

Victaulic Specification Power Industry

1.01 General:

A. Section Includes:

1. General
2. Materials:
 - a. Pipe
 - b. Victaulic Couplings
 - c. Victaulic Fittings
 - d. Victaulic Valves
 - e. Victaulic Specialties
 - f. Victaulic Tooling
3. Execution

B. Submittals:

1. Victaulic products shall be shown on drawings and product submittals and shall be specifically identified with the applicable Victaulic style or series number.

C. References:

1. American Society for Testing Materials (ASTM)
 - a. ASTM A-36 – Carbon Structural Steel.
 - b. ASTM A-53 – Pipe, Steel, Black and Hot-Dipped Zinc Coated, Welded and Seamless.
 - c. ASTM A-183 – Carbon Steel Track Bolts and Nuts
 - d. ASTM A-234 – Standard Specification For Piping Fittings or Wrought Carbon Steel and Alloy Steel.
 - e. ASTM A240 – Chromium and Chromium-Nickel Stainless Steel Plate, Sheet, and Strip for Pressure Vessels and General Applications.
 - f. ASTM A312 – Seamless and Welded Austenitic Stainless Steel Pipe.
 - g. ASTM A351 – Castings, Austenitic, Austenitic-Ferritic (Duplex), for pressure Containing Parts
 - h. ASTM A743 – Castings, Iron-Chromium Nickel, Corrosion Resistant, for General Applications
 - i. ASTM A744 – Castings, Iron-Chromium Nickel, Corrosion Resistant, for Severe Applications
 - j. ASTM A-449 – Quenched and Tempered Steel Bolts and Studs
 - k. ASTM F-1476 - Standard Specification for Performance of Gasketed Mechanical Couplings for Use in Piping Applications

2. American Society of Mechanical Engineers
 - a. ASME B16.9 – Factory Made Wrought Butt Welded Fittings
 - b. ASME B31.1 – Chemical Plant and Petroleum Refining Piping
 - c. ASME B31.9 – Building Services Piping
 - d. ANSI A21.10 - Ductile and Gray Iron Fittings

3. American Water Works Association
 - a. AWWA C-606 – Grooved and Shouldered Joints
 - b. AWWA C-110 – Ductile and Gray Iron Fittings
 - c. AWWA C-153 – Ductile Iron Compact Fittings 3 In. Through 24 In. and 54 In. Through 65 In., for Water Service.

D. Quality Assurance

1. To assure uniformity and compatibility of piping components in grooved end piping systems, all grooved products utilized shall be supplied by Victaulic. Grooving tools shall be supplied by the same manufacturer as the grooved components.

2.01 Materials:

A. Pipe/Grooved (Standard/Lightwall):

1. Carbon Steel, A-53B/A-106B - Roll or cut grooved-ends as appropriate to pipe material, wall thickness, pressures, size and method of joining. Pipe ends to be grooved in accordance with Victaulic current listed standards conforming to ANSI/AWWA C-606.
2. Stainless Steel, ASTM A312, Type 304/304L or 316/316L, Schedule 5, 10, or 40. Roll or Cut grooved as appropriate to the pipe material, wall thickness, pressure, size and method of joining. Use Victaulic 'RX' rolls for grooving schedule 5 or 10 stainless steel pipe.
 - a. Pipe used with Vic-Press™ couplings and fittings shall be Schedule 5S stainless steel, certified for use with the Vic-Press™ piping system.
3. AWWA ductile iron pipe, minimum Class 53, grooved in accordance with AWWA C606. Rigid radius groove dimensions shall be utilized where flexibility is neither required nor desired. Pipe ends shall be factory grooved.
4. For joining plain end HDPE pipe conforming to ASTM D-2447, D-3000, D-3035 or F-714 with wall thickness from SDR 32.5 to 7.3. Victaulic products for HDPE pipe are rated to pressures equal to the pipe with which they are used. The pipe manufacturer's listing is dependent upon wall thickness, pipe composition and temperature.

B. Victaulic Mechanical Couplings for Joining Carbon Steel Pipe

1. Victaulic Standard Mechanical Couplings, 2 inch (DN50) through 12 inch (DN300): Manufactured in two segments of cast ductile iron, conforming to ASTM A-536, Grade 65-45-12. Gaskets shall be pressure-responsive synthetic rubber, grade to suit the intended service, conforming to ASTM D-2000. (Gaskets used for potable water applications shall be UL classified in accordance with ANSI/NSF-61 for potable water service.) Mechanical Coupling bolts shall be zinc plated (ASTM B-633) heat treated carbon steel track head conforming to ASTM A-449 and ASTM A-183, minimum tensile strength 110,000 psi (758450 kPa) as provided standard Victaulic.
 - a. **Rigid Type:** Coupling housings with offsetting, angle-pattern bolt pads shall be used to provide system rigidity and support and hanging in accordance with ANSI B31.1, B31.9, and NFPA 13.
 - a. 2" (DN50) through 8" (DN200): Victaulic Style 107 (Quick-Vic™). Installation ready rigid coupling for direct stab installation without field disassembly. Gasket shall be Grade "EHP" EPDM compound with red color code designed for operating temperatures from -30 deg F (-34 deg C) to +250 deg F (+120 deg C).
 - b. 8" (DN200) through 12" (DN300): Victaulic Style 07 (Zero-Flex®). Standard rigid coupling. Gasket shall be Grade "E" EPDM compound with green color code designed for operating temperatures from -30 deg F (-34 deg C) to +230 deg F (+110 deg C).
 - c. Fire Protection: "Installation Ready" rigid joints shall be Victaulic FireLock® EZ Style 009, in sizes 1-1/4"(DN32) through 4"(DN100).
 - d. Standard rigid joints shall be Victaulic Style 005 (FireLock® 005) or 07 (Zero-Flex®).
 - e. Rigid couplings shall require visual pad-to-pad verification of complete installation. Tongue and recess type couplings which require the use of a torque wrench to achieve the exact required gap between housings are not permitted.
 - b. **Flexible Type:** Use in locations where vibration attenuation and stress relief are required. Flexible couplings may be used in lieu of flexible connectors at equipment connections. Three couplings, for each connector, shall be placed in close proximity to the vibration source. Victaulic Installation-Ready Style 177, or Style 75 or 77.

2. **Flange Adapters:** For use with grooved end pipe and fittings, flat faced, for mating to ANSI Class 125 / 150 flanges. Victaulic Style 741. For direct connection to ANSI Class 300 flanges use Victaulic Style 743.
3. Grooved couplings shall meet the requirements of ASTM F-1476.
4. **Gasket:** Synthetic rubber conforming to steel pipe outside diameter and coupling housing, manufactured of elastomers as designated in ASTM D-2000.
 - a. Reference shall always be made to the latest published Selection Guide for Victaulic Gaskets for proper gasket selection for the intended service.
5. Victaulic AGS Mechanical Couplings, 14 inch (DN350) through 24 inch (DN600): Couplings shall consist of two ASTM A-536 ductile iron housing segments, a wide elastomer pressure responsive gasket, and zinc electroplated carbon steel track head bolts and nuts conforming to the physical and chemical requirements of ASTM A-449 and the physical requirements of ASTM A-183.
 - a. Coupling housings designed with the wedge-shaped AGS key profile to engage the mating pipe(s)/component(s) wedge-shaped AGS grooves. Housings include lead-in chamfer to accommodate a wider acceptable range of initial pipe positions. Housings shall be coated with orange enamel or galvanized.
 - b. Gasket: Wide width, pressure-responsive, synthetic rubber of a FlushSeal® design, conforming to steel pipe outside diameter and coupling housing, manufactured of elastomers as designated in ASTM D-2000.
 - 1) Grade “E” EPDM with green color code designed for operating temperatures from -30 deg F (-34 deg C) to +230 deg F (+110 deg C).
 - 2) Grade “T” Nitrile with orange color code designed for operating temperatures from -20 deg F (-29 deg C) to +180 deg F (+82 deg C).
 - 3) Grade “L” Silicone with red color code designed for operating temperatures of -30 deg F (-34 deg C) to +350 deg F (+177 deg C); recommended for dry heat service (air without hydrocarbons).
 - 4) Reference shall always be made to the latest published Selection Guide for Victaulic Gaskets for proper gasket selection for the intended service.

c. Coupling Types:

- 1) **Victaulic W07 AGS Rigid Coupling:** Coupling key shall be designed to fill the wedge shaped AGS groove to provide a rigid joint that corresponds with support spacings as defined by ASME B31.1 and B31.9. Systems incorporating rigid couplings require the calculated thermal growth/contraction of the piping system to be fully compensated for in the design of the piping system through use of adequate flexible components.
- 2) **Victaulic W77 AGS Flexible Coupling:** Coupling key shall be designed to fit into the wedge shaped AGS groove and allow for linear and angular movement, vibration attenuation, and stress relief. Support requirements defined by Victaulic Design Data Submittal 26.01.
- 3) **Victaulic Style W741 Flange Adapter:** For use with AGS grooved end pipe and fittings, flat faced, for mating to ANSI Class 125 / 150 flanges.

C. **Victaulic Mechanical Couplings for Joining Stainless Steel Pipe:**

1. **Victaulic Stainless Steel Mechanical Couplings:** Manufactured in two or more segments of cast stainless steel, conforming to ASTM A-351, A-743, and A-744. Gaskets shall be pressure-responsive synthetic rubber, grade to suit the intended service, conforming to ASTM D-2000. (Gaskets used on potable water systems shall be UL classified in accordance with ANSI/NSF-61 for potable water service.) Mechanical coupling bolts shall be stainless steel, type 316, meeting the physical properties of ASTM A-193, grade B8M, Class2.
 - a. **Rigid Type:** Cast with key designed to clamp the bottom of the groove to provide an essentially rigid joint. Victaulic Style 489.
 - b. **Flexible Type:** Use in locations where vibration attenuation and stress relief are required. Victaulic Style 77S.
 - c. **Lightweight Flexible Couplings:** For sizes up to 4", use in locations where vibration attenuation and stress relief are required. Unique design permitting assembly by one bolt/nut removal. Victaulic Style 475.

2. **Victaulic Ductile Iron Mechanical Couplings:** Rigid type, manufactured in two or more segments of cast ductile iron, conforming to ASTM A-536, designed to clamp the bottom of the groove to provide an essentially rigid joint. Gaskets shall be pressure-responsive synthetic rubber, grade to suit the intended service, conforming to ASTM D-2000. Mechanical coupling bolts shall be zinc plated (ASTM B-633) heat treated carbon steel track head conforming to ASTM A-449 and A-183, minimum tensile strength 110,000 psi (758450 kPa) as provided standard Victaulic. Victaulic Style 89.
 - a. For sizes 14" through 24", Victaulic AGS W89 rigid type coupling for stainless steel pipe, rated to 300 psig / 2065 kPa with Schedule 10S pipe.
 3. **Flange Adapters:** For use with grooved end pipe and fittings, for mating to ANSI Class 150 flanged components. Victaulic Style 441.
 4. **Pressure Ratings (psi CWP):** Pressure ratings for Victaulic couplings and flange adapters on stainless steel pipe vary dependent on size and pipe schedule. Refer to Victaulic literature for exact ratings.
- D. Victaulic Mechanical Couplings for Joining AWWA Ductile Iron Pipe:**
1. **Victaulic Couplings:** Manufactured in two or more segments of cast ductile iron, conforming to A-536, Grade 65-45-12. Gaskets shall be pressure-responsive synthetic rubber, FlushSeal® type. Mechanical coupling bolts shall be zinc plated (ASTM B-633) heat treated carbon steel track head conforming to physical properties of ASTM A-183, minimum tensile strength 110,000 psi (758450 kPa) as provided standard Victaulic. Victaulic Style 31.
 2. **Transition Couplings:** For transition between IPS steel and AWWA ductile iron sized pipe. Housings cast with offsetting, angle-pattern, bolt pads. Victaulic Style 307.
 3. **Flange Adapters:** For use with AWWA grooved end pipe and fittings, for mating to ANSI Class 125 flanged components. Victaulic Style 341.

E. Victaulic Mechanical Couplings for Joining HDPE Pipe:

1. Couplings shall be of ductile iron conforming to ASTM A-395, Grade 65-45-15 and/or ASTM A-536, Grade 65-45-12. Coupling bolts shall be heat treated carbon steel or stainless steel trackhead type. Gasket shall be pressure responsive synthetic rubber of a grade to suit the intended service. Couplings shall contain gripping teeth machined into coupling housing which will bite into the entire circumference of the HDPE pipe.
 - a. Victaulic Style 995 couplings shall be used to join plain end HDPE pipe.
 - b. Victaulic Style 997 Transition Coupling; connection of plain end HDPE pipe to IPS pipe grooved to Victaulic published specifications.
2. For direct connection to ANSI Class 125 and 150 flanged components. Sizes 4", 6", and 8" (DN100, DN150, and DN200). Adapters shall consist of ductile iron housings with integral rows of gripping teeth machined into the HDPE side of housing. Gasket shall be pressure responsive synthetic rubber. (Grade to suit the intended service.) Victaulic Style 994.

F. Victaulic Depend-O-Lok Couplings for Carbon Steel or Stainless Steel Pipe.

1. Couplings shall be split-sleeve type, consisting of a double-arched rolled housing conforming to ASTM A36 (carbon steel) or ASTM A240 (stainless steel), closure plates, elastomer O-ring type gasket, and required bolts, nuts, and/or studs.
2. For restrained joints, couplings shall be provided with carbon steel or stainless steel restraint rings. The rings shall be factory-welded to the pipe OD in accordance with Victaulic instructions.
3. The couplings shall be ExE (Expansion); FxF (restrained) or FxE (combination).

G. Victaulic Grooved End Fittings for Carbon Steel Pipe:

1. Standard fittings shall be cast of ductile iron conforming to ASTM A-536, Grade 65-45-12, forged steel conforming to ASTM A-234, Grade WPB 0.375" wall (9,53 mm wall), or fabricated from Std. Wt. Carbon Steel pipe conforming to ASTM A-53, Type F, E or S, Grade B. Fittings provided with an alkyd enamel finish or hot dip galvanized to ASTM A-153. Zinc electroplated fittings and couplings conform to ASTM B633.
2. AGS Fittings shall be supplied with factory AGS grooved ends, for use with Victaulic W07 or W77 couplings and W741 flange adapter. Fittings shall be manufactured of ductile iron conforming to ASTM A-536, forged carbon steel conforming to ASTM A-234, or factory fabricated from carbon steel pipe conforming to ASTM A-53. Fittings shall be manufactured to the dimensional standards ASME B16.9. Orange enamel coated or galvanized.

H. Victaulic Grooved End Fittings for Stainless Steel Pipe:

Fittings shall be manufactured of stainless steel conforming to ASTM A-403, WPW, WPW/S9, or CR/S9, or shall be fabricated from stainless steel pipe conforming to ASTM A312, with factory grooved ends. Fittings shall be type 304/304L or 316/316L stainless steel.

I. Victaulic Grooved End Fittings for AWWA Ductile Iron Pipe:

Fittings shall be cast of ductile iron conforming to A-536, Grade 65-45-12. Fittings conform to ANSI A21.10/AWWA C-110 for center-to-end dimensions and wall thickness, and AWWA C-153 for wall thickness. Grooved ends shall conform to AWWA C606.

J. Victaulic Grooved End Valves

1. Butterfly Valves:

- a. 2"(DN50) through 12"(DN300) Sizes: 300 psi CWP (2065 kPa) suitable for bidirectional and dead-end service at full rated pressure. Body shall be grooved end black enamel coated ductile iron conforming to ASTM A536. Disc shall be [electroless nickel plated ductile iron] [stainless steel] [aluminum bronze] with blowout proof 416 stainless steel stem. Disc shall be offset from the stem centerline to allow full 360 degree seating. Seat shall be pressure responsive [EPDM] [Lubricated Nitrile] [Fluoroelastomer]. Valve bearings shall be TFE lined fiberglass, and stem seals shall be of the same grade elastomer as the valve seat. Valve shall be complete with ISO flange for actuation mounting. Valve operators shall be lever handle or gear operator, available with memory stop feature, locking device, chainwheel, or supplied bare. (Valve with EPDM seat is UL classified in accordance with ANSI/NSF-61.) Victaulic Vic®-300 MasterSeal™.
- b. 14" (DN350) through 24" (DN600) Sizes: 300 psi (2065 kPa), AGS grooved ends, polyphenylene sulfide (PPS) coated ductile iron body (ASTM A-536, Grade 65-45-12), PPS coated ductile iron disc (ASTM A-536), and two piece 17-4 PH S/S stem design. Seat and seal material to suit intended service. Reinforced PTFE bearings and gear operator. Bubble tight, dead-end, or bi-directional service. With memory stop for throttling, metering or balancing service. Victaulic Vic®-300 AGS.
- c. Fire Protection Services: UL/FM Global approved, 300 psi (2065 kPa), grooved ends, polyphenylene sulfide (PPS) coated ductile iron body (ASTM A-536, Grade 65-45-12). Ductile iron disc, synthetic rubber encapsulated suited for the intended service, with integrally cast stem. Complete with weatherproof actuator and pre-wired supervisory switches. Victaulic Series 705W FireLock® or Series 707 FireLock® for fire pump metering test lines per NFPA 20 and rooftop test units, as well as pressure reducing valve bypass lines per NFPA 14.

- d. Stainless Steel: Grade CF8M stainless steel body and disc, 316 stainless steel stem, PTFE impregnated glass fabric bearings with 316 stainless steel backing, with synthetic rubber seal. (Grade to suit the intended service.) Bubble-tight, dead-end or bi-directional service to 300 psi (2065 kPa) CWP. Victaulic Series 763.

Note: Refer to latest published Victaulic literature, Butterfly Valve Material Selection section, for liner/seat and disc material recommendations for chemical service.

2. Plug Valves:

175 psi (2"(DN50) through 12"(DN300)) and 150 psi (14"(DN350) through 18"(DN450)) bubble-tight, bi-directional sealing. Ductile iron body conforming to ASTM A-536, Grade 65-45-12, synthetic rubber encapsulated ductile iron plug, grade to suit the intended service, with welded-in nickel seat. Victaulic Series 365.

3. Check Valves:

- a. **2-1/2"(DN65) through 3"(DN80) Sizes Spring Assisted:** PPS coated ductile iron body, ASTM A-536, Grade 65-45-12, aluminum bronze non-slam tilting disc, stainless steel spring and shaft, rubber seat suitable for intended service, 300 psi (2065 kPa). Victaulic Series 716.
- b. **4"(DN100) through 12"(DN300) Sizes Spring Assisted:** Black enamel coated ductile iron body, ASTM A-536, Grade 65-45-12, elastomer encapsulated ductile iron disc suitable for intended service, stainless steel spring and shaft, welded-in nickel seat, 300 psi (2065 kPa). Victaulic Series 716.
- c. **2"(DN50) through 4"(DN100) Sizes Horizontal Swing:** Horizontal installation, ductile iron body, ASTM A-536, Grade 65-45-12, and Type 316 stainless steel clapper. Synthetic rubber bumper & bonnet seals suitable for intended service, stainless steel wetted parts, 300 psi (2065 kPa). Victaulic Series 712.
- d. **4"(DN100) through 12"(DN300) Sizes Venturi Check:** Black enamel coated ductile iron body, ASTM A-536, Grade 65-45-12 with venturi-like taps, elastomer encapsulated ductile iron disc suitable for intended service, stainless steel spring and shaft, welded-in nickel seat, 300 psi (2065 kPa). Victaulic Series 779.
- e. **14" (DN350) through 24" (DN600) Check Valves:** 230 psi (1585 kPa), AGS grooved ends, spring-assisted dual disc check valve. ASTM A-536, Grade 65-45-12 coated ductile iron body, EPDM seat bonded to the valve body, 304 stainless steel disc, and 300 series stainless steel spring and shaft. Victaulic Series W715.
- f. **AWWA Check Valves:** 175 psi working pressure, cast iron body conforming to ASTM A-126, Class B, Bronze disc conforming to ASTM B-584 or ductile iron conforming to ASTM A-536, Grade 65-45-12, ductile iron hinge, stainless steel shaft, bronze seat. Spring and lever, weight and lever, or lever with air cushion actuator. Victaulic Series 317.

4. Ball Valves:

- a. 1/2" (DN15) through 2" (DN50) sizes, ASTM B-16, chrome-plated brass ball and stem, standard port, with TFE seats and fluoroelastomer seals. Victaulic Series 722 (threaded) and Series 589 (Vic-Press 304™).
- b. 1/2" (DN15) through 2" (DN50) sizes, CF8M stainless steel body and ball, 316 stainless steel stem, full port, with PTFE seats. Victaulic Series 569.
- c. 1-1/2"(DN40) through 6"(DN150) sizes, ASTM A-536, Grade 65-45-12, ductile iron body, chrome plated carbon steel ball and stem, TFE seats, with Fluoroelastomer seals. 800 psi (5515 kPa). Victaulic Series 726.
- d. 1-1/2"(DN40) through 6"(DN150) sizes, Grade CF8M stainless steel body, 316 stainless steel ball and stem, TFE seats, fluoroelastomer seals, standard port, two-piece valve. Victaulic Series 726S.

5. Fire Protection Device Valves

- a. **Alarm Check Valve:** Black enamel coated ductile iron body conforming to ASTM A-536, grade 65-45-12, aluminum bronze clapper, stainless steel spring and shaft, EPDM seal, and Nitrile seat O-rings. Valve internal parts shall be replaceable without removing the valve from the installed position. Water working pressure is 300 psi. Suitable for constant and variable pressure systems with optional Series 752 retard chamber. Victaulic FireLock® Series 751.
 - 1) Optional Accessories:
 - **Series 752 Retard Chamber:** High strength ductile iron body with corrosion resistant exterior and interior coating, suitable for operating pressures to 300 psi (2065 kPa).
 - **Series 752V Retard Vent Kit:** For use with Series 752 retard chamber when an electric alarm pressure switch is installed without a water motor alarm.
 - **Series 760 Water Motor Alarm:** Red enamel finished gong shell, with internal components of non-corrosive stainless-steel or aluminum, with upstream strainer.
 - **Alarm Pressure Switch:** System Sensor Model "EPS".
 - **Waterflow Detectors:** System Sensor Model "WFD".
- b. **Dry System Check Valve:** Low differential, latched clapper design, black enamel coated ductile iron body conforming to ASTM A-536, grade 65-45-12, aluminum bronze clapper, stainless steel spring and shaft, peroxide cured EPDM diaphragm, EPDM seal, brass seat, and Nitrile seat O-rings. Valve internal parts shall be replaceable without removing the valve from the installed position. Valve shall be externally resettable. Required air pressure is 13 psi. Water working pressure is 300 psi. Valve is available bare, pre-trimmed, as a Vic®-Quick Riser, or in a Fire-Pac cabinet. Victaulic FireLock® NXT Series 768.

- 1) Optional Accessories:
 - **Series 746-LPA Dry Accelerator:** Bronze body, stainless steel spring, restrictor, and bolts, with EPDM diaphragm, seal, and O-ring, for use with system air pressures ranging from 13 psi (90kPa) to 18 psi (124 kPa).
 - **Series 760 Water Motor Alarm:** Red enamel finished gong shell, with internal components of non-corrosive stainless-steel, aluminum, etc., with upstream strainer.
 - **Series 75B Supplemental Alarm Device:** For use with systems using a water motor gong as the alarm device. 304 stainless steel flexible braided hose, with brass pilot valve and galvanized steel trim and nipples, rated to 300 psi (2065 kPa).
 - **Series 75D Water Column Kit:** Ductile iron body with stainless steel internal components and Nitrile seal, rated to 300 psi (2065 kPa), designed to minimize residual water in the riser.
 - **Series 757 Air Maintenance Trim Assembly:** Consisting of a pressure-reducing air regulator, strainer, brass restrictor, spring-loaded in-line check valve, and associated piping components.
 - **Series 7C7 Compressor Package:** Consisting of a riser-mounted compressor, Series 757P air maintenance device and flexible hoses for installation. Available with 1/3 HP compressor for an up to 500 gallon system.
 - **Alarm Pressure Switch:** System Sensor Model “EPS”.

- c. **Actuated Deluge Valve:** [Pneumatic] [Hydraulic] [Electric] Actuation, low differential, latched clapper design, black enamel coated ductile iron body conforming to ASTM A-536, grade 65-45-12, aluminum bronze clapper, stainless steel spring and shaft, peroxide cured EPDM diaphragm, EPDM seal, brass seat, and Nitrile seat O-rings. Valve internal parts shall be replaceable without removing the valve from the installed position. Valve shall be externally resettable. Required air pressure is 13 psi. Water working pressure is 300 psi. Valve is available bare, pre-trimmed, as a Vic®-Quick Riser, or in a Fire-Pac cabinet. Victaulic FireLock® NXT Series 769.

- 1) Optional Accessories:
 - **Series 776 Low-Pressure Actuator:** Cast bronze lower chamber with brass middle and upper chambers and brass internal components and strainer, with stainless steel springs, and EPDM seals. Rated for water supply to 300 psi (2065 kPa) and air supply pressure of 13 psi (90kPa).
 - **Series 753-E Solenoid Valve:** Forged brass body, stainless steel spring, fluoroelastomer seal and diaphragm, 24 VDC wiring and voltage, with 8.7 watts power rating, 66 ohms resistance, and current at .364 amps. Valve shall be rated to 300 psi (2065 kPa).
 - **Series 760 Water Motor Alarm:** Red enamel finished gong shell, with internal components of non-corrosive stainless-steel, aluminum, etc., with upstream strainer.
 - **Series 757 Air Maintenance Trim Assembly:** Consisting of a pressure-reducing air regulator, strainer, brass restrictor, spring-loaded in-line check valve, and associated piping components.

- **Series 7C7 Compressor Package:** Consisting of a riser-mounted compressor, Series 757P air maintenance device and flexible hoses for installation. Available with 1/3 HP compressor for an up to 500 gallon system.
 - **Alarm Pressure Switch:** System Sensor Model “EPS”.
- d. **Preaction Valve:** Low differential, latched clapper design, black enamel coated ductile iron body conforming to ASTM A-536, grade 65-45-12, aluminum bronze clapper, stainless steel spring and shaft, peroxide cured EPDM diaphragm, EPDM seal, brass seat, and Nitrile seat O-rings. Valve internal parts shall be replaceable without removing the valve from the installed position. Valve shall be externally resettable. Water working pressure is 300 psi. Does not require a separate check valve downstream of preaction valve. Valve is available bare, pre-trimmed, as a Vic®-Quick Riser, or in a Fire-Pac cabinet. Victaulic FireLock® NXT Series 769.
- 1) Optional Accessories:
 - **Series 746-LPA Dry Accelerator:** Bronze body, stainless steel spring, restrictor, and bolts, with EPDM diaphragm, seal, and O-ring, for use with system air pressures ranging from 13 psi (90kPa) to 18 psi (124 kPa).
 - **Series 760 Water Motor Alarm:** Red enamel finished gong shell, with internal components of non-corrosive stainless-steel, aluminum, etc., with upstream strainer.
 - **Series 75B Supplemental Alarm Device:** For use with systems using a water motor gong as the alarm device. 304 stainless steel flexible braided hose, with brass pilot valve and galvanized steel trim and nipples, rated to 300 psi (2065 kPa).
 - **Series 75D Water Column Kit:** Ductile iron body with stainless steel internal components and Nitrile seal, rated to 300 psi (2065 kPa), designed to minimize residual water in the riser.
 - **Series 757 Air Maintenance Trim Assembly:** Consisting of a pressure-reducing air regulator, strainer, brass restrictor, spring-loaded in-line check valve, and associated piping components.
 - **Series 7C7 Compressor Package:** Consisting of a riser-mounted compressor, Series 757P air maintenance device and flexible hoses for installation. Available with either a 1/6 HP compressor for an up to 400 gallon system using only a solenoid valve and no Auto-Vent, or a 1/3 HP compressor for an up to 750 gallon system using only a solenoid valve and no Auto-Vent.
 - **Alarm Pressure Switch:** System Sensor Model “EPS”.

K. Victaulic Grooved End Specialties

1. Expansion Joints:

- a. 2”(DN50) through 6”(DN150) Sizes: Packless, gasketed, type with grooved end telescoping body, suitable for axial end movement to 3”. 350 psi (2410 kPa). Victaulic Style 150 Mover®.
- b. 3/4”(DN20) and Larger Sizes: Expansion joint consisting of a series of grooved end nipples joined with flexible-type couplings. Joint movement and expansion capabilities determined by number of couplings / nipples used in the joint. Victaulic Style 155.

2. **Dielectric Waterways:** 1”(DN25) through 8”(DN200) sizes, grooved, plain end, or threaded end, ASTM A-53 carbon steel or ASTM A-536 ductile iron body, zinc electroplated, with LTHS high temperature stabilized polyolefin polymer liner. Victaulic Style 47.
3. **Strainers - Grooved-End**
 - a. T-Type Strainer. 2” (DN50) through 12”(DN300) sizes, 300 PSI (2065 kPa) T-Type Strainer shall consist of ductile iron (ASTM A-536, Grade 65-45-12) or carbon steel (ASTM A-53) body, Type 304 stainless steel frame and mesh removable basket with No. 12 mesh, 2"-3" (DN50-DN75) strainer sizes, or No. 6 mesh, 4"-12" (DN100-DN300) strainer sizes, 57% free open area. Victaulic Style 730.
 - b. T-Type Strainer: 14” (DN350) through 24” (DN600) sizes, 300 PSI (2065 kPa), AGS grooved end “Tee” strainer. Factory fabricated carbon steel body conforming to ASTM A-53, Grade B, carbon steel T-bolt hinged closure/ cap, and type 304 stainless steel frame and mesh basket, (6x6 mesh for 14”(DN350) and 16”(DN400) sizes, and 4x4 mesh for 18”(DN450) through 24”(DN600) sizes). Victaulic Series W730.
 - c. Y-Type Strainer. 2”(DN50) through 12”(DN300) sizes, 300 PSI (2065 kPa) Y-Type Strainer shall consist of ductile iron body, ASTM A-536, Grade 65-45-12, Type 304 stainless steel perforated metal removable baskets with 1/16" (1,6mm) diameter perforations and 41% open area 2"-3" (DN50-DN75) strainer sizes or 1/8" (3,2mm) strainer sizes diameter perforations and 40% open area 4"-12" (DN100-DN300) strainer sizes. Victaulic Style 732.

L. Victaulic Tooling:

1. Tools shall be manufactured and supplied by Victaulic. Use roll sets or cut groovers compatible with the pipe material and wall thickness per Victaulic installation instructions (I-100).
2. Common wedge shaped AGS groove for pipe sizes 14” (DN350) through 24”(DN600) requiring one (1) common AGS roll set per tool, for use with approved Victaulic grooving tools. (VE414MC, VE416 FSD, VE424 MC, or VE436.)

3.01 Execution:

A. Installation:

1. Pipe ends shall be clean and free from indentations, projections and roll marks in the area from pipe end to groove for proper gasket sealing.
2. The gasket style and elastomeric material (grade) shall be verified as suitable for the intended service as specified.
3. Install the Victaulic AGS piping system in accordance with the latest Victaulic installation instructions.
4. AGS products shall not be installed with standard grooved end pipe or components. (Installing AGS products in combination with standard grooved end products could result in joint separation and/or leakage.)
5. Use Victaulic grooving tools with AGS roll sets to groove the pipe. Follow Victaulic guidelines for tool selection and operation.
6. Couplings installation shall be complete when visual metal-to-metal contact is reached.
7. Assembly of HDPE couplings and flange adapters shall be in accordance with latest published edition of the I-900 'Field Installation Handbook' Products for High Density Polyethylene (HDPE) pipe.
8. See the latest copy of Victaulic's Field Assembly and Installation Instruction Pocket Handbook (I-100).

B. Training:

1. A Victaulic factory trained representative (direct employee) shall provide on-site training for contractor's field personnel in the use of grooving tools, application of groove, and product installation.

C. Application:

1. A Victaulic representative shall periodically visit the job site and review installation. Contractor shall remove and replace any improperly installed products.
2. Victaulic grooved mechanical pipe couplings, fittings, valves and other grooved components may be used as an option to welding, threading or flanged methods.
3. All grooved components shall conform to local code approval and/or as listed by ANSI-B-31.1, B-31.3, B-31.9, ASME, UL/ULC, FM, IAPMO or BOCA.
4. Grooved end product manufacturer to be ISO-9001 certified