

GIPS FC

Slam Shut-off Valve

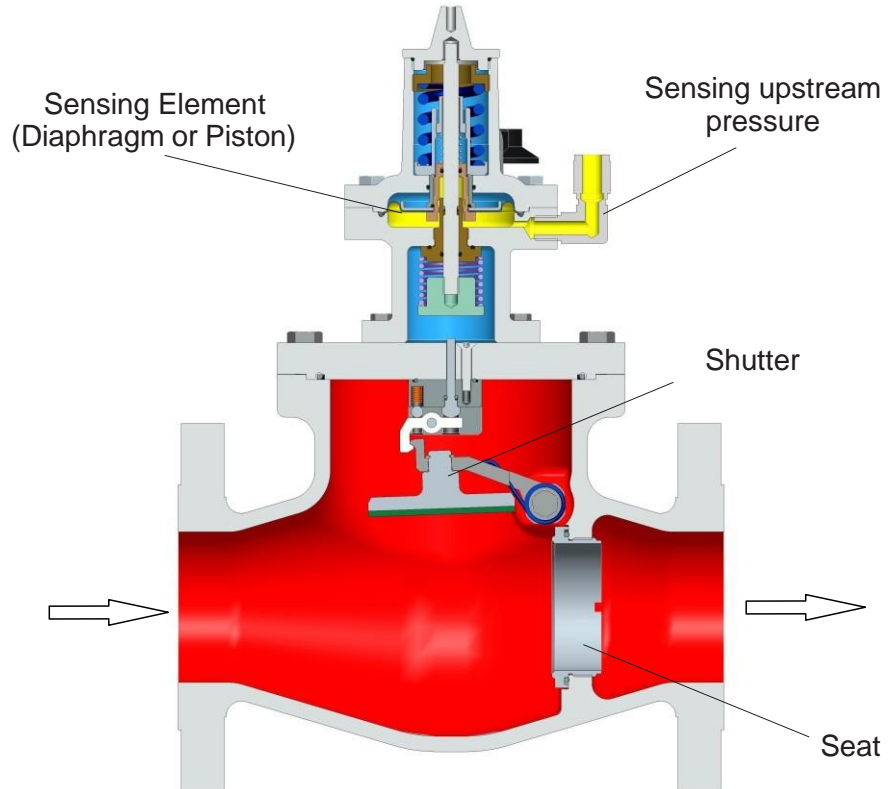


GASCAT

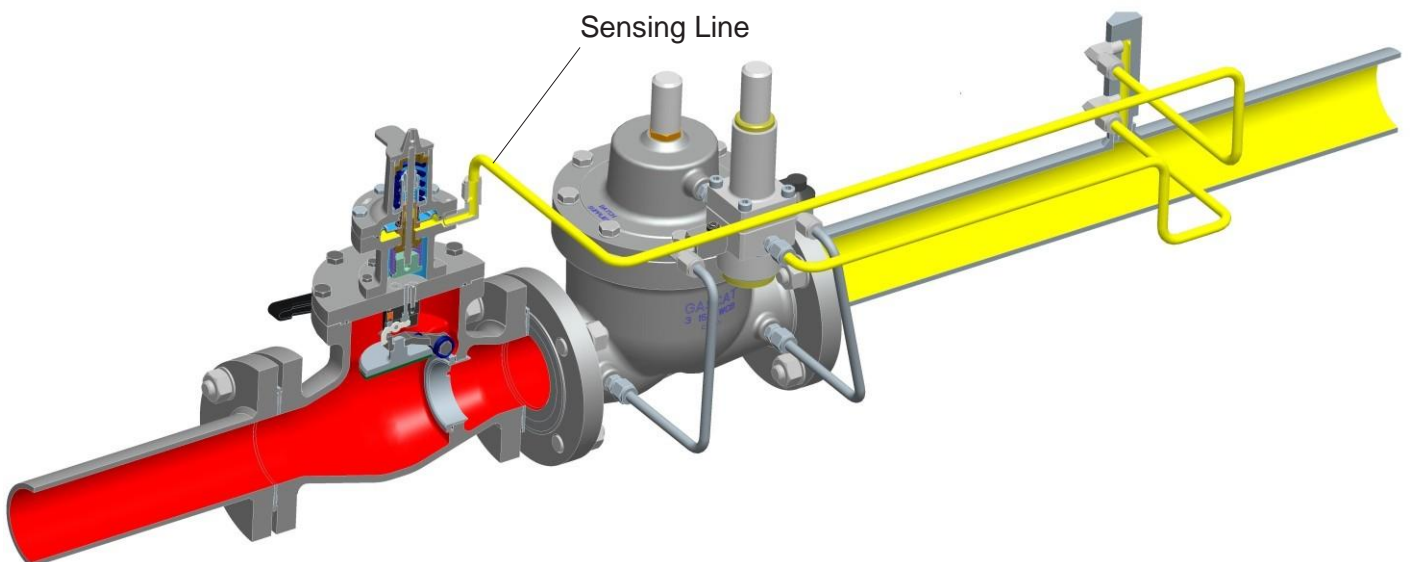
INTRODUCTION

The slam shut-off valve model GIPS-FC is designed to quickly shut-off the gas flow when the monitored pressure exceeds the pre-set values, to protect the pipe line, the gas equipments and all downstream instruments from an unexpected over pressure or also in case of gas source interruption or even in case of rupture of it's own tubing's.

- Upstram Pressure
- Downstream Pressure
- Atmosphere Pressure

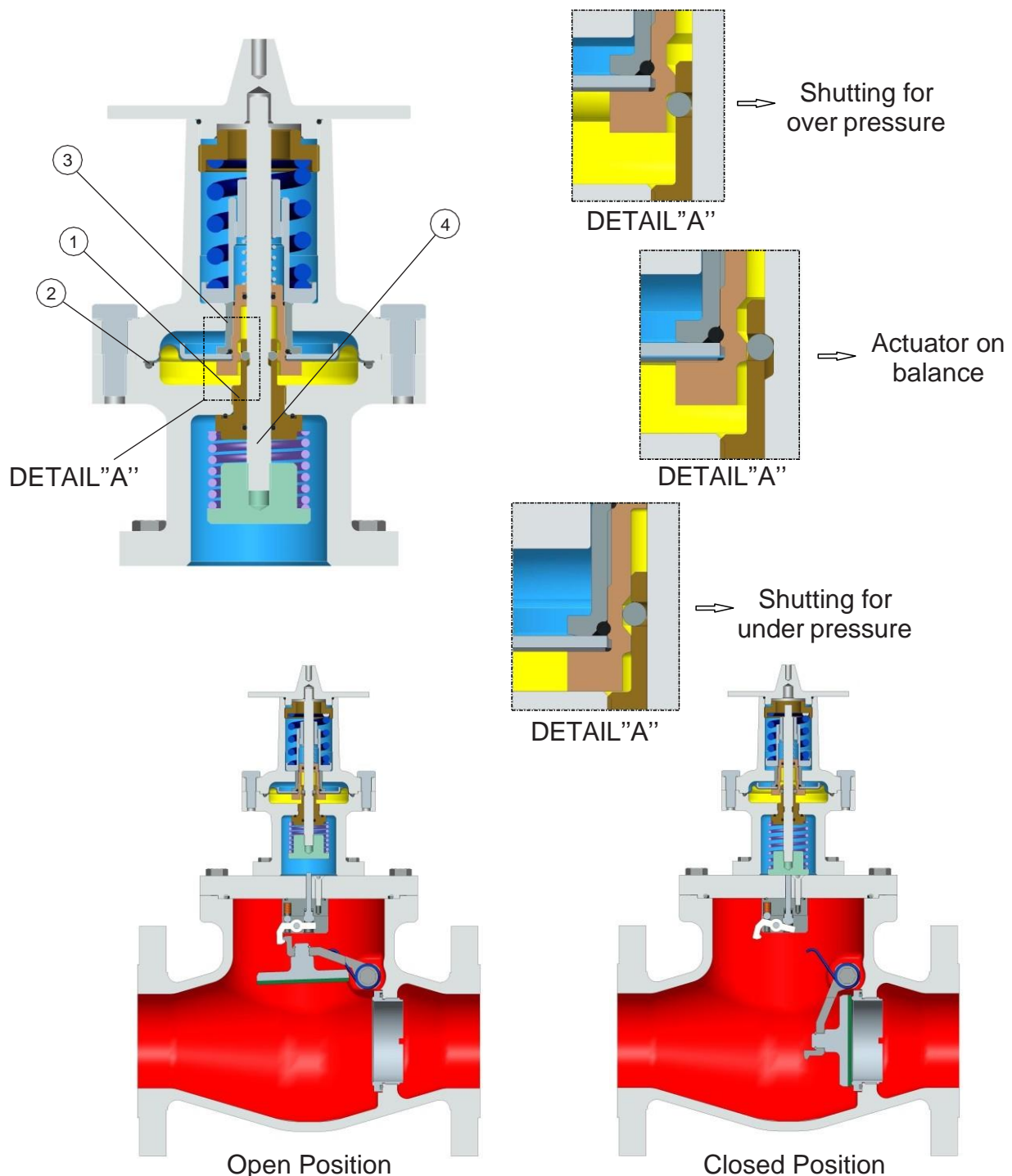


It also has a fail-close function, that is, gas flow shut also occurs in the event of a rupture of the valve sensor element (diaphragm), interruption of gas supply, sharp decrease or interruption of the sensing line. With this function (set only at the factory) the stop valve meets the requirements of the EN 14382 standard. The GIPS-FC block valves are fast-acting (< 1s), completely watertight, have manual reset, low pressure loss, wide adjustment range and are easy to install and operate, and can be mounted in any position. Due to their design, the set pressure of GIPS-FC valves is not affected by inlet pressure variation (EN 14382 class A).



WORK PRINCIPLE


The GIPS-FC series valves have an actuator coupled by a Spheres Collar (1) which is connected to the Sensor Element (2) and monitors the downstream pressure. In cases of increase in operating pressure beyond the defined limit, rupture of the sensor element (diaphragm), rupture of the sensor line or operating pressure below the defined limit, the external bushing of the ball coupling (3) will be displaced and allow movement of the actuator shaft (4) and trigger a hammer blow, which will trigger the closing spring on the shutter locking system. In this way the blocking system is released, thus stopping the flow of gas immediately. After the working pressure is restored, the pressures downstream and upstream of the valve are equalized through an equalizing valve (normally closed), and after that, the actuator must be reset and then the locking system of the valve must be reset. valve.

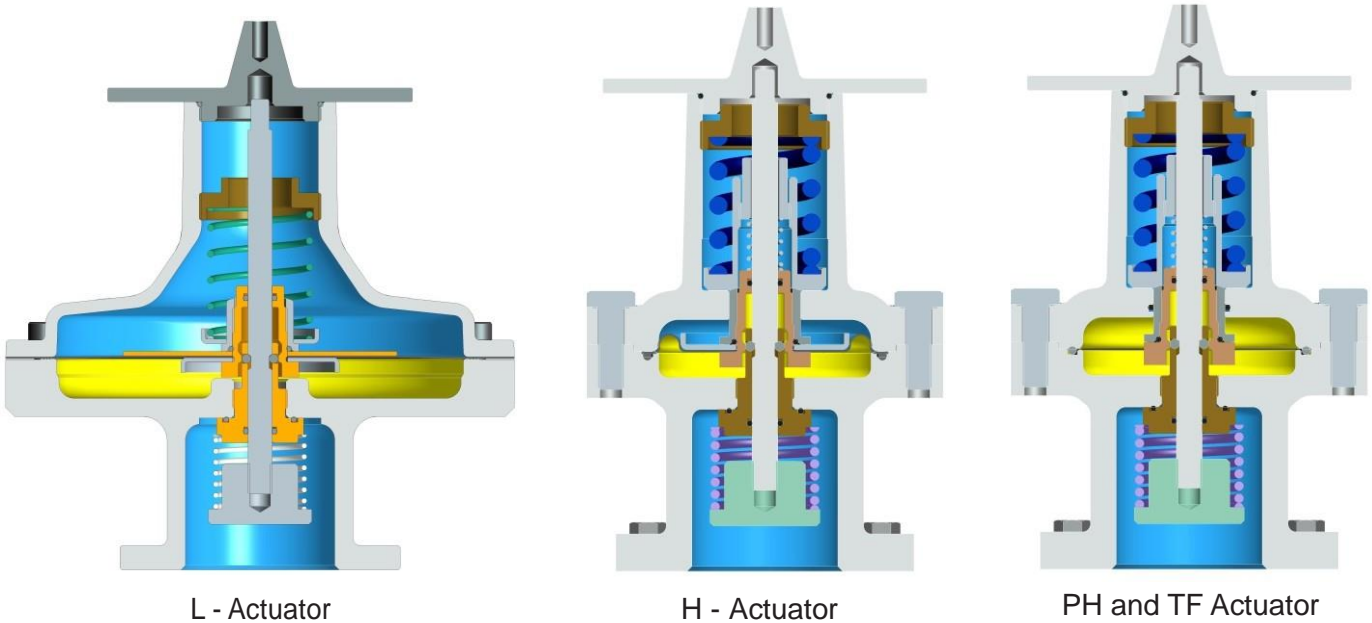


Actuator L, H, PH e TF

For better accuracy and repeatability, the GIPS model block valve contains four different types of actuators, the L model, the H model, the PH model and the TF model.

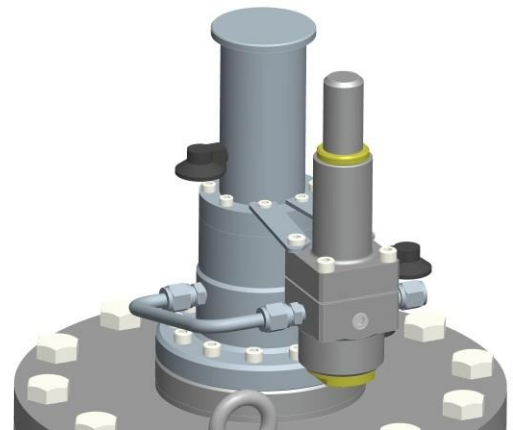
 Downstream Pressure (sensing)

 Atmosphere Pressure



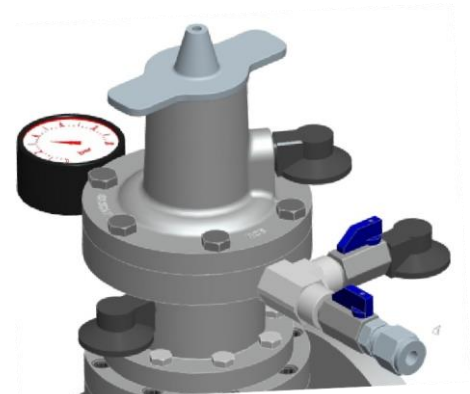
GIPS FC - Pilot Operated Model (optional)

If required, the GIPS FC model could be supplied in Pilot Operated model with the same accuracy and easy operation.



GDPS Model - Actuator by Under Pressure (optional)

The GDPS model slam shut-off valve has the same mechanism, precision and technical characteristics of the GIPS-FC model slam shut-off valve, but with exclusive pressure drop operation.

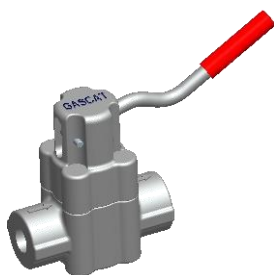


Pressure Equalizer Valve (By-pass)

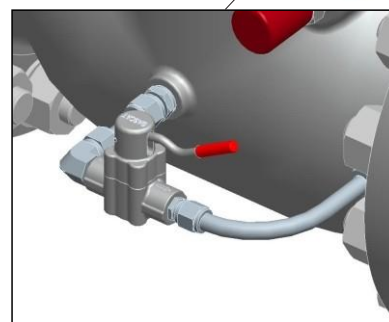
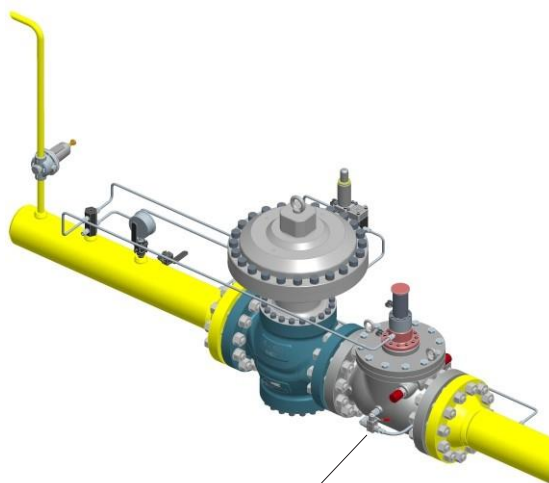
The Pressure Equalizer Valve (By-pass) normally closed, it is applied on the GIPS slam shut-off valve to equalize the pressure between upstream and downstream of the shutter when the valve is in closed position, making resetting the tripping system possible.



Button Model



Lever Model



Travel Indicator

It is also possible to use it in a remote sensing system if combined with a position sensor type limit switch.



TECHNICAL CHARACTERISTICS

COMPONENT	MATERIAL
Body	Carbon Steel ASTM 216 GR.WCB Stainless Steel ASTM A182 F316
Shutter	Polyurethane (STD) FKM / EPDM (Optional)
Seat	Stainless Steel AISI 316
Internals	Stainless Steel AISI 316
Diaphragm	Buna N (STD) FKM / EPDM (Optional)
Elastomers	Buna N (STD) FKM / EPDM (Optional)
Fittings	Stainless Steel AISI 316 (10mm O.D.)

* For the others options, the GASCAT should be consulted.

FEATURES	
Maximum Inlet Pressure	150 bar / 15 MPa
Set Pressure Range	25 mbar - 95 bar / 2.5 kPa - 9.5 MPa
Temperature Range	-20°C ~ +60°C
AG - Accuracy Class	Up to ± 1%
Available Accessories	Limit Switch Sense and Remote Shutting
Nominal Dimensions	DN 25 / 1"; DN 50 / 2"; DN 80 / 3"; DN 100 / 4"; DN 150 / 6"; DN 200 / 8"; DN 250 / 10"; DN 300 / 12"
Connections	Thread NPT-F ANSI B2.1 (only to DN1") Class 150, 300, 600 e 900 RF/RTJ according to ASME B16.5 or PN 16/40/100 according to EN1092-1
Construction and Tests Standard	EN 14382

PRESSURE LOSS SIZING

FLOW COEFFICIENT	
ND	K
1"	451
2"	3050
3"	9640
4"	18450
6"	45130
8"	71800
10"	103000
12"	137000

$$\Delta p = \left(\frac{Q}{K} \right)^2 \times \frac{1}{P_2}$$

Where:

$\Delta p = P1 - P2$ [bar];

$Q =$ Flow in [Nm^3/h];

$P1 =$ Inlet Pressure [bar absolute];

$P2 =$ Outlet Pressure [bar absolute];

$K =$ Pressure loss coefficient

TECHNICAL CHARACTERISTICS

SPRING RANGE – ND 1" - 4"			
SET POINT RANGE		SPRING COLOR	ACTUATOR
25 - 50 mbar	2,5 - 5 kPa	GREEN	L
45 - 160 mbar	4,5 - 16 kPa	BLACK	
150 - 260 mbar	15 - 26 kPa	WHITE	
200 - 600 mbar	20 - 60 kPa	GRAY	H
0.5 - 1.3 bar	50 - 103 kPa	PURPLE	
1 - 5 bar	100 - 500 kPa	RED	
4 - 11 bar	0,4 - 1,1 MPa	YELLOW	
10 - 16 bar	1 - 1,6 MPa	BROWN	PH
14 - 38 bar	1,4 - 3,8 MPa	ZINCATED	
28 - 60 bar	2,8 - 6 MPa	WHITE	
55 - 70 bar	2,8 - 6 MPa	YELLOW	TF
55 - 75 bar	2,8 - 9,5 MPa	YELLOW	

SPRING RANGE: ND 6" - 12"			
SET POINT RANGE		SPRING COLOR	ACTUATOR
25 - 50 mbar	2.5 - 5 kPa	GREEN	L
45 - 160 mbar	4.5 - 16 kPa	BLACK	
150 - 260 mbar	15 - 26 kPa	WHITE	
200 - 600 mbar	20 - 60 kPa	GRAY	H
0.5 - 1.3 bar	50 - 103 kPa	PURPLE	
1 - 7,7 bar	100 - 770 kPa	GRAY	PH
5 - 14 bar	0.5 - 1.4 MPa	RED	
12 - 40 bar	1.2 - 4 MPa	WHITE	
30 - 45 bar	3 - 4.5 MPa	BLACK	
40 - 60 bar	4 - 6 MPa	BLUE	
55 - 70 bar	5.5 - 7 MPa	YELLOW	
60 - 95 bar	6 - 8.5 MPa	BLUE	TF

Notes:

1 - Actuator for GIPS-L is not fail close type.

2 - The Fail Close device for models GIPS-H and GIPS-PH are adjusted only in Gascat Plant.

3 - For special actuator versions that are not Fail Close type the DVGW approval is not valid and are not qualified in Class A of Standard DIN EN 14382.

4 - The following versions are not approved by DVGW: GIPS-L, GDPS and GIPS (H or PH) which actuator does not have Fail Close (FC) device.

TECHNICAL CHARACTERISTICS

ND	DIMENSIONS (mm)							
	1" 25mm	2" 50mm	3" 80mm	4" 100mm	6" 150mm	8" 200mm	10" 250mm	12" 300mm
A - ANSI 150/PN16/NPT-F	163	190	283	304	470	595	673	788
A - ANSI 300/PN40	163	190	283	304	470	619	708	826
A - ANSI 600/PN100	182	211	283	317	505	660	752	870
A - ANSI 900	235	263	326	466	570	712	814	922
B	266	271	313	337	509	578	600	650
C	110	91	124	175	200	250	298	-
WEIGHT (Kg)								
ANSI 150/PN16/NPT-F	9	13	27	34,5	107	157	201	568
ANSI 300/PN40	10	14,5	30	41,5	125	184	254	660
ANSI 600/PN100	10,5	16,5	33	53,5	169	248	400	700
ANSI 900	12	18	38	62	180	265	460	790

