

Pull/Push DC Solenoids for Diesel Engines

Watts Power/Cold Force in Pounds at 100% Voltage/Inches Stroke

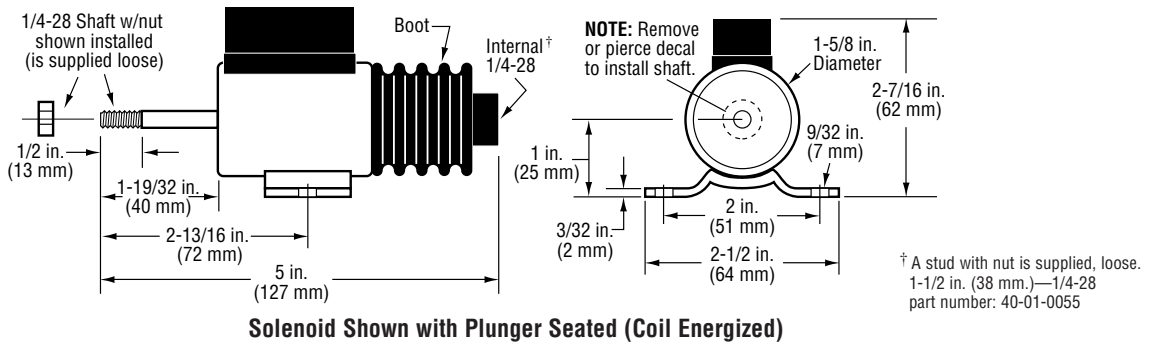
Maximum Stroke In. (mm.)	Power in Watts		Force* in Pounds [Kilograms] at 100% Voltage** Stroke in Inches (Millimeters)								
	Seated	Inrush	Continuous Hold	1/8 (3)	1/4 (6)	1/2 (13)	3/4 (19)	1 (25)	1-1/4 (32)	1-1/2 (38)	
RP2307B 1 (25)	12	624	25 [11.34] <13> [5.90]	22 [9.98] <12> [5.44]	21 [9.53] <11> [4.99]	17 [7.71] <10> [4.54]	14 [6.35] <8> [3.63]	10 [4.54] <6> [2.72]	—	—	
RP2308B 1 (25)	12	696	27 [12.25] <15> [6.80]	25 [11.34] <14> [6.35]	23 [10.43] <13> [5.90]	19 [8.62] <12> [5.44]	15 [6.80] <9> [4.08]	11 [4.99] <7> [3.18]	—	—	
RP2309B 1-1/2 (38)	12	1029	32 [14.52] <19> [8.62]	30 [13.61] <18> [8.16]	27 [12.25] <16> [7.26]	22 [9.98] <14> [6.35]	18 [8.16] <11> [4.99]	13 [5.90] <9> [4.08]	8 [3.63] <6> [2.72]	6 [2.72] <4> [1.81]	
RP2310B 1-1/2 (38)	12	960	35 [15.88] <20> [9.07]	34 [15.42] <19> [8.62]	31 [14.06] <17> [7.71]	26 [11.79] <15> [6.80]	22 [9.98] <12> [5.44]	17 [7.71] <9> [4.08]	12 [5.44] <7> [3.18]	7 [3.18] <4> [1.81]	

*Forces shown are without return spring. Forces shown < > are with return spring. Forces shown in [] are in kilograms.

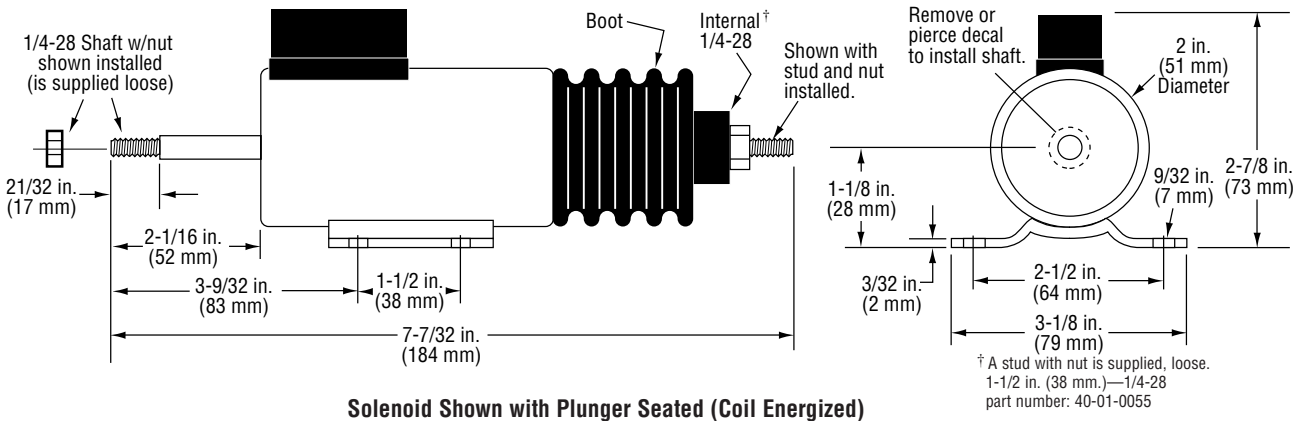
**To determine the operating current, divide the power (watts) indicated in the above table by the applied voltage. Solenoids will operate at any stroke less than maximum.

Solenoid Dimensions

RP2307B and RP2308B



Solenoid Shown with Plunger Seated (Coil Energized)



Solenoid Shown with Plunger Seated (Coil Energized)

Note 1. Typical operating temperature is: 140°F(60°C) ± 10°F (6°C) for 1 in. (25 mm.) Stroke Solenoids (70°F/21°C Rise above ambient)
120°F(49°C) ± 10°F (6°C) 1-1/2 in. (38 mm.) Stroke Solenoids (50°F/10°C Rise above ambient)
See CAUTION statement on next page and note maximum housing temperature is 185°F (85°C).

Note 2. The energize-coil should not be activated for more than 15 seconds. Longer energize-coil activation times will damage the solenoid.

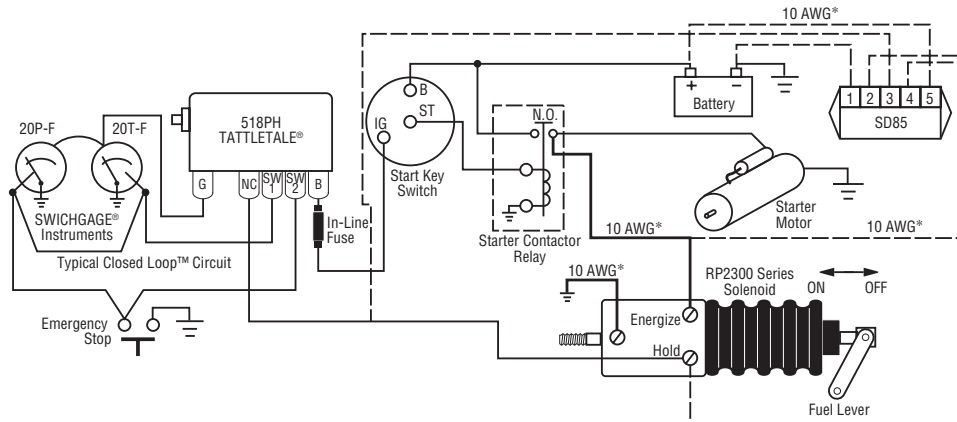
Note 3. Allow 15 minutes for cooling between activations of energize-coil to retain full pulling force.

Note 4. The energize-coil must fully seat the plunger to allow the hold-coil to function properly.

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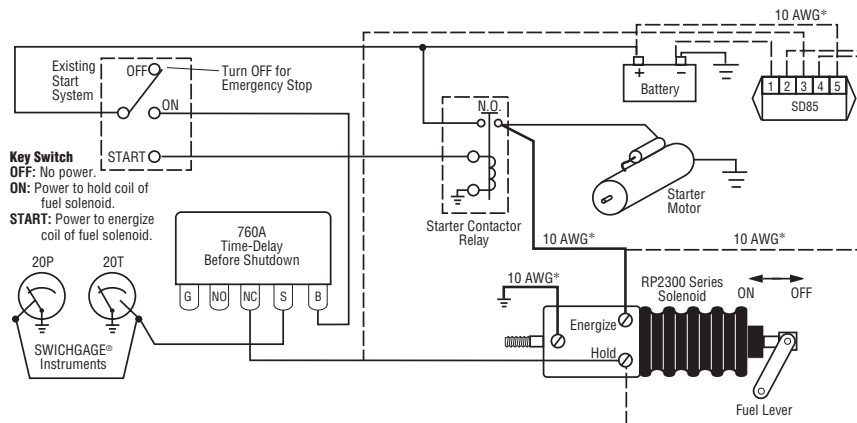
Typical Wiring Diagrams

Typical auto-shutdown system using a 518PH magnetic switch



*Wires must be minimum 10 AWG (65/0.3 mm. [4.5 mm.]) to develop full force.

Typical time-delayed shutdown using a 760A magnetic switch



*Wires must be minimum 10 AWG (65/0.3 mm. [4.5 mm.]) to develop full force.

Mechanical Installation

1. Bolt the solenoid securely to the mounting bracket.
2. Connect linkage and check for binding. Plunger should move freely throughout the complete stroke and be allowed to "bottom" at the internal stop of the solenoid.

DO NOT mount with boot down.

DO NOT apply any grease or lubrication to parts.

IMPORTANT: If the plunger does not seat, it will release prematurely when shifted to the "holding" mode of operation. Readjust linkage to shorten the plunger stroke. Adjust the yoke in increments of 1/2 turn until plunger will remain in hold position.

Electrical Installation

1. Refer to the diagrams above for typical electric wiring.
2. Use minimum 10 AWG [65/0.3 mm. (4.5 mm.)] wire size, as noted in the wiring diagrams. A smaller wire will reduce the current available and thus the pulling force. Wire length must be kept to a minimum.

Operation

The solenoid coil is connected to the existing engine starter system or an equivalent circuit. At starting both the Energize and Hold-in coils are energized. In the run mode, the Hold-in coil is continuously energized while the Energize coil is disconnected, reducing the heating effect and power consumption.

NOTE: Coils that burn out due to improper electrical hookup or misadjustment are not covered by Murphy factory warranty.

NOTE: A cool down period of 2 minutes minimum should be allowed between energized pull in cycles.



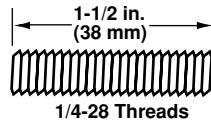
CAUTION: The solenoid housing is hot to the touch. A temperature rise to 185°F (85°C) is permissible.

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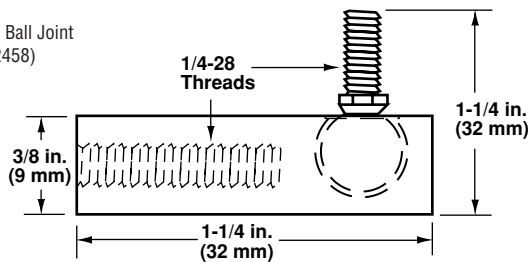
Accessories

RPS Linkage Parts and Assemblies

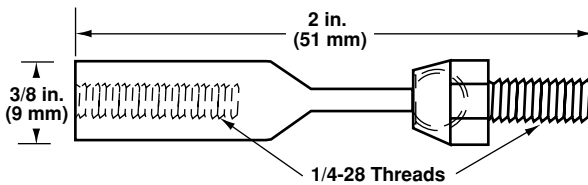
Threaded Rod
(40-05-0315)



RPS 90° Ball Joint
(00-00-2458)



RPS In-Line Ball Joint (00-00-2457)

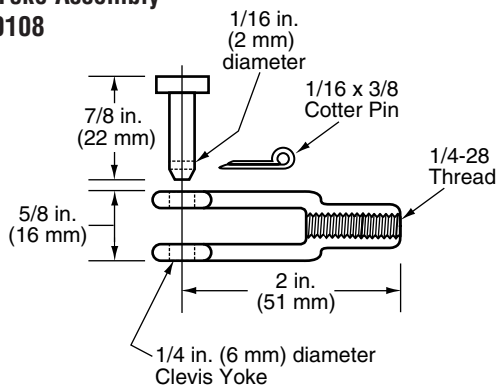


Clevis Yoke Bead Chain Assemblies 65-01-0110

12 inch
(300 mm.)
Chain

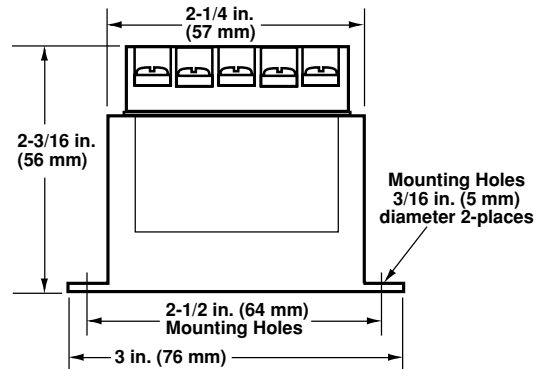


Clevis Yoke Assembly 65-01-0108

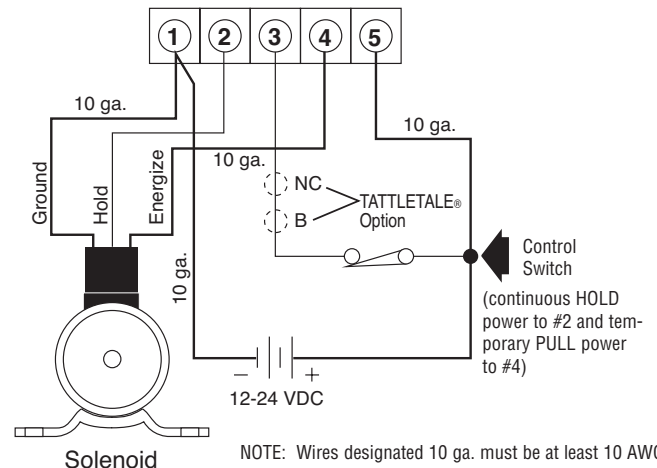


SD85: Solenoid Drive Time Delay

The SD85 is used when the solenoid is duty cycled for short time periods such as 2-position throttle operation. It also provides enhanced operational control for normal on-off applications. The SD85 activates both coils of the solenoid for a short time then de-energizes the Energize-coil. The Hold-in coil remains energized.



SD85 Terminal Block



NOTE: Wires designated 10 ga. must be at least 10 AWG [65/0.3 mm. (4.5 mm.)] to develop full force.