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Robertshaw 700-506 Gas Valve Instruction Manual

Model: 700-506

1. PRODUCT OVERVIEW

The Robertshaw 700 series gas valve uni-kits are designed for use in intermittent pilot, direct spark, and hot surface ignition applications. This model, the 700-506, is a fast-opening gas valve with a capacity of up to 200,000 BTUH.

It integrates a manual valve, a pilot valve, and a main gas pressure regulator into a single unit. These valves are suitable for various residential and commercial heating systems, including central heating units, wall heaters, boilers, and mobile home furnaces.

Key features include:

- Normally closed solenoid for safety.
- Compact size with high flow rates.
- Standard NEMA terminals for electrical connections.
- Inlet filtered screen to prevent debris entry.
- Compatibility with various gas types: natural, manufactured, mixed, LP, and LP/air mixtures.



Image 1.1: Robertshaw 700-506 Gas Valve. This image displays the main unit of the gas valve, highlighting its compact design and connection points.

2. SAFETY INFORMATION

WARNING: Improper installation, adjustment, alteration, service, or maintenance can cause property damage, personal injury, or loss of life. Read the installation, operating, and maintenance instructions thoroughly before installing or servicing this equipment.

- Installation and service must be performed by a qualified installer, service agency, or gas supplier.
- Always shut off the main gas supply before attempting any installation, service, or maintenance.
- Check for gas leaks after any service or installation using a soap solution; never use an open flame.
- Ensure proper ventilation during operation.
- Do not bypass or tamper with safety devices.

This manual provides general guidelines. Always refer to the specific appliance manufacturer's instructions and local codes for complete safety and installation procedures.

3. PACKAGE CONTENTS

Upon opening the package, verify that all components are present:

- Robertshaw 700-506 Gas Valve Unit
- Product & Instructions Guide (this document and supplementary materials)
- Necessary parts for conversion to direct spark or hot surface applications (as specified in the included guide).

4. SPECIFICATIONS

Specification	Detail
Model Number	700-506
Material	Metal
Exterior Finish	Stainless Steel
Color	Silver
Item Dimensions (L x W x H)	3 x 3 x 4.13 inches
Item Weight	2 pounds
Inlet Connection Size	0.5 Inches
Inlet Connection Type	Standard
Outlet Connection Size	3 Inches
Number of Ports	1
Connector Type	Flanged
Specification Met	ASME, CSA, UL
Gas Types Supported	Natural, Manufactured, Mixed, LP, LP/Air mixtures

5. INSTALLATION AND SETUP

Important: Installation of this gas valve must be performed by a qualified and licensed professional in accordance with all local and national codes and regulations.

1. Preparation:

- Ensure the main gas supply to the appliance is turned off.
- Disconnect electrical power to the appliance.
- Ventilate the area thoroughly.

2. Removal of Old Valve (if applicable):

- Carefully disconnect gas lines and electrical wiring from the existing valve.
- Remove the old valve, taking note of its orientation and connections.

3. Mounting the New Valve:

- Mount the Robertshaw 700-506 gas valve in the same orientation as the original valve, ensuring it is securely fastened.

- The valve is designed with easily accessible wiring connections, manual selector, and adjustments.

4. Gas Line Connections:

- Connect the gas supply lines to the inlet and outlet ports of the new valve. Use appropriate pipe sealant on all threaded connections.
- The inlet connection size is 0.5 inches, and the outlet connection size is 3 inches. Ensure compatible fittings are used.

5. Electrical Wiring:

- Connect the electrical wiring to the standard NEMA terminals on the valve according to the appliance manufacturer's wiring diagram.

6. Leak Testing:

- Slowly turn on the main gas supply.
- Apply a soap solution to all gas connections. Bubbles indicate a leak. If a leak is detected, turn off the gas supply immediately and tighten connections until no bubbles appear.
- **Never use an open flame to check for gas leaks.**

7. Initial Startup and Adjustment:

- Refer to the appliance manufacturer's instructions for specific startup procedures and pilot light ignition.
- Adjust the main gas pressure regulator as needed, following the appliance specifications.

This uni-kit includes all necessary parts and instructions for conversion to direct spark or hot surface applications. Consult the supplementary instructions guide for detailed conversion procedures.

6. OPERATION

The Robertshaw 700-506 gas valve operates in conjunction with your heating appliance's control system to regulate gas flow to the main burner and pilot light.

- **Manual Valve:** This allows for manual shut-off of the gas supply to the entire valve. Ensure it is in the "ON" position for normal operation.
- **Pilot Valve:** Controls the gas flow to the pilot light. For systems with standing pilots, this valve must be open for the pilot to ignite and remain lit. For intermittent pilot or direct spark systems, the pilot valve opens as part of the ignition sequence.
- **Main Gas Pressure Regulator:** Maintains a consistent gas pressure to the main burner for efficient combustion.
- **Fast Opening Feature:** This valve is designed for quick response, allowing for rapid gas flow when called for by the thermostat or control system.

Always follow the operating instructions provided by the manufacturer of your specific heating appliance for proper startup, shutdown, and general use.

7. MAINTENANCE

Regular maintenance helps ensure the safe and efficient operation of your gas valve and heating system. All maintenance should be performed by a qualified service technician.

- **Annual Inspection:** Have a qualified technician inspect the gas valve and entire heating system annually. This includes checking for leaks, proper gas pressure, and overall valve function.
- **Inlet Filtered Screen:** The valve features an inlet filtered screen. During annual inspections, this screen should be checked for any debris or blockages and cleaned if necessary to maintain proper gas flow.
- **Cleaning:** Keep the exterior of the valve clean and free from dust and debris. Do not use harsh chemicals or abrasive cleaners.

Do not attempt to disassemble or repair the gas valve yourself. Contact a qualified service professional for any issues beyond routine cleaning and inspection.

8. TROUBLESHOOTING

If you experience issues with your heating appliance, consider the following common troubleshooting steps. For safety, always contact a qualified technician for diagnosis and repair if you are unsure or suspect a gas leak.

- **No Heat / Burner Not Igniting:**
 - Check if the main gas supply is turned on.
 - Verify that the manual valve on the 700-506 is in the "ON" position.
 - Ensure electrical power to the appliance is active.
 - Check the thermostat setting.
 - Inspect the pilot light (if applicable). If it's out, follow your appliance's instructions for relighting.
- **Pilot Light Not Staying Lit:**
 - This can indicate an issue with the thermocouple/thermopile or the pilot assembly.
 - Ensure the pilot flame is strong and consistently engulfing the thermocouple/thermopile.
 - A qualified technician should inspect and replace faulty components.
- **Gas Odor:**
 - If you smell gas, immediately turn off the main gas supply, open windows and doors, evacuate the premises, and call your gas company or a qualified technician from a safe location.
 - Do not operate any electrical switches or phones inside the building.

9. GAS TYPE CONVERSION

The Robertshaw 700-506 gas valve is compatible with various gas types. However, specific conversion kits are required to switch between natural gas and LP gas.

- To convert the valve for use with **Natural Gas**, use Robertshaw conversion kit **1751-003**.
- To convert the valve for use with **LP Gas**, use Robertshaw conversion kit **1751-013**.

WARNING: Gas type conversion must only be performed by a qualified service technician. Incorrect conversion can lead to unsafe operation, property damage, personal injury, or loss of life.

10. WARRANTY AND SUPPORT

For information regarding the product warranty, please refer to the warranty documentation included with your purchase or visit the official Robertshaw website. For technical support, replacement parts, or service inquiries, please contact Robertshaw customer service or a qualified service professional.

You can find more information and contact details on the Robertshaw Store on Amazon or their official corporate website.