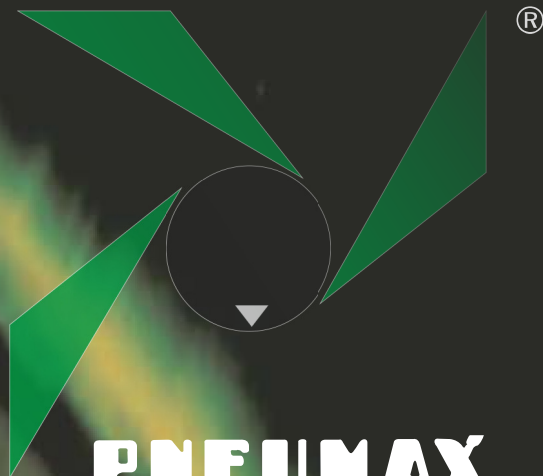


COMPONENTS FOR PNEUMATIC AUTOMATION



**PNEUMAX**

**AIR SERVICE UNITS**





## 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 unit: filter, pressure regulator and lubricator.

## Construction and working characteristics

The new FRL units AIRPLUS series represents the evolution of the well known and consolidated 1700 series.

The main features are increased performances, reliability, easy and fast assembly and the introduction of the latest technical features.

With the exception of the air intake module and the pressure switch module all elements are available in two configurations: with technopolimer connections (IN and OUT), (T series), or with metal threaded inserts, (N series).

Bowls made of transparent polycarbonate (PC) are fitted with a bowl protection guard which is assembled on the body via a quick coupling mechanism provided with a safety button.

The filter, available with three filtration grades (5µm, 20µm and 50µm) is fitted as standard with a drain mechanism which can be operated manually or semi-automatically.

The regulator is based on the rolling diaphragm technology with low hysteresis and the system is balanced. The unit can be fitted with integrated flush mounting pressure gauge (0 to 12 bar range).

4 pressure ranges are available going from 0 to 12 bar and the regulating knob can be blocked in position simply by pressing it down. A dedicated version is available for battery mounting, up to a maximum of 6 units.

The lubricator is based on the Venturi principle and the oil quantity is regulated via the adjusting screw positioned on the transparent polycarbonate (PC) regulating dome which also ensure clear visibility of the oil flow and regulation.

The oil suction pipe is fitted as standard with a sintered filter which ensures that any contaminant that should be present in the oil will reach the down stream circuit.

Shoot off valve is available in two versions, one manually operated and one solenoid operated. In both cases the unit is fitted with a threaded connection for depressurising the downstream circuit.

On the manually operated version, in the lock position, it is possible to fit up to three locks in order to prevent the accidental pressurization of the pneumatic circuit avoiding accidents or damages.

The solenoid operated version is available with a 15mm or with a 22mm solenoid valve.

The soft start valve ensure a progressive pressurization of the down stream circuit avoiding sudden pressure surges which could be dangerous for the devices fitted on the down stream circuit.

The filling time can be easily adjusted via a built in flow regulator. The full flow rate is allowed only once the down stream pressure has reached 50% of the value of the inlet pressure.

The pressure switch module which can be set between 2 and 10 bar and the air intake module complete the range.

The elements are joint together via dedicated quick coupling technopolimer flanges which allows for the units to be panel mounted moreover ensure the possibility to replace any component without disassembling the FRL group from its position.

90° mounting brackets and standard gauges are also available.

## Instruction for installation and operation

The FRL unit must be installed as close as possible to the application.

The air flow direction must follow the directions indicated on the single units in correspondence of the threaded connections. (IN and OUT)

Units provided with bowl must be mounted vertically with the bowl facing down.

Single units or groups can be panel mounted via the Y type flanges, regulators and filter-regulators can be mounted via the 90° zinc plated steel bracket. In order to mount the 90° bracket it is necessary to remove the regulating knob and then the locking ring before positioning the bracket.

All units must be operated according to the specified pressure and temperature ranges; fittings must be mounted without exceeding the maximum torque allowed.

Ensure that the units cover plates are in position before pressure is applied. The cover plates are needed to lock in position the top part of the unit.

The condense level in filter and filter-regulators bowls must never exceed the maximum level indicated on the bowls. With manual or semi automatic drain the condense can be discharged via a 6/4mm tube directly connected to the drain tap.

On the pressure regulator the pressure value must always set while pressure is rising and ideally the unit pressure range should be chosen based on the pressure value to be regulated.

Lubricators must be filled with class FD22 and HG32 oils. Ensure, both on the inlet and on the outlet, that the flow rate is above the minimum flow rate required to operate the unit. Below this value the units does not operate.

The oil quantity can be regulated via the regulating screw on the transparent polycarbonate dome through which it is also clearly visible the oil flow. A drop every 300-600 litres should be allowed.

The oil refill can take place only with the bowl not under pressure. This size does not have the dedicated oil re-fill plug.

The manual shot off valve needs, to be operated, a push and turn action (clockwise) in order to close it and discharge the down stream circuit it is necessary to turn anti clock wise the knob.

The soft start valve is used to slowly and progressively pressurize the down stream circuit, the time needed to do so can be set by means of the built in flow regulator.

The soft start valve on its own does not allow for the down stream circuit to be discharged, in order to do so it is necessary to combine it with a shot off valve (to be mounted upstream).

## Maintenance



**For any maintenance which requires the removal of the top plugs/ supports from the body it is necessary to preventively remove the sides cover plates. If the top plugs\supports are removed with the sides plates still in their position the unit could be permanently damaged.**

Bowls , plugs and supports are assembled with a bayonet type mechanism. In order to remove them rotate anti clockwise until the mechanical stop is reached and than remove from the body (for the bowls firstly press down the green safety button).

Bowls and transparent parts can be cleaned with water and neutral soap. Do not use solvents or alcohol.

Filtering elements (from filters and filter regulators ) made of HDPE can be regenerated by washing and blowing them. In order to remove them it is necessary to remove the bowl unscrew the filter element and replace it with a new one or clean it.

The oil refill process can take place only if the bowl in not pressurized. The oil refill plug is not available on this size.

Should the pressure regulator not perform properly or should present a constant leakage from the relieving replaced the diaphragm by unloading completely the regulating spring before removing the regulation support.

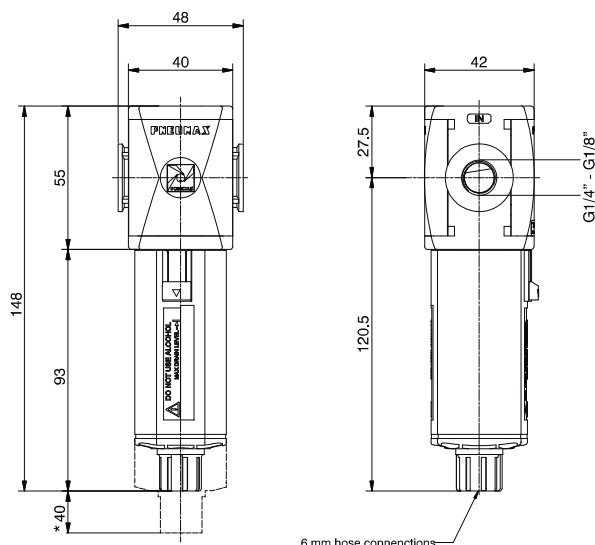
Any other maintenance operation, in consideration of the complexity of the assembly, and the need of a through test according to the Pneumax spa specification, should be carried out by the manufacturer.

## Fittings maximum recommended torque applicable

THREAD	Technopolymer version (T)	Metal version (N)
G1/8"	4 Nm	/
G1/4"	9 Nm	20 Nm
G3/8"	16 Nm	25 Nm
G1/2"	22 Nm	30 Nm

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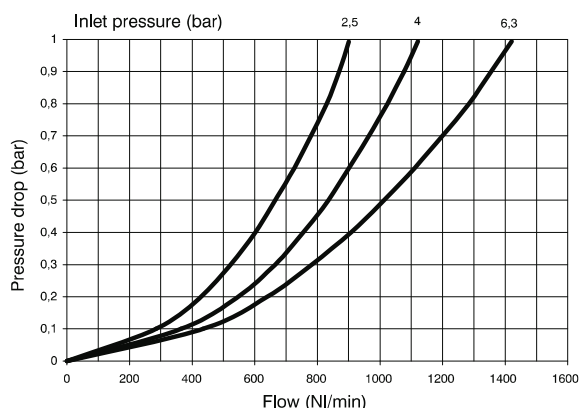




\*Bowl removal maximum height

Example: T171BFB : size 1, Filter with Technopolymer threads, G1/4" connections, 20  $\mu$ m filter pore size

Flow rate curves



#### Operational characteristics

- Double filtering action: air flow centrifugation and filter element
- Filtering element made of HDPE (high density polyethylene) available in three different filtration grades (5 $\mu$ m, 20 $\mu$ m e 50 $\mu$ m) can be regenerated by washing it or replaced.
- Transparent bowl made off polycarbonate with bowl protection guard.
- Bowl assembly via bayonet type quick coupling mechanism with safety button.
- Semi-automatic drain mounted as standard.

#### Technical characteristics

Connections	G 1/8" - G 1/4"
Max. inlet pressure	13 bar - 1,3 Mpa
Working temperature	-5°C ÷ +50°C
Weight with Technopolymer threads	gr. 120
Weight with threaded inserts	gr. 130
Filter pore size	5 $\mu$ m - 20 $\mu$ m - 50 $\mu$ m
Bowl capacity	18 cm <sup>3</sup>
Assembly positions	Vertical
Max. fitting torque (with Technopolymer threads)	G1/4" = 9 Nm
Max. fitting torque (with threaded inserts)	G1/8" = 15 Nm G1/4" = 15 Nm

#### Ordering code

**V171F**

#### VERSION

N = Metal inserts

T = Technopolymer thread

#### CONNECTIONS

A = G1/8" (only for insert versions)

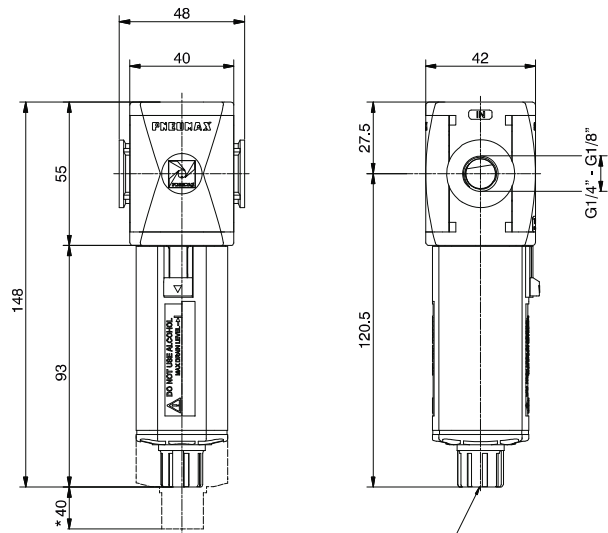
B = G1/4"

#### FILTER PORE SIZE

A = 5  $\mu$ m

B = 20  $\mu$ m

C = 50  $\mu$ m

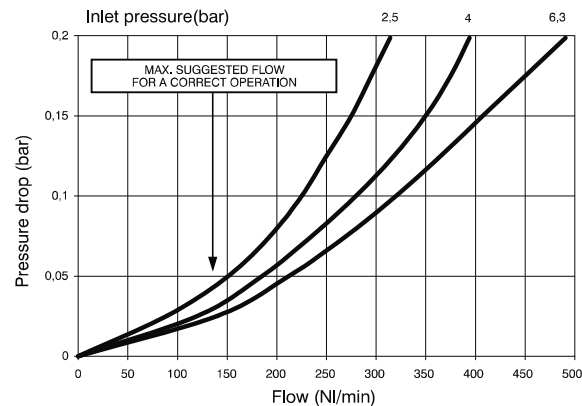


6mm hose connections

\*Bowl removal maximum height

Example : T171BDA : Coalescing size 1, Filter with Technopolymer threads, G1/4" connections, filter efficiency 99,97%

Flow rate curves



#### Operational characteristics

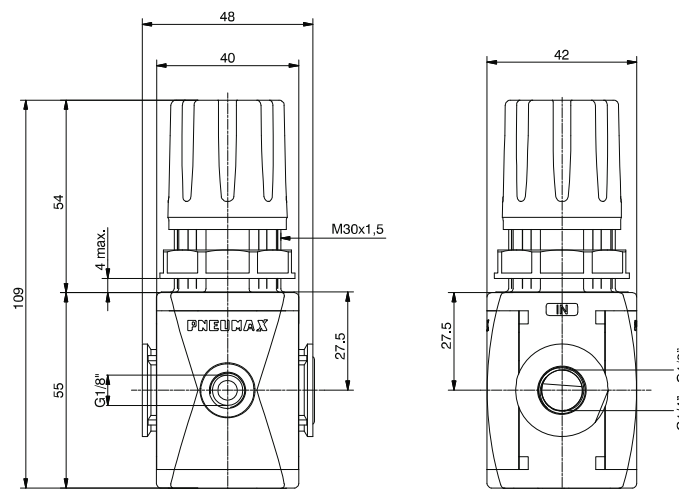
- Coalescing filter element with filtration grade of 0.01  $\mu\text{m}$
- Transparent bowl made off polycarbonate with bowl protection guard.
- Bowl assembly via bayonet type quick coupling mechanism with safety button.
- Semi-automatic drain mounted as standard.

#### Note

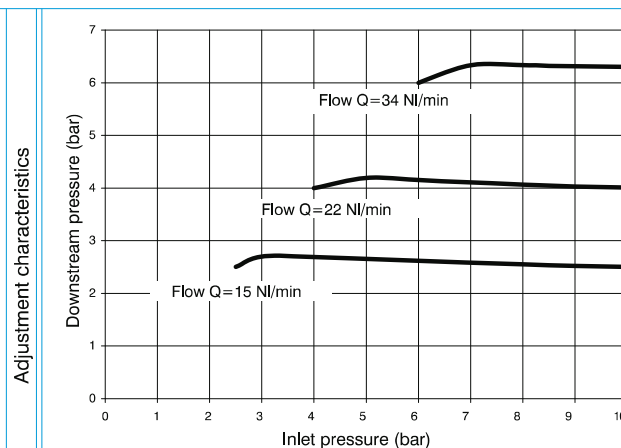
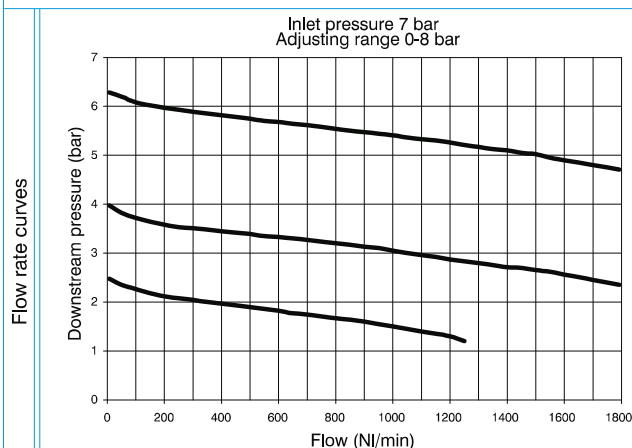
In order to ensure a better grade of filtration it is recommended to use a 5  $\mu\text{m}$  filter before the coalescing filter.

#### Technical characteristics

Connections	G 1/8" - G 1/4"	Ordering code
Max. inlet pressure	13 bar - 1,3 Mpa	
Working temperature	-5°C ÷ +50°C	<b>V171CDE</b>
Weight with Technopolymer threads	gr. 125	
Weight with threaded inserts	gr. 135	VERSION N = Metal inserts T = Technopolymer thread
Filter efficiency	99,97%	
with 0,01 $\mu\text{m}$ particle		CONNECTIONS A = G1/8" (only for insert versions) B = G1/4"
Bowl capacity	18cm <sup>3</sup>	
Assembly positions	Vertical	FILTER EFFICIENCY A = 99,97%
Max. fitting torque (with Technopolymer threads)	G1/4" = 9 Nm	
Max. fitting torque (with threaded inserts)	G1/8" = 15 Nm G1/4" = 15 Nm	



Example: T171BRC : size 1, Regulator with Technopolymer threads, G1/4" connections, 0 to 8 bar adjusting range



#### Operational characteristics

- Diaphragm pressure regulator with relieving.
- Low hysteresis rolling diaphragm.
- Balanced system.
- Available in four pressure ranges up to 12 bar.
- Operating knob can be locked in position by pressing it down once the desired P2 (regulated pressure) pressure value is achieved.
- Fitted with panel mounting locking ring.

#### Note

The pressure must be always regulating while increasing. For a more precise regulation and higher sensibility, the use of a regulator with a pressure range as close as possible to the regulated pressure is recommended.

#### Technical characteristics

Connections	G 1/8" - G 1/4"	Ordering code
Max. inlet pressure	13 bar - 1,3 Mpa	
Working temperature	-5°C ÷ +50°C	V171CRG
Pressure gauge connections	G 1/8"	
Weight with Technopolymer threads	gr. 130	VERSION
Weight with threaded inserts	gr. 140	
Pressure range	0-2 bar / 0-4 bar 0-8 bar / 0-12 bar	CONNECTIONS
Assembly positions	Indifferent	
Max. fitting torque (with Technopolymer threads)	G1/8" = 4 Nm G1/4" = 9 Nm	ADJUSTING RANGE
Max. fitting torque (with threaded inserts)	G1/8" = 15 Nm G1/4" = 15 Nm	
		OPTIONS

Ordering code

V171CRG

VERSION

N = Metal inserts

T = Technopolymer thread

CONNECTIONS

A = G1/8" (only for insert versions)

B = G1/4"

ADJUSTING RANGE

A = 0-2 bar

B = 0-4 bar

C = 0-8 bar

D = 0-12 bar

OPTIONS

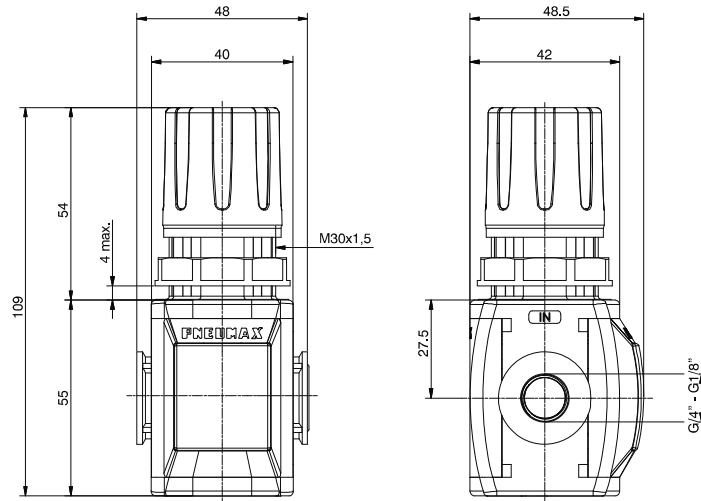
Standard (without options)

F = Controlled relief +

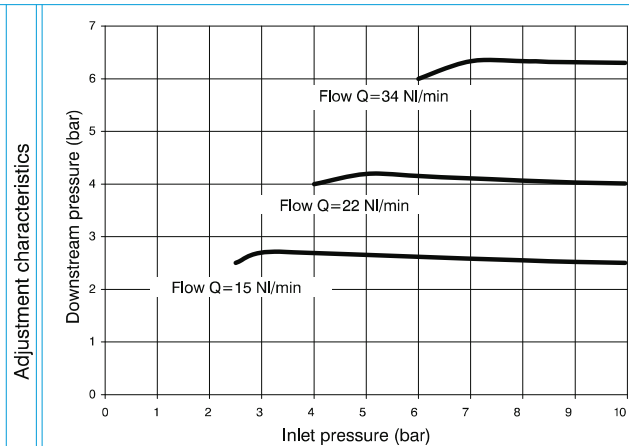
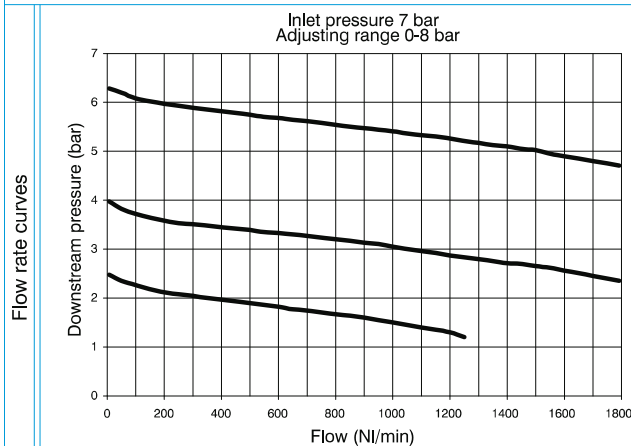
improved relieving

L = no relieving

R = Improved relieving



Example : T171BRMC : size 1, Regulator including gauge with Technopolymer threads, G1/4" connections, 0 to 8 bar adjusting range



#### Operational characteristics

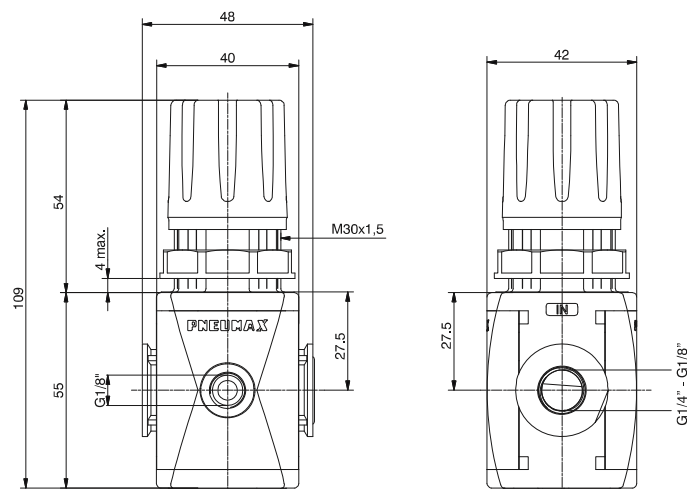
- Diaphragm pressure regulator with relieving.
- Low hysteresis rolling diaphragm.
- Balanced system.
- Available in four pressure ranges up to 12 bar.
- Operating knob can be locked in position by pressing it down once the desired P2 (regulated pressure) pressure value is achieved.
- Fitted with panel mounting locking ring.
- Built in gauge 0-12 bar range as standard.

#### Note

The pressure must be always regulating while increasing. For a more precise regulation and higher sensibility, the use of a regulator with a pressure range as close as possible to the regulated pressure is recommended.

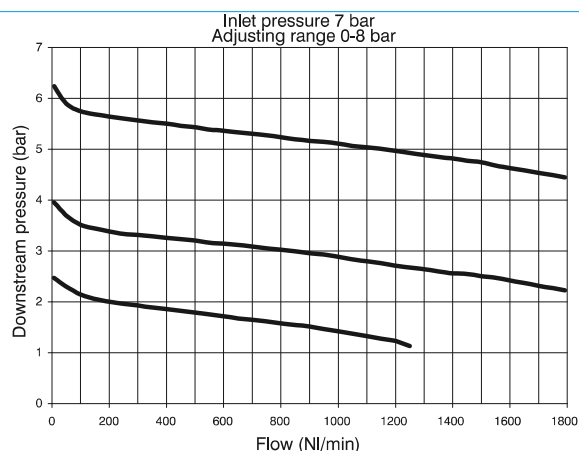
#### Technical characteristics

Connections	G 1/8" - G 1/4"	Ordering code
Max. inlet pressure	13 bar - 1,3 Mpa	
Working temperature	-5°C ÷ +50°C	V171CRMCO
Weight with Technopolymer threads	gr. 140	
Weight with threaded inserts	gr. 150	VERSION N = Metal inserts T = Technopolymer thread
Pressure range	0-2 bar / 0-4 bar 0-8 bar / 0-12 bar	
Assembly positions	Indifferent	CONNECTIONS A = G1/8" (only for insert versions) B = G1/4"
Max. fitting torque (with Technopolymer threads)	G1/8" = 4 Nm G1/4" = 9 Nm	
Max. fitting torque (with threaded inserts)	G1/8" = 15 Nm G1/4" = 15 Nm	ADJUSTING RANGE A = 0-2 bar B = 0-4 bar C = 0-8 bar D = 0-12 bar
		OPTIONS Standard (without options) F = Controlled relief + improved relieving L = no relieving R = Improved relieving



Example: T171BBC : size 1, Regulator with Technopolymer threads, G1/4" connections, 0 to 8 bar adjusting range

Flow rate curves



#### Operational characteristics

- Diaphragm pressure regulator with relieving.
- Low hysteresis rolling diaphragm.
- Balanced system.
- Available in four pressure ranges up to 12 bar.
- Operating knob can be locked in position by pressing it down once the desired P2 (regulated pressure) pressure value is achieved.
- G1/8" output front connection.
- Air supply can be applied by both directions.

#### Note

The pressure must be always regulating while increasing. For a more precise regulation and higher sensibility, the use of a regulator with a pressure range as close as possible to the regulated pressure is recommended.

#### Technical characteristics

Connections	G 1/8" - G 1/4"
Max. inlet pressure	13 bar - 1,3 Mpa
Working temperature	-5°C ÷ +50°C
Pressure gauge connections	G 1/8"
Weight with Technopolymer threads	gr. 130
Weight with threaded inserts	gr. 140
Pressure range	0-2 bar / 0-4 bar 0-8 bar / 0-12 bar
Assembly positions	Indifferent
Max. fitting torque (with Technopolymer threads)	G1/8" = 4 Nm G1/4" = 9 Nm
Max. fitting torque (with threaded inserts)	G1/8" = 15 Nm G1/4" = 15 Nm

#### Ordering code

**V171C B C C**

#### VERSION

- V N = Metal inserts
- T = Technopolymer thread

#### CONNECTIONS

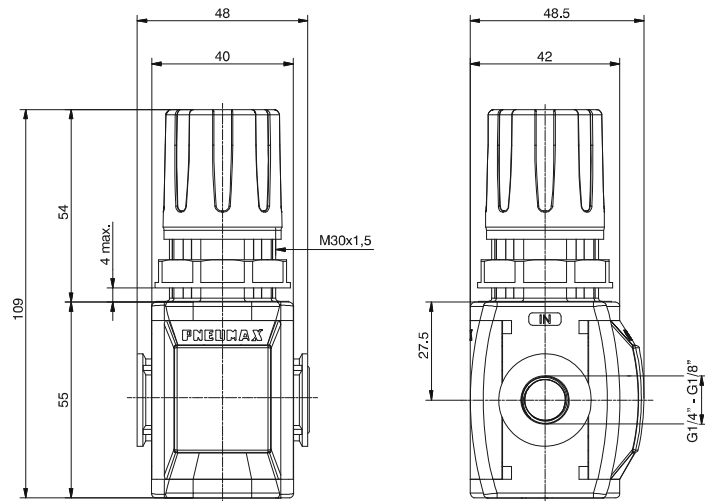
- A = G1/8" (only for insert versions)
- B = G1/4"

#### ADJUSTING RANGE

- A = 0-2 bar
- B = 0-4 bar
- C = 0-8 bar
- D = 0-12 bar

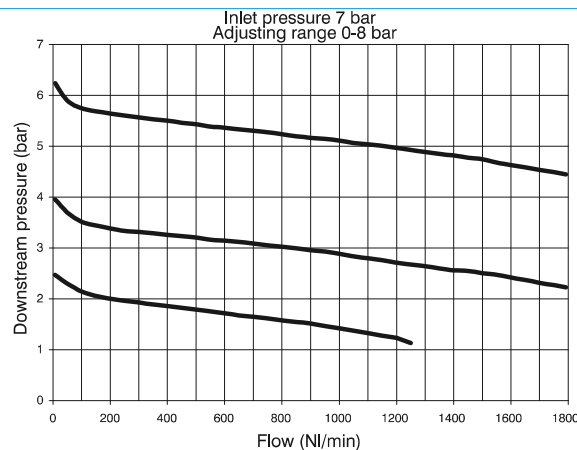
#### OPTIONS

- Standard (without options)
- F = Controlled relief + improved relieving
- L = no relieving
- R = Improved relieving



Example : T171BMC : size 1, Regulator including gauge with Technopolymer threads, G1/4" connections, 0 to 8 bar adjusting range

Flow rate curves








#### Operational characteristics

- Diaphragm pressure regulator with relieving.
- Low hysteresis rolling diaphragm.
- Balanced system.
- Available in four pressure ranges up to 12 bar.
- Operating knob can be locked in position by pressing it down once the desired P2 (regulated pressure) pressure value is achieved.
- G 1/8" output connection positioned on the opposite side of the built in gauge.
- Air supply can be applied by both directions.
- Built in gauge 0-12 bar range as standard.

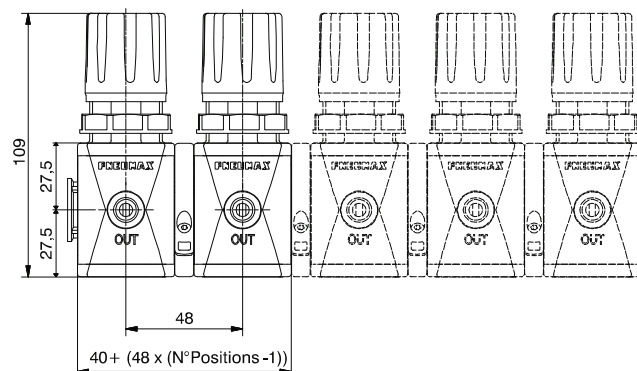
#### Note

The pressure must be always regulating while increasing. For a more precise regulation and higher sensibility, the use of a regulator with a pressure range as close as possible to the regulated pressure is recommended.

#### Technical characteristics

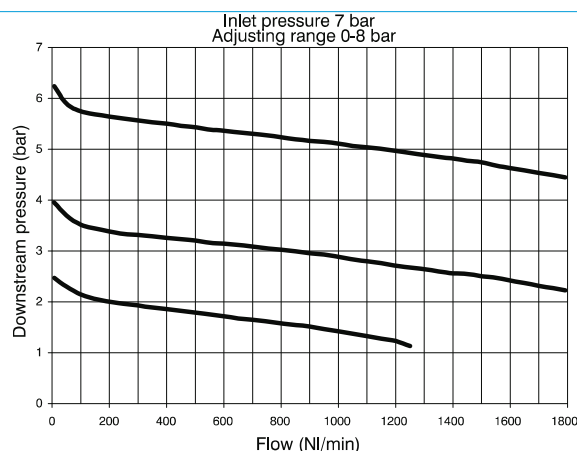
Connections	G 1/8" - G 1/4"	Ordering code	
Max. inlet pressure	13 bar - 1,3 Mpa		
Working temperature	-5°C ÷ +50°C		
Weight with Technopolymer threads	gr. 140		VERSION
Weight with threaded inserts	gr. 150		N = Metal inserts T = Technopolymer thread
Pressure range	0-2 bar / 0-4 bar 0-8 bar / 0-12 bar		CONNECTIONS
Assembly positions	Indifferent		A = G1/8" (only for insert versions) B = G1/4"
Max. fitting torque	G1/8" = 4 Nm		ADJUSTING RANGE
(with Technopolymer threads)	G1/4" = 9 Nm		A = 0-2 bar
			B = 0-4 bar C = 0-8 bar D = 0-12 bar
Max. fitting torque	G1/8" = 15 Nm		OPTIONS
(with threaded inserts)	G1/4" = 15 Nm		Standard(without options) F = Controlled relief + improved relieving L = no relieving R = Improved relieving





Example: GT171BB4CCCC : Combined group comprising 4 size 1 Regulators Technopolymer threads, G1/4" connections and 0 to 8 bar adjusting range

Flow rate curves



#### Operational characteristics

- Inlet pressure common for the whole manifold of regulator.
- A maximum of 6 regulators can be mounted
- Air supply can be applied by both directions.

#### Note

The pressure must be always regulating while increasing. For a more precise regulation and higher sensibility, the use of a regulator with a pressure range as close as possible to the regulated pressure is recommended.

#### Technical characteristics

Connections	G 1/8" - G 1/4"
Max. inlet pressure	13 bar - 1,3 Mpa
Working temperature	-5°C ÷ +50°C
Pressure range	0-2 bar / 0-4 bar 0-8 bar / 0-12 bar
Assembly positions	indifferent
Max. fitting torque (with Technopolymer threads)	G1/8" = 4 Nm G1/4" = 9 Nm
Max. fitting torque (with threaded inserts)	G1/8" = 15 Nm G1/4" = 15 Nm

#### Ordering code

**GV171CTNCGGGGGG**

#### VERSION

- N = Metal inserts
- T = Technopolymer thread

#### CONNECTIONS

- A = G1/8" (only for insert versions)
- B = G1/4"

#### TYPE

- B = Standard with flanges X
- M = Manometer included with flanges X
- W = Standard with flanges Y
- Z = Manometer included with flanges Y

#### NUMBER REGULATORS

- 1 = 1 regulator
- 2 = 2 regulators
- 3 = 3 regulators
- 4 = 4 regulators
- 5 = 5 regulators
- 6 = 6 regulators

#### ADJUSTING RANGE 1

- A = 0-2 bar
- B = 0-4 bar
- C = 0-8 bar
- D = 0-12 bar

#### ADJUSTING RANGE 2

- A = 0-2 bar
- B = 0-4 bar
- C = 0-8 bar
- D = 0-12 bar

#### ADJUSTING RANGE 3

- A = 0-2 bar
- B = 0-4 bar
- C = 0-8 bar
- D = 0-12 bar

#### ADJUSTING RANGE 4

- A = 0-2 bar
- B = 0-4 bar
- C = 0-8 bar
- D = 0-12 bar

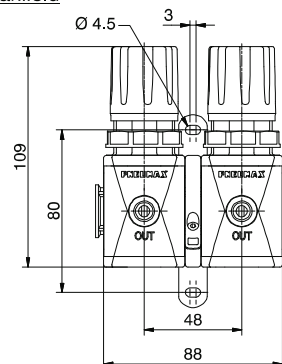
#### ADJUSTING RANGE 5

- A = 0-2 bar
- B = 0-4 bar
- C = 0-8 bar
- D = 0-12 bar

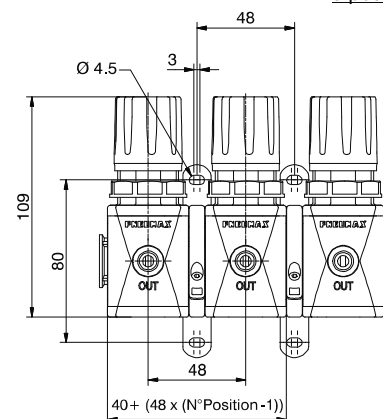
#### ADJUSTING RANGE 6

- A = 0-2 bar
- B = 0-4 bar
- C = 0-8 bar
- D = 0-12 bar

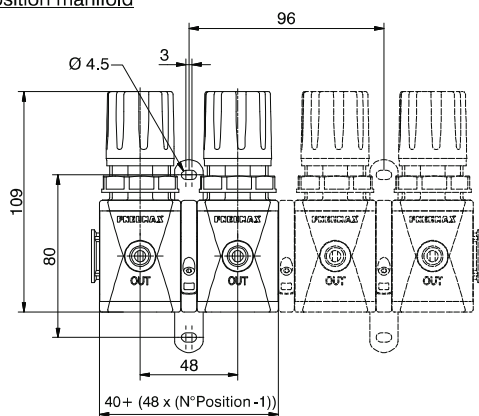
2 position manifold



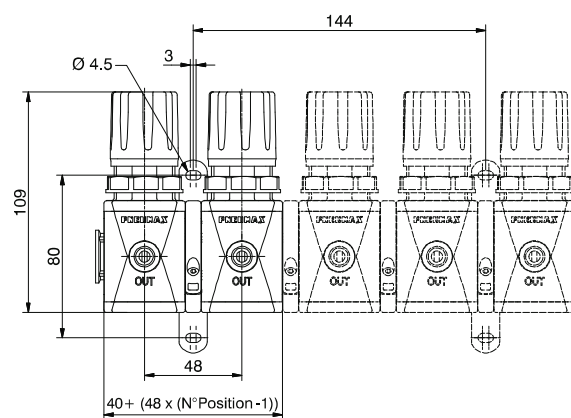
3 position manifold



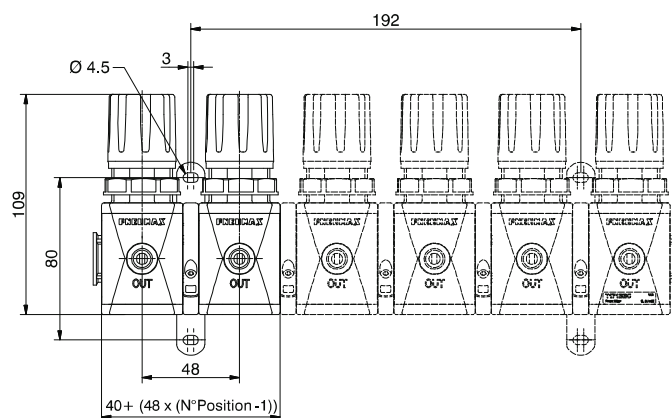
4 position manifold

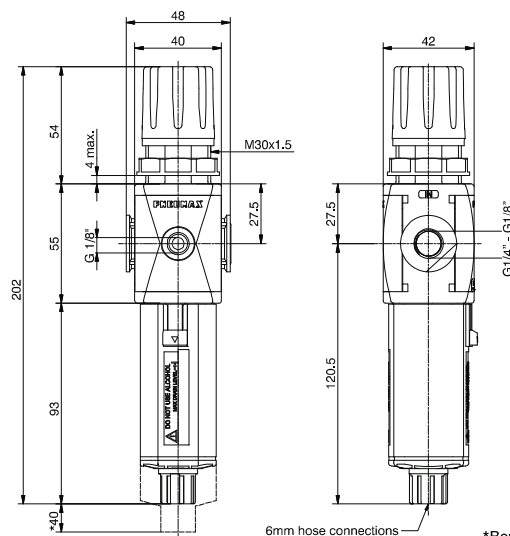


5 position manifold



6 position manifold

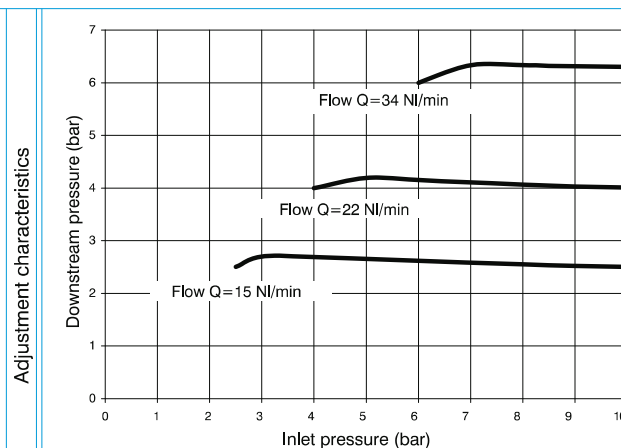
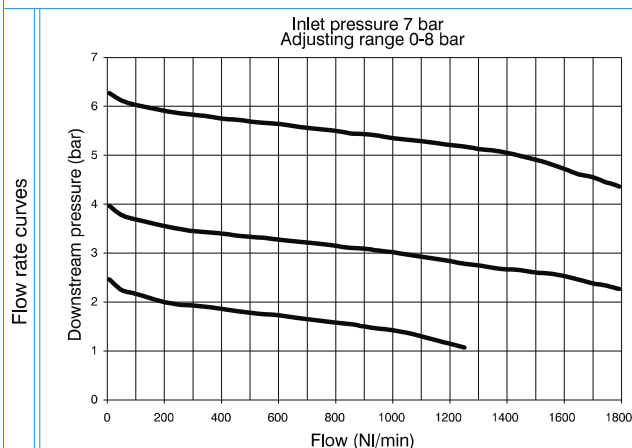




6mm hose connections

\*Bowl removal maximum height

Example : T171BEBC : size 1, Filter-regulator with Technopolymer threads, G1/4" connections, 20 µm filtering pore size, 0 to 8 bar adjusting range



#### Operational characteristics

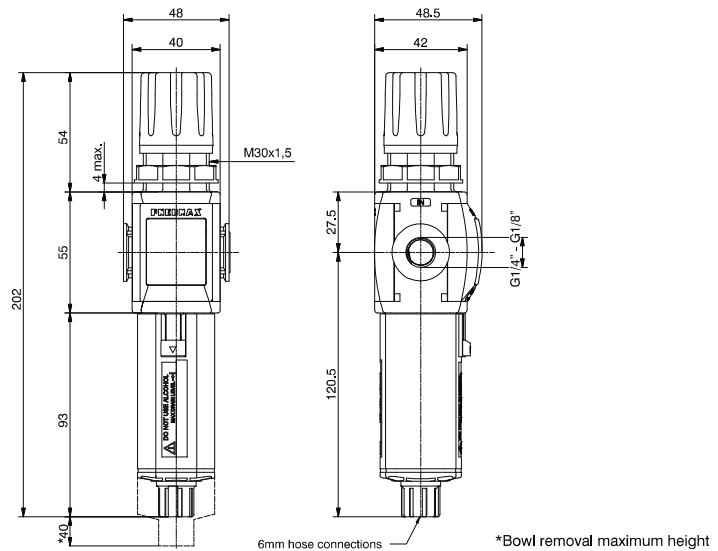
- Filter - diaphragm pressure regulator with relieving.
- Low hysteresis rolling diaphragm.
- Balanced system.
- Double filtering action: air flow centrifugation and filter element.
- Filtering element made of HDPE (high density polyethylene) available in three different filtration grades (5µm, 20µm e 50µm) can be regenerated by washing it or replaced.
- Transparent bowl made of polycarbonate with bowl protection guard.
- Bowl assembly via bayonet type quick coupling mechanism with safety button.
- Semi-automatic drain mounted as standard.
- Available in four pressure ranges up to 12 bar.
- Operating knob can be locked in position by pressing it down once the desired P2 (regulated pressure) pressure value is achieved.
- Fitted with panel mounting locking ring.

#### Note

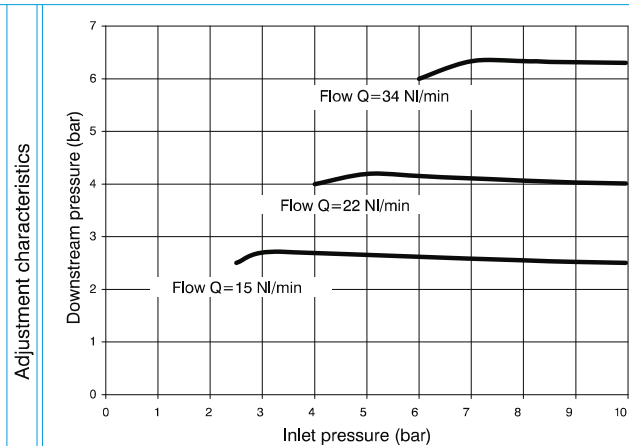
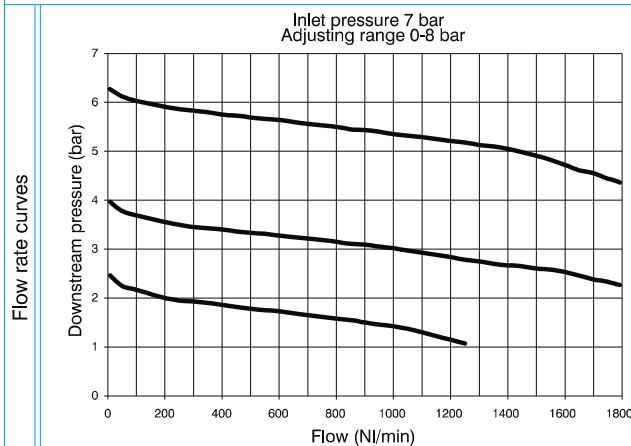
The pressure must be always regulating while increasing. For a more precise regulation and higher sensibility, the use of a regulator with a pressure range as close as possible to the regulated pressure is recommended.

#### Technical characteristics

Connections	G 1/8" - G 1/4"	Ordering code
Max. inlet pressure	13 bar - 1,3 Mpa	
Working temperature	-5°C ÷ +50°C	V171CESC
Pressure gauge connections	G 1/8"	
Weight with Technopolymer threads	gr. 190	VERSION
Weight with threaded inserts	gr. 200	N = Metal inserts
Pressure range	0-2 bar / 0-4 bar	T = Technopolymer thread
	0-8 bar / 0-12 bar	CONNECTIONS
Filter pore size	5 µm - 20 µm - 50 µm	A = G1/8" (only for insert versions)
Bowl capacity	18 cm³	B = G1/4"
Assembly positions	Vertical	FILTER PORE SIZE
Max. fitting torque	G1/8" = 4 Nm	A = 5 µm
(with Technopolymer threads)	G1/4" = 9 Nm	B = 20 µm
Max. fitting torque (with threaded inserts)	G1/8" = 15 Nm G1/4" = 15 Nm	C = 50 µm
		ADJUSTING RANGE
		A = 0-2 bar
		B = 0-4 bar
		C = 0-8 bar
		D = 0-12 bar



Example: T171BEMBC : size 1, Filter-Regulator including gauge with Technopolymer threads, G1/4" connections, with 20 µm filtering pore size, 0 to 8 bar adjusting range



#### Operational characteristics

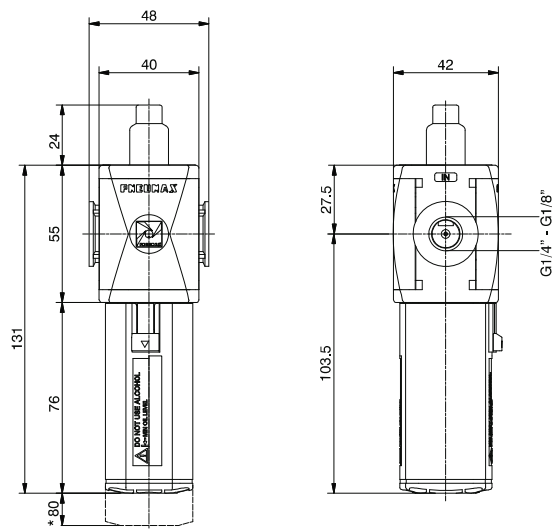
- Filter - diaphragm pressure regulator with relieving.
- Low hysteresis rolling diaphragm.
- Balanced system.
- Double filtering action: air flow centrifugation and filter element.
- Filtering element made of HDPE (high density polyethylene) available in three different filtration grades (5µm, 20µm e 50µm) can be regenerated by washing it or replaced.
- Transparent bowl made off polycarbonate with bowl protection guard.
- Bowl assembly via bayonet type quick coupling mechanism with safety button.
- Semi-automatic drain mounted as standard.
- Available in four pressure ranges up to 12 bar.
- Operating knob can be locked in position by pressing it down once the desired P2 (regulated pressure) pressure value is achieved.
- Fitted with panel mounting locking ring.
- Built in gauge 0-12 bar range as standard.

#### Note

The pressure must be always regulating while increasing. For a more precise regulation and higher sensibility, the use of a regulator with a pressure range as close as possible to the regulated pressure is recommended.

#### Technical characteristics

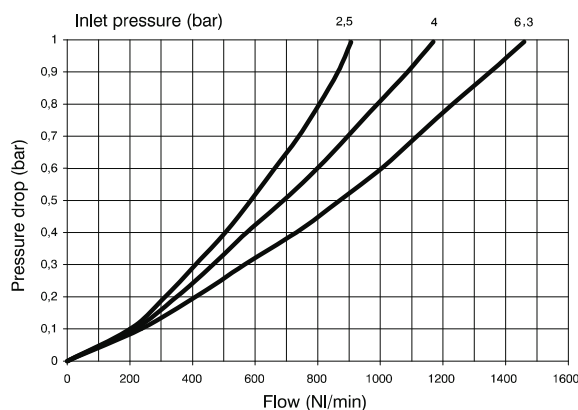
Connections	G 1/8" - G 1/4"	Ordering code
Max. inlet pressure	13 bar - 1,3 Mpa	
Working temperature	-5°C ÷ +50°C	<b>V171CEMSG</b>
Weight with Technopolymer threads	gr. 200	VERSION
Weight with threaded inserts	gr. 210	N = Metal inserts
Pressure range	0-2 bar / 0-4 bar	T = Technopolymer thread
	0-8 bar / 0-12 bar	CONNECTIONS
Filter pore size	5 µm - 20 µm - 50 µm	A = G1/8" (only for insert versions)
Bowl capacity	18 cm³	B = G1/4"
Assembly positions	Vertical	FILTER PORE SIZE
Max. fitting torque	G1/4" = 9 Nm	A = 5 µm
(with Technopolymer threads)	G1/8" = 15 Nm G1/4" = 15 Nm	B = 20 µm
		C = 50 µm
		ADJUSTING RANGE
		A = 0-2 bar
		B = 0-4 bar
		C = 0-8 bar
		D = 0-12 bar



\*Bowl removal maximum height

Example : T171BL : size 1, Lubricator with Technopolymer threads, G1/4" connections

Flow rate curves



#### Operational characteristics

- Oil mist lubrication with variable orifice size in function of the flow rate
- Oil quantity regulation mechanism and oil quantity visualization dome made of polycarbonate.
- Transparent bowl made off polycarbonate with bowl protection guard.
- Bowl assembly via bayonet type quick coupling mechanism with safety button.

#### Note

Install as close as possible to the point o fuse  
Do not use alcohol , deterging oils or solvents.

#### Technical characteristics

Connections	G 1/8" - G 1/4"
Max. inlet pressure	13 bar - 1,3 Mpa
Working temperature	-5°C ÷ +50°C
Weight with Technopolymer threads	gr. 110
Weight with threaded inserts	gr. 120
Indicative oil drip rate	1 drop every 300/600 NI
Oil type	FD22 - HG32
Bowl capacity	36 cm <sup>3</sup>
Assembly positions	Vertical
Max. fitting torque (with Technopolymer threads)	G1/4" = 9 Nm
Max. fitting torque (with threaded inserts)	G1/8" = 15 Nm G1/4" = 15 Nm
Min. operational flow at 6,3 bar	40 NI/min.

#### Ordering code

**V171CL**

#### VERSION

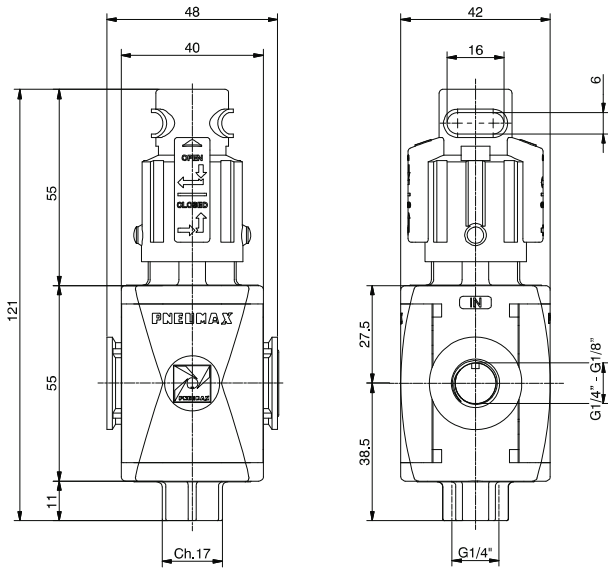
✓ N = Metal inserts

T = Technopolymer thread

#### CONNECTIONS

⊙ A = G1/8" (only for insert versions)

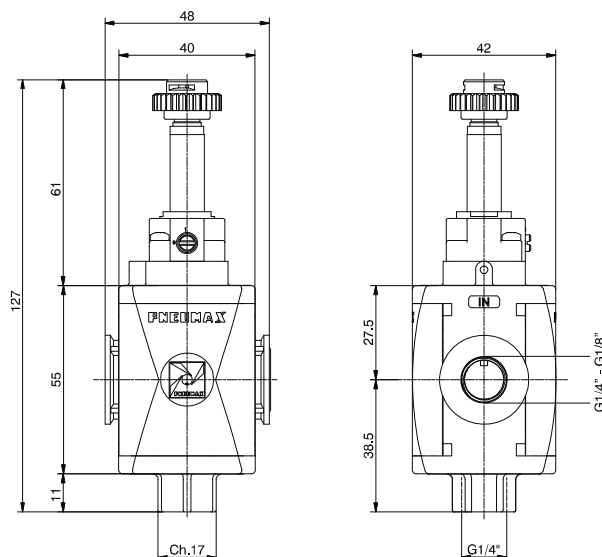
B = G1/4"



Example: T171BVL : size 1, Shut-off valve with Technopolymer threads, G1/4" connections

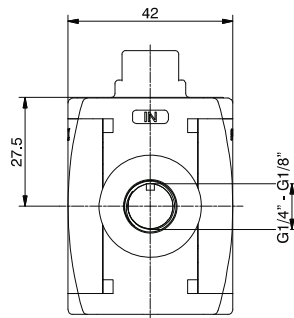
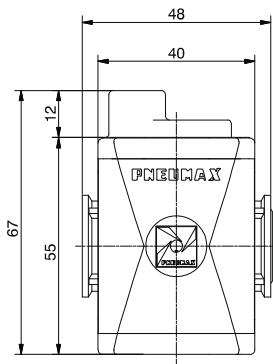
Operational characteristics	Technical characteristics		
<ul style="list-style-type: none"><li>- Manual operated 3 ways poppet valve.</li><li>- Double handle action for valve opening: pushing and rotating (clockwise).</li><li>- The valve can be closed and the down stream circuit depressurized by rotating anticlockwise the knob.</li><li>- Knob lockable with three padlocks.</li></ul>	Connections	G 1/8" - G 1/4"	Ordering code
	Max. inlet pressure	13 bar - 1,3 Mpa	V171VL
	Working temperature	-5°C ÷ +50°C	
	Weight with Technopolymer threads	gr. 100	VERSION
	Weight with threaded inserts	gr. 110	N = Metal inserts
	Assembly positions	Indifferent	T = Technopolymer thread
	Handle opening and closing angle	90°	CONNECTIONS
	Max. fitting torque (with Technopolymer threads)	G1/4" = 9 Nm	A = G1/8" (only for insert versions)
	Max. fitting torque (with threaded inserts)	G1/8" = 15 Nm G1/4" = 15 Nm	B = G1/4"
	Nominal flow at 6 bar with Δp=1	1400 NI/min.	
	Exhaust nominal flowrate at 6 bar with Δp=1	550 NI/min.	





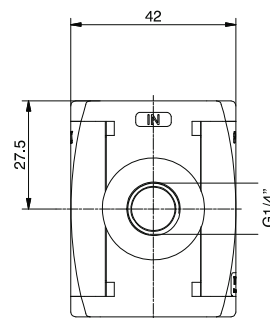
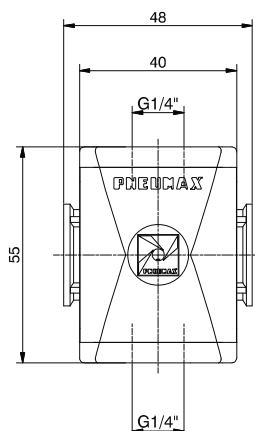
Example : T171BVEB2 : size 1, Electric shut-off valve, with M2 Pilot without coil, Technopolymer threads, G1/4" connections

Operational characteristics	Technical characteristics		
<ul style="list-style-type: none"> <li>- Solenoid operated 3 ways poppet valve.</li> <li>- Available also with 15mm solenoid operator.</li> </ul>	Supply and operating connections	G 1/8" - G 1/4"	Ordering code
	Discharge connections	G 1/4"	<b>V171CVEA</b>
	Working temperature	-5°C ÷ +50°C	VERSION
	Weight with Technopolymer threads	gr. 130	N = Metal inserts
	Weight with threaded inserts	gr. 140	T = Technopolymer thread
	Assembly positions	Indifferent	CONNECTIONS
	Min. Pressure working	2,5 bar	A = G1/8" (only for insert versions)
	Max. Pressure working	10 bar	B = G1/4"
	Max. fitting torque (with Technopolymer threads)	G1/4" = 9 Nm	15 mm COIL VOLTAGE
	Max. fitting torque (with threaded inserts)	G1/8" = 15 Nm G1/4" = 15 Nm	A4 = 12 V DC A5 = 24 V DC A6 = 24 V AC (50-60 Hz) A7 = 110 V AC (50-60 Hz) A8 = 220 V AC (50-60 Hz) A9 = 24 V DC (1 Watt)
	Nominal flow at 6 bar with $\Delta p=1$	1400 NI/min.	22 mm COIL VOLTAGE
	Exhaust nominal flowrate at 6 bar with $\Delta p=1$	550 NI/min.	B2 = Without coil M2 mechanic B4 = 12 V DC B5 = 24 V DC B6 = 24 V AC (50-60 Hz) B7 = 110 V AC (50-60 Hz) B8 = 220 V AC (50-60 Hz) B9 = 24 V DC (2 Watt)
			30 mm COIL VOLTAGE
			C2 = Without coil M1 mechanic C5 = 24 V DC C6 = 24 V AC (50-60 Hz) C7 = 110 V AC (50-60 Hz) C8 = 230 V AC (50-60 Hz) C9 = 24 V DC (2 Watt)



Example : T171BAP : size 1, Progressive start-up valve with Technopolymer threads, G1/4" connections

Operational characteristics	Technical characteristics		
<ul style="list-style-type: none"><li>- Down stream circuit filling time regulated via a built in flow regulator.</li><li>- Full pressure is allowed once the down stream circuit pressure reaches 50% of the inlet pressure.</li></ul>	Connections	G 1/8" - G 1/4"	Ordering code
	Max. inlet pressure	13 bar - 1,3 Mpa	V171AP
	Working temperature	-5°C ÷ +50°C	
	Weight with Technopolymer threads	gr. 70	VERSION
	Weight with threaded inserts	gr. 80	N = Metal inserts
	Max. fitting torque	G1/4" = 9 Nm	T = Technopolymer thread
	(with Technopolymer threads)		CONNECTIONS
	Max. fitting torque	G1/8" = 15 Nm	A = G1/8" (only for insert versions)
	(with threaded inserts)	G1/4" = 15 Nm	B = G1/4"
	Assembly positions	Indifferent	
	Min. pressure working	2,5 bar - 0,25 Mpa	
	Nominal flow at 6 bar with Δp=1	1400 NI/min.	
	fully open built in flow regulator Flow rate	75 NI/min.	



Example : T171BPA : size 1, Air intake with Technopolymer threads, G1/4" connections

#### Operational characteristics

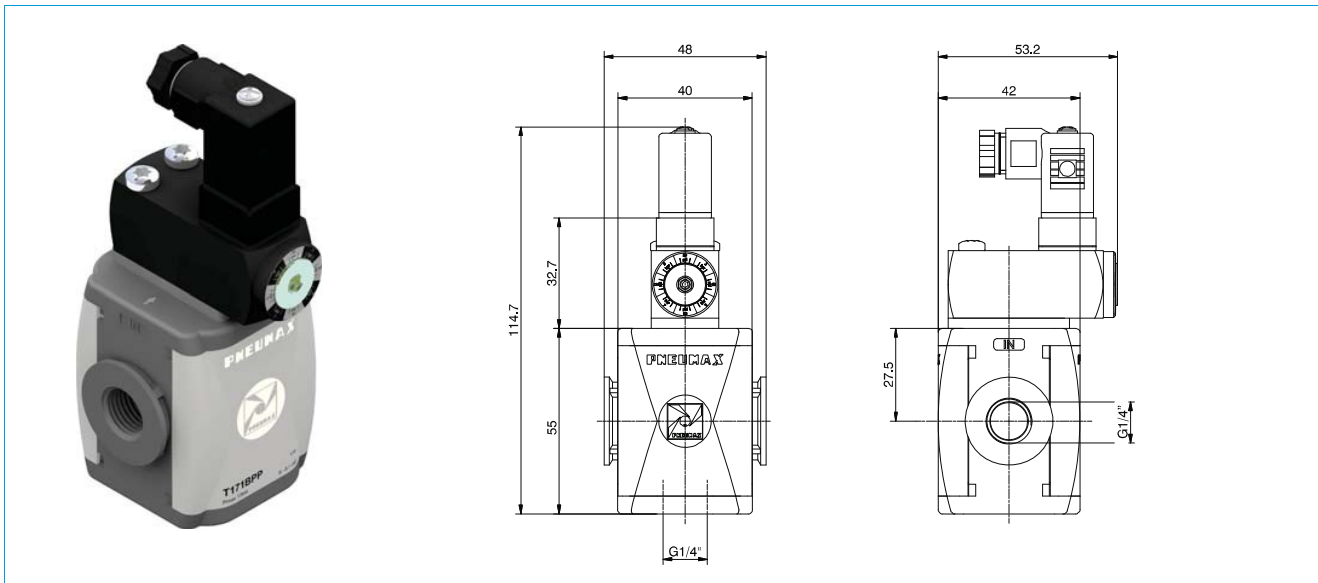
- Available with two G1/4" threaded connections.

#### Attention

For this product are available  
only Technopolymer connections

#### Technical characteristics

Connections	G 1/4"	Ordering code
Max. inlet pressure	13 bar - 1,3 Mpa	<b>T171BPA</b>
Working temperature	-5°C ÷ +50°C	
Weight	gr. 52	
Assembly positions	Indifferent	
Max. fitting torque (with Technopolymer threads)	G1/4" = 9 Nm	



Example: T171BPP : Size 1, Pressure switch with Technopolymer threads, G1/4" connections

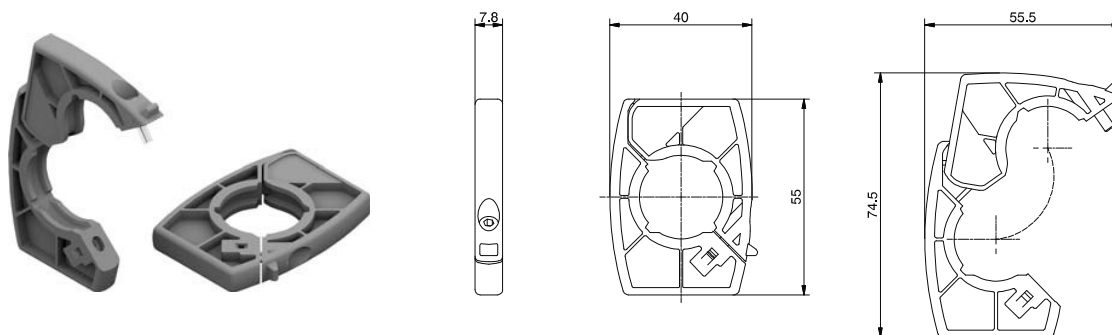
Operational characteristics	Technical characteristics		
<ul style="list-style-type: none"><li>- Built in adjustable pressure switch (2 to 10 bar) with electrical connection.</li><li>- G 1/4" threaded connection on the bottom face.</li><li>- The electrical connection is made by mean of a 15 mm connector DIN 43650 type C. The microswitch contact could be normally closed or open (change overswitch).</li></ul> <p><b>Attention</b> For this product are available only Technopolymer connections</p>	Connections	G 1/4"	Ordering code
	Max. inlet pressure	13 bar - 1,3 Mpa	<b>T171BPP</b>
	Working temperature	-5°C ÷ +50°C	
	Weight	gr. 138	
	Microswitch capacity	1A	
	Grade of protection (with connector assembled)	IP 65	
	Adjusting range	2 -10 bar	
	Assembly positions	Indifferent	
	Max. fitting torque (with Technopolymer threads)	G1/4" = 9 Nm	
	Microswitch maximum tension	250 VAC	

Connection

1 = Neutral  
2 = N.C contact  
3 = N.O contact

DIN 43650 type C connector

### Flange X



Example : T171X : Size 1 coupling flange

#### Operational characteristics

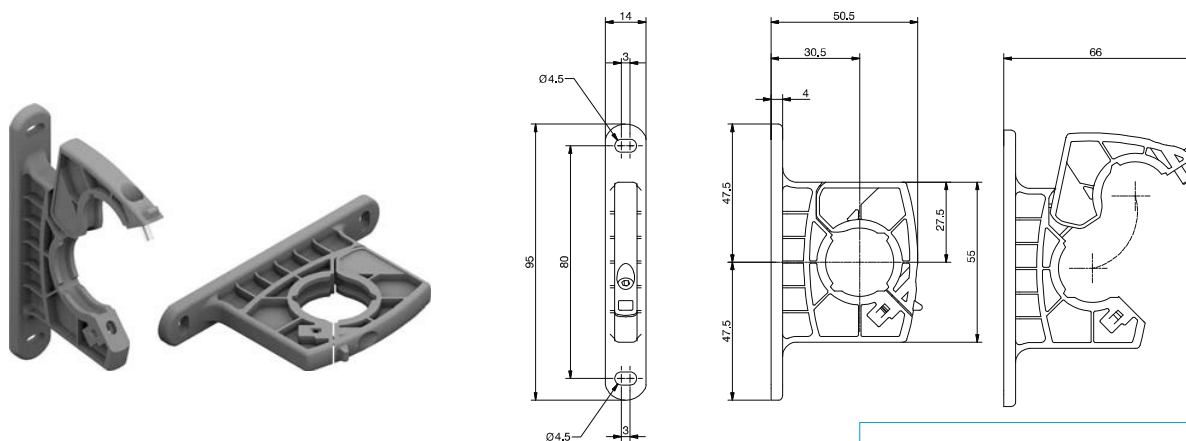
-Enables the quick connection of two functions

Weight gr. 12

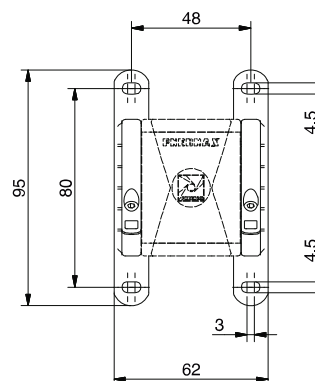
Ordering code

**T171X**

### Flange Y



#### Single unit panel mounting dimensions



Example : T171Y : Size 1 coupling flange with mounting holes

#### Operational characteristics

- Used to couple together two elements and to panel mount them.  
- Used to panel mount one single element.

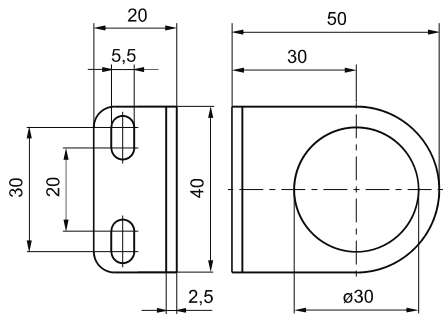
Weight gr. 18

Ordering code

**T171Y**



Fixing bracket



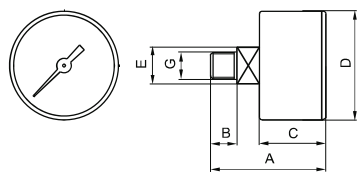
Operational characteristics

- Allows for regulators and filter regulators to be panel mounted. Weight gr. 32

Ordering code

17150

Pressure gauge



DIMENSIONS

CODE	A	B	C	D	E	G	Weight gr.
17070A	44	10	26	41	14	1/8"	60
17070B	45	10	27	49	14	1/8"	80

Ordering code

17070V.S

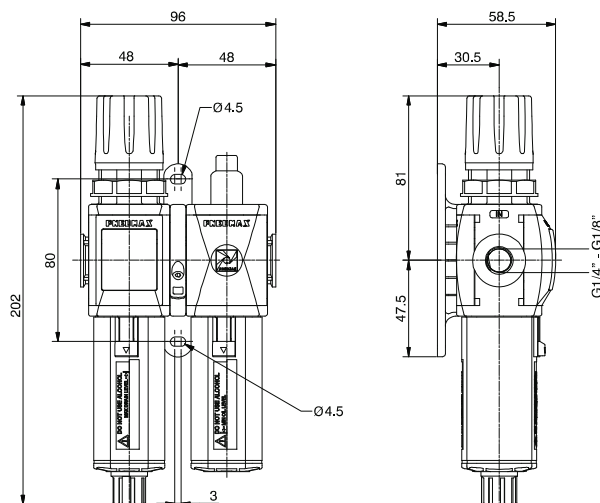
VERSION

V A = Dial Ø40  
B = Dial Ø50

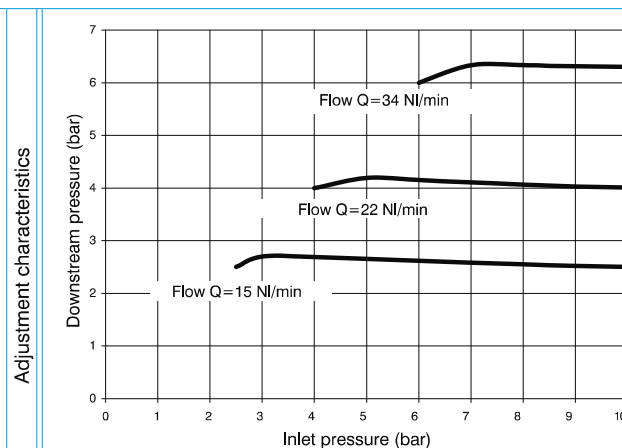
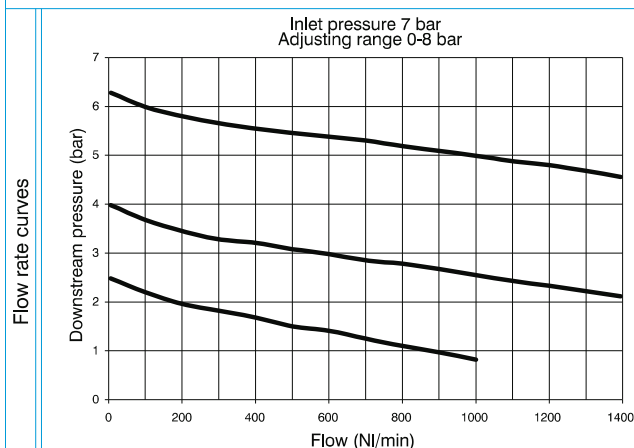
SCALE

S A = Scale 0-4 bar  
B = Scale 0-6 bar  
C = Scale 0-12 bar





Example : GT171BHG : size 1, combined group comprising Filter-regulator and Lubricator, Technopolymer threads, G1/4" connections, 0 to 8 bar adjusting range and 20 µm filter pore size



#### Operational characteristics

Combined group comprising Filter-regulator with built in manometer and Lubricator assembled with a (Y) type coupling kit for panel mounting.

Built in gauge 0 to 12 bar as standard

#### Note

The pressure must be always regulating while increasing. For a more precise regulation and higher sensibility, the use of a regulator with a pressure range as close as possible to the regulated pressure is recommended.

#### Technical characteristics

Connections	G 1/8" - G 1/4"
Max. inlet pressure	13 bar / 1,3 Mpa
Working temperature	-5°C ÷ +50°C
Weight with Technopolymer threads	gr. 328
Weight with threaded inserts	gr. 348
Pressure range	0-2 bar / 0-4 bar 0-8 bar / 0-12 bar
Filter pore size	5 µm - 20 µm - 50 µm
Bowl capacity	18 cm <sup>3</sup>
Indicative oil drip rate	1 drop every 300/600 NI
Oil type	FD22 - HG32
Bowl capacity	36 cm <sup>3</sup>
Assembly positions	Vertical
Max. fitting torque (with Technopolymer threads)	G1/4" = 9 Nm
Max. fitting torque (with threaded inserts)	G1/8" = 15 Nm G1/4" = 15 Nm
Min. operational flow at 6,3 bar	40 NI/min.

#### Ordering code

**GV171CHS**

#### VERSION

N = Metal inserts

T = Technopolymer thread

#### CONNECTIONS

A = G1/8" (only for insert versions)

B = G1/4"

#### FILTER PORE SIZE

#### ADJUSTING RANGE

C = 5 µm / 0-8 bar

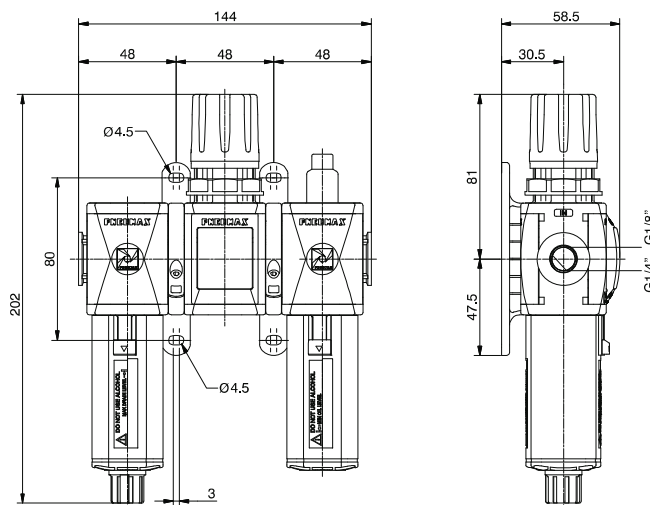
D = 5 µm / 0-12 bar

G = 20 µm / 0-8 bar

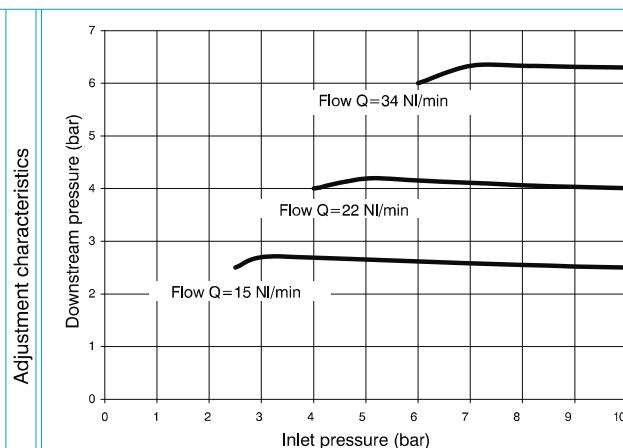
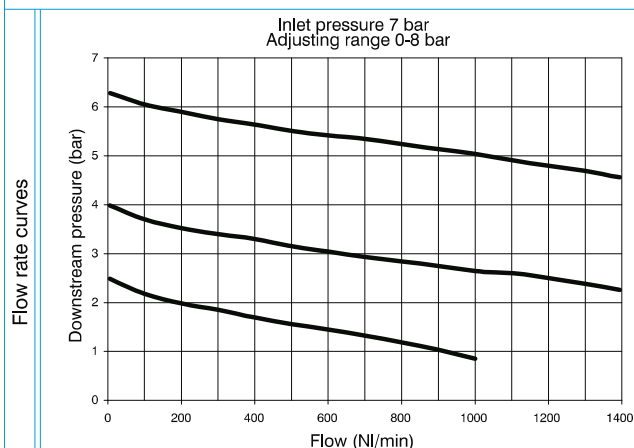
H = 20 µm / 0-12 bar

N = 50 µm / 0-8 bar

P = 50 µm / 0-12 bar



Example : GT171BKG : size 1 combined group comprising Filter, Regulator and Lubricator Technopolymer threads, G1/4" connections, 0 to 8 bar adjusting range and 20  $\mu$ m filter pore size



#### Operational characteristics

Combined group comprising Filter, Regulator with built in manometer and Lubricator assembled with two (Y) type coupling kits for panel mounting.

Built in gauge 0 to 12 bar as standard

#### Note

The pressure must be always regulating while increasing. For a more precise regulation and higher sensibility, the use of a regulator with a pressure range as close as possible to the regulated pressure is recommended.

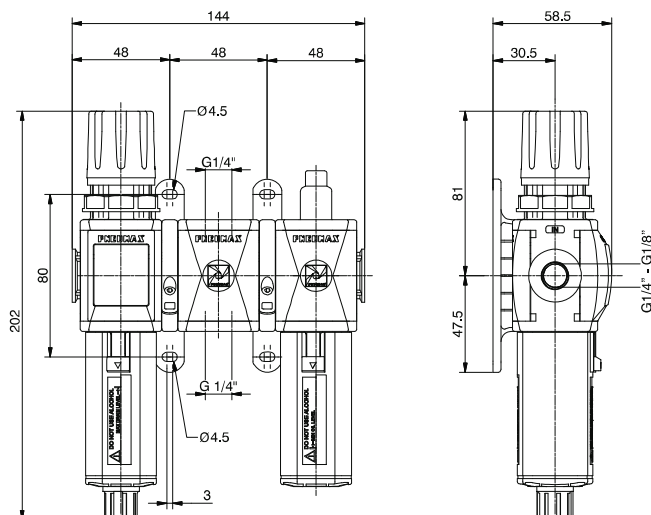
#### Technical characteristics

Connections	G 1/8" - G 1/4"
Max. inlet pressure	13 bar - 1,3 Mpa
Working temperature	-5°C ÷ +50°C
Weight with Technopolymer threads	gr. 406
Weight with threaded inserts	gr. 436
Pressure range	0-2 bar / 0-4 bar 0-8 bar / 0-12 bar
Filter pore size	5 $\mu$ m - 20 $\mu$ m - 50 $\mu$ m
Bowl capacity	18 cm <sup>3</sup>
Indicative oil drip rate	1 drop every 300/600 NI
Oil type	FD22 - HG32
Bowl capacity	36 cm <sup>3</sup>
Assembly positions	Vertical
Max. fitting torque (with Technopolymer threads)	G1/4" = 9 Nm
Max. fitting torque (with threaded inserts)	G1/8" = 15 Nm G1/4" = 15 Nm
Min. operational flow at 6,3 bar	40 NI/min.

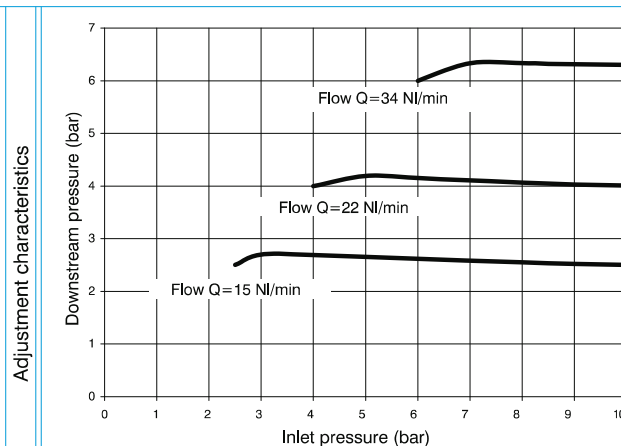
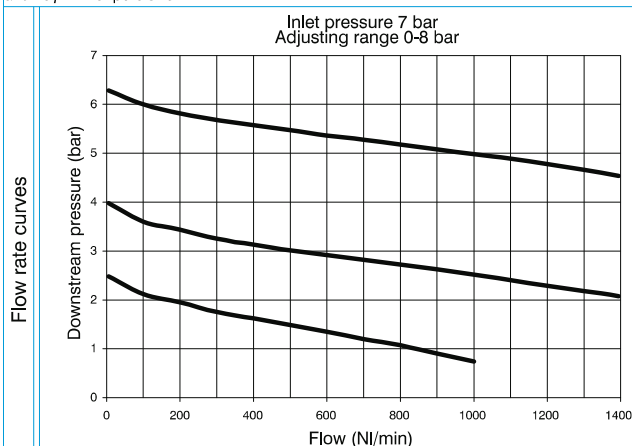
#### Ordering code

**G01710K0**

<b>V</b>	VERSION
N	N = Metal inserts
T	T = Technopolymer thread
<b>C</b>	CONNECTIONS
A	A = G1/8" (only for insert versions)
B	B = G1/4"
<b>S</b>	FILTER PORE SIZE
C	C = 5 $\mu$ m / 0-8 bar
D	D = 5 $\mu$ m / 0-12 bar
G	G = 20 $\mu$ m / 0-8 bar
H	H = 20 $\mu$ m / 0-12 bar
N	N = 50 $\mu$ m / 0-8 bar
P	P = 50 $\mu$ m / 0-12 bar



Example : GT171BNG : size 1 combined group comprising Filter-regulator, Air intake and Lubricator Technopolymer threads, G1/4" connections, 0 to 8 bar adjusting range and 20 µm filter pore size



#### Operational characteristics

Combined group comprising Filter-regulator with built in manometer, Air intake and Lubricator assembled with two (Y) type coupling kits for panel mounting.  
Built in gauge 0 to 12 bar as standard

#### Note

The pressure must be always regulating while increasing. For a more precise regulation and higher sensibility, the use of a regulator with a pressure range as close as possible to the regulated pressure is recommended.

#### Technical characteristics

Connections	G 1/8" - G 1/4"
Max. inlet pressure	13 bar - 1,3 Mpa
Working temperature	-5°C ÷ +50°C
Weight with Technopolymer threads	gr. 398
Weight with threaded inserts	gr. 418
Pressure range	0-2 bar / 0-4 bar 0-8 bar / 0-12 bar
Filter pore size	5 µm - 20 µm - 50 µm
Bowl capacity	18 cm <sup>3</sup>
Indicative oil drip rate	1 drop every 300/600 NI
Oil type	FD22 - HG32
Bowl capacity	36 cm <sup>3</sup>
Assembly positions	Vertical
Max. fitting torque (with Technopolymer threads)	G1/4" = 9 Nm
Max. fitting torque (with threaded inserts)	G1/8" = 15 Nm G1/4" = 15 Nm
Min. operational flow at 6,3 bar	40 NI/min.

#### Ordering code

**GV171ONS**

#### VERSION

N = Metal inserts  
T = Technopolymer thread

#### CONNECTIONS

A = G1/8" (only for insert versions)  
B = G1/4"

#### FILTER PORE SIZE

#### ADJUSTING RANGE

C = 5 µm / 0-8 bar

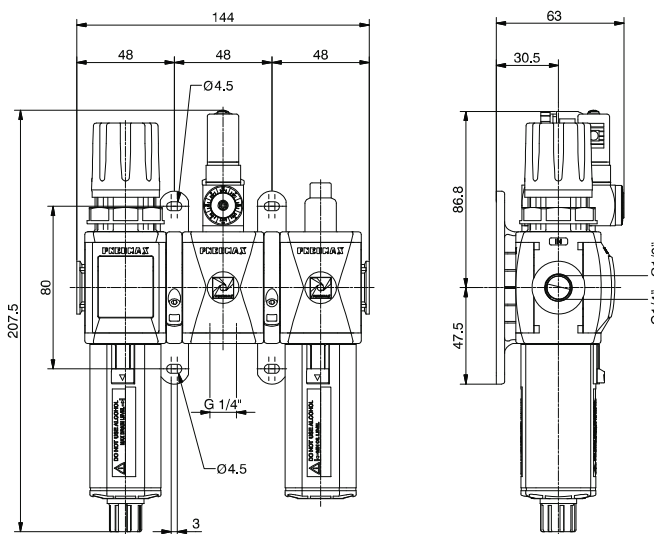
D = 5 µm / 0-12 bar

G = 20 µm / 0-8 bar

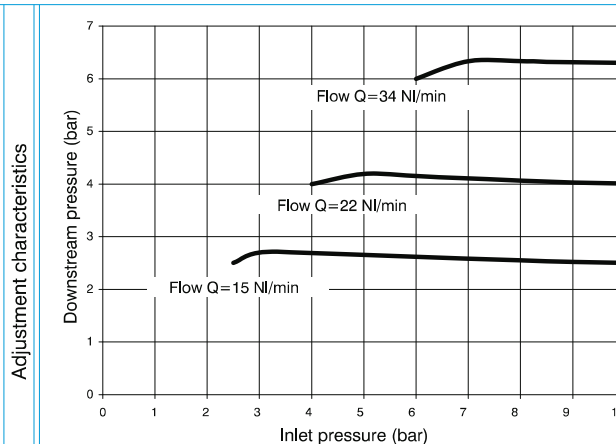
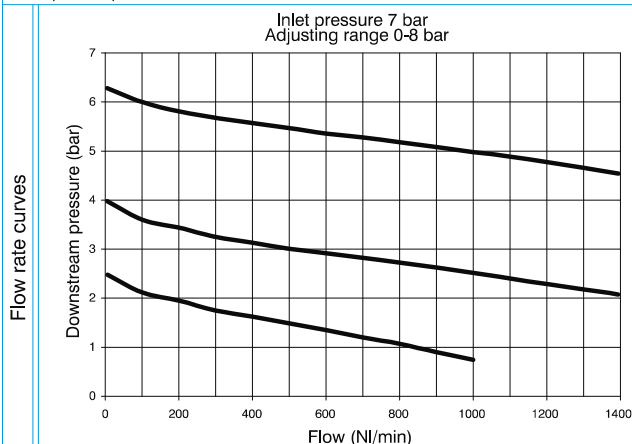
H = 20 µm / 0-12 bar

N = 50 µm / 0-8 bar

P = 50 µm / 0-12 bar



Example : GT171BRG : size 1 combined group comprising Filter-Regulator, Pressure switch and Lubricator Technopolymer threads, G1/4" connections 0 to 8 bar adjusting range and 20  $\mu$ m filter pore size



#### Operational characteristics

Combined group comprising Filter-regulator with built in manometer, Pressure switch and Lubricator assembled with two (Y) type coupling kits for panel mountings.  
Built in gauge 0 to 12 bar as standard

#### Note

The pressure must be always regulating while increasing. For a more precise regulation and higher sensibility, the use of a regulator with a pressure range as close as possible to the regulated pressure is recommended.

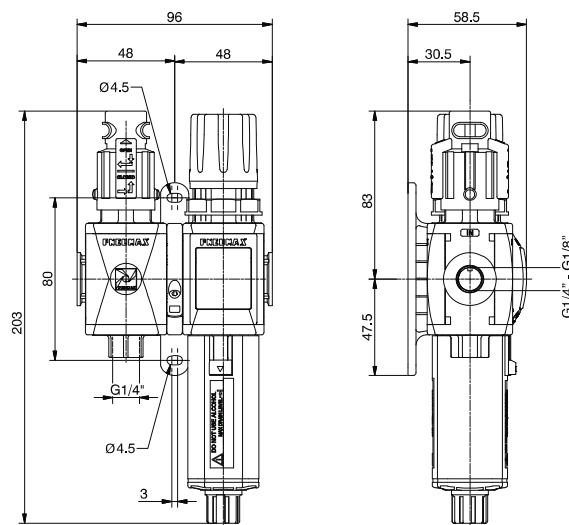
#### Technical characteristics

Connections	G 1/8" - G 1/4"
Max. inlet pressure	13 bar - 1,3 Mpa
Working temperature	-5°C ÷ +50°C
Weight with Technopolymer threads	gr. 484
Weight with threaded inserts	gr. 504
Pressure range	0-2 bar / 0-4 bar 0-8 bar / 0-12 bar
Filter pore size	5 $\mu$ m - 20 $\mu$ m - 50 $\mu$ m
Bowl capacity	18 cm <sup>3</sup>
Indicative oil drip rate	1 drop every 300/600 NI
Oil type	FD22 - HG32
Bowl capacity	36 cm <sup>3</sup>
Assembly positions	Vertical
Max. fitting torque (with Technopolymer threads)	G1/4" = 9 Nm
Max. fitting torque (with threaded inserts)	G1/8" = 15 Nm G1/4" = 15 Nm
Min. operational flow at 6,3 bar	40 NI/min.

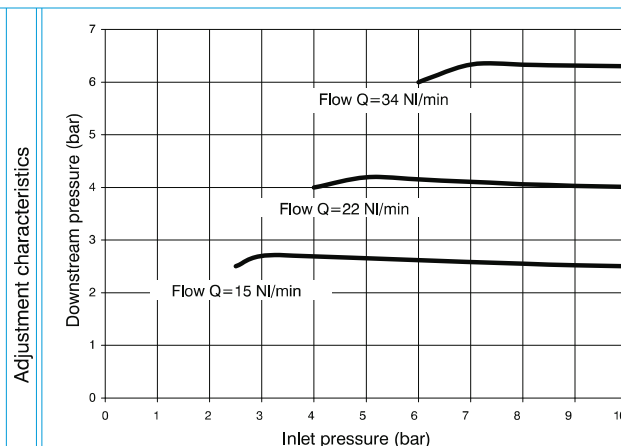
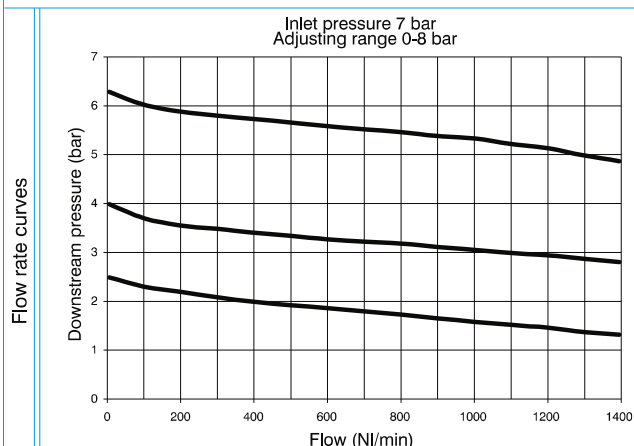
#### Ordering code

**G01710R0**

<b>V</b>	VERSION
N	N = Metal inserts
T	T = Technopolymer thread
<b>C</b>	CONNECTIONS
A	A = G1/8" (only for insert versions)
B	B = G1/4"
<b>S</b>	FILTER PORE SIZE
C	C = 5 $\mu$ m / 0-8 bar
D	D = 5 $\mu$ m / 0-12 bar
G	G = 20 $\mu$ m / 0-8 bar
H	H = 20 $\mu$ m / 0-12 bar
N	N = 50 $\mu$ m / 0-8 bar
P	P = 50 $\mu$ m / 0-12 bar



Example : GT171BVG : size 1 combined group comprising Shut-off valve, Filter-regulator Technopolymer threads, G1/4" connections 0 to 8 bar adjusting range and 20 µm filter pore size



#### Operational characteristics

Combined group comprising manual shut-off valve, Filter - regulator with built in manometer, assembled with one (Y) type coupling kit for panel mountings.  
Built in gauge 0 to 12 bar as standard.

#### Note

The pressure must be always regulating while increasing. For a more precise regulation and higher sensibility, the use of a regulator with a pressure range as close as possible to the regulated pressure is recommended.

#### Technical characteristics

Connections	G 1/8" - G 1/4"
Max. inlet pressure	13 bar - 1,3 Mpa
Working temperature	-5°C ÷ +50°C
Weight with Technopolymer threads	gr. 318
Weight with threaded inserts	gr. 338
Pressure range	0-2 bar / 0-4 bar 0-8 bar / 0-12 bar
Filter pore size	5 µm - 20 µm - 50 µm
Bowl capacity	18 cm <sup>3</sup>
Indicative oil drip rate	1 drop every 300/600 NI
Oil type	FD22 - HG32
Bowl capacity	36 cm <sup>3</sup>
Assembly positions	Vertical
Max. fitting torque (with Technopolymer threads)	G1/4" = 9 Nm
Max. fitting torque (with threaded inserts)	G1/8" = 15 Nm G1/4" = 15 Nm
Min. operational flow at 6,3 bar	40 NI/min.

#### Ordering code

**G171BVG**

#### VERSION

N = Metal inserts  
T = Technopolymer thread

#### CONNECTIONS

A = G1/8" (only for insert versions)  
B = G1/4"

#### FILTER PORE SIZE

#### ADJUSTING RANGE

C = 5 µm / 0-8 bar

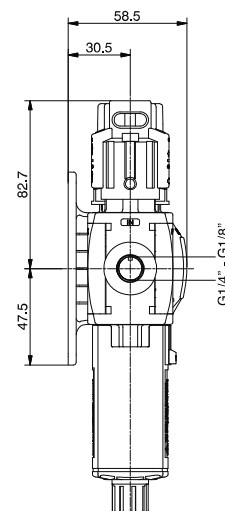
D = 5 µm / 0-12 bar

G = 20 µm / 0-8 bar

H = 20 µm / 0-12 bar

N = 50 µm / 0-8 bar

P = 50 µm / 0-12 bar



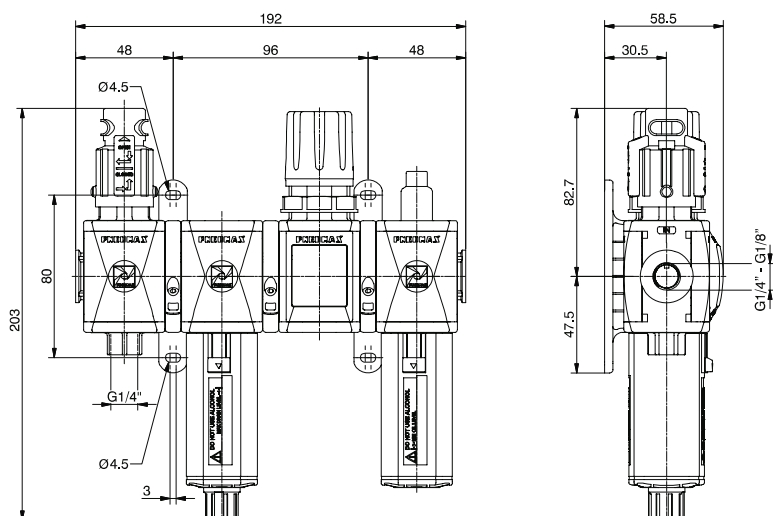
The graph shows the relationship between inlet and downstream pressures for three different flow rates. The y-axis represents downstream pressure in bar, ranging from 0 to 7. The x-axis represents inlet pressure in bar, ranging from 0 to 10. Three curves are plotted, each corresponding to a specific flow rate:

- Flow Q=34 NL/min:** This curve starts at an inlet pressure of approximately 6.2 bar and a downstream pressure of 6.0 bar. It rises to a peak downstream pressure of about 6.3 bar at an inlet pressure of 7.5 bar, then levels off at approximately 6.2 bar for inlet pressures up to 10 bar.
- Flow Q=22 NL/min:** This curve starts at an inlet pressure of approximately 4.0 bar and a downstream pressure of 4.0 bar. It rises to a peak downstream pressure of about 4.2 bar at an inlet pressure of 5.5 bar, then levels off at approximately 4.0 bar for inlet pressures up to 10 bar.
- Flow Q=15 NL/min:** This curve starts at an inlet pressure of approximately 2.5 bar and a downstream pressure of 2.5 bar. It rises to a peak downstream pressure of about 2.7 bar at an inlet pressure of 3.5 bar, then levels off at approximately 2.5 bar for inlet pressures up to 10 bar.

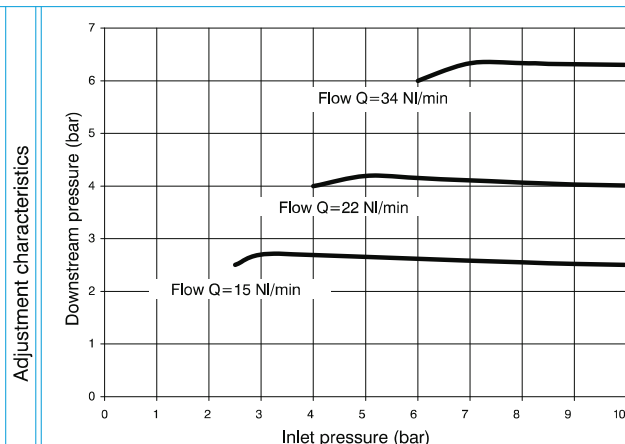
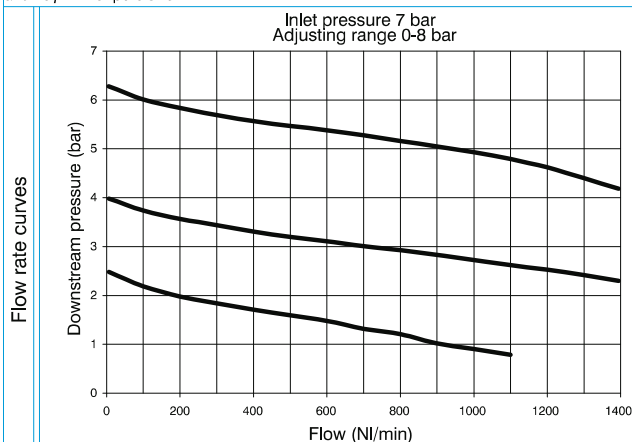
In all cases, the downstream pressure is equal to or slightly higher than the inlet pressure, and the pressure drop (inlet minus downstream) is relatively small and consistent across the range of inlet pressures shown.

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Example : GT171BVKG : size 1 combined group comprising Shut-off valve, Filter, Regulator and Lubricator Technopolymer threads, G1/4" connections 0 to 8 bar adjusting range and 20 µm filter pore size



#### Operational characteristics

Combined group comprising manual shut - off valve, Filter, Regulator with built in manometer and Lubricator , assembled with two (Y) type coupling kits for panel mounting and one (X) type coupling kit.

Built in pressure gauge 0 to 12 bar range

#### Note

The pressure must be always regulating while increasing. For a more precise regulation and higher sensibility, the use of a regulator with a pressure range as close as possible to the regulated pressure is recommended.

#### Technical characteristics

Connections	G 1/8" - G 1/4"
Max. inlet pressure	13 bar - 1,3 Mpa
Working temperature	-5°C ÷ +50°C
Weight with Technopolymer threads	gr. 518
Weight with threaded inserts	gr. 558
Pressure range	0-2 bar / 0-4 bar 0-8 bar / 0-12 bar
Filter pore size	5 µm - 20 µm - 50 µm
Bowl capacity	18 cm <sup>3</sup>
Indicative oil drip rate	1 drop every 300/600 NI
Oil type	FD22 - HG32
Bowl capacity	36 cm <sup>3</sup>
Assembly positions	Vertical
Max. fitting torque (with Technopolymer threads)	G1/4" = 9 Nm
Max. fitting torque (with threaded inserts)	G1/8" = 15 Nm G1/4" = 15 Nm
Min. operational flow at 6,3 bar	40 NI/min.

#### Ordering code

**G171BVK**

#### VERSION

N = Metal inserts

T = Technopolymer thread

#### CONNECTIONS

A = G1/8" (only for insert versions)

B = G1/4"

#### FILTER PORE SIZE

#### ADJUSTING RANGE

C = 5 µm / 0-8 bar

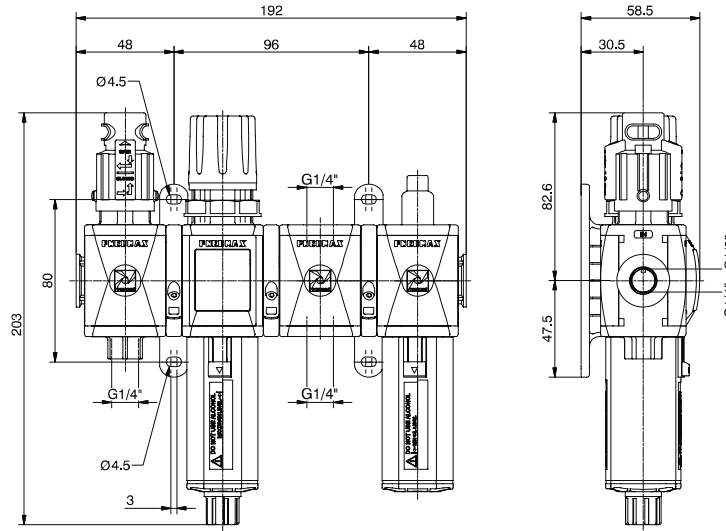
D = 5 µm / 0-12 bar

G = 20 µm / 0-8 bar

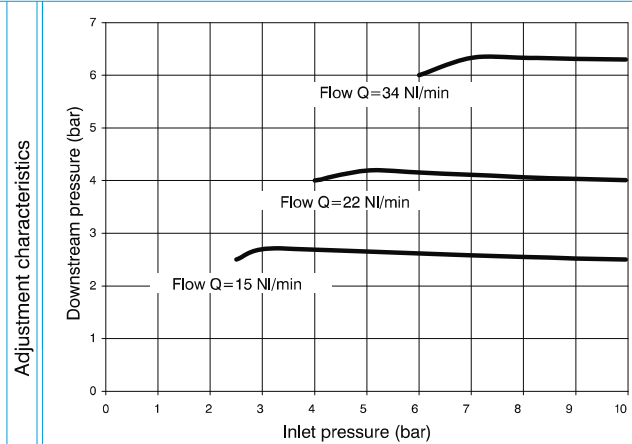
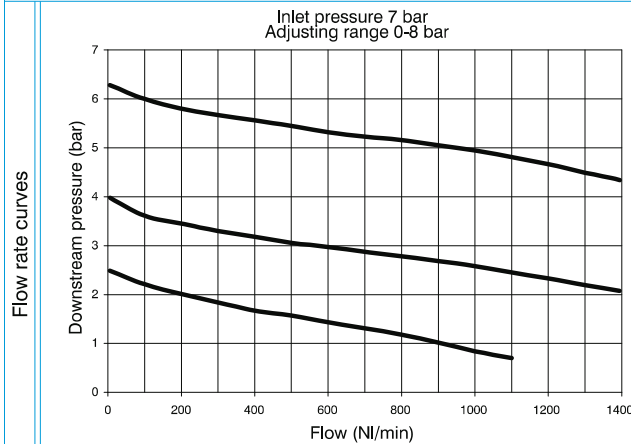
H = 20 µm / 0-12 bar

N = 50 µm / 0-8 bar

P = 50 µm / 0-12 bar



Example : GT171BVNG : size 1 combined group comprising Shut-off valve, Filter-regulator, Air intake and Lubricator Technopolymer threads, G1/4" connections 0 to 8 bar adjusting range and 20 µm filter pore size



#### Operational characteristics

Combined group comprising manual shut-off valve, Filter - regulator with built in manometer, Air intake and Lubricator, assembled with two (Y) type coupling kits for panel mounting and one (X) type coupling kit.  
Built in pressure gauge 0 to 12 bar range

#### Note

The pressure must be always regulating while increasing. For a more precise regulation and higher sensibility, the use of a regulator with a pressure range as close as possible to the regulated pressure is recommended.

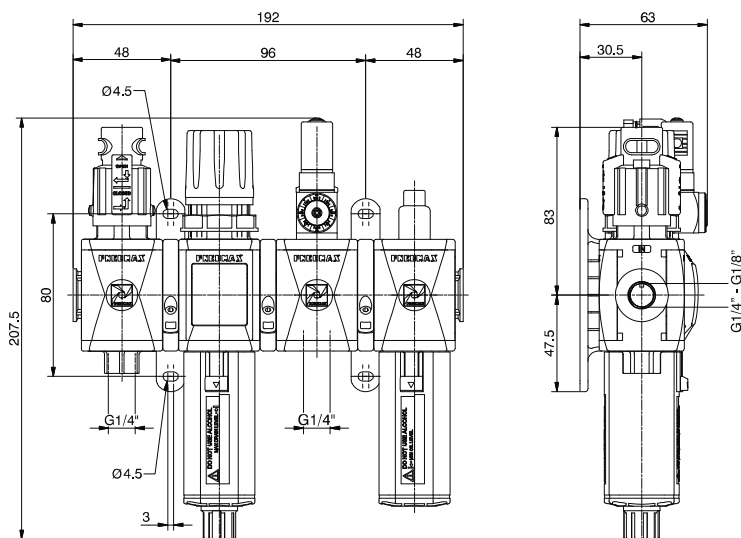
#### Technical characteristics

Connections	G 1/8" - G 1/4"
Max. inlet pressure	13 bar - 1,3 Mpa
Working temperature	-5°C ÷ +50°C
Weight with Technopolymer threads	gr. 510
Weight with threaded inserts	gr. 540
Pressure range	0-2 bar / 0-4 bar 0-8 bar / 0-12 bar
Filter pore size	5 µm - 20 µm - 50 µm
Bowl capacity	18 cm³
Indicative oil drip rate	1 drop every 300/600 NI
Oil type	FD22 - HG32
Bowl capacity	36 cm³
Assembly positions	Vertical
Max. fitting torque (with Technopolymer threads)	G1/4" = 9 Nm
Max. fitting torque (with threaded inserts)	G1/8" = 15 Nm G1/4" = 15 Nm
Min. operational flow at 6,3 bar	40 NI/min.

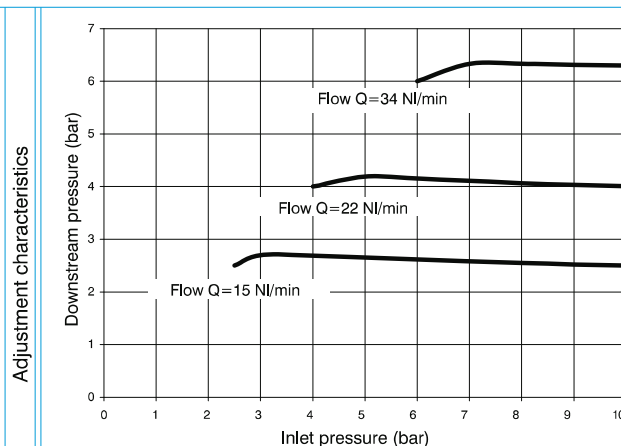
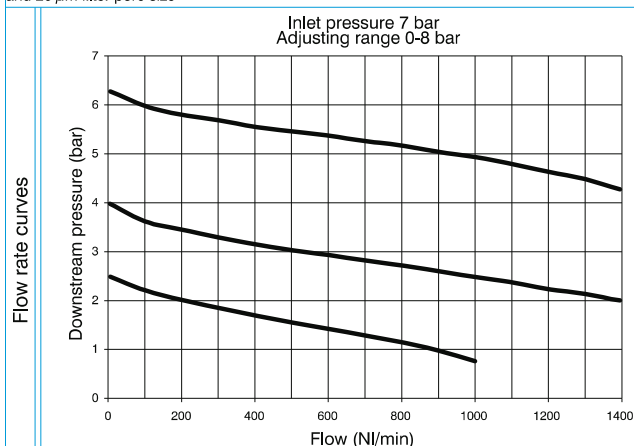
#### Ordering code

**GV171GVNS**

<b>V</b>	VERSION
N	N = Metal inserts
T	T = Technopolymer thread
<b>C</b>	CONNECTIONS
A	A = G1/8" (only for insert versions)
B	B = G1/4"
<b>S</b>	FILTER PORE SIZE
C	C = 5 µm / 0-8 bar
D	D = 5 µm / 0-12 bar
G	G = 20 µm / 0-8 bar
H	H = 20 µm / 0-12 bar
N	N = 50 µm / 0-8 bar
P	P = 50 µm / 0-12 bar



Example : GT171BVRG : size 1 combined group comprising Shut-off valve, Filter-regulator, Pressure switch and Lubricator Technopolymer threads, G1/4" connections adjusting range 0 to 8 bar and 20 µm filter pore size



#### Operational characteristics

Combined group comprising manual shut-off valve, Filter - regulator with built in manometer, Pressure switch and Lubricator, assembled with two (Y) type coupling kits for panel mounting and one (X) type coupling kit.  
Built in pressure gauge 0 to 12 bar range

#### Note

The pressure must be always regulating while increasing. For a more precise regulation and higher sensibility, the use of a regulator with a pressure range as close as possible to the regulated pressure is recommended.

#### Technical characteristics

Connections	G 1/8" - G 1/4"
Max. inlet pressure	13 bar - 1,3 Mpa
Working temperature	-5°C ÷ +50°C
Weight with Technopolymer threads	gr. 596
Weight with threaded inserts	gr. 626
Pressure range	0-2 bar / 0-4 bar 0-8 bar / 0-12 bar
Filter pore size	5 µm - 20 µm - 50 µm
Bowl capacity	18 cm³
Indicative oil drip rate	1 drop every 300/600 NI
Oil type	FD22 - HG32
Bowl capacity	36 cm³
Assembly positions	Vertical
Max. fitting torque (with Technopolymer threads)	G1/4" = 9 Nm
Max. fitting torque (with threaded inserts)	G1/8" = 15 Nm G1/4" = 15 Nm
Min. operational flow at 6,3 bar	40 NI/min.

#### Ordering code

**GV171BVRG**

#### VERSION

N = Metal inserts  
T = Technopolymer thread

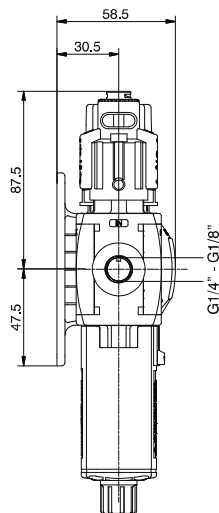
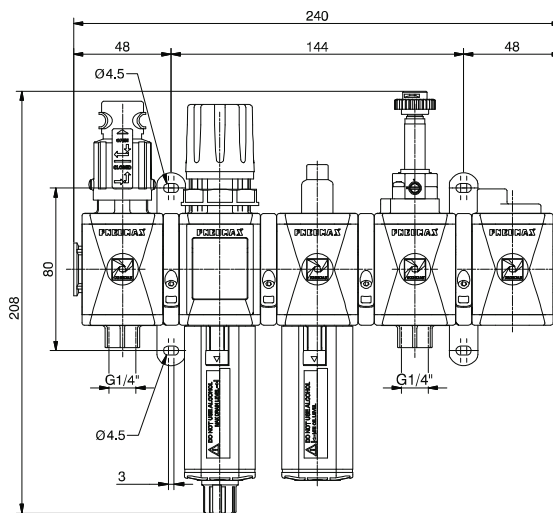
#### CONNECTIONS

A = G1/8" (only for insert versions)  
B = G1/4"

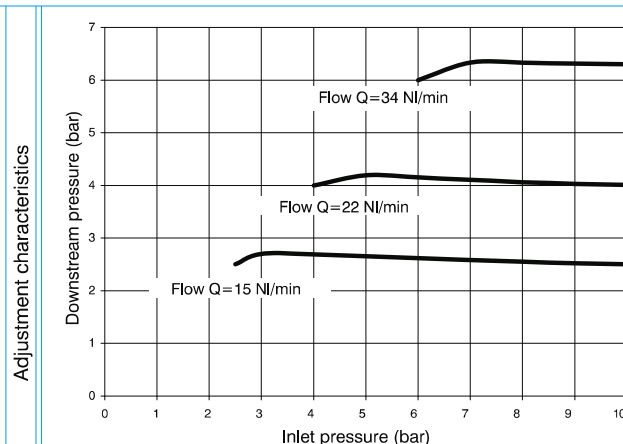
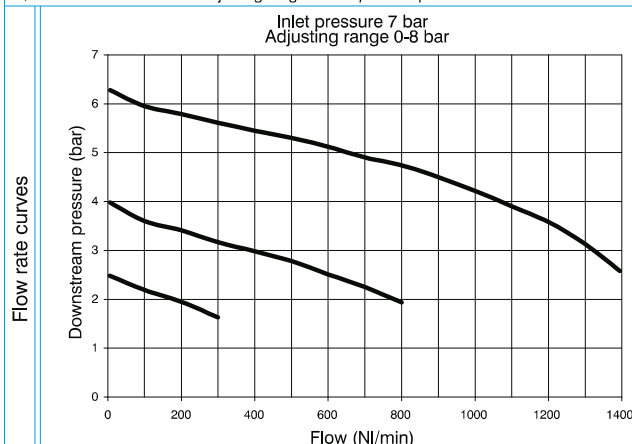
#### FILTER PORE SIZE

#### ADJUSTING RANGE

C = 5 µm / 0-8 bar  
D = 5 µm / 0-12 bar  
G = 20 µm / 0-8 bar  
H = 20 µm / 0-12 bar  
N = 50 µm / 0-8 bar  
P = 50 µm / 0-12 bar



Example : GT171BVHSGB9 : size 1 combined group comprising Shut-off valve, Filter-regulator, Lubricator, Electric shut-off valve Progressive start-up valve Technopolymer threads, G1/4" connections 0 to 8 bar adjusting range and 20  $\mu$ m filter pore size



#### Operational characteristics

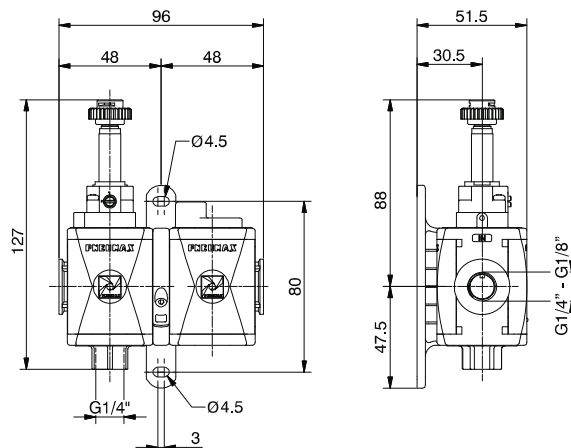
Combined group comprising manual shut-off valve, Filter - regulator with built in manometer, Lubricator, Electric shut - off valve and Progressive start-up valve assembled with two (Y) type coupling kits for panel mounting and two (X) type coupling kits. Built in gauge 0 to 12 bar as standard

#### Note

The pressure must be always regulating while increasing. For a more precise regulation and higher sensibility, the use of a regulator with a pressure range as close as possible to the regulated pressure is recommended.

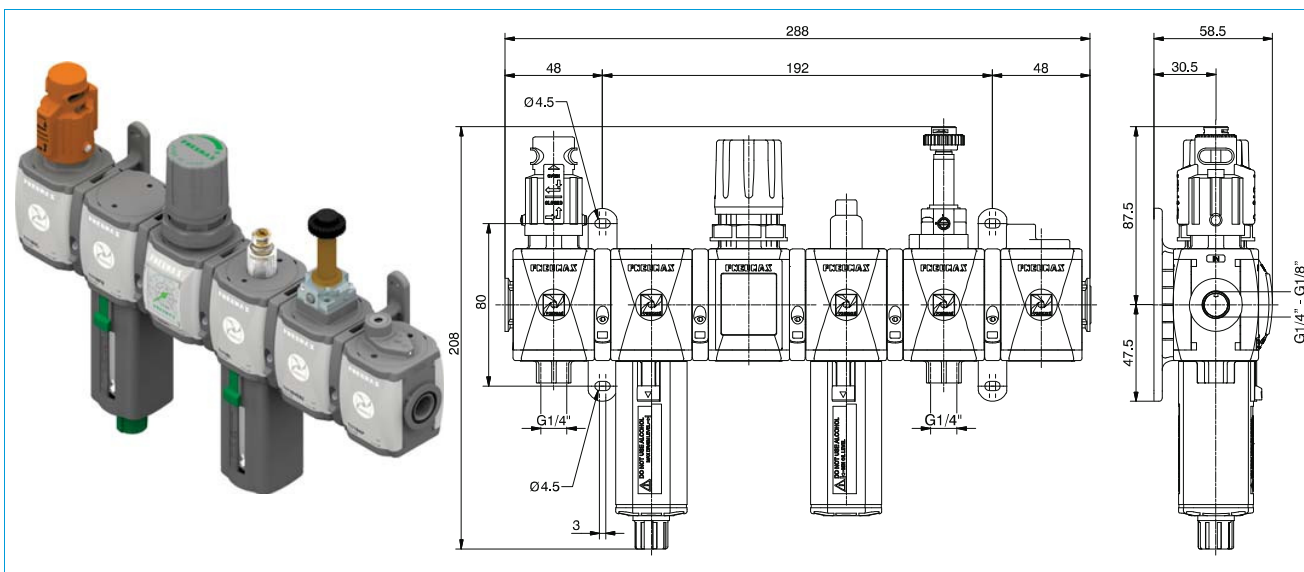
#### Technical characteristics

Connections	G 1/8" - G 1/4"	Ordering code <b>GV171GVHSGA</b>
Max. inlet pressure	13 bar - 1,3 Mpa	
Working temperature	-5°C ÷ +50°C	VERSION N = Metal inserts T = Technopolymer thread
Weight with Technopolymer threads	gr. 670	
Weight with threaded inserts	gr. 720	CONNECTIONS A = G1/8" (only for insert versions) B = G1/4"
Pressure range	0-2 bar / 0-4 bar 0-8 bar / 0-12 bar	
Filter pore size	5 $\mu$ m - 20 $\mu$ m - 50 $\mu$ m	FILTER PORE SIZE ADJUSTING RANGE C = 5 $\mu$ m / 0-8 bar D = 5 $\mu$ m / 0-12 bar G = 20 $\mu$ m / 0-8 bar H = 20 $\mu$ m / 0-12 bar N = 50 $\mu$ m / 0-8 bar P = 50 $\mu$ m / 0-12 bar
Bowl capacity	18 cm <sup>3</sup>	
Indicative oil drip rate	1 drop every 300/600 NI	15 mm COIL VOLTAGE A4 = 12 V DC A5 = 24 V DC A6 = 24 V AC (50-60 Hz) A7 = 110 V AC (50-60 Hz) A8 = 220 V AC (50-60 Hz) A9 = 24 V DC (1 Watt)
Oil type	FD22 - HG32	
Bowl capacity	36 cm <sup>3</sup>	22 mm COIL VOLTAGE B2 = Without coil M2 mechanic B4 = 12 V DC B5 = 24 V DC B6 = 24 V AC (50-60 Hz) B7 = 110 V AC (50-60 Hz) B8 = 220 V AC (50-60 Hz) B9 = 24 V DC (2 Watt)
Assembly positions	Vertical	
Max. fitting torque (with Technopolymer threads)	G1/4" = 9 Nm	A
Max. fitting torque (with threaded inserts)	G1/8" = 15 Nm G1/4" = 15 Nm	
Min. operational flow at 6,3 bar	40 NI/min.	
	30 mm COIL VOLTAGE C2 = Without coil M1 mechanic C5 = 24 V DC C6 = 24 V AC (50-60 Hz) C7 = 110 V AC (50-60 Hz) C8 = 230 V AC (50-60 Hz) C9 = 24 V DC (2 Watt)	

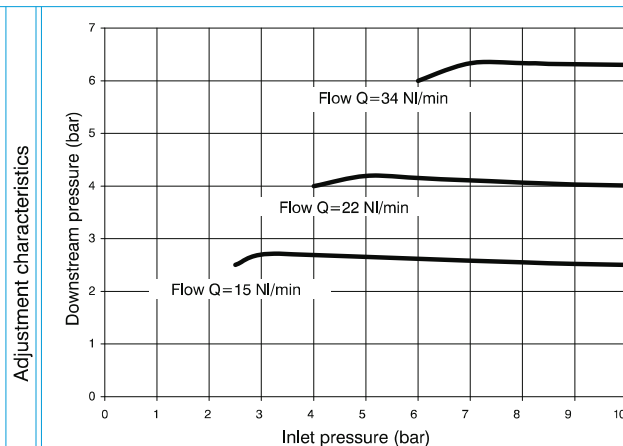
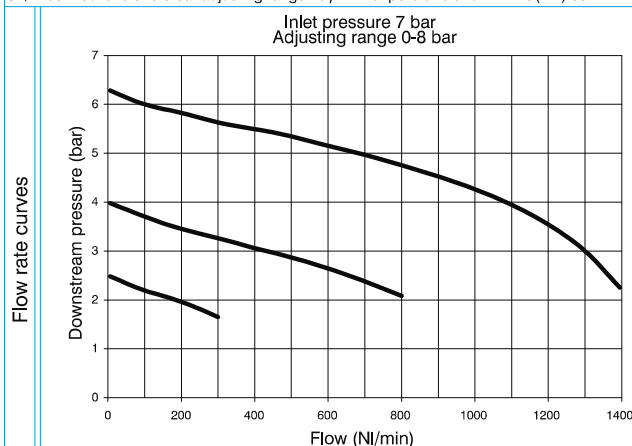


Example : GT171BSB2 : size 1 combined group comprising Electric shut-off valve, Progressive start-up valve without coil with M2 pilot Technopolymer threads, G1/4" connections

Operational characteristics	Technical characteristics		
Combined group comprising Electric shut - off valve and Progressive start-up valve assembled with a (Y) type coupling kit for panel mounting.	Connections	G 1/8" - G 1/4"	Ordering code
	Max. inlet pressure	10 bar - 1 Mpa	<b>GV171CSA</b>
	Min. inlet pressure	2.5 bar - 0.25 Mpa	
	Working temperature	-5°C ÷ +50°C	VERSION
	Weight with Technopolymer threads	gr. 218	✓ N = Metal inserts
	Weight with threaded inserts	gr. 238	T = Technopolymer thread
	Assembly positions	Indifferent	CONNECTIONS
	Max. fitting torque (with Technopolymer threads)	G1/4" = 9 Nm	⊙ A = G1/8" (only for insert versions)
	Max. fitting torque (with threaded inserts)	G1/8" = 15 Nm G1/4" = 15 Nm	B = G1/4"
	Flow at 6 bar with $\Delta p=1$	1200 NI/min.	15 mm COIL VOLTAGE
			A4 = 12 V DC A5 = 24 V DC A6 = 24 V AC (50-60 Hz) A7 = 110 V AC (50-60 Hz) A8 = 220 V AC (50-60 Hz) A9 = 24 V DC (1 Watt)
			22 mm COIL VOLTAGE
			Ⓐ B2 = Without coil M2 mechanic B4 = 12 V DC B5 = 24 V DC B6 = 24 V AC (50-60 Hz) B7 = 110 V AC (50-60 Hz) B8 = 220 V AC (50-60 Hz) B9 = 24 V DC (2 Watt)
			30 mm COIL VOLTAGE
			C2 = Without coil M1 mechanic C5 = 24 V DC C6 = 24 V AC (50-60 Hz) C7 = 110 V AC (50-60 Hz) C8 = 230 V AC (50-60 Hz) C9 = 24 V DC (2 Watt)



Example : GT171BVKSGB9 : size 1 combined group comprising Shut-off valve, Filter, Regulator, Lubricator, Electrical shut-off valve and Progressive start-up valve Technopolymer threads, G1/4" connections 0 to 8 bar adjusting range 20  $\mu$ m filter pore size and 24V DC(2W) coil



#### Operational characteristics

Combined group comprising manual shut-off valve, Filter, Regulator with built in manometer , Lubricator , Electric shut-off valve and Progressive start-up valve assembled with two (Y) type coupling kits for panel mounting and three (X) type coupling kits. Built in pressure gauge 0 to 12 bar range

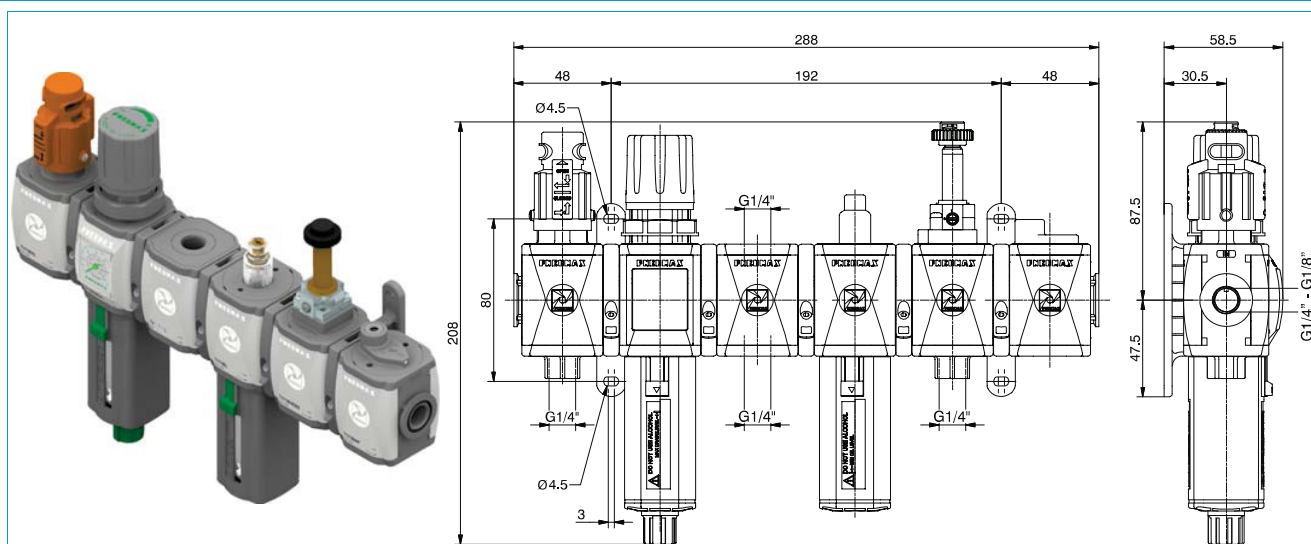
#### Note

The pressure must be always regulating while increasing. For a more precise regulation and higher sensibility, the use of a regulator with a pressure range as close as possible to the regulated pressure is recommended.

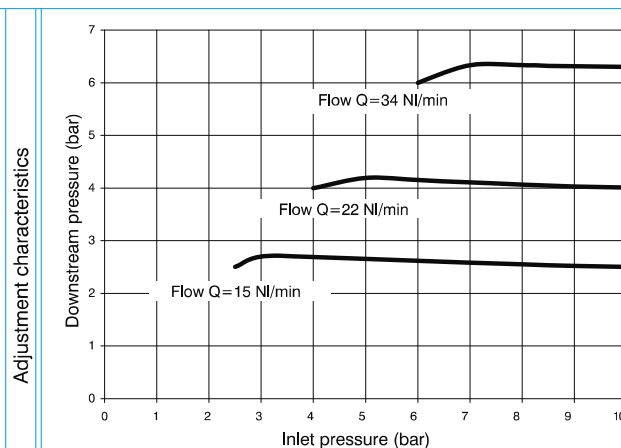
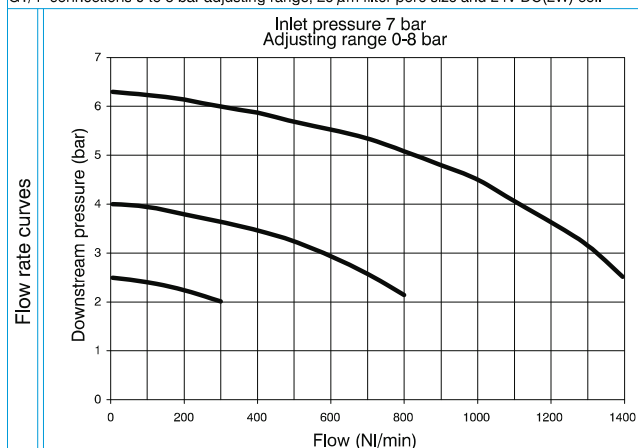
#### Technical characteristics

Connections	G 1/8" - G 1/4"	Ordering code <b>GV171GVKSGA</b>
Max. inlet pressure	13 bar - 1,3 Mpa	
Working temperature	-5°C ÷ +50°C	VERSION N = Metal inserts T = Technopolymer thread
Weight with Technopolymer threads	gr. 742	
Weight with threaded inserts	gr. 802	CONNECTIONS A = G1/8" (only for insert versions) B = G1/4"
Pressure range	0-2 bar / 0-4 bar 0-8 bar / 0-12 bar	
Filter pore size	5 $\mu$ m - 20 $\mu$ m - 50 $\mu$ m	FILTER PORE SIZE ADJUSTING RANGE C = 5 $\mu$ m / 0-8 bar D = 5 $\mu$ m / 0-12 bar G = 20 $\mu$ m / 0-8 bar H = 20 $\mu$ m / 0-12 bar N = 50 $\mu$ m / 0-8 bar P = 50 $\mu$ m / 0-12 bar
Bowl capacity	18 cm <sup>3</sup>	
Indicative oil drip rate	1 drop every 300/600 NI	15 mm COIL VOLTAGE A4 = 12 V DC A5 = 24 V DC A6 = 24 V AC (50-60 Hz) A7 = 110 V AC (50-60 Hz) A8 = 220 V AC (50-60 Hz) A9 = 24 V DC (1 Watt)
Oil type	FD22 - HG32	
Bowl capacity	36 cm <sup>3</sup>	22 mm COIL VOLTAGE B2 = Without coil M2 mechanic B4 = 12 V DC B5 = 24 V DC B6 = 24 V AC (50-60 Hz) B7 = 110 V AC (50-60 Hz) B8 = 220 V AC (50-60 Hz) B9 = 24 V DC (2 Watt)
Assembly positions	Vertical	
Max. fitting torque (with Technopolymer threads)	G1/4" = 9 Nm	A
Max. fitting torque (with threaded inserts)	G1/8" = 15 Nm G1/4" = 15 Nm	
Min. operational flow at 6,3 bar	40 NI/min.	
30 mm COIL VOLTAGE C2 = Without coil M1 mechanic C5 = 24 V DC C6 = 24 V AC (50-60 Hz) C7 = 110 V AC (50-60 Hz) C8 = 230 V AC (50-60 Hz) C9 = 24 V DC (2 Watt)		

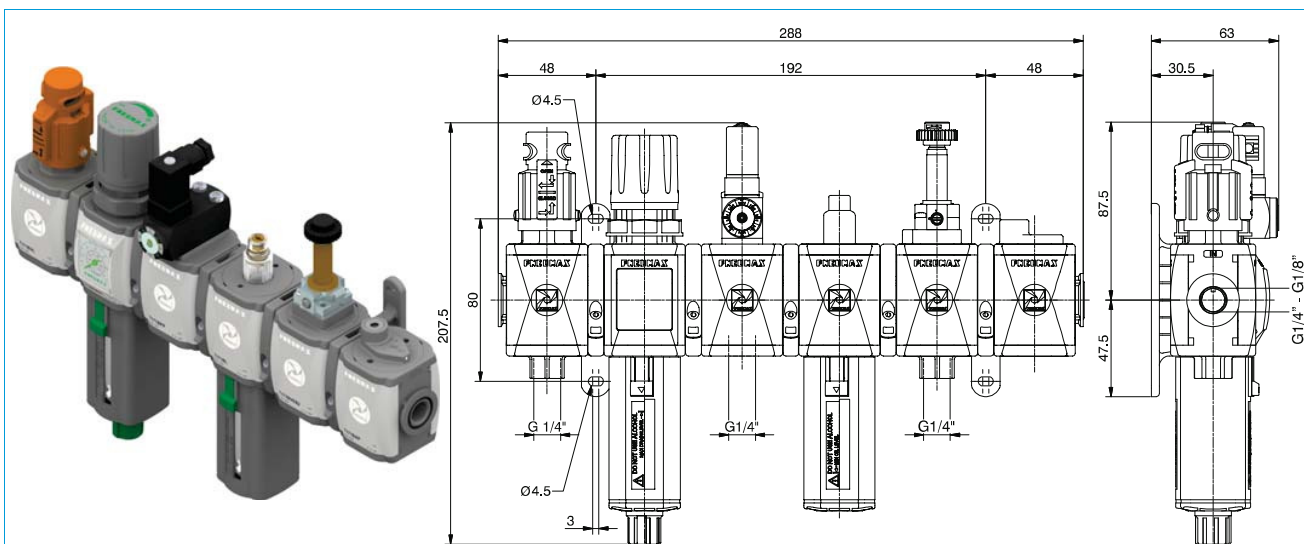




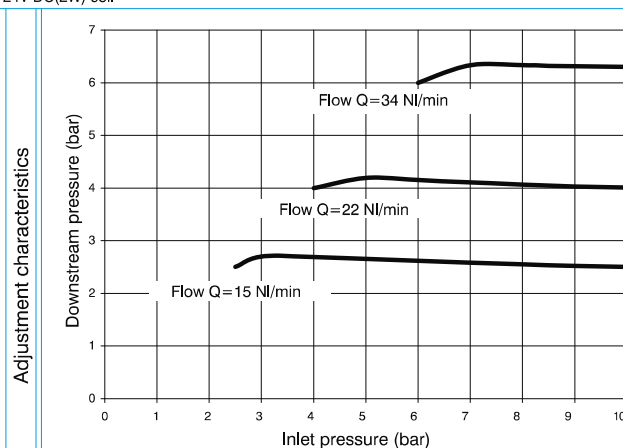
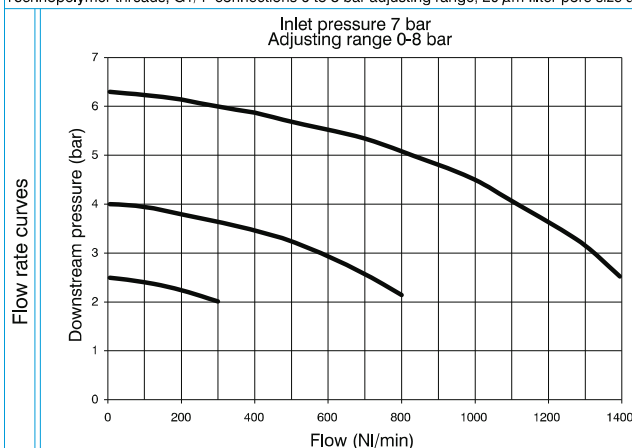
Example : GT171BVNSGB9 : size 1 combined group comprising Shut-off valve, Filter-regulator, Air intake, Lubricator, Electrical shut-off valve and Progressive start-up valve Technopolymer threads, G1/4" connections 0 to 8 bar adjusting range, 20 µm filter pore size and 24V DC(2W) coil



Operational characteristics		Technical characteristics	
Combined group comprising manual shut-off valve, Filter - regulator with built in manometer, Air intake, Lubricator, Electric shut-off valve and Progressive start up valve assembled with two (Y) type coupling kits for panel mounting and three (X) type coupling kits. Built in pressure gauge 0 to 12 bar range		Connections	G 1/8" - G 1/4"
		Max. inlet pressure	13 bar - 1,3 Mpa
<b>Note</b> The pressure must be always regulating while increasing. For a more precise regulation and higher sensibility, the use of a regulator with a pressure range as close as possible to the regulated pressure is recommended.		Working temperature	-5°C ÷ +50°C
		Weight with Technopolymer threads	gr. 734
		Weight with threaded inserts	gr. 784
		Pressure range	0-2 bar / 0-4 bar 0-8 bar / 0-12 bar
		Filter pore size	5 µm - 20 µm - 50 µm
		Bowl capacity	18 cm³
		Indicative oil drip rate	1 drop every 300/600 NI
		Oil type	FD22 - HG32
		Bowl capacity	36 cm³
		Assembly positions	Vertical
		Max. fitting torque (with Technopolymer threads)	G1/4" = 9 Nm
		Max. fitting torque (with threaded inserts)	G1/8" = 15 Nm G1/4" = 15 Nm
		Min. operational flow at 6,3 bar	40 NI/min.
		30 mm COIL VOLTAGE C2 = Without coil M1 mechanic C5 = 24 V DC A C6 = 24 V AC (50-60 Hz) C7 = 110 V AC (50-60 Hz) C8 = 230 V AC (50-60 Hz) C9 = 24 V DC (2 Watt)	22 mm COIL VOLTAGE B2 = Without coil M2 mechanic B4 = 12 V DC B5 = 24 V DC B6 = 24 V AC (50-60 Hz) B7 = 110 V AC (50-60 Hz) B8 = 220 V AC (50-60 Hz) B9 = 24 V DC (2 Watt)



Example : GT171BVRSGB9 : size 1 combined group comprising Shut-off valve, Filter-regulator, Pressure switch, Lubricator, Electrical shut-off valve and Progressive start-up valve  
Technopolymer threads, G1/4\" connections 0 to 8 bar adjusting range, 20  $\mu$ m filter pore size and 24V DC(2W) coil



#### Operational characteristics

Combined group comprising manual shut-off valve, Filter - regulator with built in manometer, Pressure switch, Lubricator, Electric shut-off valve and Progressive start-up valve assembled with two (Y) type coupling kits for panel mounting and three (X) type coupling kits.

Built in pressure gauge 0 to 12 bar range

#### Note

The pressure must be always regulating while increasing. For a more precise regulation and higher sensibility, the use of a regulator with a pressure range as close as possible to the regulated pressure is recommended.

#### Technical characteristics

Connections	G 1/8" - G 1/4"	Ordering code <b>GV171BVRSGA</b>
Max. inlet pressure	13 bar - 1,3 Mpa	
Working temperature	-5°C ÷ +50°C	VERSION N = Metal inserts T = Technopolymer thread
Weight with Technopolymer threads	gr. 820	
Weight with threaded inserts	gr. 870	CONNECTIONS A = G1/8" (only for insert versions) B = G1/4"
Pressure range	0-2 bar / 0-4 bar 0-8 bar / 0-12 bar	
Filter pore size	5 $\mu$ m - 20 $\mu$ m - 50 $\mu$ m	FILTER PORE SIZE ADJUSTING RANGE C = 5 $\mu$ m / 0-8 bar D = 5 $\mu$ m / 0-12 bar G = 20 $\mu$ m / 0-8 bar H = 20 $\mu$ m / 0-12 bar N = 50 $\mu$ m / 0-8 bar P = 50 $\mu$ m / 0-12 bar
Bowl capacity	18 cm <sup>3</sup>	
Indicative oil drip rate	1 drop every 300/600 NI	15 mm COIL VOLTAGE A4 = 12 V DC A5 = 24 V DC A6 = 24 V AC (50-60 Hz) A7 = 110 V AC (50-60 Hz) A8 = 220 V AC (50-60 Hz) A9 = 24 V DC (1 Watt)
Oil type	FD22 - HG32	
Bowl capacity	36 cm <sup>3</sup>	22 mm COIL VOLTAGE B2 = Without coil M2 mechanic B4 = 12 V DC B5 = 24 V DC B6 = 24 V AC (50-60 Hz) B7 = 110 V AC (50-60 Hz) B8 = 220 V AC (50-60 Hz) B9 = 24 V DC (2 Watt)
Assembly positions	Vertical	
Max. fitting torque (with Technopolymer threads)	G1/4" = 9 Nm	A
Max. fitting torque (with threaded inserts)	G1/8" = 15 Nm G1/4" = 15 Nm	
Min. operational flow at 6,3 bar	40 NI/min.	
	30 mm COIL VOLTAGE C2 = Without coil M1 mechanic C5 = 24 V DC C6 = 24 V AC (50-60 Hz) C7 = 110 V AC (50-60 Hz) C8 = 230 V AC (50-60 Hz) C9 = 24 V DC (2 Watt)	



## Construction and working characteristics

The new FRL units AIRPLUS series represents the evolution of the well known and consolidated 1700 series.

The main features are increased performances, reliability, easy and fast assembly and the introduction of the latest technical features.

With the exception of the air intake module and the pressure switch module all elements are available in two configurations: with technopolimer connections (IN and OUT) , (T series), or with metal threaded inserts , (N series).

Bowls made of transparent polycarbonate (PC) are fitted with a bowl protection guard which is assembled on the body via a quick coupling mechanism provided with a safety button.

The filter, available with three filtration grades ( $5\mu\text{m}$ ,  $20\mu\text{m}$  and  $50\mu\text{m}$ ) is fitted as standard with a drain mechanism which can be operated manually or semi-automatically. On request is available the auto-drain mechanism.

The regulator is based on the rolling diaphragm technology with low hysteresis and the system is balanced. The unit can be fitted with integrated flush mounting pressure gauge (0 to 12 bar range).

4 pressure ranges are available going from 0 to 12 bar and the regulating knob can be blocked in position simply by pressing it down. A dedicated version is available for battery mounting , up to a maximum of 6 units.

The lubricator is based on the Venturi principle and the oil quantity is regulated via the adjusting screw positioned on the transparent polycarbonate (PC) regulating dome which also ensure clear visibility of the oil flow and regulation.

The oil suction pipe is fitted as standard with a sintered filter which ensures that any contaminant that should be present in the oil will reach the down stream circuit.

Shoot off valve is available in two versions, one manually operated and one solenoid operated. In both cases the unit is fitted with a threaded connection for depressurising the downstream circuit.

On the manually operated version, in the lock position, it is possible to fit up to three locks in order to prevent the accidental pressurization of the pneumatic circuit avoiding accidents or damages.

The solenoid operated version is available with a 15mm or with a 22mm solenoid valve.

The soft start valve ensure a progressive pressurization of the down stream circuit avoiding sudden pressure surges which could be dangerous for the devices fitted on the down stream circuit.

The filling time can be easily adjusted via a built in flow regulator. The full flow rate is allowed only once the down stream pressure has reached 50% of the value of the inlet pressure.

The pressure switch module which can be set between 2 and 10 bar and the air intake module complete the range.

The elements are joint together via dedicated quick coupling technopolimer flanges which allows for the units to be panel mounted moreover ensure the possibility to replace any component without disassembling the FRL group from its position.

90° mounting brackets and standard gauges are also available.

## Instruction for installation and operation

The FRL unit must be installed as close as possible to the application.

The air flow direction must follow the directions indicated on the single units in correspondence of the threaded connections,(IN and OUT)

Units provided with bowl must be mounted vertically with the bowl facing down.

Single units or groups can be panel mounted via the Y type flanges, regulators and filter-regulators can be mounted via the 90° zinc plated steel bracket. In order to mount the 90° bracket it is necessary to remove the regulating knob and then the locking ring before positioning the bracket.

All units must be operated according to the specified pressure and temperature ranges; fittings must be mounted without exceeding the maximum torque allowed.

Ensure that the units cover plates are in position before pressure is applied. The cover plates are needed to lock in position the top part of the unit.

The condense level in filter and filter-regulators bowls must never exceed the maximum level indicated on the bowls. With manual or semi automatic drain the condense can be discharged via a 6/4mm tube directly connected to the drain tap.

On the pressure regulator the pressure value must always set while pressure is rising and ideally the unit pressure range should be chosen based on the pressure value to be regulated.

Lubricators must be filled with class FD22 and HG32 oils. Ensure, both on the inlet and on the outlet , that the flow rate is above the minimum flow rate required to operate the unit. Below this value the units does not operate.

The oil quantity can be regulated via the regulating screw on the transparent polycarbonate dome through which it is also clearly visible the oil flow. A drop every 300-600 litres should be allowed.

The oil can be re-filled while the pneumatic circuit is pressurized thanks to the exhaust valve which is built in the refill plug and allows for the bowl to be depressurized and the oil refill directly form in the bowl or from the plug.

The manual shot off valve needs, to be operated, a push and turn action (clockwise) in order to close it and discharge the down stream circuit it is necessary to turn anti clock wise the knob.

The soft start valve is used to slowly and progressively pressurize the down stream circuit, the time needed to do so can be set by means of the built in flow regulator.

The soft start valve on its own does not allow for the down stream circuit to be discharged, in order to do so it is necessary to combine it with a shot off valve ( to be mounted upstream).

## Maintenance



**For any maintenance which requires the removal of the top plugs/ supports from the body it is necessary to preventively remove the sides cover plates. If the top plugs/supports are removed with the sides plates still in their position the unit could be permanently damaged.**

Bowls , plugs and supports are assembled with a bayonet type mechanism. In order to remove them rotate anti clockwise until the mechanical stop is reached and then remove from the body (for the bowls firstly press down the green safety button).

Bowls and transparent parts can be cleaned with water and neutral soap. Do not use solvents or alcohol.

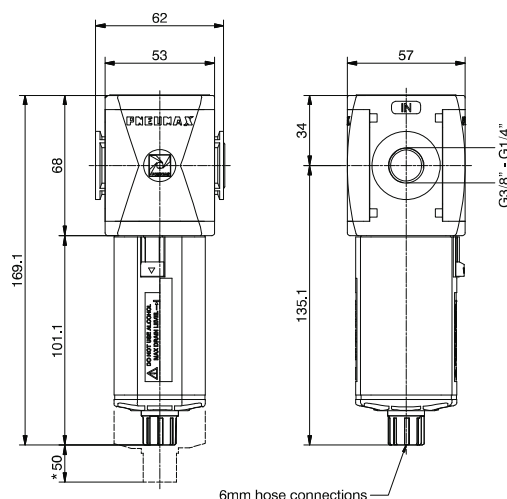
Filtering elements (from filters and filter regulators ) made of HDPE can be regenerated by washing and blowing them. In order to remove them it is necessary to remove the bowl unscrew the filter element and replace it with a new one or clean it. The oil can be re-filled while the pneumatic circuit is pressurized thanks to the exhaust valve which is built in the refill plug and allows for the bowl to be depressurized. In order to be able to un-mount the bowl it is necessary unscrew the refill plug positioned near the oil dome, once this operation has been carried out it is possible to remove the bowl to re fill it or to refill from the refill plug. Refilling directly the bowl is suggested.

Should the pressure regulator not perform properly or should present a constant leakage from the relieving replaced the diaphragm by unloading completely the regulating spring before removing the regulation support.

Any other maintenance operation, in consideration of the complexity of the assembly, and the need of a through test according to the Pneumax spa specification, should be carried out by the manufacturer.

## Fittings maximum recommended torque applicable

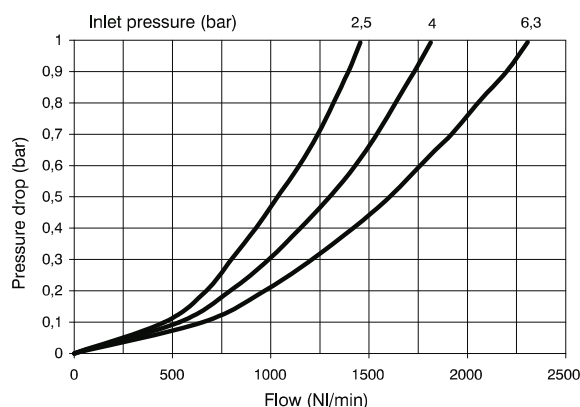
THREAD	Technopolymer version (T)	Metal version (N)
G1/8"	4 N/m	/
G1/4"	9 N/m	20 N/m
G3/8"	16 N/m	25 N/m
G1/2"	22 N/m	30 N/m



\*Bowl removal maximum height

Example: T172BFB : size 2, Filter with Technopolymer threads, G3/8" connections, 20  $\mu$ m filter pore size

Flow rate curves



#### Operational characteristics

- Double filtering action: air flow centrifugation and filter element
- Filtering element made of HDPE (high density polyethylene) available in three different filtration grades (5 $\mu$ m, 20 $\mu$ m e 50 $\mu$ m) can be regenerated by washing it or replaced.
- Transparent bowl made off polycarbonate with bowl protection guard.
- Bowl assembly via bayonet type quick coupling mechanism with safety button.
- Semi-automatic drain mounted as standard; automatic drain upon request.

#### Technical characteristics

Connections	G 1/4" - G 3/8"	Ordering code	
Max. inlet pressure	13 bar - 1,3 Mpa	<b>V172CFS</b>	
Working temperature	-5°C ÷ +50°C		
Weight with Technopolymer threads	gr. 220	<b>V</b>	VERSION
Weight with threaded inserts	gr. 230		N = Metal inserts T = Technopolymer thread
Filter pore size	5 µm - 20 µm - 50 µm	<b>C</b>	CONNECTIONS
Bowl capacity	34 cm³		A = G1/4" (only for insert versions) B = G3/8"
Assembly positions	Vertical	<b>S</b>	FILTER PORE SIZE
Max. fitting torque (with Technopolymer threads)	G3/8" = 16 Nm		A = 5 µm B = 20 µm C = 50 µm
Max. fitting torque (with threaded inserts)	G1/4" = 20 Nm G3/8" = 25 Nm		OPTIONS
		<b>O</b>	Standard (without options)
			S = Automatic drain

VERSION

N = Metal inserts

T = Technopolymer thread

CONNECTIONS

A = G1/4" (only for insert versions)

B = G3/8"

FILTER PORE SIZE

A = 5  $\mu$ m

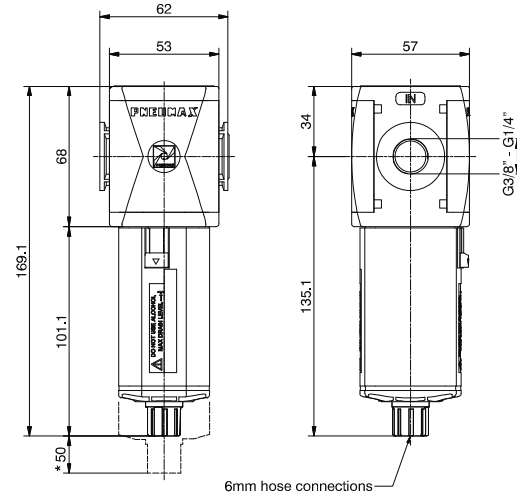
B = 20  $\mu$ m

C = 50  $\mu$ m

OPTIONS

Standard(without options)

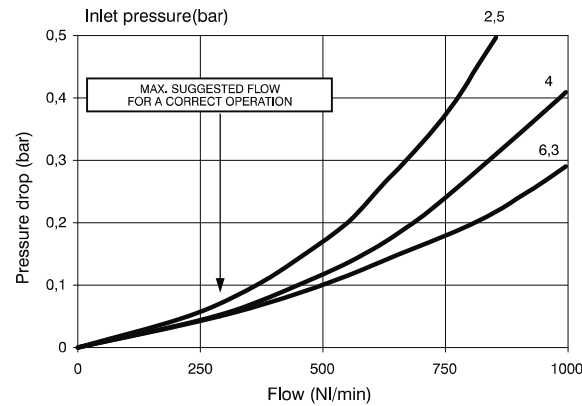
S = Automatic drain



\*Bowl removal maximum height

Example : T172BDA : Coalescing size 2, Filter with Technopolymer threads, G3/8" connections, filter efficiency 99,97%

Flow rate curves



#### Operational characteristics

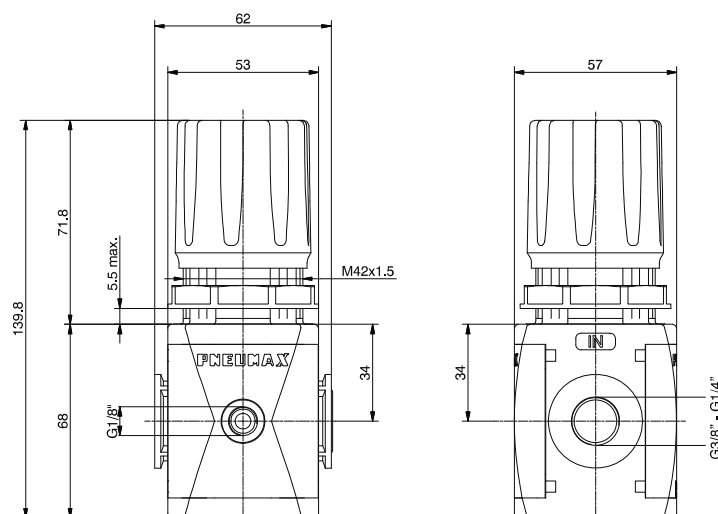
- Coalescing filter element with filtration grade of 0.01  $\mu\text{m}$
- Transparent bowl made off polycarbonate with bowl protection guard.
- Bowl assembly via bayonet type quick coupling mechanism with safety button.
- Semi-automatic drain mounted as standard; automatic drain upon request.

#### Note

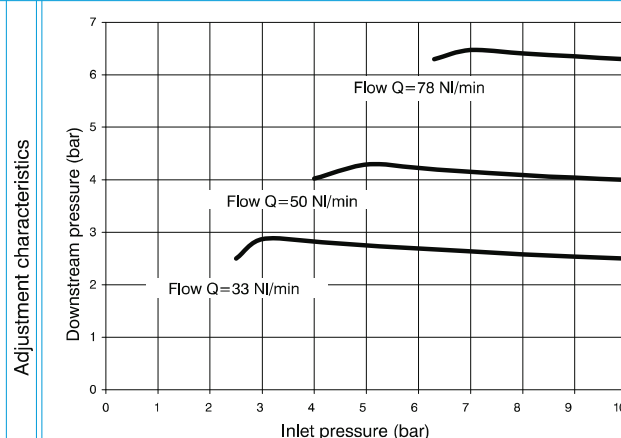
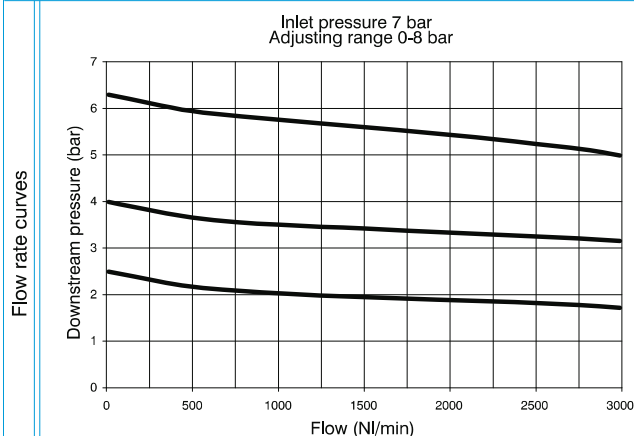
In order to ensure a better grade of filtration it is recommended to use a 5  $\mu\text{m}$  filter before the coalescing filter.

#### Technical characteristics

Connections	G 1/4" - G 3/8"	Ordering code <b>V172DDE</b>
Max. inlet pressure	13 bar - 1,3 Mpa	
Working temperature	-5°C ÷ +50°C	
Weight with Technopolymer threads	gr. 225	VERSION
Weight with threaded inserts	gr. 235	N = Metal inserts
Filter efficiency with 0,01 $\mu\text{m}$ particle	99,97%	T = Technopolymer thread
Bowl capacity	34 cm <sup>3</sup>	CONNECTIONS
Assembly positions	Vertical	A = G1/4" (only for insert versions)
Max. fitting torque (with Technopolymer threads)	G3/8" = 16 Nm	B = G3/8"
Max. fitting torque (with threaded inserts)	G1/4" = 20 Nm G3/8" = 25 Nm	FILTER EFFICIENCY
		A = 99,97%
		OPTIONS
		S = Automatic drain



Example: T172BRC : size 2, Regulator with Technopolymer threads, G3/8" connections, 0 to 8 bar adjusting range



#### Operational characteristics

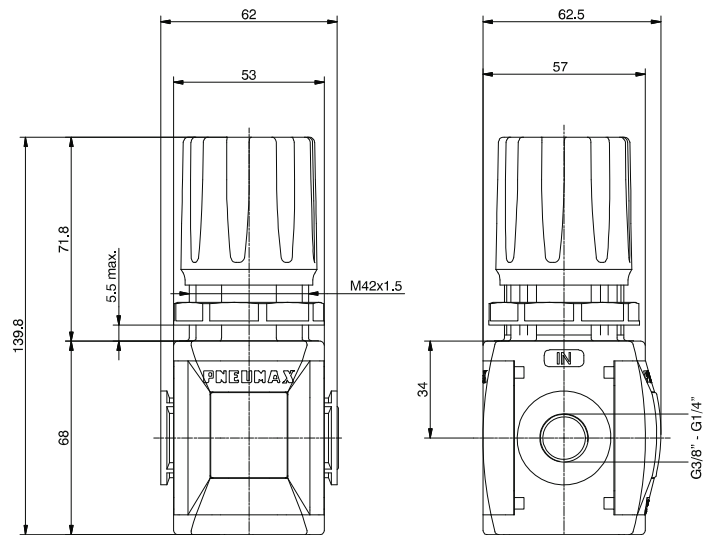
- Diaphragm pressure regulator with relieving.
- Low hysteresis rolling diaphragm.
- Balanced system.
- Available in four pressure ranges up to 12 bar.
- Operating knob can be locked in position by pressing it down once the desired P2 (regulated pressure) pressure value is achieved.
- Fitted with panel mounting locking ring.

#### Note

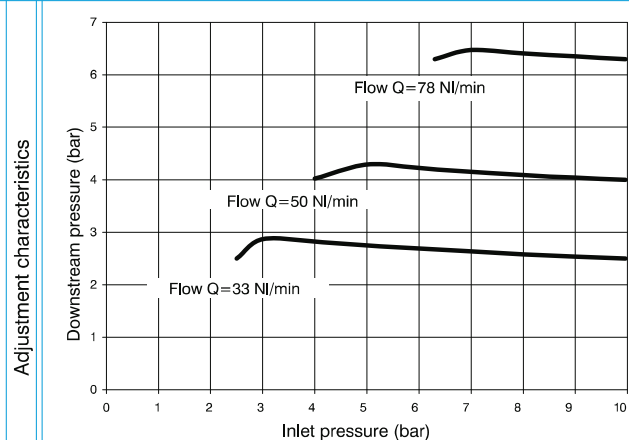
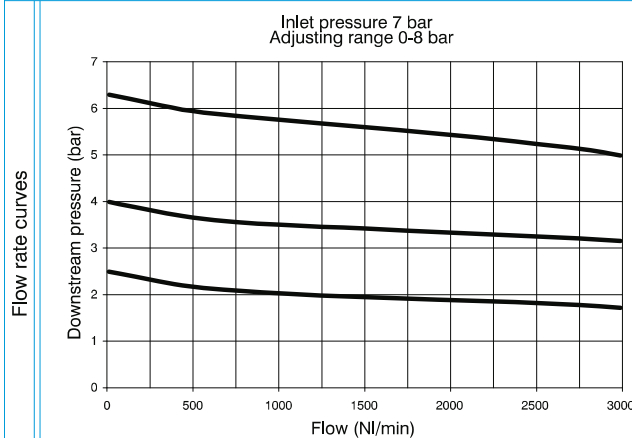
The pressure must be always regulating while increasing. For a more precise regulation and higher sensibility, the use of a regulator with a pressure range as close as possible to the regulated pressure is recommended.

#### Technical characteristics

Connections	G 1/4" - G 3/8"	Ordering code
Max. inlet pressure	13 bar - 1,3 Mpa	
Working temperature	-5°C ÷ +50°C	V172CRG
Pressure gauge connections	G 1/8"	
Weight with Technopolymer threads	gr. 300	VERSION
Weight with threaded inserts	gr. 310	N = Metal inserts
Pressure range	0-2 bar / 0-4 bar 0-8 bar / 0-12 bar	T = Technopolymer thread
Assembly positions	Indifferent	CONNECTIONS
Max. fitting torque (with Technopolymer threads)	G1/8" = 4 Nm G3/8" = 16 Nm	A = G1/4" (only for insert versions)
Max. fitting torque (with threaded inserts)	G1/4" = 20 Nm G3/8" = 25 Nm	B = G3/8"
		ADJUSTING RANGE
		A = 0-2 bar
		B = 0-4 bar
		C = 0-8 bar
		D = 0-12 bar
		OPTIONS
		Standard (without options)
		F = Controlled relief + improved relieving
		L = no relieving
		R = Improved relieving



Example : T172BRMC : size 2, Regulator including gauge with Technopolymer threads, G3/8" connections, 0 to 8 bar adjusting range



#### Operational characteristics

- Diaphragm pressure regulator with relieving.
- Low hysteresis rolling diaphragm.
- Balanced system.
- Available in four pressure ranges up to 12 bar.
- Operating knob can be locked in position by pressing it down once the desired P2 (regulated pressure) pressure value is achieved.
- Fitted with panel mounting locking ring.
- Built in gauge 0-12 bar range as standard.

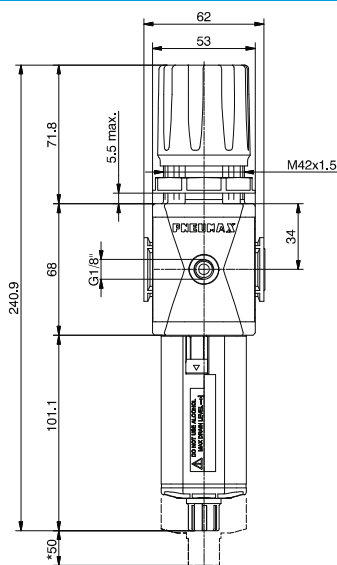
#### Note

The pressure must be always regulating while increasing. For a more precise regulation and higher sensibility, the use of a regulator with a pressure range as close as possible to the regulated pressure is recommended.

#### Technical characteristics

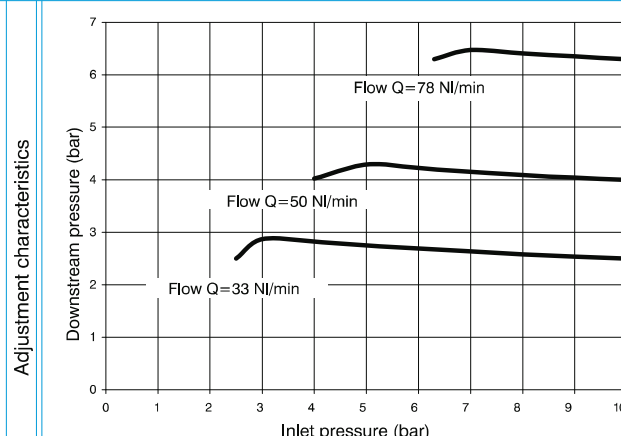
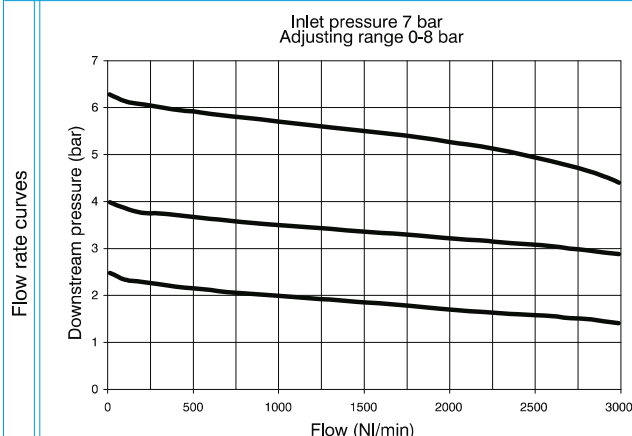
Connections	G 1/4" - G 3/8"	Ordering code
Max. inlet pressure	13 bar - 1,3 Mpa	
Working temperature	-5°C ÷ +50°C	V172CRMGO
Weight with Technopolymer threads	gr. 300	
Weight with threaded inserts	gr. 310	VERSION
Pressure range	0-2 bar / 0-4 bar 0-8 bar / 0-12 bar	
Assembly positions	Indifferent	CONNECTIONS
Max. fitting torque (with Technopolymer threads)	G1/8" = 4 Nm G3/8" = 16 Nm	
Max. fitting torque (with threaded inserts)	G1/4" = 20 Nm G3/8" = 25 Nm	ADJUSTING RANGE
		OPTIONS

- Standard(without options)
- F = Controlled relief + improved relieving
- L = no relieving
- R = Improved relieving



\*Bowl removal maximum height

Example : T172BEBC : size 2, Filter-regulator with Technopolymer threads, G3/8" connections, 20  $\mu$ m filtering pore size, 0 to 8 bar adjusting range



#### Operational characteristics

- Filter - diaphragm pressure regulator with relieving.
- Low hysteresis rolling diaphragm.
- Balanced system.
- Double filtering action: air flow centrifugation and filter element.
- Filtering element made of HDPE (high density polyethylene) available in three different filtration grades (5 $\mu$ m, 20 $\mu$ m e 50 $\mu$ m) can be regenerated by washing it or replaced.
- Transparent bowl made off polycarbonate with bowl protection guard.
- Bowl assembly via bayonet type quick coupling mechanism with safety button.
- Semi-automatic drain mounted as standard; automatic drain upon request.
- Available in four pressure ranges up to 12 bar.
- Operating knob can be locked in position by pressing it down once the desired P2 (regulated pressure) pressure value is achieved.
- Fitted with panel mounting locking ring.

#### Note

The pressure must be always regulating while increasing. For a more precise regulation and higher sensibility, the use of a regulator with a pressure range as close as possible to the regulated pressure is recommended.

#### Technical characteristics

Connections	G 1/4" - G 3/8"
Max. inlet pressure	13 bar - 1,3 Mpa
Working temperature	-5°C ÷ +50°C
Pressure gauge connections	G 1/8"
Weight with Technopolymer threads	gr. 390
Weight with threaded inserts	gr. 400
Pressure range	0-2 bar / 0-4 bar 0-8 bar / 0-12 bar
Filter pore size	5 $\mu$ m - 20 $\mu$ m - 50 $\mu$ m
Bowl capacity	34 cm <sup>3</sup>
Assembly positions	Vertical
Max. fitting torque (with Technopolymer threads)	G1/8" = 4 Nm G3/8" = 16 Nm
Max. fitting torque (with threaded inserts)	G1/4" = 20 Nm G3/8" = 25 Nm

#### Ordering code

**V1720ES00**

#### VERSION

- ✓ N = Metal inserts
- T = Technopolymer thread

#### CONNECTIONS

- Ⓐ = G1/4" (only for insert versions)
- Ⓑ = G3/8"

#### FILTER PORE SIZE

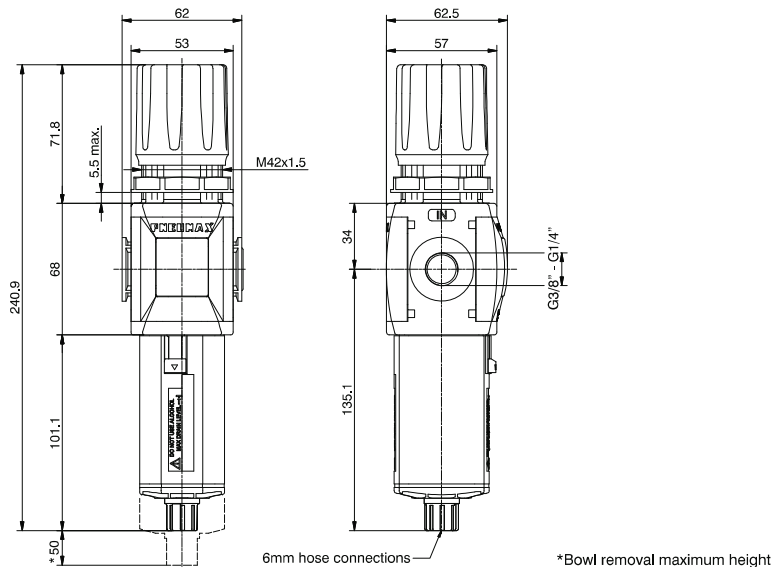
- Ⓐ = 5  $\mu$ m
- Ⓑ = 20  $\mu$ m
- Ⓒ = 50  $\mu$ m

#### ADJUSTING RANGE

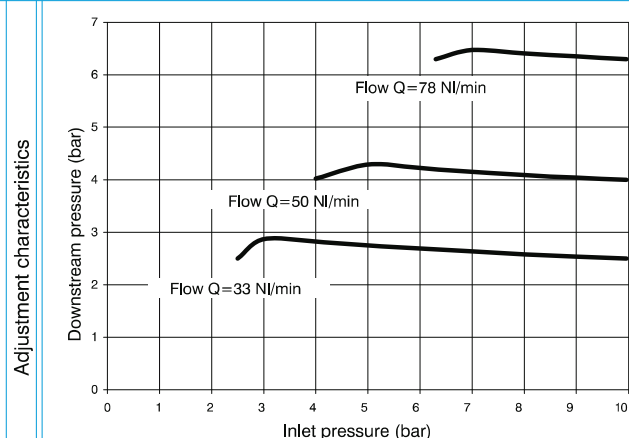
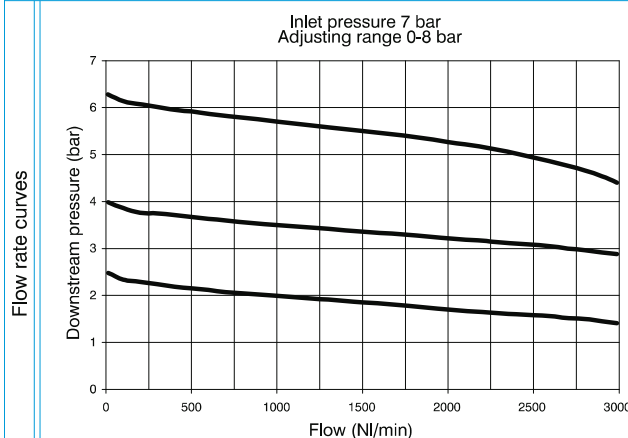
- Ⓐ = 0-2 bar
- Ⓑ = 0-4 bar
- Ⓒ = 0-8 bar
- Ⓓ = 0-12 bar

#### OPTIONS

- Ⓐ = Standard (without options)
- Ⓑ = Automatic drain



Example: T172BEMBC : size 2, Filter-Regulator including gauge with Technopolymer threads, G3/8" connections, with 20 µm filtering pore size, 0 to 8 bar adjusting range



#### Operational characteristics

- Filter - diaphragm pressure regulator with relieving.
- Low hysteresis rolling diaphragm.
- Balanced system.
- Double filtering action: air flow centrifugation and filter element.
- Filtering element made of HDPE (high density polyethylene) available in three different filtration grades (5µm, 20µm e 50µm) can be regenerated by washing it or replaced.
- Transparent bowl made of polycarbonate with bowl protection guard.
- Bowl assembly via bayonet type quick coupling mechanism with safety button.
- Semi-automatic drain mounted as standard; automatic drain upon request.
- Available in four pressure ranges up to 12 bar.
- Operating knob can be locked in position by pressing it down once the desired P2 (regulated pressure) pressure value is achieved.
- Fitted with panel mounting locking ring.
- Built in gauge 0-12 bar range as standard.

#### Note

The pressure must be always regulating while increasing. For a more precise regulation and higher sensibility, the use of a regulator with a pressure range as close as possible to the regulated pressure is recommended.

#### Technical characteristics

Connections	G 1/4" - G 3/8"	Ordering code
Max. inlet pressure	13 bar - 1,3 Mpa	
Working temperature	-5°C ÷ +50°C	V172BEMSCC
Weight with Technopolymer threads	gr. 400	
Weight with threaded inserts	gr. 410	VERSION
Pressure range	0-2 bar / 0-4 bar 0-8 bar / 0-12 bar	
Filter pore size	5 µm - 20 µm - 50 µm	CONNECTIONS
Bowl capacity	34 cm³	
Assembly positions	Vertical	A = G1/4" (only for insert versions)
Max. fitting torque (with Technopolymer threads)	G3/8" = 16 Nm	
Max. fitting torque (with threaded inserts)	G1/4" = 20 Nm G3/8" = 25 Nm	FILTER PORE SIZE
		ADJUSTING RANGE
		OPTIONS

Ordering code

V172BEMSCC

VERSION

N = Metal inserts

T = Technopolymer thread

CONNECTIONS

A = G1/4" (only for insert versions)

B = G3/8"

FILTER PORE SIZE

A = 5 µm

B = 20 µm

C = 50 µm

ADJUSTING RANGE

A = 0-2 bar

B = 0-4 bar

C = 0-8 bar

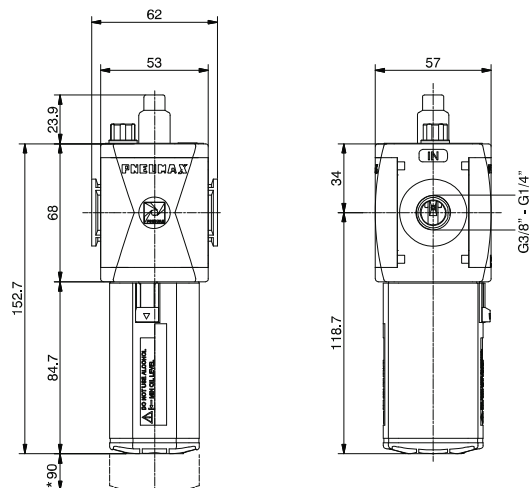
D = 0-12 bar

OPTIONS

Standard(without options)

S = Automatic drain

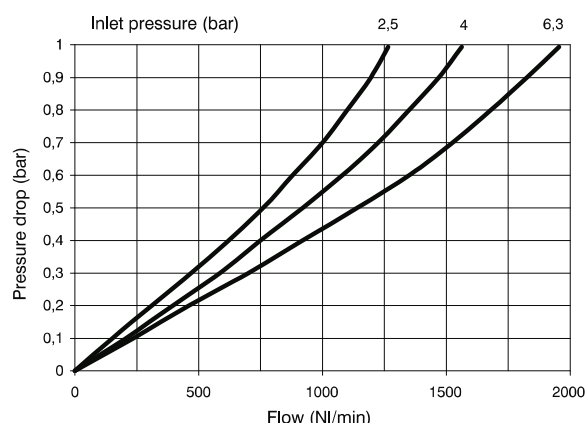




\*Bowl removal maximum height

Example : T172BL : size 2, Lubricator with Technopolymer threads, G3/8" connections

Flow rate curves



#### Operational characteristics

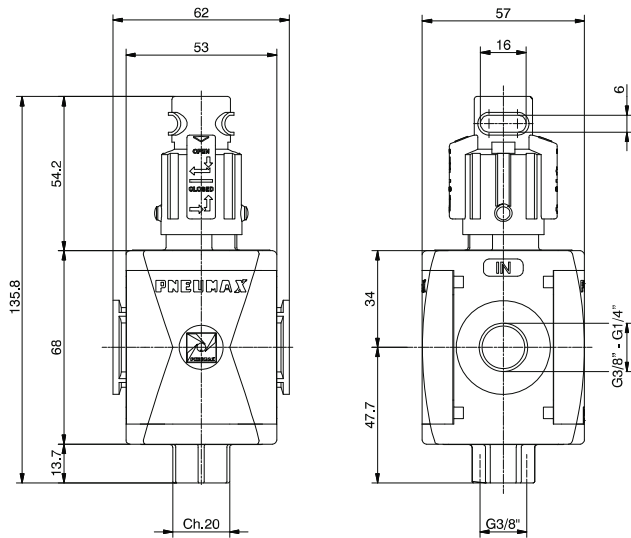
- Oil mist lubrication with variable orifice size in function of the flow rate
- Oil quantity regulation mechanism and oil quantity visualization dome made of polycarbonate.
- Transparent bowl made off polycarbonate with bowl protection guard.
- Bowl assembly via bayonet type quick coupling mechanism with safety button.
- Oil filling plug
- Oil can be refilled with pressurized circuit.
- Available with electric min-level sensor N.O. or N.C. with connection for connector.
- For electrical connection use connectors type C1-C2-C3 (see sensors chapter in the catalogue).

#### Note

Install as close as possible to the point o fuse  
Do not use alcohol, deterging oils or solvents.

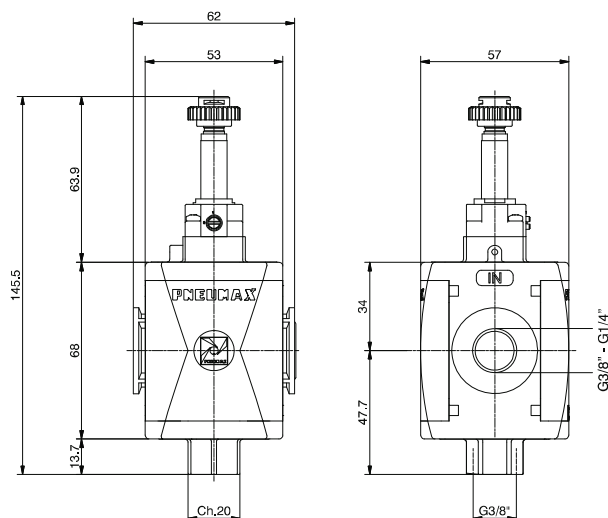
#### Technical characteristics

Connections	G 1/4" - G 3/8"	Ordering code
Max. inlet pressure	13 bar - 1,3 Mpa	
Working temperature	-5°C ÷ +50°C	<b>V172OL</b>
Weight with Technopolymer threads	gr. 210	
Weight with threaded inserts	gr. 220	VERSION N = Metal inserts T = Technopolymer thread
Indicative oil drip rate	1 drop every 300/600 NI	
Oil type	FD22 - HG32	CONNECTIONS A = G1/4" (only for insert versions) B = G3/8"
Bowl capacity	70 cm <sup>3</sup>	
Assembly positions	Vertical	OPTIONS A = Min. Oil level indicator Normally open C = Min. Oil level indicator Normally closed
Max. fitting torque (with Technopolymer threads)	G3/8" = 16 Nm	
Max. fitting torque (with threaded inserts)	G1/4" = 20 Nm G3/8" = 25 Nm	
Min. operational flow at 6,3 bar	70 NI/min.	



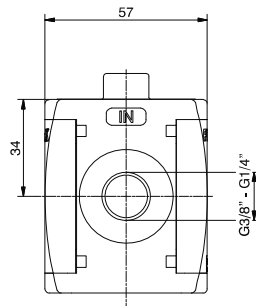
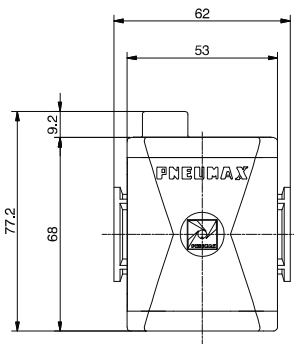
Example: T172BVL : size 2, Shut-off valve with Technopolymer threads, G3/8" connections

Operational characteristics	Technical characteristics		
<ul style="list-style-type: none"><li>- Manual operated 3 ways poppet valve.</li><li>- Double handle action for valve opening: pushing and rotating (clockwise).</li><li>- The valve can be closed and the down stream circuit depressurized by rotating anticlockwise the knob.</li><li>- Knob lockable with three padlocks.</li></ul>	Connections	G 1/4" - G 3/8"	Ordering code
	Max. inlet pressure	13 bar - 1,3 Mpa	V172VL
	Working temperature	-5°C ÷ +50°C	
	Weight with Technopolymer threads	gr. 180	VERSION
	Weight with threaded inserts	gr. 190	N = Metal inserts
	Assembly positions	Indifferent	T = Technopolymer thread
	Handle opening and closing angle	90°	CONNECTIONS
	Max. fitting torque (with Technopolymer threads)	G3/8" = 16 Nm	A = G1/4" (only for insert versions)
	Max. fitting torque (with threaded inserts)	G1/4" = 20 Nm G3/8" = 25 Nm	B = G3/8"
	Nominal flow at 6 bar with Δp=1	2200 NI/min.	
	Exhaust nominal flowrate at 6 bar with Δp=1	1500 NI/min.	



Example : T172BVEB2 : size 2, Electric shut-off valve, with M2 Pilot without coil, Technopolymer threads, G3/8" connections

Operational characteristics	Technical characteristics		
<ul style="list-style-type: none"><li>- Solenoid operated 3 ways poppet valve.</li><li>- Available also with 15mm solenoid operator.</li></ul>	Supply and operating connections	G 1/4" - G 3/8"	Ordering code
	Discharge connections	G 1/4"	<b>V172CVEA</b>
	Working temperature	-5°C ÷ +50°C	VERSION
	Weight with Technopolymer threads	gr. 200	N = Metal inserts
	Weight with threaded inserts	gr. 210	T = Technopolymer thread
	Assembly positions	Indifferent	CONNECTIONS
	Min. Pressure working	2,5 bar	A = G1/4" (only for insert versions)
	Max. Pressure working	10 bar	B = G3/8"
	Max. fitting torque (with Technopolymer threads)	G3/8" = 16 Nm	15 mm COIL VOLTAGE
	Max. fitting torque (with threaded inserts)	G1/4" = 20 Nm G3/8" = 25 Nm	A4 = 12 V DC A5 = 24 V DC A6 = 24 V AC (50-60 Hz) A7 = 110 V AC (50-60 Hz) A8 = 220 V AC (50-60 Hz) A9 = 24 V DC (1 Watt)
Nominal flow at 6 bar with $\Delta p=1$	2200 NI/min.		22 mm COIL VOLTAGE
	1400 NI/min.		B2 = Without coil M2 mechanic B4 = 12 V DC B5 = 24 V DC B6 = 24 V AC (50-60 Hz) B7 = 110 V AC (50-60 Hz) B8 = 220 V AC (50-60 Hz) B9 = 24 V DC (2 Watt)
Exhaust nominal flowrate at 6 bar with $\Delta p=1$	1400 NI/min.		30 mm COIL VOLTAGE
			C2 = Without coil M1 mechanic C5 = 24 V DC C6 = 24 V AC (50-60 Hz) C7 = 110 V AC (50-60 Hz) C8 = 230 V AC (50-60 Hz) C9 = 24 V DC (2 Watt)



Example : T172BAP : size 2, Progressive start-up valve with Technopolymer threads, G3/8" connections

Operational characteristics	Technical characteristics		
<ul style="list-style-type: none"><li>- Down stream circuit filling time regulated via a built in flow regulator.</li><li>- Full pressure is allowed once the down stream circuit pressure reaches 50% of the inlet pressure.</li></ul>	Connections	G 1/4" - G 3/8"	Ordering code
	Max. inlet pressure	13 bar - 1,3 Mpa	V172CAP
	Working temperature	-5°C ÷ +50°C	
	Weight with Technopolymer threads	gr. 140	VERSION
	Weight with threaded inserts	gr. 150	N = Metal inserts
	Max. fitting torque	G3/8" = 16 Nm	T = Technopolymer thread
	(with Technopolymer threads)		CONNECTIONS
	Max. fitting torque	G1/4" = 20 Nm	A = G1/4" (only for insert versions)
	(with threaded inserts)	G3/8" = 25 Nm	B = G3/8"
	Assembly positions	Indifferent	
	Min. pressure working	2,5 bar - 0,25 Mpa	
	Nominal flow	2200 NI/min.	
	at 6 bar with Δp=1		
	fully open built in flow		
	regulator Flow rate	200 NI/min.	