



*U.S. Army photo: Bernard Fuller*



# HIGH PERFORMANCE SOLENOIDS

PRODUCT GUIDE

# SOLENOIDS

The Moog solenoid line has been solving problems for over 50 years. We are experts at designing solenoid solutions for complex actuation requirements. 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.

Moog supplies solenoid solutions for the most demanding applications:

- Cockpit Locks
- Electric Door Locks
- Armament Equipment
- Fuel Management
- Ground Combat Vehicles
- Pilot Safety
- Safe and Arms Controls



## 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.



**LINEAR SOLENOID**



**ROTARY SOLENOID**



**LINEAR ELECTROMECHANICAL  
ACTUATOR**



**SAFE AND ARM DEVICE  
ACTUATOR**

# PERFORMANCE CHARACTERISTICS

## 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)
SDHH-2.3UF0.018-80	Pull Type	80 lbf @ .018 stroke @ 13.3 VDC / 2.250 diameter x 2.311 length	355.9 newtons @ 0.46 / 57.2 diameter x 58.7 length
13330	Pull type	44 lbf @ .250 stroke @ 24VDC / 2.125 diameter x 3.174 length	195.7 newtons @ 6.35 / 54.0 diameter x 80.6 length
SDUH-1.8UB0.012-26	Pull Type	26 lbf @ .0120 stroke @ 13.3 VDC / 2.239 diameter x 1.808 length	115.7 newtons @ 0.31 / 56.9 diameter x 45.9 length
C62840-004	Push Type*	15 lbf @ .190 stroke @ 28VDC / 1.510 diameter x 4.577 length	66.7 newtons @ 4.83 / 38.4 diameter x 116.3 length
SR15130-1	Push Type	7 lbf @ .160 stroke @ 13.3 VDC / 1.970 diameter x 1.330 length	31.1 newtons @ 4.06 / 50.0 diameter x 33.8 length
SDUP-1.500WAA-2	Pull Type*	4.88 lbf @ .300 stroke @ 24 VDC / 1.500 diameter x 2.885 length	21.7 newtons @ 7.62 / 38.1 diameter x 73.3 length
SR2780	Pull Type	2 lbf @ 0.060 stroke @ 24 VDC / 1.180 diameter x 1.174 length	8.90 newtons @ 1.52 / 30.0 diameter x 29.8 length
SR2080	Pull type*	.11 lbf @ .125 stroke @ 13.3VDC / .687 diameter x 1.969 length	0.5 newtons @ 3.18 / 17.3 diameter x 50.0 length
SR2000	Pull type*	.044 lbf @ .250 stroke @ 28VDC / .500 diameter x .625 length	0.2 newtons @ 3.18 / 12.7 diameter x 15.9 length
SR2070	Pull type	.022 lbf @ .058 stroke @ 12VDC / .500 diameter x .625 length	0.1 newtons @ 1.47 / 12.7 diameter x 15.9 length
5650	Pull Type*	.022 lbf @ .093 stroke @ 27.5VDC / .375 diameter x 2.327 length	0.1 newtons @ 2.36 / 9.5 diameter x 59.1 length

\*Includes return spring

## Latching/Holding Solenoids

Moog offers innovative solenoid designs to solve the unique challenges of our customers. The latching/holding solenoid provides another alternative for your motion requirements.

Model	Description	Force - Stroke / Dimensions (inches)	Force - Stroke / Dimensions (millimeters)
SR12920	Pull Type, Hold Coil	27 lbf pull @ .250 stroke @ 28VDC / 10 lbf hold force @ 0.000 stroke / 1.740 diameter x 3.130 length	120 newtons pull @ 6.35 / 44.5 newtons hold force / 44.2 diameter x 79.5 length
SR15970-1	Pull Type, Hold Coil	19 lbf pull @ .060 stroke, 4 lbf @ .180 stroke @ 14 VDC / 15 lbf hold force @ 0.000 stroke / 1.330 diameter x 3.750 length	84.5 newtons pull @ 6.35, 17.8 newtons @ 4.57 / 66.7 newtons hold force / 33.8 diameter x 95.3 length
C84525-004	Push/Pull Type, Magnetic Latch	7 lbf push, 6 lbf pull @ .385 stroke @ 24 VDC / 4 lbf magnetic latching @ 0.000 stroke / 1.500 diameter x 4.676 length	31.1 newtons push, 26.7 newtons pull @ 9.78 / 17.8 newtons magnetic latching / 38.1 diameter x 118.8 length
SDPL-11WA398-50	Push/Pull Type, Magnetic Latch	0.5 lbf push/pull @ .375 stroke @ 19 VDC / 1.5 lbf magnetic latching @ 0.000 stroke / 1.250 diameter x 4.100 length	2.22 newtons push/pull @ 9.53 / 6.67 newtons magnetic latching / 31.75 diameter x 104.1 length
SR15140-2	Push Type, Hold Coil	.25 lbf push @ .250 stroke @ 28 VDC / 7 lbf hold force @ .250 stroke / 1.533 diameter x 4.160 length	1.11 newtons push @ 6.35 / 31.1 newtons hold force @ 6.35 / 38.94 diameter x 105.7 length

## 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

# PERFORMANCE CHARACTERISTICS

## Safe and Arm Devices

Over the years, we have worked with major companies to develop 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)
SR15760	Solenoid zero retention force	.39 / 2.225 height x 1.375 width x .885 depth	9.91 / 56.5 height x 34.9 width x 22.5 depth
SR15400	Solenoid zero retention force	.15 / 3.34 height x 2.41 width x 1.86 depth	3.81 / 84.8 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

Our 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 on the solenoid on the rotating shaft.

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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