

**Assembly of positioner XSP 31 G
to valve drives AV 42 ... 45 P**
ASSEMBLY (also see page 3, fig. 4)

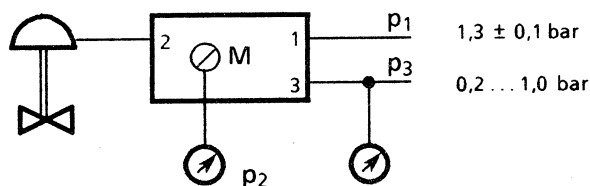
1. Mount plate (2) with the slot down on the left and the distance piece (1) to the lower coupling part, on the clamping screw side of the yoke. Use selfcutting screws (3) for this purpose. Chose the fixing holes according to fig. 5, page 3, depending on drive type and stroke.
2. Fix the housing to the yoke by means of the hexagonal screws supplied.
3. Remove the cover. Introduce the sliding screw (5) from the front notice side into the measuring lever (4). Tighten the screw by means of the hexagonal nut on the number corresponding to the valve stroke (in mm). Insert the screw (5) into the slot of the plate (2) and mount the measuring lever by means of the hexagonal screw (6) and washer on the shaft and hand tighten only.
4. Move the drive spindle to the lower position i.e. for assembly E with 1,2 bar pressure applied to the drive and A-types at zero pressure.
5. Hook the spring (9) with its noseless loop into the fork (10) and with the other loop into the slide (K) according to the table below:

Assembly type	Lever	Control span Δp	Hole
A	R	0,2 ... 0,6	R1
		0,6 ... 1,0	R1
E	L	0,2 ... 0,6	L2
		0,6 ... 1,0	L1

6. After loosening the spring tightening nut (11) and the slide screw (K) set the required control span by a parallel sliding of the spring.
Effective lever length h (mm) = $\Delta p \times 30$
tighten the nut (3) and screw (K).

Attention: When loosening or tightening the screws (K), do support the rear of the lever with your finger, to avoid undue load on the flat bearing.

7. Pull the force comparison lever (L/R) to the top and when in this position, turn the plate (8) downwards as to pre-tension the spring by abt. 1 mm. Tighten hexagonal head screw (6).

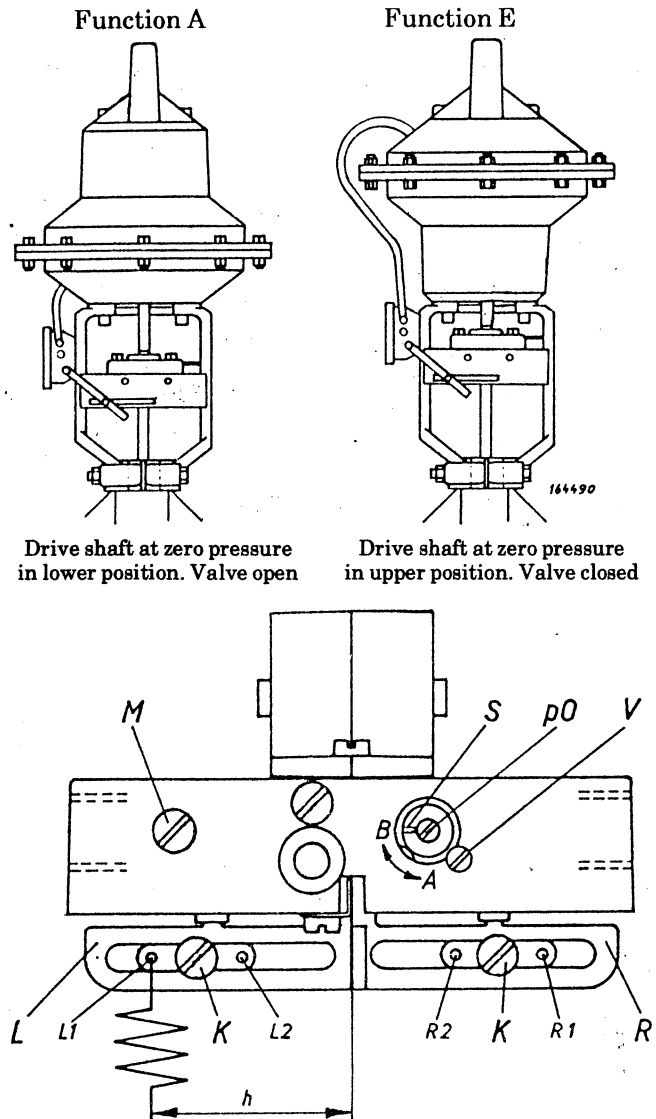
CONNECTIONS


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 G)

M = Measuring connection



ADJUSTING

1. Set control action according to table I. Loosen the lock screw (V). Stick the screwdriver supplied into the slot of the plastic ring (S) and slide into the correct position A or B. Re-tighten the turning lock screw (V).
2. Setting the starting point pressure p_0 (see table I)
 - Set inlet pressure p_3 to the required zero point pressure p_0 .
 - Insert the zero point screw p_0 centrically into the screw slot and move slowly until the valve is just beginning to lift from the lower stop (steep pressure change on the measuring connection M).
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 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. **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 collapse 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.

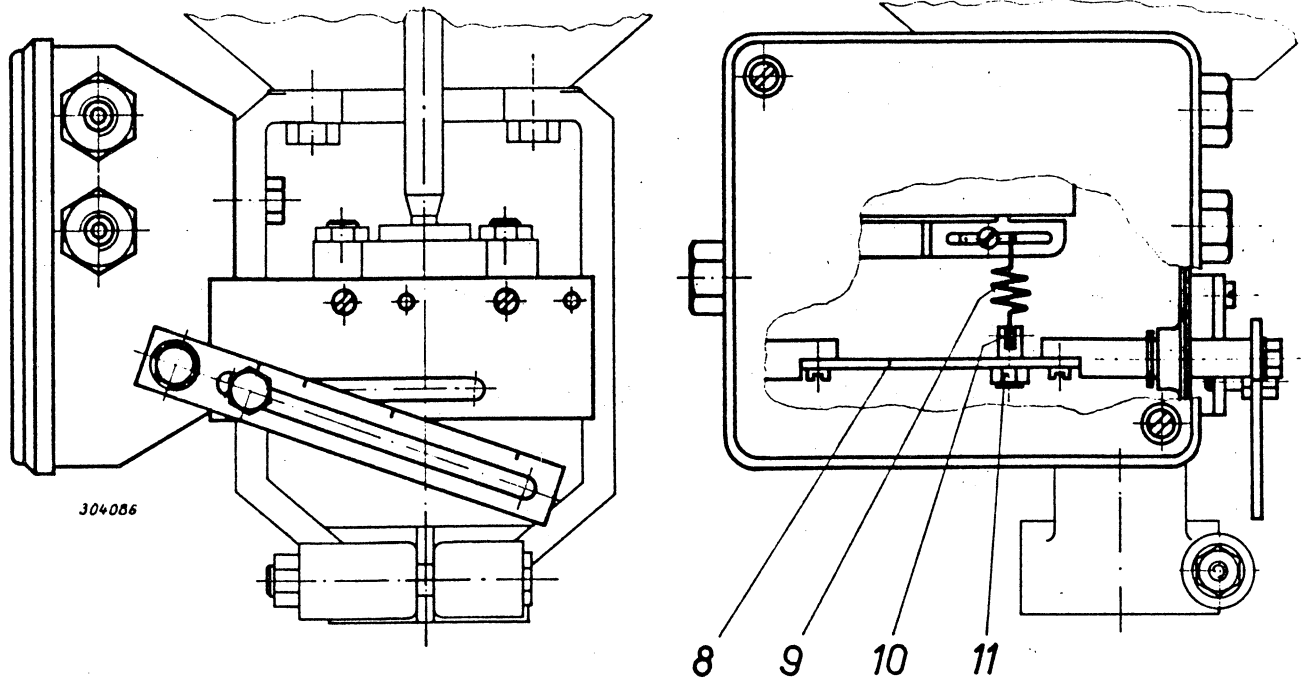


Fig. 4

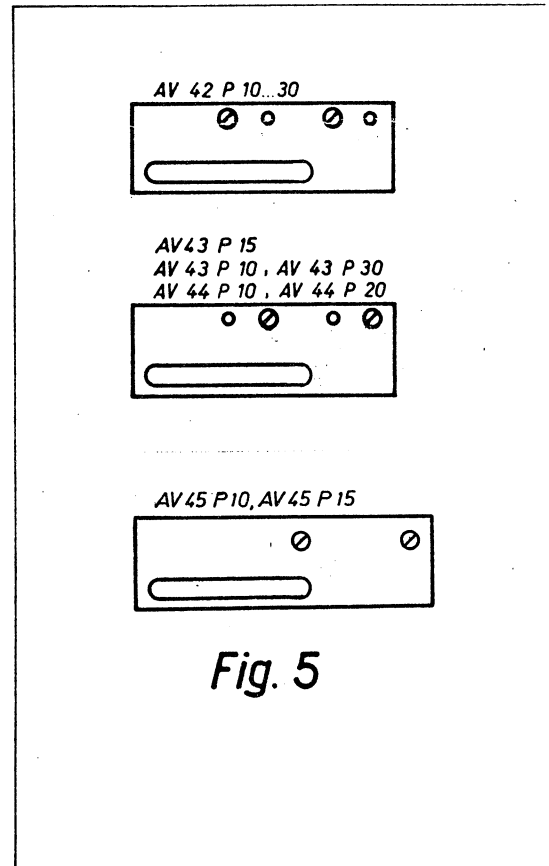
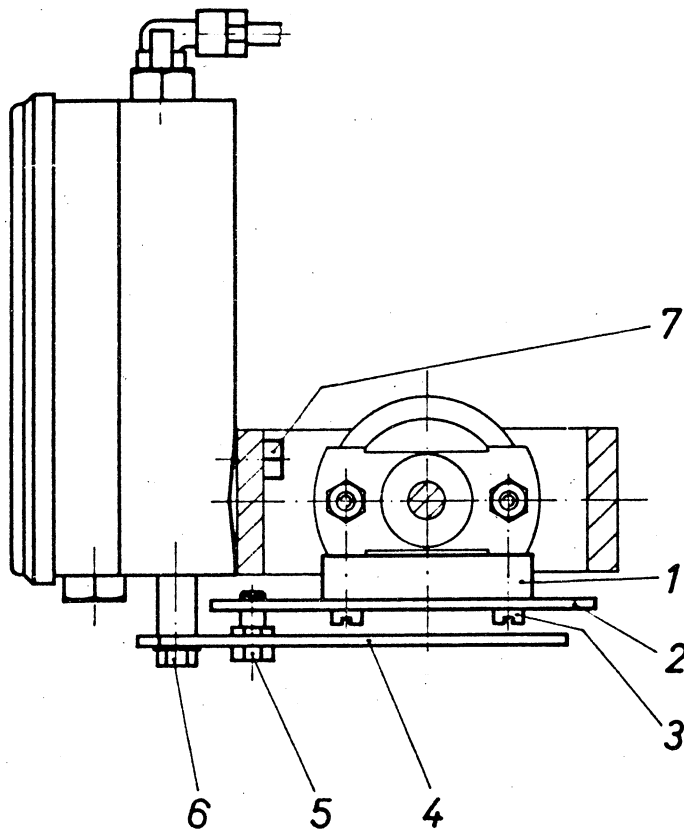
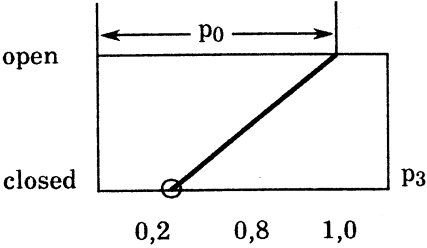
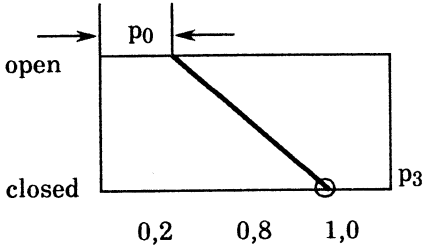
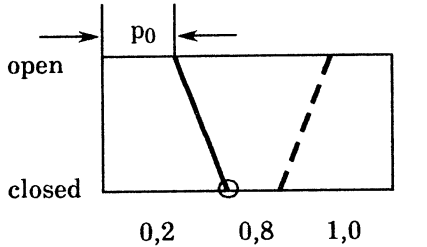
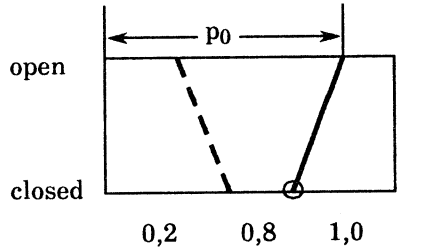


Fig. 5

Typical Positioner Characteristics for XSP 31 G

For valves with pushing plug B 6., V 6., B 16.

Table I

Required control function	Value 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 left $h = 24 \text{ mm}$</p> <p>$p_0 = 1.0 \text{ bar}$</p>	<p>control action B</p> <p>lever on right $h = 24 \text{ mm}$</p> <p>$p_0 = 1.0 \text{ bar}$</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 left $h = 24 \text{ mm}$</p> <p>$p_0 = 0.2 \text{ bar}$</p>	<p>control action A</p> <p>lever on right $h = 24 \text{ mm}$</p> <p>$p_0 = 0.2 \text{ bar}$</p>
 <p>closes with increasing inlet pressure</p> <p>control range 40 % $\Delta p = 0.32 \text{ bar}$</p> <p>closing point 0.5 bar</p>	<p>control action B</p> <p>lever on left $h \approx 10 \text{ mm}$</p> <p>$p_0 = 0.2 \text{ bar}$</p>	<p>control action A</p> <p>lever on right $h \approx 10 \text{ mm}$</p> <p>$p_0 = 0.2 \text{ bar}$</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 left $h \approx 10 \text{ mm}$</p> <p>$p_0 = 1.0 \text{ bar}$</p>	<p>control action B</p> <p>lever on right $h \approx 10 \text{ mm}$</p> <p>$p_0 = 1.0 \text{ bar}$</p>

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RPN 302297 003

Printed in Switzerland