PLEIGER

Electrically Operated Control Valves Electrical Motor Drive

MOV - 81
MOV - S - 81
MOV - 3 - 81

Types

Single-seat valve in straight-way form
Type MOV-81
Dimension sheet EK-413

Seat valve in straigth-way form with noise attenuating cone
Type MOV-S-81
Dimension sheet EK-413

Three-way valve
Type MOV-3-81
Dimension sheet EK-414

Construction

Straight-way valves up to DN 200 with shrunk seats, beginning with DN 250 with screwed seats

cone characteristics linear or equi-percentage different Kv values are possible at equal nominal width

three-way valves with screwed-in double-seat bushes with linear characteristics of flow and disk cones

inserted stuffing-box flanges

cast housing

driven by spur gearing with linear actuator

4 drive sizes, having different positioning forces are available

E-motors for 50 or 60 HzAC and three-phase voltages

drives with emergency manual operation and mechanical position display

drive covered with steel cover

Materials

Valve housing:	PN10/16 GG20 PN25/40 GS-C-25 othermaterials, such as special steel cast, chromium-nickel steel, gun metal, bronze, etc. and hard rubber lining on request
Valve seats:	W. No. 1.4401 for three-way valves DN 65-200 W. No. 1.4410 or bronze G Sn Bz 10 other materials on request
Valve conel:	W. No. 1.4401 for straight-way valves DN 125-350 and three-way valves DN 250-350 W. No. 1.4410 or bronze G Sn Bz 10 other materials on request
Valve spindle:	W.-Nr. 1.4401 or bronze AlBz 10Ni other materials on request
Stuffing-box packing:	PTFE, silkyam (reinforced) orpure graphite
Housing:	steel casting GS-C-25

Technical Data

Overall length:	according to DIN 3300	
Flanges:	PN 10 PN 16 PN 25 PN 40	DIN 2532 DIN 2533 DIN 2544 DIN 2545
Operating pressures:	according to DIN 2401	
Differential pressures:	in accorddance with tables EK-413 and EK-414	
Positioning ratio:	1:50	
Positioning - speed:	normal 25mm/min; 50mm/min possible	
Strokes:	DN 15- 50 DN 65- 100 DN 125-175 DN 200 DN 250-350	25 mm 35 mm 50 mm 58 mm 65 mm
Installing position:	vertical to horizontal	
Electrical data:	according tables „electrical Drive Data“	

Additional Equipment

Soft seal in the cone
cone with multi-hole sleeve
ribbed stuffing-box
spindle sealing by bellows W. No. 1.4571

General

The motor valves are used as electrically operated continuous control elements (control valves) and as on-off controller for the control of gaseous and liquid agents. The control is established by means of two-point or three-point controllers as a function of temperature, pressure, quantity etc. or manually with push-button or switch.

Construction and Operation

-Straight-way valves in single-seat construction.
Dimension sheet EK-413
with cooling rib assembly or bellows sealing, respectively.
Dimension sheet EK-425

- Three-way valves.
Dimension sheet EK-414
with cooling rib assembly or bellows sealing, respectively.
Dimension sheet EK-419

- 4 different drives (1.2 kN; 4.5 kN; 12 kN; 24 kN) are optionally available to meet the operational requirements.

The switching-off at the end position is established for straightway valves in the closing position torque-dependent, and in

the opening position travel dependent, with an additional limit switch, being torque dependent, wired in parallel, for three-way valves in both end positions, torque dependent.

In addition, a further free travel dependent limit switch with switch-over contact is provided.

The valve position is indicated by a pointer at the drive spindle and a scale at the housins.

For the analog remote transmission of the valve position, the installation of 2 potentiometers is possible.

In addition, a further travel dependent limit switch can be installed. The built-in electro motor (a) drives the linear actuator via a spur gear. In the last gear (b) of the geartrain, a bushing with internal thread is shrunk in, which runs in ball bearings. In this thread runs the upper part of the push-rod (d), provided against torsion by a key and groove.

When the gear is driven, the push-rod and the valve spindle performs a push / pullmotion, depending on direction of rotation.

On power failure, the final control element can manually be actuated.

The gear ist dustproof separated from the electrical components in an aluminium pressure housing. Terminals, motor, limit switch and potentiometers are easily accessible by removing of the steel cover

Electrical and technical drive data

Data for regulating operation: The motors are designed for intermittent duty S4 acc. to VDE 530 with a relative duty cycle of 30%.
switching frequency max. 600/h
minimum pulse duration: 250 ms
minimum pulse pause: 40 ms

Electrical wiring: at the terminal via cable sorewings according to DIN 89280

Power supply: normally
230 V- 50 or. 60 Hz, single-phase-AC,
or
380 V- 50 or. 60 Hz three-phase current
other supply voltages on request

Type of protection: DIN 40050 · IP 65

Allowable ambient temperature: - 20 to + 60°C

Limit switch: torque dependent switches max. 230 V
ohmic load max. 10 A
inductive load max. 5 A
travel dependent switches max. 230 V
ohmic load max. 5 A
inductive load max. 3 A
electric bulb max. 1 A

Potentiometer: max. 50 V, 100 mA

Motor data

Drive 1,2 kN

Positioning time	mm/min	25	50	25	50	30	60
Voltage	Volt	single-phase AC current 230 V 50 Hz		three-phase 400 V 50 Hz		three-phase 440 V 60 Hz	
Rated current	mA	29		15		14,3	
Power consumption	Watt	6,6		9,9		9,35	
Power output	Watt	2,4		3,1		3,1	
Rotational speed motor	U/min	500		500		600	

Drive 4,5 kN

Positioning time	mm/min	25	50	25	50	30	60
Voltage	Volt	single-phase AC current 230 V 50 Hz		three-phase 400 V 50 Hz		three-phase 440 V 60 Hz	
Rated current	mA	135	160	110	80	100	100
Power consumption	Watt	28	32	35	32	35	45
Power output	Watt	5,3	12	10	16	12	19
Rotational speed motor	U/min	1350	2700	1350	2700	1620	3240

Drive 12 kN without brake

Positioning time	mm/min	25	50	25	50	30	60
Voltage	Volt	single-phase AC current 230 V 50 Hz		three-phase 400 V 50 Hz		three-phase 440 V 60 Hz	
Rated current	mA	320	700	210	290	220	265
Power consumption	Watt	60	130	75	120	80	138
Power output	Watt	22	72	28	63	28	85
Rotational speed motor	U/min	1300	2750	1300	2750	1600	3300

Antrieb 24 kN without brake

Positioning time	mm/min	25	50	25	50	30	60
Voltage	Volt	single-phase AC current 230 V 50 Hz		three-phase 400 V 50 Hz		three-phase 440 V 60 Hz	
Rated current	mA	660	930	400	700	342	640
Power consumption	Watt	145	206	163	337	180	370
Power output	Watt	67	110	75	215	88	235
Rotational speed motor	U/min	1350	2700	1350	2750	1560	3300

Connection Diagrams

AC	2/2 way valve	RTA-264
	3/2 way valve	RTA-265
Three-phase current:	2/2 way valve	
	linear actuator 1,2 + 4,5 kN	RTA-264/3
	linear actuator 12 + 24 kN	RTA-264/4
	3/2 way valve	
	linear actuator 1,2 + 4,5 kN	RTA-265/3
	linear actuator 12 + 24 kN	RTA-265/4

Installation

"These actuator valves shall be mounted with the drive towards the top. For any other position ask before ordering."

The pipes have thouroughly to be cleaned prior to assembling, in order to prevent a later damage to the seats and cones.

The installation of a dirt tr,ap in front of each control valve is strongly recommended.

On mounting of straight-way and angle valves pay attention to the direction of arrow on the valve housing.

Mix and partitioning valves are provided with the figures 1,2 and 3 on their connecting flanges. Observe the correct installation in accordance with piping diagram.1 is always the joint connection, whereas to 2 and 3 the incoming or leaving part streams are connected.

The wiring and connecting of the electrical circuitry has to be performed in accordance with the regulations for the installation of power plants and with the respective wiring diagrams.

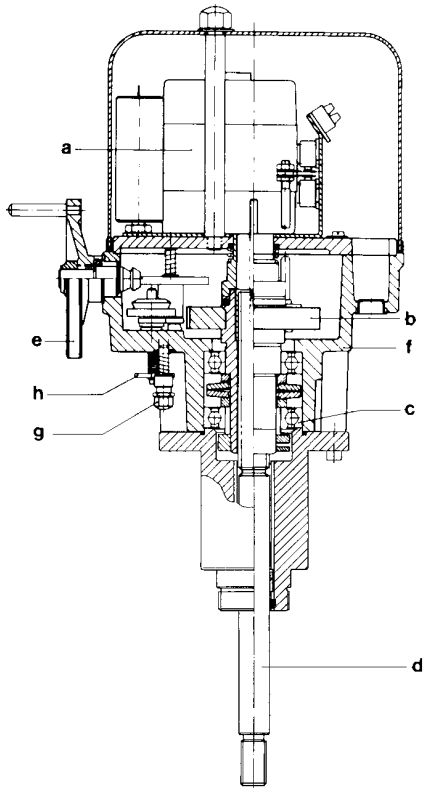
Start-up and Adjustment instructions

For start-up of the valve place the drive by means of the hand wheel (e) in the middle of the positioning travel, switch on power and give shortACpulses to the drive; watch whether the push rod (d) moves into the correct direction. Otherwise, exchange the motor connections at the terminal strips 2 + 3.

Drive 1.2 kN and 4.5 kN

Operate manually only with the motor at standstill.

For this purpose press the bolt (f) mounted below at the drive housing with the hexagonal head into the housing until the spring lever (h) engages into the notch of the bolt. Hereby rotate the handwheel (e) a little bit. On rotating of the handwheel ciockwise, the push spindle is extended rotating ccw draws the spindle in. On pressing of spring lever (h) in the direction of the valve shaft the bolt jumps out on its own and the drive is switched back to motor drive.



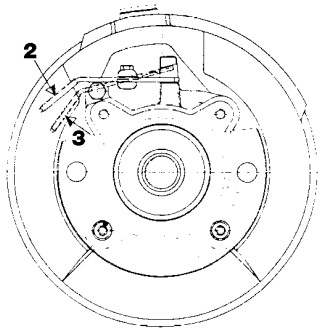
Drive 12 kN and 24 kN

Change over to hand-operating:

Push hand disengaging lever into direction -1- (at the time turn hand wheel slightly if necessary), then swivel hand disengaging lever above the hexagon screw into direction -2-.
Now hand operating position is locked.

Change over to motor drive:

Swivel hand disengaging lever into direction - 3 - and release. All further engaging proceedings will occur automatically with starting up of themotor.



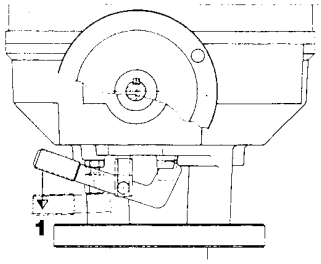


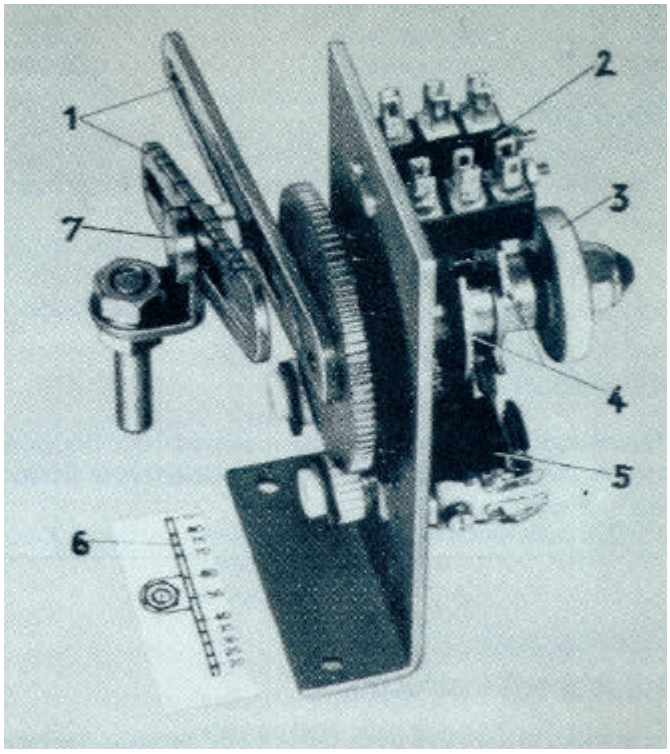
Figure travel dependent switch and message devices

With the end position reached with extended push spindle, the two slotted levers (1) are parallel. A'ter loosening of the nut, the carrier bolt (7) can be moved into the slot of the lever allowing the stroke of the drive to be adjusted by means of the auxiliary scale. After this being done, re-fasten the bolt. In this position, the potentiometers (5) (in case there are any) have to be in the end position. They can be adjusted by rotating the slider.

After that move the drive by the required travel for 2/2 valves or the possible travel for 3/2-way valves in the opposite direction the potentiometer will then turn into the other end position.

For the adjustment of the travel dependent limit switch "S 3" for the limiting of the travel in the position open, the knurled head nut (4) has to be loosened. Adjust the cam washer (4) to make the switch shut off. The second built-in travel dependent switch "S 4" and another possible "S 5" may freely be adjusted inbetween the two end positions. Re-fasten the knurled head nut after the switches being adjusted.

The switches provided for the end positioning are factory adjusted. The torques of the load dependent switches are fixed and can not be changed.



1 Slotted levers; the lower one is marked for the set travel
2 Travel-dependent switches
3 Knurled nut
4 Cam disks
5 Potentiometer for position indication
6 Scale for setting the travel
7 Connection bolt

Maintenance

Valve assembly

Re-fasten the screws and flange connections at the housing after start-up of the installation as the sealings are settling a bit at the beginning. The maintenance of the stuffing-box is also important. In case of leakage, the stuffing-box gland has to be fastened at once. If this is no longer possible, the stuffing-box has to be re-packed.

Take care to use the right material, depending on the agent, the temperature etc. Keep the part of the spindle being in contact with the stuffing-box always clean and grease at regular intervals with a suitable grease. If the sealing surfaces at the seat and the cone are damaged by dirt or foreign particles, no longer giving a tight seat, they can be ground with a fine emery paste. With valves having PTFE inserts in the cone, the latter can easily be replaced.

Drive

Grease the drive at normal operating conditions every three years, at higher loads after approx. 200 000 double strokes with "Fett Klüber Structoris P 00" or a similar grease.

Ausgabe/EDITION 06/02

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