DYNAPAC
Part of the Atlas Copco Group

Instruction manual

ICG223HF-3EN3.pdf
Operation & Maintenance

Vibratory roller
CG223HF

Engine
Deutz BF4M 2011 / TD2011 L04W

Serial number
85110280* - *85110300
10000327x0A000001 -

Translation of original instructions

Subject to changes
Printed in Sweden

Introduction

The machine

Dynapac CG223HF is a self-propelled vibratory tandem roller in 8 metric tonnes class featuring pivotal steering and 1450 mm (57 in) wide drums. The machine is equipped with drive, brakes, vibration and timer for water sprinkler on both drums. Propulsion and braking are applied to all drum halves.

The comfort cab can be flush, i.e. the same width as the machine, or built out on the right side for optimum view of both drums.

Intended use

CG223HF is mainly designed to be used for thin and thick asphalt layers with regards to dual vibration amplitudes that are optimized for this purpose. It is also possible to compact granular soil material, such as sand and gravel.

Warning symbols

WARNING ! Marks a danger or a hazardous procedure that can result in life threatening or serious injury if the warning is ignored.

CAUTION ! Marks a danger or hazardous procedure that can result in damage to the machine or property if the warning is ignored.

Safety information

It is recommended to at least train operators in handling and daily maintenance of the machine in accordance with the instruction manual. Passengers are not allowed on the machine, and you must sit in the seat when operating the machine.

The safety manual supplied with the machine must be read by all roller operators. Always follow the safety instructions. Do not remove the manual from the machine.

We recommend that the operator reads the safety instructions in this manual carefully. Always follow the safety instructions. Ensure that this manual is always easily accessible.

Working lights - Xenon

Warning, high voltage!

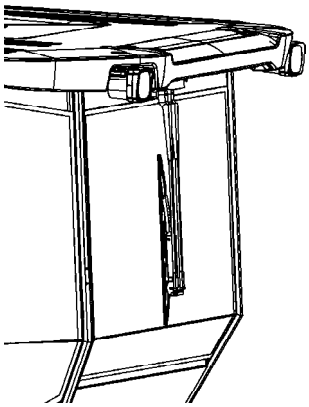

Figure. Xenon lighting on cab

The working lights of the Xenon type have a secondary high-voltage source.

Work on the lighting should only be conducted by an authorized electrician and with the primary voltage disconnected.

Contact a Dynapac dealer!

Warning, environmentally hazardous waste!

Working lights of the Xenon type include a discharge lamp that contains mercury (Hg).

A defective lamp is to be considered as hazardous waste and shall be disposed off as per local directives.

Hydraulic system

Opening pressure	MPa	PSI
Drive system	42.0	6090
Supply system	2.4	350
Vibration system	35.0	5080
Control systems	20.0	2900
Brake release	1.8	260

Automatic Climate Control (ACC) (Optional)

The system described in this manual is type ACC (Automatic Climate Control), i.e. a system which maintains the set temperature in the cab provided the windows and doors are kept closed.

Coolant designation: HFC-R134:A

Coolant weight when full: 1600 gram (3.53 lbs)

Locations - Control panel and controls

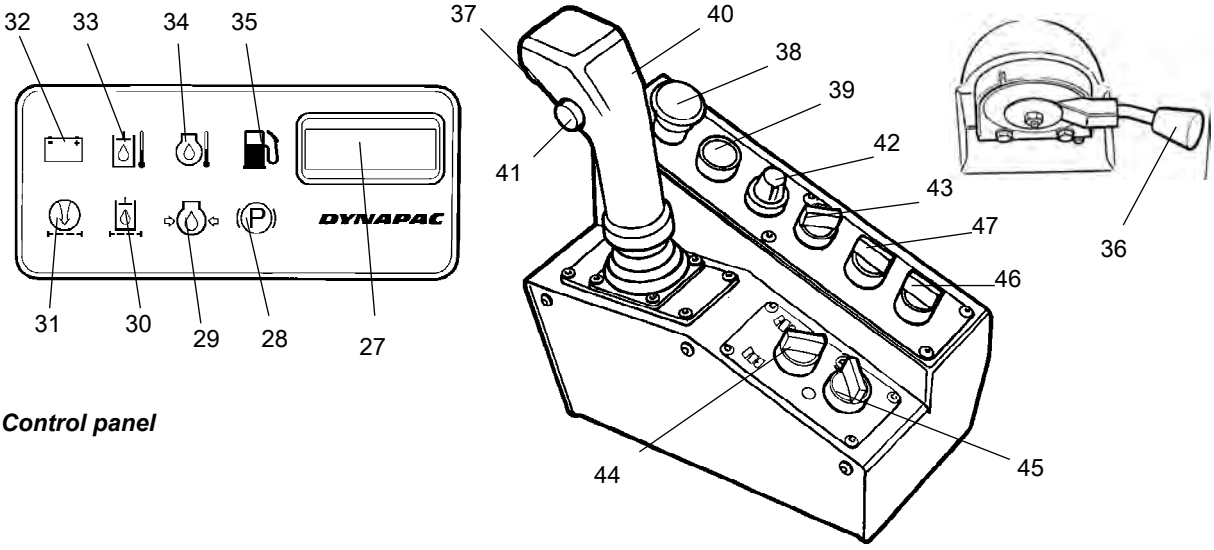

Fig. Control panel

27.	Hourmeter	36.	Engine speed control
28.	Brake warning lamp	37.	Alignment (off-set), buttons
29.	Warning lamp, engine oil pressure	38.	Emergency stop
30.	Warning lamp, hydraulic filter	39.	Horn
31.	Warning lamp, air filter	40.	Forward/Reverse lever
32.	Warning lamp, battery charging	41.	Vibration On/Off
33.	Warning lamp, hydraulic temperature	42.	Speed limiter
34.	Warning lamp, engine temperature	43.	Transport/Work mode
35.	Warning lamp, fuel level	44.	Steering both drums (synchro)/front drum
		45.	Parking brake On/Off
		46. *	Sprinkler, edge cutter
		47. *	Edge cutter, Up/Down

Function descriptions

No	Designation	Symbol	Function
1	Starter switch		The electric circuit is broken.
			All instruments and electric controls are supplied with power. Pre-heating, hold until lamp goes out.
			Starter motor activation.
2	Engine speed		The current engine speed is shown in this position on the instrument above (14).
	Vibration frequency measurement, switch		In the left position, frequency is measured on the rear rear drum.
			In the right position, frequency is measured on the front drum.
3	Working lights, switch		When turning to the right to position I, the working lights in the cab are lit.

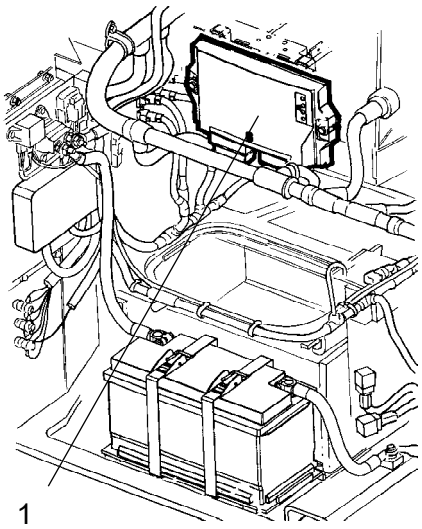

Fig. Control unit, left engine compartment
1. Control unit (ECU)

The control unit (the ECU) in the engine compartment is located under the platform inside the left engine compartment door.

This control unit looks after the electrical drive control, including vibration, steering, start-stop.

Signals any faults in the system with error codes, see error code list for troubleshooting.

Fault indicating on the control unit (ECU)

	Example of sequence							
	On	Off	On	Off	On	Off	On	Off
Time in seconds	1.2 s	0.7 s	0.2 s	0.7 s	0.2 s	0.7 s	0.2 s	0.7 s
Signal	-		•		•		•	
	Long		Short		Short		Short	
	2 seconds between each sequence							

Error code list

*Error code	Type of fault	System reaction	Comments
— • • •	Fault on Joystick, F/R lever	The speed reduces and the machine stops. Limp home device	Cable break/no contact, recalibration, outside limiting values. Check cables 401-1, 722, 909-1 and potentiometer.
• • — —	Fault on potentiometer for speed	The speed is reduced: 33% of max speed	Cable break, recalibration, outside limiting values. Check cables 401-2, 721, 909-2 and potentiometer.

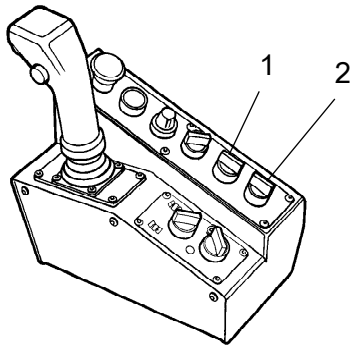

Fig. Changeover switch
1. Edge cutter/roller, Up/Down
2. Sprinkler, edge cutter/roller

Edge cutting (Optional)

Ensure that nobody remains within the edge cutter's working range.

If the engine is running and the changeover switch (1) is turned to the left, the edge cutter is lowered to the asphalt surface by a hydraulic cylinder. Turn the changeover switch to the right to lift the tool back into its original position.

A bypass valve prevents the hydraulic system being overloaded.

There is a separate sprinkler system which the operator should use to avoid asphalt sticking to the edge cutter/roller. The system is operated using a switch (2). The water is drawn from the front water tank, which is also used for the front drum sprinkler system.

Always ensure that the edge cutter is folded up during transport or when the tool is not going to be used.

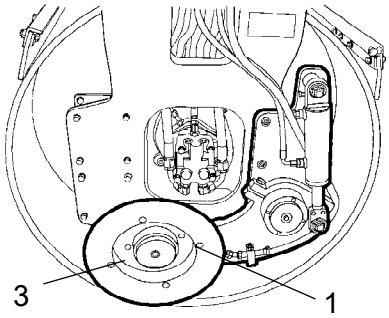

Fig. Changing tools
1. Edge cutter
3. Bolted joint

The operator can chose to use one of two tools, the edge cutter or the edge roller. The edge cutter (1) in the figure is shown in the transport position.

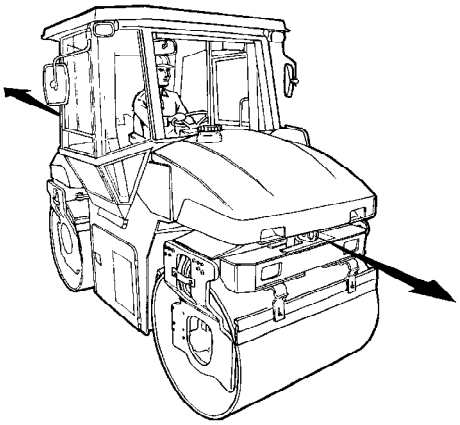

Fig. Trailer eye

Trailer eye

The roller is fitted with trailer eyes front and rear.

The trailer eye is not designed to be used for towing/recovering. It is designed for trailers and other towed objects weighing no more than 4,000 kg (8,850 lbs).

Transport

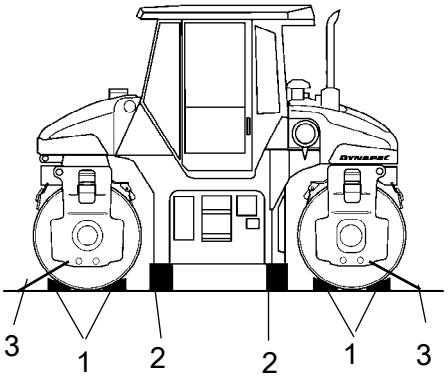

Fig. Positioning
1. Chocks
2. Blocks
3. Straps

Roller prepared for transport

Make sure that the machine has aligned drum position (neutral).

Tighten down the machine to the platform of the transport vehicle, tie-down points are marked with decals.

Block the drums and chock up the frame to avoid any damage of the drums shock absorbers.

Every 50 hours of operation (Weekly)

Refer to the contents to find the page number of the sections referred to !

Pos. in fig	Action	Comment
1	Inspect/clean the filter element in the air cleaner	Replace as required
11,18	Grease the steering cylinder and pivot cylinder.	
22	Check the voltage level of the battery	
	Check the oil level in the drum gear/gears.	
	Inspect the air conditioning	Optional
	Inspect/lubricate the edge cutter	Optional

Every 250 hours of operation (Monthly)

Refer to the contents to find the page number of the sections referred to !

Pos. in fig	Action	Comment
	Check the sliding cab windows	
	Inspect the air conditioning	Optional

Maintenance - 50h

Park the roller on a level surface.
When checking and making adjustments to the roller, switch the engine off and ensure the parking brake knob is switched on, unless otherwise specified.

Ensue that there is good ventilation (air extraction) if the engine is run indoors. Risk of carbon monoxide poisoning.

Air cleaner

Checking - Change the main air filter

Change the air cleaner main filter when the warning lamp on the control panel comes on when the engine is running at maximum speed.

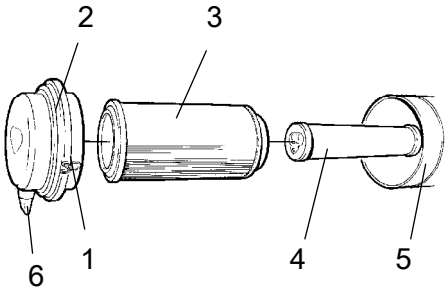

Fig. Air cleaner
1. Clips
2. Cover
3. Main filter
4. Backup filter
5. Filter housing
6. Dust valve

Release the clips (1), pull off the cover (2), and pull out the main filter (3).

Do not remove the backup filter (4).

Clean the air cleaner if necessary, see section Air cleaner - Cleaning.

When replacing the main filter (3), insert a new filter and refit the air cleaner in the reverse order.

Check the condition of the dust valve (6); replace if necessary.

When refitting the cover, make sure that the dust valve is positioned downwards.

Hydraulic reservoir cap - Check

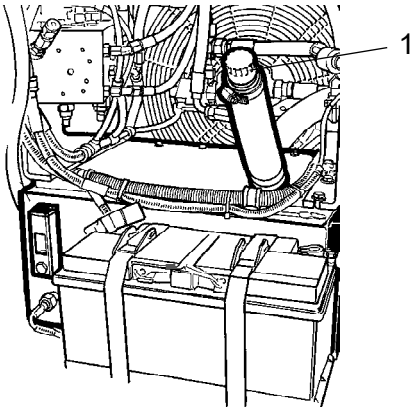

Fig. Engine compartment, left side
1. Reservoir cap

Open the right engine compartment door.

Unscrew and make sure that the reservoir cap is not clogged. Air must have unobstructed passage through the cap in both directions.

If passage in either direction is blocked, clean the filter with a little diesel oil and blow through with compressed air until the block is removed, or replace the cap with a new one.

Wear protective goggles when working with compressed air.

Seat bearing - Lubrication

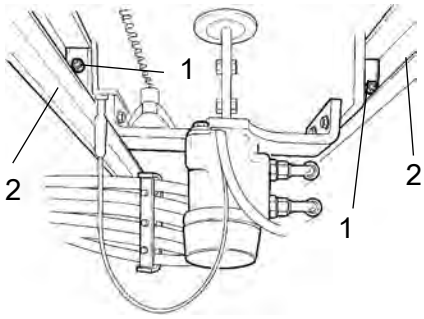

Fig. Seat bearing, underside
1. Grease nipples
2. Slide rails

Lubricate the seat slide rails (2) for transverse travel. There are four lubrication nipples (1), two accessible from each side. All are to receive five strokes from a hand-operated grease gun.

Also lubricate the seat locking mechanism, both for transverse travel and rotation. Use engine oil or drum oil.

If the seat starts to be stiff when adjusting, it should be lubricated more often.