Heavy Duty Air Intake Shut-off Valve

Model 7002

Overview

Hydraulic fracturing technology requires the use of heavy-duty, high-horsepower diesel engines. Hydrocarbon release in an area where a diesel engine is operating can lead to diesel engine runaway which can be a highly dangerous situation. Once an engine begins to run on the external fuel source, turning off the ignition will have no effect. The engine will continue to run and overspeed leading to mechanical failure or explosion. The AMOT 7002 Series air intake shut-off valve was designed for the wear and tear of the frac industry. The valve will effectively shut down a runaway diesel engine by closing off the engine intake air.

Features and Benefits

- Rated for continuous working temperature from -40°C to +280°C
- IP67 rated solenoid/actuator is enclosed for reliable performance
- Designed for high-vibration environments
- Anodized aluminum and stainless steel construction resists corrosion
- Designed for post-turbo temperatures
- Male/female marmon flange connections (can be coupled directly to Cummins QSK50 engine intakes)
- Position switch integrated into actuator housing
- Switch is not exposed to charge air temperature/debris

Applications

Cummins QSK50 (Tier 2 and 4) high horsepower engines used in the following applications:

- Hydraulic fracturing units
- Electric power generators
- Offshore production engines
- Drilling industry
- Marine engines
- Power generation (gen sets)
- Mining equipment
- Locomotives
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Dimensions

(VALVE IS CLOSED)

(VALVE IS OPEN)

Handle at stop position

Handle at full position

SWITCH IS OPEN WHEN VALVE IS OPEN

SWITCH: DEUTSCH DT06-2S

SOLENOID INDUCTANCE: 3.5mH

GATE MATERIAL: BRASS

MAXIMUM CHARGE AIR PRESSURE: 5 Bar

MAXIMUM FLOW RATE: 1.8 kg/sec

TEMPERATURE RANGE: -40° C TO 70° C

1kΩ SHUNT RESISTOR, MAX >.25W

SOLENOID DUTY CYCLE: 1.3%, MAX 1.0s ON, MIN 75s OFF

SOLENOID RESISTANCE: 1.00 - 1.22 OHMS @ 25°C

SOLENOID CONNECTOR: DT04-4P, PINS 1 & 2 POWER SOLENOID

SWITCH: 5 AMP RESISTIVE LOAD MAX >.25W

MAXIMUM VOLTAGE: 28.0 VOLTS

SWITCH VOLTAGE: 19.2-28.8 VOLTS

SWITCH CURRENT: 5 AMPRESSIVE LOAD MAX >.25W

SWITCH RESISTANCE: 1Ω SHUNT RESISTOR, MAX >.25W

MATERIAL: ALUMINUM

FINISH: 3.2 MICRONS

ALL DIMENSIONS IN MILLIMETERS

FINISH 3.2 MICRONS

THIRD ANGLE PROJECTION

SCALE: .X .XX

DRAWN BY: JRM

DATE: PM 10/23/2013

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Specifications

<table>
<thead>
<tr>
<th>Standard materials</th>
<th>Valve body &amp; actuator housing</th>
<th>Hard anodized aluminum</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gate</td>
<td>Brass</td>
<td></td>
</tr>
<tr>
<td>Seals</td>
<td>Viton/Silicone</td>
<td></td>
</tr>
</tbody>
</table>

Maximum intake air temperature

-40°C to 280°C   -40°F to 535°F

Valve Size

4” valve size 102 mm

Net weight

10 kg (21 lbs)

Max Charge Air Pressure

5 bar 72 psi

Solenoid

Voltage 19.2 - 28.8 Volts DC
Max current draw 38.9 A @ 28.8 VDC & -40°C
Inductance 3.5mH +40°C
Duty Cycle @ 125°C 1.3%, Max 1.0s ON Min 75s OFF

Switch

5 Amp resistive load max >0.25W

Service Kits & Accessories

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>RKS-7001-01</td>
<td>Left hand/right hand elbow kit</td>
</tr>
<tr>
<td>RKS-7001-09</td>
<td>Reset handle</td>
</tr>
<tr>
<td>RKS-7002-03</td>
<td>24V Solenoid kit</td>
</tr>
<tr>
<td>RKS-7002-04</td>
<td>Normally-closed switch kit</td>
</tr>
<tr>
<td>RKS-7002-05</td>
<td>Pneumatic cylinder kit</td>
</tr>
<tr>
<td>22092L</td>
<td>Flange o-ring</td>
</tr>
<tr>
<td>1641-019</td>
<td>Timer relay, 24 VDC</td>
</tr>
</tbody>
</table>
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How to order

Use the tables below to select the unique specification of your Model 7002 Intake Air Shut-off Valve:

Example: 7002 A BB C - DDD

<table>
<thead>
<tr>
<th>A</th>
<th>Valve Size</th>
<th>BB</th>
<th>Valve Operator</th>
<th>C</th>
<th>Switch Options</th>
</tr>
</thead>
<tbody>
<tr>
<td>4</td>
<td>4 inch, standard</td>
<td>72</td>
<td>Electric Solenoid, 24VDC</td>
<td>A</td>
<td>Valve Open = Switch Closed</td>
</tr>
<tr>
<td></td>
<td></td>
<td>25</td>
<td>Pneumatic Cyl.</td>
<td>B</td>
<td>Valve Open = Switch Open</td>
</tr>
</tbody>
</table>

Note: AMOT does not qualify the valve for specific applications. Consult the engine and valve specifications. Switch, Solenoid and Reset Service Kits are available for your valve. Contact Customer Service for the specific part number.

www.amot.com