

M/ Series Pressure Regulator



M/ Series Pressure Regulator

Their technical and operational features make the MN/ Series spring-loaded regulators the choice of preference in those applications requiring sudden changes in capacity or where gas shut-off is solenoid-controlled as with domestic or industrial burners.

These regulators can be employed with natural, manufactured, propane, other gases and air so long as these are duly filtered and do not contain high percentages of benzol.

Main features:

- Fail to Open regulator
- Counterbalanced valve
- Wide pressure regulation range
- Full seal at zero flow
- Easy maintenance
- Optional minimum and/or maximum pressure shut-off device

Widened outlet flange configurations

MN series
Differential
strength



MN Regulator



MBN Regulator + Shut-off



MBN-M Monitor + Shut-off

Configurations	ID-ABBREVIATIONS			
	Widened outlet flange PN 16 – ANSI 150			
	Standard	AP	APA	PST
Regulator	MN	MN-AP	MN-APA	MN-PST
Regulator + Shut-off	MBN	MBN-AP	MBN-APA	MBN-PST
Monitor + Shut-off	MBN-M	MBN-M-AP	MBN-M-APA	MBN-M-PST

SR version with built-in silencer available on request.

Same size inlet/outlet flanges configurations

MF series
Differential
strength



MF Regulator



MBF Regulator + Shut-off



MBF-M Monitor + Shut-off

Configurations	ID-ABBREVIATIONS			
	Same size inlet/outlet flanges configurations PN 16 – ANSI 150			
	Standard	AP	APA	PST
Regulator	MF	MF-AP	MF-APA	MF-PST
Regulator + Shut-off	MBF	MBF-AP	MBF-APA	MBF-PST
Monitor + Shut-off	MBF-M	MBF-M-AP	MBF-M-APA	MBF-M-PST

SR version with built-in silencer available on request.

Same size inlet/outlet flanges configurations

MR series
Integral
strength,
only DN 50
available



MR Regulator



MBR Regulator + Shut-off

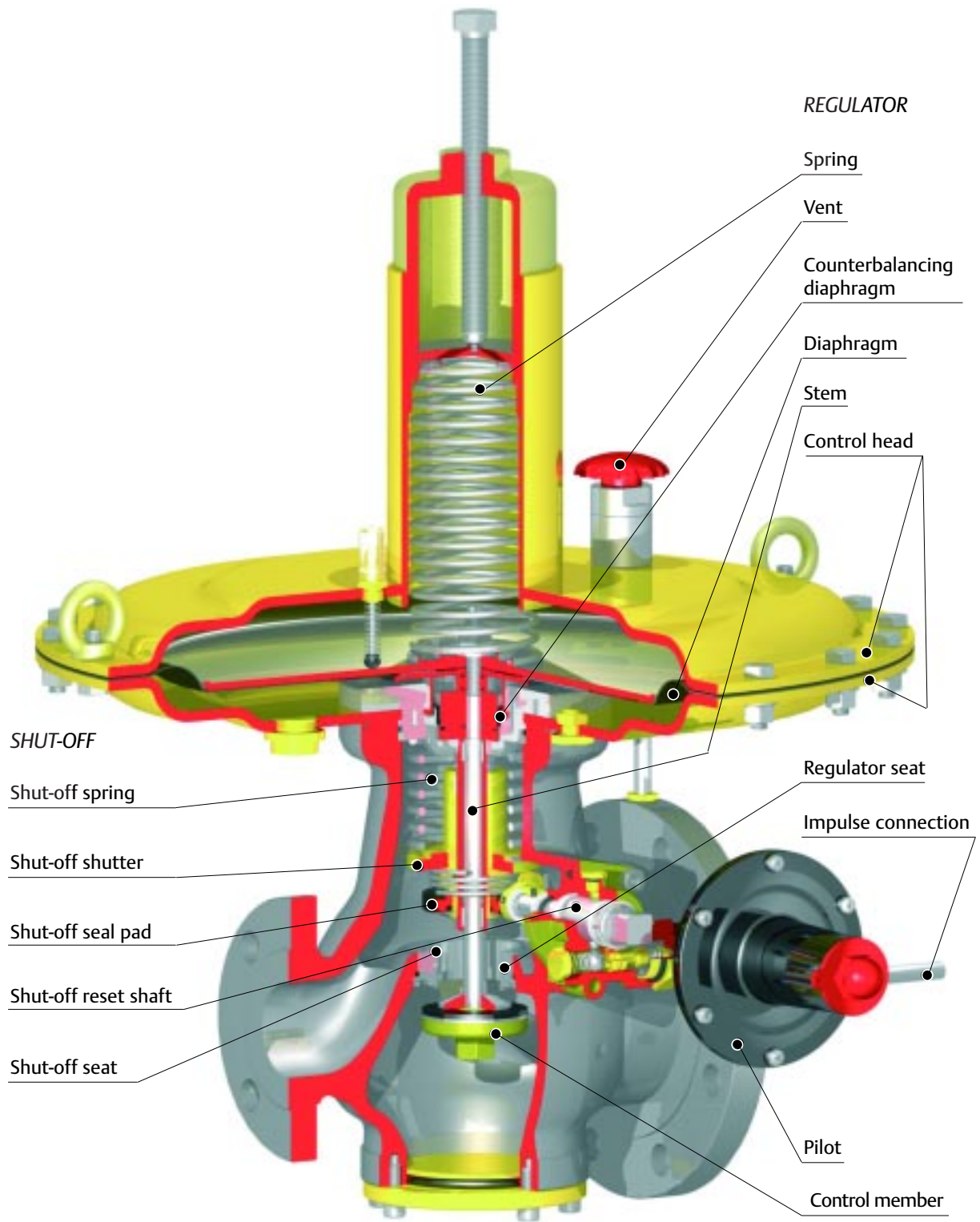


MBR-M Monitor + Shut-off

Configurations	ID-ABBREVIATIONS			
	Same size inlet/outlet flanges configurations PN 16 – ANSI 150			
	Standard	AP	APA	PST
Regulator	MR	MR-AP	MR-APA	MR-PST
Regulator + Shut-off	MBR	MBR-AP	MBR-APA	MBR-PST
Monitor + Shut-off	MBR-M	MBR-M-AP	MBR-M-APA	MBR-M-PST

SR version with built-in silencer available on request.

Operation



Operation

HOW THE REGULATOR WORKS

The range of position of control member depend from actuator assembly (spring-stem-diaphragm) movements.

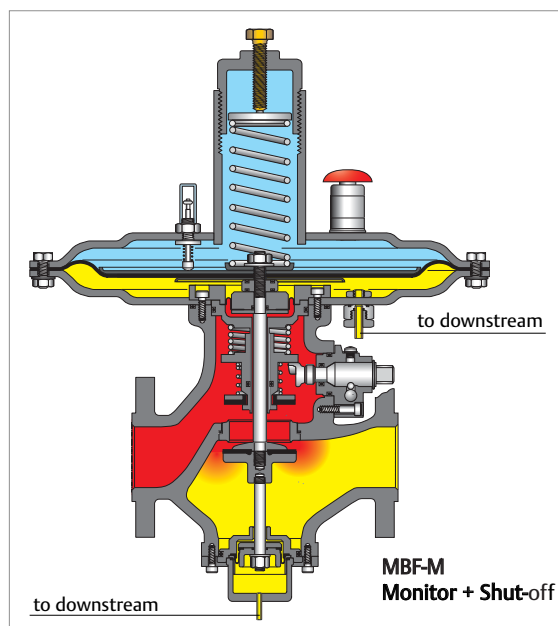
The Diaphragm divides the Regulator control head into two chambers.

The lower chambers is connected to regulated pressure P_a , and the other, where the spring regulator is located, is connected to atmospheric pressure.

When the contrasting actions of the spring and outlet pressure coincide, the mobile diaphragm-stem-valve assembly remains motionless, and outlet pressure matches spring set point.

An increase in capacity demand will cause a decrease in outlet pressure. This means that the spring's action will prevail over outlet pressure's action, and the valve will open until set point pressure is again reached at outlet. The opposite occurs whenever outlet pressure increases.

Precision perfect balancing of control member is assured under all operating conditions by the inlet pressure which operates in the counterbalancing chamber.



HOW THE MONITOR WORKS

The Monitor or emergency regulator is used as a safety device in gas pressure reduction systems. The purpose of this device is to protect the system against possible overpressure, while keeping the reduction line in service.

The monitor controls downstream pressure at the same point as the main regulator and is set a little higher than the latter. Under normal duty, the monitor is fully open as it detects a pressure value lower than its set value.

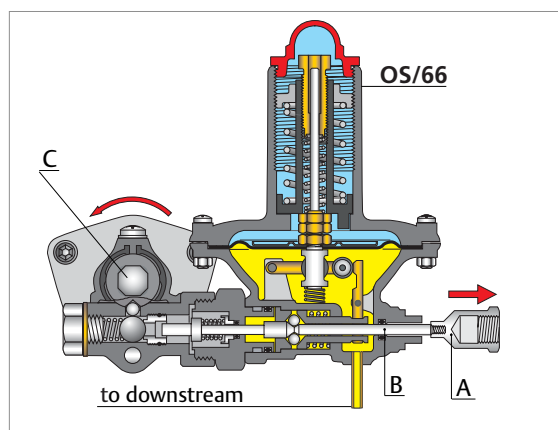
If, due to any regulator fault, downstream pressure increases, when it exceeds the tolerated level, the monitor comes into operation and adjusts pressure to its own set value.

HOW THE SHUT-OFF DEVICE WORKS

The shut-off device has a shutter and its own seat, and is provided with functions independent of the regulator/monitor.

To keep the shutter open, actuator-pilot series OS/66 is used is designed to operate on maximum and minimum pressure, on maximum only, on minimum only. When the system's downstream pressure is at normal operating value, the actuator-pilot remains set and prevents the shut-off reset shaft from turning by keeping the shut-off shutter open.

When downstream pressure varies beyond its set limits, the actuator-pilot releases the reset shaft and the shutter is closed by the thrust of the spring. The shutter can be opened by hand only, by rotating the shut-off reset shaft anti-clockwise.



RESETTING

- Remove cap (A), screw it to stem (B) and pull outwards.
- While keeping stem pulled out, use the appropriate wrench to turn shaft (C) anticlockwise.
Wait until inlet pressure has flowed downstream.
- Complete rotation of shaft until balls are felt to be properly and fully engaged, and then release shaft, checking that the shut-off valve remains open.
- Wait till outlet pressure stabilizes before releasing stem and remounting cap in its original position.

CAUTION: If these steps are carried out too rapidly, pressure peaks can occur that can trip the valve. If this happens, repeat steps with greater care.

Features

Technical features

MN - MF Series

Allowable pressure:

body	PS	: up to 20 bar
actuator	PS	: 4 bar
Highest operating pressure	P _{max}	: 3 bar

Permissible inlet pressure:

Standard version DN 25 ÷ 50	P _{e,max}	: 10 bar
Standard version DN 65 ÷ 100	P _{e,max}	: 5 bar
PST version	P _{e,max}	: 19.6 bar*
AP version	P _{e,max}	: 19.6 bar*
APA version	P _{e,max}	: 19.6 bar*

Set range:

Standard version	W _h	: 10 to 500 mbar**
PST version	W _h	: 0.25 to 0.5 bar
AP version	W _h	: 0.5 to 1 bar
APA version	W _h	: 1 to 3 bar

Serie MR

Allowable pressure:

body	PS	: up to 20 bar
actuator	PS	: up to 20 bar
Highest operating pressure	P _{max}	: 3 bar

Permissible inlet pressure:

Standard version	P _{e,max}	: 10 bar
PST version	P _{e,max}	: 19.6 bar*
AP version	P _{e,max}	: 19.6 bar*
APA version	P _{e,max}	: 19.6 bar*

Set range:

Standard version	W _h	: 10 to 500 mbar
PST version	W _h	: 0.25 to 0.5 bar
AP version	W _h	: 0.5 to 1 bar
APA version	W _h	: 1 to 3 bar

* At average ambient temperature.

** For DN 80 and 100 the Operating Outlet Set Pressure Range 0.02 ÷ 0.08 bar is allowable with M...- BP version.

Features

Functional features	Accuracy class	AC : up to $\pm 5\%$
	Lock-up pressure class	SG : up to + 10%
	Class of lock-up pressure zone	SZ : up to 10%

Shut-off device Independent pneumatic control:

Accuracy class	AG : $\pm 5\%$
Response time	t_a : ≤ 1 s

Flanged connections

MN Series widened outlet flange: 25x65, 40x80, 50x100, 65x100, 80x150, 100x200

MF Series same size inlet/outlet flanges: 25, 40, 50, 80, 100

MR Series same size inlet/outlet flanges: 50

Flange rating:

PN 16 UNI/DIN • ANSI 150

Temperature:

Standard version: working -10 °C +60 °C • ambient -20 °C +80 °C

Low-temperature version: working -20 °C +60 °C • ambient -30 °C +80 °C

Materials	Flanges and covers	• Steel
	Diaphragms	• Fabric NBR+PVC/Nitrile rubber
	Pads	• NBR Nitrile rubber

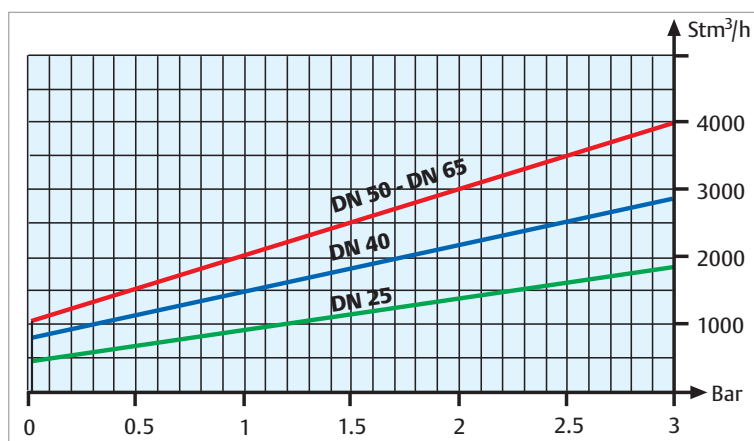
Sizing

Selection should be based on maximum capacity demanded by working conditions.

In the DN 25-65 MN series regulator the impulse connection is incorporated in the outlet flange.

Maximum capacity in these models is limited by speed of gas flow. Capacity in these cases can be calculated as a function of actual outlet pressure as shown in the following chart.

The outlet pressure-capacity chart can be used for quickly checking that capacity demand falls within regulator operating range. If capacity demand is greater than regulator operating range, an expansion cone will have to be fitted and the control connection shifted beyond the cone.



Flow tables Following flow tables (referred to Natural Gas) are advised for an optimal use of the M/series regulators.

For other gases with different densities, the flow rate must be multiplied by the correction factor:

$$F = \sqrt{\frac{0,6}{d}}$$

Gas	Relative Density d	Factor F
Air	1	0.78
City gas	0.44	1.17
Butane	2.01	0.55
Propane	1.53	0.63
Nitrogen	0.97	0.79
Carbon dioxide	1.52	0.63
Hydrogen	0.07	2.93

MN/ series flow tables Stm³/h

Pe bar Pa bar	0.05	0.1	0.15	0.2	0.3	0.4	0.5	0.6	0.7	0.8	1	1.25	1.5	2	3	4	5	6	7	8	10	11÷19
0.02	60	110	140	170	220	250	280	310	330	360	400	450	500	600	750	900	950	950	950	950	950	-
0.03	50	100	130	170	220	250	280	310	330	360	400	450	500	600	750	900	950	950	950	950	950	-
0.05	-	90	125	160	210	240	270	300	330	360	400	450	500	600	750	900	950	950	950	950	950	-
0.08	-	60	110	150	200	380	260	300	320	350	400	450	500	600	750	900	1000	950	1000	1000	1000	-
0.1	-	-	90	140	190	230	250	300	320	350	400	450	500	600	750	1000	1050	1050	1050	1050	1050	-
0.2	-	-	-	-	140	200	240	280	310	340	390	450	500	600	750	1000	1050	1100	1100	1100	1100	-
0.25	-	-	-	-	-	160	220	260	300	330	380	440	500	600	750	1000	1050	1150	1200	1200	1200	1200
0.3	-	-	-	-	-	150	210	250	290	320	380	440	500	600	750	1000	1050	1150	1300	1300	1300	1300
0.4	-	-	-	-	-	-	160	220	260	300	360	430	500	600	750	1000	1050	1150	1300	1300	1300	1300
0.5	-	-	-	-	-	-	-	160	220	270	350	420	490	600	750	1000	1050	1150	1400	1400	1400	1400

 PST version

MN
DN 25

AP version

Pe bar Pa bar	0.5	0.6	0.7	0.8	1	1.25	1.5	2	3	4	5	6	7	8	10	11÷19
0.4	160	220	260	300	360	430	500	600	750	1000	1050	1150	1300	1300	1300	1300
0.5	-	160	220	270	350	420	490	600	750	1000	1050	1150	1400	1400	1400	1400
0.6	-	-	170	230	320	410	480	600	750	1000	1050	1150	1400	1500	1500	1500
0.7	-	-	-	170	290	390	460	590	750	1000	1050	1150	1400	1600	1600	1600
0.8	-	-	-	-	250	360	450	580	750	1000	1050	1150	1400	1600	1700	1700
1	-	-	-	-	-	290	400	560	750	1000	1050	1150	1400	1600	2000	1900

APA version

Pe bar Pa bar	1.25	1.5	2	3	4	5	6	7	8	10	11÷19
1	290	400	560	750	1000	1050	1150	1400	1600	2000	1900
1.5	-	-	450	700	1000	1050	1150	1400	1600	2000	2200
2	-	-	-	700	1000	1050	1150	1400	1600	2000	2200
2.5	-	-	-	550	910	1050	1150	1400	1600	2000	2200
3	-	-	-	-	810	1000	1100	1400	1600	2000	2200

Pe bar Pa bar	0.05	0.1	0.15	0.2	0.3	0.4	0.5	0.6	0.7	0.8	1	1.25	1.5	2	3	4	5	6	7	8	10	11÷19
0.02	150	230	290	340	410	470	520	580	610	640	710	800	900	1050	1400	1700	1800	1800	1800	1800	1800	-
0.03	122	220	280	330	400	460	510	570	600	640	710	800	900	1050	1400	1700	1800	1800	1800	1800	1800	-
0.05	-	150	260	320	390	450	500	560	590	640	710	800	900	1050	1400	1700	1800	1800	1800	1800	1800	-
0.08	-	120	230	290	380	440	490	550	590	630	710	800	900	1050	1400	1700	1800	1800	1800	1800	1800	-
0.1	-	-	190	270	370	430	480	540	580	620	710	800	900	1050	1400	1700	1850	1850	1850	1850	1850	-
0.2	-	-	-	-	280	390	470	530	570	600	700	790	850	1050	1400	1700	2000	2000	2000	2000	2000	-
0.25	-	-	-	-	210	350	440	510	560	620	700	790	850	1050	1400	1700	2100	2100	2100	2100	2100	2100
0.3	-	-	-	-	-	290	410	490	540	580	690	780	850	1000	1400	1700	2100	2200	2200	2200	2200	2200
0.4	-	-	-	-	-	-	310	420	500	570	670	770	850	1000	1400	1700	2100	2300	2300	2300	2300	2300
0.5	-	-	-	-	-	-	-	320	440	520	640	750	850	1000	1400	1700	2100	2400	2500	2500	2500	2500

 PST version

MN
DN 40

AP version

Pe bar Pa bar	0.5	0.6	0.7	0.8	1	1.25	1.5	2	3	4	5	6	7	8	10	11÷19
0.4	310	420	500	570	670	770	850	1000	1400	1700	2100	2300	2300	2300	2300	2300
0.5	-	320	440	520	640	750	850	1000	1400	1700	2100	2400	2500	2500	2500	2500
0.6	-	-	330	450	600	740	850	1000	1400	1700	2100	2400	2600	2600	2600	2600
0.7	-	-	-	340	550	710	830	1000	1200	1700	2100	2400	2800	2800	2800	2800
0.8	-	-	-	-	460	680	790	980	1300	1700	2100	2400	2800	2900	2900	2900
1	-	-	-	-	-	550	730	950	1350	1700	2100	2400	2800	3200	3100	3100

APA version

Pe bar Pa bar	1.25	1.5	2	3	4	5	6	7	8	10	11÷19
1	550	730	950	1350	1700	2100	2400	2800	3200	3100	3100
1.5	-	-	840	1250	1650	2100	2400	2800	3200	3900	3600
2	-	-	-	1150	1400	2050	2200	2800	3200	3900	4200
2.5	-	-	-	950	1100	1800	2400	2800	3200	3900	4200
3	-	-	-	-	1050	1800	2400	2800	3200	3900	4200

MN/ series flow tables Stm³/h

Pe bar Pa bar	0.05	0.1	0.15	0.2	0.3	0.4	0.5	0.6	0.7	0.8	1	1.25	1.5	2	3	4	5	6	7	8	10	11÷19
0.02	200	330	390	480	580	660	730	800	850	900	1000	1100	1200	1450	1450	2450	2600	2600	2600	2600	2600	-
0.03	160	320	380	470	580	660	730	800	850	900	1000	1100	1200	1450	1450	2450	2600	2600	2600	2600	2600	-
0.05	-	270	350	450	570	650	730	790	850	900	1000	1100	1200	1450	1450	2450	2650	2650	2650	2650	2650	-
0.08	-	160	300	420	540	640	720	790	840	900	1000	1100	1200	1450	1450	2450	2700	2700	2700	2700	2700	-
0.1	-	-	170	390	520	630	710	780	840	900	1000	1100	1200	1450	1450	2450	2750	2750	2750	2750	2750	-
0.2	-	-	-	-	400	550	660	750	820	880	1000	1100	1200	1450	1450	2450	2850	3000	3000	3000	3000	-
0.25	-	-	-	-	290	490	620	720	800	870	1000	1100	1200	1450	1450	2450	2850	3100	3100	3100	3100	3100
0.3	-	-	-	-	-	420	580	690	780	860	990	1100	1200	1450	1450	2450	2850	3400	3400	3400	3400	3400
0.4	-	-	-	-	-	-	430	600	720	820	970	1050	1200	1450	1900	2450	2850	3400	3700	3700	3700	3700
0.5	-	-	-	-	-	-	-	450	630	750	930	1050	1200	1450	1900	2450	2850	3400	3900	4000	4000	4000

 PST version

MN
DN 50

AP version

Pe bar Pa bar	0.5	0.6	0.7	0.8	1	1.25	1.5	2	3	4	5	6	7	8	10	11÷19
0.4	430	600	720	820	970	1050	1200	1450	1900	2450	2850	3400	3700	3700	3700	3700
0.5	-	450	630	750	930	1050	1200	1450	1900	2450	2850	3400	3900	4000	4000	4000
0.6	-	-	460	650	880	1000	1200	1450	1900	2450	2850	3400	3900	4200	4200	4200
0.7	-	-	-	480	800	1000	1200	1450	1900	2450	2850	3400	3900	4400	4600	4600
0.8	-	-	-	-	680	990	1150	1450	1900	2450	2850	3400	3900	4400	4900	4900
1	-	-	-	-	-	800	1050	1400	1850	2450	2850	3400	3900	4400	5400	5300

APA version

Pe bar Pa bar	1.25	1.5	2	3	4	5	6	7	8	10	11÷19
1	800	1050	1400	1850	2450	2850	3400	3900	4400	5400	5300
1.5	-	-	1200	1850	2400	2850	3400	3900	4400	5400	5900
2	-	-	-	1750	2400	2850	3400	3900	4400	5400	5900
2.5	-	-	-	-	2300	2850	3400	3900	4400	5400	5900
3	-	-	-	-	2100	2800	3300	3900	4400	5400	5900

Pe bar Pa bar	0.05	0.1	0.15	0.2	0.3	0.4	0.5	0.6	0.7	0.8	1	1.25	1.5	2	3	4	5	6	7	8	10	11÷19
0.02	300	480	620	720	890	1000	1150	1250	1350	1450	1600	1800	2000	2400	3200	4000	4400	-	-	-	-	-
0.03	250	460	600	700	880	1000	1150	1250	1350	1450	1600	1800	2000	2400	3200	4000	4400	-	-	-	-	-
0.05	-	400	550	670	850	1000	1100	1250	1350	1450	1600	1800	2000	2400	3200	4000	4500	-	-	-	-	-
0.08	-	250	470	610	820	980	1100	1250	1350	1450	1600	1800	2000	2400	3200	4000	4650	-	-	-	-	-
0.1	-	-	400	560	790	960	1100	1250	1350	1450	1600	1800	2000	2400	3200	4000	4750	-	-	-	-	-
0.2	-	-	-	-	590	820	1000	1200	1300	1400	1600	1800	2000	2400	3200	4000	4900	-	-	-	-	-
0.25	-	-	-	-	470	800	1000	1150	1300	1400	1600	1800	2000	2400	3200	4000	4900	5400	5400	5400	5400	5400
0.3	-	-	-	-	-	620	860	1100	1250	1400	1600	1800	2000	2400	3200	4000	4900	5600	5600	5600	5600	5600
0.4	-	-	-	-	-	-	640	980	1150	1300	1550	1800	2000	2400	3200	4000	4900	5700	6000	6000	6000	6000
0.5	-	-	-	-	-	-	-	730	1000	1200	1500	1800	2000	2400	3200	4000	4900	5700	6450	6500	6500	6500

 PST version

MN
DN 65

AP version

Pe bar Pa bar	0.5	0.6	0.7	0.8	1	1.25	1.5	2	3	4	5	6	7	8	10	11÷19
0.4	640	980	1150	1300	1550	1800	2000	2400	3200	4000	4900	5700	6000	6000	6000	6000
0.5	-	730	1000	1200	1500	1800	2000	2400	3200	4000	4900	5700	6450	6500	6500	6500
0.6	-	-	760	1050	1400	1750	2000	2400	3200	4000	4900	5700	6450	6900	6900	6900
0.7	-	-	-	780	1300	1700	2000	2400	3200	4000	4900	5700	6450	7300	7400	7400
0.8	-	-	-	-	1100	1600	1950	2400	3200	4000	4900	5700	6450	7300	7800	7800
1	-	-	-	-	-	1300	1750	2350	3200	4000	4900	5700	6450	7300	8700	8700

APA version

Pe bar Pa bar	1.25	1.5	2	3	4	5	6	7	8	10	11÷19
1	1300	1750	2350	3200	4000	4900	5700	6450	7300	8700	8700
1.5	-	-	2000	3100	4000	4900	5700	6450	7300	8900	9600
2	-	-	-	3000	4000	4900	5700	6450	7300	8900	9700
2.5	-	-	-	2400	3900	4850	5700	6450	7300	8900	9700
3	-	-	-	-	3500	4800	5700	6450	7300	8900	9700

MN/ series flow tables Stm³/h

Pe bar Pa bar	0.05	0.1	0.15	0.2	0.3	0.4	0.5	0.6	0.7	0.8	1	1.25	1.5	2	3	4	5	6	7	8	10	11÷19
0.02	470	750	950	1100	1350	1500	1700	1800	1950	2050	2300	2600	2900	3400	4600	5700	6900	-	-	-	-	-
0.03	390	720	900	1050	1300	1500	1700	1800	1950	2050	2300	2600	2900	3400	4600	5700	6900	-	-	-	-	-
0.05	-	620	850	1000	1300	1500	1650	1800	1950	2050	2300	2600	2900	3400	4600	5700	6900	-	-	-	-	-
0.08	-	400	740	950	1250	1450	1650	1800	1950	2050	2300	2600	2900	3400	4600	5700	6900	-	-	-	-	-
0.1	-	-	630	880	1200	1450	1600	1800	1900	2050	2300	2600	2900	3400	4600	5700	6900	-	-	-	-	-
0.2	-	-	-	650	920	1250	1500	1700	1900	2050	2300	2600	2900	3400	4600	5700	6900	-	-	-	-	-
0.25	-	-	-	-	680	1150	1400	1650	1850	2000	2300	2600	2900	3400	4600	5700	6900	8100	9200	10300	12000	12000
0.3	-	-	-	-	-	950	1300	1600	1800	1950	2250	2600	2850	3400	4600	5700	6900	8100	9200	10300	12600	12600
0.4	-	-	-	-	-	-	1000	1350	1650	1850	2200	2550	2850	3400	4600	5700	6900	8100	9200	10300	12600	13500
0.5	-	-	-	-	-	-	-	1000	1400	1700	2150	2550	2850	3400	4600	5700	6900	8100	9200	10300	12600	13800

PST version

MN
DN 80

AP version

Pe bar Pa bar	0.5	0.6	0.7	0.8	1	1.25	1.5	2	3	4	5	6	7	8	10	11÷19
0.4	1000	1350	1650	1850	2200	2550	2850	3400	4600	5700	6900	8100	9200	10300	12600	13500
0.5	-	1000	1400	1700	2150	2550	2850	3400	4600	5700	6900	8100	9200	10300	12600	13800
0.6	-	-	1050	1450	2000	2500	2850	3400	4600	5700	6900	8100	9200	10300	12600	13800
0.7	-	-	-	1100	1850	2400	2800	3400	4600	5700	6900	8100	9200	10300	12600	13800
0.8	-	-	-	-	1500	2250	2750	3400	4600	5700	6900	8100	9200	10300	12600	13800
1	-	-	-	-	-	1850	2500	3400	4600	5700	6900	8100	9200	10300	12600	13800

APA version

Pe bar Pa bar	1.25	1.5	2	3	4	5	6	7	8	10	11÷19
1	1850	2500	3400	4600	5700	6900	8100	9200	10300	12600	13800
1.5	-	-	2850	4550	5700	6900	8100	9200	10300	12600	13800
2	-	-	-	4300	5700	6900	8100	9200	10300	12600	13800
2.5	-	-	-	3400	5500	6900	8000	9200	10300	12600	13800
3	-	-	-	-	5000	6800	8000	9100	10300	12600	13800

Pe bar Pa bar	0.05	0.1	0.15	0.2	0.3	0.4	0.5	0.6	0.7	0.8	1	1.25	1.5	2	3	4	5	6	7	8	10	11÷19
0.02	730	1150	1450	1700	2050	2350	2600	2800	3000	3200	3550	4000	4400	5300	7100	8800	10500	-	-	-	-	-
0.03	600	1100	1400	1650	2050	2350	2600	2800	3000	3200	3550	4000	4400	5300	7100	8800	10500	-	-	-	-	-
0.05	-	950	1300	1600	2000	2300	2550	2800	3000	3200	3550	4000	4400	5300	7100	8800	10500	-	-	-	-	-
0.08	-	620	1100	1450	1900	2250	2550	2750	3000	3200	3550	4000	4400	5300	7100	8800	10500	-	-	-	-	-
0.1	-	-	950	1350	1850	2200	2500	2750	3000	3200	3550	4000	4400	5300	7100	8800	10500	-	-	-	-	-
0.2	-	-	-	-	1400	1950	2300	2650	2900	3100	3550	4000	4400	5300	7100	8800	10500	-	-	-	-	-
0.25	-	-	-	-	1000	1750	2200	2550	2850	3100	3500	4000	4400	5300	7100	8800	10500	12400	14000	15700	19200	21000
0.3	-	-	-	-	-	1450	2000	2450	2750	3000	3500	4000	4400	5300	7100	8800	10500	12400	14000	15700	19200	21000
0.4	-	-	-	-	-	-	1500	2100	2550	2850	3450	4000	4400	5300	7100	8800	10500	12400	14000	15700	19200	21000
0.5	-	-	-	-	-	-	-	1600	2200	2600	3300	3900	4400	5300	7100	8800	10500	12400	14000	15700	19200	21000

PST version

MN
DN 100

AP version

Pe bar Pa bar	0.5	0.6	0.7	0.8	1	1.25	1.5	2	3	4	5	6	7	8	10	11÷19
0.4	1500	2100	2550	2850	3450	4000	4400	5300	7100	8800	10500	12400	14000	15700	19200	21000
0.5	-	1600	2200	2600	3300	3900	4400	5300	7100	8800	10500	12400	14000	15700	19200	21000
0.6	-	-	1650	2250	3100	3850	4400	5300	7100	8800	10500	12400	14000	15700	19200	21000
0.7	-	-	-	1700	2850	3700	4350	5300	7100	8800	10500	12400	14000	15700	19200	21000
0.8	-	-	-	-	2400	3500	4250	5300	7100	8800	10500	12400	14000	15700	19200	21000
1	-	-	-	-	-	2850	3900	5200	7100	8800	10500	12400	14000	15700	19200	21000

APA version

Pe bar Pa bar	1.25	1.5	2	3	4	5	6	7	8	10	11÷19
1	2850	3900	5200	7100	8800	10500	12400	14000	15700	19200	21000
1.5	-	-	4400	7000	8750	10500	12400	14000	15700	19200	21000
2	-	-	-	6600	8700	10500	12400	14000	15700	19200	21000
2.5	-	-	-	5300	8500	10500	12400	14000	15700	19200	21000
3	-	-	-	-	7700	10500	12400	14000	15700	19200	21000

MF/ series flow tables Stm³/h

P _e bar Pa bar	0.05	0.1	0.15	0.2	0.3	0.4	0.5	0.6	0.7	0.8	1	1.25	1.5	2	3	4	5	6	7	8	10	11÷19
0.02	60	110	140	170	220	250	280	280	280	280	280	280	280	280	280	280	280	280	280	280	280	-
0.03	50	100	130	170	220	250	280	280	280	280	280	280	280	280	280	280	280	280	280	280	280	-
0.05	-	90	125	160	210	240	270	290	290	290	290	290	290	290	290	290	290	290	290	290	290	-
0.08	-	60	110	150	200	380	260	300	300	300	300	300	300	300	300	300	300	300	300	300	300	-
0.1	-	-	90	140	190	230	250	300	300	300	300	300	300	300	300	300	300	300	300	300	300	-
0.2	-	-	-	-	140	200	240	280	310	320	320	320	320	320	320	320	320	320	320	320	320	-
0.25	-	-	-	-	-	160	220	260	300	330	340	340	340	340	340	340	340	340	340	340	340	340
0.3	-	-	-	-	-	150	210	250	290	320	350	350	350	350	350	350	350	350	350	350	350	350
0.4	-	-	-	-	-	-	160	220	260	300	360	360	360	360	360	360	360	360	360	360	360	360
0.5	-	-	-	-	-	-	-	160	220	270	350	400	400	400	400	400	400	400	400	400	400	400

PST version

MF
DN 25

AP version

P _e bar Pa bar	0.5	0.6	0.7	0.8	1	1.25	1.5	2	3	4	5	6	7	8	10	11÷19
0.4	160	220	260	300	360	360	360	360	360	360	360	360	360	360	360	360
0.5	-	160	220	270	350	400	400	400	400	400	400	400	400	400	400	400
0.6	-	-	170	230	320	410	440	440	440	440	440	440	440	440	440	440
0.7	-	-	-	170	290	390	430	430	430	430	430	430	430	430	430	430
0.8	-	-	-	-	250	360	450	500	500	500	500	500	500	500	500	500
1	-	-	-	-	-	290	400	560	560	560	560	560	560	560	560	560

APA version

P _e bar Pa bar	1.25	1.5	2	3	4	5	6	7	8	10	11÷19
1	200	380	540	640	640	640	640	640	640	640	640
1.5	-	-	450	680	680	680	680	680	680	680	680
2	-	-	-	700	800	800	800	800	800	800	800
2.5	-	-	-	550	910	950	950	950	950	950	950
3	-	-	-	-	810	1000	1000	1000	1000	1000	1000

$\frac{P_e \text{ bar}}{P_a \text{ bar}}$	0.05	0.1	0.15	0.2	0.3	0.4	0.5	0.6	0.7	0.8	1	1.25	1.5	2	3	4	5	6	7	8	10	11÷19
0.02	150	230	290	340	410	470	520	580	610	640	710	710	710	710	710	710	710	710	710	710	710	-
0.03	122	220	280	330	400	460	510	570	600	640	710	710	710	710	710	710	710	710	710	710	710	-
0.05	-	150	260	320	390	450	500	560	590	640	710	720	720	720	720	720	720	720	720	720	720	-
0.08	-	120	230	290	380	440	490	550	590	630	710	750	750	750	750	750	750	750	750	750	750	-
0.1	-	-	190	270	370	430	480	540	580	620	710	800	800	800	800	800	800	800	800	800	800	-
0.2	-	-	-	-	280	390	470	530	570	600	700	790	850	850	850	850	850	850	850	850	850	-
0.25	-	-	-	-	210	350	440	510	560	620	700	790	850	870	870	870	870	870	870	870	870	870
0.3	-	-	-	-	-	290	410	490	540	580	690	780	850	1000	1000	1000	1000	1000	1000	1000	1000	1000
0.4	-	-	-	-	-	-	310	420	500	570	670	770	850	1000	1000	1000	1000	1000	1000	1000	1000	1000
0.5	-	-	-	-	-	-	-	320	440	520	640	750	850	1000	1000	1000	1000	1000	1000	1000	1000	1000

PST version

MF
DN 40

AP version

P _e bar Pa bar	0.5	0.6	0.7	0.8	1	1.25	1.5	2	3	4	5	6	7	8	10	11÷19
0.4	310	420	500	570	670	770	850	1000	1000	1000	1000	1000	1000	1000	1000	1000
0.5	-	320	440	520	640	750	850	1000	1000	1000	1000	1000	1000	1000	1000	1000
0.6	-	-	330	450	600	740	850	1000	1100	1100	1100	1100	1100	1100	1100	1100
0.7	-	-	-	340	550	710	830	1000	1200	1200	1200	1200	1200	1200	1200	1200
0.8	-	-	-	-	460	680	790	980	1300	1300	1300	1300	1300	1300	1300	1300
1	-	-	-	-	-	550	730	950	1350	1350	1350	1350	1350	1350	1350	1350

APA version

P _e bar Pa bar	1.25	1.5	2	3	4	5	6	7	8	10	11÷19
1	550	730	950	1350	1350	1350	1350	1350	1350	1350	1350
1.5	-	-	840	1250	1650	2100	1800	1800	1800	1800	1800
2	-	-	-	1150	1400	2050	2200	2200	2200	2200	2200
2.5	-	-	-	950	1100	1800	2400	2400	2400	2400	2400
3	-	-	-	-	1050	1800	2400	2800	2800	2800	2800

MF/ series flow tables Stm³/h

Pe bar Pa bar	0.05	0.1	0.15	0.2	0.3	0.4	0.5	0.6	0.7	0.8	1	1.25	1.5	2	3	4	5	6	7	8	10	11÷19
0.02	200	330	390	480	580	660	730	800	850	900	1000	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	-
0.03	160	320	380	470	580	660	730	800	850	900	1000	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	-
0.05	-	270	350	450	570	650	730	790	850	900	1000	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	-
0.08	-	160	300	420	540	640	720	790	840	900	1000	1100	1150	1150	1150	1150	1150	1150	1150	1150	1150	-
0.1	-	-	170	390	520	630	710	780	840	900	1000	1100	1200	1200	1200	1200	1200	1200	1200	1200	1200	-
0.2	-	-	-	-	400	550	660	750	820	880	1000	1100	1200	1300	1300	1300	1300	1300	1300	1300	1300	-
0.25	-	-	-	-	290	490	620	720	800	870	1000	1100	1200	1350	1350	1350	1350	1350	1350	1350	1350	1350
0.3	-	-	-	-	-	420	580	690	780	860	990	1100	1200	1400	1400	1400	1400	1400	1400	1400	1400	1400
0.4	-	-	-	-	-	-	430	600	720	820	970	1050	1200	1450	1500	1500	1500	1500	1500	1500	1500	1500
0.5	-	-	-	-	-	-	-	450	630	750	930	1050	1200	1450	1600	1600	1600	1600	1600	1600	1600	1600

PST version

MF
DN 50

AP version

Pe bar Pa bar	0.5	0.6	0.7	0.8	1	1.25	1.5	2	3	4	5	6	7	8	10	11÷19
0.4	430	600	720	820	970	1050	1200	1450	1500	1500	1500	1500	1500	1500	1500	1500
0.5	-	450	630	750	930	1050	1200	1450	1600	1600	1600	1600	1600	1600	1600	1600
0.6	-	-	460	650	880	1000	1200	1450	1700	1700	1700	1700	1700	1700	1700	1700
0.7	-	-	-	480	800	1000	1200	1450	1800	1800	1800	1800	1800	1800	1800	1800
0.8	-	-	-	-	680	990	1150	1450	1900	1900	1900	1900	1900	1900	1900	1900
1	-	-	-	-	-	800	1050	1400	1850	2150	2150	2150	2150	2150	2150	2150

APA version

Pe bar Pa bar	1.25	1.5	2	3	4	5	6	7	8	10	11÷19
1	800	1050	1400	1850	2150	2150	2150	2150	2150	2150	2150
1.5	-	-	1200	1850	2400	2700	2700	2700	2700	2700	2700
2	-	-	-	1750	2400	2850	3200	3200	3200	3200	3200
2.5	-	-	-	-	2300	2850	3400	3800	3800	3800	3800
3	-	-	-	-	2100	2800	3300	3900	4300	4300	4300

Pe bar Pa bar	0.05	0.1	0.15	0.2	0.3	0.4	0.5	0.6	0.7	0.8	1	1.25	1.5	2	3	4	5	6	7	8	10	11÷19
0.02	470	750	950	1100	1350	1500	1700	1800	1950	2050	2300	2600	2800	2800	2800	2800	2800	-	-	-	-	-
0.03	390	720	900	1050	1300	1500	1700	1800	1950	2050	2300	2600	2800	2800	2800	2800	2800	-	-	-	-	-
0.05	-	620	850	1000	1300	1500	1650	1800	1950	2050	2300	2600	2900	2900	2900	2900	2900	-	-	-	-	-
0.08	-	400	740	950	1250	1450	1650	1800	1950	2050	2300	2600	2900	3000	3000	3000	3000	-	-	-	-	-
0.1	-	-	630	880	1200	1450	1600	1800	1900	2050	2300	2600	2900	3050	3050	3050	3050	-	-	-	-	-
0.2	-	-	-	650	920	1250	1500	1700	1900	2050	2300	2600	2900	3300	3300	3300	3300	-	-	-	-	-
0.25	-	-	-	-	680	1150	1400	1650	1850	2000	2300	2600	2900	3400	3500	3500	3500	3500	3500	3500	3500	3500
0.3	-	-	-	-	-	950	1300	1600	1800	1950	2250	2600	2850	3400	3600	3600	3600	3600	3600	3600	3600	3600
0.4	-	-	-	-	-	-	1000	1350	1650	1850	2200	2550	2850	3400	3900	3900	3900	3900	3900	3900	3900	3900
0.5	-	-	-	-	-	-	-	1000	1400	1700	2150	2550	2850	3400	4150	4150	4150	4150	4150	4150	4150	4150

PST version

MF
DN 80

AP version

Pe bar Pa bar	0.5	0.6	0.7	0.8	1	1.25	1.5	2	3	4	5	6	7	8	10	11÷19
0.4	1000	1350	1650	1850	2200	2550	2850	3400	3900	3900	3900	3900	3900	3900	3900	3900
0.5	-	1000	1400	1700	2150	2550	2850	3400	4150	4150	4150	4150	4150	4150	4150	4150
0.6	-	-	1050	1450	2000	2500	2850	3400	4450	4450	4450	4450	4450	4450	4450	4450
0.7	-	-	-	1100	1850	2400	2800	3400	4600	4700	4700	4700	4700	4700	4700	4700
0.8	-	-	-	-	1500	2250	2750	3400	4600	5000	5000	5000	5000	5000	5000	5000
1	-	-	-	-	-	1850	2500	3400	4600	5500	5500	5500	5500	5500	5500	5500

APA version

Pe bar Pa bar	1.25	1.5	2	3	4	5	6	7	8	10	11÷19
1	1850	2500	3400	4600	5500	5500	5500	5500	5500	5500	5500
1.5	-	-	2850	4550	5700	6900	6900	6900	6900	6900	6900
2	-	-	-	4300	5700	6900	8100	8300	8300	8300	8300
2.5	-	-	-	3400	5500	6900	8000	9200	9700	9700	9700
3	-	-	-	-	5000	6800	8000	9100	10300	11200	11200

MF/ series flow tables Stm³/h

Pe bar Pa bar	0.05	0.1	0.15	0.2	0.3	0.4	0.5	0.6	0.7	0.8	1	1.25	1.5	2	3	4	5	6	7	8	10	11÷19
0.02	730	1150	1450	1700	2050	2350	2600	2800	3000	3200	3550	4000	4400	4400	4400	4400	4400	-	-	-	-	-
0.03	600	1100	1400	1650	2050	2350	2600	2800	3000	3200	3550	4000	4400	4450	4450	4450	4450	-	-	-	-	-
0.05	-	950	1300	1600	2000	2300	2550	2800	3000	3200	3550	4000	4400	4500	4500	4500	4500	-	-	-	-	-
0.08	-	620	1100	1450	1900	2250	2550	2750	3000	3200	3550	4000	4400	4650	4650	4650	4650	-	-	-	-	-
0.1	-	-	950	1350	1850	2200	2500	2750	3000	3200	3550	4000	4400	4800	4800	4800	4800	-	-	-	-	-
0.2	-	-	-	-	1400	1950	2300	2650	2900	3100	3550	4000	4400	5200	5200	5200	5200	-	-	-	-	-
0.25	-	-	-	-	1000	1750	2200	2550	2850	3100	3500	4000	4400	5300	5400	5400	5400	5400	5400	5400	5400	5400
0.3	-	-	-	-	-	1450	2000	2450	2750	3000	3500	4000	4400	5300	5600	5600	5600	5600	5600	5600	5600	5600
0.4	-	-	-	-	-	-	1500	2100	2550	2850	3450	4000	4400	5300	6100	6100	6100	6100	6100	6100	6100	6100
0.5	-	-	-	-	-	-	-	1600	2200	2600	3300	3900	4400	5300	6500	6500	6500	6500	6500	6500	6500	6500

PST version

MF
DN 100

AP version

Pe bar Pa bar	0.5	0.6	0.7	0.8	1	1.25	1.5	2	3	4	5	6	7	8	10	11÷19
0.4	1500	2100	2550	2850	3450	4000	4400	5300	6100	6100	6100	6100	6100	6100	6100	6100
0.5	-	1600	2200	2600	3300	3900	4400	5300	6500	6500	6500	6500	6500	6500	6500	6500
0.6	-	-	1650	2250	3100	3850	4400	5300	7000	7000	7000	7000	7000	7000	7000	7000
0.7	-	-	-	1700	2850	3700	4350	5300	7100	7400	7400	7400	7400	7400	7400	7400
0.8	-	-	-	-	2400	3500	4250	5300	7100	7800	7800	7800	7800	7800	7800	7800
1	-	-	-	-	-	2850	3900	5200	7100	8700	8700	8700	8700	8700	8700	8700

APA version

Pe bar Pa bar	1.25	1.5	2	3	4	5	6	7	8	10	11÷19
1	2850	3900	5200	7100	8700	8700	8700	8700	8700	8700	8700
1.5	-	-	4400	7000	8750	10500	10900	10900	10900	10900	10900
2	-	-	-	6600	8700	10500	12400	13000	13000	13000	13000
2.5	-	-	-	5300	8500	10500	12400	14000	15300	15300	15300
3	-	-	-	-	7700	10500	12400	14000	15700	17500	17500

MR/ series flow tables

Pe bar Pa bar	0.05	0.1	0.15	0.2	0.3	0.4	0.5	0.6	0.7	0.8	1	1.25	1.5	2	3	4	5	6	7	8	10	11÷19
0.02	200	330	390	480	580	660	730	800	850	900	1000	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	-
0.03	160	320	380	470	580	660	730	800	850	900	1000	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	-
0.05	-	270	350	450	570	650	730	790	850	900	1000	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	-
0.08	-	160	300	420	540	640	720	790	840	900	1000	1100	1150	1150	1150	1150	1150	1150	1150	1150	1150	-
0.1	-	-	170	390	520	630	710	780	840	900	1000	1100	1200	1200	1200	1200	1200	1200	1200	1200	1200	-
0.2	-	-	-	-	400	550	660	750	820	880	1000	1100	1200	1300	1300	1300	1300	1300	1300	1300	1300	-
0.25	-	-	-	-	290	490	620	720	800	870	1000	1100	1200	1350	1350	1350	1350	1350	1350	1350	1350	1350
0.3	-	-	-	-	-	420	580	690	780	860	990	1100	1200	1400	1400	1400	1400	1400	1400	1400	1400	1400
0.4	-	-	-	-	-	-	430	600	720	820	970	1050	1200	1450	1500	1500	1500	1500	1500	1500	1500	1500
0.5	-	-	-	-	-	-	-	450	630	750	930	1050	1200	1450	1600	1600	1600	1600	1600	1600	1600	1600

PST version

MR
DN 50

AP version

Pe bar Pa bar	0.5	0.6	0.7	0.8	1	1.25	1.5	2	3	4	5	6	7	8	10	11÷19
0.4	430	600	720	820	970	1050	1200	1450	1500	1500	1500	1500	1500	1500	1500	1500
0.5	-	450	630	750	930	1050	1200	1450	1600	1600	1600	1600	1600	1600	1600	1600
0.6	-	-	460	650	880	1000	1200	1450	1700	1700	1700	1700	1700	1700	1700	1700
0.7	-	-	-	480	800	1000	1200	1450	1800	1800	1800	1800	1800	1800	1800	1800
0.8	-	-	-	-	680	990	1150	1450	1900	1900	1900	1900	1900	1900	1900	1900
1	-	-	-	-	-	800	1050	1400	1850	2150	2150	2150	2150	2150	2150	2150

APA version

Pe bar Pa bar	1.25	1.5	2	3	4	5	6	7	8	10	11÷19
1	800	1050	1400	1850	2150	2150	2150	2150	2150	2150	2150
1.5	-	-	1200	1850	2400	2700	2700	2700	2700	2700	2700
2	-	-	-	1750	2400	2850	3200	3200	3200	3200	3200
2.5	-	-	-	-	2300	2850	3400	3800	3800	3800	3800
3	-	-	-	-	2100	2800	3300	3900	4300	4300	4300

Pilot

Configurations The following pilots are used with M series regulator with built-in shut-off device:

- OS/66 Series spring loaded pilot
- OS/66-R Series MR series only

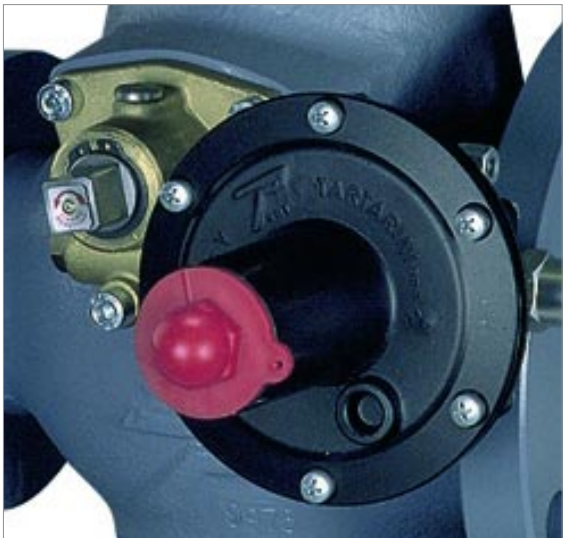
Technical features	Model	Servomotor body resistance (bar)	Overpressure set range W_{ho} (bar)		Underpressure set range W_{hu} (bar)	
			min.	max.	min.	max.
	OS/66	6	0.022	0.6	0.007	0.450
	OS/66-AP	6	0.2	5	0.1	2.5
	OS/66-R	19	0.022	0.6	0.007	0.450
	OS/66-AP-R	19	0.2	5	0.1	2.5

Materials

OS/66
OS/66-AP
OS/66-R
OS/66-AP-R

Body
Cover
Diaphragm

Aluminium
Steel
NBR Rubber



Silencer

Type SR Built-in multi-path
Up to 10 dB(A) attenuation.



Accessories

Proximity switch



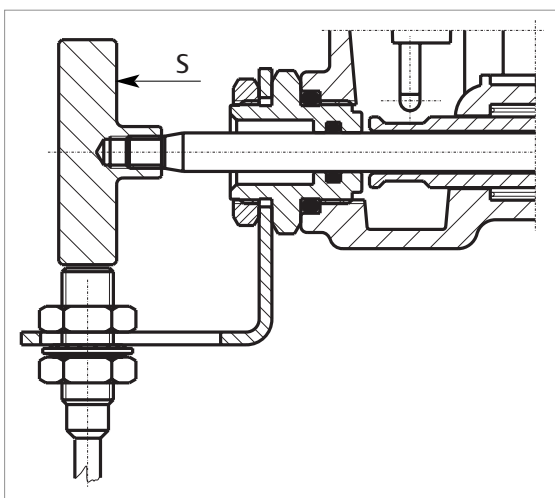
In order to send the shut-off or the regulator/monitor opening/closing signal, a proximity switch suitable for installation in hazardous area is used.

The use of this switch foresees the application of an intrinsic safety separation barrier which should be installed in safe area.

The distance between the proximity switch and the barrier should be calculated according to the type of gas and installation electrical specifications.

The proximity switch should be positioned at about 0.5 mm from the stem (S).

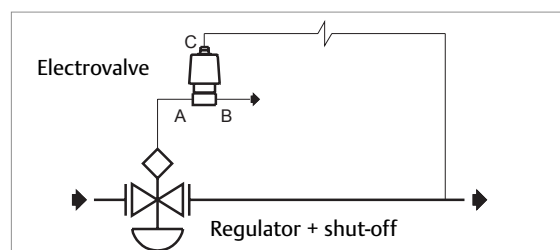
The adjustment is made by means of adjusting nuts



Pilot installation

Electrovalve for remote controlled closure

The OS/66 equipped with a shut-off device for minimum pressure, can be equipped with a 3-way valve with explosion-proof construction to permit remote-controlled closure.



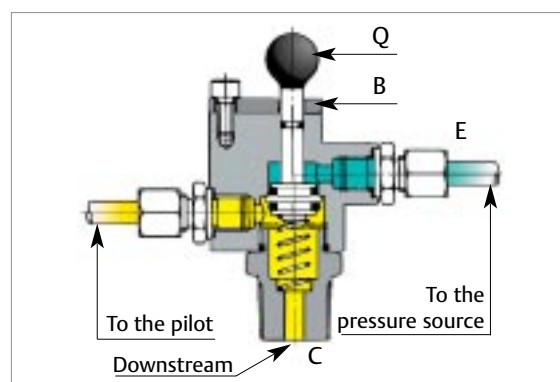
IT/3V three-way valve for setting control (P_e max 50 bar)

It allows the OS/66 operation and setting control, without having to change the regulator setting.

The valve is installed on the OS/66 control line and it must be connected to a suitable pressure source that is capable of reaching the settings of the OS/66.

The IT/3V three-way valve is of the spring return type and it is equipped with a safety lock plate (B) on the control knob (Q).

When the plate (B) is pivoted, pressure on the knob (Q) makes it possible to put the sensitive member into communication with a pressure source, thus making it possible to perform operation and setting tests.



Upon completion of the procedures, releasing the knob will reset normal running conditions.

The safety lock plate on the knob prevents accidental maneuvers.

Installation

Mount regulator on a pipe segment with horizontal axis.

For proper performance, it is recommended to install a filter upstream of the regulator.

Proceed as follows for proper installation:

- Make sure unit has not been damaged in transport.
- Clean and bleed pipes of any foreign matter (sand, welding residues, etc.).
- Make sure pipes can bear regulator's weight. If not, brace with adequate supports.
- Install shut-off valves, pressure gauges and impulse connections both upstream and downstream of regulator.
- Make sure that regulator is mounted in flow direction as shown by the arrow embossed on its body.
- In models featuring internal impulse connection, connect the sensing line to the appropriate connection located at the centre of the outlet flange.

Linking control connection

- Check that gas flow speed in the control connection fitted section of the pipe is less than 40 metres a second.
 - For horizontal pipes, control connections should be linked up as shown in Fig. 3. Vertical pipes do not require any particular link-up configuration.
 - In the versions with internal slam-shut valve, pilot impulse connection must be fitted downstream (Figs 1 and 2).
 - In models with external impulse connection, link-up must be made downstream of regulator (Fig. 2).
 - In models featuring internal impulse connection, connect the sensing line prior to regular being installed onto the line.
- In case of values exceeding those shown in the "OUTLET PRESSURE- CAPACITY" table, these models require an external impulse connection (see Fig. 2).

Outlet pipe capacity

While the MN/Series regulators are classified as "prompt response" types, a properly sized amount of gas must be present between the regulator and the burner when ON-OFF feed control is employed. This will dampen the pressure peaks due to sudden swings in capacity. Said amount of gas should be at least 1/1000 of capacity as expressed in Stm^3/hr , especially for low-pressure utilities.

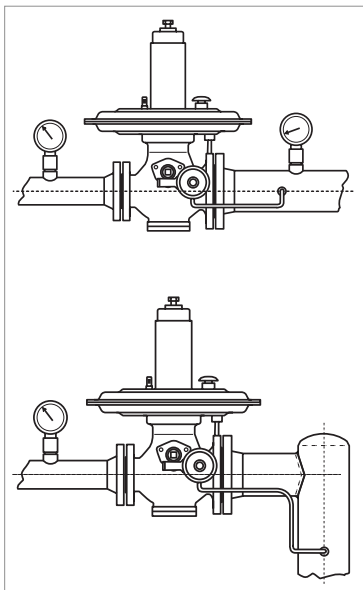


Fig.1 Installation examples

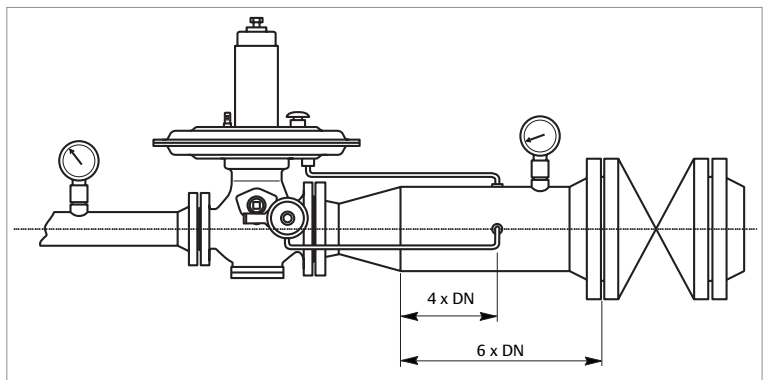


Fig.2 Widened downstream line installation example

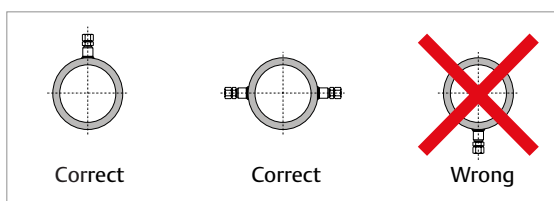
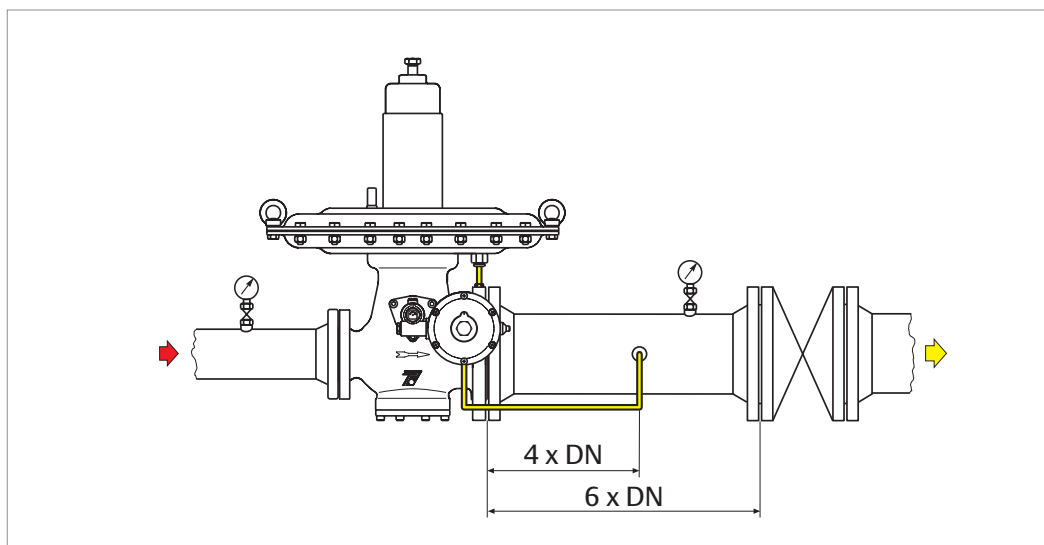


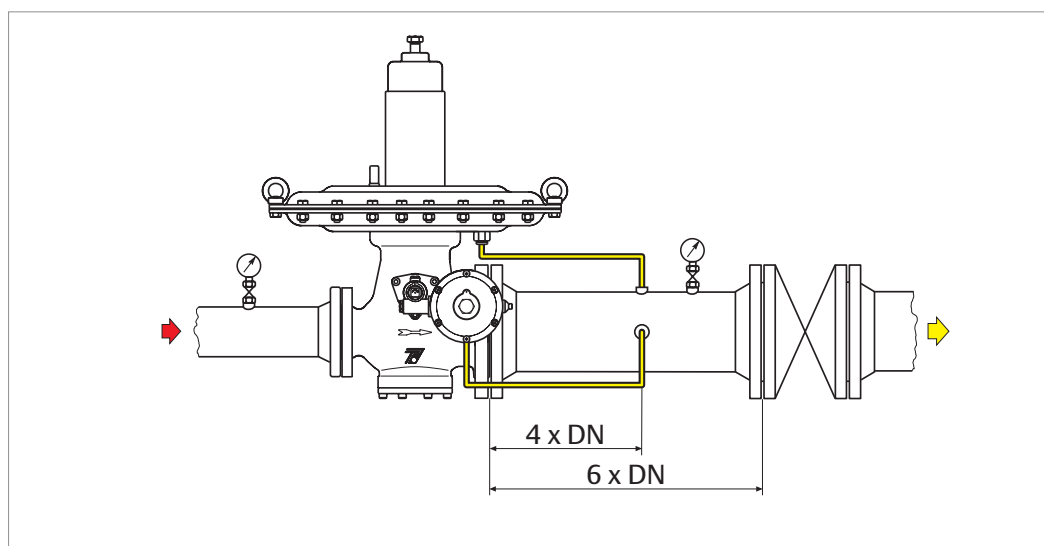
Fig.3
Impulse line
connection

Examples of connection

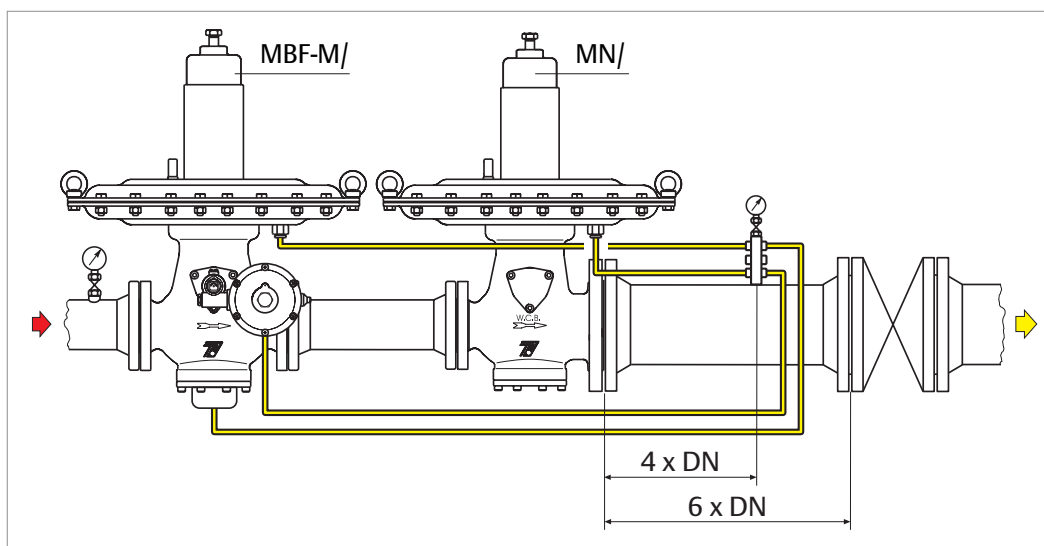
MBN/ DN 25 ÷ 65
Regulator
Internal impulse
connection



MBN/ DN 80 ÷ 100
Regulator
External impulse
connection



MBF-M/ and MN
Regulator
External impulse
connections



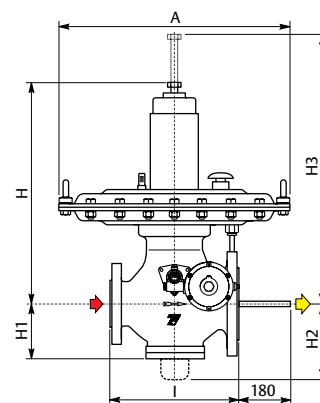
Overall dimensions (mm) and Weights (Kg)

MN MBN MBN-M Series

DN	I	A		H	H1	H2 monitor version	H3	Weight		
		Std	AP APA					MN	MBN	MBN-M
25x65	184	380	380	500	95	140	730	31	33	37
40x80	222	500	380	580	100	160	770	53	55	59
50x100	254	500	380	600	120	170	800	59	62	67
65x100	276	500	380	620	132	200	800	62	66	72
80x150	298	500 620*	380	650	145	215	840	80	84	90
100x200	352	500 620*	500	660	180	265	870	125	130	140

* For outlet pressure from 20 to 80 mbar only

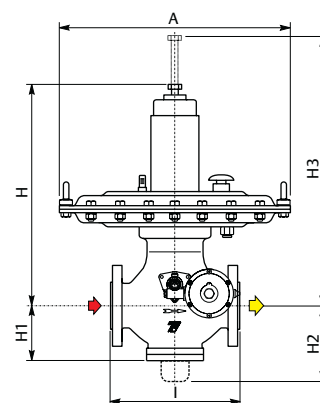
** For models with internal impulse connection only (DN 25-40-50-65)



MF MBF MBF-M Series

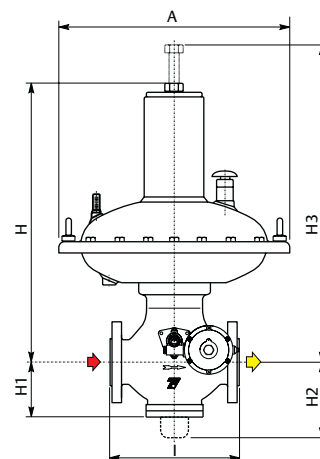
DN	I	A		H	H1	H2 monitor version	H3	Weight		
		Std	AP APA					MF	MBF	MBF-M
25	184	380	380	500	95	140	730	27	29	33
40	222	500	380	580	100	160	770	50	52	56
50	254	500	380	600	120	180	800	55	59	64
80	298	500 620*	380	650	145	215	840	73	77	83
100	352	500 620*	500	660	180	265	870	110	115	125

* For outlet pressure from 20 to 80 mbar only



MR MBR MBR-M Series

DN	I	A		H	H1	H2 monitor version	H3	Weight		
		Std	AP APA					MR	MBR	MBR-M
50	254	500	416	620	120	180	800	58	63	68



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