BOMAG Central Service - Technical data and adjustment values

Status: 2001-07-09

Product type:	**BW 216 D-3**
Type No.:	580 40

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Maintenance table

Maintenance work	Comment	Running-in inspect. (50 op. hours)	10 oper. hours	50 oper. hours	250 op. hours	500 op. hours	1000 op. hours	2000 op. hours	as required
Change the engine oil filter		X							
Change the engine oil		X							
Check, adjust the valve clearance		X							
Tighten all screw connections on intake and exhaust manifold, oil sump and engine mounts		X							
Tighten the screw connections on the machine		X							
Tighten the fastening screws for the wheels		X							
Change the oil in the drive axle		X							
Change the oil in the planetary drives		X							
Change the oil in the axle reduction gear		X							
Change the oil in the drum drive reduction gear		X							
Change the oil in the vibration housings	see note	X				X	X		
Check the engine oil level	Dipstick mark		X	X	X	X	X	X	
Check the water separator			X	X	X	X	X	X	
Check the fuel level	approx. 340 l		X	X	X	X	X	X	
Check the hydraulic oil level	Inspection glass		X	X	X	X	X	X	
Check the coolant level			X	X	X	X	X	X	
Grease the articulated joint	High press. grease			X	X	X	X	X	
Check the tire pressure	1.1 bar			X	X	X	X	X	
Adjust the scrapers				X	X	X	X	X	
Retighten the screws on the articulated joint					X	X	X	X	

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Fig. 1 Hy

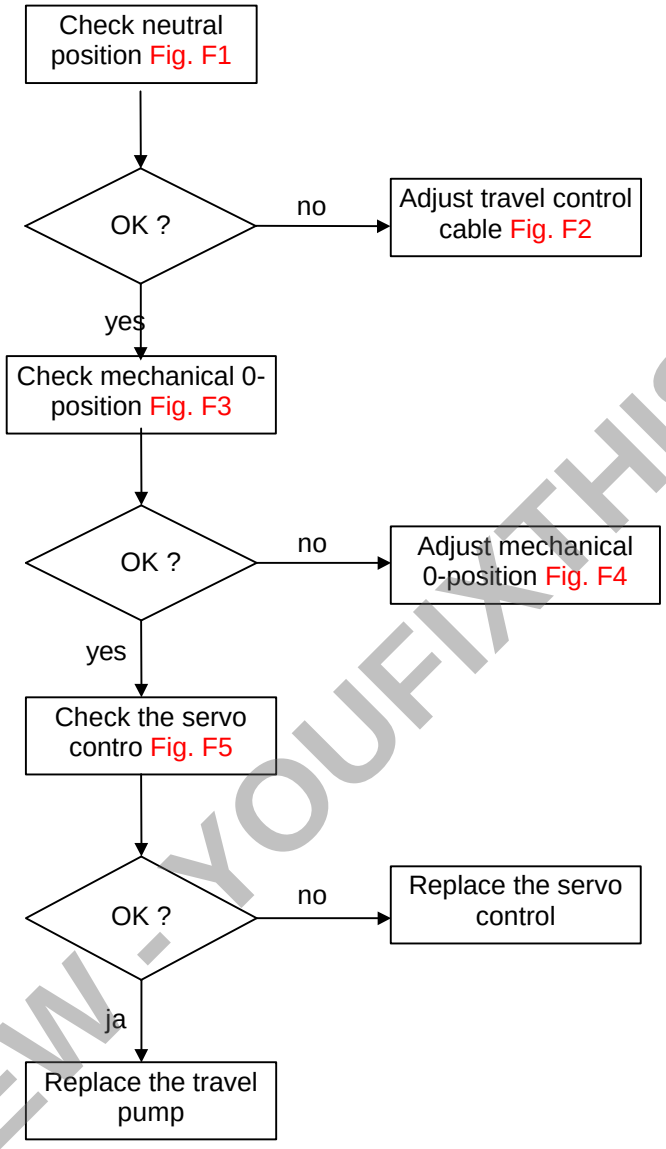
from brake valve

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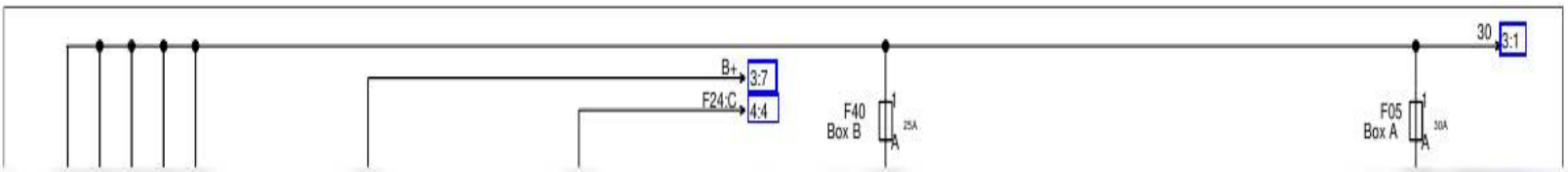
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The machine moves with the travel lever in „NEUTRAL“



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BOMAG GMBH BOPPARD

Gez.: 29.05.2000
Name: Wemer
Gepr.: 29.05.2000
Name: Seis

Bauteilliste
component listing

Name	Bl.	Pf.	Benennung	title	TYP
A01	012	6	Intervallschalter Berieselungssystem	Interval switch, sprinkler system	
A02	013	17	Blinkrelais	Indicator relay	
A05	005	9	Elektronik Geschwindigkeitsanzeige	Electronic system, speedometer	MODUL
A06	005	4	Elektronik Frequenzanzeige vorne	Electronic system, frequency meter, fr.	MODUL
A08	010	18	Elektronik Omegameter	Electronic system, Omegameter	
A12	014	17	Radio	Radio	
A15	004	13	Platine Ueberwachungsmodul	Printed circuit board, monitoring module	
A16	005	14	Elektronik Tachograph	Electronic system, tachograph	
A17	007	11	Elektronik Geschwindigkeitskontrolle	Electronic, speed control	
A23	002	8	Platine Generator	Printed circuit,generator	
A33	010	7	Zentralplatine Kopplung Verdichtungskomponenten	Connection dircuit board, compac. components	
A35	010	14	Versorgungsplatine	Suppling circuit board	
A36	008	2	Elektronik Antischlupfregelung	Elektronic antispin control	
A37	009	11	Elektronik Variomatic	Elektronic variomatic	
A44	010	5	Zusatzelektronik	Additional control unit	
A46	009	2	Modul Variomatik	Modul, variomatik	
A51	005	17	Platine Frequenzanzeige	Circuit board,frequenzy meter	
A54	015	6	Modul Pumpenansteuerung	Modul pump control	
B03	004	19	Unterdruckschalter Luftfilter	Vacuum switch, air cleaner	
B06	004	15	Druckschalter Motoroel	Pressure switch, engine oil	
B11	004	1	Signalhorn	Warning horn	MAX. 5A
B11	004	3	Signalhorn	Warning horn	MAX. 5A
B13	006	2	Naeherungsinitiator Fahrhebel links	Proximity switch, travel lever, lh.	
B14	006	4	Naeherungsinitiator Fahrhebel rechts	Proximity switch, travel lever, rh.	
B16	005	3	Aufnehmer Vibrationsfrequenz vorne	Transducer, vibration frequency, front	
B21	004	18	Differenzdruckschalter Hydr.−Oelfilter	Pressure diff. switch, hydr. oil filter	
B29	014	5	Raumthermostat	Room thermostat	
B51	014	17	Lautsprecher Radio	Speaker radio	
B51	014	18	Lautsprecher Radio	Speaker radio	
B53	004	16	Temperaturgeber Kuehlmittel	Temperature switch, collant	
B54	003	5	Temperaturgeber Starthilfe	Temperature switch, starting assistance	
B55	004	19	Kuehlmittelstand Ausgleichsbehaelter	Coolant charge expansion tank	
B57	008	9	Neigungssensor Stufenumschaltung	Slope sensor, speed range selection	
B59	008	11	Aufnehmer Bandagengeschwindigkeit	Sensor, drum speed	
B60	007	15	Aufnehmer Achsgeschwindigkeit	Sensor, axle speed	
B60	008	12	Aufnehmer Achsgeschwindigkeit	Sensor, axle speed	
B60	010	3	Aufnehmer Achsgeschwindigkeit	Sensor, axle speed	
B61	009	7	Aufnehmer Verstellzylinder	Sensor, ajustable zylinder	
B62	009	9	Beschleunigungsaufnehmer	Acceleration sensor	
B62	009	10	Beschleunigungsaufnehmer	Acceleration sensor	
B62	010	9	Beschleunigungsaufnehmer	Acceleration sensor	
B62	010	9	Beschleunigungsaufnehmer	Acceleration sensor	
B62	010	18	Beschleunigungsaufnehmer	Acceleration sensor	
B75	014	5	Kuehlmitteldruck	coolant pressure	
E01	013	12	Beleuchtung Tankanzeige	Illumination, level gauge	
E02	013	14	Beleuchtung Temperaturanzeige	Illumination, temperature gauge	
E03	013	14	Beleuchtung Drehzahlmesser	Illumination, rpm meter	
E04	011	13	Beleuchtung Geschwindigkeitsanzeige	Illumination, speedometer	
E05	011	12	Beleuchtung Frequenzanzeige vorne	Illumination, frequency gauge, front	
E05	013	16	Beleuchtung Frequenzanzeige vorne	Illumination, frequency gauge, front	
E07	010	17	Beleuchtung Omegameter	Illumination, Omegameter	
E07	011	12	Beleuchtung Omegameter	Illumination, Omegameter	
E08	013	18	Blinkleuchte vorne links	Indicator, front, lh.	MAX. 1,75A
E09	013	18	Blinkleuchte hinten links	Indicator, rear, lh.	MAX. 1,75A
E10	013	19	Blinkleuchte vorne rechts	Indicator, front, rh.	MAX. 1,75A
E11	013	19	Blinkleuchte hinten rechts	Indicator, rear, rh.	MAX. 1,75A
E12	013	6	Parkleuchte links	Parking light, lh.	MAX. 0,42A
E13	013	5	Schlussleuchte links	Tail light, lh.	MAX. 0,42A
E14	013	6	Parkleuchte rechts	Parking light, rh.	MAX. 0,42A
E15	013	7	Schlussleuchte rechts	Tail light, rh.	MAX. 0,42A
E16	013	2	Scheinwerfer links	Head light, lh.	MAX. 4,6A
E17	013	2	Scheinwerfer rechts	Head light, rh.	MAX. 4,6A
E22	013	13	Beleuchtung Temperaturanzeige Hydr.−oel	Illumination, temp. gauge, hydraulic oil	
E23	013	11	Arbeitsscheinwerfer vorne links	Working head light, front, lh.	MAX. 4,6A
E23	014	16	Arbeitsscheinwerfer vorne links	Working head light, front, lh.	4,6A
E25	013	12	Arbeitsscheinwerfer vorne rechts	Working head light, front, rh.	MAX. 4,6A
E25	014	17	Arbeitsscheinwerfer vorne rechts	Working head light, front, rh.	4,6A
E27	013	10	Arbeitsscheinwerfer hinten links	Working head light, rear, lh.	MAX. 4,6A
E27	014	15	Arbeitsscheinwerfer hinten links	Working head light, rear, lh.	4,6A
E28	013	10	Arbeitsscheinwerfer hinten rechts	Working head light, rear, rh.	MAX. 4,6A
E28	014	16	Arbeitsscheinwerfer hinten rechts	Working head light, rear, rh.	4,6A
E29	014	7	Innenleuchte Kabine	Inside light, cabin	1,3A
E30	002	12	Heizgeraet	Heating unit	MAX.20A/NENN2A
E32	013	9	Kennleuchte	Warning light	
E32	014	20	Kennleuchte	Warning light	5A
E41	013	4	Umrissleuchte vorne links	Contour illumination front, lh.	MAX. 0,42A
E42	013	4	Umrissleuchte hinten links	Contour illumination rear, lh.	MAX. 0,42A
E43	013	7	Umrissleuchte vorne rechts	Contour illumination front, rh.	MAX. 0,42A
E44	013	8	Umrissleuchte hinten rechts	Contour illumination rear, rh.	MAX. 0,42A
E45	013	13	Beleuchtung Oeldruckanzeige	Illumination oil pressure indicator	
E46	013	15	Beleuchtung Voltmeter	Illumination volt meter	
E54	013	16	Beleuchtung Vektoranzeige	Illumination vector indicator	
F00	002	3	Hauptsicherung Batterie	Fuse, main, battery	125A
F02	014	19	Ersatzsicherung	Fuse, spare	
F03	007	2	Sicherung Vibration	Fuse, vibration	30A
F05	002	19	Sicherung Steckdose	Fuse, socket	30A
F06	012	6	Sicherung Berieselung	Fuse, sprinkler system	30A
F07	013	12	Sicherung Warnblinker	Fuse, hazard light	15A
F08	013	13	Sicherung Blinker u. Arbeitsscheinw.	Fuse, indicators a. work. head light	15A
F09	013	5	Sicherung Park− u. Schlussl. links	Fuse, parking and tail light, lh.	15A
F10	013	7	Sicherung Park− u. Schlussl. rechts	Fuse, parking and tail light, rh.	15A
F11	013	2	Sicherung Scheinwerfer links	Fuse, head light, lh.	15A
F13	003	5	Sicherung Startschalter	Fuse, starter switch	30A
F14	003	14	Sicherung Hubmagnet Motor	Fuse, shut off solenoid, engine	30A
F17	014	17	Sicherung Radio	Fuse, radio	
F18	013	4	Vorsicherung Arbeitsscheinw. vorne	Primary fuse, work. head light, fr.	30A

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Foreword

This training manual was specifically written for the new single drum rollers BW 216 D-3, BW 216 DH-3/PDH-3, BW 219 DH-3/PDH3 and BW 225 D-3/PD-3 of generation 3. This range of single drum rollers is the consequent further development of the machine range of heavy single drum rollers of generation 2 and is also an adaptation to the presently most modern status of technology.

Single drum rollers of this product ranges are today needed on construction sites all over the world. Rollers of this size are mainly used in earth construction and for the preparation and sealing of sanitary landfill sites.

During the development of this new generation of single drum rollers the requirements and demands of our customers, operators and maintenance personnel were the main aspects which were taken into consideration.

Since we would like to increase the benefit for our customers also in the future, we ask you kindly to inform us about your ideas and suggestions.

The introduction of new or improved products on the market is not possible without thorough training of all persons responsible for the efficient after sales service for all these products.

This is the reason why this document was prepared on the basis of the training material for the new range of single drum rollers of generation 3. This material will help the trainer to transfer the necessary knowledge to the participants in the training session in an easy to understand way.

This manual is by no means complete. Technical data and details, which were not available at the date of release of this manual, or which have changed since the release of this manual, require special attention of the respective trainer during the training course.

These training documents are not subjected to a regular updating service. All important changes to the machine will, however, be worked in during the revision of this training manual.

The chapter "Documentation“ contains information about other documents for this machine. The latest operating and maintenance instructions and the up-to-date electric and hydraulic diagrams are part of this training manual.

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Status: 2001-07-09

Product type:	**BW 225 PD-3**
Type No.:	580 61
Serial numbers from:	101 580 61 1001
Engine:	
Manufacturer:	Deutz
Type:	BF6M1013E
Combustion principle:	4-stroke-Diesel
Cooling:	Water
Number of cylinders:	6
Power acc. to ISO 9249:	145 kW
Power data at nominal speed of:	2300 U/min
Low idle speed:	850+/-150 U/min
High idle speed:	2375+/-125 U/min
Spec. fuel consumption:	228 g/kWh
Valve clearance, inlet:	0,3 mm
Valve clearance, outlet:	0,5 mm
Opening pressure, injection valves:	250 bar
Starter voltage:	12 V
Starter power:	3,1 kW
Travel pump:	
Manufacturer:	Sauer-Danfoss
Type:	90R 100
System:	Axial piston-swash plate
Max. displacement:	100 cm^3/U
Max. flow ratio:	237,5 l/min
High pressure limiation:	435 +/-15 bar
Charge pressure, high idle:	29+/-1 bar
Reduction gear, drum:	
Manufacturer:	Sauer-Danfoss
Type:	CR 51
Transmission ratio:	73,5
Travel motor, rear:	
Manufacturer:	Sauer-Danfoss
Type:	51D110
System:	Axial piston-bent axle
Max. displacement (stage 1):	110 cm^3/U
Min. displacement (stage 2):	31,4 cm^3/U
Perm. leak oil quantity:	2 l/min
Drum drive:	
Manufacturer:	Sauer-Danfoss
Type:	51C 110
System:	Axial piston-swash plate
Displacement stage 1:	110 cm^3/U

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Multi-function valves

High pressure limitation

The pumps of the series 90 are equipped with a sequential valve, which will activate a pressure override and a pressure relief valve, one after the other.

Once the preadjusted pressure value is reached, the pressure override valve will move the swash plate very quickly back towards neutral position, thereby limiting the system pressure. The average response time is less than 90 ms.

In case of a very sudden pressure increase (pressure peaks) the system uses the function of the pressure relief valve to protect the system. In such an instance the pressure override valve works as a pilot control for the piston of the pressure relief valve. The pressure relief valve, the pressure setting of which is higher than the pressure setting of the pressure override valve, is only used if the pressure override is not able to destroke the pump quickly enough in case of sudden pressure peaks.

Pressure override valve and high pressure relief valves are all located inside the multi-function valve in the pump case. This so-called multi-function valve is a further development and a better kind of pressure limitation.

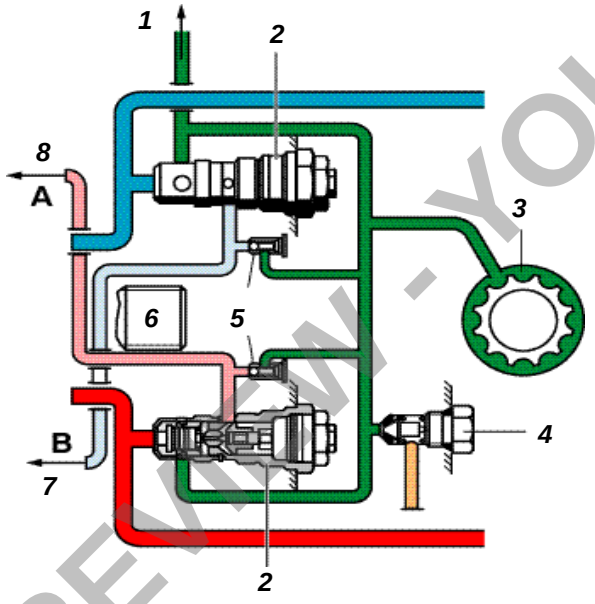


Fig. 12 Multi-function valves

1	*to the control*	*6*	*Output shaft*
2	*Multi-function valve*	*7*	*to the servo piston*
3	*Charge pump*	*8*	*to the servo piston*
4	*Charge pressure relief valve*	*A*	*Port A*
5	*Pilot pressure relief valves*	*B*	*Port B*

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Vibration pump, cross-sectional view

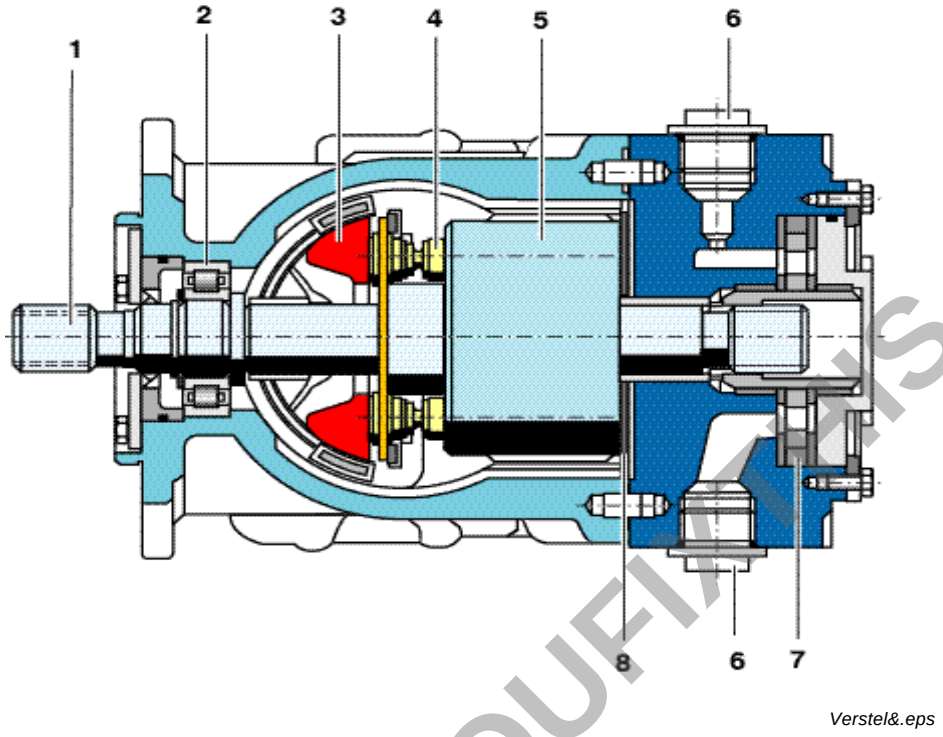


Fig. 6 Cross section of vibration pump BW 219 / BW 225

1 Drive shaft
2 Drive shaft bearing
3 Swash plate
4 Piston with slipper pads
5 Cylinder block
6 High pressure relief valve
7 Charge pump
8 Valve plate

The engine drives the drive shaft (1) with the cylinder block (5). The cylinder block carries the working pistons (4).

The slipper pads abut against the sliding surface of the swash plate while a retaining device holds them on the sliding surface.

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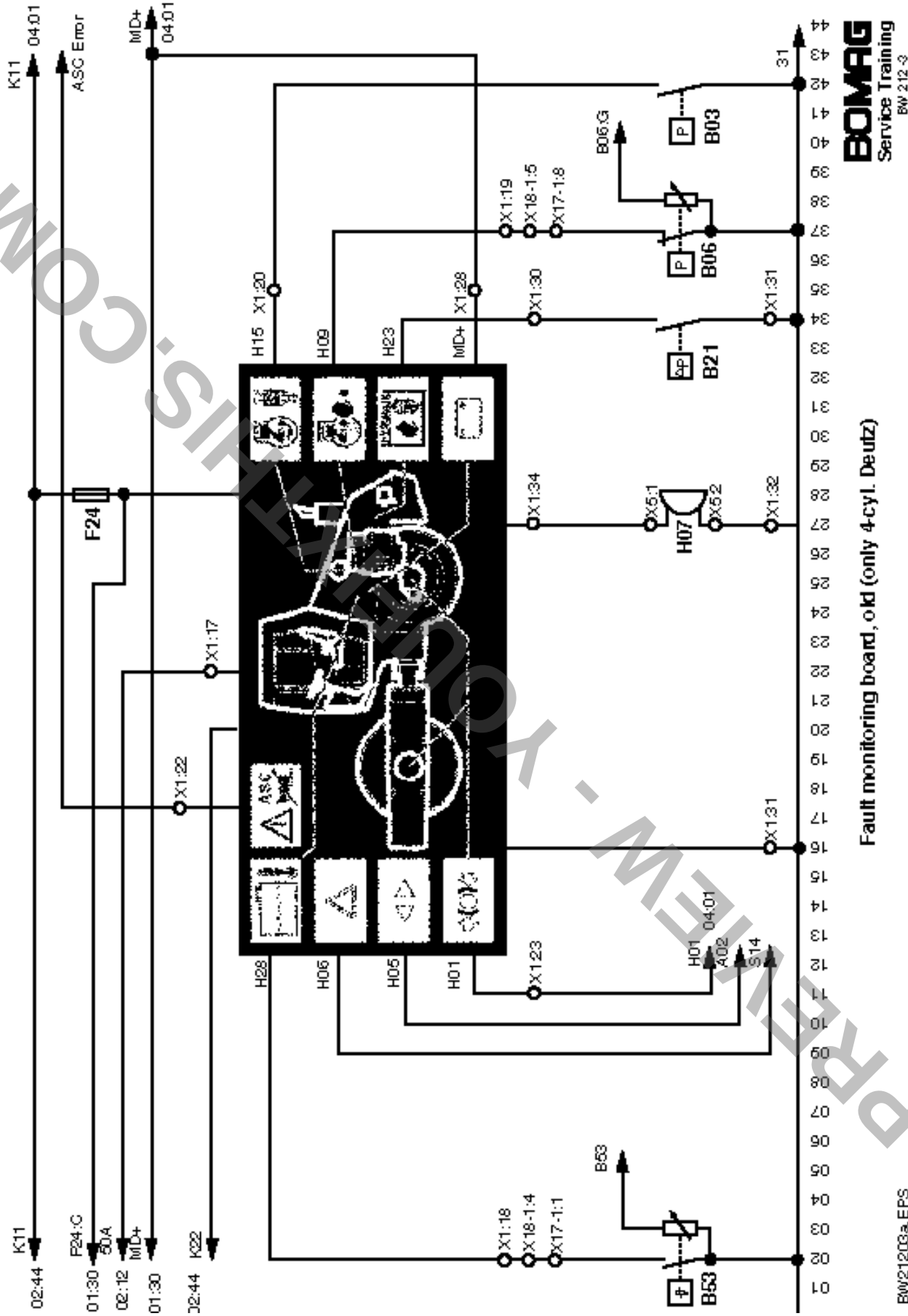


Fig. 4:

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