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## Fig. KIRIG25 Ductile Iron Resilient Seated Gate Valve Installation & Maintenance Instructions

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### PRODUCT LIFE CYCLE

The life of the valve is dependent on its application, frequency of use and freedom from misuse.

The properties of the fluid being transported such as pressure and temperature must be taken into account to avoid premature failure.

Other factors to be considered are the electrolytic interaction between dissimilar metal used in the system, dezincification and stress corrosion cracking occurring on chilled water service.

Before commissioning a system, it should be flushed to eliminate debris and chemically cleaned as appropriate to eliminate contamination, all of which will prolong the life of the valve.

### Operating pressures and temperatures

Maximum non shock pressure and temperature range:

25 bar from -10°C to 120°C

Water hammer and other shock conditions should be avoided.

Not suitable for fatigue loading, creep conditions, fire testing, fire hazard environment, corrosive service or transporting abrasive solids.

### PRESSURE / TEMPERATURE RATING

These valves must be installed in a piping system where the normal pressure and temperature do not exceed the above ratings.

If system testing will subject the valve to pressures in excess of the working pressure rating, this should be within the test pressure for the body with the valve in the open position.

If the limits of use specified in these instructions are exceeded or if the valve is used on applications for which it was not designed, a potential hazard could result.

### LAYOUT AND SITING

It should be considered at the design stage where valves will be located to give access for operation, adjustment, maintenance and repair.

The preferred installation orientation is;

- Horizontal pipework with stem vertical - valves should not be installed with the stem horizontal as this may impair its sealing capability.
- Vertical pipework with stem horizontal.



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### INSTALLATION

Prior to installation, a check of the identification plate and body marking must be made to ensure that the correct valve is being installed.

Valves are precision manufactured items and as such, should not be subjected to misuse such as careless handling, allowing dirt to enter the valve through the end ports and excessive force during handwheel operation.

Valves and adjoining pipework must be provided with adequate support to avoid inducing bending stresses into the valve body, which will impair its performance.

Immediately prior to valve installation, the pipework to which the valve is to be fastened should be checked for cleanliness and freedom from debris. Valve end protectors should be removed immediately prior to installation.

Valves should not be lifted using the handwheel or stem, use the correct slings.

The surface finish and condition of the gasket contact face on both the valve and pipework should be checked. Incorrect surface finish or damage can cause leakage and no attempt to assemble should be made until it has been rectified.

Gaskets should be suitable for the operating conditions including the maximum temperature and pressure.

Care should be taken to align the flanges being assembled.

During assembly bolts should initially be hand tightened sequentially to make the initial contact ensuring gaskets are concentric with the valve ports and that the flanges are parallel.

Finally tighten the bolts gradually and uniformly in an opposing sequence to prevent bending one flange relative to the other, particularly on flanges with raised faces.

Parallel alignment of flanges is especially important when assembling between exist flanges.

### INSTALLATION

Flanged joints depend on compressive deformation of the gasket material to achieve a seal.

After installation, the valve may be opened and closed fully to confirm satisfactory operation.

It is recommended that valves installed on end of line service and unused for prolonged periods should be fitted with a blank flange.

### OPERATION

Open the valve by rotating the handwheel anticlockwise until a positive stop is felt. When fully open it is recommended to close the valve by  $\frac{1}{2}$  a turn.

Close the valves by rotating the handwheel clockwise until a positive stop is felt.

Wheel keys or similar devices should not be used.

The operator should use suitable hand protection at extreme temperature conditions.

Gate valves should only be used in the full open or closed position.



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### MAINTENANCE

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

A full risk assessment and method statement must be compiled prior to any maintenance. Use only correctly fitting tools and equipment.

The valve should be included in a planned maintenance programme to identify any leakage at an early stage and rectified before it becomes serious

These gate valves should not normally require any maintenance, apart from periodic inspection and adjustment of the gland.

When no further adjustment is left partially repack or fully replace the existing packing depending upon the amount of packing in the stuffing box or severity of the leakage.

Using a sharp pointed tool, lift out the existing packing and ensure the stem and stuffing box are clean & free from debris. Take care not to damage the stem or stuffing box.

Fit appropriate packing into the stuffing box and press down firmly. Re-fit the gland, handwheel and nameplate and confirm stem resistance while operating the valve.