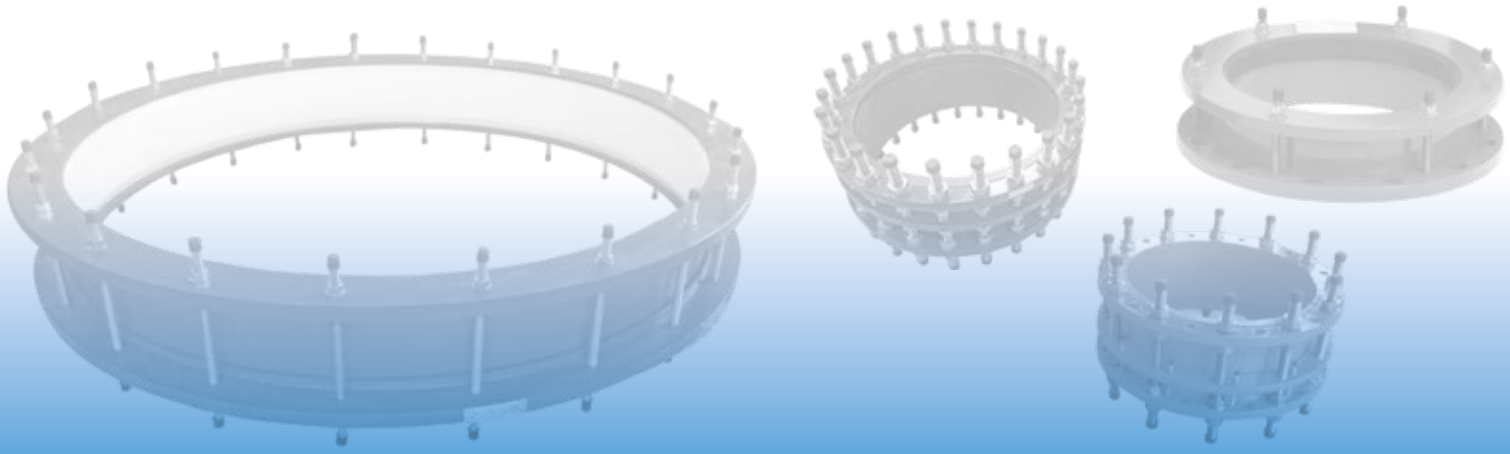
Greater Cairo Foundries
مسـابـك القـاهرة الكـبرى

DUCTILE IRON MECHANICAL JOINTS



DUCTILE IRON
Mechanical Joint

Introduction

GCF started in 1983 with a reputable brand name in the field of Ductile Iron Pipeline Products.

Based in Egypt, GCF is a prominent supplier of DI Pipes, fittings and Valves serving a broad variety of water and sewage applications. Whether it is a water pipeline, a water treatment plant, or a pumping station, GCF brand stands out as one of satisfaction over the years. Our product mix includes Pipe fittings and Mechanical Joints up to DN 2600, Butterfly Valves up to DN 2200, Gate Valves up to DN 1800, Non Return Valve up to DN 1500 and Air valves up to DN 200.

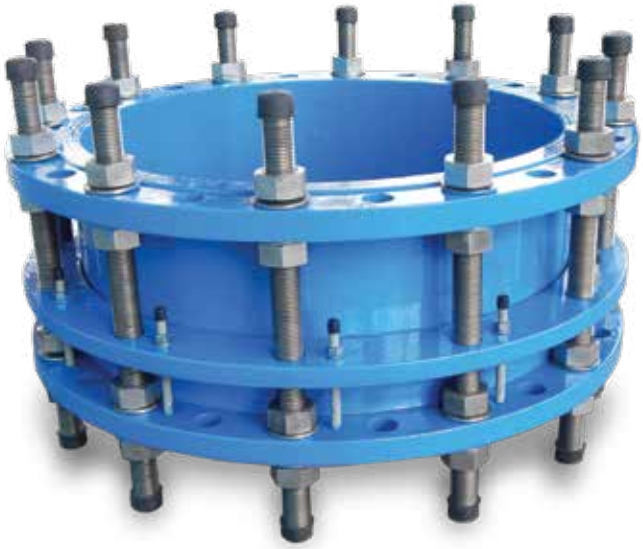
The product mix that GCF offers with a commitment to an in depth knowledge of our customers' requirements has enabled us to acquire their confidence with a continuously increased market share. GCF not only offers a range of products but offers solutions to water and sewage companies, municipalities, civil and electromechanical contractors alike.

GCF client list spreads all along the Middle East, North African and South Europe Region.

From Egypt to Libya, Iraq, KSA, UAE, Oman, Algeria, Jordan, Turkey, Italy, Greece,

GCF brand stand out as brand of quality excellence. The distinctive location where GCF has its manufacturing facility makes it within few days of delivery to any market in MENA region and a free import taxation privilege.

GCF quality management system had been certified for ISO 9001 since 1997, GCF's products had been certified by different international laboratories



Manufacturing Standards

GCF produces mechanical joints in accordance to the following standards:

ISO1083:2004 (Spheroidal graphite cast irons - Classification**)**

BS EN 10025-1:2004 (Hot rolled products of structural steels. General technical delivery condition)

I**SO7005-2:1988** (Metallic flanges - Part 2: Cast iron flanges)

EN1092-2:1997 (Flanges and their joints. Circular flanges for pipes, valves, fittings and accessories, PN designated. Cast iron flanges)

EN14901:2006 (Ductile iron pipes, fittings and accessories. Epoxy coating (heavy duty) of ductile iron fittings and accessories. Requirements and test methods)

ISO4633:2002 (Rubber seals - Joint rings for water supply, drainage and sewerage pipelines - Specification for materials)

DISMANTLING JOINTS

Dismantling Joints

Dismantling Joint

Overview

Concept

The Dismantling Joint range was developed to provide longitudinal flexibility for the designer and the engineer for the installation of flanged pipeline systems and to provide easy maintenance processes.

The Dismantling Joints accommodate up to 100mm longitudinal adjustment and can be locked at the required length with the tie bars supplied. Not only does this system allow for fast, easy maintenance of valves, pumps or meters, it simplifies future pipe work modifications and reduces downtime when changes need to be made.

Easy Installation

The installation is also straightforward using just a spanner and torque wrench to tighten the high tensile steel or stainless steel tie bars.

Materials

Flange Spigot - Ductile Iron to ISO 1083:2004: Grade ISO1083/JS/400-15/S

Flange Adaptor - Ductile Iron to ISO 1083:2004: Grade ISO1083/JS/400-15/S

Gland - Ductile Iron to ISO 1083:2004: Grade ISO1083/JS/400-15/S

Gaskets - EPDM in accordance with ISO4633, suitable for potable water (WRAS Approved)

Tie Rods & Fasteners - to be applied with one of the following options:

- Hot dipped galvanized steel Class 8.8 (Standard)
- Stainless Steel to BS EN3506-1:2009 Grade A2 (S.S. 304) Property Class 70 (450 N/mm^2) (Optional)
- Stainless Steel to BS EN3506-1:2009 Grade A4 (S.S. 316) Property Class 70 (450 N/mm^2) (Optional)

Size Range

A comprehensive range is available from DN80 to DN2600 with virtually any flange drilling or pressure rating supplied, although larger sizes and custom made Dismantling Joints can be designed and built on request.

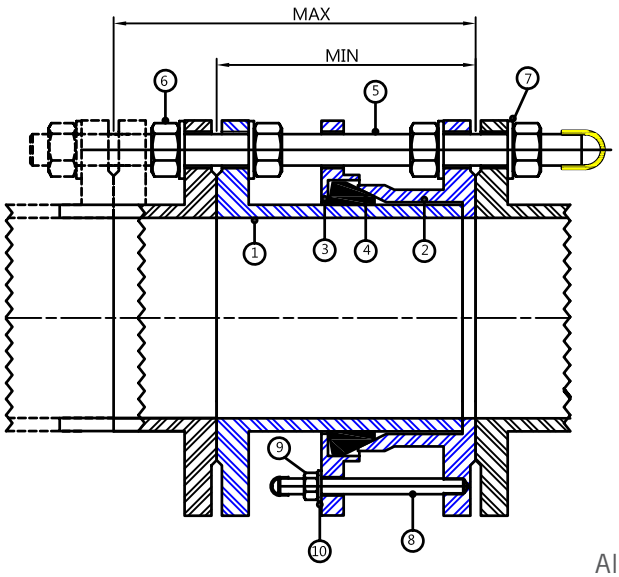
Customer Benefits

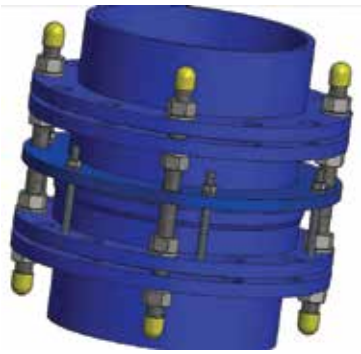
- GCF Dismantling Joints are particularly suitable for simplifying the installation and removal of isolation valves, control valves, check valves, non-return valves, flow metering valves, pump sets, pressure reducing valves, flanged pipe and fittings.
- The simplicity and versatility of the fittings make them suitable for many applications including pumping stations, water treatment works, sewage treatment works, plant rooms, meter chambers, power generation equipment.

Dismantling Joints

Restrained Dismantling Joints (Type B)

PART NO.	DESCRIPTION
1	SPIGOT
2	ADAPTOR
3	GLAND
4	GASKET
5	TIE BARS
6	NUT
7	WASHER
8	GLAND STUDS
9	GLANG NUT
10	GLAND WASHER





PN10

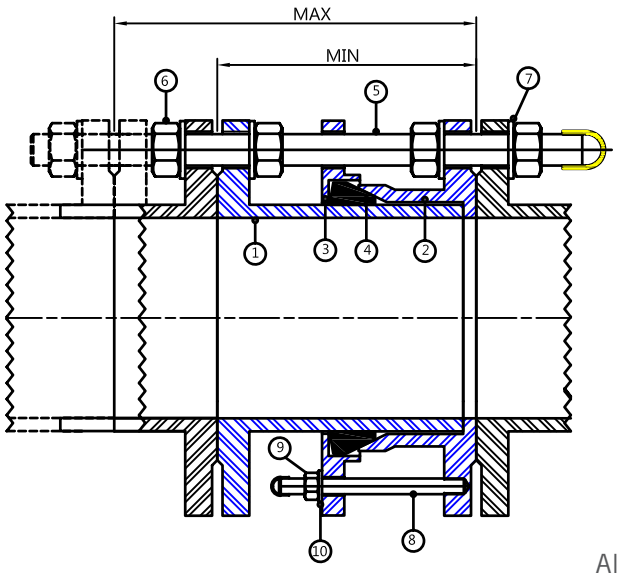
All dimensions are in millimeters.

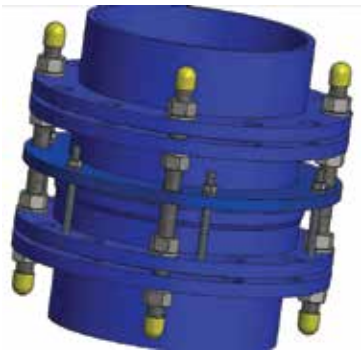
Size (DN)	Flange Details Acc. to ISO 7005				Flange – to – Flange Length			Restraining Tie Rod			Gland Studs	
	OD	PCD	Bolt Hole Diam.	No. of Holes	Min.	Nom.	Max.	Size	No. H. D. Galv. Steel	No. St. Steel SS 304 SS 316	Size	No.
80	200	160	19	8	168	188	208	M16 X 300	4	4	M12X125	4
100	220	180	19	8	168	188	208	M16 X 300	4	4	M12X125	4
150	285	240	23	8	168	188	208	M20 X 330	4	4	M12X125	4
200	340	295	23	8	168	188	208	M20 X 330	4	4	M12X125	4
250	400	350	23	12	200	220	240	M20 X 360	4	4	M12X140	6
300	455	400	23	12	200	220	240	M20 X 360	4	4	M12X140	6
350	505	460	23	16	277	302	327	M20 X 500	4	4	M12X160	8
400	565	515	28	16	277	302	327	M24 X 500	4	8	M12X160	8
450	615	565	28	20	277	302	327	M24 X 500	5	10	M12X160	10
500	670	620	28	20	277	302	327	M24 X 500	5	10	M16X160	10
600	780	725	31	20	277	302	327	M27 X 500	5	10	M16X160	10
700	895	840	31	24	277	302	327	M27 X 500	6	12	M16X160	12
800	1015	950	34	24	277	302	327	M30 X 550	6	12	M16X185	12
900	1115	1050	34	28	300	325	350	M30 X 600	7	14	M16X185	14
1000	1230	1160	37	28	300	325	350	M33 X 600	7	14	M16X185	14
1100	1340	1270	37	32	310	340	370	M33 X 620	8	16	M16X185	16
1200	1455	1380	40	32	330	360	390	M36 X 650	8	16	M16X210	16
1300	1565	1485	43	32	330	360	390	M39 X 650	8	16	M16X210	16
1400	1675	1590	43	36	340	370	400	M39 X 700	8	16	M20X210	18
1500	1785	1700	43	36	360	390	420	M39 X 700	9	18	M20X210	18
1600	1915	1820	49	40	412	462	512	M45 X 800	10	20	M20X260	20
1800	2115	2020	49	44	412	462	512	M45 X 800	11	22	M20X260	22
2000	2325	2230	49	48	412	462	512	M45 X 800	12	22	M20X260	24
2200	2550	2440	56	52	412	462	512	M52 X 850	13	22	M20X280	26
2400	2750	2650	56	56	460	510	560	M52 X 1000	14	28	M20X280	28
2600	2960	2850	56	60	460	510	560	M52 X 1000	15	30	M20X330	30

Dismantling Joints

Restrained Dismantling Joints (Type B)

PART NO.	DESCRIPTION
1	SPIGOT
2	ADAPTOR
3	GLAND
4	GASKET
5	TIE BARS
6	NUT
7	WASHER
8	GLAND STUDS
9	GLANG NUT
10	GLAND WASHER





PN16

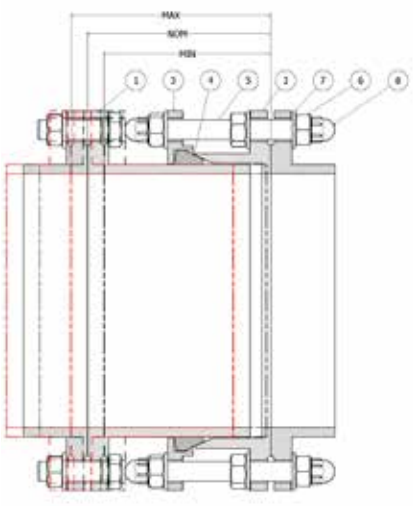
All dimensions are in millimeters.

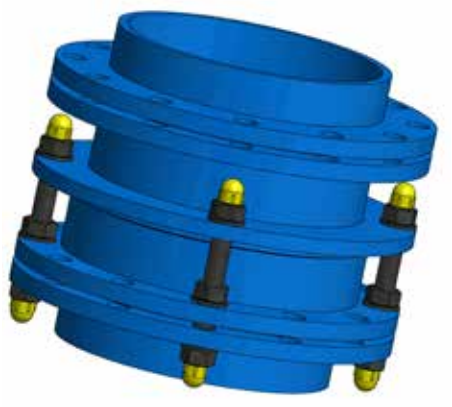
Size (DN)	Flange Details Acc. to ISO 7005				Flange – to – Flange Length			Restraining Tie Rod			Gland Studs	
	OD	PCD	Bolt Hole Diam.	No. of Holes	Min.	Nom.	Max.	Size	No.		Size	No.
									H. D. Galv. Steel	St. Steel SS 304 SS 316		
80	200	160	19	8	168	188	208	M16 X 300	4	4	M12X125	4
100	220	180	19	8	168	188	208	M16 X 300	4	4	M12X125	4
150	285	240	23	8	168	188	208	M20 X 330	4	4	M12X125	4
200	340	295	23	12	168	188	208	M20 X 330	4	4	M12X125	4
250	400	355	28	12	200	220	240	M24 X 360	4	4	M12X140	6
300	455	410	28	12	200	220	240	M24 X 360	4	4	M12X140	6
350	520	470	28	16	277	302	327	M24 X 500	4	4	M12X160	8
400	580	525	31	16	277	302	327	M27 X 500	4	8	M12X160	8
450	640	585	31	20	277	302	327	M27 X 500	5	10	M12X160	10
500	715	650	34	20	277	302	327	M30 X 500	5	10	M16X160	10
600	840	770	37	20	277	302	327	M33 X 550	5	10	M16X160	10
700	910	840	37	24	277	302	327	M33 X 550	6	12	M16X160	12
800	1025	950	40	24	277	302	327	M36 X 600	6	12	M16X185	12
900	1125	1050	40	28	300	325	350	M36 X 600	7	14	M16X185	14
1000	1255	1170	43	28	300	325	350	M39 X 600	7	14	M16X185	14
1100	1355	1270	43	32	310	340	370	M39 X 650	8	16	M16X185	16
1200	1485	1390	49	32	330	360	390	M45 X 680	8	16	M16X210	16
1300	1585	1490	49	32	330	360	390	M45 X 750	8	16	M16X210	16
1400	1685	1590	49	36	340	370	400	M45 X 750	9	18	M20X210	18
1500	1820	1710	56	36	360	390	420	M52 X 750	9	18	M20X210	18
1600	1930	1820	56	40	412	462	512	M52 X 850	10	20	M20X260	20
1800	2130	2020	56	44	412	462	512	M52 X 850	11	22	M20X260	22
2000	2345	2230	62	48	412	462	512	M56 X 850	12	24	M20X260	24
2200	2555	2440	62	52	412	462	512	M56 X 1000	13	26	M20X280	26
2400	2765	2650	62	56	460	510	560	M56 X 1000	14	28	M20X280	28
2600	2965	2850	62	60	460	510	560	M56 X 1000	15	30	M20X330	30

Dismantling Joints

Flexible Dismantling Joints

PART NO.	DESCRIPTION
1	SPIGOT
2	ADAPTOR
3	GLAND
4	GASKET
5	TIE BARS
6	NUT
7	WASHER
8	CAP





PN10

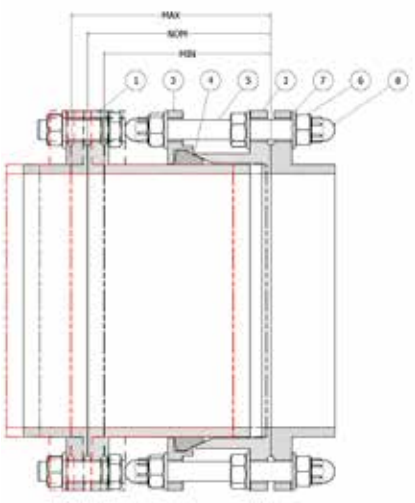
All dimensions are in millimeters.

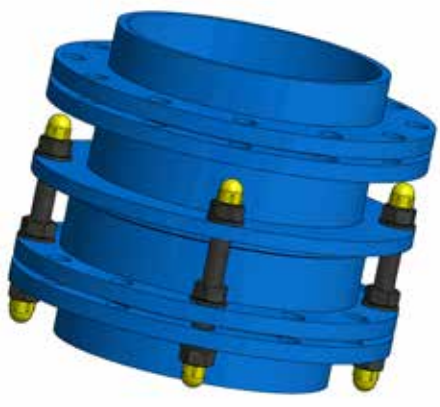
Size (DN)	Flange - to - Flange Length			PN10 Flange Details Acc. to ISO 7005				Tie Rod		
	MIN.	NOM.	MAX.	OD	PCD	Bolt Hole Dia.	No. of Holes	Size	No. Galv. St	No. St. St.
80	168	188	208	200	160	19	8	M16 X 170	4	4
100	168	188	208	220	180	19	8	M16 X 170	4	4
150	168	188	208	285	240	23	8	M20 X 180	4	4
200	168	188	208	340	295	23	8	M20 X 205	4	4
250	200	220	240	400	350	23	12	M20 X 225	4	4
300	200	220	240	455	400	23	12	M20 X 225	4	4
350	277	302	327	505	460	23	16	M20 X 230	4	4
400	277	302	327	565	515	28	16	M24 X 230	4	8
450	277	302	327	615	565	28	20	M24 X 240	5	10
500	277	302	327	670	620	28	20	M24 X 250	5	10
600	277	302	327	780	725	31	20	M27 X 265	5	10
700	277	302	327	895	840	31	24	M27 X 270	6	12
800	277	302	327	1015	950	34	24	M30 X 280	6	12
900	300	325	350	1115	1050	34	28	M30 X 290	7	14
1000	300	325	350	1230	1160	37	28	M33 X 310	7	14
1100	310	340	370	1340	1270	37	32	M33 X 320	8	16
1200	330	360	390	1455	1380	40	32	M36 X 330	8	16
1300	330	360	390	1565	1485	43	32	M39 X 350	8	16
1400	340	370	400	1675	1590	43	36	M39 X 365	9	18
1500	360	390	420	1785	1700	43	36	M39 X 370	9	18
1600	412	462	512	1915	1820	49	40	M45 X 430	10	20
1800	412	462	512	2115	2020	49	44	M45 X 430	11	22
2000	412	462	512	2325	2230	49	48	M45 X 500	12	22
2200	412	462	512	2550	2440	56	52	M52 X 520	13	22
2400	460	510	560	2750	2650	56	56	M52 X 530	14	28
2600	460	510	560	2960	2850	56	60	M52 X 550	15	30

Dismantling Joints

Flexible Dismantling Joints

PART NO.	DESCRIPTION
1	SPIGOT
2	ADAPTOR
3	GLAND
4	GASKET
5	TIE BARS
6	NUT
7	WASHER
8	CAP





PN16

All dimensions are in millimeters.

Size (DN)	Flange - to - Flange Length			PN16 Flange Details Acc. to ISO 7005				Tie Rod		
	MIN.	NOM.	MAX.	OD	PCD	Bolt Hole Dia.	No. of Holes	Size	No.	
									Galv. St	St. St.
80	168	188	208	200	160	19	8	M16 X 170	4	4
100	168	188	208	220	180	19	8	M16 X 170	4	4
150	168	188	208	285	240	23	8	M20 X 180	4	4
200	168	188	208	340	295	23	8	M20 X 205	4	4
250	200	220	240	400	350	23	12	M20 X 225	4	4
300	200	220	240	455	400	23	12	M20 X 225	4	4
350	277	302	327	505	460	23	16	M20 X 230	4	4
400	277	302	327	565	515	28	16	M24 X 230	4	8
450	277	302	327	615	565	28	20	M24 X 240	5	10
500	277	302	327	670	620	28	20	M24 X 250	5	10
600	277	302	327	780	725	31	20	M27 X 265	5	10
700	277	302	327	895	840	31	24	M27 X 270	6	12
800	277	302	327	1015	950	34	24	M30 X 280	6	12
900	300	325	350	1115	1050	34	28	M30 X 290	7	14
1000	300	325	350	1230	1160	37	28	M33 X 310	7	14
1100	310	340	370	1340	1270	37	32	M33 X 320	8	16
1200	330	360	390	1455	1380	40	32	M36 X 330	8	16
1300	330	360	390	1565	1485	43	32	M39 X 350	8	16
1400	340	370	400	1675	1590	43	36	M39 X 365	9	18
1500	360	390	420	1785	1700	43	36	M39 X 370	9	18
1600	412	462	512	1915	1820	49	40	M45 X 430	10	20
1800	412	462	512	2115	2020	49	44	M45 X 430	11	22
2000	412	462	512	2325	2230	49	48	M45 X 500	12	22
2200	412	462	512	2550	2440	56	52	M52 X 520	13	22
2400	460	510	560	2750	2650	56	56	M52 X 530	14	28
2600	460	510	560	2960	2850	56	60	M52 X 550	15	30

Installation Instructions

1 Check the DJ parts to ensure that there aren't any damage occurred during transit and that no parts are missing.

2 Check the mating flanges to insure that it matches the drilling of the DJ size. They must be parallel and aligned axially.

3 Remove the tie-rods completely from the DJ and loosen the end ring (sealing gland) to allow the spool piece (spigot) to move freely within the Flange adaptor body.

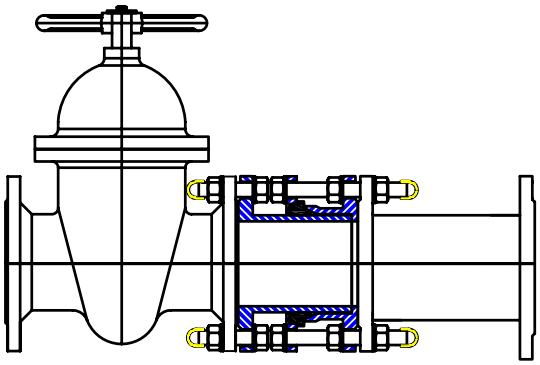


Fig.1

4 Move the DJ in to position between the mating flanges. Insert the flange gasket between the flange faces (not provided). Using flange bolts, fasten the flanged coupling end of the dismantling joint to one of the mating flanges.

5 Attach the flanged spool (spigot piece) to the opposite mating flange in your system and fasten together with flange bolts. Make sure that The DJ length doesn't exceed its maximum length specified on the data sheet. Spool piece should be concentric with the flanged coupling after bolting the flanges. Spool piece

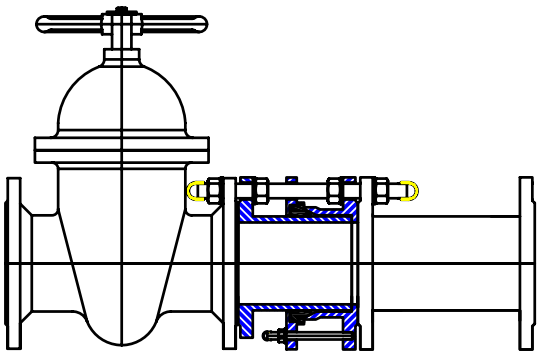


Fig.2

6 For restrained dismantling joint Insert tie-rods. (NOTE: Without the tie-rods in place, the fitting is NOT RESTRAINED.) Each tie-rod will have a total of 5 nuts when assembled as shown in fig. While inserting the tie-rod, thread the nuts into position (the five nuts positions as shown in fig. 3): Nut 1,2,3,4 for tightening both spool piece and coupling piece with mating flanges. Nut 5 for tightening gland (Type-A only). The tie-rod must pass through the flanges on each end of the dismantling joint. Make sure the tie-rod lengths are equal. Tighten the nuts that secure the flanges BEFORE torqueing the nuts on the end ring to complete the installation.

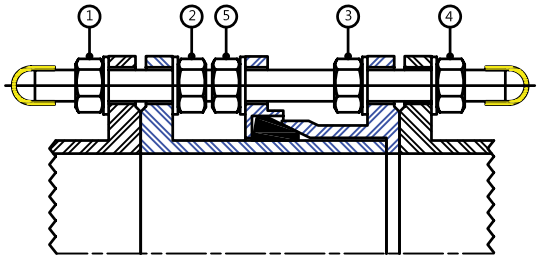


Fig.3

7 Evenly tighten the bolts around the end ring by diametrically alternating opposite positions (See fig. 4) at approximately 34 Nm increments until the recommended torque is achieved. Wait ten minutes and then re-torque.

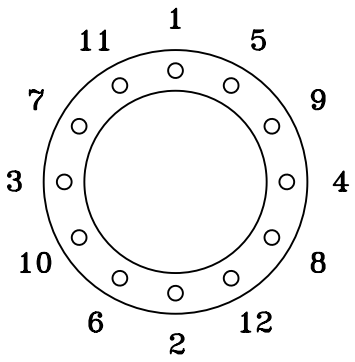


Fig.4

8 In case of stainless steel studs/bolts (grade 304 or 316) the greasing of nuts is essential to avoid the galling phenomena and to achieve the bolt tightening torque.

Flange Adaptors

Flange Adaptors

Flange Adaptors

Overview

Concept

Flange adaptors are the fast and efficient way for flange installations in the field. By using ductile iron pipe cut to dimension and a flange adaptor, you can quickly connect to virtually any faced and drilled flange.

Flange adaptors join spigot end of ductile iron pipe to flanges of valves, pumps, fittings and pipes. They require no threading or welding, and allow for pipe misalignment. The set screws eliminate additional restraining connections and prevent blow-off. Set screws should be tightened to 95 N. m torque.

Materials

Flange Adaptor - Ductile Iron to ISO 1083:2004: Grade ISO1083/JS/40015-/S

Gland - Ductile Iron to ISO 1083:2004: Grade ISO1083/JS/40015-/S

Gaskets - EPDM in accordance with ISO4633, suitable for potable water (WRAS Approved)

Studs & Fasteners - to be applied with one of the following options:

- Hot dipped galvanized steel Class 8.8 (Standard)
- Stainless Steel to BS EN3506-1:2009 Grade A2 (S.S. 304) Property Class 70 (450 N/mm^2) (Optional)
- Stainless Steel to BS EN3506-1:2009 Grade A4 (S.S. 316) Property Class 70 (450 N/mm^2) (Optional)

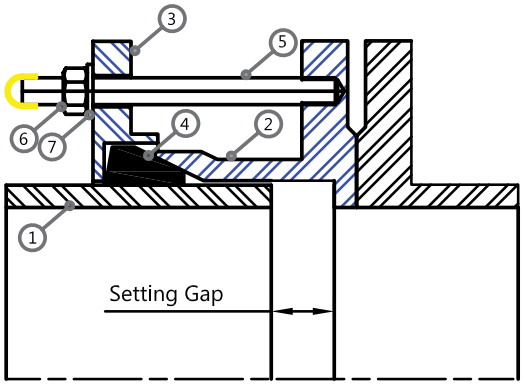
Size Range

A comprehensive range is available from DN80 to DN2600 with virtually any flange drilling or pressure rating supplied.

Flange Adaptors

Flange Adaptor Dimensions

PART NO.	DESCRIPTION
1	PIPE
2	ADAPTOR
3	GLAND
4	GASKET
5	STUDS
6	NUT
7	WASHER



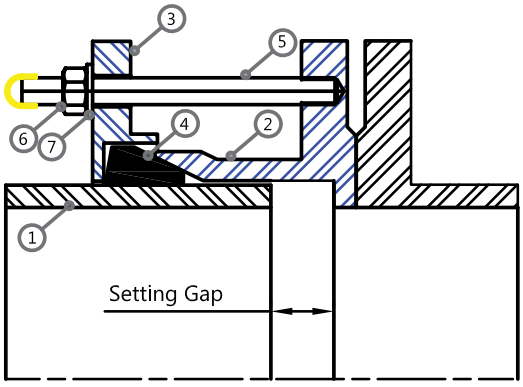
PN10

All dimensions are in millimeters.

Size (DN)	Pipe Mat.	Flange Details Acc. to ISO 7005				Adaptor Length (S) mm	Overall Length (L) mm	Setting Gap mm		Studs	
		OD	PCD	Bolt Hole Diam.	No. of Holes			Min.	Max.	Size	No
80	DI	200	160	19	8	75	130	25	40	M12X125	4
100	DI	220	180	19	8	75	130	25	40	M12X125	4
150	DI	285	240	23	8	75	130	25	40	M12X125	4
200	DI	340	295	23	8	75	130	25	40	M12X125	4
250	DI	400	350	23	12	85	140	25	40	M12X140	6
300	DI	455	400	23	12	90	150	25	40	M12X140	6
350	DI	505	460	23	16	100	160	25	40	M12X160	8
400	DI	565	515	28	16	100	160	25	40	M12X160	8
450	DI	615	565	28	20	100	160	25	40	M12X160	10
500	DI	670	620	28	20	100	160	25	40	M12X160	10
600	DI	780	725	31	20	100	160	25	40	M16X160	10
700	DI	895	840	31	24	100	170	25	40	M16X160	12
800	DI	1015	950	34	24	105	170	25	40	M16X185	12
900	DI	1115	1050	34	28	105	170	25	40	M16X185	14
1000	DI	1230	1160	37	28	115	200	25	40	M16X185	14
1100	DI	1340	1270	37	32	115	200	25	40	M16X185	16
1200	DI	1455	1380	40	32	130	210	25	40	M16X210	16
1300	DI	1565	1485	43	32	135	220	25	40	M16X210	16
1400	DI	1675	1590	43	36	135	220	25	40	M20X210	18
1500	DI	1785	1700	43	36	135	220	25	40	M20X210	18
1600	DI	1915	1820	49	40	190	280	25	40	M20X260	20
1800	DI	2115	2020	49	44	190	280	25	40	M20X260	22
2000	DI	2325	2230	49	48	190	280	25	40	M20X260	24
2200	DI	2550	2440	56	52	190	280	25	40	M20X280	26
2400	DI	2750	2650	56	56	190	280	25	40	M20X280	28
2600	DI	2960	2850	56	60	254	350	25	40	M20X330	30

Flange Adaptor Dimensions

PART NO.	DESCRIPTION
1	PIPE
2	ADAPTOR
3	GLAND
4	GASKET
5	STUDS
6	NUT
7	WASHER



PN16

All dimensions are in millimeters.

Size (DN)	.Pipe Mat	Flange Details Acc. to ISO 7005				Adaptor Length (S) mm	Overall Length (L) mm	Setting Gap mm		Studs	
		OD	PCD	Bolt Hole .Diam	No. of Holes			.Min	.Max	Size	No
80	DI	200	160	19	8	75	130	25	40	M12X125	4
100	DI	220	180	19	8	75	130	25	40	M12X125	4
150	DI	285	240	23	8	75	130	25	40	M12X125	4
200	DI	340	295	23	12	75	130	25	40	M12X125	6
250	DI	400	355	28	12	85	140	25	40	M12X140	6
300	DI	455	410	28	12	90	150	25	40	M12X140	6
350	DI	520	470	28	16	100	160	25	40	M12X160	8
400	DI	580	525	31	16	100	160	25	40	M12X160	8
450	DI	640	585	31	20	100	160	25	40	M12X160	10
500	DI	715	650	34	20	100	160	25	40	M12X160	10
600	DI	840	770	37	20	100	160	25	40	M16X160	10
700	DI	910	840	37	24	100	170	25	40	M16X160	12
800	DI	1025	950	40	24	105	170	25	40	M16X185	12
900	DI	1125	1050	40	28	105	170	25	40	M16X185	14
1000	DI	1255	1170	43	28	115	200	25	40	M16X185	14
1100	DI	1355	1270	43	32	115	200	25	40	M16X185	16
1200	DI	1485	1390	49	32	130	210	25	40	M16X210	16
1300	DI	1585	1490	49	32	135	220	25	40	M16X210	16
1400	DI	1685	1590	49	36	135	220	25	40	M20X210	18
1500	DI	1820	1710	56	36	135	220	25	40	M20X210	18
1600	DI	1930	1820	56	40	190	280	25	40	M20X260	20
1800	DI	2130	2020	56	44	190	280	25	40	M20X260	22
2000	DI	2345	2230	62	48	190	280	25	40	M20X260	24
2200	DI	2555	2440	62	52	190	280	25	40	M20X280	26
2400	DI	2765	2650	62	56	190	280	25	40	M20X280	28
2600	DI	2965	2850	62	60	254	350	25	40	M20X330	30

Installation Instructions

1 Examine the pipe ends and ensure they are round, smooth, free from bulges, dents and score marks and within the outside diameter tolerance of DI. Pipes. Ensure that pipe ends are free from scale, rust, or any loose debris or other surface defect that may affect coupling performance.

2 Slide the sealing gland into the pipe end

3 Check grade of gasket is suitable for conveyed medium.

4 Place the gasket into the pipe end. (between gland and pipe end)

5 Place the flange adaptor onto pipe end. Adjust the setting gap between pipe end and flange adaptor as necessary (see setting gap table 1). Ensure that the pipe end is concentric with the bore of the mating flange. (See fig. 1)

6 Ensure that the assembly bolts' heads are facing the flange adaptor's gland, to avoid any misassemble due to the bolt length. (See fig. 2)

7 Fit flange gasket (flat gasket) and ensure it is concentric with the flange connecting bolts. Bolt the flange adaptor to the mating flange, using standard bolting procedures. (See fig. 3)

8 Tighten diametrically opposed studs giving the nuts one or two turns at a time to draw up the end ring (sealing gland) evenly. The nuts must be thoroughly tightened to achieve the bolt torque figures given below (See fig. 4), working around the flange adaptor as many times as necessary to reach the required torque (see table 2). On completion, radial gap between pipe and flange adaptor end ring should be even all the way round. Rubber may be seen to extrude into the gap.

9 In case of stainless steel studs/bolts (grade 304 or 316) the greasing of nuts is essential to avoid the galling phenomena and to achieve the bolt tightening torque.

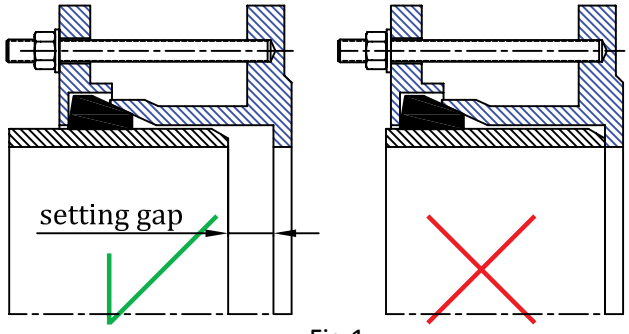


Fig.1

Setting gap Table (1)	
Nominal size	Setting gap (mm)
From DN80 – DN150	20
From DN200 – DN450	25
From DN500 – DN2600	40

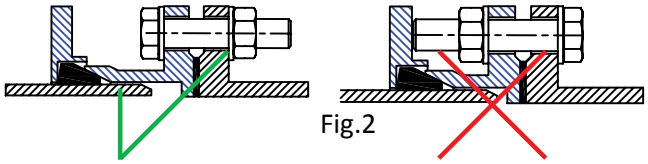


Fig.2

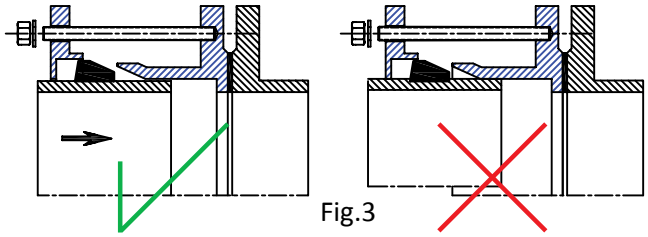


Fig.3

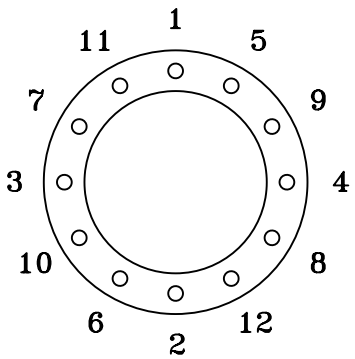


Fig.4

Stud Torque Table (2)	
Stud size	Torque (N.m)
M12	55 – 65
M16	95 - 120
M20	300 - 350

Pipe Couplers

Pipe Couplers

Pipe Coupler

Overview

The Concept

Straight Couplings are used for joining DI pipes or pipes of different materials but having the same external diameter.

GCF coupling comprises a center sleeve located between two end rings. Wedge-shaped elastomeric gaskets separate the sleeve and end rings. As the tie bars are tightened, the end rings are drawn together, compressing the gaskets between the end rings and the center sleeve onto the surface of the pipe to form an effective, leak-proof seal (fig. 1).

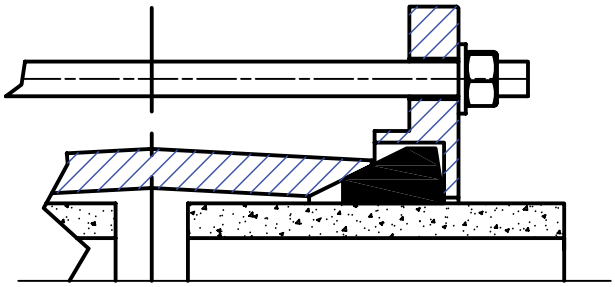


Fig. 1

Customer Benefits

Application

The basic concept of the GCF coupling means that it can be used on plain ended pipe, removing the need for costly and time-consuming pipe end preparation. Coupling is also capable of absorbing expansion and contraction which occurs in pipelines as a result of temperature fluctuations, without the need for special expansion joints (fig. 2). In addition, it can accommodate enough angular deflection to allow for pipeline movement or ground settlement, or to provide for long radius curves without the necessity of incorporating purpose-made bends (fig. 3).

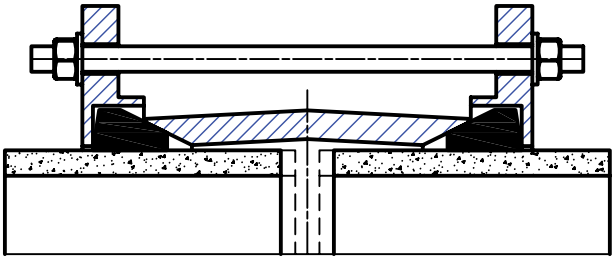


Fig. 2

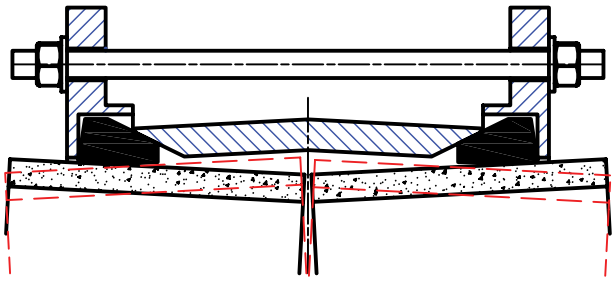


Fig. 3

Pipe Coupler

Angular Deflection

GCF pipe couplers allows an angular deflectionof angle (Ø) as shown in Table 1.

The angular deflection provided by GCF couplings, provides the following:

a) To overcome the minor misalignment of the pipeline.

b) To overcome ground settlement.

Table (1)
Pipe Coupler Allowable Angular Deflection

Size (DN)	Angle
DN80 – DN450	± 6°
DN500 – DN600	± 5°
DN700 – DN1200	± 3°
DN1400 – DN1800	± 2°
DN2000 – DN2600	± 1°

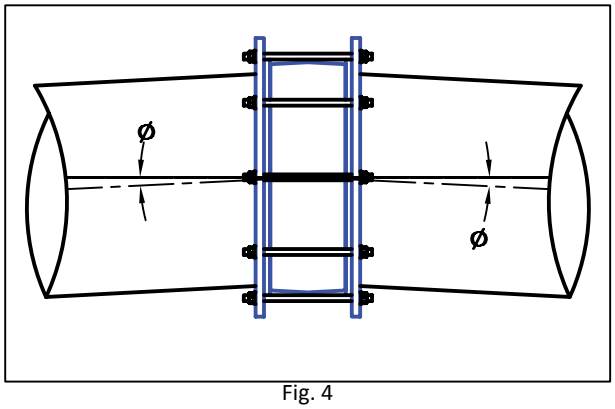


Fig. 4

Materials

Coupler Sleeve - Ductile Iron to ISO 1083:2004: Grade ISO1083/JS/40015-/S or Rolled Steel to: BS EN 10025:2004: Grade S235.

Gland - Ductile Iron to ISO 1083:2004: Grade ISO1083/JS/40015-/S

Gaskets - EPDM in accordance with ISO4633, suitable for potable water (WRAS Approved)

Studs & Fasteners - to be applied with one of the following options:

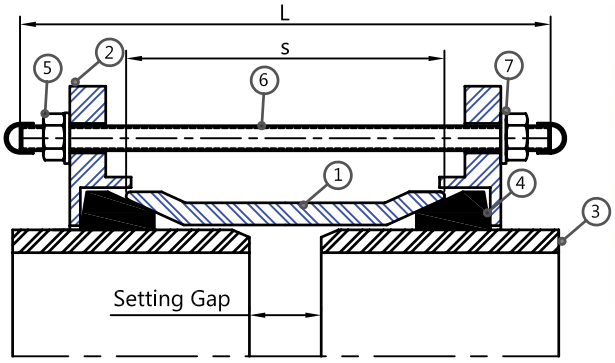
- Hot dipped galvanized steel Class 8.8 (Standard)
- Stainless Steel to BS EN3506-1:2009 Grade A2 (S.S. 304) Property Class 70 (450 N/mm²) (Optional)
- Stainless Steel to BS EN3506-1:2009 Grade A4 (S.S. 316) Property Class 70 (450 N/mm²) (Optional)

Size Range

A comprehensive range is available from DN80 to DN2600 to be used with Ductile Iron Pipes spigots.

Pipe Coupler Dimensions

PART NO.	DESCRIPTION
1	SLEEVE
2	GLAND
3	PIPE
4	GASKET
5	NUT
6	STUDS
7	WASHER



PN10-16

All dimensions are in millimeters.

Size	Pipe Mat.	Pipe OD	Overall Length (L) mm	End Ring OD (A) mm	Sleeve Length (S) mm	Setting Gap mm		Studs	
						Min.	Max.	Size	No.
80	DI	98	210	200	125	20	40	M12X210	4
100	DI	118	210	220	125	20	40	M12X210	4
150	DI	170	210	285	125	20	40	M12X210	4
200	DI	222	210	340	125	25	40	M12X210	4
250	DI	274	210	400	125	25	40	M12X210	6
300	DI	326	233	455	125	25	40	M12X240	8
350	DI	378	258	505	150	25	40	M12X270	8
400	DI	429	258	565	150	25	40	M12X270	10
450	DI	480	258	615	150	25	40	M12X270	10
500	DI	532	284	670	150	25	40	M16X290	10
600	DI	635	284	780	150	25	40	M16X290	12
700	DI	738	284	895	150	25	40	M16X290	12
800	DI	842	284	1015	150	25	40	M16X290	14
900	DI	945	284	1115	150	25	40	M16X290	14
1000	DI	1048	378	1230	220	25	40	M16X380	14
1100	DI	1152	412	1340	254	25	40	M16X420	16
1200	DI	1255	412	1455	254	25	40	M16X420	18
1300	DI	1358	412	1565	254	25	40	M16X420	20
1400	DI	1462	416	1675	254	25	40	M16X460	20
1500	DI	1565	416	1785	254	25	40	M16X460	24
1600	DI	1668	420	1915	254	25	40	M16X460	24
1800	DI	1875	424	2115	254	25	40	M16X460	32
2000	DI	2082	424	2325	254	25	40	M16X460	36
2200	DI	2288	428	2550	254	25	40	M16X460	38
2400	DI	2495	442	2750	254	25	40	M16X460	40
2600	DI	2702	442	2960	254	25	40	M16X460	44

Installation Instructions

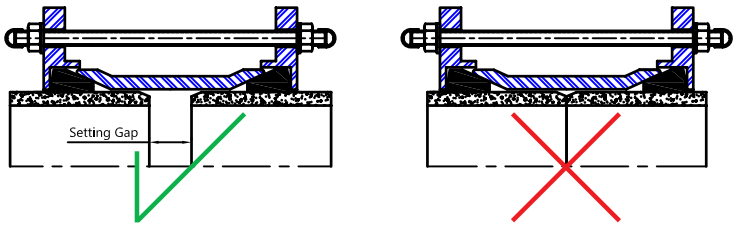
1 Examine the pipe ends and ensure they are round, smooth, free from bulges, and within the outside diameter tolerance given on the pipe standards. Ensure that pipe ends are free from scale, rust, or any loose debris or other surface defect that may affect coupling performance.

2 Check grade of gasket is suitable for the conveyed medium.

3 Align pipe to be laid with pipe already in position, taking care that pipe ends are concentric, adjusting support or trench bed as necessary.

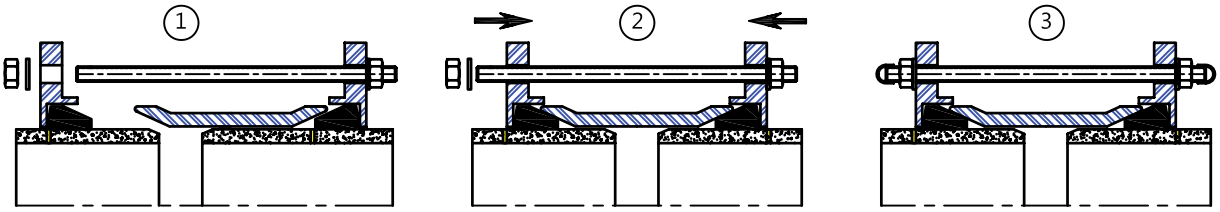
4 To aid installation, mark both pipe ends at a distance equal to and greater than half the overall assembled width of the coupling. Place coupling wholly on one pipe end.

5 Adjust setting gap between pipe ends as necessary (fig. 1) (see setting gap table1).

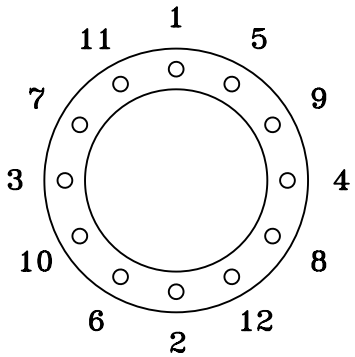


Setting gap Table (1)	
Nominal size	Setting gap (mm)
From DN80 – DN150	20
From DN200 – DN450	25
From DN500 – DN2600	40

6 Using marks made at step 4, slide the coupling to a central position over the pipe ends and commence bolt-up (fig. 2).



7 Tighten diametrically opposed bolts giving the nuts one or two turns at a time to draw up the end rings evenly (fig. 3). The bolts must be thoroughly tightened to the figures given below (See table 2), working around the coupling as many times as necessary. On completion, the radial gap between pipe and coupling should be even all the way round. Rubber may be seen to extrude into the gap.



Stud Torque Table (2)	
Stud size	Torque (N.m)
M12	55 – 65
M16	95 - 120
M20	300 - 350

8 In case of stainless steel studs/bolts (grade 304 or 316) the greasing of nuts is essential to avoid the galling phenomena and to achieve the bolt tightening torque.

NOTES

GCF pipe couplings do not prevent pipe pull out. Adequate external restraint to pipework is essential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