

Swing Check Valve

ECOLINE SCF 800

Class 800
NPS ½"-2"
Forged Steel
Bolted Cover
Threaded Ends or
Socket Weld Ends

Type Series Booklet



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Type Series Booklet ECOLINE SCF 800

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Check Valves and Strainers

Swing Check Valves

ECOLINE SCF 800



Main applications

- Boiler feed applications
- Fossil-fuelled power stations
- Petrochemical industry
- Pipelines and tank farms
- Refineries
- Process engineering

Fluids handled

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

Operating data

Operating properties

Characteristic	Value
Nominal pressure	Class 800
Nominal size	NPS 1/2" - 2"
Max. permissible pressure	141 bar / 2000 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 105	Up to 427 °C / 800 °F
ASTM A 182 F11	Up to 593 °C / 1100 °F
ASTM A 182 F22	Up to 593 °C / 1100 °F
ASTM A 182 F304	Up to 816 °C / 1500 °F
ASTM A 182 F316	Up to 816 °C / 1500 °F
ASTM A 182 F304L	Up to 427 °C / 800 °F
ASTM A 182 F316L	Up to 450 °C / 850 °F

Other materials on request.

Design details

Design

- Swing check valve to API 602
- Tested to API 598
- Body made of forged steel
- Bolted cover
- Reduced bore
- Fully confined cover gasket
- Seat ring ST6(HF) swaged
- Solid disc
- 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

- Seal-welded body/cover joint
- Full bore
- Butt weld ends
- NACE standard
- Other threaded end designs or butt weld ends to ASME B16.25
- Other trims

Product benefits

Long service life and high functional reliability

- Hard-faced body seat and solid disc seat made of wear-resistant and corrosion-proof materials for handling all kinds of corrosive and erosive fluids.

Reliable sealing and longer service life

- Male/female joint between body and cover 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

- Hard-facing applied to disc and seat rings by deposit welding provides extra wear allowance and ensures reliable long-term shut-off even with frequent opening/closing cycles.

Related documents

- Swing check valve, type ECOLINE SCF 150-600, see type series booklet 7361.15
- Operating manual 7361.81

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
- Reduced or full bore
- 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	0 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
800	A 105	136,0	124,8	120,5	116,4	110,9	104,5	101,1	97,4	93,2	75,7														
800	A 182 F11 1)	137,9	137,9	132,7	127,4	122,2	111,2	108,1	104,5	97,8	93,4	89,5	82,7	58,6	39,8	26,4	17,7								
800	A 182 F304 2)	132,4	110,3	98,9	91,4	85,5	81,2	79,4	77,6	76,0	74,5	72,9	71,5	70,2	65,3	59,8	47,2	37,7	30,3	24,5	20,8	17,1	13,8	10,7	7,7
800	A 182 F22	137,9	137,9	133,9	129,6	122,2	111,2	108,1	104,5	97,8	93,4	89,5	82,7	70,7	49,1	32,2	20,2								
800	A 182 F316 2)	132,4	114,0	102,9	94,3	87,9	82,9	81,2	80,0	78,5	77,6	76,9	76,3	71,2	66,7	66,2	56,1	43,6	34,0	27,0	21,5	17,7	13,8	10,7	7,7
800	A 182 F304L	110,3	94,0	83,9	77,2	72,3	68,4	67,1	66,2	64,9	63,4														
800	A 182 F316L	110,3	94,0	83,9	77,2	72,3	68,4	67,1	66,2	64,9	63,4	62,2													

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

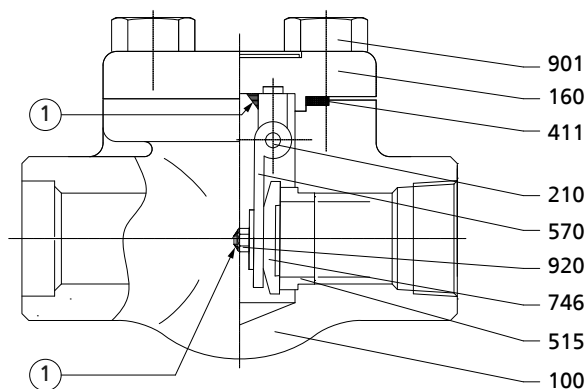
Class	Material	32 to 100	200	300	400	500	600	650	700	750	800	850	900	950	1000	1050	1100	1150	1200	1250	1300	1350	1400	1450	1500
800	A 105	1973	1810	1747	1688	1608	1515	1467	1413	1352	1098														
800	A 182 F11 1)	2000	2000	1925	1848	1773	1613	1568	1515	1418	1355	1298	1200	850	577	383	257								
800	A 182 F304 2)	1920	1600	1435	1325	1240	1178	1152	1125	1102	1080	1057	1037	1018	947	867	685	547	440	355	302	248	200	155	112
800	A 182 F22	2000	2000	1942	1880	1773	1613	1568	1515	1418	1355	1298	1200	1025	712	467	293								
800	A 182 F316 2)	1920	1653	1493	1368	1275	1203	1178	1160	1138	1125	1115	1107	1032	968	960	813	632	493	392	312	257	200	155	112
800	A 182 F304L	1600	1363	1217	1120	1048	992	973	960	942	920														
800	A 182 F316L	1600	1363	1217	1120	1048	992	973	960	942	920	902													

Test pressures

Test	Test medium	Class 800	
		bar	psi
Shell	Water	205,1	2975
Leak test (seat)		149,8	2173

1) Use normalised and tempered materials only.
 2) At temperatures over 538 °C (1000 °F), use only when carbon content is 0.04% or higher.

Materials

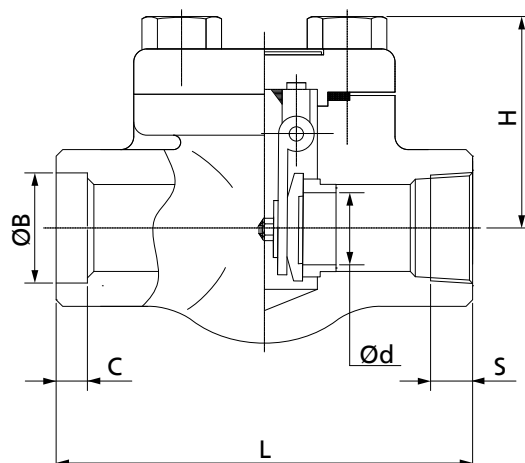


① Tack weld

Overview of available materials

Part No.	Description	Material				
		A 105 Trim 8	A 182 F11 Trim 5	A 182 F22 Trim 5	A 182 F304 Trim 2	A 182 F316 Trim 10
100	Body	A 105	A 182 F11	A 182 F22	A 182 F304	A 182 F316
160	Cover	A 105	A 182 F11	A 182 F22	A 182 F304	A 182 F316
746	Disc	A 182 F6a	A 182 F6a + STL6	A 182 F6a + STL6	A 182 F304	A 182 F316
411	Joint ring	304 + graphite	304 + graphite	304 + graphite	304 + graphite	316 + graphite
515	Seat ring	A 182 F6a + STL6	A 182 F6a + STL6	A 182 F6a + STL6	A 182 F304	A 182 F316
210	Hinge pin	A 276 304	A 276 304	A 276 304	A 276 304	A 276 316
570	Hanger arm	A 351 CF8	A 351 CF8	A 351 CF8	A 351 CF8	A 351 CF8M
901	Bolt	A 193 B7	A 193 B16	A 193 B16	A 193 B8	A 193 B8M
920	Nut	A 194 8	A 194 8	A 194 8	A 194 8	A 194 8M

Dimensions



Dimensions in mm

Class	NPS	L	S	C	Ød	ØB	H	[kg]
800	1/2"	79	13,6	10	10,0	21,8	62	1,25
	3/4"	92	13,9	13	13,5	27,2	62	1,40
	1"	111	17,4	13	17,5	33,9	69	3,40
	1 1/2"	118	18,4	13	28,6	48,8	100	3,40
	2"	132	19,2	16	36,5	61,2	118	5,10

Mating dimensions - Standards

Face-to-face lengths: see table
Threaded ends: ASME B1.20.1
Socket Weld Ends: ASME B16.11

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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