

### General

The operational safety and durability of a pneumatic circuit depends on the quality of the compressed air. The compressed air and the moisture increase the rate of wear of the surfaces and seals, reducing the efficiency and the life of the pneumatic components. Furthermore the pressure fluctuation due to a discontinuous demand of air, adversely effect the correct operation of the circuit. To eliminate these disadvantages it is essential to install the service units: filter, pressure regulator and lubricator.

### Construction and working characteristics

The great advantage of these Air Service Unit's components is their Modular Design which allows their assembly without the use of additional devices.

Two different version have been designed for this size: one made with zinc alloy body and the other with reinforced technopolymer body and threaded brass connections.

The bowls are made of transparent technopolymer and are also available with shock resistant technopolymer protection on request, always allowing the moisture and oil level control from any angle.

The filter can be equipped with manual or semiautomatic water drain valve; furthermore it's possible to install the automatic draining device inside the bowl.

The pressure regulator handle is lockable in the desired position by simply pressing it downwards.

The lubricator oil flow is adjustable with proper handle and it is visibly checked through the sight dome.

The shut-off valve can be equipped with pad-lock to prevent accidents or damages due to unauthorized operation.

The progressive start-up valve, pneumatically or electropneumatically controlled, allows air supply to the circuit progressively and with adjustable time.

The accessories like the wall fixing brackets, pressure gauges with different scales and diameters and the air intake blocks are completing the range. They are assembled between the elements to get filtered or filtered non-lubricated air in the system.

### Instruction for installation and operation

Pay attention to install a group or a single component with air flow direction according to the arrows and to the following sequence: filter, pressure regulator, lubricator and with bowls downwards. The group can be fixed to the wall by removing the covers, which can be installed again after fixing for covering the screws.

Do not exceed the recommended torque while assembling the connectors.

Do not exceed the recommended air pressure and temperature limits.

The moisture should not exceed the level marked on the bowl and it can be drawn off and carried by a flexible tube of  $\emptyset$  6/4 directly connected to the discharge valve handle. The pressure should be set from minimum to maximum, rotating the adjusting handle clockwise. As lubricant, we suggest to use oil class FD22 or HG32. Verify that the lubricator is not fed with a flow lower than the minimum operational.

To set the cil flow rotate the proper adjusting handle in order to get one drop of cil every 300-600 liters of air.

The oil flow will be kept automatically and proportionally to the air flow.

The oil can be refilled by mean of proper plug or directly into the bowl after having de-pressurized the system. Do not exceed the maximum level indicated on the bowl. For opening the shut-off valve push and rotate clockwise the operating handle. For closing it and consequently discharging the down stream line, rotate the handle counter-clockwise.

#### Maintenance

Clean the bowls with water and detergent. Do not use alcohol. The filter element made with HPDE is reusable by blowing and cleaning it with proper detergent. For replacing or cleaning it, remove the bowl and unscrew the baffle spins. Replace the pressure regulator diaphragm whenever the operation is not correct or there is a continuos air leaking through the relieving (over pressure discharge); reinstall the adjusting mechanism support, locking it with about 8 Nm torque. In case it is necessary to replace the lubricator transparent dome, tight it at 5 Nm torque maximum.

### Assembling



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### Filter



Max. fittings torque on zinc alloy body

Max. fittings torque on technopolymer body

30 Nm

15 Nm

30 Nm

15 Nm

#### Coalescing filter



Max. fittings torque on zinc alloy body

Max. fittings torque on technopolymer body

Series 1700 Size 1







Series 1700 Size 1

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## Modular pressure regulator



3.7





Series 1700 Size 1



Manifold pressure regulators

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G 1/8" - G 1/4"

13 bar - 1,3 MPa

50°C

G 1/8" gr. 235

gr. 380

Any

M4

25 Nm

8

#### Ordering code M30x1,5 31, 17B020.0.0.0 19,3 ø19 TYPF B = Standard regulator ø38 M = vers. manometer included \$ CONNECTIONS PNEUMAXD PNEUWAX • A = G 1/8" Lockable H. $( \bigcirc )$ $( \bigcirc )$ \_ version detail B = G 1/4"POSITIONS N. Ø53 1 2 = 2 regulators Ø47 55 3 = 3 regulators M42x1,5 40+55 • (N.POS.-1) 4 = 4 regulators 5 = 5 regulators 6 = 6 regulators ADJUSTING RANGE A = 0 - 2 bar **G** B = 0 - 4 bar 20 Τ C = 0 - 8 bar 114.1 L\_\_\_\_ والم والروال D = 0 - 12 bar \_\_\_\_ OPTION T \_\_\_\_\_ Standard regulator TYPE "B" (without options) PNEUMAXC >PNEUMAXD I $\bigcirc$ 劒 0 K = Version with padlock (availa-ble only for Standard version L 55 TYPE "B") 47+55•(N.POS.-1) Note: a special kit between pressure regulators is necessary for manifold mounting. Therefore regulators and kits must be ordered in same quantity less one kit. Code 170M6, see accessories page. Inlet pressure (7 bar) 7 low Q=34 NI/min. 7 6 6 Downstream pressure (bar) Adjustment characteristics (bar) 5 5 Flow Q=22 NI/min. Flow rate curves Downstream pressure 4 4 Flow Q=15 NI/min. 3 3 / 2 2 1 0 200 400 600 800 1000 2 0 6 4 Flow (NI/min.) Inlet pressure (bar) **Operational characteristic Technical characteristic** Connections Pneumax modular regulators have a common inlet for the whole manifold joined by a bayonet system. Max working pressure (bar) Alternatively to standard version it is also possible to use regulators with manometer included. Temperature °C This solution allows pace savings on machine and avoids further pneumatic connections among regulators and manometers. Pressure gauge connections Weight Weight Pressure range (bar) 0 - 2 / 0 - 4 / 0 - 8 / 0 - 12 Assembly position

Wall fixing screw

Max. fittings torque

Series 1700 Size 1 PHENNAX

### Lubricator



0.7

200

400

600 800 Flow (NI/min.) 800 1000 1200 1400

Pressure drop (bar) 0.6 0.5 0.4 0.3 0.2 0.1 0



**Operational characteristic** 

Wall mounting possibility with M4 screws protected by covers. Transparent technopolymer bowl screwed to the body.

- Technopolymer shock resistant bowl protection. Possibility to see the min. and max. oil level on 360° also with bowl protection assembled. Transparent technopolymer sight dome with adjusting handle. Oil filling plug.

Flow rate curves

Technical characteristic			
Connections	G 1/8" - G 1/4"		
Max working pressure (bar)	orking pressure (bar) 13 bar - 1,3 MPa		
Temperature °C	50°C		
Weight with technopolymer body	gr. 108		
ght with zinc alloy body gr. 258			
Indicative oil drip rate	1 drop every 300/600 NI		
Oil type	FD22 - HG32		
vl capacity 36 cm <sup>3</sup>			
embly position Vertical			
fixing screw M4			
Max. fittings torque on zinc alloy body	30 Nm		
. fittings torque on technopolymer body 15 Nm			
Min. operational flow at 6,3 bar 10 NI/min.			



#### Filter - pressure regulator





Max. fittings torque on technopolymer body

15 Nm



#### Electrically operated shut-off valve



Example: 17130.M2 : Shut-off valve size 1 with electric control complete wih M2 mechanic.

Important note: the preventive or programmed maintenance of this product is not foreseen considering the elaborated assembling and the specific "PNEUMAX" testing; therefore, call the producer or its representative in case of necessity.

**Technical characteristic** 

#### **Operational characteristic**

G 1/4" 3 ways poppet valve, electric control. Zinc alloy body or reinforced technopolymer body with threaded aluminium insert connec-Inlet connections Exhaust connections G 1/8" tions. Temperature °C -5 °C - 50°C Opening and closing of the valve via solenoid operator. The correct flow direction is indicated by the arrows stamped on the valve body. The supply pressure must be minimum 2 bars or higher for the solenoid operated version. Weight with technopolymer body gr. 215 Weight with zinc alloy body gr. 345 The piloting pressure must be minimum 2bar or higher for the pneumatic operated ver-Assembly position Any sion.(inlet pressure can be lower than 2 bar). Wall fixing screw M4 It is possible to produce the external supplied solenoid version by mounting the 305.10.05 Max. fittings torque 15 Nm between the valve main body and the solenoid pilot valve. Min. working pressure 2 bar The air supply can only be done via port 1. Max working pressure (bar) 13 bar Ensure that the downstream air consumption will not cause a pressure drop which could result in the pressure falling below the minimum operating values. If the pressure inside the valve falls 1000 NI/min Flow rate at 6 bar with  $\Delta p = 1$ below 2 bars, the valve might shut off. Wall mounting possibility with M4 screws protected by covers. Pneumatically operated shut-off valve Ordering code 17**Ø**30.PN ¢ VERSION 0 = Zinc alloy body 58.4 1 = Technopolymer body ø4.25 89.2 Æ PNEUMAXD ₽ ø4.25





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Example: 17130.PN : Shut-off valve size 1 with pneumatic pilot. Important note: the preventive or programmed maintenance of this product is not foreseen considering the elaborated assembling and the specific "PNEUMAX" testing; therefore, call the producer or its representative in case of necessity Technical characteristic

**Operational characteristic** 

	3 ways poppet valve, pneumatic pilot.	Piloting connections	G 1/8"
	Zinc alloy body or reinforced technopolymer body with threaded aluminium insert connec-	Temperature °C	-5 - + 50
	tions. Opening and closing of the valve via pneumatic operator The correct flow direction is indicated by the arrows stamped on the valve body.	Weight with technopolymer body	gr. 180
		Weight with zinc alloy body	gr. 310
The supply pressure must be minimum 2 bars or higher for the solenoid operated version.	Assembly position	Any	
	The piloting pressure must be minimum 2bar or higher for the pneumatic operated ver-	Wall fixing screw	M4
	sion.(inlet pressure can be lower than 2 bar).	Max. fittings torque	15 Nm
	It is possible to produce the external supplied solenoid version by mounting the 305.10.05	Min. working pressure	0 bar
	The air supply can only be done via port 1	Max working pressure (bar)	13 bar
	Ensure that the downstream air consumption will not cause a pressure drop which could result	Piloting pressure	2 bar
	in the pressure falling below the minimum operating values. If the pressure inside the valve falls	Flow rate at 6 har with Ap - 1	1000 NII/min
Wall mounting possibility with M4 screws protected by covers.			





10 NI/min.

#### Filter + Pressure regulator + Lubricator



Min. operational flow at 6,3 bar







