

# SSX 176

Slam shut valves



**TECHNICAL BROCHURE**

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**[www.f Fiorentini.com](http://www.f Fiorentini.com)**

# Who we are

We are a global organization specialized in designing and manufacturing technologically advanced solutions for natural gas treatment, transmission and distribution systems.

We are the ideal partner for operators in the Oil & Gas sector, with a business offer that goes across the whole natural gas chain.

We are in constant evolution to meet our customers' highest expectations in terms of quality and reliability.

Our aim is to be a step ahead of the competition, with customized technologies and an after-sale service program undertaken with the highest grade of professionalism.



## Pietro Fiorentini advantages



Localised technical support

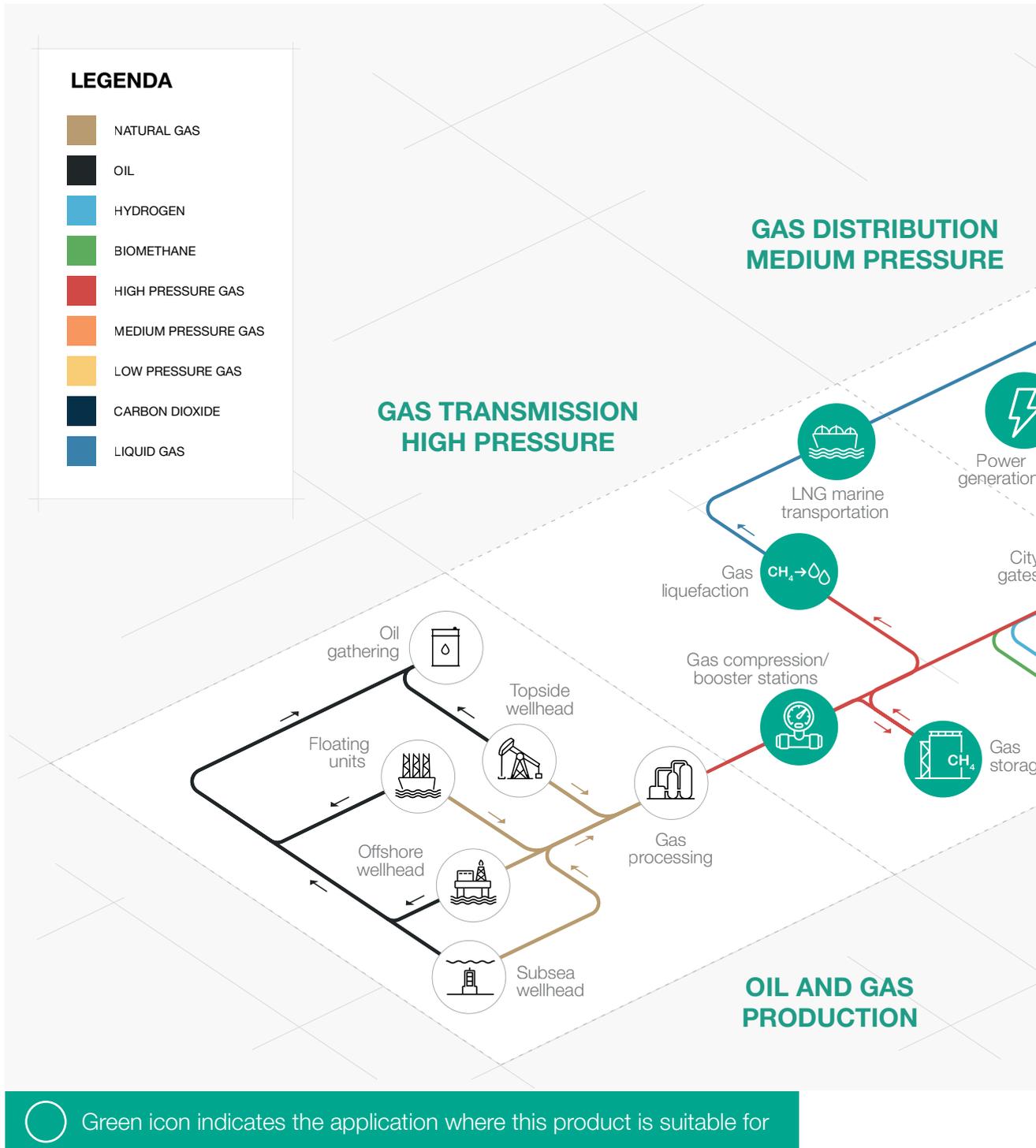


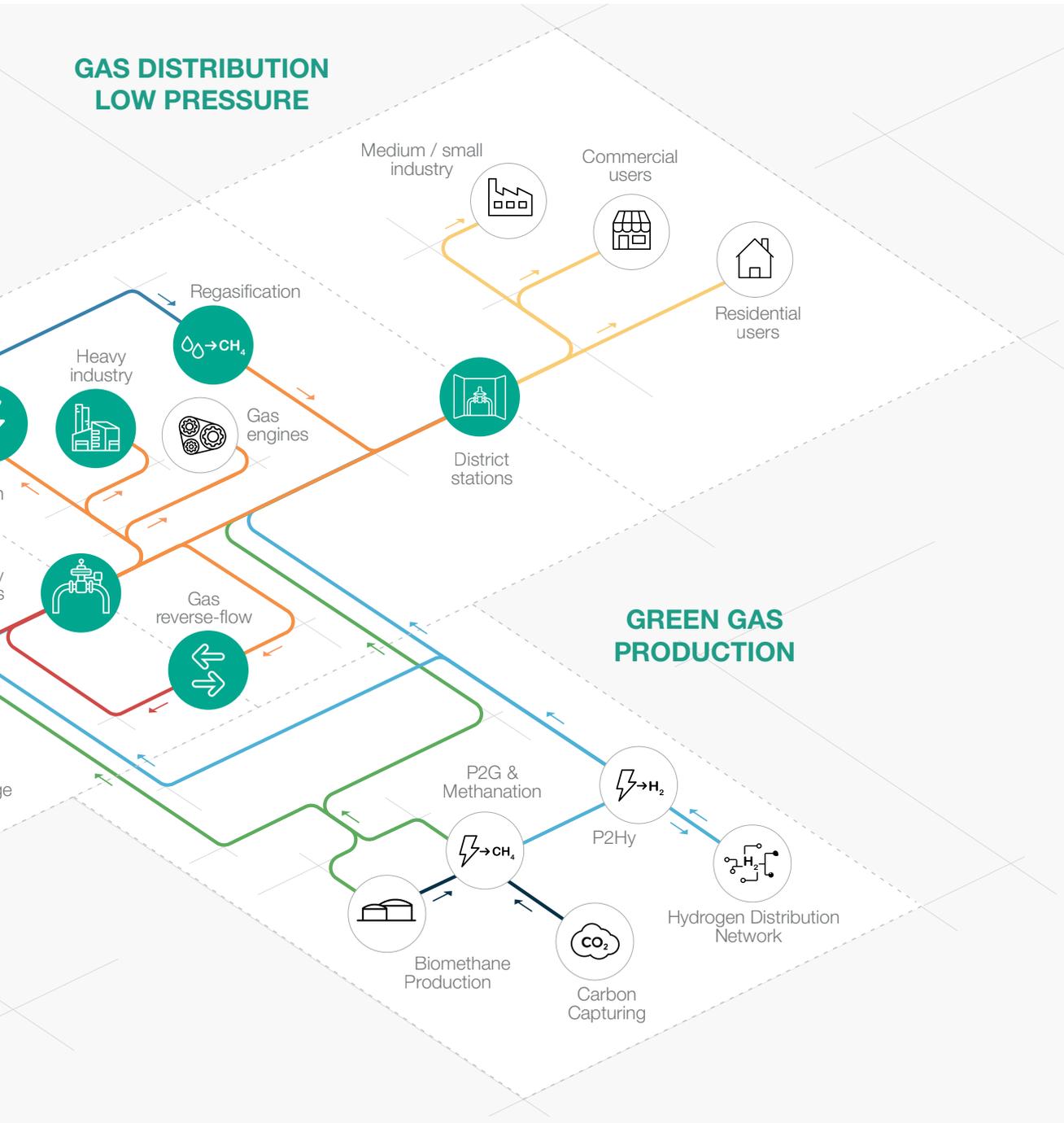
Experience since 1940



We operate in over 100 countries

# Area of Application





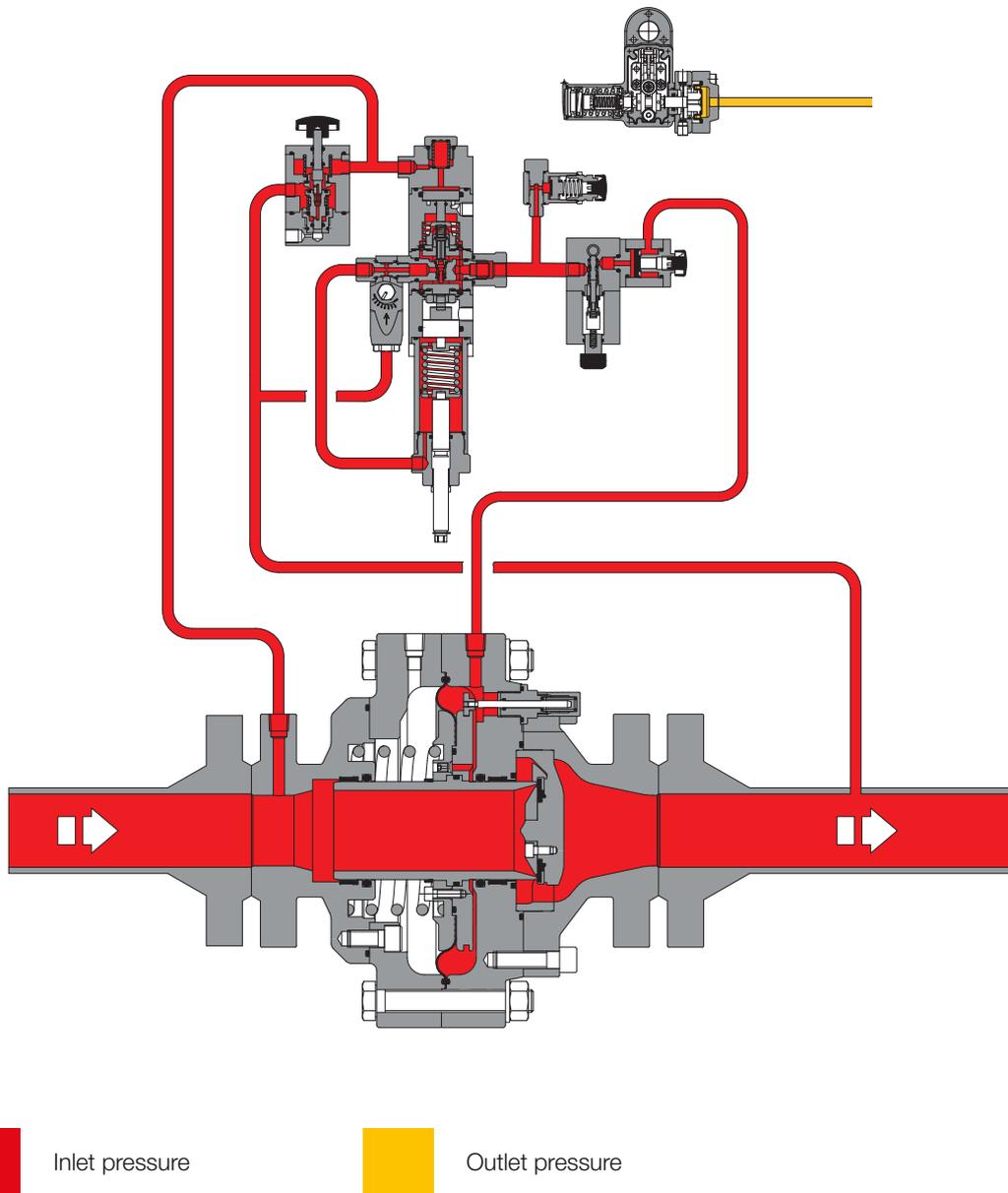
**Figure 1** Area of Application Map



# Introduction

**SSX 176** is a safety device, also called slam shut valve, suitable to quickly interrupt the gas flow when the pressure reaches a calibration set value.

This device is mainly used in high-pressure transmission systems and in medium pressure gas distribution networks.



**Figure 2** SSX 176

# Features and Calibration ranges

A key feature of a slam shut valves is to be **extremely fast in response time**, ensuring the tripping within 1 second. Set point adjustment of the slam shut is operated via a pressostatic device which is sensing the downstream pressure.

The tripping of the slam-shut device, besides occurring **automatically** when the predetermined set-point is exceeded.

It can also be enabled locally, by pressing the suitable button available on the pressure switch, or remotely, as a result of the monitoring of the system or network on which the slam-shut device is installed.

As a result of the tripping of the slam-shut valve, the subsequent restoration of the normal operating condition, also called **RESET** operation, is carried out in a **purely manual manner**, after having verified and solved the causes that led to such a tripping.

This slam shut valve is suitable to be used with previously filtered, non corrosive gases, in natural gas transmission, power plants fuel gas skids and distribution networks as well as high load industrial application.



Figure 3 SSX 176

## SSX 176 competitive advantages



Over Pressure Shut-Off



Under Pressure Shut-Off



Internal by-pass



Push button for tripping test



Compact dimensions



Easy maintenance



Remote tripping option



Limit switch option



Biomethane compatible and available with specific versions for full Hydrogen or blending

## Features

Features	Values
Design pressure*	up to 10.2 MPa up to 102 barg
Ambient temperature*	from -20 °C to +60 °C from -4 °F to +140 °F
Inlet gas temperature range*	from -20 °C to +60 °C from -4 °F to +140 °F
Available Accessories	Limit switch, remote tripping
Accuracy class AG	up to 2.5 for OPSO (depending on working conditions) up to 2.5 for UPSO (depending on working conditions)
Over pressure setting range (OPSO)	from 0.2 MPa to 9 MPa from 2 barg to 90 barg
Under pressure setting range (UPSO)	from 0.005 MPa to 9 MPa from 0.05 barg to 90 barg
Nominal dimensions DN	DN 25 / 1"; DN 50 / 2"; DN 80 / 3"; DN 100 / 4"; DN 150 / 6";
Connections*	ANSI 150, 300 and 600 according to ASME B16.5 and PN 16 according to EN 1092
End to end dimensions	EN 14382

**(\*) REMARK: Different functional features and/or extended temperature ranges available on request. Stated temperature ranges are the maximum for which the equipment's full performance, including accuracy, are fulfilled. Standard product may have a narrower range.**

**Table 1** Features

# Materials and Approvals

Part	Material
Body	Steel ASTM A350 LF2
Plug	ASTM A 350 LF2 Nickel coated on sealing surface
Seat	Polyurethane
Diaphragm	Rubberized canvas (performed by hot-pressing process)
Sealing ring	Nitrile rubber
Compression fittings	In zinc-plated carbon steel according to DIN 2353; Stainless steel on request

**REMARK:** The materials indicated above refer to the standard models. Different materials can be provided according to specific needs.

**Table 2** Materials

## Construction Standards and Approvals

**SSX 176** slam shut valve is designed according to the European standard EN 14382.

The product is certified according to European Directive 2014/68/EU (PED).

Leakage class: bubble tight, better than VIII according to ANSI/FCI 70-3.



EN 14382



PED-CE



# Pressure switch

## types and ranges

Pressure switch types and ranges					
SSV Type	Model	Operation	Range Wh		Spring Table web link
			MPa	barg	
SSX/176	102M	OPSO	0.02 - 0.55	0.2 - 5.5	<a href="#">TT 1331</a>
		UPSO	0.005 - 0.28	0.05 - 2.8	
SSX/176	102MH	OPSO	0.02 - 0.55	0.2 - 5.5	<a href="#">TT 1331</a>
		UPSO	0.28 - 0.55	2.8 - 5.5	
SSX/176	103M	OPSO	0.2 - 2.2	2 - 22	<a href="#">TT 1331</a>
		UPSO	0.02 - 0.8	0.2 - 8	
SSX/176	103MH	OPSO	0.2 - 2.2	2 - 22	<a href="#">TT 1331</a>
		UPSO	0.8 - 1.9	8 - 19	
SSX/176	104M	OPSO	1.5 - 4.5	15 - 45	<a href="#">TT 1331</a>
		UPSO	0.16 - 1.8	1.6 - 18	
SSX/176	104MH	OPSO	1.5 - 4.5	15 - 45	<a href="#">TT 1331</a>
		UPSO	1.8 - 4.1	18 - 41	
SSX/176	105M	OPSO	3 - 9	30 - 90	<a href="#">TT 1331</a>
		UPSO	0.3 - 4.4	3 - 44	
SSX/176	105MH	OPSO	3 - 9	30 - 90	<a href="#">TT 1331</a>
		UPSO	4.4 - 9	44 - 90	

**Table 3** Settings table

General link to the calibration tables: [PRESS HERE](#) or use the QR code:

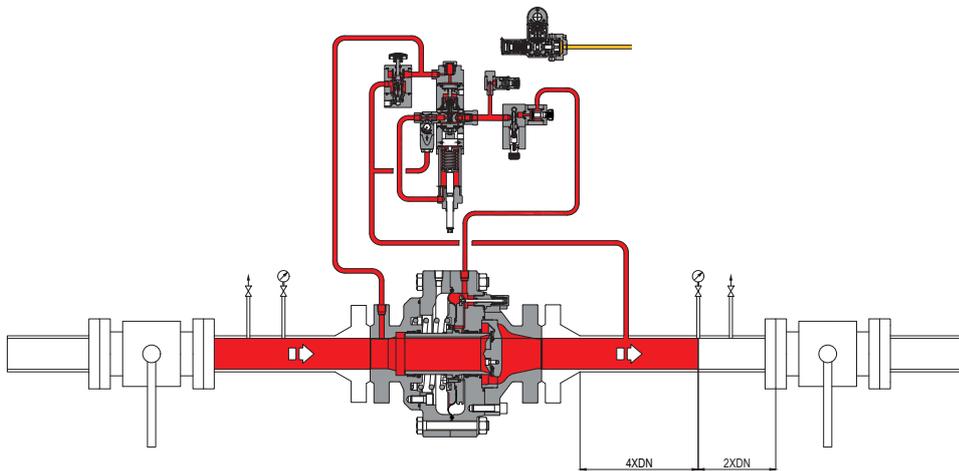


# Accessories

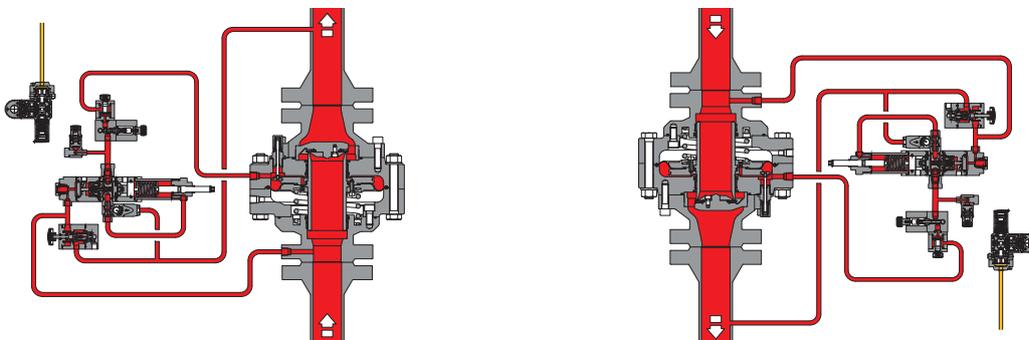
- Limit switches
- Remote tripping

## In-line Installation

The following example is provided as a recommendation to get the best performance from the slam shut valves SSX 176.



**Figure 4** SSX 176 in-line installation



**Figure 5** SSX 176 recommended installations



Inlet pressure



Outlet pressure



# Weights and Dimensions

## SSX 176

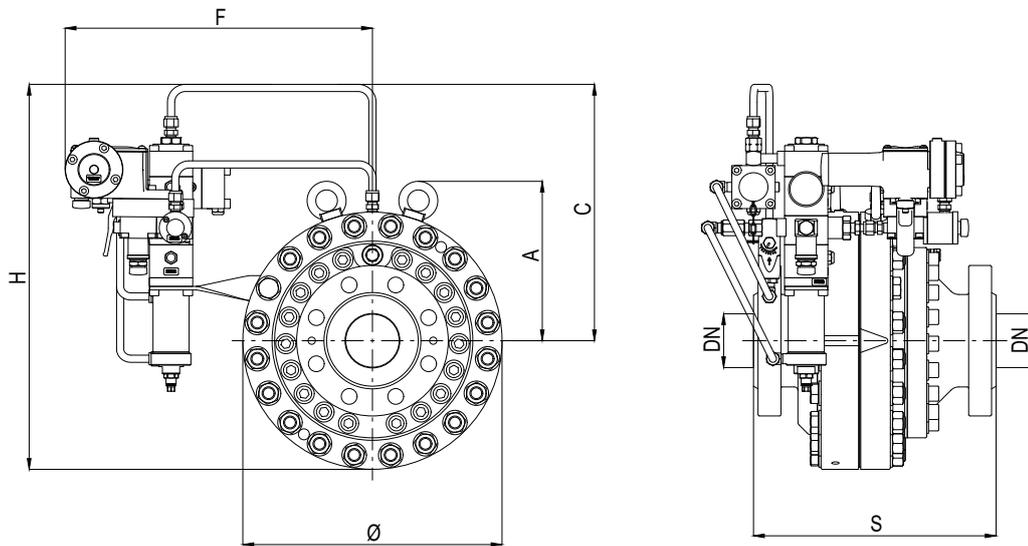


Figure 6 SSX 176 dimensions

Weights and Dimensions (for other connections please contact your closest Pietro Fiorentini representative)										
Size (DN) - [mm]	25		50		80		100		150	
Size (DN) - inches	1"		2"		3"		4"		6"	
	[mm]	inches	[mm]	inches	[mm]	inches	[mm]	inches	[mm]	inches
S - ANSI 300	197	7.7"	167	6.5"	317	12.4"	368	14.4"	473	18.6"
S - ANSI 600	210	8.2"	286	11.2"	336	13.2"	394	15.5"	508	20.0"
Ø	279	10.9"	279	10.9"	359	14.1"	440	17.3"	550	21.6"
A	180	7.0"	180	7.0"	223	8.7"	263	10.3"	318	12.5"
C	346	13.6"	346	13.6"	352	13.8"	369	14.5"	388	15.2"
F	348	13.7"	348	13.7"	389	15.3"	425	16.7"	460	18.1"
H	489	19.2"	489	19.2"	532	20.9"	590	23.2"	653	25.7"
Tubing Connections	Øe 10 x Øi 8 (on request imperial sizing)									
Weight	Kg	lbs	Kg	lbs	Kg	lbs	Kg	lbs	Kg	lbs
S - ANSI 300	63	139	80	176	131	289	222	489	341	752
S - ANSI 600	63	139	82	181	134	295	233	514	373	822

Table 4 Weights and dimensions

# Sizing and Cg

In general, the choice of a slam-shut valve is made of several factors, but primarily by the differential pressure drop generated downstream and the energy generated by the gas flow on the internal mechanism. For this purpose Pietro Fiorentini has developed a specific online tool for slam-shut valve sizing following the calculation guidelines available from EN14382 standard.

For sizing [PRESS HERE](#) or use the QR code:



**Note:** In case you do not have the proper credentials to access, feel free to contact your closest Pietro Fiorentini representative.



# Customer Centricity

Pietro Fiorentini is one of the main Italian international companies with high focus on product and service quality.

The main strategy is to create a stable long-term oriented relationship, putting the customer's needs first. Lean management and thinking and customer centricity are used to improve and maintain the highest level of customer experience.



## Support

One of Pietro Fiorentini's top priorities is to provide support to the client in all phases of project development, during installation, commissioning and operation. Pietro Fiorentini has developed a highly standardized intervention management system, which helps to facilitate the entire process and effectively archive all the interventions carried out, drawing on valuable information to improve the product and service. Many services are available remotely, avoiding long waiting times or expensive interventions.



## Training

Pietro Fiorentini offers training services available for both experienced operators and new users. The training is composed of the theoretical and the practical parts, and is designed, selected and prepared according to the level of use and the customer's need.



## Customer Relation Management (CRM)

The centrality of customer is one of the main missions and vision of Pietro Fiorentini. For this reason, Pietro Fiorentini has enhanced the customer relation management system. This enables to track every opportunity and request from Customer in one single point and make free the information flow.

# Sustainability

Here at Pietro Fiorentini, we believe in a world capable of improvement through technologies and solutions that can shape a more sustainable future. That is why respect for people, society and the environment form the cornerstones of our strategy.

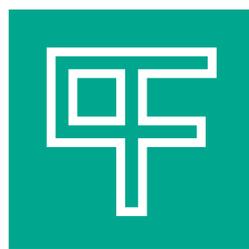


## Our commitment to the world of tomorrow

While in the past we limited ourselves to providing products, systems and services for the oil & gas sector, today we want to broaden our horizons and create technologies and solutions for a digital and sustainable world, with a particular focus on renewable energy projects to help make the most of our planet's resources and create a future in which the younger generations can grow and prosper.

The time has come to put the why we operate before the what and how we do it.





# Pietro Fiorentini

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