

BOMAG

Service Training



Variocontrol

Single drum roller - 4

BW 177 / 213 / 226 BVC

Table of contents

Foreword	A 1
Documentation	A 2
General	B 1
Peculiarities	B 3
Electric steering	C 1
Steering circuit	C 2
Steering pump	C 4
Steering wheel	C 5
Steering valve	C 6
Steering angle sensor	C12
Trouble shooting	C15
Compaction measuring system	D 1
BEM	D 1
BTM plus	D 2
BTM prof.	D 3
BVC	D 4
BVC - System	E 1
Exciter system	E 4
Gear pump	E 5
Valve block	E 7
Swashing motor	E 9
Acceleration transducer	E 10
MESX-control	E 11
BOP	E 12
Working principle of the system	F 1

Repair and adjustments	G 1
Replacement of swashing motor	G 2
Replacement of potentiometer	G 3
Potentiometer adjustment	G 4
Trouble shooting	H 1
Electrics	I 1
Service Training	
MESX - Service Training	
Wiring diagram	
Hydraulic diagrams	

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

These Variocontrol training documents are valid for the following single drum rollers of series 4:

BW 177 DH-4 BVC

BW 213 DH-4 BVC

BW 213 DH-4 BVC + vibratory plates

BW 226 DH-4 BVC

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

BOMAG VARIOCONTROL (BVC)

The increased demands concerning quantity and quality in the application and compaction of soils and rolled asphalt inevitably requires a permanent further development of vibratory rollers.

From the contractor's point of view a vibratory roller must fulfil three major requirements:

1. efficient operation
2. fulfilment of a task according to specification
3. flexible in use

Due to the inflexible parameterization, standard compaction systems are not able to adapt to the permanently changing construction conditions in an optimal way.

However, this problem can be solved by the introduction of intelligent compaction systems. The control values required for an automatic optimization of the compaction parameters are directly gained from the interaction between drum and material to be compacted.

BOMAG VARIOCONTROL is a compaction system, which improves the quality and reproducibility of compaction and enhances the efficiency of the roller, independently from the roller operator.

BOMAG VARIOCONTROL offers the user the following advantages:

1. Automatic adaptation of the emitted compaction energy to the actual compaction status
2. Better, reproducible results on all materials
3. No jump operation and therefore no particle destruction or loosening of material
4. The resulting direction of force is automatically adapted to the travel direction. This improves the surface quality of the material and the gradability of the roller.
5. Low vibration loads for driver and environment

The further development of the VARIOCONTROL system for earthwork was founded on experiences gained with the VARIOMATIC system used for asphalt compaction. The basic difference between VARIOCONTROL and VARIOMATIC is the new exciter system.

It meets the demands of many users for an "intelligent" roller with automatic adaptation of compaction.

Part of this new further development is the new display and control element

BOP (Bomag Operation Panel)

in connection with the MESX.

Besides the display of the entire operation of the measuring technology the BOP also enables a simple self diagnose of the overall system.

The operation of the BOP is described in detail in the operating and maintenance instructions.

Error and input codes can be found on the electrics page (MESX Service Training).

BOP ----- Bomag Operation Panel



Specialities

All BVC single drum rollers of series 4 are equipped with an electric steering system as standard.

The hydraulic steering is also available as an option.

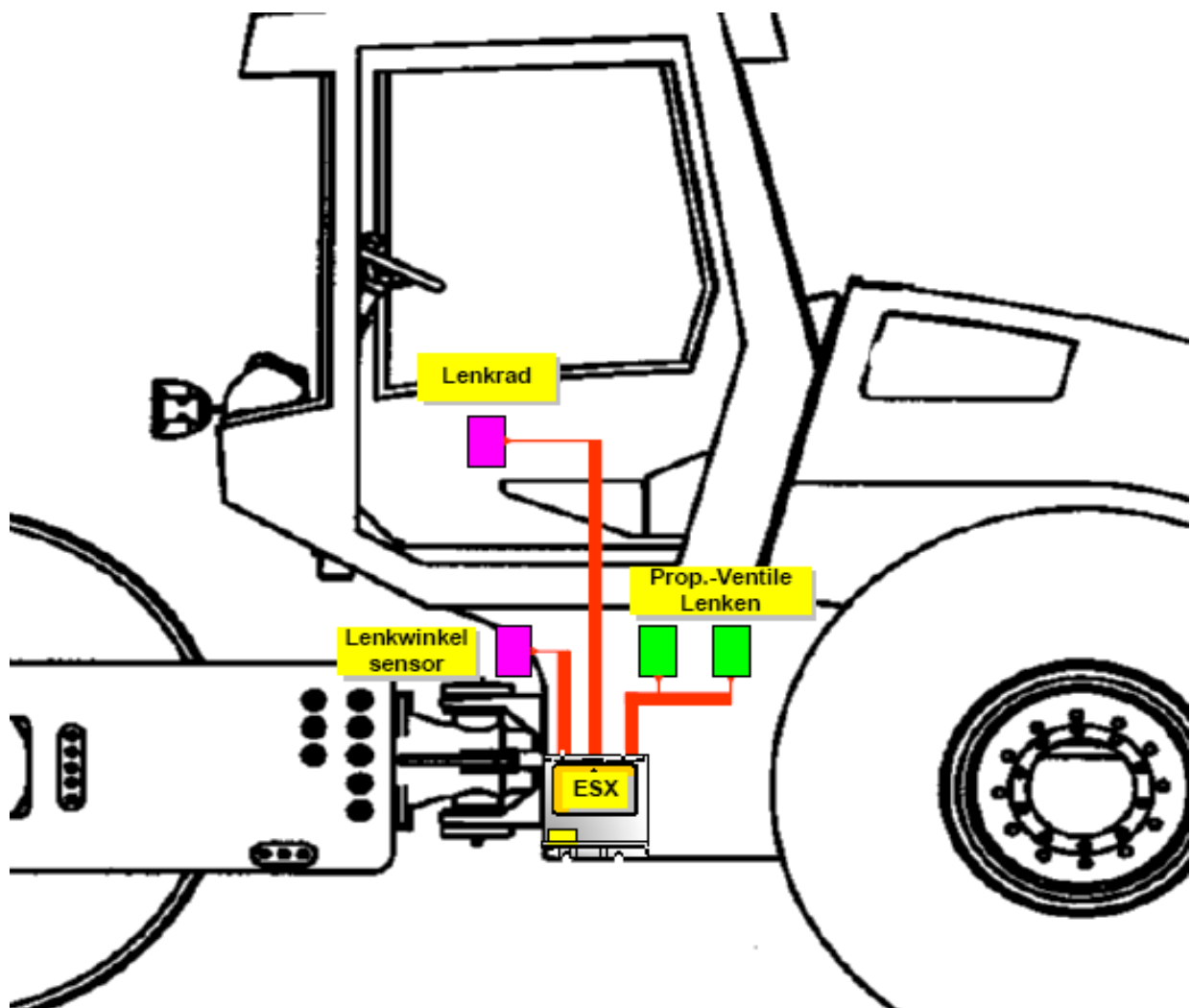


Electric steering

The electric steering consists of an electronically controlled closed control loop and a hydraulic steering circuit.

The **electronically controlled circuit** consists of a small **electric steering wheel** (in the left hand seat armrest), the **ESX-control** (located in the electric junction box), which converts the signal from the steering wheel into electric signals for the **proportional solenoids of the steering valve** and the **steering angle sensor** (located on the articulated joint), which feeds the steering angle back to the control.

The **hydraulic steering circuit** consists of steering pump, high pressure filter, steering valve and steering cylinders.



Pos.	Designation	Pos. in wiring diagram	Pos. in hydraulic diagram	Measuring values
05	one steering cylinder on BW 177		05	
05	two steering cylinders on BW 213 and 226		05	
06	Steering valve with 2 proportional solenoids and an integrated accumulator	Y92 / Y93 Page 006	06	
07	High pressure filter 12µm		07	
09	Steering pump and charge pump		09 / MB	200 +/-10 bar
17	additional gear pump 5.5 cm ³ on BW 177 BVC		17 / MG	80 bar
17	additional gear pump 8 cm ³ on BW 213 and 226 BVC		17 / MG	120 bar
20	High pressure line filter for Variocontrol 100 µm		20	
21	Optional emergency steering valve with 2 B/W solenoids	Y112 / Y113 Page 006	21	

Emergency steering:

The emergency steering valve is only an option and can only be operated via a special input code. The valve is supplied by the additional Variocontrol gear pump.

Buy Now



Our support email:

ebooklibonline@outlook.com