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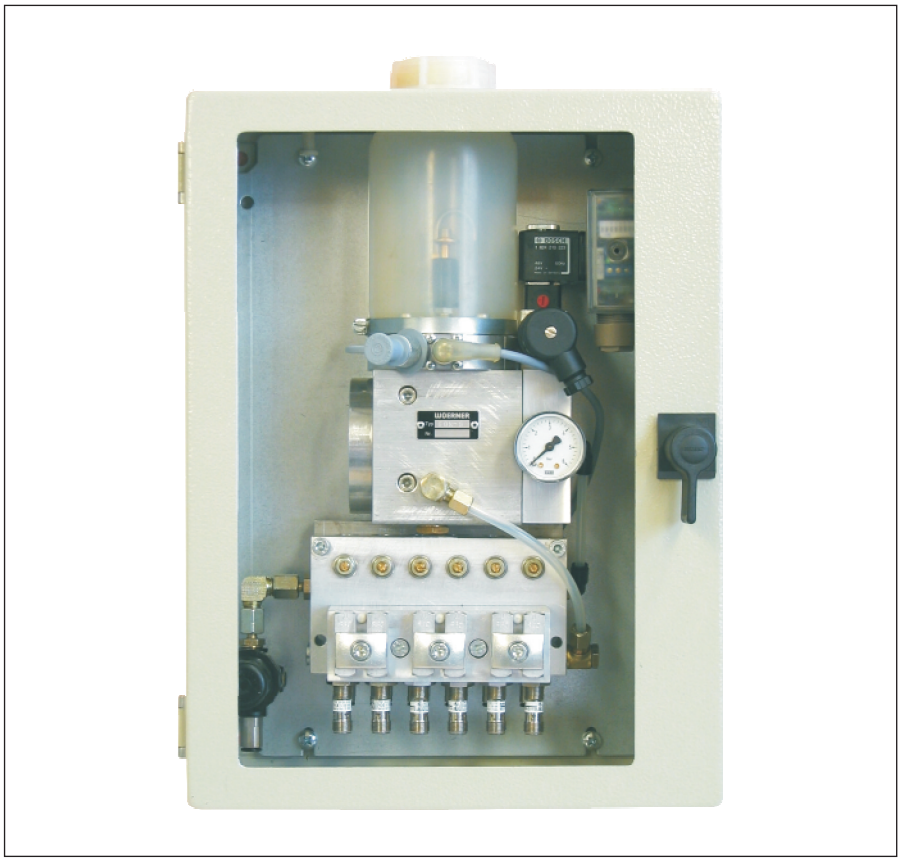
ZENTRALSCHMIERANLAGEN



OL-feeding- and proportioning aggregate with feed monitoring device

GOK-B

Use:

OL-aggregates are used, among others, to lubricate rolling bearings, toothed gears, slide strips, and tools.

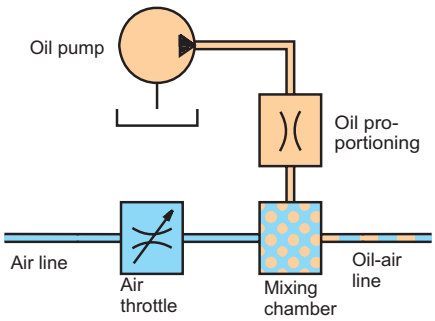
- **Smallest oil volume per time unit as a continuous oil flow**
- **Visual and electrical feed indication**
- **Proportioning volume per lubrication point can be selected**
- **Air volume per lubrication point individually adjustable**
- **Compact design**

General description:

The GOK-B feeding and proportioning aggregate consists of a pneumatically actuated piston pump with reservoir and an OL-one-line distributor with visual / electrical feed monitoring.

OL principle:

In a mixing chamber, oil is proportioned and linked with an air stream. Such air stream serves to transport the oil to the lubrication point, whilst stretching the first oil drop generated into a thin lubrication oil film. This way, the bearing is supplied with a continuous oil flow of smallest volume.
By virtue of the air fed in, an internal overpressure is generated in the bearing. Such pressure prevents dust from penetrating into the bearing from outside.



- Subject to modifications -

OL-feeding- and proportioning aggregate GOK-B **165.800**

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Supplements No.
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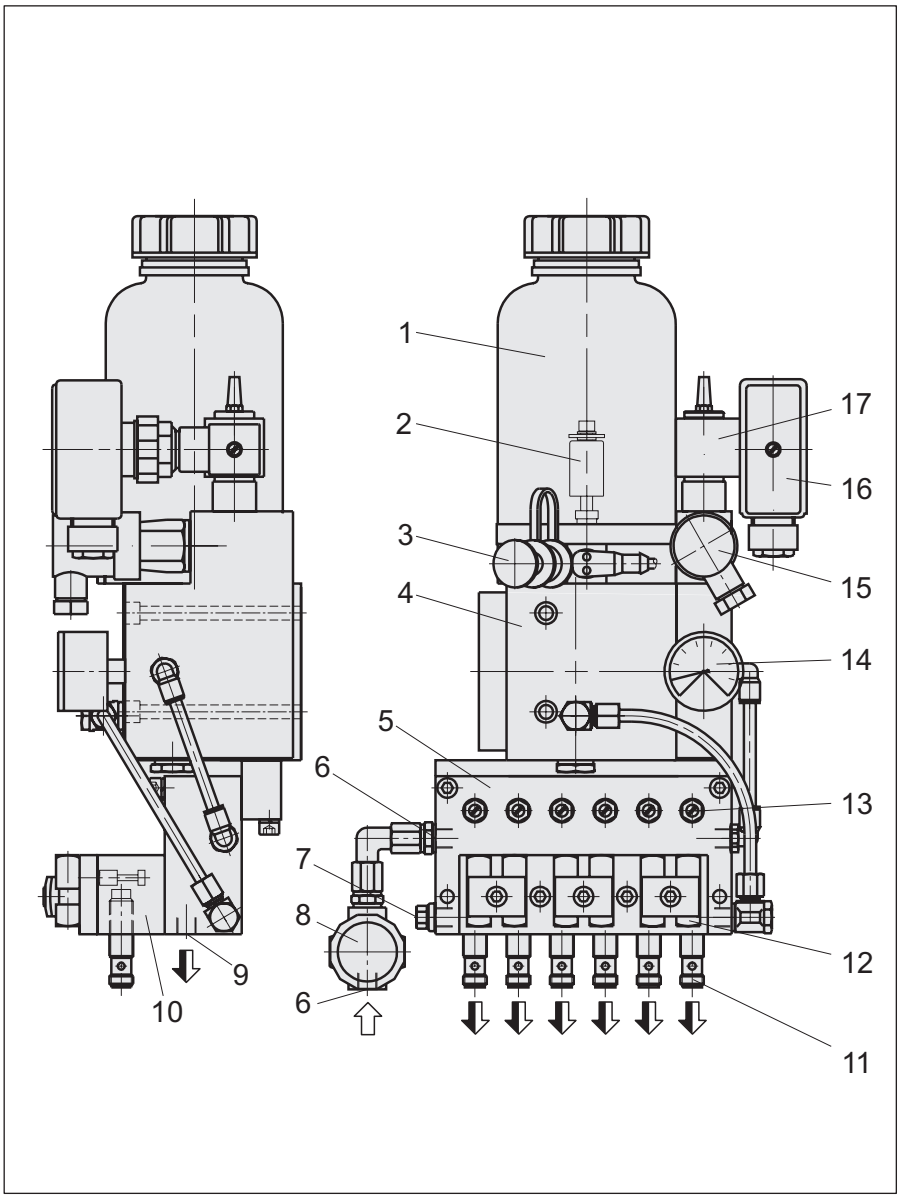


Technical data:

Number of outlets
- without housing: 2; 4; 6; 8
- with housing: 2; 4; 6

Proportioning volume per outlet and cycle: 11; 22; 34; 57; 110; 170; 230 mm³

Air operating pressure
- max.: 10 bar
- min.: 3 bar

Oil operating pressure
- max.: 32 bar

Medium: Mineral oil

Viscosity: up to 3000 mm²/s

Reservoir capacity: 0,7 l

Temperature range: 0 ... +50 °C

Materials:
- Pump and distributor: Aluminium/steel
- Reservoir: PE
- Display area: PMMA
- Casing "G": Steel sheet, varnished
- Casing "GF": Steel sheet, varnished
- Viewing glass: PC

Weight:

GOK-B without housing
- 2 outlets: 5,0 kg
- 4 outlets: 5,6 kg
- 6 outlets: 6,2 kg
- 8 outlets: 6,8 kg

GOK-B with housing
- 2 outlets: 10,8 kg
- 4 outlets: 11,4 kg
- 6 outlets: 12,0 kg

Directional control valve:

Directional control valve actuation:
- Working time min.: 1 s
- Off-duty time min.: 10 s
- depends on lubricant volume needed

Standard voltage: 24 VDC

Power consumption: 5 W

other technical data:

Monitoring elements and timer: see page 4

Control unit with electronic evaluation: Leaflet-no. 0491

Note to illustration and schemes:

1 Reservoir
2 Level switch
3 Filling supply
4 Feeding pump
5 VOE-D OL-one-line distributor
6 Air supply G1/8
7 Vent screw
8 Pressure regulator
9 Outlet G1/8
10 Transparent block for visual feed monitoring
11 Initiator for feed checking
12 Proportioning element DEB
13 Air throttle
14 Gauge to indicate air pressure
15 Pressure switch to monitor air pressure
16 Timer
17 3/2-port directional control valve
18 Mixing chamber
19 Indication pin

Construction:

Every friction point the following elements are allocated to a lubrication point line, a proportioning element, an OL-mixing chamber, an initiator for monitoring the feeding function, and a throttle for air speed adjustment.

Functional description:

The OL-aggregate is connected to the compressed air network and to the machine's electric control unit.

The oil volumes fed to the lubrication points depend on the proportioning elements chosen and on cycle frequency.

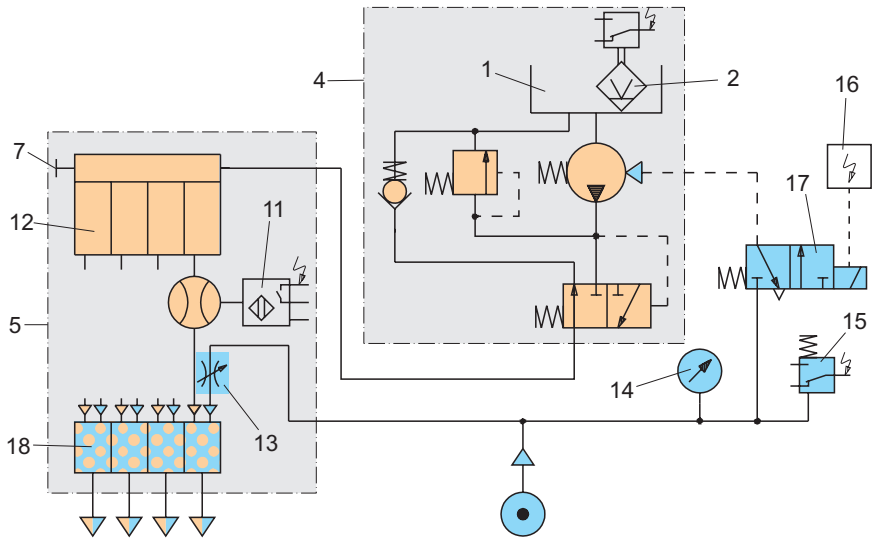
The directional control valve **17** can be actuated from the machine directly or by means of an electric timer **16** integrated into GOK-B or a control unit fitted with an electronic evaluation capability (see separate leaflet).

By virtue of directional control valve actuation, the feeding pump **4** is pressurised with compressed air and makes a feed stroke, as a result of which oil is fed from the proportioning elements **12** to the mixing chambers **18**.
From mixing chamber **18**, the oil is transported via air stream to the lubrication point, then. Streaming velocity of the air can be adjusted by means of the built-in air throttles **13**.
After actuation completion by directional control valve **17**, the spring force causes the feed piston of feeding pump **4** to return into its home position and to draw oil from reservoir **1** at the same time.

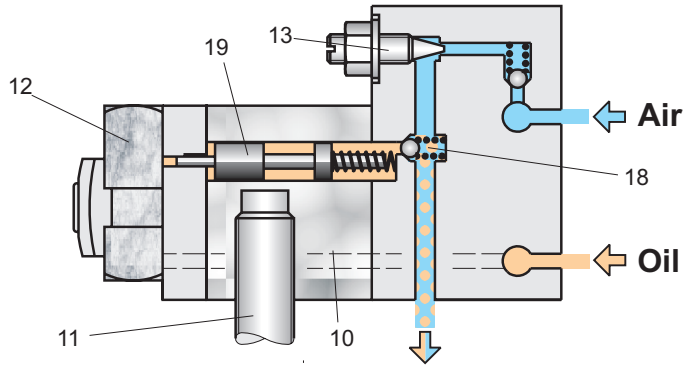
Feed monitoring:

The oil volume allocated by proportioning element 12 dislocates indication pin **19**. As a result, an externally mounted initiator **11** is attenuated shortly.

Overall unit functional scheme:



Feed monitoring functional scheme:



Venting:

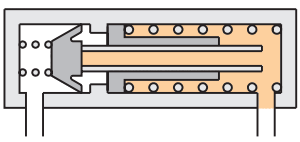
- Loosen vent screw **7**.
- Switch compressed air supply on.
- Use directional control valve **17** to repeat feed pump **4** actuation until oil comes out free of bubbles.
- Screw down vent screw.

Note to operation:

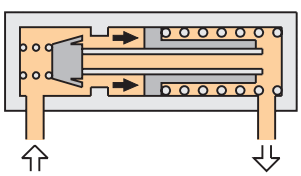
- Fill in clean oil only
- Filter compressed air

Recommended oil and air filter fineness ≤ 25 µm.
For use on fast running spindles, we recommend a filter fineness of ≤ 5 µm.
Finest filtered medium contributes to extend the bearings' service lives.

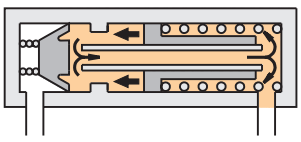
DEB proportioning element functional scheme:



Idle position, no oil feeding.



Lubricant feeding and pressure build-up. Proportioned lubricant volume is allocated.



Pressure relief in oil inlet. Lubricant in proportioning element is rearranged.

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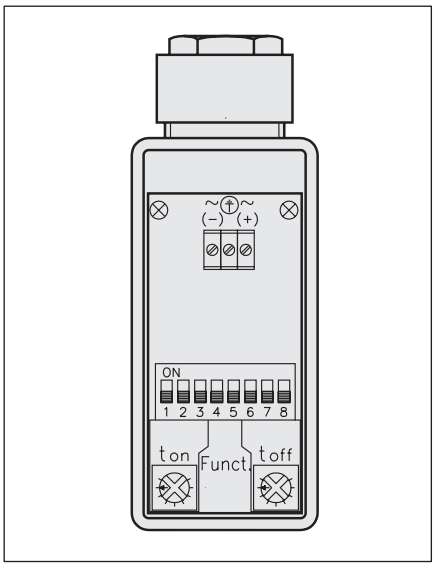
Electrical time control unit variant Ⓢ:

Control unit with electronic evaluation capability: see Leaflet-no. 0491

Timer variant Ⓣ:

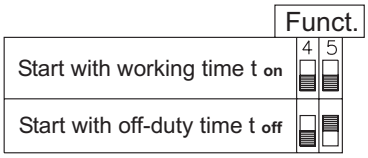
Time switch functions:

The internal DIP switches 4 + 5 can be used to set two time switch functions:
- Start with working time t on (pump is actuated).
- Start with off-duty time t off



Time setting:

The DIP switches 1-3 and 6-8 can be used to separately set the time ranges for working time t on and off-duty time t off, respectively, while the times within the time ranges can be set at the potentiometers t on and t off.



	t on 1 2 3	t off 6 7 8
0,5 ÷ 10 sec		
1,5 ÷ 30 sec		
5 ÷ 100 sec		
0,5 ÷ 10 min		
1,5 ÷ 30 min		
5 ÷ 100 min		
12 ÷ 240 min		
0,5 ÷ 10 h		

Connection:

The unit is to be connected via terminals inside the casing. In case of AC, the unit is connected to terminals (-) and PE, whereas in case of DC voltage, terminals (+/-) and PE have to be used.

Technical data:

Operating voltage:	24 ...48 VDC
Power consumption:	1,0 W
Contact switching power at max.:	1,5 A; 48 VDC
Casing material:	Polyamide
Gasket:	NBR
Temperature range:	0 ... +55°C
System of protection:	IP 65

other voltages (230 VAC) available on request.

Monitoring systems:

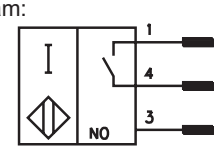
Feed monitoring:

The initiators serve to monitor oil feeding and oil proportioning by volume.

Electrical data:

Operating voltage:	10 ... 30 VDC
Residual ripple:	≤15%
Load current at max.:	130 mA
System of protection:	IP 67
Power supply:	Line socket 4-pin (M12)

Connection diagram:



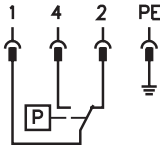
Air pressure monitoring:

The air pressure required for pump actuation is monitored by means of a pressure switch.

Electrical data:

Switching voltage at max.:	230 VUC
Switching power at max.:	150 W 1000 VA
Switching current at max.:	4 A
Power supply:	Unit socket

Connection diagram:



Level switch:

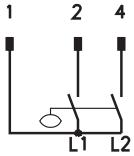
In the bottom of the reservoir, a float switch with two switching points is mounted. [1)]

Switch point L1:	Break contact at min.
Switch point L2:	Break contact in case of pre-warning (approx. 0,1l before minimum level)

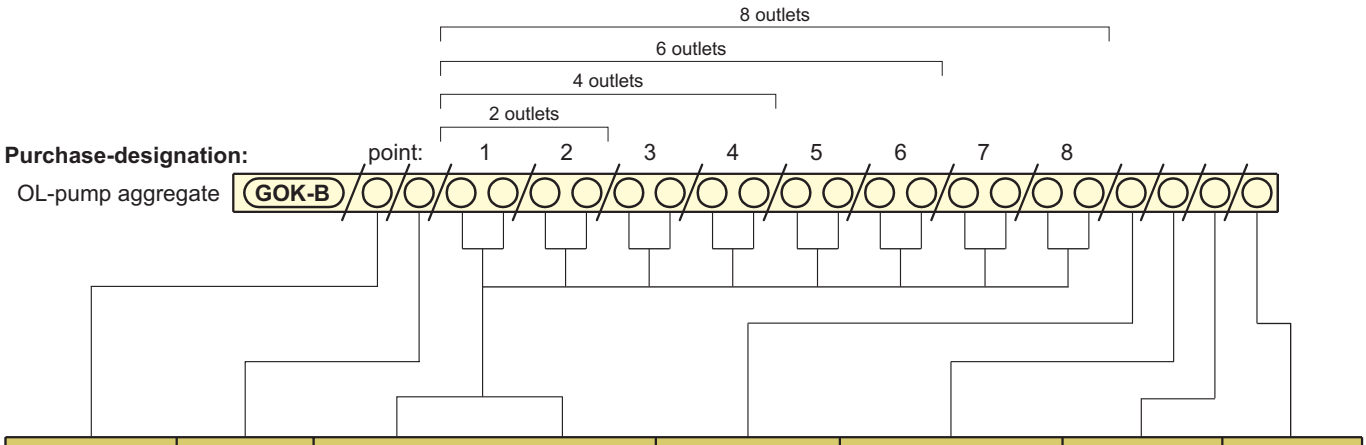
Electrical data:

Switching voltage at max.:	30 VDC
Switching power at max.:	3 W
Switching current at max.:	0,25 A
Power supply:	line socket, 4-pin (M12)

Connection diagram: (reservoit empty)



[1)] Switching funktion at electrical time control variant "S" see Leaflet - no. 0491.



Casing	Number of outlets	Proportioning volume [mm³] and feed monitoring per point		Reservoir	Auxiliaries	Electrical time control	Electrical voltage[3]
without casing (0) Casing without viewing glass (G) Casing with viewing glass (GF)	(2) (4) (6)	11 (1) 22 (2) 34 (3) 57 (4) 110 (5) 170 (6) 230 (7) without (0)	without feed monitoring (0) [1] Point with visual indication and initiator (N) [1] Point with visual indication, without initiator (L) [1]	0,7l reservoir without level monitoring (B) 0,7l reservoir with level monitoring (BK) without reservoir, threaded connection G1/4 (0)	Pressure switch (S) Pressure regulator (R) Filling connector (B) (multiple choice possible, e.g. "SB" or "SRB") without (0)	Timer (T) Control with electronic evaluation (S) [2] without (0)	24 VDC (24) other voltage available on request
without casing (0)	(8)						

[1] Marks "N" and "L" can be used alternately.
At "L" marked points, initiators can be installed later on.
Mark "0" (without feed monitoring) cannot be combined with "N" or "L".

[2] Control "S" possible with casing "G" only.

[3] Input voltage of directional control valve, time control, and initiators:
For allowable input voltages of the monitoring devices see technical data sections.

Purchase-example:

GOK-B OL-pump aggregate, casing with viewing glass, 6 outlets, proportioning volumes 57; 57; 110; 110; 230, and 22mm³, with initiators at points 1, 2, 3, and 6; with reservoir and level monitoring, pressure switch, pressure regulator, filling connector, time, and 24VDC electrical voltage.

Purchase-designation:

GOK-B / GF / 6 / 4N / 4N / 5N / 5L / 7L / 2N / BK / SRB / T / 24

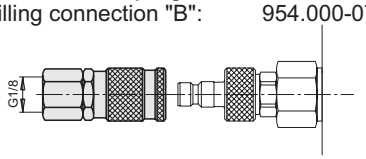
Auxiliaries: (state purchase-no, please)

For initiators:
Unit plug with cable 5m 913.404-46
(1x per initiator each)

For level switches:
Unit plug with cable 5m 979.044-73

Outlet screw joint:
Pluggable screw joint
for outer diameter 6 pipe 943.600-19
for outer diameter 8 pipe 943.600-21

Filling connection:
Quick release coupling for
filling connection "B": 954.000-07



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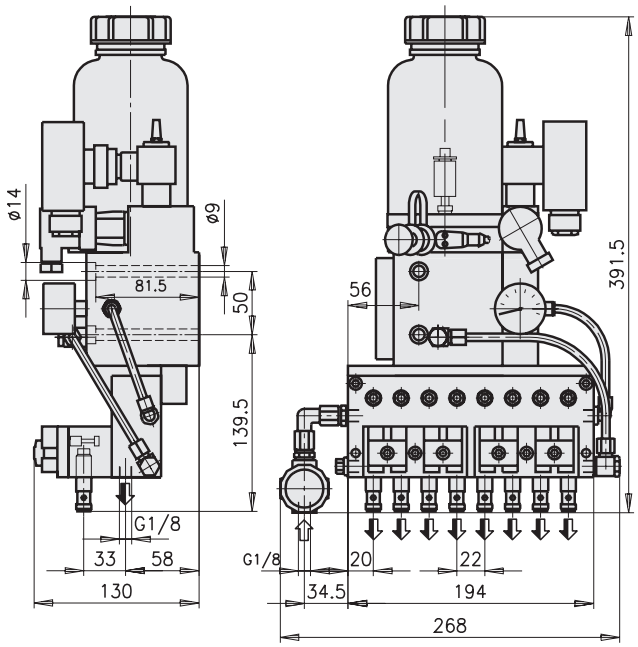
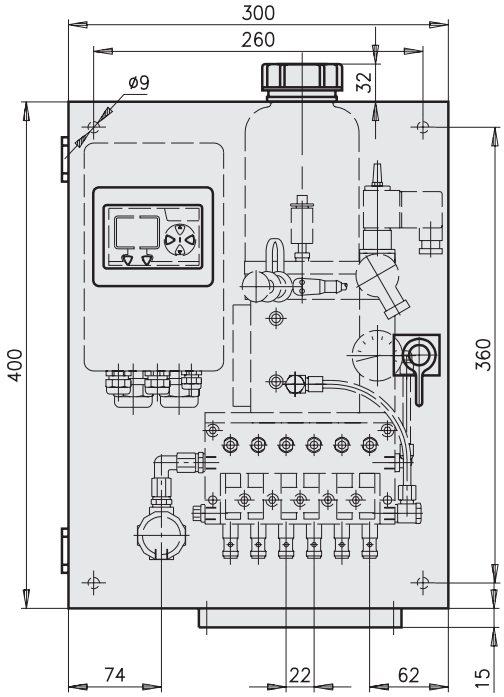
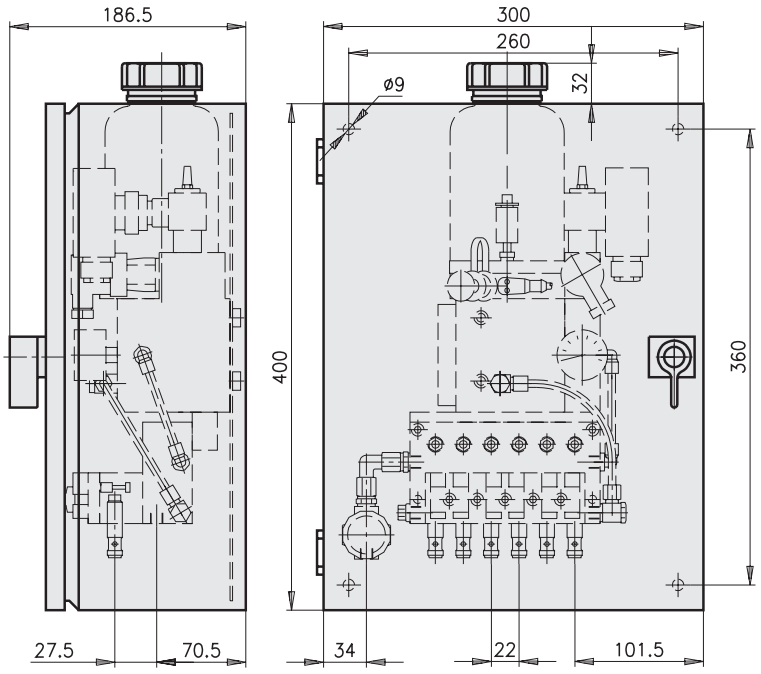
Version - without casing "0", with timer "T":



Version - casing "G" and control with electronic evaluation "S":



Version - casing "G" and timer "T":



Version - casing "GS" (with viewing glass) and timer "T":