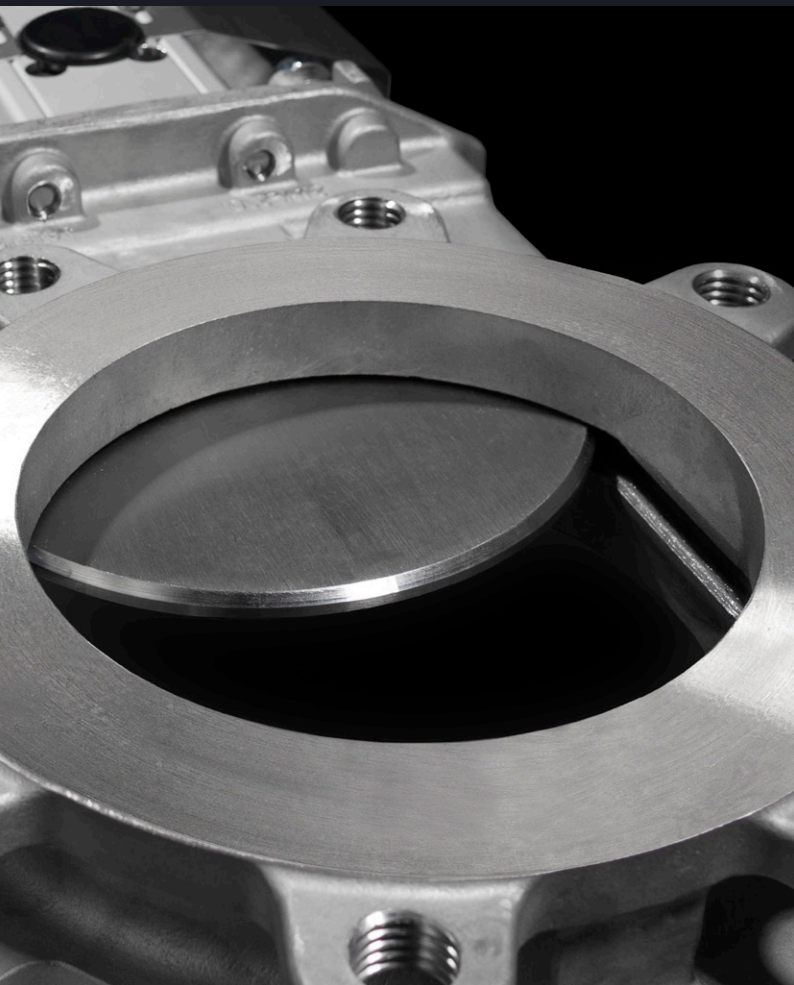


Stafsjö®
SINCE 1666

Knife gate valve WB14E

Stainless steel bi-directional and fully lugged
high performance knife gate valve

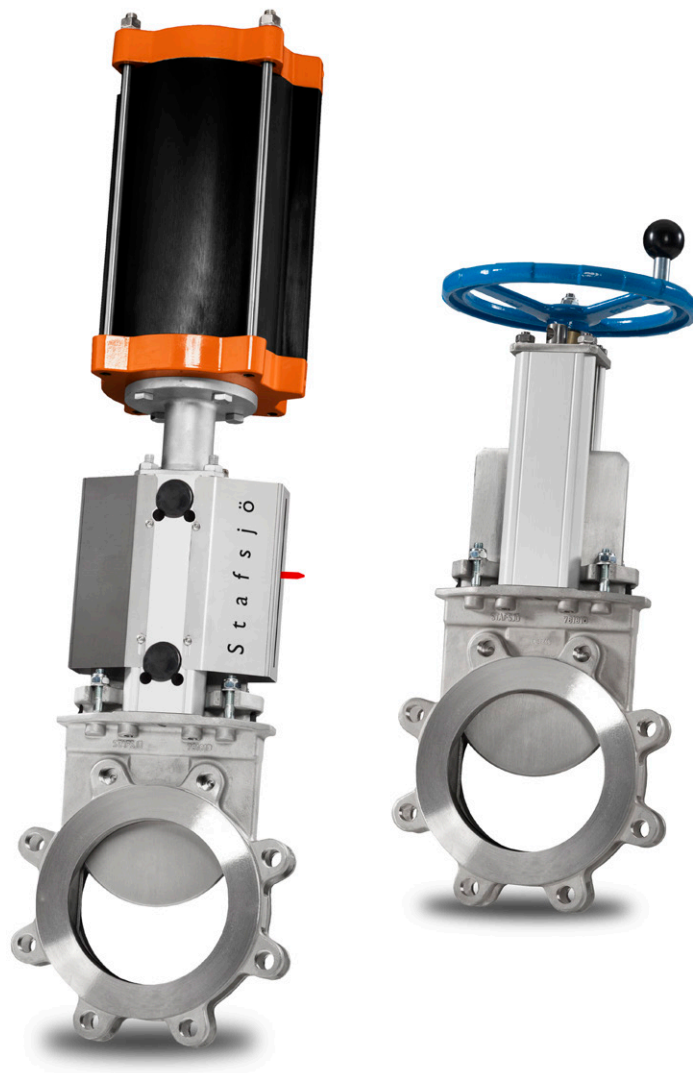
Size range:
DN 50 - DN 900 (2" - 36")



About WB14E

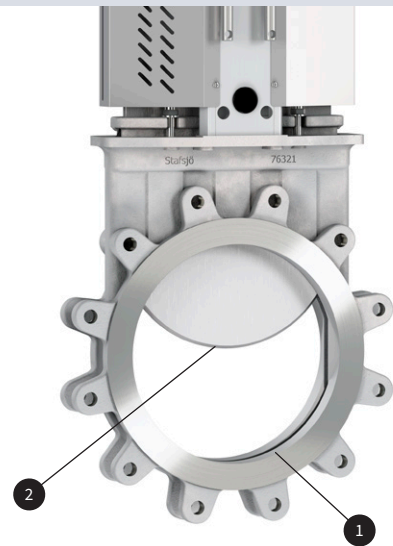
Stafsjö's WB14E knife gate valve is a high performance shut-off valve with superior flow characteristics, offering bi-directional zero leakage isolation. It is suitable for fluids such as pulp stock, chemicals, sludge, bio mass and water. The fully lugged body design is suitable for dead-end services.

The WB14E valve is modular designed and it can easily be customized in materials, with actuators and related automation accessories to different process conditions. The valve is also available with mechanical lock out. As standard the WB14E is supplied with stainless steel wetted parts including the fully lugged valve body, polished gate and gland. Up to DN 300 it has a one piece valve body and from DN 350 it features a rigid two-piece version. The WB14E sealing system assure a first rate sealing, both internal and external against surrounding environment.



Full bore with superior flow characteristics

The cavity free bore (1) prevent any build up of media during operation. The polished gate (2) with the dual bevel edge and reduced gate arc profile make it easy for the gate to cut through the media. The design also prevents media from wedging between the gate and body as the valve closes.



Bi-directional zero leakage shut-off

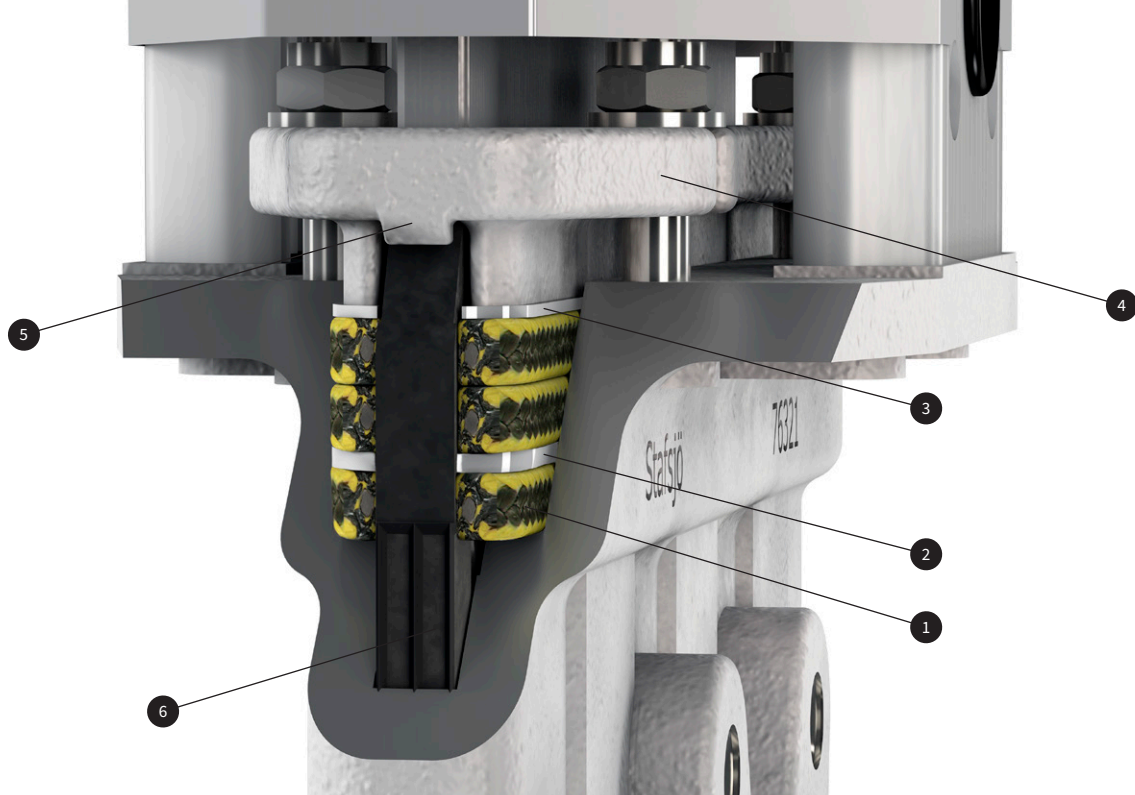
Gate guides (3) support the gate through the entire range of travel. In bottom of the guides, the relief areas (4) promote a self-cleaning, flushing action as the gate moves into the final stage of closure. The perimeter resilient seat provides tight shut-off in both directions. On sizes with single piece valve body, the seat is reinforced with a stainless steel core (5) to enhance durability.



High strength top works

Smooth cycling and a tight shut-off independent of valve position is achieved by the high strength top works that provide an essential alignment for the gate. It utilizes stainless steel tie rods (6) encapsulated inside the structural beams (7). Stafsjö assemble stainless steel gate guards (8) as standard on all automated valves.





The WB14E sealing system

The WB14E valve is intended for use in a wide range of applications. A first rate sealing both internal and external is crucial for both plant efficiency and personnel safety. The sealing system consist of several features and components, all working together to perform during long periods of time to provide zero leakage isolations.

Stafsjö's TwinPack braids (1) perform the main external sealing operation in the system and offers high mechanical strength and excellent chemical resistance. It is made up by an elastic silicon rubber core surrounded by interlocked graphite filled PTFE fibres with additional strong interlocked aramide fibre reinforced corners (yellow). The TwinPack braids resist pH 2-13 and temperatures -60 °C up to 260 °C. The additional PTFE scraper (2) in between

the braids and optional on top (3) further reinforce the packings scraping function.

The gland (4) and gland bolts ensure even distribution of the gland force as the nuts are tightened. The linear locks (5) on the gland up to DN 300 securely hold the steel reinforced seat in position as the gate strokes. From DN 350 the seat is securely locked between the valve body halves.

The unique flexible profile (6) on the outside surface of the seat up to DN 300 energizes sealing, reducing friction and providing longer cycle life while the internal stainless steel reinforcement enhance the durability.

The WB14E valve can be supplied with seat in EPDM, NBR and the high temperature and chemical resistant FEPM (Fluoroelastomer) material.

EPDM -25 °C - + 120 °C

An allround durable chemical resistant rubber suitable for rather high media temperatures.

Unsuitable media and service

Petroleum (gasoline, kerosene, oil and grease) and sulphuric acid.

FEPM -10 °C - + 180 °C

Excellent resistance to wide range of aggressive chemicals, both acids and bases, and steam at high continuous service temperatures including short term peaks up to + 225 °C.

Unsuitable media and service

Limited resistance to mineral and aromatic oils and low temp.

NBR -25 °C - + 100 °C

Alternative to EPDM with excellent resistance to petroleum (gasoline, oil, grease).

Unsuitable media and service

Chlorinated solvents, acetone, sulphuric acid, formic acid.

Pressure class

Max working pressure at 20 °C		Max differential pressure at 20 °C	
DN	bar	DN	bar
50 - 300	10	50 - 300	10
350 - 450	10	350 - 450	6 OR 10
500 - 600	10	500 - 600	4 OR 10
750 - 900	4 OR 6	750 - 900	4 OR 6

Configurations

Standard	High pressure version
<p>Sizes: DN 50 - DN 900</p> <p>Valve body: Stainless steel EN 1.4408</p> <p>Gate: Stainless steel EN 1.4404, AISI 316L</p> <p>Box packing: TwinPack with extra PTFE scrapers</p> <p>Top works: Stainless steel tie rods encapsulated in aluminum beams up to DN 600 and stainless steel beams on larger including stainless steel gate guards on automated valves</p>	<p>Sizes: DN 350 - DN 900</p> <p>Valve body: Stainless steel EN 1.4408</p> <p>Gate: Duplex stainless steel EN 1.4462, S32205</p> <p>Box packing: TwinPack with extra PTFE scrapers</p> <p>Top works: Stainless steel tie rods encapsulated in aluminum beams up to DN 600 and stainless steel beams on larger, including stainless steel gate guards on automated valves</p>

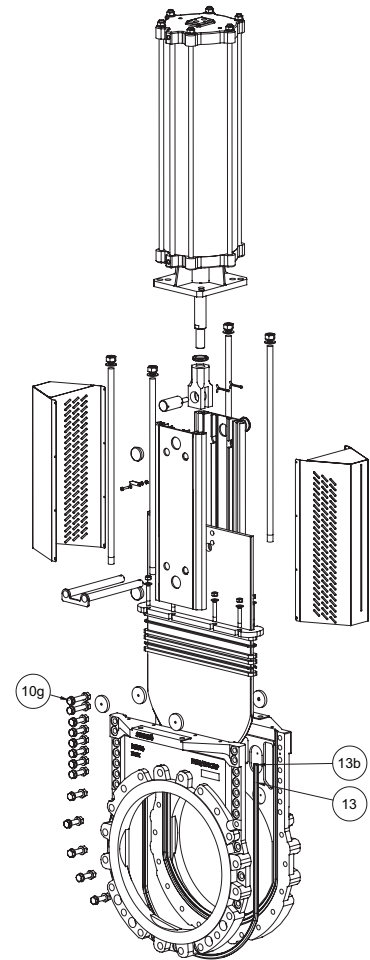
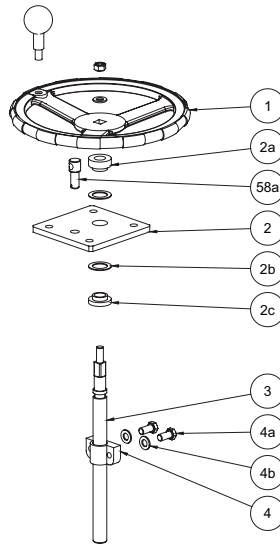
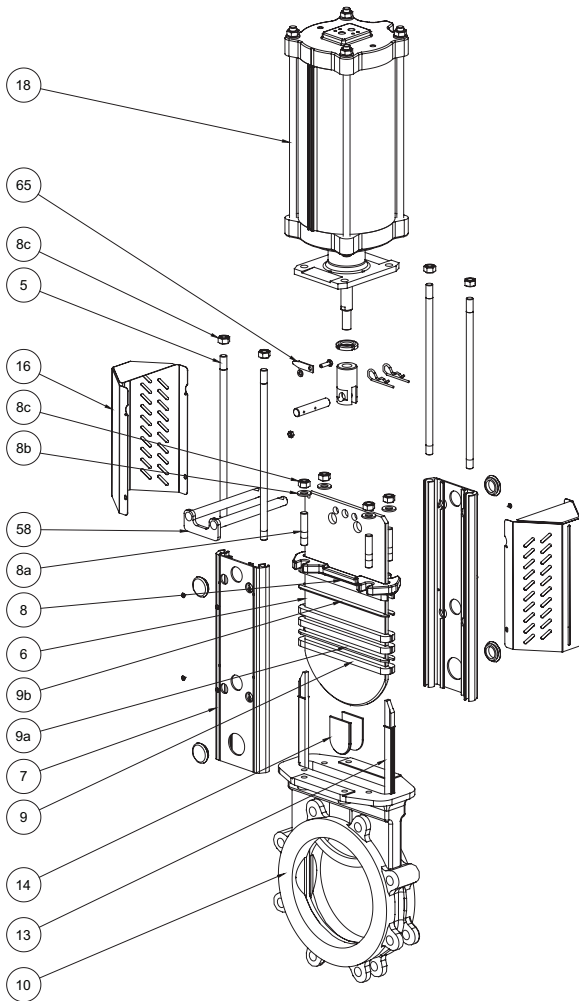
Options	
<p>Valve body</p> <p>Stainless steel EN 1.4408 Duplex stainless steel EN 1.4470 (DN 350-DN 900) Equivalent material to 254 SMO stainless steel (DN 350-DN 900)</p> <p>Gate material and surface treatments</p> <p>Stainless steel EN 1.4404, AISI 316L Duplex stainless steel EN 1.4462, S32205 254 SMO stainless steel or equivalent Hard chromed surface Extra polished surface (max Ra 0,8)</p> <p>Seats</p> <p>EPDM, FEPM or NBR</p> <p>Box packings</p> <p>TwinPack with extra PTFE scrapers Top scraper in PTFE (optional)</p>	<p>Top works</p> <p>Stainless steel tie rods encapsulated in aluminum beams Stainless steel pillars or beams¹⁾</p> <p>Actuators</p> <p>Hand wheel with non-rising stem Chain wheel Bevel gear Double-acting pneumatic cylinders Single-acting pneumatic cylinders Electric actuators Hydraulic actuator</p> <p>Flange drillings</p> <p>EN 1092 PN 10 ASME/ANSI B16.5 Class 150 and B16.47 Class 150 series A AS 2129 Table D and E</p>

Design standards	
<p>Design, manufacturing, inspection and test</p> <p>According to pressure equipment directive 2014/68/EU category I and II module A2. The valves are CE marked when it is applicable.</p> <p>Stafsjö's valves are subject for pressure tests before delivery in opened and closed position with water at 20 °C according to EN 12266-1:2003 rate A. No visually detectable leakage is allowed for duration of the test.</p> <p>On request Stafsjö can provide 2.2 test report and 3.1 inspection certificate according to EN 10204.</p> <p>Contact Stafsjö for further information on ATEX approved solutions.</p>	<p>Face-to-face dimensions</p> <p>DN 80 - DN 900: MSS-SP81. Other sizes according Stafsjö standard.</p> <p>Service temperature</p> <p>Information to determine minimum and maximum temperature for the knife gate valve is available on stafsjo.com/support/temperatures/.</p>

1) Standard on valves supplied with valve body in duplex or equivalent material to 254 SMO stainless steel.

Single piece valve body: DN 50 - DN 300

Two-piece valve body: DN 350 - DN 900



Part list

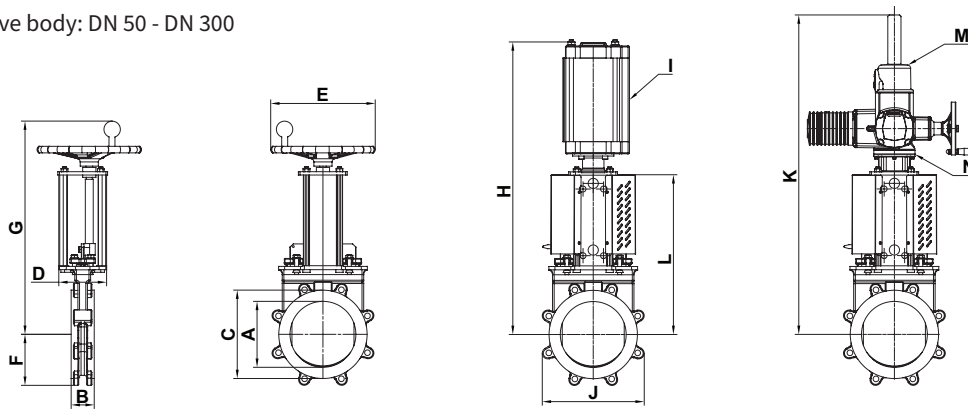
Pos.	Part	Material
1	Hand wheel	Coated cast iron Ø 200 - Ø 300 EN-JL1040, GG25, ≥ Ø 400 EN-JL1030, GG20
2	Yoke	Stainless steel EN 1.4301
2a	Bearing	Brass
2b	Slide washer	POM
2c	Bearing	Brass
3	Stem	Stainless steel EN 1.4016
4	Stem nut	Brass
4a	Washer	Stainless steel A2
4b	Bolt	Stainless steel A2
5	Tie rod	Stainless steel EN 1.4301
6	Gate	See options on page 4
7	Beam	Anodized aluminum
8	Gland	Stainless steel EN 1.4408
8a	Stud bolt	Stainless steel A2

Pos.	Part	Material
8b	Washer	Stainless steel A2
8c	Nut	Stainless steel A2
9 ¹⁾	Box packing	TwinPack
9a ¹⁾	Box scraper	PTFE
9b ^{1,2)}	Box top scraper	PTFE
10	Valve body	See options on page 4
10g	Valve body boltings	Stainless steel A2
13 ¹⁾	Seat	See options on page 4
13b ¹⁾	Pin short	Stainless steel EN 1.4301
14	Guiding pads	POM-C, PTFE on request
16	Gate guards	Stainless steel EN 1.4301
18	Pneumatic cylinder	See separate datasheet
58/a ²⁾	Locking pin	Stainless steel EN 1.4301
65 ²⁾	Gate indicator	Stainless steel EN 1.4301, Nylon 12

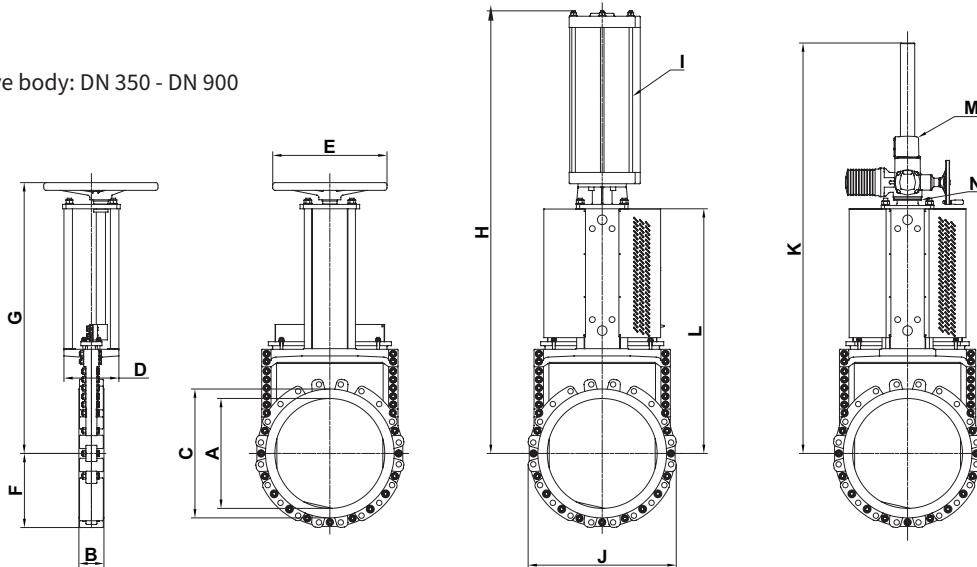
1) Recommended spare parts

2) Optional accessories

Single piece valve body: DN 50 - DN 300



Two-piece valve body: DN 350 - DN 900



Main dimensions (mm)

DN	A	B	C	D	E	F	G	H ¹⁾	H ²⁾	I ³⁾	I ⁴⁾	J	K	L	M ⁵⁾	N ⁶⁾	kg ⁷⁾
50	50	43	90	80	200	58	350	515	-	SC100	-	116	621	219	SA07.2	F10/A	7
80	80	51	127	80	250	69	346	574	-	SC100	-	137	677	275	SA07.2	F10/A	12
100	100	52	153	80	250	102	381	653	-	SC125	-	204	712	310	SA07.2	F10/A	15
150	150	56	212	80	250	128	464	784	-	SC125	-	256	794	392	SA07.6	F10/A	22
200	200	70	268	145	315	155	561	960	-	SC160	-	310	818	489	SA07.6	F10/A	37
250	250	69	320	145	315	194	657	1155	-	SC160	-	388	914	579	SA07.6	F10/A	55
300	300	78	372	148	315	231	753	1251	-	SC160	-	462	1059	675	SA10.2	F10/A	71
350	350	78	430	180	400	251	880	1543	1543	SC200	SC200	501	1228	783	SA10.2	F10/A	126
400	400	89	482	180	400	285	977	1640	1640	SC200	SC250	570	1375	880	SA10.2	F10/A	155
450	450	89	532	250	520	308	1153	1896	1896	SC200	SC250	615	1636	1034	SA10.2	F10/A	230
500	500	114	586	250	520	338	1225	2103	2103	SC250	SC250	675	1875	1113	SA14.2	F14/A	270
600	600	114	686	250	635	400	1436	2307	2403	SC250	SC320	800	2180	1317	SA14.2	F14/A	400
750	750	117	841	340	-	495	-	2633	-	SC320	-	990	2323	1622	OR	OR	570
800	800	117	905	350	-	520	-	2901	-	PA400	-	1040	2439	1738	OR	OR	670
900	900	117	1004	350	-	588	-	3785	-	PA400	-	1176	2629	1928	OR	OR	880

1) Dimensions standard version.

2) Dimensions 10/10 bar version DN 350 - DN 600.

3) Recommended sizing of double-acting pneumatic cylinder type SC at normal operation with 5 bar air supply pressure for WB14E standard pressure class version. For other operating conditions, contact Stafsjö for advice.

4) Recommended sizing of double-acting pneumatic cylinder type SC at normal operation with 5 bar air pressure for WB14E 10/10 bar version DN 350-DN 600. For other operating conditions, contact Stafsjö for advice.

5) Recommended sizing of Auma SA electric motors at normal operation. For other operating conditions, contact Stafsjö or your local representative for advice.

6) Valve and Auma SA interface. The electric motors are mounted as standard with output drive type A (rising stem) according ISO 5210.

7) Weight in kg for valve equipped with hand wheel, bare shaft on DN 750 - DN 900.

Main dimensions are only for information. Contact Stafsjö for certified drawings.

Flange drilling according to ASME/ANSI B16.5 and B16.47 Class 150

DN	50	80	100	150	200	250	300	350
Bolt circle diameter (mm)	120,6	152,4	190,5	241,3	298,4	361,9	431,8	476,3
Number of throughgoing bolts	-	-	-	-	-	-	-	-
Number of tapped holes/side	4	4	8	8	8	12	12	12
Bolt size (UNC)	5/8"-11	5/8"-11	5/8"-11	3/4"-10	3/4"-10	7/8"-9	7/8"-9	1"-8
Bolt lengths ¹⁾ (mm)	14	14	15	15	23	20	21	21

DN	400	450	500	600	750	800	900
Bolt circle diameter (mm)	539,8	577,9	635	749,3	914,4	977,9	1085,9
Number of throughgoing bolts	-	-	-	-	-	-	-
Number of tapped holes/side	16	16	20	20	28	28	32
Bolt size (UNC)	1"-8	1 1/8"-7	1 1/8"-7	1 1/4"-7	1 1/4"-7	1 1/2"-6	1 1/2"-6
Bolt lengths ¹⁾ (mm)	27	27	32	32	28	26	26

Flange drilling according to EN 1092 PN10

DN	50	80	100	150	200	250	300	350
Bolt circle diameter (mm)	125	160	180	240	295	350	400	460
Number of throughgoing bolts	-	-	-	-	-	-	-	-
Number of tapped holes/side	4	8	8	8	8	12	12	16
Bolt size	M16	M16	M16	M20	M20	M20	M20	M20
Bolt lengths ¹⁾ (mm)	14	11	15	15	18	20	21	19

DN	400	450	500	600	750	800	900
Bolt circle diameter (mm)	515	565	620	725	900	950	1050
Number of throughgoing bolts	-	-	-	-	-	-	-
Number of tapped holes/side	16	20	20	20	24	24	28
Bolt size	M24	M24	M24	M27	M27	M30	M30
Bolt lengths ¹⁾ (mm)	27	29	32	32	28	26	26

Flange drilling according to AS 2129 Table D

DN	50	80	100	150	200	250	300	350
Bolt circle diameter (mm)	114	146	178	235	292	356	406	470
Number of throughgoing bolts	-	-	-	-	-	-	-	-
Number of tapped holes/side	4	4	4	8	8	8	12	12
Bolt size	M16	M16	M16	M16	M16	M20	M20	M24
Bolt lengths ¹⁾ (mm)	14	11	15	15	18	20	21	21

DN	400	450	500	600	750	800	900
Bolt circle diameter (mm)	521	584	641	756	927	984	1092
Number of throughgoing bolts	-	-	-	-	-	-	-
Number of tapped holes/side	12	12	16	16	20	20	24
Bolt size	M24	M24	M24	M27	M30	M33	M33
Bolt lengths ¹⁾ (mm)	27	27	32	32	28	26	26

1) Add the values with the thickness of flanges, washers and gaskets.

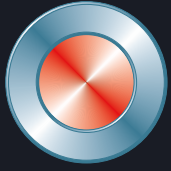
Flange drilling according to AS 2129 Table E

DN	50	80	100	150	200	250	300	350
Bolt circle diameter (mm)	114	146	178	235	292	356	406	470
Number of throughgoing bolts	-	-	-	-	-	-	-	-
Number of tapped holes/side	4	4	8	8	8	12	12	12
Bolt size	M16	M16	M16	M20	M20	M20	M24	M24
Bolt lengths ¹⁾ (mm)	14	11	15	15	18	20	21	21

DN	400	450	500	600	750	800	900
Bolt circle diameter (mm)	521	584	641	756	927	984	1092
Number of throughgoing bolts	-	-	-	-	-	-	-
Number of tapped holes/side	12	16	16	16	20	20	24
Bolt size	M24	M24	M24	M30	M33	M33	M33
Bolt lengths ¹⁾ (mm)	27	27	32	32	28	26	26

1) Add the values with the thickness of flanges, washers and gaskets.





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Stafsjö Valves AB
SE-618 95 Stavsjö, Sweden

+46 11 39 31 00 | sales@stafsjo.se | www.stafsjo.com



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