BOMAG

Service Training

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BW 177 D-4

Teile-Nr. 008 099 90

06/2004

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Foreword

Reliable construction equipment is of greatest advantage for all parties involved:

- for the customer/user it is a basis for an exact calculation of utilization periods and the completion of projects as scheduled.
- in the rental business it means that the equipment can be reliably used and planned without having to stock a large number of stand-by machines.
- for the manufacturer it means that customers are satisfied, provides him with a good image and gives him a feeling of confidence.

It is BOMAG's philosophy to design and produce the machines with highest possible reliability. This aspect of simple and easy maintenance was one of the key issues when developing and designing the machine:

- the location of components in the machine eases maintenance work,
- the high quality standard of BOMAG is the basis for the considerable extension of the service and maintenance intervals.
- the After Sales Service of BOMAG, including excellent operating and maintenance instruction manuals, high quality training courses and on-site machine demonstrations helps the customer to maintain their machines in good condition over a long period of time.

Permanent training of BOMAG's own service personnel as well as the service personnel of BOMAG Profit Centres and dealers is therefore a general prerequisite for BOMAG's excellent world-wide service.

This program of permanent training is only possible with appropriate and up-to-date training material for trainers as well as persons attending the training courses.

This training manual has not only been written as a support for the professional work of the trainer, but also for the trainees attending these training courses.

The different levels of product training demand, that the training performed by BOMAG, its Profit Centres or its dealers reflects the high quality of the training conducted at the Training Centre at BOMAG in Boppard. For this reason we invested a lot of time in the preparation of these materials .

The structure of this training manual enables us to change or up-date individual chapters in case of alterations to the machine.

Documentation

For the BOMAG machines described in this training manual the following documentation is additionally available:

Attention!

The currently valid part numbers for the documents can be taken from the Doclist or the Customer Service page in the BOMAG (BOMAG Secured Area) in accordance with the serial number of the machine.

1. **Operating and maintenance instructions**
2. **Spare parts catalogue**
3. **Wiring diagram ***
4. **Hydraulic diagram ***
5. **Repair instructions**
6. **Service Information**

* The document versions valid at the date of printing are part of this training manual.

General

The new single drum rollers BW 177 D-4 from BOMAG are essentially further developments of their predecessors, the machines of product range BW 177 D-3.

These machines have been successfully and reliably used for years on construction sites all over the world, especially in earth construction and on sanitary landfill sites.

High compaction power and excellent traction are characteristics, which are of utmost importance for this type of machine.

All components installed in these machines are manufactured in series production and are subjected to stringent quality tests. This guarantees a high level of reliability and safety.

As with many other BOMAG products, and here especially with the large single drum rollers of the new generation, we have decided to use the same successful drive concept with diesel engine (water cooled) and hydrostatic drives also for these machines. The hydrostatic drives transfer the output power of the engine directly to drum, drive wheels and steering.

The drive wheels are driven by fast rotating hydraulic motors and axle, whereas the drum is driven by slow running radial piston motors.

On construction machines the work place of the operator is of utmost importance. Under such working conditions the health and safety of the operator must be the greatest concern.

The cabin is very spacious and clearly arranged. The driver’s seat is very comfortable and can be individually adjusted for every operator, even for his weight.

All control elements and gauges are within the reach and in the sight of the operator.

A monitoring display with light emitting diodes and clear pictograms informs the operator about any operating faults. The operator is therefore always informed about the present condition of the machine.

The generously glazed cabin with windscreen wiper and washer systems for front and rear windscreens, as well as a heated rear windscreen, offers clear vision to all sides.

Important characteristics of the new generation of single drum rollers are

- strong ROPS/FOPS according to SAE-standard
- wear free service brake by closed hydrostatic travel circuits
- disc brakes in axle and drum drive motor serve as parking and emergency brakes
- high stability due to low centre of gravity and the use of an articulated joint
- operating safety due to the use of monitoring boards for all important system data
- automatic engine shut-down at too engine temperature, too low hydraulic oil level (when reaching the lowest permissible level the engine will be shut down after 20 seconds) and too low engine oil pressure.

The machines of product ranges BW 177 D-4 are well designed down to the smallest detail, so that they can meet the toughest demands on large scale construction sites all over the world.

Technical data and adjustment values

The following pages contain technical data valid at the date of printing (see front page of this manual).

Attention!

The currently valid technical data and adjustment values can be taken from the BOMAG Intranet or Extranet (BOMAG Secured Area) in accordance with the serial number of the machine.

BOMAG Central Service - Technical data and adjustment values

Status: 2004-06-21

Product type:	**BW 177 D Serie 4**
Type No.:	582 20
Serial numbers from:	101 582 20 1001

Engine:

Manufacturer:	Deutz
Type:	BF4M 2011
Combustion principle:	4-stroke-Diesel
Cooling:	Air-Oil
Number of cylinders:	4
Power acc. to ISO 9249:	54 kW
Power data at nominal speed of:	2300 1/min
Low idle speed:	850 +/-150 1/min
High idle speed:	2500+/-50 1/min
Spec. fuel consumption:	243 g/kWh
Valve clearance, inlet:	0,3 mm
Valve clearance, outlet:	0,5 mm
Opening pressure, injection valves:	210 +8 bar
Starter voltage:	12 V

Travel pump:

Manufacturer:	Bosch-Rexroth
Type:	A4VG 56 HW
System:	Axial piston-swash plate
Max. displacement:	56 cm^3/U
Max. flow ratio:	140 l/min
High pressure limitation:	475 bar
Pressure override:	435+/-15 bar
Charge pressure, high idle:	25+/-1 bar

Travel motor, rear:

Manufacturer:	Sauer-Danfoss
Type:	51D80
System:	Axial piston-bent axle
Max. displacement (stage 1):	80 cm^3/U
Min. displacement (stage 2):	40,2 cm^3/U
Perm. leak oil quantity:	2 l/min

Drum drive:

Manufacturer:	Poclain
Type:	MSE 08 1CX
System:	Radial piston
Displacement stage 1:	1260 cm^3/U
Perm. leak oil quantity:	1,5 l/min

Vibration pump:

Manufacturer:	Bosch-Rexroth
Type:	A10VG 28 EZ
System:	Axial piston-swash plate
Max. displacement:	28 cm^3/U
Starting pressure:	365+/-35 bar
Operating pressure, soil dependent:	ca. 100 bar

Vibration motor:

Manufacturer:	Sauer-Danfoss
Type:	MMF 025
System:	Axial piston-swash plate
Displacement:	25 cm^3/U
Frequency:	30/40 Hz
Amplitude:	1,8/0,9 mm

Steering and charge pump:

Manufacturer:	Bosch-Rexroth
Type:	HYZ/19
System:	Gear pump
Displacement:	19 cm^3/U
Max. steering pressure:	190 +/-10 bar

Steering valve:

Manufacturer:	Sauer-Danfoss
Type:	OSPC 315 ON
System:	Rotary valve

Rear axle:

Manufacturer:	Dana
Type:	CHC 192/57LD
Differential:	No-Spin
Degree of locking:	100 %
Reduction ratio:	43,7

Filling capacities:

Engine oil:	13,5 l (SAE 15W-40, API SJ/CF)
Hydraulic oil:	60 l (HVLP 46 VI 150)
Vibration bearing housing:	2x 3,2 l (SAE 15W-40, API SJ/CF)
Rear axle:	6,7 l (SAE 90 EP, API GL 5)
Rear axle wheel hubs:	0,7 l (SAE 90 EP, API GL 5)
AC refrigerant:	1300 g (R 134a)
Compressor oil (filling the system):	100 ml (PAG Öl)

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