



ACETYLENE SAFETY EQUIPMENT

TABLE OF CONTENTS

INTRODUCTION	P.04
FLAME ARRESTORS	P.06
- DF3L	P.06
- 50HD	P.07
- 10HD-N	P.08
- DF10	P.09
- DF50	P.10
- 50MD	P.11
- 50MD-DF50	P.12
VALVES	P.13
- HP12 - Line valve	P.13
- C400 - Cylinder valve	P.14
TECHNICAL DATA	P.16
- Pressure drop table	P.16
- How to order	P.17

TECHNOLOGY OVERVIEW

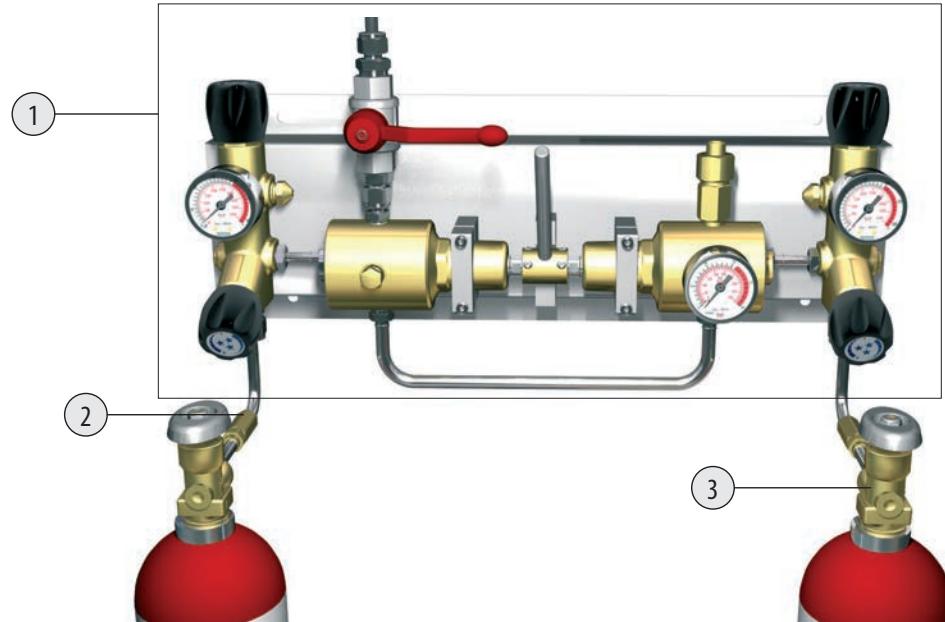
ARPF means: shut-off device flame arrestor.

Produced by our plant SMT located in France.
Only originals SMT parts are to be used for refurbishment

PROPERTIES OF OUR PRODUCTS

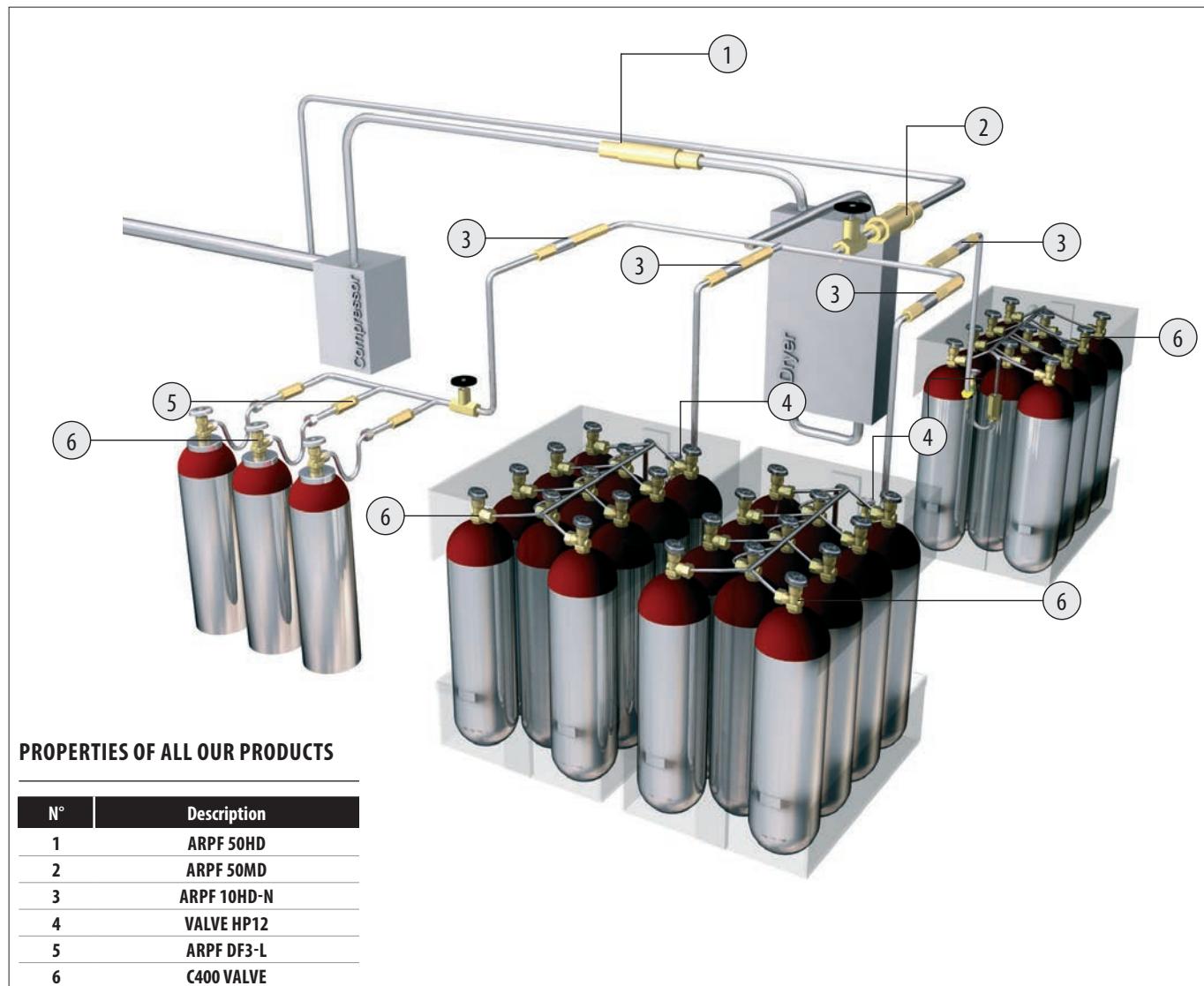
	DF3L	50HD	10HD-N	DF10	DF50	50MD	50MD-DF50
HP High pressure	✓	✓	✓	✓	✓	/	/
LP Low pressure	/	/	/	/	/	✓	✓
NRV Non return valve	✓	/	/	/	/	/	/
FB Flash back arrestors	✓	✓	✓	/	/	✓	✓
TSD Thermal shut-off device	/	✓	/	/	✓	✓	✓
SD Shut-off device	✓	/	✓	✓	/	/	/

AD SUPPLY STATION PLAN



N°	Description
1	ACETYLENE SWITCH OVER BOARD (AD)
2	DF3L
3	C400 VALVE

FILLING PLAN



SERIE DF3L

- Product approved by validation test according to EN ISO 15615
- Product in compliance with the PED 2014/68/EU directive



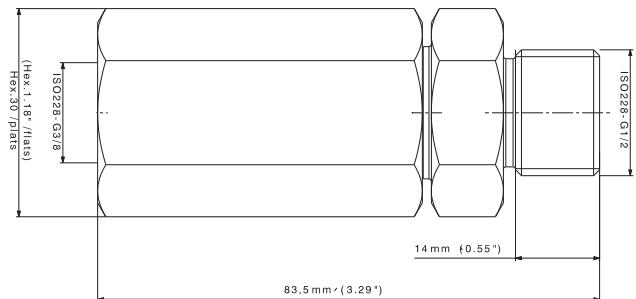
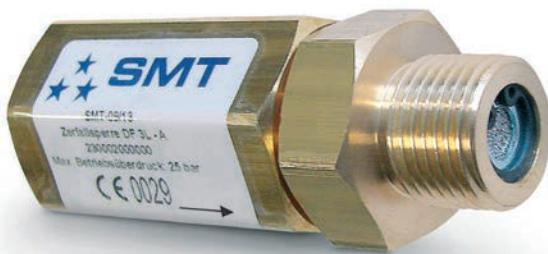
Can be combined with our switch over board CEN AD (acetylene) version for C₂H₂ applications.
If interested, please refer to the switch over board catalog.

APPLICATIONS

- Filling of acetylene cylinder. Located on the removable pipe, between the distribution pipe and the container to be filled, it can be installed horizontally, vertically or at an angle
- Installed on the high pressure side on a C₂H₂ supply equipment as defined in ISO 14114
 - For its non-return function, the DF3L device is located immediately downstream of the cylinder or bundle
 - For its fast-action automatic shut-off function, the DF3L is located upstream of the pressure regulator of the cylinder or supply equipment (See regulators or switch over boards catalog)

KEY FEATURES

- The DF3L is a multi-purpose safety device for high-pressure acetylene pipes. It is equipped with:
 - A fast-action automatic shut-off device, which cuts off the gas supply under the effect of an explosion due to decomposition of the acetylene or a flash back
 - A non-return valve, which prevents gas from flowing in the opposite direction to the normal flow
 - A flame arrestor, which prevents a flame from propagating in either direction



SPECIFICATIONS

Gas used	C ₂ H ₂	Outlet connection	G 1/2 male according to ISO 228	Weight	0.33 kg
Maximum operating pressure	25 bar	Body material	brass	Body diameter (maximum)	30 mm
Inlet connection	G 3/8 female according to ISO 228	Total length	83,5 mm	Pressure Drop: VS Flow	See p.14



SERIE 50HD

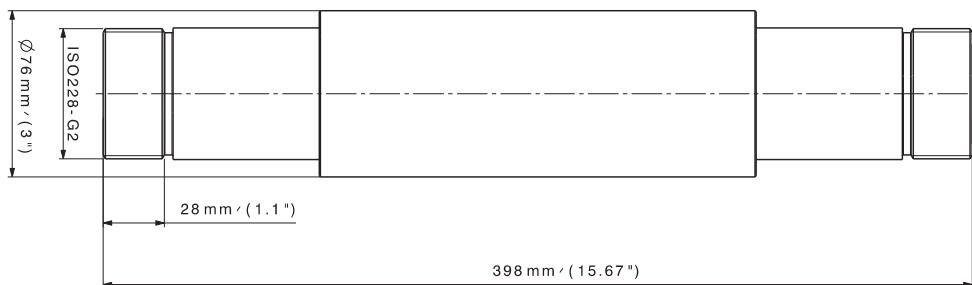
- Product approved by validation test according to EN ISO 15615
- Product in compliance with the PED 2014/68/EU directive

APPLICATIONS

- This device is used on C₂H₂ production or filling plants, on the line between compressor and dryer

KEY FEATURES

- The 50HD is a multi-purpose safety device for high-pressure acetylene pipes. It is equipped with:
 - A temperature sensitive cut off valve, which automatically shuts off the acetylene supply in both directions in the event of a flash back whenever a preset temperature is reached and in the event of acetylene decomposition
 - A flame arrestor, which prevents a flame from propagating in either direction



SPECIFICATIONS

Gas used	C ₂ H ₂	Outlet connection	G2 male in accordance with ISO 228	Weight	7.4 kg
Maximum operating pressure	25 bar	Body material	Dichromate steel	Body diameter (maximum)	77 mm
Inlet connection	G2 male in accordance with ISO 228	Total length	398 mm	Pressure Drop: VS Flow	See p.14



SERIE 10HD-N

- Product approved by validation test according to EN ISO 15615
- Product in compliance with the PED 2014/68/EU directive



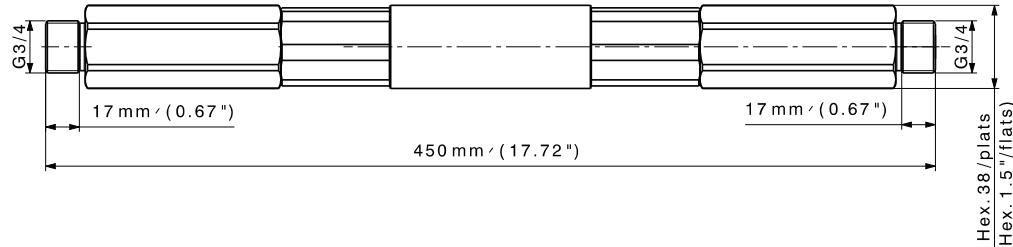
Available in standard version (without extension)
See table p.15

APPLICATIONS

- The 10HD-N is used on production plants of acetylene as follows:
 - Between the compressor and the filler manifold, where there is a risk of explosion
 - Before the filling station distribution unit and each filler clamp
- The device is used on C₂H₂ production or filling plants according to ISO 14114

KEY FEATURES

- The 10HD-N is a multi-purpose safety device for high-pressure acetylene pipes.
- It is equipped with:
 - A fast-action automatic shut-off device, which cuts off the gas supply under the effect of an explosion due to the decomposition of the acetylene or a flash back.
 - A flame arrestor, which prevents a flame from propagating in either direction.



SPECIFICATIONS

HP **FB** **SD**

Gas used	C ₂ H ₂	Outlet connection	M 24 x 1.5 male or G 3/4 male	Weight	2.65 kg
Maximum operating pressure	25 bar	Body material	brass	Body diameter (maximum)	42 mm
Inlet connection	M 24 x 1.5 male or G 3/4 male	Total length	240, 348 mm (M24 version) 370, 450 mm (G 3/4 version)	Pressure Drop: VS Flow	See p. 14

SERIE DF10

- Product approved by validation test according to EN ISO 15615
- Product in compliance with the PED 2014/68/EU directive

APPLICATIONS

- This safety device is designed for use in high-pressure acetylene pipes and bundles, as flow cut off device according to ISO 10961
- The safety device is located before regulators, switch over boards or supply boards AD version

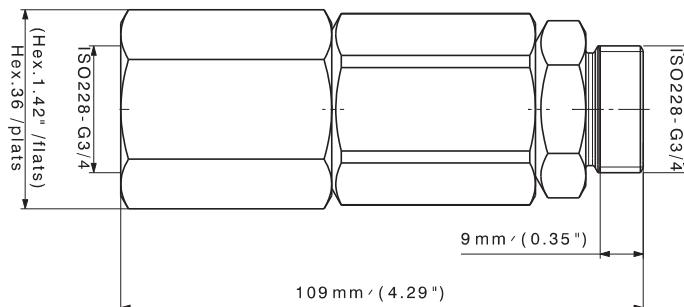
KEY FEATURES

- The DF10 is a fast-action shut off device for high-pressure acetylene pipes
- This device automatically cuts off the acetylene supply in the **event of acetylene decomposition**.



Can be combined with our switch over board CEN AD (acetylene) version for C₂H₂ applications.

If interested, please refer to the switch over board catalog.



SPECIFICATIONS



Gas used	C ₂ H ₂	Outlet connection	G 3/4 male according to ISO 228	Weight	0,7 Kg
Maximum operating pressure	25 bar	Body material	Brass	Body diameter (maximum)	36 mm
Inlet connection	G 3/4 female acc ISO 228	Total length	109 mm	Flow coefficient	kv = 0,74

SERIE DF50

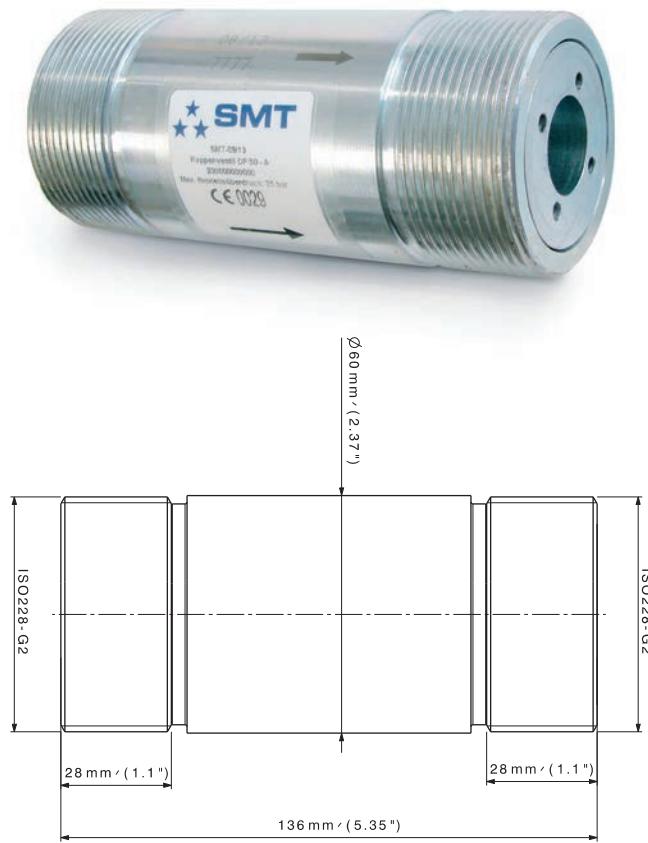
- Product approved by validation test according to EN ISO 15615
- Product in compliance with the PED 2014/68/EU directive

APPLICATIONS

- This safety device is designed for use in high-pressure acetylene pipes as flow cut off device according to ISO 10961
- The safety device is located before regulators, switch over boards or supply boards AD (acetylene) version

KEY FEATURES

- The DF50 is a safety device equipped with only a fuse.
- This device automatically shuts off the acetylene supply in the event of a flash back when a preset temperature was reached.



SPECIFICATIONS

HP TSD

Gas used	C ₂ H ₂	Outlet connection	G2 male according to ISO 228	Weight	1.9 kg
Maximum operating pressure	25 bar	Body material	dichromate steel	Body diameter (maximum)	61 mm
Inlet connection	G2 male according to ISO 228	Total length	136 mm	Pressure Drop: VS Flow	See p.14

SERIE 50MD

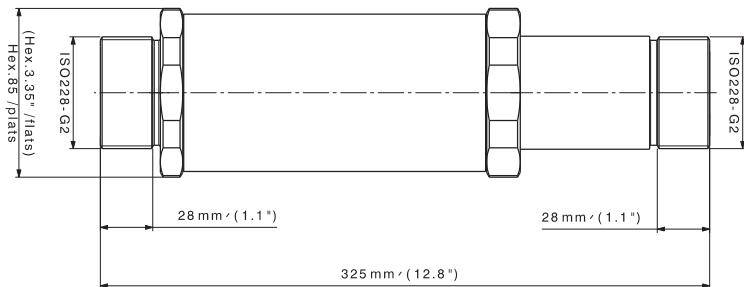
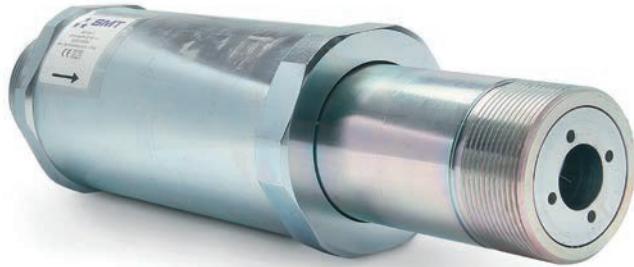
- Product approved by validation test EN 730
- Product in compliance with the PED 2014/68/EU directive.

APPLICATIONS

- This safety device is designed for use in low pressure acetylene pipes
- The safety device can be used in the acetylene filling plants on low pressure pipes on the line going back to gasometer

KEY FEATURES

- The 50MD is a multi-purpose safety device for medium pressure acetylene pipes. It is equipped with:
 - A temperature sensitive cut off valve, which automatically shuts off the acetylene supply in the event of a flash back whenever a preset temperature is reached
 - A flame arrestor, which prevents a flame from propagating in either direction



SPECIFICATIONS



Gas used	C ₂ H ₂	Outlet connection	G2 male in accordance with ISO 228	Weight	6.5 kg
Maximum operating pressure	1.5 bar	Body material	dichromate steel	Body diameter (maximum)	90 mm
Inlet connection	G2 male in accordance with ISO 228	Total length	325 mm	Flow coefficient	kv = 1,64

SERIE 50MD-DF50

- Product in compliance with the PED 2014/68/EU directive.

OPTIONS

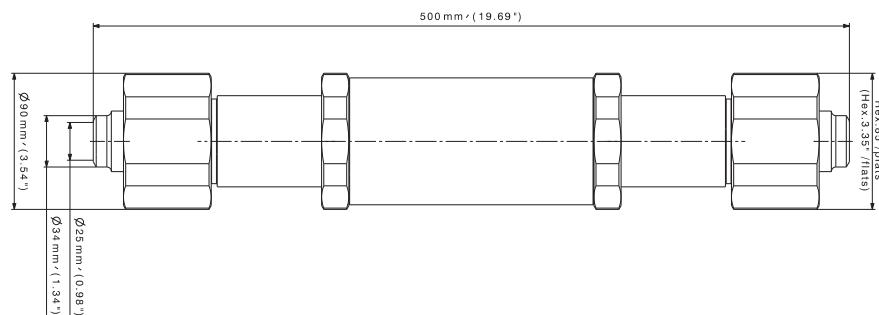
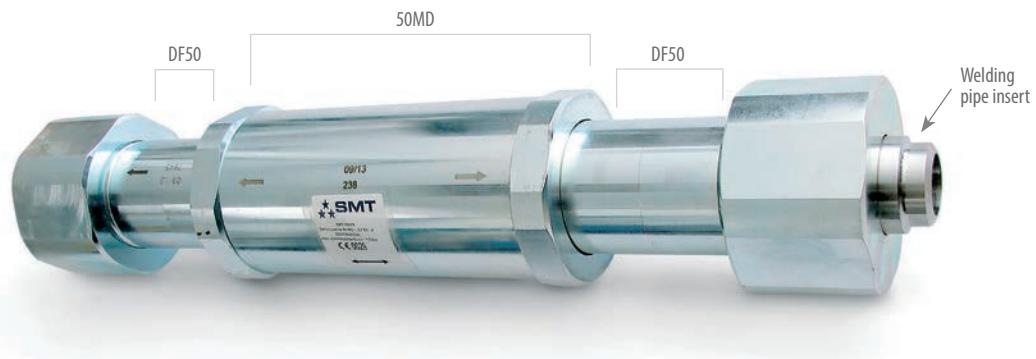
- ★ The ARPF is supplied in standard version with 2 welding pipe inserts (inside diameter = 25 mm, thickness = 4.5 mm) and 2 rotating nuts.

APPLICATIONS

- This safety device is designed for use in low pressure acetylene pipes
- The safety device can be used in the acetylene filling plants on low pressure pipes on the line going back to gasometer

KEY FEATURES

- The 50MD-DF50 is a multi-purpose safety device for medium pressure acetylene pipes. It is equipped with:
 - A temperature sensitive cut off valve, which automatically shut off the propagation of acetylene in either direction in the event of a flash back whenever a preset temperature is reached
 - A flame arrestor, which prevents a flame from propagating in either direction
 - Dual flow direction



SPECIFICATIONS

LP
FB
TSD

Gas used	C ₂ H ₂	Outlet connection	G2 Male Welding pipe insert Ø int.: 25 / ext.: 34	Weight	8.5 kg (with welding pipe inserts and rotating nuts)
Maximum operating pressure	1.5 bar	Body material	dichromate steel	Body diameter (maximum)	90 mm
Inlet connection	G2 Male Welding pipe insert Ø int.: 25 / ext.: 34	Total length	500 mm (with welding pipe inserts and rotating nuts)	Flow coefficient	k _v = 1,32

SERIE HP 12 | LINE VALVE FOR ACETYLENE USE

- Product in compliance with the 2010/35/EU directive.
- This product has to be protect downstream with a flashback arrestor.

OPTIONS

- ★ Inlet and outlet: weldable adaptor for steel pipes, external dia. 21mm
- ★ Inlet and outlet: M28x1,5 left male, without weldable adaptor



APPLICATIONS

- The HP12 stainless steel multturn valve is a seat disk shut-off valve intended and approved for a high pressure acetylene gas installation.
- The HP12 valves can be used in following cases :
 - On high pressure installations,
 - Manifolds for filling, discharging and venting HP systems,
 - Acetylene supply line,
 - Cylinder bundle, as a general shut-off valve,
 - Acetylene switch-over units.
- The HP12 valve is a seat disk valve equipped or not with a weldable adaptor on the inlet and outlet, easily removable from pipework.

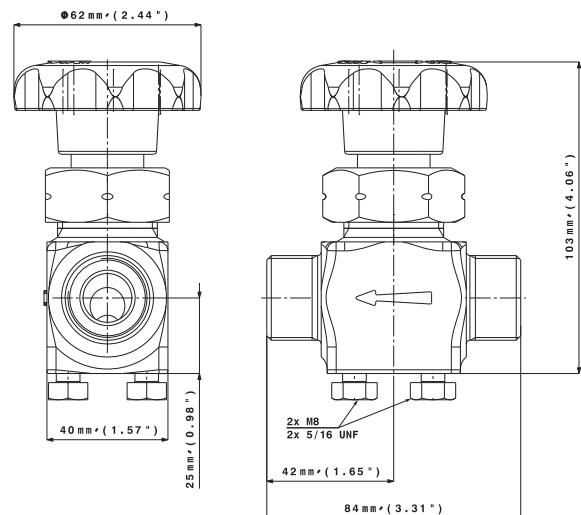
KEY FEATURES

- High flow through 12mm orifice
- The HP12 valve is a seat disk valve equipped with a weldable adaptor on the inlet and on the outlet, easily removable from pipework
- No friction between the seat valve and the valve
- Opening allowing a progressive flow of the gas
- π marking according TPED 2010/35/EN
- Acetone and DMF resistant
- Inlet and outlet: M33x2 left male, without weldable adaptor

ORDERING

When ordering, please specify:

- ★ Connection type
- ★ Options



SPECIFICATIONS

Gas	C ₂ H ₂	Leak rate	10 ⁻³ mbar.l/s	O-ring	EPDM
Inlet pressure max.	25 bar	Temperature range	-20 °C to +70 °C	Weight	1,8 kg
Flow coefficient	2,13	Body Material	AISI 304 - Stainless steel	Inlet connection	M33x2
Orifice diameter	Ø 12 mm	Seat seal	PA - Polyamid	Outlet connection	M33x2

SERIES C 400 | CYLINDER VALVE FOR ACETYLENE USE

High pressure brass cylinder valve for acetylene, O-ring seal type, orifice diameter 4 mm

OPTIONS

- ★ Parallel thread
- ★ Key operation
- ★ Bursting disc safety

Special requirements on request

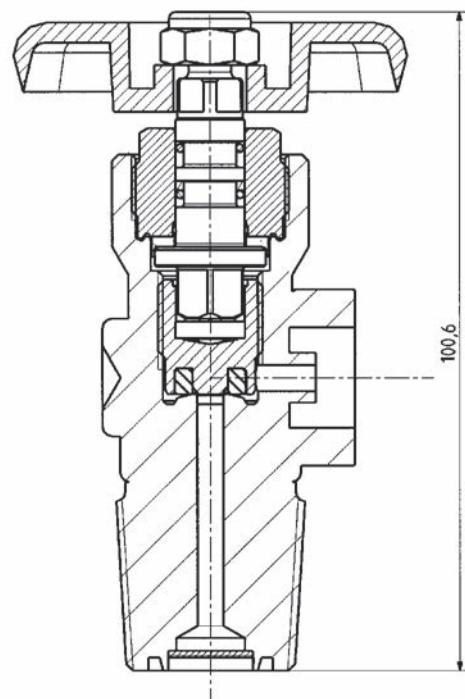
KEY FEATURES

- Permanent gas tight seal
- Robust design for a safe and trouble free long life under all service conditions
- Low torque operation
- Approved valve design (Germany: 10L101)

ORDERING

When ordering, please specify:

- Serial number or range
- Connections dimensions and standard
- Options



SPECIFICATIONS

Working pressure p max.	30 bar	Helium leak rate • internal • external	10 ⁻³ mbarl/sec at p max.	O-rings	EPDM
Temperature range	-25 °C - + 70 °C	Valve body	brass	Handwheel	aluminium
Seat orifice size	4 mm	Seat disc	ebonite	In- and outlet connections in accordance with	all standards

NOTES

PRESSURE DROP TABLE

Pressure drop flow against flow and pressure use

DF3L - T°C = 15°C / 59°F

		Pressure Drop				
		5	10	15	20	25
P1 (bar)		Dp (bar)				
Q (Nm³/h C₂H₂)		0.32	0.24	0.24	0.2	0.2
1		0.76	0.49	0.42	0.3	0.4
3		1.76	1	0.74	0.6	0.6
5		2.98	2	1.5	1.3	
10		7	3.66	2.8	2.2	
15			8.9	5.2	4.1	
20				10.2	7	
25					11.5	
30						20.4
35						

10HD-N - KV = 0.31 - T°C = 15°C / 59°F

		Pressure Drop				
		1.5	5	10	15	20
P1 (bar r)		Dp (bar)				
Q (Nm³/h C₂H₂)		0.01	< 0.01	< 0.01	< 0.01	< 0.01
1		0.13	0.05	0.03	0.02	0.02
5		0.52	0.22	0.12	0.08	0.06
10		0.87	0.48	0.33	0.25	0.2
20			1.46	1	0.76	0.62
35				2.05	1.56	1.26
50						

50HD - KV = 1 - T°C = 15°C

		Pressure Drop					
		1.5	5	10	15	20	25
P1 (bar r)		Dp (bar)					
Q (Nm³/h Ad)		0.01	0.01	< 0.01	< 0.01	< 0.01	< 0.01
5		0.05	0.02	0.01	0.01	0.01	0.01
10		0.2	0.08	0.05	0.03	0.02	0.02
20			0.26	0.14	0.1	0.07	0.06
35				0.29	0.2	0.15	0.12
50					0.79	0.6	0.48
100						2.4	1.94
200							

DF50 - KV = 4,48 - T°C = 15°C / 59°F

		Pressure Drop					
		1.5	5	10	15	20	25
P1 (bar r)		Dp (bar)					
Q (Nm³/h C₂H₂)		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
5		< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
10		0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
20			0.03	0.01	0.01	< 0.01	< 0.01
35				0.06	0.03	0.01	0.01
50					0.25	0.1	0.06
100						0.04	0.03
200							0.02

HOW TO ORDER

Designation	Operating pressure max.	Inlet	Outlet	Part number
FLASHBACK ARRESTORS FOR ACÉTYLÈNE USE				
DF3L				
	Cap valve DF3L (Std - F:3/8 - M:1/2)	25 bar	F: G $\frac{3}{8}$	M: G $\frac{1}{2}$ 23000200000
	Cap valve DF3L (NPT version)	25 bar	F: 1/4 NPT	F: 1/4 NPT 23000500001
	Repair kit DF3L (if delivered after fev-2005*)			230002990001
50HD				
	Decomposition arrestor 50HD	25 bar	M: G2	M: G2 22000200000
	Decomposition arrestor 50HD (NPT version)	25 bar	F: 3/4 NPT	F: 3/4 NPT 22000600000
	Repair kit 50HD*			220002990000
10 HD-N				
	Flashback arrestor 10HD-N 240mm	25 bar	M: M24x1,5	M: M24x1,5 22000500000
	Flashback arrestor 10HD-N 348mm	25 bar	M: M24x1,5	M: M24x1,5 22000500001
	Flashback arrestor 10HD-N 370mm	25 bar	M: G $\frac{3}{4}$	M: G $\frac{3}{4}$ 22000500002
	Flashback arrestor 10HD-N 450mm	25 bar	M: G $\frac{3}{4}$	M: G $\frac{3}{4}$ 22000500003
	Repair kit 10 HD-N*			220005990001
DF10				
	Cap valve DF10	25 bar	F: G $\frac{3}{4}$	M: G $\frac{3}{4}$ 23000100000
	Repair kit DF10*			23000100001
DF50				
	Cap valve DF50	25 bar	M: G2	M: G2 230000000000
	Repair kit DF50*			230000990001
50 MD				
	Decomposition arrestor 50MD	1,5 bar	M: G2	M: G2 22000100000
	Decomposition arrestor 50MD (NPT version)	1,5 bar	F: 3/4 NPT	F: 3/4 NPT 220000000004
	Repair kit 50MD*			22000100001
50MD-DF50				
	Flashback arrestor 50MD-DF50	1,5 bar	M: G2	M: G2 220003000000

HP12

Description	Material	Inlet	Outlet	Observations	Part number
Vanne HP12 ad inox	stainless steel 316L	M:M33x2 LH	M:M33x2 LH	Without socket weld standard version	25356100001
Vanne HP12 ad inox m28x1,5 LH	stainless steel 316L	M:M28x1,5 LH	M:M28x1,5 LH	Without socket weld special version	25356100003

* Repair kit only available for certified service people

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