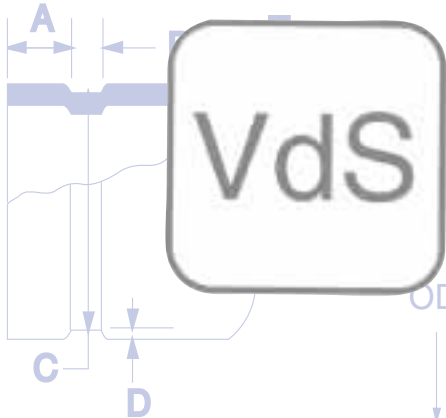
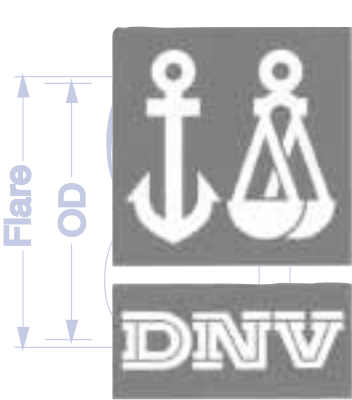


# GRUVLOK®

## Grooved Piping Specification

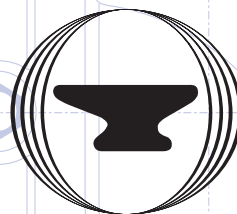
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Certified to  
ANSI/NSF 61



# ISO 9001



# ANVIL®

INTERNATIONAL, INC.

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# Table of Contents

CSI DIVISION SECTIONS AND PARAGRAPH	PAGE
<b>Section Listing (1500 series A–H)</b> .....	2
<b>A. Definition: (ANSI rating, gaskets, approvals, service levels, PSI and Temperature)</b> .....	2
<b>B. Piping System Applications: (Applicable listing of Plbg., HVAC, &amp; FP services)</b> .....	2
<b>C. 15050 Basic Materials and Methods</b> .....	3-5
2.00 Grooved Mechanical Products – General .....	3
2.01 Material Standards – General .....	3
2.01.1 Material Specifications – General .....	3
2.01.2 Gasket Lubricant .....	3
2.02 Steel Piping – General .....	3
2.03 Copper Tubing – General .....	3
2.04 Stainless, Aluminum, Plastic and other Piping Materials – General .....	3
2.05 Grooved Couplings for Steel Pipe Systems or other Approved Piping .....	3
2.06 Grooved Couplings for Copper Tube Systems .....	4
2.07 Couplings for Fire Protection Systems .....	4
2.08 Couplings for Stainless, Aluminum and Plastic Pipe Systems .....	4
3.08 Grooved Flange Adapters .....	4
3.09 Grooved Fittings for Steel Piping Systems .....	4
3.10 Grooved Fittings for Fire Protection Systems .....	4
3.11 Grooved Copper Fittings .....	4
3.11.1 Di-Electric Insulated Pipe Connection .....	4
3.12 Branch Outlets .....	4
3.13 Outlet Couplings.....	4
4.00 Plain End Couplings & Fittings .....	5
4.10 Plain End “Sock-It” Method .....	5
5.00 Gruvlok® Product Gaskets (For Plumbing and HVAC systems) .....	5
5.01 Gruvlok® Product Gaskets (Industrial and other piping systems) .....	5
5.02 Coatings and Linings .....	5
6.00 Track Head Bolts and Hex Nuts .....	5
7.00 Installation Procedure .....	5
7.01 Product Substitutions .....	5
<b>D. 15300 Fire Protection</b> .....	6
2.00 Pipe, Valves and Fittings .....	6
2.01 Grooved Butterfly Valve .....	6
2.02 Check Valves .....	6
<b>E. 15400 Plumbing Systems</b> .....	6
2.00 Pipe, Valves and Fittings .....	6
<b>F. 15500 Piping Specialties</b> .....	6-8
2.00 Grooved Butterfly Valve .....	6
2.01 Grooved Ball Valve .....	7
2.01.1 Grooved Three Way Diverter Valve .....	7
2.01.2 Grooved Bronze Ball Valve .....	7
2.02 Grooved (Non Slam) Check Valve .....	7
2.03 Grooved (Globe Type) Silent Check Valve .....	7
2.03.1 Di-Electric Pipe Connection .....	7
2.04 Grooved Strainers .....	7
2.05 Grooved Suction Diffusers .....	7
2.06 Flexible Connectors .....	8
2.07 Triple Duty Combination Valves .....	8
2.08 Circuit Setters.....	8
2.09 Automatic Air Vents .....	8
<b>G. 15600 HVAC Heating and Cooling:</b> .....	8
2.00 Pipe, Valves and Fittings .....	8
<b>H. Gruvlok® Condensed Specification Format:</b> .....	9
2.00 Pipe, Valves and Fittings .....	9

# CSI Division Sections



[Refer to Note 1 on page 8]

(Definitions and Piping Applications)

**Disclaimer:** \*CSI no longer supports changes and revisions of specifications for Building Service Piping.  
Anvil Revision 17-0600 of Specification Standards 695

- |    |                                  |    |                                |
|----|----------------------------------|----|--------------------------------|
| A. | Definition                       | E. | 15400 Plumbing                 |
| B. | Piping System Applications       | F. | 15500 Piping Specialties       |
| C. | 15050 Basic Material and Methods | G. | 15600 HVAC Heating and Cooling |
| D. | 15300 Fire Protection            | H. | Condensed Specification Format |

## Definition

# A

Gruvlok® Grooved Mechanical Piping Products are designed for permanent or temporary above or below ground installations. Operating temperature range -40° to +230° Fahrenheit with Grade E [EPDM] gasket. Vacuum service from 0" to 29" mercury vacuum with standard gaskets through 6" pipe diameter, 15" Hg vacuum for 8"-12". [Full vacuum service 29.9" with "Flush Gap" gaskets.] Gruvlok® is excellent for areas of high seismic activity. **Gruvlok® is ISO 9001 Certified.** Industry Standards\* include: AIA, UL/ULC listed, FM approved, NSF, ASME, ASTM, ANSI, ANSI-AWWA-C606. Government, Military [Mil. COE, NAVFAC, Coast Guard]. National, State and Local code approvals. APMO, UPC, SBCCI, BOCA, ASHRAE, ASPE and agencies worldwide.

## Piping System Applications

# B

(Applicable Listing of Plbg., HVAC & FP services)

### Plumbing System Piping:

- Domestic Hot/Cold Water
- Hot Water Recirculation
- Roof and Storm Drains
- Sanitary Waste and Vent

### HVAC Heating & Cooling System Piping:

- Hot Water Heating
- Chilled Water
- Condenser Water
- Dual Temperature Water
- Glycol Heating Water
- Brine (Ice Building) Water

### Fire Protection System Piping:

- Fire Sprinklers (Wet & Dry)
- Standpipe (Wet & Dry)
- Service Water Above/Below Ground
- Special Hazards

### Other Services:

- Compressed Air
- Process Service Water
- Elevator and Lubricated Oil Systems
- Deionized Water
- Vacuum Service
- Chemical Service

**Specification Standards\*:** Gruvlok® Specifications are to be used as a grooved piping reference guide by consulting engineers, owners, and contractors. We have attempted to compile current and accurate Gruvlok® and referenced grooved product industry standards. New Gruvlok® products and industry standards may be changed without notice. Always contact Gruvlok® Sales Engineers for "standards" updates. In all situations, standard grooved industry piping practice shall prevail.

## 2.00 Grooved Mechanical Products – General

Gruvlok® couplings, fittings, valves and other grooved components may be used as a proprietary piping method, or listed as an option to welding, threaded or flanged piping methods.

### 2.01 Material Standards – General

All Anvil manufacturing locations are approved to ISO 9001:2000. Grooved piping installation shall meet ANSI B-31.1 - ANSI B-31.9 standards for Horizontal and Vertical pipe support design criteria. Grooved products shall meet National and Local Piping and/or Building Codes. Grooved products shall conform to ASTM, ANSI Standards, Government, Military, NFPA and other applicable Product Piping standards. All Mechanical commercial and industrial piping products shall have a minimum 300 psi working pressure with 3 to 1 or greater safety working pressure with the exception of plain-end fittings, which may have a minimum of 175-psi working pressure. Fire Protection UL/ ULC listed and FM approved products shall confirm to NFPA working pressures.

#### 2.01.1 Material Specifications – General

Couplings and Grooved Flange Adapters shall conform to ASTM A-536 Ductile Grade 65-45-12 or to ASTM A-47 Malleable Grade 32510. Coupling Track Head Bolts shall conform to ASTM A-183 Grade 2. Hex nuts shall conform to ASTM A-563 Grade A. Bolts and Nuts are zinc electroplated. Fittings shall conform to Cast Ductile ASTM A-536 or Cast Malleable ASTM A-47. Forged steel fittings shall conform to ASTM A-234 or A-106 Gr B. Segmental welded fittings shall conform to ASTM A-53. Coatings shall be Standard (Orange) Alkyd-enamel rust inhibiting lead free paint. Hot dipped galvanized fittings shall conform to ASTM A-153. Standard coupling gaskets for building services shall be Grade “E” EPDM conforming to ASTM D-2000 with operating temperature range from -40° F to +230° Fahrenheit. Other gasket materials are available upon request for fluids other than water and air. Consult a Gruvlok® representative regarding intended product usage.

#### 2.01.2 Gasket Lubricant

All Gruvlok® coupling gaskets except DRI-SEAL® must be lubricated with approved lubricant as provided by Gruvlok®. Gruvlok® Xtreme Lubricant™ shall be used for all Gruvlok® Copper systems. Gruvlok® Xtreme Lubricant™ is strongly recommended below -20° F, and above 180° F and systems subject to continuous cycle temperature changes. Standard and other specific Gruvlok® lubricants can be used on DRI-SEAL® Fire Protection gaskets and other applications as recommended by Gruvlok®. Other manufacturers’ gasket lubricant is not recommended and in certain applications - prohibited!

## 2.02 Steel Piping – General

Black steel and/or galvanized pipe conforming to ASTM A-53, Grade A or B. (Fire Protection pipe may be A-135 or A-795) Standard schedule 40 pipe may be roll or cut grooved. Schedule 10 pipe must be roll grooved. Grooving must conform to Gruvlok® standards. (Consult a Gruvlok® representative for X-Heavy or other pipe wall grooving options)

## 2.03 Copper Tubing – General

Copper tube to ASTM B-88. Types K, L, M, and DWV may be used in conjunction with the Gruvlok® Copper roll grooved method.

## 2.04 Stainless, Aluminum, Plastic and other Piping Materials – General

Consult a Gruvlok® representative regarding intended product usage.

## 2.05 Grooved Couplings for Steel Pipe Systems or other Approved Piping

Sizes 1" - 30". Gruvlok® Style 7401 (Rigid) couplings shall be used including 7012 flange adapters. Gruvlok® Style 7001 (Flexible) couplings may be used for vibration attenuation and noise suppression at equipment locations.

**Optional:** Combination rigid, flexible and outlet couplings may be used for complete systems to aid in providing vibration, noise suppression and seismic tremor. Clamp type couplings may be used for branch outlets. Grade “E” EPDM gaskets are standard, but other gasket materials are available. *Flexible or other style couplings designed for axial motion or other movements must be engineered and supported in strict accordance with factory recommendations.* (Refer to Notes 2,3,4, & 5 on page 8)

## 2.06 Grooved Couplings for Copper Tube Systems

Shall be Gruvlok® style 7400 Rigidlite and style 7012 coupling flange adapters. Grade “E” EPDM gasket. Use “Gruvlok® Xtreme Lubricant™” only. Coupling working pressure is 300 psig maximum.

## 2.07 Couplings for Fire Protection Systems

Shall be Gruvlok® UL/ULC listed and/or FM approved. Figure 7000 (Flexible) and 7400 (Rigid) are standard. Grade “E” EPDM Type A, “C” Style Gaskets (DRI-SEAL®). Other approved figure numbers as listed in current Gruvlok® catalogs.

## 2.08 Couplings for Stainless, Aluminum and Plastic Pipe Systems

Consult a Gruvlok® representative regarding intended product usage.

## 3.08 Grooved Flange Adapters

Shall be Gruvlok® Style 7012. Sizes 2" - 24". Transition Flange Adapter from flange to groove. Conforms to ANSI class 125 or 150 lb. bolt pattern. Sizes 2" - 20" 300 psig. Sizes 24" 250 psig. Style 7013 2" - 12" available for ANSI class 250/or 300 lb. bolt pattern. 750 psig. Flanges are designed with internal anti-rotation “tang” designated as a rigid connection 2" - 12". Series 7012 Flange Adapters require sealing rings when used with certain flanged products. (Refer to Note 5 on page 8) (**Option:** Fig. 7083, 7084 & 7085 Flange x nipple adapter acceptable.)

## 3.09 Grooved Fittings for Steel Piping Systems

Shall be Gruvlok® cast ductile, malleable, forged steel, and/or segmentally welded steel fittings. Sizes 1" - 30" diameter. Cast ductile conforms to ASTM A-536 or ASTM A-47. Forged steel conforms to ASTM A-234. Segmentally welded conforms to ASTM A-53. Fittings shall be coated with an Alkyd-enamel non-toxic paint. Zinc electroplated fittings conform to ASTM B-633. Hot dip galvanized fittings conform to ASTM A-153. Standard Fittings are schedule 40 or standard wall. Other fittings are schedule 80 or lightwall as specified.

## 3.10 Grooved Fittings for Fire Protection Piping Systems

The Gruvlok® Fire-Rite® short pattern fittings consist of 90 degree elbows and tees in the 2" to 8" size range. Cast ductile conforms to ASTM A-536 Ductile Iron to Grade 65-45-12. Fittings are painted to industry specification and are available galvanized. Fire-Rite® fittings are UL/ULC listed and FM approved. Other approved fire protection Gruvlok® fittings are available.

## 3.11 Grooved Copper Fittings

Shall be Gruvlok® Wrot Copper fittings per ASTM B-75 and ANSI B-16.22, alloy C12200. Wrot Copper fittings size 2" - 8" diameter fittings are schedule 10 or standard wall 304 or 316 stainless steel. Copper fittings are 99.9% lead free. Intended for usage with Gruvlok® series 7400 Rigidlite couplings, and series 7012 flanged adapters. Couplings and Wrot Copper Fittings are NSF, Plumbing Code approved and UL/ULC listed.

### 3.11.1 Di-Electric Insulated Pipe Connections

Shall be *Di-LOK*® Figure 7088 or 7089 grooved x grooved or grooved x thread insulating nipples. Inhibits the formation of a galvanic cell between dissimilar metals. *Housing:* Steel Tube to ASTM A513. *Liner:* Polypropylene to ASTM D4140. 300 psig. Operating temperature -40°F to +230°F. Size range is ¾" - 6" diameter.

## 3.12 Branch Outlets

Shall be Gruvlok® Clamp T Styles 7045 and 7046, and Clamp T Cross Figure 7047, 7048 and 7049 with grooved or threaded outlets. Sizes 2" - 8". Branch outlets from ½" - 3" diameter. Designated as a bolted-on positive pipe engagement branch outlet. Working pressure to 500 psi.

## 3.13 Outlet Couplings

Shall be Gruvlok® Figure 7042 with grooved or threaded outlets. Run sizes 1½" - 6". Branch outlets from ½" - 2" diameter. Working pressure to 500 psig.

#### 4.00 Plain End Couplings & Fittings

Shall be Gruvlok® Roughneck coupling Style 7005 and plain-end fittings to match. Size range is 2" - 16" diameter. Materials conform to ASTM A-536 and A-47. Fittings are cast or forged steel. Intended for working pressures 300 - 750 psig with bolts fully torqued to factory recommend torque requirement on plain-end or beveled standard wall steel pipe and Gruvlok® Plain-End fittings. Fittings match coupling working pressure. Lower pressures on lightwall pipe. (Refer to Note 6 on page 8)

#### 4.10 Plain End "Sock-It" Method

Shall be Gruvlok® Sock-it fitting series 7100 through 7109. Size range is 1" - 2½" diameter. Material conforms to ASTM A-126 Class A Cast Iron. Working pressures from 175-300 psi UL/ULC listed and FM approved. (Refer to Note 6 on page 8)

#### 5.00 Gruvlok® Product Gaskets – (Plumbing & HVAC systems)

Shall be Grade "E" EPDM pressure responsive design for all water and non-oily air service. EPDM gaskets are color coded green. Material conformance to grooved industrial standards ASTM D-2000, designation 2CA615A25B24F17Z. Temperature operating range is -40° to +230° Fahrenheit. Gruvlok® Non-Toxic lubricant must be used to insure non-pinch-ing of gaskets during product installation. "Gruvlok® Xtreme Lubricant™" must be used for all copper system installations, installations below -20°F, installations above 180°F and installations that are subject to temperature cycles. Refer to Section 2.01.2 Gasket Lubricant.

#### 5.01 Gruvlok® Product Gaskets – (Industrial & other piping systems)

Gaskets with different media products may require industrial grade gaskets. Nitrile, fluoroelastomer, silicone and specific configuration gaskets are available for special performance requirements.

#### 5.02 Coatings and Linings

Standard Gruvlok® products are furnished with alkyd enamel, rust inhibiting non-toxic paint. Galvanized material conforms to ASTM A-153. Bolts and nuts are zinc electroplated to ASTM A-164. (Epoxy; Cement linings and other coatings available.)

#### 6.00 Track Head Bolts and Hex Nuts

Couplings shall be furnished with heat treated, oval neck track head bolts conforming to ASTM A-183 Grade 2. Bolts meet minimum tensile strength of 110,000 psi. Hex nuts are carbon steel conforming to ASTM A1-563 Grade A. Bolts and nuts are zinc electroplated. (Stainless Steel or other alloy bolts and nuts available.)

#### 7.00 Installation Procedure

Gruvlok® products must be installed in strict accordance with specifications and instructions as published in current Gruvlok® catalog data. Pipe ends must be clean and free from indentations, burrs, rust, or damage. Field grooving or pipe cutting of galvanized pipe may require repair of possible damaged galvanized pipe ends. Two coats of spray-on "liquid-galvanize" are recommended. Gruvlok® formulated gasket lubricant must be used to assure proper coupling gasket seating, and conformance with gasket service usage. Refer to Section 2.01.2 Gasket Lubricant.

#### 7.01 Product Substitutions

Requests for other Grooved manufacturer product approvals shall be approved subject to competitive manufacturer Certified to ISO 9001:2000. All substitutions shall be subject to a 10-day pre-bid CSI form "Request for Substitution" only.

# 15300 Fire Protection

D

## 2.00 Pipe, Valves, and Fittings

Gruvlok® Grooved products for steel and copper Fire Protection systems are acceptable as defined in Section “B” - *Piping System Applications, Section 15050 Basic Materials and Methods and Section 15500 Piping Specialties*. All products shall be UL/ULC listed and FM approved. Materials must be installed in accordance with current NFPA Standards, local Rating Bureau and/or local Fire Marshall guidelines. Grooved products intended for above or below ground fire protection systems. (Consult a Gruvlok® representative regarding special hazard systems).

### 2.01 Grooved Butterfly Valve

Shall be Gruvlok® Figure AE-7722-3A, 2 to 10 inches: 300 PSI rated UL/ULC listed and FM approved grooved-end with two (2) switches; one is a supervisory switch and the other is an auxiliary switch. Tamper resistant screws are used to attach the cover of the actuator.

### 2.02 Check Valves

Shall be Gruvlok® Figure 78FP, 2½ - 8 inches: 300 PSI rated, UL/ULC listed and FM approved grooved-end.

# 15400 Plumbing

E

## 2.00 Pipe, Valves and Fittings

Gruvlok® Grooved products for steel and copper plumbing systems are acceptable as defined in *Section “B” - Piping Systems Applications, Section 15050 Basic Materials and Methods and Section 15500 Piping Specialties*. Galvanized fittings to be used with galvanized pipe. Schedule 10 Type 304 or 316 grooved stainless steel pipe and grooved stainless steel fittings may be used in conjunction with copper systems 8" diameter and above. Couplings shall not be galvanized unless system is exposed to a corrosive environment. Copper fittings must be 99.9% lead free.

# 15500 Piping Specialties

F

## 2.00 Grooved Butterfly Valve

Shall be Gruvlok® Series 7700 and Series 8000GR grooved butterfly valves. Service usage for Balancing and On/Off service.

**Series 7700: Butterfly Valve** – Sizes 2" - 12". Listed in accordance with MSS SP-67. Bubble tight at 300 psig. **Body** - Ductile Iron, available with standard Nylon body coating or Epoxy body coated. **Disc** - Ductile Iron with EPDM encapsulation. Operating temperature -40° to +230°F. (Optional - Buna N Disc encapsulation) Operating temperature up to +180°F and Grade O Fluoroelastomer. Operating temperature up to +300°F. **Trim** - 416 s/s. Bronze upper and lower shaft bearings, conforming to ASTM B438, Grade 1 - Type 1 for sizes 8" to 12", only. Low Torque. Rated for “Dead-end” service.

**Series 8000GR: Butterfly Valve** – Size range 14" - 24". Bubble tight to 200-psig. **Body** - Cast Iron to ASTM A-126 CL.B. **Disc** - Nickel-Plated Ductile, Aluminum Bronze or Stainless Steel. **Liner** - standard EPDM or Buna N. Operating temperature same as 7700 series. Bearings - upper and lower bearings Teflon reinforced. **Trim** - 316 and 416 s/s. Low Torque. Rated for “Dead-end” service.

**BFV Operators/Handles** – Series 7700 and 8000GR available in 2 position, 10 position latch lock, Infinite position with memory stop for sizes 2" through 8", Double “D” with gear operators, chain wheel, and pneumatic or electric actuated for sizes 2" through 12".

## 2.01 Grooved Ball Valve

Shall be Gruvlok® Series 7500. Sizes 2" - 6". Standard port design rated for 740 psig cwp. Meets MSS SP-72 body and 100% Hydro pressure tested. The Series 7500 is compliant with NACE MR01-75 when stainless steel trim is specified. **Bi-directional** flow. Low torque operation. **Body and End Caps** - Ductile Iron ASTM 395 and Stainless Steel ASTM A351 CF8M. **Ball and Stem** - chrome plated carbon steel and 316 Stainless Steel. **RPTFE Seats and fluoro-carbon stem and body seals.** Two position handle standard.

### 2.01.1 Grooved Three Way Diverter Valve

Shall be Gruvlok® Series FS7500 Stainless Steel body or FC7500 Carbon Steel Body 3-way Diverter Valve. Full Port design rated for 600 psig cwp. Meets MSS SP-72 body and 100% Hydrostatic pressure tested.

### 2.01.2 Grooved Bronze Ball Valve

Shall be Gruvlok® Series 7500B. Sizes 1½" - 4" are rated 300 psi WOG. Full port sizes 1½" - 3" and standard port in the 4" version. Cast bronze body with stainless 316 ball and PTFE Seats and Seals. Valve Shall comply with extraction requirements of NSF/ANSI 6.

## 2.02 Grooved (Non-Slam) Check Valve

Shall be Gruvlok® Series 7800. Sizes 2" - 12". 300-psig. **Body** - Ductile. Exterior body coated with rust inhibiting paint. (Optional body coat is Nickel Zn Electroplated) **Clapper** - sizes 2" - 5" – Type 304 or 302 s/s to ASTM A-167. **Clapper** - sizes 6" - 12". Ductile Iron. **Clapper facing** - EPDM or Buna-N. Seat ring, spring, and hinge pin - Type 302 or 304 s/s. Bronze hinge pin bushings. Iron hinge pin plugs and drain. Service from 300 psi to a low 1 psi (28" water head.) Replaceable clapper. Horizontal or vertical service usage. MSS SP-71 & SP-80. 100% Shell Test and Hydro Seat test pressure 100%.

## 2.03 Grooved (Globe Type) Silent Check Valve

Shall be Gruvlok® Series 400G. Sizes 2" - 10". Rated for 200 psi maximum working pressure. Operating temperature to 200°F. **Body** - Ductile. Bronze Seat, Plug and Bushing. Durlon Gasket. **Trim** - Metal on Metal. **Optional Trim** - Bronze with Buna Seat, s/s and s/s with Buna Seat. Center-guided plug. (Positive noiseless opening and closing) Plug activated at ¼ to ½ psi.

### 2.03.1 Di-Electric Insulated Pipe Connections

Shall be *Di-Lok*® Figure 7088 or 7089 grooved x grooved or grooved x thread insulating nipples. Inhibits the formation of a galvanic cell between dissimilar metals. **Housing** - Steel Tube to ASTM A513. **Liner** - Polypropylene to ASTM D4140. 300 psig. Operating temperature -40°F to +230°F.

## 2.04 Grooved Strainers

Shall be Gruvlok® Series 7260-T ("Tee" Type) or 758-G or 768-GF ("Wye" Type) strainers.

**Tee Strainer Series 7260-T** – Sizes 2" - 24". Strainer in-line, twin-fold basket provides 100% of the projected pipe area for open flow. **Body** - Ductile 2" - 12". Malleable Iron ASTM A47 or Ductile Iron ASTM A536, Sizes 14" and up: Carbon Steel Pipe ASTM A53. **Basket** - Stainless steel type 304-basket standard #12 mesh (1/16" perf.) through 3". Sizes 4" up standard with #6 mesh (1/8" perf.) Monel or other alloy baskets, magnets, and various mesh sizes optional. Horizontal or vertical service usage.

**Wye Strainers 785-G and 768-GF** – Size range 2" - 12". **Body** - Ductile Iron. 300 psig. **Baskets** - Same as Tee Series.

## 2.05 Grooved Suction Diffusers

Shall be Gruvlok® Series 7250. Sizes 2½" - 16". **Body** - Ductile or Malleable Iron body for sizes 2½" x 2½" through 10" x 8". **Body** - Carbon steel to ASTM A-53 body for sizes 10" x 10" through 16" x 14". 300 psig. **Strainer Basket** - Stainless steel (3/16" perf.) with start-up #16 mesh pre-filter removable screen. Blow-down and gage plug standard.

# 15500 Piping Specialties

F

## 2.06 Flexible Connectors

Sizes 2" - 12". Stainless steel tube and braid design. Carbon steel grooved, threaded and flanged end. Rated working pressure 150 - 300 psi.

## 2.07 Triple Duty Combination Valves

Shall be Gruvlok® "Tri-Service" (FTV-A/FTV-S) service valves. Sizes 2 1/2" - 12". **Services** - Combination shut-off, non-slam silent check and full throttling. Throttling flow indicator is standard. Horizontal or vertical service usage. Flow measurement ports on either side of valve body. Fixed or portable meters available for differential pressure measurement.

## 2.08 Calibrated Circuit (Setter) Balancing Valves

Shall be GBV-Gruvlok® "Circuit Balancing" Valve. Sizes 1/2" - 12". Multi-turn adjustment. Positive shut-off. Tamper-proof memory stop. Pressure differential read-out ports. **Differential Pressure Meter** - Provide CBV differential pressure meter/transducer as required. Direct Flow readout. Proportional balancing.

## 2.09 Automatic Air Vents

Gruvlok® Models GAV-15 rated 150 psig and GAV-30 rated 300 psig.

# 15600 HVAC Heating and Cooling

G

## 2.00 Pipe, Valves and Fittings

Gruvlok® Grooved products for steel and copper systems are acceptable for HVAC Heating and Cooling as defined in *Section "B" - Piping System Applications, Section 15050 Basic Material and Methods and 15500 Piping Specialties*. Not recommended for steam service. (Refer to Specific Mechanical Engineers' Master Guidespec design criteria for applicable piping system usage.)

**Note 1:** The Mechanical Engineer "Master Guide-Spec" may differ from the following CSI suggested format. Changes may be edited to merge with the A/E specific text layout. Windows 98 [word] is currently available on floppy disc and shortly will be available in CD format. Gruvlok® sales engineers are available to merge Gruvlok® specifications with client specifications.

**Note 2:** The above and following text may list one or more product or method options. Design evaluation should consider systems, media, pressures, temperature and other criteria. Gruvlok® Sales Engineers are available to assist with industry grooved terminology and design objectives.

**Note 3:** Gruvlok® coupling housings conform to Ductile ASTM A-536 (Grade 65-45-12) or Malleable ASTM A-47 Grade 32510.

**Note 4:** Rigid couplings are designed with a Tongue and Groove housing for precise coupling alignment and engagement. "Tines" are installed in the housing key section to provide a rigid-like pipe connection. Induced angular coupling and gasket stress is eliminated with this exclusive Gruvlok® design feature. Large and small diameter Coupling installation can be easily installed with complete pipe integrity.

**Note 5:** Grooved Flange "Sealing-rings" may be required for proper installation of grooved flange adapter's style 7012. Companion or mating flanges must have a flat hard surface and must be free from gouges, undulations or deformities. Flange gasket "sealing rings" must be used if mating surfaces are not uniform, as noted.

**Note 6:** Plain-end coupling and fitting installation must comply with specific torque and installation requirements. (Consult current Gruvlok® product installation catalog data.)

## 2.00 Pipe, Valves and Fittings

**Appendage Section:** Gruvlok® grooved couplings, fittings, valves, and related grooved components may be used as an option to welding, threading, or flanging in steel and copper piping methods. Standard wall pipe may be rolled or cut grooved. Light wall pipe may be roll grooved only. Pressures, temperatures, and installation procedure shall be as recommended in Gruvlok® current product literature. Rigid couplings Figure 7401 shall be used for all IPS steel systems. Flexible couplings style 7001 may be used to assist in vibration and noise reduction at equipment locations. Rigid couplings style 7400 shall be used for copper tube systems. All building service gaskets shall be EPDM Grade “E” for temperatures from -40°F to +230°F.

**Gasket Lubricant:** All Gruvlok® coupling gaskets except for DRI-SEAL® must be lubricated with approved lubricant as provided by Gruvlok®. “Gruvlok® Xtreme Lubricant™” shall be used for all Gruvlok® Copper systems, temperatures below -20°F, temperatures above +180°F and systems subject to continuous temperature cycle changes. Standard and other specific Gruvlok® lubricants can be used on DRI-SEAL® Fire Protection gaskets and other applications as recommended by Gruvlok®. Other manufacturer’s gasket lubricant is strongly not recommended and in certain applications prohibited!

**Product Substitutions:** Requests for other Grooved manufacturer product approvals shall be approved subject to competitive manufacturer Certified to ISO 9002. All substitutions shall be subject to a 10-day pre-bid CSI form “Request for Substitution” only.

**\*Condensed Specification Notice:** The above format will suffice for coverage of a suggested grooved specification in condensed form. Please refer to Gruvlok® Specification Standards on page 2 for specific information.





**ANVIL**<sup>®</sup>  
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Bob Arison *Regional Vice President*  
Ernie Chuter *Director, Marketing*  
Laura DiLiegro *Director, Human Resources*  
Bob Kim *Vice President, Manufacturing*  
John Martin *Vice President, National Accounts*  
Ron Pound *Director, National Operations*  
William Strouss *Vice President, Finance*  
Dean Taylor *Regional Vice President*

#### ANVIL MANUFACTURED PRODUCTS

##### Columbia, PA Foundry

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##### Henderson, TN Plant

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Rich Brooks — Plant Manager

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Brent Widdifield — Plant Manager

##### Longview, TX Plant

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Van O'Keefe — Plant Manager

##### J.B. Smith

6618 Navigation  
Houston, TX 77011  
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Ray Mullenix — Plant Manager

##### North Kingstown, RI Plant

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#### ENGINEERED PIPE SUPPORTS

- Structural Fabrication
  - Field Services
  - Non-destructive Testing
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