

Returned Goods Procedure for MagnaValves

Please contact us before sending MagnaValves back for repair. To help improve our service and minimize your downtime there are several things that should be considered:

1. We can often help you by phone/fax/e-mail to determine the problem without you sending the valve back to us.
2. Do you need a replacement valve while your valve is in our shop?
3. Would you want to purchase another valve to have as a spare back-up unit? We also sell factory re-conditioned valves and controls with warranty.
4. Be sure you give us clear shipping address and instructions, including person's name and phone number
5. Be sure you have our (new) address (see below).
6. What is the name of the technical contact person in case we have questions during repair evaluation? (Phone and e-mail information)
7. What is the valve model and serial number?
8. Can you describe the nature of the problem? What are the symptoms?
9. What type of machine is it on?
10. Are there other valves on the machine?
11. How long has the valve been in service, or is it a new application?
12. What is the wheel size or nozzle size?
13. What size is the wheel motor Hp or KW?
14. What type and size of shot is being used?
15. What is your typical flow rate (or motor amperage) being used?
16. What is the full-scale flow range set at? (i.e. 30 lbs/minute, 500 Kg/min)
17. Can you send us a photo, (digital image) of the valve on the machine so that we might recognize an application problem?
18. Would you want to send a technician to EI for factory training? This is a free 2-day session in our facilities for calibration and trouble-shooting.
19. Please see the next page for tips on determining if the MagnaValve or its valve driver module is defective.
20. Please request a Returned Goods (RG) number from us prior to send the valve.
21. Send to:

Electronics Inc
56790 Magnetic Drive
Mishawaka, IN 46545-7493
1-574-256-5001 phone
1-574-256-5222 fax

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How to determine if a MagnaValve or its valve driver module is defective

Theory: The MagnaValve, as its name implies, is a magnetic valve used to regulate and control the flow rate of steel shot or grit. A permanent magnet in the valve holds back the shot (even with no power applied to the valve). By applying a power signal to the internal electro-magnets we cancel the magnetic field and allow shot to flow. A special device, the valve driver module, at the MagnaValve provides the precise electrical current to the valve solenoids to get a perfectly neutral or null magnetic field.

In order to have proper MagnaValve operation the valve driver module must be functioning correctly and the solenoids must be in good working condition. (You must also have an unrestricted supply of shot. If the hopper is empty we cannot control the flow rate ☹.) Always be sure that any slide gate or maintenance gate above the MagnaValve is fully open. This is especially important because the valve needs a full supply of shot above it in order to operate properly. If a slide gate above the valve is restricting the flow rate the shot will pass through the valve at a high velocity causing pre-mature wear to the valve interior parts. In normal operation the magnetic field attracts a "blanket" of shot to protect the interior parts from abrasion. This "blanket" of shot is not created when the shot supply above the valve is restricted.

Please follow these steps for your diagnosis:

1. Be sure the maintenance or slide gate is fully open and that there is an ample supply of shot in the hopper. If it was fully open then close it to prevent shot from filling the wheel and then proceed with the following steps.
2. The following steps can be done with the wheel motor turned OFF.
3. Send a 100% command to the MagnaValve, indicated by the red led. The led should be constantly "on" and not blinking.
4. Measure the voltage at the MagnaValve between the red and black wires on the valve driver module. It should be approximately $45\text{Vdc} \pm 5\text{Vdc}$. If this voltage is not present then the controller may be defective. Disconnect the red and black wires from the controller and re-measure the voltage. If the voltage is present then a defect in the valve caused a problem and the valve or valve driver module must be replaced.
5. If the red black voltage is ok then measure the voltage at the orange brown wires. It should be (approximately, depending upon the specific valve) about 30 Vdc. If it is not then we need to check the condition of the valve solenoids, connected to the orange brown wires. Remove the orange brown wires and measure the dc resistance of the solenoid coils. Depending upon the specific MagnaValve this may be about 40 Ohms. (Call factory for assistance or check out this web page.)
6. If the voltage coming into and going out of the valve driver is correct and if the solenoid resistance is correct then the valve is probably functioning. With 100% signal applied, red led constantly "ON", insert something metallic, such as screwdriver, and check the strength of the magnetic field. It should be zero or near zero. If it is zero than the valve driver and MagnaValve is working correctly and there is either no shot available or an obstruction or debris above the MagnaValve.

For additional technical information visit our website:

MagnaValve valve driver module descriptions

<http://www.magnavalve.com/Products/appnotes/an109.pdf>

MagnaValve instruction manuals

<http://www.magnavalve.com/Products/manuals/im0000.html>