

General Warning

It is recommended you follow the instructions below in order to prevent personal injury or damage to the booster.

- The pressure booster is supplied as standard with the regulating spring completely unwound. In this condition it is possible to detect a leak of air from below the regulating knob or through the exhaust port. This condition is standard for the unit. When the spring is completely unwound the downstream pressure and the inlet pressure are the same. In order to increase the downstream pressure it is necessary to operate the regulation knob increasing the spring compression.
- Please apply the necessary safety measures to ensure that the booster only operates within the specified pressure range. Exceeding the maximum output pressure is dangerous.
- The booster is fitted with a non-return valve on the output which prevents discharge of the downstream pressure. It is recommended that a 3/2 valve be installed in the OUT connection if it is necessary to rapidly discharge the downstream pressure.
- When the booster is not in use it is recommended that the inlet pressure is removed to let the booster stop, thus avoiding unexpected operation or malfunction.
- If there is not downstream air consumption it is possible to register a leak through the exhaust port of the unit. This condition is normal and is the consequence of the internal design aimed at discharging any pressure building up in the unit in the rest condition.

Use and maintenance

The pressure booster must always be used in accordance with the operating parameters and instruction.

Any improper use may cause injury or malfunction.

The pressure booster is not an alternative to a compressor because continuous uninterrupted operation will greatly reduce the life of the unit.

- The operating life of the device depends mainly on the operational duty cycle. Prolonged uninterrupted use without pause may reduce the operating life of the booster.
- Ensure the unit is supplied with a suitable compressed air supply, please note: appropriate filtration and lubrication may help to increase the durability of the product.
- **The input flow value must be equal or greater than double the output flow value ($Q1/Q2 > 2$). Ensure that the value of the output pressure is at least 1 bar higher than the input pressure ($P2 > P1 + 1$).**
- To avoid pulsation of the output pressure during operation, it is recommended that an accumulation tank (reservoir) is installed in the downstream circuit.
- To avoid pulsation of the output pressure during operation, it is recommended that an accumulation tank (reservoir) is installed in the downstream circuit.
- To reduce the noise generated by the unit, install silencers into the exhaust ports.
- Pressure booster has an average life of about 20 millions of valve cycles, depending on working conditions (every back stroke corresponds to one valve cycle).

Pressure regulation

The booster is fitted with an internal pressure regulator which allows regulation of the output pressure $P2$ and is also fitted with pressure relief valve. For correct operation of the booster, please consider the following instructions:

- Air leaking from under the adjusting knob when the spring is decompressed is not a defect but a sign that the device is working correctly.
- In order to increase the regulated pressure, pull the knob upwards to unlock, then rotate the knob in the direction indicated by the arrow (+).
- The rotation of the knob has an upper and lower block beyond which the knob is damaged.
- To lock the knob after the adjustment has been made, push the knob downwards until it detents in the locked position.
- To reduce the output pressure, pull the knob upwards, rotate the knob indicated by the arrow (-), the built in pressure relief valve will discharge the excess pressure from under the adjusting knob.
- Always regulate the rising pressure.



Method of calculation of the time necessary to increase the pressure in a tank of a given volume using a pressure booster.

DATA:

$P1$ = Inlet pressure

$P2'$ = Tank initial pressure

$P2''$ = Final tank pressure

V = Tank volume



Procedure

- 1) Calculate the K' ratio between the initial tank pressure and the inlet booster pressure (P_2'/P_1).
- 2) Calculate the K'' ratio between the final tank pressure and the inlet booster pressure (P_2''/P_1).
- 3) Locate, on the chart illustrating, the booster filling time, the intersection point between the K' ratio and the curve, then trace a vertical line from the intersection point to the vertical axis and read the correspondent value T' (in the example chart, to a ratio of 0.8 corresponds a time value of about 3.6 seconds).
- 4) Repeat the operation for the K'' ratio, obtaining the T'' time.
- 5) Use the following formula

$$T = \frac{V}{5} \cdot (T'' - T')$$

to obtain the total time needed to take the tank of volume V from the pressure value P_2' to the pressure value P_2'' .

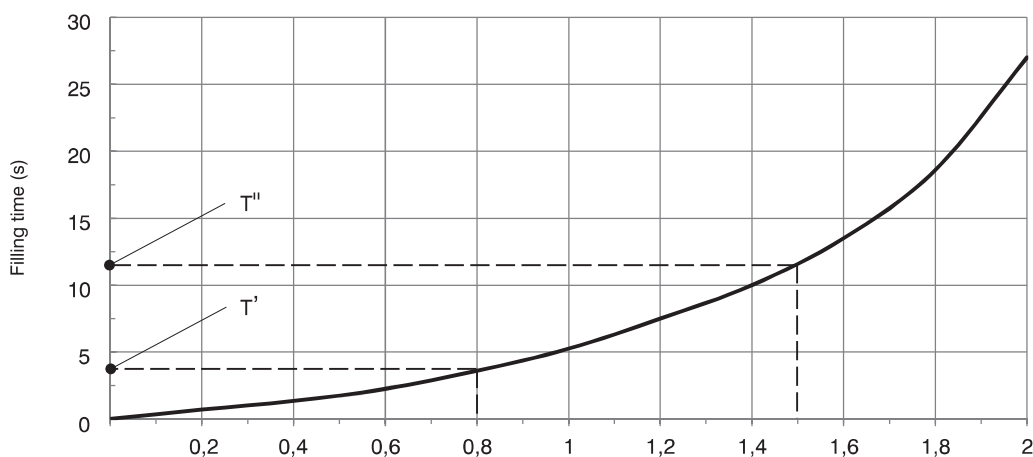
Example of calculation of the necessary time to take a 10L tank from the pressure value P_2' to the value P_2''

$$K' = 0,8 \quad T' = 3,6 \text{ sec.} \quad V = 5L.$$

$$K'' = 1,5 \quad T'' = 12 \text{ sec.}$$

$$T = \frac{5}{5} \cdot (12 - 3,6) = 8,4 \text{ sec.}$$

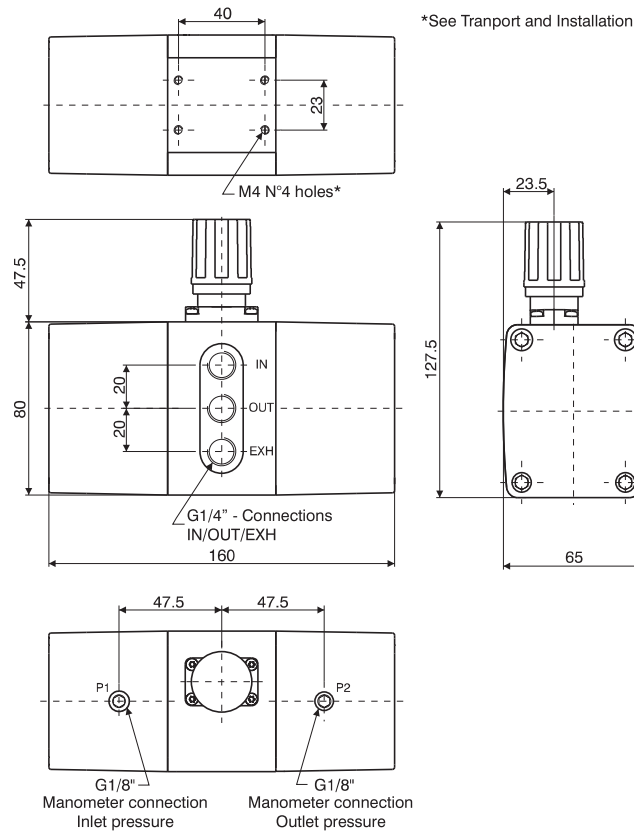
Filling Characteristics (5 litres tank)



K ratio P_2/P_1
P1 = Inlet pressure
P2 = Tank pressure

Pressure booster in technopolymer Ø40

Coding: MDPT40.2R.Ⓢ



*See Transport and Installation

MANOMETER OPTIONS	
	Standard without manometer
A	Manometer P1 0-12 bar
Ⓢ	Manometer P2 0-20 bar
B	Manometer P1 0-12 bar
	Manometer P2 0-16 bar
C	Manometer P1 0-12 bar
	Manometer P2 0-12 bar

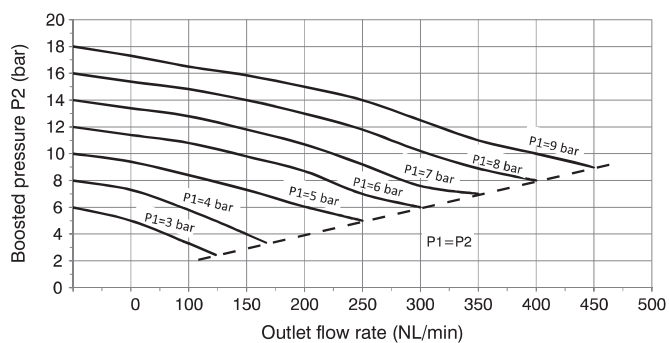
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AIR TREATMENT

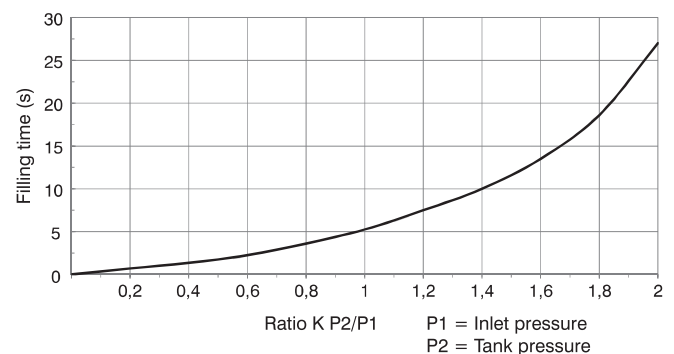
Construction characteristics	Technical characteristics	
<ul style="list-style-type: none"> Pressure Booster with max. 2:1 Compression ratio Automatic operation for use with compressed air only Maintains downstream air when the supply pressure fails (Providing the circuit has no leakage) Integrated regulator for output pressure control, with overpressure relief valve IN, OUT and EXH connections – G1/4" on the same side Manometer connections G1/8" to monitor and control the input and output pressures Body and cover in technopolymer Connections in technopolymer 	Connections IN / OUT / EXT	G1/4"
	Manometer connections P1/P2	G1/8"
	Max working pressure (bar)	2,5 ... 10
	Working temperature °C	-5 ... +50
	Multiplication ratio max.	2 : 1
	Assembly positions	Indifferent
	Pressure regulation	Manual with relieving
	Weight (g)	905
	Max. fittings torque (Nm)	G1/8 = 4 G1/4 = 9

Characteristic curves

Flow rate characteristics



Filling curve





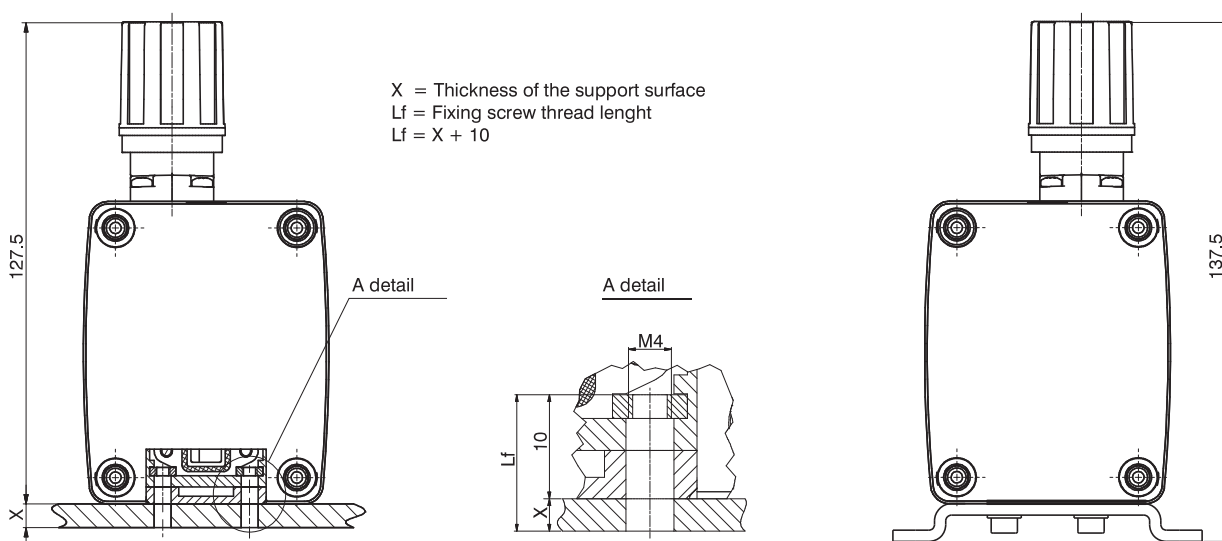
Transport and Installation

The installation and implementation of the device must be done by skilled personnel. Respecting the safety requirements specified in the **UNI norm UNI EN 983-97 Machinery Safety – Safety Requirements concerning oleo-hydraulic and pneumatic systems** and their components. The following instructions are essential for a correct installation:

- Do not use the green knob to lift and transport the device, because it could rip off causing injuries or damaging objects.
- Install the booster by fixing it through the threaded M4 holes on the body of the machine or using the special accessories (see the “Accessories” chapter).

Direct wall fixing

Fixing with a steel plate fixing clamp

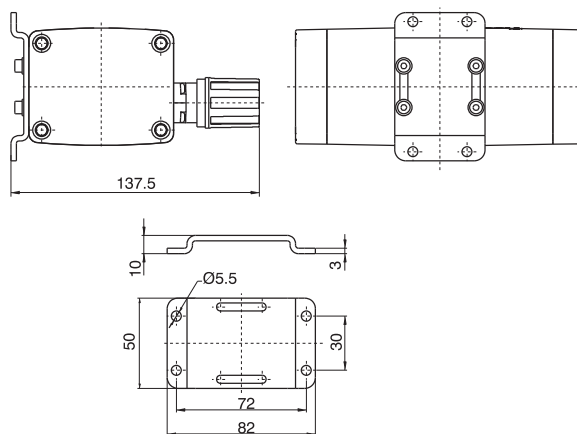


Bracket

Coding: T1740.01

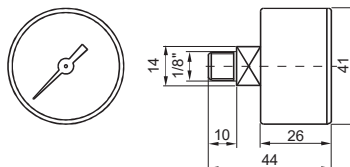


Weight: 94,5
Complete with booster fixing screws



Pressure gauge

Coding: 17070V^{VS}



V	VERSION
	A = Dial Ø40
S	SCALE
	A = 0 - 4 bar
	B = 0 - 6 bar
	C = 0 - 12 bar
	D = 0 - 16 bar
	E = 0 - 20 bar