

High Performance Solenoids

Product Guide



A complete product line of solenoid solutions for the most demanding applications.

- Armament Equipment
- Cockpit Locks
- Electric Door Locks
- Fuel Management
- Ground Vehicles
- Instrumentation
- Medical Flow Controls
- Medical Imaging Device Locks
- Missile Launchers
- Pilot Safety
- Remote Control Units
- Safe and Arms Controls
- Shutter Actuators

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About Moog

Solenoids

The Moog solenoid line has been solving problems for over 50 years. We are experts at designing solenoid solutions for complex actuation requirements at Boeing, Raytheon, Lockheed Martin and many other aerospace system manufacturers. Our reputation is built on providing solenoid actuators that survive harsh environments and are reliable for years beyond normal expectations. Often, as the sole-source provider, we offer innovations and customer support not found anywhere else. You get the advantage of our best engineering at competitive prices.

Moog supplies solenoids for several markets and applications:

- Aerospace
- Industrial and Medical
- Safe and Arm Devices
- Spacecraft

Experience

Moog's solenoid line provides you with all facets of motion control utilizing the latest solenoid technology. In addition, our innovative engineering team is available to provide customized applications. We can provide an existing design from our many years of manufacturing experience, or we can design and build a solenoid for your specific application and space availability. This product guide represents a small portion of our product line.

Products

Standard Industrial and Medical Linear Solenoids

Moog's industrial solenoids offer a new solution with improved performance. With a legacy of designing and manufacturing solenoids for rugged aerospace and defense projects, Moog has taken that leading-edge experience and developed a new line of industrial linear solenoids.

- Ideal match for medical flow controls
- High performance and reliability
- More force in a small package size

Legacy Linear Solenoids

Moog linear solenoids include simple push / pull applications, but we are best known for adding features to enhance the value of the solenoid. For example, we can provide latching in energized or power-off applications, position indication feedback and four-position articulating motion. Linear solenoids can also be designed for proportional motion relative to power input. Our solenoids are known for providing more force from the same size than our competitors because we have developed combinations of high-flux magnetic metals and dry lubricant films to provide more power per square inch.



Standard Industrial and Medical Linear Solenoids



Moog's standard linear solenoids offer a new solution with improved performance. With a legacy of designing and manufacturing solenoids for rugged aerospace and defense projects, Moog has taken that leading-edge experience and developed a new line of standard linear solenoids.

Model	Description	Force - Stroke / Dimensions (inches)	Force - Stroke / Dimensions (millimeters)
SDH-.5 XA	Push type	0.6 lbf @ .15 stroke @ 20.5 VDC / .500 diameter x 1.00 length	2.7 newtons @ 3.8 / 12.7 diameter x 25.4 length
SDU-.5 XA	Pull type	0.9 lbf @ .15 stroke @ 20.5 VDC / .500 diameter x 1.00 length	4.0 newtons @ 3.8 / 12.7 diameter x 25.4 length
SDH-.75 WA	Push type	1.0 lbf @ .1 stroke @ 24 VDC / .750 diameter x 1.50 length	4.4 newtons @ 2.5 / 19.1 diameter x 38.1 length
SDU-.75 WA	Pull type	1.0 lbf @ .1 stroke @ 24 VDC / .750 diameter x 1.50 length	4.4 newtons @ 2.5 / 19.1 diameter x 38.1 length
SDU-1.00 UA.1-2.2	Pull flat plunger	7.5 lbf @ .15 stroke @ 16.4 VDC / 1.00 diameter x 2.00 length	33.4 newtons @ 3.8 / 25.4 diameter x 50.8 length
SDU-1.00 XA.1-4	Pull plunger	5.0 lbf @ .15 stroke @ 44 VDC / 1.00 diameter x 2.00 lengths	22.2 newtons @ 3.8 / 25.4 diameter x 50.8 length
SDH-1.5 XA	Push type	2.5 lbf @ .15 stroke @ 27.2 VDC / 1.50 diameter x 2.19 length	11.1 newtons @ 3.8 / 38.1 diameter x 55.6 length
SDU-1.5 XA	Pull type	2.5 lbf @ .15 stroke @ 27.2 VDC / 1.50 diameter x 2.19 length	11.1 newtons @ 3.8 / 38.1 diameter x 55.6 length
SDP-1.9 WA	Pull type	40.0 lbf @ .04 stroke @ 17.1 VDC / 1.890 diameter x .88 thick	177.9 newtons @ 1.0 / 48.0 diameter x 22.4 thick

Legacy Linear Solenoids



Moog linear solenoids include simple push / pull applications, but we are best known for adding features to enhance the value of the solenoid. For example, we can provide latching in energized or power-off applications, position indication feedback and articulating motion. Linear solenoids can also be designed for proportional motion relative to power input. Our solenoids are known for providing more force from the same size than our competitors do because we have developed combinations of high-flux magnetic metals and dry lubricant films to provide more power per square inch.

Model	Description	Force - Stroke / Dimensions (inches)	Force - Stroke / Dimensions (millimeters)
13330	Pull type	44 lbf @ .25 stroke @ 24 VDC / 2.125 diameter x 3.174 length	195.7 newtons @ 6.350 / 54.0 diameter x 80.6 length
SR2000	Pull type	.044 lbf @ .125 stroke @ 28 VDC / .500 diameter x .625 length	0.2 newtons @ 3.175 / 12.7 diameter x 15.9 length
SR2070	Pull type	.022 lbf @ .058 stroke @ 12 VDC / .500 diameter x .625 length	0.1 newtons @ 1.473 / 12.7 diameter x 15.9 length
SR2080	Pull type	.11 lbf @ .125 stroke @ 13.3 VDC / .687 diameter x 1.969 length	0.5 newtons @ 3.175 / 17.4 diameter x 50.0 length


Specifications and information are subject to change without prior notice.

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Solenoids



Linear Electromechanical Actuators

Moog leads the way in designing and manufacturing linear electromechanical actuators for armament equipment. These devices provide over 50 pounds of linear force when activated by the internal rotary solenoids moving in a perpendicular plane to the linear motion. Because of this unique design, the linear electromechanical actuator (LEMA) can only be activated by an electronic pulse and is impervious to shock and unintentional activation. Thus, our patented design provides a lot of force (up to 60 lbs) from a relatively small unit and is highly dependable and fault-free.

Model	Description	Stroke / Dimensions (inches)	Stroke / Dimensions (millimeters)
 62030	Linear Electromechanical Actuator	.560 / 1.63 diameter x 4.35 length	14.21 / 41.38 diameter x 110.44 length




Safe and Arm Devices

Moog is the original designer and manufacturer of the Zero Retention Force Arming Unit. We worked with McDonnell Douglas to design an arming unit that could not be inadvertently armed by the circumstances that occur during flight and landings on aircraft carriers. These devices provide zero retention force on a standard .060 diameter arming ring (they will not bind and accidentally arm the bomb because of wind drag). When actuated, these units will support a 600 pound weight suspended vertically (the pin or lanyard will not pull out accidentally). Operating at a voltage range of 18 to 30 VDC, they are used in critical situations and are designed and manufactured to work every time.

Model	Description	Stroke / Dimensions (inches)	Stroke / Dimensions (millimeters)
 SR15400	Solenoid zero retention force	.15 / 3.34 height x 2.41 width x 1.86 depth	3.81 / 84.80 height x 61.18 width x 47.22 depth
 C62183	Solenoid zero retention force	.17 / 3.34 height x 1.53 width x .90 depth	4.31 / 84.8 height x 38.9 width x 22.9 depth

Rotary Solenoids

Moog rotary solenoids are on most of today's commercial airliners. Although the cockpits are complete with digital gauges, nothing catches the pilot's eye like a moving red flag. Our rotary solenoids, with a red flag on the rotating shaft, are still preferred. We also make rotary solenoids for camera shutters and other industrial applications.

Model	Description	Stroke / Dimensions (inches)	Stroke / Dimensions (millimeters)
 3840	Rotary actuator	60 degree rotation / .464 diameter x 1.640 length	60 degree rotation / 11.78 diameter x 41.66 length
 4440	Rotary actuator	+/- 60 degree rotation / .490 diameter x .791 length	+/- 60 degree rotation / 12.44 diameter x 20.09 length
 4480	Rotary actuator	+/- 60 degree rotation / .490 diameter x .866 length	+/- 60 degree rotation / 12.44 diameter x 22.00 length

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