

Recommended fasteners for Jamesbury™ Wafer-Sphere™ butterfly valves

The tables on the following pages provide information regarding the size, type and quantity of fasteners recommended for installing Wafer-Sphere high-performance butterfly valves into a piping system. They are intended as a planning and procurement guide. For actual installation, please refer to the “Installation, Maintenance & Operating Instructions” provided with each individual product. The general notes below should be reviewed and considered when planning fastener purchases.

1. Fastener threads

Fasteners with Class 2A threads are recommended. Fastener diameters less than 1-1/8” (28.6 mm) have UNC series threads, and 1-1/8” (28.6 mm) and larger have 8-UN series threads.

2. Nuts

Standard heavy hex nuts per ANSI B18.2.2 with class 2B threads are recommended. All studs require one nut each and stud-bolts require two nuts each.

3. Short studs

Many Wafer-Sphere valves have tapped holes adjacent to the shaft and/or adjacent to tapped lifting lugs. These tapped holes require short flange fasteners (short studs). Required short studs are noted in the following tables.

4. “Dead end” service

When lugged valves are connected to only a single flange, and a mating flange is not installed, fasteners are required on only one side of the body. Use half of the quantities listed.

5. Thread engagement

Length of thread engagement is in accordance with ASME B31.3 (Chemical Plant & Petroleum Refinery Piping). Stud-bolt and stud lengths herein are effective thread lengths and do not include the end points.

6. Gasket thickness

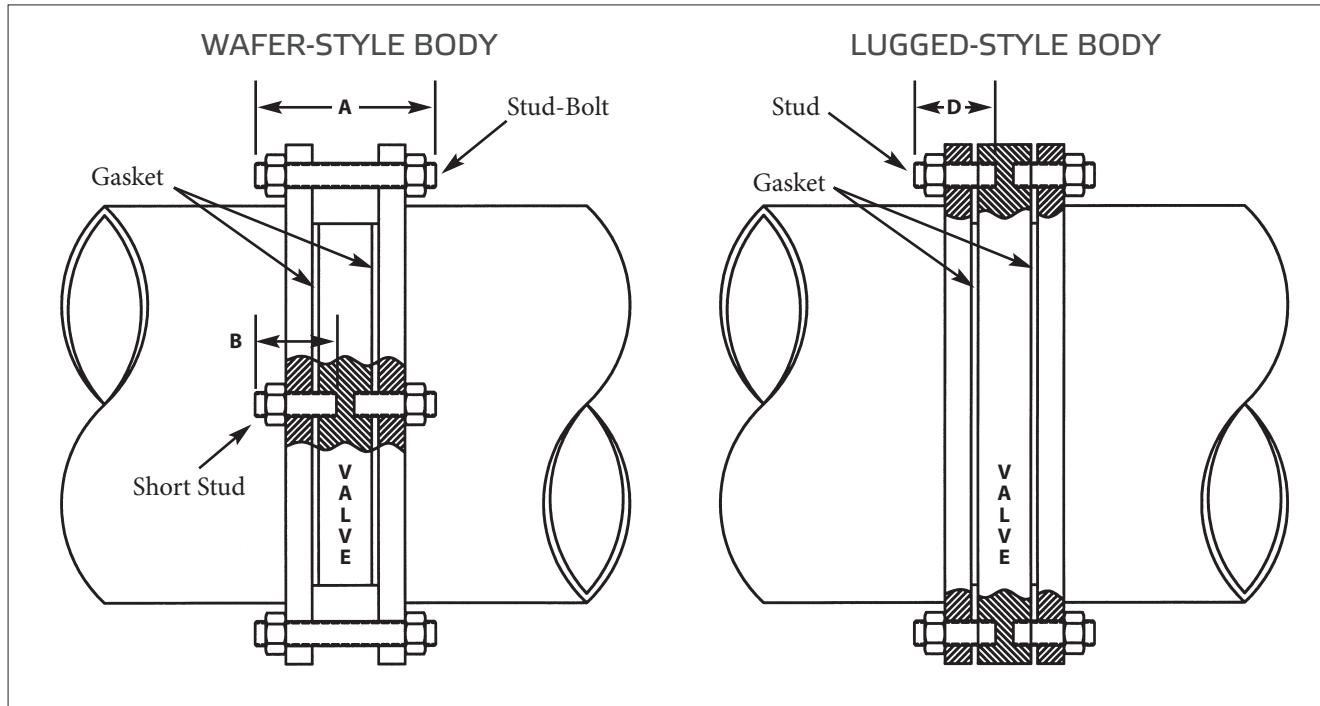
Fastener lengths are based on installation of the valve between standard raised face flanges, utilizing flange gaskets with a final compressed thickness of 1/8” (3.2 mm). To maintain thread engagement, adjust fastener lengths and/or install washers as necessary when using gaskets that have a final compression thickness of less than, or greater than 1/8” (3.2 mm).

7. Mating flanges

Fastener lengths and quantities are based on installation with flanges in accordance with ASME B16.5 on valve sizes through 24” (DN 600) valves, and MSS-SP-44 for sizes larger than 24” (DN 600).

8. 3” (DN 80) and 4” (DN 100) 830W between Class-150 flanges

When installing 3” (DN 80) and 4” (DN 100) Type 830W valves between ANSI Class 150 flanges, use the stud-bolts recommended for the corresponding Type 815W valve.



Valve Size		Fastener Diameter & Thread	Type 815W, Wafer Body				Type 815L, Lugged Body	
			Quantity		Length – inches		Quantity	Length – inches
inches	DN		No. of “A” Stud- Bolts	No. of “B” Studs	Stud-Bolt Length (A)	Short Stud Length (B)	No. of “D” studs	Stud Length (D)
2-1/2	60	5/8” – 11UNC	4	—	5-3/4	—	8	2-1/2
3	80	5/8” – 11UNC	4	—	5-3/4	—	8	2-1/2
4	100	5/8” – 11UNC	8	—	6	—	16	2-1/2
5	125	3/4” – 10UNC	8	—	6-1/2	—	16	2-3/4
6	150	3/4” – 10UNC	8	—	6-1/2	—	16	3
8	200	3/4” – 10UNC	8	—	7	—	16	3
10	250	7/8” – 9UNC	12	—	7-1/2	—	24	3-1/4
12	300	7/8” – 9UNC	12	—	8	—	24	3-1/2
14	350	1” – 8UNC	12	—	9	—	24	3-3/4
16	400	1” – 8UNC	16	—	9-1/2	—	32	3-3/4
18	450	1-1/8” – 8UN	16	—	10-1/2	—	32	4-1/4
20	500	1-1/8” – 8UN	16	8	11-1/2	4-1/2	40	4-1/2
24	600	1-1/4” – 8UN	16	8	13-1/4	4-3/4	40	4-3/4
30	750	1-1/4” – 8UN	24	8	15-3/4	6	56	6
36	900	1-1/2” – 8UN	28	8	18-1/2	7	64	7
42	1050	1-1/2” – 8UN	22	28	20-1/2	7-1/4	72	7-1/4
48	1200	1-1/2” – 8UN	—	88	22-1/2	7-3/4	88	7-3/4
54	1350	1-3/4” – 8UN	—	—	24-1/2	8-3/4	88	8-3/4
60	1500	1-3/4” – 8UN	—	—	26-1/2	9	104	9

Valve Size		Fastener Diameter & Thread	Type 830W, Wafer Body				Type 830L, Lugged Body	
			Quantity		Length – inches		Quantity	Length – inches
inches	DN		No. of “A” Stud- Bolts	No. of “B” Studs	Stud-Bolt Length (A)	Short Stud Length (B)	No. of “D” studs	Stud Length (D)
2-1/2	65	3/4" – 10UNC	8	—	6-1/2	—	16	3
3	80	3/4" – 10UNC	8	—	6-1/2	—	16	3
4	100	3/4" – 10UNC	8	—	6-3/4	—	16	3-1/4
5	125	3/4" – 10UNC	8	—	7	—	16	3-1/4
6	150	3/4" – 10UNC	12	—	7-1/2	—	24	3-1/4
8	200	7/8" – 9UNC	12	—	8-1/2	—	24	3-3/4
10	250	1" – 8UNC	12	8	9-3/4	4-1/4	32	4-1/4
12	300	1-1/8" – 8UN	12	8	10-1/2	4-3/4	32	4-3/4
14	350	1-1/8" – 8UN	16	8	11-3/4	4-3/4	40	4-3/4
16	400	1-1/4" – 8UN	16	8	13	5-1/4	40	5-1/4
18	450	1-1/4" – 8UN	20	8	14	5-1/4	48	5-1/4
20	500	1-1/4" – 8UN	20	8	14-3/4	5-1/2	48	5-1/2
24	600	1-1/2" – 8UN	20	8	16-3/4	6-1/4	48	6-1/4
30	750	1-3/4" – 8UN	24	8	22-1/2	7-1/2	56	7-1/2
36	900	2" – 8UN	—	—	24-1/2	8-1/2	64	8-1/2

Valve Size		Fastener Diameter & Thread	Type 860W, Wafer Body				Type 860L, Lugged Body	
			Quantity		Length – inches		Quantity	Length – inches
inches	DN		No. of “A” Stud- Bolts	No. of “B” Studs	Stud-Bolt Length (A)	Short Stud Length (B)	No. of “D” studs	Stud Length (D)
3	80	3/4"-10UNC	8	—	7	—	16	3-1/4
4	100	7/8"-9UNC	8	—	8-1/4	—	16	3-3/4
6	150	1"-8UNC	12	—	9-1/2	—	24	4-1/4
8	200	1-1/8"-8UN	12	—	11-1/4	—	24	5
10	250	1-1/4"-8UN	12	8	13	5-1/2	32	5-1/2
12	300	1-1/4"-8UN	16	8	14-1/4	5-1/2	40	5-1/2
14	350	1-3/8"-8UN	16	8	15-1/4	6	40	6
16	400	1-1/2"-8UN	16	8	16-1/2	6-1/2	40	6-1/2
18	450	1-5/8"-8UN	16	8	18-1/2	7	40	7
20	500	1-5/8"-8UN	20	8	19-1/2	7-1/4	48	7-1/4
24	600	1-7/8"-8UN	20	8	24	8-1/4	48	8-1/4

Valve Size		Fastener Diameter & Thread	Type 835L, Lugged Body (With flange holes drilled through, word modifier “DV”)				Type 835L, Lugged Body	
			Quantity		Length – inches		Quantity	Length – inches
inches	DN		No. of “A” Stud- Bolts	No. of “B” Studs	Stud-Bolt Length (A)	Short Stud Length (B)	No. of “D” studs	Stud Length (D)
30	750	1-1/4"-8UN	24	8	14	6	56	6
36	900	1-1/2"-8UN	28	8	17	7	64	7
40	1000	1-1/2"-8UN	32	8	19-1/2	7	72	7
42	1050	1-1/2"-8UN	32	8	20	7-1/4	72	7-1/4
48	1200	1-1/2"-8UN	40	8	21-1/2	7-3/4	88	7-3/4
54	1350	1-3/4"-8UN	40	8	24	8-3/4	88	8-3/4
60	1500	1-3/4"-8UN	48	8	25-1/2	9-1/4	104	9-1/4

Valve Size		Fastener Diameter & Thread	Type 845W, Wafer Body			
			Quantity		Length – inches	
inches	DN		No. of “A” Stud- Bolts	No. of “B” Studs	Stud-Bolt Length (A)	Short Stud Length (B)
10	250	7/8" – 9UNC	12	—	7-1/2	—
12	300	7/8" – 9UNC	12	—	8	—
14	350	1" – 8UNC	12	—	9	—
16	400	1" – 8UNC	16	—	9-1/2	—
18	450	1-1/8" – 8UN	16	—	10-1/2	—
20	500	1-1/8" – 8UN	16	8	11-1/2	4-1/2
24	600	1-1/4" – 8UN	16	8	13-1/4	4-3/4
28	700	1-1/4" – 8UN	24	8	15-1/2	5-3/4
30	750	1-1/4" – 8UN	24	8	15-3/4	6
32	800	1-1/2" – 8UN	24	8	17-1/2	6-3/4
36	900	1-1/2" – 8UN	28	8	18-1/2	7
42	1050	1-1/2" – 8UN	32	8	20-1/2	7-1/4

Subject to change without prior notice.

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