



## TROUBLESHOOTING YOUR ELECTROMAGNETIC CHUCK

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### WHEN YOUR CHUCK IS OPERATING, BUT NOT UP TO PREVIOUS PERFORMANCE

PROBLEM	POSSIBLE REASON	TEST AND REMEDY
<p>Poor holding power over entire working surface</p> 	Insufficient voltage, so that too little magnetic flux is being generated	Consult name plate on chuck to determine proper operating voltage. If name plate is missing, the electrical operating characteristics can be found stamped on the chuck body, usually on the front right-hand side near terminal box. At power supply check D.C. voltage output and A.C. input voltage with voltmeter under load during peak power consumption. If D.C. voltage is low, adjust to proper output by changing the taps within the power supply to match measured A.C. input. If your power supply does not have multiple taps, relocate chuck onto circuit with full A.C. voltage
	Worn and irregular chuck working surface causing air gaps in magnetic field	Grind working surface of chuck to eliminate uneven condition.
	Workpiece has changed: <ul style="list-style-type: none"> <li>a. Surface condition is rough or warped causing air gaps in magnetic circuit.</li> </ul> Composition or heat treat of workpiece has changed, reducing magnetic properties.	Remove burrs and irregularities on surface against chuck. The following are typically difficult to hold: <ul style="list-style-type: none"> <li>• Some alloy &amp; tool steels</li> <li>• Sintered metals</li> <li>• 400 series stainless steel</li> <li>• Cast iron (some grades)</li> </ul> Contact Obsidian Manufacturing Industries, Inc. for application engineering on difficult to hold parts.
Poor holding power over small area	Open or short circuit exists in one or more energizing coils, so that no magnetic flux is generated in that coil area.	Test at chuck power leads for resistance reading. Measure the resistance by connecting an ohmmeter across the leads. Contact Obsidian Manufacturing Industries, Inc. for appropriate resistance values.
Poor holding power over areas smaller than the hand (detectable with 1"x1" steel block).	All chucks show some variation in holding power across the surface, depending on the design and spacing of the energizing coils.	If situation is critical, consult Obsidian Manufacturing Industries, Inc. for application engineering. A different chuck design may be the solution to the problem.

### WHEN YOUR CHUCK HAS FAILED COMPLETELY, SHOWING NO HOLDING POWER

CHECK FOR SOURCE OF FAILURE IN THE FOLLOWING ORDER	POSSIBLE REASON	TEST AND REMEDY
<p>No A.C. power into rectifier or D.C. power supply</p>	Fuse blown	Test voltage at A.C. source. Replace fuse or set circuit breaker
	Defective switch or connection in A.C. circuit.	Test voltage at connections. Replace defective parts
<p>No D.C. voltage on output side of power supply</p>	Failure of transformer, rectifier or switching components within power supply. Some units have D.C. fuses, which may have blown	Check D.C. output voltages with voltmeter. Replace fuse if blown. Replace defective components; contact manufacturer of power supply for parts or assistance.
<p>Power from D.C. supply not getting to chuck</p>	Defective wiring or connectors between power supply and junction box, or defective collector rings and brushes on rotary chucks.	Test for input voltage at terminal box. Replace power cords or connectors. If a rotary, see section on rotary chucks, above.
<p>Chucks not responding to available D.C. power</p> 	Faulty internal electrical wiring or coils	Check with ohmmeter for proper resistance <ul style="list-style-type: none"> <li>a) Resistance to ground (minimum should be above 100,000 ohms).</li> <li>b) Resistance between power leads.</li> </ul> Measure the actual resistance by connecting an ohmmeter across the leads. Contact Obsidian Manufacturing Industries, Inc. for appropriate resistance values and compare with measured readings. If the resistance differs by more than 10% from the appropriate value, the chuck will require factory repair. Contact Obsidian Manufacturing Industries, Inc. for repair service information.