



SERIES 40 UNION FLANGE

An economical, practical and reliable alternative to welded and screwed systems, Clow Canada's Union Flange joins plain-ended pipe to flange-ended equipment, fittings and valves (not recommended for PVC pipe; better alternative is Clow Canada's [Series 90 Adapter Flange](#)). On-site installation is simple: a wrench is the only tool required. The Union Flange is a unique solution to the problems which can occur in the use of pre-fabricated flanged piping, such as downtime, reliance on off-site suppliers and inaccurate dimensions. The design of the Union Flange comprises three elements: the flange, the gasket and the set screws. The flange is manufactured from ductile iron, which is stronger than the usual grey iron threaded flange, to avoid breakage upon impact or from overtightening of bolts. The gasket used is the standard mechanical joint gasket, proven reliable in over 40 years of service. A set screw locking device provides the restraint connection to the pipe. This device resembles those used in mechanical joint retainer glands, hundreds of thousands of which are in use worldwide, replacing concrete thrust blocks and other restraining devices.

Clow Canada's Union Flange has been successful in numerous municipal and industrial applications such as fire protection, water and wastewater, and process piping systems.



Advantages of Clow's Union Flange



Easy to Install no skilled labour or special equipment required

Efficient no problems with bolt-hole alignment

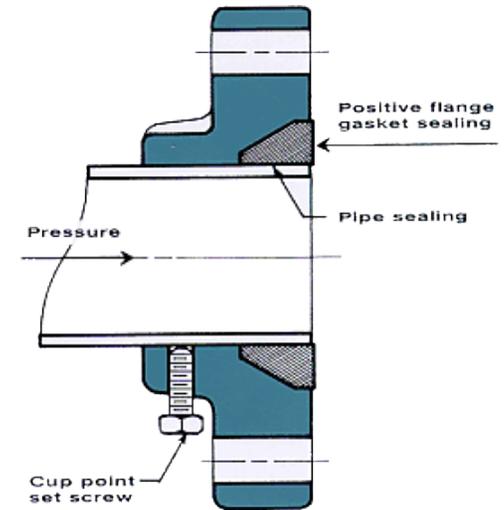
Versatile can be used under or above ground; usable with abrasive materials; can handle wide temperature range

Durable all materials corrosion resistant; ductile iron used for flange, for added toughness

Reliable based on proven design principles; extensively field tested; manufactured under strict quality controls

Economical prevents delays during assembly; plain-end pipe less costly than threaded or flanged; no tie-rods required

Design Superiority exceeds capabilities of threaded and weld flanges and flanged coupling adapters.



[Technical specifications of Series 40 Union Flange.](#)

Pipe joint Restraints and Flange Adapters

**SERIES 400-S / 400-C UNION FLANGE
SPECIFICATIONS & DESIGN DETAILS**

Flange

Ductile iron ASTM A536 Grade 65-45-12 AISI 4140 Steel, tensile 190,000 psi minimum, heat treated and zinc plated

Drilling

In accordance with ANSI B16.1 - Class 125, ANSI B16.5 - Class 150

Testing

Flanges meet all test requirements of ANSI B16.1 - Class 125, ANSI B16.5 - Class 150

Gaskets

Standard gasket supplied:

SBR (BUNA-S), suitable for water, wastewater and most moderate chemicals.

Temperature range -65°F to +212°F

Alternative gaskets (colour coded):

EPDM-Ethylene Propylene (green)

Temperature range -65°F to +350°F

CR-Neoprene (yellow)

Temperature range -65°F to +212°F

NBR-Buna-N, Nytril, Hycar (orange)

Temperature range -50°F to 450°F

Hydrostatic Pressure Test

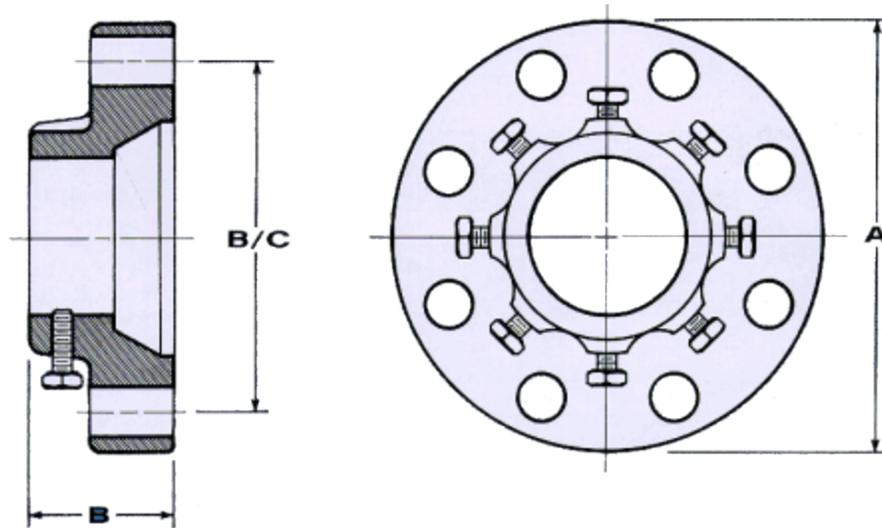
Flange Capable of withstanding the following hydrostatic test without leakage:

2" to 12" -- 750 psi

Applications

Flanges are designed to handle the following water working pressures (temperature range -20°F to +150°F):

2" to 12" -- 250 psi



Nom. Pipe Size	Cast Iron Pipe O.D. 400-C	A	B	B/C	Bolt Hole Dia.	Set Screws Size	No.	Weight Approx. (LBS.)
2	2.50	6	2	4-3/4	3/4	1/2 x 1	4	5
2-1/2	† N/A	7	2-1/16	5-1/2	3/4	1/2 x 1	4	7
3	3.96	7-1/2	2-1/16	6	3/4	1/2 x 1	4	8
3-1/2	† N/A	8-1/2	2-1/16	7	3/4	1/2 x 1	8	9
4	4.80	9	2-1/16	7-1/2	3/4	1/2 x 1	8	11
5	† N/A	10	2-1/8	8-1/2	7/8	5/8 x 1-1/4	8	13
6	6.90	11	2-1/8	9-1/2	7/8	5/8 x 1-1/4	8	14
8	9.05	13-1/2	2-1/8	11-3/4	7/8	5/8 x 1-1/4	8	21
10	11.10	16	2-3/16	14-1/4	1	5/8 x 1-1/4	12	38
12	13.20	19	2-1/4	17	1	5/8 x 1-1/4	12	56

† Cast iron pipe not manufactured in these sizes

Nom. Pipe Size	DEFLECTION		THRUST RESTRAINT		
	Maximum Angle Deflection	Deflection Inches/18ft. Length	WWP Rating (PSI)	Thrust at Rated Pressure	Thrust Restraint (LBS.) ‡
2	4-2'	15.23	250	785	22,800
2-1/2	3-56'	14.85	-	-	-
3	3-50'	14.47	250	1,767	22,800
3-1/2	3-47'	14.28	-	-	-
4	3-44'	14.09	250	3,142	45,600
5	3-41'	13.91	-	-	-
6	3-36'	13.59	250	7,069	50,600
8	3-20'	12.58	250	12,566	50,600
10	3-13'	12.14	250	19,635	75,900
12	2-35'	9.12	250	28,274	75,900

‡ These figures apply only for standard wall steel (schedule 40+) and ductile iron (class 52+) pipes, when the full recommended torque is applied to the set screw