



INSTRUCTION MANUAL

TROUBLESHOOTING

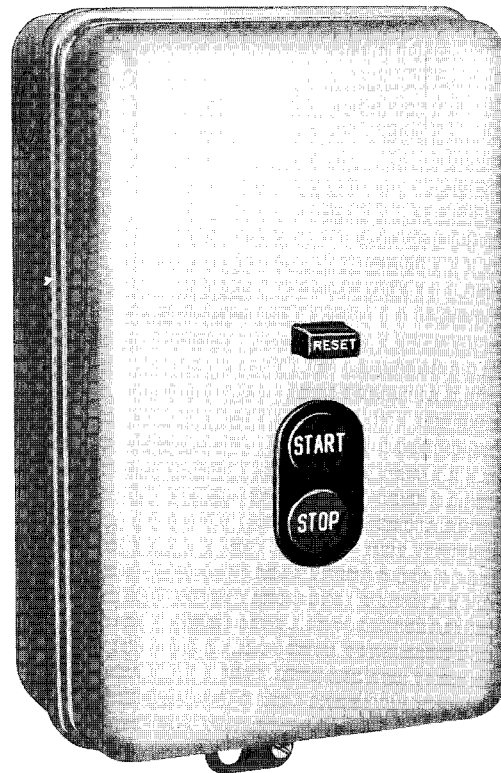
ELECTRICAL COMPONENT

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The following troubleshooting chart is furnished to you as part of Aurora Pump's continuing efforts to provide total service to their customers.

The troubles, causes and remedies contained herein will aid you in quickly determining and correcting

most problems connected with electrical components used with your pump. However, it is not the intent of Aurora Pump to supersede the component manufacturer's operation and maintenance recommendations, but to supplement such data. Any specific questions or problems regarding a component should be directed to the component manufacturer.



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TROUBLE	PROBABLE CAUSE	REMEDY
1. Contact chatter	<ul style="list-style-type: none"> a. Broken shading coil b. Poor contact in control circuit. c. Low voltage 	<ul style="list-style-type: none"> a. Replace shading coil. b. Improve contact; use a 3 wire control circuit interlock. c. Determine cause of low voltage and correct. Check momentary voltage drop during starting.
2. Contacts are welded or frozen	<ul style="list-style-type: none"> a. Abnormally high voltage inrush b. Rapid jogging of control c. Low tip pressure d. Low voltage preventing magnet from sealing e. Foreign material holding contacts open f. Short circuits 	<ul style="list-style-type: none"> a. Check for grounding, shorting or excessive motor load current; install larger contactor. b. Caution operator not to jog control; install a control rated for jogging. c. Replace contact springs; check contact carrier for possible damage. d. See 1.c. above. e. Clean contacts per manufacturer's recommendations. f. Correct shorting problem; check for correct fuse or circuit breaker size.
3. Overheating of contact tips; short tip life	<ul style="list-style-type: none"> a. Filing or dressing of tips b. Interrupting excessively high currents c. Excessive jogging of control d. Weak tip pressure e. Dirt or other foreign material on contact surface f. Short circuits g. Loose connections h. Sustained overloads 	<ul style="list-style-type: none"> a. Do not file or dress silver tips. Discolored or rough tips maintain their efficiency. b. See 2.a. above. c. See 2.b. above. d. See 2.c. above. e. See 2.e. above. f. See 2.f. above. g. Clean connection and tighten it. h. Check for excessive motor load current; install larger device if required.
4. Open circuit in coil	<ul style="list-style-type: none"> a. Mechanical damage 	<ul style="list-style-type: none"> a. Replace coil; handle and store coils carefully.
5. Overheated coil	<ul style="list-style-type: none"> a. High ambient temperature; excessive voltage b. Incorrect coil for application c. Shorted turns due to corrosion or mechanical damage d. Low voltage; magnet does not seal in e. Rust or dirt on pole faces 	<ul style="list-style-type: none"> a. Re-evaluate circuit and application. b. Replace with proper coil. c. Replace coil. d. Correct system voltage. e. Clean pole faces to reduce air gap.
6. Tripping of overload relay	<ul style="list-style-type: none"> a. Sustained overloads b. Loose connection on load wires c. Heater is of incorrect size 	<ul style="list-style-type: none"> a. Check for shorting, grounding, or excessive motor currents. b. Clean and tighten connection. c. Replace with correct heater.
7. Magnet is noisy	<ul style="list-style-type: none"> a. Shading coil is broken b. Magnet faces are not mating c. Magnet faces are rusty or dirty d. Low voltage 	<ul style="list-style-type: none"> a. Replace shading coil. b. Realign or replace magnet. c. Clean and realign magnet. d. See 1.c. above.

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TROUBLE	PROBABLE CAUSE	REMEDY
8. Magnet does not pick up and seal	<ul style="list-style-type: none"> a. Low voltage b. Open or shorted coil c. Incorrect coil for application d. Mechanical obstruction 	<ul style="list-style-type: none"> a. See 1.c. above. b. Replace coil. c. Replace coil. d. With power off, check for free movement of contact and armature.
9. Magnet does not drop out	<ul style="list-style-type: none"> a. Pole faces are dirty b. Voltage is not removed c. Worn or rusted parts are binding. d. Lack of air gap in magnet path causing residual magnetism 	<ul style="list-style-type: none"> a. Clean pole faces. b. Check coil circuit. c. Replace worn parts. d. Replace worn magnet parts.
10. Pneumatic timer is erratic	<ul style="list-style-type: none"> a. Foreign material in valve 	<ul style="list-style-type: none"> a. Replace timing head or return to factory for repair.
11. Pneumatic timer contacts malfunction	<ul style="list-style-type: none"> a. Actuating screw is not correctly adjusted b. Worn or broken parts in snap switch 	<ul style="list-style-type: none"> a. Adjust screw per manufacturer's recommendations. b. Replace snap switch.
12. Broken parts in limit switch	<ul style="list-style-type: none"> a. Over travel of actuator 	<ul style="list-style-type: none"> a. Use resilient actuator; operate within tolerance limits of switch.
13. Manual starter reset will not work	<ul style="list-style-type: none"> a. Latching mechanism is broken or worn 	<ul style="list-style-type: none"> a. Replace broken or worn part.
14. Manual compensator contacts weld on starting side	<ul style="list-style-type: none"> a. Inching, jogging, or slow operation of control handle 	<ul style="list-style-type: none"> a. Caution operator not to inch or jog control; handle should be moved swiftly to "start" position.
15. Manual compensator contacts weld on running side	<ul style="list-style-type: none"> a. Insufficient spring pressure b. Slow movement of handle to "run" position 	<ul style="list-style-type: none"> a. Replace contact springs and contacts. b. Move handle swiftly from "start" position to "run" position when motor approaches full speed.
16. Damaged or burned transformer	<ul style="list-style-type: none"> a. Repeated inching or jogging of control b. Holding handle in "start" position for long periods of time 	<ul style="list-style-type: none"> a. Caution operator not to inch or jog control. b. See 15.b. above.