

Dilock

Slam shut valve



TECHNICAL BROCHURE

Pietro Fiorentini S.p.A.

Via E.Fermi, 8/10 | 36057 Arcugnano, Italy | +39 0444 968 511
sales@fiorentini.com

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www.f Fiorentini.com

Who we are

We are a global organization that specializes 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 solutions that span the whole natural gas chain.

We are constantly evolving 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 level of professionalism.



Pietro Fiorentini advantages



Localised technical support

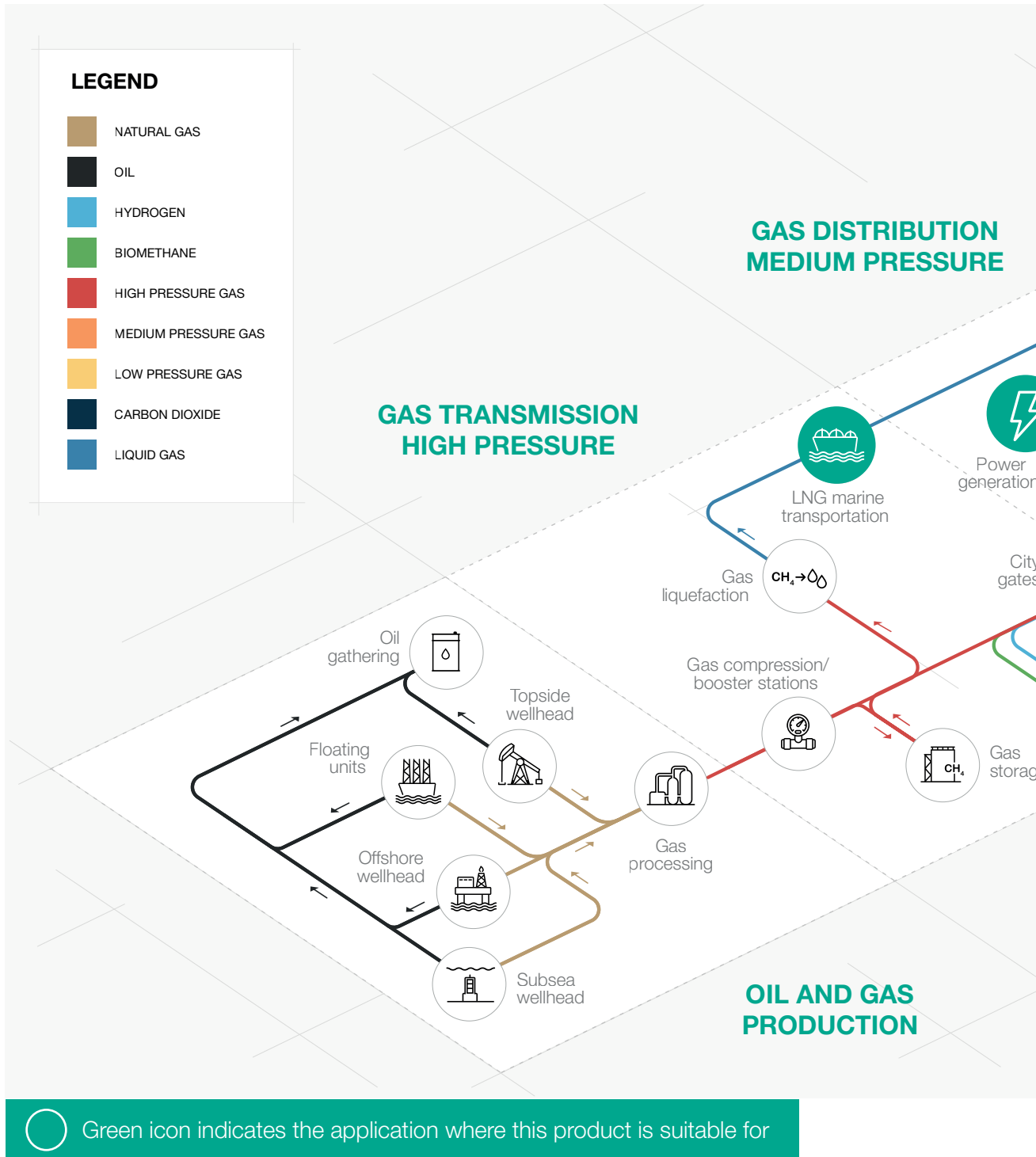


Experience since 1940



Operating in over 100 countries

Area of Application



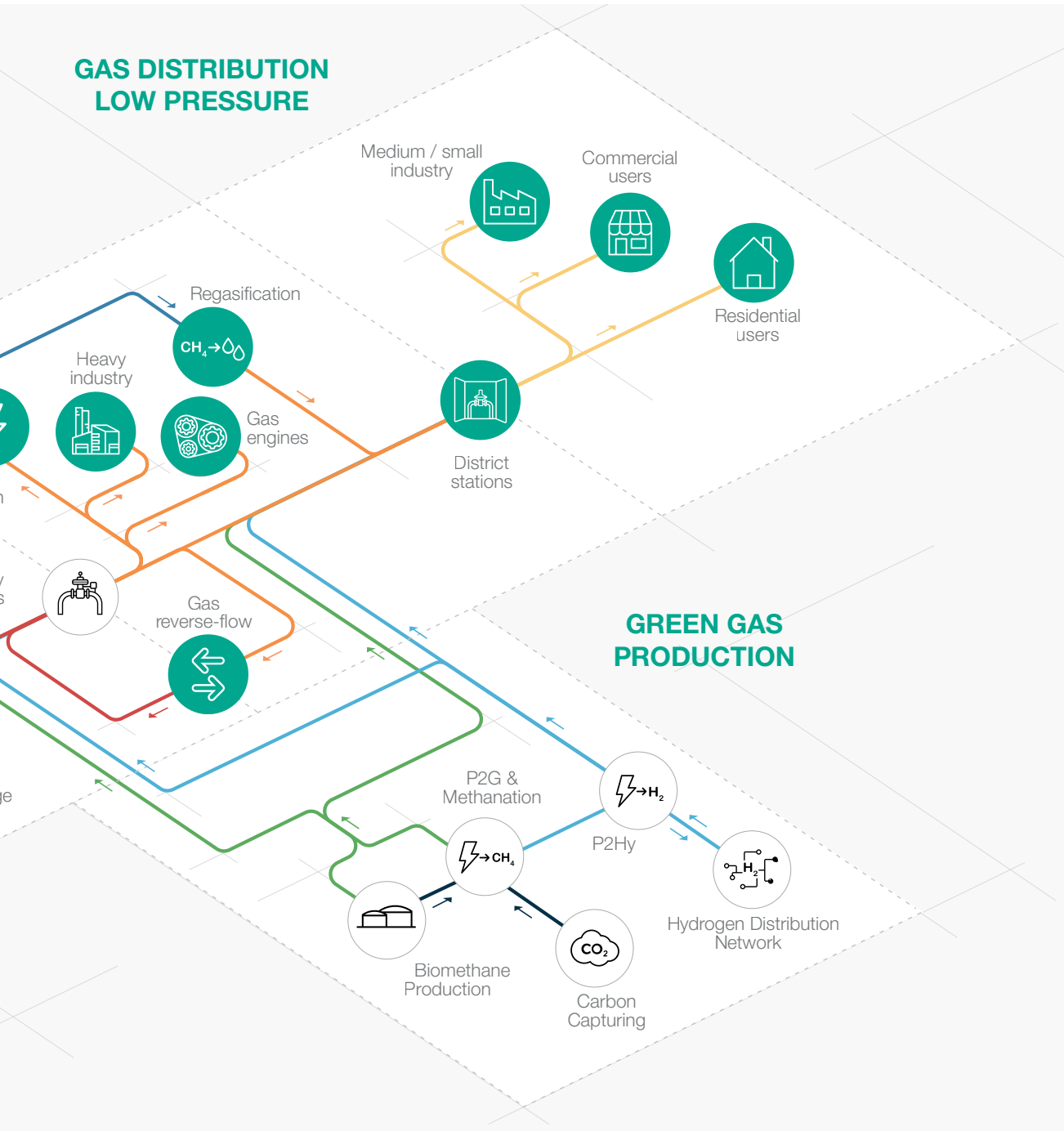
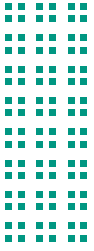


Figure 1 Area of Application Map



Introduction

The **Dilock** 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 medium and low pressure gas distribution networks.

The Dilock is **Hydrogen Ready** for NG-H2 blending.

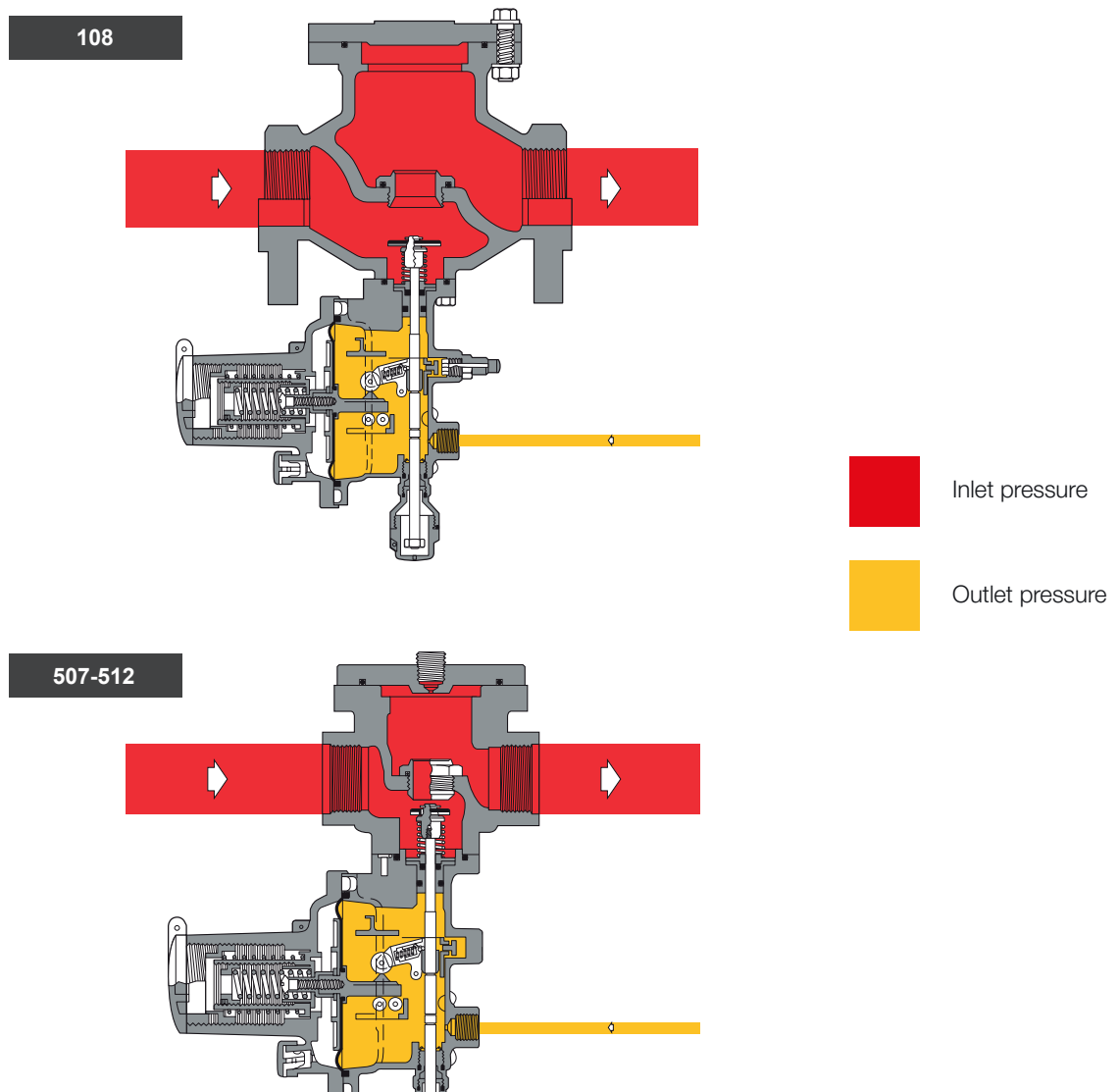


Figure 2 Dilock

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 by pressing the local push button available on the pressure switch for Dilock 108 (available on request for Dilock 507-512), or remotely.

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 distribution networks as well as high load industrial application.

It is a **truly top entry design** which allows an **easy maintenance** of parts directly in the field **without removing the body from the pipework**.

The modular design of the Dilock slam shut valve series allows its retrofitting on existing pressure regulators in the field without piping modifications.



Dilock competitive advantages

 OPSO Overpressure Shut-Off	 Compact dimensions
 UPSO Underpressure Shut-Off	 Easy maintenance
 Internal by-pass	 Remote tripping option
 Push button for tripping test (if available)	 Limit switch option
 Top Entry	 Biomethane compatible and 20% Hydrogen blending compatible. Higher blending available on request

Features

Features	Values
Design pressure* (PS ¹)	up to 2.0 MPa up to 20 barg
Ambient temperature* (TS ¹)	from -20 °C to +60 °C from -4 °F to +140 °F
Inlet gas temperature*	from -20 °C to +60 °C from -4 °F to +140 °F
Available Accessories	Limit switch, remote tripping
Accuracy class (AG ¹)	up to 5 for OPSO (depending on working conditions) up to 10 for UPSO (depending on working conditions)
Over pressure setting range (OPSO)	from 3 kPa to 0.55 MPa from 30 mbarg to 5.5 barg
Under pressure setting range (UPSO)	from 0.6 kPa to 0.35 MPa from 6 mbarg to 3.5 barg
Nominal size (DN ¹)	<ul style="list-style-type: none"> Dilock 108: DN 25 1"; DN 40 1"1/2; DN 50 2" Dilock 507-512: DN 25x40 1"x1"1/2; DN 25x25 1"x1"
Connections	<ul style="list-style-type: none"> Dilock 108: Class 150 RF according to ASME B16.5; PN16 according to ISO 7005; Threated Rp according to EN10226 or NPT according to ASME B1.20.1 (only for DN 50 2") Dilock 507-512: Threated Rp according to EN10226 or NPT according to ASME B1.20.1
End to end dimensions	EN 14382

(¹) according to EN14382 standard

(*) NOTE: Different functional features and/or extended temperature ranges may be available on request. Stated inlet gas temperature range is the maximum for which the equipment's full performance, including accuracy is guaranteed. Product may have a different pressure or temperature ranges according to the version and/or installed accessories.

Table 1 Features

Materials and Approvals

Part	Material
Body	<ul style="list-style-type: none"> • Model 108: Steel casting ASTM A 216 gr WCB or Cast iron GS - 400 - 18 ISO 1083 • Model 507-512: Cast iron GS400-18 UNI EN 1083 Aluminium EN AC 43300 UNI EN 1706
Stem	AISI 303 stainless steel
Seals	Nitrile rubber

NOTE: 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

The **Dilock** 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 class VI according to ANSI/FCI 70-2 and equivalent to class VIII according to ANSI/FCI 70-3.



EN 14382



PED-CE



Pressure switches

Pressure switch types and ranges					
SSV Model	Type	Operation	Range Wh		Spring Table web link
			KPa	mbar	
LA	BP	OPSO	3 - 18	30 - 180	TT 00214
		UPSO	0.6 - 6	6 - 60	
LA	MP	OPSO	14 - 45	140 - 450	TT 00214
		UPSO	1 - 24	10 - 240	
LA	TR	OPSO	25 - 550	250 - 5500	TT 00214
		UPSO	10 - 350	100 - 3500	

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



Maximum allowable operating pressure

Design pressure (p_g according to EN334)					
Version		Body		Slam shut	
		MPa	barg	MPa	barg
Dilock 108	PN16-25 Steel body	2.00	20	2.00	20
	PN16-25 Cast Iron body	2.00	20	2.00	20
	#150 Steel body	1.89	18.9	2.00	20
	#150 Cast Iron body	1.70	17	2.00	20
	Threaded Cast Iron body	2.00	20	2.00	20
Dilock 507-512	Cast Iron Body 1"x1" and 1" x 1" 1/2	2.00	20	2.00	20
	Aluminum Body 1"x1" and 1" x 1" 1/2	2.00	20	2.00	20

Table 3 Design pressure of body and slam shut

MAOP Maximum Allowable Operating Pressure (p_{umax} according to EN334)				
Version		MPa	barg	
WITH / WITHOUT CE MARKING	Dilock 108	PN16-25 (all body materials) + SSV	2.00	20
		#150 Steel body + SSV	1.89	18.9
		#150 Cast Iron body + SSV	1.70	17
	Dilock 507-512	Cast Iron Body 1"x1" and 1" x 1" 1/2 +SSV	2.00	20
		Aluminum Body 1"x1" and 1" x 1" 1/2 + SSV	2.00	20

Table 4 MAOP Maximum Allowable Operating Pressure with/without CE marking



Weights and Dimensions

Dilock 108

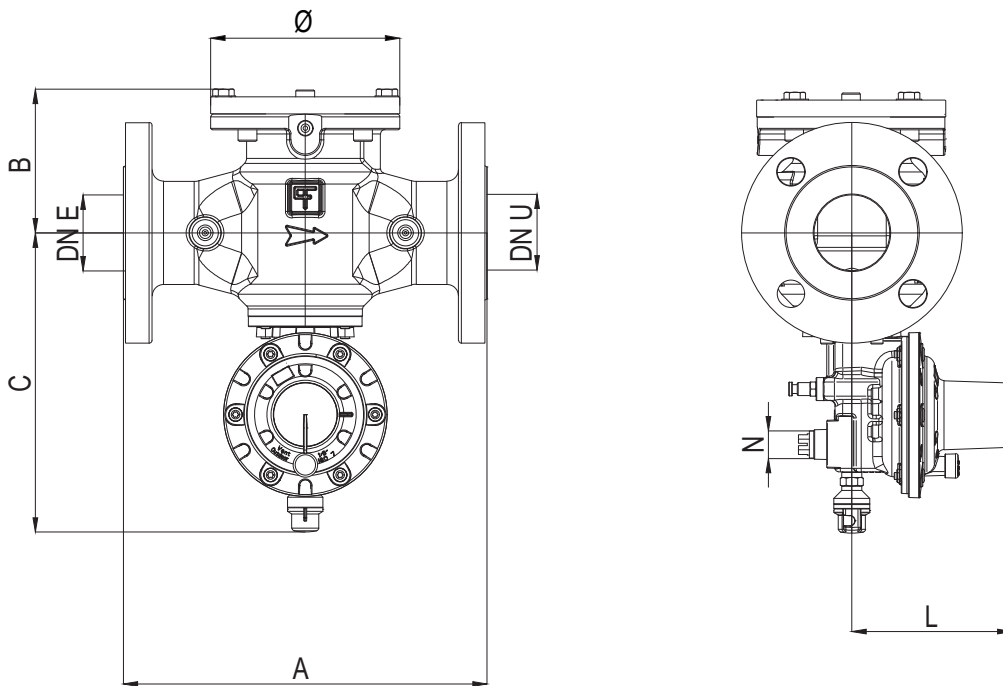


Figure 3 Dilock 108 dimensions

Weights and Dimensions (for other connections please contact your closest Pietro Fiorentini representative)								
Size (DN) - [mm] Size (DN) - inches	25 1"		40 1" 1/2		50 2"		50 2"	
	[mm]	inches	[mm]	inches	[mm]	inches	[mm]	inches
A	183	7.2"	222	8.7"	254	10.0"	152.4	6.0"
B	103	4.1"	103	4.1"	103	4.1"	103	4.1"
C	198	7.8"	210	8.3"	210	8.3"	210	8.3"
N	1/4" Rp		1/4" Rp		1/4" Rp		1/4" Rp	
L	114	4.5"	114	4.5"	114	4.5"	114	4.5"
ø	132	5.20"	132	5.2"	132	5.2"	132	5.2"
DNE	1" 25		1"1/2 40		2" 50		2" G/NPT	
DNU	1" 25		1"1/2 40		2" 50		2" G/NPT	
Weight	Kg	lbs	Kg	lbs	Kg	lbs	Kg	lbs
	9.5	20.9	12	26.5	13.5	29.8	8.5	18.7

Table 5 Weights and dimensions

Weights and Dimensions

Dilock 507-512

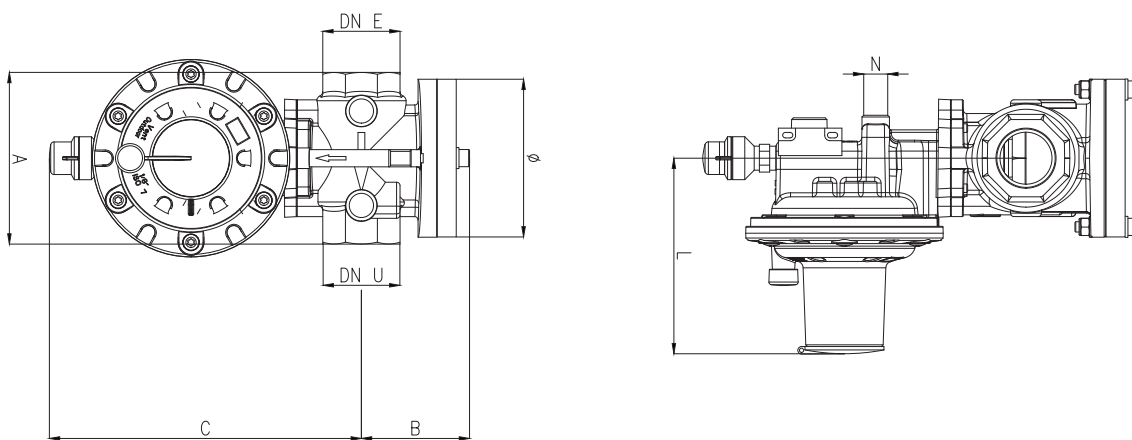


Figure 4 Dilock 507-512 dimensions

Weights and Dimensions (for other connections please contact your closest Pietro Fiorentini representative)				
Model	507		512	
	[mm]	inches	[mm]	inches
A	100	3.9"	129	5.1"
B	62.5	2.5"	62.5	2.5"
C	185	7.3"	191	7.5"
N	1/4" Rp		1/4" Rp	
L	114	4.5"	114	4.5"
ø	90	3.54"	90	3.5"
DNE	1"		1"	
DNU	1"		1" 1/2	
Weight	Kg	lbs	Kg	lbs
	1.73	3.8	2.11	4.7

Table 6 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

Customer centricity is a way of running your business — implementing a perfect customer experience at each stage of the pipeline. Pietro Fiorentini is one of the main Italian international company with high focus on product and service quality.

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



Support

Pietro Fiorentini's top priority is to provide support to the client in all phases of project development, during installation, start up and operation. Pietro Fiorentini has developed a highly standardized Intervention-Management-System (IMS), which helps to facilitate the entire process and putting the customer at the forefront of every decision in our process while manufacturing or developing a product to help improve the product and service. With our IMS business model many services are available remotely, avoiding long waiting times, improving service, and avoiding unnecessary expenses.



Training

Pietro Fiorentini offers training services available for both experienced operators and new customers. The training is offered for all levels of our customers which can include one or all of the following: sizing of equipment, application, installation, operation, maintenance and is prepared according to the level of use and the customer's need.



Customer Relation Management (CRM)

The service and care of our customers are one of the main missions and vision of Pietro Fiorentini. For this reason, Pietro Fiorentini has enhanced the customer relation management system. This enables us to track every opportunity and request from our customers into one single information point and allows us to coordinate information allowing us to give the customer improved service.



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