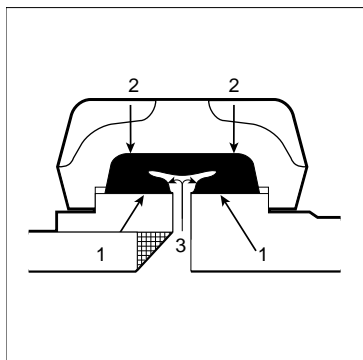


# Vic-Ring® System

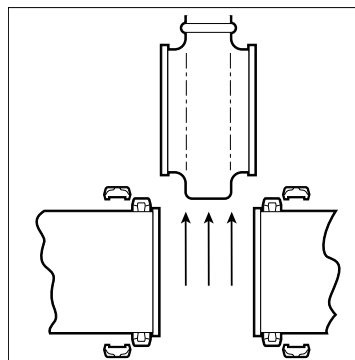
Victaulic offers the Vic-Ring® Piping Method for joining large diameter pipe which does not lend itself to direct grooving. The adaptation of pipe with Vic-Ring adapters and the selection of a suitable Victaulic coupling can present individual considerations which are best handled by Victaulic engineers, who are experienced in these applications. However, the following guidelines can be used to aid in the selection process.

The Vic-Ring Piping Method has been in use for more than 65 years, incorporating the proven grooved piping concept.



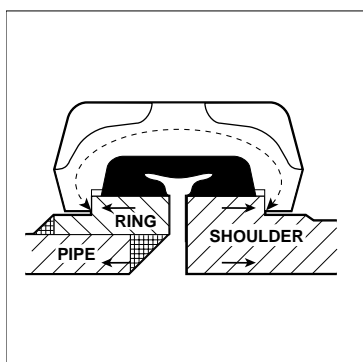
## PROVEN, PRESSURE RESPONSIVE TRIPLE SEAL GASKET

- Reliable, leak-free service
- Unique design seals under pressure or vacuum
- Compounded to last the life of the system



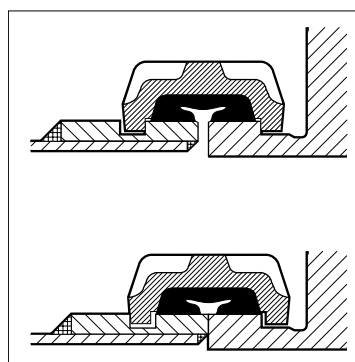
## EASES VALVE MAINTENANCE AND REPAIRS

- Disassembly of two couplings (on depressurized system) permits removal of pipe, valves or fitting
- Easy add-on, change or renovation of system
- Easily relocated and reused



## PROVEN JOINT RELIABILITY

- Full circumferential engagement of housing into groove or onto shoulder provides high end pull strength
- Couplings suitable for vacuum service and working pressures up to 750 psi (5175 kPa) (depending on size and style) with a nominal safety factor of 3



## EXPANSION AND CONTRACTION ALLOWANCE

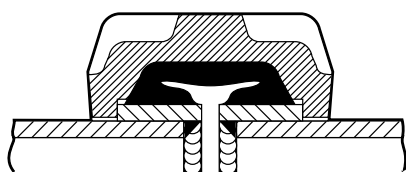
- Up to 1/2" (12,7 mm) linear movement at each joint
- Compensates for thermal changes and pipe shunting
- Provides a stress-free system

### 1. Large Diameter Coupling Styles

Style 22 couplings are designed with cross-ribbed construction to provide a strong component for Vic-Ring adapter prepared piping systems. Style 22 couplings are designed primarily for use with Type "A" Vic-Ring adapters, depending upon sizes and pressures.

Sizes 17" through 24" (425 - 600 mm) are cast in four segments; 30" through 36" (750 - 900 mm) in six segments and 60" (1500 mm) in 10 segments, to assure concentricity and ease of handling.

All sizes are supplied painted and with plated nuts and bolts.

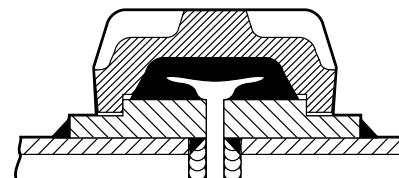


Type "A" Vic-Ring Adapters  
on Steel Pipe

Style 31 and Style 41 couplings are commonly used with Type "D" or "E" Vic-Ring adapters and are designed to provide a strong component for use on steel pipe with applied Vic-Ring adapters. Many sizes may be used on pipe with cast shoulders.

Style 31 sizes 14" through 20" (350 - 500 mm) are cast in four segments and the 24" (600 mm) size is cast in six segments. Style 41 sizes 30" through 38" (750 - 950 mm) are cast in six segments; 42" through 54" (1050 - 1375 mm) sizes in eight segments; 60" (1500 mm) in 10 segments and 66" (1675 mm) in 12 segments, to assure concentricity and ease of handling.

All sizes are supplied painted and with plated nuts and bolts.

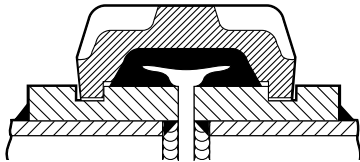


Type "E" Vic-Ring Adapters  
on Steel Pipe

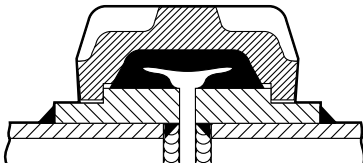
Style 44 couplings are designed with cross-ribbed construction to provide a strong component for use in steel pipe with applied Vic-Ring adapters. Style 44 couplings are generally used with Type "D" or "E" applied Vic-Ring adapters and provide higher pressure ratings than the similar Style 41 coupling. Many sizes may be used on pipe with cast shoulders.

Sizes 4 - 12" (100 - 300 mm) are cast in two segments; 14" through 20" (350 - 500 mm) in four segments; 24" and 36" (600 - 900 mm) in six segments; 42" through 54" (1050 - 1375 mm) in eight segments; and 60" (1500 mm) in 12 segments, to assure concentricity and ease of handling.

All sizes are supplied painted and with plated nuts and bolts.

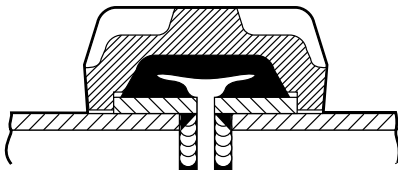


**Type "D" Vic-Ring Adapters  
on Steel Pipe**



**Type "E" Vic-Ring Adapters  
on Steel Pipe**

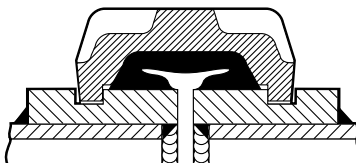
For performance data and dimensions on Victaulic Style 22, Style 31, Style 41 and Style 44 couplings, refer to Sections 16.04 - 16.07.



**Type "A" Vic-Ring Adapters  
on Steel Pipe**

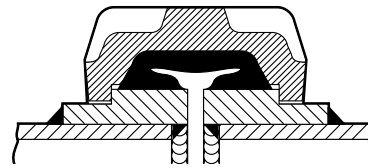
## 2. Vic-Ring Adapter Types

**Type A Vic-Ring Adapter Ends.** This method is widely used for adapting common sizes of light wall pipe and tubing for general applications such as contractors' portable pipe lines, irrigation lines, ventilating and duct piping, tank truck tubing and other applications where weight is a factor. The Vic-Ring adapters are slipped over the pipe ends and are welded in place with a single fillet end weld. The Victaulic coupling seats over the Vic-Ring adapter and functions in normal fashion.



**Type "D" Vic-Ring Adapters  
on Steel Pipe**

**Type D Heavy Duty Grooved Vic-Ring Adapter Ends – Double Fillets.** This heavy duty type end applies principally to large diameter pipe – 30" (750 mm) and up. Style 44 couplings are most commonly used with Type "D" Vic-Ring adapters; however, others may be used depending on the Vic-Ring adapter O.D.



**Type "E" Vic-Ring Adapters  
on Steel Pipe**

**Type E Vic-Ring Adapter Ends – Double Fillets.** Type E is similar in application to "D" Vic-Ring adapter ends, allowing easier attachment while providing secure coupling engagement. Style 31, Style 41 and Style 44 couplings are commonly used with Type "E" Vic-Ring adapters.

## 3. Selection

Before proceeding with the Vic-Ring adapter selection, the following information is required:

- Pipe O.D.
- Pipe wall thickness
- Service; water, air, etc. (For abrasive services or services requiring pipe linings, contact Victaulic for special ring preparations.)
- Maximum working pressure
- Shock loads, if any
- Operating temperature; maximum, minimum
- Victaulic coupling and ring type, if currently being used

From these details, the Selection Chart on page 4 of this section can be consulted to pick the most economical Victaulic coupling and Vic-Ring adapter combination.

## SELECTION CHART

SIZE Nominal In. mm	Max. Work. Press.* PSI/kPa	Coupling Selection		Vic-Ring Type
		Size Inches/mm	Style	
14 350	175 1207	14 355,6	31	D, E
16 400	200 1380	16 406,4	22	A
16 400	175 1207	16 406,4	44	D, E
18 450	175 1207	18 457,2	31	D, E
20 500	200 1380	20 508,0	22	A
20 500	175 1207	20 508,0	31	D, E
24 600	200 1380	24 609,6	22	A
24 600	175 1207	24 609,6	31	D, E
30 750	175 1207	30 762,0	44	D, E
30 750	150 1035	30 762,0	22	A
30 750	90 620	30 762,0	41	D, E
36 900	175 1207	36 914,4	44	D, E
38 950	90 620	38 950,0	41	D, E
42 1050	175 1207	42 1066,8	44	D, E
42 1050	90 620	42 1066,8	41	D, E
46 1150	90 620	46 1175,0	41	D, E
48 1200	175 1207	48 1219,0	44	D, E

Table continued on page 3.

## SELECTION CHART

SIZE Nominal In. Actual mm	Max. Work. Press.* PSI/kPa	Coupling Selection		Vic-Ring Type
		Size Inches/mm	Style	
48 1200	90 620	48 1219,2	41	D, E
54 1375	175 1207	54 1371,6	44	D, E
54 1375	90 620	54 1371,6	41	D, E
60 1500	175 1207	60 1524,0	44	D, E
60 1500	90 620	60 1524,0	41	D, E
66 1675	90 620	66 1676,4	41	D, E

For complete Vic-Ring adapter dimensions for the above selections, as well as Victaulic couplings data, refer to Sections 16.02 through 16.06. For coupling/ring combinations not shown, or for other applications, contact Victaulic for details.

\* Working Pressures are total, from all internal and external loads, based on ANSI standard weight steel pipe, with Vic-Rings applied in accordance with Victaulic specifications. Contact Victaulic for performance on other pipe.

#### 4. Vic-Ring Adapter System and Coupling Material

**Specifications.** The Vic-Ring adapter system for joining large diameter pipe, valve settings, manifolds, pumps and other components saves time, dollars and space. The Victaulic system provides a bolted, self-restraining joint which eases valve installation and removal for maintenance compared with flanges, compression-type joints or mechanical joints.

The Victaulic system requires no special restraints, no tie-bars or rodding. Each coupling takes less than 7" (175 mm) of space for setting a 60" (1500 mm) valve. Victaulic couplings require far fewer bolts – only 10 for a 60" (1500 mm) Style 41, compared with 52 for a 60" (1500 mm) flange, and 28 for a compression type fitting. Victaulic couplings are cast in segments – from two (for 12") up to 12 (for 66") – to ease handling, assembly and assure concentricity. Total Victaulic coupling weight is as low as 1/2 that for compression type couplings (depending on size), a pair of flanges or mechanical joints. Mechanical joints are typically three times wider than a Victaulic coupling and require restraint for pressure service. The required restraint adds to necessary space which can add substantially to the size and cost of valve chambers.

The major valve manufacturers offer valves with grooved or shouldered ends to meet Victaulic coupling requirements or as specified in AWWA C-606. Steel pipe and tubing, certain types of aluminum and copper tubing – and fabricated steel plate pipe in diameters 30" (750 mm) and up – may be adapted for Victaulic couplings by means of applied rings or collars.

**Housing:** Ductile iron conforming to ASTM A-536.

**Housing Coating:** Orange enamel

**Optional:** Hot dipped galvanized and others

**Gasket:** (Specify choice on order)

**Grade "E" EPDM** (Green 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.*

**Grade "T" nitrile** (Orange color code). Temperature range from –20°F to +180°F (–29°C to +82°C). Recommended for petroleum products, air with oil vapors, vegetable and mineral oils within the specified temperature range; except hot, dry air over +150°F (+66°C). *Not recommended for hot water services.*

**Grade "M" Halogenated Butyl** (Brown color coded).

Temperature range from –20°F to +200°F (–29°C to +93°C).

Recommended for hot water service within the specified temperature range plus a variety of dilute acids, oil-free air and many chemical services. Readily conforms to ductile pipe surfaces. UL classified in accordance with ANSI/NSF 61 for potable water service. *Not recommended for petroleum services.*

**Grade "S" nitrile** (Red color coded). Temperature range from –20°F to +180°F (–29°C to +82°C). Specially compounded to conform to ductile pipe surfaces. Recommended for petroleum products, air with oil vapors, vegetable and mineral oils within the specified temperature range. *Not recommended for hot water services over +150°F (+66°C) or for hot dry air over +140°F (+60°C).*

**Grade "L" silicone** (Red gasket). Temperature range from –30°F to +350°F (–34°C to +177°C). Recommended for systems operating below 0°F (–18°C) plus dry heat, air without hydrocarbons, certain chemical services and water to +350°F (+177°C).

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

**Bolts/Nuts:** Heat treated plated carbon steel, track-head conforming to physical properties of ASTM A-183 minimum tensile 110,000 psi (758340 kPa).

#### 5. Performance Data and Dimensions for Victaulic Styles 22, 31, 41 and 44 couplings. (See Sections 16.02 - 16.05.)

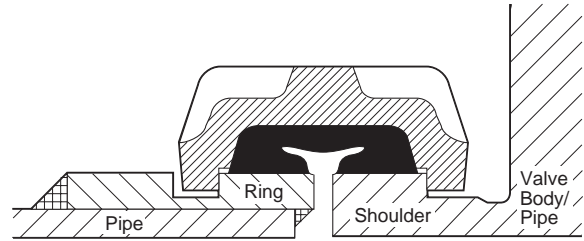
#### 6. Vic-Ring Adapter Dimensions. (See Section 16.06.)

## VIC-RING SYSTEM APPLICATION DATA

The adaptation of pipe with Vic-Ring adapters and the selection of a suitable Victaulic coupling present individual considerations which can best be screened by Victaulic engineers, who are experienced in Vic-Ring end applications. Also, space limitation in this manual prevents a listing of all Victaulic coupling patterns available for Vic-Ring adaptations.

Before proceeding with Vic-Ring end designs, submit to us the following data: pipe O.D., pipe wall thickness working pressure, laying conditions and the quantity of Victaulic couplings required. We will be glad to recommend the type of ends, the collar dimensions, and the Victaulic coupling best suited to the application.

Please send completed information to your regional branch or the Engineered Products Department at Victaulic World Headquarters.



## GENERAL

Is this installation: ☐ new ☐ or existing?

If existing, which joining method has been used? ☐ Grooved ☐ Welded ☐ Flanged ☐ Other

Details \_\_\_\_\_

Type of Vic-Ring preferred (if any): ☐ A ☐ B ☐ C ☐ D ☐ E

Reason \_\_\_\_\_

## PIPE MATERIAL

Steel \_\_\_\_\_ Cast Iron Other (Specify) \_\_\_\_\_

\*Pipe O.D Pipe Wall Thickness \_\_\_\_\_

\*Note: Vic-Ring adapters are supplied with a minimum I.D. which is 0.5% larger than the nominal O.D., unless otherwise specified by customer.

Service (water, air, slurry, etc.) \_\_\_\_\_ Pipe Lengths (20', 40', etc.) \_\_\_\_\_

Working Pressure \_\_\_\_\_ Shock Load (if any) Abrasion \_\_\_\_\_

Operating Temperature Range: Max. \_\_\_\_\_ Min. \_\_\_\_\_

Victaulic Coupling (if known) Size \_\_\_\_\_ Style \_\_\_\_\_ Quantity \_\_\_\_\_

## PIPE INSTALLATION DETAILS

Buried Depth of Cover \_\_\_\_\_

Exposed \_\_\_\_\_ Inside Plant \_\_\_\_\_ Outdoors \_\_\_\_\_

Valve Chamber \_\_\_\_\_

Pump Connection \_\_\_\_\_ Type of Support \_\_\_\_\_ Spacing \_\_\_\_\_

Anchors (if any) Location \_\_\_\_\_

Pipe Settlement: ☐ Yes ☐ No If yes, explain in detail. (Attach supplementary sheet.)

Code Piping Involved: ☐ Yes ☐ No If yes, which code \_\_\_\_\_

Chief Function of Coupling: Union \_\_\_\_\_ Expansion & Contraction \_\_\_\_\_

Deflection Combination \_\_\_\_\_

Is Piping Layout Available \_\_\_\_\_

Other Installation Details Helpful to Victaulic (Attach Supplementary Sheets)

This product shall be manufactured by Victaulic Company. All products shall 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.