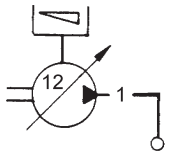
Pump FZ-B

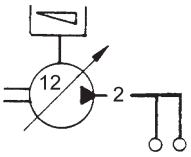
APPLICATION

The FZ-B type lubricator is an central plunger grease pump, which is operating without valves and springs.
The numerous ratios available within the range 3 : 1 to 2880 : 1 which are between the speed of the drive shaft on machine to be lubricated and the number of strokes of the delivery plunger, ensure universal application of the lubricator so that it can be adapted to any system having a small to medium number of lubrication points:
The FZ-B pump comes with 1 outlet or 2 outlets and is preferably used to feed progressive systems.
Connected to each outlet is one progressive distributor, including a sub-distributor if necessary, to distribute the lubricant to several consumers or grease points.

ADVANTAGES

- Best adaptation possibility to different driving speeds and to the machine to be lubricated.
- Additional control can be omitted.
- Use for anticlockwise and clockwise rotation is possible without modifications.
- Forced control without any valves and springs.
- Rugged, consequently minimal expenditure of maintenance and repair works.
- Explosion protection according to ATEX guideline 94/9/EG





PRINCIPLE OF OPERATION

The alternate integral operating circuit between suction stroke and compression stroke operates enforced.

The grease lubrication pump FZ-B has either a single outlet with a maximum delivery of 12 x 0.1 = 1.2 ccm, or two outlets with a maximum delivery of 6 x 0.1 = 0.6 ccm per rotation of the plunger. The lubricator generates the necessary lubricant pressure and meters the quantity of grease, which is adjustable.

If metered quantities of grease have to be delivered to more lubrication points than the lubricator has outlets, then progressive distributors must be connected to one or more of the outlets (distributors, type E 4, ZP-A, ZP-B or PVB).

Due to the good adaptability of the pump to different available driving speeds of the machine to be lubricated, one can do without an additional control.
Because of the positive mechanical connection or electrical interlocking between the lubricator and the machine being lubricated, grease is delivered only when the machine is switched on.

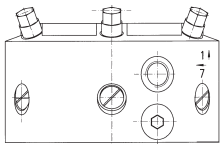
All pumps are suitable for clockwise or anticlockwise rotation as required, without modification and giving the same delivery.
The drive can be effected in different ways, please refer to the possibilities illustrated "KINDS OF DRIVE".

On lubricators with mounted electric motor the coupling is located in the housing flange between the lubricator and the electric motor, so that it is dust, dirt and splash-proof and guarded, eliminating the risk of accidents.
The rotating parts of the drive are supported by roller- bearings.

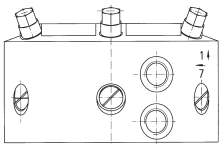
All lubricators are attached to the machine with which they are to be used, or to a foundation, by means of two bolts only.

A. PUMP TYPE	Code
	FZB

B. NUMBER OF OUTLETS	Code
1 outlet	01
2 outlets	02



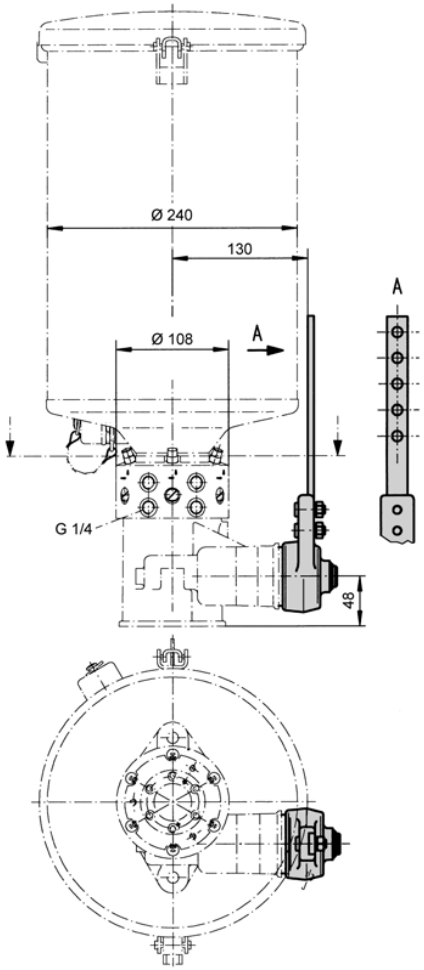
Pump body with 1 outlet,



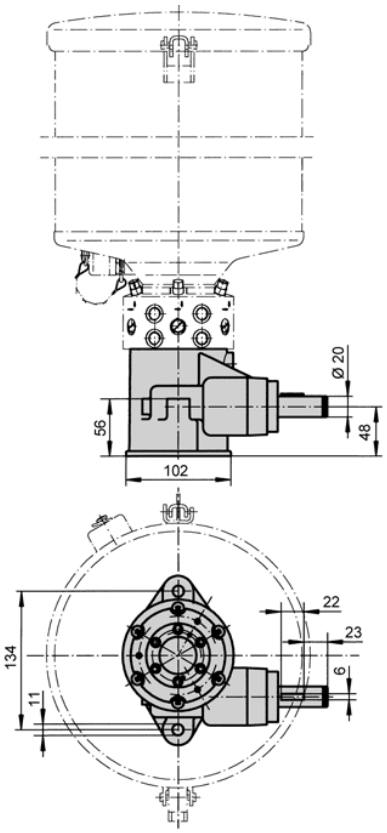
with 2 outlets

C. REVISION	Code
Status A	A

D. KINDS OF DRIVE	Code
Pendulum lever, gear ratio 3 : 1	01
Pendulum lever, gear ratio 12 : 1	02
Pendulum lever, gear ratio 25 : 1	03
Pendulum lever, gear ratio 50 : 1	04
Shaft end free, gear ratio 3 : 1	05
Shaft end free, gear ratio 12 : 1	06
Shaft end free, gear ratio 25 : 1	07
Shaft end free, gear ratio 50 : 1	08



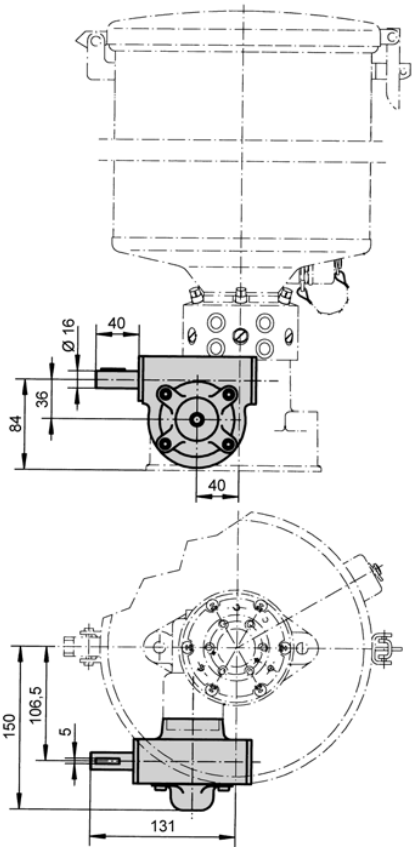
Drive with pendulum lever



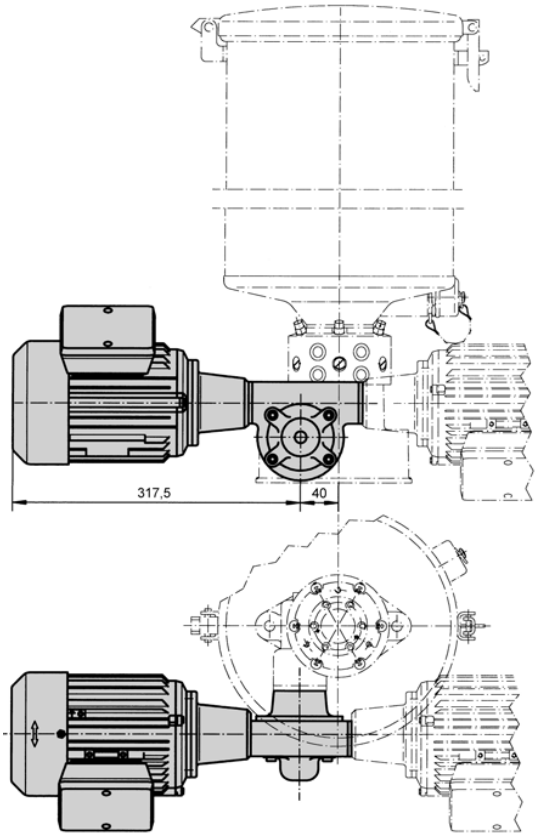
Drive with shaft end free

Step-down gear, gear ratio 95 : 1	09
Step-down gear, gear ratio 215 : 1	10
Step-down gear, gear ratio 345 : 1	11
Step-down gear, gear ratio 710 : 1	31
Step-down gear & motor 230-260V / 400-460V / 50/60Hz, gear ratio 215 : 1	12
Step-down gear & motor 230-260V / 400-460V / 50/60Hz, gear ratio 345 : 1	13
Step-down gear & motor 230-260V / 400-460V / 50/60Hz, gear ratio 710 : 1	14
Step-down gear & motor 230-260V / 400-460V / 50/60Hz, gear ratio 1420 : 1	15
Step-down gear & motor 230-260V / 400-460V / 50/60Hz, gear ratio 2880 : 1	16

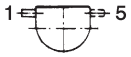
D. KINDS OF DRIVE (continuation)	Code
Step-down gear & motor 500V / 50Hz, gear ratio 215 : 1	17
Step-down gear & motor 500V / 50Hz, gear ratio 345 : 1	18
Step-down gear & motor 500V / 50Hz, gear ratio 710 : 1	19
Step-down gear & motor 500V / 50Hz, gear ratio 1420 : 1	20
Step-down gear & motor 500V / 50Hz, gear ratio 2880 : 1	21
Step-down gear & motor flange, gear ratio 710 : 1	27
Step-down gear & motor flange, gear ratio 345 : 1	28
Step-down gear & motor UL / 3 / PE 115V / 60Hz / 0.21kW, gear ratio 215 : 1	45
Step-down gear & motor UL / 3 / PE 115V / 60Hz / 0.21kW, gear ratio 345 : 1	46
Step-down gear & motor UL / 3 / PE 115V / 60Hz / 0.21kW, gear ratio 710 : 1	47
Step-down gear & motor UL / 3 / PE 115V / 60Hz / 0.21kW, gear ratio 420 : 1	48
Step-down gear & motor UL / 3 / PE 115V / 60Hz / 0.21kW, gear ratio 2880 : 1	49
Step-down gear & motor UL / 440-480V / 60Hz / 0.21kW, gear ratio 215 : 1	50
Step-down gear & motor UL / 440-480V / 60Hz / 0.21kW, gear ratio 345 : 1	51
Step-down gear & motor UL / 440-480V / 60Hz / 0.21kW, gear ratio 710 : 1	52
Step-down gear & motor UL / 440-480V / 60Hz / 0.21kW, gear ratio 1420 : 1	53
Step-down gear & motor UL / 440-480V / 60Hz / 0.21kW, gear ratio 2880 : 1	54
Step-down gear & motor UL / 1/PE 115V / 60Hz / 0.21kW, gear ratio 215 : 1	55
Step-down gear & motor UL / 1/PE 115V / 60Hz / 0.21kW, gear ratio 345 : 1	56
Step-down gear & motor UL / 1/PE 115V / 60Hz / 0.21kW, gear ratio 710 : 1	57
Step-down gear & motor UL / 1/PE 115V / 60Hz / 0.21kW, gear ratio 420 : 1	58
Step-down gear & motor UL / 1/PE 115V / 60Hz / 0.21kW, gear ratio 2880 : 1	59



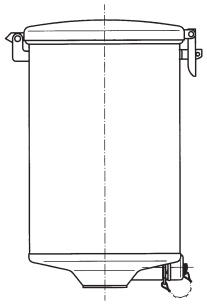
Drive with step-down gear



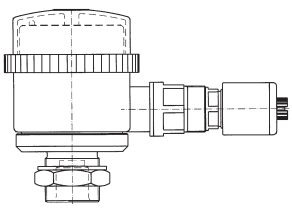
Drive with step-down gear and flange motor

E. POSITION OF DRIVE	Code
without	O
Position 1 on the left 	A
Position 5 on the right	E

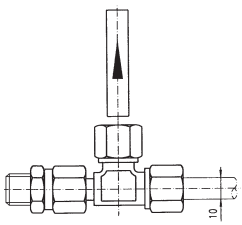
F. RESERVOIR	Code
2.5 litres, rotational direction clockwise/anticlockwise	D
8.0 litres, rotational direction clockwise/anticlockwise	A
15.0 litres, rotational direction clockwise/anticlockwise (without support)	B
30.0 litres, rotational direction clockwise/anticlockwise (without support)	C



G. ACCESSORIES	Code
without	00
Level switch	01
Filling valve	02
Level switch and filling valve	03
1 x pressure control 160 bar, diam. = 10mm	20
2 x pressure control 160 bar, diam. = 10mm	04
1 x pressure control 160 bar, diam. = 10mm, level switch and filling valve	21
2 x pressure control 160 bar, diam. = 10mm, level switch and filling valve	05
1 x pressure control 200 bar, diam. = 10mm	22
2 x pressure control 200 bar, diam. = 10mm	06
1 x pressure control 200 bar, diam. = 10mm, level switch and filling valve	23
2 x pressure control 200 bar, diam. = 10mm, level switch and filling valve	07



Level switch
data sheet BA_2005_1_GB_76951_6011



Pressure control
data sheet PB_2005_1_GB_38132

EXAMPLE OF ORDER

	Code										
	F	Z	B	0	2	A	1	2	A	A	0	1

Pump type FZ-B	Code: FZB
Number of outlet 2 outlets with delivery volume 6 x 0.1	Code: 02
Revision Status A	Code: A
Kinds of drive Step-down gear & motor 230 - 260 V / 400 - 460 V / 50/60 Hz, gear ratio 215 : 1	Code: 12
Position of drive Position 1 on the left	Code: A
Reservoir 8,0 litres, rotational direction clockwise/anticlockwise	Code: A
Accessories Level switch for reservoir 8 litres	Code: 01

SPECIFICATION

Permissible feed pressure — 200 bars, until 250 bars for short period only

Delivery volume per outlet and pump plunger rotation — max. 1.2 ccm at FZ-B with 1 outlet (12 outlets combined)
max. 0.6 ccm at FZ-B with 2 outlets (every 6 outlets combined)

Delivery volume per outlet and hours — max. 60 ccm, pendulum lever drive max. 36 ccm.
Delivery volume from all outlets can be reduced by selecting a lower driving speed or higher gear ration, so that the pump plunger rotatest at less than 10 min^{-1} resp. 6 min^{-1}.

Permissible pump plunger speed — max. 10 $min.^{-1}$, with pendulum lever drive max. 6 $min.^{-1}$
In case higher speed or less then 1 and less then < 1 is requested and also when distributors ZP-A, ZP-B, PVB or E 4 are installed downflow, ask producer.

Adjustment of volume rate — The figures 0 - 4 are stamped on the hexagons on the adjusting spindles. The maximum delivery (0.1 ccm) is obtained in position 4. The quantity delivered is reduced by turning the adjusting spindles clockwise. To ensure reliable operation of the lubricator, delivery should not be less than 1/4 of the maximum rating.

Number of outlet — FZ-B 1 or 2 outlets

Outlet bore — G 1/4 female pipe thread, cylindric

Kinds of drive and gear ratio — Pendulum lever : / Shaft end free : 3 : 1, 12 : 1, 25 : 1, 50 : 1
Step-down gear : 95 : 1, 215 : 1, 345 : 1, 710 : 1
Step-down gear & motor / Motor according to DIN 42677 / Speed n = 1500 $min.^{-1}$ / Design B 14, small flange size 63 / Rated output 0.18 kW — 215 : 1, 345 : 1, 710 : 1, 1420 : 1, 2880 : 1
Voltage and frequency to be specified at time of ordering

Rotational direction of drive shaft — optional

Oscillating rate — max. 300 $min.^{-1}$
In case of using the pendulum lever drive, the lever rod should be installed that way, that the amplitude of the oscillating lever is the same in both direction.
$\propto 1 = \propto 2 =$ max. 50°
lever amplitude max. 100°
lever amplitude min. 10°

Reservoir volume — 2.5, 8, 15 and 30 litres

Usable lubricants — greases based of mineral oils to NLGI-class 2, DIN 51818.
Oils : on request
Synthetic greases : on request

Operating temperature — - 20 °C up to + 80 °C
Depending on the lubricant used, restrictions to the service temperature are possible.