




SOUTHWEST GAS CORPORATION

® **ENGINEERING STAFF**

MATERIAL SPECIFICATION

Prepared By: Engineering Staff 

Approved By: Jerome T. Schmitz 

Section No:	MS E-9
Page No.:	1 of 8
Issue Date:	03/01/16
Superseded Date:	02/25/15

SERVICE FITTINGS

Meter Manifolds, Prefabricated

1. SCOPE

This specification covers two (2) types of prefabricated meter manifolds for multiple domestic meter set assemblies. The first manifold utilizes a Schedule 40 2-inch IPS header with Schedule 40 3/4-inch IPS threaded outlet branches. The second design utilizes a Schedule 40 2-inch IPS header with Schedule 80 3/4-inch IPS threaded outlet branches. This latter design is for use in heavy snow areas.

2. APPLICABLE DOCUMENTS


- 2.1 American National Standards Institute (ANSI) B2.1, "Pipe Threads."
- 2.2 American National Standards Institute (ANSI) Z55.1, "Gray Finishes for Industrial Apparatus and Equipment."
- 2.2 American Petroleum Institute (API) STD 5L, "Specification for Line Pipe", 26th Edition, April 1971.
- 2.3 ASTM International (ASTM) A53, "Pipe, Steel Black and Hot-Dipped, Zinc-Coated Welded and Seamless."
- 2.4 Southwest Gas Corporation Material Specification (MS) E-16, "Manifold-Valve-Lock Assembly."
- 2.5 United States Department of Transportation (DOT), Code of Federal Regulations (CFR), Title 49, Part 192, "Transportation of Natural and Other Gas by Pipeline; Minimum Safety Standards."

NOTE: Unless otherwise specified, the editions of the above documents incorporated by DOT 49, CFR 192 are applicable. Documents not incorporated by DOT 49, CFR 192 will be the most recent edition.



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3. TERMINOLOGY

3.1 General

- 3.1.1 "Southwest Gas," "Southwest" or "SWG" wherever used in this specification and other related documents will refer exclusively to Southwest Gas Corporation.
- 3.1.2 The terms "approved," "as approved," "satisfactory," "as directed," "or equal" or other similar terms wherever used in this specification and other related documents will mean "as determined by Southwest Gas," unless specifically stated otherwise.
- 3.1.3 "Product Information Package" or "PIP" wherever used in this specification and other related documents will mean the required technical product information that a manufacturer must submit to SWG to determine if the product is suitable for use unless specifically stated otherwise.

4. MATERIALS AND MANUFACTURING

4.1 Schedule 40 Manifold

- 4.1.1 The headers and the outlet branches shall be made from 2-inch and ¾-inch IPS Schedule 40 pipe which conforms to the requirements of API STD 5L, Grade A 25 Class I or II or ASTM A53, Type F. The longitudinal seam in the pipe shall not be visible to the unaided eye throughout the external length of the pipe not in the threaded portions of the pipe.

4.2 Schedule 80 Manifold

- 4.2.1 Same as above, except the ¾-inch outlet nipples shall be made from Schedule 80 pipe per ASTM A53, Type F (0.154 w.t.).


- 4.3 The headers shall be fabricated from 2-inch IPS Schedule 40 pipe threaded on both ends. The length of the headers shall be determined from the number of outlet branches specified on the order and according to the dimensions shown in Section 2.5 and on the drawing on Page 6 of 6.



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4. MATERIALS AND MANUFACTURING (Cont'd)

- 4.4 The outlet branches shall be fabricated from ¾-inch IPS pipe, threaded on one end and contoured on the other end to fit onto the 2-inch IPS headers. The wall thickness of the ¾-inch outlets shall be either Schedule 40 (.113) or Schedule 80 (.154) as required on the Purchase Order. The outlet branches shall be fillet welded onto the 2-inch IPS headers. The header shall be drilled with a ¾-inch diameter hole through each outlet branch. All burrs and chips shall be removed.
- 4.5 Pipe threads shall conform to the requirements of ANSI B2.1 for NPT threads. Threaded ends shall be reamed and chamfered and the chamfer shall extend for approximately one-half a thread. Threaded openings shall be capped or plugged with thread protectors.
- 4.6 The length of each header shall be determined by the number of outlets.
- 4.7 Location of outermost outlets (Dimension B) shall be 5± 1/16-inch from each end for aluminum or iron-case meters and 7± 1/16-inch from each end for the welded or tin-case meters.
- 4.8 Spacing between the outlet branches (Dimension A) on the header shall be 11± 1/8-inch for aluminum or iron-case meters; and 15 ± 1/8-inch for the (special order) welded or tin-case meters.
- 4.9 Length of each outlet branch shall be 3 ½-inches plus or minus 1/16-inch.
- 4.10 All scale, rust, grease, oil and other debris shall be removed prior to painting with meter gray enamel per ANSI Z55.1, Color 49.
- 4.11 After painting, a label shall be affixed to the manifold showing the manufacturer, type of meter the manifold was built for (i.e. aluminum/iron case meters or welded/tin-case meters) and the type of meter outlets (i.e. Schedule 40 outlets or Schedule 80 outlets).




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5. PERFORMANCE REQUIREMENTS

- 5.1 The manufacturer or supplier shall, upon request by the Company, furnish appropriate certification that the material furnished conforms to the requirements of this specification.
- 5.2 After all fabrication is completed, each meter manifold shall be pressure tested at 100 psig and shall not leak.

6. DIMENSIONS AND TOLERANCES

- 6.1 Straightness of 2-inch header shall not vary more than ¼-inch from a straight line over the entire length of the header.
- 6.2 Alignment of each outlet shall not vary more than 1/2° from a vertical line through the center of the cross section of the header pipe.
- 6.3 Centering of drilled ¾-inch hole through each outlet into the 2-inch header shall not vary more than 1/32-inch from a vertical line through the center of the cross section of the header pipe.

7. INSPECTION

- 7.1 Successful reviews of the Product Information Package (PIP), as well as any future reference by SWG to the Seller's part number or internal code number in any future contract or purchase, will mean only that no conflict with the specification was found and will not relieve the Seller from meeting all the requirements of this specification.
- 7.2 SWG retains the option to inspect the manufacture and testing of any and all materials, products or systems referenced in this specification that are sold to SWG.
- 7.3 SWG will make appropriate inspections and tests of any and all materials, products or systems supplied to this specification. SWG will have the right, at their option, to reject any material which fails to conform to this specification. Any such rejection may take place at the manufacturer's facility; the supplier's warehouse or any subsequent delivery location before or after SWG assumes possession. Notice of the rejection will be made promptly to the supplier by SWG. The defective product will be replaced or returned for credit at the manufacturer's expense.




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7. INSPECTION (Cont'd)

7.4 Any changes in the manufacturing of previously approved materials, products or systems described in this specification for sale to SWG must be approved by SWG's Engineering Staff. **Failure to obtain SWG's approval may be cause for rejection and disqualification as an approved supplier.**

8. CERTIFICATION

The manufacturer's or supplier's certification shall be furnished to Southwest. This certification shall state that samples representing each lot have been manufactured, tested and inspected in accordance with this specification and that requirements have been met. When requested or specified in the purchase order or contract, a report of test results will be provided.

Upon the request of Southwest, the certification of an independent third party indicating conformance to the specification may be considered at Southwest's expense.

9. SAFETY DATA SHEETS



In accordance with law, the Seller will supply Safety Data Sheets for all applicable items supplied under this specification to the following:

- 1) The Receiving Location
- 2) Engineering Staff
- 3) Southwest Gas Corporation
Corporate Safety
Mail Station LVA-120
P.O. Box 98510
Las Vegas, NV 89193-8510



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10. PRODUCT MARKING

All meter manifolds sold to Southwest will be marked with the following:

- Manufacturer's name or trademark
- Manufacturer's part number
- Material identification
- Nominal pipe size
- Schedule or nominal wall thickness

Southwest retains the right to require the fitting to be marked with Southwest's purchase order number and/or heat code identity.

11. PACKAGING AND PACKAGE MARKING

All meter manifolds will be packaged in a manner to prevent damage during transportation and storage.

12. STOCK CLASSIFICATION DESCRIPTION

MANIFOLD, _____ METER, _____-INCH IPS SCHEDULE _____, HEADER _____-INCH SPACING, _____-INCH CAP, _____-INCH IPS SCHEDULE _____ OUTLET BRANCHES, _____-INCH VALVE AND LOCK ASSEMBLY, CAN BE COATED WIT POLYESTER OR GRAY PAINT.



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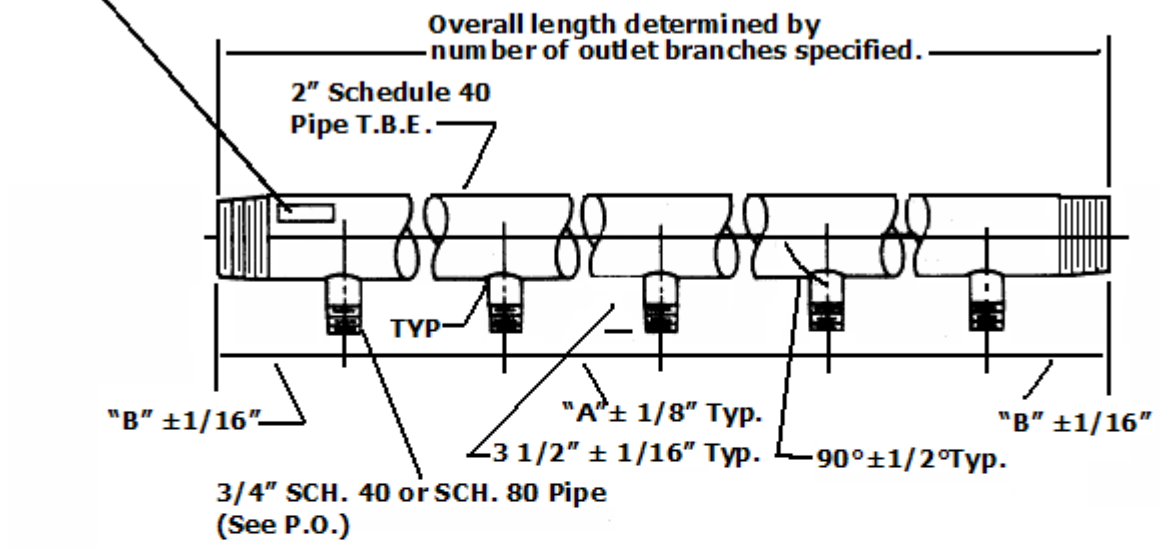
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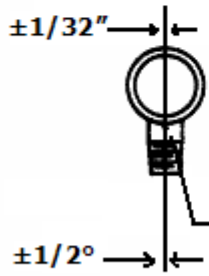
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Label Showing:

1. Manufacturer
2. Whether Manifold is for Aluminum /Ironcase Meters or Welded /Tincase Meters
3. Whether outlet branches are SCH. 40 or SCH. 80 Pipe



Dimension "A"	Dimension "B"	Application
11 Inches	5 Inches	AL or Ironcase Meters
15 Inches	7 Inches	Welded or Tincase Meters



Maximum deviation of header length between nipples shall be ± 1/8" in any direction.
 Total deviation of header from straight shall be ± 1/4".

NOTE:

1. After all fabrication is completed, each manifold shall be pressure tested at 100 PSIG & shall not leak.
2. All scale, rust, grease, oil & other debris shall be removed prior to painting with gray enamel per ANSI Z 55.1, color 49.