



## AVK Connect – Product Engineering Update No.0002

### Series 555 Mk3 Wedge Gate Valve Spindle Shear Groove

#### **Introduction**

There have been some occurrences where some customers have broken spindles on Series 555 Mk3 valves. They were reported as '*breaking during operation*'.

Valve as supplied with shear groove



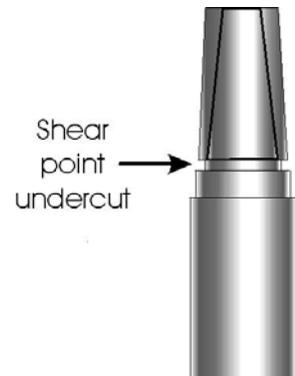
Top of the spindle sheared off



#### **S.555 Mk3 spindle design.**

The S.555 Mk3 valve spindle is designed such that, in the event of excess torque, bending force or an impact, failure will occur at the shear groove outside of the main body of the valve.

An undercut is machined to ensure that when torque levels reach an excessive level the spindle will shear. This leaves the valve internals in a safe condition, prevents damage to the pressure containing and working parts of the product and prevents any potential for gas leakage to atmosphere.



The valves are designed to operate and seal at a very low closing torques and the torque to obtain a double block and bleed seal is normally below 100Nm.

In accordance with GIS/V7-1 'Metal bodied line valves for use at pressures up to 16 bar and construction valves for use at pressures up to 7 bar' the maximum allowable closing torque to achieve a seal through the valve is 150Nm and that the valve must be able to withstand a torque of 225Nm without failure.

Therefore in operation the torque value of 150Nm must never be exceeded for any reason. This can be verified by using a torque wrench or by selecting the correct sized handwheel or tee key.

If excess torque is applied the spindle will fracture at the groove before the valve integrity is compromised.

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