

Remote Pilot 25 TRM Pilot Operated Temperature Regulator

Safety Information

Safe operation of these products can only be guaranteed if they are properly installed, commissioned, used and maintained by qualified personnel (see Section 1.11) in compliance with the operating instructions. General installation and safety instructions for pipeline and plant construction, as well as the proper use of tools and safety equipment must also be complied with.

1.1 Intended use

Referring to the Installation and Maintenance Instructions, name-plate and Technical Information Sheet, check that the product is suitable for the intended use/application.

- i) The products have been specifically designed for use on steam, air or water/condensate. The products' use on other fluids may be possible but, if this is contemplated, Spirax Sarco should be contacted to confirm the suitability of the product for the application being considered.
- ii) Check material suitability, pressure and temperature and their maximum and minimum values. If the maximum operating limits of the product are lower than those of the system in which it is being fitted, or if malfunction of the product could result in a dangerous overpressure or overtemperature occurrence, ensure a safety device is included in the system to prevent such over-limit situations.
- iii) Determine the correct installation situation and direction of fluid flow.
- iv) Spirax Sarco products are not intended to withstand external stresses that may be induced by any system to which they are fitted. It is the responsibility of the installer to consider these stresses and take adequate precautions to minimise them.
- v) Remove protection covers from all connections and protective film from all name-plates, where appropriate, before installation on steam or other high temperature applications.

1.2 Access

Ensure safe access and if necessary a safe working platform (suitably guarded) before attempting to work on the product. Arrange suitable lifting gear if required.

1.3 Lighting

Ensure adequate lighting, particularly where detailed or intricate work is required.

1.4 Hazardous liquids or gases in the pipeline

Consider what is in the pipeline or what may have been in the pipeline at some previous time. Consider: flammable materials, substances hazardous to health, extremes of temperature.

1.5 Hazardous environment around the product

Consider: explosion risk areas, lack of oxygen (e.g. tanks, pits), dangerous gases, extremes of temperature, hot surfaces, fire hazard (e.g. during welding), excessive noise, moving machinery.

1.6 The system

Consider the effect on the complete system of the work proposed. Will any proposed action (e.g. closing isolation valves, electrical isolation) put any other part of the system or any personnel at risk?

Dangers might include isolation of vents or protective devices or the rendering ineffective of controls or alarms. Ensure isolation valves are turned on and off in a gradual way to avoid system shocks.

1.7 Pressure systems

Ensure that any pressure is isolated and safely vented to atmospheric pressure. Consider double isolation (double block and bleed) and the locking or labelling of closed valves. Do not assume that the system has depressurised even when the pressure gauge indicates zero.

1.8 Temperature

Allow time for temperature to normalise after isolation to avoid danger of burns.

1.9 Tools and consumables

Before starting work ensure that you have suitable tools and/or consumables available. Use only genuine Spirax Sarco replacement parts.

1.10 Protective clothing

Consider whether you and/or others in the vicinity require any protective clothing to protect against the hazards of, for example, chemicals, high/low temperature, radiation, noise, falling objects, and dangers to eyes and face.

1.11 Permits to work

All work must be carried out or be supervised by a suitably competent person. Installation and operating personnel should be trained in the correct use of the product according to the Installation and Maintenance Instructions.

Where a formal 'permit to work' system is in force it must be complied with. Where there is no such system, it is recommended that a responsible person should know what work is going on and, where necessary, arrange to have an assistant whose primary responsibility is safety.

Post 'warning notices' if necessary.

1.12 Handling

Manual handling of large and/or heavy products may present a risk of injury. Lifting, pushing, pulling, carrying or supporting a load by bodily force can cause injury particularly to the back. You are advised to assess the risks taking into account the task, the individual, the load and the working environment and use the appropriate handling method depending on the circumstances of the work being done.

1.13 Residual hazards

In normal use the external surface of the product may be very hot. If used at the maximum permitted operating conditions the surface temperature of some products may reach temperatures in excess of 300°C (572°F).

Many products are not self-draining. Take due care when dismantling or removing the product from an installation (refer to 'Maintenance instructions').

1.14 Freezing

Provision must be made to protect products which are not self-draining against frost damage in environments where they may be exposed to temperatures below freezing point.

1.15 Disposal

Unless otherwise stated in the Installation and Maintenance Instructions, this product is recyclable and no ecological hazard is anticipated with its disposal providing due care is taken.

1.16 Returning products

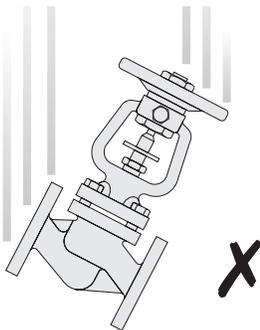
Customers and stockists are reminded that under EC Health, Safety and Environment Law, when returning products to Spirax Sarco they must provide information on any hazards and the precautions to be taken due to contamination residues or mechanical damage which may present a health, safety or environmental risk. This information must be provided in writing including Health and Safety data sheets relating to any substances identified as hazardous or potentially hazardous.

1.17 Working safely with cast iron products on steam

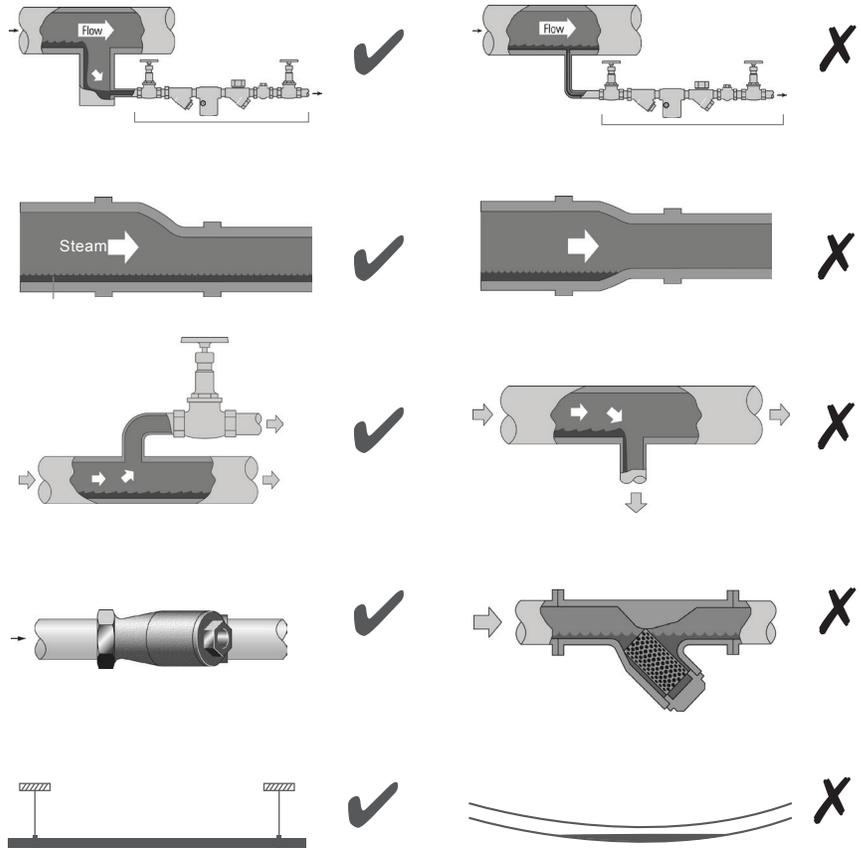
Cast iron products are commonly found on steam and condensate systems. If installed correctly using good steam engineering practices, it is perfectly safe. However, because of its mechanical properties, it is less forgiving compared to other materials such as SG iron or carbon steel. The following are the good engineering practices required to prevent waterhammer and ensure safe working conditions on a steam system.

Safe Handling

Cast Iron is a brittle material. If the product is dropped during installation and there is any risk of damage the product should not be used unless it is fully inspected and pressure tested by the manufacturer.



Steam Mains - Do's and Don't's:



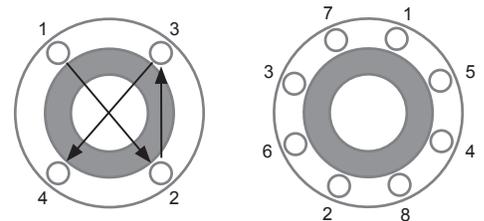
Prevention of tensile stressing

Pipe misalignment:

Installing products or re-assembling after maintenance:



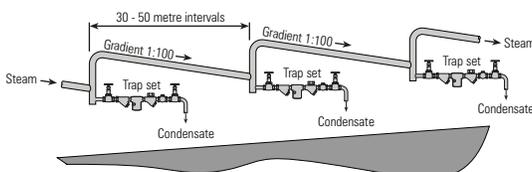
Do not over tighten.
Use correct torque figures.



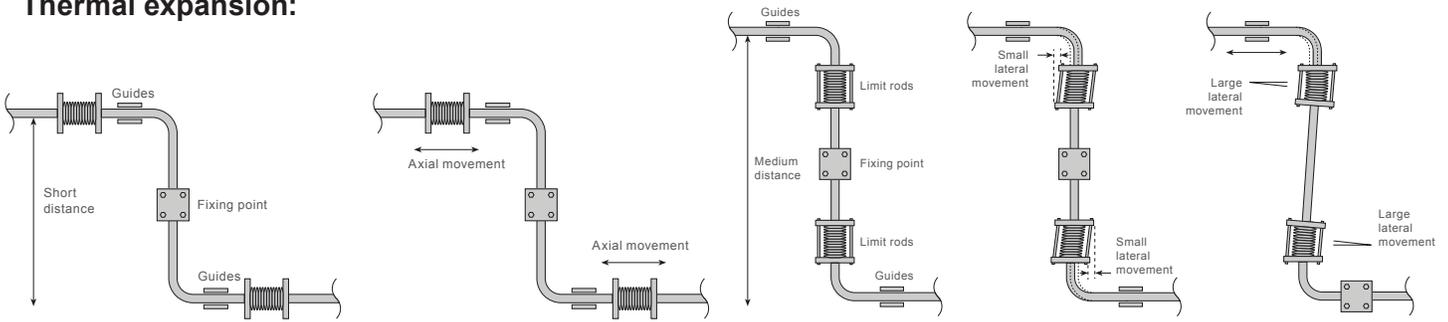
Flange bolts should be gradually tightened across diameters to ensure even load and alignment.

Prevention of water hammer

Steam trapping on steam mains:



Thermal expansion:



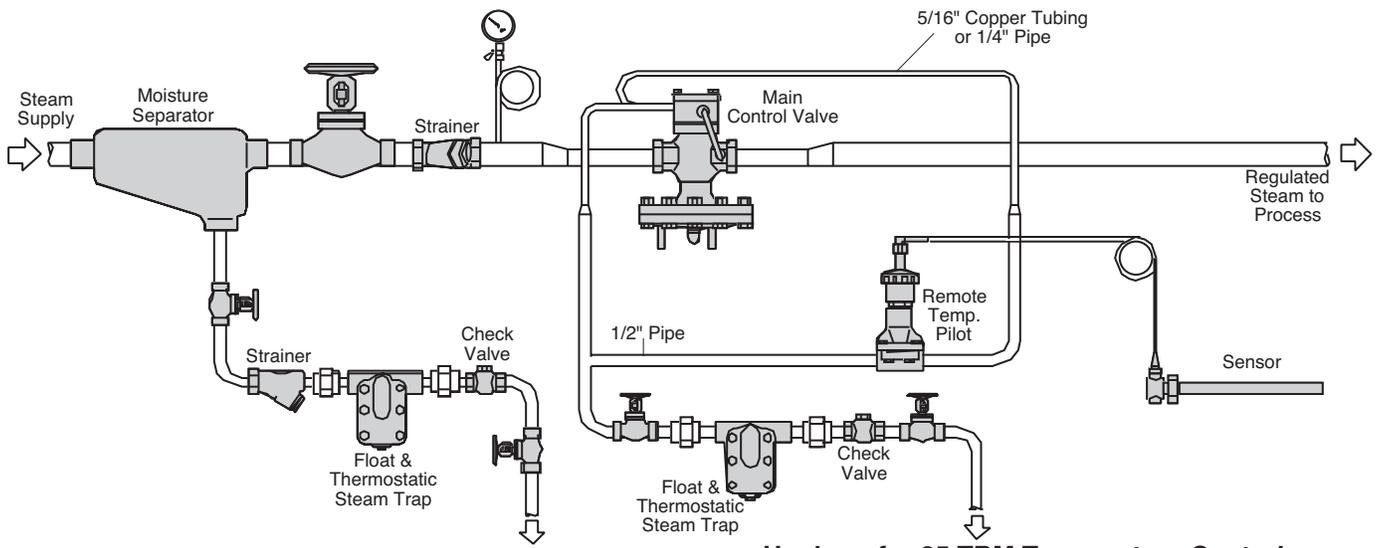
Assembly Instructions

Caution: Installation should be performed by qualified service personnel. Before installation or any maintenance is performed, ensure that all main valve and pilot stop valves are closed and that all internal pressure has been relieved. When breaking any connection, piping/bolts should be removed slowly so that if the line is under pressure, this fact will be apparent before completely removing the pipe or component. Always relieve pressure before breaking any joint. Allow main valve and lines to cool before beginning installation.

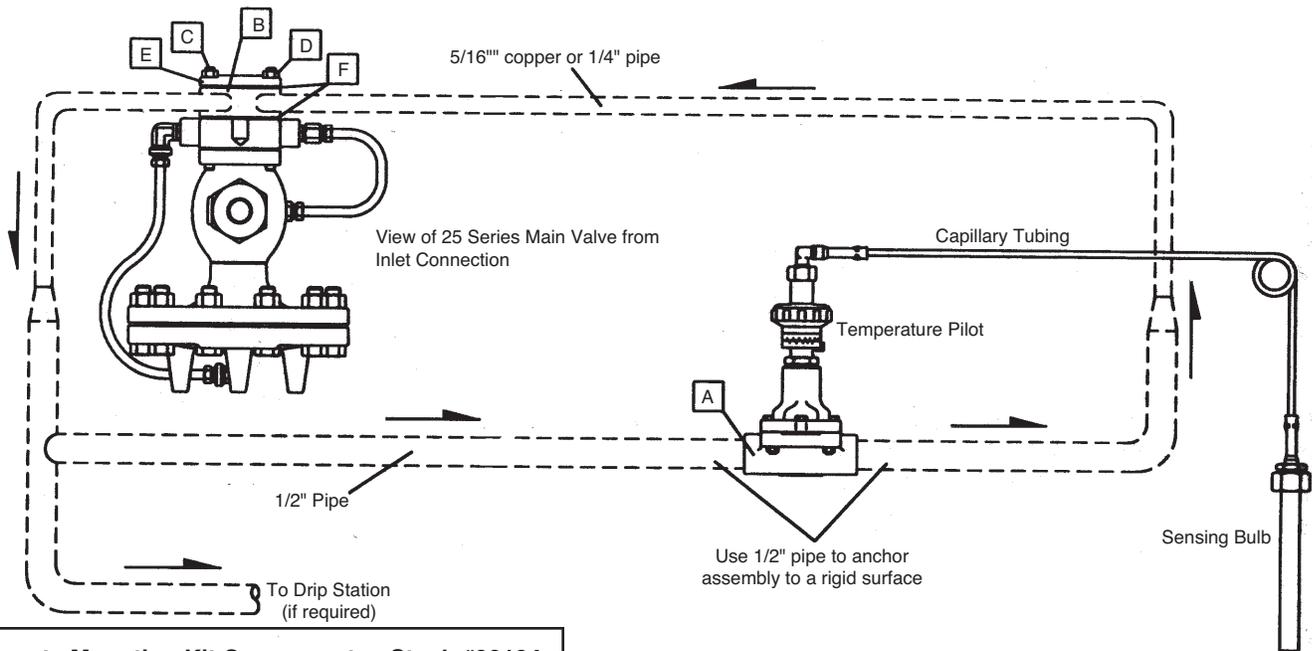
1. If a pilot valve is mounted, remove the present pilot valve assembly from the main valve body. Leave the main valve cover and the copper tubing connections intact.
2. Assemble the adapter (B) and cap (E) to the main valve body using studs (C) and nuts (D) in the location which the pilot valve assembly was removed in Step 1. Make sure that the locating pin is properly entered into the locating pin hole. Place gaskets (F) between castings as shown on the attached drawing.
3. Assemble body (A) and pilot valve assembly as shown in the attached drawing. Be sure to place gasket between pilot valve and body (A). Make certain that the locating pin is properly entered into the locating pin hole.
4. Note direction of pilot flow indicated on the attached drawing. Connect 5/16" copper tubing or 1/4" pipe between exit flow of adapter (B) and inlet end of body (A) indicated with arrow on casting.
5. Connect a similar pipe between outlet of body (A) to the inlet of adapter (B).
6. Carefully uncoil the flexible tubing avoiding sharp bends and kinks.
7. Support flexible tubing to protect it against mechanical damage.
8. Keep flexible tubing away from hot pipe lines or other hot surfaces.
9. Install thermostatic bulb to unit to be controlled. Make certain that the entire bulb is exposed to the medium being controlled. Accuracy of regulation depends on the bulb being located in a representative location with adequate circulation over it.
10. If a separable socket is used for the temperature bulb, it is recommended that the socket be packed with a heat transfer compound to minimize lag in response to temperature changes caused by the insulating air layer between bulb and socket.

Start-Up

1. First make certain that all stop valves are closed.
2. Adjust the temperature pilot to the temperature required by turning the red adjustment knob 3C. Caution: DO NOT loosen Allen set-screw in the red temperature knob.
3. Open stop valves in the following order:
 - a. Open stop valves ahead of steam trap on steam supply line. This will insure condensate free steam at the regulator inlet.
 - b. Open downstream stop valve.
 - c. Slowly open inlet stop valve.
4. After the system has stabilized itself, check thermometer temperature. Readjustment of the temperature pilot (red knob 3C) may be necessary. Note: In the event the temperature indicated on the calibrated dial does not agree with the thermometer, the temperature pilot can be recalibrated to match the thermometer. See Installation and Maintenance Instructions - IMI 1.1116 for recalibration procedure.
5. Important - Retighten all pilot flange connections to insure steam tight joints.



Hook-up for 25 TRM Temperature Control Remotely Mounted (within 15 ft. of Main Valve)



Remote Mounting Kit Components - Stock #99134

- A (1) 1/2" MP Valve Body
- B (1) Adapter Bracket
- C (4) Studs
- D (4) Nuts
- E (1) E Pilot Cap
- F (2) Pilot Gaskets

Notes:

1. Piping shown in phantom lines to be supplied by end user.
2. Remote pilot should not be more than 15 feet from the main valve.

Spirax Sarco Applications Engineering Department
Toll Free at:
1-800-575-0394



SPIRAX SARCO, INC. • 1150 NORTHPOINT BLVD. • BLYTHEWOOD, SC 29016
 PHONE 803-714-2000 • FAX 803-714-2200