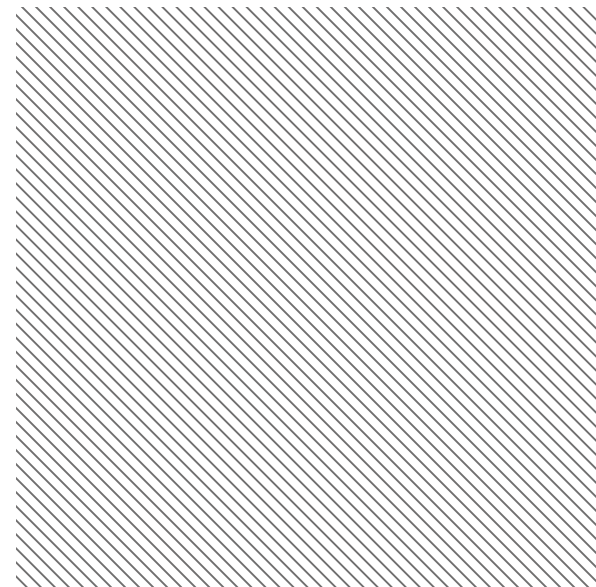




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**TA-957**

Direct Action Pressure Regulator



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# TA-957 FAMILY

TA957 family of pressure regulators and SSV comprises single and double function units.

The modular design in which a single body is capable of accepting two separate functions with separate sensing lines, internal control valves and seats is a characteristic of TA957 family.

This feature allows the best possible use of space due to an exceptionally compact configuration.

The modular design allows any installed units, to be updated or upgraded during the entire lifetime of the regulator as the operating requirements or any changes in customers specifications are modified.

TA957 pressure regulators are top entry design, this allows for rapid, easy, cost effective maintenance without dismantling regulator body from the line.



# APPLICATION

The modular design allows a wide variety of configurations to suit the most demanding applications in distribution utility systems, industry and commercial installations, etc. TA957 pressure regulators and SSV are designed to be used with non corrosive and filtered natural gas. Upon request other gases and different process conditions may be acceptable with specific choice of materials. TA957 pressure regulators are the ideal choice for applications requiring sudden variation of flow rate as it is common with boilers and applications where solenoid valves are used downstream. TA957 is a direct action single function Fail to Open gas pressure regulator suitable for high, medium, and low pressure applications.

This pressure regulator will go to fully Open position in case of rupture of one of the following parts:

- Regulator diaphragm;
- Downstream supply signal pressure not available.

TA-957 pressure regulator is CE marked in accordance with the following standards:

- Pressure Equipment Directive (PED) 2014/68/EU
- DIN EN 334 (01.07.2009)
- DIN EN 14382 (01.07.2009)

Product Identification Number: CE-0085CO0164.

# FEATURES

- Body specifically designed for high capacity with low noise generation;
- Completely self contained and operated using the inlet gas pressure energy;
- Fully balanced control valve;
- Extremely high rangeability;
- Suitable for most pressure reduction applications;
- Local position indicator with magnetic drive, available as an option;
- Available with internal silencer;
- Available in double function configurations with built in SSV;
- A monitor version is available;
- One standard size orifice covers up to 20 barg inlet pressure;
- Optional internal relief valve (RV);
- External adjustment of the setting for the required outlet pressure;
- Anti-pulsation dampening device to give better quality of control of the outlet pressure.

# TECHNICAL SPECIFICATIONS TA-957

<b>Max. inlet pressure p<sub>max</sub></b>	16 barg DN25/50 - 10 barg DN80/100				
<b>Outlet pressure range W<sub>d</sub></b>	15* to 4360 mbar DN 25, 50, 80, 100; 15* to 1770 mbar DN 150, 200 (*10 mbar available on request)				
<b>Nominal diameter and CG value</b>	1" (DN 25)	CG=348			
	2" (DN 50)	CG=1428			
	3" (DN 80)	CG=3565			
	4" (DN 100)	CG=5355			
	6" (DN 150)	CG=11130			
	8" (DN 200)	CG=17430			
<b>Type of connection</b>	Flanges ANSI 150 (PN 16 on request)				
<b>Accuracy class</b>	AC 10% up to 100 mbar AC 5% from 100 mbar to 1 bar AC 2.5% over 1 bar				
<b>Lock up pressure class</b>	SG 20% up to 100 mbar SG 10% over 100 mbar				
<b>Lock Up pressure category</b>	SZ 2.5%				
<b>Outlet pressure range W<sub>d</sub></b>	TA-957 LLP* DN25...100	10 ... 91 mbar (* on request)			
	TA-957 LP DN25...100	15 ... 91 mbar			
	TA-957 MP DN25...100	49 ... 1276 mbar			
	TA-957 HP DN25...100	361 ... 4360 mbar			
	TA-957 LLP* DN150...200	10 ... 90 mbar (* on request)			
	TA-957 LP DN150...200	15 ... 90 mbar			
	TA-957 MP DN150...200	36 ... 473 mbar			
	TA-957 HP DN150...200	157 ... 1771 mbar			
<b>Safety Shutoff Device Head</b>	Type	W <sub>do</sub>	AG	W <sub>du</sub>	AG
	CX677	0.015-1.2 bar	10/2.5	0.01-1 bar	20/5
	CX640	0.2-10 bar	5/1	0.15-4 bar	5
<b>Closing time t<sub>a</sub></b>	0.1-0.5 s according to size and head type				
<b>Operational temperature range</b>	-20 °C to +60 °C (-40°C to +60°C available on request)				
<b>Operation and strength according to</b>	EN 334, EN 14382, PED 2014/68/EU, ANSI B16.5, ANSI B16.34				
<b>CE mark according to PED</b>	CE 0085				
<b>EX protection</b>	Since the device is not fitted with potential ignition sources of its own, it is not subject to ATEX 95 regulations (all used electronic accessories meet ATEX requirements).				
<b>Accessories</b>	Pneumatic remote set point				
	Remote closure command				

## MATERIALS

<b>Body</b>	ASTM A216 WCB, (ASTM A352 LCC on request)
<b>Diaphragm housing</b>	ASTM A105, SAE1020, ASTM A216 WCB, (ASTM A352LCC or LF2 on request)
<b>Covers</b>	ASTM A105; SAE1020 (ASTM A352 LCC or LF2 on request)
<b>Shutter</b>	ASTM A 182 F6 / A105 zinc pltd, (A 350 LF2 ENP on request)
<b>Seat</b>	ASTM A182 F6 Cl.2 + Bonded Nitrile Rubber
<b>Diaphragms</b>	Nitrile rubber with nylon fabric
<b>Seals</b>	Nitrile (NBR) or fluoroelastomer (FKM)
<b>SSV device</b>	Steel, Brass, Aluminium

# TA-957 SPRING TABLE

Covers	DN [mm]	Spring		Pressure	
		Nr	Color	Min. [mbar]	Max. [mbar]
LLP*	25 ... 100	1542	Pink	10	22
LP	25 ... 100	1542	Pink	15	22
LP	25 ... 100	1543	Brown	15	47
LP	25 ... 100	1544	Aluminium	15	91
MP	25 ... 100	1545	Orange	49	395
MP	25 ... 100	1546	White	76	607
MP	25 ... 100	1547	Green	159	1276
HP	25 ... 100	1548	Lylium	361	2047
HP	25 ... 100	1549	Yellow	711	3319
HP	25 ... 100	1550	Red	1308	4360
LLP*	150 ... 200	1551	Black	10	22
LP	150 ... 200	1551	Black	15	20
LP	150 ... 200	1552	L. Blue	15	40
LP	150 ... 200	1553	Blue	15	90
MP	150 ... 200	1554	Pink	36	284
MP	150 ... 200	1555	Brown	59	473
HP	150 ... 200	1556	Aluminium	157	1253
HP	150 ... 200	1557	Orange	266	1771

\*10 mbar LLP version available on request

# TA-957 OPERATING PRINCIPLE

The Tormene TA-957 is a Fail Open type pressure regulator, this means that the main valve will move to the fully open position in the event of diaphragm rupture of main valve or supply pressure is not available.

These Pressure regulators are operated by the spring and controlled by outlet pressure through the downstream outlet pressure pipework.

Regulated pressure is achieved through a balance between the force generated by the spring and the force generated by this outlet pressure on main diaphragm.

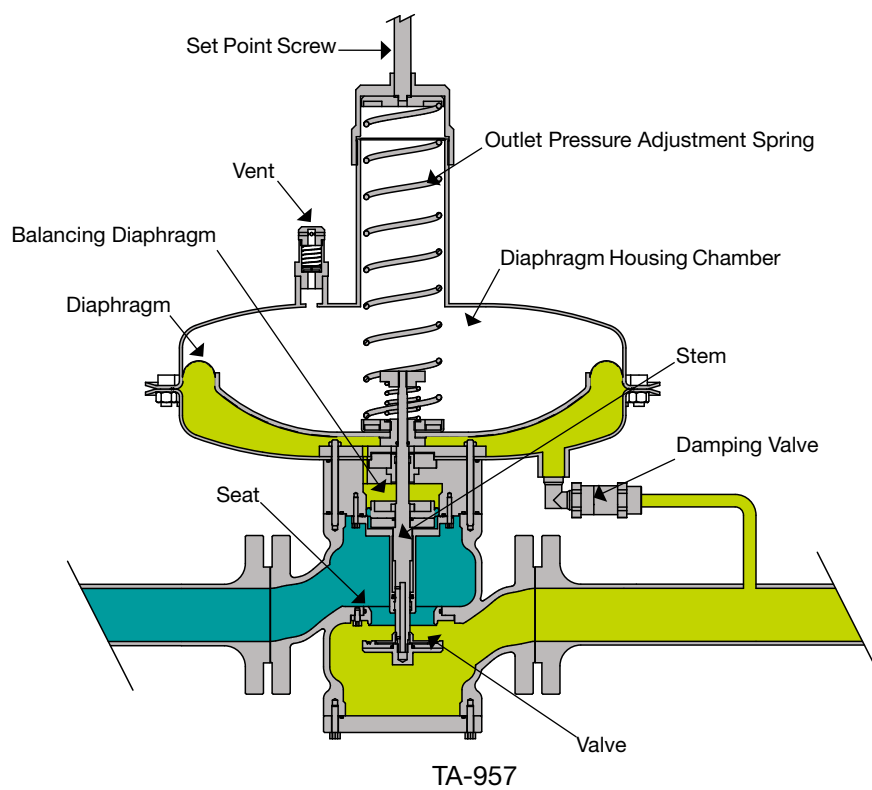
The valve movement is transmitted by the spindle, which moves perpendicular to gas flow direction.

The valve and the spindle are fully balanced with the inlet pressure, therefore control accuracy is independent of inlet pressure variations.

A dampening valve is fitted in the down-stream connection to the diaphragm casing to reduce the pulsations and give better quality of control of the outlet pressure.

Turning the regulator spring set screw adjuster will increase the outlet pressure set point by increasing compression on the spring, or reduce the set point by decreasing compression on the spring.





# TA-957+SSV DOUBLE FUNCTION

Configuration for a unit equipped with a SSV suitable for High and Low pressure protection of the system.

This valve is equipped with a spring loaded valve that is maintained in the open position by a mechanism that is controlled by a pressure switch.

The pressure switch may be equipped with one or more of the following control modes:

- minimum pressure control;
- maximum pressure control;
- minimum and maximum pressure control;
- manual control (local button);
- remote control with solenoid valve(optional).

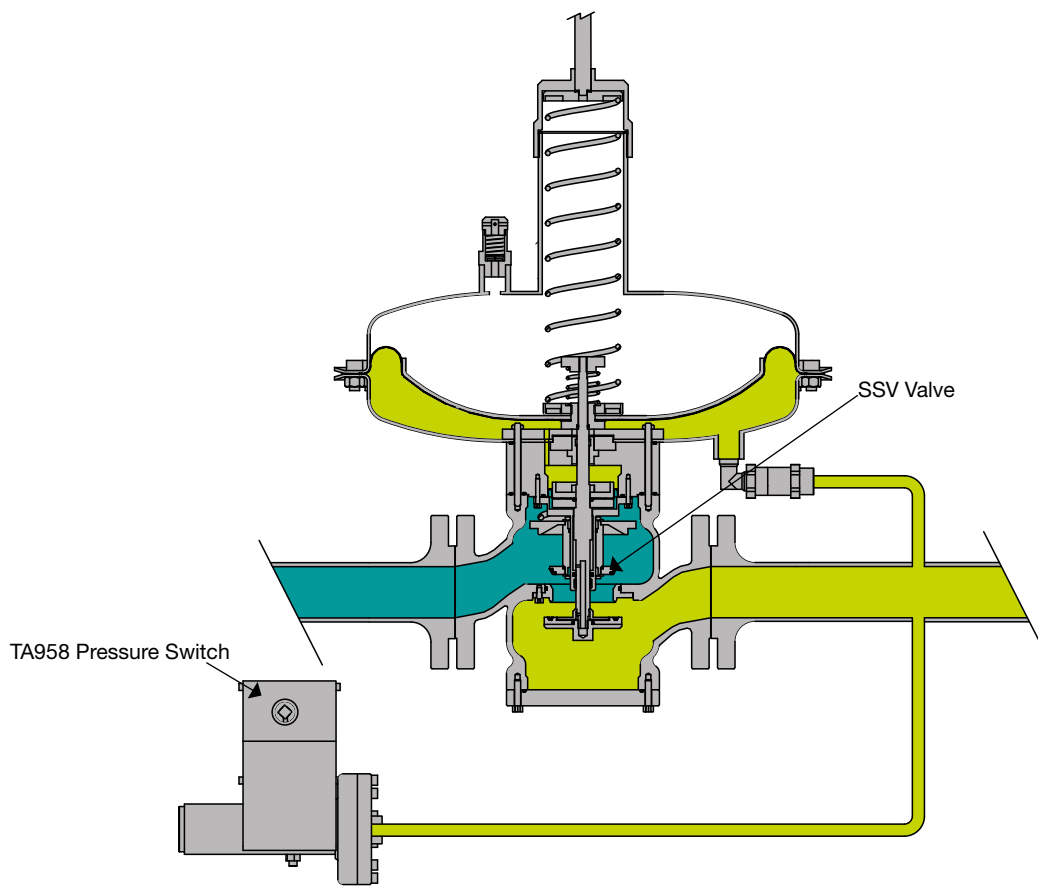
Once the set point according to the installed spring is reached the pressure switch releases the latching mechanism that in turn allows the valve close. The valve is fully balanced therefore its operation is not affected by any changes in the inlet pressure. In the fully closed position the valve sealing is also supported by differential pressure.

The system may be re-latched to the open position only when the pressure conditions allow for that and only by operating the latching lever to the open position using the suitable wrench.

Remote operation is possible by installing an optional solenoid valve that in normal conditions would maintain the connection of the pressure switch head to the downstream pipework.

When the valve is remotely tripped it will connect the pressure switch head to atmosphere therefore venting the pressure entrained and generating a minimum pressure trip. The SSV can be always closed with the manual button.

This button must be used only by qualified personnel during normal maintenance operations or during emergencies.



TA-957 + SSV

## PRESSURE SWITCH TA-958 SPRING TABLE

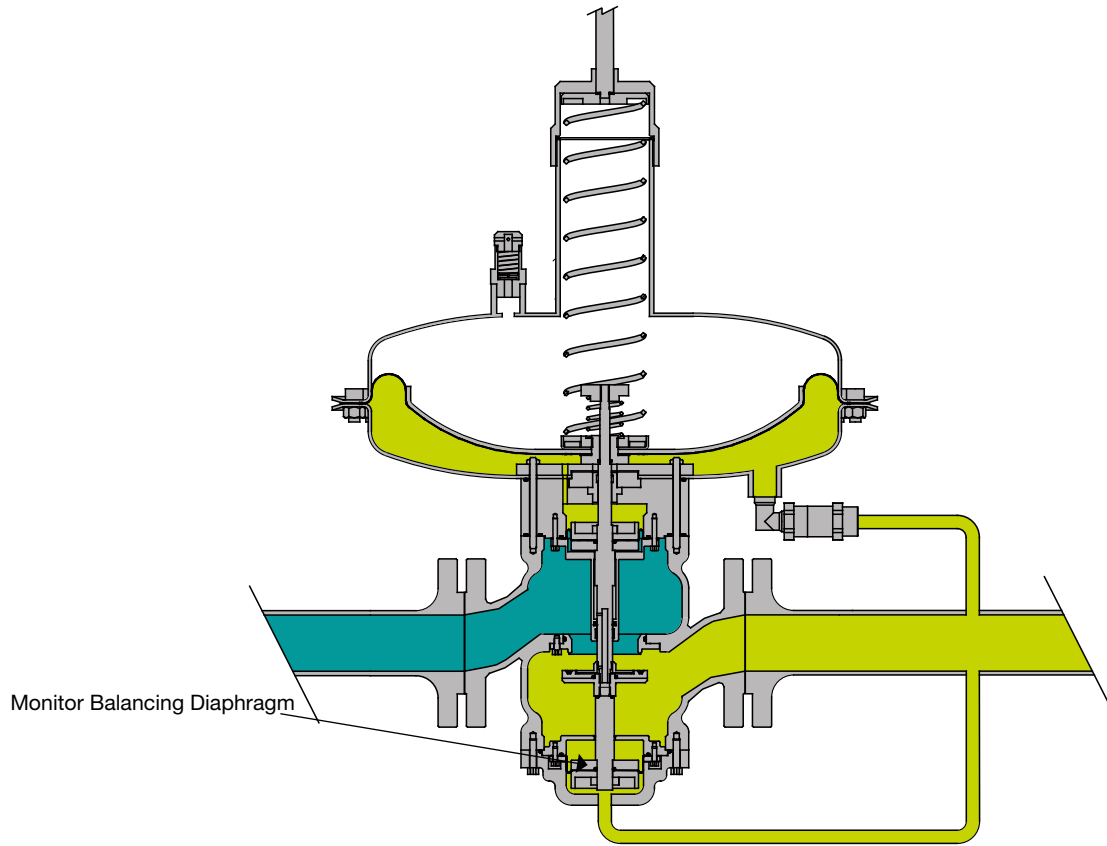
MODEL	Under Pressure Range						Over Pressure Range					
	Spring			Wdsu		$\Delta p_{wu}$	Spring			Wdso		$\Delta p_{wo}$
	n°	Color	RAL	Min [bar]	Max [bar]	[bar]	n°	Color	RAL	Min [bar]	Max [bar]	[bar]
CX 640	1260	Light Blue	5012	0,15	0,32	0,08						
CX 640	1261	Blue	5017	0,25	0,90	0,12						
CX 640	1262	Red	3001	0,50	1,80	0,20						
CX 640	1263	Brown	8003	0,80	2,50	0,30						
CX 640	1264	Black	9005	2,00	4,00	0,50						
CX 640							1266	Green	6029	0,20	0,60	0,10
CX 640							1267	Light Blue	5012	0,50	1,70	0,20
CX 640							1268	Blue	5017	1,00	3,50	0,30
CX 640							1269	Red	3001	2,00	6,00	0,50
CX 640							1270	Brown	8003	4,50	10,00	1,00
CX 640	1260	Light Blue	5012	0,15	0,32	0,08	1266	Green	6029	0,20	0,60	0,10
CX 640	1260	Light Blue	5012	0,15	0,32	0,08	1267	Light Blue	5012	0,50	1,70	0,20
CX 640	1261	Blue	5017	0,25	0,90	0,12	1267	Light Blue	5012	0,50	1,70	0,20
CX 640	1260	Light Blue	5012	0,15	0,32	0,08	1268	Blue	5017	1,00	3,50	0,30
CX 640	1261	Blue	5017	0,25	0,90	0,12	1268	Blue	5017	1,00	3,50	0,30
CX 640	1262	Red	3001	0,50	1,80	0,20	1268	Blue	5017	1,00	3,50	0,30
CX 640	1260	Light Blue	5012	0,15	0,32	0,08	1269	Red	3001	2,00	6,00	0,50
CX 640	1261	Blue	5017	0,25	0,90	0,12	1269	Red	3001	2,00	6,00	0,50
CX 640	1262	Red	3001	0,50	1,80	0,20	1269	Red	3001	2,00	6,00	0,50
CX 640	1263	Brown	8003	0,80	2,50	0,30	1269	Red	3001	2,00	6,00	0,50
CX 640	1260	Light Blue	5012	0,15	0,32	0,08	1270	Brown	8003	4,50	10,00	1,00
CX 640	1261	Blue	5017	0,25	0,90	0,12	1270	Brown	8003	4,50	10,00	1,00
CX 640	1262	Red	3001	0,50	1,80	0,20	1270	Brown	8003	4,50	10,00	1,00
CX 640	1263	Brown	8003	0,80	2,50	0,30	1270	Brown	8003	4,50	10,00	1,00
CX 640	1264	Black	9005	2,00	4,00	0,50	1270	Brown	8003	4,50	10,00	1,00
CX 677	1259	Green	6029	0,010	0,040	0,012						
CX 677	1260	Light Blue	5012	0,035	0,120	0,015						
CX 677	1261	Blue	5017	0,085	0,250	0,020						
CX 677	1262	Red	3001	0,220	0,450	0,050						
CX 677	1263	Brown	8003	0,400	0,650	0,060						
CX 677	1264	Black	9005	0,600	1,000	0,090						

<b>CX 677</b>							1265	Yellow	1023	0,015	0,050	0,008
<b>CX 677</b>							1266	Green	6029	0,040	0,130	0,020
<b>CX 677</b>							1267	Light Blue	5012	0,100	0,350	0,024
<b>CX 677</b>							1268	Blue	5017	0,270	0,700	0,040
<b>CX 677</b>							1269	Red	3001	0,600	1,200	0,090
<b>CX 677</b>	1259	Green	6029	0,010	0,040	0,012	1265	Yellow	1023	0,015	0,050	0,008
<b>CX 677</b>	1259	Green	6029	0,010	0,040	0,012	1266	Green	6029	0,040	0,130	0,020
<b>CX 677</b>	1259	Green	6029	0,010	0,040	0,012	1267	Light Blue	5012	0,100	0,350	0,024
<b>CX 677</b>	1260	Light Blue	5012	0,035	0,120	0,015	1267	Light Blue	5012	0,100	0,350	0,024
<b>CX 677</b>	1259	Green	6029	0,010	0,040	0,012	1268	Blue	5017	0,270	0,700	0,040
<b>CX 677</b>	1260	Light Blue	5012	0,035	0,120	0,015	1268	Blue	5017	0,270	0,700	0,040
<b>CX 677</b>	1261	Blue	5017	0,085	0,250	0,020	1268	Blue	5017	0,270	0,700	0,040
<b>CX 677</b>	1259	Green	6029	0,010	0,040	0,012	1269	Red	3001	0,600	1,200	0,090
<b>CX 677</b>	1260	Light Blue	5012	0,035	0,120	0,015	1269	Red	3001	0,600	1,200	0,090
<b>CX 677</b>	1261	Blue	5017	0,085	0,250	0,020	1269	Red	3001	0,600	1,200	0,090
<b>CX 677</b>	1262	Red	3001	0,220	0,450	0,050	1269	Red	3001	0,600	1,200	0,090
<b>CX 677</b>	1263	Brown	8003	0,400	0,650	0,060	1269	Red	3001	0,600	1,200	0,090

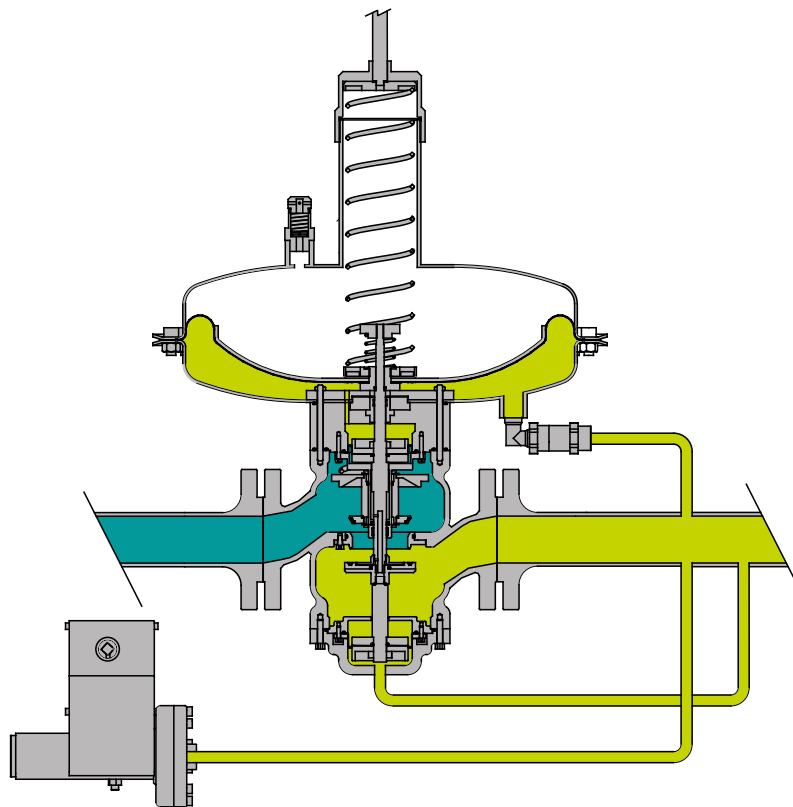
# MONITOR USE

The TA-957 is classified as PED Category IV as a stand-alone safety accessory According to Pressure Equipment Directive (PED) 2014/68/EU. This means that a stand-alone TA957 is capable not only of regulating downstream pressure, but also protecting downstream piping from high pressure.

TA957 may be used in Active-Monitor configuration. In this case the Monitor regulator differs from the active. This is due to the need of keeping the monitor fully open when there is no differential pressure across it. Since the monitor is sensing the pressure downstream of the Active regulator the balancing diaphragm is subject to a differential pressure that is not the same acting across the seat, so a secondary balancing diaphragm needs to be connected to the regulator stem taking pressure from downstream of Active regulator. In this way the two diaphragms are in equilibrium with each other and the regulator may stay in the fully open position until is requested to take service.



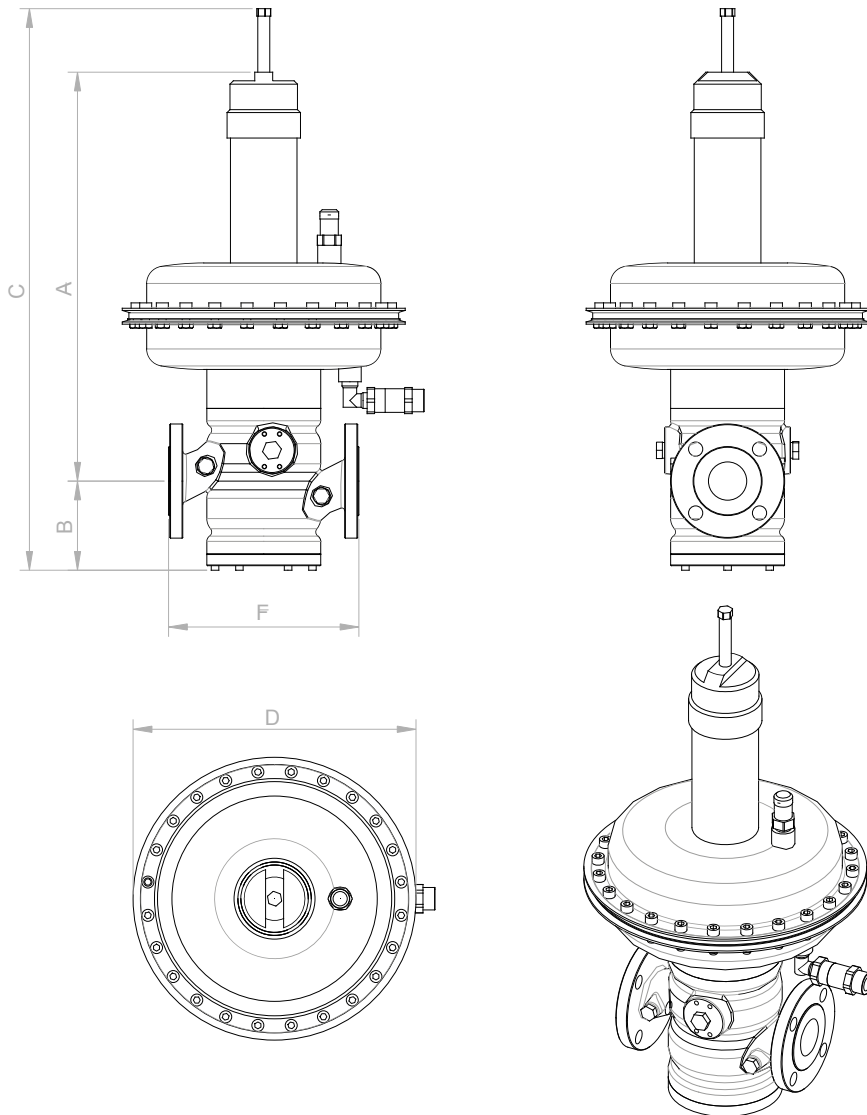
TA-957 Monitor



TA-957 Monitor + SSV

# DIMENSIONS

TA-957

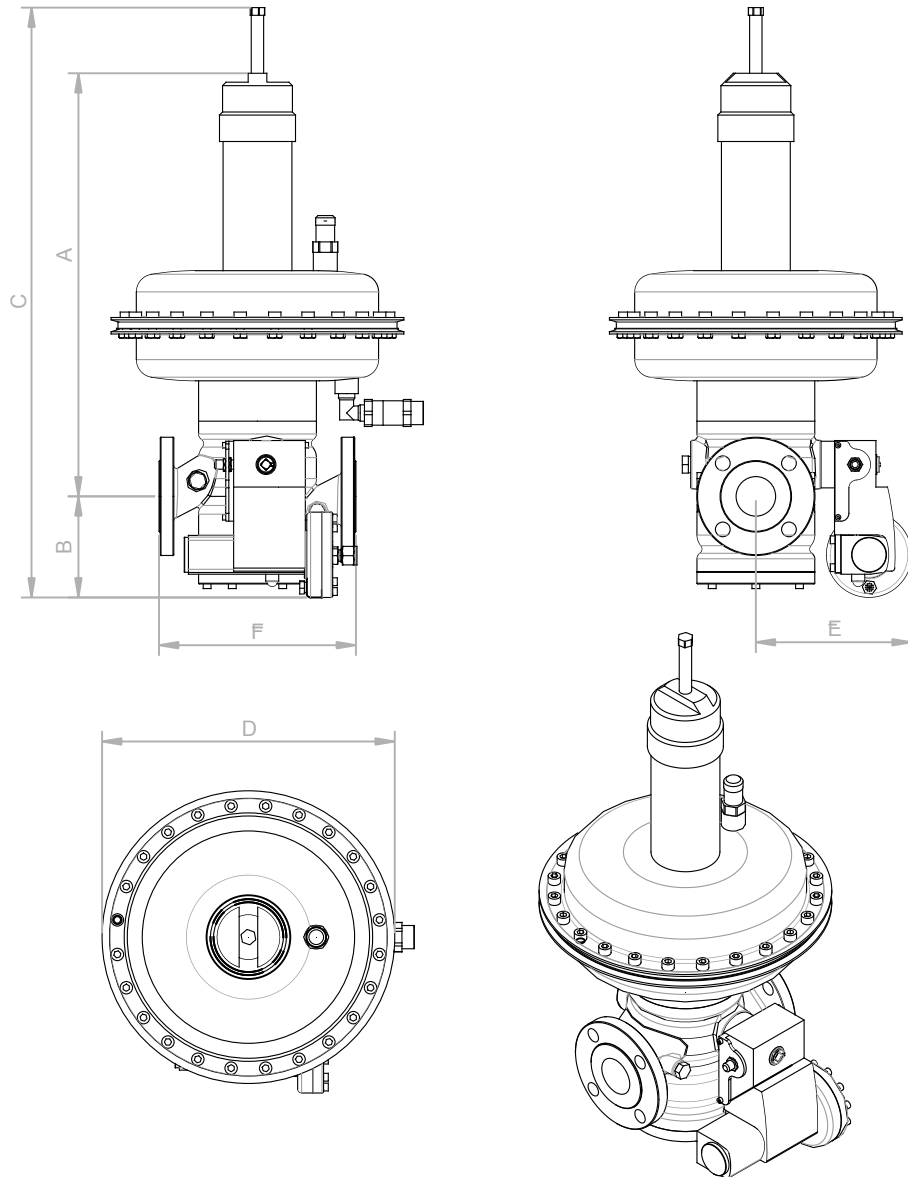




## DIMENSIONS [mm] & WEIGHT [kg]

DN	Cover	A	B	C	D	F	Weight
25 (1")	LP	485	84	700	494	184 184	34
	MP	506		721	378		28
	HP	514		731			30
50 (2")	LP	520	119	769	494	254 254	48
	MP	538		788	378		42
	HP	546		796			44
80 (3")	LP	555	153	838	494	298 298	63
	MP	575		860	378		57
	HP	583		867			60
100 (4")	LP	592	185	910	494	352 352	92
	MP	612		928	378		87
	HP	621		937			90

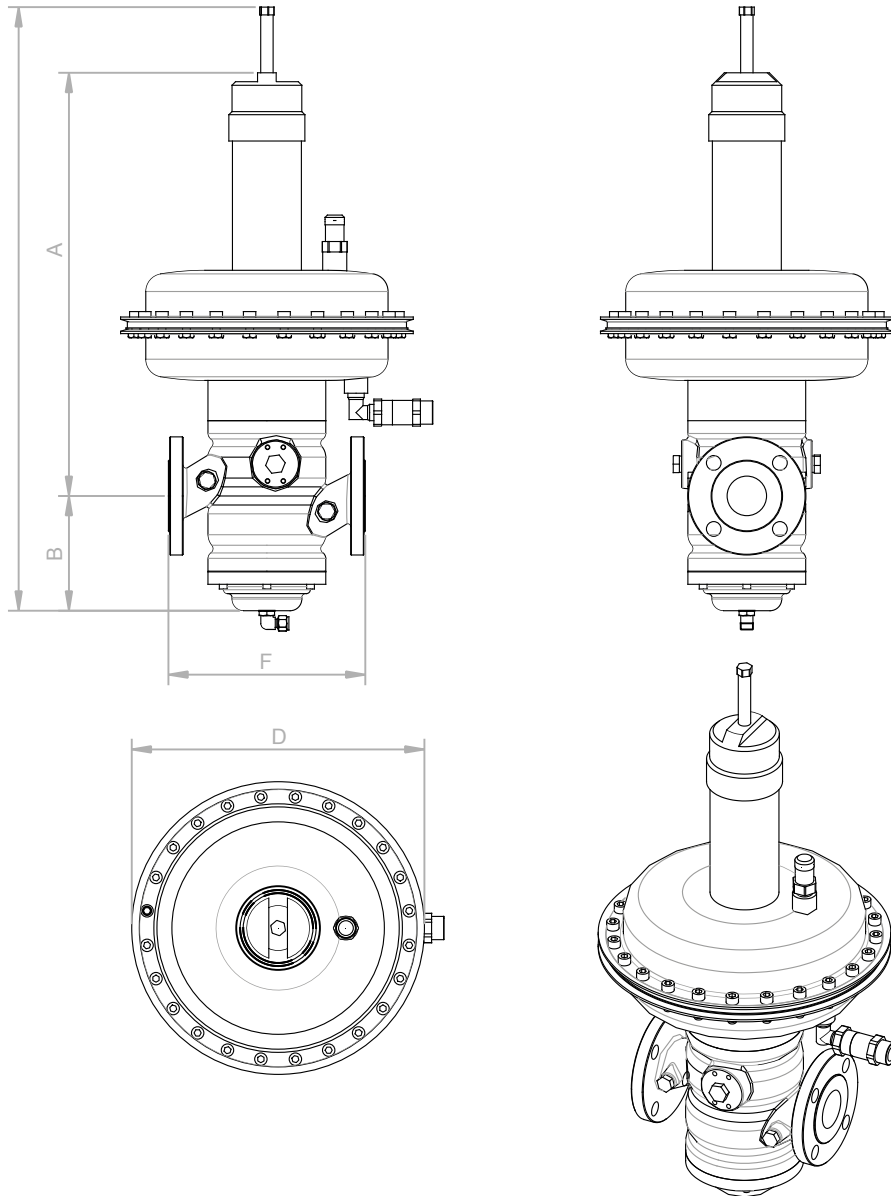
# TA-957 + SSV



## DIMENSIONS [kg] TA-957 + SSV

DN	Cover	A	B	C	D	E	F	Weight
25 (1")	LP	485	110	726	494	190	184	40
	MP	506		747	378			34
	HP	514		757	36			
50 (2")	LP	520	131	781	494	201	254	55
	MP	538		800	378			49
	HP	546		808	51			
80 (3")	LP	555	153	838	494	227	298	71
	MP	575		860	378			65
	HP	583		867	68			
100 (4")	LP	592	185	910	494	245	352	101
	MP	612		928	378			96
	HP	621		937	99			

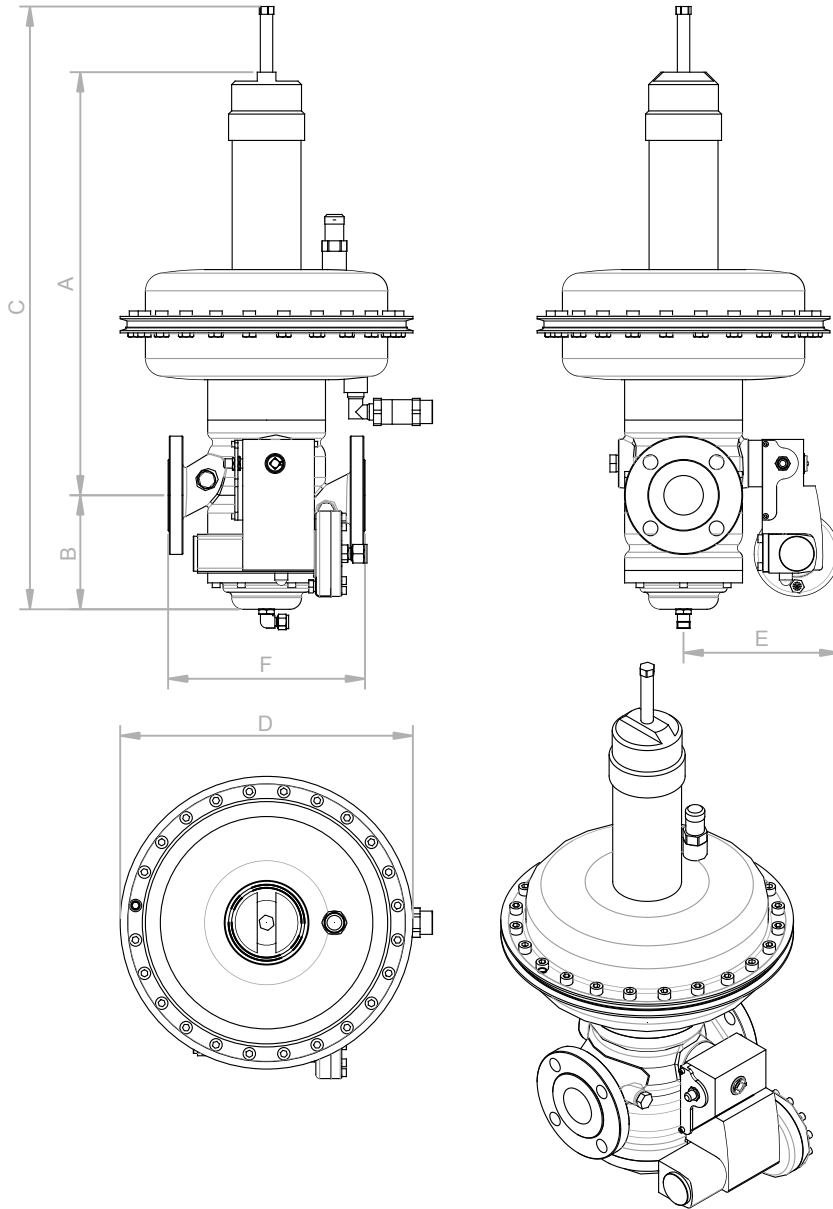
# TA-957 MONITOR



## DIMENSIONS [kg] TA-957 MONITOR

DN	Cover	A	B	C	D	F	Weight
25 (1")	LP	485	104	720	494	184	35
	MP	506		741	378		29
	HP	514		751	378		31
50 (2")	LP	520	147	797	494	254	50
	MP	538		816	378		44
	HP	546		824	378		46
80 (3")	LP	555	185	870	494	298	66
	MP	575		892	378		60
	HP	583		899	378		63
100 (4")	LP	592	219	944	494	352	96
	MP	612		962	378		91
	HP	621		971	378		94

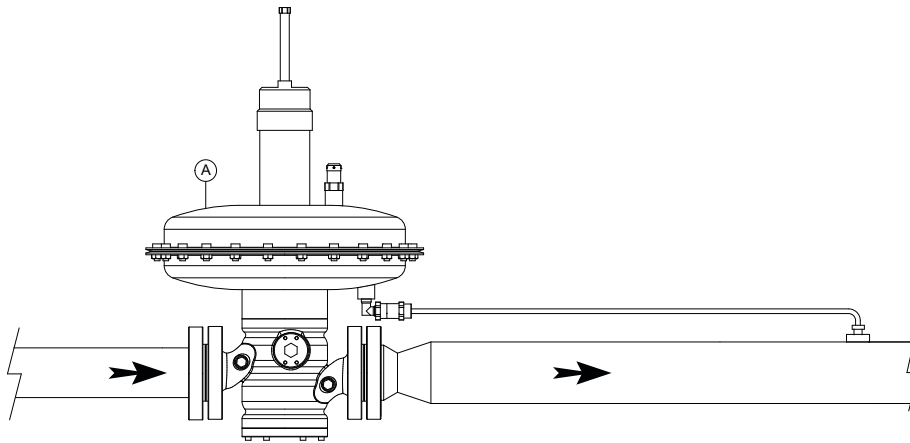
# TA-957 + SSV MONITOR



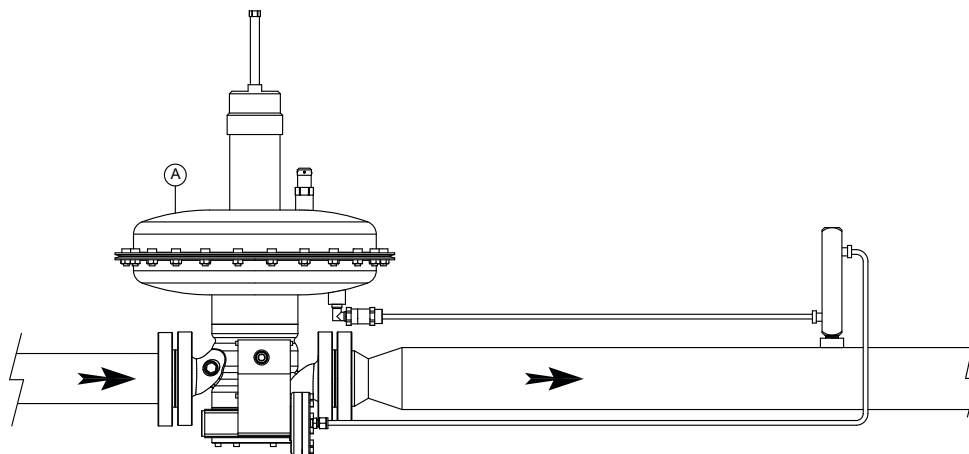
## DIMENSIONS [kg] TA-957 + SSV MONITOR

DN	Cover	A	B	C	D	E	F	Weight
25 (1")	LP	485	110	726	494	190	184	41
	MP	506		747	378			35
	HP	514		757	378			37
50 (2")	LP	520	147	797	494	201	254	57
	MP	538		816	378			51
	HP	546		824	378			53
80 (3")	LP	555	185	870	494	227	298	74
	MP	575		892	378			68
	HP	583		899	378			71
100 (4")	LP	592	219	944	494	245	352	105
	MP	612		962	378			100
	HP	621		971	378			103

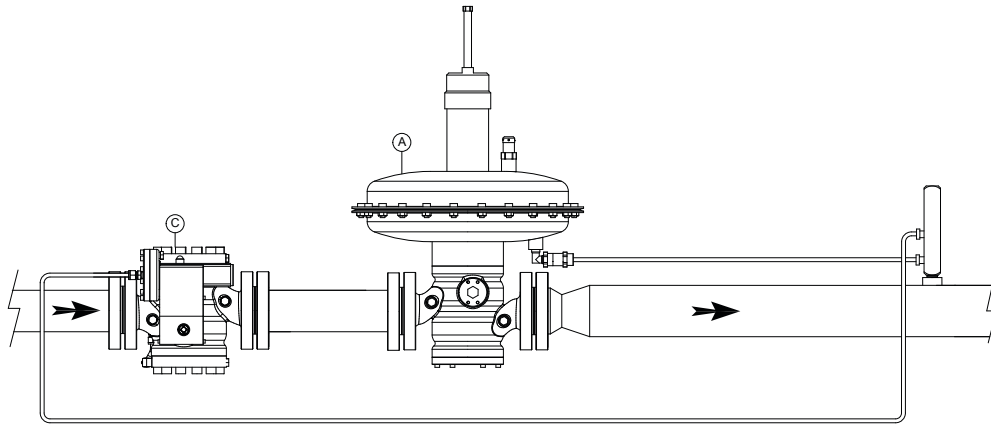
# INSTALLATION SCHEMATICS



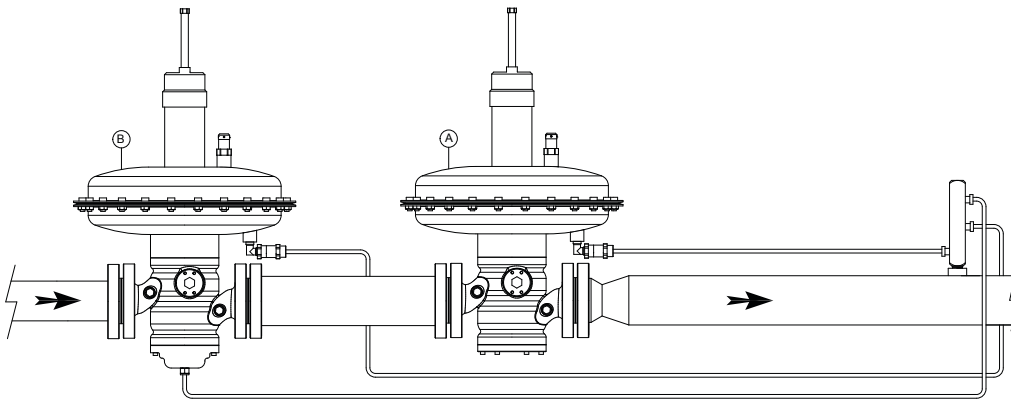
A - TA957 REGULATOR



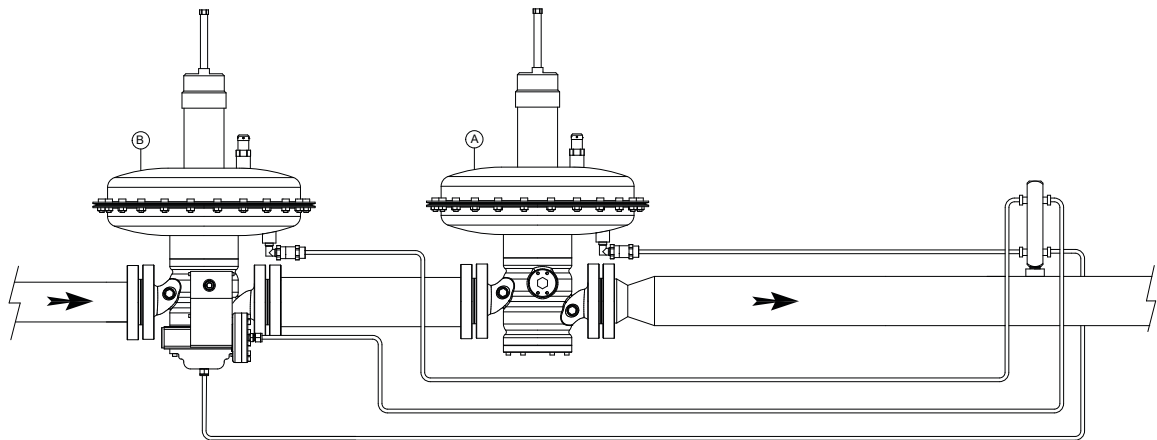
A - TA957+SSV DUOBLE FUNCTION REGULATOR



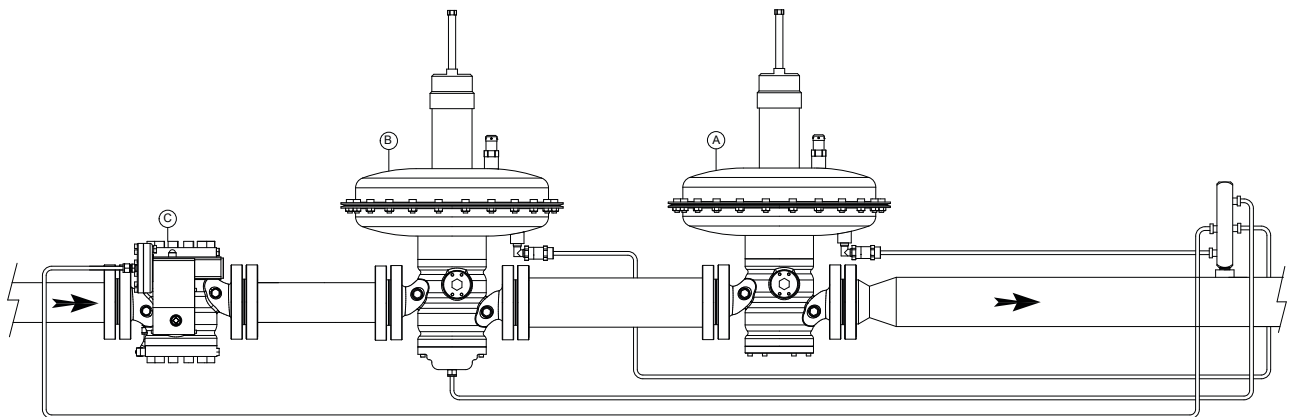
A - TA957 REGULATOR  
C - TA956 SSV SAFETY SHUTOFF VALVE



A - TA957 ACTIVE REGULATOR  
B - TA957 MONITOR



A - TA957 ACTIVE REGULATOR  
B - TA957+SSV MONITOR



A - TA957 ACTIVE REGULATOR  
B - TA957 MONITOR  
C - TA956 SSV SAFETY SHUTOFF VALVE

# SIZING

Sizing of gas pressure regulator involves establishing if the installed  $C_g$  is higher than the required  $C_g$  and if the outlet velocity of gas at regulator outlet flange is within the required limits.

The following units shall be used in the below formulas:

- $Q$  = Flow Rate [ $\text{Sm}^3/\text{h}$ ] (Reference conditions  $T=15^\circ\text{C}$ ,  $P=1$  barg)
- $P_u$  = Upstream Pressure [bar g]
- $P_d$  = Downstream (Controlled) Pressure [bar g]
- $P_b$  = Atmospheric Pressure [bar]
- $d$  = Gas Density Relative to Air
- $t_u$  = Upstream Temperature [ $^\circ\text{C}$ ]
- $DN$  = Regulator Outlet Nominal Diameter [mm]
- $v$  = Gas Velocity at Outlet Flange [m/s]

According to the ratio of inlet to outlet pressure there are two cases using different formulas.

## a) Sub Critical Flow Conditions

$$(P_u - P_d) \leq 0.5 (P_u + P_b)$$

Required  $C_g$  is calculated with the following formula.

$$C_g = \frac{Q}{13.57} \sqrt{\frac{d(t_u + 273)}{(P_d + P_b)(P_u - P_d)}}$$

## b) Critical Flow Conditions

$$(P_u - P_d) > 0.5 (P_u + P_b)$$

Required  $C_g$  is calculated with the following formula.

$$C_g = \frac{2Q}{13.57 (P_u + P_b)} \sqrt{d(t_u + 273)}$$



## CG TA-957

Class	DN25	DN50	DN80	DN100	DN150	DN200
Cg	348	1428	3565	5355	11130	17430

In case of gases different from  $d=0.61$  Natural Gas a correction factor F shall be used in the value of the Flow Rate Q used in the above formulas.

The Flow Rate to be used shall be  $Q'=Q/F$ .

F is taken from the following table.

## Gas conversion table

Gas	Relative Density [d]	Coefficient [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	3

Velocity of gas at regulator outlet flange shall be calculated using the following formula:

$$V = \frac{345.92 Q (1-0.002 P_d)}{DN^2(P_d+P_b)}$$

## Allowable velocity:

Downstream Pressure Pd [bar g]	Maximum Allowable Velocity v [m/s]
1	250
3	230
5	200

Interpolation may be used for intermediate values.

# PRESSURE REGULATOR FLOW RATE TABLE

		1"	2"	3"	4"	6"	8"
Regulated Pressure	Inlet Pressure	Flow Rate					
P2	P1	Sm <sup>3</sup> /h					
bar	bar						
0,050	0,500	254	1.041	2.598	3.902	8.111	12.702
	1,000	368	1.512	3.775	5.670	11.785	18.456
	1,500	384	1.660	3.930	6.388	14.186	23.099
	2.0 to 20.0	384	1.660	3.930	6.388	14.186	25.302
0,100	0,500	245	1.004	2.507	3.766	7.827	12.257
	1,000	367	1.506	3.761	5.649	11.741	18.386
	1,500	402	1.739	4.117	6.693	14.750	23.099
	2.0 to 20.0	402	1.739	4.117	6.693	14.862	26.508
0,200	0,500	221	908	2.268	3.406	7.080	11.087
	1,000	361	1.483	3.703	5.563	11.561	18.106
	1,500	439	1.892	4.492	7.097	14.750	23.099
	2,000	439	1.898	4.492	7.302	16.215	27.718
	2.5 to 20.0	439	1.898	4.492	7.302	16.215	28.922
0,300	0,500	188	772	1.927	2.895	6.017	9.422
	1,000	352	1.444	3.605	5.416	11.256	17.628
	1,500	461	1.891	4.721	7.091	14.738	23.080
	2,000	475	2.056	4.867	7.911	17.569	27.718
	2.5 to 20.0	475	2.056	4.867	7.911	17.569	31.336
0,400	0,500	138	566	1.414	2.124	4.415	6.914
	1,000	338	1.388	3.464	5.203	10.815	16.936
	1,500	458	1.879	4.690	7.045	14.643	22.932
	2,000	512	2.215	5.242	8.516	17.700	27.718
	2,500	512	2.215	5.242	8.521	18.922	32.338
	3.0 to 20.0	512	2.215	5.242	8.521	18.922	33.751
0,500	1,000	320	1.311	3.273	4.917	10.219	16.003
	1,500	452	1.854	4.629	6.953	14.452	22.632
	2,000	549	2.271	5.617	8.516	17.700	27.718
	2,500	549	2.373	5.617	9.131	20.277	32.338
	3.0 to 20.0	549	2.373	5.617	9.131	20.277	36.166
0,750	1,000	244	1.001	2.500	3.755	7.805	12.223
	1,500	423	1.734	4.330	6.504	13.518	21.170
	2,000	546	2.239	5.590	8.397	17.452	27.331
	2,500	640	2.649	6.555	9.935	20.650	32.338
	3,000	640	2.770	6.555	10.656	23.600	36.958
	3,500	640	2.770	6.555	10.656	23.664	41.577
	4.0 to 20.0	640	2.770	6.555	10.656	23.664	42.208

1,000	1,500	369	1.514	3.780	5.677	11.800	18.479
	2,000	522	2.141	5.345	8.029	16.687	26.133
	2,500	639	2.622	6.546	9.833	20.438	32.006
	3,000	732	3.028	7.494	11.354	23.600	36.958
	3,500	732	3.166	7.494	12.182	26.549	41.577
	4,000	732	3.166	7.494	12.182	27.053	46.197
	4.5 to 20.0	732	3.166	7.494	12.182	27.053	48.252
1,250	2,000	479	1.967	4.910	7.375	15.328	24.005
	2,500	619	2.539	6.338	9.521	19.789	30.990
	3,000	732	3.004	7.500	11.265	23.414	36.668
	3,500	824	3.406	8.433	12.774	26.549	41.577
	4,000	824	3.563	8.433	13.709	29.499	46.197
	4,500	824	3.563	8.433	13.709	30.444	50.817
	5.0 to 20.0	824	3.563	8.433	13.709	30.444	54.302
1,500	2,000	412	1.693	4.226	6.347	13.193	20.660
	2,500	583	2.394	5.976	8.977	18.657	29.218
	3,000	714	2.932	7.319	10.994	22.850	35.784
	3,500	825	3.385	8.451	12.695	26.385	41.320
	4,000	915	3.785	9.373	14.193	29.499	46.197
	4,500	915	3.960	9.373	15.238	32.449	50.817
	5,000	915	3.960	9.373	15.238	33.838	55.437
	5.5 to 20.0	915	3.960	9.373	15.238	33.838	60.056
1,750	2,000	306	1.255	3.134	4.707	9.784	15.322
	2,500	530	2.174	5.428	8.153	16.946	26.538
	3,000	684	2.807	7.007	10.526	21.877	34.261
	3,500	809	3.321	8.291	12.454	25.886	40.538
	4,000	918	3.766	9.401	14.122	29.352	45.966
	4,500	1.007	4.163	10.314	15.612	32.449	50.817
	5,000	1.007	4.358	10.314	16.767	35.399	55.437
	5,500	1.007	4.358	10.314	16.767	37.234	60.056
	6,000	1.007	4.358	10.314	16.767	37.234	64.676
	6.5 to 20.0	1.007	4.358	10.314	16.767	37.234	66.411
	2,000	2,500	452	1.854	4.629	6.953	
3,000		639	2.622	6.546	9.833		
3,500		783	3.212	8.018	12.043		
4,000		904	3.708	9.258	13.906		
4,500		1.010	4.146	10.351	15.548		
5,000		1.099	4.542	11.255	17.032		
5.5 to 20.0		1.099	4.755	11.255	18.297		

2,500	3,000	488	2.003	5.000	7.510		
	3,500	690	2.832	7.071	10.621		
	4,000	845	3.469	8.660	13.008		
	4,500	976	4.005	10.000	15.021		
	5,000	1.091	4.478	11.180	16.794		
	5,500	1.196	4.906	12.247	18.396		
	6,000	1.283	5.299	13.140	19.870		
	6,500	1.283	5.552	13.140	21.290		
	7.0 to 20.0	1.283	5.552	13.140	21.360		
3,000	3,500	522	2.141	5.345	8.029		
	4,000	738	3.028	7.559	11.354		
	4,500	904	3.708	9.258	13.906		
	5,000	1.044	4.282	10.690	16.058		
	5,500	1.167	4.787	11.952	17.953		
	6,000	1.278	5.244	13.093	19.667		
	6,500	1.380	5.665	14.142	21.242		
	7,000	1.467	6.056	15.027	22.709		
	7.5 to 20.0	1.467	6.349	15.027	24.128		
3,500	4,000	553	2.271	5.669	8.516		
	4,500	783	3.212	8.018	12.043		
	5,000	959	3.933	9.819	14.750		
	5,500	1.107	4.542	11.339	17.032		
	6,000	1.237	5.078	12.677	19.042		
	6,500	1.356	5.563	13.887	20.860		
	7,000	1.464	6.008	15.000	22.531		
	7,500	1.565	6.423	16.035	24.086		
	8,000	1.652	6.813	16.916	25.548		
	8,500	1.652	7.147	16.916	26.967		
	9.0 to 20.0	1.652	7.147	16.916	27.499		
4,000	4,500	583	2.394	5.976	8.977		
	5,000	825	3.385	8.451	12.695		
	5,500	1.010	4.146	10.351	15.548		
	6,000	1.167	4.787	11.952	17.953		
	6,500	1.304	5.353	13.363	20.072		
	7,000	1.429	5.863	14.638	21.988		
	7,500	1.543	6.333	15.811	23.750		
	8,000	1.650	6.771	16.903	25.389		
	8,500	1.750	7.181	17.928	26.930		
	9,000	1.837	7.570	18.808	28.386		
	9,500	1.837	7.946	18.808	29.806		
	10.0 to 20.0	1.837	7.946	18.808	30.574		



# TA957 PART NUMBERING FOR

FIXED			MODEL	CLASS/FLANGES	SIZE	MATERIALS	Continue
1	2	3	4	5	6	7	...
9	5	7					...

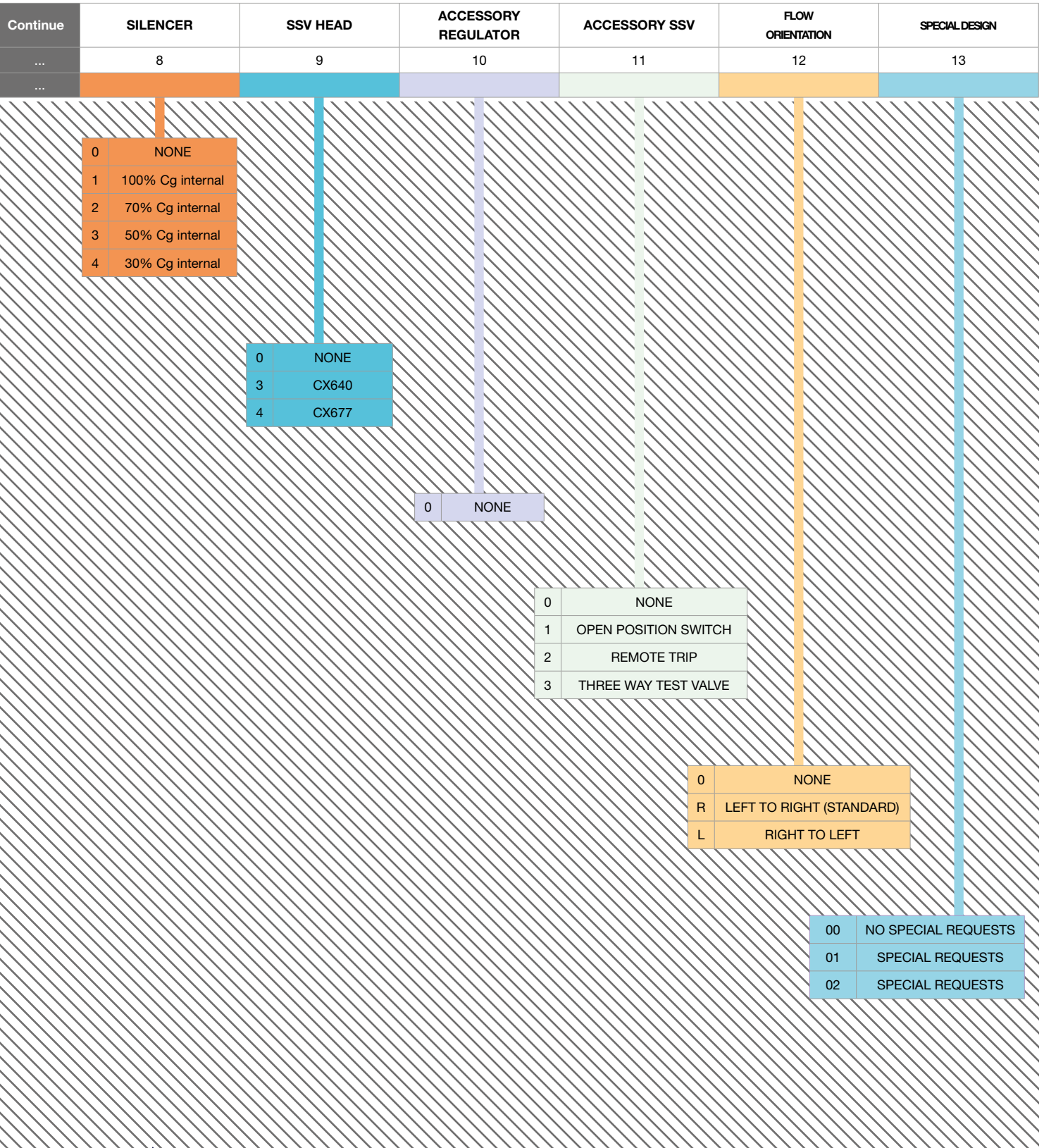
L	TA957LP
M	TA957MP
H	TA957HP
A	TA957LP+SSV
B	TA957MP+SSV
C	TA957HP+SSV
N	TA957LLP
O	TA957LLP+SSV
1	TA957LP (MONITOR)
2	TA957MP (MONITOR)
3	TA957HP (MONITOR)
4	TA957LP+SSV (MONITOR)
5	TA957MP+SSV (MONITOR)
6	TA957HP+SSV (MONITOR)
7	TA957LLP (MONITOR)
8	TA957LLP+SSV (MONITOR)

0	NONE
1	ANSI 150 RF
7	PN 16
D	ANSI 150 RTJ

INLET x OUTLET	
1	25x25
3	50x50
4	80x80
5	100x100
6	150x150
7	200x200

1	Standard Temperature Range -20/+60°C
2	Low Temperature Steel Survival -40/+60°C
3	Low Temperature Steel Operating -40/+60°C
4	Standard Temperature Range -20/+60°C - High Aromatics
5	Low Temperature Steel Survival -40/+60°C - High Aromatics

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