

Grooved Fittings



The Right Connection™

Advantages of Grooved Fittings



Built in deflection tolerances allow for quick installation and easy pipe alignment in uneven areas, or, where ground settling may occur



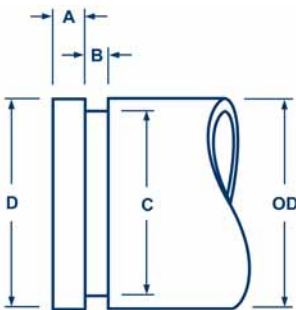
Grooved couplings allow for some linear expansion and contraction as well as horizontal variance. These features eliminate limited pipeline stresses without the use of costly expansion joints.

Comparative Advantages	Threaded	Flanged	Welded	Grooved
Allows angular deflection-misalignment				•
Expansion, contraction or, no need for expansion joint				•
Reclaimable, no need for union		•		•
Allows fast connection with valves				•
Allows rotation of pipe for alignment		•		•
No special skills required to assemble	•			•
No welding slags	•			•
No weakening of pipe at joints		•	•	•
No fire hazard during installation	•	•		•
Speed of installation	•			•
Allows prefabrication	•	•		•
Low installation cost	•			•

Features and Benefits

- Grooved End fittings for grooved pipe combine the features of a straight line or a flexible coupling, a union and an extension at each pipe joint. The housings engage the groove around the entire pipe circumference, locking the pipe together.
- Grooved End fittings allow easy removal of pipe sections for replacement, cleaning and service.
- Since the grooves are not as deeply cut as threaded pipe, less metal is removed and more of the pressure rating of the pipe is retained.
- Installation time and cost is low, since only a socket wrench is required.

Groove Dimensions



Size	OD	A	B	C	D
1½"	1.900	5/8	5/16	1.775	1.900
2"	2.375	5/8	5/16	2.250	2.375
2½"	2.875	5/8	5/16	2.750	2.875
3"	3.500	5/8	5/16	3.344	3.500
4"	4.500	5/8	3/8	4.334	4.500
5"	5.563	5/8	3/8	5.395	5.563
6"	6.625	5/8	3/8	6.455	6.625
8"	8.625	3/4	7/16	8.441	8.625
10"	10.750	3/4	1/2	10.562	10.750
12"	12.750	3/4	1/2	12.531	12.750

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HOSE COUPLING SAFETY

- Use Dixon couplings, retention devices and accessory products **only** for their intended service.
- All recommendations of the Hose Manufacturer, and the Coupling Manufacturer, must be employed with regards to **Size, Temperature, Application, Media,** and **Pressure** when selecting the components for a hose assembly.
- All finished hose assemblies should be tested in accordance with the Rubber Manufacturers Association recommendations.
- All hose assemblies should be thoroughly inspected prior to each use to ensure they are undamaged, and properly coupled.
- Use safety clips on couplings, and King Safety Cables on assemblies where required by the manufacturer, as well as State and Federal regulations. (OSHA regulations may be viewed in full on the OSHA website, www.osha.gov.)
- Under no circumstances should the assembly working pressure or working temperature exceed the working pressure or working temperature of the lowest rated component (coupling, clamp, ferrule, or hose).
- Call Dixon (800.355.1991) for advice on couplings, retention devices, and accessories for your application.

Couplings

Standard Couplings - Series S



Standard couplings are designed for a wide range of applications including commercial/industrial construction, mining, process piping. The housing design allows for optimum strength without excessive casting weight.

- Painted ductile iron
- **Underwriters listed and Factory Mutual approved**

Accommodates:

- working pressure: **1000 PSI**
for sizes: 1½", 2", 2½", 3", 4", 6"
- working pressure: **800 PSI**
for sizes: 8", 10", 12"



Lightweight Flexible Couplings - Series L



Lightweight flexible couplings are designed for applications requiring moderate internal pressure or where weight is a factor. Applications include; general purpose, mining, irrigation, and compressed air where a deflection of 5% or less is required.

- Painted ductile iron
- **Underwriters listed and Factory Mutual approved**

Accommodates:

- working pressure: **500 PSI**
for sizes: 1½", 2"
- working pressure: **300 PSI**
for sizes: 2½", 3", 4", 5", 6", 8"



Rigid Couplings - Series R



This lightweight, rigid style coupling is ideal for fire protection, plumbing, low pressure air and drainage. Small gripping teeth hold the housing into the groove allowing a straight run of pipe and preventing flex at the joint.

- Painted ductile iron
- **Underwriters listed and Factory Mutual approved**

Accommodates:

- working pressure: **175 PSI**
for sizes: 2", 2½", 3", 4", 6", 8"



Quick Release Couplings - Series Q

Quick release couplings are specially designed for applications requiring a quick connection and/or disconnection of a pipe joint. A locking pin through the handle prevents accidental opening of the coupling.

- Zinc plated ductile iron body with steel safety clip

Accommodates:

- working pressure: **500 PSI**
for sizes: 1½", 2", 2½", 3", 4", 6"



ANSI Split Flange Couplings - Series SF



The split flange coupling is designed to provide a direct connection between a grooved adapter and an ANSI Class 125 and 150 raised face flanged component. It can be used with flat face flanges by removing the raised projections on the outside face of the flange.

- Painted ductile iron
- **Underwriters listed and Factory Mutual approved**

Accommodates:

- working pressure: **300 PSI**
for sizes: 2", 2½", 3", 4", 6", 8"



End Caps

ANSI Caps with Tapped Outlet - Series EC

Available in :

- sizes: 2", 2½", 3", 4", 6", 8"



Blank End Caps - Series BE



- **Underwriters listed and Factory Mutual approved**

Available in :

- sizes: 2", 2½", 3", 4", 6", 8"



Grooved End Fittings



Elbows - Series 45

- Designed to provide minimum pressure drop and uniform strength
- Painted ductile iron
- Interchangeable with Victaulic and Grinnell®
- **Underwriters listed and Factory Mutual approved**

Accommodates:

- working pressure: **1000 PSI**
for sizes: 2", 2½", 3", 4", 5", 6", 8"



Elbows - Series 90

- Designed to provide minimum pressure drop and uniform strength
- Painted ductile iron
- Interchangeable with Victaulic and Grinnell®
- **Underwriters listed and Factory Mutual approved**

Accommodates:

- working pressure: **1000 PSI**
for sizes: 2", 2½", 3", 4", 6", 8"



Elbows - Series T

- Designed to provide minimum pressure drop and uniform strength
- Painted ductile iron
- Interchangeable with Victaulic and Grinnell®
- **Underwriters listed and Factory Mutual approved**

Accommodates:

- working pressure: **1000 PSI**
for sizes: 2", 2½", 3", 4", 6", 8"

Adapters



Reducing Adapters - Series RA

- Painted ductile iron
- **Underwriters listed and Factory Mutual approved**

Available in :

- sizes: 1½", 2", 2½", 3", 4", 5", 6", 8"



Flange Adapters - Series FA

Flange adapters are used to connect an ANSI Class 125 and 150 flange to a grooved pipe using a grooved clamp. To assemble to another flange, position bolt heads on the adapter (grooved) side. These adapters provide a rigid one piece connection that can be disconnected by removing the clamp assembly.

- Galvanized ductile iron

Accommodates:

- working pressure: **300 PSI**
for sizes: 2", 3", 4", 6", 8"



Mechanical T's - Series T

Mechanical tees provide a fast, easy way to install a threaded connection along a length of pipe. After drilling or cutting a hole in the pipe at the location of the branch connection, simply attach the clamps around the pipe for a leak-free threaded outlet connection.

- Painted ductile iron
- **Underwriters listed and Factory Mutual approved**

Accommodates:

- working pressure: **300 PSI**
for sizes: 2", 2½", 3", 4", 6"

Adapter Nipples

- These fittings are designed to provide minimum pressure drop and uniform strength

Short Hex Style



Accommodates:

- working pressure: **1000 PSI**
for sizes: 2", 2½", 3", 4"

Long Pipe Style



Available in :

- sizes: 2", 2½", 3", 4", 5", 6"

Victaulic x Weld



Available in :

- sizes: 2", 2½", 3", 4"

Valves

Compact High Pressure Grooved End Ball Valves

- Applications: High pressure pipeline systems, including petroleum, process systems, water, oil and gas.
- Epoxy coated high strength ductile iron body
- 316 stainless steel ball and stem
- 15% glass reinforced Teflon® seats
- Temperature rated to **450°F**
- Maximum working pressure: **600 PSI**
- Sizes available: 4" and 6"



Econovalves

The Econovalve series of ball valves are solidly constructed and designed for rugged service such as the mining and construction industries. The unique one piece ball and stem provides positive on/off action with no slacks and no leaks.

- Cast iron
- Nitrile butadiene seals
- Maximum working pressure: **300 PSI**
- Sizes available: 1", 1½", 2"



Combination Nipples



- The PF shank design was developed specifically for chemical transport hoses having Crosslinked Polyethylene (XLPE) or Ultra High Molecular Weight Polyethylene (UHMW) tubes, where shank retention can be a problem when using conventional band clamps
- Recommended for discharge and suction service
- **Not intended for compressed air**
- Sizes available: 2" and 3"

- Combination nipples are recommended for low-pressure discharge and suction service for compatible liquids. **They are not for compressible products such as air or nitrogen**
- **King Combination Nipples are not recommended for steam**
- Sizes available: 1", 1¼", 1½", 2", 2½", 3", 4", 5", 6", 8", 10", 12"

**SAFETY
ALERT**



External Swage Holedall Fittings

Stems



- Stems are plated carbon steel
- Sizes available: 1/4", 1/2", 2", 2 1/2", 3", 4", 5", 6", 8", 10"

Ferrules



- Ferrules are plated carbon steel
- Sizes available: 1/4", 1/2", 2", 2 1/2", 3", 4", 5", 6", 8", 10"

SAFETY
ALERT

Proper ferrule selection is very important in achieving a correct coupling-to-hose assembly.

Internal Expansion Holedall Fittings

Stems



- Stems are carbon steel
- Sizes available: 1/4", 1/2", 2", 2 1/2", 3", 4"

Ferrules



- Ferrules are plated carbon steel
- Sizes available: 1/4", 1/2", 2", 2 1/2", 3", 4"

SAFETY
ALERT

Proper ferrule selection is very important in achieving a correct coupling-to-hose assembly.

Internal Expansion Holedall Fittings - Scovill Style

Stems



- Recommended for discharge and suction service
- Commonly used to transfer fuel
- Couplings are compact, light and streamlined to eliminate catching on curbs and shrubs
- The stem is expanded to nominal hose I.D. for a full-flow
- Sizes available: 1", 1 1/2", 2", 2 1/2"

Ferrules



- Ferrules available in brass or stainless steel
- Sizes available: 1", 1 1/2", 2", 2 1/2"

SAFETY
ALERT

Proper ferrule selection is very important in achieving a correct coupling-to-hose assembly.

Nuts and Bolts

- Nuts and bolts are made of electroplated carbon steel and conform to ASTM A183
- The nuts are a heavy duty hexagon design
- The bolts are specifically designed for use with the couplings in this brochure.

Gruvlok Lubricant

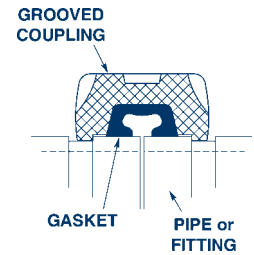
- Water soluble
- Non-toxic
- Non-corrosive
- Non-flammable
- NSF approved for use with potable water



Should not be used with HDPE pipe.

Gaskets

- Check gasket color code (see below) to be certain it is recommended for the service intended
- Use lubricant on gasket
- For services not listed contact Dixon for recommendations



Buna-N Gaskets

Compound Type: **Buna-N**
 Temperature Range: **-24°F to +176°F**
 Color Code: *Blue*
 General Service Application:

- Petroleum products, vegetable oils, mineral oils, and air contaminated with petroleum oils.

Not for use in hot water services



EPDM Gaskets

Compound Type: **EPDM**
 Temperature Range: **-22°F to +230°F**
 Color Code: *Black*
 General Service Application:

- Water, dilute acids, alkalis, salts, and many chemical services not involving hydrocarbons, oils, or gases. Excellent oxidation resistance.

Not for use with hydrocarbons



Grooved Piping System Guidelines

Grooved piping systems require a careful coupling selection. To ensure a properly set up system use the following guidelines:

- 1) The coupling must suit the pipe O.D., and pressure rating for the application in which it is to be used.
- 2) Use the correct gasket to suit the media being transported/conveyed.
- 3) Make sure the correct groove dimension is used to ensure the correct fittings of the coupling to the pipe.

The following industry standards must be followed to ensure a correct pipe joint assembly.

- a) All bolts should be torqued evenly to achieve metal to metal contact at the bolt pads.
- b) Tongue and recess housings must be checked for correct alignment.
- c) Apply Dixon gasket lubricant to all rubber surfaces to ensure a no pinch assembly.
- d) Test the system slowly (preferably hydrostatically) and check for leaks.
- e) Depressurize the system before carefully dismantling the couplings.

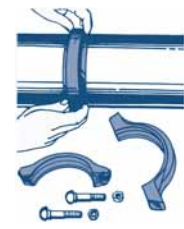
Installation Instructions



1
 A socket wrench is the only tool needed to assemble the gasket, housing, nuts and bolts.



2
 Before installing the gasket, make sure that the pipe ends are correctly grooved. Remove any burrs, scores, rust or other imperfections from the pipe ends and gasket.



3
 Smear ordinary rubber grease on the inside and outside of the gasket. Stretch the gasket over one pipe end and bring the other pipe to be coupled into alignment. Slide the gasket into the center between the grooves on the two pipe ends.



4
 Attach the two sections of the housings and insert the bolts and nuts.



5
 Tighten the bolts evenly until the housings are firmly together with the metal touching.

Through its divisions and affiliated companies, Dixon is recognized as the premier manufacturer and supplier of hose fittings and accessories spanning a wide range of industrial uses. Dixon's reach includes products for fire protection, food, dairy processing, beverage and brewery, mobile tankers, mining, construction, chemical processing, petroleum, oilfields, refining, nuclear and manufacturing.



The Right Connection™

Dixon Valve & Coupling Company

800 High Street, Chestertown, MD 21620

Customer Service: 877.963.4966

Fax: 800.283.4966

www.dixonvalve.com