

AVP 242...244: Pneumatic valve drives

To operate valves in series VUD/BUD, VUE/BUE, VUG/BUG and VUP, in continuous control systems or open/closed controls. The valve drive is silicone-free and conforms to Directive 97/23 EEC on Pressure Equipment.

Housing made of glass-fibre-reinforced plastic or light metal. Rubber membrane with inlaid fabric. Drive shaft made of stainless steel with fast-action connector and stroke indicator. Direction of operation can be reversed by installation, condition when delivered: shaft retracted when free of pressure (installation variant E, Valve Closed). Compressed air connection: Rp 1/8

Type	For valve with stroke mm	Air consumption for 100% stroke I_n	Control span ¹⁾ bar	Effective drive area cm ²	Weight kg
AVP 242 F001 ²⁾	8	0,8	0,6	180	3
AVP 242 F021	20	0,8	0,6	180	3
AVP 243 F021	20	2,2	0,6	250	6
AVP 243 F031	40	2,2	0,6	250	6
AVP 244 F021	20	4,2	0,6	500	12
AVP 244 F031	40	4,2	0,6	500	12

Control pressure ³⁾ 0...1,2 bar

Max. pressure 1,5 bar

Permitted ambient temperature -15...50 °C

Temperature on membrane max. 70 °C

Dimension drawing

AVP242 [M 10428](#)

AVP243/244 [M 10429](#)

Installation instructions

Assembly AVP 242 F001 [MV 506041](#)

AVP 242 F021 [MV 506012](#)

AVP 243/244 [MV 506013](#)

Material declaration

AVP 242/243/244 [MD 71.247](#)



T10443



T10445



Y07550

Accessories

-XSP 31 Positioner ⁴⁾ (see datasheet, section 79)

-XAP 1 Auxiliary contact unit ⁴⁾ (see datasheet, section 79)

-XAP 2 Potentiometer unit ⁴⁾ (see datasheet, section 79)

-XEP Electro-pneumatic transducer ⁴⁾ for continuous signals (see datasheet, section 69)

0274521 000* Manual adjustment device ⁵⁾ for AVP 243 and AVP 244, weight 1.7 kg, [MV 505819](#)

0274730 000* Manual adjustment device ⁵⁾ for AVP242, weight 0.6 kg, [MV 505819](#)

^{*)} Dimension drawing for accessory available under same number

Assembly kit for valve type series VUD/BUD, VUE/BUE, VUG/BUG and VUP

Drive type	XSP 31	XAP	XEP
AVP 242 F001	297933 001	297934 001	297935 001
AVP 242 / AVP 243 / AVP 244 F021	297933 001	297934 001	297935 001
AVP 243 F031 AVP 244 F031	297933 001	297934 001	297935 001

¹⁾ Pressure-stroke characteristics: see valve datasheet, section 76

²⁾ Only for valve design version with O-ring stuffing box

³⁾ Required to achieve the actuating forces.

For regulations regarding the quality of the supply air, especially with a low ambient temperature, see section 60.

⁴⁾ Of the accessories, only one positioner (XSP 31) and one feedback unit (XAP) and one electro-pneumatic transducer (XEP) can be built on.

⁵⁾ Can be used for minimum or maximum limitation of the stroke. Handwheel can be removed.

Function

The control pressure acts via a disc membrane against a pre-tensioned pressure spring. When the force exerted by the control pressure on the membrane is greater than the spring pre-tension, the working shaft starts to move. The valve drive is reversible and there are two alternatives for fitting it on the bracket:

function A: "extended without pressure" (as the control pressure increases, the shaft is retracted).

function E: "retracted without pressure" (as the control pressure increases, the shaft is extended).

Function "E" is the condition when the product is delivered.

With valves in series VUD/BUD, VUE/BUE and VUG/BUG, (cone facing downwards) this gives:

function A: (valve) "open with no pressure" or "normally open" (NO)

function E: (valve) "closed with no pressure" or "normally closed" (NC)

With valves in series VUP (pushing cone), this gives:

function A: (valve) "closed with no pressure" or "normally closed" (NC)

function E: (valve) "open with no pressure" or "normally open" (NO)

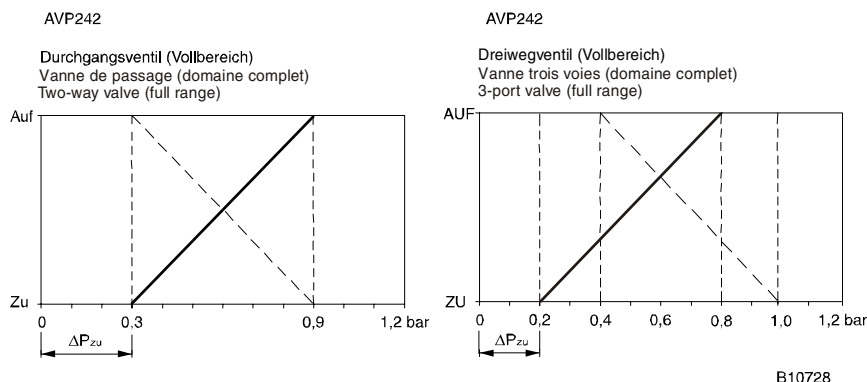
Engineering and installation notes

The drive springs are preset for installation with the valve (stroke 20 or 40 mm). After assembly with the valve, the closing points for AVP 242 must be checked according to MV 506012, or for AVP 243/244 they must be checked according to MV 506013. On the AVP 243/244, if necessary, the spring tension can be corrected as appropriate using the central adjusting nut. In this case, however, you must take note of the resultant shift in the characteristic. Installation in any desired position but not in a downwards-facing position up to a valve medium temperature of 240°C. For medium temperatures in excess of 180°C, the horizontal installed position is advised. Intermediate piece **0372336 180** for temperatures above 130°C to 180°C, or **0372336 240** for temperatures above 180°C to 240°C, can also be used as an extension in order to bring the drive out of the pipe insulation.

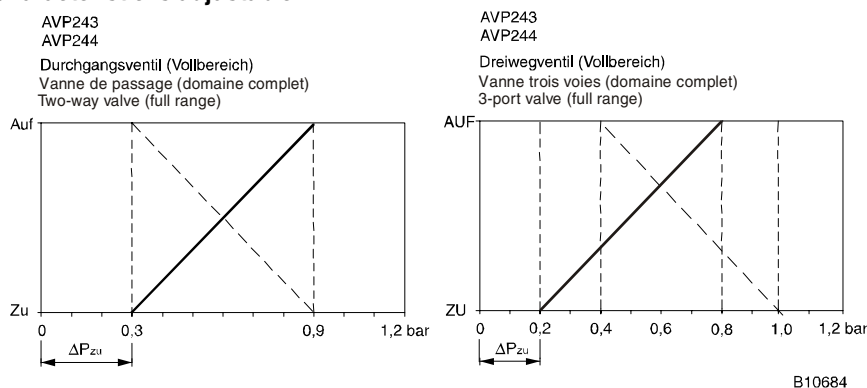
Penetration of condensate and dripping water etc. along the shaft into the drive must be prevented. When installing the valve drive, make sure that the valve cone is not rotated in the valve seat (stop guide) (this would damage the sealing surface).

Pressure-stroke characteristic (with built-on valve)

Characteristic is not adjustable:



Characteristic is adjustable:



———— = CLOSED without pressure (function E)
 = OPEN without pressure (function A)

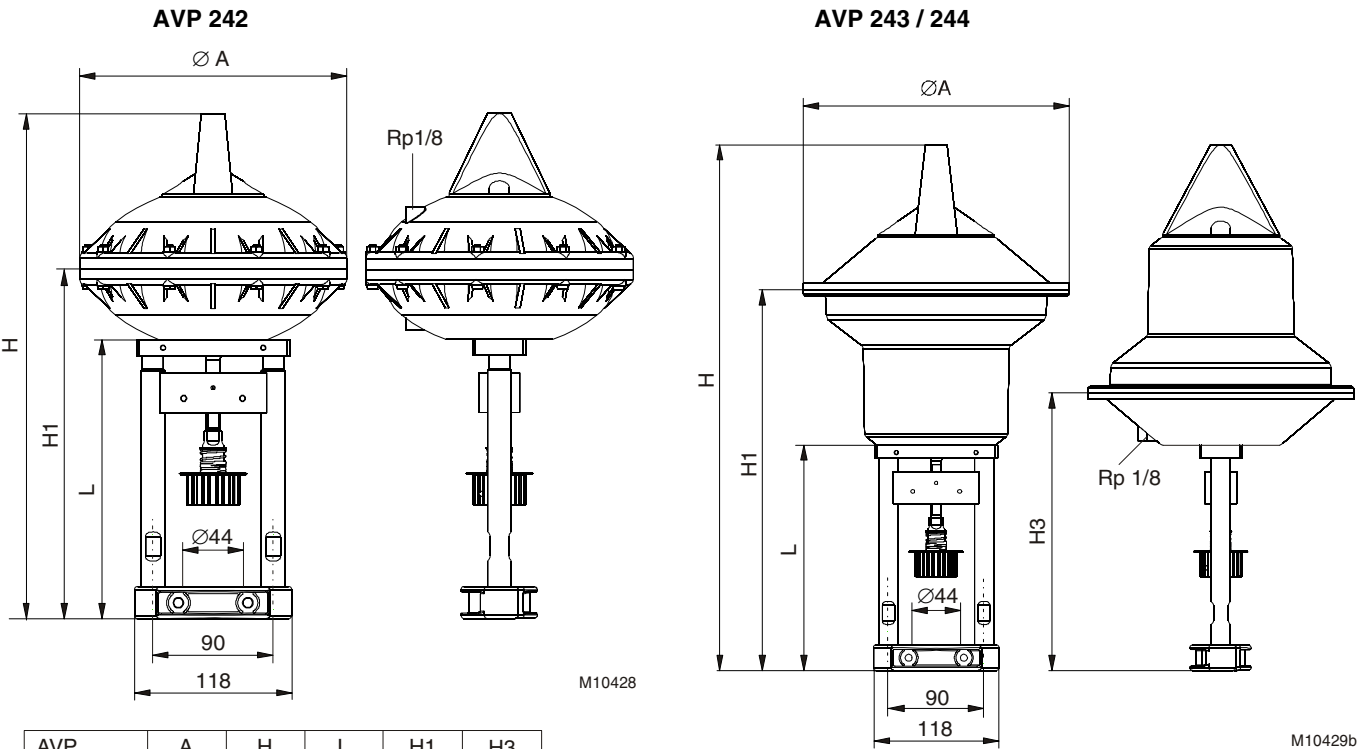
Sequences with XSP31 are possible

In the case of mixing valves, the characteristics relate to the upper seat (control passage)
The 'closing point' is the control pressure at which the valve just closes without pressure
(For three-way valves, upper seat = control passage is applicable).

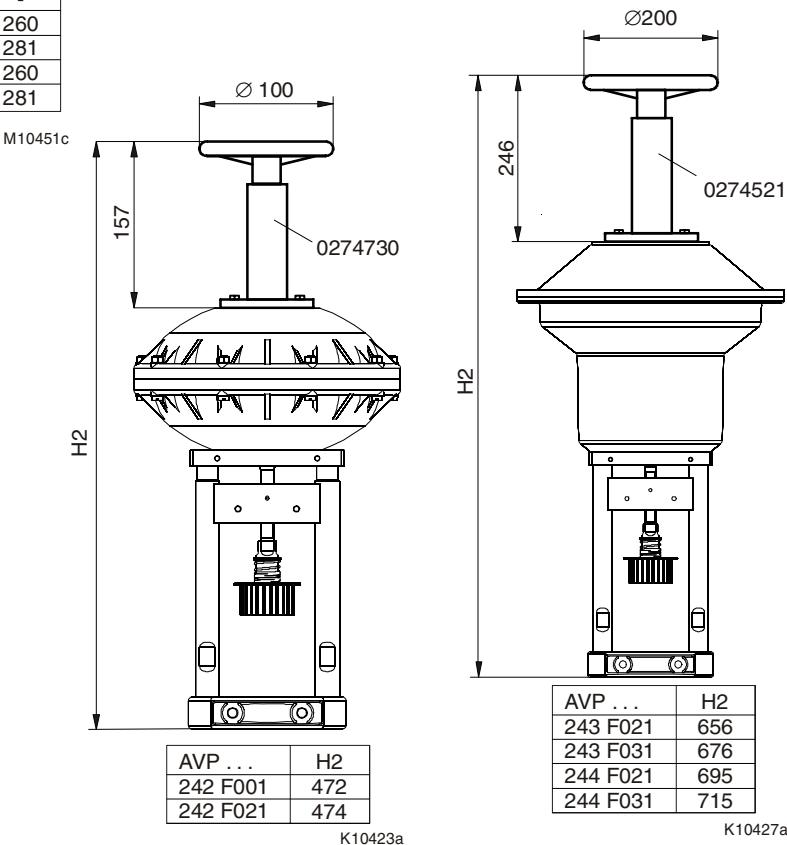
The closing points are selected, taking account of the hysteresis, in such a way that:

- maximum closing force is attained with through valves
- with mixing valves, the closing force on the mixing passage is at least 2/3 of the closing force on the control passage.

Dimension drawing

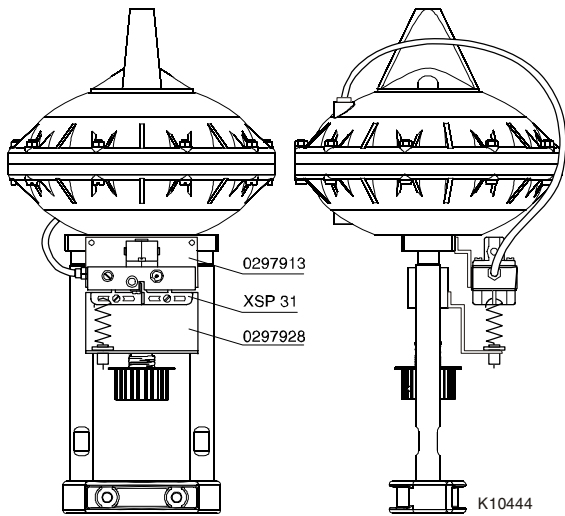


Manual adjustment device

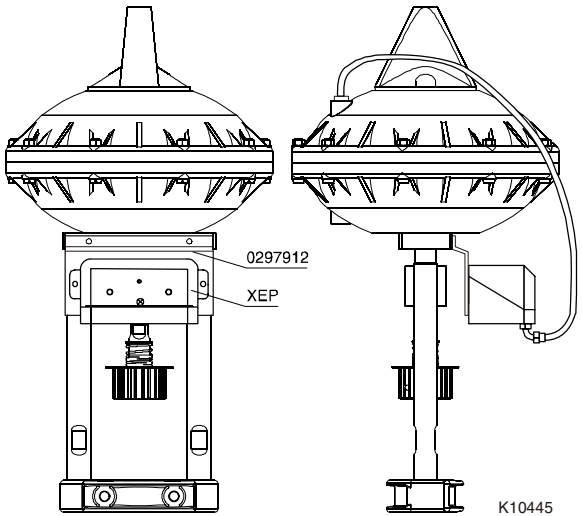


Types of installation for additional devices

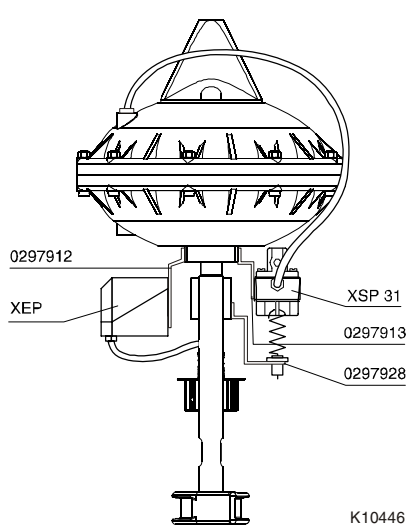
AVP 242, XSP 31



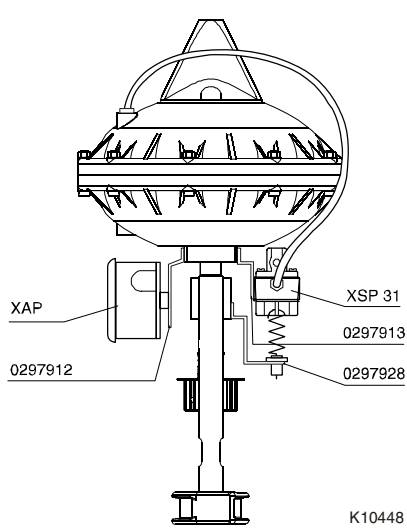
AVP 242, XEP



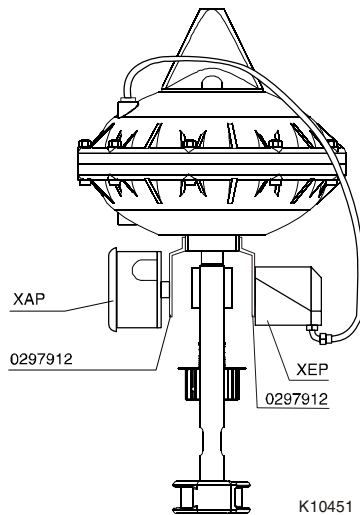
AVP 242, XEP, XSP 31



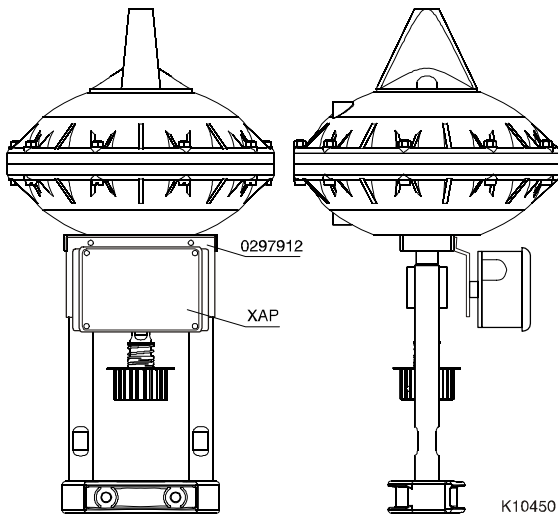
AVP 242, XAP, XSP 31



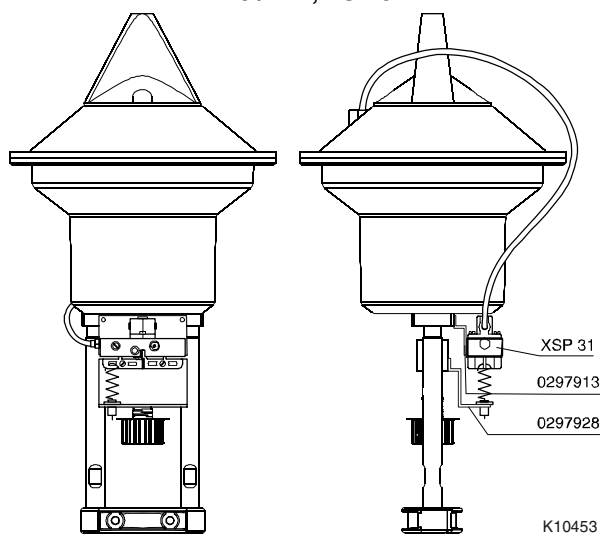
AVP 242, XAP, XEP



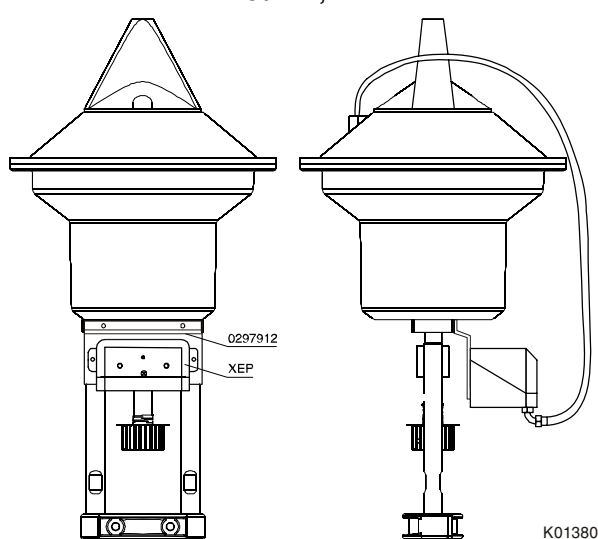
AVP 242, XAP



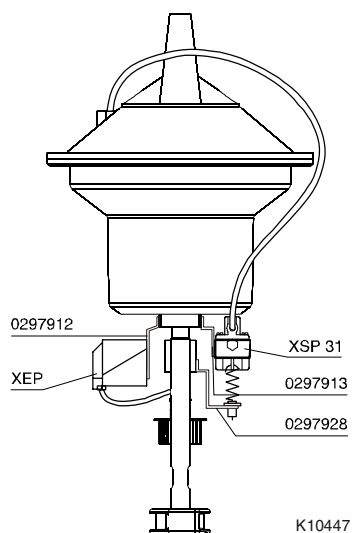
AVP 243 / 244, XSP 31



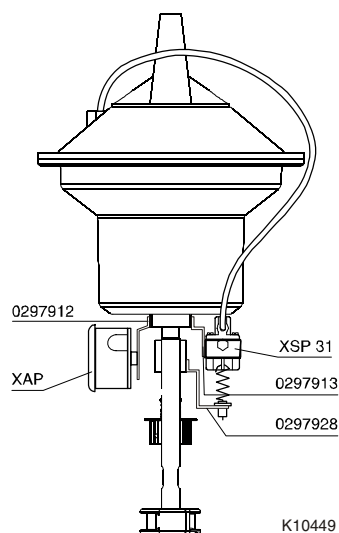
AVP 243 / 244, XEP



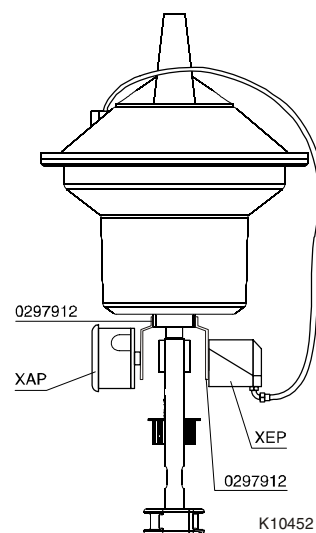
AVP 243 / 244, XEP, XSP 31



AVP243 / 244, XAP XSP31



AVP 243 / 244 XAP, XEP



AVP 243 / 244 XAP

