MBM VALVES
FAMILY 05 GROUP 67-68

Master handbook description: Guide to selection, operation and maintenance MBM Valves (english)

Code: 7374
Category: 1719
Group: 900

Revision Table

Revision Nr.	Revision date	Applicable to CE marked MBM valves with matricula number:		Drawn up by	Checked by	Approved by
		dal	al			
01	21/12/2001	3073	3499	LF	LR	OS
02	01/05/2002	3500	3642	LF	LR	OS
03	04/11/2002	3643	3908	LF	LR	OS
04	19/06/2003	3909	4648	LF	LR	OS
05	01/06/2004	4649	4953	LF	RP	OS
06	07/02/2005	4954	2006/5370	LF	RP	OS
07	27/02/2006	2006/5371	2006/5600	LF	RP	OS
08	29/12/2006	2006/5601	2010/6623	LF	RP	OS
09	30/03/2010	2010/6624	2012/74947	LF	RP	OS
10	25/05/2012	2012/74948	2012/7712	LF	RP	OS
11	22/10/2012	2012/7713	2012/7774	RP	RP	OS
12	22/12/2012	2012/7775	2013/8257	RP	RP	OS
13	06/12/2013	2013/8258	2014/8433	AR	MB	OS
14	11/04/2014	2014/8434	2015/8434	AR	MB	OS
15	25/11/2015	2015/8435	2016/9714	MBL	MB	OS
16	18/07/2016	2016/9715	2018/10734	MBL	MB	OS
17	16/01/2018	2018/10735		AR	LR	OS

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DICHIARAZIONE DI CONFORMITA' UE

DECLARATION OF UE CONFORMITY

Mod: 700
Rev: 01
Data: 26/02/2017

VALVOLE DI SICUREZZA SERIE MBM

MBM SERIES SAFETY VALVES

(in tutte le sue configurazioni / *in all their configurations*)

ITALVALVOLE® s.a.s. di Spadon Oscar & C. dichiara che l'intera gamma dei prodotti è stata progettata, costruita e collaudata in accordo a quanto indicato della direttiva:
ITALVALVOLE® *s.a.s. of Spadon Oscar & C. declare that all products it was engineered, manufactured and tested in according as indicated of the directive:*

2014/68/UE

CLASSIFICAZIONE DELLE VALVOLE / *CLASSIFICATION OF THE VALVES*

CATEGORIA IV - *CATEGORY IV*

GARANZIA DI QUALITA' N°
QUALITY ASSURANCE SYSTEM N°

MODULO D:	N. **00008PED80001D D** Rev.00
MODULO B:	N. **PA001 – 97/23/CE – B** Rev. 04

NORME TECHICHE ARMONIZZATE e SPECIFICHE UTILIZZATE:
HARMONISED TECHNICAL STANDARDS and SPECIFICATIONS USED:

UNI EN 10213 / UNI EN 12516-1-2 / UNI EN 1503 / UNI EN 4126-1-7

Marcatura dell'apparecchiatura:
Marking of equipments:

CE **1115**

ENTE NOTIFICATO – *NOTIFIED BODY*

Consorzio Pascal Srl a socio unico
Via A. Scarsellini, 11 – 20161 Milano
Numero Identificativo dell'Organismo Notificato
Notified Body Identification Number:

1115

LUOGO e DATA - *Place and Date*
Cossato, 26/02/2017

Legale rappresentante
Legal representative
Firmato digitalmente da
OSCAR SPADON
SerialNumber = IT:SPDSCR44M19L436J
C = IT

Table of contents

1 Foreword

The MBM model safety valves are of direct spring loaded type and are in according to 2014/68/UE directive.
The dimensions of the inlet coupling range between 1/2" and 2".
The range of calibration, at atmospheric back pressure, varies from 0.5 to 15 bar (gauge pressure).
The qualification has been obtained with a very high coefficient of discharge (K = 0.96): this allows a considerable discharge capacity also with models of small dimensions.
Valves are designed both in the closed cover version and in that with lifting device (reset).
They can be used for: air, sarurated steam, overheated water, nitogen and gases belonging to group 2 (2014/68/UE directive)
They are produced with flanged or threaded connections

2 Technical Characteristics

MBM series threaded valves

General note:	⇒ **valve designed for air, sarurated steam, overheated water, nitogen, of group 2 (2014/68/UE directive), compatible with AISI 316 and Carbon-loaded Teflon**
	⇒ *ND: 1*5 – 20 – 25 – 32 – 40 – 50
	⇒ for valve equipment see paragraph 3.8
Connections	⇒ external GAS inlet threaded: 1/2" - 2"
	⇒ internal GAS outlet threaded: 3/4" – 2" 1/2"
	⇒ inlet flanged: NP 16 ND 15 - 50
	⇒ outlet flanged: NP 16 ND 20 - 65
Max. all. press. (relative):	⇒ 25 bar
Min. all. press. (relative):	⇒ 0 bar
Overpressure:	⇒ 10 %
Blowdown:	⇒ 15 %
Max. all. temperature:	⇒ 210° C
Min. all. temperature:	⇒ - 10° C
Flow direction:	⇒ unidirectional 2-way globe valve, with angle pattern body.
Building material:	⇒ See Dwg. 060772 – 011249 - 011250 - 011251 - 011253 and attached tables
Overall dimensions:	⇒ See overall dimensions drawings and relative tables

3 Dimensioning Data

To dimension correctly valves the following data are essential:
- Calibration pressure (relative bar)
- Type of fluid
- Fluid temperature (degree centigrades)
- Capacity
- Type of connections

3.1 Calculation Formulas for Capacity (Vapour and Gas)

Foreword: the following formulas provide the capacity values of safety valves under critical stage conditions
The critical stage condition is obtained when $p_2 \leq p_c$ being

p_2 = back pressure in absolute bar declared by the user
p_c = critical pressure in absolute bar
p_1 = calculation pressure in absolute bar (calibration pressure).

$$p_c = p_1 \left(\frac{2}{k+1} \right)^{\frac{k}{k-1}}$$

where *k* = exponent of the equation for the isentropic expansion

3.1.1 Calculation flow rate steam (saturated, superheated or supercritical) in condition critical flow rate

$$Q\left[\frac{Kg}{h}\right] = 0{,}2883 \cdot C \cdot A \cdot K_{vr} \cdot \sqrt{\frac{P_0}{v_0}}$$

[UNI EN ISO 4126-7 : 2016 paragraph 6.3.1 (17)]

3.1.2 Calculation flow rate wet steam

Foreword: : the following formula is applicable only for wet steam with dryness fraction of steam up to 90%

$$Q\left[\frac{Kg}{h}\right] = \frac{0{,}2883 \cdot C \cdot A \cdot K_{vr} \cdot \sqrt{\frac{p_0}{v_0}}}{\sqrt{x_0}}$$

[UNI EN ISO 4126-7 : 2016 paragraph 6.3.2 (20)]

3.2 Calculation Formulas for Capacity (Overheated Water from ND 25)

Foreword : the following formula provides the capacity values of safety valves under critical stage conditions. The critical stage condition is obtained when pressure beyond the valve (back pressure P2) does not exceed 58% of calibration pressure.

3.2.1 Overheated Water

$$Q\left[\frac{Kg}{h}\right] = \frac{A \cdot K_{vr} \cdot p_0}{K_S \cdot \sqrt{x_0}}$$

[UNI EN ISO 4126-7 : 2016 paragraph 6.3.2 (21)]

where:

$$k_s = \frac{\sqrt{p_0 v_0}}{0{,}2883 \cdot C}$$

[UNI EN ISO 4126-7 : 2016 paragrafo 6.3.2 (22)]

3.3 Legend

k = isoentropic exponent at the discharge pressure and temperature.

P_0 = back pressure in absolute bar

v_0 = specific volume of steam [m^3/Kg]

x_0 = dryness fraction of steam on inlet valve at the discharge pressure and temperature

d = inlet diameter [mm]

A = inlet area $A = \pi\left(\frac{d}{2}\right)^2$ [mm2]

Kv = coefficient of discharge

Kvr = coefficient of discharge correct = 0.9 Kv [UNI EN ISO 4126-1 : 2016 - paragraph 7.5]

Ks = coefficient of steam pressure [UNI EN ISO 4126-7 : 2016 - paragraph 6.3.2]

Q = discharge capacity of steam [Kg/h]

C in relation of isoentropic exponent calculablewith formula $C = 3{,}948\sqrt{k\left(\frac{2}{k+1}\right)^{(k+1)/(k-1)}}$

[UNI EN ISO 4126-7 : 2016 – paragraph 5.3.1 (8)]

r = heat of vaporization of water pressure [Kcal/kg]

Value of C in function of k

k	C	k	C	k	C	k	C	k	C	k	C	k	C	k	C	k	C
0,40	1,647	0,60	1,957	0,80	2,198	1,001	2,395	1,20	2,560	1,40	2,703	1,60	2,829	1,80	2,940	2,00	3,039
0,41	1,665	0,61	1,971	0,81	2,209	1,01	2,404	1,21	2,568	1,41	2,710	1,61	2,834	1,81	2,945	2,01	3,044
0,42	1,682	0,62	1,984	0,82	2,219	1,02	2,412	1,22	2,576	1,42	2,717	1,62	2,840	1,82	2,950	2,02	3,049
0,43	1,700	0,63	1,997	0,83	2,230	1,03	2,421	1,23	2,583	1,43	2,723	1,63	2,846	1,83	2,955	2,03	3,053
0,44	1,717	0,64	2,010	0,84	2,240	1,04	2,430	1,24	2,591	1,44	2,730	1,64	2,852	1,84	2,960	2,04	3,058
0,45	1,733	0,65	2,023	0,85	2,251	1,05	2,439	1,25	2,598	1,45	2,736	1,65	2,858	1,85	2,965	2,05	3,063
0,46	1,750	0,66	2,035	0,86	2,261	1,06	2,447	1,26	2,605	1,46	2,743	1,66	2,863	1,86	2,971	2,06	3,067
0,47	1,766	0,67	2,048	0,87	2,271	1,07	2,456	1,27	2,613	1,47	2,749	1,67	2,869	1,87	2,976	2,07	3,072
0,48	1,782	0,68	2,060	0,88	2,281	1,08	2,464	1,28	2,620	1,48	2,755	1,68	2,874	1,88	2,981	2,08	3,076
0,49	1,798	0,69	2,072	0,89	2,291	1,09	2,472	1,29	2,627	1,49	2,762	1,69	2,880	1,89	2,986	2,09	3,081
0,50	1,813	0,70	2,084	0,90	2,301	1,10	2,481	1,30	2,634	1,50	2,768	1,70	2,886	1,90	2,991	2,10	3,085
0,51	1,829	0,71	2,096	0,91	2,311	1,11	2,489	1,31	2,641	1,51	2,774	1,71	2,891	1,91	2,996	2,11	3,090
0,52	1,844	0,72	2,108	0,92	2,320	1,12	2,497	1,32	2,649	1,52	2,780	1,72	2,897	1,92	3,001	2,12	3,094
0,53	1,858	0,73	2,120	0,93	2,330	1,13	2,505	1,33	2,656	1,53	2,786	1,73	2,902	1,93	3,006	2,13	3,099
0,54	1,873	0,74	2,131	0,94	2,339	1,14	2,513	1,34	2,663	1,54	2,793	1,74	2,908	1,94	3,010	2,14	3,103
0,55	1,888	0,75	2,143	0,95	2,349	1,15	2,521	1,35	2,669	1,55	2,799	1,75	2,913	1,95	3,015	2,15	3,107
0,56	1,902	0,76	2,154	0,96	2,358	1,16	2,529	1,36	2,676	1,56	2,805	1,76	2,918	1,96	3,020	2,16	3,112
0,57	1,916	0,77	2,165	0,97	2,367	1,17	2,537	1,37	2,683	1,57	2,811	1,77	2,924	1,97	3,025	2,17	3,116
0,58	1,930	0,78	2,176	0,98	2,376	1,18	2,545	1,38	2,690	1,58	2,817	1,78	2,929	1,98	3,030	2,18	3,121
0,59	1,944	0,79	2,187	0,99	2,386	1,19	2,553	1,39	2,697	1,59	2,823	1,79	2,934	1,99	3,034	2,19	3,125
-	-	-	,	-	-	-	-	-	-	-	-	-	-	-	-	2,20	3,129

[prospect 3 UNI EN ISO 4126-7 : 2016]

3.4 Flow coefficient Kv

Flow coefficient Kv varies as function of ratio between absolute back-pressure and absolute discharge pressure. For compressible fluids, when this ratio is greater than 0.25, Kv of the valve widely depends on this ratio.
Here below, there is the table of Kv values as function of ratio between absolute back-pressure and absolute discharge pressure that will be called “Back Pressure Ratio”.
These values have been determined through experimental tests at Politecnico di Milano.

Back pressure ratio	KV
66.7 %	0.85
62.5 %	0.86
58.8 %	0.87
55.6 %	0.88
52.6 %	0.89
50 %	0.90
47.6 %	0.91
45.5 %	0.92
43.5 %	0.93
41.7 %	0.93
40 %	0.94
38.5 %	0.94
37 %	0.95
35.7 %	0.95
34.5 %	0.95
33.3 %	0.96

3.5 Capacity Values for MBM Valves (according to Formulas UNI EN ISO 4126-7:2016)

3.5.1 Table 2 - Air (0 °C)

Capacity in Kg/h with overpressure of 10 % and absolute back-pressure equal to 1						
Type of valve	15/20 - 15/25	20/25	25/32 - 25/40	32/40	40/50 - 40/65	50/65
Inlet area [cm²]	0.866	1.431	2.270	3.630	5.515	9.079
Calibration pressure [relative bar]						
0.5	102	169	269	430	654	1076
1	138	229	363	581	883	1453
1.5	173	286	454	726	1103	1816
2	207	343	544	871	1323	2178
2.5	242	400	635	1015	1543	2540
3	276	457	725	1160	1763	2902
3.5	311	514	816	1305	1983	3265
4	345	571	906	1450	2203	3627
4.5	380	629	997	1595	2423	3989
5	415	686	1088	1740	2643	4352
6	484	800	1269	2029	3083	5076
7	553	914	1450	2319	3524	5801
8	622	1028	1631	2609	3964	6525
9	691	1143	1812	2899	4404	7250
10	760	1257	1993	3188	4844	7974
11	829	1371	2174	3478	5284	8698
12	898	1485	2355	3768	5724	9423
13	967	1599	2537	4057	6164	10148
14	1036	1714	2718	4347	6605	10872
15	1106	1828	2899	4637	7045	11597

3.5.2 Table 3 - Saturated Steam

Capacity in Kg/h with overpressure of 10 % and absolute back-pressure equal to 1							
Type of valve		15/20-15/25	20/25	25/32-25/40	32/40	40/50-40/65	50/65
Inlet area [cm²]		0.866	1.431	2.270	3.630	5.515	9.079
Calibration pressure [relative bar]	**Temperature °C**						
0.5	111.6	65	108	172	276	419	690
1	120.4	90	149	236	377	574	945
1.5	127.6	111	184	293	468	712	1172
2	133.7	133	220	349	558	848	1397
2.5	139.0	154	255	405	648	985	1621
3	143.7	175	290	461	737	1120	1844
3.5	148.7	197	325	516	826	1255	2067
4	152.0	218	360	572	915	1390	2289
4.5	155.5	239	395	627	1003	1524	2510
5	158.9	260	430	682	1091	1658	2730
6	165.0	302	499	792	1267	1926	3170
7	170.5	344	569	902	1443	2192	3609
8	175.4	385	638	1011	1618	2458	4047
9	180.0	427	706	1121	1793	2724	4484
10	184.1	469	775	1230	1967	2989	4920
11	188.0	510	844	1339	2141	3253	5356
12	191.7	552	913	1447	2315	3518	5791
13	195.1	593	981	1556	2489	3782	6226
14	198.3	635	1050	1665	2663	4046	6661
15	201.4	676	1118	1774	2837	4311	7096

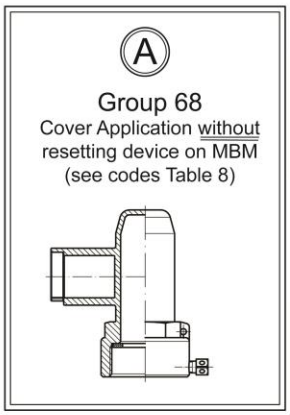
3.5.3 Table 4 - Overheated Water

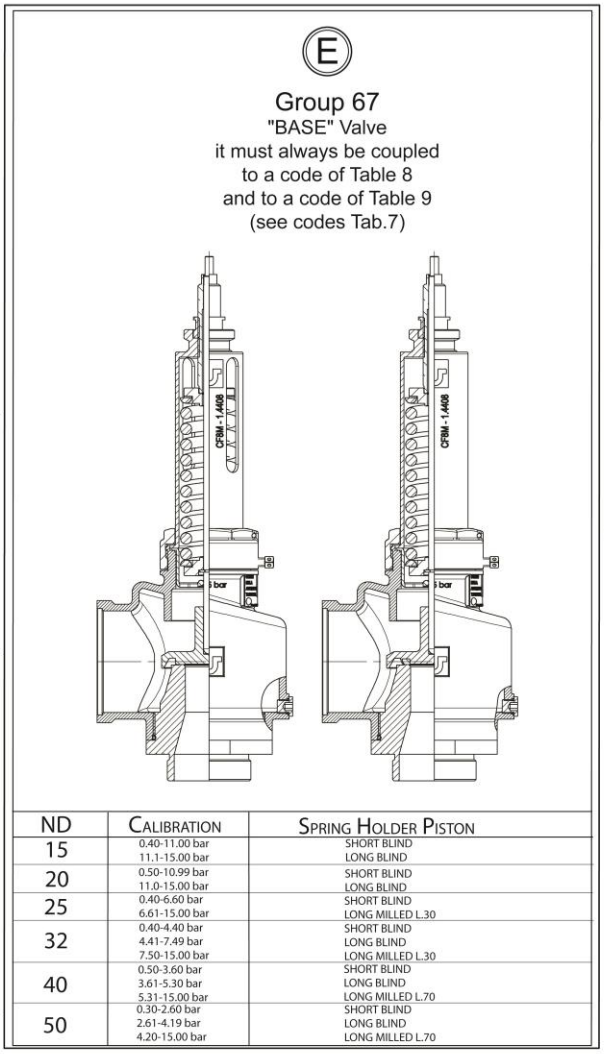
Capacity in Kg/h with overpressure of 10 % and absolute back-pressure equal to 1 bar [T=200 °C]				
Type of valve	25/32-25/40	32/40	40/50-40/65	50/65
Inlet area [cm²]	2.270	3.630	5.515	9.079
Calibration pressure [relative bar]				
1	113	179	286	435
1.5	152	242	387	589
2	191	303	486	738
2.5	229	364	582	885
3	267	424	678	1031
3.5	296	470	751	1142
4	321	509	815	1239
4.5	359	569	911	1384
5	416	660	1056	1605
5.5	450	714	1143	1736
6	489	775	1240	1884
6.5	522	827	1324	2011
7	557	883	1413	2146
7.5	594	943	1508	2291
8	635	1007	1611	2448
8.5	669	1061	1697	2579
9	704	1117	1787	2716
9.5	741	1176	1881	2858
10	781	1238	1981	3009
11	853	1353	2165	3289
12	926	1469	2349	3569
13	996	1580	2527	3839
14	1071	1699	2718	4129
15	1141	1810	2896	4400

3.6 Identification of the Type of Valve

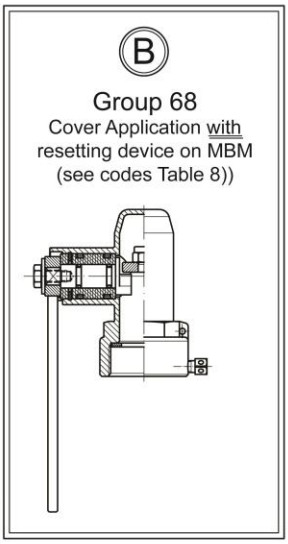
As you can see in the diagram below, for identification of the selected valve it is necessary to define three codes:

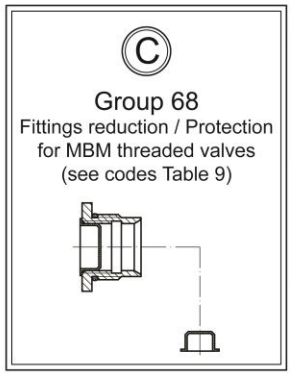
1) The code relating to the base valve (diagram **E**, for code selection see table 7)
2) The code relating to the type of cover (diagrams **A** and **B**, for code selection see table 8)
3) The code relating to the type of coupling (diagrams **C** and **D**, for code selection see table 9)

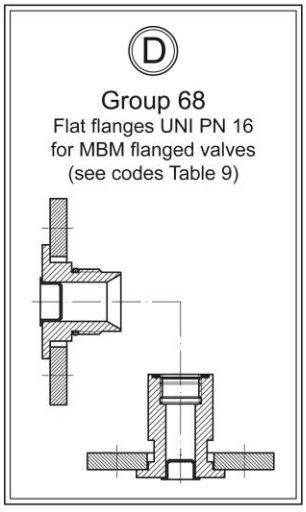




ND	CALIBRATION	SPRING HOLDER PISTON
15	0.40-11.00 bar 11.1-15.00 bar	SHORT BLIND LONG BLIND
20	0.50-10.99 bar 11.0-15.00 bar	SHORT BLIND LONG BLIND
25	0.40-6.60 bar 6.61-15.00 bar	SHORT BLIND LONG MILLED L.30
32	0.40-4.40 bar 4.41-7.49 bar 7.50-15.00 bar	SHORT BLIND LONG BLIND LONG MILLED L.30
40	0.50-3.60 bar 3.61-5.30 bar 5.31-15.00 bar	SHORT BLIND LONG BLIND LONG MILLED L.70
50	0.30-2.60 bar 2.61-4.19 bar 4.20-15.00 bar	SHORT BLIND LONG BLIND LONG MILLED L.70







Dwg. no. 020304 Rev. 01

3.6.1 Table 7: Codes of the Base Valve with AISI 302/316 spring (Diagram E)

ND entrance	range of calibration	code Metallic seal	NrDrawing Technical File
15	0.40 ÷ 0.60	8321	060087
	0.61 ÷ 0.80	8322	
	0.81 ÷ 1.40	8323	
	1.41 ÷ 1.70	8324	
	1.71 ÷ 2.20	8325	
	2.21 ÷ 3.40	8326	
	3.41 ÷ 4.40	8327	
	4.41 ÷ 7.00	8328	
	7.01 ÷ 11.00	8329	
	11.01 ÷ 15.00	8330	060088
20	0.50 ÷ 0.65	8331	060089
	0.66 ÷ 1.00	8332	
	1.01 ÷ 1.40	8333	
	1.41 ÷ 2.09	8334	
	2.10 ÷ 3.30	15332	
	3.31 ÷ 4.99	8335	
	5.00 ÷ 6.00	15333	
	6.01 ÷ 10.99	8336	
	11.00 ÷ 15.00	8337	060090
25	0.40 ÷ 0.60	8338	060091
	0.61 ÷ 0.80	8339	
	0.81 ÷ 1.30	8340	
	1.31 ÷ 1.70	8341	
	1.71 ÷ 4.00	8342	
	4.01 ÷ 6.60	8343	
	6.61 ÷ 10.00	8344	060092
	10.01 ÷ 15.00	8345	
32	0.40 ÷ 0.50	8346	060093
	0.51 ÷ 0.70	8347	
	0.71 ÷ 0.90	8348	
	0.91 ÷ 1.30	8349	
	1.31 ÷ 2.10	8350	
	2.11 ÷ 2.80	8351	
	2.81 ÷ 3.19	15326	
	3.20 ÷ 3.70	8352	
	3.71 ÷ 4.40	15327	
	4.41 ÷ 7.49	8353	060094
	7.50 ÷ 9.50	15328	
	9.51 ÷ 11.00	15329	
	11.00 ÷ 15.00	8354	
40	0.40 ÷ 0.70	8355	060095
	0.71 ÷ 0.90	8356	
	0.91 ÷ 1.60	8357	
	1.61 ÷ 2.30	8358	
	2.31 ÷ 3.60	8359	
	3.61 ÷ 5.30	8360	060096
	5.31 ÷ 9.30	8361	
	9.31 ÷ 15.00	8362	
50	0.40 ÷ 1.00	8363	060097
	1.01 ÷ 1.40	8364	
	1.41 ÷ 2.00	8365	
	2.01 ÷ 2.60	8366	
	2.61 ÷ 4.19	8367	060098
	4.20 ÷ 4.50	8368	
	4.51 ÷ 6.49	15330	
	6.51 ÷ 9.00	8369	
	9.01 ÷ 11.50	15331	
	11.51 ÷ 15.00	8371	

Written request technical office,for some fields of calibration, may be provided valves with seal plastic (PTFE – CARBON)

3.6.2 Table 8: Codes of MBM Valve Covers (Diagram A or Diagram B)

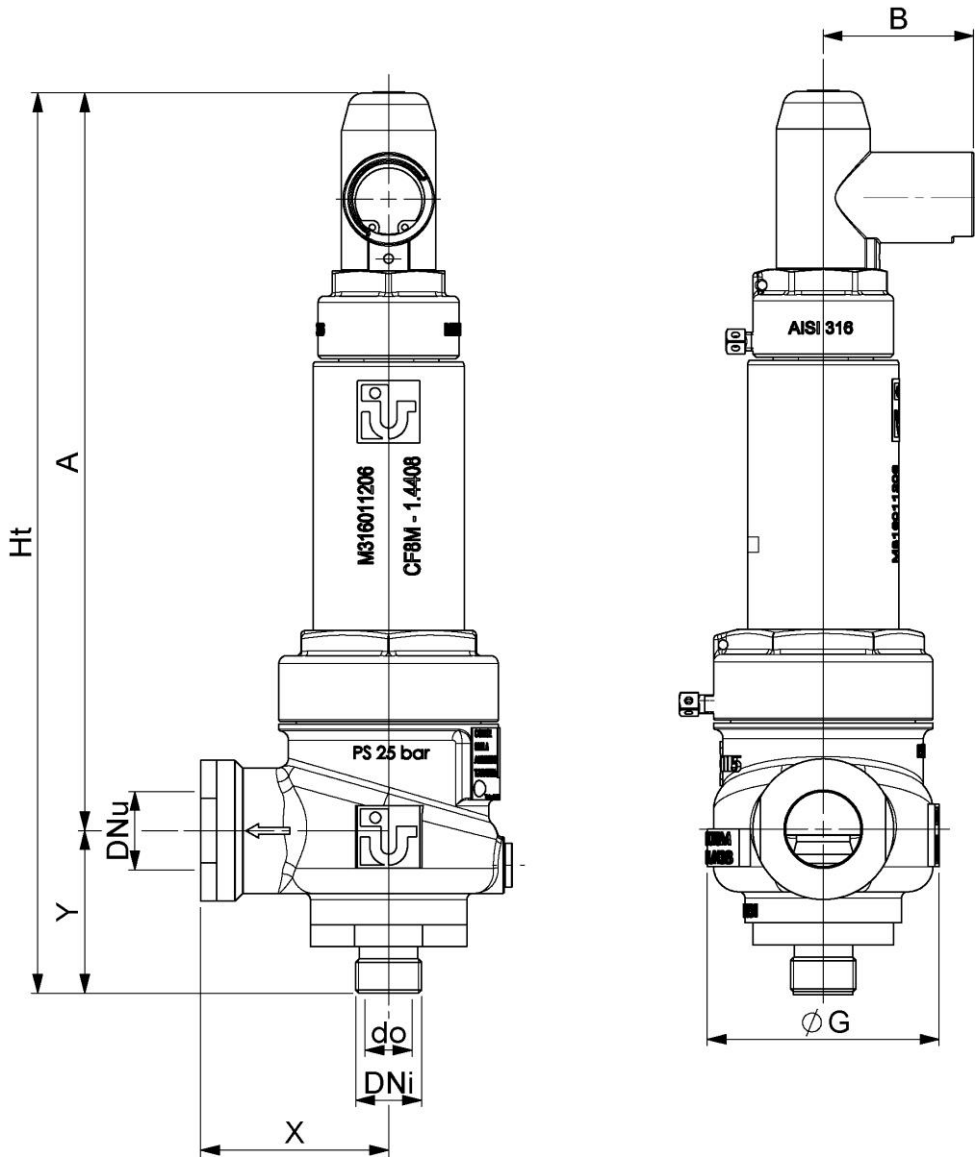
ND	Diagram	Code	Nr Drawing Technical File
15/20 – 15/25 – 20/25 25/32 – 25/40 – 32/40 40/50 – 40/65 – 50/65	A	**7303**	**020295**
	B	**6598**	**XX0707**

3.6.3 Table 9: Codes of MBM Valve Flanged and Threaded Connections (Diagram C or Diagram D)

ND	Diagram	Code	Nr Drawing Technical File
15/20	C	**7304**	**020296**
	D	**3770**	**011285**
15/25	C	**7449**	**020592**
	D	**7452**	**020595**
20/25	C	**7305**	**020297**
	D	**3771**	**011286**
25/32	C	**7306**	**020298**
	D	**3772**	**011287**
25/40	C	**7450**	**020593**
	D	**7453**	**020596**
32/40	C	**7307**	**020299**
	D	**3773**	**011288**
40/50	C	**7308**	**020300**
	D	**3774**	**011289**
40/65	C	**7451**	**020594**
	D	**7454**	**020597**
50/65	C	**7309**	**020301**
	D	**3775**	**011290**

3.7 Overall Dimensions of MBM Safety Valves

3.7.1 MBM Threaded Valves

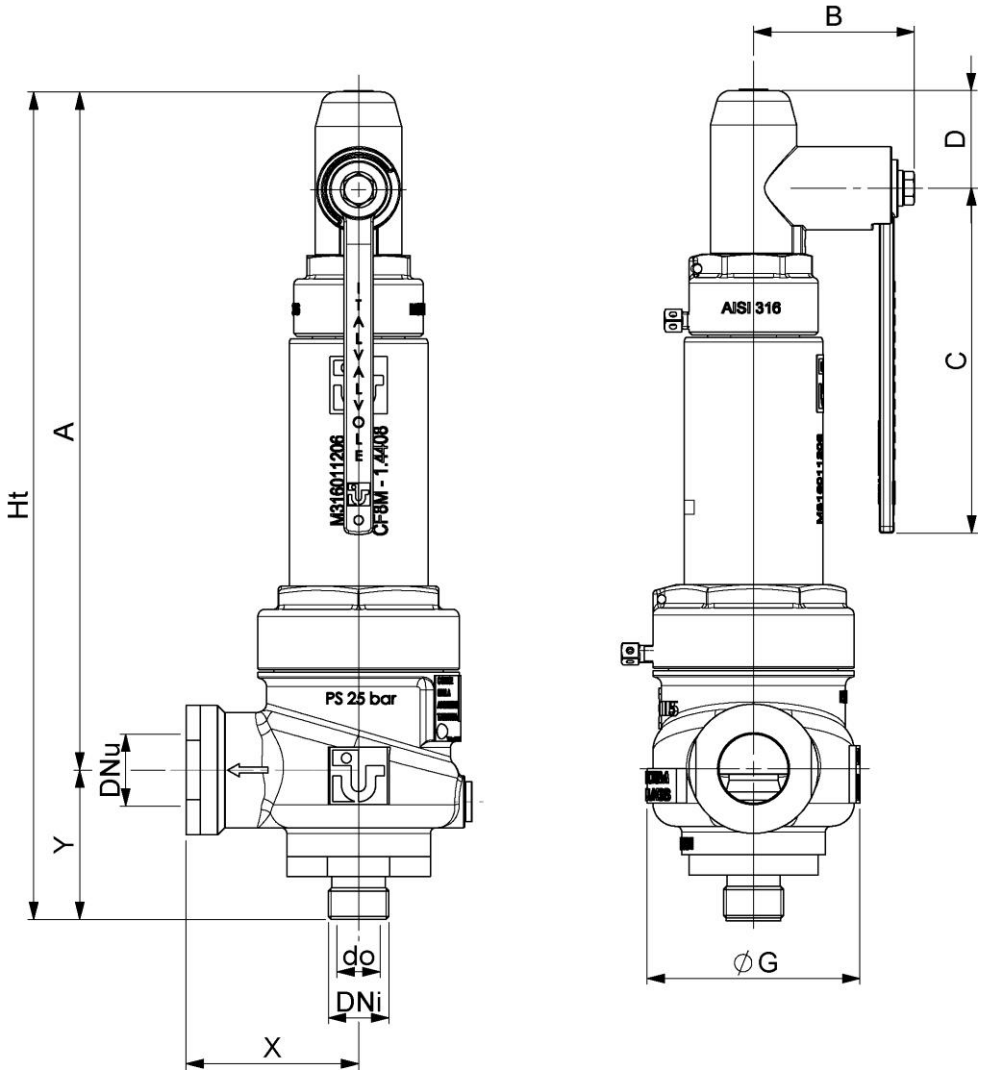


Dwg. no. 011247 Rev.:01

MBM Model		15/20	15/25	20/25	25/32	25/40	32/40	40/50	40/65	50/65
Ndi		1/2“	1/2“	3/4“	1“	1“	1” 1/4	1” 1/2	1” 1/2	2“
NDf		3/4“	1“	1“	1” 1/4	1” 1/2	1” 1/2	2“	2” 1/2	2” 1/2
do (Output diameter)		10.5	10.5	13.5	17	17	21.5	26.5	26.5	34
A	Short cylinder	236	236	236	243.5	243.5	243.5	267	267	267
	Long cylinder	276	276	276	283.5	283.5	283.5	307	307	307
B		48	48	48	48	48	48	48	48	48
Ø G		74	74	74	84	84	84	114	114	114
Ht	Short cylinder	288	288	288	303.5	303.5	303.5	352	352	352
	Long cylinder	328	328	328	343.5	343.5	343.5	392	392	392
X		60	55	55	68	60	60	88	80	80
Y		52	52	52	60	60	60	85	85	85
Area [mm²]		86.6	86.6	143	227	227	363	551.5	551.5	908
H [lift]		5.6	5.6	6.6	7.2	7.2	9	10.2	10.2	13.8

Dimensions are in millimeters

3.7.2 MBM Threaded Valves with Resetting Device

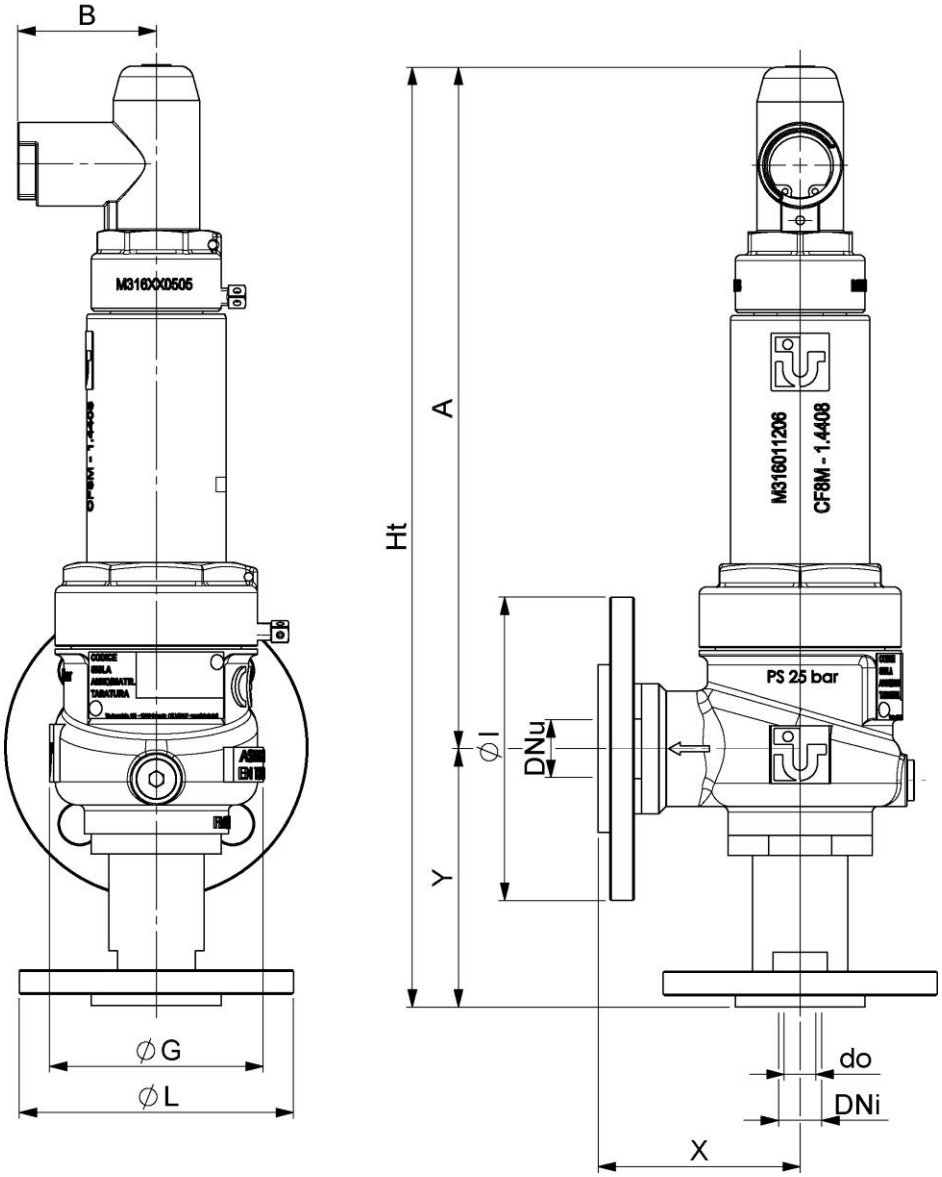


Dwg. no. 011248 Rev.:01

MBM Model		15/20	15/25	20/25	25/32	25/40	32/40	40/50	40/65	50/65
Ndi		1/2“	1/2“	3/4“	1“	1“	1” 1/4	1” 1/2	1” 1/2	2“
NDf		3/4“	1“	1“	1” 1/4	1” 1/2	1” 1/2	2“	2” 1/2	2” 1/2
do (Output diameter)		10.5	10.5	13.5	17	17	21.5	26.5	26.5	34
A	Short cylinder	236	236	236	243.5	243.5	243.5	267	267	267
	Long cylinder	276	276	276	283.5	283.5	283.5	307	307	307
B		56	56	56	56	56	56	56	56	56
C		120	120	120	120	120	120	120	120	120
D		34	34	34	34	34	34	34	34	34
Ø G		74	74	74	84	84	84	114	114	114
Ht	Short cylinder	288	288	288	303.5	303.5	303.5	352	352	352
	Long cylinder	328	328	328	343.5	343.5	343.5	392	392	392
X		60	55	55	68	60	60	88	80	80
Y		52	52	52	60	60	60	85	85	85
Area [mm²]		86.6	86.6	143	227	227	363	551.5	551.5	908
H [lift]		5.6	5.	6.6	7.2	7.2	9	10.2	10.2	13.8

Dimensions are in millimeters

3.7.3 MBM Flanged Valves

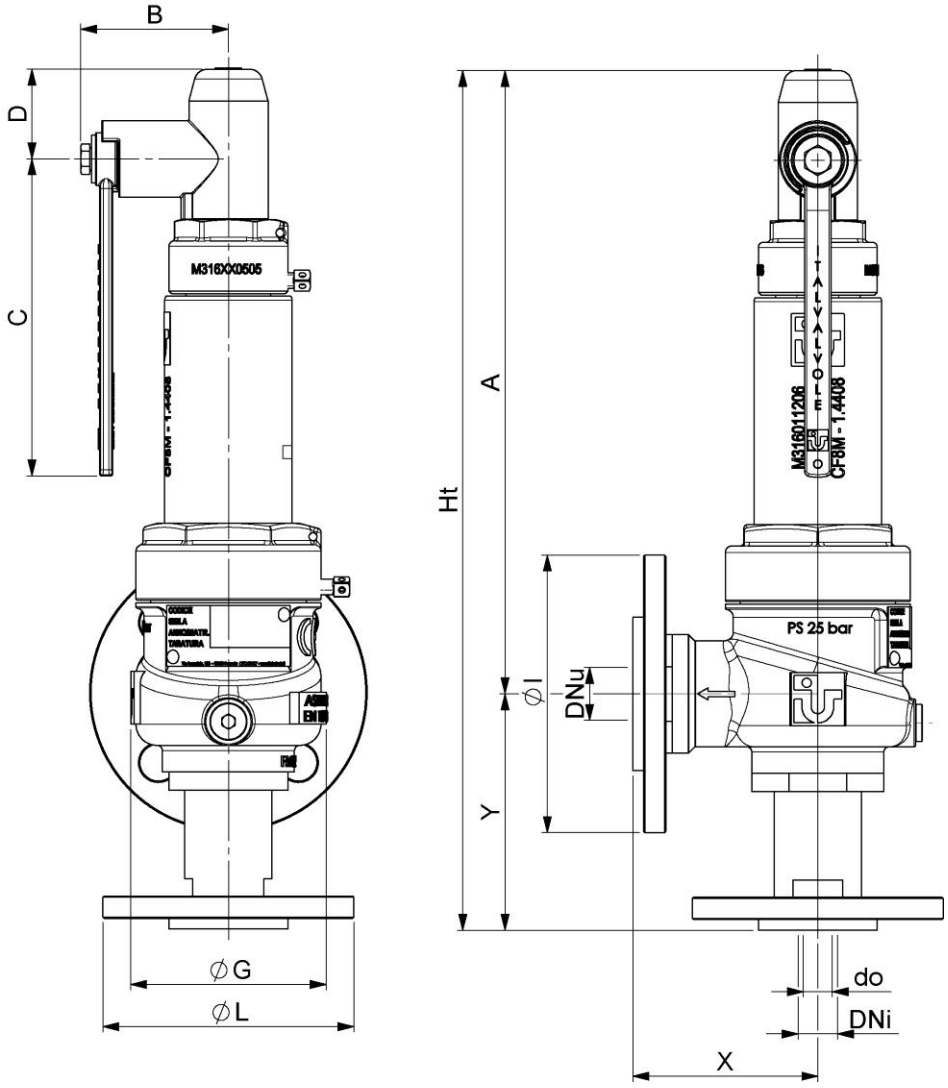


Dwg. no. 011255 Rev.:02

MBM Model		15/20	15/25	20/25	25/32	25/40	32/40	40/50	40/65	50/65
Ndi		1/2“	1/2“	3/4“	1“	1“	1” 1/4	1” 1/2	1” 1/2	2“
NDf		3/4“	1“	1“	1” 1/4	1” 1/2	1” 1/2	2“	2” 1/2	2” 1/2
do (Output diameter)		10.5	10.5	13.5	17	17	21.5	26.5	26.5	34
A	Short cylinder	236	236	236	243.5	243.5	243.5	267	267	267
	Long cylinder	276	276	276	283.5	283.5	283.5	307	307	307
B		48	48	48	48	48	48	48	48	48
Ø G		74	74	74	84	84	84	114	114	114
Ø I		105	115	115	140	150	150	165	185	185
Ø L		95	95	105	115	115	140	150	150	165
Ht	Short cylinder	326	326	326	353.5	353.5	353.5	397	397	397
	Long cylinder	366	366	366	393.5	393.5	393.5	437	437	437
X		70	70	70	80	90	90	100	100	100
Y		90	90	90	110	110	110	130	130	130
Area [mm^2]		86.6	86.6	143	227	227	363	551.5	551.5	908
H [lift]		5.6	5.6	6.6	7.2	7.2	9	10.2	10.2	13.8

Dimensions are in millimeters

3.7.4 MBM Flanged Valves with Resetting Device

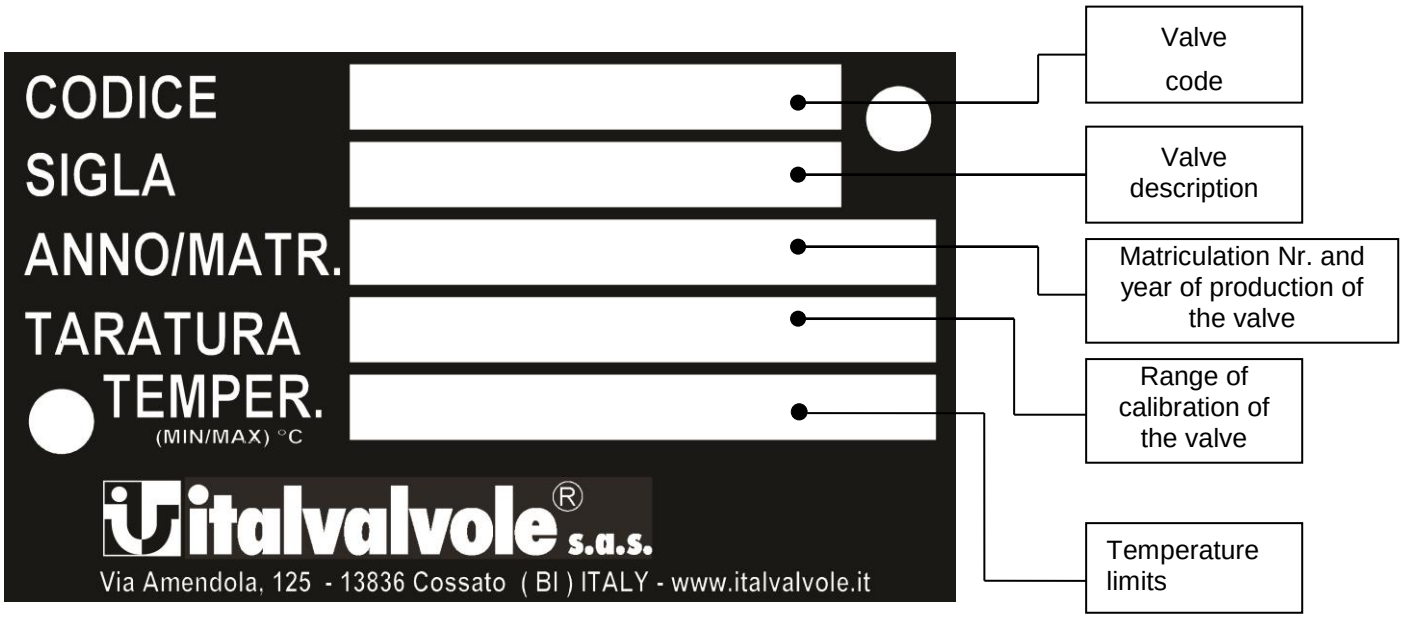


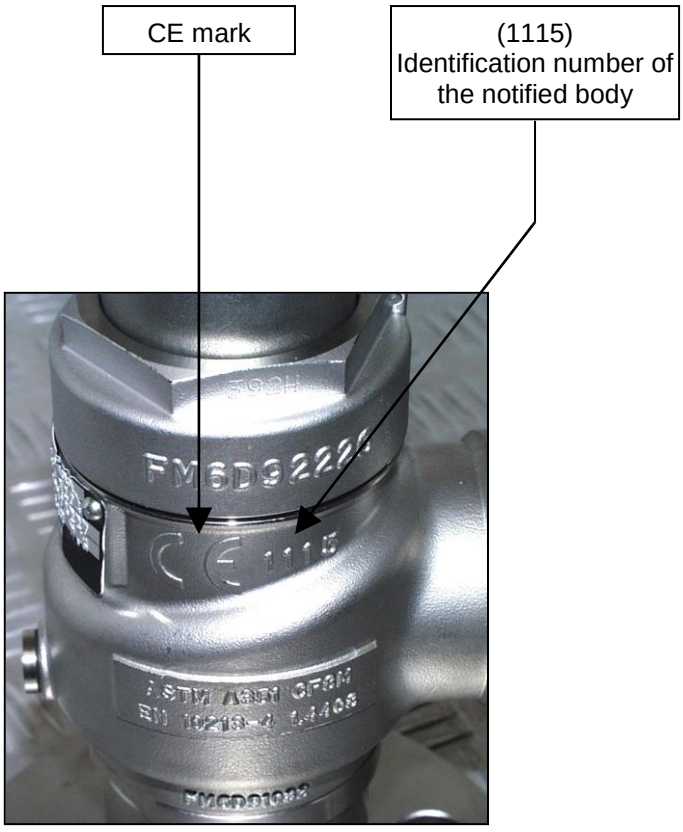
Dwg. no. 011256 Rev.:01

MBM Model		15/20	15/25	20/25	25/32	25/40	32/40	40/50	40/65	50/65
Ndi		1/2“	1/2“	3/4“	1“	1“	1” 1/4	1” 1/2	1” 1/2	2“
NDf		3/4“	1“	1“	1” 1/4	1” 1/2	1” 1/2	2“	2” 1/2	2” 1/2
do (Output diameter)		10.5	10.5	13.5	17	17	21.5	26.5	26.5	34
A	Short cylinder	236	236	236	243.5	243.5	243.5	267	267	267
	Long cylinder	276	276	276	283.5	283.5	283.5	307	307	307
B		56	56	56	56	56	56	56	56	56
C		120	120	120	120	120	120	120	120	120
D		34	34	34	34	34	34	34	34	34
Ø G		74	74	74	84	84	84	114	114	114
Ø I		105	115	115	140	150	150	165	185	185
Ø L		95	95	105	115	115	140	150	150	165
Ht	Short cylinder	326	326	326	353.5	353.5	353.5	397	397	397
	Long cylinder	366	366	366	393.5	393.5	393.5	437	437	437
X		70	70	70	80	90	90	100	100	100
Y		90	90	90	110	110	110	130	130	130
Area [mm^2]		86.6	86.6	143	227	227	363	551.5	551.5	908
H [lift]		5.6	5.6	6.6	7.2	7.2	9	10.2	10.2	13.8

Dimensions are in millimeters

4 Description of MBM Valve Rating Plates





5 Storage, Assembly, Check and Maintenance

5.1 Transport, Storage and Handling

Safety valves, during transport and assembly, must be handled very carefully. Shocks and anomalous stresses must be avoided. In the event of safety valves with resetting device, do not seize the valve by the lever present on the resetting device.
Valves are delivered with dust-proof protections on all connections and these protections must not be removed until they are installed.
Valves shall be stored in areas which are not exposed to the sunshine, so as to prevent inner gaskets from getting dry and old before time.
Storage temperatures must range between 5 °C and 40 °C.

A thorough visual inspection must be carried out to avoid damages possibly caused by accidental shocks or falls of the valve. Any dent or misalignment of parts are index of damages which could jeopardise the valve operation. In this case, avoid installing the valve.

5.2 Assembly instructions

5.2.1 General

The valve installation on the system shall be carried out by qualified personnel only, within the hydraulic and pneumatic fields, provided with all the equipment normally used in the industrial hydraulic and pneumatic plant engineering. The personnel shall always wear proper accident prevention garments, with particular care to the protection of face, eyes and hands.
The valve must never be disassembled or modified, under pain of revocation of any type of guarantee.
NOTE Inside the valve there is a compression spring.
Before assembly, all protections shall be removed from the valve body.
Safety valves must be installed, with the axis of movement of the obturator, in vertical position (position tolerance ± 2 °) on containers or on pipes connected to them.
As for calibration, you must take account of possible losses of pressure between the point of maximum pressure of the container and the installation point.
The containers which are connected by means of pipes, of a proper diameter, as declared by their manufacturer or by the user, and on which no stop valves are interposed, can be considered as a single container as regards the application of safety valves.
The connection pipe between safety valve and container shall be as short as possible and its section must not be smaller than the section of the inlet coupling of the safety valve. In the event of several valves connected with a single conduit to the container, the conduit section must not be lower than the sum of the areas of the inlet connections of the prescribed safety valves.
On these connections no gas take must be present.
Stop valves or any other obstacle must not be located between safety valve and pressure container.
Loss of pressure between protected container and safety valve, at the maximum capacity to be released, shall not exceed 3% of calibration pressure.
Before assembly, it is necessary to clean carefully the valve inlet and the connection stub pipe, if any.
Provisions similar to those followed for valve - pressure container connection, are to be observed for the outlet connection or exhaust conveying pipe, if any.
The inner diameter of the exhaust pipe must not be lower than the inner diameter of the valve outlet.
For containers with design pressure lower than 2 relative bar, the pipe section shall be increased by at least 20%.
The safety valve must not be stressed; therefore, a slip joint must be inserted between valve and exhaust pipe to allow large gap for thermal expansion.
Safety device release must take place without causing damages to people.
The user must keep a register where to write down all the operations of valve calibration.

5.2.2 Assembly of Valves with Threaded Connections

In case the valve body has threaded connections, it is necessary to fold these areas with PTFE seal tape to ensure a perfect seal; furthermore, it is necessary to tighten connections to the prescribed torque, as specified here below, in table 11. Caution: the installer must verify that the parts connected to the valve support the specified tightening torque.

5.2.3 Assembly of Flanged Valves

In case the valve body has flanged connections, it is necessary to interpose a gasket between valve flanges and pipe flanges, to ensure a perfect seal; moreover, it is necessary to tighten the flange fastening screws to the prescribed torque, as specified in the system specifications.

5.2.4 Indications for Correct Assembly

The safety valve is the most important component part of the system and prevents fluid pressure from exceeding a given value called calibration pressure. Therefore, it is advisable that the valve is installed correctly, following carefully instructions and rules for correct assembly.
Distance “A” must be as short as possible. It may be necessary to have connections “B” able to support the reaction forces of the outgoing fluid and the pipe weight so as to avoid stressing the valve.
A_{max} = 5 NDu

Use with uncondens. vapours or gases

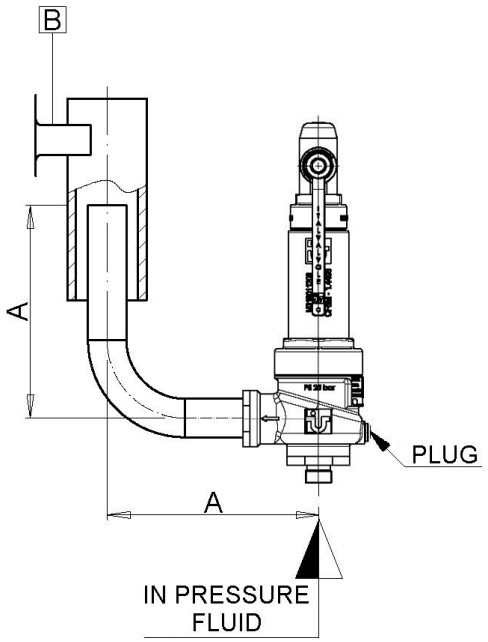


Fig. 1

Use with overheated water

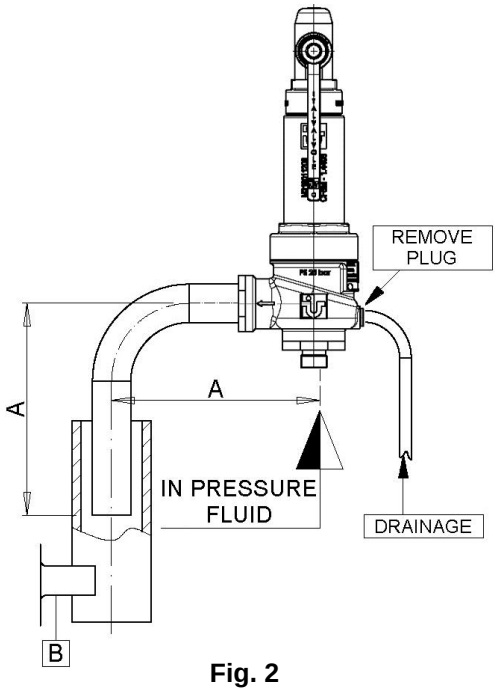


Fig. 2

Use with condensable vapours or gases

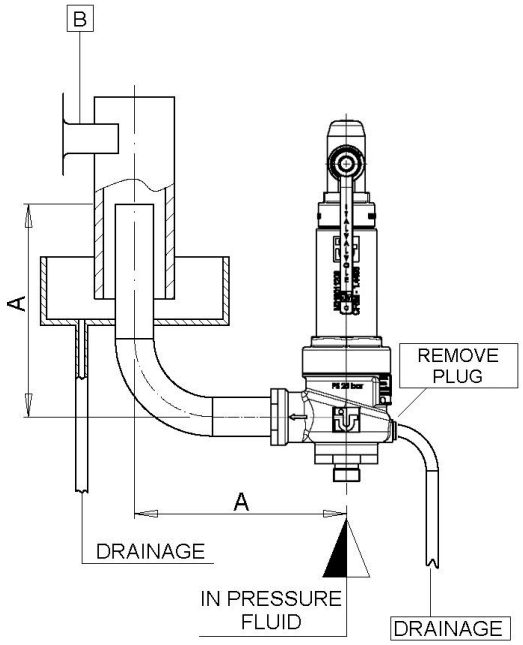


Fig. 3

MBM Valves Exploded View

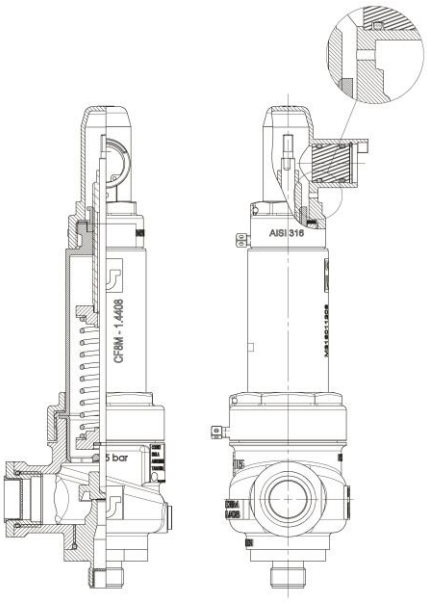


Fig. 4

5.3 Safety notes – residual risk

- For a correct valve operation, it is important to install them according to assembly diagrams, according to the used fluid (figure 1 – 2 – 3), paying special attention to drainages, in order to prevent valve from filling with liquid and compromising their operation and life. Attention: leak of liquid from the top of the valve (figure 4) indicates a malfunction of the valve discharge system; consequently, it is necessary to perform periodic checks and protect persons/objects from leak of fluid from the hole.
- The valve body, under the maximum operating temperature depending upon the system, may reach a temperature T equal to 210° C. It is up to the engineer to provide the system with the necessary safety guards and/or warning signals aiming at removing/indicating the risk of burns by the user.
- The safety valve MBM during unloading and/or normal use,can emit noise exceeding the threshold. The user must estimate the overall exposure in the installation workplace and observe all applicable requirements

5.4 Troubleshooting

Troubleshooting operations shall be always carried out by qualified personnel only, adequately equipped for hydraulic and pneumatic operations and provided with the proper safety clothing (refer to the DPI table). Paying particular attention to the protection of face, eyes, hands and hearing.
These are the factors which can lead to a valve malfunction: leakages, knocking and valve lock in partially open position.Must also pay particular attention to the dangers and risks not eliminated at the design stage (residual risks).The user must takes adequate protective measures to eliminated or reduce these risks.Ensure that the pressure on the inlet connections is nothing.

5.4.1 Leakages

The standard operating pressure must always be lower than the calibration pressure of 10%. Otherwise, fluid exerts on the plug such strength that a slight variation in pressure is sufficient to cause leakages. A possible hiss can be sign of these leakages.
A slight leakage, under normal operating conditions, is the signal of a small imperfection of the seal seat.
A significant leakage means a serious seat damage: impurities between seat and obturator may be the cause of this damage. Therefore, it is necessary to operate the lifting lever several times (in versions equipped with resetting device).
In the event that leakage does not stop, it is recommended to make the valve repaired, as soon as possible, to avoid serious erosions.
An incorrect installation of the exhaust pipe can subject valves to stress and determine anomalous deformations with consequent malfunction.

5.4.2 Knocking

It is a phenomenon of obturator vibration due to excessive back pressure (too long exhaust pipe or of too small section) or to insufficient capacity or to obstructions in the exhaust pipe.
This phenomenon must be absolutely eliminated, checking exhaust pipes, up to verify the system dimensioning.

5.4.3 Valve Lock

Valve lock can occur as a result of frictions of mechanical origin, or it can be due to sticking between seat and obturator because of impurity deposit. For this reason it is advisable to use always valves with resetting device..

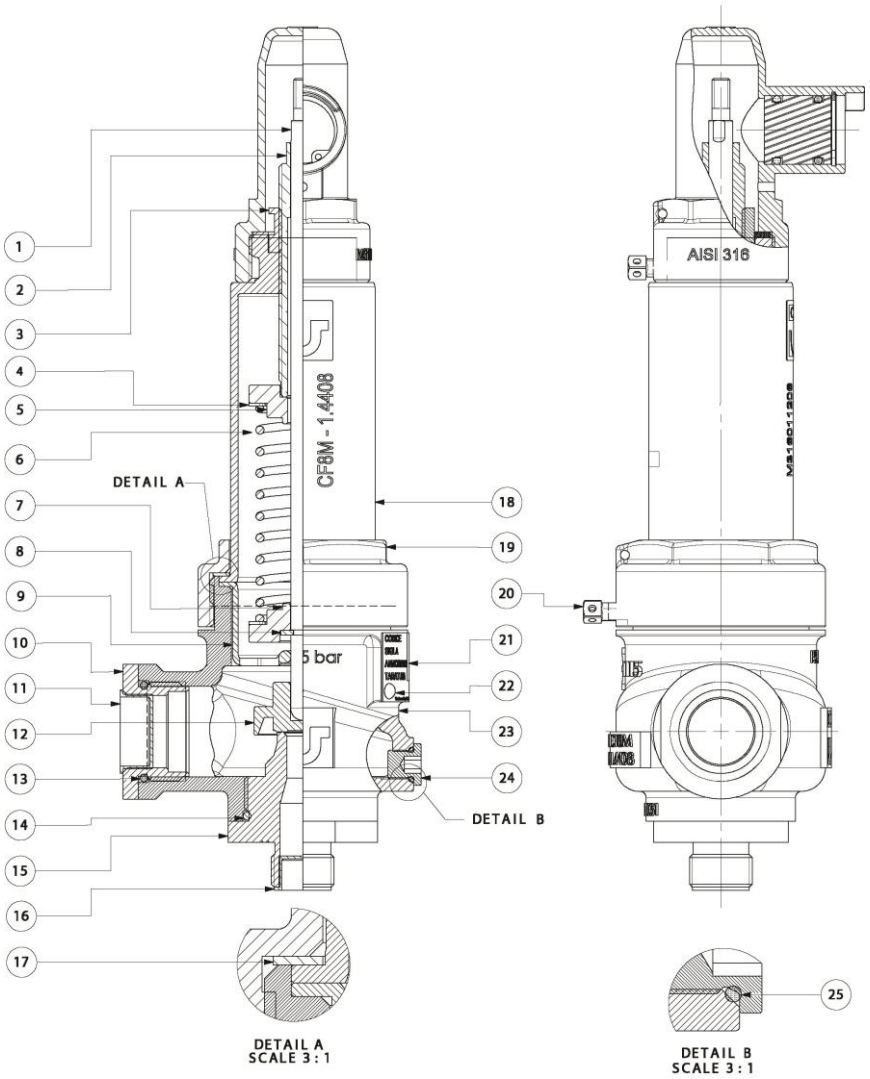
5.5 Valve Life and Periodic Maintenance

The MBM safety valve has been designed and manufactured to guarantee the system safety under and within the limits of normal operating conditions.
A pressure calibration check is expected every year, according to the above-mentioned operating limits. All fixed metal parts, which are not concerned with the seal function, have a life expectation of 10 years. Seal and movable parts must be submitted to a complete revision every two years and every time they exert their safety action (emergency system).
This operation of revision can be performed by ITALVALVOLE personnel only, or by personnel authorised, by written consent, and trained by ITALVALVOLE.
Periodic maintenance operations must be performed independently of those carried out as a result of possible damages, which always require an immediate intervention.

Here in after you can find the series of exploded views with the list of components to make the valve operation understanding easier and to facilitate both selection and exchange of information with the manufacturer.

6 MBM Safety Valves Exploded Views and Components

6.1 MBM ND 15#20 25#32 40#50 Threaded Valves Sectional View



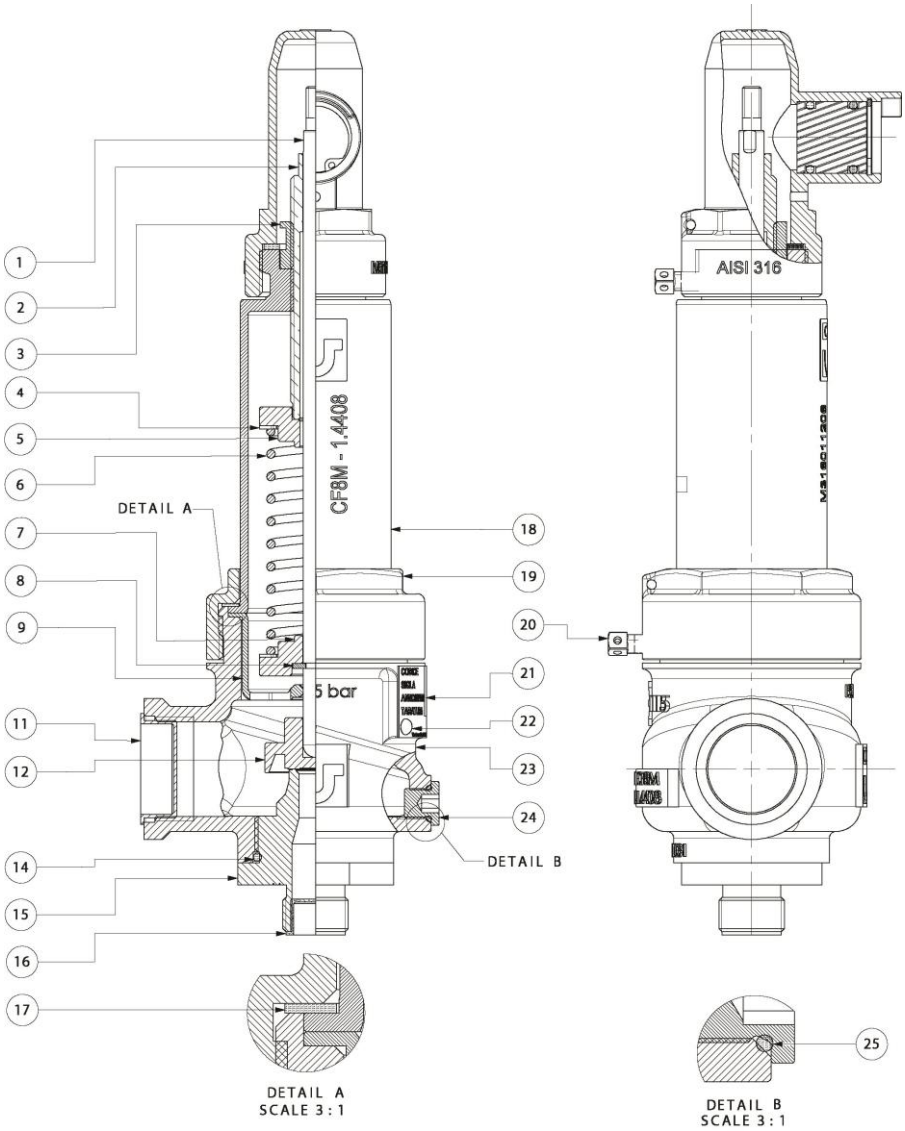
Dwg. no. 011250 Rev.:03

6.2 MBM ND 15#20 25#32 40#50 Threaded Valve Components

Nr	DESCRIPTION		MATERIAL
1	Obturator stem		S31600/1.4401
2	Pre-load screw		S31600/1.4401
3	Stop nut		S31600/1.4401
4	Anti fiction washer spring		PTFE
5	Upper spring hold. plate		S30400/1.4403
6	Spring		S30200/1.4310
7	Lower spring hold. plate		S30400/1.4403
8	Spring lock washer		S31600/1.4401
9	Stem guide		CF8M/1.4408
10	Reducing valve union		S31600/1.4401
11	Cylindrical cap		POLYAMIDE
12	Obturator	Plastic seal	S31600/1.4401 + PTFE-CARBON
		Metallic seal	S31600/1.4401

Nr	DESCRIPTION	MATERIAL
13	O-Ring gasket	FPM
14	O-Ring gasket	FPM
15	Valve seat	S31600/1.4401
16	Cylindrical cap	POLYAMIDE
17	Gasket	PTFE
18	Spring holder piston	CF8M/1.4408
19	Cylinder ring nut	CF8M/1.4408
20	Lock screw	S30400/1.4403
21	Rating plate	ALLUMINIUM
22	Self-tapping rivets	ALLUMINIUM
23	Valve body	CF8M/1.4408
24	Male cap	S31600/1.4401
25	O-Ring gasket	FPM

6.3 MBM ND 15#25 20#25 25#40 32#40 40#65 50#65 Threaded Valves Sectional View



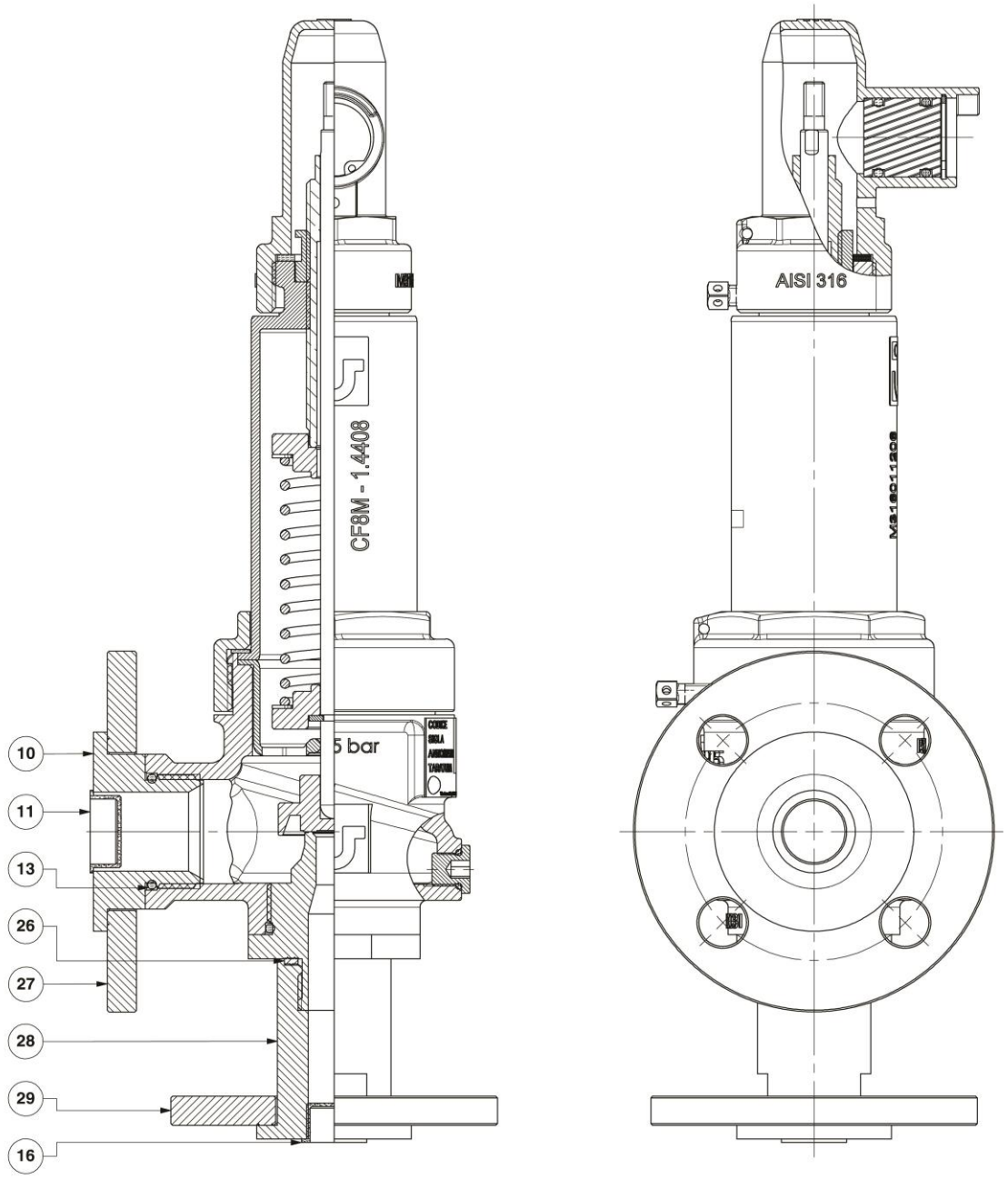
Dwg. no. 011249 Rev.:03

6.4 MBM ND 15#25 20#25 25#40 32#40 40#65 50#65 Threaded Valve Components

Nr	DESCRIPTION		MATERIAL
1	Obturator stem		S31600/1.4401
2	Pre-load reg. screw		S31600/1.4401
3	Stop nut		S31600/1.4401
4	Anti friction washer spring		PTFE
5	Upper spring hold. plate		S30400/1.4403
6	Spring		S30200/1.4310
7	Lower spring hold. plate		S30400/1.4403
8	Spring lock washer		S31600/1.4401
9	Stem guide		CF8M/1.4408
11	Cylindrical cap		POLYAMIDE
12	Obturator	Plastic seal	S31600/1.4401 + PTFE-CARBON

Nr	DESCRIPTION	MATERIAL
14	O-Ring gasket	FPM
15	Valve seat	S31600/1.4401
16	Cylindrical cap	POLYAMIDE
17	Cylinder Gasket	PTFE
18	Spring holder piston	CF8M/1.4408
19	Cylinder ring nut	CF8M/1.4408
20	Lock screw	S30400/1.4403
21	Rating plate	ALLUMINIUM
22	Self-tapping rivets	ALLUMINIUM
23	Valve body	CF8M/1.4408
24	Male cap	S31600/1.4401
25	O-Ring gasket	FPM

6.5 MBM Flanged Valves Sectional View



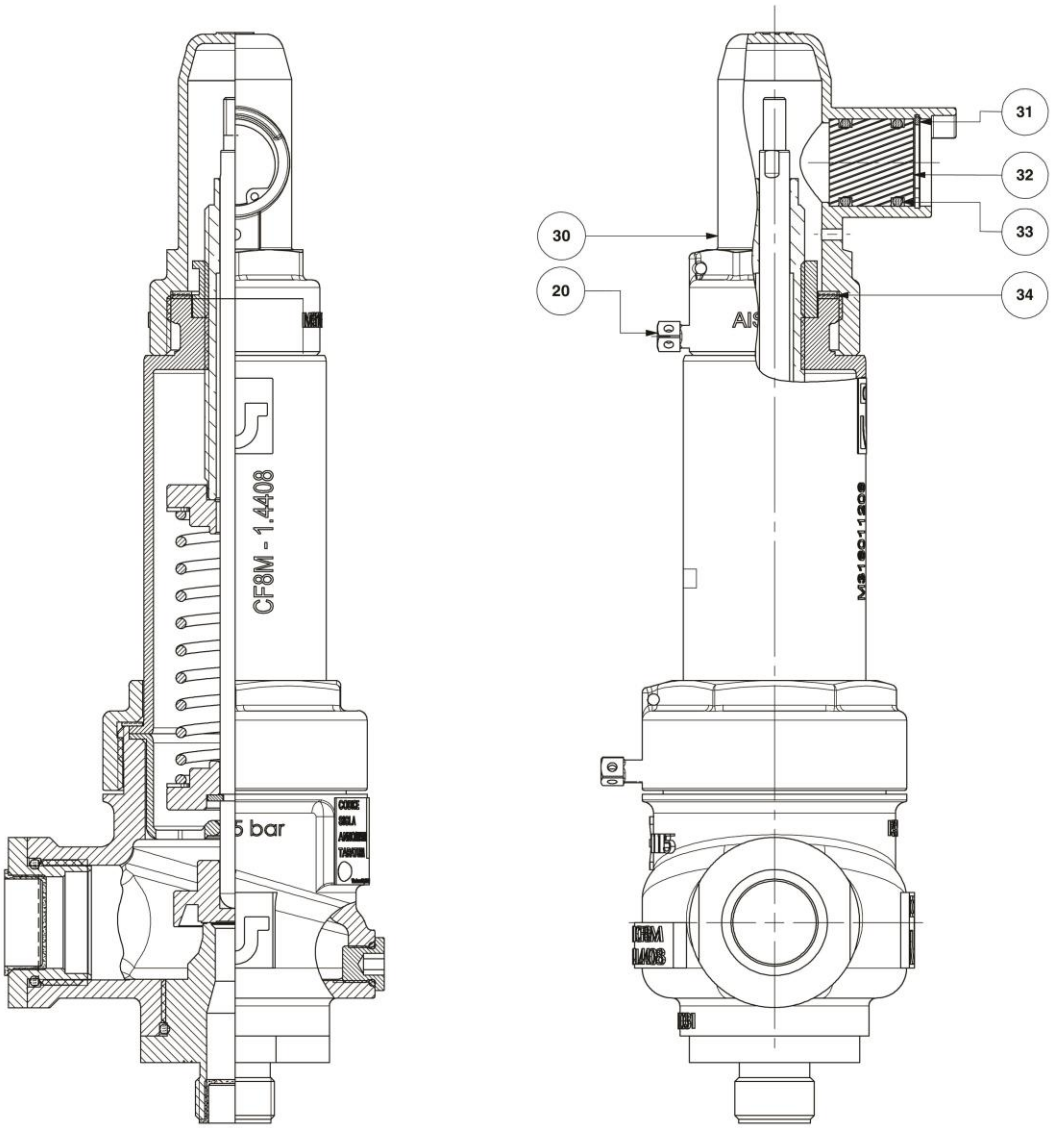
Dwg. no. 011253 Rev.:04

6.6 MBM Flanged Valve Components Table

Nr	DESCRIPTION	MATERIAL
10	Outlet union	S31600/1.4401
11	Cylindrical cap	POLYAMIDE
13	O-Ring gasket	FPM
16	Cylindrical cap	POLYAMIDE

Nr	DESCRIPTION	MATERIAL
26	MBM Gasket	FASIT 400
27	Outlet flange	S30400/1.4403
28	Inlet union	S31600/1.4401
29	Inlet flange	S30400/1.4403

6.7 MBM Valves Sectional View without Resetting Device

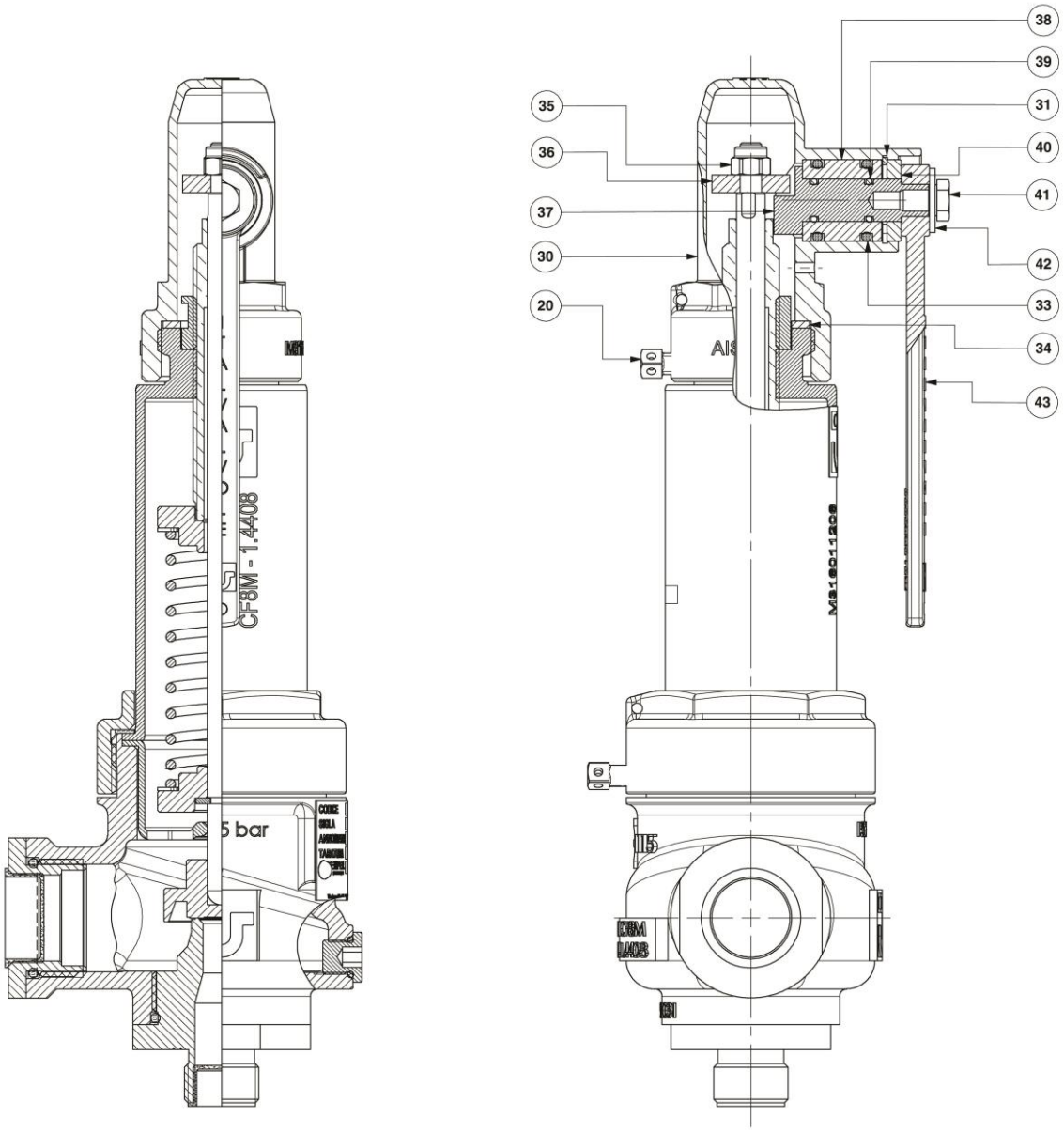


Dwg. no. 060772 Rev.:02

6.8 MBM Valves without Resetting Device Components Table

Nr	DESCRIPTION	MATERIAL
20	Lock screw	S30400/1.4403
30	Reset cover	CF8/1.4308
31	Seeger ring	S31600/1.4401
32	Closing cover gasket	PTFE
33	O-Ring gasket	FPM
34	Cap gasket	PTFE

6.9 MBM Valves Sectional View with Resetting Device



Dwg. no. 011251 Rev.:02

6.10 MBM Valves with Resetting Device Components Table

Nr	DESCRIPTION	MATERIAL
20	Lock screw	S30400/1.4403
30	Reset cover	CF8/1.4308
31	Seeger ring	S31600/1.4401
33	O-Ring gasket	FPM
34	Cover gasket	PTFE
35	Self-braking nut	S30400/1.4403
36	Stem terminal	S30400/1.4403

Nr	DESCRIPTION	MATERIAL
37	Eccentric pin	S30400/1.4403
38	Guide bush	PA66 G6
39	O-Ring gasket	FPM
40	Guide bush	PTFE+Graphite
41	Hexagonal-head screw	S30400/1.4403
42	Flat washer	S30400/1.4403
43	Handle	CF8/1.4308

7 Tightening Torques

7.1 Table 10 – Tightening Torques of Valve-System Connections.

TYPE OF VALVE	INLET UNION	OUTLET UNION
15-20	C½"=2 Kg·m	C¾"=2,8 Kg·m
15-25	C½"=2 Kg·m	C1"=8,9 Kg·m
20-25	C¾"=4,7 Kg·m	C1"=8,9 Kg·m
25-32	C1"=8,9 Kg·m	C1"¼=12,5 Kg·m
25-40	C1"=8,9 Kg·m	C1"½=15,9 Kg·m
32-40	C1"¼=12,5 Kg·m	C1"½=15,9 Kg·m
40-50	C1"½=15,9 Kg·m	C2"=47,6 Kg·m
40-65	C2"=47,6 Kg·m	C2"½=95,8 Kg·m
50-65	C2"=47,6 Kg·m	C2"½=95,8 Kg·m

8 Disposal

At the end of use, for the disposal of the valve, it is necessary to disassemble the valve and divide its components by building materials, referring to the tables attached to valve working drawings; therefore, get rid of components in conformity with the existing rules. Disassembly operations must be performed by skilled personnel, equipped with all the necessary safety and operating equipment.

Caution! Inside the cylinder there is a compressed spring (see dwg. no. 011250 of page 20). Therefore, during valve disassembly, for the disposal of components, it is necessary to provide yourself with suitable equipment that, once the cylinder ring nut (19) has been unscrewed, does not allow the sudden expulsion of the spring holder cylinder (18) from the valve body (23).

NOTES:

- Safety conditions ca not be warranted and wrong workings can not be attributed to our valves if:
  - Disassembly, assembly and maintenance operations are not carried out following the instructions described in this manual.
  - Original spare parts are not used.
- It is forbidden to remove pages from this document or to make any correction.
- ITALVALVOLE® S.A.S. reserves the right to make modification and/or amendment to its products and relevant documentation without giving notice.
- The use of the handbook does not exempt from the observance of the laws in force.
- In case of doubt, make reference to Italian version of the manual.
- Please, note that some parts may be not be sourced from Italy.

Annex 1: CE type examination certificate according to module B of the 2014/68/UE directive

PASCAL

CERTIFICATO DI ESAME CE DEL TIPO
EC TYPE EXAMINATION CERTIFICATE

N. **PA01 – 97/23/CE – B Rev. 04**

Consorzio Pascal Srl a socio unico
Organismo Notificato n. 1115
Via A. Scarsellini, 13 – 20161 Milano ITALY
Tel. 02 4541 8101 – Fax 02 4541 8140
e-mail: info@consorziopascal.it

Consorzio PASCAL s.r.l. a socio unico, quale Organismo Notificato n. 1115
Consorzio PASCAL s.r.l. a socio unico, acting as Notified Body n. 1115

ATTESTA
ATTESTS

che il prototipo presentato da
that the prototype submitted by

FABBRICANTE *MANUFACTURER*	**ITALVALVOLE s.a.s. di Spadon Oscar & C.** Via Amendola, 125 13836 Cossato (BI)

soddisfa le disposizioni dell'Allegato III, **Modulo B** della **Direttiva 97/23/CE**
*satisfy the requirements of Annex III, **Module B** of the Pressure Equipment **Directive 97/23/EC***

ATTREZZATURA *EQUIPMENT*	**VALVOLE DI SICUREZZA** *PRESSURE SAFETY VALVES*
Modelli coperti *Covered models*	**MBM** DN 15/20 DN 15/25, DN 20/25, DN 25/32, DN 25/40, DN 32/40, DN 40/50, DN 40/65, DN 50/65
Fascicolo Tecnico *Technical File*	**MBM rev. 14 del 25/11/2015 – PASCAL N. 05293** L'elenco della documentazione tecnica rilevante è riportata in appendice A. *A list of the relevant technical documentation is summarized in appendix A.*
Disegno *Drawing*	**Fascicolo Tecnico All. 7 – Disegni MBM** ***Technical File Annex 7 – Disegni MBM***
Codice Progetto *Design Code*	**EN 4126-1, EN 4126-7**
Rapporti di valutazione *Evaluation Reports*	**008_RED_2015_12_22**
LIMITI ESSENZIALI AMMISSIBILI ***ESSENTIAL ALLOWABLE LIMITS***	
PS (bar g)	**25**
TS min/max (°C)	**-10 / 210**
Volume (L)/DN	**DN15, DN20, DN25, DN32, DN40, DN50**
Fluido *Fluid*	**Aria, Vapore, Acqua surriscaldata** ***Air, Steam, Superheated water***
Gruppo Fluido (art. 13 Dir. 2014/68/UE) *Fluid Group (art. 13 Dir. 2014/68/EU)*	**2**
Categoria di Rischio *Risk Category*	**IV**
ACCESSORI DI SICUREZZA ***SAFETY DEVICES***	**N.A.**
CONDIZIONI DI VALIDITA' ***VALIDITY TERMS AND CONDITIONS***	Tutte le modifiche al tipo approvato sono soggette ad ulteriore approvazione. Il presente certificato deve ritenersi nullo ed il Fabbricante se ne assumerà tutte le conseguenze del suo indebito utilizzo, in caso di modifiche che influenzano la conformità ai requisiti essenziali di sicurezza e, in generale, se il Fabbricante non rispetta tutti e ciascuno degli obblighi a suo carico previsti dalla direttiva 97/23/CE, come recepita dalla legislazione nazionale vigente. *All the modifications to the approved type are subjected to further approval. This certificate shall be deemed to be void an the Manufacturer shall alone bear any consequences pursuant to its use, in case of modifications where these may affect conformity to the essential safety requirements, and generally, where the Manufacturer fails to comply with each and every of his obligations under directive 97/23/CE, as transposed in the applicable national laws.*

Rev.	Descrizione	*Description*
04	Adeguamento a 4126-1, 4126-7	*Compliance with 4126-1, 4126-7*

La presente revisione annulla e sostituisce le precedenti – ***This revision supersedes previous ones***

ACCREDIA L'ENTE ITALIANO DI ACCREDITAMENTO
PRD N° 188B
Membro degli Accordi di Mutuo Riconoscimento EA, IAF e ILAC
Signatory of EA, IAF and ILAC Mutual Recognition Agreements

Prima Emissione *First issue*	Emissione corrente *Current issue*	Data di Scadenza *Expiring date*
18/02/2002	23/12/2015	22/10/2022

IL PRESIDENTE / *THE PRESIDENT*
Consorzio PASCAL srl
Via A. Scarsellini, 13 – 20161 Milano

Il presente Certificato non è da ritenersi valido se non completo di tutte le sue pagine e può essere sospeso o revocato in qualsiasi momento nel caso di inadempienze del Fabbricante. L'autenticità e la validità del presente attestato può essere verificata contattando Consorzio PASCAL.
This Certificate is not valid without all its pages and can be suspended or withdrawn at any time in the event of manufacturer's non fulfilment. To verify autenticity and validity of this Certificate please contact Consorzio PASCAL.

Pagina *Page* 1 di *of* 2

Mod. DES.01

PASCAL

CERTIFICATO DI ESAME CE DEL TIPO
EC TYPE EXAMINATION CERTIFICATE

N. **PA01 - 97/23/CE - B Rev. 04**

Consorzio Pascal Srl a socio unico
Organismo Notificato n. 1115
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Tel. 02 4541 8101 - Fax 02 4541 8140
e-mail: info@consorziopascal.it

APPENDICE A
APPENDIX A

	Elenco documenti significativi del fascicolo tecnico ***List of significant documents of the technical file***	**Riferimenti ai documenti esaminati** ***Reference to examined documents***
1	Descrizione generale *General description*	Descrizione generale del tipo rev 4 del 25/11/2015
2	Disegni di progettazione e fabbricazione *Conceptual design and manufacturing drawings*	Fascicolo Tecnico All. 7 – Disegni MBM *Technical File Annex 7 – Disegni MBM*
3	Elenco norme applicate *List of applied standards*	Elenco delle norme di riferimento rev 6 del 25/11/2015
4	Risultati dei calcoli di progetto e/o degli esami svolti per la progettazione *Results of design calculations and/or design examinations carried out*	Fascicolo Tecnico All. 10 – Calcoli e verifiche MBM *Technical File Annex 10 – Calcoli e verifiche MBM* Visto doc. Mod. 388 rev. 00 del 25/11/2015 *Seen doc. Mod. 388 rev. 00 dated 11/25/2015*
5	Analisi dei rischi *Risk Analysis*	Fascicolo Tecnico All. 09 – Analisi dei rischi valvole MBM rev.04 del 28/09/2012 *Technical File Annex 09 – Analisi dei rischi valvole MBM rev. 04 dated 09/28/2015*
6	Materiali *Materials*	Fascicolo Tecnico All. 05 – Elenco specifiche tecniche e resistenze materiali MBM *echnical File Annex 05 - Elenco specifiche tecniche e resistenze materiali MBM*
7	Qualifiche procedimenti giunzioni permanenti *Qualification of permanent joints procedure*	N.A.
8	Qualifiche operatori giunzioni permanenti *Qualification of permanent joints operators*	N.A.
9	Qualifiche personale CND *Qualification NDT personnel*	N.A.

ACCREDIA
L'ENTE ITALIANO DI ACCREDITAMENTO

PRD N° 188B

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Signatory of EA, IAF and ILAC Mutual Recognition Agreements

Prima Emissione *First issue*	Emissione corrente *Current issue*	Data di Scadenza *Expiring date*
18/02/2002	23/12/2015	22/10/2022

IL PRESIDENTE / *THE PRESIDENT*
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Via A. Scarsellini, 13 - 20161 Milano

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Mod. DES.01

Annex 2: Production Quality Guarantee System Acceptance Certificate

PASCAL

CERTIFICATO DI CONFORMITA'
CONFORMITY CERTIFICATE
N. **00008PED80001D D Rev. 00**

Consorzio Pascal Srl a socio unico
Organismo Notificato n. 1115
Via A. Scarsellini, 11 – 20161 Milano ITALY
Tel. 02 4541 3101 – Fax 02 4541 0140
e-mail: info@consorziopascal.it

Consorzio PASCAL s.r.l. a socio unico, quale Organismo Notificato n. 1115
Consorzio PASCAL s.r.l. a socio unico, acting as Notified Body n. 1115

ATTESTA
ATTESTS
che il sistema qualità adottato da
that the quality system operated by

FABBRICANTE / ***MANUFACTURER***: **ITALVALVOLE s.a.s. di Spadon Oscar & C.**
Via Amendole, 125 – 13836 Cossato (BI)

per la produzione, l'ispezione e le prove sul prodotto finito delle attrezzature a pressione di seguito identificate è stato esaminato in accordo alle prescrizioni dell'Allegato **III, modulo D**, della **Direttiva 2014/68/UE**,
*for production, final inspection and testing of the pressure equipment identified hereunder has been examined against the provisions of Annex III, **module D**, of the Pressure Equipment **Directive 2014/68/UE**,*

AUTORIZZA
AUTHORIZES

ad apporre, sui prodotti di seguito specificati, il marchio
to provide the above mentioned products, the mark CE 1115

ACCESSORI DI SICUREZZA / ***SAFETY ACCESSORIES***: **VALVOLE DI SICUREZZA** / ***SAFETY VALVES***

Modelli coperti / *Covered models*: **MBM**

Rapporti di valutazione / *Evaluation Reports*: **008_RDQ_2017_01_23; 008_RAQ_2017_02_06**

Attestato di riferimento / *Approval reference*: **PA1 – 97/23/CE – B**

Data Scadenza / *Expiring date*: **22/10/2022**

Emesso da / *Issued by*: **Consorzio PASCAL srl**

Organismo notificato n. / *Notified Body n.*: **1115**

CONDIZIONI DI VALIDITA' / ***VALIDITY TERMS AND CONDITIONS***

L'approvazione del Sistema di Qualità è soggetta a verifiche ispettive periodiche e/o senza preavviso.
L'approvazione è valida esclusivamente per le attrezzature ed i limiti essenziali di cui sopra. Il Fabbricante è tenuto a mantenere informato Consorzio PASCAL sul programma di produzione previsto per le attrezzature di cui sopra. Il Fabbricante rimane obbligato a mantenere aggiornato e disponibile a Consorzio PASCAL il Registro Prodotti con l'identificazione dei prodotti immessi sul mercato con il numero identificativo 1115 di Consorzio PASCAL.
Il Fabbricante deve preventivamente informare Consorzio PASCAL ogni qual volta intenda apportare modifiche al Sistema Qualità approvato.
Il presente certificato deve ritenersi nullo ed il Fabbricante se ne assumerà tutte le conseguenze del suo indebito utilizzo, in caso di modifiche apportate al Sistema di Qualità che influenzano la conformità ai requisiti essenziali di sicurezza e, in generale, se il Fabbricante non rispetta tutti e ciascuno degli obblighi a suo carico previsti dalla direttiva 2014/68/UE, come recepita dalla legislazione nazionale vigente.
The approval of the Quality System is subjected to periodic and/or unexpected visits.
The approval is only valid for the equipment and the essential limits listed above. The manufacturer shall inform Consorzio PASCAL about the production schedule. The Manufacturer remains obligad to maintain updated and available to Consorzio PASCAL a Product Register where items placed on the market with Consorzio PASCAL identification number 1115 are identified.
The Manufacturer shall preventively inform Consorzio PASCAL whenever he intends to modify the approved Quality System.
This certificate shall be deemed to be void an the Manufacturer shall alone bear any consequences pursuant to its use, in case of modifications of Quality System where these may affect conformity to the essential safety requirements, and generally, where the Manufacturer fails to comply with each and every of his obligations under directive 2014/68/UE, as transposed in the applicable national laws.

Rev.	Descrizione / *Description*
0	Rinnovo e transizione Direttiva 2014/68/UE / *Renewal and transition to Directive 2014/68/EU*

La presente revisione annulla e sostituisce il certificato n. 2-97/23/CE-D rev. 4 secondo Direttiva 97/23/CE – *This revision supersedes certificate n. 2-97/23/CE-D rev. 4 according to Directive 97/23/EC*

ACCREDIA L'ENTE ITALIANO DI ACCREDITAMENTO
PRD N° 1868
Membro degli Accordi di Mutuo Riconoscimento EA, IAF e ILAC
Signatory of EA, IAF and ILAC Mutual Recognition Agreements

Prima Emissione / *First issue*	Emissione corrente / *Current issue*	Data di Scadenza / *Expiring date*
26/02/2002	26/02/2017	25/02/2020

Documento firmato elettronicamente; firma certificata da InfoCert S.p.a
Electronically signed document; signature certified by InfoCert S.p.a
IL PRESIDENTE – *THE PRESIDENT*
Consorzio PASCAL srl
Via A. Scarsellini, 11 – 20161 Milano

Il presente Certificato non è da ritenersi valido se non completo di tutte le sue pagine e può essere sospeso o revocato in qualsiasi momento nel caso di inadempienze del Fabbricante. L'autenticità e la validità del presente attestato può essere verificata contattando Consorzio PASCAL.
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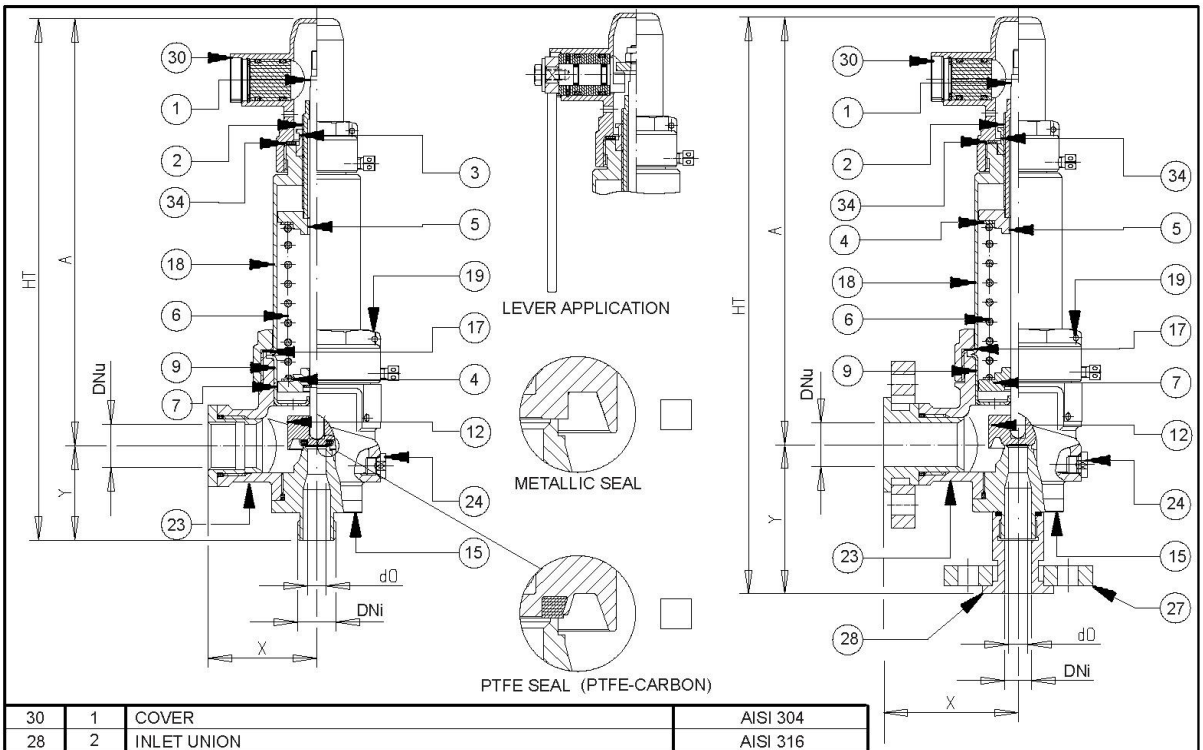
Questo documento è di proprietà di Consorzio PASCAL – *Property of Consorzio PASCAL* Mod. SQ0.01

Annex 3: Manufacturer's report



PART.N°	Q.TA'	DESCRIZIONE	MATERIAL
30	1	COVER	AISI 304
28	2	INLET UNION	AISI 316
27	2	OUTLET FLANGE	AISI 304
24	1	MALE CYLINDRICAL CAP	AISI 316
23	1	VALVE BODY	AISI 316
19	1	CYLINDER RING NUT	AISI 316
18	1	SPRING HOLDER PISTON	AISI 316
17/34	2	CAP AND CYLINDER GASKET	PTFE
15	1	VALVE SEAT	AISI 316
12	1	OBTURATOR	AISI 316/AISI 316-PTFE CARBON
9	1	STEAM GUIDE	AISI 316
7	1	LOWER SPRING HOLD. PLATE	AISI 304
6	1	SPRING	AISI 316/AISI 302
5	1	UPPER SPRING HOLD. PLATE	AISI 304
4	2	ANTI FRICTION WASHER	PTFE
3	1	SPRING STOP NUT	AISI 316
2	1	PRELOAD REG. SCREW	AISI 316/BRASS
1	1	OBTURATOR STEAM	AISI 316

MOD.267
DATE 18/07/2016
REV. 08
DWG.N 020124_01

SAFETY MBM VALVE
-Marker: ITALVALVOLE
-Regyster N°:
- Fluid in use: belonging to group 2 (Art. 13 2014/68/UE directive)
compatible with AISI 316 and loaded carbon PTFE
-Inlet ND -Outlet ND
-Calibration range: 0,5 - 15 BAR
-According to 2014/68/UE directive - class. in cat. IV
- Appraisal conformity according engl II: mod. B+D
Examination certificate "CE del tipo" n°PA001-97/23/CE-B Rev.04 del 23/12/2015
Q.S certificate N.2-97/23/CE-D Rev.04 del 26/02/2014
notified body n° 1115 Società Consortile PASCAL
-Coefficent of discharge: K = 0,96
-Overpressure: 10 % -Closing reyect: 15 %
-Test results: Positive
-Calibration pressure: BAR
-Outlet capacity:
-Inlet PN 25 - Outlet PN 16
-Hydraulic body test: 37,5 BAR
-Lift h = mm
-Report N° del:
-Spring AISI 316 ☐ AISI 302 ☐

type. MBM		15/20	15/25	20/25	25/32	25/40	32/40	40/50	40/65	50/65
NDi	Thread.	1/2"	1/2"	3/4"	1"	1"	1"1/4	1"1/2	1"1/2	2"
	Flang.	15	15	20	25	25	32	40	40	50
NDu	Thread.	3/4"	1"	1"	1"1/4	1"1/2	1"1/2	2"	2"1/2	2"1/2
	Flang..	20	25	25	32	40	40	50	65	65
dO		10.5	10.5	13.5	17	17	21.5	26.5	26.5	34
Area mm²		86.6	86.6	143	227	227	363	551.5	551.5	908
H (Lift)		5.6	5.6	6.6	7.2	7.2	9	10.2	10.2	13.8
X	Thread.	60	55	55	68	60	60	88	80	80
	Flang.	70	70	70	80	90	90	100	100	115
Y	Thread.	52	52	52	60	269	60	85	85	85
	Flang.	90	90	90	110	110	110	130	130	130
A max		276	276	276	283,5	283,5	283,5	307	307	307
HT max	Thread.	288	288	288	303.5	303.5	303.5	352	352	352
		328	328	328	343.5	343.5	343.5	392	392	392
	Flang.	326	326	326	353.5	353.5	353.5	397	397	397
		366	366	366	393.5	393.5	393.5	437	437	437

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13836 COSSATO (ITALIA) - TEL. 015/980641 - TELEFAX 015/926297

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