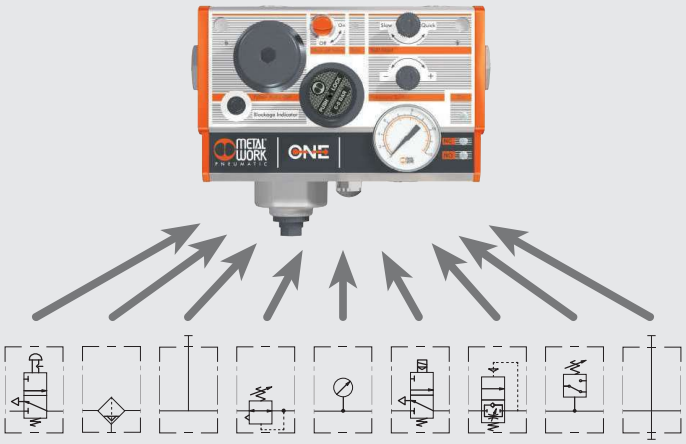
LEARNING ABOUT

In the world of pneumatics, which is considered mature, it is rare to encounter completely new and different products.
ONE a compressed air treatment unit with a high degree of integration, that encompassed numerous pneumatic functions. In fact, it contains so many innovations that a single patent is not enough to safeguard it against imitation – three separate patent applications have been registered with a total of 39 claims. This unit is so innovative that it won the international novelty award at Fluidtrans Compomac.
ONE has a single high-performance valve on the main flow that handles all the functions from regulation to relief. It is controlled by a high-precision pilot regulator with controlled relief, in series with the manual on-off valve, the electric valve and the progressive actuator. Unification of the valve has led to a significant reduction in overall dimensions, enhanced capacity, precision and response speed.

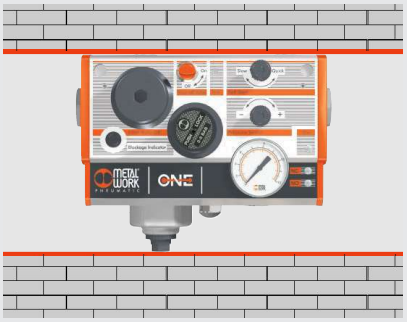
INTEGRATION

One single unit houses the threaded ports, filter, condensate drain, pressure regulator, shut-off valve, soft start valve, pressure switch and three supplementary air intakes.



MINIATURISATION

Extremely reduced dimensions, considering the extra-high performance and flow rate reachable.



No clearance is required above and below it to make adjustments or change the filter or other components. The actual space occupied is thus further reduced.

It weighs slightly more than one kilo instead of the 4 to 8 kilos of conventional units.

EASY ADJUSTMENTS AND LITTLE MAINTENANCE

The entire user interface is at the front, which means that everything is visible and easy to reach. All the adjustments are made using the push-lock knobs (no need for wrenches or screwdrivers), thus preventing accidental operations or manoeuvres.

CONFIGURABILITY

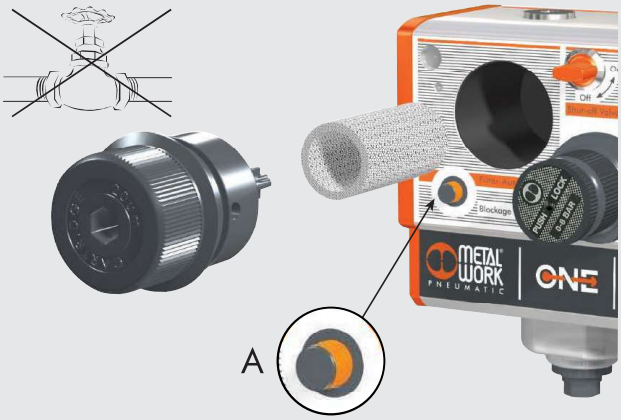
Considering that ONE is reduced in size but highly performing, and it can integrate tenths of functions, a single unit can cover the entire range of applications, with cut-clear advantages in terms of standardisation and reduction of the number of codes handled and goods in stock.
With a single size there are thousands of different configurations.
For example, there is choice between 1/4", 3/8", 1/2", 3/4" or 1" threaded ports, manual and/or electric on-off or progressive valves, etc.
The customer decides the configuration he wants and creates the code, using the key-to-coding table shown below in this catalogue.
He will receive the unit he wants marked with its code and the correct pneumatic diagram.

WHAT YOU CAN SEE FROM THE OUTSIDE

① Air intake, with swivel threaded port
② Fixing hole
③ Access to filter cartridge
④ Pressure regulation
⑤ Shut-off valve (manual)
⑥ Manual override (shut-off valve electrical)
⑦ Soft start valve regulation
⑧ Switching pressure regulation
⑨ Air outlet, with swivel threaded port
⑩ LED signalling unit ON
⑪ LED signalling pressure below the value set on pressure switch
⑫ LED signalling pressure over the value set on pressure switch
⑬ 5-pin M12x1 electrical connector
⑭ Pressure gauge
⑮ 1/4" air intake. Another regulated air intake and a filtered non-regulated air intake are situated on the top
⑯ Air exhaust with a G1/4"silencer
⑰ Condensate tank
⑱ Condensate drain
⑲ Clogged filter signal

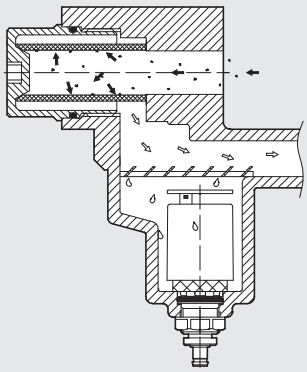
THREADED PORTS

- The threaded ports at the air intake and outlet are the swivel type to facilitate coupling with the supply and delivery pipes. In this way, the unit can be mounted or removed without dismounting the pipes.
- A range of 5 different threads, 1/4", 3/8", 1/2", 3/4" and 1" is also available.
- The thread for the supply pipe may differ from that of the delivery one.



- If the filter gets so clogged up that it causes an excessive drop in pressure as the air passes through, the optical filter blockage indicator will project (see detail A) to indicate that the filter cartridge must be replaced.
- The cartridge can be replaced by unscrewing a plug at the front. This system is functional and, unlike conventional filters, does not require manoeuvring space below the unit.
- An automatic stop on-off valve is incorporated in the unit: when the filter plug is unscrewed, the valve closes automatically. This means there is not need to a tap upstream and there is no risk of the plug being ejected violently.

CONDENSATE DRAIN



- The condensate drain is located downstream of the filter and thus uses cleaner air. This prevents the known problem of air leaks due to the deposit of dirt on the condensate discharge valve.
- You can request ONE with two types of condensate drain:
  - semi-automatic, type RMSA
  - automatic, of the floating type RA

SINGLE AIR EXHAUST

The air in the circuit is relieved via one outlet situated below the unit and fitted with silencer. If you want to convey air relief to prevent the emission of polluted air into the atmosphere, you can replace the silencer and install a fitting. (a pipe with a diameter of at least 6 mm is recommended)
Next to the air outlet there is the condensate drain, which in the RA version conveys the draining by inserting the pipe having internal diameter 6 mm in the lower port.

SUPPLEMENTARY PORTS

In addition to the main outlet, there are three supplementary air ports with a 1/4" thread.

- one for filtered non-regulated air (A) for use, for example, with a compressed air gun.
- two for filtered regulated air (B).

The unit comes complete with supplementary plugged ports for use with A7 fittings.

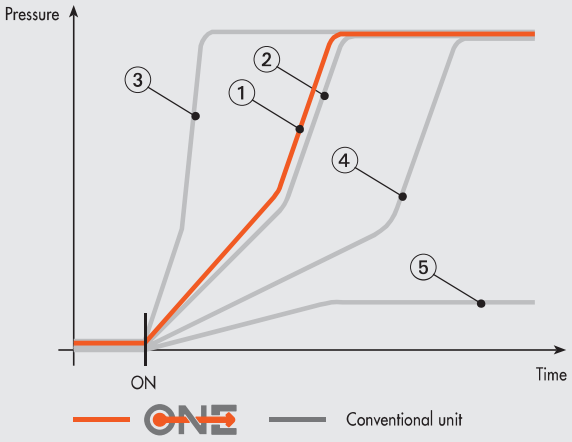
PANEL MOUNTING

ONE can be mounted inside the guard of the machine leaving only the front visible. This is a considerable advantage in terms of functionality and aesthetics as the user interface is entirely at the front.
Among the accessories to be ordered separately, there is the kit of brackets for panel mounting.

ELECTRICAL CONNECTION

A standard five-pin M12x1 connector, with IP67 protection is used for the opening solenoid valve and the pressure switch.
One cable only is required, thus improving reliability and reducing wiring times.

SOFT START VALVE



① Regulation for: ONE does not change with flow rate!
② Initial regulation of conventional unit
③ Low flow rate: activation too abrupt
④ High flow rate: activation too slow
⑤ Even higher flow rate: never cuts in!

The soft start valve is an absolutely innovative feature among the functions provided by ONE.
Soft start valve available from the trade are generally based on the principle of leaving the passage of a small amount of air until the downstream pressure reaches a set value, and then opening the passage fully. In this way, the rate at which the pressure increases depends on the flow rate of the utilities, which often feature a continuous flow rate, for example a blow, and thus the starter can hardly activate. The solution offered by One is such that the pressure increases gradually and it is independent of the flow rate of the utilities. Pressure increase can be regulated precisely via the knob at the front.
Another piece of news, among the several possible configurations you can have the soft start valve operated by the manual V3V

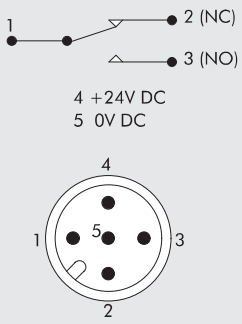
SPECIFICATIONS

TECHNICAL DATA		1/4"	3/8"	1/2"	3/4"	1"
Flow rate at 6.3 bar (0.6 Mpa; 91 psi) ΔP 0.5 bar (0.05 Mpa; 7 psi)	Nl/min	2200	2900		3600	
	scfm	78	102		127	
Flow rate at 6.3 bar (0.6 Mpa; 91 psi) ΔP 1 bar (0.1 Mpa; 14 psi)	Nl/min	2400	3300		4000	
	scfm	85	116		141	
Flow rate on discharge at 6 bar (0.1 Mpa; 14 psi)	Nl/min	1600				
	scfm	56				
1/4" port flow rate of non-regulated filtered air	Nl/min	1800				
at 6.3 bar (0.6 Mpa; 91 psi) Δp 1 bar	scfm	64				
Flow rate of each supplementary 1/4" filtered	Nl/min	2400				
and regulated air port at 6.3 bar (0.6 Mpa; 91 psi) ΔP 1 bar *	scfm	85				
Fluid		Compressed air				
Setting range	bar	0.5 to 2 - 0.5 to 4 + 0.5 to 8				
Degree of filtration	µm	5 (yellow) or 20 (white)				
Operating pressure range	bar	10				
	MPa	1				
	psi	145				
Operating temperature range	°C	-10 to 50				
	°F	-14 to 122				
Class of protection		IP 65 with connector				
Insulation class of the solenoid valve		F155				
Switching time		100% ED				
Electrical connector		M12x1, 5-PIN 90°, according to CEI IEC 60947-5-2 *				
Solenoid valve power	W	3/0.3				
Solenoid valve voltage	V	24 VDC± 10%				
Pressure interval settable on the pressure switch	bar	0.5 to 10				
Pressure switch hysteresis (not adjustable)	bar	bar 0.4 to 0.8 (see diagram)				
Maximum pressure switch current	A	0.5				
Maximum pressure switch voltage	V	3 to 30 AC/DC				
Pressure switch contacts		Normally open (NO) and normally closed (NC)				
Number of switching		$5x10^6$				
Weight	kg	From 1.15 to 1.25 according to configurations				
Wall fixing (max. panel thickness 10 mm):		Front, with M5x75 screws or back, with M6x70 screws				
		The screws are included in the supply				
Mounting position		Vertical				
Direction of flow		From left to right				
Compatibility with oils		See **chapter Z1**				

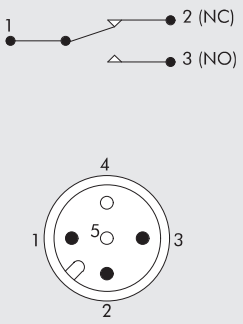
* Total flow rate from two supplementary outlets and the main one cannot exceed 4000 Nl/min at 6.3 bar with ΔP=1

WIRING DIAGRAM

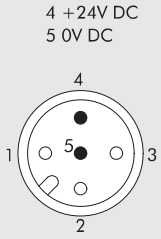
Version with solenoid valve and pressure switch



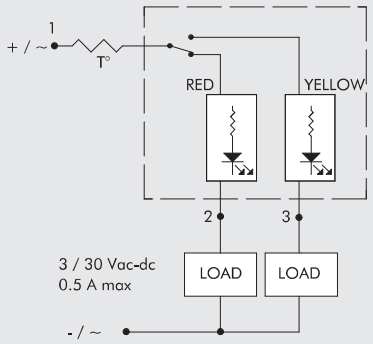
Version with pressure switch



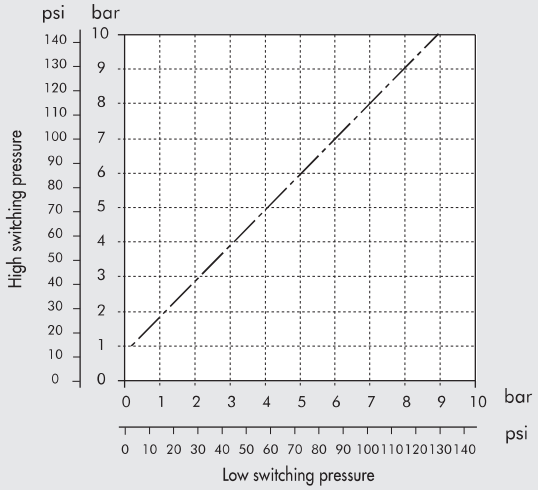
Version with solenoid valve



PRESSURE SWITCH WIRING DIAGRAM



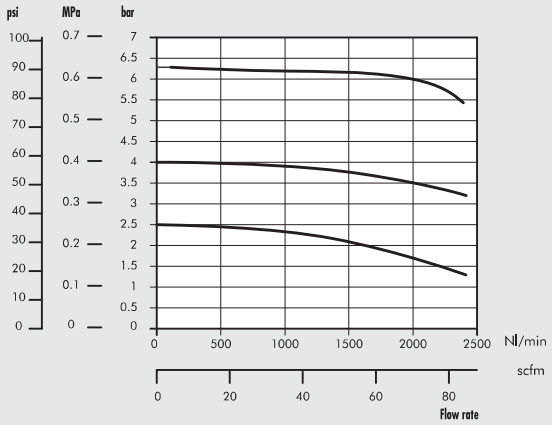
PRESSURE SWITCH HYSTERESIS CHART



FLOW CHARTS

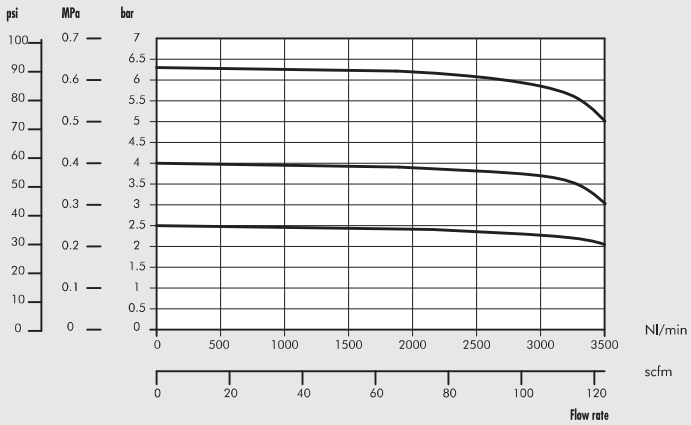
1/4"

Pm = 8 bar - 0.8 MPa - 116 psi
Preset pressure



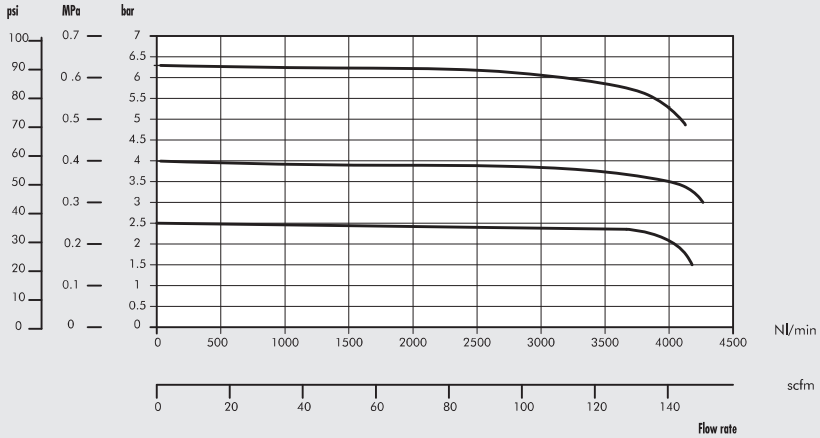
3/8"

Pm = 8 bar - 0.8 MPa - 116 psi
Preset pressure

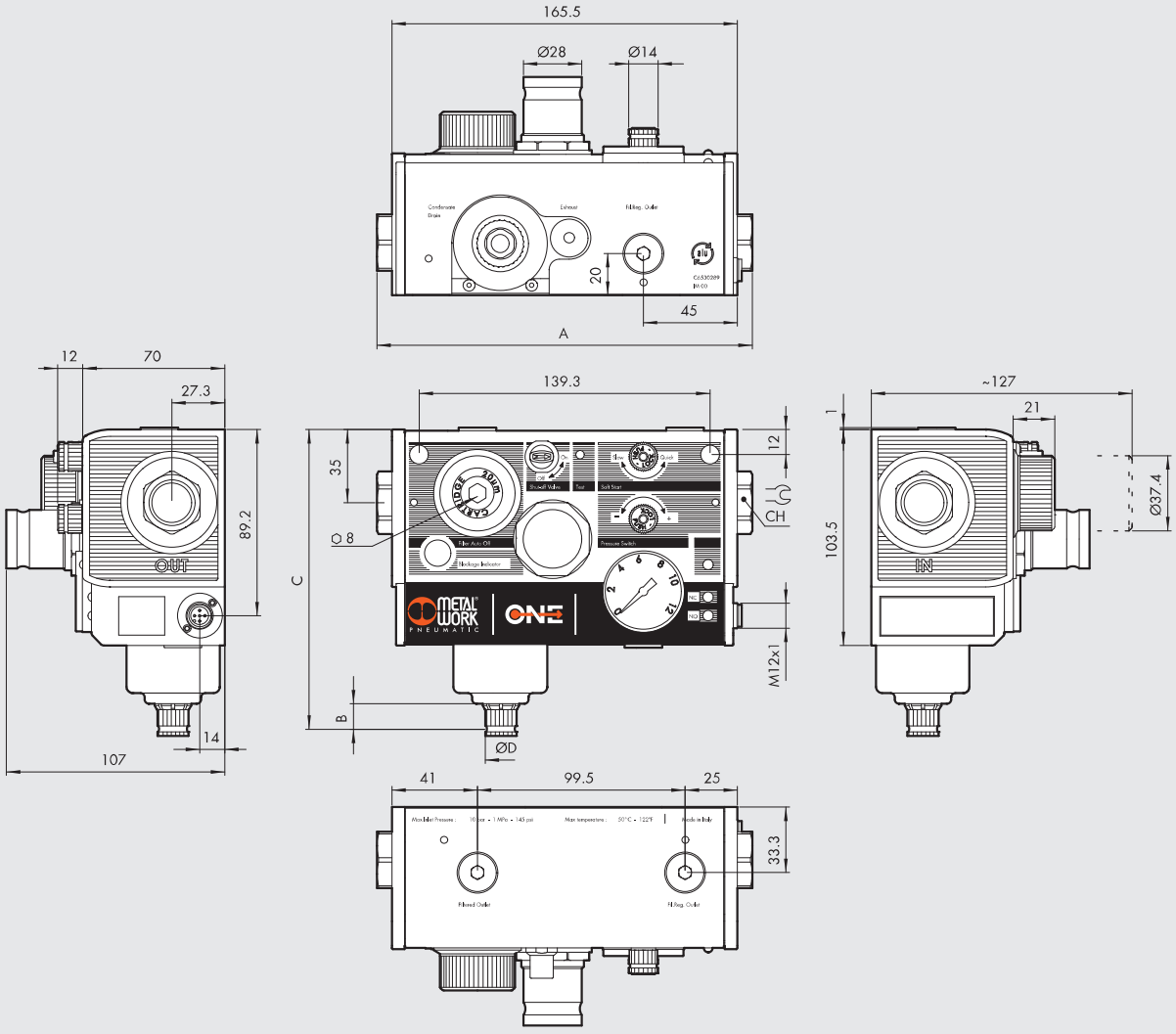


1/2" - 3/4" - 1"

Pm = 8 bar - 0.8 MPa - 116 psi
Preset pressure



DIMENSIONS

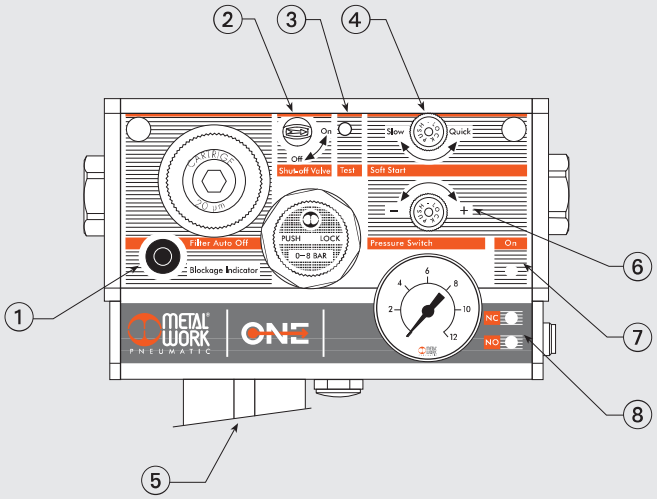


	1/4"	3/8"	1/2"	3/4"	1"
A		180		195	
CH	19	22	27	32	36

	RA	RMSA
B	20.4	16.4
C	152	148
Ø D	For pipe internal diameter 6 mm	15

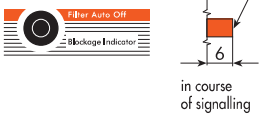
EXTERNAL DESIGN

You can get thousands of different configurations. The external design differs according on the versions chosen.

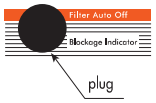


CLOGGED FILTER SIGNAL ①

PRESENT

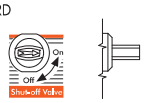


NOT PRESENT

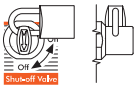


V3V MANUAL ②

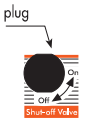
STANDARD



LOCKABLE

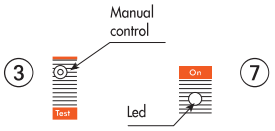


NOT PRESENT

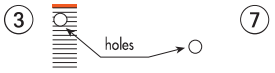


V3V ELECTRICAL

PRESENT



NOT PRESENT
in some versions holes are present



in other configurations the cover has no holes

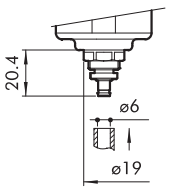
SOFT START VALVE ④

PRESENT

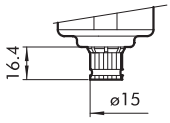
NOT PRESENT

CONDENSATE DRAIN ⑤

AUTOMATIC (RA)



RMSA



PRESSURE SWITCH

PRESENT

NOT PRESENT
in some versions holes are present

in other configurations the cover has no holes

ONE NON-ELECTRICAL