

Swing Check Valve

## ECOLINE SCV 150-300

Class 150-300  
NPS 2"-12"  
Stainless Steel  
Bolted Cover  
Flanged Ends

### Type Series Booklet



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Type Series Booklet ECOLINE SCV 150-300

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## Check Valves and Strainers

### Swing Check Valves

## ECOLINE SCV 150-300



#### Main applications

- Chemical industry
- Petrochemical industry
- Pipelines and tank farms
- Refineries
- Process engineering

#### Fluids handled

- Steam
- Gas
- Fluids containing gas
- High-temperature hot water
- Volatile fluids
- Oil
- Feed water

#### Operating data

Operating properties

Characteristic	Value
Nominal pressure	Class 150 - 300
Nominal size	NPS 2" - 12"
Max. permissible pressure	50 bar / 720 PSI
Max. permissible temperature	816 °C / 1500 °F

Selection as per pressure/temperature ratings (⇒ Page 4)

#### Body materials

Overview of available materials

Material	Temperature limit
ASTM A 351 CF8	Up to 816 °C / 1500 °F
ASTM A 351 CF8M	Up to 816 °C / 1500 °F

Other materials on request.

#### Design details

##### Design

- Swing check valve to ASME B16.34
- Tested to API 598
- Compact design to API 603
- Valve made of corrosion-resistant materials
- Body made of stainless steel
- Bolted cover
- Stainless steel/graphite gaskets
- Fully confined cover gasket
- Internal hinge pin
- Integrated seat ring
- Minimum wall thickness as per ASME B16.34
- The valves satisfy the safety requirements of Annex I of the European Pressure Equipment Directive 97/23/EC (PED) for fluids in Groups 1 and 2.
- The valves do not have a potential internal source of ignition and can be used in potentially explosive atmospheres, Group II, category 2 (zones 1+21) and category 3 (zones 2+22) to ATEX 94/9/EC.

##### Variants

- PTFE gasket
- Grease-free version
- Non-destructive testing, e.g. radiographic testing
- NACE standard
- Other flange designs
- Larger nominal sizes and other variants on request

#### Product benefits

Long service life and high functional reliability

- Valve body designed with special stop pad preventing severe impact of hanger arm and resultant damage to hanger arm or valve disc caused by abrupt fluid inflow.

Reliable sealing and longer service life

- Male/female joint between body and bonnet prevents excessive compression of fully confined gasket, resulting in longer gasket life and improved sealing performance.
- Internal hinge pin design eliminates additional leakage points, substantially improving sealing reliability.

Reliable protection against unintentional loosening of valve disc and hanger arm

- Hexagon nut on valve disc stem prevents unintentional loosening of hanger arm. Nut secured by washer and tack welding, preventing it from working loose as a result of repeated and abrupt fluid impact.

Extended maintenance-free service life

- Integral seating surface is highly resistant to wear and easy to repair after long-term operation.

**Related documents**

- Operating manual 7255.81

**On all enquiries/orders please specify**

- Type
- Class
- Nominal size
- Pressure rating
- Temperature rating
- Differential pressure
- Fluid handled
- Material
- Trim material (API trim number)
- Line connection
- Variants
- Number of type series booklet

**Pressure/temperature ratings**

Permissible operating pressures in bar at a temperature of °C (to ASME B16.34)

Class	Material	-29 to 38	93	149	204	260	316	343	371	399	427	454	482	510	538	566	593	621	649	677	704	732	760	788	816	
150	A 351 CF8 <sup>1)</sup>	19,0	15,9	14,1	13,1	11,7	9,7	8,6	7,6	6,6	5,5	4,5	3,4	2,4	1,4	1,4 2)	1,4 2)	1,4 2)	1,4 2)	1,4 2)	1,4 2)	1,4 2)	1,4 2)	1,4 2)	1,4 2)	1,0 2)
300		49,6	41,4	37,2	34,1	32,1	30,3	29,6	29,0	28,6	27,9	27,2	26,9	26,2	24,5	22,4	17,6	14,1	11,4	9,3	7,9	6,6	5,2	4,1	2,8	
150	A 351 CF8M <sup>1)</sup>	19,0	16,2	14,8	13,4	11,7	9,7	8,6	7,6	6,6	5,5	4,5	3,4	2,4	1,4	1,4 2)	1,4 2)	1,4 2)	1,4 2)	1,4 2)	1,4 2)	1,4 2)	1,4 2)	1,4 2)	1,4 2)	1,0 2)
300		49,6	42,7	38,6	35,5	33,1	31,0	30,3	30,0	29,3	29,0	29,0	28,6	26,5	25,2	24,8	21,0	16,2	12,8	10,0	7,9	6,6	5,2	4,1	2,8	

Permissible operating pressures in PSI at a temperature of °F (to ASME B16.34)

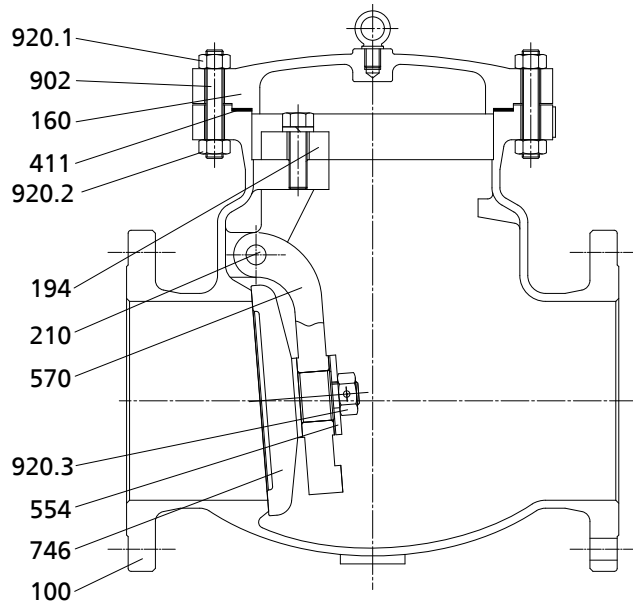
Class	Material	-20 to 100	200	300	400	500	600	650	700	750	800	850	900	950	1000	1050	1100	1150	1200	1250	1300	1350	1400	1450	1500	
150	A 351 CF8 <sup>1)</sup>	275	230	205	190	170	140	125	110	95	80	65	50	35	20	20 2)	20 2)	20 2)	20 2)	20 2)	20 2)	20 2)	20 2)	20 2)	20 2)	15 2)
300		720	600	540	495	465	440	430	420	415	405	395	390	380	355	325	255	205	165	135	115	95	75	60	40	
150	A 351 CF8M <sup>1)</sup>	275	235	215	195	170	140	125	110	95	80	65	50	35	20	20 2)	20 2)	20 2)	20 2)	20 2)	20 2)	20 2)	20 2)	20 2)	20 2)	15 2)
300		720	620	560	515	480	450	440	435	425	420	420	415	385	365	360	305	235	185	145	115	95	75	60	40	

**Test pressures**

Test	Test medium	Class 150		Class 300	
		bar	psi	bar	psi
Shell	Water	32	450	78	1125
Leak test (seat)		23	315	56	815

1) At temperatures over 538 °C (1000 °F), use only when carbon content is 0.04% or higher.  
2) For butt weld end valves only. Flanged end ratings terminate at 538 °C (1000 °F).

Materials



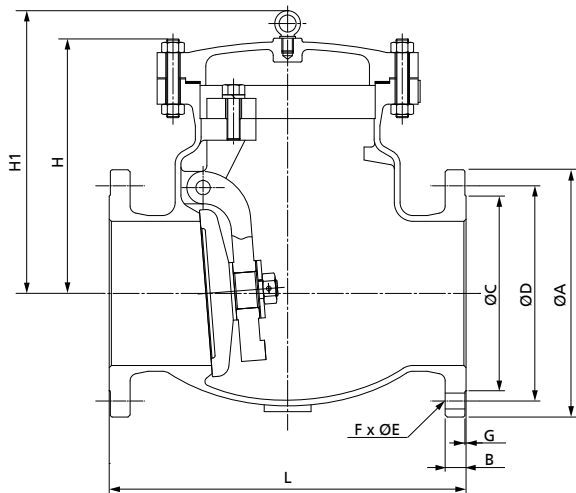
Overview of available materials

Part No.	Description	Material	
		A 351 CF8	A 351 CF8M
100	Body	A 351 CF8	A 351 CF8M
746	Disc	A 351 CF8	A 351 CF8M
554	Washer	A 276 304	A 276 316
920.3	Nut	A 194 8	A 194 8M
570	Hanger arm	A 351 CF8	A 351 CF8M
210	Hinge pin	A 276 304	A 276 316
194	Bracket	A 351 CF8	A 351 CF8M
920.2	Nut	A 194 8	A 194 8
411	Joint ring	Stainless steel/graphite	Stainless steel/graphite
160	Cover	A 351 CF8	A 351 CF8M
902	Stud	A 193 B8	A 193 B8
920.1	Nut	A 194 8	A 194 8

Trim materials

Part No.	Description	Trim	
		Trim 2 304 / 304	Trim 10 316 / 316
100	Body	304 stainless steel	316 stainless steel
746	Disc	304 stainless steel	316 stainless steel
210	Hinge pin	304 stainless steel	316 stainless steel

### Dimensions



### Dimensions in mm

Class	NPS	L	H1	H	B	G	ØC	ØD	ØA	F x ØE	[kg]
150	2"	203	-	113,5	15,7	1,6	91,9	120,7	152	4 x 19,1	9
	2 ½"	216	-	158,0	17,5	1,6	104,6	139,7	178	4 x 19,1	21
	3"	241	-	168,5	19,1	1,6	127,0	152,4	191	4 x 19,1	25
	4"	292	-	222,0	23,9	1,6	157,2	190,5	229	8 x 19,1	45
	6"	356	350	296,0	25,4	1,6	215,9	241,3	279	8 x 22,4	73
	8"	495	407	354,0	28,4	1,6	269,7	298,5	343	8 x 22,4	122
	10"	622	463	410,0	30,2	1,6	323,9	362,0	406	12 x 25,4	181
300	12"	698	538	485,0	31,8	1,6	381,0	431,8	483	12 x 25,4	309
	2"	267	-	101,0	22,4	1,6	91,9	127,0	165	8 x 19,1	14
	2 ½"	292	-	157,0	25,4	1,6	104,6	149,4	191	8 x 22,4	24
	3"	318	-	172,0	28,4	1,6	127,0	168,1	210	8 x 22,4	34
	4"	356	-	225,0	31,8	1,6	157,2	200,2	254	8 x 22,4	56
	6"	445	351	296,5	36,6	1,6	215,9	269,7	318	12 x 22,4	105
	8"	533	407	361,0	41,1	1,6	269,7	330,2	381	12 x 25,4	161
10"	622	477	428,0	47,8	1,6	323,9	387,4	445	16 x 28,4	285	
12"	711	547	500,0	50,8	1,6	381,0	450,9	521	16 x 31,8	423	

### Mating dimensions - Standards

Face-to-face lengths: ASME B16.10  
Flanges: ASME B16.5

Swing check valves should preferably be installed in horizontal pipes. When installing them in vertical pipes, make sure that the flow direction is upward, so that in the unpressurised condition, the disc will be closed by its own weight.

### Notes on installation

The valve bodies are marked with an arrow indicating the flow direction.





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