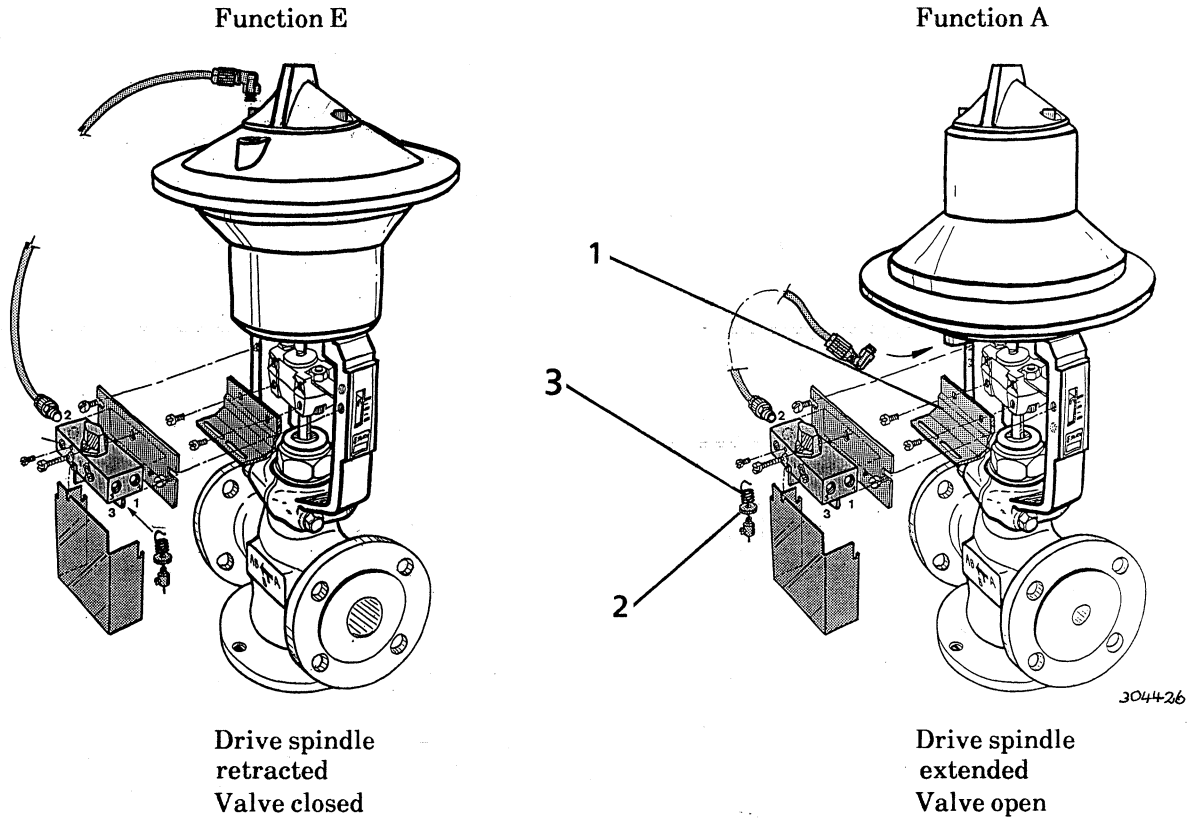


**Assembly of Positioner XSP 31
to Valve Drives AV 42...45 P**

MVE 43143 g

ASSEMBLY

1. Mount positioner on the clamping screw side of the yoke, see diagram.



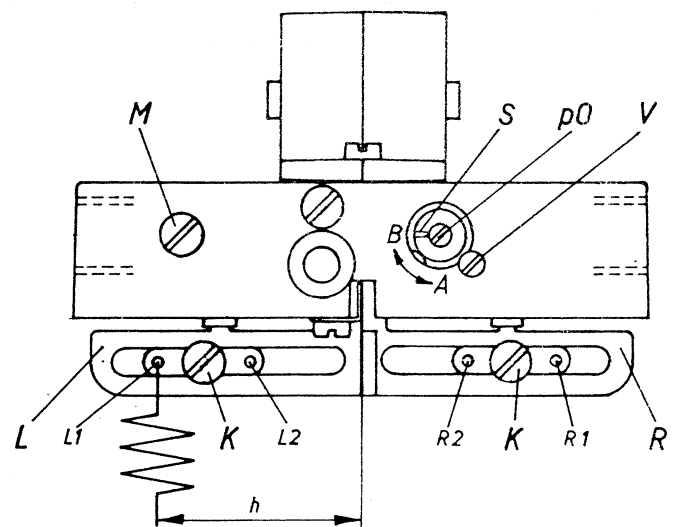
2. Move the drive spindle to the top position, i.e. assembly function A. Apply pressure of 1,2 bar to the drive, in case of assembly function E the drive is at zero pressure.
3. Fit the spring (3) with its straight end in the tightening nut pointing downwards and introduce the straight spring (3) piece sideways into the guiding slot of the bracket (1), then hook the spring (3) into the slide (K) according to the table below:

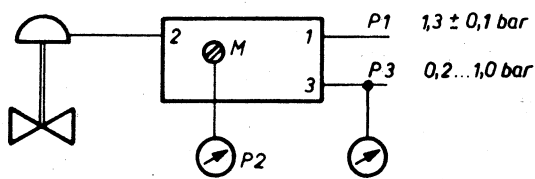
Assembly position	Lever	Control span Δp	Hole
A	L	0,2...0,6	L 2
		0,6...1,0	L 1
E	R	0,2...0,6	R 2
		0,6...1,0	R 1

4. Screw together (not tight) clamping device with knurled nut.
5. Set desired control span by parallel movement of the spring after loosening screw (K). Effective lever length h (mm) = $\Delta p \times 30$
Tighten knurled nut (2) and screw (K).

NB: For loosening and tightening the screws K support the back of the lever with a finger in order to avoid excessive load on the band bearing.

6. Draw force-balance lever (L/R) as far as it will go in the direction the spring pulls. In this position draw the straight part of the spring about 0.5 mm and fix with spring locking screw.



CONNECTIONS

1 = Supply pressure $1,3 \pm 0,1$ bar

2 = Outlet to drive

3 = Control pressure

(adjustable pressure source $0,2...1,0$ bar
for adjusting the XSP 31)

M = Measuring connection

ADJUSTING

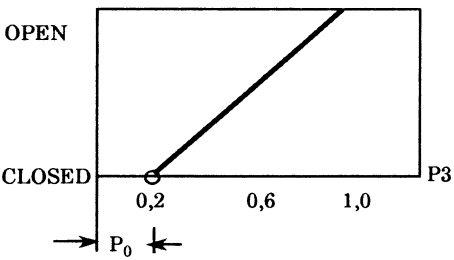
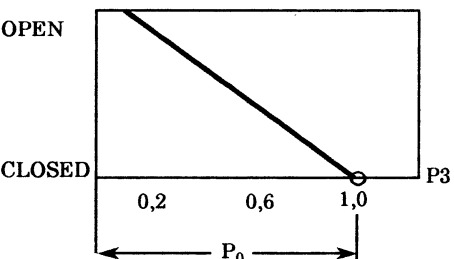
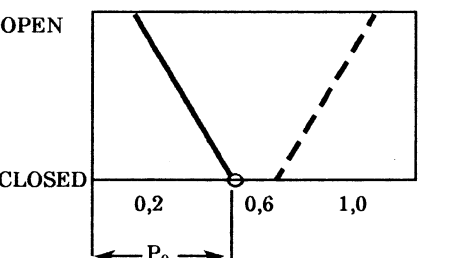
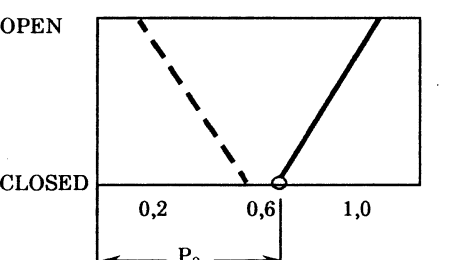
1. Set control action according to table I. Loosen the lock screw V. Stick a 2 to 3 mm wide screwdriver into the slot of the plastic ring (S) and slide into the position A or B by pressure of the thumb. Tighten again the lock screw V.
2. Setting the starting point pressure p_0 (see table I)
 - set inlet pressure p_3 to the required starting point pressure p_0 .
 - adjust the starting point screw (p_0) slowly with a small (2 mm) screwdriver until the valve is just beginning to move away from the upper stop (steep pressure change on measuring connection M). Introduce the screwdriver well in the centre to avoid damaging the plastic ring (S).
3. Checking the function

Vary the inlet pressure p_3 slowly or step by step and compare the valve stroke with the required characteristic of the positioner.

Important: always check first the upper start point corresponding to p_0 and correct if necessary. Now the control span can be checked and corrected by changing the effective lever length (h).
4. Push the cover into position from below, click to the fixing plate and screw tight.
5. **Attention:** With a weak dimensioned pressure supply system (e.g. long, thin supply pipes to a number of control units) the supply pressure can so heavily decrease that by a disorder in the system loop a single or a periodical surging may be produced.
Control with a manometer pressure gauge across the positioner's connector 1:
when the pressure is below 1.1 bar then a valve Z 274553 is assembled at output 2 of the positioner XSP ... and the air supply is halved.

Typical Positioner Characteristics
For valves with hanging plug B 6., V 6.

Table I

Required control function	Valve to be set	
	Function E (closed at zero pressure)	Function A (open at zero pressure)
 <p>opens with increasing inlet pressure</p> <p>control range 100 % $\Delta p = 0.8 \text{ bar}$</p> <p>closing point 0.2 bar</p>	<p>control action A</p> <p>lever on right R $h = 24 \text{ mm}$</p> <p>$p_0 = 0.2 \text{ bar}$</p>	<p>control action B</p> <p>lever on left L $h = 24 \text{ mm}$</p> <p>$p_0 = 0.2 \text{ bar}$</p>
 <p>closes with increasing inlet pressure</p> <p>control range 100 % $\Delta p = 0.8 \text{ bar}$</p> <p>closing point 1.0 bar</p>	<p>control action B</p> <p>lever on right R $h = 24 \text{ mm}$</p> <p>$p_0 = 1.0 \text{ bar}$</p>	<p>control action A</p> <p>lever on left L $h = 24 \text{ mm}$</p> <p>$p_0 = 1.0 \text{ bar}$</p>
 <p>closes with increasing inlet pressure</p> <p>control range 40 % $\Delta p = 0.32 \text{ bar}$</p> <p>closing point 1.0 bar</p>	<p>control action B</p> <p>lever on right R $h \cong 10 \text{ mm}$</p> <p>$p_0 = 0.5 \text{ bar}$</p>	<p>control action A</p> <p>lever on left L $h \cong 10 \text{ mm}$</p> <p>$p_0 = 0.5 \text{ bar}$</p>
 <p>opens with increasing inlet pressure</p> <p>control range 40 % $\Delta p = 0.32 \text{ bar}$</p> <p>closing point 0.7 bar</p>	<p>control action A</p> <p>lever on right R $h \cong 10 \text{ mm}$</p> <p>$p_0 = 0.7 \text{ bar}$</p>	<p>control action B</p> <p>lever on left L $h \cong 10 \text{ mm}$</p> <p>$p_0 = 0.7 \text{ bar}$</p>

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