

**INSTRUCTIONAL MANUAL
CAT. 64806-10
Overhead Stirrer Complete Unit**



Electron Microscopy Sciences
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General Safety Rules

WARNING

PLEASE READ THIS MANUAL CAREFULLY PRIOR TO OPERATING UNIT. FAILURE TO FOLLOW ALL INSTRUCTIONS MAY RESULT IN PERSONAL INJURY OR DAMAGE TO THE UNIT.

Work area:

- Keep your work area clean to avoid clutter that could cause injury
- Never put the unit near any flammables, gasses or dust – the motor creates sparks which could ignite fumes
- Only to be used by authorized personnel

Electrical safety:

- Grounded equipment must be plugged into the proper outlet in accordance with all codes. Never remove the grounding prong. Do not use any adapter plugs. If the unit should electrically malfunction, grounding provides a low-resistance path to carry electricity away from the user.
- Avoid direct contact with grounded surfaces such as pipes, radiators, ranges, and refrigerators.
- Do not abuse the cord.
- Replace damaged cords immediately – failure to do so could result in serious personal injury.

Personal safety:

- Stay alert when using this unit – any case of inattention while using this unit can result in serious personal injury
- Dress properly – do not wear loose clothing; keep hair, clothing, and gloves away from moving parts.
- To avoid the unit from accidentally starting, be sure that the switch is off before plugging in.
- Remove adjusting keys or wrenches before turning on the instrument. A wrench or key that is left attached to a rotating part of the tool may result in personal injury.
- Do not overreach. Maintain proper footing at all times. This enables better control of the instruments should any unanticipated situations occur.

Instrument use and care:

- Do not use the unit if the switch does not turn it on or off – this could be an indication that the unit may need to be replaced.
- Disconnect the plug from the power source before making any adjustments.
- Store idle equipment out of reach of unauthorized personnel.
- Check for misalignment of the unit or broken parts. If damaged, have the unit serviced before using.
- Only use the accessories that are recommended by the manufacturer for your model.

Service:

- Servicing must be performed by qualified personnel.
- When servicing, use only identical replacement parts

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Introduction



The Overhead Stirrer (Complete Unit) is designed for use with Potter-Elvehjem and tapered tissue grinders with Teflon® pestles. The precision chuck, adjustable, will accommodate most pestles and mixing rods with ¼" diameter shafts.

Features:

- Solid state speed controller
- Heavy-duty drive motor (ample power and speed)
- Facilitation in the power of homogenization operations
- Enamel finish aluminum cabinet
- Aluminum rod and clamp for attachment to a support stand (stand not included)
- Durable
- Stain-resistant

Applications:

- General laboratory mixing operations
- Versatility in its speed range of 300 – 5,000 (underload) RPM

Safety Symbols



The following safety symbols can be found within this manual and applied as decals to the unit. Their definitions can be found below.



WARNING: indicates attention to an operation which can cause the operator injury, improper function of or damage to the instrument and possible problems with the process.



ELECTRICAL DANGER: indicates attention to an operation which could cause electrocution or severe injury.

Operation



Refer to Figure A.

1. Carefully unpack the unit and save the box and all packing materials.
2. The unit should be located in an area where AC power is available.
3. Mount the stirrer to a laboratory stand using the clamp (6).

NOTE: A laboratory stand is not included with this unit.

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4. Open the keyless chuck (3) by holding the end closest to the stirrer cabinet and turning the end with the opening clockwise (as viewed from above) and insert shaft or pestle or paddle.
5. Once the shaft is inserted properly straight into the chuck, tighten the chuck securely by holding the end closest to the stirrer cabinet and turning the end with the opening counter-clockwise (as viewed from above). Tighten securely.



WARNING: NEVER INSERT GLASS SHAFTS INTO THE CHUCK, AS INJURY MAY RESULT.

6. Connect the unit to an AC power source.
7. Turn the unit on by rotating the speed control knob (17) clockwise until a slight click is felt. Provided the unit is connected and operating properly, the indicator lamp (18) will illuminate.
8. Adjust the speed controls knob until the desired rotational speed is reached. Turn the speed control knob clockwise to increase stirrer speed, or counterclockwise to decrease stirrer speed.

NOTE: The running torque of the motor is proportional to the motor speed

9. We recommend that the stirrer speed be increased gradually to avoid possible damage.
10. Turn the stirrer off when not in use and always unplug when changing pestles or paddles.



WARNING: NEVER ATTEMPT TO INSERT OR REMOVE SHAFTS FROM THE CHUCK WHILE THE UNIT IS PLUGGED IN.

Maintenance



NOTE: For qualified personnel only.



DANGER: NEVER ATTEMPT TO PERFORM REPAIRS IF THIS INSTRUMENT IS PLUGGED IN! IN ORDER TO AVOID SERIOUS ELECTRIC SHOCK OR ELECTROCUTION, THIS INSTRUMENT MUST BE DISCONNECTED FROM THE SOURCE OF AC POWER BEFORE REMOVAL OF ANY PROTECTIVE COVERS.

Performing inspection periodically is recommended for this unit, as well as for any other laboratory equipment of its kind. How often inspection occurs is entirely dependent on the amount of use of the unit, working environment, and age.

Troubleshooting



See following page for troubleshooting directions.

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CAUSE	REMEDY
Fuse blown	Replace fuse with proper size and type
Supply voltage low or at zero	Check house receptacle with a voltmeter
On/Off power switch in "Off" position	Turn on power by rotating speed control knob clockwise
Motor defective	Replace motor
Control board defective	Replace control board

Motor Replacement



DANGER: NEVER ATTEMPT TO PERFORM REPAIRS IF THIS INSTRUMENT IS PLUGGED IN. IN ORDER TO AVOID SERIOUS ELECTRIC SHOCK OR ELECTROCUTION, THIS INSTRUMENT MUST BE DISCONNECTED FROM THE AC POWER SOURCE BEFORE REPLACEMENT.

1. Disconnect the unit from the AC power source.
2. Using a 5/64" Allen wrench, loosen the set screw that holds the chuck (3) to the motor shaft and remove chuck.
3. Remove the eight screws, (two each side, four in rear), which secure the cabinet front cover (1) to the cabinet rear cover (2).
4. Remove the two screws in cabinet rear cover that secure the vibration isolators (3) to the cabinet rear cover.
5. Separate the cabinet halves.
6. Disconnect the motor leads from the double male connectors (27).
7. Disconnect the green grounding wire from the motor by removing the hex nut securing the wire.
8. Remove the two screws in cabinet front cover that secure the vibration isolators to the cabinet front cover.
9. Remove defective motor.
10. Remove the four vibration isolators from the motor by unscrewing.
11. For reassembly, reverse above order using new motor.

Control Board Replacement

Refer to Figure A.



DANGER: BE CERTAIN THAT THE UNIT IS DISCONNECTED FROM THE AC POWER SOURCE.

1. Disconnect the unit from the AC power source.
2. Using a 1/16" Allen wrench, loosen the set screw that secures the speed control knob (17) to the control board (5) and remove knob.

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3. Remove the outside pot hex nut (25).
4. Remove the eight screws, (two each side, four in rear), which secure the cabinet front cover (1) to the cabinet rear cover.
5. Remove the two screws in cabinet rear cover that secure the vibration isolators (13) to the cabinet rear cover. Separate the cabinet halves.
6. While applying slight outward pressure against the control board, press in on locking tabs of circuit board supports (24) and remove control board.
7. For reassembly, reverse above order using new control board.

Motor Brush Replacement



Refer to Figure A.



DANGER: BE CERTAIN UNIT IS DISCONNECTED FROM THE AC POWER SOURCE.

1. Disconnect the unit from the power source.
2. Using a 5/64" Allen wrench, loosen the set screw that holds the chuck (3) to the motor shaft and remove chuck.
3. Remove the eight screws, (two each side, four in rear), which secure the cabinet front cover (1) to the cabinet rear cover (2).
4. Remove the two screws in cabinet rear cover that secure the vibration isolators (3) to the cabinet rear cover.
5. Separate the cabinet halves.
6. Disconnect the motor leads from the double male connectors.
7. Remove the two screws in cabinet front cover that secure the vibration isolators to the cabinet front cover.
8. Remove motor from unit.
9. Remove the two nuts and lock washers located in the bottom of the motor casing.
10. Slide motor casing apart, revealing motor brush housings.
11. Straighten brush spring retainer tab.
12. Place thumb at rear of brush housing and with other hand slide brush spring retainer tab through slots of housing.
13. Carefully remove brush spring and brush.
14. Inspect motor brushes for wear and replace if brush length is less than 3/16" long.
15. Be certain to replace brushed with slotted side up.
16. For reassembly, reverse above order.

Fuse Replacement



DANGER: BE CERTAIN UNIT IS DISCONNECTED FROM THE AC POWER SOURCE.

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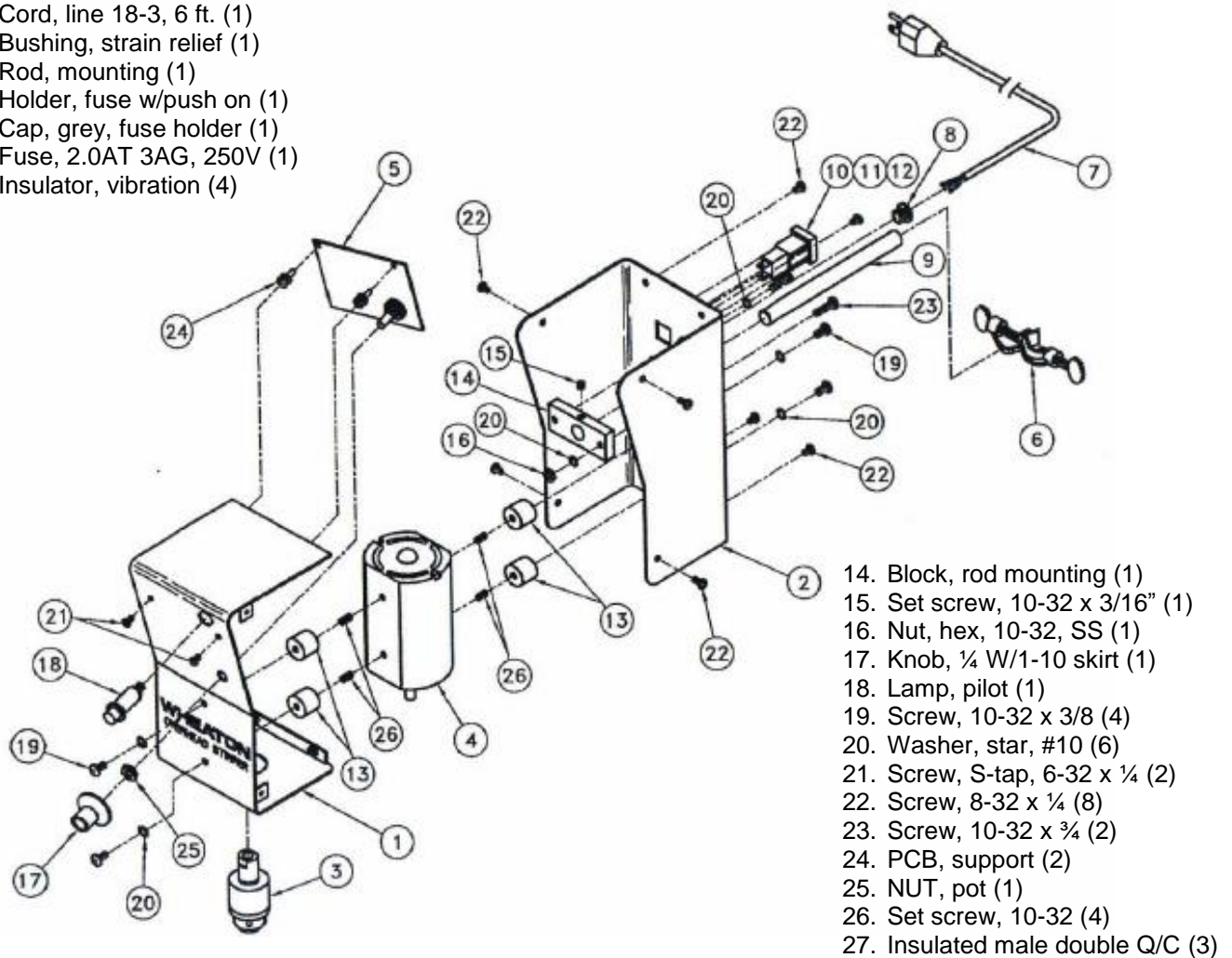
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1. Disconnect the unit from the AC power source.
2. Locate the square fuse holder (10).
3. Depress the fuse holder cap (11) and remove the fuse (12).
4. Replace with new 2.0AT 3AG 250V fuse.

Overhead Stirrer – Parts List (Figure A)



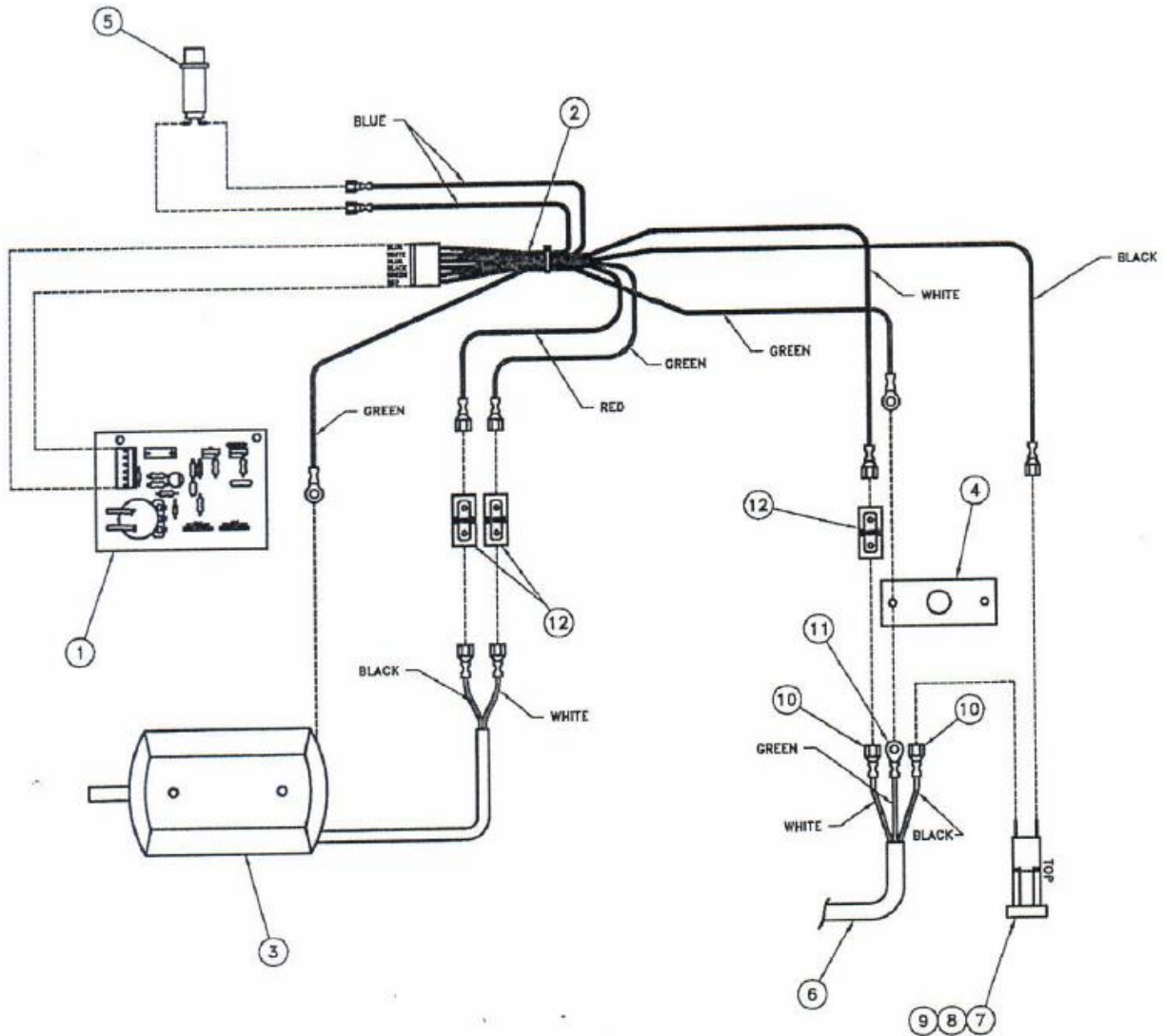
1. Lid, cabinet (1)
2. Base, cabinet (1)
3. Chuck w/Adapter (1)
4. Motor (1)
5. PCBA, control (1)
6. Clamp (1)
7. Cord, line 18-3, 6 ft. (1)
8. Bushing, strain relief (1)
9. Rod, mounting (1)
10. Holder, fuse w/push on (1)
11. Cap, grey, fuse holder (1)
12. Fuse, 2.0AT 3AG, 250V (1)
13. Insulator, vibration (4)



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1. PCBA, O-H Stirrer w/Molex (1)
2. Wire harness, PCBA (1)
3. Assembly, Dayton motor (1)
4. Block, rod mounting (1)
5. Pilot lamp (1)
6. #18-3 x 6 ft., CBL line (1)
7. Square fuseholder (1)
8. Gray cap, fuseholder (1)
9. Fuse, AAG 2 AMP SB (1)
10. CONN, .250, F, 22/16AWG (2)
11. #10 CONN, eing, 16/14 (1)
12. Connector, male/male (3)



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For any questions or for ordering
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*Thank you for choosing
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