

Pressure Storage Vessel

Type 330.902 · Type 230.902

- ▶ For all interlinked or separate battery tank systems with non-return connection.
- ▶ Tested to DIN EN 12514-1.

Construction and functional description

The OILPRESS pressure storage vessels type 330.902 and type 230.902 are used to transport heating oil to EL DIN 51603 to one or more consumer points.

The units consist of a casing with pressure storage vessel, motor, pump and pressure switch. During the transport process, the heating oil is sucked in via the pump and pressed into pressure storage vessel. The air cushion in the storage vessel presses the oil to the individual consumer points.

The motor is switched on by the pressure switch at a lower working pressure of 1.6 bar, and switched off again on reaching the upper working pressure of 2.6 bar.

Pump Type 330.902

The planetary gear pump is driven by the motor through a reduction gear. The pump is characterised by its quiet running and low wear. The pump is protected against contamination by dirt by means of a circular filter fitted to the pump body.

Pump Type 230.902

The feed pump is a planetary gear pump driven direct by the motor. The pump is characterised by its quiet running and low wear. The pump is protected against contamination by dirt by means of a circular filter fitted to the pump body.

Casing

The casing is the supporting element of all components. It houses the pump, motor, pressure switch, pressure storage vessel, filter, over-pressure valve and drain valve, together with the non-return valve and ventilation.

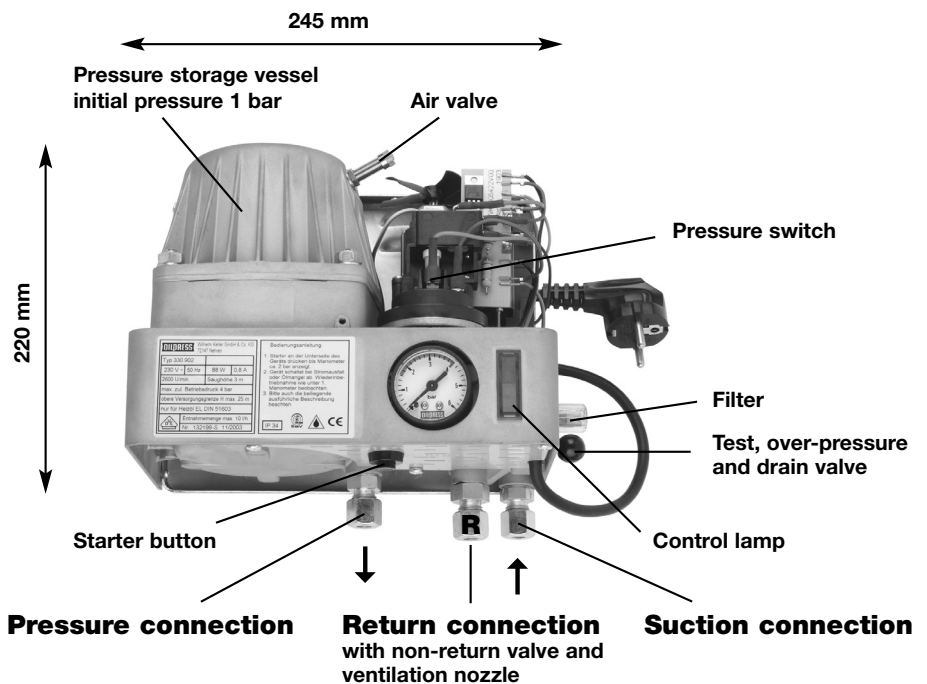
Three taper union connections for the connection of 8-mm pipes are fitted to the distributor housing on the underside of the casing.



Pressure storage vessel

Disconnect the unit from the electrical power supply before removing the cover hood (see "Instructions"). The lower part of the pressure storage vessel is moulded into the casing. A cylindrical diaphragm is clamped between the lower and upper part, separating the air from the oil. An initial air pressure of 1 bar is applied to the pressure storage vessel through the valve located in the upper part of the storage vessel. The air can therefore escape over the course of time by

diffusion, increasing the switching frequency of the pump. This change is corrected by refilling the air cushion with the aid of an air pump. When refilling with air, take care to ensure that the test, over-pressure and drain valve at the side of the unit are open. The initial air pressure in the pressure storage vessel is correct when the manometer on the pressure storage vessel shows 0 bar, and the manometer on the pressure measurement device (air pump) shows 1 bar.



Technical data

Motor:
 Delivery capacity:
Max. consumption:
 Permissible working pressure:

 Upper supply limit:

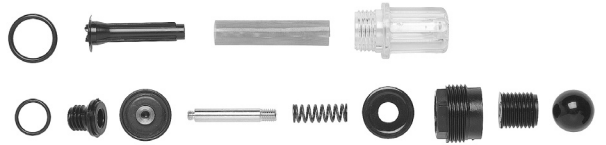
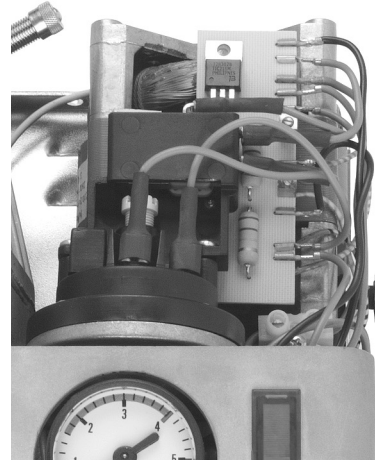
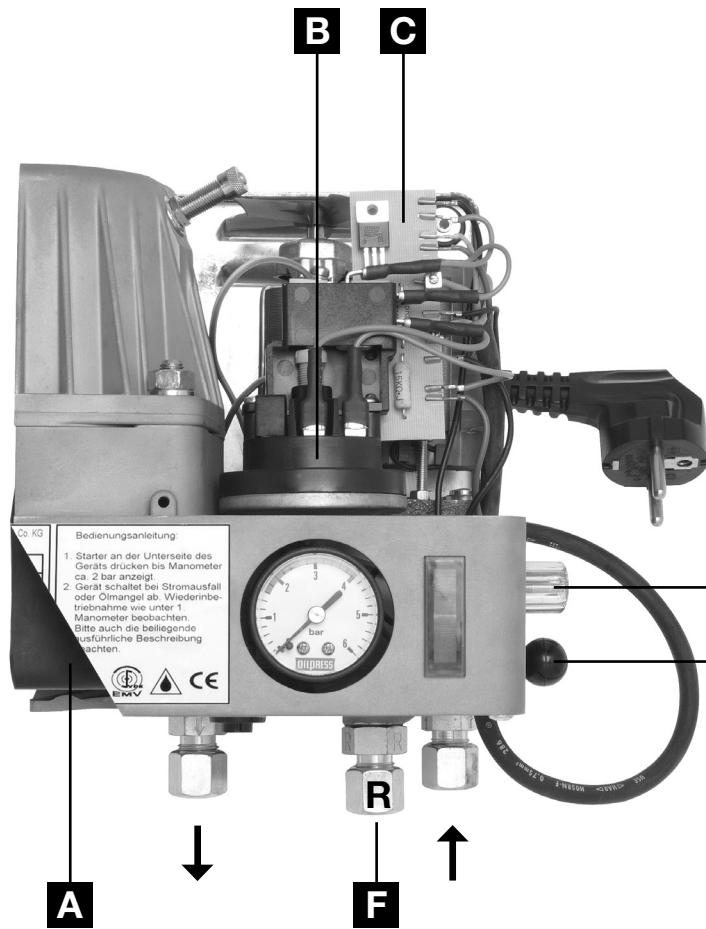
 Suction head:
 Pipe connection:
 Protection type:
 Temperature of supply medium:
 Weight:

Type 330.902

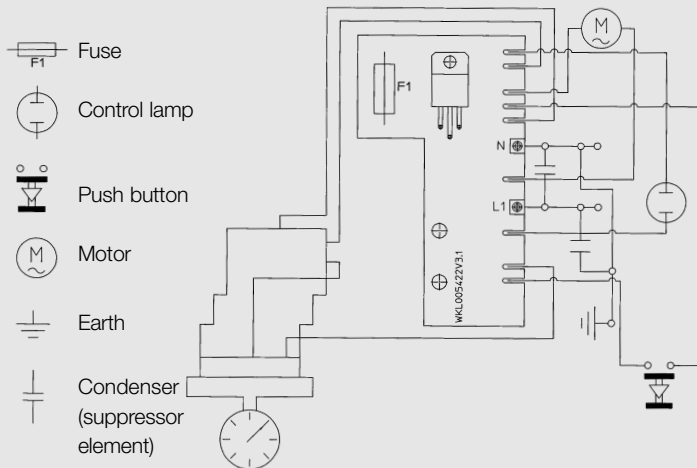
230 V ~ 88 W
 22 l/h at 0 bar pressure
approx. 10 l/h
 4.0 bar, limited by over-pressure valve adjustable up to 25 m, factory set to 15 m
 3 m
 Taper union 8x1 mm
 IP 34
 max. 40°C
 approx. 6 kg

Type 230.902

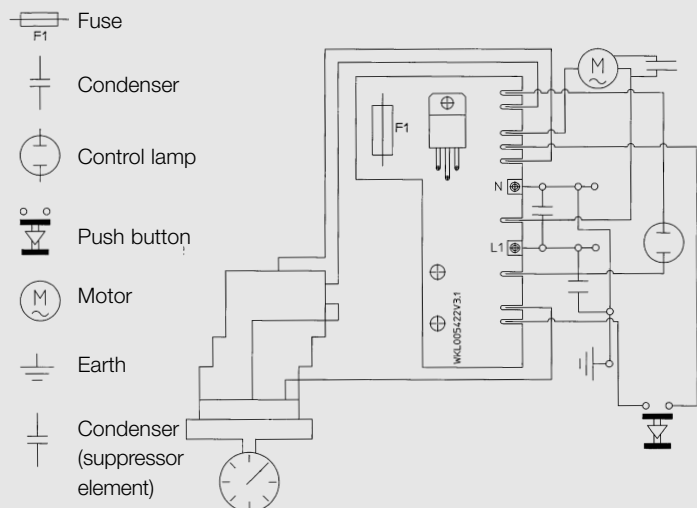
230 V ~ 50 W
 46 l/h at 0 bar pressure
approx. 25 l/h
 4.0 bar, limited by over-pressure valve adjustable up to 25 m, factory set to 15 m
 3 m
 Taper union 8x1 mm
 IP 34
 max. 40°C
 approx. 6 kg



Wiring diagram, type 330.902



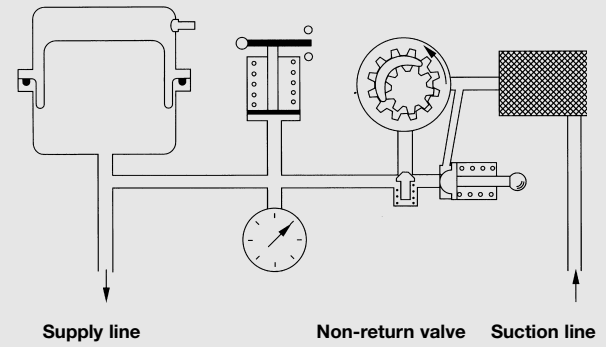
Wiring diagram, type 230.902



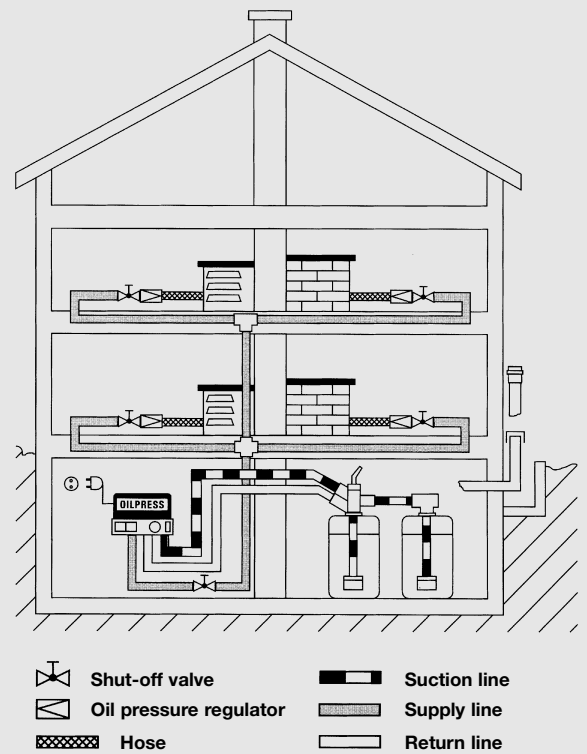
Spare parts list

	330.902	230.902	Best.-Nr.	Description
A	X	X	511.422	Replacement cylindrical diaphragm set
B	X	X	413.422	Pressure switch complete
C	X	X	005.422	Switch plate
D	X	X	079.422	Filter group complete
E	X	X	076.422	Over-pressure valve complete
F	X	X	078.422	Non-return valve complete
	X	X	096.422	Protection conductor parts
	X	X	016.252	Upper casing
	X	X	097.422	Screw set for upper casing
	X	X	363.252	Return screw
	X	X	098.422	Cable with cable clamp
	X	X	027.232	Screw-in stub connection
	X	X	010.202	O-ring 10 x 2.2 mm
	X	X	081.422	Connection components
	X	X	030.232	Control lamp
	X		080.422	Assembly plate complete
	X		075.422	Assembly plate complete
	X	X	025.252	Distance piece
	X	X	020.232	Hood
	X	X	099.422	Screw set for hood
	X	X	100.422	Cover with screws
	X	X	002.412	Pump
	X	X	030.422	Spare parts for pump
	X		002.422	Pump complete
	X		017.232	Gear wheel
	X	X	012.252	Lug screw
	X	X	003.232	Manometer
	X	X	110.422	Push button with connecting wires
	X		003.412	Motor complete
	X		063.202	Fan
	X		198.422	Motor complete
	X		445.422	Intermediate flange complete
	X		113.202	Terminal rail
	X		072.312	Cylinder screw M3 x 15
	X		446.422	Clamp with screw
	X		174.312	Cylinder screw M4 x 90
	X		447.422	Condenser complete
	X	X	005.202	Fine fuse
	X		357.252	Carrier
	X	X	096.212	suppressor element

Hydraulic diagram

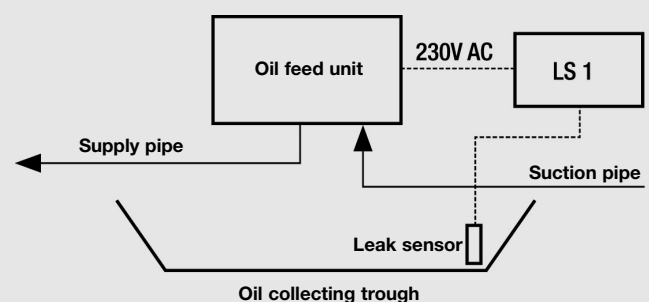


Piping diagram



Accessory

	X	X	800.912	Leak detection system LS 1
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Test, over-pressure and drain valve **E**

The over-pressure valve is the cut-off point between the supply line and return line. The over-pressure valve comes into operation when the maximum set pressure of 4 bar is exceeded. The proper operation of the valve can be checked by actuating it manually. It also enables the pressure to be relieved in the complete piping system and the storage vessel, and the draining of the unit.

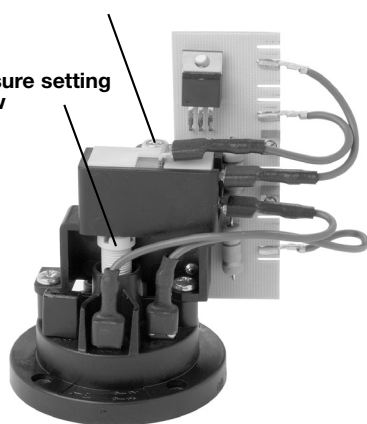
Non-return valve **F**

The non-return valve prevents return flow or loss of pressure in the oil already pumped into the pressure storage vessel and the supply line. During the pumping process, a small quantity of oil flows back into the supply tank through the ventilation nozzle in the non-return valve. Most of the air sucked in also escapes with this small quantity of oil.

Pressure switch **B**

Cross-head screw

Pressure setting screw



The pressure switch switches the motor on at a lower working pressure of approx. 1.6 bar, and switches it off again on reaching the upper working pressure of approx. 2.6 bar. The pressure range can be regulated upward in the case of supply heights of over 15 m. This is done by screwing in the pressure setting screw, using a small screwdriver or small pin of max. 1.5 mm diameter in the four slots of the pressure setting screw. The safety cut-off must in this case be adjusted to the lower working pressure of minus 0.1 bar. The pressure for the safety cut-off is reduced by screwing the cross-head screw in, and increased by screwing it out. In the event of a drop in pressure to below the set pressure as a result of a power failure, lack of oil or break in the line, the safety cut-off switches to "fault", and the control lamp lights up.

Installation

The installation, connection and testing of heating oil supply systems must be carried out in accordance with DIN 4755 Part 2. The unit can be installed up to 1.5 m below the upper tank level. The maximum suction head of 3 m must not be exceeded. About 1.0 m of suction head must be deducted for every 10 m of horizontal suction distance.

Example: Calculating the suction head

Tank floor - unit = 1,5 m \pm 1,5 m vertical

Horizontal = 2,0 m \pm 0,2 m vertical
suction distance

Calculated suction head 1,7 m

The unit is mounted horizontally against the wall. The unit is easy to adjust by means of the movable assembly plates.

The leak detection system LS 1 (Art. No. 800.912) with collecting trough must be mounted under the device.

Suction line

The installation of a filter in the suction line is not necessary, since a filter of adequate capacity with a mesh size of 0.1 mm is already built into the unit. The suction line should terminate at least 5 cm above the tank floor.

No non-return valve may be installed.

Normal suction lines on plastic battery tanks or the corresponding tank connection 301.912 for individual tanks fulfil the above requirements.

Return line

The return line should be installed so that it terminates directly below the tank connection. It must not be immersed in the oil, since most of the air sucked in is returned to the supply tank via the return line.

No shut-off valve may be installed.

Supply line

OILPRESS pressure storage units allow the use of a single-line supply system (see Piping diagram). The line can be laid in any way required. Oil pressure regulators must be installed so that the permissible pressure range of the oil regulator of 125 mm – 3000 mm of oil is not exceeded at the combustion point. The line from the oil pressure regulator to the oil regulator should be laid at an incline. When used for the supply of atomising burners, the user must check whether a pressure regulator should also be installed.

Maintenance work

Replacing the filter **D**

In case of contamination and during maintenance work, the filter should be replaced, in order to ensure trouble-free operation.

Starting and ventilation

1. Open all valves in the system, including the inlet valve at the oil regulator.
2. Insert the plug into the socket. The control lamp will light up.
3. Press down the push button on the underside of the unit. The pressure storage unit ventilates itself automatically.
4. Press down the push button until the pointer of the manometer has reached the green area (this may take up to 10 min.). The unit then starts to operate automatically. On reaching the upper cut-off pressure (approx. 2.6 bar), the unit switches off.
5. For testing purposes, the button of the over-pressure valve **E** is now slightly withdrawn until the motor starts again. Note the starting pressure, which should be approx. 1.6 bar.

Restarting

following lack of oil or power failure

Check whether the manometer is still showing button until the motor continues to run automatically. If the manometer shows no pressure, restart as described under "Starting and ventilation".

Instructions

The installation and electrical connection of the unit, commissioning and maintenance, must be carried out by a qualified technician. In the event of maintenance work, and before removing the cover hood, the unit must be disconnected from the power supply by removing the plug, and the pressure in the pressure storage vessel must be relieved.

The operating instructions must be kept in the vicinity of the system following installation.

An essential requirement for smooth operation of the pressure storage units is proper installation in accordance with the technical rules applicable to the planning, installation and operation of the complete system.

The pressure storage units and the corresponding pipes must be installed so that they are protected against frost.

Heating oil is a material harmful to water. Spilt or leaked heating oil must be disposed of properly. All components which have come into contact with heating oil must be disposed of properly in accordance with applicable disposal regulations.

This device is not intended for use by people (incl. children) with restricted physical, sensory or intellectual abilities or lack of experience and/or lack of knowledge, unless they are supervised by a person responsible for their safety or received, from this person, instructions about how to use the device. Children should be supervised to ensure that they do not play with the device.

If the device's power cable is damaged it must be replaced by the manufacturer or the manufacturer's customer service or a similarly qualified specialist.

The installation and maintenance instructions are intended only for qualified technicians!

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