Vals must be installed into a well-designed system and it is recommended that the system be inspected in accordance with the appropriate national and regional legislation.

Vals must be installed by trained personnel only.

Service temperature and pressure indicated on the identification plate or body marking should not be exceeded.

The installation should be designed to provide adequate means of draining and venting to prevent cleaning, inspection and maintenance in the incorrect manner.

Vals are not designed to operate under high shock loads. Where pressure increases occur due to shock loading (water hammer), they should be added to the working pressure to obtain the total pressure acting on the valve. The total must not exceed the pressure rating of the valve. A pressure surge, or shock, is usually caused by the rapid closure of a check valve or quarter turn valve resulting in a sudden reduction in flow rate.

It is the responsibility of the installer to ensure that the valves do not exceed the allowable limits of pressure. However, the equipment is designed to withstand a momentary pressure surge of up to 10% above the maximum working pressure.

The product has not been designed to include corrosion, erosion or abrasion allowances. Any queries regarding service applications should be addressed to the Crane FS - Technical Sales Department.

The valves have been designed for loadings, appropriate to its intended use and other reasonably foreseeable operating conditions. Loadings caused by traffic, wind and earthquake have not been taken into account.

The piping system shall be designed to reduce the risk of fatigue due to vibration of pipes.

Maximum operating pressure reduces as service temperature increases. Pressure and temperature limitations are shown by the valve body marking or on the identification plate.

Crane FS valves have not been designed as fire safe valves.

Every effort has been made to ensure that the information contained in this publication is accurate at the time of publishing. Crane FS assumes no responsibility or liability for typographical errors or omissions or for any misinterpretation of the information within the publication and reserves the right to change without notice.

**TABLE**

<table>
<thead>
<tr>
<th>Fig. No.</th>
<th>Material</th>
<th>PED CATEGORY BY VALVE SIZE</th>
<th>PRODUCT APPLICATIONS</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>SEP Not CE marked</td>
<td>GROUP 1 GAS</td>
</tr>
<tr>
<td>FM124</td>
<td>Ductile Iron</td>
<td>50-300</td>
<td>✓</td>
</tr>
<tr>
<td>FM125</td>
<td>Ductile Iron</td>
<td>50-300</td>
<td>✓</td>
</tr>
</tbody>
</table>

**DUCTILE IRON RESILIENT SEATED GATE VALVES**

**FM124 (HANDWHEEL) | FM125 (STEM ADAPTOR)**

Gate valves provide complete shut off, providing the seats remain undamaged, and offer very little resistance to flow in the open position. Gate valves are best suited to infrequent valve operation, as any dirt in the system can cause scuffing of the seats.

Gate valves are not recommended for use in the partially open position because vibration and erosion of the disc may occur.

**GENERAL INSTALLATION**

**Preparation**

- Ensure valve is suitable for service conditions e.g. pressure, temperature, service media.
- Remove dust caps/flange protectors, where fitted.
- The installation shall be designed to provide adequate means of draining and venting to permit cleaning, inspection and maintenance in the correct manner.

- The valves may be installed in horizontal pipework with the stem in the vertical position, or in vertical pipework with the stem horizontal. The valves should not be installed in horizontal pipework with the stem horizontal because shut off performance may be impaired.
- The Valves are not designed for use as "end of line" services, where mounted on the end of a pipeline we strongly recommend the use of a blanking flange.
**Valve Location**

- Valves should be located to ensure ease and safety of operation and access allowed for subsequent maintenance of the valve.

**Piping Supports**

- These must be carefully aligned and at the correct distance between centres for the size and type of pipe. The following publications provide details of correct spans and installation details:
  - BS3974, Specification for Pipe Supports (Available from BSI)

**Flange Joints**

- Cast iron flanges may be damaged by over tightening the bolts.
- Make sure the pipe flanges are correctly aligned.
- Full faced gaskets should be used with flat faced flanges to reduce stress.
- Always use the correct size and number of bolts.
- Appropriate gaskets, bolting, and correct assembly torques should be used to ensure integrity of joint. Do not match flat-faced flanges to raised face flanges.
- The distance between the pipe flanges should exceed the face to face dimension of the valve by at least 20mm. This will ensure that raised faces are not damaged and gaskets can be inserted.

**OPERATION**

- Resilient Seated Gate Valves are designed for On-Off service, regulating or throttling services should be avoided. The valve is closed by turning the operating element i.e. Cap-Top, Handwheel or Extension Spindle in a clockwise or anti-clockwise direction, which is confirmed on the identification label.
- Once installed operate the valve through its full extent. The valve should be operated by Handwheel or Tee Key without applying excessive force. Valves can also be fitted with correctly sized and fitted gearboxes or Actuators that should be specific for the process or duty.
- Gate Valves are designed to operate either in the fully closed or open positions, if used in an intermediate position this will lead to increased wear and therefore reduced life expectancy.
- Media temperature limitations should not be exceeded.

**OPERATION (CONTINUED)**

- The maximum pressure rating is that on a closed valve.
- Where EPDM is used as the sealing medium, oil or grease should not be allowed to come into contact as this will cause swelling in the EPDM.

**MAINTENANCE**

**Pre-Maintenance Checks**

The valve should be at zero pressure and ambient temperature prior to any maintenance.

Maintenance Engineers & Operators are reminded to use correct fitting tools and equipment.

A full risk assessment and methodology statement must be compiled prior to any maintenance.

The risk assessment must take into account the possibility of the limits of use being exceeded whereby a potential hazard could result.

A maintenance programme should therefore include checks on the development of unforeseen conditions, which could lead to failure.

**Routine Maintenance**

Occasionally operate valves that remain open or closed for long periods to ensure they are in good working order, thus avoiding the possibility of being inoperable in a time of emergency.

**LEAKING GLAND**

Operate the valve one full turn or more and return to the original position.

If leaking persists the ‘O’ rings in the gland requires replacing.

**PRESSURE/TEMPERATURE RATING**

<table>
<thead>
<tr>
<th>Fig. No.</th>
<th>Max. Operating Pressure Conditions</th>
<th>Max. Operating Temperature Conditions</th>
</tr>
</thead>
<tbody>
<tr>
<td>FM124 / FM125</td>
<td>16 Bar</td>
<td>0 to 80 °C</td>
</tr>
</tbody>
</table>

Insulation is essential for external temperatures from 0°C to 10°C. The Valves are not suitable for fatigue loading, creep conditions, corrosive or erosive service or transporting fluids with abrasive solids.

**GENERAL CONSIDERATIONS**

- It is bad practice to install valves with the handwheels pointing downwards, as damage may be caused to the gland packing and stem seal, by debris in the system.
- Where the handwheel, and therefore the identification plate, is removed for maintenance they must be refitted after the work is completed.
- The surfaces of valves in service may be subject to extreme temperatures; care should be taken when handling.

**LIMITS OF USE**

These valves have been categorised in accordance with the Pressure Equipment Directive 2014/68/EU.

The fluid to be transported is limited to those shown in the product table. On no account must these valves be used on any unstable fluids, or for the fluids groups not specified in the product table.

Note: Valves that are classified as SEP (Sound Engineering Practice) are not CE marked and therefore do not require a declaration of conformity.