





SOUTHWEST GAS CORPORATION

® ENGINEERING STAFF

MATERIAL SPECIFICATION

Section No:	MS F-2
Page No.:	1 of 8
Issue Date:	03/01/16
Superseded Date:	02/24/15

Prepared By: Engineering Staff 

Approved By: Jerome T. Schmitz 

REGULATORS

Regulator Reconditioning

1. SCOPE

This specification covers the repair requirements for all types of regulators.

2. APPLICABLE DOCUMENTS

- 2.1 American National Standards Institute (ANSI) B-16.104-1976, "Control Valve Seat Leakage."
- 2.2 American National Standards Institute (ANSI) Z-55.1, "Specification for Gray Finishes for Industrial Apparatus and Equipment."
- 2.3 United States Department of Transportation (DOT), Code of Federal Regulations, 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.

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 by SWG, unless specifically stated otherwise.




SOUTHWEST GAS CORPORATION

® ENGINEERING STAFF

MATERIAL SPECIFICATION

Section No:	MS F-2
Page No.:	2 of 8
Issue Date:	03/01/16
Superseded Date:	02/24/15

Prepared By: Engineering Staff 

Approved By: Jerome T. Schmitz 

REGULATORS

Regulator Reconditioning

4. MATERIALS AND MANUFACTURING

- 4.1 All materials used in the reconditioning of regulators supplied to this specification will be compatible with natural gas. No copper components will be accepted.
- 4.2 All replacement parts for use in regulators reconditioned to this specification will comply with the current approved design of the respective Material Specification.
- 4.3 All replacement parts will be supplied by the regulator's manufacturer. Parts from any other source will not be accepted.
- 4.4 Products should meet customary and workman-like standards of fit and finish.
- 4.5 Unless otherwise specified, all regulators shall be coated with an Industrial Gray Coating No. 49 per ANSI Z-55.1.

5. INSPECTION

- 5.1 Successful review 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.
- 5.2 SWG retains the option to inspect the repair process, manufacture and testing of any and all materials, products or systems referenced in this specification that are sold to SWG.
- 5.3 SWG will make appropriate inspections and tests of any and all materials, products or systems supplied to this specification. Southwest 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 Southwest 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.





SOUTHWEST GAS CORPORATION

® ENGINEERING STAFF

MATERIAL SPECIFICATION

Section No:	MS F-2
Page No.:	3 of 8
Issue Date:	03/01/16
Superseded Date:	02/24/15

Prepared By: Engineering Staff 

Approved By: Jerome T. Schmitz 

REGULATORS

Regulator Reconditioning

5. INSPECTION (Cont'd)

5.4 Any changes in the manufacturing of previously approved materials, products or systems described in this material 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.**

6. 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.




SOUTHWEST GAS CORPORATION

® **ENGINEERING STAFF**

MATERIAL SPECIFICATION

Prepared By: Engineering Staff 

Approved By: Jerome T. Schmitz 

Section No:	MS F-2
Page No.:	4 of 8
Issue Date:	03/01/16
Superseded Date:	02/24/15

REGULATORS

Regulator Reconditioning

7. DOCUMENTATION

7.1 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 98193-8510

7.2 Product and Technical Literature

Product and technical literature shall be maintained and updated to reflect the current state of product knowledge. The literature shall be provided in electronic format, preferably on portable media (CD or DVD). This information should be mirrored on a website. Interim updates can be posted to the website or updated to the portable media.

8. PRODUCT MARKING

The month and year of reconditioning shall be stamped on a metal tag(s) bolted to the regulator diaphragm case.




SOUTHWEST GAS CORPORATION

® **ENGINEERING STAFF**

MATERIAL SPECIFICATION

Section No:	MS F-2
Page No.:	5 of 8
Issue Date:	03/01/16
Superseded Date:	02/24/15

Prepared By: Engineering Staff 

Approved By: Jerome T. Schmitz 

REGULATORS

Regulator Reconditioning

9. PACKAGING AND PACKAGE MARKING

- 9.1 All reconditioned regulators will be packaged in a manner to prevent damage during shipping, transportation and storage.
- 9.2 The package will be marked with the following information:
 - Reconditioning Firm name
 - Regulator manufacturer's name
 - Model designation
 - Connection size and type
 - Orifice size
 - Spring range


10. RECONDITIONING PROCESS REQUIREMENTS

- 10.1 All components will be visually inspected for deterioration, damage, stress cracks, corrosion, erosion or any other damage. Damaged components will be replaced.
- 10.2 If, after the regulator is inspected, it is determined that any major components require replacement, the cost of repair will be evaluated. If the cost of repair exceeds 75% of the cost of a new regulator, the regulator will be condemned.
- 10.3 All diaphragms, seals, gaskets, O-rings, seats and any rubber, plastic, fiber composition or other non-metallic components will be replaced during the reconditioning process.
- 10.4 Unless otherwise specified, all configuration related parts (orifices, springs, etc.) that require replacement will be replaced with the size and type listed on the regulator badge.
- 10.5 Information regarding any deviation from the badged configuration will be identified by the installation of a separate metal tag(s) on which the updated data has been permanently stamped. Update tags will be bolted to the regulator diaphragm case. Obsolete badge data will be permanently obliterated.



SOUTHWEST GAS CORPORATION
ENGINEERING STAFF
MATERIAL SPECIFICATION

Section No:	MS F-2
Page No.:	6 of 8
Issue Date:	03/01/16
Superseded Date:	02/24/15

Prepared By: Engineering Staff 

Approved By: Jerome T. Schmitz 

REGULATORS

Regulator Reconditioning

10. RECONDITIONING PROCESS REQUIREMENTS (Cont'd)

- 10.6 All metal-to-metal contact points will be lubricated as recommended by the manufacturer.
- 10.7 If an adjuster travel limiting device is required by the manufacturer for a particular spring installed in the unit, the limiting device must be installed whether or not one was on the unit as received.
- 10.8 All reconditioned regulators will be cleaned as necessary and painted in accordance with this specification.

11. TESTING OF REGULATORS

- 11.1 Each reconditioned regulator will be performance tested for flowing pressure and lockup using the following protocol.
 - Unless otherwise specified, the inlet pressure for the test will be 100 PSIG or the maximum rated inlet pressure, whichever is lower.
 - Flow pressure will be observed with the adjuster positioned at the midpoint of adjustment travel.
 - Under flowing conditions, the setpoint will be changed sufficiently to ensure the regulator's ability to respond to adjustment by first increasing pressure, then adjusting to decrease pressure, then returning to midpoint.
 - Flowrate will be approximately 10% of rated capacity.
 - The regulator will exhibit positive shutoff (lockup) under no load conditions for a period of not less than 5 minutes.
 - Maximum regulator lockup pressures are listed in Table F-2.3.

Maximum Lockup Pressure	
Nominal Outlet Pressure	Maximum Lockup Pressure
0 - 12 psig	25% over setpoint
12 - 60 psig	3 psig over setpoint
Over 60 psig	5% over setpoint

TABLE F-2.3

- 11.2 Each reconditioned regulator will be tested for leakage and proven leak free.




SOUTHWEST GAS CORPORATION

® ENGINEERING STAFF

MATERIAL SPECIFICATION

Prepared By: Engineering Staff 

Approved By: Jerome T. Schmitz 

REGULATORS

Regulator Reconditioning

Section No:	MS F-2
Page No.:	7 of 8
Issue Date:	03/01/16
Superseded Date:	02/24/15

12. TESTING OF CONTROL VALVES

- 12.1 Each reconditioned control valve will be tested to and perform within the shut off requirements of the ANSI B16.104-1976 control valve leak through specification.
- 12.2 Each reconditioned control valve will be tested for leakage and proven leak free.