

BOMAG

Service Training



BW 100 AD/AC Series 4 BW 120 AD/AC Series 4

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Foreword

In 2004 the tandem vibratory rollers of product range BW 100 AD/AC4 and BW 120 AD/AC4 were launched in the market for the first time.

They are a further development of the old BW 100/120AD/AC of generation 3, which already were a great sales success.

The contents of this training shall enable the service engineer to perform adjustments and trouble shooting as well as all necessary repair work in a professional manner.

The owner of the machine should recognize that the service engineer is fully familiar with the machine. He should realize that the service engineer applies the correct measures to detect a possible fault on a machine and that all repair measures are performed with skill and knowledge.

Persons participating on this training course should be confident when having to work on this 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 Intranet or Extranet (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

Machines of product range BW 100/120 AD/AC-4 are tandem vibratory rollers or combination rollers for compaction work in road construction. They are most suitable for the compaction of bituminous materials as well as light compaction tasks in earthwork. Compaction is achieved by the vibration of both drums or the vibration of the drum and the static load of the rubber tires. The power output from the water cooled Kubota diesel engine is transferred to drums or wheels (travel and vibration systems) and to the steering via the hydrostatic drive systems of the machine. This type of power transmission ensures lowest possible efficiency losses.

Both drums of the BW 100/120 AD-4 are fitted with both travel motors as well as vibration motors. The motors for the respective drive systems are always arranged on one side of the machine. Since it is beneficial for many applications (e.g. when laying asphalt layers) to work with one vibrating and one static drum, the machine is equipped with a vibration shut-off valve for the rear drum.

On machines of type BW 100/120 AC-4 the wheel set is driven by two travel motors. This roller combines the high compaction power of a vibration drum with the excellent surface sealing effect of rubber tires in one machine. This machine obviously achieves considerable savings in costs when compared with a pure vibratory or pneumatic tired roller.

The standard equipment of the machine includes a gravity sprinkler system. A pressure sprinkler system is optionally available on request. In connection with the scrapers the water sprinkler system avoids picking up of material by the drums.

On the AC-machines a pressure sprinkler system prevents sticking of dirt and bitumen to the rubber tires. For this purpose the tires are sprayed with emulsion.

Front and rear frames of the machine are joined by an oscillating articulated joint. The amply dimensioned oscillation angle makes sure that the drums always have ground contact over the entire width.

Both travel motors are fitted with integrated brakes working as parking brakes. Depending on the position of the brake solenoid valve these brakes are released by charge pressure when starting the engine and applied when shutting the engine down.

Maintenance

The tandem/combination rollers of series BW 100/120 AD/AC-4 are high performance machines for the extremely difficult use in asphalt compaction and earth work. To be able to meet these demands the machine must always be ready to be loaded up to its limits. Apart from that, all safety installations must always be fully functional when working under the partly very dangerous conditions on a construction site.

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 hour interval you must also perform the maintenance work for the 500 and 1000 hour intervals.

It should also be clear, that with the 2500 hours interval only the work for the 10 and 500 hour intervals must be performed.

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

List of components**BW 100/120 AD/AC-4****Engine**

Manufacturer		Kubota
Type		D 1703 MDI
Cooling		Water
Working cycles		4
Number of cylinders		3
Power DIN 6271 IFN/SAE at 2700 rpm	kW	25,2
Fixed engine speed Stage 1	rpm	2250
Fixed engine speed Stage 2	rpm	2700
Valve clearance I/E	mm	0,20/0,20

Travel pump

Manufacturer		Hydromatik
Type		A10 VG 28
System		Axial piston
Displacement	cm ³ /rev.	28
High pressure limitation	bar	380
Charge pressure	bar	24
Speed	rpm	2700
Max. flow capacity	l/min	73

BW 100/120 AD/AC-4**Travel motor (drums)**

Manufacturer		Poclain
Type		MK 04
Number		2
System		Radial piston motor
Displacement	cm ³ /rev.	408
Brake		yes

BW 100/120 AC-4**Travel motor (wheels)**

Manufacturer		Poclain
Type		MSE 02
Number		2
System		Radial piston motor
Displacement	cm ³ /rev.	255
Brake		yes

BW 100/120 AD/AC-4**Vibration pump**

Manufacturer		Bosch
Type		HYZ 11
System		Gear
Displacement	cm ³ /rev.	11
Starting pressure	bar	210
Operating pressure	bar	100 +/-60 bar (soil dependent)

Vibration motor

Manufacturer		Bosch
Type		HYZ 8
System		Gear
Displacement	cm ³ /rev.	8
Frequency stage 1	Hz	55
Frequency stage 2	Hz	70
Amplitude	mm	0.5

Steering pump

Manufacturer		Bosch
Type		HYZ 8
System		Gear
Displacement	cm ³ /rev.	8
max. steering pressure	bar	140 +/-30 bar

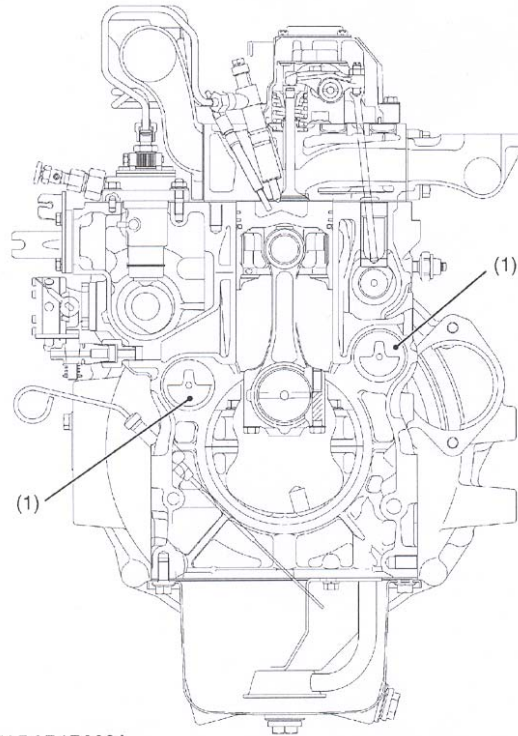
Steering valve

Manufacturer		Danfoss
Type		OSPC 80 ON
System		Rotary valve

Kubota diesel engine 1703 MDI

The tandem vibratory rollers of series BW 100/120 AD/AC-4 are powered by a water cooled 3-cylinder Kubota diesel engine type 1703 MDI.

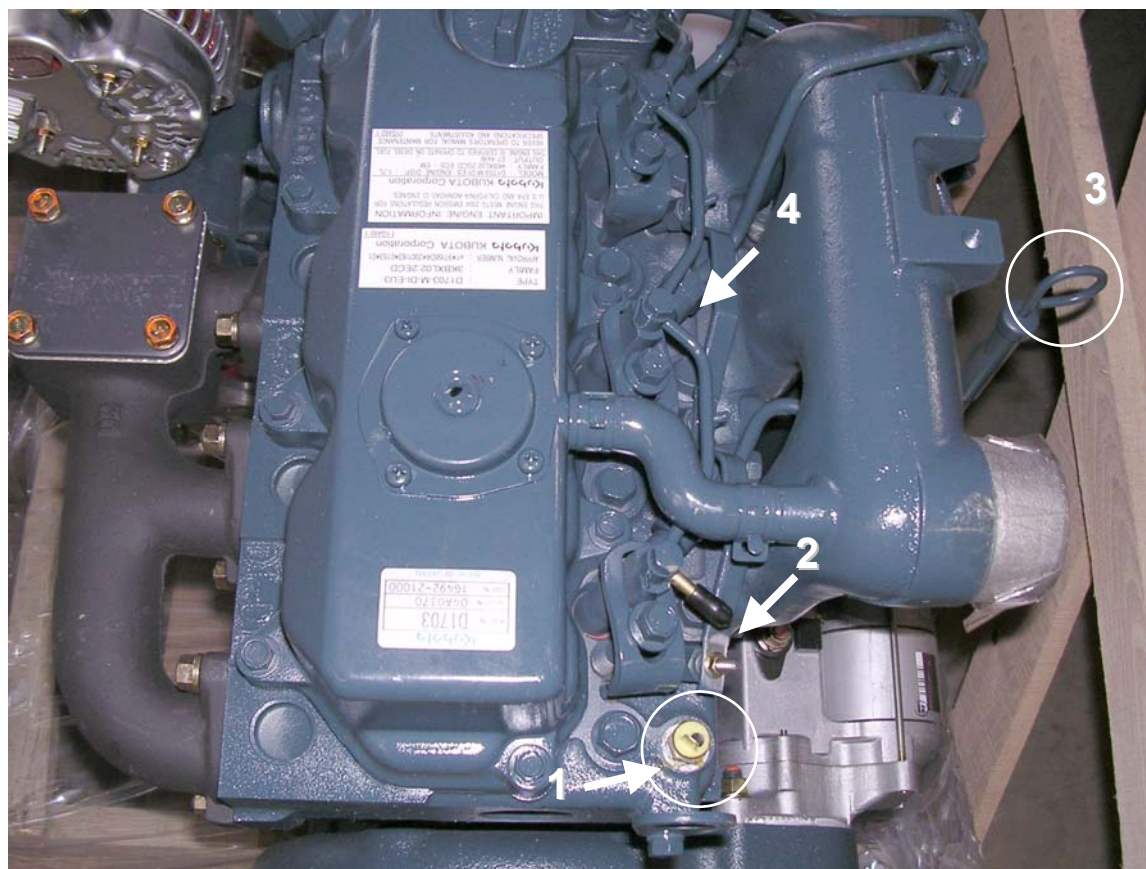
The engine is an upright water-cooled four-stroke diesel engine.



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Cross-section of diesel engine

View of engine:



Pos. 1	Engine temperature switch	
Pos. 2	Connection glow plug	
Pos. 3	Oil dipstick	
Pos. 4	Injection nozzles	