Devronizer XP10 Steam Shower Actuator

The XP10 is a pneumatically controlled actuator used in Devronizer® wet-end steam showers and Calendizer dry-end steam showers to regulate steam flow to individual profiling zones. A Devronizer with XP10 actuators across the width of the paper machine can control the cross-direction (CD) moisture profile with zone sizes as small as 50 mm (2.0”).

The XP10 is a bellows-type steam control actuator with welded assembly and no elastomer or other replaceable parts.

The XP10 incorporates unique bellows, made from Inconel 625, for the ultimate in corrosion resistance in the paper machine environment. The XP10 should last the life of the Devronizer without any repairs or preventive maintenance. There are no diaphragms or other elastomer components to replace.

Benefits

- High reliability backed up with a 15-year warranty
- Improved performance
  - Completely sealed – no chance for dripping from internal condensation
  - Tapered valve plug – smooth steam flow control over a wide flow range means better control
  - No internal seals or elastomeric parts – no friction and no hysteresis means better control
- Low maintenance
- Easy retrofits
- Devronizer size reduction

A Devronizer cross section with XP10s, shown on the left, can be up to 80 mm smaller than with A7s -- a big advantage for press section applications.
High Reliability

Profitable papermaking requires maximum uptime and minimum maintenance for all equipment, right down to the valve actuator in the steam shower. Using highly accelerated life testing techniques, exposing the actuators to extreme chemicals, temperatures and fatigue cycling, it has been demonstrated that this new bellows technology will last as long as many steam boxes. This claim is backed up with a 15-year warranty on the XP10. All the known failure modes of steam actuators have been eliminated through careful engineering. The result is a simple, robust actuator manufactured from highly corrosion-resistant alloys.

This translates to lower cost of ownership over the years as fewer spare parts are consumed and there is no need to remove the steam shower every few years just to replace diaphragms.

Improved Performance

Unlike other steam actuators, the XP10 is completely sealed to the atmosphere so it is impossible for the actuator to leak or drip – a major benefit for dry-end steam shower applications. It also means that no seal is required around the plug stem, thus eliminating a major source of friction and hysteresis.

The XP10 features a tapered valve plug design.

A new tapered valve plug design also eliminates valve friction. With negligible hysteresis, the actuator achieves better steam flow control resulting in superior moisture profiling performance.

Low Maintenance

There is no scheduled or recommended preventive maintenance for the XP10. Should an XP10 ever need cleaning, simply drop it in a bucket of caustic to eliminate the contaminants.

Because unforeseen things do happen, it is necessary to verify actuator performance, ideally without having to stop the paper machine for inspection. IDP Scout diagnostics are available with the Honeywell IDP interface system for the profiling Devronizer and provide the means to analyze each actuator’s performance remotely – not just leak testing, but full motion testing for blocked or jammed actuators, broken springs, stiction and hysteresis. Since IDP Scout utilizes the IDP II interface hardware, it provides an effective substitute for direct position feedback without introducing a failure mode into the actuator.

By analyzing actuator pressurization curves, IDP Scout can detect a broken spring (left) or a stuck actuator (right).

When integrated with Honeywell’s Da Vinci™ Quality Control System (QCS), IDP Scout exercises actuators automatically during sheet breaks or other downtime. If the performance of an actuator has changed significantly since the system was installed, a diagnostic alarm will automatically be reported via the Da Vinci interface. Thus, maintenance personnel can be warned of actuator performance degradation before it seriously affects moisture profile control. IDP Scout extends Honeywell’s asset management technology right down to the steam shower actuator. For non Da Vinci systems, IDP Scout is available in a standalone configuration with manual operation.

The IDP Scout diagnostic display shows the actuator failure mode, zone by zone.
**Easy Retrofits**

The XP10 actuator is designed to support existing customers. The new actuator is physically smaller than its predecessors, but it operates on the same 0.4-2.0 bar [6-30 psi] actuation pressure.

The XP10 is physically smaller than the A7 and features a new tapered valve plug, which eliminates valve friction and enables the XP10 to provide smooth steam modulation over a wide range of steam flows.

Retrofit kits to replace virtually any A5 or A7 actuators include an XP10 actuator, adapter ring and new valve seat. (Type EK and EL very high steam flow plugs are not compatible with the XP10.)

XP10 is also available for retrofits to selected third-party steam boxes with an appropriate adapter kit.

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Two XP10s with adapter rings are installed between A7 actuators, showing how easy it is to retrofit a Devronizer with new actuators.

Devronizer® is a registered trademark and Da Vinci™ is a trademark of Honeywell International Inc.

IDP Scout is an optional feature with the IDP II interface, sold separately from the XP10 actuator.

**More Information**

For more information on Honeywell’s XP10 actuator and related products, visit [www.honeywell.com/ps](http://www.honeywell.com/ps), or contact your Honeywell account manager.

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