General

The large flow valves and solenoid poppet valves for compressed air and vacuum are manufactured for 3/2 and 2/2 versions only, either normally close and normally open.
For the compressed air oparation, the application is similar to the equivalent spool valves while for the vacuum operation a particular attention should be paid to the valve selected and its connection to the pump.
For the electric pilot it is used a normal miniature solenoid M2 with pneumatic actuator and the special miniature solenoid M2/V with vacuum.
The ordering code are referring to the solenoid valves with mechanics "M2" or "M2/V" assembled (see Series 300). (Coil are not included and have to be ordored separately).

Coil c UL us homologated are available (see 300 Series).

Construction characteristics

	G 3/8"	G 1/2" - G 3/4"	G 1"	G 1 1/2"
Body	Aluminium	Zinc alloy	Aluminium	Aluminium
Bottom plates	Aluminium			
Actuators	NBR			
Pistons	Aluminium			
Actuators rod	Stainless steel			
Spring	Stainless steel			
Piston seals	NBR			

Use and maintenance

These valves have a mean life of 10 to 15 million cycles under normal operating conditions.
Lubrication is not required for good operation but we recommend good filtration to avoid dirty deposit causing malfunction.
Check that the operating conditions: pressure, temperature and so on are as suggested.
The exhaust port of the distributor has to be protected in a dusty and dirty environment.
For these products, according to the construction technique and special application, is not required any maintenance with parts replacement. When necessary it is sufficient to clean the internal parts.
When it is used the solenoid valves with internal pilot, either for air or vacuum, inlet flow rate must be equal or higher that the required consumption flow rate, otherwise is better choose the external pilot version.

Vacuum valves connections

NORMALLY CLOSED INTERNAL PILOT
779/V.32.0.1AC
773/V.32.0.1AC
771/V.32.0.1AC
P = 1 = EXHAUST
A = 2 = OUTLET
R = 3 = PUMP

NORMALLY OPEN INTERNAL PILOT
779/V.32.0.1AA
773/V.32.0.1AA
771/V.32.0.1AA
P = 1 = PUMP
A = 2 = OUTLET
R = 3 = EXHAUST

NORMALLY CLOSED EXTERNAL PILOT
779/V.32.0.1C
773/V.32.0.1C
771/V.32.0.1C
779/V.32.11.1C
773/V.32.11.1C
771/V.32.11.1C
P = 1 = PUMP
A = 2 = OUTLET
R = 3 = EXHAUST

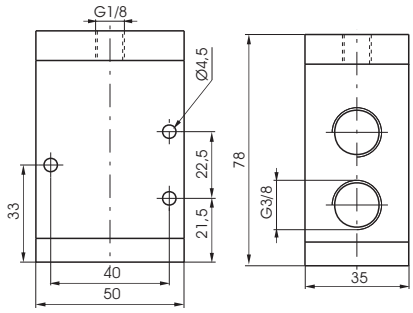
NORMALLY OPEN EXTERNAL PILOT
779/V.32.0.1A
773/V.32.0.1A
771/V.32.0.1A
779/V.32.11.1A
773/V.32.11.1A
771/V.32.11.1A
P = 1 = EXHAUST
A = 2 = OUTLET
R = 3 = PUMP

Pneumatic - Spring

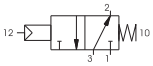
Ordering code

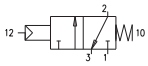
779.32.11.Ⓕ

Ⓕ	FUNCTION
	1C = Normally Closed
	1A = Normally Open



Weight gr. 360
Attention : for the Normally open version, connect the inlet port to the exhaust port No "3".
Minimum piloting pressure 2,5 bar





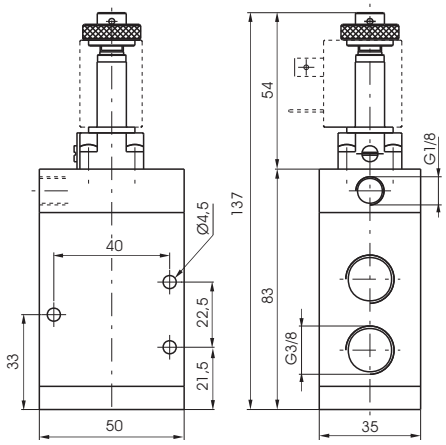
Operational characteristic	Fluid	Max working pressure (bar)	Temperature °C	Flow rate at 6 bar with Δp=1 (Nl/min)	Orifice size (mm)	Working ports size	Pilot ports size
	Filtered and lubricated air	10	-5 - +70	1800	10	G 3/8"	G 1/8"

Solenoid - Spring

Ordering code

779.32.0.Ⓕ.M2

Ⓕ	FUNCTION
	1AC = Internal Pilot N.C.
	1C = External Pilot Normally Closed
	1AA = Internal Pilot N.A.
	1A = External Pilot Normally Open



Weight gr. 420
Minimum piloting pressure 2,5 bar (External Pilot) - 3 bar (Internal Pilot)

Operational characteristic	Fluid	Max working pressure (bar)	Temperature °C	Flow rate at 6 bar with Δp=1 (Nl/min)	Orifice size (mm)	Working ports size	Pilot ports size
	Filtered and lubricated air	10	-5 - +50	1800	10	G 3/8"	G 1/8"

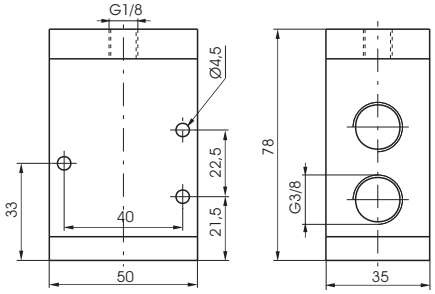
2

Pneumatic - Spring

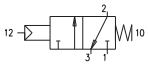
Ordering code

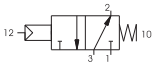
779/V.32.11.Ⓕ

Ⓕ	FUNCTION
	1C = Normally Closed
	1A = Normally Open



Weight gr. 360
Minimum piloting pressure 2 bar





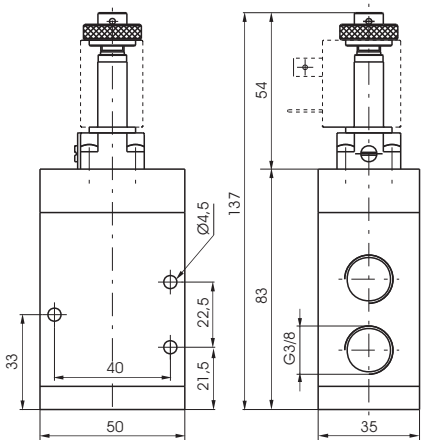
Operational characteristic	Fluid	Temperature °C	Orifice size (mm)	Working ports size	Pilot ports size
	Vacuum	-5 - + 70	10	G 3/8"	G 1/8"

Solenoid - Spring - Internal Pilot

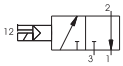
Ordering code

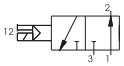
779/V.32.0.Ⓕ.M2/V

Ⓕ	FUNCTION
	1AA = Normally Open
	1AC = Normally Closed



Weight gr. 420





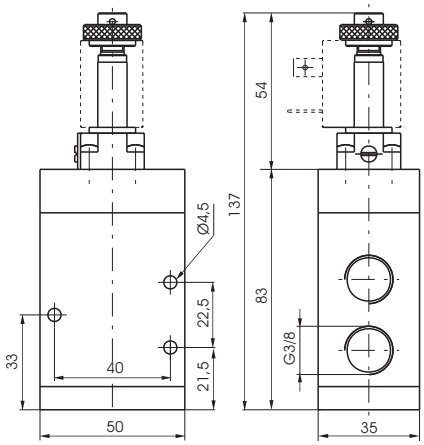
Operational characteristic	Fluid	Temperature °C	Orifice size (mm)	Working ports size	Pilot ports size
	Vacuum	-5 - + 50	10	G 3/8"	G 1/8"

Solenoid - Spring - External Pilot

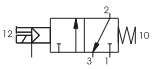
Ordering code

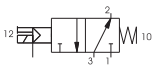
779/V.32.0.Ⓕ.M2

Ⓕ	FUNCTION
	1A = Normally Open
	1C = Normally Closed



Weight gr. 420
Minimum piloting pressure 2 bar (External Pilot)



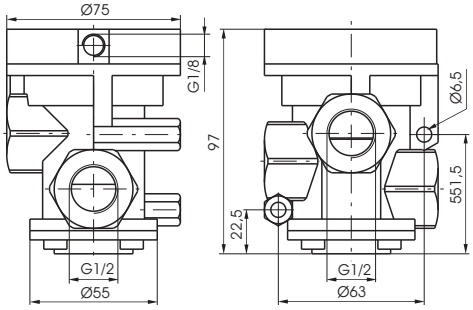


Operational characteristic	Fluid	Temperature °C	Orifice size (mm)	Working ports size	Pilot ports size
	Vacuum	-5 - + 50	10	G 3/8"	G 1/8"

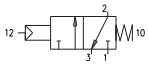
Pneumatic - Spring

Ordering code

772.32.11.1C



Weight gr. 1100
Normally Closed
Minimum piloting pressure 2,5 bar



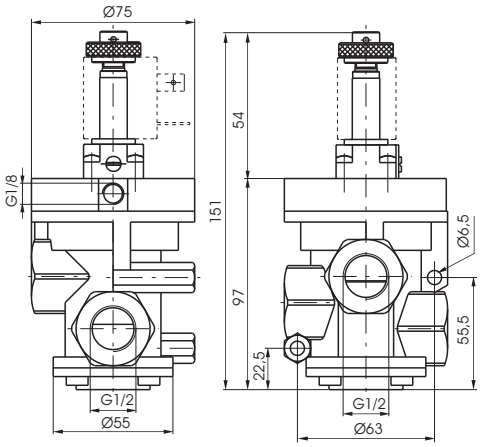
Operational characteristic	Fluid	Max working pressure (bar)	Temperature °C	Flow rate at 6 bar with Δp=1 (Nl/min)	Orience size (mm)	Working ports size	Pilot ports size
	Filtered and lubricated air	10	-5 - +70	4800	15	G 1/2"	G 1/8"

Solenoid - Spring

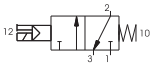
Ordering code

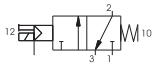
772.32.0.Ⓕ.M2

Ⓕ	FUNCTION
	1AC = Internal Pilot Normally Closed
	1C = External Pilot Normally Closed



Weight gr. 1160
Minimum piloting pressure 2,5 bar (External Pilot) - 3 bar (Internal Pilot)





Operational characteristic	Fluid	Max working pressure (bar)	Temperature °C	Flow rate at 6 bar with Δp=1 (Nl/min)	Orience size (mm)	Working ports size	Pilot ports size
	Filtered and lubricated air	10	-5 - +50	4800	15	G 1/2"	G 1/8"

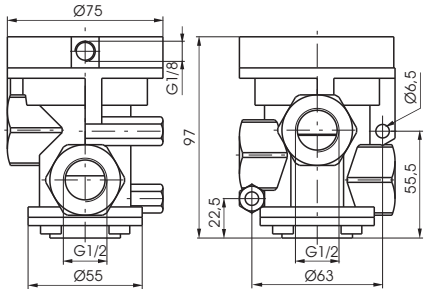
2

Pneumatic - Spring

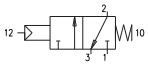
Ordering code

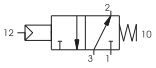
772/V.32.11.Ⓕ

Ⓕ	FUNCTION
	1C = Normally Closed
	1A = Normally Open



Weight gr. 1100
Minimum piloting pressure 2 bar





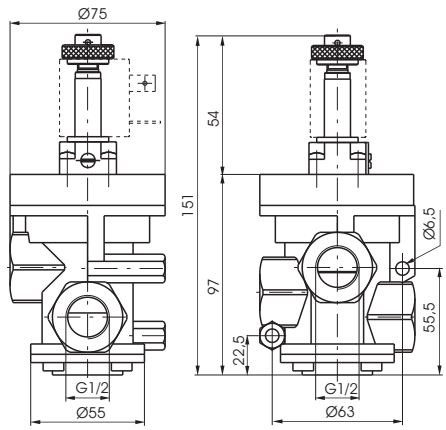
Operational characteristic	Fluid	Temperature °C	Orifice size (mm)	Working ports size	Pilot ports size
	Vacuum	-5 - + 70	15	G 1/2"	G 1/8"

Solenoid - Spring - Internal Pilot

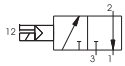
Ordering code

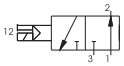
772/V.32.0.Ⓕ.M2/V

Ⓕ	FUNCTION
	1AA = Normally Open
	1AC = Normally Closed



Weight gr. 1160





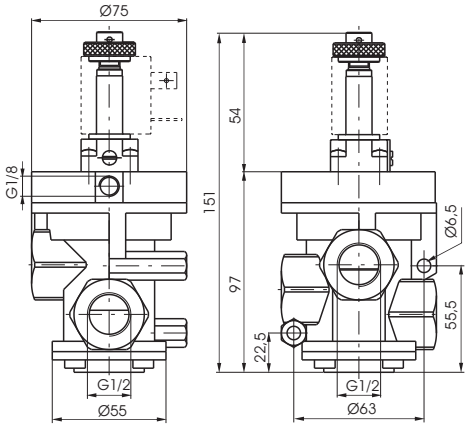
Operational characteristic	Fluid	Temperature °C	Orifice size (mm)	Working ports size	Pilot ports size
	Vacuum	-5 - + 50	15	G 1/2"	G 1/8"

Solenoid - Spring - External Pilot

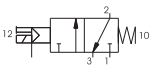
Ordering code

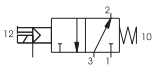
772/V.32.0.Ⓕ.M2

Ⓕ	FUNCTION
	1A = Normally Open
	1C = Normally Closed



Weight gr. 1160
Minimum piloting pressure 2 bar (External Pilot)

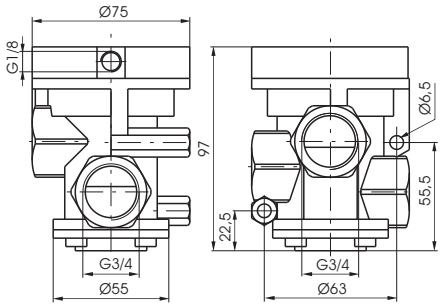




Operational characteristic	Fluid	Temperature °C	Orifice size (mm)	Working ports size	Pilot ports size
	Vacuum	-5 - + 50	15	G 1/2"	G 1/8"

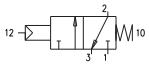
Pneumatic - Spring

Ordering code
773.32.11.1C



Weight gr. 990

Normally Closed
Minimum piloting pressure 2,5 bar

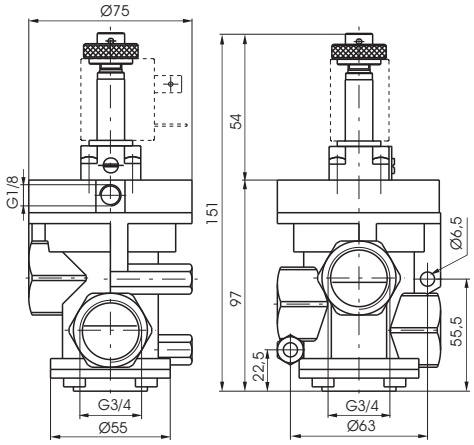


Operational characteristic	Fluid	Max working pressure (bar)	Temperature °C	Flow rate at 6 bar with Δp=1 (Nl/min)	Orience size (mm)	Working ports size	Pilot ports size
	Filtered and lubricated air	10	-5 - +70	6100	20	G 3/4"	G 1/8"

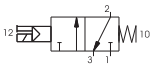
Solenoid - Spring

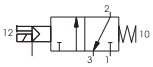
Ordering code
773.32.0.Ⓕ.M2

	FUNCTION
Ⓕ	1AC = Internal Pilot Normally Closed
	1C = External Pilot Normally Closed



Weight gr. 1050
Minimum piloting pressure 2,5 bar (External Pilot) - 3 bar (Internal Pilot)





Operational characteristic	Fluid	Max working pressure (bar)	Temperature °C	Flow rate at 6 bar with Δp=1 (Nl/min)	Orience size (mm)	Working ports size	Pilot ports size
	Filtered and lubricated air	10	-5 - +50	6100	20	G 3/4"	G 1/8"

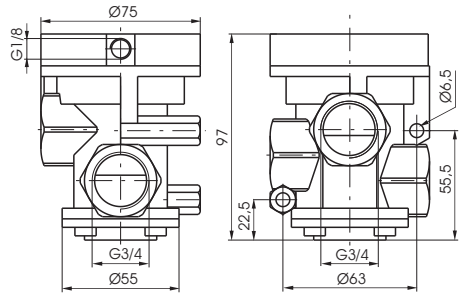
2

Pneumatic - Spring

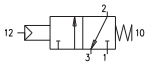
Ordering code

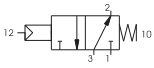
773/V.32.11.Ⓕ

Ⓕ	FUNCTION
	1C = Normally Closed
	1A = Normally Open



Weight gr. 990
Minimum piloting pressure 2 bar





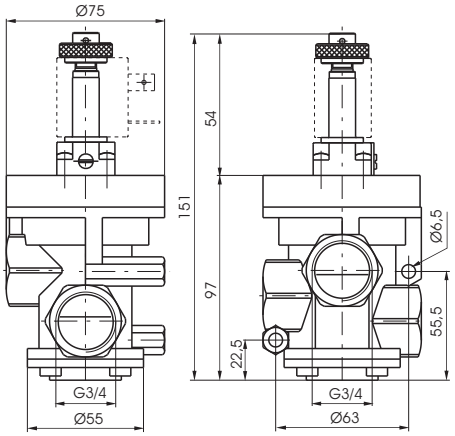
Operational characteristic	Fluid	Temperature °C	Orifice size (mm)	Working ports size	Pilot ports size
	Vacuum	-5 - + 70	20	G 3/4"	G 1/8"

Solenoid - Spring - Internal Pilot

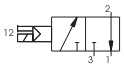
Ordering code

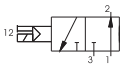
773/V.32.0.Ⓕ.M2/V

Ⓕ	FUNCTION
	1AA = Normally Open
	1AC = Normally Closed



Weight gr. 1050





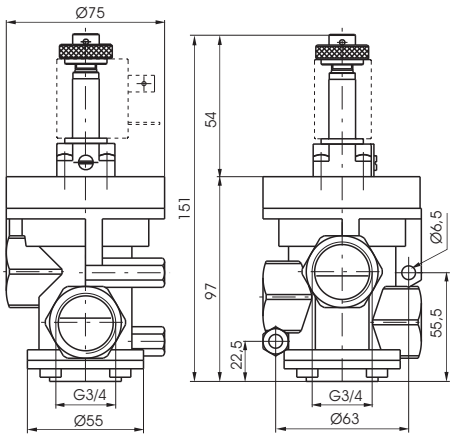
Operational characteristic	Fluid	Temperature °C	Orifice size (mm)	Working ports size	Pilot ports size
	Vacuum	-5 - + 50	20	G 3/4"	G 1/8"

Solenoid - Spring - External Pilot

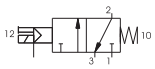
Ordering code

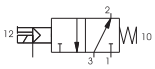
773/V.32.0.Ⓕ.M2

Ⓕ	FUNCTION
	1A = Normally Open
	1C = Normally Closed



Weight gr. 1050
Minimum piloting pressure 2 bar (External Pilot)



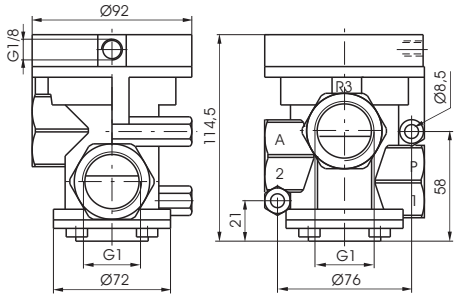


Operational characteristic	Fluid	Temperature °C	Orifice size (mm)	Working ports size	Pilot ports size
	Vacuum	-5 - + 50	20	G 3/4"	G 1/8"

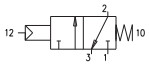
Pneumatic - Spring

Ordering code

771.32.11.1C



Weight gr. 1060
Normally Closed
Minimum piloting pressure 2 ,5 bar



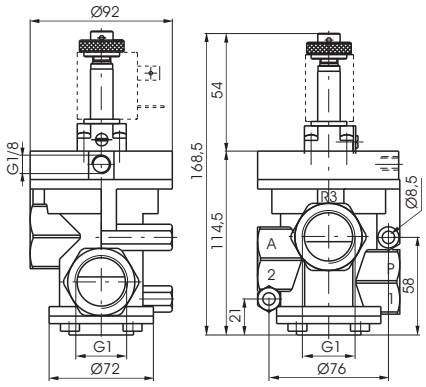
Operational characteristic	Fluid	Max working pressure (bar)	Temperature °C	Flow rate at 6 bar with Δp=1 (Nl/min)	Orifice size (mm)	Working ports size	Pilot ports size
	Filtered and lubricated air	10	-5 - +70	12000	25	G 1"	G 1/8"

Solenoid - Spring

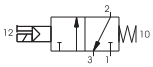
Ordering code

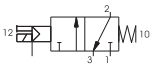
771.32.0.Ⓕ.M2

Ⓕ	FUNCTION
	1AC = Internal Pilot Normally Closed
	1C = External Pilot Normally Closed



Weight gr. 1120
Minimum piloting pressure 2,5 bar (External Pilot) - 3 bar (Internal Pilot)





Operational characteristic	Fluid	Max working pressure (bar)	Temperature °C	Flow rate at 6 bar with Δp=1 (Nl/min)	Orifice size (mm)	Working ports size	Pilot ports size
	Filtered and lubricated air	10	-5 - +50	12000	25	G 1"	G 1/8"

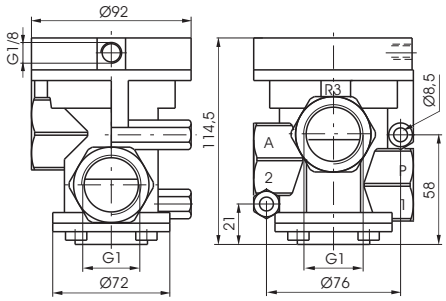
2

Pneumatic - Spring

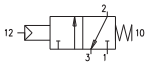
Ordering code

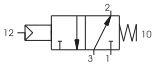
771/V.32.11.Ⓕ

Ⓕ	FUNCTION
	1C = Normally Closed
	1A = Normally Open



Weight gr. 1060
Minimum piloting pressure 2 bar





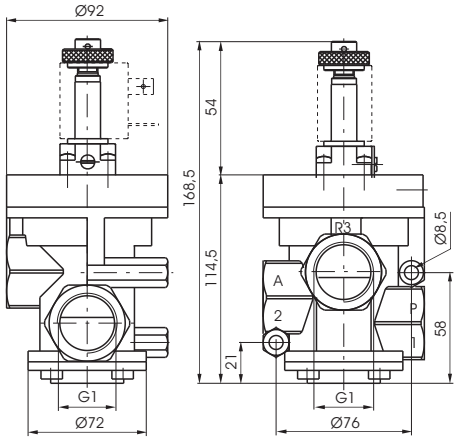
Operational characteristic	Fluid	Temperature °C	Orifice size (mm)	Working ports size	Pilot ports size
	Vacuum	-5 - + 70	25	G 1"	G 1/8"

Solenoid - Spring - Internal Pilot

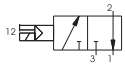
Ordering code

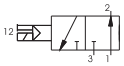
771/V.32.0.Ⓕ.M2/V

Ⓕ	FUNCTION
	1AA = Normally Open
	1AC = Normally Closed



Weight gr. 1120





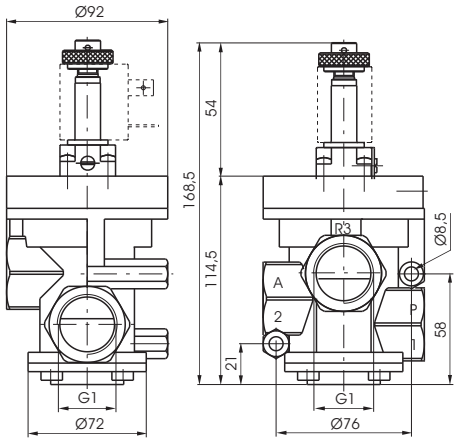
Operational characteristic	Fluid	Temperature °C	Orifice size (mm)	Working ports size	Pilot ports size
	Vacuum	-5 - + 50	25	G 1"	G 1/8"

Solenoid - Spring - External Pilot

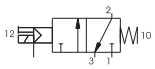
Ordering code

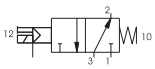
771/V.32.0.Ⓕ.M2

Ⓕ	FUNCTION
	1A = Normally Open
	1C = Normally Closed



Weight gr. 1120
Minimum piloting pressure 2 bar (External Pilot)



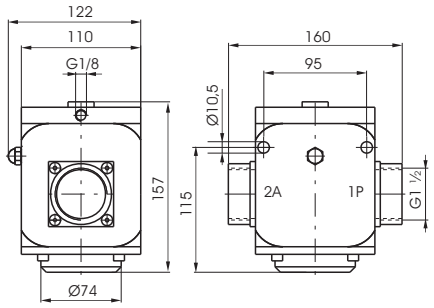


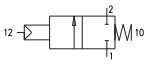
Operational characteristic	Fluid	Temperature °C	Orifice size (mm)	Working ports size	Pilot ports size
	Vacuum	-5 - + 50	25	G 1"	G 1/8"

Pneumatic - Spring

Ordering code

776.22.11.1C





Weight gr. 3950
Normally Closed
Minimum piloting pressure 2,5 bar

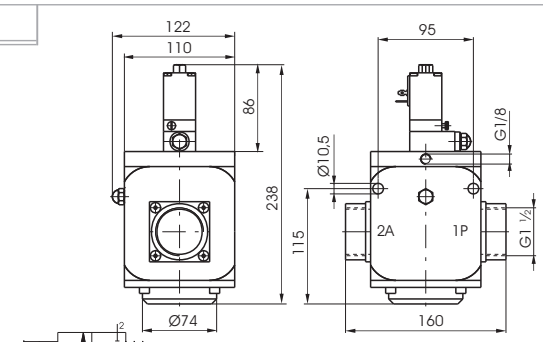
Operational characteristic	Fluid	Max working pressure (bar)	Temperature °C	Flow rate at 6 bar with Δp=1 (Nl/min)	Orifice size (mm)	Working ports size	Pilot ports size
	Filtered and lubricated air	10	-5 - +70	33500	38	G1 1/2"	G 1/8"

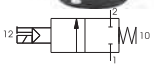
Solenoid - Spring

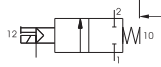
Ordering code

776.22.0.Ⓕ.Ⓢ

	FUNCTION
Ⓕ	1AC = Internal Pilot Normally Closed
	1C = External Pilot Normally Closed
Ⓢ	SOLENOID CODE
	See Valves Series 300 Type "S"







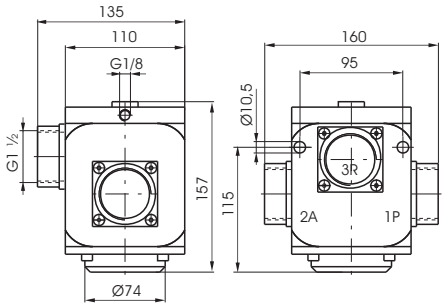
Weight gr. 4450
Minimum piloting pressure 2,5 bar (External Pilot) - 3 bar (Internal Pilot)

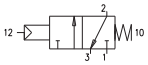
Operational characteristic	Fluid	Max working pressure (bar)	Temperature °C	Flow rate at 6 bar with Δp=1 (Nl/min)	Orifice size (mm)	Working ports size	Pilot ports size
	Filtered and lubricated air	10	-5 - +50	33500	38	G1 1/2"	G 1/8"

Pneumatic - Spring

Ordering code

776.32.11.1C





Weight gr. 3900
Normally Closed
Minimum piloting pressure 2,5 bar

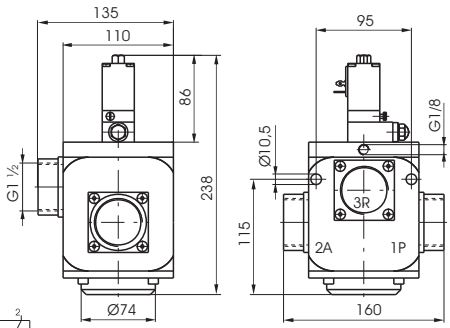
Operational characteristic	Fluid	Max working pressure (bar)	Temperature °C	Flow rate at 6 bar with Δp=1 (Nl/min)	Orifice size (mm)	Working ports size	Pilot ports size
	Filtered and lubricated air	10	-5 - +70	33500	38	G1 1/2"	G 1/8"

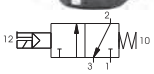
Solenoid - Spring

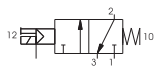
Ordering code

776.32.0.Ⓕ.Ⓢ

	FUNCTION
Ⓕ	1AC = Internal Pilot Normally Closed
	1C = External Pilot Normally Closed
Ⓢ	SOLENOID CODE
	See Valves Series 300 Type "S"







Weight gr. 4450
Minimum piloting pressure 2,5 bar (External Pilot) - 3 bar (Internal Pilot)

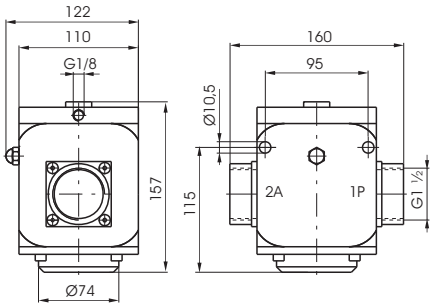
Operational characteristic	Fluid	Max working pressure (bar)	Temperature °C	Flow rate at 6 bar with Δp=1 (Nl/min)	Orifice size (mm)	Working ports size	Pilot ports size
	Filtered and lubricated air	10	-5 - +50	33500	38	G1 1/2"	G 1/8"

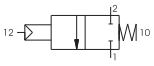
2

Pneumatic - Spring

Ordering code

776/V.22.11.1C





Weight gr. 3950
Normally Closed
Minimum piloting pressure 2 bar

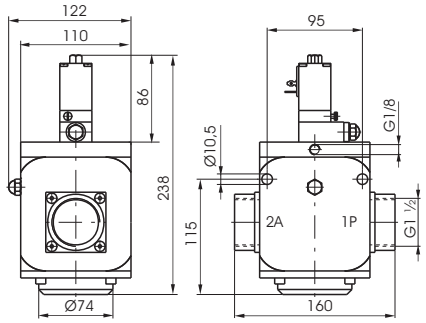
Operational characteristic	Fluid	Temperature °C	Orifice size (mm)	Working ports size	Pilot ports size
	Vacuum	-5 - + 70	38	G1 1/2"	G 1/8"

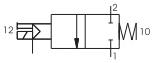
Solenoid - Spring

Ordering code

776/V.22.0.1C.Ⓢ

Ⓢ	SOLENOID CODE
	See Valves Series 300 Type "S"





Weight gr. 4450
External Pilot Normally Closed
Minimum piloting pressure 2 bar

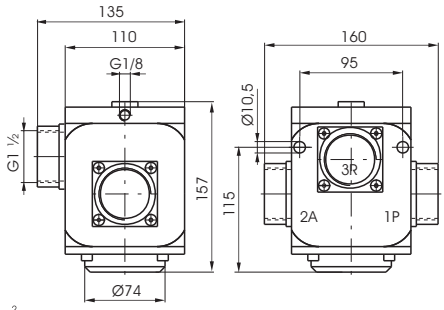
Operational characteristic	Fluid	Temperature °C	Orifice size (mm)	Working ports size	Pilot ports size
	Vacuum	-5 - + 50	38	G1 1/2"	G 1/8"

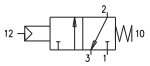
Pneumatic - Spring

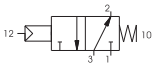
Ordering code

776/V.32.11.Ⓕ

Ⓕ	FUNCTION
	1C = Normally Closed
	1A = Normally Open







Weight gr. 3900
Minimum piloting pressure 2 bar

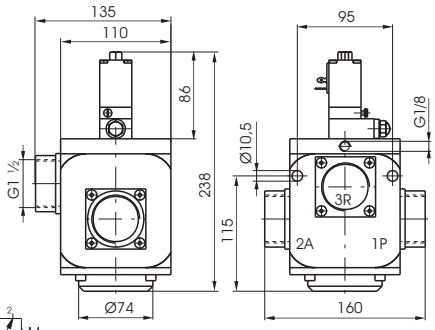
Operational characteristic	Fluid	Temperature °C	Orifice size (mm)	Working ports size	Pilot ports size
	Vacuum	-5 - + 70	38	G1 1/2"	G 1/8"

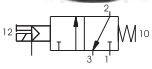
Solenoid - Spring

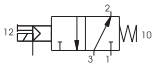
Ordering code

776/V.32.0.Ⓕ.Ⓢ

Ⓕ	FUNCTION
	1C = External Pilot Normally Closed
	1A = External Pilot Normally Open
Ⓢ	SOLENOID CODE
	See Valves Series 300 Type "S"







Weight gr. 4500
Minimum piloting pressure 2 bar

Operational characteristic	Fluid	Temperature °C	Orifice size (mm)	Working ports size	Pilot ports size
	Vacuum	-5 - + 50	38	G1 1/2"	G 1/8"

General

This new range of G1/2" and G3/4" pilot and solenoid operated poppet valves represents an evolution of the current popular Zama series. The main feature of this new series is the high impact resistant thermoplastic used to mould the valve components.
The use of this materiel results in a versatile, lightweight and economical valve. The new series also has other technical and functional enhancements over the existing range. Firstly, the traditional piston lip seal has been replaced with a rolling diaphragm, thereby eliminating frictional wear and tear to this seal. The new series (with the exception of certain vacuum models) also features a seal, which separates port 3 from the piston head. The inclusion of this seal has enhanced the valve's performance and allows the valve to be used as normally open (a configuration not possible in the Zama series).
Solenoid operated valves (both internal and external pilot versions) are fitted with a quick exhaust unit, which reduces the return stroke operating time by 60%. The bulk of the valves in this series use the MP type operator, the exception being internally piloted vacuum models, which use the MV operator. These operators differ from the M2 type in that they have self-tapping mounting screws for use in plastics.
Coils are not included and have to be ordered separately (series 300, Section 1, General Catalogue), with the exception of the bistable versions which already include 24V Dc Coils (N331.0A).

Coils C US homologated are also available. (see series 300).

Construction characteristics

Body, operator and end cover	High resistance technopolymer
Seals and poppets	Oil resistant rubber (NBR)
Piston and shaft	Acetal resin
Springs	AISI 302 stainless steel
Diaphragm	Oil resistant rubber coated (NBR)

Use and mainutenance

These valves have a mean life of 10 to 15 million cycles under normal operating conditions.
Lubrication is not required for good operation but we recommend good filtration to avoid dirty deposit causing malfunction.
Check that the operating conditions: pressure, temperature and so on are as suggested.
The exhaust port of the distributor has to be protected in a dusty and dirty environment.
For these products, according to the construction technique and special application, is not required any maintenance with parts replacement. When necessary it is sufficient to clean the internal parts.
When it is used the solenoid valves with internal pilot, either for air or vacuum, inlet flow rate must be equal or higher that the required consumption flow rate, otherwise is better choose the external pilot version.

Air valve port layout:

Normally closed:
1 = LINE IN
2 = CONSUMPTION
3 = EXHAUST

Normally open:
1 = EXHAUST
2 = CONSUMPTION
3 = LINE IN

Vacuum valve port layout:

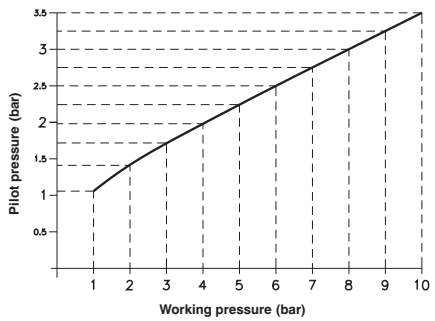
Normally closed internal pilot
Normally open (servoassisted) external pilot
1 = EXHAUST
2 = CONSUMPTION
3 = PUMP

Normally open internal pilot
Normally closed (servoassisted) external pilot
1 = PUMP
2 = CONSUMPTION
3 = EXHAUST

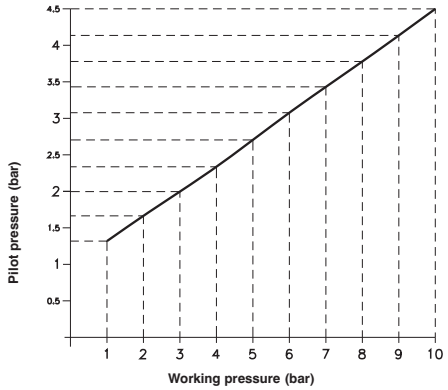
MINIMUM WORKING PRESSURE DIAGRAM (Valves for compressed air)

PNEUMATIC/SPRING AND EXTERNAL SOLENOID PILOT VERSION

NORMALLY CLOSED VALVE



NORMALLY OPEN VALVE



2

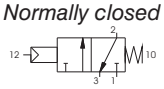
Valve
Pneumatic spring

3/2

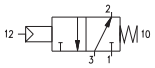
Ordering code

T772.32.11.1

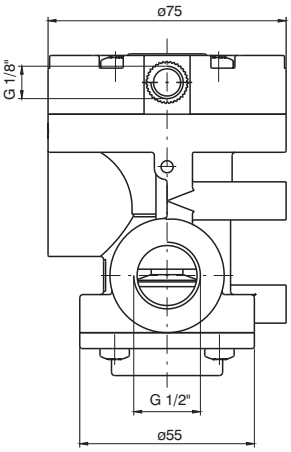
Normally closed

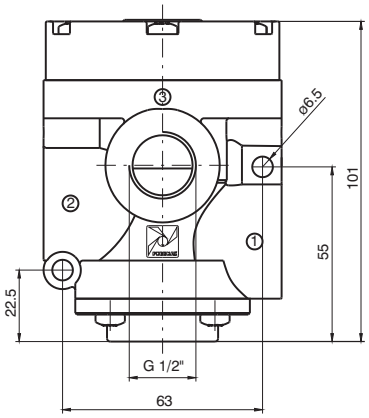


Normally open



Weight gr. 350



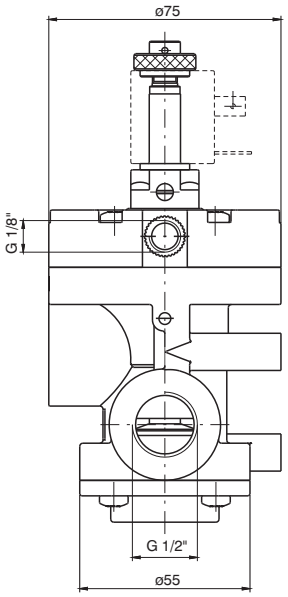


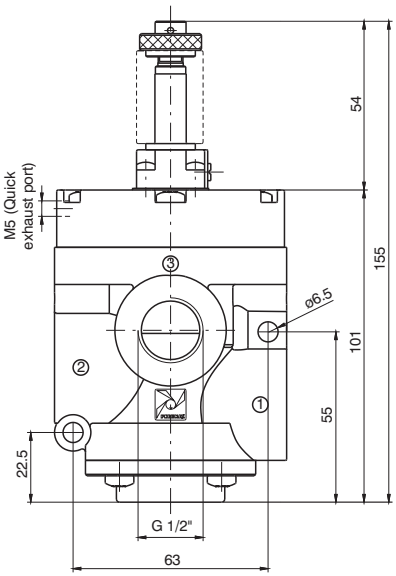
Minimum piloting pressure: see diagram at General page

Solenoid valve
Solenoid spring

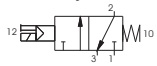
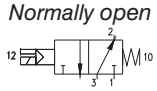
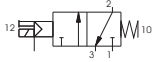
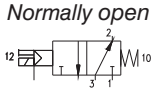
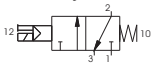
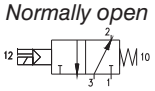
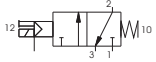
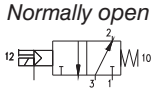
3/2

Weight gr. 390





Ordering code

Internal pilot	*Servoassisted external pilot*	*Internal pilot with quick exhaust*	*Servoassisted external pilot with quick exhaust*
T772.32.0.1AC.MP *Normally closed*  **T772.32.0.1AA.MP** *Normally open*  Minimum piloting pressure: 2.5 bar	**T772.32.0.1.MP** *Normally closed*  *Normally open*  Minimum piloting pressure: see diagram at General page	**T772S.32.0.1AC.MP** *Normally closed*  **T772S.32.0.1AA.MP** *Normally open*  Minimum piloting pressure: 2.5 bar	**T772S.32.0.1.MP** *Normally closed*  *Normally open*  Minimum piloting pressure: see diagram at General page

	Fluid	Max working pressure	Operating temperature min.	Operating temperature max.	Flow rate at 6 bar with Δp = 1 bar	Orifice size	Inlet port size	Pilot ports size
Operational characteristics	Filtered and lubricated or non lubricated air	10 bar	-5° C	+50°C	4100 Nl/min	mm 15	G 1/2"	G 1/8"

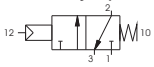
Valve
Pneumatic spring

3/2

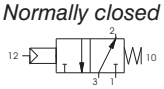
Ordering code

T772/V.32.11.1

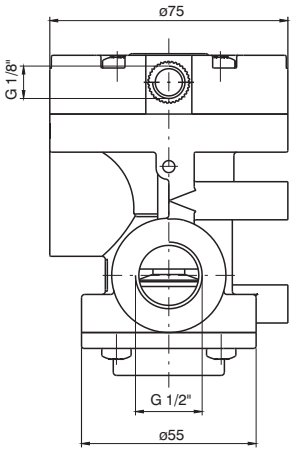
Normally open

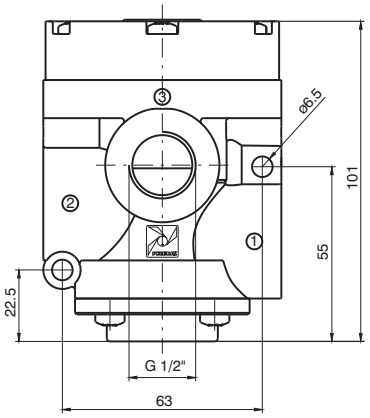


Normally closed



Weight gr. 350



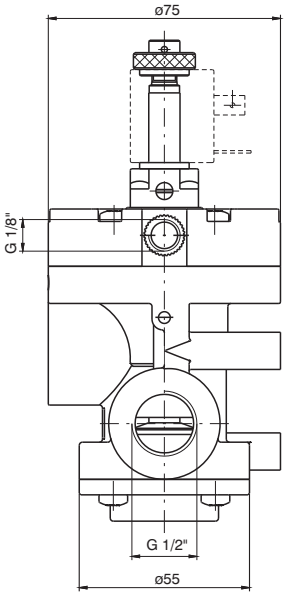


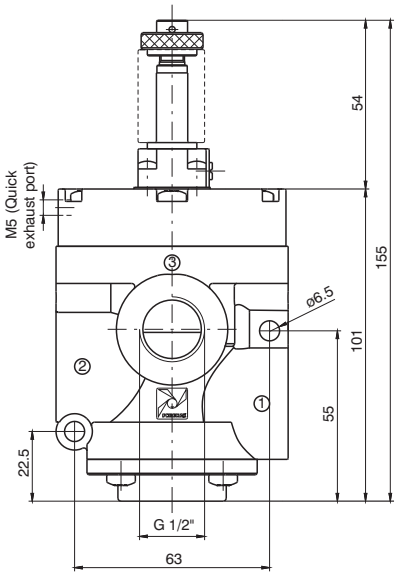
Minimum piloting pressure: 2,5 bar

Solenoid valve
Solenoid spring

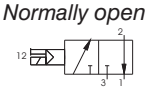
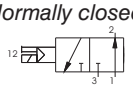
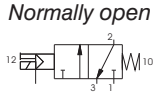
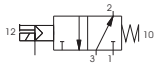
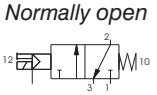
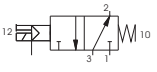
3/2

Weight gr. 390





Ordering code

Internal pilot	*Servoassisted external pilot*	*Servoassisted external pilot with quick exhaust*
T772/V.32.0.1AA.MV *Normally open*  **T772/V.32.0.1AC.MV** *Normally closed* 	**T772/V.32.0.1.MP** *Normally open*  *Normally closed* 	**T772/VS.32.0.1.MP** *Normally open*  *Normally closed* 

Minimum piloting pressure: 2.5 bar

Operational characteristics	Fluid	Operating temperature min.	Operating temperature max.	Orifice Size	Inlet port size	Pilot ports size
	Vacuum	-5°C	+50°C	mm 15	G 1/2"	G 1/8"

2

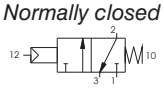
Valve
Pneumatic spring

3/2

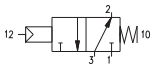
Ordering code

T773.32.11.1

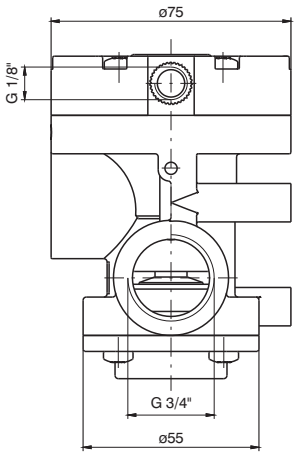
Normally closed

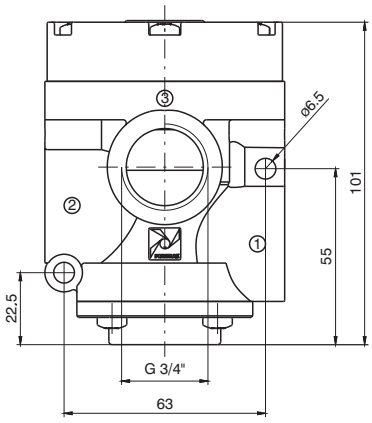


Normally open



Weight gr. 330



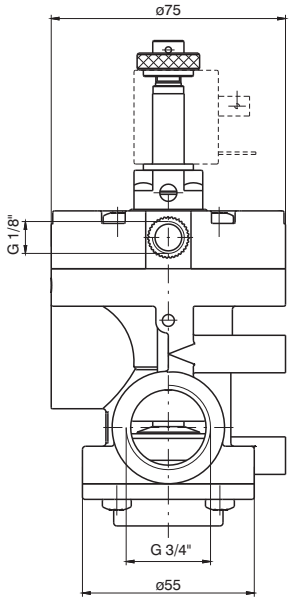


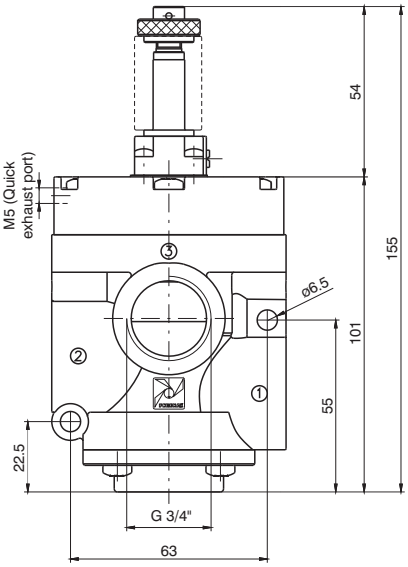
Minimum piloting pressure: see diagram at General page

Solenoid valve
Solenoid spring

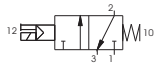
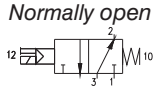
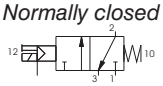
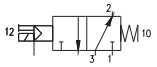
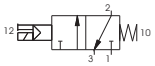
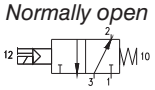
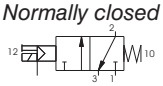
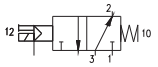
3/2

Weight gr. 370





Ordering code

Internal pilot	*Servoassisted external pilot*	*Internal pilot with quick exhaust*	*Servoassisted external pilot with quick exhaust*
T773.32.0.1AC.MP *Normally closed*  **T773.32.0.1AA.MP** *Normally open*  Minimum piloting pressure: 2.5 bar	**T773.32.0.1.MP** *Normally closed*  *Normally open*  Minimum piloting pressure: see diagram at General page	**T773S.32.0.1AC.MP** *Normally closed*  **T773S.32.0.1AA.MP** *Normally open*  Minimum piloting pressure: 2.5 bar	**T773S.32.0.1.MP** *Normally closed*  *Normally open*  Minimum piloting pressure: see diagram at General page

Operational characteristics	Fluid	Max piloting pressure	Operating temperature min.	Operating temperature max.	Flow rate at 6 bar with Δp = 1 bar	Orifice size	Inlet port size	Pilot ports size
	Filtered and lubricated or non lubricated air	10 bar	-5° C	+50°C	6400 Nl/min	mm 20	G 3/4"	G 1/8"

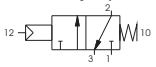
Valve
Pneumatic spring

3/2

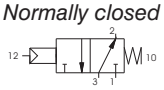
Ordering code

T773/V.32.11.1

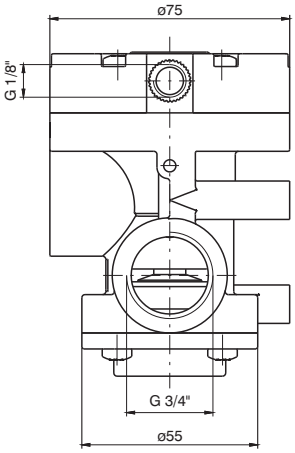
Normally open

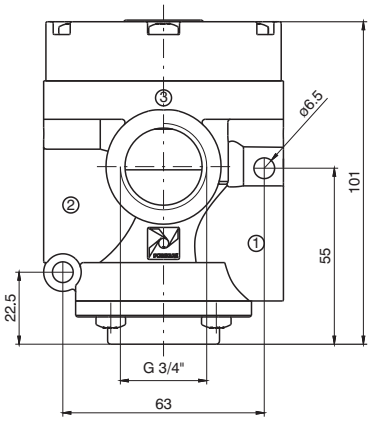


Normally closed



Weight gr. 330



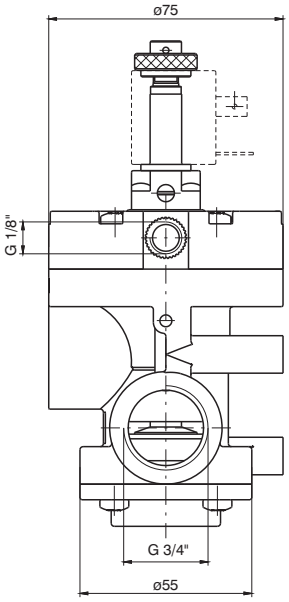


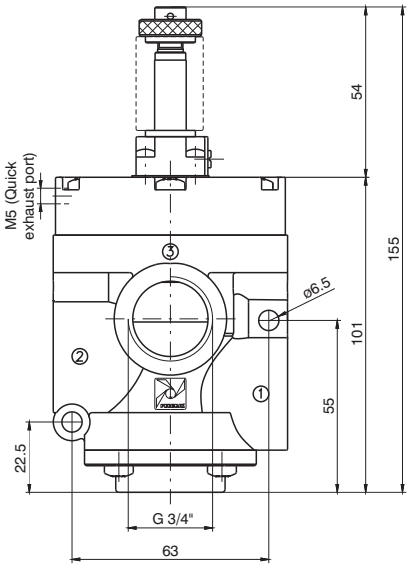
Minimum piloting pressure: 2,5 bar

Solenoid valve
Solenoid spring

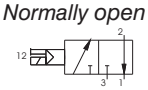
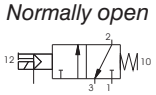
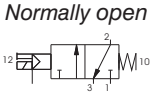
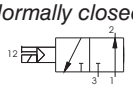
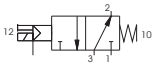
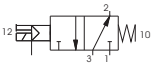
3/2

Weight gr. 370





Ordering code

Internal pilot	*Servoassisted external pilot*	*Servoassisted external pilot with quick exhaust*
T773/V.32.0.1AA.MV *Normally open* 	**T773/V.32.0.1.MP** *Normally open* 	**T773/VS.32.0.1.MP** *Normally open* 
T773/V.32.0.1AC.MV *Normally closed* 	*Normally closed* 	*Normally closed* 

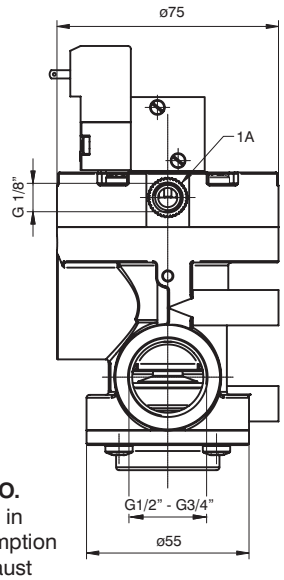
Minimum piloting pressure: 2.5 bar

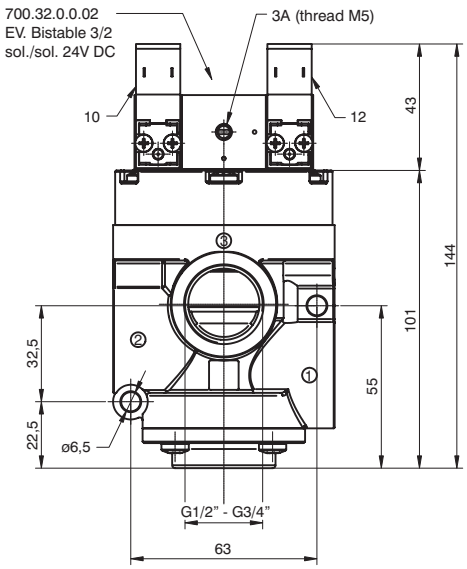
Operational characteristics	Fluid	Operating temperature min.	Operating temperature max.	Orifice Size	Inlet port size	Pilot ports size
	Vacuum	-5°C	+50°C	mm 20	G 3/4"	G 1/8"

2

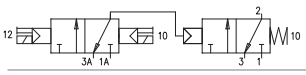
Bistable version for Compressed air

3/2

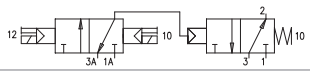




Air - N.C.
1 = line in
2 = consumption
1 = exhaust



Air - N.O.
3 = line in
2 = consumption
1 = exhaust



Weight gr. 550

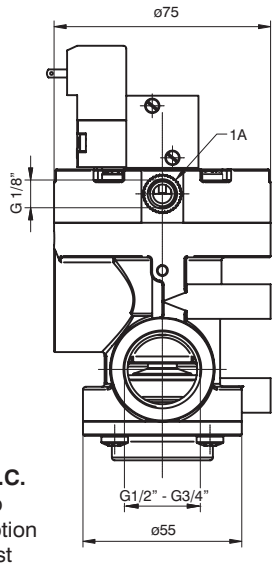
Ordering code

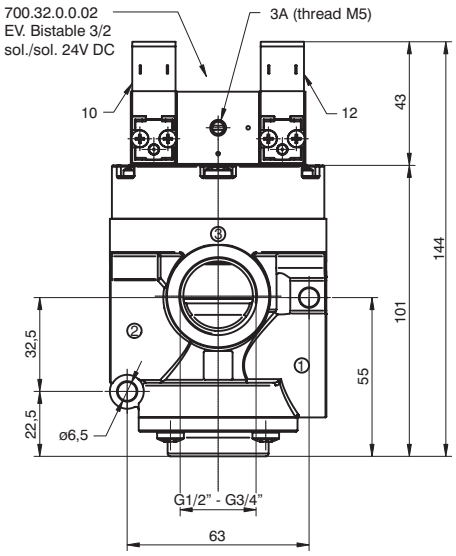
G 1/2"	*G 3/4"*	*G ½" (with quick exhaust)*	*G 3/4" (with quick exhaust)*
T772.32.0.1BP *Normally closed* *Normally open*	**T773.32.0.1.BP** *Normally closed* *Normally open*	**T772S.32.0.1.BP** *Normally closed* *Normally open*	**T773S.32.0.1.BP** *Normally closed* *Normally open*

	Fluid	Max piloting pressure	Min. Pilot pressure	Temperature min.	Temperature max.	Flow rate at 6 bar with Δp = 1 bar	Orifice Size	piloting port size	Pilot ports size
Operational characteristics	Filtered and lubricated or non lubricated air	10 bar	2 bar	-5° C	+50°C	G1/2": 4100 Nl/min G3/4": 6400 Nl/min	mm 15	G 1/2" G 3/4"	G 1/8"

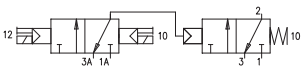
Bistable version for Vacuum

3/2

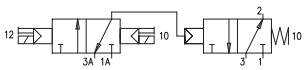




Vacuum - N.O.
3 = pump
2 = consumption
1 = exhaust



Vacuum - N.C.
1 = pump
2 = consumption
3 = exhaust



Weight gr. 550

Ordering code

G 1/2"	*G 3/4"*	*G ½" (with quick exhaust)*	*G 3/4" (with quick exhaust)*
T772/V.32.0.1BP *Normally closed* *Normally open*	**T773/V.32.0.1.BP** *Normally closed* *Normally open*	**T772/VS.32.0.1.BP** *Normally closed* *Normally open*	**T773/VS.32.0.1.BP** *Normally closed* *Normally open*

	Fluid	Min. Pilot pressure	Temperature min.	Temperature max.	Orifice Size	Inlet port size	Pilot ports size
Operational characteristics	Vacuum	2,5 bar	-5° C	+50°C	mm 15	G 1/2" G 3/4"	G 1/8"

General

This new range of G1” pilot and solenoid operated poppet valves represents an evolution of the current popular Zama series and of the series T772-T773 (G1/2" - 3/4").
Also for this series the main feature is the technopolimer material used to mould most of its components. The use of this materiel results in a versatile, lightweight and economical valve.
The new series also has other technical and functional enhancements over the existing range. Firstly, the traditional piston lip seal has been replaced with a rolling diaphragm, thereby eliminating frictional wear and tear to this seal. The new series (with the exception of certain vacuum models) also features a seal, which separates port 3 from the piston head. The inclusion of this seal has enhanced the valve’s performance and allows the valve to be used as normally open (a configuration not possible in the Zama series).
Solenoid operated valves (both internal and external pilot versions) are fitted with a quick exhaust unit, which reduces the return stroke operating time by 80%. The bulk of the valves in this series use the MP type operator, the exception being internally piloted vacuum models, which use the MV operator. These operators differ from the M2 type in that they have self-tapping mounting screws for use in plastics.
Bistable versions are also available, both for air or for vacuum. These valves are fitted with a 3/2 sol-sol valve (instead of the standard pilot valve) fitted with two 15mm 24V Dc microvalves (N331.0A).Ordering codes refer to solenoid valves with MP or MV assembled on them.
Coils are not included and have to be ordered separately (series 300, Section 1, General Catalogue), with the exception of the bistable versions which already include 24V Dc Coils (N331.0A).

Coils c UL us homologated are also available (see series 300).

Construction characteristics

Body, operator and end cover	High resistance technopolymer
Seals and poppets	NBR
Piston and shaft	Acetal resin
Springs	AISI 302 stainless steel
Diaphragm	NBR

Use and mainutenance

These valves have a mean life of 10 to 15 million cycles under normal operating conditions.
Lubrication is not required for good operation but we recommend good filtration to avoid dirty deposit causing malfunction.
Check that the operating conditions: pressure, temperature and so on are as suggested.
The exhaust port of the distributor has to be protected in a dusty and dirty environment.
For these products, according to the construction technique and special application, is not required any maintenance with parts replacement. When necessary it is sufficient to clean the internal parts.
When it is used the solenoid valves with internal pilot, either for air or vacuum, inlet flow rate must be equal or higher that the required consumption flow rate, otherwise is better choose the external pilot version.

Air valve port layout:

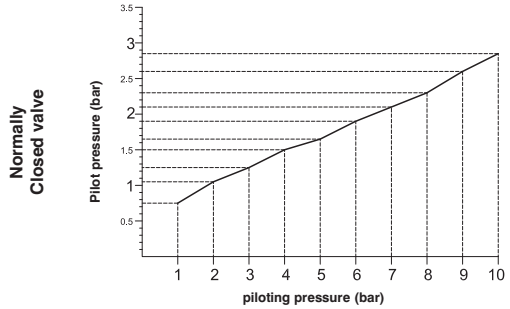
Normally closed:	1 = LINE IN 2 = CONSUMPTION 3 = EXHAUST
Normally open:	1 = EXHAUST 2 = CONSUMPTION 3 = LINE IN

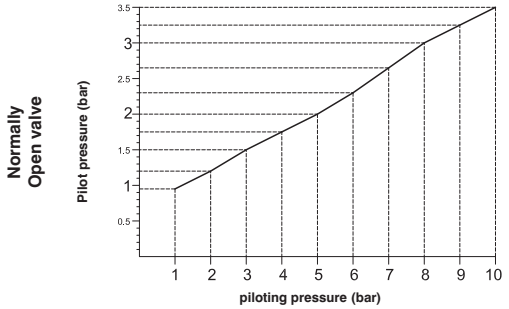
Vacuum valve port layout:

Normally closed internal pilot Normally open (servoassisted) external pilot	1 = EXHAUST 2 = CONSUMPTION 3 = PUMP
Normally open internal pilot Normally closed (servoassisted) external pilot	1 = PUMP 2 = CONSUMPTION 3 = EXHAUST

MINIMUM piloting PRESSURE DIAGRAM (Valves for compressed air)

PNEUMATIC/SPRING AND EXTERNAL SOLENOID PILOT VERSION





2

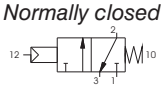
Valve
Pneumatic spring

3/2

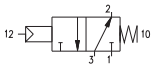
Ordering code

T771.32.11.1

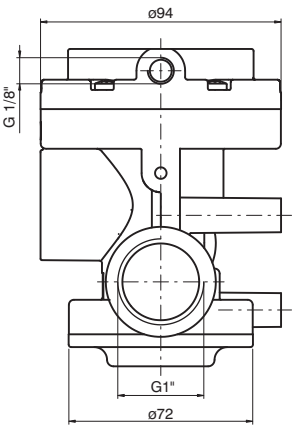
Normally closed

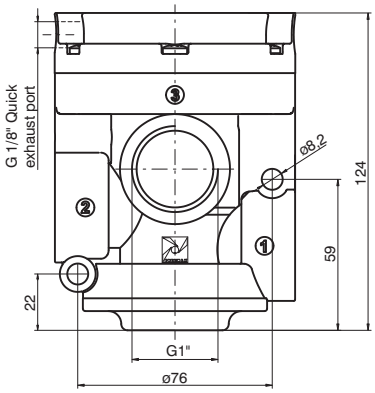


Normally open



Weight gr. 480



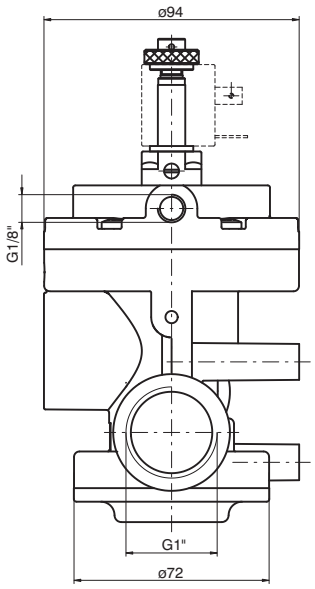


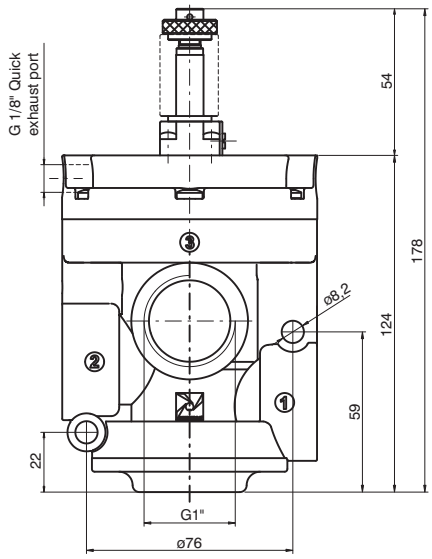
Minimum piloting pressure: see diagram at General page

Solenoid valve
Solenoid spring

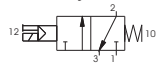
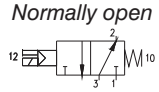
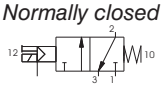
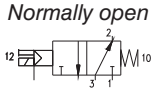
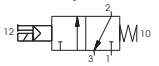
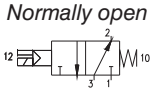
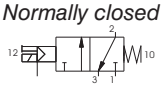
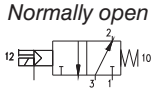
3/2

Weight gr. 520





Ordering code

Internal pilot	*Servoassisted external pilot*	*Internal pilot with quick exhaust*	*Servoassisted external pilot with quick exhaust*
T771.32.0.1AC.MP *Normally closed*  **T771.32.0.1AA.MP** *Normally open*  Minimum piloting pressure: 2,5 bar	**T771.32.0.1.MP** *Normally closed*  *Normally open*  Minimum piloting pressure: see diagram at General page	**T771S.32.0.1AC.MP** *Normally closed*  **T771S.32.0.1AA.MP** *Normally open*  Minimum piloting pressure: 2,5 bar	**T771S.32.0.1.MP** *Normally closed*  *Normally open*  Minimum piloting pressure: see diagram at General page

	Fluid	Max piloting pressure	Operating temperature min.	Operating temperature max.	Flow rate at 6 bar with Δp = 1 bar	Orifice size	Inlet port size	Pilot ports size
Operational characteristics	Filtered and lubricated or non lubricated air	10 bar	-5° C	+50°C	12.000 Nl/min	mm 25	G 1”	G 1/8"

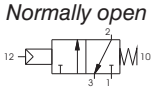
Valve
Pneumatic spring

3/2

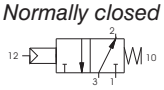
Ordering code

T771/V.32.11.1

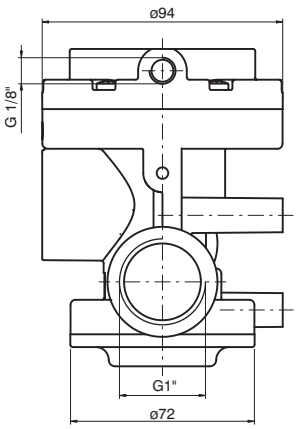
Normally open

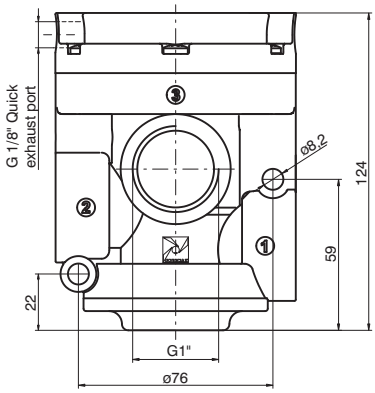


Normally closed



Weight gr. 480



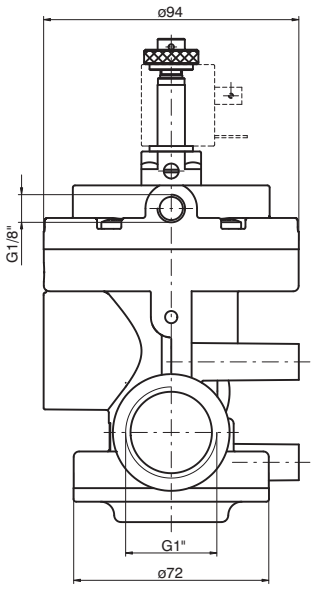


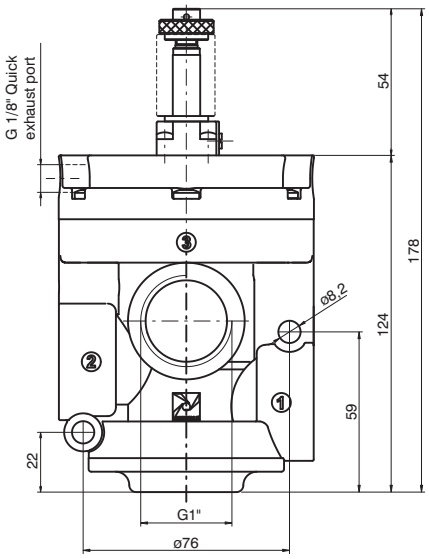
Minimum piloting pressure: 2 bar

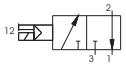
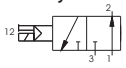
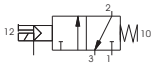
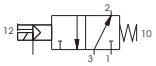
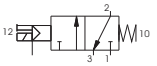
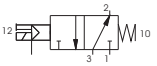
Solenoid valve
Solenoid spring

3/2

Weight gr. 520





Ordering code		
Internal pilot	*Servoassisted external pilot*	*Servoassisted external pilot with quick exhaust*
T771/V.32.0.1AA.MV *Normally open*  **T771/V.32.0.1AC.MV** *Normally closed* 	**T771/V.32.0.1.MP** *Normally open*  *Normally closed* 	**T771/VS.32.0.1.MP** *Normally open*  *Normally closed* 

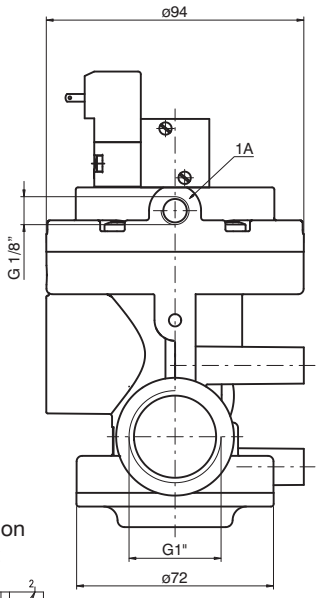
Minimum piloting pressure: 2 bar

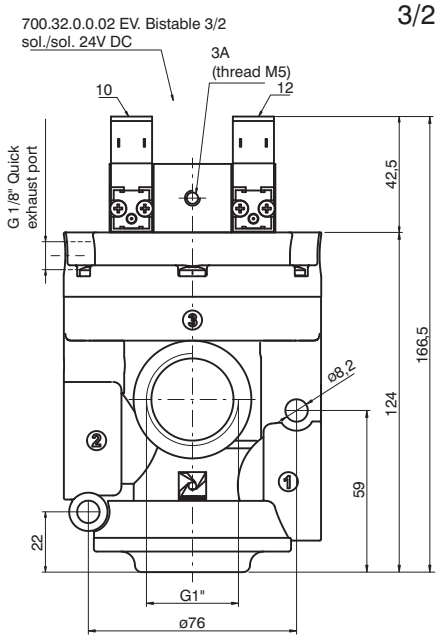
	Fluid	Temperature min.	Temperature max.	Orifice size	Inlet port size	Pilot ports size
Operational characteristics	Vacuum	-5°C	+50°C	mm 25	G 1"	G 1/8"

2

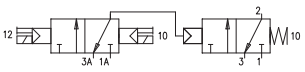
Bistable version for Compressed air

3/2

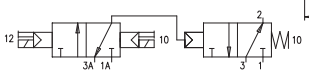




Air - N.C.
1 = line in
2 = consumption
3 = exhaust



Air - N.O.
3 = line in
2 = consumption
1 = exhaust



Weight gr. 680

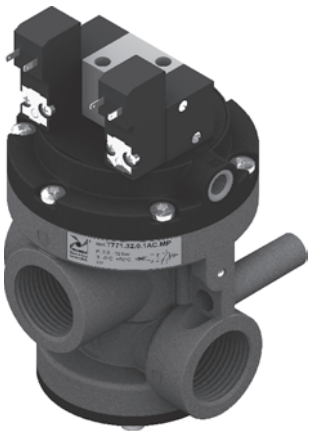
Ordering code

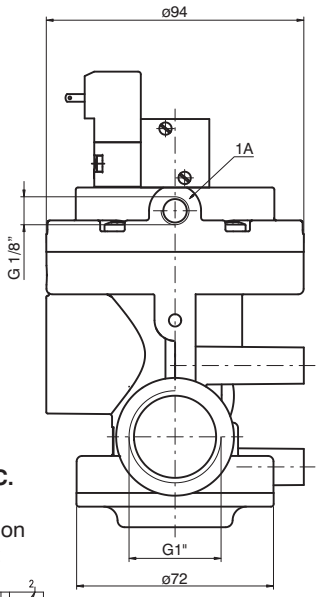
	with quick exhaust
T771.32.0.1BP *Normally closed / Normally open*	**T771S.32.0.1.BP** *Normally closed / Normally open*

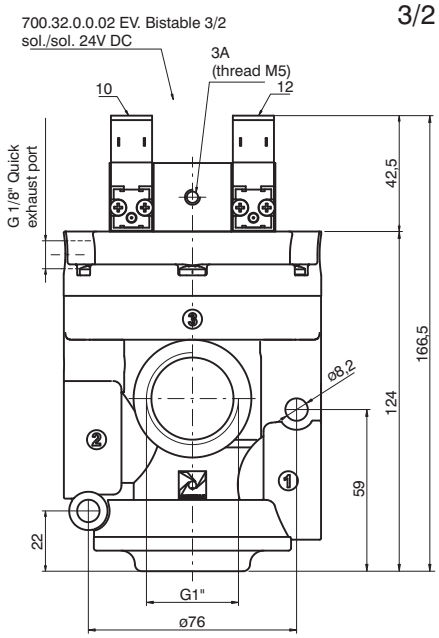
	Fluid	Max piloting pressure	Minumum piloting pressure	Operating temperature min.	Operating temperature max.	Flow rate at 6 bar with Δp = 1 bar	Orifice size	inlet port size	Pilot ports size
Operational characteristics	Filtered and lubricated air	10 bar	2,5 bar	-5° C	+50°C	12.000 Nl/min	mm 25	G 1”	G 1/8"

Bistable version for Vacuum

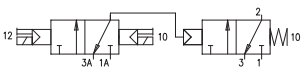
3/2



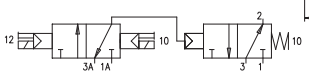




Vacuum - N.O.
3 = pump
2 = consumption
1 = exhaust



Vacuum - N.C.
1 = pump
2 = consumption
3 = exhaust



Weight gr. 680

Ordering code

	with quick exhaust
T771/V.32.0.1BP *Normally closed / Normally open*	**T771/VS.32.0.1.BP** *Normally closed / Normally open*

	Fluid	Minumum piloting pressure	Temperature min.	Temperature max.	Orifice size	Inlet port size	Pilot ports size
Operational characteristics	Vacuum	2,5 bar	-5° C	+50°C	mm 25	G 1”	G 1/8"

General

The N776 G1.1/2" series of valves and solenoid operated poppet valves is the result of the technical evolution of the 776 series. A rolling diaphragm construction has replaced the previously used piston design ensure lower frictions and longer life.
Connection 3 is isolated via a dedicated seal which allow to have the N.O. version as well as the self feed for vacuum which was not available on the 776 series.
The pilot valves are the M3R (CNOMO Stile) with bistable manual override.

Coils are not included and have to be ordered separately (see 300 series, 22mm MB coils and 30mm CNOMO MC coils).

Coils C RU US homologated are also available. (series 300).

Construction characteristics

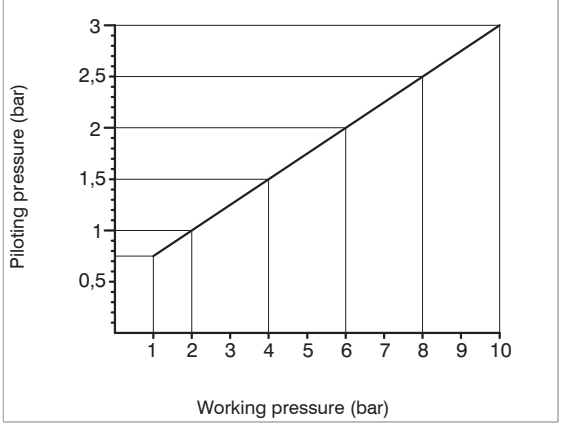
Body, operator and end cover:	Die casting Aluminium
Seals and poppets:	NBR oil resistant rubber
Piston:	Aluminium (for Air) - Acetylic resin (for Vacuum)
Pin guide:	Nickel plated steel
Spring:	Steel
Diaphragm:	NBR oil resistant rubber

Use and mainutenance

These valves have a mean life of 10 to 15 million cycles under normal operating conditions.
Lubrication is not required for good operation but we recommend good filtration to avoid dirty deposit causing malfunction.
Check that the operating conditions: pressure, temperature and so on are as suggested.
The exhaust port of the distributor has to be protected in a dusty and dirty environment.
For these products, according to the construction technique and special application, is not required any maintenance with parts replacement. When necessary it is sufficient to clean the internal parts.
When it is used the solenoid valves with internal pilot, either for air or vacuum, inlet flow rate must be equal or higher that the required consumption flow rate, otherwise is better choose the external pilot version.

Air valves port layout:		**Vacuum valves port layout:**	
Normally Closed:	1 = LINE IN	Normally Closed internal Pilot	1 = EXHAUST
	2 = CONSUMPTION	Normally Open (servoassisted) external pilot	2 = CONSUMPTION
	3 = EXHAUST		3 = PUMP
Normally Open:	1 = EXHAUST	Normally Open internal Pilot	1 = PUMP
	2 = CONSUMPTION	Normally Closed servoassisted) external pilot	2 = CONSUMPTION
	3 = LINE IN		3 = EXHAUST

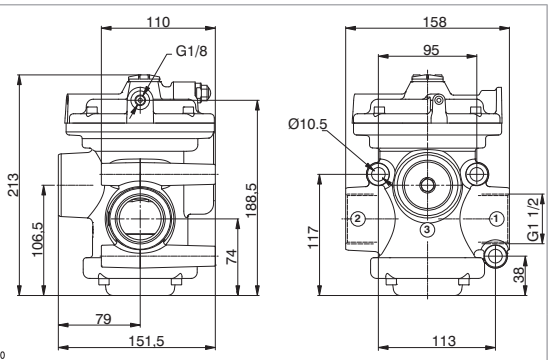
Minumum working pressure diagram for external pilot versions Normally Closed & Normally Open

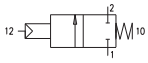


Pneumatic - Spring

Ordering code

N776.22.11.1C





Weight gr.3560
Normally Closed
Minimum piloting pressur "See diagram on the General page"

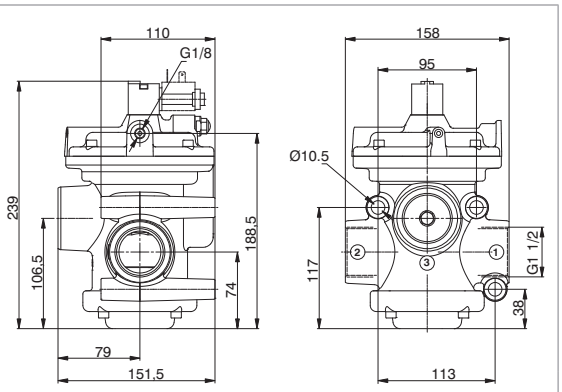
Operational characteristics	Fluid	Temperature °C	Max working pressure (bar)	Flow rate at 6 bar with Δp=1 (Nl/min)	Orifice size (mm)	Working ports size	Pilot ports size
	Filtered and lubricated air or non	-5 ÷ +70	10	33500	38	G1 1/2"	G1/8"

Solenoid - Spring

Ordering code

N776.22.0.Ⓕ.M3R

	FUNCTION
Ⓕ	1AC = Internal Pilot Normally Closed
	1C = External Pilot Normally Closed



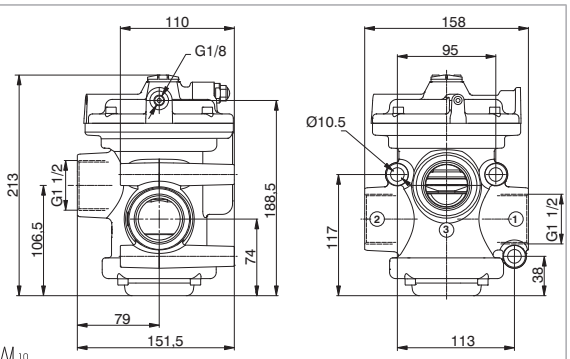
Weight gr.3620
Minimum piloting pressure: Servoassisted external pilot version, "See diagram on the General page" / 3,5 bar Internal pilot version,

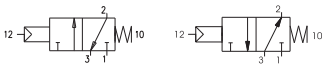
Operational characteristics	Fluid	Temperature °C	Max working pressure (bar)	Flow rate at 6 bar with Δp=1 (Nl/min)	Orifice size (mm)	Working ports size	Pilot ports size
	Filtered and lubricated air or non	-5 ÷ +50	10	33500	38	G1 1/2"	G1/8"

Pneumatic - Spring

Ordering code

N776.32.11.1





Weight gr.3550
Normally Closed / Normally open
Minimum piloting pressur "See diagram on the General page"

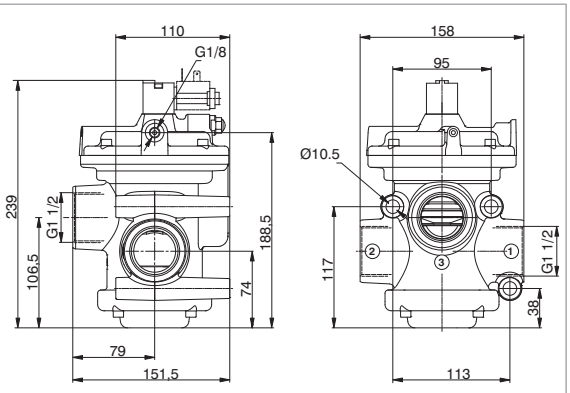
Operational characteristics	Fluid	Temperature °C	Max working pressure (bar)	Flow rate at 6 bar with Δp=1 (Nl/min)	Orifice size (mm)	Working ports size	Pilot ports size
	Filtered and lubricated air or non	-5 ÷ +70	10	33500	38	G1 1/2"	G1/8"

Solenoid - Spring

Ordering code

N776.32.0.Ⓕ.M3R

	FUNCTION
Ⓕ	1AC = Internal Pilot Normally Closed
	1AA=Internal Pilot Normally Open
	1 = External Pilot Normally Closed-Normally Open



Weight gr.3610
Minimum piloting pressure: Servoassisted external pilot "See diagram on the General page" / 3,5 bar Internal pilot version,

Operational characteristics	Fluid	Temperature °C	Max working pressure (bar)	Flow rate at 6 bar with Δp=1 (Nl/min)	Orifice size (mm)	Working ports size	Pilot ports size
	Filtered and lubricated air or non	-5 ÷ +50	10	33500	38	G1 1/2"	G1/8"

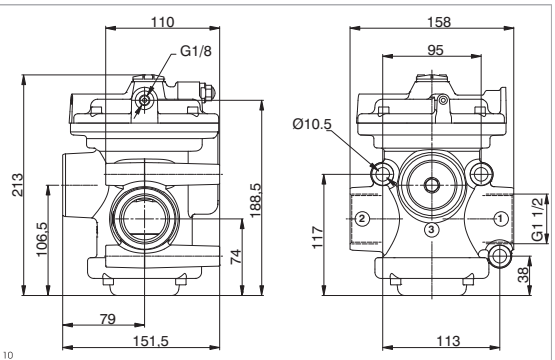
2

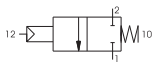
Pneumatic - Spring

Ordering code

N776/V.22.11.1C

Weight gr.3178
Normally Closed
Minimum piloting pressur 2 bar





Operational characteristics	Fluid	Temperature °C	Orifice size (mm)	Working ports size	Pilot ports size
	Vacuum	-5 ÷ +70	38	G1 1/2"	G1/8"

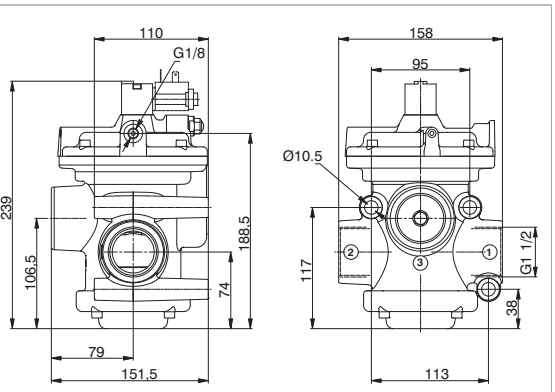
Solenoid - Spring

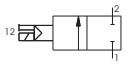
Ordering code

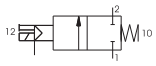
N776/V.22.0.Ⓕ.M3R

	FUNCTION
Ⓕ	1AC = Internal Pilot Normally Closed
	1C = External Pilot Normally Closed

Weight gr.3238
Minimum piloting pressure 2 bar







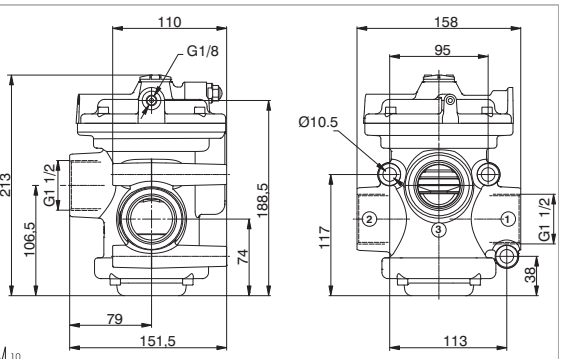
Operational characteristics	Fluid	Temperature °C	Orifice size (mm)	Working ports size	Pilot ports size
	Vacuum	-5 ÷ +50	38	G1 1/2"	G1/8"

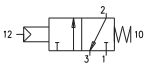
Pneumatic - Spring

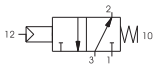
Ordering code

N776/V.32.11.1

Weight gr.3168
Normally Closed / Normally open
Minimum piloting pressur 2 bar







Operational characteristics	Fluid	Temperature °C	Orifice size (mm)	Working ports size	Pilot ports size
	Vacuum	-5 ÷ +70	38	G1 1/2"	G1/8"

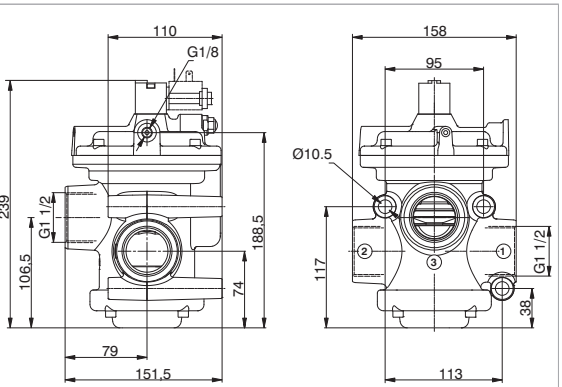
Solenoid - Spring

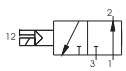
Ordering code

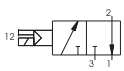
N776/V.32.0.Ⓕ.M3R

	FUNCTION
Ⓕ	1AC = Internal Pilot Normally Closed
	1AA=Internal Pilot Normally Open
	1 = External Pilot Normally Closed-Normally Open

Weight gr.3228
Minimum piloting pressure 2 bar







Operational characteristics	Fluid	Temperature °C	Orifice size (mm)	Working ports size	Pilot ports size
	Vacuum	-5 ÷ +50	38	G1 1/2"	G1/8"

General

Pad Valves offer a reliable and economic solution to fluid control.
The valve is manufactured with a 2 way Bronze body and actuated pneumatically using either a single or double acting compact cylinder which can be rotated 360°.

Versions are available with NBR, FPM or PTFE valve seals.

The barrel profile allows the use of magnetic sensors code "1500._" , "RS._" , "HS._", for slots "A" type.
(see the Pneumax Genaral catalogue, chapter 4).

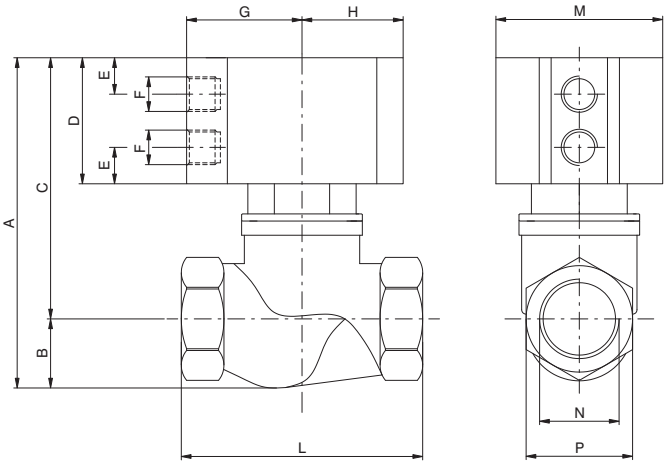
Construction characteristics

Rear eye, Piston and Rod bushing	Anodized aluminium
Cylinder	Aluminium alloy Anodized
Spring	Zinc plated steel
Pneumatic cylinder seals	NBR (FPM for variants with seals in contact with fluid in FPM or PTFE)
Seals in contact with fluid	NBR, FPM, PTFE
Piston rod	Chromed stainelss steel
Bushing, Bushing pad, Nut pad	Brass

Working characteristics

Pneumatic cylinder fluid	Filtered and lubricated air or non
Valve fluid	Fluid compatible with gasket compounds available
Maximum working pressure (bar)	10
Temperature °C, non magnetic piston, NBR seals	-5 / + 70
non magnetic piston, FPM seals	-5 / + 150
non magnetic piston, PTFE seals	-5 / + 150
magnetic piston, NBR, FPM, PTFE seals	-5 / + 70

"T" body version Pad valves



Ordering code

PVA.B.Ⓐ.Ⓟ.T.Ⓒ.Ⓢ

Ⓐ	ACTING
	DE=Double acting
	SC=Normally closed
	SA=Normally open
Ⓟ	PISTON
	N=Non magnetic
	M= Magnetic
Ⓒ	CONNECTIONS
	A=G1/4"
	B=G3/8"
	C=G1/2"
	D=G3/4"
	E=G1"
	F=G1 1/4"
	G=G1 1/2"
	H=G2"
Ⓢ	SEALS
	N=NBR
	V=FPM
	F=PTFE

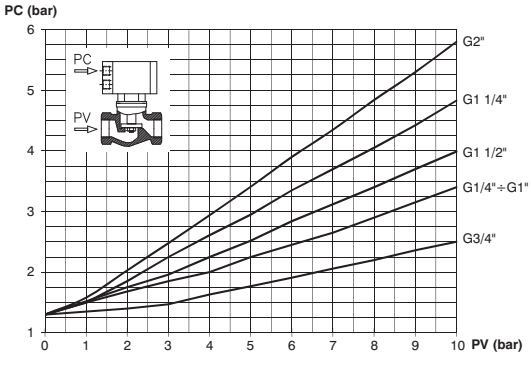
TABLE OF DIMENSIONS

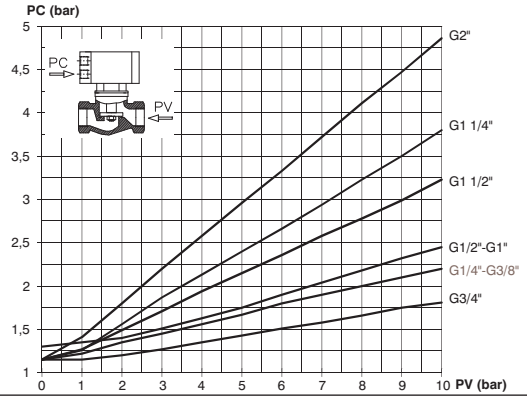
	Non magnetic version			Magnetic version											TECHNICAL DATA		
Connection (N)	A	C	D	A	C	D	B	E	F	G	H	L	M	P	*Actuator (Ø)*	*Nominal Valve (Ø)*	*Weight (gr.)*
G1/4"	93,5	77,5	41	97,5	81,5	45	16	10,25	G1/8"	32,5	28,5	64	47	25	Ø40	Ø13,5	350
G3/8"	93,5	77,5	41	97,5	81,5	45	16	10,25	G1/8"	32,5	28,5	64	47	25	Ø40	Ø13,5	350
G1/2"	93,5	78	41	99,5	82	45	17,5	10,25	G1/8"	32,5	28,5	68	47	30	Ø40	Ø15	400
G 3/4"	105	83	41	113	90	48	22	11,25	G1/8"	44	40	79	70	36	Ø63	Ø20,5	850
G1"	117	89	41	125	101	53	28	11,25	G1/8"	44	40	94	70	44	Ø63	Ø25	1100
G1 1/4"	131	103	48	136	108	53	28	11,25	G1/8"	44	40	110	70	55	Ø63	Ø30	1400
G1 1/2"	154	118	57	166	130	69	36	13,75	G1/8"	56	49	120	90	60	Ø80	Ø38	2100
G2"	169	124	57	181	136	69	45	13,75	G1/8"	56	49	140	90	73	Ø80	Ø49,5	3000

Pad valves, 2-ways, are a reliable and economic solution to control fluid. Pneumatically actuated by a compact double or single acting cylinder with 360° revolving connections. Standard seals in contact with fluid are made in NBR, FPM or PTFE. The barrel profile allows the use of Pneumax magnetic sensors series 1500 (see the Pneumax Genaral catalogue, chapter 4).

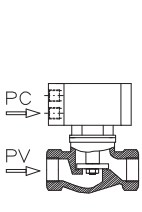
Pressure curves

DOUBLE ACTING CYLINDER

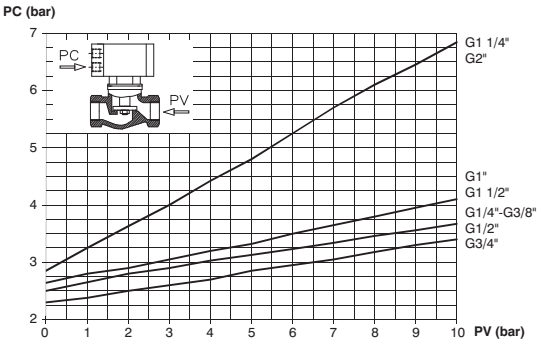




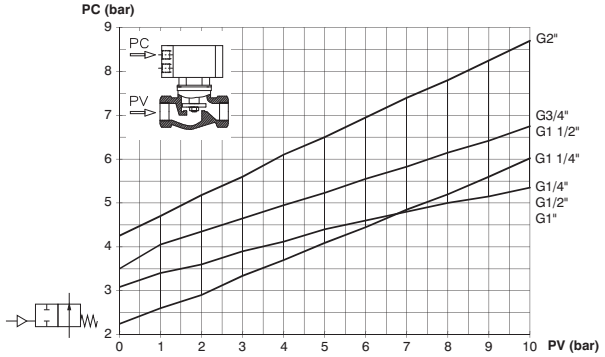
SINGLE ACTING CYLINDER, NORMALLY CLOSED VALVE



PV max. 2 bar



SINGLE ACTING CYLINDER, NORMALLY OPEN VALVE



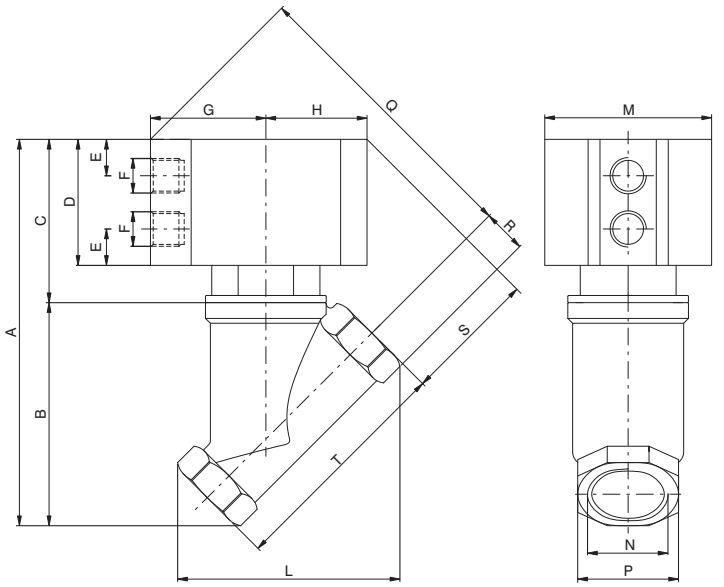
Operational characteristics

- Rear eye, Piston and Rod bushing = Anodized aluminium
- Cylinder = Aluminium alloy Anodized
- Spring = Zinc plated steel
- Seals = NBR, FPM, PTFE
- Piston rod = Chromed stainelss steel
- Bushing, Bushing pad, Nut pad = Brass

Technical characteristics

Fluid	Filtered and lubricated air or non
Maximum working pressure (bar)	10
Temperature °C (non magnetic piston, NBR seals)	-5 / + 70
Temperature °C (non magnetic piston, FPM seals)	-5 / + 150
Temperature °C (non magnetic piston, PTFE seals)	-5 / + 150
Temperature °C (magnetic piston, NBR, FPM, PTFE seals)	-5 / + 70

"Y" body version Pad valves



Ordering code

PVA.B.A.P.Y.C.S

A	ACTING
	DE=Double acting
	SC=Normally closed
	SA=Normally open
P	PISTON
	N=Non magnetic
	M= Magnetic
C	CONNECTIONS
	A=G1/4"
	B=G3/8"
	C=G1/2"
	D=G3/4"
	E=G1"
	F=G1 1/4"
	G=G1 1/2"
	H=G2"
S	SEALS
	N=NBR
	V=FPM
	F=PTFE

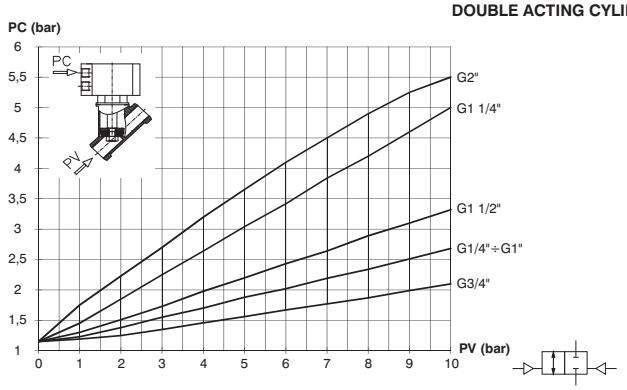
TABLE OF DIMENSIONS

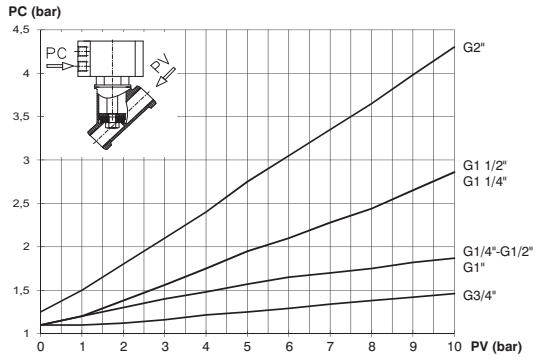
	Non magnetic version					Magnetic version															TECHNICAL DATA		
Connection (N)	A	C	D	Q	S	A	C	D	Q	S	B	E	F	G	H	L	M	P	R	T	Actuator (Ø)	Nominal Valve (Ø)	Weight (gr.)
G1/4"	121	71	45	95	51	124	74	48	97	53	50	10,3	G1/8"	32,5	28,5	52	47	21	10,5	50	Ø40	Ø13	350
G3/8"	121	71	45	95	51	124	74	48	97	53	50	10,3	G1/8"	32,5	28,5	52	47	21	10,5	50	Ø40	Ø13	350
G1/2"	127	71	45	97	54	130	74	48	99	56	56	10,3	G1/8"	32,5	28,5	57	47	27	13,5	56	Ø40	Ø13	400
G 3/4"	148	80	48	119	66	201	133	104	175	92	68	11,3	G1/8"	44	40	70	70	32	16	66	Ø63	Ø18	850
G1"	159	75	48	123	75	215	131	104	175	92	84	11,3	G1/8"	44	40	82	70	38	19	78	Ø63	Ø21,5	850
G1 1/4"	184	91	65	140	70	231	138	112	172	96	93	11,3	G1/8"	44	40	105	70	47	23,5	101	Ø63	Ø30	1200
G1 1/2"	180	99	81	173	85	255	129	111	187	107	126	13,8	G1/8"	56	49	125	90	55	27,5	113	Ø80	Ø36	2000
G2"	246	106	88	182	88	269	129	111	203	109	140	13,8	G1/8"	56	49	136	90	68	34	125	Ø80	Ø46	2300

Pad valves, 2-ways, are a reliable and economic solution to control fluid. Pneumatically actuated by a compact double or single acting cylinder with 360° revolving connections. Standard seals in contact with fluid are made in NBR, FPM or PTFE. The barrel profile allows the use of Pneumax magnetic sensors series 1500 (see the Pneumax Genaral catalogue, chapter 4).

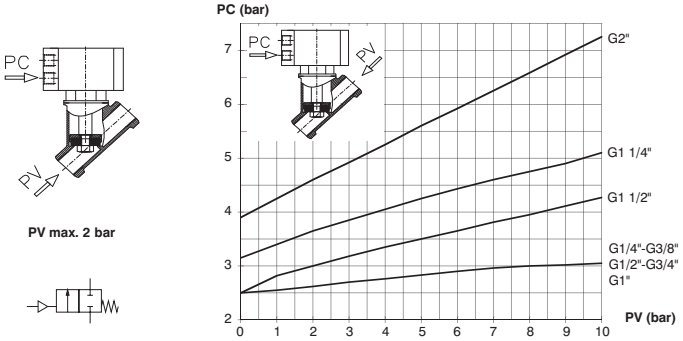
Pressure curves

DOUBLE ACTING CYLINDER

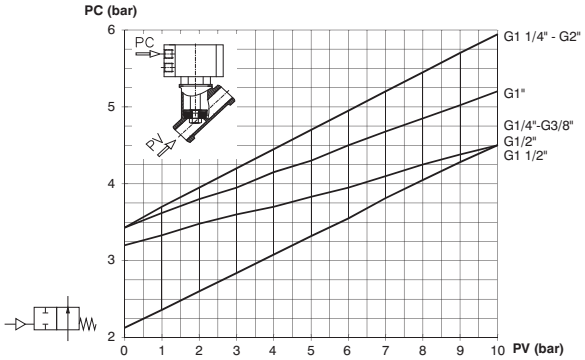




SINGLE ACTING CYLINDER, NORMALLY CLOSED VALVE



SINGLE ACTING CYLINDER, NORMALLY OPEN VALVE



Operational characteristics

- Rear eye, Piston and Rod bushing = Anodized aluminium
- Cylinder = Aluminium alloy Anodized
- Spring = Zinc plated steel
- Seals = NBR, FPM, PTFE
- Piston rod = Chromed stainelss steel
- Bushing, Bushing pad, Nut pad = Brass

Technical characteristics

Fluid	Filtered and lubricated air or non
Maximum working pressure (bar)	10
Temperature °C (non magnetic piston, NBR seals)	-5 / + 70
Temperature °C (non magnetic piston, FPM seals)	-5 / + 150
Temperature °C (non magnetic piston, PTFE seals)	-5 / + 150
Temperature °C (magnetic piston, NBR, FPM, PTFE seals)	-5 / + 70