PIPE JOINING SOLUTIONS IDEALLY SUITED FOR

Large Diameter Piping
The Victaulic method for mechanically joining pipe has been used successfully for over 85 years simplifying design, installation, and operation of piping systems. It combines the advantages of fast installation, design integrity and reliable operation. Disassembly is just as fast, facilitating rapid pipe rotation to reduce your downtime.

Victaulic technology for joining large diameter piping includes capabilities for direct grooving or adding an external ring on steel pipe up to 60”/1525 mm.

The Victaulic system for joining large diameter pipe and piping components are available from stocking distributors worldwide. Over 500 factory-trained piping specialists provide on-site assistance backed by application and product engineering support as close as your phone.

About Victaulic
Victaulic Company is the originator and developer of the grooved piping method for rapidly joining building service pipe. Victaulic has been used for many years for HVAC, Mining, Oil Gas and Chemical, Power, Water Transmission and a variety of other piping applications.

Victaulic continues to develop ground breaking products and innovative solutions to the world’s most difficult piping challenges. Victaulic pipe joining technology is found on pipe as small as ½”/15 mm and as large as 216”/5500 mm. Regardless of size or type Victaulic products are known for significantly reducing construction and maintenance schedules for piping projects worldwide.
SYSTEM BENEFITS
› Lower total installed cost
› Fast, easy bolted connection
› Meet project deadlines and fasttrack schedules
› Direct grooved products up to 60’/1525 mm
› Utilize in-house or contracted labor
› No flame or fire hazard as with welding
› Up to 12× fewer bolts than flanged systems
› Reduced weight and assembly compared to flanges
› A union at every joint
› Couplings accommodate expansion/contraction and deflection
› The system attenuates noise and vibration

VICTAULIC HAS RELIABLY SERVED THESE MARKETS SINCE 1925.
› Mining
› Industrial
› Power
› Water/Wasterwater Treatment
› Building Services
› Fire Protection
› Ship Building
› Biofuels
VICTAULIC LARGE DIAMETER PIPING SYSTEMS

Applications

Victaulic applications for large diameter systems since 1925.

- Chilled Water
- Condenser
- Water Supply
- Wastewater
- Underground/Buried
- Slurries and Tailings
- Water Transmission

Large Diameter mechanical rooms are joined in a fraction of the time required for flanged and welded systems.

Direct groove systems utilizing AGS are ideal for chilled water systems.

For abrasive services such as this tailings line Victaulic offers an AGS Vic-Ring coupling that requires only four bolts and nuts to join 40”/1000mm pipe.

A water supply line in use since 1932.
Victaulic products are frequently found on buried services such as this water transmission line.

The AGS (Advanced Groove System) includes a line of fittings, valves, and strainers.

Victaulic systems provide flexibility and rigidity where needed in the piping system.
The Victaulic grooved piping system is the most versatile, economical and reliable piping system available. It is up to three times faster to install than welding, easier and more reliable than flanging, resulting in lower total installed cost.

The system is designed for ANSI, ISO, DIN and other black or galvanized steel pipe. Pipe end preparation is fast and easy either in the shop or on the job site with the variety of Victaulic grooving tools available.

In addition to speed and ease of assembly, the Victaulic system offers varied mechanical benefits to the designer, installer and owner.
EACH JOINT IS A UNION
Welded systems require specially installed unions while flanged systems have twice the number of bolts of grooved systems.

EASY SYSTEM OR EQUIPMENT ACCESS
Removal of couplings provides access for cleaning, maintenance, system expansion or changes.

FLEXIBILITY
The Victaulic system is unique in the ability to accommodate expansion/contraction/deflection. Elimination or reduction of special vibration accessories, expansion loops and settlement allowance are among the inherent benefits of the grooved system.

ELIMINATES RE-COATING AND RE-LINING
Since Victaulic couplings do not require heat to join the piping system no damage is done to either coatings or linings during the assembly process. Eliminating the costly step of re-lining and re-coating the pipe dramatically reduces project completion times.

NO FIRE HAZARD
As a fully mechanical, bolted system, Victaulic products present no fire hazard. It is far safer and requires no shielding or fire watch.

ALIGNMENT EASE
The grooved system allows full rotation of pipe, valves, fittings or couplings before tightening for easy alignment. This compensates for some alignment errors and eliminates the “twoholing” required with flanges. Fitting in tight places is eased.

SELF-RESTRAINED JOINT
The full engagement of the housing keys into grooves around the full pipe circumference provides significant pressure restraint and end load capabilities to withstand pipe movement from varied internal and external sources.

ELIMINATES CONFINED SPACE ENTRY
Because Victaulic couplings are assembled on the outside of the pipe the need to re-coat, re-line or weld the inside of the pipe is eliminated. This creates a safer working environment and increases productivity.
**VICTAULIC LARGE DIAMETER PIPING SYSTEMS IMPROVES PRODUCTIVITY**

**Versus Flanged/Welded Systems**

**VICTAULIC GROOVED**

- Grooved piping can pass through wall sleeves
- Special design considerations eliminated
- Compression type couplings not required
- No side space needed for bolts; No two-holing required
- 1/3 the weight of flanged systems
- Number of bolts greatly reduced
- No radiographic inspection required

**FLANGED**

- Require special design considerations
- Flanging must be made-on loose or have coupling adapter added to pass through a wall sleeve
- Side space needed for bolts; Two-holing required
- Heavier, more costly to install
- More bolts, longer installation time

**WELDED**

- Emits harmful noxious fumes
- Over 10x longer to install than grooved
- Requires skilled welder and welding equipment
- No visual method for ensuring joint integrity
Victaulic systems rotate for alignment and can pass through wall sleeves.

Flanged must be “two holed” and must be made-on loose or have coupling adapters added to pass through a wall sleeve.

Victaulic systems can reduce direct and indirect installed costs by 50% or more when compared to other joining methods.

<table>
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<th>Outside Diameter</th>
<th>Weight</th>
<th>Number of Bolts</th>
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</table>

SAVES SPACE... LIGHTER... FEWER BOLTS.

Flanged must be “two holed” and must be made-on loose or have coupling adapters added to pass through a wall sleeve.

Victaulic systems can reduce direct and indirect installed costs by 50% or more when compared to other joining methods.
Methods for Joining Large Diameter Pipe

The Direct Grooved Method

The concept of rolling a groove into pipe without removing metal was developed by Victaulic in 1955. The concept was first used for light-wall pipe which did not have sufficient wall thicknesses to permit cut grooving. Technological developments now permit roll grooving of standard weight steel pipe, up to 60’/1525 mm.

DIRECT GROOVED PIPE PREPARATION
Piping from 14–60’/350–1525 mm can now be direct roll grooved to receive AGS (Advanced Groove System) large diameter couplings. This capability brings the speed and ease of bolted mechanical assembly to large diameter pipe assembly.

Roll grooving removes no metal, cold forming a groove by the action of an upper male roll displacing the pipe wall as the pipe is rotated by a lower female drive roll forming the groove.

Victaulic shop roll groovers can roll groove up to ⅝/13 mm wall thickness carbon steel pipe.

LARGE DIAMETER PIPE ROLL GROOVING TOOL
The Victaulic Large Diameter Roll Groover is a fully motorized, automated shop tool for continuous production grooving. It is supplied in several variations to accommodate the needs of roll grooving pipe above 14’/350 mm.

The VE436 is a fully automated shop tool for roll grooving pipe in the following sizes: 22–24’/550–600 mm and 30–36’/750–900 mm up to maximum wall thickness of ½/13 mm. These rolls are standard supply with this tool. Other roll sets can be provided upon request.

The VE-460 is our most versatile tool; capable of grooving ½/13 mm wall pipe up to 60’/1525 mm. This heavy duty tool is capable of production grooving over the entire range of large diameter products.
The AGS Vic-Ring Method

Victaulic offers the AGS (Advanced Groove System) 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. Contact Victaulic for assistance.

TYPE D RING CONFIGURATION

A heavy duty collar typically for large diameter pipe—30”/750mm and up—providing special pipe end reinforcement and rigidity. Standard Style W07 rigid or Style W77 flexible couplings may be used with Type “D” ring configurations.

TYPE B RING CONFIGURATION

A short grooved nipple, buttwelded to the pipe end. The nipples may be cut from standard pipe and joined using standard AGS rigid or flexible couplings.

Victaulic invented the grooved end system for pipe joining in 1925. More than 85 years later, Victaulic continues to lead the industry with pipe joining innovations and solutions around the world. With offices and manufacturing facilities in Europe, Asia, the US and Canada, and a worldwide network of sales and service representatives, Victaulic works closely with engineers, contractors and owners to design and install mechanical piping systems that lower costs, improve productivity, reduce risk and provide for total system expansion.

Visit www.victaulic.com
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• Download product submittals and literature
• Piping software demos and modules
• Engineering support services

VICTAULIC

BELGIUM
Prijkelstraat 36
9810 Nazareth, Belgium
32 9 381 15 00
49 6151 9573 0
(within Germany)
viceuro@victaulic.com

www.victaulic.com

UNITED KINGDOM
Units B1 & B2, SG1 Industrial Park
Cockerell Close
Gunners Wood Road, Stevenage
Hertfordshire, UK
SG1 2NB
44 (0) 143 831 0690
viceuro@victaulic.com

ASIA
Unit 808, Building B
Hongwell International Plaza
No. 1602 West Zhongshan Road
Shanghai, China 200235
86 21 6021 9400
vicap@victaulic.com

UNITED STATES AND WORLD HEADQUARTERS
4901 Kesslersville Road
Easton, PA 18040 USA
1 800 PICK VIC
1 800 742 5842
(within North America)
1 610 559 3300
pickvic@victaulic.com

UNITED ARAB EMIRATES
P.O. Box 17683
Jebel Ali
Dubai
United Arab Emirates
971 48 838 870
viceuro@victaulic.com

INDIA
Victaulic Piping Products
India Priv. Ltd.
Indialand Global Industrial Park
Plot 4, Hinjewadi, Phase I, Mulshi
Pune 411057, India
91 20 67 919 300
viceuro@victaulic.com

CANADA
123 Newkirk Road
Richmond Hill, ON L4C 3G5
Canada
1 905 884 7444
viccanada@victaulic.com