

Building connections that last™



# Gruvlok®

## Mechanical Piping



# BUILDING CONNECTIONS THAT LAST



For over 160 years, Anvil has worked diligently to build a strong, vibrant tradition of making connections — pipe to pipe and people to people.

We pride ourselves in providing the finest-quality pipe products and services with integrity and dedication to superior customer service at all levels.



We provide expertise and product solutions for a wide range of applications, from plumbing, mechanical, HVAC, industrial and fire protection to mining, oil and gas. Our comprehensive line of products includes: grooved pipe couplings, grooved and plain-end fittings, valves, cast and malleable iron fittings, forged steel fittings, steel pipe nipples and couplings, pipe hangers and supports, channel and strut fittings, mining and oil field fittings, along with much more.



As an additional benefit to our customers, Anvil offers a complete and comprehensive Design Services Analysis for mechanical equipment rooms, to help you determine the most effective and cost-efficient piping solutions.

At Anvil, we believe that responsive and accessible customer support is what makes the difference between simply delivering products — and delivering solutions.



# Mechanical Piping Products



Durable. Flexible. Safe. Easy to install. Easy to maintain. That's Anvil's Gruvlok® product line. Gruvlok gives your building the toughest, simplest, and most adaptable piping system possible.

Through a combination of roll-grooving and two-bolt coupling design, this innovative product line joins piping and other components into a single rugged yet flexible system. This makes Gruvlok products ideal for a variety of applications — particularly in tight spaces such as subfloors, UFAD systems, crawlspaces, trenches, and tunnels.

Gruvlok products eliminate the need for traditional expansion joints, allowing your system to expand and contract with your needs. With a Gruvlok union at every joint, you have the freedom to make on-site tweaks without altering the overall design of your system.

Maintenance is as simple and flexible as installation. Every component in a Gruvlok system is easily replaceable and easily accessed, so that you can make repairs without resorting to a total shutdown.

## 3-D CAD Library



Anvil's Gruvlok product line is now available in 3-D CAD Models, as well as the standard 2-D drawings, at [www.anvilintl.com](http://www.anvilintl.com). Anvil also offers downloadable Master Format 3 Part Specifications.

## Building Green with Anvil

Anvil manufactures an extensive line of products composed of 90% recycled materials, visit [www.anvilintl.com](http://www.anvilintl.com) for current certificates related to recycled material. Anvil is a member of the United States Green Building Council.

### Products include:

- Gruvlok® Couplings, Fittings, and Flanges
- Anvil® Cast and Malleable Threaded Fittings
- Anvil Cast Iron Flanged Fittings
- Anvil Pipe Hangers and Supports
- Merit® Tee-Lets and Drop Nipples
- Beck Welded Pipe Nipples

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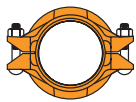
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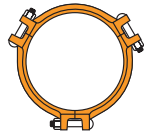
## COUPLINGS

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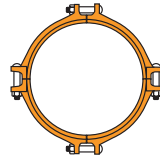
Rigidlok® Coupling



Size Range: 1 1/2" - 14"



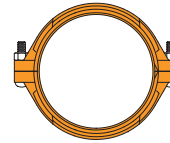
Size Range: 16"



Size Range: 18" - 24"

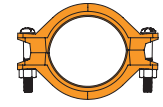
**Fig. 7401-2** Page 22

Rigidlok® Coupling  
Size Range: 14" - 24"



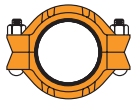
**Fig. 74** Pages 23-24

SlideLOK® Ready for Installation  
Coupling  
Size Range: 2" - 8"

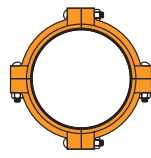


**Fig. 7001** Pages 25-26

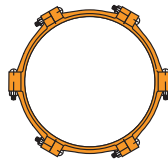
Flexible Coupling



Size Range: 1" - 14"



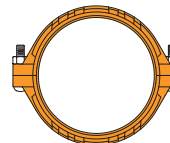
Size Range: 16" - 24"



Size Range: 28" - 30 I.D."

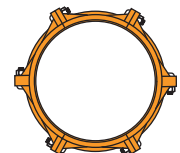
**Fig. 7001-2** Page 27

Flexible Coupling  
Size Range: 14" - 24"



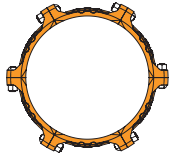
**Fig. 7011** Pages 28-29

Standard Coupling  
Size 30 O.D."



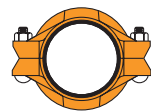
**Fig. 7022** Pages 30-33

Weld Ring Gruv-Ring Coupling  
Size Range: 30" - 60"



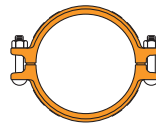
**Fig. 7000** Pages 34-35

Lightweight Flexible Coupling  
Size Range: 1" - 8"



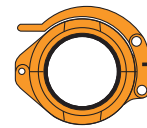
**Fig. 7400** Pages 36-37

300 PSI Rigidlite® Coupling  
Size Range: 1" - 8"



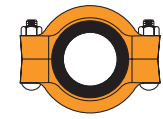
**Fig. 7003** Pages 38-39

Hingelok® Coupling  
Size Range: 1" - 4" and 5" - 8"



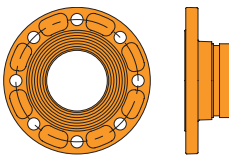
**Fig. 7010** Pages 40-41

Reducing Coupling  
Size Range: 2" x 1 1/2" thru 8"x 6"



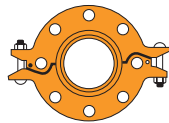
**Fig. 7788** Page 42

Gruvlok Flange Adapter  
Size Range: 2" - 12"

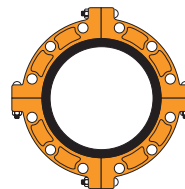


**Fig. 7012** Pages 43-45

Gruvlok Flanges



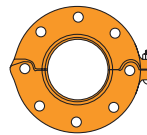
Size Range: 2" - 12"



Size Range: 14" - 24"

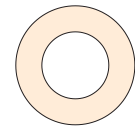
**Fig. 7013** Pages 46-48

Gruvlok Flanges (#300 Flange)  
Size Range: 2" - 12"



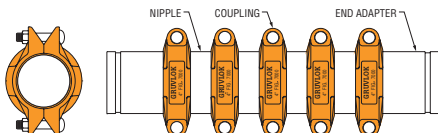
**Flanged Seal Rings** Page 49

Flange Adapter Inserts for use  
with Fig. 7012/7013 Flanges  
Size Range: 2" - 24"



**Fig. 7240** Pages 50-51

Expansion Joint  
Size Range: 2" - 12"



## BRANCH OUTLETS

**Fig. 7042** Pages 52-53

Outlet Coupling  
Size Range: 1 1/2" - 6"

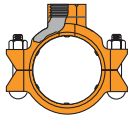


Fig. 7042F  
Female IPS Outlet

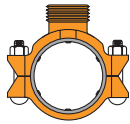


Fig. 7042M  
Male IPS Outlet

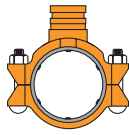
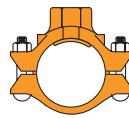


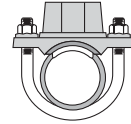
Fig. 7042G  
Grooved Outlet



Clamp-T, FPT Branch  
Size Range: 3" x 1 1/4" thru  
8" x 4"

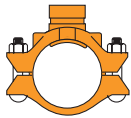


(U-Bolt)  
Size Range: 2 1/2" x 1/2" thru  
4" x 1"

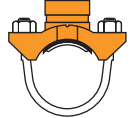


Branch Outlet  
Size Range: 1 1/4" x 1/2" thru  
2 1/2" x 1"

**Fig. 7046** Pages 57-58



Clamp-T, Grooved Branch  
Size Range: 3" x 1 1/4" thru  
8" x 4"



(U-Bolt)  
Size Range: 2 1/2" x 1 1/4" thru  
2 1/2" x 1 1/2"

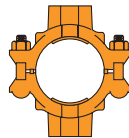


Fig. 7047  
Thread x Thread

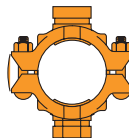


Fig. 7048  
Groove x Groove

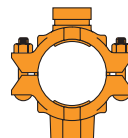


Fig. 7049  
Groove x Thread

**Fig. 7047, Fig. 7048 & Fig. 7049** Page 59

Clamp-T Cross  
Size Range: 2" x 1/2" thru 8" x 4"

## GROOVED FITTINGS

**Fig. 7050** Page 62

90° Elbow  
Size Range: 1" - 24"



**Fig. 7051** Page 62

45° Elbow  
Size Range: 1" - 24"



**Fig. 7052** Page 62

22 1/2° Elbow  
Size Range: 1" - 24"



**Fig. 7053** Page 63

11 1/4° Elbow  
Size Range: 1" - 24"



**Fig. 7050LR** Page 63

90° Long Radius Elbow  
Size Range: 1" - 24"



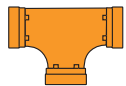
**Fig. 7051LR** Page 63

45° Long Radius Elbow  
Size Range: 1" - 24"



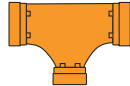
**Fig. 7060** Page 64

Tee  
Size Range: 1" - 24"



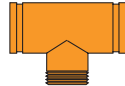
**Fig. 7061** Page 64

Reducing Tee Standard  
Size Range: 1 1/4" x 1 1/4" x 1"  
thru 24" x 24" x 20"



**Fig. 7063** Page 65

Tee with Threaded Branch  
Size Range: 1" - 12"



**Fig. 7064** Page 65

Reducing Tee with  
Threaded Branch  
Size Range: 2" x 2" x 3/4"  
thru 24" x 24" x 12"



**Fig. 7073 & Fig. 7097** Page 66

Eccentric Reducers  
Size Range: 1 1/4" x 1" thru 24" x 20"



Fig. 7073  
Groove x Groove



Fig. 7097  
Groove x Thread

**Fig. 7076** Page 66

Gr x Thd Concentric Reducer  
Size Range: 1 1/2" x 1" thru  
6" x 4"



**Fig. 7077, 7078 & 7079** Page 67

Swaged Nipples  
Size Range: 2" x 1" thru 6" x 5"



Fig. 7077  
Groove x Groove



Fig. 7078  
Groove x Thread



Fig. 7079  
Groove x Bevel

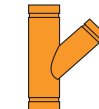
**Fig. 7072** Page 67

Gr x Gr Concentric Reducer  
Size Range: 1 1/4" x 1" thru  
24" x 20"



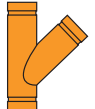
**Fig. 7070** Page 68

45° Reducing Lateral  
Size Range: 3" x 3" x 2"  
thru 24" x 24" x 20"



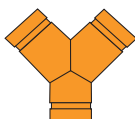
**Fig. 7069** Page 68

45° Lateral  
Size Range: 1" - 24"



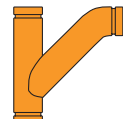
**Fig. 7071** Page 69

True Wye  
Size Range: 1" - 24"



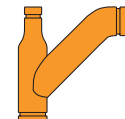
**Fig. 7066** Page 69

Tee Wye  
Size Range: 2" x 2" x 2"  
thru 12" x 12" x 12"



**Fig. 7067** Page 69

Reducing Tee Wye  
Size Range: 4" x 3" x 3"  
thru 8" x 6" x 8"



**Fig. 7087** Page 70

Female Thread Adapter  
Size Range: 1" - 4"



**Fig. 7055** Page 70

90° Adapter Elbow  
Size Range: 1" - 6"



**Fig. 7056** Page 70

45° Adapter Elbow  
Size Range: 1" - 6"





# GROOVED FITTINGS

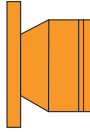
**Fig. 7050RF** Page 70

Reducing Base Support Elbow  
Groove x 150# Flange (GxF)  
Size Range: 5" x 4" thru 12" x 10"



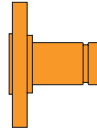
**Fig. 7072GF** Page 71

Gr x Flange Concentric Reducer  
Size Range: 3" x 2" thru 8" x 6"



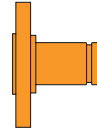
**Fig. 7084** Page 71

Groove x Class 150 Flange Nipple  
Size Range: 1" - 24"



**Fig. 7085** Page 71

Groove x Class 300 Flange Nipple  
Size Range: 1" - 24"



**Fig. 7074** Page 72

Cap  
Size Range: 1" - 24"



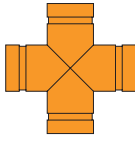
**Fig. 7075** Page 72

Bull Plug  
Size Range: 2" - 6"



**Fig. 7068** Page 72

Cross  
Size Range: 1" - 24"



**Fig. 7086** Page 73

Groove x Hose Nipple  
Size Range: 1" - 12"



**Fig. 7065** Page 74

Standpipe Tee (Gr x Gr x FPT)  
Size Range: 4" x 4" x 2 1/2"  
thru 6" x 6" x 2 1/2"



**Fig. 7062** Page 74

Bullhead Tee Specialty Tees  
(Gr x Gr x FPT)  
Size Range: 5" x 5" x 8" thru  
6" x 6" x 8"



**Fig. 7050DR** Page 74

90° Drain Elbow  
Size Range: 1 1/4" - 12"



**Fig. 7080,**  
**Fig. 7081 &**  
**Fig. 7082** Page 73

Nipples  
Size Range: 3/4" - 12"



**Fig. 7080**  
Groove x Groove



**Fig. 7081**  
Groove x MPT



**Fig. 7082**  
Groove x Bevel

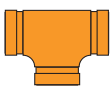
**Fig. 7450** Page 75

90° Short Pattern Elbow  
Size Range: 2" - 8"



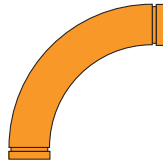
**Fig. 7460** Page 75

Short Pattern Tee  
Size Range: 2" - 8"



**Fig. 7050-3D** Page 76

Long Radius Elbows  
Size Range: 2" - 24"



**Fig. 7050-3D**  
90° Elbow



**Fig. 7057-3D**  
60° Elbow



**Fig. 7051-3D**  
45° Elbow



**Fig. 7058-3D**  
30° Elbow



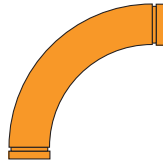
**Fig. 7052-3D**  
22 1/2° Elbow



**Fig. 7053-3D**  
11 1/4° Elbow

**Fig. 7050-5D** Page 77

Long Radius Elbows  
Size Range: 2" - 24"



**Fig. 7050-5D**  
90° Elbow



**Fig. 7057-5D**  
60° Elbow



**Fig. 7051-5D**  
45° Elbow



**Fig. 7058-5D**  
30° Elbow



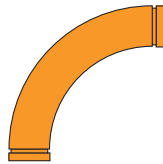
**Fig. 7052-5D**  
22 1/2° Elbow



**Fig. 7053-5D**  
11 1/4° Elbow

**Fig. 7050-6D** Page 78

Long Radius Elbows  
Size Range: 2" - 24"



**Fig. 7050-6D**  
90° Elbow



**Fig. 7057-6D**  
60° Elbow



**Fig. 7051-6D**  
45° Elbow



**Fig. 7058-6D**  
30° Elbow



**Fig. 7052-6D**  
22 1/2° Elbow

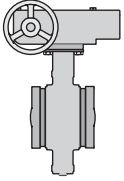


**Fig. 7053-6D**  
11 1/4° Elbow

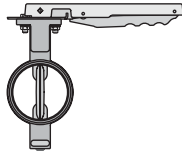
## VALVES & ACCESSORIES

### Series 7700 Pages 79-83

Butterfly Valve  
Size Range: 2" - 12"



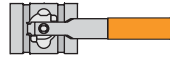
AN-7722-3  
Series 7700 Butterfly Valve  
with Gear Operator



AN-7721-3  
Series 7700 Butterfly Valve  
with 10 Position Lever Lock

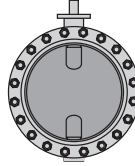
### Series 7600 Page 84

Butterfly Valve  
Size Range: 2" - 6"



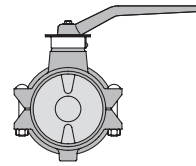
### Series 8000GR

Pages 85-87  
Butterfly Valve  
Size Range: 14" - 24"



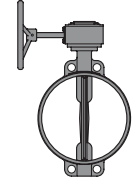
### Fig. 70G Pages 88-89

Butterfly Valve  
Size Range: 2" - 6"



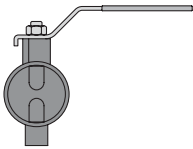
### Model B333

Pages 90-91  
Butterfly Valve  
Size Range: 14" - 24"



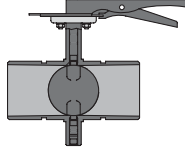
### Model B8101 Page 92

Low Profile Butterfly Valve  
Size Range: 2" - 6"



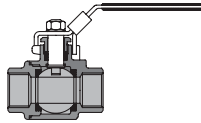
### Model B8200L

Page 93  
PVC Butterfly Valve  
Size Range: 2" - 8"



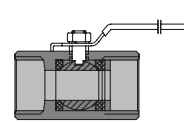
### Fig. 2000BV-FP

Page 94  
Full Port Ball Valve  
Size Range: 1/4" - 2"



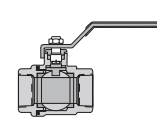
### Fig. 2000BV-RP

Page 95  
Reduced Port Ball Valve  
Size Range: 1/4" - 2"



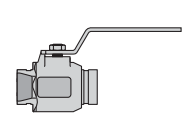
### Series 161N LF & 1615 LF

Page 96  
Low Lead Brass Ball Valve  
161N LF - Size Range: 1/4" - 4"  
1615 LF - Size Range: 1/2" - 3"



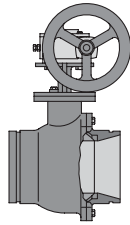
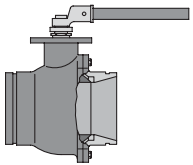
### Series 7500

Page 97-98  
Ball Valve  
Size Range: 2" - 6"



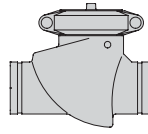
### Model BV835 Pages 99-100

Grooved End Ball Valve with Lever or Gear Operator  
Size Range: 2" - 6"



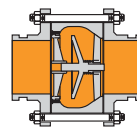
### Fig. 90G Page 101-102

Check Valve  
Size Range: 2" - 4"



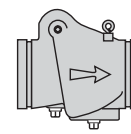
### Fig. 400G Page 103

Grooved-End  
Silent Check Valve  
Size Range: 2" - 10"



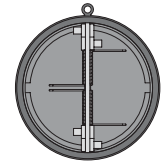
### Series 7800

Page 104-106  
Check Valve for use in  
Grooved-End Piping Systems  
Size Range: 2" - 12"



### Fig. CV890

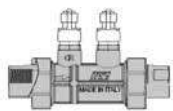
Pages 107-108  
Dual Disc Check Valve  
Size Range: 14" - 24"



### ABV-9900V Series

Pages 109-111

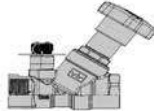
Straight DZR Brass  
Automatic Balancing Valve  
Solder (ABV-S-9909)  
Threaded (ABV-T-9907)  
Size Range: 1/2" - 2 1/2"



### MBV-9510 Series

Pages 112-115

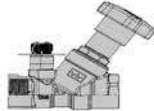
Fixed Orifice Double  
Regulating Valve  
Solder (MBV-S-9519)  
Threaded (MBV-T-9517)  
Size Range: 1/2" - 2"



### MBV-9510AB Series

Pages 116-119

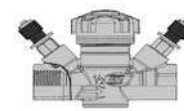
Fixed Orifice Double  
Regulating Low Lead Valve  
Solder (MBV-S-9519AB)  
Threaded (MBV-T-9517AB)  
Size Range: 1/2" - 2"



### CSV-9520AB Series

Pages 120-124

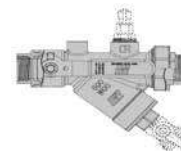
DZR Brass On/Off Terminal  
Low Lead Balancing Valve  
Solder (CSV-S-9529AB)  
Threaded (CSV-T-9527AB)  
Size Range: 1/2" - 1"



### Fig. Anvil 92ST

Pages 126-127

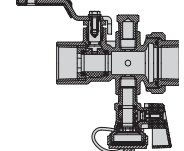
DZR Brass Ball Valve  
with Strainer  
Size Range: 1/2" - 2"



### Fig. Anvil 92BPC

Pages 128-129

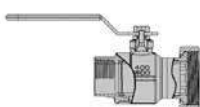
DZR Brass Ball Valve  
with Bypass  
Size Range: 1/2" - 2"



### Fig. Anvil 99IBV

Pages 130-131

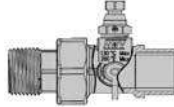
Ball Valve with Nut for  
9900V Series Valves  
Size Range: 1/2" - 2 1/2"



### Fig. Anvil 92UN

Pages 132-133

DZR Brass Union Body  
with Air Vent and Test Point  
Size Range: 1/2" - 2"



### Fig. Anvil 92HS

Page 134

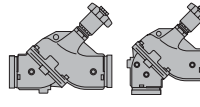
Stainless Steel Braided Hose  
Size Range: 1/2" - 2"



### GBV-A & GBV-G

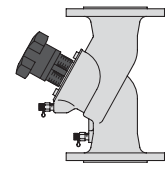
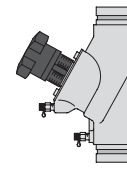
Pages 135-136

Balancing Valve  
Ductile Iron, Grooved-End  
Straight or Angle  
Size Range: 2 1/2" - 12"



### Model CB800 Pages 137-140

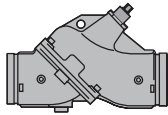
Circuit Balancing Valve, Grooved-End or Flanged End  
Size Range: 2 1/2" - 12"



# VALVES & ACCESSORIES

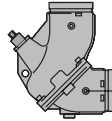
**FTV-S** Pages 141-142

Tri-Service Valve (Straight)  
Size Range: 2½" - 12"



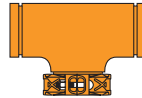
**FTV-A** Pages 141-142

Tri-Service Valve (Angle Body)  
Size Range: 2½" - 12"



**Fig. 7260** Pages 143-144

Gruvlok Tee Strainer  
Size Range: 2" - 18"



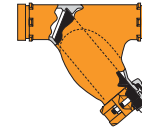
**Model 758G** Page 145

Grooved-End "Wye" Strainer  
Size Range: 2" - 12"



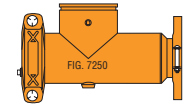
**Model 768G** Page 146

Grooved-End "Wye" Strainer  
Size Range: 2" - 12"



**Fig. 7250** Pages 147-148

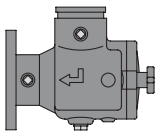
Suction Diffuser  
Size Range: 2½" x 2½" thru 16" x 14"



**Fig. S810**

Pages 149-150

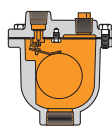
Suction Diffuser  
Size Range: 2" x 2" - 16" x 14"



**Model GAV-15**

Page 151

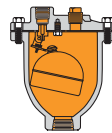
Automatic Air Vent for Ultimate Performance  
Size Range: ½" - 1"



**Model GAV-30**

Page 152

Automatic Air Vent for Ultimate Performance  
Size Range: ½" - ¾"



## AnvilFlex® AF-21 Series Pages 153-156

Flex Connectors  
Size Range: 2" - 12"



Fig. AF-21-GG  
Grooved Ends



Fig. AF-21-GF  
Grooved x Class 150 Flanged



Fig. AF-21-FF  
Class 150 Flanged x  
Class 150 Flanged

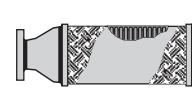


Fig. AF-21-RFF  
Reducing Class 150 Flanged x  
Class 150 Flanged

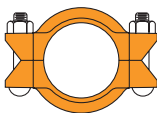


Fig. AF-21-RGF  
Reducing Grooved x  
Class 150 Flanged

# HIGH PRESSURE SYSTEMS

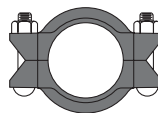
**Fig. 7004** Pages 158-159

Coupling  
Size Range: 2" - 12"



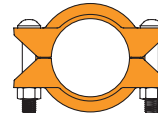
**Fig. 7004EG** Pages 160-161

High Pressure Coupling with EG Gasket  
Size Range: 2" - 12"



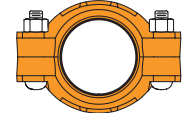
**Fig. 770** Pages 162-163

Rigid Coupling  
Size Range: 2" - 12"



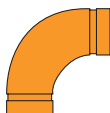
**Fig. 7377** Page 164

Double Groove Coupling  
Size Range: 6" - 10"



**Fig. 7050 EG** Page 165

High Pressure 90° LR Elbow  
Size Range: 2" - 12"



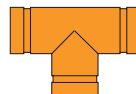
**Fig. 7051 EG** Page 165

High Pressure 45° LR Elbow  
Size Range: 2" - 12"



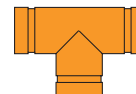
**Fig. 7662 EG** Page 166

High Pressure Header Tee  
Size: 2"



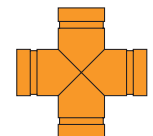
**Fig. 7060 EG** Page 166

High Pressure Tee  
Size Range: 2" - 12"



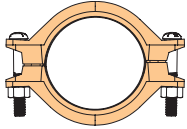
**Fig. 7068 EG** Page 166

High Pressure Cross  
Size Range: 2" - 12"

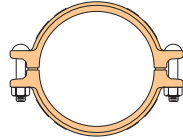


## CTS COPPER SYSTEM

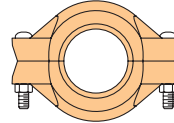
**Fig. 64** Pages 168-169  
CTS SlideLOK® Ready for Installation Coupling  
Size Range: 2" - 8"



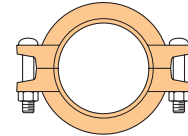
**Fig. 6400** Page 170  
Rigid Coupling  
Size Range: 2" - 8"



**Fig. 616** Page 171-172  
Reducing Coupling for Joining Copper Tubing Systems  
Size Range: 2 1/2" x 2" - 6" x 4"



**Fig. 617** Page 173  
Transition Coupling for Joining IPS to Copper Tubing Systems  
Size Range: 2" - 4"



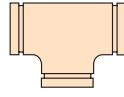
**Fig. 6050** Page 174  
90° Elbow  
Size Range: 2" - 8"



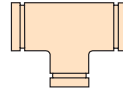
**Fig. 6051** Page 174  
45° Elbow  
Size Range: 2" - 8"



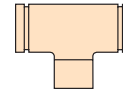
**Fig. 6060** Page 174  
Tee  
Size Range: 2" - 8"



**Fig. 6061** Page 175  
Reducing Tee (Gr x Gr x Gr)  
Size Range: 2 1/2" x 2 1/2" x 2" - 6" x 6" x 5"



**Fig. 6064** Page 175  
Reducing Tee (Gr x Gr x Cup)  
Size Range: 2" x 2" x 3/4" - 4" x 4" x 1 1/2"



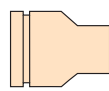
**Fig. 6074** Page 174  
End Cap  
Size Range: 2" - 6"



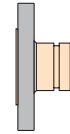
**Fig. 6072** Page 176  
Concentric Reducer (Gr x Gr)  
Size Range: 2 1/2" x 2" - 8" x 6"



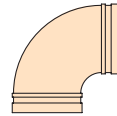
**Fig. 6075** Page 176  
Reducing Adapter (Gr x Cup)  
Size Range: 2" x 1" - 4" x 2"



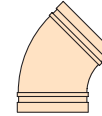
**Fig. 6084** Page 176  
Flange Adapter  
Size Range: 2" - 6"



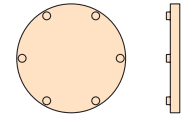
**Fig. 610** Page 178  
90° CTS Elbow  
Size Range: 2" - 8"



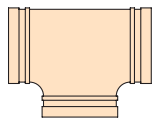
**Fig. 601** Page 178  
45° CTS Elbow  
Size Range: 2" - 8"



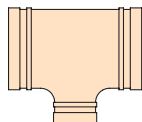
**Fig. 660** Page 178  
CTS Cap  
Size Range: 2" - 8"



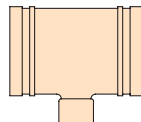
**Fig. 619** Page 178  
CTS Tee  
Size Range: 2" - 8"



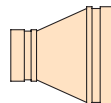
**Fig. 621** Page 179  
CTS Reducing Tee (Gr x Gr x Gr)  
Size Range: 2" - 8"



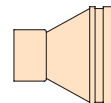
**Fig. 618** Page 179  
CTS Reducing Tee (Gr x Gr x Cup)  
Size Range: 2" - 8"



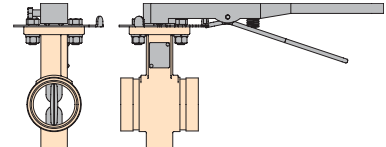
**Fig. 650** Page 180  
CTS Concentric Reducer (Gr x Gr)  
Size Range: 2" - 8"



**Fig. 652** Page 180  
CTS Concentric Reducer (Gr x Cup)  
Size Range: 2" - 8"



**Series 6700** Pages 181-182  
CTS Copper Butterfly Valve  
Size Range: 2 1/2" - 6"



## DI-ELECTRIC NIPPLES

**Fig. 7088** Page 183  
Di-Electric Pipe Connection  
Thread x Groove  
Size Range: 1" - 4"



**Fig. 7089** Page 183  
Di-Electric Pipe Connection  
Groove x Groove  
Size Range: 2" - 4"



**Fig. 7090** Page 183  
Di-Electric Pipe Connection  
Thread x Thread  
Size Range: 1/2" - 3"

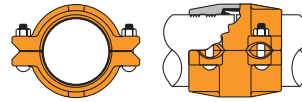


**Fig. 7091** Page 184  
Gruvlok DI-LOK® Nipple  
Di-Electric Pipe Connection  
CTS Groove x IPS Groove  
Size Range: 2" - 8"

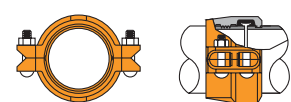


## HDPE COUPLINGS

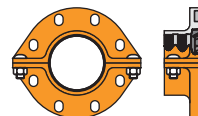
**Fig. 7305** Pages 190-191  
HDPE Coupling  
Size Range: 2" - 18"



**Fig. 7307** Pages 192-193  
HDPE Transition Coupling  
Size Range: 2" - 12"



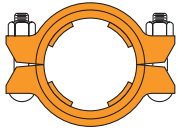
**Fig. 7312** Pages 194-195  
HDPE Flange Adapter  
Size Range: 4" - 8"



# PLAIN-END FITTINGS

**Fig. 7005** Page 185

Roughneck® Coupling  
Size Range: 2" - 16"



**Fig. 7050P, 7051P & 7060P** Page 186

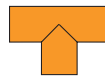
Gruvlok Plain-End Fittings  
Size Range: 2" - 8"



**Fig. 7050P**  
90° Elbow



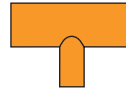
**Fig. 7051P**  
45° Elbow



**Fig. 7060P**  
Tee

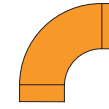
**Fig. 7061P** Page 187

Reducing Tee  
Size Range: 3" x 3" x 2"  
thru 12" x 12" x 10"



**Fig. 7050LRP**

Page 187  
90° LR Elbow  
Size Range: 2" - 8"



**Fig. 7051LRP**

Page 188  
45° LR Elbow  
Size Range: 2" - 8"



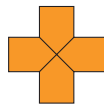
**Fig. 7071P** Page 187

90° True Wye  
Size Range: 2" - 8"



**Fig. 7068P** Page 187

Cross  
Size Range: 2" - 8"



**Fig. 7069P** Page 187

45° Lateral  
Size Range: 2" - 8"



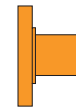
**Fig. 7075P** Page 188

Bull Plug  
Size Range: 2" - 8"



**Fig. 7084P & 7085P**

Page 188  
Flange Nipples  
Size Range: 2" - 8"



**Fig. 7077P** Page 189

Swaged Nipple  
Size Range: 2 1/2" x 2" thru  
8" x 6"



**Fig. 7080P, 7081P & 7082P** Page 189

Adapter Nipples  
Size Range: 2" - 8"



**Fig. 7080P**  
Plain x Groove



**Fig. 7081P**  
Plain x Thread



**Fig. 7082P**  
Plain x Bevel

# SOCK-IT® METHOD

**Fig. 7100** Page 196

90° Elbow  
(Sock-It x Sock-It)  
Size Range: 1" - 2"



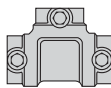
**Fig. 7101** Page 197

90° Reducing Elbow  
(Sock-It x NPT)  
Size Range: 1" x 1/2" thru  
1 1/2" x 1"



**Fig. 7103** Page 197

Straight Tee  
(Sock-It x Sock-It x Sock-It)  
Size Range: 1" - 2"



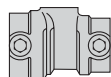
**Fig. 7105** Page 198

Reducing Outlet Tee  
(Sock-It x Sock-It x NPT)  
Size Range: 1" x 1" x 1/2"  
thru 2 1/2" x 2 1/2" x 1"



**Fig. 7106** Page 198

Reducing Tee  
(Sock-It x Sock-It x NPT)  
Size Range: 1 1/4" x 1" x 1/2"  
thru 2" x 1 1/2" x 1"



**Fig. 7107** Page 197

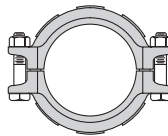
Coupling  
(Sock-It x Sock-It)  
Size Range: 1" - 2"



# STAINLESS STEEL METHOD

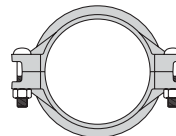
**Fig. 7400SS** Page 199

Rigidlite® Coupling  
Size Range: 1 1/4" - 8"



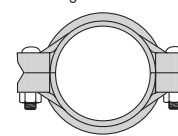
**Fig. 472** Pages 200-201

Stainless Steel Rigid Coupling  
Size Range: 1 1/4" - 12"



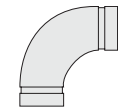
**Fig. 405** Pages 202-203

Stainless Steel Flexible  
Coupling  
Size Range: 1" - 8"



**Fig. A7050SS**

Page 205  
90° Stainless Steel Elbow  
Size Range: 1" - 12"



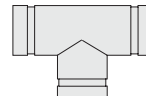
**Fig. A7051SS**

Page 205  
45° Stainless Steel Elbow  
Size Range: 1" - 12"



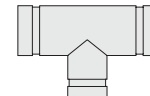
**Fig. A7060SS**

Page 205  
Stainless Steel Tee  
Size Range: 1" - 12"



**Fig. A7061SS**

Page 206  
Stainless Steel Reducing Tee  
Size Range: 1 1/2" x 1 1/2" x 1"  
thru 12" x 12" x 10"



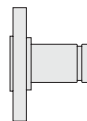
**Fig. A7074SS**

Page 207  
Stainless Steel Cap  
Size Range: 1" - 12"



**Fig. A7084SS** Page 207

Stainless Steel Flange Adapter  
Size Range: 1" - 12"



**Fig. A7072SS** Page 208

Stainless Steel Concentric Reducer  
Size Range: 1 1/2" x 1" thru 12" x 10"



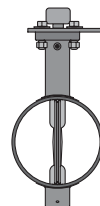
**Fig. A7073SS** Page 209

Stainless Steel Eccentric Reducer  
Size Range: 1 1/2" x 1" thru 12" x 10"



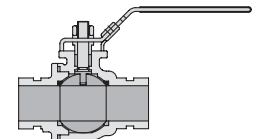
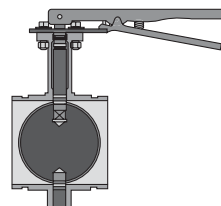
**Model B480** Pages 210-211

Grooved End Stainless Steel Butterfly Valve  
Size Range: 2" - 6"



**Model BV435** Page 212

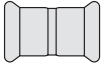
Grooved End Stainless Steel Ball Valve  
Size Range: 1 1/2" - 4"



## STAINLESS STEEL G-PRESS SYSTEM

**Fig. 407** Page 217

Straight Coupling  
(Press x Press)  
Size Range: 1/2" - 2"



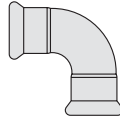
**Fig. 408** Page 217

Slip Coupling  
(Press x Press)  
Size Range: 1/2" - 2"



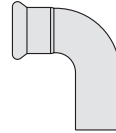
**Fig. 468** Page 217

90° Elbow  
(Press x Press)  
Size Range: 1/2" - 2"



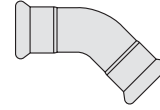
**Fig. 467** Page 218

90° Elbow  
(Male x Female)  
Size Range: 1/2" - 2"



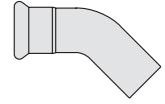
**Fig. 471** Page 218

45° Elbow  
(Press x Press)  
Size Range: 1/2" - 2"



**Fig. 470** Page 218

45° Elbow  
(Male x Female)  
Size Range: 1/2" - 2"



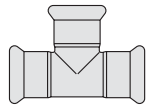
**Fig. 484** Page 219

End Cap  
(Female Press)  
Size Range: 1/2" - 2"



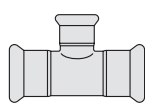
**Fig. 442** Page 219

Equal Tees  
(Press x Press x Press)  
Size Range: 1/2" - 2"



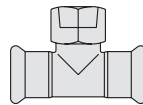
**Fig. 473** Page 220

Reducing Tees  
(Press x Press x Press)  
Size Range: 3/4" x 3/4" x 1/2"  
thru 2" x 2" x 1 1/2"



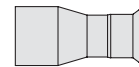
**Fig. 478** Page 221

Tee & Reducing Tee Adapters  
(Press x Press x Female NPT)  
Size Range: 1/2" x 1/2" x 1/2"  
thru 2" x 2" x 2"



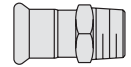
**Fig. 474** Page 222

Reducer  
(Female Press x Male Press)  
Size Range: 3/4" x 1/2" thru  
2" x 1 1/2"



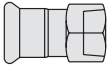
**Fig. 476** Page 222

Straight Connector  
(Female Press x Male NPT)  
Size Range: 1/2" x 1/2" thru  
2" x 2"



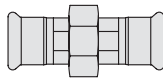
**Fig. 479** Page 223

Straight Connector  
(Female Press x Female NPT)  
Size Range: 1/2" x 1/2" thru  
2" x 2"



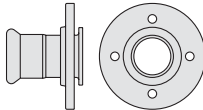
**Fig. 485** Page 223

3-Piece Union  
(Press x Press)  
Size Range: 1/2" - 2"



**Fig. 466** Page 224

Van Stone Flange Adapter  
(Female Press x Flange)  
Size Range: 1/2" - 2"



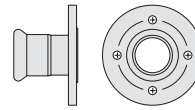
**Fig. 477** Page 224

Transition Nipple Grooved  
(Groove x Male Press)  
Size Range: 1/2" - 2"



**Fig. 475** Page 225

Flange Adapters  
(Female Press x Flange)  
Size Range: 1/2" - 2"



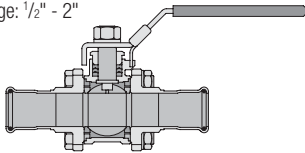
**Fig. 461** Page 225

Weld Adapter  
(Male Weld x Female Press)  
Size Range: 1/2" - 2"



**Fig. 469** Page 226

Ball Valve  
(Press x Press)  
Size Range: 1/2" - 2"



## ROLL GROOVERS

Gruvlok roll grooving technology is protected by U.S. Patents 5450738, 5570603, 5778715 and others pending.

**Model 1007** Pages 227-228

Roll Groover  
Groover Capability: 2" - 16"



**Model 3007** Pages 227-228

Roll Groover  
Groover Capability: 2" - 16"



**Model 3006** Pages 229-230

Roll Groover  
Groover Capability: 2" - 12"



# PRODUCTS FOR GROOVED PIPING SYSTEM

The Gruvlok® System has been manufactured since the late 1960's. The Gruvlok product line has grown from standard couplings and fittings to today's extensive range of grooved product, plain-end product, butterfly valves, check valves, pump protection components, pipe preparation tools and various accessories.

Gruvlok is part of our overall commitment to provide today's piping industry with tomorrow's products.



Certified to NSF/ANSI 61-G

For Listings/Approval Details and Limitations, visit our website at [www.anvilintl.com](http://www.anvilintl.com) or contact an Anvil® Sales Representative.



## INDUSTRY & GOVERNMENT STANDARDS & APPROVALS

<b>ANSI</b> American National Standards Institute	<b>FAA</b> Federal Aviation Administration: HVAC, Plumbing, Fire Protection	<b>NY-BSA</b> New York Board of Standards and Appeals
<b>API</b> American Petroleum Institute: API Std. 5L, Sect. 7.5	<b>FHA</b> Federal Housing Administration	<b>NYC</b> New York City
<b>ASHRAE</b> American Society of Heating, Refrigerating and Air Conditioning Engineers	<b>FM</b> Factory Mutual Engineering Corp.	<b>TVA</b> Tennessee Valley Authority: Fire protection, storm drains
<b>ASME</b> American Society of Mechanical Engineers: Power Piping, B 31.1; Chemical Plant and Petroleum Refinery Piping, B 31.3; Refrigeration Piping, B 31.5; Building Services Piping, B 31.9; Slurry Pipelines, B 31.11	<b>GSA</b> General Services Administration: 15000 Series	<b>UL</b> Underwriter's Laboratories, Inc.
<b>ASTM</b> American Society of Testing and Materials: F 1476, F 1387	<b>IAPMO</b> International Association of Plumbing & Mechanical Officials	<b>ULC</b> Underwriter's Laboratories of Canada
<b>AWWA</b> American Water Works Association: C 606	<b>LPC</b> Loss Prevention Council	Bureau of Marine Inspection: Salt and fresh water, oil transfer
<b>BV</b> Bureau Veritas	<b>MEA</b> Materials & Equipment Acceptance	Bureau of Public Roads; Div. of Bridges: Drain lines and bridge crossings
<b>CDF</b> California State Fire Marshal	<b>MIL</b> Military Specifications: MILP-10388 Fittings; MIL-C-10387 Couplings; MIL-P-11087A(CE) Steel Pipe, Grooved MIL-I-45208 Inspection Procedure	Canadian Coast Guard
<b>COE</b> Corps of Engineers: CEGS 15000	<b>NASA</b> National Aeronautics and Space Administration: 15000 Series	U.S. Coast Guard –Approves each vessel individually
<b>CSA</b> Canadian Standards Association: B 242	<b>NAVFAC</b> Naval Facilities Engineering Command: NFGS 15000 Series	<b>USGBC</b> United States Green Building Council
<b>DNV</b> Det Norske Veritas Hong Kong Fire Services Board New Zealand Insurance Council New Zealand Building Act. (1991)	<b>NFPA</b> National Fire Protection Association	<b>VA</b> Veterans Affairs : 15000 Series
	<b>NIH</b> National Institute of Health (Dept. of Health): 15000 Series	<b>VdS</b> Verband der Sachversicherer e.V.
	<b>NSF</b> NSF International	

**Note:** Please refer to product specific pages for exact listings and approvals related to a specific size for a specific product.



# GRUVLOK® – THE ENGINEERED COUPLING

## HOUSING (A) FLEXIBLE OR RIGID

The Gruvlok Coupling housing is designed to self-center around the pipe. The housing encircles and retains the gasket against the application of internal system pressure or vacuum.

The housing key sections fit into and engage the pipe-end grooves around the entire pipe circumference, thus restraining the pipe ends from separation due to the application of internal pressure.

Flexible Couplings provide designed-in clearances between the housing key sections and the pipe grooves to permit both angular and longitudinal movement of the pipe. Rigid couplings grip the pipe and lock the joint into position.

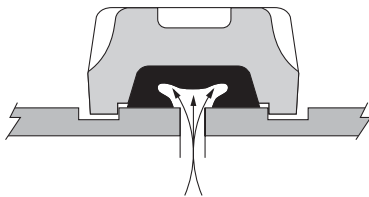
All housings are coated with paint for general service applications. The paint serves to provide protection against normal atmospheric corrosion. However, for couplings used in corrosive environments, hot-dip galvanizing, and stainless steel are available.

## GASKET (B)

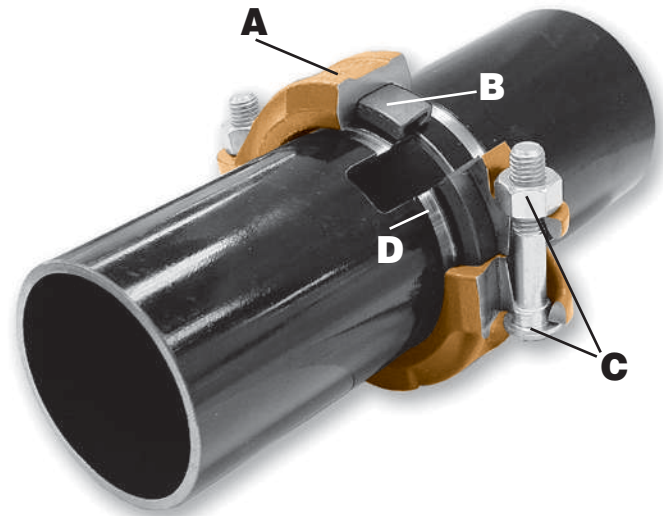
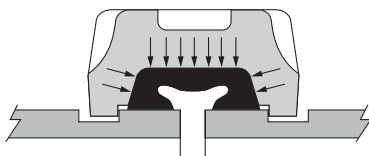
The unique single piece “C” style design of the gasket has been engineered to provide a pressure responsive, leak-tight seal in both pressure and vacuum applications without the aid of external forces. The “lips” of the gasket are molded so that upon installation onto the pipe ends they provide compression against the pipe surface to establish the leak-tight seal.

The gasket cavity functions as a “pressure reservoir”. Pressure within the pipe system is applied to the internal surfaces of the gasket which increases the sealing force and enhances the leak-tight seal. In vacuum systems, non-pressure-responsive seals tend to “lift off” the pipe, producing leak paths. However, the Gruvlok gasket reacts to the negative pressure (higher outside atmospheric pressure) as to improve the sealing capability of the gasket.

Gasket Reaction to Pressure



Gasket Reaction to Vacuum



## BOLTS AND NUTS (C)

Heat treated oval neck track head bolts serve to connect and secure the housing segments together. The oval neck design prevents turning of the bolt while tightening the hex nut with a single wrench. The bolt size and corresponding wrench (or socket) size for the hex nuts are shown in the chart below.

### ANSI

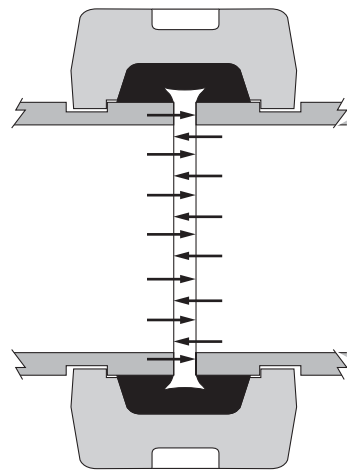
Bolt Size	3/8	1/2	5/8	3/4	7/8	1	1 1/4
Wrench Size	11/16	7/8	1 1/16	1 1/4	1 7/16	1 5/8	2

### METRIC

Bolt Size	M10	M12	M16	M20	M22
Wrench Size	16	22	24	30	34

## GROOVED PIPE ENDS (D)

The ends of the pipe must have a groove in them which may be either cut grooved or roll grooved. The grooved pipe ends engage the coupling keys, thus, providing a self-restraining, mechanical joint capable of resisting the separation of the pipe ends due to the application of system pressure. The groove diameters must be dimensionally accurate to obtain the maximum benefit of the Gruvlok Coupling.





# THE GRUVLOK® PIPING METHOD

Gruvlok couplings and grooved-end fittings are widely used for joining pipe in a wide variety of piping systems. Gruvlok couplings for grooved-end pipe are designed to provide a self-centering joint which accommodates the application of pressure, vacuum and other external forces, while limiting the burdensome need for special supports, expansion joints, etc.

The Gruvlok piping method offers many mechanical design features which benefit the design engineer, the contractor, and the end user. Utilization of the functional characteristics of the Gruvlok coupling will aid in pipe system design and must be considered for proper installation, assembly and performance.

The design factors presented in the Gruvlok technical data section should always be referenced to when designing any grooved piping system to obtain the maximum benefit of the Gruvlok piping method.

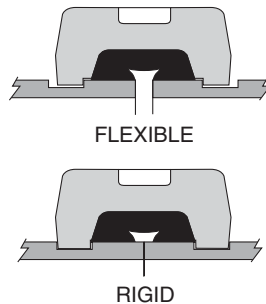


## GRUVLOK FEATURES

### RIGIDITY OR FLEXIBILITY

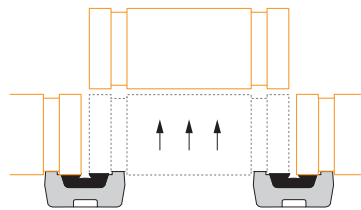
Couplings are available where rigid connections are required. Rigid couplings are clearly marked with an "X" for identification.

Couplings with flexible design allow for pipe expansion and contractions with temperature changes. The need for an expansion joint is minimized or eliminated.



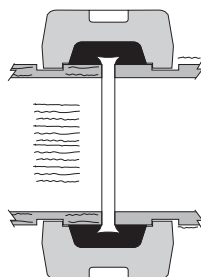
### UNION AT EVERY JOINT

Gruvlok couplings can be disassembled easily permitting maintenance and servicing of the piping system. It will facilitate periodic rotation of pipe to distribute internal wear from slurries or other abrasive media.



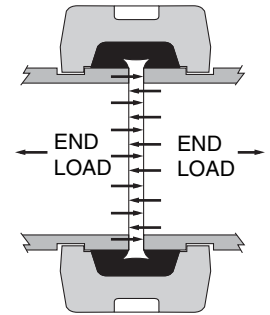
### MINIMIZES NOISE & VIBRATION

The resilient elastomeric gasket and pre-designed gap of the Gruvlok coupling help isolate and absorb noise and vibration, this minimizes vibration transmission.



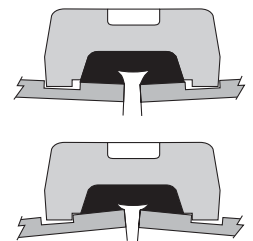
### SELF RESTRAINED JOINT

The couplings engage the pipe around the entire circumference and restrain the pipe ends from separation due to pressure and other forces, up to the maximum coupling rated working pressure.



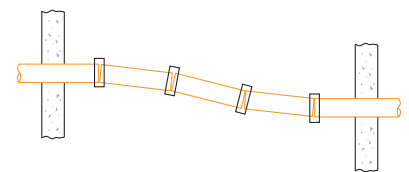
### STRESS-FREE SYSTEM

Flexibility designed in the Gruvlok coupling absorbs and eliminates stress caused by imprecise location of buried pipe or those induced by seismic tremors.



### ACCOMMODATES MISALIGNMENT AND JOINT DEFLECTION

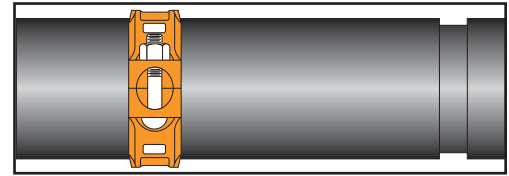
The flexibility designed into the Gruvlok coupling will accommodate misalignments caused by imprecise location of pipe opening through walls and floors, will provide pitch for drainage piping systems and facilitate laying pipe on uneven terrain, thus permitting deflection in any direction.



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Sock-It® Fittings  
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# GRUVLOK® COUPLINGS FOR GROOVED-END PIPE

Gruvlok couplings for grooved-end pipe are available in nominal pipe sizes 1" thru 60" and metric sizes. The variety of coupling designs provide a universal means for the connection of pipe, fittings and pipe system components. The wide assortment of Gruvlok couplings and gaskets permit selection of the most suitable combination for a specific application, thus providing the most versatile and economical pipe system installation.



## MATERIAL SPECIFICATIONS

### BOLTS:

SAE J429, Grade 5, Zinc Electroplated  
ISO 898-1, Class 8.8, Zinc Electroplated followed by a Yellow Chromate Dip

### HEAVY HEX NUTS:

ASTM A563, Grade A, Zinc Electroplated  
ISO 898-2, Class 8.8, Zinc Electroplated followed by a Yellow Chromate Dip

### STAINLESS STEEL BOLTS & NUTS:

Stainless steel bolts and nuts are available for the Fig. 7001, 7401, 7401-2, 7001-2, 7004, 7000 and 7400 couplings in standard 304SS, (316SS available as special order)

### HOUSING:

Ductile Iron conforming to ASTM A 536, Grade 65-45-12

### COATINGS:

Rust inhibiting paint Color: ORANGE (standard)  
Hot Dipped Zinc Galvanized (optional)  
Other Colors Available (IE: RAL3000 and RAL9000)  
For other Coating requirements contact an Anvil Representative.

### GASKETS: Materials

Properties as designated in accordance with ASTM D 2000

### GRADE "EP" EPDM (Green/Red color code) NSF-61 Certified

-40°F to 250°F (Service Temperature Range)(-40°C to 121°C)  
Recommended for water service, diluted acids, alkalies solutions, oil-free air and many other chemical services.  
NOT FOR USE IN PETROLEUM APPLICATIONS.

### GRADE "E" EPDM (Green color code) NSF-61 Certified

-40°F to 230°F (Service Temperature Range)(-40°C to 110°C)  
Recommended for water service, diluted acids, alkalies solutions, oil-free air and many chemical services.  
NOT FOR USE IN PETROLEUM APPLICATIONS.

### GRADE "T" Nitrile (Orange color code)

-20°F to 180°F (Service Temperature Range)(-29°C to 82°C)  
Recommended for petroleum applications. Air with oil vapors and vegetable and mineral oils.  
NOT FOR USE IN HOT WATER OR HOT AIR

### GRADE "O" Fluoro-Elastomer (Blue color code)

Size Range: 1" - 12" (C style only)  
20°F to 300°F (Service Temperature Range)(-29°C to 149°C)  
Recommended for high temperature resistance to oxidizing acids, petroleum oils, hydraulic fluids, halogenated hydrocarbons and lubricants

### GRADE "L" Silicone (Red color code)

Size Range: 1" - 12" (C style only)  
-40°F to 350°F (Service Temperature Range)(-40°C to 177°C)  
Recommended for dry, hot air and some high temperature chemical services

### GASKET TYPE:

Standard C Style  
Flush Gap: 1" - 24"  
End Guard: 1" - 12" (Fig. 7004 and 7377)  
SlideLOK: 2" - 8"

### LUBRICATION:

Standard Gruvlok  
Gruvlok Xtreme™ (Do Not use with Grade "L")

### WORKING PRESSURE, END LOAD, PIPE END SEPARATION & DEFLECTION FROM CENTER LINE:

Based on standard wall steel pipe with cut or roll grooves in accordance with Gruvlok specifications. Pressure ratings for light wall, stainless steel, aluminum, and ISO pipe available. See technical data section.

## COUPLING DATA CHART NOTES

COUPLING DATA CHART NOTES														
Nominal Size	O.D.	Max. Work. Pressure	Max. End Load	Range of Pipe End Separation	Deflection from $\bar{C}$		Coupling Dimensions			Coupling Bolts		Specified Torque		Approx. Wt. Ea.
					Per Coupling	of Pipe	X	Y	Z	Qty.	Size	Min.	Max.	
In./DN(mm)	In./mm	PSI/bar	Lbs./kN	In./mm	Degrees(°)-Minutes(')	In./ft-mm/m	In./mm	In./mm	In./mm		In./mm	Ft.-Lbs/N-m		Lbs./kg
<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>		<b>7</b>			<b>8</b>		<b>9</b>		<b>10</b>

- 1** Gruvlok Couplings are identified by either the nominal ANSI pipe size in inches or pipe O.D. in millimeters (see column 2).
- 2** Nominal Outside Diameter of Pipe.
- 3** Maximum line pressure, including surge, to which a joint can be subjected. Working pressure ratings are based on standard wall steel pipe with standard cut or roll grooves in accordance with Gruvlok specifications. For Performance Data on other than standard wall pipe, refer to Technical data section. **NOTE: For one time field test only, the maximum joint working pressure may be increased to 1.5 times the figure shown unless otherwise noted.**
- 4** Maximum end load from all interior and/or exterior forces to which the joint can be subjected are based on standard wall steel pipe with standard cut or roll grooves in accordance with Gruvlok specifications.
- 5** Range of pipe end separation for roll grooved pipe, Double values shown when using cut groove pipe; see page 274 for details.
- 6** Maximum allowable angular deflection values from centerline when using standard roll grooved pipe; Double values shown when using cut groove pipe; see page 274 for details.
- 7** “X”, “Y”, and “Z” are external dimensions for reference purposes only.
- 8** The quantity of bolts per coupling.
- 9** Nuts must be tightened alternating and evenly to the specified bolt torque. See individual product installation instructions for additional important information.
- 10** Approximate weight for a fully assembled coupling with gasket, bolts, and nuts.

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 Plain-End Fittings  
 HDPE Couplings  
 Sock-It® Fittings  
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