

International Adapter Flange Series

The design of the Uni-Flange Adapter is really quite simple. We took the best features of three different products and combined them into one fitting.

TECHNICAL DATA

• FLANGE

Manufactured from ductile iron in accordance with ASTM A536. Drilling and O.D. in accordance with AS 2129/AS4087. Pipe O.D.'s shown in tables are to the following standards. Steel - AS 1074, B 36.10. Iron - AS 2280.

• GASKET

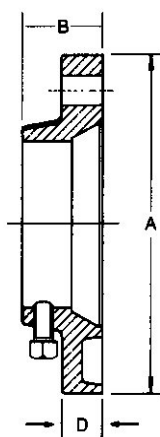
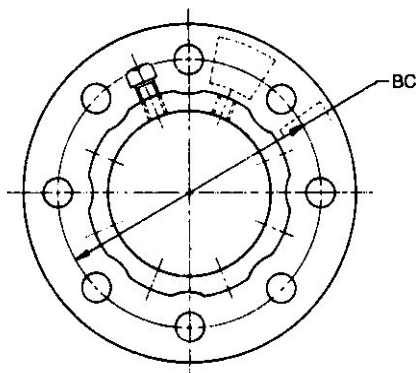
Standard gasket supplied with the Uni-flange Adapter Flange is SBR (Buna-S). Suitable for water and wastewater, and most moderate chemicals. Temperature range - 54o to 70oC. Other gaskets available include: EPDM, CR, NBR.

• SET SCREW

Manufactured from - Steel (AISI 4137) , zinc plated, or Stainless Steel (AISI 410 or AISI 431). Heat treated to Rockwell C 35 - 44.

• COATING

Resicoat R4-ES Fusion Bonded Epoxy.



• AVAILABILITY

Normally available ex stock : DI Pipe - 80mm to 600mm, Steel Pipe - 50mm to 500mm.

Specials and larger sizes are also available .

• RECOMMENDED MAXIMUM WORKING & TEST PRESSURES

AS4087 ClassTable F / Class 35 Series 490		
Nom. Pipe Size	Working Pressure (kPa)	Test Pressure (Hydrostatic) (kPa)
Restraining		
50 - 300 mm	1,600	2,000
350 - 600 mm	1,000	1,400
Non-Restraining		
50 - 600 mm	1,600	2,000
AS4087 Class 35 / AS2129 Table F		
Nom. Pipe Size	Working Pressure (kPa)	Test Pressure (Hydrostatic) (kPa)
80 - 300 mm	2,500	3,750

Note : Restraining - where Uni-flange is the only restraint provided.

Table C / Class 16 Series 470

Nom. Pipe Size	Steel Pipe OD	Cast Iron Pipe OD	A	B	BC	D	Bolt Hole Diam.	No. Bolts	Set Screw Size	Wgt. Approx. (Kgs)	Part No. Steel Pipe	Part No. Iron Pipe
50	60.3	96.0	150	51	114	25	18	4	1/2x1	3	470-S-050	
65	76.1		165	51	127	27	18	4	1/2x1	3	470-S-65	
80	88.9		185	51	146	27	18	4	1/2x1	4	470-S-80	470-C-080
100	114.3	122.0	215	54	178	27	18	4	5/8x1 1/4	5	470-S-100	470-C-100
150	165.1	177.0	280	60	235	27	18	8	5/8x1 1/4	8	470-S-150	470-C-150
150	168.3		280	60	235	27	18	8	5/8x1 1/4	8	470-S-150/168	
200	219.1	232.0	335	64	292	27	18	8	5/8x1 1/4	12	470-S-20	470-C-200
225	257.0	259.0	370	64	324	27	18	8	5/8x1 1/4	13	470-S-225	470-C-225
250	273.0	286.0	405	64	356	27	22	8	5/8x1 1/4	14	470-S-250	470-C-250
300	323.9	345.0	455	67	406	30	22	12	5/8x1 1/4	16	470-S-300	470-C-300
300	337.0		455	67	406	30	22	12	5/8x1 1/4	16	470-S-300/337	
350	355.6		525	70	470	35	26	12	5/8x1 1/4	23	470-S-350	
375	419.0	426.0	550	70	495	35	26	12	5/8x1 1/4	23	470-S-375	470-C-375
400	406.5	507.0	580	83	521	40	26	12	3/4x2	36	470-S-400	
450	457.0		640	86	584	40	26	12	3/4x2	36	470-S-450	470-C-450
450	502.0	560.0	640	86	584	40	26	12	3/4x2	36	470-S-450/502	
500	508.0	667.0	705	89	641	40	26	16	3/4x2	50	470-S-500	470-C-500
600	610.0		825	92	756	45	30	16	3/4x2	60	470-S-600	470-C-600
600	660.0		825	92	756	45	30	16	3/4x2	60	470-S-600/660	
750	762.0	826.0	995	98	927	48	30	20	1x21/4	120	470-S-750	470-C-750

Table E / Series 474

Nom. Pipe Size	Steel Pipe OD	Cast Iron Pipe OD	A	B	BC	D	Bolt Hole Diam.	No. Bolts	Set Screw Size	Wgt. Approx. (Kgs)	Part No. Steel Pipe	Part No. Iron Pipe
100	114.3	122.0	215	54	178	27	18	4	5/8x1 1/4	5	474-S-100	474-C-100
150	165.1	177.0	280	60	235	27	18	8	5/8x1 1/4	8	474-S-150	474-C-150
200	219.1	232.0	335	64	292	27	18	8	5/8x1 1/4	12	474-S-20	474-C-200
225	257.0	259.0	370	64	324	27	18	8	5/8x1 1/4	13	474-S-225	474-C-225
250	273.0	286.0	405	64	356	27	22	8	5/8x1 1/4	14	474-S-250	474-C-250
300	323.9	345.0	455	67	406	30	22	12	5/8x1 1/4	16	474-S-300	474-C-300
450	457.0	560.0	640	86	584	40	26	12	3/4x2	36	474-S-450	474-C-450
600	610.0	667.0	825	92	756	45	30	16	3/4x2	60	474-S-600	474-C-600

Note: Table E sizes 50, 65, 80, 350, 375, 400 and 500mm are identical to Table C refer Table C for specifications.

Table F / Class 35 Series 490

Nom. Pipe Size	Steel Pipe OD	Cast Iron Pipe OD	A	B	BC	D	Bolt Hole Diam.	No. Bolts	Set Screw Size	Wgt. Approx. (Kgs)	Part No. Steel Pipe	Part No. Iron Pipe
80	88.9	96.0	205	51	165	27	18	8	1/2x1	4	490-S-080	490-C-080
100	114.3	122.0	215	54	191	27	18	8	1/2x1	5	490-S-100	490-C-100
150	165.1	177.0	280	60	260	27	22	12	5/8x1 1/4	10	490-S-150	490-C-150
150	168.3		305	60	260	27	22	12	5/8x1 1/4	10	490-S-150/168	
200	219.1	232.0	335	64	324	27	22	12	5/8x1 1/4	15	490-S-20	490-C-200
225	257.0	259.0	370	64	356	27	26	12	5/8x1 1/4	17	490-S-225	490-C-225
250	273.0	286.0	405	64	381	27	26	12	5/8x1 1/4	19	490-S-250	490-C-250
300	323.9	345.0	455	67	438	30	26	16	5/8x1 1/4	25	490-S-300	490-C-300

FEATURES

- **Job Site Fabrication using Plain End Pipe**

Uni-Flange eliminates the problems of pre-engineered, prefabricated piping systems. Pipe fabrication can be performed on site, using plain end pipe, a pipe cutter and a wrench. No threading, welding or grooving is necessary. The Uni-Flange eliminates the need to rely on off-site fabricators and machine shops. It is ideal for projects that involve retro-fitting or renovation of existing piping systems. The Uni-Flange keeps the project moving..... DOWN TIME SAVINGS are considerable.

- **Eliminates Bolt Hole Alignment Problems**

Uni-Flanges can be freely rotated (see Figure 2) before the flange bolts are inserted and tightened. This facilitates bolt hole alignment with the facing flange. Pre-fabricated piping systems do not offer this installation advantage.

- **Permits Pipe Deflection**

Unlike conventional threaded or welded flanges, the Uni-Flange will permit pipe deflection during installation (see Figure 3). This means the Uni-Flange can "make the connection" when other means can't. See Deflection Chart.

- **Built-In End Restraints**

The Uni-Flange offers built-in end restraint. No tie rods or other forms of anchoring are necessary for normal working pressures. Special considerations may be necessary for pump surges.

- **Future Maintenance Capabilities**

When future maintenance is required on flanged equipment such as meters or valves, the Uni-Flange can be easily disassembled and slid back on the pipe. This facilitates removal of the flanged equipment. When the equipment is to be replaced, simply drop it in and re-install the Uni-Flange. Threaded and welded flanges do not offer this feature.

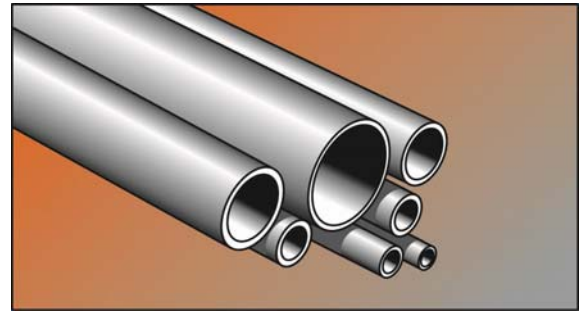


Figure 1

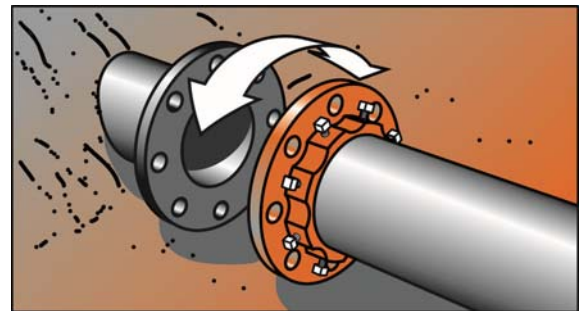


Figure 2

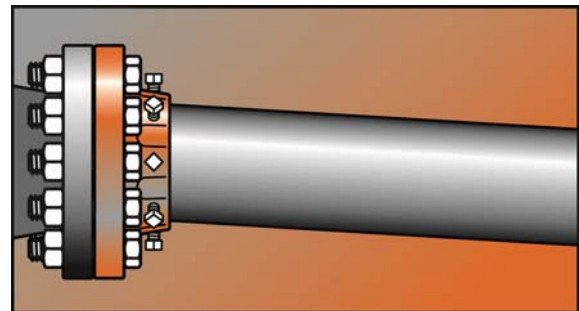


Figure 3

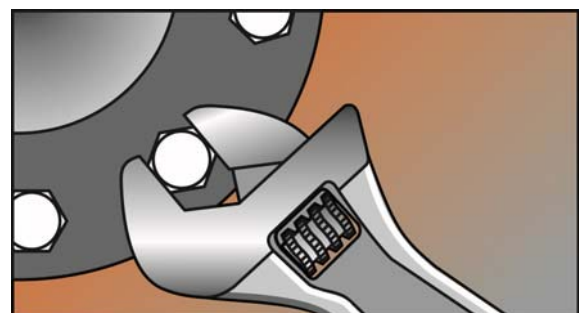


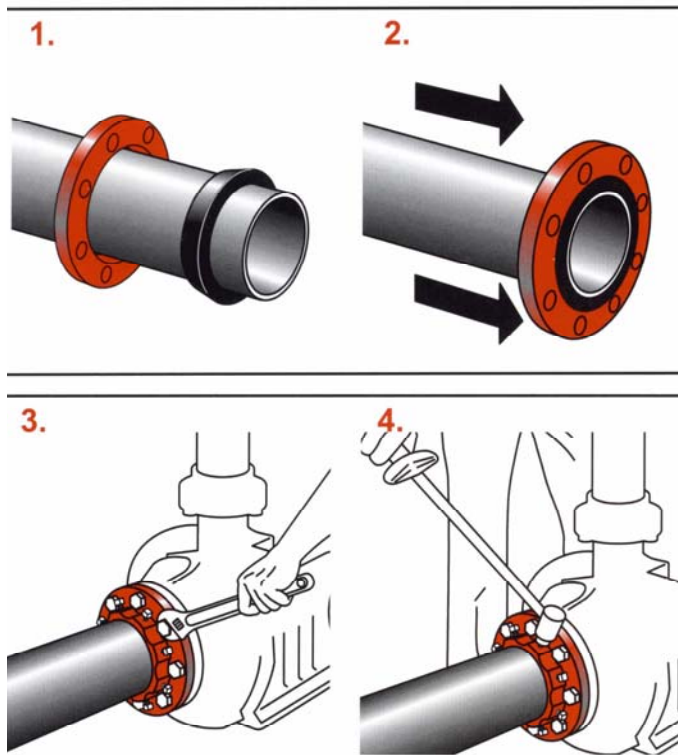
Figure 4

Deflection															
Nom. Pipe Size (mm)	50	65	80	100	150	200	225	250	300	350	375	400	450	500	600
Maximum Angle Deflection	4° -02'	3° -56'	3° -50'	3° -44'	3° -36'	3° -20'	3° -15'	3° -13'	2° -35'	2° -20'	2° -10'	2° -05'	2° -00'	1° -56'	1° -37'
Deflection mm/Length	387	377	368	358	345	320	312	308	232	224	208	200	192	185	155

UNI-FLANGE ASSEMBLY INSTRUCTIONS

1. Pipe end should be cut square and be free of burrs. Clean the plain end of the pipe. Thoroughly lubricate the pipe 1. and gasket with a soap based pipe lubricant. Slide the flange onto the pipe with the gasket cavity facing the end of the pipe. Slide the lubricated gasket over the pipe end, with the tapered end facing the gasket cavity in the flange. (No other gasket is necessary or should be used to seal the flange faces).
2. Slide the flange forward until the gasket is evenly seated in the flange cavity, and the Uni-flange face is flush with 2. the end of the pipe. (The end of the pipe should butt against the facing flange, it cannot be more than 6mm from the facing flange). Hand tighten the set screws against the pipe surface.
3. Using conventional flange bolts, mate the Uni-flange to the standard flange. Be sure to evenly tighten the bolts 3. alternately on opposite sides. (Use the star method like tightening the lug nuts on a car wheel). Do not over-tighten the flange bolts. It is not necessary to bring the Uni-flange Adapter to a face to face contact with the standard flange. A gap of approximately 3mm between the flanges is normal.
4. Snug down all the set screws evenly. Tighten in an alternating manner (star method) to the torque values specified. 4. Use of a torque wrench is recommended.

Note: In installations where rapid or excessive surges may occur, or extreme thrusts encountered (e.g. near pumps or 90° bends), Uni-flange engineers recommend the use of tie rods for additional thrust restraint.



Thrust Restraint								
Nom. Pipe Size (mm)	Set Screw Torque (Nm) PN35	Set Screw Torque (Nm) Flange Class, Sched. 40 Steel Pipe	Class 16, Series 470, 474			Class 35, Series 490		
			Working Pressure Max. (kPa)	Thrust at Working Pressure (Kgs)	Uni-flange Thrust Restraint (Kgs)	Working Pressure Max. (kPa)	Thrust at Working Pressure (Kgs)	Uni-flange Thrust Restraint (Kgs)
50		90	1,600	465	6,000			
65		90	1,600	740	6,000			
80	40	90	1,600	1,180	6,000	2,500	1,845	12,000
100	40	90	1,600	1,907	6,000	2,500	2,980	12,000
150	50	110	1,600	4,014	16,000	2,500	6,272	24,000
200	50	110	1,600	6,897	16,000	2,500	10,776	24,000
225	50	110	1,600	8,595	16,000	2,500	13,431	24,000
250	50	110	1,600	10,481	16,000	2,500	16,377	24,000
300	50	110	1,600	15,252	24,000	2,500	23,831	32,000
350		120	1,000	10,127	24,000			
375	50	120	1,000	14,534	24,000			
400		120	1,000	13,227	28,000			
450	60	160	1,000	20,586	33,000			
500	60	160	1,000	25,115	44,000			
600	60	160	1,000	35,630	44,000			

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