

Masoneilan

a Baker Hughes business

Type 7700P

Pneumatic Positioner

Instruction Manual (Rev.A)



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WARNING

BEFORE installing, using or carrying out any maintenance tasks associated with this instrument, READ THE INSTRUCTIONS CAREFULLY.

It is the end user's responsibility to:

- **Verify material compatibility with the application**
- **Ensure proper use of fall protection when working at heights, per Safe Site Work Practices**
- **Ensure use of proper Personal Protective Equipment**
- **Take the appropriate actions to ensure that site personnel who are performing installation, commissioning and maintenance have been trained in proper site procedures for working with and around equipment, per Safe Site Work Practices**

Baker Hughes reserves the right to discontinue manufacture of any product or change product materials, design, or specifications without notice.

Under certain operating conditions, the use of damaged instruments could cause a degradation of the performances of the system which may lead to personal injury or death.

Use only genuine replacement parts, which are provided by the manufacturer, to guarantee the proper working of the product.

1. Instrument Operation

The Model 7700P positioner operation principle is a force-balance mechanism:

- An entry force exerted by the double diaphragm under the effect of a pneumatic signal pressure
- An opposite force developed by a feedback spring. The tension of this spring varies with the displacement of the actuator lever to which it is connected.

2. Numbering System

Unique positioner: 7700P

Different versions:

- Housing material:
 - Aluminum
 - Stainless steel
- Mounting:
 - Single lever: 28001
 - Adjustable Cv: 28002

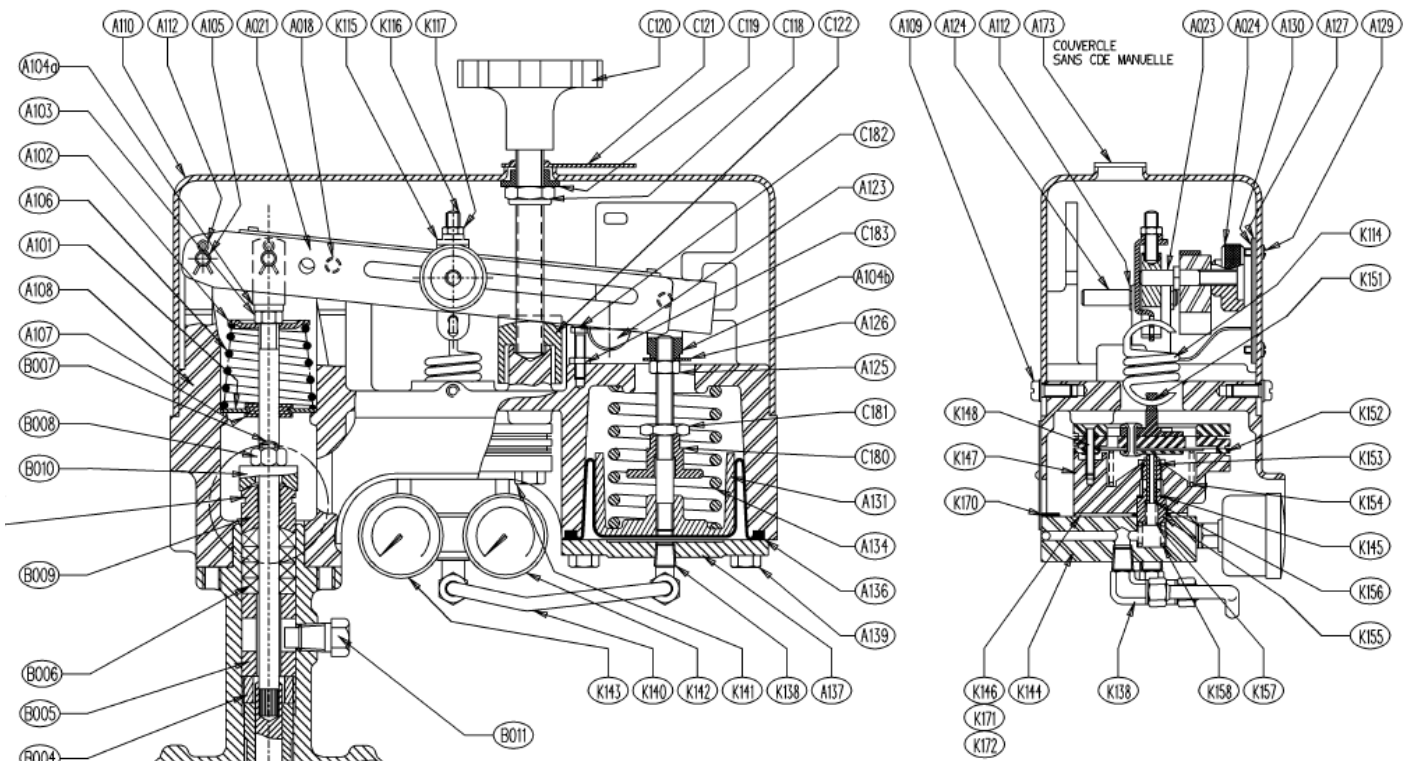
3. Technical Data

3.1. Performances

Performances	(% of the signal range)
Started point (closed valve)	$\leq 2,0\%$
Hysteresis (mid-stroke)	$\leq 0,9\%$

- Maximum service temperature range: -40°C to $+85^{\circ}\text{C}$
- Storage temperature: -55°C to $+90^{\circ}\text{C}$

3.2. Schematic



K027	4	VIS	/SCREW
K028	1	JOINT TORIQUE	/*O*RING
K029	1	JOINT TORIQUE	/*O*RING
K030	1	JOINT TORIQUE	/*O*RING
K031	1	EVENT	/VENT PLUG
K114	1	RESSORT D'EQUILIBRAGE	/FORCE BAL. SPRING
K115	1	ANNEAU D'ACCROCHAGE	/SPRING CLAMP
K116	1	VIS DE REGLAGE	/TAKE UP SCREW
K117	1	ECROU DE BLOCAGE	/LOCK NUT
K138	2	RACCORD COUDE	/PRESSURE CONNECTION
K140	1	TUBE	/TUBING
K141	4	VIS	/SCREW
K141a	2	VIS	/SCREW
K141b	2	VIS	/SCREW
K142	1	MANOMETRE SORTIE	/OUTPUT GAUGE

REP	NB.	DESIGNATION/PART NAME
K143	1	MANOMETRE INSTRUMENT /INSTRUMENT GAUGE
K144	1	BLOC MANIFOLD /MANIFOLD BLOCK
K145	1-5	RONDELLE /SHIM
K146	1	JOINT(INCLUS K171&172)/GASKET(INC.K171&172)
K147	1	CORPS DE POSITIONNEUR /POSITIONER BLOCK
K148	2	VIS TETE FRAISEE /SLOTTED FLAT SCREW
K151	1	SUPPORT DE RESSORT /SPRING BRACKET
K152	1	ENS.DIAPHRAGME /DIAPHRAGME S/A
K153	1	JOINT TORIQUE /*O* RING
K154	1	RESSORT DE RAPPEL /SPRING
K155	1	FOURREAU DE PILOTE /SLEEVE
K156	1	CLAPET DE PILOTE /SPOOL
K157	1	RESSORT /SPRING
K158	1	RESSORT /RESSORT
K170	1	PLAQUE SIGNAL /SIGNAL DECAL
K171	2	JOINT TORIQUE /*O* RING
K172	1	JOINT TORIQUE /*O* RING

4. Assembly of a 7700P Positioner on a Valve

Note: Before installation, check that the device is undamaged. In the event of damage, replace the defective parts with genuine manufacturer's replacement parts.

If the positioner is shipped alone, the user is responsible for its installation and pneumatic connections and its calibration.

Please refer to 28000 Series Varipak instruction manual **Ref. 30857** for more details.

5. Pneumatic Connection of Positioner 7700P

Make sure that the air supply pressure is suitable for the installation and for the instrument. When using a positioner, make sure that the air supply pressure matches the one specified on the serial plate without exceeding 275 kPa (40 psi).

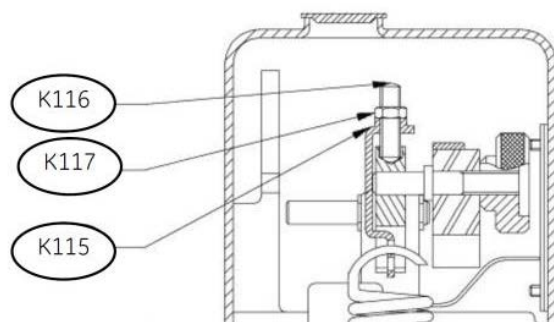
Diameter of tubing required: 4 x 6 mm.

6. Calibration of the 7700P Positioner

- **Comply with current national and local regulations for installation.**
- **Before carrying out any work on the device, power off the instrument.**

The positioner assembled on valve is factory-calibrated, but if it is necessary to remake the calibration on the site, it will be carried out by the customer according to the following general principles

- Make the pneumatic connections, see §5.
- The adjustment of the starting pressure is made by screw (K116). Calibrate the pneumatic signal corresponding to the closing of the valve (3-15psi or 6-30psi). Turn the take-up screw (K116) until the piston rod just begins to move (the plug leaves the contact with the seat ring).
- Tighten the locknut (K117).



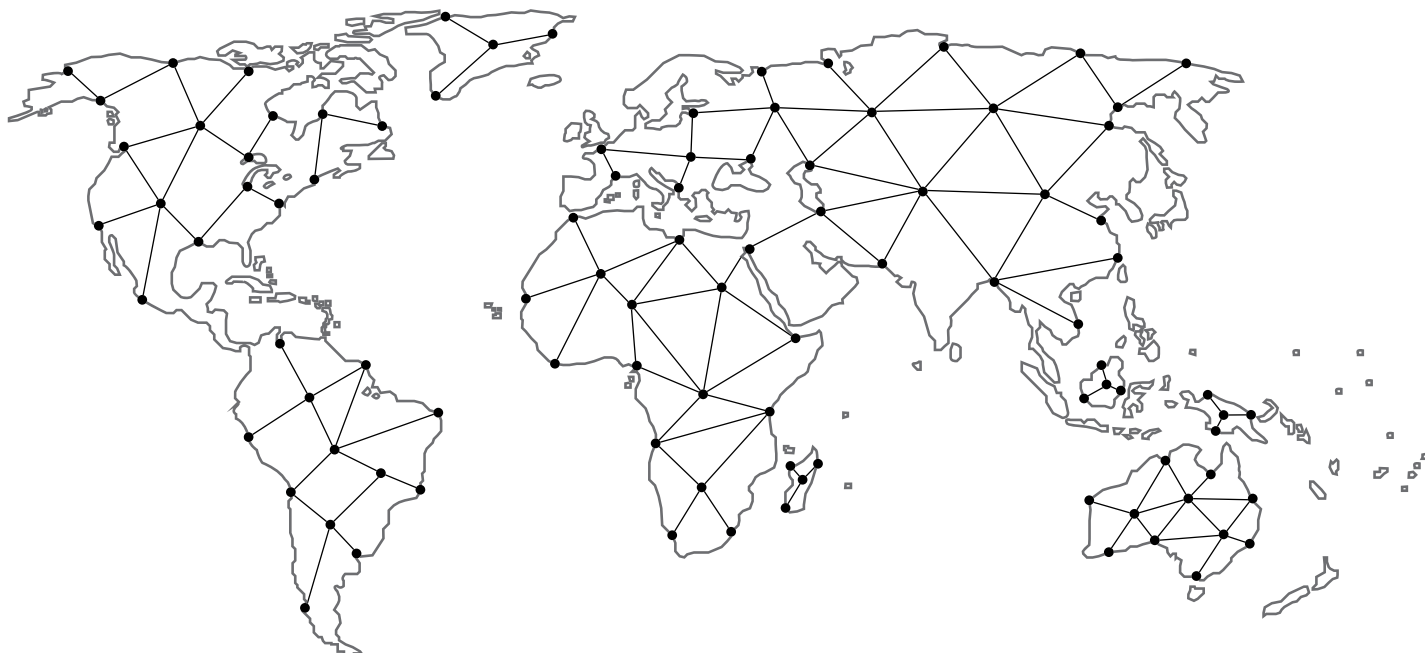
7. Maintenance of the Positioner

- **Comply with current national and local regulations for installation.**
- **Before carrying out any work on the device, power off the instrument.**

- Make sure that the components of the instrument are not damaged. In the event of damage replace the defective parts with genuine manufacturer's replacement parts.
- Pay particular attention of any defect of the housing.
- Avoid contact of the apparatus with aggressive substances which could damage the metallic or plastic parts.

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