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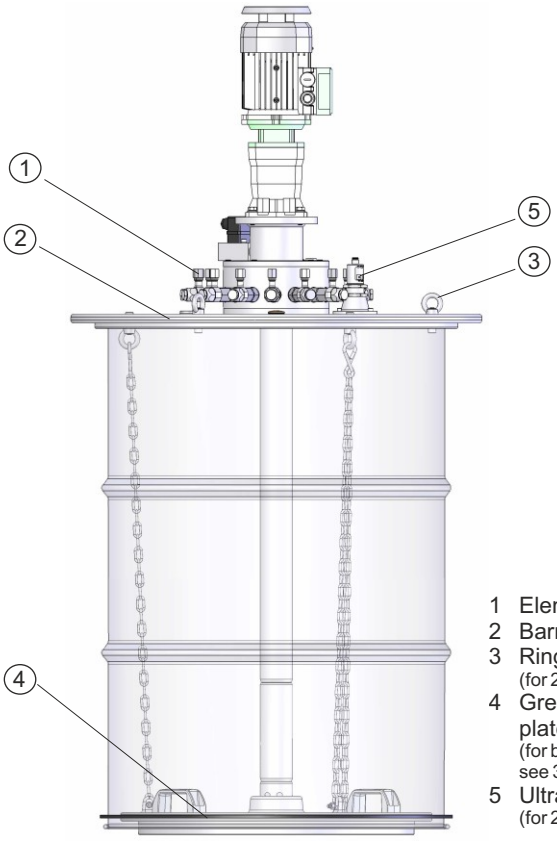
Lubrication Experts since 1922

Pump for bung-hole

Illustration shows example

Pump for barrel lid

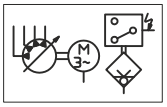
Illustration shows example



1 Elements
2 Barrel lid
3 Ring screws
(for 200 l only)
4 Grease follow-up plate
(for barrel dimesions see 3th page)
5 Ultrassonic sensor
(for 200 l only)

Pump unit

GMZ-E



Pump used to supply oil and grease from a barrel directly through a lid- or a bung-hole.

Technical data:

Delivery volume per stroke
Pump element "6": 0,08 cm³/stroke
Number of strokes: [1] 23,9 min^{-1}
Number of pump elements: 1 ... 15
Delivery pressure: 350 bar
Lubricant
Oil: Viscosity >200 mm²/s
Grease: Class NLGI 000 ... 2
from class 1 onward follow-up plate required additionally.
The intended lubricant must be suitable for use with centralized lubrication equipment.
Pipe connection: 6, 8 and 10 mm
Temperature range: -10 ... +40 °C
Lower or higher temperatures by request.
Seal material: NBR

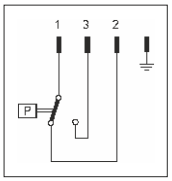
Electrical data:

Motor:
Connecting voltage
at 50 Hz D/Y: 220 ... 240/380 ... 415 V
at 60 Hz Y: 440 ... 460 V
Current
at 50 Hz D/Y: 1,21/0,7 A
at 60 Hz D/Y: 1,07/0,62 A
Rated speed: [1] 1500 min^{-1}
Power rating: 180 W
Protection class: DIN EN 60529 IP55
Insulation class: F
(other motors upon request)

Pressure control: (Pressure switch)
Switching voltage AC: max. 250 VAC
max. 5 A
inductive max. 3 A
Switching voltage DC: max. 125 VDC
max. 0,4 A
inductive max. 0,05 A
Connection type: Male
DIN EN 175301-803, shape A
Protection class: DIN EN 60529 IP65

Connection diagram:

Switch position shown represents "barrel empty" (pump casing depressurized)

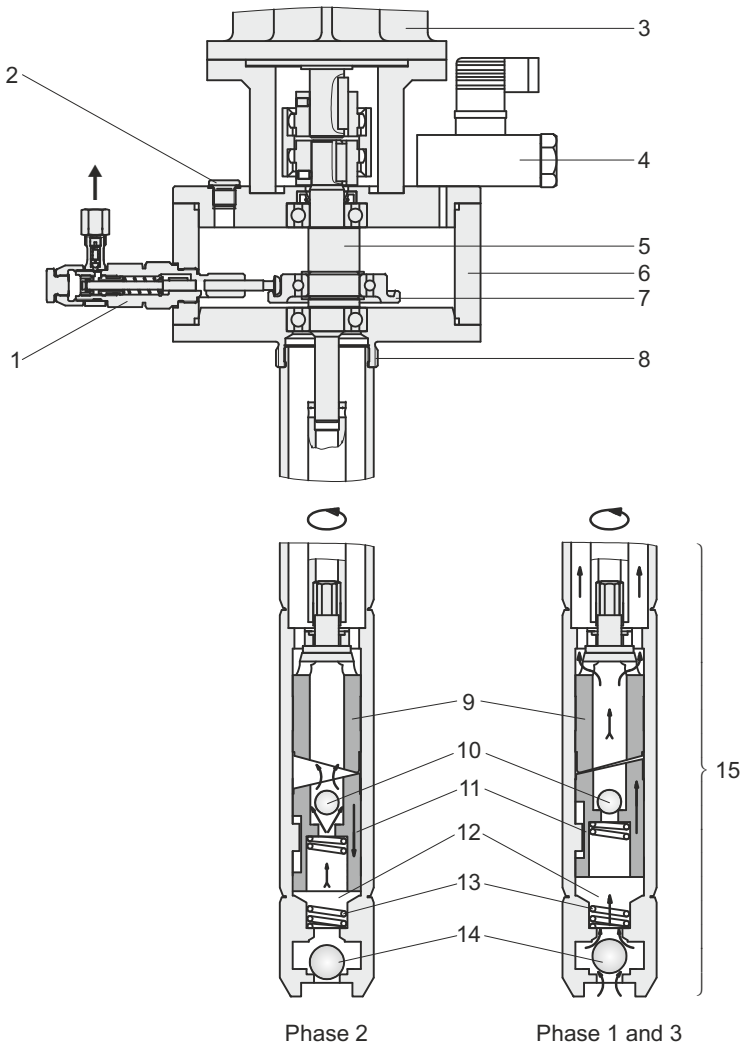


[1] with standard motor and 50 Hz frequency

- Subject to modifications -

EUGEN WOERNER GmbH & Co. KG
Hafenstraße 2 DE-97877 Wertheim
☎ +49 9342 803-0
info@woerner.de www.woerner.de

Data sheet **P0668.11.22 EN**
Replaces P0668.02.22 EN



1 Pump element
2 Vent screw G 1/4
3 Gear motor
4 Pressure control
5 Eccentric shaft
6 Pump casing
7 Pressure ring
8 Threaded connection G2
9 Control piston
10 Check valve
11 Delivery piston
12 Intermediate chamber
13 Pressure spring
14 Check valve
15 Delivery pump

Operation of pump:

The barrel pump consists of the following components:

Feed pump (15), pump housing (6), pump elements (1) and drive motor (3). The feed pump (15) is powered by the drive motor (3) via the vertical eccentric shaft (5).

Phase 1
During the suction stroke the delivery piston (11) forced downward by the control piston (9) is pressed upward again by the compression spring (13). The vacuum resulting in the intermediate chamber (12) causes the lubricant to be drawn in via the non-return valve (14).

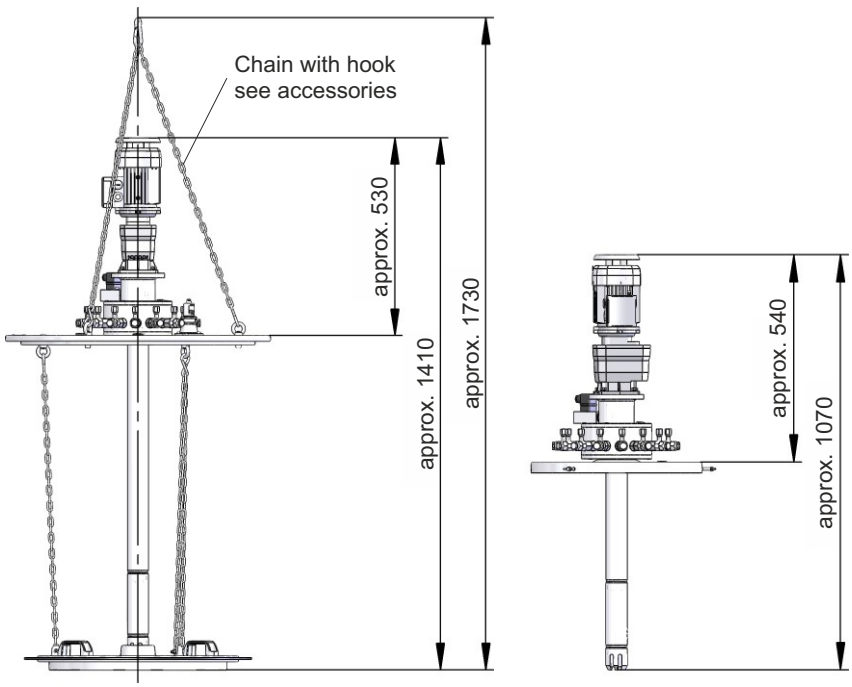
Phase 2
During the next half revolution of the control piston (9), the delivery piston (11) is forced downward again and the lubricant contained in the intermediate chamber (12) is delivered in upward direction via the non-return valve (10).

Phase 3
Further rotation of the control spool (9) through 180° results in a new suction stroke and the non-return valve (10) closing at the same time enables the spring-loaded delivery piston (11) to force the lubricant above it into the upper pump housing (6).
The pressure monitor (4) signals "barrel empty" when no more lubricant is delivered by the feed pump (15), however there is still lubricant left in the pump housing.

The vertical eccentric shaft (5) drives a pressure ring (7) to which the pump elements (1) are attached. Due to the eccentricity of the pressure ring (7) each delivery piston performs one constant delivery and suction stroke per pump shaft revolution.
The pump elements (1) draw accurately metered quantities of lubricant (dependent on element adjustment) from the lubricant reservoir in the pump housing (6).

Mode of operation and assembly of pump element see data sheet P0386.

EUGEN WOERNER GmbH & Co. KG
Hafenstraße 2 DE-97877 Wertheim
☎ +49 9342 803-0
info@woerner.de www.woerner.de



① Pump unit for 200 l barrel

② Pump unit for 50 l barrel

Operating instructions:

Direction of motor rotation:
When connecting the motor make sure the drive shaft rotates counter-clockwise when viewing the fan.

The gear is maintenance-free filled with synthetic oil for its whole working life.

Venting:
Before putting the pump into operation remove the plug (2) to vent the pump housing.

The lubricant supply lines must be clean and allow free passage. Do not connect the lines to the lubrication point before the lubricant flows out bubble-free.

Leak testing:
Inspect all supply line connections for leaks.

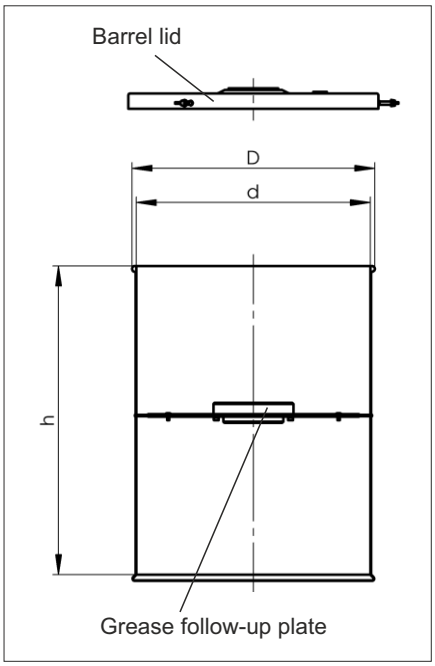
No lubricant return lines may be connected to the pump unit.

Follow-up plate:
Caution: When using the follow-up plate, do not install it in barrels having indentations!

After installation press the rubber seal against the barrel wall.

Version	Barrel dimensions			Barrel
	min. barrel inner height h	Barrel inner diameter d	Barrel outer diameter D	Nominal filling capacity
① 200 l barrel	850 mm	550 ... 570 mm	610 mm	200 l acc. to DIN 6644
② 50 l barrel	540 mm [1)]	300 ... 410 mm [1)]	300 ... 415 mm [1)]	50 l

[1)] see order designation page 5



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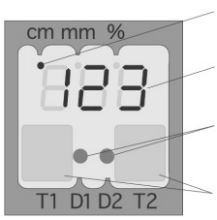
EUGEN WOERNER GmbH & Co. KG
Hafenstraße 2 DE-97877 Wertheim
☎ +49 9342 803-0
info@woerner.de www.woerner.de

Level monitoring (ultrasonic sensor)

Technical data:

Operating voltage:	9 V ... 30 VDC
	reverse polarity protected
No-load supply current:	≤80 mA
Protection class:	DIN EN 60529 IP67
Connection type:	Male
	M12x1, 5-pin
Transducer frequency:	200 kHz



Measuring range
3-digit LED-display
LED D1 and D2
Push-buttons T1 and T2

Ultrasonic sensor with one analogue output (A)

Product description:

The ultrasonic sensor with one analogue output measurers the distance to an object, within the detection zone contactless. A signal proportional to distance is created according to the adjusted window margings of the analogue characteristic curve. The sensor automatically detects the load put to the analogue output and switches to current output or voltage output respectively. Light emitting diodes (three-colour LED`s) indicate all operation conditions. The ultrasonic sensor indicate a blind zone, in which the distance cannot be measured.

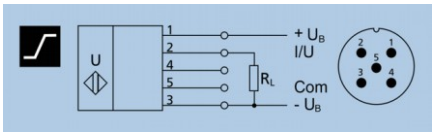
Technical data:

Current output:	4 ... 20 mA
	R_L ≤100 Ω at 9 V ≤U_B ≤20 V
	R_L ≤500 Ω at U_B ≥20 V
Voltage output:	0 ... 10 V
	R_L ≥100 kΩ at U_B ≥15 V
	short-circuit-proof

Measuring range from bottom edge of drum lid:

	200 mm ≙ 20 mA
	810 mm ≙ 4 mA

Connection diagram:



Ultrasonic sensor with two switched outputs (2)

Product description:

The ultrasonic sensors with two switched outputs measurers the distance to an objekt, within the detection zone contactless. Depending on the adjusted detect distance the switched outputs are set. Light emitting diodes (three-colour LED`s) indicate the switching status. The ultrasonic sensor indicate a blind zone, in which the distance cannot be measured.

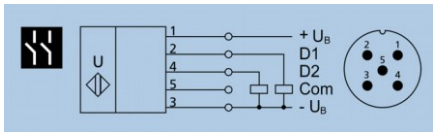
Technical data:

Switched output:	2 x pnp
Switching function:	NC contact
	U_B -2 V
	I_{max} = 2 x 200 mA
	short-circuit-proof

Measuring range from bottom edge of drum lid:

Preliminary warning	750 mm
Min.	810 mm

Connection diagram:



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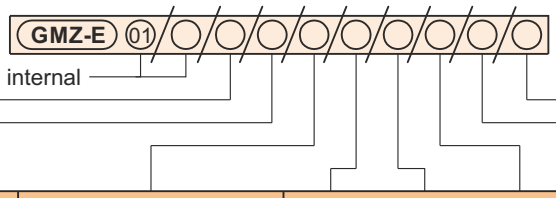
EUGEN WOERNER GmbH & Co. KG
Hafenstraße 2 DE-97877 Wertheim
☎ +49 9342 803-0
info@woerner.de www.woerner.de

Order designation:



Version	Barrel lid	Grease follow-up plate	Element "6" with pipe connection			Motor	Level monitoring barrel [1]
			ø6 Number	ø8 Number	ø10 Number		
(1) for barrel 200 l with pressure control [2] (1A) for barrel 200 l without pressure control	with (D1)	with (F) without (0)	0 ... 15	0 ... 15	0 ... 15	(A) Standard motor (technical data see 1th page)	(A) Ultrasonic sensor analogue output (2) Ultrasonic sensor 2 switched outputs without (0)
	without (0)	without (0)					without (0)
(2) for barrel 50 l	with [3] for barrel outer øD ø365 ... 415 mm (D2) ø312 ... 342 mm (D3) ø240 ... 310 mm (D4) without (0)	with for barrel inner ød ø300 ... 352 mm (F1) ø340 ... 393 mm (F2) ø370 ... 416 mm (F3) without (0)	max. 15 elements possible			(S) Special motor (please state data)	without (0)

[1] Only for 200 l barrel and version with barrel lid
[2] Pressure control is not used as level monitoring!
[3] For barrels h <540 mm:

	Order no.
Special adapter	**111.459-65**

Order example:

Pump unit GMZ-E01, version for 200 l barrel, with barrel cover, without follow-up plate, 8 pcs. of element 6 with pipe connector ø6, standard motor and without a niveau control.

Order designation:

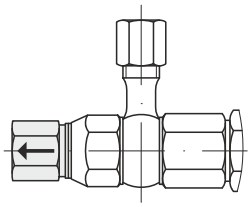
GMZ-E01 / 00 / 1 / D1 / 0 / 8 / 0 / 0 / A / 0

Medium recirculation optional

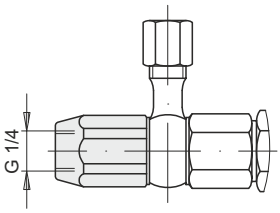
EUGEN WOERNER GmbH & Co. KG
Hafenstraße 2 DE-97877 Wertheim
☎ +49 9342 803-0
info@woerner.de www.woerner.de

Accessories:

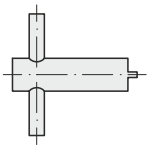
Pressure control valve:

Order no.	Opening pressure	Depiction	Mounting place	Use
110.566-64	70 bar		After removal of the locking screw at the pump element, the pressure control valve can be screwed in.	To limit max. operating pressure. The opening pressure is fixed and cannot be changed subsequently.
110.569-64	80 bar			
110.565-64	100 bar			
110.564-64	150 bar			
110.563-64	250 bar			
110.570-64	350 bar			
110.560-64	400 bar			
	preset as per customer's specification:			
110.568-65	from 50 ... 160 bar			
110.562-65	from 160 ... 450 bar			

Manometer connector:

Order no.	Depiction	Mounting place	Use
110.068-65K		After removal of the locking cap at the pump element, the manometer connector can be screwed in.	To connect a manometer with G 1/4" male thread.

Adjustment spanner:

Order no.	Depiction	Use
110.004-65		After removal of the locking cap at the pump element, the delivery volume of the pump element can be adjusted by using the adjustment spanner (included in scope of delivery = i.e. 1 piece per pump each)

Chain with hook:

Order no.	Depiction	Mounting place	Use
590.001-65	see figure page 3	Barrel lid	for operation with crane

Level monitoring for barrel pumps see data sheet P0885

Technical documents also valid for this product:

B0668 EN Operating instruction GMZ-E
E0668 EN Spare parts GMZ-E

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All products from WOERNER may only be used as intended and corresponding to the information in this data sheet.
For products supplied with operating instructions, the additional directives and information contained in them are to be complied with.

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The safety and danger information stated in the safety data sheets of the substances used must be taken into account at all costs.

Transportation of gases, liquefied gases, gases under pressure, vapours and liquids, the vapour pressure of which is more than 0,5 bar above normal atmospheric pressure (1013 mbar) at the maximum admissible temperature, of easy inflammable or explosive media as well as transportation of foodstuffs is forbidden.

Information on EU Directive 2011/65/EU (RoHS)

In its controls and switching devices, WOERNER only uses materials which fulfil the criteria of EU Directive 2011/65/EU. To the extent that hexavalent chromium has been used as corrosion protection in the parts which we produce ourselves, it has already been replaced by other environmentally tolerable protective measures.

The mechanical devices supplied by WOERNER are not affected by EU Directive 2011/65/EU.

But as WOERNER is conscious of its responsibility towards the environment, we shall also use materials fulfilling the requirements of the Directive for devices not covered by EU Directive 2011/65/EU as soon as they are generally available and their use is technically possible.

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☎ +49 9342 803-0
info@woerner.de www.woerner.de