

## FORGED CHECK VALVE 800 LBS ( 312-313-314-318-319-358-359 )



**Size :** DN 10 to 50 (NPS 3/8" to 2")  
**Ends :** Female - Female BSP or NPT , Socket Welding  
**Min Temperature :** - 29°C  
**Max Temperature :** + 538°C for SS (+ 425°C for carbon steel)  
**Max Pressure :** 138 Bars  
**Specifications :** Piston or ball type  
Bolted bonnet and gland pack  
Standard port

**Materials :** Carbon steel or stainless steel

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## SPECIFICATIONS :

- Standard port
- Piston type (with SS 302 spring) or ball type (without spring)
- Horizontal position only (respect the flow direction indicated by the arrow )
- Easy maintenance thanks to the bolted bonnet
- Forged carbon steel or stainless steel
- ½ stellite ( Trim 8 ) for carbon steel types , guaranty of excellent strength mechanical of the seat
- Trim 10 standard SS 316 for stainless steel types
- Metal / metal seat
- High temperature thanks to the stainless steel + graphite bonnet gasket
- 800 lbs

## USE :

- Petroleum industry, steam, high pressure
- Min and max Temperature Ts : - 29°C to + 538°C for stainless steel types **Ref.358/359**
- Min and max Temperature Ts : - 29°C to + 425°C for carbon steel types **Ref. 312/313/314/318/319**
- Max Pressure Ps : 138 bars ( see graph )

## FLOW COEFFICIENT Kvs ( M3 / h ) :

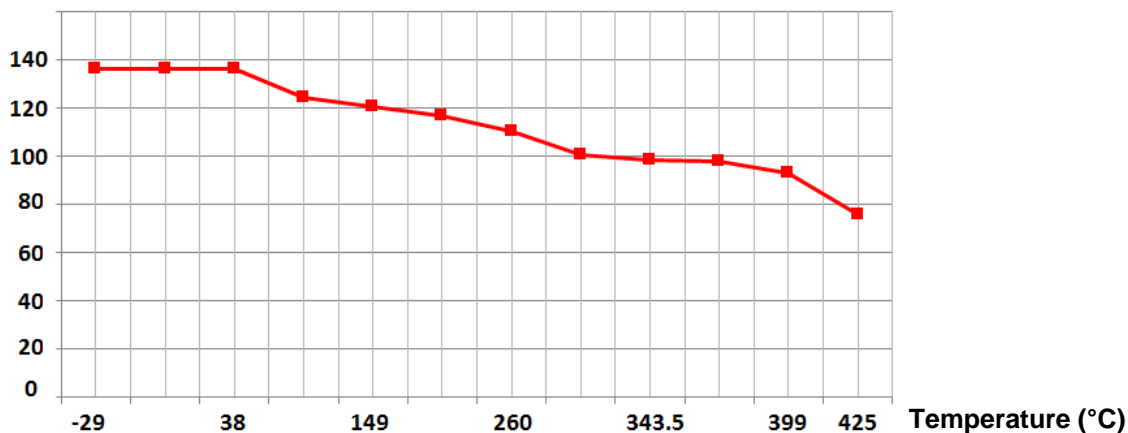
DN	10	15	20	25	32	40	50
NPS	3/8"	1/2"	3/4"	1"	1"1/4	1"1/2	2"
Kvs ( m3/h )	0.95	0.86	2.4	5.2	8.2	9.5	15.6

## PRESSURE / TEMPERATURE RELATION FOR CARBON STEEL CHECK VALVES REF. 312/313/314/318/319 :

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 FOR CARBON STEEL CHECK VALVES REF. 312/313/314/318/319 :

Pressure (Bars)

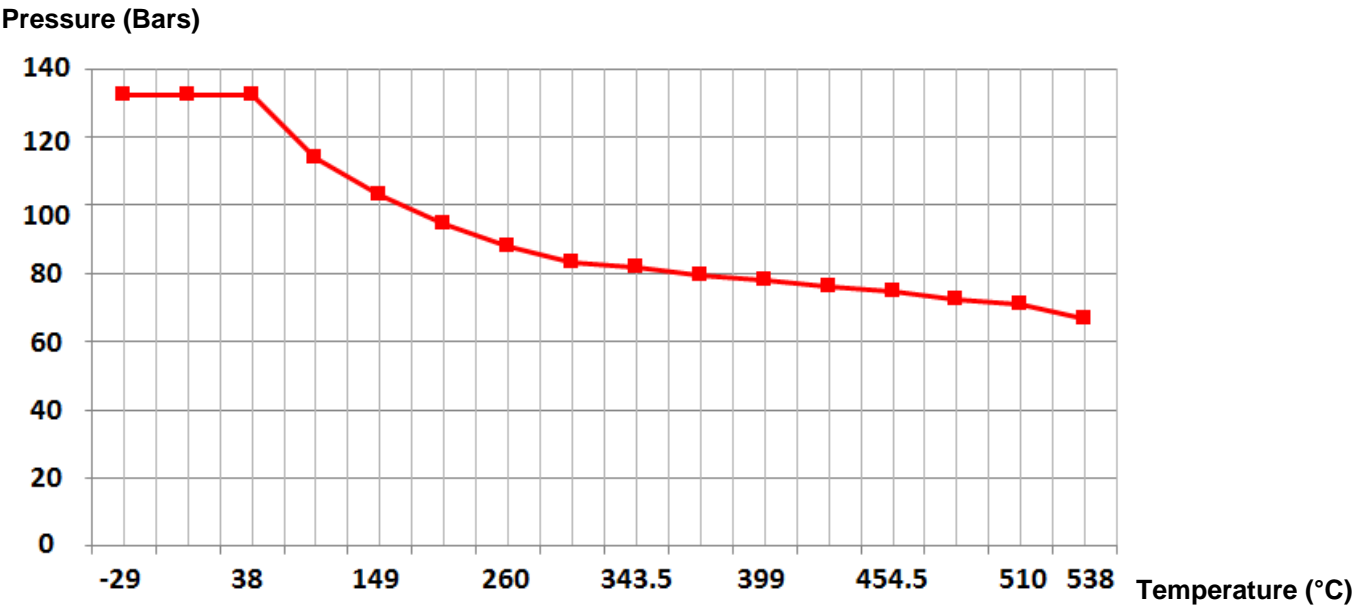


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PRESSURE / TEMPERATURE RELATION FOR STAINLESS STEEL CHECK VALVES REF. 358/359 :

Pressure (bar)	132.4	132.4	132.4	114.1	103.1	94.5	87.9	83.1	81.7	79.3	77.9	76.2	74.5	72.4	71	66.9
Temperature (°C)	-29	0	38	93,5	149	204,5	260	315,5	343,5	371	399	425	454.5	482	510	538

PRESSURE / TEMPERATURE GRAPH FOR STAINLESS STEEL CHECK VALVES REF. 358/359 :



OPENING PRESSURE :

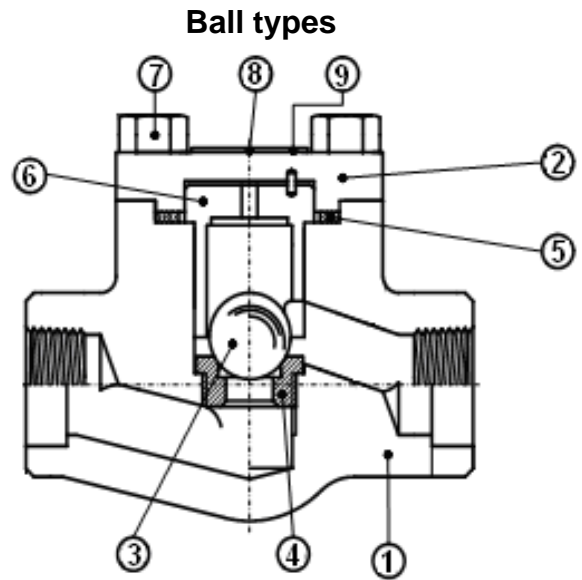
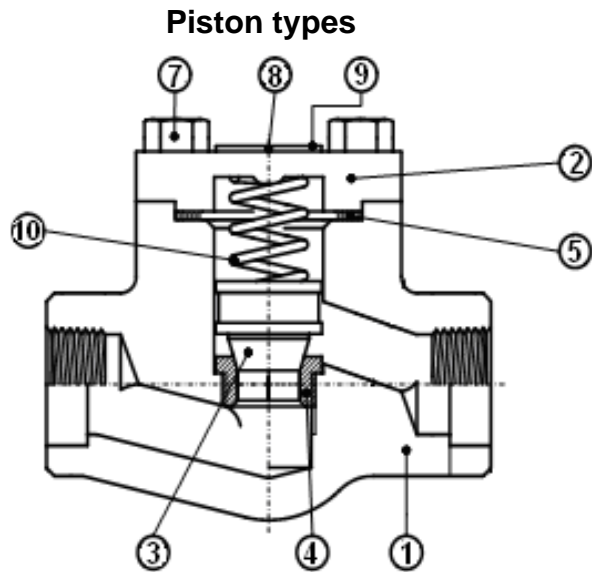
- Opening pressure between 300 and 600 mbar

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 cylindrical ends **Ref.314** DN 10 to DN 50 (NPS 3/8" to DN 2")
- Forged A105N carbon steel ball check valve type TRIM 8 without spring Socket Welding ends **Ref.318** DN 10 to DN 50 (NPS 3/8" to DN 2")
- Forged A105N carbon steel ball check valve type TRIM 8 without spring threaded NPT ends **Ref.319** DN 10 to DN 50 (NPS 3/8" to DN 2")
- Forged A182 F316 stainless steel ball check valve type TRIM 10 without spring Socket Welding ends **Ref.358** DN 10 to DN 50 (NPS 3/8" to DN 2")
- Forged A182 F316 stainless steel ball check valve type TRIM 10 without spring threaded NPT ends **Ref.359** DN 10 to DN 50 (NPS 3/8" to DN 2")

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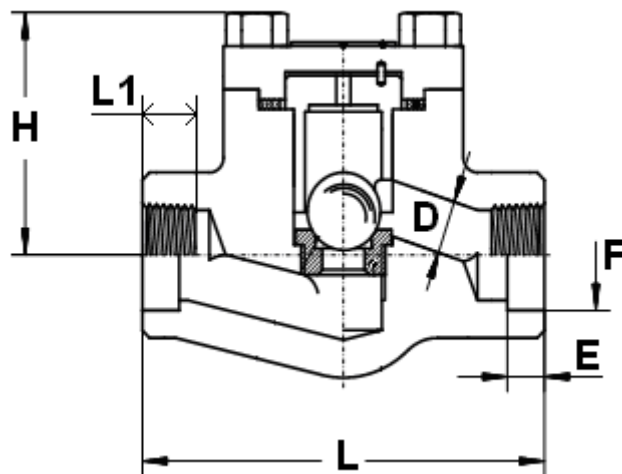
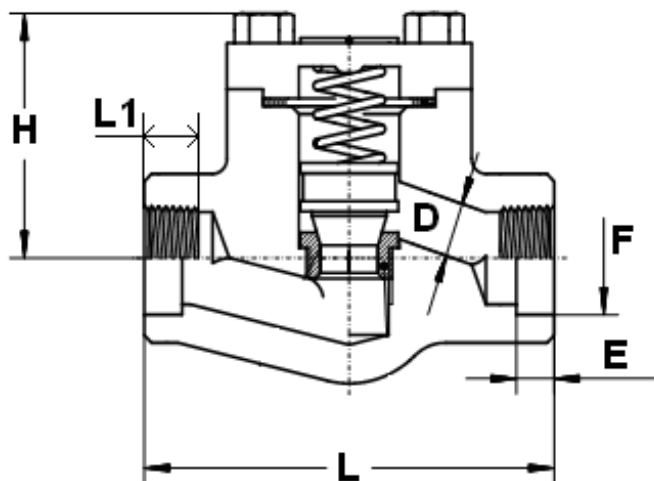
## MATERIALS:



Item	Designation	Materials 312/313/314/318/319	Materials 358/359
1	Body	ASTM A105 N	ASTM A182 F316
2	Bonnet	ASTM A105 N	ASTM A182 F316
3	Ball ( or piston )	ASTM A276 type 410	ASTM A479 type 316
4	Seat	ASTM A276 TYPE 410+STELLITE GR.6'	ASTM A479 type 316
5	Gasket	SS 316 + graphite spiral wound	SS 316 + graphite spiral wound
6	Ball guide	ASTM A276 type 410	ASTM A479 type 316
7	Bolts	ASTM A193 B7	ASTM A193 B8
8	Rivet	Carbon steel	Carbon steel
9	Nameplate	Aluminium	Aluminium
10	Spring ( for piston )	SS 302	-

# FORGED CHECK VALVE 800 LBS ( 312-313-314-318-319-358-359 )

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
318/319	L	80	80	90	110	127	155	170
358/359	H	53	53	60	73	80	98	118
313/314/319/359	L1	13	15	18	19	20	21	21
312/318/358	E ( SW )	11.1	12.7	14.5	16	17.5	19	22
	Ø F ( SW )	17.6	21.72	27.05	33.78	42.54	48.64	61.11
312/313/314/318/319	Weight ( Kg )	1.3	1.2	1.4	2.4	3.6	5.4	8
358/359	Weight ( Kg )	1.3	1.2	1.48	2.5	3.7	5.63	8.3

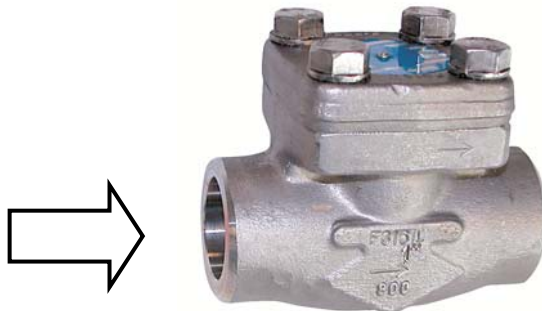
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## STANDARDS :

- Fabrication according to **ISO 9001 : 2008**
- DIRECTIVE 97/23/CE : **CE N° 0036**  
Risk category III module H
- Designing according to **ISO 15761** and **API 602 8<sup>th</sup>**
- Approval certificate **API 6D**
- Tests according to **API 598, table 6**
- Approval certificate Russian Federation **GOST-R**
- Check valves approved by the main oil industries ( certificates on request )
- ATEX Group II Category 2 G/2D Zone 1 & 21 Zone 2 & 22 ( optional marking )
- Threaded female BSP cylindrical ends according to **ISO 7-1 Rp**
- Threaded female NPT ends according to **ANSI B1.20.1**

## INSTALLATION POSITION :

Horizontal position



**ADVICE :** Our opinion and our advice are not guaranteed and SFERACO shall not be liable for the consequences of damages. The customer must check the right choice of the products with the real service conditions.

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## **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 norm NF CR 13932 to install the check valve.