

# METHOD OF DIMENSIONING GROOVED PIPING ASSEMBLIES

*Prepared by*  
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PFI neither endorses, approves, or recommends any specific product by issuance of this standard.

### METRIC CONVERSIONS

The conversion of quantities between systems of units involves a determination of the number of significant digits to be retained. All conversions depend upon the intended precision of the original quantity and are rounded to the appropriate accuracy.

Pipe sizes together with applicable wall thicknesses are not shown with metric equivalents.

The SI (metric) values where included with the customary US values in this Standard are the rounded equivalents of the US values and are for reference only.

Metric units were derived utilizing the following conversion factor:

| <u>Conversion</u>    | <u>Factor</u> |
|----------------------|---------------|
| Inches to millimeter | 25.4          |

### 1. Scope

- 1.1 This standard covers the recommended practices for dimensioning grooved piping assemblies in a manner that would enable the fabricator to furnish a product meeting the geometry intended by the design engineer. This standard may be used in conjunction with additional fabrication processes (i.e., bending, welding, etc.) in accordance with PFI standards.

### 2. Dimensioning

- 2.1 Piping is normally of a circular cross section. Thus the geometry of a piping system can be fully defined by the location of the centerline axis of the pipe. Terminal points and points of change in direction of the pipe axis are known as working points. Since two points determine a straight line, it is recommended that the pipe axes be located by means of working points. Two alternate methods of locating working points are suggested in 2.2 and 2.3.
- 2.2 Fig. 1A illustrates location of the working points along the axis of the pipe by providing information on the length and direction of each consecutive segment of the axis.
- 2.3 Fig. 1B illustrates dimensioning by means of location of the work points from fixed reference planes, such as from ground elevation, column lines, etc.

- 2.4 While not necessary for the determination of the pipeline geometry, it is essential that the engineer provide the fabricator with additional information such as:

- a. pipe size and wall thickness
- b. material specification
- c. type of pipe fittings to be used
- d. bend radius for bends
- e. type of branch connections to be used
- f. type of grooves to be used (rolled or cut)
- g. type of couplings to be used and location of all rigid joints
- h. locations of all attachments
- i. permissible tolerances (see PFI Standard ES-39)
- j. system operating conditions

### 3. Fabrication Variables

- 3.1 This section intended to acquaint the engineer with the variables encountered by the fabricator.
- 3.2 In joining the components of a fabricated assembly, the fabricator must consider three factors; joint type and spacing; maximum and minimum pipe end separation and pipe fitting tolerances.