



1810.1 • 1/4"-2"

1820.1 • 1/4"-2"

1830.1 • 1/4"-2"

SAFETY VALVES PRESET AND LEAD SEALED WITH FREE DISCHARGE  
CE-1115 MARKED  
IN COMPLIANCE WITH DIRECTIVE PED 97/23/EC - CAT IV

CONNECTION: MALE



#### HYDRAULIC FEATURES

The automatic safety valve with "free discharge" is a security measure against overpressure designed to open solely by the energy of the fluid in the event the internal pressure of the system reaches the valve's predetermined maximum pressure (Preset Nominal Pressure Pnr), thus releasing the fluid through the free discharge outlet into the air. This safety valve with free discharge closes automatically when the internal pressure of the system descends below the predetermined pressure. The preset pressure (Pnr) is fitted so that each external setting is sealed to prevent non-authorized adjustments. The discharge side of the body can not convey and therefore it is perfect for use only with gas and steam (Group I - if compatible). The safety valve with automatic free discharge satisfies the essential safety requirements stipulated in the EU Pressure Equipment Directive (PED) 97/23/EC.

#### TECHNICAL FEATURES

##### Pressure:

Maximum allowable working pressure (PN) 16 bar

Preset nominal pressure (Pnr) may be requested for a field adjustable from 0.5 to 16 bar (Factory set and sealed and thus the above must be specified when ordering)

Minimum accumulation pressure

- 5%

Overpressure

10%

Reclosing value

20%

Flow coefficient

(K) = 0.05 - Classified as an "Ordinary Valve" by the ISPESL (Italian Institute for Occupational Safety Prevention)

##### Threading:

Pipeline connections

Threads according to ISO 228/1

##### Requirements and tests as per:

Type test (functional aspects) with reference to ISO 4126-1 § 7.2

Acceptance test

Preset pressure verification according to Italian national standards (UNI 10197) UNI 10197

Pressure test in line with Annex I, Section 3.2.2 of the PED Directive.

Manufacturing test



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## PED OPERATING LIMITS

| Code | Obturator Material | Max. allowable Pressure PS | Max. allowable Temperature TS | PED Risk Category | PED Evaluation Procedure | PED supervisory body | Acceptable Fluids   |
|------|--------------------|----------------------------|-------------------------------|-------------------|--------------------------|----------------------|---------------------|
| 1810 | Brass              | 16 Bar                     | from 0° to 220 °C             | IV                | Module B+D               | 1115                 | S Group I* and II   |
| 1820 | SBR Rubber         | 16 Bar                     | from 0° to 70 °C              | IV                | Module B+D               | 1115                 | G Group I* and II   |
| 1830 | PTFE               | 16 Bar                     | from 0° to 180 °C             | IV                | Module B+D               | 1115                 | G-S Group I* and II |

G: Gas – S: Steam

\* Compatibility to substances belonging to "Group I" is limited and requires to be approved by Officine Rigamonti S.p.A.

## DESIGN

Brass Body EN 12165 - CW617N  
 Brass bonnet dimensions 1/4"-1"1/2 EN 12164 - CW614N  
 Cast brass bonnet dimensions 2" EN 1982-CB753S  
 Other components in brass EN 12164 - CW614N  
 Metal seat: obturator in brass EN 12165 - CW617N  
 Rubber seat: obturator gasket in NBR elastomer  
 PTFE seat: obturator gasket in pure PTFE  
 Sm GALVANIZED STEEL spring - EN 10270-1

## PRODUCT CODES

| Metal seat product codes |                    | Rubber seat product codes |                     | PTFE seat product codes |                   |
|--------------------------|--------------------|---------------------------|---------------------|-------------------------|-------------------|
| 1810.108                 | metal seat 1/4" M  | 1820.108                  | rubber seat 1/4" M  | 1830.108                | PTFE seat 1/4" M  |
| 1810.112                 | metal seat 3/8" M  | 1820.112                  | rubber seat 3/8" M  | 1830.112                | PTFE seat 3/8" M  |
| 1810.115                 | metal seat 1/2" M  | 1820.115                  | rubber seat 1/2" M  | 1830.115                | PTFE seat 1/2" M  |
| 1810.120                 | metal seat 3/4" M  | 1820.120                  | rubber seat 3/4" M  | 1830.120                | PTFE seat 3/4" M  |
| 1810.125                 | metal seat 1" M    | 1820.125                  | rubber seat 1" M    | 1830.125                | PTFE seat 1" M    |
| 1810.133                 | metal seat 1"1/4 M | 1820.133                  | rubber seat 1"1/4 M | 1830.133                | PTFE seat 1"1/4 M |
| 1810.142                 | metal seat 1"1/2 M | 1820.142                  | rubber seat 1"1/2 M | 1830.142                | PTFE seat 1"1/2 M |
| 1810.150                 | metal seat 2" M    | 1820.150                  | rubber seat 2" M    | 1830.150                | PTFE seat 2" M    |



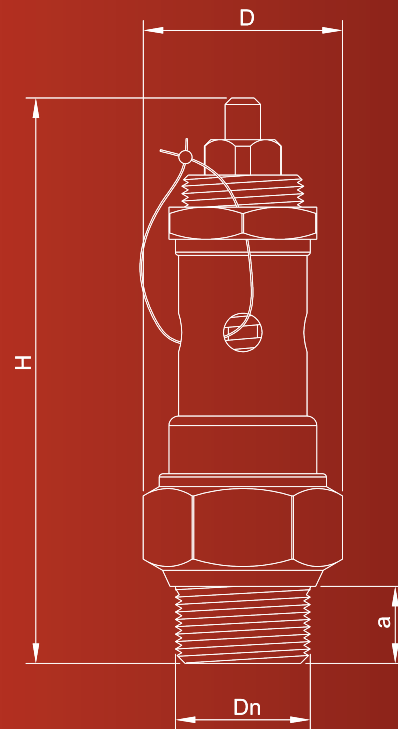
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## FEATURES

| Dn    | D  | H   | a  |
|-------|----|-----|----|
| 1/4"  | 29 | 88  | 10 |
| 3/8"  | 30 | 87  | 11 |
| 1/2"  | 31 | 89  | 12 |
| 3/4"  | 43 | 109 | 15 |
| 1"    | 52 | 124 | 17 |
| 1"1/4 | 66 | 145 | 23 |
| 1"1/2 | 74 | 158 | 23 |
| 2"    | 88 | 177 | 25 |



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## SETTING

## DISCHARGING FLOW STEAM (kg/h) 1810.1-1830.1

| P  | 1/4"  | 3/8" | 1/2" | 3/4" | 1"    | 1"1/4 | 1"1/2 | 2"    |
|----|-------|------|------|------|-------|-------|-------|-------|
| 1  | 1,77  | 3,8  | 5,5  | 10,8 | 13,5  | 22,2  | 22,2  | 26,5  |
| 2  | 2,61  | 5,6  | 8,1  | 16   | 19,9  | 32,8  | 32,8  | 39,2  |
| 3  | 3,45  | 7,4  | 10,7 | 21,1 | 26,3  | 43,4  | 43,4  | 51,8  |
| 4  | 4,28  | 9,2  | 13,3 | 26,2 | 32,6  | 53,8  | 53,8  | 64,3  |
| 5  | 5,1   | 11   | 15,8 | 31,3 | 38,9  | 64,1  | 64,1  | 76,6  |
| 6  | 5,92  | 12,8 | 18,4 | 36,3 | 45,2  | 74,5  | 74,5  | 88,9  |
| 7  | 6,74  | 14,5 | 20,9 | 41,3 | 51,4  | 84,7  | 84,7  | 101,2 |
| 8  | 7,55  | 16,3 | 23,4 | 46,3 | 57,6  | 95    | 95    | 113,4 |
| 9  | 8,36  | 18   | 26   | 51,3 | 63,8  | 105,2 | 105,2 | 125,6 |
| 10 | 9,17  | 19,8 | 28,5 | 56,2 | 70    | 115,4 | 115,4 | 137,8 |
| 11 | 9,98  | 21,5 | 31   | 61,2 | 76,2  | 125,5 | 125,5 | 149,9 |
| 12 | 10,79 | 23,3 | 33,5 | 66,1 | 82,3  | 135,7 | 135,7 | 162,1 |
| 13 | 11,59 | 25   | 36   | 71,1 | 88,5  | 145,8 | 145,8 | 174,2 |
| 14 | 12,4  | 26,8 | 38,5 | 76   | 94,6  | 155,9 | 155,9 | 186,3 |
| 15 | 13,2  | 28,5 | 41   | 81   | 100,8 | 166,1 | 166,1 | 198,4 |
| 16 | 14,01 | 30,2 | 43,5 | 85,9 | 106,9 | 176,2 | 176,2 | 210,5 |

## DISCHARGING FLOW GAS ( kg/h) 1820.1-1830.1

| P  | 1/4" | 3/8" | 1/2" | 3/4"  | 1"    | 1"1/4 | 1"1/2 | 2"    |
|----|------|------|------|-------|-------|-------|-------|-------|
| 1  | 2,9  | 6,3  | 9    | 17,8  | 22,2  | 36,6  | 36,6  | 43,7  |
| 2  | 4,4  | 9,4  | 13,5 | 26,7  | 33,3  | 54,9  | 54,9  | 65,5  |
| 3  | 5,8  | 12,6 | 18,1 | 35,7  | 44,4  | 73,2  | 73,2  | 87,4  |
| 4  | 7,3  | 15,7 | 22,6 | 44,6  | 55,5  | 91,4  | 91,4  | 109,2 |
| 5  | 8,7  | 18,8 | 27,1 | 53,5  | 66,6  | 109,7 | 109,7 | 131,1 |
| 6  | 10,2 | 22   | 31,6 | 62,4  | 77,7  | 128   | 128   | 152,9 |
| 7  | 11,6 | 25,1 | 36,1 | 71,3  | 88,8  | 146,3 | 146,3 | 174,8 |
| 8  | 13,1 | 28,2 | 40,6 | 80,2  | 99,9  | 164,6 | 164,6 | 196,6 |
| 9  | 14,5 | 31,4 | 45,2 | 89,2  | 111   | 182,9 | 182,9 | 218,5 |
| 10 | 16   | 34,5 | 49,7 | 98,1  | 122,1 | 201,2 | 201,2 | 240,3 |
| 11 | 17,4 | 37,7 | 54,2 | 107   | 133,2 | 219,5 | 219,5 | 262,2 |
| 12 | 18,9 | 40,8 | 58,7 | 115,9 | 144,3 | 237,8 | 237,8 | 284   |
| 13 | 20,4 | 43,9 | 63,2 | 124,8 | 155,3 | 256,1 | 256,1 | 305,9 |
| 14 | 21,8 | 47,1 | 67,7 | 133,7 | 166,4 | 274,3 | 274,3 | 327,7 |
| 15 | 23,3 | 50,2 | 72,2 | 142,6 | 177,5 | 292,6 | 292,6 | 349,6 |
| 16 | 24,7 | 53,3 | 76,8 | 151,6 | 188,6 | 310,9 | 310,9 | 371,4 |



**CHRYSSAFIDIS**