

Z15

Z15 121.312 class800 DN3/8" – DN2" Piston check valve socket welding SW



PED/97/23/CE



Certificate 3.1

Size : DN 10 to 50 (NPS 3/8" to 2")
Ends : Female - Female BSP or NPT , Socket Welding
Min Temperature : - 29°C
Max Temperature : + 425°C
Max Pressure : 136 Bars (Class 800)
Specifications : Piston type
Bolted bonnet and gland pack
Standard port

Materials : Carbon steel A105N

SPECIFICATIONS :

- Standard port
- Piston type
- Horizontal position only (respect the flow direction indicated by the arrow)
- Easy maintenance thanks to the bolted bonnet
- Forged carbon steel A105N
- ½ stellite (Trim 8), guaranty of excellent strength mechanical of the seat
- Metal / metal seat
- High temperature thanks to the stainless steel + graphite bonnet gasket
- Class 800

USE :

- Petroleum industry, steam, high pressure
- Min and max Temperature Ts : - 29°C to + 425°C
- Max Pressure Ps : 136 bars (see graph)

FLOW COEFFICIENT Kvs (M3 / h) :

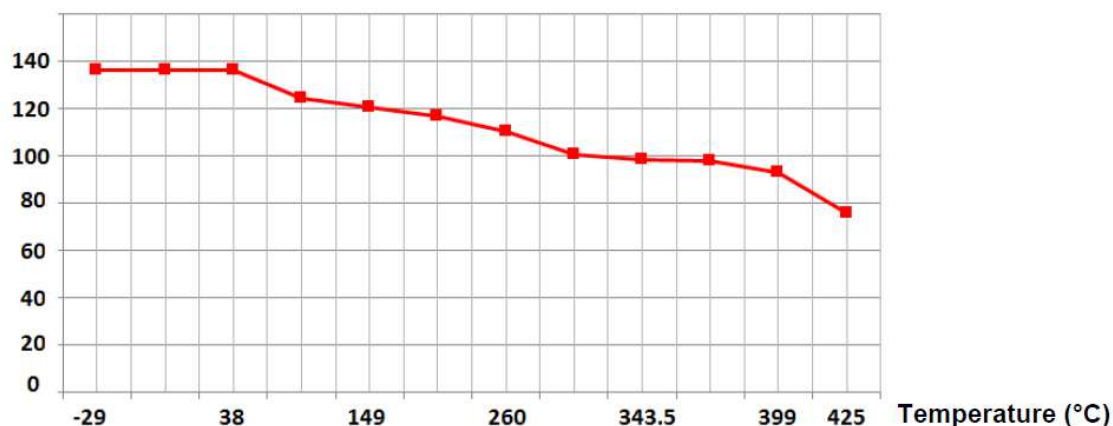
| DN | 10 | 15 | 20 | 25 | 32 | 40 | 50 |
|--------------|------|------|------|-----|-------|-------|------|
| NPS | 3/8" | 1/2" | 3/4" | 1" | 1"1/4 | 1"1/2 | 2" |
| Kvs (m3/h) | 0.95 | 0.86 | 2.4 | 5.2 | 8.2 | 9.5 | 15.6 |

PRESSURE / TEMPERATURE RELATION :

| Pressure (bar) | 136.2 | 136.2 | 136.2 | 124,1 | 120,7 | 116,6 | 110 | 100,7 | 98,6 | 97,9 | 92,7 | 75,9 |
|------------------|-------|-------|-------|-------|-------|-------|-----|-------|-------|------|------|------|
| Temperature (°C) | -29 | 0 | 38 | 93,5 | 149 | 204,5 | 260 | 315,5 | 343,5 | 371 | 399 | 425 |

PRESSURE / TEMPERATURE GRAPH :

Pressure (Bars)



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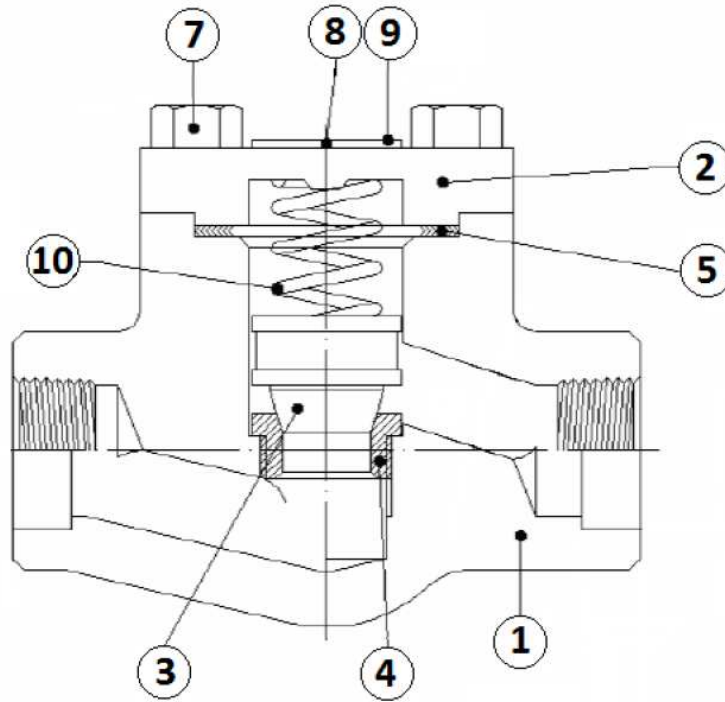
OPENING PRESSURE :

- Opening pressure between 300 and 600 mbar

RANGE :

- Forged A105N carbon steel check valve piston type TRIM 8 with spring Socket Welding ends **Ref. 312** DN 10 to DN 50 (NPS 3/8" to DN 2")
- Forged A105N carbon steel check valve piston type TRIM 8 with spring threaded NPT ends **Ref.313** DN 10 to DN 50 (NPS 3/8" to DN 2")
- Forged A105N carbon steel check valve piston type TRIM 8 with spring threaded BSP conical ends **Ref.314** DN 10 to DN 50 (NPS 3/8" to DN 2")

MATERIALS:

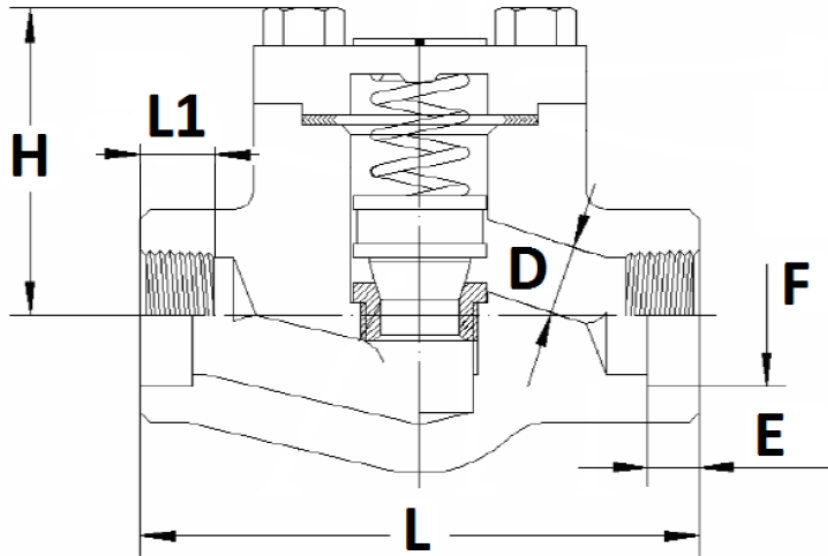


| Item | Designation | Materials |
|------|-------------|-----------------------------------|
| 1 | Body | ASTM A105 N |
| 2 | Bonnet | ASTM A105 N |
| 3 | Piston | ASTM A276 type 410 |
| 4 | Seat | ASTM A276 TYPE 410+STELLITE GR.6' |
| 5 | Gasket | AISI 316 + graphite spiral wound |
| 6 | Ball guide | ASTM A276 type 410 |
| 7 | Bolts | ASTM A193 B7 |
| 8 | Rivet | Carbon steel |
| 9 | Nameplate | Aluminium |
| 10 | Spring | AISI 302 |

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SIZE (in mm) :



| Ref. | DN (mm) | 10 | 15 | 20 | 25 | 32 | 40 | 50 |
|-------------|-------------|------|------|------|------|-------|-------|------|
| | NPS (") | 3/8" | 1/2" | 3/4" | 1" | 1"1/4 | 1"1/2 | 2" |
| 312/313/314 | Ø D | 7 | 9 | 13 | 17.5 | 22.5 | 29.5 | 35 |
| | L | 80 | 80 | 90 | 110 | 127 | 155 | 170 |
| | H | 53 | 53 | 60 | 73 | 80 | 98 | 118 |
| 313/314 | L1 | 13 | 15 | 18 | 19 | 20 | 21 | 21 |
| 312 | E (SW) | 11.1 | 12.7 | 14.5 | 16 | 17.5 | 19 | 22 |
| | Ø F (SW) | 17.6 | 21.8 | 27.2 | 33.9 | 42.7 | 48.8 | 61.2 |
| 312/313/314 | Weight (Kg) | 1.3 | 1.2 | 1.4 | 2.4 | 3.6 | 5.4 | 8 |

STANDARDS :

- Fabrication according to **ISO 9001 : 2008**
- DIRECTIVE 97/23/CE : **CE N° 0036**
Risk category III module H
- Certificate 3.1 on request
- Designing according to **ISO 15761** and **API 602 8th**
- Approval certificate **API 6D**
- Pressure tests according to **API 598, table 6**
- Check valves approved by the main oil industries (certificates on request)
- ATEX Group II Category 2 GD T3 Zone 1 & 21 Zone 2 & 22 (optional marking) according to directive 2014/34/EU
- Threaded female BSP conical ends according to **ISO 7-1 Rc**
- Threaded female NPT ends according to **ANSI B1.20.1**
- Socket Welding ends according to **ISO 15761**

INSTALLATION POSITION :

Horizontal position



INSTALLATION INSTRUCTIONS

GENERAL GUIDELINES :

- Ensure that the check valves to be used are appropriate for the conditions of the installation (type of fluid, pressure and temperature).
- Be sure to have enough valves to be able to isolate the sections of piping as well as the appropriate equipment for maintenance and repair.
- Ensure that the check valves to be installed are of correct strength to be able to support the capacity of their usage.
- Installation of all circuits should ensure that their function can be automatically tested on a regular basis (at least two times a year).

INSTALLATION INSTRUCTIONS :

- Before installing the check valves, clean and remove any objects from the pipes (in particular bits of sealing and metal) which could obstruct and block the check valves.
- Ensure that both connecting pipes either side of the check valve (upstream and downstream) are aligned (if they're not, the valves may not work correctly).
- Make sure that the two sections of the pipe (upstream and downstream) match, the check valve unit will not absorb any gaps. Any distortions in the pipes may affect the tightness of the connection, the working of the check valve and can even cause a rupture. To be sure, place the kit in position to ensure the assembling will work.
- During welding operation, for S.W. types be sure to not exceed 350-400°C
- If sections of piping do not have their final support in place, they should be temporarily fixed. This is to avoid unnecessary strain on the check valve.
- Fluids in the check valve must not contain solid objects (it could damaged the seat).
- If there is a direction changing or if there's another material, it's better to take away the check valve so that it is outside the turbulence area (between 3 and 5 times the ND before and after).
- After a pump please refer to **FD CEN/TR 13932** to install the check valve :
 - If it is essential to keep priming the pump, a non-return check valve can be fitted to the suction pipe at a distance **L1 (straight length suction) > 10xD1 (diameter suction)**
The check valve is designed to meet the maximum flow rate in service
 - In other cases, the non-return check valve is mounted on the discharge pipe at a distance of **L2 (straight length at discharge) > 3xD2 (diameter at discharge)**