GAS CONTROL NEWS

QUALITY – RELIABILITY – SAFETY WINTER 2003

IN THIS ISSUE:

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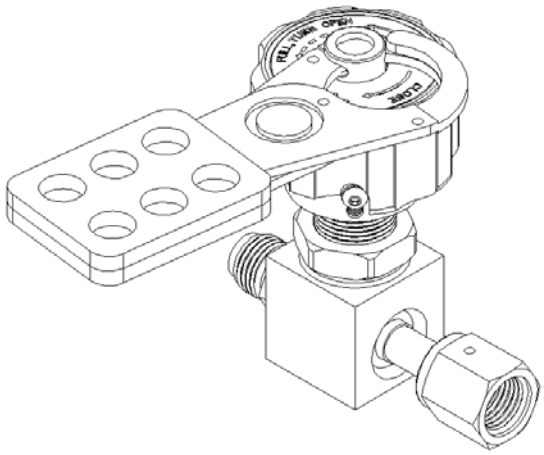
SAFETY FIRST!

Safety is everyone's concern. We at AP Tech feel that it is our ethical obligation as a manufacturer to provide not only safe products, but safety innovations.

Pull > Twist, The AP 3657 Takes a New Turn

The AP 3650 (and 4650) has a new variation available – the AP 3657 (and 4657). The AP 3657 is a unique blend of LOTO added to the AP 3650, ¼ turn, round knob valve. The AP 3657 requires one to lift the knob upward before it can be rotated from the closed position to open. This is a passive lock feature. There is a detent in the full open position to preclude unintentional closure of the valve. The detent is designed such that one can still close the valve by simply turning the knob (though lifting eases the action). A precision machined slot and path in the knob base combined with a roller facilitate this new feature.



In addition to the passive lock, provisions for a physical lock are included. The top of the knob has a swivel hub that enables one to attach a 1/8 inch shackle extended length pad lock or a lock hasp such as the Master Lock® # 420. The hub has a cross drilled hole that allows one to insert a leg of the lock or hasp.

Once inserted, the hasp or lock prevent one from pulling the knob upward which in turn prevents one from opening the valve. A properly sized lock or hasp cannot be installed in the open position. The hub in the center of the knob top can also be used for simple TO.

The AP 3657 has something for everyone as it blends passive and physical LOTO features for maximum flexibility. ❖

Passive or Physical?

There are several views on valve lock out. Lock out is a fairly broad term open to interpretation. Many differentiate between ‘tag out’ (TO) as merely affixing a ‘do not operate’ label to a device from ‘lock out/tag out’ (LOTO) as locking and affixing a ‘do not operate’ tag. What constitutes locking is the question. We distinguish between passive and physical locking, defining ‘passive’ as requiring an action before opening a valve but not a unique key or tool and ‘physical’ as requiring a key to unlock before opening the valve. Passive is not LOTO per OSHA standards. It is more of an operational safety enhancement to help prevent accidental or inadvertent opening of a valve. Both terms only relate to opening the valve. Philosophically, we feel closing a valve should never be impeded by any device nor require special actions. In an emergency situation, one’s intuitive action is imperative.

Some might consider that passive and TO are synonymous. We differ with this opinion. Passive infers that one must take an action beyond removing a tag to open the device. For example, the action required can be pulling a pin or pulling a knob before turning. TO is a ‘do not operate’ notice.

Physical locking is exactly what the connotation implies. It means having the ability to pad lock something closed or lock in some other manner that requires a special key or tool to open.

AP Tech has a variety of passive and physical LOTO options. It is up to the purchaser to determine what level of lock out is appropriate – passive or physical. ❖

Indications of a Manual Valve

The AP 3650 and AP 4650 are available with an intriguing option – electronic status indication. A switch option provides remote indication of the valve’s status – open or closed. This is a common option for pneumatic valves. Now one can be assured from a remote control room as to whether a manual valve is open or closed. A Reed switch is employed to safely switch magnetically, completely spark free. A switch signal can now be interlocked in controls to add a brand new layer of safety. An old saying is that knowledge is power. We prefer to think knowledge adds safety. ❖

Check Valves

AP Tech has two solutions for reverse flow protection – the AP 64 and the AP 61. The AP 64 is a conventional device rated to full cylinder pressure. The AP 61, on the other hand, is anything but conventional as it combines the functions of ¼ inch face seal gasket and check valve into one compact device. The two check valves have a nominal 3 psid cracking pressure with the standard seal material. This provides a margin of safety such that the valve allows flow only if the upstream pressure side is 3 psi or more than the downstream. A selection of seal materials are available to accommodate most compatibility needs. ❖

PL 225 Lever LOTO

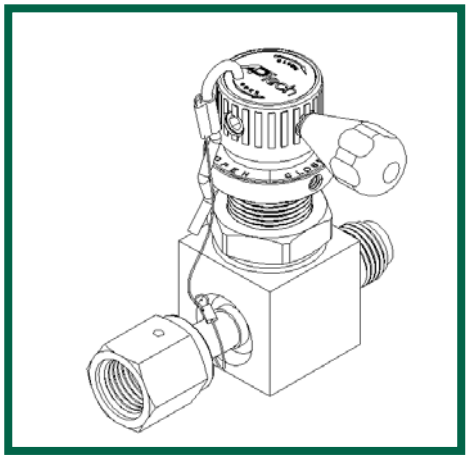
The PL 225 lockout device is a safety tool that enables one to physically lock closed an AP 3625 (and AP 4625) manual valve. Once the PL 225 is installed the valve is locked out and cannot be opened until the device is removed. The PL 225 employs a pin inserted into the AP 3625 knob hub to prevent the valve from being rotated open. Once the pin is properly inserted, the body of the PL 225 slides over the lever hub, exposing a hole for a pad lock. This prevents removal of the pin and the device itself when a lock is installed. ❖

PL 227 – Passive Pin Lock Out

The AP 3625 (and 4625) now have a passive lock out option to augment the PL 225 physical lock out device. The PL 227 is a very simple passive pin lock out - a clevis spring pin. The AP 3625 lever center hub has a drilled hole located under the label. In the closed position, one can insert the PL 227 into the hole such that the knob cannot be turned until the pin is removed.

The AP 3625 ¼ turn of travel is set by a slot in a stationary plate below the lever. A pin in the lever hub resides in the slot and limits the lever's motion. The hole in the lever hub, referenced above, aligns with the opposite end of the slot from the pin in the closed position. The pin can only be fully inserted when the lever is fully closed. The spring flexure of the pin doesn't seat properly unless the pin is fully inserted, giving visible notice the valve isn't closed. This was a complex way of saying you can only push the pin in properly when the valve is fully closed. If the valve isn't closed, the pin doesn't seat.

The PL 227 comes with instructions and a lanyard to attach the pin to a valve for safekeeping. All 3625 and 4625 valves have holes machined for the PL 227 and PL 225 located under the label. The instructions for the device help one locate the hole for puncturing without need of removing the adhesive label. ❖



Pneumatic Valve Indicating Switches

The AP 3000, AP 3113, AP 3130, AP 3550, AP 4550 and AP 3200 are each available with an optional switch to electronically indicate valve status open or closed. The switches are available NO or NC for user flexibility. The signal from the switch provides the user with added comfort of knowing the valve status – open or closed. Please refer to individual data sheets or contact the factory for further information regarding these options. ❖

Don’t bypass this flow switch

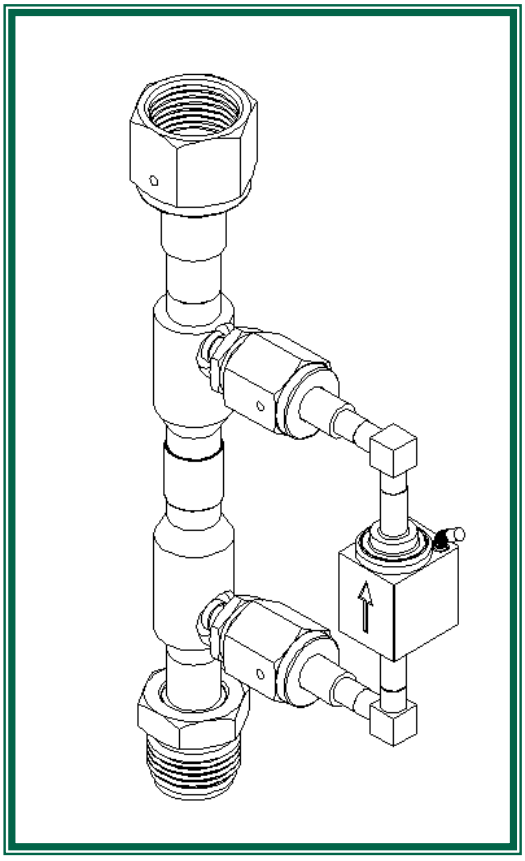
The AP 74B is a new, innovative safety solution to address high flow applications. The standard field proven AP 74 flow switch is utilized in a bypass module to sense excess flow. It samples the flow rate much like a thermal mass flow controller’s bypass leg. The bypass module can be ordered for either a horizontal or vertical main line in two sizes – ½” and ¾”. The nominal trip points in slpm of N2 at 100 psig are as follows:

½” size – 225, 350, 500 and 950 slpm
¾” size – 1,100, 1,650 and 2,600 slpm

To put this in perspective, the AP 74 maximum flow trip point is 100 slpm at 100 psig of N2. The AP 74B significantly expands the range, needless to say.

A sizing guide will be available soon to ease switch size selection for a given application.

This is the first truly ultraclean solution for excess high flow. There is nothing else available in the market today. ❖



PL 210 – Pneumatic Valve LOTO

The ‘Pneu-lock’ is a safety device which enables passive manual shut down and then physical lock out of an air actuated normally closed valve. It functions similarly to an ‘ESO’, emergency shut off, electrical switch. The red knob is pushed down to shut off and vent the pressure to the actuator. This closes the NC valve if it is open or prevents the valve from being opened if it is already closed. A slight rotation clockwise then latches the knob in the closed position which exposes a bore for locking with a pad lock or TO. The Pneu-lock may only be locked in the closed position. Rotating the knob counterclockwise and releasing it returns the valve to pneumatic control.

The Pneu-lock attaches to the actuator with a 1/8” NPT male thread while the actuation control line connects via a 10-32 port. The design is optimally intended for actuators with a 1/8” NPT female actuation port in their top. It may be retrofitted easily to existing valves or new installations. ❖

AP Tech is proud to offer this wide array of safety products, unmatched by any other in our industry.