ELECTRO-HYDRAULIC PRODUCTS

WORLD CLASS PRODUCTS FOR THE HIGHEST MACHINE PRODUCTIVITY

WHAT MOVES YOUR WORLD
Moog offers an extensive product range of Servo and Proportional Valves specifically designed for precise control of position, velocity and force.

**SERVO VALVES**

<table>
<thead>
<tr>
<th>SERIES</th>
<th>Rated Flow @ Δp 70 bar (1,000 psi)</th>
<th>Maximum operating pressure (bar)</th>
<th>100% Step Response @ 210 bar (3,000 psi)</th>
</tr>
</thead>
<tbody>
<tr>
<td>30, 771 to 773, 631, 760, 761, 72, 78, 79-100, 79-200</td>
<td>From 0.95 to 757 l/min</td>
<td>From 210 to 350</td>
<td>From 3 to 40 ms</td>
</tr>
<tr>
<td>30, 771 to 773, 631, 760, 761, 72, 78, 79-100, 79-200</td>
<td>From 5 to 100 l/min</td>
<td>350</td>
<td>From 3 to 20 ms</td>
</tr>
<tr>
<td>30, 771 to 773, 631, 760, 761, 72, 78, 79-100, 79-200</td>
<td>From 4 to 1,000 l/min</td>
<td>From 315 to 350</td>
<td>From 3 to 19 ms</td>
</tr>
</tbody>
</table>

**Moog SERVO Valves at a glance**

- Pilot operated with low friction double nozzle pilot stage with high resolution and low hysteresis
- Mechanical position feedback without onboard electronics
- Direct Drive Valves with Linear Force Motor
- Analog or digital onboard electronics
- Optional fieldbus interface, pressure or axis control functionality
- 2- and 3-stage pilot operated valves with ServoJet or nozzle flapper pilot
- Analog or digital onboard electronics
- Optional fieldbus interface, pressure or axis control functionality

**Advantages**

- High wear-resistance and durability
- Robust and proven track record in broad range of industries
- Convenient selection and configuration of valves to suit the application
- Easy integration into the hydraulic system using standard interfaces
- High accuracy and repeatability for demanding applications
- Fail-safe and explosion proof versions available

**PROPORTIONAL VALVES**

<table>
<thead>
<tr>
<th>SERIES</th>
<th>Rated Flow @ Δp 10 bar (145 psi)</th>
<th>Maximum operating pressure (bar)</th>
<th>100% Step Response @ 210 bar (3,000 psi)</th>
</tr>
</thead>
<tbody>
<tr>
<td>D634, D637, D639</td>
<td>From 24 to 60 l/min</td>
<td>350</td>
<td>From 20 to 25 ms</td>
</tr>
<tr>
<td>D661 to D665, D681 to D685</td>
<td>From 30 to 1,500 l/min</td>
<td>350</td>
<td>From 9 to 48 ms</td>
</tr>
<tr>
<td>D671 to D675, D941 to D945</td>
<td>From 30 to 1,500 l/min</td>
<td>350</td>
<td>From 10 to 44 ms</td>
</tr>
</tbody>
</table>

**Moog PROPORTIONAL Valves at a glance**

- Direct Drive Valves with Linear Force Motor
- Analog or digital onboard electronics
- Optional fieldbus interface, pressure or axis control functionality
- 2- and 3-stage pilot operated valves with ServoJet or Direct Drive Valve pilot
- Analog onboard electronics
- Optional fieldbus interface, pressure or axis control functionality

**Advantages**

- Numerous models with a range of sizes, performance characteristics and mounting options available
- Flow-optimized design for high rated flows
- Fast commissioning of digital products using Moog Valve and Pump Configuration Software (MoVaPuCo)
- Fail-safe and explosion proof versions available

**SERVO AND PROPORTIONAL VALVE ACCESSORIES**

<table>
<thead>
<tr>
<th>Accessory</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>G040-125A Portable Valve Tester</td>
<td>Capable of testing all Moog Industrial Valves</td>
</tr>
<tr>
<td>G122-829A Proportional &amp; Integral (PI) Servo Amplifier</td>
<td>Connect between plant electronics and Valve for easy troubleshooting</td>
</tr>
<tr>
<td>G123-825 Buffer Amplifier</td>
<td>General purpose Servo Amplifier for applications needing closed-loop control</td>
</tr>
<tr>
<td>G123-825 Buffer Amplifier</td>
<td>Used to interface between the output of PLC and Moog Valves</td>
</tr>
<tr>
<td>G123-817 LVDT Oscillator Demodulator</td>
<td>Commonly paired with Mechanical Feedback Valves</td>
</tr>
<tr>
<td>G123-817 LVDT Oscillator Demodulator</td>
<td>Used with an LVDT to convert a transducer's position to a voltage or current output</td>
</tr>
<tr>
<td>G123-817 LVDT Oscillator Demodulator</td>
<td>Commonly paired with -079 Series Valves</td>
</tr>
</tbody>
</table>

These are a few of our most popular accessories. For our full offering visit: [www.moog.com](http://www.moog.com)
### INDUSTRIAL CARTRIDGE VALVES

Moog offers a broad product range of cartridges and cartridge valves for directional, pressure, check and throttle functions.

#### SERIES

<table>
<thead>
<tr>
<th>SERIES</th>
<th>DIRECTIONAL, PRESSURE AND CHECK CARTRIDGES INCLUDING COVERS AND PILOT VALVES</th>
<th>ACTIVE CARTRIDGE VALVES</th>
<th>SERVO AND PROPORTIONAL CARTRIDGE VALVES</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rated Flow @ Δp 5 bar (75 psi)</td>
<td>From 130 to 10,500 l/min</td>
<td>From 100 to 12,000 l/min</td>
<td>From 33 to 20,550 l/min</td>
</tr>
<tr>
<td>Maximum operating pressure (bar)</td>
<td>From 350 to 420</td>
<td>350</td>
<td>From 210 to 420</td>
</tr>
</tbody>
</table>

#### Moog Cartridge Valves at a glance

- Modular set of building blocks to cover a wide variety of functions and applications
- Actively operated for fast and accurate switching
- Optional position monitoring for safety applications
- 2- and 3-way throttle control
- Different performance and fail-safe options available

### RADIAL PISTON PUMPS

Moog Radial Piston Pump (RKP) is a variable displacement piston pump, available in various sizes (from 19 to 250 cm³ per revolution) and offers a highly dynamic control of pressure, flow and horsepower in industrial applications.

#### SERIES

<table>
<thead>
<tr>
<th>SERIES</th>
<th>RKP</th>
<th>RKP-D</th>
</tr>
</thead>
<tbody>
<tr>
<td>Size in cm³ per revolution</td>
<td>From 19 to 250</td>
<td>From 19 to 250</td>
</tr>
<tr>
<td>Flow l/min @ 1.500 rpm</td>
<td>Up to 375</td>
<td>Up to 375</td>
</tr>
<tr>
<td>Flow l/min @ 1.800 rpm</td>
<td>Up to 450</td>
<td>Up to 450</td>
</tr>
<tr>
<td>Pressure (bar)</td>
<td>From 34 to 450</td>
<td>From 34 to 450</td>
</tr>
</tbody>
</table>

#### Moog Radial Piston Pumps at a glance

- Robust and compact design
- Low noise emission
- Broad range of compensator types and various control options available
- Low pressure pulsation with less resonances
- High efficiency
- Improved dynamics
- Parameters online switchable
- Improved diagnostics
- Factory-set leakage compensation
- Less wiring (no external card required)
- Easy to use Windows based configuration tool (Moog Valve and Pump Configuration Software)
- Flexible configuration according to application demands
- Reduced effort for noise damping measures
- Improved control in hydraulic cycle
- Less installed power, less effort to cool fluid
- Increased machine productivity, process stability and repeatability and condition monitoring capability
- Well suited for a broad variety of special fluids and for use in potentially explosive environments (ATEX Certification)

### MOTION AND MACHINE CONTROLLERS

Moog offers a wide range of Machine and Motion Controllers and Software to meet your specific needs.

#### SERIES

<table>
<thead>
<tr>
<th>SERIES</th>
<th>MSC-R</th>
<th>MSC II</th>
<th>MC 600</th>
</tr>
</thead>
<tbody>
<tr>
<td>Moog Motion and Machine Controllers at a glance</td>
<td>Motion Controllers and Software for electric and hydraulic servo actuation applications that offer rapid set-up</td>
<td>Motion Controllers with high vibration resistance and extended resistance against fluid contamination and corrosion for use in harsh environments</td>
<td>Machine Controllers available in modular design for high flexibility and effortless implementation into new systems</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

#### Advantages

- Modular design enables the solution to be scaled to the needs of the machine
- Industry standard fieldbus enable convenient integration with other machine elements (sensors, drives, etc.)
- Designed to perform in harsh environments
- Resistant against various aggressive fluids
Moog Global Support is our promise to help maintenance professionals worldwide maximize uptime and get more from your machine investment. We are your trusted service partner for responsive support and motion control know-how.

**FACTORY REPAIR**
Ensure "like-new" performance in your machine
Moog’s factory repair services deliver less unplanned downtime
Minimize risk of poor repair by non-authorized repair facilities with no access to authentic Moog parts, product specifications, valve test parameters or upgrades
Gain expertise—and warranty protection—available only from the OEM

**LONG-LIFE RETROFITS/UPGRADES**
Take advantage of long-life replacements for motion control products to achieve better productivity
Improve the quality and performance of underperforming machines with retrofit components that incorporate the latest technology upgrades
Work with Moog technical experts who can recommend a course of action to add extra reliability to your operations

**HANDS-ON TRAINING**
Get hands-on training from Moog trainers using Moog equipment in our facilities or on-site at yours
Learn how to effectively manage installation and troubleshooting on your own
Speed up repair and maintenance in order to maximize uptime

**OEM REPLACEMENT PRODUCTS**
Moog is the only provider of OEM replacement products/spares
Ensure industry-leading performance in your machine
Take advantage of global availability of spare parts when you need them
Secure guaranteed turnaround on parts with flexible product exchange programs designed for peace of mind

**PROFESSIONAL FIELD SERVICE**
Reduce risk and keep machines up and running faster with expert support
Supplement your staff with expert professionals who know your applications
Benefit from less downtime and access to original drawings and documentation
Available in person, online, over the phone and via remote diagnostic tools

**FLEXIBLE SERVICE AGREEMENTS**
Shift from unplanned "break and fix" approach to planned maintenance that will minimize risk of failure
Tailor a flexible and bundled program that focuses on your operating challenges
Reduce your total cost of ownership while taking a proactive approach to O&M services

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If you have questions about Electro-Hydraulic Products or want to the contact information of your closest Moog facility, visit moogglobalsupport.com/contacts