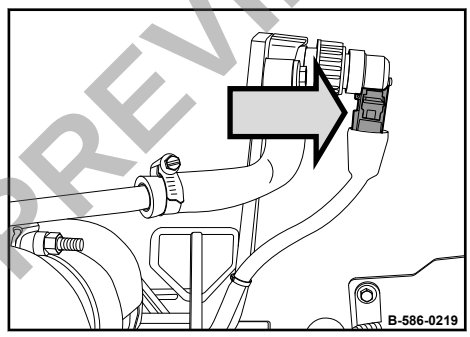


Fig. 741

7. Plug on the plug to the sensor.

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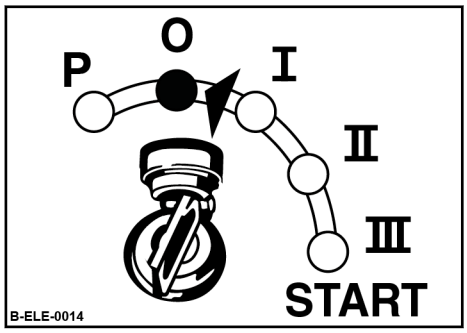


Fig. 791: Switch the ignition off

4. Turn the ignition key to position “0” ↳ Fig. 791.

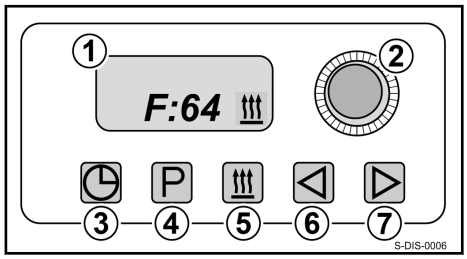


Fig. 792

5. Press button (3) ↳ Fig. 792 and button (4) simultaneously, switch the ignition on at the same time and wait until the display shows the following reading .

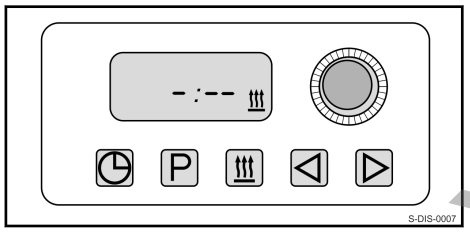


Fig. 793: Display reading after ignition “On”

⇨ Display flashing, heating symbol not flashing ↳ Fig. 793.

After 3 seconds the control unit is unlocked, the heater unit will then start and the display will show the following reading.

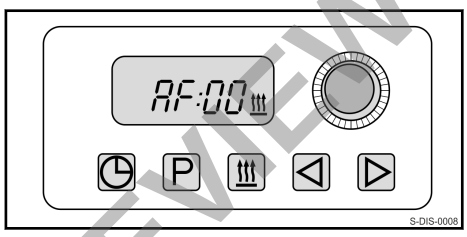


Fig. 794: Display reading after the heater unit has been started

⇨ No current fault, heating symbol ↳ Fig. 794.

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Pin overview
Pin Übersicht

A83				Measurement controller Messtechnik Steuerung		
Plug Stecker	Pin Kontakt	Page Blatt	Path Pfad	Description Beschreibung	Signal	Signal
X88	1	14	6	AGND	AGND	Analogmasse
X88	4	39	6	RxD	RxD	RxD
X88	5	39	7	TxD	TxD	TxD
X88	7	39	3	AI/3	Transducer Acceleration rear 20g	Beschleunigungsaufn. hinten 20g
X88	9	35	4	AI/7	Position exciter	Erregerposition
X88	23	14	5	8,5VEXT	8,5V Sensor Power	8,5V Sensor Spannung
X88	25	39	8	DO(2,5A)/3	Power supply GPS	Spannungsversorgung GPS
X88	26	16	7	CAN1_L	CAN 1 -	CAN 1 -
X88	27	16	6	CAN1_H	CAN 1 +	CAN 1 +
X88	28	13	1	15/54	Ignition	Zündung
X88	29	39	2	AI/2	Transducer Acceleration front 15g	Beschleunigungsaufn. vorne 15g
X88	30	39	4	AI/4	Transducer Acceleration rear 15g	Beschleunigungsaufn. hinten 15g
X88	31	39	1	AI/6	Transducer Acceleration front 20g	Beschleunigungsaufn. vorne 20g
X88	32	35	2	AIN_8	Switch, amplitude adjustment	Schalter Amplitudenverstellung
X88	33	17	8	CAN2_L	CAN 3 -	CAN 3 -
X88	46	35	8	DO(PWM)/1	Exciter down	Erreger ab
X88	47	35	7	DO(PWM)/2	Exciter up	Erreger auf
X88	53	17	7	CAN2_H	CAN 3 +	CAN 3 +
X88	54	13	2	+UE	Power Supply (Electronic)	Spannungsvers. (Elektronik)
X88	55	13	5	GND	Ground Electronic	Masse Elektronik
X88	56	13	3	+UB	Power Supply (Outputs)	Spannungsvers. (Ausgänge)
X88	57	13	4	+UB	- " -	- " -
X88	58	13	5	+UB	- " -	- " -
X88	59	13	6	+UB	- " -	- " -
X88	60	13	6	+UB	- " -	- " -
X88	61	35	9	DO_5	Exciter priority	Erreger Priorität
X88	65	13	6	GND	Ground Electronic	Masse Elektronik
X88	66	13	7	GND	- " -	- " -
X88	67	13	8	GND	- " -	- " -
X88	68	13	9	GND	- " -	- " -

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