

# Style 641 Vic-Flange® Adapter for Copper Tubing

## PRODUCT DESCRIPTION



See Victaulic publication 10.01 for details.

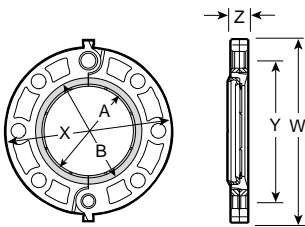
The Victaulic copper connection system is a method for joining large diameter copper tubing. In use since 1925 for steel (and other IPS pipe), cast and ductile iron, the grooved piping method is now available to join copper tubing sizes (CTS) in 2 - 6" (54,0 - 155,6 mm) sizes.

The system uses a proven pressure-responsive synthetic rubber gasket to seal on the outside diameter of the tubing. This means no heat is required and no lead is used. The Vic-Flange adapter housing surrounds the gasket gripping into grooves rolled into the tubing. The housing is isolated from the fluid but provides the gripping strength for pressure ratings up to 300 psi (2065 kPa), depending on the type of copper tubing and size.

Compatible copper fittings in 90°, 45° elbow, tee, and reducing configurations are supplied grooved ready for installation.

Standard Victaulic Vic-Easy® roll grooving tools can be used to field or shop roll groove all grades of copper tubing from 2 - 6" (54,0 - 155,6 mm). The VE26C allows in-place grooving for all types of copper grooving for types of copper tubing. Tools must be equipped only with Victaulic rolls designed specifically for grooving 2 - 6" (54,0 - 155,6 mm) copper tube (color coded copper). **DO NOT use rolls intended for steel pipe.**

## DIMENSIONS



**Note:** Gray area of mating face must be free from gouges, undulations or deformities of any type for effective sealing.

TUBING SIZE Nominal Inches Actual mm	No. Bolts Req'd. †	Bolt Size Inches	Dimensions Inches/millimeters						Aprx. Wgt. Ea. Lbs. kg
			Seal. Surface		Flange Dimensions				
			A Max.	B Min.	W	X	Y	Z	
2 54,0	4	5/8 X 3	2.13 54	3.20 81	6.88 175	6.00 152	4.75 121	0.78 20	3.8 1,7
2½ 66,7	4	5/8 X 3	2.63 67	3.91 99	7.88 200	7.00 178	5.50 140	0.88 22	4.7 2,1
3 79,4	4	5/8 X 3	3.13 80	4.53 115	8.44 214	7.50 191	6.00 152	0.94 24	5.4 2,5
4 104,8	8	5/8 X 3	4.13 105	5.53 140	9.94 253	9.00 229	7.50 191	0.94 24	7.7 3,5
5 130,2	8	¾ X 3½	5.13 130	6.71 170	11.00 279	10.00 254	8.50 216	1.00 25	9.3 4,2
6 155,6	8	¾ X 3½	6.13 156	7.78 198	12.00 305	11.00 279	9.50 241	1.00 25	10.3 4,7

† Total bolts required to be supplied by installer. Bolt sizes for conventional flange-to-flange connection. Longer bolts are required when Vic-Flange adapter is utilized with wafer-type valves.

NOTE: Style 641 Vic-Flange adapters for copper tubing provide rigid joints when used on copper tubing with roll groove to Victaulic dimensions and consequently allow no linear or angular movement at the joint.

Refer to notes on page 2.

### Flange Washers

Style 641 Vic-Flange adapters require a smooth hard surface at the mating flange face for effective sealing. Some applications for which the Vic-Flange adapter is otherwise well suited do not provide an adequate mating surface. In such cases, it is recommended that a phenolic (Type F) Flange Washer be inserted between the Vic-Flange adapter and the mating flange to provide the necessary sealing surface.

Typical applications where a Flange Washer should be used are:

- When mating to a serrated flange:** A flange gasket should be used adjacent to the serrated flange and then the Flange Washer is inserted between the Vic-Flange adapter and the flange gasket.
- When mating to a wafer valve:** Where typical valves are rubber lined and partially rubber faced (smooth or not), the Flange Washer is placed between the valve and the Vic-Flange adapter.
- When mating to a rubber faced flange:** The Flange Washer is placed between the Vic-Flange adapter and the rubber faced flange.
- When mating AWWA cast flanges or IPS flanges to copper tubing size flanges:** The Flange Washer is placed between two Vic-Flange adapters. If one flange is not a Vic-Flange adapter (e.g., flanged valve), then a flange gasket must be placed adjacent to that flange and the Flange Washer inserted between the flange gasket and the Vic-Flange adapter.  
When connecting Vic-Flange adapters to iron body components, use of a bolt isolation kit is recommended.
- When mating to components (valves, strainers, etc.) where the component flange face has an insert:** Follow the same arrangement as in Application 1.

## PERFORMANCE

The Victaulic copper connection system has been thoroughly tested on Types K, L, M and DWV copper tubing. Victaulic products are routinely tested to failure in restrained and unrestrained hydrostatic and flexure tests. Testing to ASTM F1476 and F1548 has verified the product working pressures. These ratings apply to Victaulic Style 606 coupling, Series 608 butterfly valve, Style 641 Vic-Flange® adapter, roll grooved copper fittings, and cast bronze fittings on the indicated types of tubing.

TUBING SIZE Nominal Inches Actual mm	Type "K" ASTM B-88			Type "L" ASTM B-88			Type "M" ASTM B-88			DWV ASTM B-306		
	Wall Thick. In. mm	Max.* Joint Wk. Press. PSI/kPa	Max. Permis. End Load Lbs./N	Wall Thick. In. mm	Max.* Joint Wk. Press. PSI/kPa	Max. Permis. End Load Lbs./N	Wall Thick. In. mm	Max.* Joint Wk. Press. PSI/kPa	Max. Permis. End Load Lbs./N	Wall Thick. In. mm	Max.* Joint Wk. Press. PSI/kPa	Max. Permis. End Load Lbs./N
2 54,0	0.083 2,1	300 2065	1,065 4740	0.070 1,8	300 2065	1,065 4740	0.058 1,5	250 1725	890 3960	- -	- -	- -
2½ 66,7	0.095 2,4	300 2065	1,625 7230	0.080 2,0	300 2065	1,625 7230	0.065 1,7	250 1725	1,350 6010	- -	- -	- -
3 79,4	0.109 2,8	300 2065	2,300 10235	0.090 2,3	300 2065	2,300 10235	0.072 1,8	250 1725	1,415 6300	0.045 1,1	100 690	765 3405
4 104,8	0.134 3,4	300 2065	4,005 17825	0.110 2,8	300 2065	4,005 17825	0.095 2,4	250 1725	3,340 14865	0.058 1,5	100 690	1,335 5940
5 130,2	0.160 4,1	300 2065	6,190 27550	0.125 3,2	300 2065	6,190 27550	0.109 2,8	200 1375	4,125 18360	0.072 1,8	100 690	2,060 9170
6 155,6	0.192 4,9	300 2065	8,840 39340	0.140 3,6	300 2065	8,840 39340	0.122 3,2	200 1375	5,890 26210	0.083 2,1	100 690	2,945 13105

\* Refer to notes below.

### NOTES

\* Working Pressure and End Load are total, from all internal and external loads, based on copper tubing of the weight indicated, standard roll grooved in accordance with Victaulic specifications. Contact Victaulic for performance on other pipe.

WARNING: FOR ONE TIME FIELD TEST ONLY, the Maximum Joint Working Pressure may be increased to 1½ times the figures shown.

WARNING: Piping systems must always be depressurized and drained before attempting disassembly and removal of any Victaulic piping products.

## VIC-FLANGE NOTES

Because of the outside flange dimension, Vic-Flange adapters should not be used within 90° of one another on a standard fitting. When wafer or lug-type valves are used adjoining a Victaulic fitting, check disc dimensions to assure proper clearance.

Vic-Flange adapters should not be used as anchor points for tie-rods across non-restrained joints. Mating rubber faced flanges, valves, etc., require the use of a Vic-Flange washer.

Vic-Flange gaskets must always be assembled with the color coded lip on the pipe and the other lip facing the mating flange.

## MATERIAL SPECIFICATIONS

**Housing:** Ductile iron conforming to ASTM A-395, grade 65-45-15, and ASTM A-536, grade 65-45-12.

**Housing Coating:** Copper colored alkyd enamel.

- **Grade "E" EPDM**

EPDM (Copper color code). Temperature range -30°F to +230°F (-34°C to +110°C). Recommended for hot water service within the specified temperature range plus a variety of dilute acids, oil-free air and many chemical services. UL classified in accordance with ANSI/NSF 61 for potable water service. NOT RECOMMENDED FOR PETROLEUM SERVICES.

- **Optional: Grade "T" nitrile**

Nitrile gaskets available for oil services. Contact Victaulic for details.

\*Services listed are General Service Recommendations only. It should be noted that there are services for which these gaskets are not recommended. Reference should always be made to the latest Victaulic Gasket Selection Guide for specific gasket service recommendations and for a listing of services which are not recommended.

**Hinge Bushing** (Vic-Flange adapter only): Electroplated steel.

This product shall be manufactured by Victaulic Company. All products to be installed in accordance with current Victaulic installation/assembly instructions. Victaulic reserves the right to change product specifications, designs and standard equipment without notice and without incurring obligations.