



Motorised valve breakdowns in domestic central heating systems often result in either lengthy periods of shivering or in energy-wasting, uncontrolled overheating. Nowadays, many more valves are needed to meet Building Regulations zoning requirements, making improved product reliability a prime requirement. A further increasingly vital need is to reduce energy consumption generally.

The latest design breakthrough from Sunvic Controls heralds a new era of reliability and low energy usage in this important controls sector.

Fig.1. Sunvic's new MoMo heralds a new era in motorised valve reliability.

MOTORISED VALVES

Motorised valves are probably the hardest working components in 'wet' domestic central heating systems. These too-often neglected workhorses must handle fluids carrying flushing agents and other chemicals, sludge, pipe scale, swarf and grit. Operating at high temperatures for prolonged periods, they must also withstand frequent swings in system loads and pressures. Yet, we expect them to work indefinitely.

The main factors leading to breakdown in today's motorised valves are:

- Prolonged motor energisation
- Overheating and
- Build-up or entrapment of solids

TYPES

Motorised valves, powered by small synchronous electric motors, are available as motor open/motor close and motor open/spring close (spring-return) types.

Nowadays, spring-return valves are used more widely because they appear to overcome problems inherent in original motor open/motor close (rotary shoe) design.

- a) Rotary shoe valves, with hard non-elastomeric sliding shoes that require system fluid lubrication, cannot quite provide a 100% tight shut-off and are thus accused of wasting energy.
- b) Secondly, the comparatively large sliding shoe occasionally allows solids to become entrapped and this can create either a blockage or a leakage passage.
- c) Perhaps the deciding issue for installers has been that original motor open/motor close valves required the use of changeover switch thermostats needing additional electrical connections.

ENERGY SAVING

However, if we look deeper into the energy saving issue, a different picture emerges.

Whereas a motor open/motor close valve positively de-energises after each movement, a spring-return valve continues to draw current (stalled) until the set temperature is attained. Spring-return mid-position valves often remain energised for long periods (all night) if the last 'call' before the system's time control shut down was 'Heating On'.

Not only does this waste energy directly but also, because this energy converts to heat, it tends to shorten the valve's working life. We then have to consider the additional energy needed to produce replacement products. So, whichever type you choose, there seems to be no ideal solution.

Until now, that is!

THE SOLUTION

A brand new range of two and three-port motorised valves for domestic central heating from Sunvic Controls Ltd., one of the UK's founder producers of motorised valves, completely overcomes the problems outlined above - and more. These patented MoMo motor-open/motor-off valves, available as two-port or three-port in all popular sizes, provide total reliability plus compatibility with existing and conventional wiring systems.

The MoMo high integrity drive mechanism operates only when the valve changes position, resulting in reduced motor "on" time, lower motor temperatures (see Fig.2), greater reliability and improved longevity. Tests show that MoMo motors, operating for shorter times, provide drive power savings of around 30% (See Fig.3).

Fig 2. Motor temperature comparison chart

Fig 3. Motor 'on-time' comparison chart

The MoMo non-stick 'Slipseal' shoe mechanism (See Fig. 4) provides 100% shut-off, significantly improves flow rates, reduces pressure losses and creates less turbulence. It has a patented 'ramp' feature that provides automatic chamber flushing and greater resilience to system contaminants.

Fig 4. Sectioned view of MoMo valve body showing Slipseal mechanism

Easy-to-install MoMo valves can directly replace all other spring return valves and are compatible with standard Y and S plan type controls systems. They are ideal for all new-build, refurbishment and upgrade applications. Wiring colours are identical, and industry-standard body dimensions mean minimal, if any, pipework changes. Changeover thermostats are not required.

A robust manual thumbwheel and valve position indicator helps simplify commissioning and system checking. Actuator replacement does not require draining down.

The MoMo design, therefore, not only overcomes all previous concerns about motor open/motor close valves, but also makes huge advances in motorised valve reliability with lower power consumption.

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