



## MOUNTING SCREWS & THREADS

### Background

On any version of our valves there are either 2-56 or 4-40 threaded/tapped holes for the purposes of securing the valve. These mounting holes can be found on both the solenoid-end (TOP) as well as the body-end (BOTTOM). Please refer to catalogues for specific details.

The 2-56 and 4-40 are to the American specification for numbered A.N.C. thread forms.

The first number is the diameter of the threaded portion of the fitting (applied to thread sizes of less ¼") and designates a certain size (0 to 12) for a basic major diameter of 0.0600" to 0.2160"; the second number represents the number of threads per inch.

### Causes

There have been instances (especially when the top mounting holes were used to secure valves) where incorrect mounting of valves eventually led to the failure of the valves. Either incorrectly specified screws other than 2-56 or 4-40 threads were used or 'OVER-ENGAGEMENT' caused by using long screws.

Over-engagement of the screws impinges the movement of the steel armature disk which is attracted to the coil upon energisation. Over-engagement may also restrict the full floating movement of this disk. The extra downward thrust is transmitted via the pusher system onto the diaphragm/s system. In turn, this force is finally translated to the relatively soft Teflon seat area of the valve, causing permanent deformation. Another possibility is that the over-engagement of the screws forces the coil/bobbin out of its shell, sometimes pushing out the retainer or even shorting the coil.

The results are leaking valves or the inability of the coil to energise.

### Remedy

When using the top mounting holes to secure valves, note the maximum thread engagement specified for the valve series.

Valve Series	Mounting Hole Size	Maximum Thread Engagement	
		Top	Bottom
161	2-56	3/32"	3/16"
225/360/648	4-40	1/8"	1/4"

When sizing your screw length, account for thickness of all washers, brackets, etc, through which the screw is to pass/hold before engaging with the mounting holes of the valve.

Do not extend beyond the specified maxim thread engagement length - failing to comply voids any warranty offered and can render the valve irreparably damaged.

Accompanying drawing UKSP9822 shows a number of fastenings that are available from NResearch UK to assist you in your selection of product. (Note all screws shown are Fillister.)

Should countersink screws be used it is essential that the great care is taken in calculating the length required, bearing in mind the quality and depth of the mating countersink will drastically affect the resultant length of the screw engaging the valve.