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1. SAFETY

These instructions contain essential health and safety requirements concerning the safe use of the equipment.

1. For the intended purpose that was specified to Hopkinsons, e.g. location, pressure, temperature, fluid, etc.

2. When installed, operated, maintained, etc. in accordance with these instructions.

Failure to comply with these points in their entirety involves serious risk.

The manufacturer of this valve and actuator is:

WEIR VALVES & CONTROLS Ltd,
Britannia House,
Huddersfield Rd,
West Yorkshire,
Elland, HX5 9JR.
England.

A nameplate is attached to the valve adaptor plate giving details in accordance with the valve standard to which this valve has been manufactured. It includes details of the manufacturing contract and item number and valve figure number. The nameplate details should be quoted in their entirety in any correspondence with Weir valves & Controls, for the enquiry of spare parts or other technical information.

Where actuators are employed, a nameplate is also attached to the electric actuator, and similarly all nameplate details should be quoted in any correspondence concerning the actuator. In addition to these instructions, the Operating and Maintenance Instructions for the actuator must be read and fully understood, and must be consulted in any matter relating to the actuator.

Where gearboxes are employed, please refer to the information provided by the gearbox manufacturer.

The following warning/instructions are attached to the valve assembly and must be observed and followed at all times.

SAFETY WARNINGS:
Hot surfaces.
Electrically isolate actuator before adjustment or maintenance to valve.
Valve must be depressurised before adjustment and maintenance.

Please refer to Weir Valves & Controls UK Ltd Publications 'SAFETY WITH VALVES' and 'SAFETY WITH ELECTRIC ACTUATORS' for general principles on installation, operation and maintenance. However, in all cases these Operating and Maintenance Instructions supersede any alternative information that may be given in, for example non-specific catalogues or the above mentioned general safety publications.

At all times the valve must be maintained to a safe condition and any damaged or worn parts must be replaced with the correct parts supplied by Weir Valves & Controls Ltd. Users are strongly recommended to avail themselves of the training courses provided by Weir Valves & Controls UK, who also provide on-site and off-site repairs.

We recommend that a record is kept of all work done to this equipment, including its operating history.

Description

The valve is of parallel slide design and the seat tightness in obtained solely by the steam pressure acting on the back of the outlet seat and holding on the back of the outlet disc. The discs are independent of each other and are free to align themselves to the seats and hold against steam pressure in any direction: they are also free to

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revolve thus minimising the possibility of longitudinal scratches across the seat and disc faces.

The spring between the disc and seat is not responsible for the steam tightness of the valve, but it dose allow the disc to remain in contact with the seats when there is no pressure within the valve or the disc are under equilibrium conditions of pressure with the relevant seats. This ensures that during closer the discs create a wiping across the seats which aids the removal of any scale or other impurities which may have lodged on the seats during operation.

Dismantling

Observe all safety precautions

The valve should be in the closed position

Remove bonnet fasteners

Remove the bonnet complete with the stem/belt assembly. Carefully withdraw the assembly taking care to secure the discs as the assembly is removed.

Overhaul

Overhaul the valve only when it is safe to do so. Obtain the correct spare parts prior to dismantling the valve. Do not attempt to reuse gland packing material.
Care must be taken not damage to the stem or stuffing box when removing old packing material. Clean and inspect all parts and replace any damaged components.

Assembly
Ensure that all parts are clean. Assemble the disc spring and discs together in the belt eye. The disc assembly now has to be introduced between the seats of the valve, to achieve this the spring has to be compressed.
The discs should therefore be positioned on top of the seats with one disc already entered. Using a wood lever or some other such instrument move carefully back the free disc so that the assembly enters the space between the seats. The lever must only be used on the centre of the disc, and care taken not to damage the sealing faces. However, on large sizes (e.g. DN 150 and above) a clip as shown in Fig. 1 should be made and used.

Re packing should be performed with the valve stem through the bonnet, with no other fittings preventing access to the stuffing box.

Refer IOM-P1-R0 Maintenance of Valves & Seats

If the valve utilises any loose metal ring or bushes in the stuffing box, ensure those are in place.

Replace any preformed block where fitted.

Cut to length and fit a portion of braided packing. Square ends are best there is no need to scarf or mitre the joint. Cut to length just before insertion to avoid braid from fraying. Avoid using braid cut too short.

Fit each ring of packing separately, tamping down each ring into the stuffing box with a tubular ram preferably fitted with a bronze bush on the end and having a small clearance between the spindle and stuffing box.
Each successive ring should be tamped down, until the full compliment of rings are fitted. Consolidation of the rings is important as adequate load cannot be achieved solely by tightening the gland studs.

Fit a final piece of braided packing into the top of the stuffing box as described above.

Fit the gland follower and replace the nuts, tighten the nuts evenly keeping the stem and gland concentric to avoid any contact with any parts in the sealing area.

The valve may then be completely assembled, tested and the system re commissioned. The packing may require slight attention after the application of pressure and temperature, in order to maintain packing density the gland should be followed up as soon as possible after re commissioning to prevent leakage. This is done by tightening the gland nuts.

In order to obtain optimum service during service glands should be followed up as soon as any leakage is detected.

Preventative Maintenance

Regularly inspect valves for signs of gland leakage. The gland packing can be tightened to

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prevent leakage but if a leak has persisted for some time it will have blown out some of the packing material and thus simply tightening the gland will not prevent the leakage. In addition the lack of support given to the stem by the gland packing may allow for the stem to come into contact with the metal gland parts.

Caution: Only undertake preventative maintenance when it is safe to do so.
Do not over tighten gland nuts in an attempt to stop gland leaks. If the leakage cannot be controlled, then overhaul the gland at the earliest opportunity.

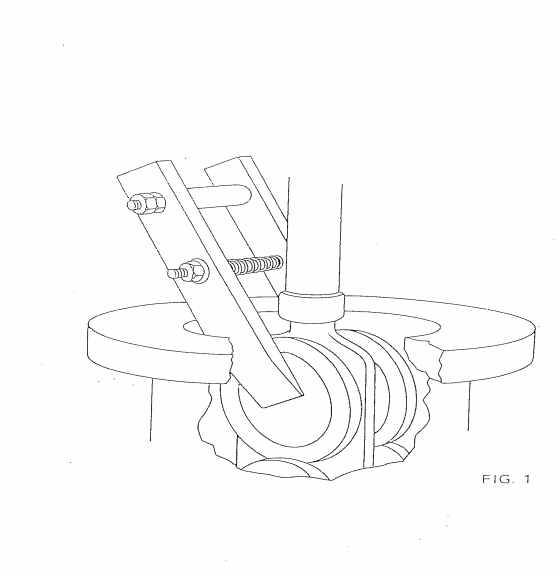
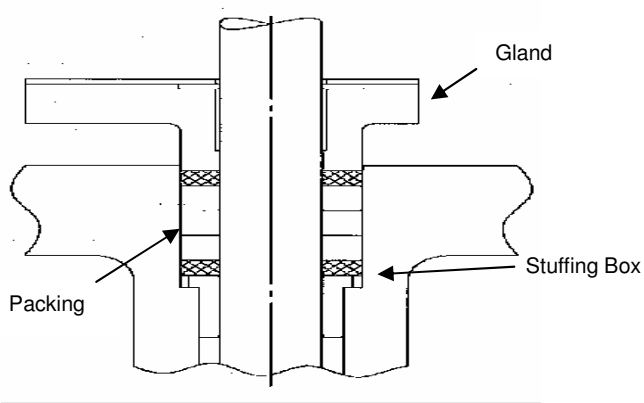


FIG. 1

Typical Packing Arrangement



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