

WILLIAM JOHNSTON & COMPANY LIMITED

FASTENERS AND FLANGE GASKET SETS FOR THE WATER, GAS AND MUNICIPAL INDUSTRIES.

The William Johnston & co range of flange bolt sets is extensive and can be tailored to suit customer's exact needs.

William Johnston & co offer complete flange gasket sets consisting of a gasket and the appropriate number of fasteners for the size of flange.

These flange gasket sets are supplied bagged and clearly labelled enabling the correct gasket with the correct size and number of bolts, nuts and washers to be selected every time a connection is to be made.

Benefits

- *Factory applied protection, no need to pack and wrap joints and fittings after installation*
- *All bolts, nuts and washers are fully coated, no exposed or unprotected metal areas*
- *Exceptional long-term corrosion protection*
- *Meets the standards of WIS 4:52:03*
- *Flange gasket sets provide the gasket and correct quantity and size of bolts, nuts and washers for ensuring correct fitment every time*
- *Extensive stocks of standard Flange Bolt Sets are available providing short lead times and high levels of customer service*
- *Non-standard materials, coatings and sizes are available on request*



General application

The William Johnston & co range of fasteners has been developed to meet the requirements of the water, gas and municipal industries. The protective coating offers all the benefits of a combination of a substantial sacrificial protection layer and a barrier layer. Both these layers combine to withstand exposure to the most extreme of environments Fasteners

Bolts, nuts and washers are supplied in steel to grade 4.6 as standard with the option of alternative grades and materials available on request.

The duplex coating process consists of a Sherardized layer to an average thickness of 30µm and a subsequent Inorganic barrier to a thickness of 12µm. This approved coating meets the requirement of WIS 4-52-03 Gaskets

William Johnston & co offer three types of gasket pattern:

- Full Face,
- 2 Lug,
- IBC

Other special gaskets can be supplied to exact customer requirements.

All gaskets are supplied in either EPDM or Nitrile rubber to a thickness of 3mm and are available as BS4504 (closed bore) and BS4865 (open bore). All EPDM gaskets supplied are fully WRAS approved for contact with potable water and conform to the requirements of BS2494.

Technical data

Material

Bolts: Mild steel, grade 4.6

Nuts: Mild steel, grade 4.6

Washers: Mild steel, grade 4.6

Alternative grades and materials are available on request

Gaskets

Water: EPDM EN681

Gas: Nitrile EN682

For pressures of NP25 or above an alternative material gasket can be supplied dependant upon application. Please contact the William Johnston & co Technical Team on the number shown below for further details

Coating: Sheraplex

Sheraplex is a duplex process -

Stage 1: Sherardized layer (Average coating to 30µm)

Stage 2: Inorganic barrier layer (Average coating to 12µm)

Combined: Sheraplex coating (Average coating to 42µm)

Sizes

Bolts: M10 to M56

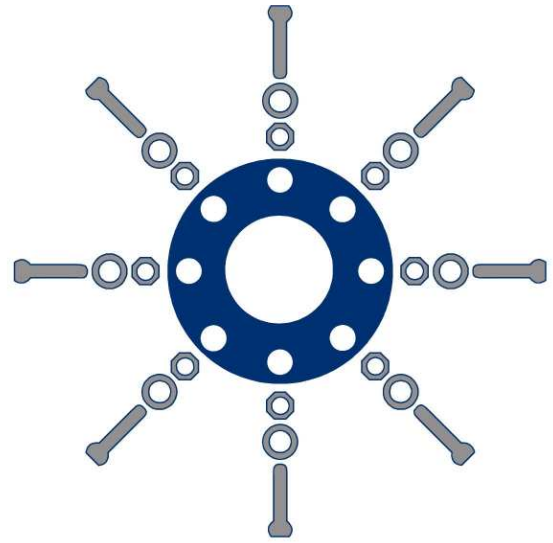
In lengths 25mm to 300mm

Gaskets: Full face, 2 lug and IBC

In sizes 50mm to 2,200mm

Technical help

For further technical data, product specifications and general information please contact our Technical Team at the telephone number shown below.



Nominal pipe size	OD of Flange	Bolt Hole Details			Bolt Size		Bolt tightening torques (Nm) Using 3mm thick 80 IRHD rubber gaskets				Spanner size across flats
		PCD mm	No	Diameter mm	Bolt diameter mm	Bolt length mm	10 Bar	16 Bar	20 Bar	25 Bar	
DN 50	165	125	4	19	M16	70 or 90	70	70	75	75	24
DN 80	200	160	8	19	M16	70 or 90	70	70	75	75	24
DN 100	220	180	8	19	M16	70 or 90	75	80	80	80	24
DN 150	285	240	8	23	M20	70 or 100	115	120	125	135	30
DN 200	340	295	12	23	M20	70 or 100	110	115	120	130	30
DN 250	400	355	12	28	M24	90 or 110	155	165	175	180	36
DN 300	455	410	12	28	M24	90 or 110	165	180	190	210	36
DN 350	520	470	16	28	M24	90 or 110	160	175	185	200	36
DN 400	580	525	16	31	M27	110	200	220	235	270	41
DN 450	640	585	20	31	M27	110	195	215	230	260	41
DN 500	715	650	20	34	M30	110	240	270	295	345	46
DN 600	840	770	20	37	M33	120	305	365	425	505	50

Notes

- The need to seal flanged gasket sets at pressures greater than the flange PN rating will only arise for the purposes of on site hydrostatic testing. Flanged gasket sets should not be operated at these higher values other than for such testing
- Bolt lengths are approximate
- Details relate to connecting ductile Iron flanges using 3mm gaskets. For information relating to Di X Pe or Pe X Pe please contact our technical team who will be pleased to assist you.









SHERAPLEX

The Sheraplex process is a duplex one. It utilises the excellent sacrificial corrosion protection of the Sherardizing process combined with a final, external coating in the form of an inorganic barrier layer. The characteristic matt textured surface of the Sherardizing process also provides an excellent key to the organic barrier layer, so enhancing the performance of both processes.

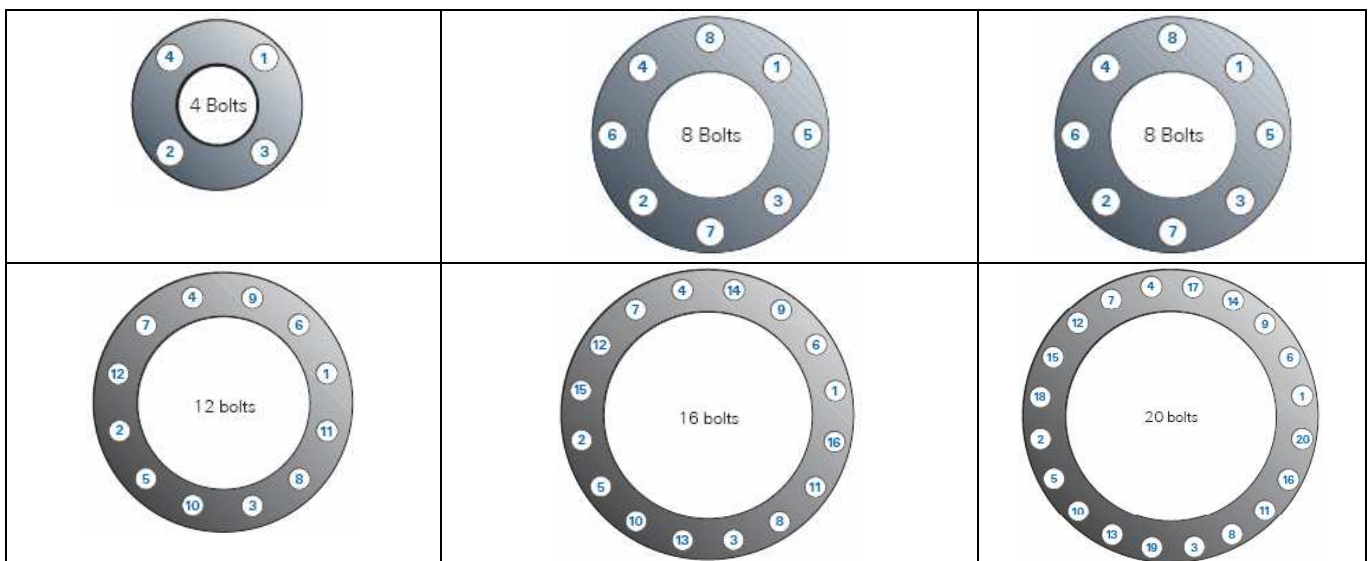
The first stage in the Sheraplex process is Sherardizing. This is a diffusion process where the items to be coated are heated in the presence of Zinc Dust. The process is normally carried out in a slowly rotating container at temperatures ranging from 320°C to 500°C. The resulting zinc/iron alloy coating is then zinc phosphated. This provides a clean, passivated, matt grey coating which closely follows the contours of the base material, giving a uniform coating on even the most intricately shaped items. The second stage of the process is the application of an organic barrier layer. This second layer is applied by either a dip/spin or a spray process, the coating is then cured at 200°C. This gives a uniform and complete coverage of coating, allowing the intricate shape of the bolt threads to be fully coated.

Benefits

-  Long term environmental protection
-  Minimum 1000 hours salt spray test to ASTM B117
-  Repeatable torque tension control to BS7371 part 2
-  Uniform diffusion zinc/iron alloy coating plus organic barrier layer, Useful for protecting irregularly shaped components
-  Substrate has a high degree of wear resistance to withstand Abrasion and handling
-  No hydrogen embrittlement



The William Johnston & co range of manufactured Flange Gasket Sets for the water utilities comprise of an EPDM gasket supplied with the correct number of bolts, nuts and washers (2 washers per bolt). Nuts, bolts and washers are Sheraplex coated to WIS 4-52-03. When assembling flanges follow the recommended numbered sequence set out below. Once fully assembled the flange bolts should be fully tightened to the required torque setting suited to operating pressure and temperature conditions, again following the recommended numbered sequence set out below.



The following information should act as a general guideline only. For full information relating to this and additional flange data, please refer to the William Johnston & co Technical Team on the numbers displayed below.

Nominal bore mm	PN 6 & PN 10 FLANGE TABLES											
	PN6						PN10					
	FLANGE DIMENSIONS (mm)				BOLT DIMENSIONS		FLANGE DIMENSIONS (mm)				BOLT DIMENSIONS	
DIA	THICK	PCD	NO OF HOLES	DIAMETER	LENGTH	DIA	THICK	PCD	NO OF HOLES	DIAMETER	LENGTH	
40	130	16	100	4	M12	55	150	16	110	4	M16	55
50	140	16	110	4	M12	55	165	18	125	4	M16	65
65	160	16	130	4	M12	55	185	18	145	4	M16	65
80	190	16	150	4	M16	65	200	20	160	8	M16	70
100	210	18	170	4	M16	65	220	20	180	8	M16	70
125	240	20	200	8	M16	70	250	22	210	8	M16	70
150	265	20	225	8	M16	70	285	22	240	8	M20	70
175	-	-	-	-	-	-	315	24	270	8	M20	75
200	320	22	280	8	M16	70	340	24	295	8	M20	75
250	375	24	335	12	M16	70	395	26	350	12	M20	80
300	440	24	395	12	M20	70	445	26	400	12	M20	80
350	490	26	445	12	M20	80	505	28	460	16	M20	80
400	540	28	495	16	M20	80	565	32	515	16	M24	90
450	595	30	550	16	M20	90	615	36	565	20	M24	105
500	645	30	600	20	M20	90	670	38	620	20	M24	105
600	755	32	705	20	M24	90	780	42	725	20	M27	120

Nominal bore mm	PN 16 & PN 25 FLANGE TABLES											
	PN16						PN25					
	FLANGE DIMENSIONS (mm)				BOLT DIMENSIONS		FLANGE DIMENSIONS (mm)				BOLT DIMENSIONS	
DIA	THICK	PCD	NO OF HOLES	DIAMETER	LENGTH	DIA	THICK	PCD	NO OF HOLES	DIAMETER	LENGTH	
40	150	16	110	4	M16	55	150	20	110	4	M16	70
50	165	18	125	4	M16	65	165	20	125	4	M16	70
65	185	22	145	8	M16	65	185	22	145	8	M16	70
80	200	20	160	8	M16	70	200	24	160	8	M16	75
100	220	20	180	8	M16	70	235	26	190	8	M20	80
125	250	22	210	8	M16	70	270	28	220	8	M24	80
150	285	22	240	8	M20	70	300	30	250	8	M24	90
175	315	24	270	8	M20	75	330	28	280	12	M24	80
200	340	24	295	12	M20	75	360	30	310	12	M24	90
250	405	26	355	12	M24	80	425	40	370	12	M27	90
300	460	28	410	12	M24	80	485	38	430	16	M27	110
350	520	32	470	16	M24	90	555	42	490	16	M30	125
400	580	36	525	16	M27	100	620	46	550	16	M33	140
450	640	40	585	20	M27	120	670	52	600	20	M33	140
500	715	44	650	20	M30	125	730	58	660	20	M33	155
600	840	52	770	20	M33	140	845	66	770	20	M36	165

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