

**For those who may wish to draw up specifications of a general nature covering Dresser Style 38 couplings, this suggested form is offered:**

1.) The pipe coupling shall be of a gasketed, sleeve-type design with diameter to properly fit the pipe. Each coupling shall consist of one (1) steel middle ring, of thickness and length specified, two (2) steel followers, two (2) rubber-compounded wedge section gaskets and sufficient track-head steel bolts to properly compress the gaskets.

The middle ring and followers of the coupling shall be true circular sections free from irregularities, flat spots or surface defects. They shall be formed from mill sections with the follower-ring section of such design as to provide confinement of the gasket. After welding, they shall be tested by cold expanding a minimum of 1% beyond the yield point. The middle ring, inside and out, and followers shall be coated with AL-CLAD™ thermosetting, fusion-bonded epoxy coating material that provides disbondment resistance in cathodically-protected systems and resistance to soil stresses and fungi. All constituents of the cured film are FDA and NSF-61 approved for exposure to fluids for human consumption and potable water.

The coupling bolts shall be of the elliptic-neck, track-head design with rolled threads. The manufacturer shall supply information as to the recommended torque to which the bolts shall be tightened. All bolt holes in the followers shall be oval for greater strength.

The coupling gaskets shall be composed of a crude or synthetic rubber base compounded with other products to produce a material that will not deteriorate from age, heat, or exposure to air under normal storage conditions. It shall also possess the quality of resilience and ability to resist cold flow of the material so that the joint will remain sealed and tight indefinitely when subjected to shock, vibration, pulsation and temperature or other adjustments of the pipeline.

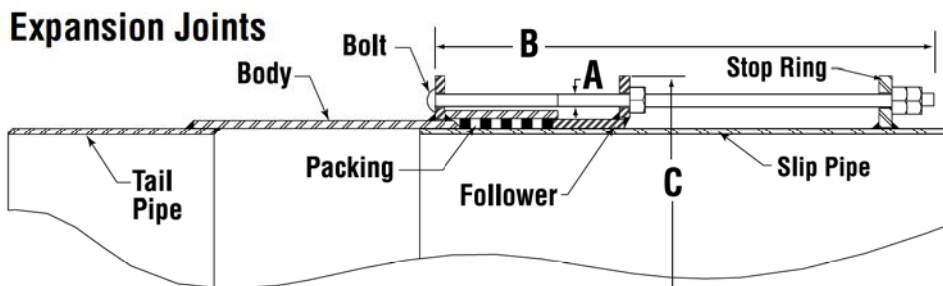
2.) The couplings shall be assembled on the job in a manner to ensure permanently tight joints under all reasonable conditions of expansion, contraction, shifting and settlement, unavoidable variations in trench gradient, etc. The coupling shall be Dresser Style 38, as manufactured by Dresser Piping Specialties, Bradford, PA, and the necessary quantity shall be furnished.

## When Ordering Dresser Expansion Joints

**Inquiries or orders for Dresser Style 63 Expansion Joints should contain the following information:**

- (1) Quantity
- (2) Type of pipe: ductile iron, steel, etc.
- (3) Style number and type
- (4) Service: Water, Industrial, etc.
- (5) Maximum working pressure
- (6) Amount of movement to be taken care of by each joint
- (7) Temperature limitations and ranges
- (8) Frequency of cycling;
- (9) End preparation of slip or tail pipe—beveled for welding, flanged, other
- (10) Remarks, unusual installations, and list support methods of line and joint

The proper type of expansion joint to use and the method of anchoring and connecting it into a line depend upon the conditions of service and type of installation, as well as other joints in the line. The most effective use of Style 63 expansion joints usually requires an engineering recommendation. For that reason, a complete description of the installation should be submitted, with sketches or working drawings, if possible. Special joints may also be made for unusual conditions.



## How to Specify Ends\* on Steel Pipe

On orders and in specifications, the ends on steel pipe to be used with Dresser couplings may be specified briefly as follows:

- The pipe shall be furnished with plain ends for Dresser couplings in accordance with **A.W.W.A.** (American Water Works Association) Steel Water Pipe Specifications;
- OR:
- The pipe shall be furnished with plain ends for Dresser couplings in accordance with A.P.I. (American Petroleum Institute) Line Pipe Specifications.

**If specifications are to be detailed, the following may be used:**

### For Pipe Above 5" OD to 10-3/4" OD inclusive:

- The pipe shall be sufficiently free from indentations, projections or roll marks for a distance of 8" from the end of the pipe to make a tight joint with the rubber-gasket type of coupling. The outside diameter of the pipe shall not be more than 1/64" smaller than the nominal outside diameter for a distance of 8" from the end of the pipe and shall permit the passing for a distance of 8" of a ring gauge which has a bore 1/16" larger than the nominal outside diameter of the pipe. The minimum outside pipe diameter shall be determined by the use of a steel tape circumferentially applied to prevent the shipment of undersize, out-of-round pipe which, if measured diametrically through the maximum diameter or checked with a No-Go ring gauge, might appear within the specified tolerance.

### For Pipe Larger than 10-3/4" OD:

- The pipe shall be sufficiently free from indentations, projections or roll marks for a distance of 8" from the end of the pipe to make a tight joint with the rubber-gasket type of coupling. The outside diameter of the pipe shall not be more than 1/32" smaller than the nominal outside diameter for a distance of 8" from the end of the pipe and shall permit the passing for a distance of 8" of a ring gauge which has a bore 3/32" larger than the nominal outside diameter of the pipe. The minimum outside pipe diameter shall be determined by the use of a steel tape circumferentially applied to prevent the shipment of undersize, out-of-round pipe which, if measured diametrically through the maximum diameter or checked with a No-Go ring gauge, might appear within the specified tolerance.

\*While Dresser couplings require only plain-end pipe, other kinds of pipe ends (such as threaded, beveled or grooved) can be used if such pipe is already on hand.

## How to Specify Ends on Cast/Ductile Iron Pipe

On orders and in specifications, the ends on cast or ductile iron pipe to be used with Dresser couplings may be specified briefly as follows:

- The pipe shall be furnished with plain ends for Dresser couplings in accordance with **A.W.W.A.** (American Water Works Association) specifications on tolerances;

OR:

- The pipe shall be furnished with plain ends for Dresser couplings in accordance with A.G.A. (American Gas Association) specifications on tolerances.

If further specifications are desired, the following may be added:

- The pipe shall be smooth and round for a distance of 8" from each end. The maximum plus or minus variation from nominal outside diameters for each size shall not exceed dimensions as shown in chart shown below.
- The maximum outside pipe diameter shall be such as to permit the passing of a ring gauge having an internal bore not greater than .01" larger than the maximum allowable outside diameter of the pipe. This ring gauge shall go over the end of the pipe for a distance of 8" for all sizes up to and including 24" and for a distance of 12" on sizes above 24".
- The minimum outside diameter shall be determined by use of a steel tape circumferentially applied to prevent the shipment of undersized, out-of-round pipe which, if measured diametrically through the maximum diameter or checked with a No-Go ring gauge, might appear within the specified tolerance.

Size	Maximum Variation
3" - 16"	.06"
18" - 24"	.08"
30" - 42"	.10"
48"	.12"
54" - 60"	.15"

# Coupling Deflection, Movement, Expansion and Contraction

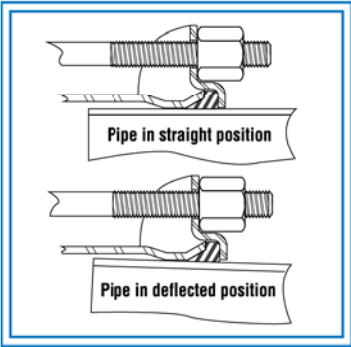
## Laying out curves with standard Dresser couplings and straight sections of pipe

Presented in tabular form in the table at right entitled "Radius of Curve and Deflection of Pipe in Feet", this chart indicates (1) radius of circle for any given degrees of deflection and pipe length, (2) length of pipe for any given radius and deflection or (3) degrees deflection necessary for any given pipe length and radius. This information is worked out for the more commonly used pipe lengths and degrees deflection.

RADIUS OF CURVE AND DEFLECTION OF PIPE IN FEET												
Length of Pipe Sec. (feet)	Radius of Curve (Feet)						Deflection of Pipe (Feet/Inches)					
	Varying degrees deflection in each coupling						Varying degrees deflection in each coupling					
	1°	2°	3°	4°	5°	6°	1°	2°	3°	4°	5°	6°
6	344	172	115	84	66	57	1/4"	2-1/2"	3-3/4"	5"	6-1/4"	7-1/2"
12	687	344	229	172	138	114	2-1/2	5	7-1/2	10	1' 5/8	1' 3
16	916	458	306	229	183	153	3-3/8	6-3/4	10	1' 1-1/2	1' 4-3/4	1' 8
18	1031	516	344	258	206	172	3-3/8	7-1/2	1' 1-1/4	1' 3-1/8	1' 6-7/8	1' 10-1/2
20	1145	573	382	286	229	191	4-1/4	8-3/8	1' 5/8	1' 4-3/4	1' 8-7/8	2' 1
30	1718	860	573	430	344	286	6-1/4	1' 5/8	1' 6-7/8	2' 1	2' 7-7/8	3' 1-5/8
40	2291	1146	764	573	458	382	8-3/8	1' 4-3/4	2' 1	2' 9-1/2	3' 5-7/8	4' 2-1/8

## Expansion & Contraction

Each coupling 10" ID and larger will safely accommodate up to 3/8" longitudinal pipe movement. This is equivalent to the amount of movement resulting from a 120° temperature variation in a 40-foot length of steel pipe. If pipe is not buried, anchorage should be provided to prevent excessive accumulation of movement. For repeated movements such as on a bridge or above ground, or if expansion exceeds 3/8" per joint, a Dresser Style 63 expansion joint should be used.



Maximum Recommended Laying Deflection Dresser Style 38 Couplings			
From 3/8" ID to 2" ID Inclusive.....6°			
From 2" ID to 14" OD Inclusive.....4°			
With Middle Ring Lengths:	5"	7"	10"
14" OD - 20" OD Inclusive	2-1/2"	4°	4°
20" OD - 30" OD Inclusive	2"	4°	4°
30" OD - 37" OD Inclusive	1-1/2"	3°	3-1/2°
37" OD - 42" OD Inclusive		2-1/2°	3-1/2°
42" OD - 49" OD Inclusive		2°	3°
49" OD - 54" OD Inclusive		2°	3°
54" OD - 66" OD Inclusive		2°	2-1/2°
66" OD - 78" OD Inclusive			2°
78" OD - 90" OD Inclusive			1-1/2°

# Methods of Supporting Coupled Lines

Shown below are three options for supporting pipeline connections when using Dresser couplings. **Figure A** shows the offset method near the pipe joint for diameters 6" and smaller with pipe lengths up to 20 feet. Suitable for any pressure providing pipe is anchored to support for high pressure. **Figure B** indicates the center-type support for diameters from 6" to 16" and lengths not over 20 feet.

This method is suitable for pressures up to 25 lb. maximum with pipe fully anchored to supports.

**Figure C** shows the "Two & One" method for all sizes and any length of pipe up to 40 feet. Suitable for any pressure providing pipe is adequately anchored. When utilizing this method each length of pipe must be anchored to one (and ONLY one) support.

