

## Grooved AWWA Pipe

Pipe of AWWA dimensions can be joined quickly and easily with the grooved piping method which conforms to ANSI/AWWA C-606, Standard for Grooved and Shouldered Type Joints and CSA 242 M1980.

The groove configuration for ductile (cast) pipe includes a large radius, eliminating sharp corners and stress concentration. This provides stronger beam load capability and higher working pressures for radius grooved systems than available with conventional flanged systems.

### FlushSeal® Gasket

The FlushSeal® gasket is designed specifically to seal on ductile iron pipe surfaces. It provides a triple-seal to assure leak-free service for the life of the system.

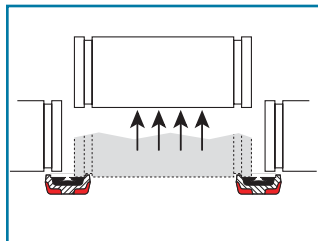
1. Stretching the gasket over pipe ends puts the angular lips in immediate and automatic sealing tension.
2. Gasket center leg is compressed over pipe ends as coupling is assembled.
3. Line pressure automatically strengthens the seal by acting internally on the gasket lips — the higher the pressure, the tighter the seal.

### Rigid or Flexible Grooving

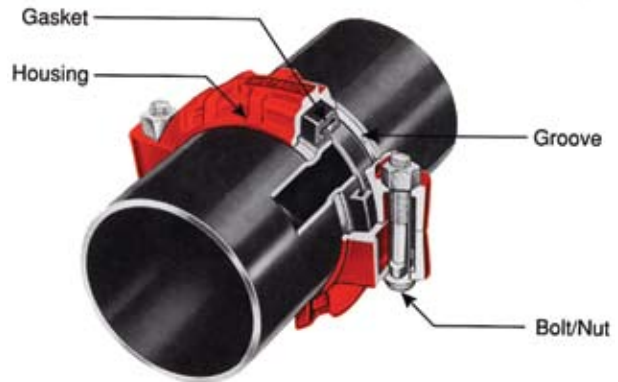
Grooving can be done quickly and easily in the field or shop. Standard “Rigid” radius grooving provides the ease of grooved pipe assembly in a rigid joint. The design of the groove and coupling draws the pipe ends into contact as the coupling is tightened.

Where flexibility is desirable, “Flexible” radius groove dimensions should be used. Flexible grooving provides the added advantages of expansion, contraction and deflection. This is useful to accommodate movement from thermal changes, settling, seismic effect or other causes.

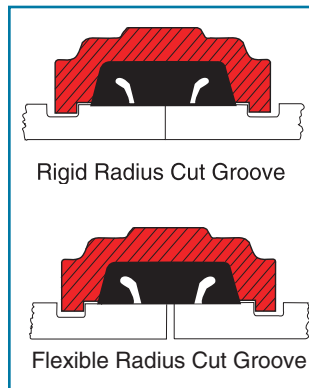
### Each Joint is a Union



- Removal of two couplings permits removal of pipe section for cleaning or servicing.
- Easy future add-on, change or renovation of pipe to distribute internal wear from abrasives or slurries.
- **Warning:** Always depressurize and drain systems before removing couplings.



### Rigidity or Flexibility



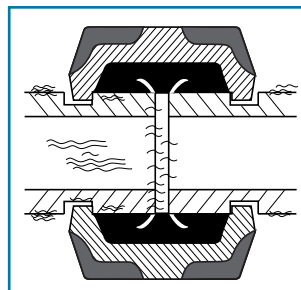
#### Rigid Radius Cut Groove

- Prevents expansion/contraction
- Ideal for long pipe runs
- Designed for systems with cycling pressure

#### Flexible Radius Cut Groove

- Allows up to 0.47" of expansion/contraction.
- Ideal for uneven surfaces or where settlement is expected.

### Proven Joint Reliability

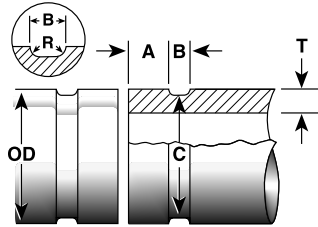


- Full circumferential engagement of housing into groove provides end pull strength.

# Pipe A-19

# Grooved Pipe/DI

## Flexible Radius Cut Groove Specifications – Ductile Iron Pipe



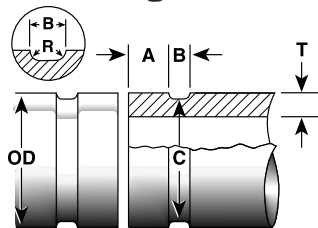
**NOTES:**

- Column 1- Column 2- Nominal AWWA Pipe Size AWWA outside diameter. The outside diameter shall not vary more than the tolerance listed. The maximum allowable tolerance from square cut ends is 0.030" for 3"; 0.045" for 4"-6" and 0.060" for sizes 8" O.D. and above, measured from true square line.
- Column 3- Gasket seat: The pipe surface shall be free from indentations and projections from the end of the pipe to the groove, to provide a leak-tight seat for the gasket.
- Column 4- Groove width.
- Column 5- Groove outside diameter: The groove must be uniform depth for the entire circumference. Groove must be maintained within the "C" diameter tolerance listed.
- Column 6- Groove depth: For reference only. Groove must conform to the groove diameter "C" listed.
- Column 7- Minimum allowable wall thickness. This is the minimum wall thickness which may be cut grooved.

| COL. 1         | COL. 2                          |            |        | COL. 3                | COL. 4                | COL. 5          |             | COL. 6   | COL. 7                    |              |
|----------------|---------------------------------|------------|--------|-----------------------|-----------------------|-----------------|-------------|----------|---------------------------|--------------|
| NOM. PIPE SIZE | PIPE OUTSIDE DIA. O.D. (INCHES) |            |        | GASKET SEAT A† +0.000 | GROOVE WIDTH B +0.031 | GROOVE DIA. C** |             | RADIUS R | MIN. ALLOW WALL THICK. T# |              |
|                | BASIC                           | TOLERANCE* |        |                       |                       | BASIC           | TOL. +0.000 |          | CAST IRON                 | DUCTILE IRON |
|                |                                 | +          | -      |                       |                       |                 |             |          |                           |              |
| 3"             | 3.96                            | +0.045     | -0.045 | 0.750                 | 0.375                 | 3.723           | -0.020      | 0.120    | 0.32                      | 0.31         |
| 4"             | 4.80                            | +0.045     | -0.045 | 0.750                 | 0.375                 | 4.563           | -0.020      | 0.120    | 0.35                      | 0.32         |
| 6"             | 6.90                            | +0.060     | -0.060 | 0.750                 | 0.375                 | 6.656           | -0.020      | 0.120    | 0.38                      | 0.34         |
| 8"             | 9.05                            | +0.060     | -0.060 | 0.875                 | 0.500                 | 8.781           | -0.025      | 0.145    | 0.41                      | 0.36         |
| 10"            | 11.10                           | +0.060     | -0.060 | 0.938                 | 0.500                 | 10.813          | -0.025      | 0.145    | 0.44                      | 0.36         |
| 12"            | 13.20                           | +0.060     | -0.060 | 0.938                 | 0.500                 | 12.906          | -0.030      | 0.145    | 0.48                      | 0.40         |
| 14"            | 15.30                           | +0.050     | -0.080 | 1.188                 | 0.625                 | 14.969          | -0.030      | 0.165    | 0.55                      | 0.52         |
| 16"            | 17.40                           | +0.050     | -0.080 | 1.188                 | 0.625                 | 17.063          | -0.030      | 0.165    | 0.58                      | 0.43         |
| 18"            | 19.50                           | +0.050     | -0.080 | 1.188                 | 0.625                 | 19.125          | -0.030      | 0.185    | 0.63                      | 0.44         |
| 20"            | 21.60                           | +0.050     | -0.080 | 1.188                 | 0.625                 | 21.219          | -0.030      | 0.185    | 0.67                      | 0.45         |
| 24"            | 25.80                           | +0.050     | -0.080 | 1.188                 | 0.625                 | 25.406          | -0.030      | 0.185    | 0.73                      | 0.47         |
| 30"            | 32.00                           | +0.080     | -0.060 | 1.375                 | 0.750                 | 31.550          | -0.035      | 0.215    | 0.92                      | 0.51         |
| 36"            | 38.30                           | +0.080     | -0.060 | 1.375                 | 0.750                 | 37.850          | -0.035      | 0.215    | 1.02                      | 0.58         |

\* Ovality, or out-of roundness, must lie within specified tolerances.  
 † Must be smooth and free of deep pits or swells.  
 \*\* Groove must be of uniform depth for entire pipe circumference. Groove must conform to "C" diameter shown  
 # Min. standard wall thickness that should be grooved. Tolerances are to conform to Class 53 ANSI/AWWA C151/A21/51 For 18"-36" ductile iron, Class 53 pipe may be used. Contact E.J. Prescott for details.

## Rigid Radius Cut Groove Specifications – Ductile Iron Pipe



**NOTES:**

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| 8"             | 9.05                            | +0.060     | -0.060 | 0.950                 | 0.500                 | 8.781           | -0.025      | 0.145    | 0.41                      | 0.36         |
| 10"            | 11.10                           | +0.060     | -0.060 | 1.015                 | 0.500                 | 10.813          | -0.025      | 0.145    | 0.44                      | 0.36         |
| 12"            | 13.20                           | +0.060     | -0.060 | 1.015                 | 0.500                 | 12.906          | -0.030      | 0.145    | 0.48                      | 0.40         |
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| 16"            | 17.40                           | +0.050     | -0.080 | 1.340                 | 0.625                 | 17.063          | -0.030      | 0.165    | 0.58                      | 0.43         |
| 18"            | 19.50                           | +0.050     | -0.080 | 1.340                 | 0.625                 | 19.125          | -0.030      | 0.185    | 0.63                      | 0.44         |
| 20"            | 21.60                           | +0.050     | -0.080 | 1.340                 | 0.625                 | 21.219          | -0.030      | 0.185    | 0.67                      | 0.45         |
| 24"            | 25.80                           | +0.050     | -0.080 | 1.340                 | 0.625                 | 25.406          | -0.030      | 0.185    | 0.73                      | 0.47         |
| 30"            | 32.00                           | +0.080     | -0.060 | 1.625                 | 0.750                 | 31.550          | -0.035      | 0.215    | 0.92                      | 0.51         |
| 36"            | 38.30                           | +0.080     | -0.060 | 1.625                 | 0.750                 | 37.850          | -0.035      | 0.215    | 1.02                      | 0.58         |

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† Coatings applied to the interior surfaces, including bolt pad mating surfaces, of our bolted grooved and bolted plain end couplings should not exceed 0.010". Also, the coating thickness applied to the gasket seating surface and within the groove on the pipe exterior should not exceed 0.010".

**NOTE:** Grooving specifications for nominal pipe sizes 4" thru 24" are in accordance with AWWA C606 Standard for Grooves and Shouldered Type Joints. Other sizes not covered by the AWWA C606 Standard are manufactures' grooving specifications.