

Automax Valve Automation Systems

Aviator II Valve Controller

Installation Operation Maintenance

FCD AXENIOM0100-02

Mechanical Installation: Installation is best performed with the NAMUR mounting kits. These kits allow direct mounting of the Aviator™II shaft to the actuator pinion without a coupler. The NAMUR mounting kits will work with any actuator conforming to the NAMUR standard for accessory mounting hole locations and pinion dimensions. Simply attach bracket to actuator and Aviator™II to bracket with the included fasteners. The Aviator™II shaft features an integral alignment pin which engages the tapped pinion hole. Automax also offers a full line of non-NAMUR kits.

Electrical Connections: The Aviator™II features three (3) 3/4" NPT conduit entries. The switches and pilot solenoid are pre-wired to the screw terminal block to simplify customer wiring connections. A wiring diagram is included under the lid. Simply make desired connections to the screw terminal blocks. Secure a grounding wire under the green grounding screw. Make sure the solenoid control voltage is the same as the solenoid electrical rating. For hazardous locations, U.L. and National Electric codes require an approved sealing fitting within 18 inches of the switch enclosure. Sealing fittings are not required for Division 2 non-incendive applications. Open conduit entries must be closed after installation using a close-up plug approved for hazardous locations. Conduit and plugs must engage a full five (5) threads.

For field wiring: ensure that any excess wire lengths or loops are routed away from any moving parts and are short enough, or secured to ensure a 1/4" clearance between the wire and the inside surface of the switchbox cover.

Spool and Tubing Configuration: For spring return actuators, a 4-way spool valve is provided with port #2 plugged. For double acting actuators, the same spool valve is provided with no plugs. Make sure the correct spool is selected before installing tubing. (Note: the APS2 module can be supplied on spring return actuators to purge the spring chamber with supply air.) 2. Make sure all air pressure is removed before installing tubing. 3. Attach tubing according to Figures 1 or 2 below, depending upon application. Attach supply tubing to Port 1 and use 3 and 5 exhaust. 4. To prolong actuator life use only clean, dry plant air. Lubricated air is not required, although it is recommended particularly for high cycle applications.

NOTE: A minimum of 35 psi is required to operate the spool valve.

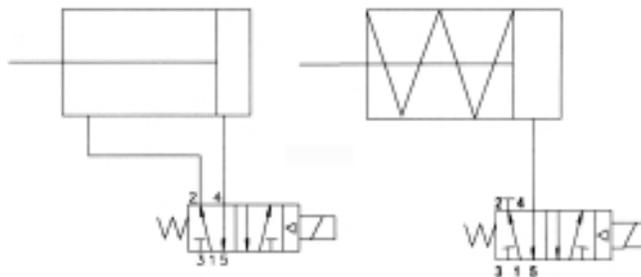


Figure 1
Double Acting Actuator

Figure 2
Spring Return Actuator

Caution: To prevent ignition of hazardous atmospheres, keep cover bolts tight while circuits are live. Disconnect supply circuit before opening removing the lid. Do not place the lid with the flat surfaces down. This will ensure that the flange is not damaged and integrity of the flame path will be maintained.



Certifications: The Aviator II has globally accepted certifications.

 <p>KEMA 07ATEX0122X 0518 Flameproof  II 2 G Ex d IIB T3/T4 T3 at $-20C \geq Tamb \leq +60C$ T4 at $020C \geq Tamb \leq +60C$ <u>Complies with standards</u> EN 60079-0:2006 EN 60079-1:2004</p>	<p>IECEX CSA 07.0009X Flameproof Ex d IIB T3/T4 T3 at $-20C \geq Tamb \leq +60C$ T4 at $020C \geq Tamb \leq +60C$ <u>Complies with standards</u> IEC 60079-0:2004, 4th Ed IEC 60079-1:2003 5th Ed</p>
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 **Explosion Proof**
Class I Div 1 Groups C,D; Class I Div 2 Groups A,B,C,D, T4 Tamb -20 to +60C; Class II Div 1,2 Group E,F,G
US - Class 1 Zone 1, AEx d IIB T3/T4,
Canada - Class 1 Zone 1, Ex d IIB T3/T4

Special Hazardous Location Instructions:

For North America installations you must install a conduit sealing fitting within 18 inches of the enclosure to meet NEC regulations.
For ATEX and IECEX installations an appropriately rated Cable Gland is required. Any unused conduit entry must have a suitably rated blanking element.

CAUTION: 

- Substitution of components may impair suitability for Zone 2 Increased Safety.
- Do not disconnect equipment unless power has been switched off or the area is known to be non-hazardous.
- Cleaning this housing by rubbing should be done in a non-hazardous area.
- Potential electrostatic charging hazard, clean only with a damp cloth – danger of propagating discharge.
- All grounding and bonding installation requirements must be addressed
- All installation, inspection, and maintenance of the equipment should be performed by suitably trained personnel. In addition, for ATEX, all installation, inspection, maintenance and repair must be done by suitably trained personnel. For more information refer to EN 60079-14:1997, EN 60079-17, EN 60079-19
- Replacement parts not to invalidate certification and to be only obtained direct from the manufacturer.

Special conditions of Use for ATEX

1. The following maximum constructional gaps are less than those required by table 2 of EN 60079-1:2004

Description	Type	Measured Gap Dimension (mm)	Maximum Required Gap Dimension (mm)	Referenced Manufacturer Document
Flat Joint between cover and base	Flat	.038 mm	.20 mm	XM0372, X01218, X01142, XM0401
Between Shaft and Cover	cylindrical	.088mm Diametrical Clearance	.20 mm	XM0372, X01218, X01142, XM0401
Between Shaft and Base	cylindrical	.088mm Diametrical Clearance	.20 mm	XM0372, X01218, X01142, XM0401

2. The tensile strength of the fastening bolts are detailed below:
(x4) Metric Hexagon Socket M8-6G Refer to Manufacturers Documentation X01265
Tensile Strength: 671 N/mm²



Switch Setting 1. Rotate actuator to desired position. 2. Loosen five captive cover screws and remove lid, turning slightly while lifting. 3. To adjust the limits, lift or depress cam against spring to disengage splines and turn cam until switch activates / deactivates as desired (Figure 3). 4. Release cam, assuring that the splines are engaged (A slight amount of force above the spring force may be needed). 5. Clean base and lid flanges and replace lid on base. Make sure wires are NOT caught between flanges, and tighten captive screws.

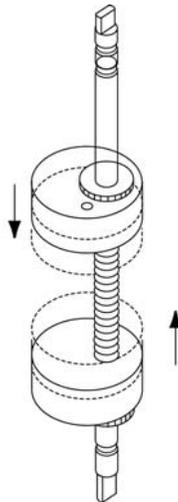
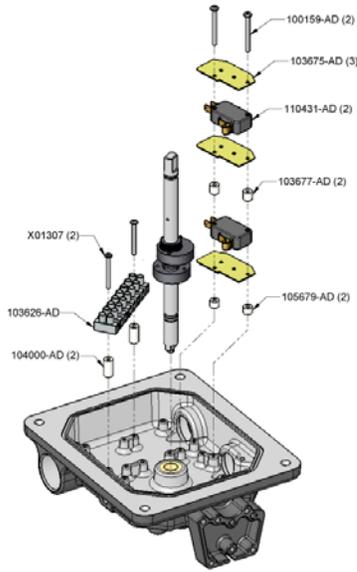


Figure 3
Cam Adjustment

Lubrication: All Aviator™ II spool valves are pre-lubricated and will operate dry (with no additional lubrication) The use of lubricated air will not interfere with the Aviator™II function.

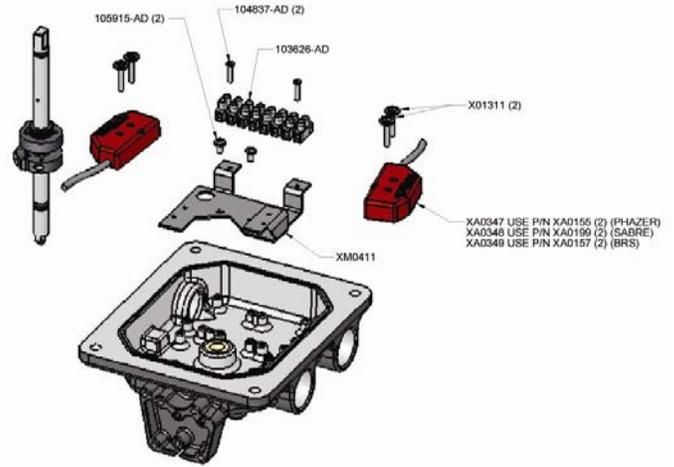
If lubrication is used, the oils listed below are popular, easily obtainable fluids that are recommended for use with the Aviator™II Spool valve: Gulf Harmon 47, Mobil DTE Medium, Shell Tellus 29, Texaco Rondo B, Sohivis 47 and Sunnis 921. May other lubricants are acceptable providing they do not contain detergents that will attack Nitrile or Viton Seals.

AVIATOR II SWITCH OPTIONS



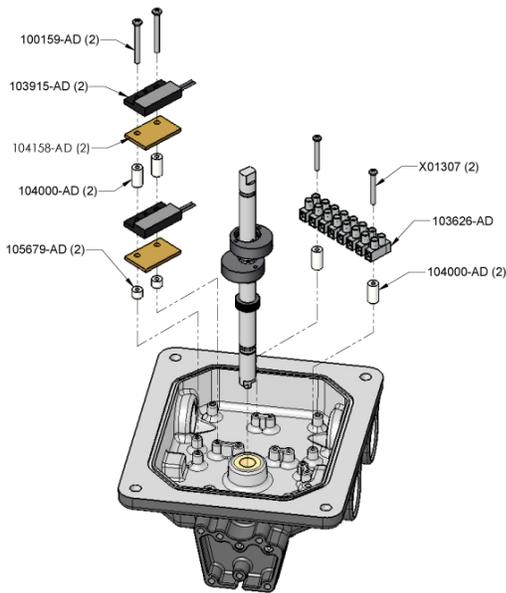
XA0346

AVIATOR II WITH MECHANICAL SWITCHES



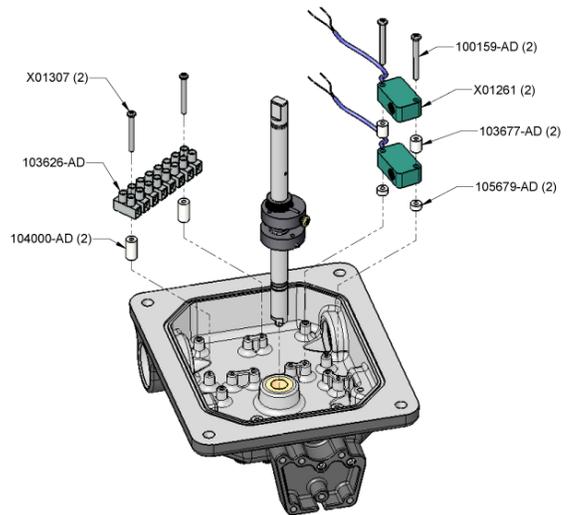
XA0347 & XA0348 & XA0349

AVIATOR II WITH PHAZER SWITCHES



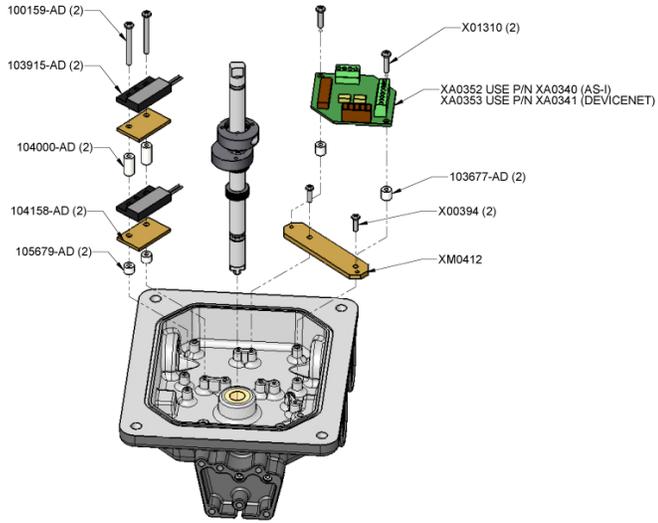
XA0350

AVIATOR II WITH TYPE 4 SWITCH



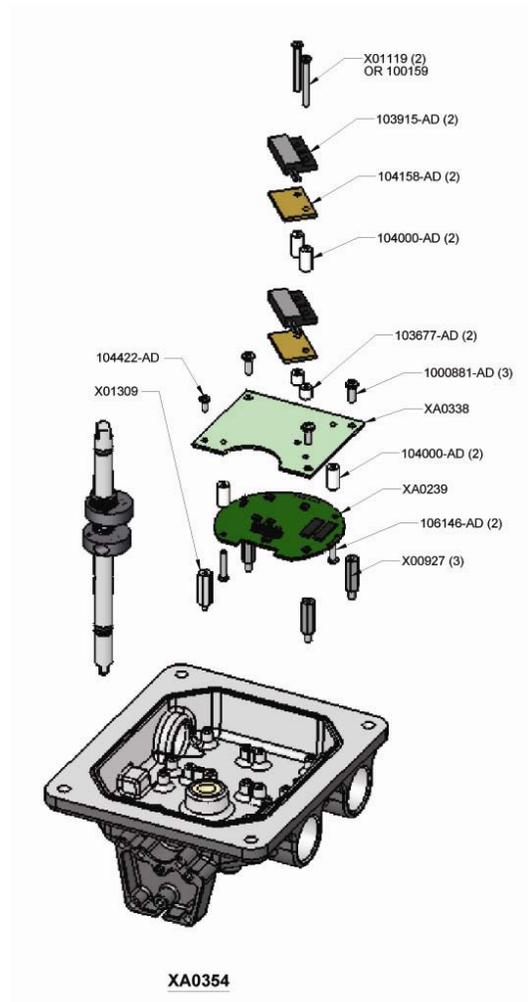
XA0351

AVIATOR WITH P&F NJ2 SWITCHES



XA0352 & XA0353

AVIATOR II WITH AS-i/DeviceNET CARD

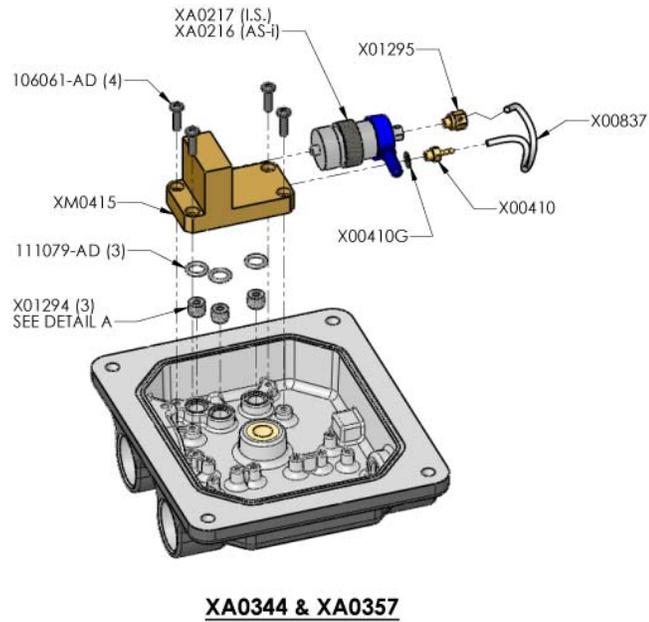
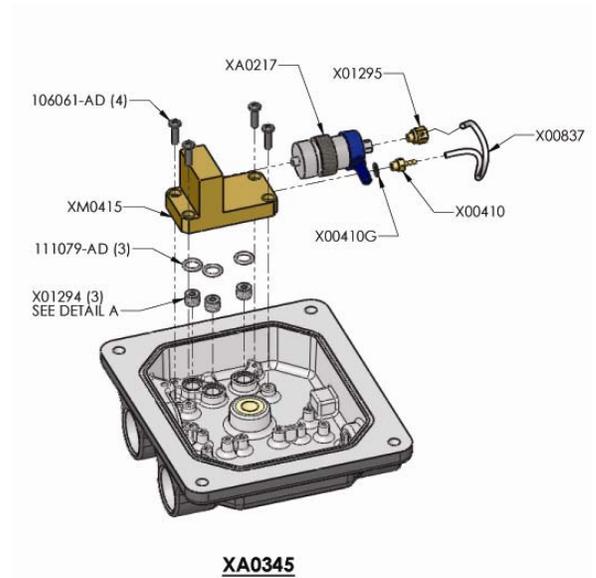
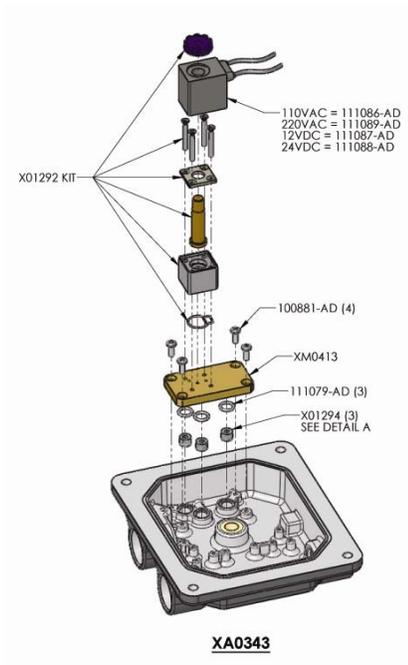


XA0354

AVIATOR II WITH FF NETWORK CARD

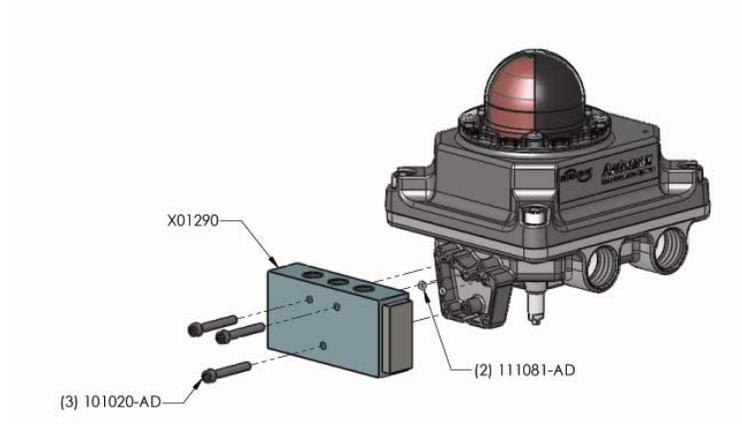


SOLENOID OPTIONS

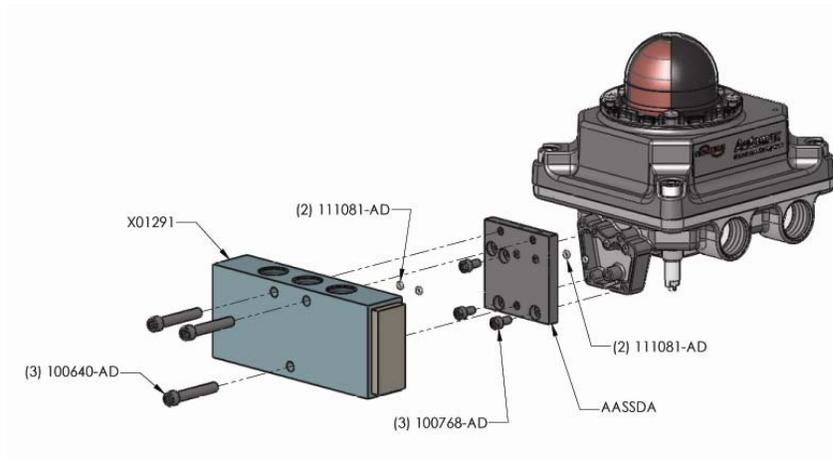




SPOOL VALVE OPTIONS



1.8 Cv Spool Option



4.5 Cv Spool Option



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Or call: 1-931-432-4021

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