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CYCLO DUAL HEAD ORBITAL POLISHER/SCRUBBER MODELS 5, 5-Pro, 5C, 5C-Pro, 6CE AND 6CE-Pro SAFETY MANUAL



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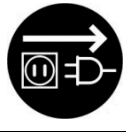
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This instruction manual is furnished with each Cyclo® Model 5, 5-Pro, 5C, 5C-Pro, 6CE & 6CE-Pro Electric Dual Head Orbital Polisher. The entire manual should be read carefully before using the Cyclo Dual Head Orbital Polisher and retained for future reference.

SAFETY INSTRUCTIONS

GENERAL SAFETY RULES

WARNING: Read all instructions. *Failure to follow all instructions listed below may result in electric shock, fire and/or serious injury. The term "power tool" in all the warnings listed below refers to your mains-operated (corded) power tool or battery-operated (cordless) power tool.*

	⚠ WARNING Read and understand tool manual before work starts to reduce risk of injury to operator, visitors, and tool.		⚠ WARNING Practice safety requirements. Work alert, have proper attire, and do not operate tools under the influence of alcohol or drugs.
	⚠ WARNING Eye protection must be worn at all times. Eye protection to conform to ANSI Z87.1.		⚠ WARNING Ear protection to be worn when exposure to sound exceeds the limits of applicable federal, state, or local statutes ordinances and/or regulations.
	⚠ WARNING Respiratory protection to be used when exposed to contaminants that exceed the applicable threshold limit values required by law.		⚠ WARNING To avoid accidental starting, unplug the cord when the tool is not being used, when changing accessories, and when adjusting or cleaning tools.

SAVE THESE INSTRUCTIONS

Work Area

- Keep work area clean and well lit.** *Cluttered and dark areas invite accidents.*
- Do not operate power tools in explosive atmospheres, such as in the presence of flammable liquids, gasses or dust.** *Power tools create sparks which may ignite the dust or fumes.*
- Keep children and bystanders away while operating a power tool.** *Distractions can cause you to lose control.*

Electrical Safety

- Power tool plugs must match the outlet.** *Never modify the plug in any way. Do not use any adapter plugs with earthed (grounded) power tools. Unmodified plugs and matching outlets will reduce risk of electric shock.*
- Avoid body contact with earthed or grounded surfaces such as pipes, radiators, ranges and refrigerators.** *There is an increased risk of electric shock if your body is earthed or grounded.*
- Do not expose power tools to rain or wet conditions.** *Water entering a power tool will increase the risk of electric shock.*
- Do not abuse the cord.** *Never use the cord for carrying, pulling or unplugging the power tool. Keep cord away from heat, oil, sharp edges or moving parts. Damaged or entangled cords increase the risk of electric shock.*
- When operating a power tool outdoors, use an extension cord suitable for outdoor use.** *Use of a cord suitable for outdoor use reduces the risk of electric shock.*
- Guard against electrical shock.** *It is recommended to use this tool on a GFI (Ground Fault Interrupter) or RCD (Residual Current Device) protected circuit with a rated residual current of 30 mA or less.*

Personal Safety

- Stay alert, watch what you are doing, use common sense when operating a power tool. Do not use a power tool while you are tired or under the influence of drugs, alcohol or medication. *A moment of inattention while operating power tools may result in serious personal injury.*
- Use safety equipment. Always wear eye protection. *Safety equipment such as dust mask, non-skid safety shoes, hard hat, or hearing protection used for appropriate conditions will reduce personal injuries.*
- Avoid accidental starting. Ensure the switch is in the off-position before plugging in. *Carrying power tools with your finger on the switch or plugging in power tools that have the switch on invites accidents.*
- Remove any adjusting key or wrench before turning the power tool on. *A wrench or key left attached to a rotating part of the power tool may result in personal injury.*
- Do not overreach. Keep proper footing and balance at all times. *This enables better control of the power tool in unexpected situations.*
- Dress properly. **Do not wear loose clothing or jewelry. Keep your hair, clothing and gloves away from moving parts.** *Loose clothes, jewelry or long hair can be caught in moving parts.*
- If devices are provided for the connection of dust extraction and collection facilities, ensure these are connected and properly used. *Use of these devices can reduce dust-related hazards.*

Power Tool Use and Care

- Do not force the power tool. **Use the correct power tool for your application.** *The correct power tool will do the job better and safer at the rate for which it was designed.*
- Do not use the power tool if the switch does not turn it on and off. *Any power tool that cannot be controlled with the switch is dangerous and must be repaired.*
- Disconnect the plug from the power source and/or the battery pack from the power tool before making any adjustments, changing accessories, or storing power tools. *Such preventive safety measures reduce the risk of starting the power tool accidentally.*
- Store idle power tools out of the reach of children, and do not allow persons unfamiliar with the power tool or these instructions to operate the power tool. *Power tools are dangerous in the hands of untrained users.*
- Maintain power tools. **Check for misalignment or binding of moving parts, breakage of parts and any other condition that may affect the power tool's operation. If damaged, have the power tool repaired before use.** *Many accidents are caused by poorly maintained power tools.*
- Keep cutting tools sharp and clean. *Properly maintained cutting tools with sharp cutting edges are less likely to bind and are easier to control.*

- g) Use the power tool, accessories and tool bits etc. in accordance with these instructions and in the manner intended for the particular type of power tool, taking into account the working conditions and the work to be performed. *Use of the power tool for operations different from those intended could result in a hazardous situation.*

Service

- a) Have your power tool serviced by a qualified repair person using only identical replacement parts. *This will ensure that the safety of the power tool is maintained.*

Safety Warnings Common for Polishing Operations.

- a) This power tool is intended to function as a polisher only. Read all safety warnings, instructions, illustrations and specifications provided with this power tool. *Failure to follow all instructions listed below may result in electric shock, fire and/or serious injury.*
- b) Operations such as sanding, grinding, wire brushing, or cutting off are not recommended to be performed with this power tool. *Operations for which the power tool was not designed may create a hazard and cause personal injury.*
- c) Do not use accessories which are not designed and recommended by the tool manufacturer. *Just because the accessory can be attached to your power tool, it does not assure safe operation.*
- d) The rated speed of the accessory must be at least equal to the maximum speed marked on the power tool. *Accessories running faster than their rated speed can break and fly apart.*
- e) The outside diameter and the thickness of your accessory must be within the capacity rating of your power tool. *Incorrectly sized accessories cannot be adequately guarded or controlled.*
- f) The arbor size of wheels, flanges, backing pads or any other accessory must properly fit the spindle of the power tool. *Accessories with arbor holes that do not match the mounting hardware of the power tool will run out of balance, vibrate excessively and may cause loss of control.*
- g) Do not use a damaged accessory. Before each use inspect the accessory such as backing pad for cracks, tear or excess wear. If power tool or accessory is dropped, inspect for damage to install an undamaged accessory. After inspecting and installing an accessory, position yourself and bystanders away from the plane of the rotating accessory and run the power tool at maximum no-load speed for one minute. *Damaged accessories will normally break apart during this test time.*
- h) Wear personal protective equipment. Depending on application, use a face shield, safety goggles or safety glasses. As appropriate, wear dust mask, hearing protectors, gloves and workshop apron capable of stopping small abrasive or workpiece fragments. *The eye protection must be capable of stopping flying debris generated by various operations. The dust mask or respirator must be capable of filtering particles generated by your operation. Prolonged exposure to high intensity noise may cause hearing loss.*
- i) Keep bystanders a safe distance away from work area. Anyone entering the work area must wear personal protective equipment. *Fragments of workpiece or of a broken accessory may fly away and cause injury beyond immediate area of operation.*
- j) Hold power tool by insulated gripping surfaces only when performing an operation where the cutting accessory may contact hidden wiring or its own cord. *Cutting accessory contacting a "live" wire may make exposed metal parts of the power tool "live" and shock the operator.*
- k) Position the cord clear of the spinning accessory. *If you lose control, the cord may be cut or snagged and your hand or arm may be pulled into the spinning accessory.*
- l) Never lay the power tool down until the accessory has come to a complete stop. *The spinning accessory may grab the surface and pull the power tool out of your control.*
- m) Do not run the power tool while carrying it at your side. *Accidental contact with the spinning accessory could snag your clothing, pulling the accessory into your body.*
- n) Regularly clean the power tool's air vents. *The motor's fan will draw the dust inside the housing and excessive accumulation of powdered metal may cause electrical hazards.*
- o) Do not operate the power tool near flammable materials. *Sparks could ignite these materials.*
- p) Do not use accessories that require liquid coolants. *Using water or other liquid coolants may result in electrocution or shock.*

Kickback and Related Warnings

Kickback is a sudden reaction to a pinched or snagged rotating wheel, backing pad, brush or any other accessory. Pinching or snagging causes rapid stalling of the rotating accessory which in turn causes the uncontrolled power tool to be forced in the direction opposite of the accessory's rotation at the point of the binding.

For example, if an abrasive wheel is snagged or pinched by the workpiece, the edge of the wheel that is entering into the pinch point can dig into the surface of the material causing the wheel to climb out or kick out. The wheel may either jump toward or away from the operator, depending on direction of the wheel's movement at the point of pinching. Abrasive wheels may also break under these conditions.

Kickback is the result of power tool misuse and/or incorrect operating procedures or conditions and can be avoided by taking proper precautions as given below.

- a) Maintain a firm grip on the power tool and position your body and arm to allow you to resist kickback forces. Always use auxiliary handle, if provided, for maximum control over kickback or torque reaction during start up. *The operator can control torque reactions or kickback forces, if proper precautions are taken.*
- b) Never place your hand near the rotating accessory. *Accessory may kickback over your hand.*
- c) Do not position your body in the area where power tool will move if kickback occurs. *Kickback will propel the tool in a direction opposite to the wheel's movement at the point of snagging.*
- d) Use special care when working corners, sharp edges etc. Avoid bounding and snagging the accessory. *Corners, sharp edges or bounding have a tendency to snag the rotating accessory and cause loss of control or kickback.*
- e) Do not attach a saw chain, woodcarving blade, or toothed saw blade. *Such blades create frequent kickback and loss of control.*

WARNING: When using electric tools, basic safety precautions should always be followed to reduce the risk of fire, electric shock, and personal injury, including but not limited to the following:

Grounding Instructions

- a) **The Cyclo Polisher should always be electrically grounded while in use to protect the operator from electric shock.** *This tool is equipped with an approved three-conductor cord and three-prong grounding type plug to fit the proper grounding type receptacle. The green or green/yellow conductor wire in the cord is the grounding wire. NEVER CONNECT THE GREEN OR GREEN/YELLOW WIRE TO A LIVE TERMINAL. If there is any doubt as to whether the wall receptacle is properly grounded, you should have it checked by a qualified electrician.*

WARNING: DO NOT UNDER ANY CIRCUMSTANCES CUT OR REMOVE THE THIRD (GROUND) PRONG FROM THE POWER CORD PLUG.

Extension Cord

- a) **With the Cyclo Polisher, use only three-wire extension cords that have three-prong grounding type plugs and three-pole receptacles that accept the tool's plug.** Replace or repair damaged cords. When using this tool at a distance from the power source, a three conductor grounding type extension cord of ADEQUATE SIZE must be used for safety and to prevent the loss of power and overheating.

Extension Cord Length	Size of Wire in Cord
0-100 feet (0-30 m)	18 AWG (0.75mm ²)
101-250 feet (30-76 m)	16 AWG (1.0 mm ²)

Motor

- a) **Your Cyclo Polisher is powered by a sturdy motor.** Be certain your power supply agrees with that shown on the name plate (a.c. means alternating current). Variance in your power supply's voltage may result in loss of power and overheating. This tool is factory tested. Built into the motor of the Model 6CE is a thermal circuit interrupt. This device will open the power circuit if the motor windings exceed 120 – 130 C. It is not resettable, and if it the protector is activated, the motor field (stator) may have to be replaced. If it will not operate, check electric supply for blown fuses; check plug and electrical receptacle for proper contact.

Additional Safety Instructions:

- a) **Do not Abuse Cord.** Do not force sharp bend in cord, especially where it exits the handle and particularly when curling cord for storage.
- b) **Maintain Tool with Care.** Keep the tool clean for better and safer performance. Follow instructions for lubricating and changing accessories. Inspect cord periodically and, if damaged, have repaired by a Cyclo Toolmakers service facility. Inspect extension cords periodically and replace if damaged. Keep handles dry, clean, and free from oil and grease. Using compressed air, blow dry the bearings under the heads or pads, and blow away dirt or lint inside the motor case. This should only be performed with the power cord disconnected and with proper eye protection.
- c) Keep Work Area Clean. **Cluttered areas and benches invite injuries.**
- d) **Use the Right Tool.** Do not force a small tool or attachment to do the job of a heavy-duty tool.
- e) **Use Proper Support.** Ensure that you have provided proper support for the work piece. A loose work piece may be propelled by the tool if not supported or fixed in place.
- f) **Check Damaged Parts.** Before further use of tool, a guard or other part that is damaged should be carefully checked to determine whether it will operate properly and perform its intended function. Check for alignment of moving parts, binding of moving parts, breakage of parts, mounting, and any other condition which may affect the tools operation. A guard or other part that is damaged should be properly repaired or replaced by an authorized Cyclo Toolmakers service center unless otherwise indicated elsewhere in this instruction manual. Have defective switches replaced by a Cyclo Toolmakers service center. Do not use tool if switch does not turn tool on and off.
- g) **Handles Should Remain Insulated.** Do not operate the tool without the properly insulated handles. NOTE: If shrink wrap insulation on the rear metal handle is damaged or is removed at the time of repair, it must be replaced before the tool is put back into service. The proper precut length is available from Cyclo Toolmakers or your dealer. When re-installing, be sure not to cover any part of the "1" or "0" (on/off) indicators embossed in the aluminum handle.
- h) **Use only Cyclo Toolmakers Recommended Products.** The use of accessories or attachments other than those recommended in these operating instructions may present a risk of personal injury.
- i) **Use of Residual Current Device is Recommended.** The use of residual current device with a rated residual current of 30 mA or less is recommended. In the United States and Canada, a residual current device is also known as a ground fault circuit interrupter (GFCI), ground fault interrupter (GFI) or an appliance leakage current interrupter (ALCI). In Australia they are sometimes known as "safety switches" or simply "RCD" and in the United Kingdom they can be referred to as "trips" or "trip switches."

CYCLO POLISHER/SCRUBBER SET-UP

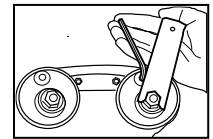
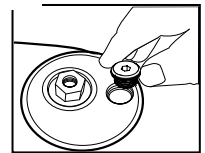
Determine the Intended Application and Appropriate Attachment System Configuration for Your Application

- a) **Scrubbing Brushes (76-810x4, 76-830x4, 76-840x4 and 76-870x4)**
- Genuine Cyclo scrubbing brushes have integral connectors which screw directly into the Cyclo Polisher replacing the heads. By simply attaching two Cyclo Brushes you can clean carpet, upholstery, tile, grout and more.



Configure the Vibration Elimination System (VES)™ Counterweights on Your Polisher.

- a) When new, your polisher will have Cyclo Toolmakers' exclusive VES counterweight system but may have no VES weighted insert installed. You will need to install the appropriate weighted insert then install whichever attachment you will be using: ProGuard OBP, Rubber Pad Holders or Brushes.
- b) With power cord not connected, lay the polisher upside-down on your lap, a bench or other flat surface.
- c) Determine the attachment system configuration that you intend to use (see section 1 above)
- d) Select the appropriate VES weighted insert from the table below.
- e) Thread the weighted insert into the counterweight and hand tighten using the 7/32" L-hex key (included).
- f) **IMPORTANT!** Tighten VES weighted insert firmly by attaching the 5/8" flat wrench (included) to the counterweight's threaded nut style fitting, and turn counterclockwise until you make contact with the L hex key. Use the flat wrench pivoting on hex wrench to prevent counterweight from turning while tightening the weighted insert. Turn the L hex key clockwise to tighten VES weighted insert firmly. Do not overtighten.






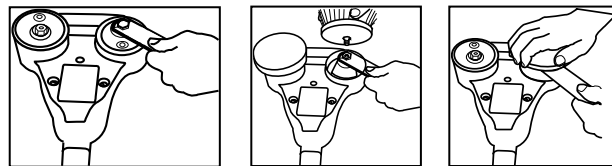
Attachment System:	ProGuard™ Orbital Backing Plates	Carpet And Scrub Brushes	Rubber Pad Holders or Bonnets over Head Assemblies
Description (part #):	6.5g Weight, Blue (20-072)	18.75g Weight, Silver, 1 Stripe (20-076)	32g Weight, Yellow, 2 Stripes(20-078)
Weighted Insert (Top And Side Views)			

Table 1: Adjustable VES Counterweight Application Table

Why Low Vibration Is Important: Operators face significant risk of muscle, joint and nerve damage caused by the hand-arm vibration of many power tools. By reducing the amount of vibration you can reduce muscle and joint fatigue as well as the potential risk for permanent damage, as described in the ISO 5349-1:2001 standard, Mechanical vibration -- Measurement and evaluation of human exposure to hand-transmitted vibration. Cyclo Toolmakers' machines are designed to minimize vibration.

Attaching Scrub Brushes, and other accessories.

- a) Lay the polisher upside-down on your lap, a bench or flat surface. You may also use the cardboard insert removed from inside the polisher box to support polisher and hold it in place.
- b) Fit the flat wrench around the hex nut-like adapter part of the counterweight.
- c) Hold the counterweight nut with the flat wrench (see left hand in diagram), and thread the attachment clockwise into the counterweight nut (see right hand).
- d) Do not over-tighten but use a firm grip for a hand tightening. Repeat the installation procedure for the other side.



Genuine Cyclo Scrub Brush Selection Guide

Your Cyclo polisher is also a scrubber. Fitted with Genuine Cyclo brushes, its action mimics the motion of hand-scrubbing. By simply attaching two Cyclo Brushes to the machine you can clean carpet, upholstery, boat decks, tile, grout and more. The orbiting motion of the Cyclo machine brushes combined with the brushes' high quality bristling safely cleans leather, fabric, upholstery and carpets. **Each brush kneads, scrubs and vibrates loose any soil or debris. The brushes do not spin, an action that could damage fabrics and carpet.** Brushes are available in four varieties, and each brush is made of durable nylon bristles modified for specific applications. Use your favorite carpet or upholstery shampoo with the Cyclo brush to remove tough stains from your vehicle, RV or home.

Scrub Brush Type	Product Number
Gray Ultra Soft Upholstery Brush	76-810x2
Aqua Soft Carpet Brush	76-830x2
White Standard Carpet Brush	76-840x2
Black Scrub Brush	76-870x2



a) Upholstery, Fine Carpets, Fine Interiors

- Gray Ultra Soft Upholstery Brush – 76-810x2
 - i. Flexible bristles, flagged (ends) for softness and water-carrying capacity.
 - ii. Recommended applications: Ideal for use on headliners, leather, and other fragile upholstery
 - iii. Natural fiber fine carpets

b) Fine Carpets, Durable Carpets, Auto & RV Carpets & Upholstery

- Aqua Soft Carpet Brush – 76-830x2
 - i. Recommended applications: Perfect for most auto and interior carpets and standard upholstery

c) Auto & RV Carpets & Interiors, Tile & Grout, Durable Carpets

- White Standard Carpet Brush – 76-840x2
 - i. Recommended applications: The white brush is designed for more vigorous cleaning of floor mats; more durable carpets

d) Tile & Grout, Truck Bed Liners, Heavy Scrubbing

- Black Scrub Brush – 76-870x2
 - i. Recommended applications: cleaning tile and stone floors, pick-up truck bed liners

MACHINE OPERATING INSTRUCTIONS

Your Cyclo Polisher/Scrubber has two heads rather than the single head common on other orbital-motion tools. As soon as the Cyclo Polisher/Scrubber is placed on a working surface and powered on, orbital “hand-rubbing” action takes place. Each sides reactive forces from its polishing or scrubbing is counteracted by the opposite side. Therein lies the secret of the tool’s ability to do many different types of jobs that could not be done with a single head orbital or a rotary tool. The two heads move in a circular motion without forced spinning and are timed and weighted to balance away vibration forces. All the energy from the motor is directed to the polishing or scrubbing action, and none returned to vibrating the user.

IMPORTANT POLISHER OPERATION INFORMATION –EXCESSIVE PRESSURE DOES NOT IMPROVE PERFORMANCE AND MAY DAMAGE THE POLISHER/SCRUBBER’S TRANSMISSION. The hand-like action of the machine’s heads prevents surface damage regardless of the pressure applied. Move the machine slowly. You need not be afraid of burning, gouging, or swirling the surface.

General Scrubbing Instructions

- a) Begin by vacuuming the loose debris and materials from the area to be scrubbed.
- b) Pre-treat the area with carpet cleaning agent or enzyme
- c) With scrub brushes installed on the Cyclo machine, connect the tool to the power supply. For additional information on the installation of scrub brushes, please refer to the CYCLO POLISHER/SCRUBBER SET-UP section of this document.
- d) Place the Cyclo machine, brush side down on the surface.
- e) Turn on the tool and move it back and forth and side to side in a latticed pattern.
- f) Grip both handles of the polisher, and using only light or moderate pressure - letting the action and the weight of the tool do the work - move the polishing brushes across the area at a comfortable speed.
- g) When you have finished, you can wipe down the treated areas with an absorbent towel. If you have an extractor or wet vacuum, lightly wet the area and extract the water.
- h) As the brushes become impregnated with loose fibers, they should be removed, combed out and cleaned.

USER MAINTENANCE AND TROUBLESHOOTING

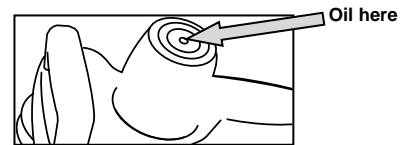
Below are instructions on care and maintenance of your polisher. You can also visit our website at www.cyclotoolmakers.com for tutorials and video instructions on proper tool care and maintenance.

HOW TO MAINTAIN YOUR CYCLO POLISHER

Be sure the polisher is disconnected from the electrical supply before any inspection or maintenance is performed.

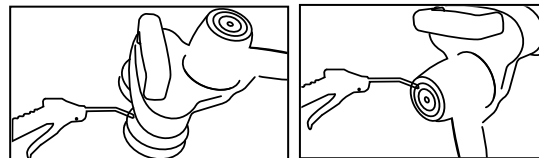
1) Lubricate the upper motor bearing

After every eight hours of use, lubricate the upper motor bearing by placing 3 drops of light machine oil (e.g. 3-in-1 oil) in the center of the bronze bushing found at the top of the motor housing.



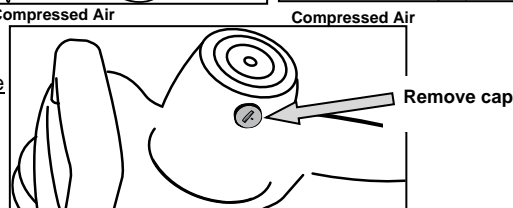
2) Clean your tool of dirt, fiber, and other debris by blowing it out with compressed air.

Every eight hours of use, or as conditions warrant, blow out the motor housing with compressed air to clean out any accumulated dust or dirt. If the tool is being used to clean carpets, be sure to blow out the motor housing after every use. If tool should get wet, be sure to blow dry the underside of the tool.



3) Inspect your carbon brushes.

Every forty hours of use, or as conditions warrant, The carbon brushes in your polisher are wear items and periodically will need to be replaced (after 50 to 150 hour of use). The carbon brushes that are used in your polisher will shut off the polisher when they need to be replaced. Refer to the images in Table 2 (below) for examples of good and worn parts. Since brushes are wear items, we recommend that you keep a spare set of brushes.



IF YOUR CYCLO POLISHER FAILS TO RUN

Be sure the polisher is disconnected from the electrical supply before any inspection or maintenance is performed. The motor is only for the voltage specified on the nameplate. Voltage should not vary more than 10% over or under the voltage shown on the nameplate. Although the Cyclo Polisher is built to last a lifetime, it can encounter problems from heavy wear and tear. All problems are repairable, and can most often be repaired by a mechanically inclined technician or user

1) If your polisher fails to run, unplug it from the outlet or power source.

- Check your power cord plug for bent prongs that could be preventing proper contact with the outlet.
- Check your power cord for areas of worn or cracked insulation. If any of these are noted, **DO NOT CONTINUE TO OPERATE** the tool. IMMEDIATELY contact Cyclo Toolmakers or your dealer to have your tool repaired and serviced.
- Check your source of power for blown fuses or open circuit breakers in the line. Also verify that your power source is providing adequate voltage and current to safely operate your polisher. Use a volt meter if able.

3) If your polisher starts to arc, experiences a loss in torque, runs hot to the touch or has stopped during operation:

Turn off your polisher and **DO NOT CONTINUE TO OPERATE** the tool. Continuing to use your tool may cause further damage by creating a short circuit in the motor windings. Unplug your polisher from the outlet or power source, and proceed through the following steps or contact Cyclo Toolmakers or your dealer to have your tool repaired and serviced:

4) Clean your tool of dirt, fiber, and other debris by blowing it out with compressed air.

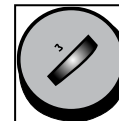
This is recommended maintenance for every 8 hours of operation or as conditions warrant. Pay particular attention to the area around the carbon brushes' contact with the motor, just inside the top of the motor cover. If tool is being used on carpets or with wool pads/bonnets, it is recommended to blow out your tool after every use. If the tool should get wet, also blow out the underside of the tool. If the tool has gotten wet, you may need to allow the tool to completely dry before you are able to completely blow out all the fibers and other debris.

5) Check the carbon brushes, brush holder and brush holder caps.

The carbon brushes in your polisher are wear items and periodically will need to be replaced (after 50 to 150 hour of use). The carbon brushes that are used in your polisher will shut off the polisher when they need to be replaced. Never operate your polisher with chipped or cracked brush holder caps. Refer to the images to the right for examples of good and worn parts. You may also refer to the "Instructions for Inspecting and Replacing the Brushes and Brush Holders" at www.cyclotoolmakers.com for instructions on removing, inspecting and replacing the brushes and brush holders in your polisher as well as inspecting and cleaning your brush holder caps. Since brushes are wear items, we recommend that you keep a spare set of brushes. Please note that some specialty tools are required for replacing the brush holders. It is recommended that you have Cyclo Toolmakers or your dealer perform this service.

6) Inspection of the brush holder caps.

- WARNING:** Never operate the polisher with chipped or otherwise damaged brush holder caps.
- Be sure the power cord is disconnected. Using a screwdriver, remove the damaged brush holder cap and the carbon brush and spring, with a cotton Q-tip wipe the threads on the inside of the brush holder clean of any foreign matter, replace the carbon brush and spring and screw on a new brush cap.



Good Brush Holder Cap

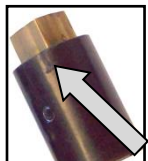


Bad Brush Holder Cap

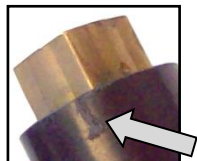
TABLE 2: VISUAL INSPECTION OF THE CARBON BRUSH HOLDERS AND CARBON BRUSHES



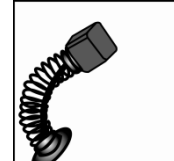
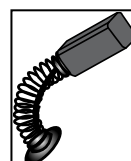
Good Brush Holder



Bad Brush Holder (photos and illustration) – Look for scarring or marking on the surface of the carbon brush holder. These may be electrical shorts.



New Carbon Brush



Worn/Bad Brush – too short to use

- If the previous steps have not enabled you to determine the problem, please return your polisher to Cyclo Toolmakers or your dealer for a complete diagnosis. Follow the return instructions on the next page!

ANY OTHER SERVICING SHOULD BE PERFORMED BY THE FACTORY OR AN AUTHORIZED CYCLO SERVICE CENTER.

ADDITIONAL MAINTENANCE AND SERVICE INFORMATION

LUBRICATION:

This tool was properly lubricated at the factory and, when new, is ready to use. The gears should be inspected after approximately 400 hours of use. If necessary, re-lubricate with Texaco Multifax #2 or equivalent.

TIMING:

The secret of the operation of your Cyclo Polisher lies in the fact that the two heads are timed exactly 1/2 turn apart. This is necessary for the balanced operation of the tool. If the machine is disassembled, use the following procedures to insure proper timing of the heads.

- 1) Turn the tools main case upside down, with the motor case, cover plate, and idler gear removed. Move the two heads together as close as possible. Then, put a heavy rubber band around the side of the two heads to keep them together.
- 2) Turn the tool right side up and carefully replace the idler gear without moving the drive gears. Now, pack the recessed well in back of the idler gear with lubricant. Also, lubricate the metal shafts in the center of each gear.
- 3) Reassemble the cover plate and motor case and remove the rubber band.

BEARINGS:

The bearings in the counterweights will loosen slightly with continued long use. This actually improves the action of the tool by allowing the heads to tilt slightly and follow a contoured surface better. These bearings should not be considered defective until they become objectionably noisy at which time the entire polisher should be sent to an authorized Cyclo service center for repair.

HEADS:

The head assemblies (0.75" thick black neoprene discs) and ProGuard Orbital Backing Plates of the polisher will wear out gradually with use. The head assemblies (60-055) should be replaced when they no longer hold the rubber pad holder or polishing bonnets firmly in position. Simply turn the polisher upside down (so the twin heads are facing up), and rest the polisher on a counter or on your lap. Slide the 5/8" flat wrench between the head and the counterweight. With the wrench in one hand and the head in the other, twist the head counterclockwise until the threaded shaft is completely clear of the nut. Oil the nut threads slightly, and reverse the above procedure to attach new heads or other attachment system. Be sure to screw the head of brush straight into the counterweight nut. Do not cross-thread. If the shaft seems to be screwing into the nut with difficulty, back it out and start over again. Be sure to tighten the heads or brushes snugly into the nut.

RUPES USA, INC. ONE-YEAR* LIMITED WARRANTY

RUPES USA, INC. WARRANTS this machine to the original purchaser to be free from material or workmanship defects for a period of ONE-YEAR* from the date of purchase but no longer than two-years from date of manufacture. Our obligations under this warranty are expressly limited to replacement or repair of such parts as we determine to be defective and the labor required for installations. Our obligation is limited to performing repairs in our U.S. factory location (address below). Your Cyclo dealer may provide local services at its own option. If you ship your product to us for repair and your claim for service is covered by this warranty, we will pay the return freight cost to places within the 48 contiguous United States, but not to other locations.

Conditions resulting from misuse, negligence, alterations, accidents, damage caused by improper use of chemicals, repair by unauthorized parties, or "wear and tear" from normal usage, are not covered. Disassembly of the tool may also void this warranty.

This warranty does not cover damage to machine occurring in shipment, nor damage caused by alterations, fire, accidents, force majeure, misuse or abuse.

To invoke coverage under this warranty you (the end user purchaser) must provide proof of purchase (sales receipt) when requesting warranty service.

We recommend that only Genuine Cyclo accessories be used with this machine. Our products are specifically designed, formulated and tested for product capability.

This warranty is in lieu of all other warranties, expressed or implied, and we do not assume any other liability in connection with the sale of this product. No claim for consequential damage shall be allowed.

*-Model 5-Pro carries a three-year warranty term.

HELPFUL TIPS FOR STORING YOUR CYCLO POLISHER

SAVE YOUR BOX:

Your Cyclo Polisher was sent to you in a special container designed for safe storage. We recommend that you keep this box for storing your Cyclo Polisher. You will also want to use this box in case you need to send your machine back to the factory for service.

CORD WRAPPING:

Do not wrap the cord around the rear handle of the polisher. Sharp bends in the cord will damage it.

SENDING YOUR CYCLO POLISHER IN FOR REPAIR:

- Please attach a note answering the following questions:
 - Is your tool under warranty? (Enclose proof of purchase in order to be covered)
 - Would you like an estimate, or a repair?
 - If you would like your tool immediately repaired, please indicate that RUPES USA, Inc. has permission to make repairs costing up to \$100. We can only repair your tool if you have provided us with your credit card information. For all repairs costing over \$100, Cyclo will contact you to confirm the price before making any repairs.
 - What is wrong with your tool? Please include a complete description of the problem, the conditions under which the polisher failed or is operating incorrectly
 - Please also include all your contact information, \$15 for US domestic return shipping address and phone numbers, and your email address so that you can be contacted with a resolution or estimate to repair your polisher. There will be no charge for product failures covered by our warranty.
- If your tool is not claimed within 30 days after repair quotation (when not in warranty), your tool will be disposed of. If \$15 was included for return shipping, we will return the polisher to the address given.
- Repair labor is \$55/hour in early 2014
- It can take up to 2 weeks or longer after receipt to provide an estimate or repair.
- Send repairs to: RUPES USA, Inc. ATTN: Service Dept. 14320 Longs Peak Court, Longmont, CO 80504-9698 U.S.A.

DISPOSAL AND RECYCLING INFORMATION:

EU countries only Do not dispose of electric power tools in the household waste! In accordance with the European Directive 2002/96/EG on Waste Electrical and Electronic Equipment and transposition into national law, used electric power tools must be collected separately and recycled in an environmentally responsible manner.

USA and other non-EU countries Do not dispose of electric power tools in the household waste! You may return your used polisher to Cyclo Toolmakers, Inc to be recycled in an environmentally friendly manner.



TECHNICAL SPECIFICATIONS

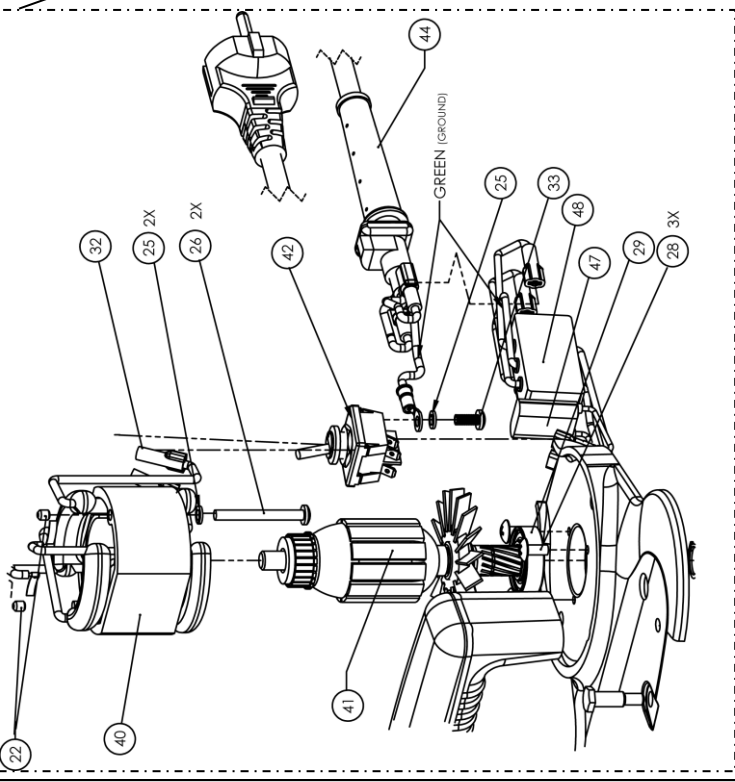
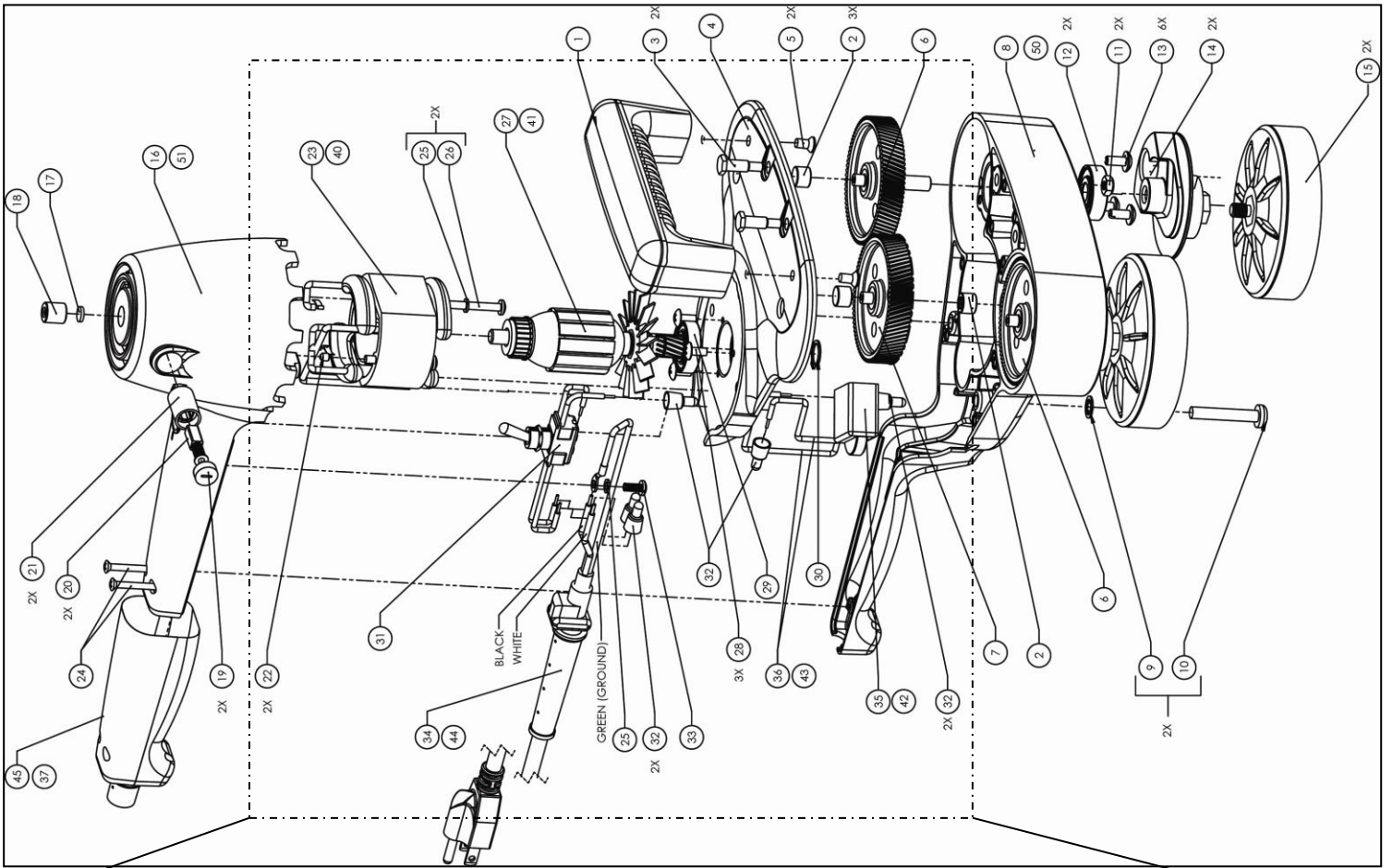
	<u>Power Supply</u>	<u>Nominal Current</u>	<u>Output</u>
Model 5, Model 5-Pro :	115 V a.c., 60 Hz,	2.0A	.35 h.p. (.23kW)
Model 5C, Model 6CE:	230 V a.c., 50 Hz	1.0A	.35 h.p. (.23kW)
Speed 5 & 5C:	2800 to 3200 RPM		
Speed 5-Pro, 5C-Pro:	650 to 3200 RPM		
Speed 6CE	$n_0 = 3200/\text{min}$		
Speed 6CE-Pro	$n_0 = 650 \text{ to } 3200/\text{min}$		
Weight:	6.5 lbs (2.9 kg)		
Pad or Bonnet Capacity	2 x 4" (2 x 100 mm) diameter		
Motor:	Alternating current, Universal, Semi-Enclosed 24-bar commutator		
Electric Cord:	Model 5 - 9.5' long, Non-Marking 16 AWG/3 SJTOW Model 5-Pro - 9.5' long, Non-Marking 16 AWG/3 SJTOW Model 5C, Model 5C-Pro - 3 m length, 3x1.0mm ² H07 Model 6CE, Model 6CE-Pro - 3 m length, 3x1.0mm ² H07		
Housing:	Heavy-duty cast aluminum		
Orbital Stroke Length	5/8 in. (16 mm)		
Sound Pressure (LpA):	82.5 dBA (uncertainty 0.57 dBA)		
Sound Power (Lw):	94.1 dBA (uncertainty 0.57 dBA)		
Hand-Arm Vibration:	1.27 m/sec ² (uncertainty 0.17 m/sec ²)		
Testing Labs:	Intertek ETL SEMKO for CE EMC and Safety (per EN 60745-1, -2, -3) and S&V Solutions for noise (ISO 15744 and EN 0745) and hand-arm vibration (ISO 20643 and EN/ISO 28927)		

THE APPEARANCE OF YOUR CYCLO POLISHER

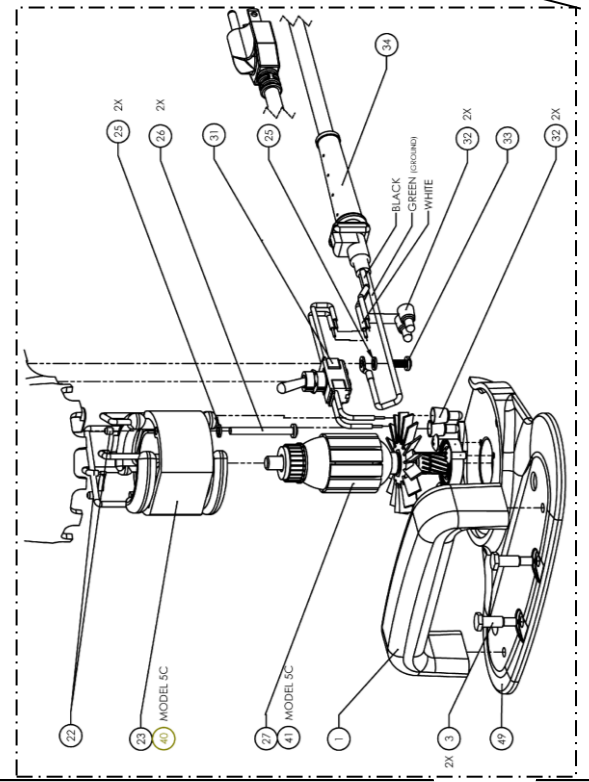
Each of our Cyclo Polishers are hand crafted with the same superior level of quality and workmanship. As all handmade items will vary slightly, we cannot guarantee that each polisher will be identical with every other one of our polishers. You may notice light sanding or buffing marks in the hand-finished aluminum castings. These are all marks of an authentic Cyclo Toolmakers tool. Naturally, RUPES USA, Inc. will replace or repair material or workmanship defects. Refer to the Cyclo Toolmakers Warranty for further information.

CYCLO POLISHER PARTS DIAGRAMS

MODEL 5, 5C, 5-PRO & 5C-PRO, 6CE PARTS AND WIRING DIAGRAMS



Note: Model 5C-Pro and 6CE-Pro include items (42 and 43)



MODEL 6CE-PRO DUAL HEAD ORBITAL & POLISH HIGHLIGHT PARTS LIST

Indicator Number	Part Number	Description
1	12-560	Handle, Plastic Front, Polisher
2	50-010	Needle Bearing
3	11-080	Short Shoulder Bolt for Retaining Cover Plate
4	10-021	Metal Cover Plate, Model 5-Pro & Model 5C-Pro
5	20-190	Screw, Handle Retaining
6	60-010	Nylon Drive Gear, Connects to Counterweight
7	60-020	Nylon Idler Gear (Center Gear)
8	10-011	Main Gear Case , Model 5-Pro, Model 5C-Pro and Model 6CE-Pro
9	22-160	Washer, Lock, Star
10	20-500	Screw, Metal Housing Retaining
11	22-520	Nut For Front Shoulder Bolt
12	50-040	Bearing, Main Drive Gear
13	20-180	Screw, Main Bearing Retaining
14	60-035	VES™ Counterweight Assembly (with bearing)
15	60-055	Head Assembly (connects to 60-035-a Counterweight Assembly)
16	10-040	Motor Case, Models 5, Model 5-Pro, Model 5C or Model 5C-Pro
17	51-705	Oiler Felt for Bronze Bearing
18	50-020	Bronze Bushing
19	30-525	Brush Holder Caps
20	30-500	Carbon Brush, Contoured Spring, and Dead Stop
21	30-515	Carbon Brush Holder
22	21-020	Screw, Brush Holder Retaining
23	30-300	Field 115V, 60Hz Model 5 and Model 5-Pro
24	20-020	Screw, Rear Handle
25	22-010	Split Lock Washer For Field Retaining Screw
26	20-100	Screw, Field Retaining
27	30-200	Armature, 115V, 60Hz Model 5 and Model 5-Pro
28	20-080	Screw, Motor Bearing Hold
29	50-030	Bearing, Lower Motor
30	51-710	Lock Ring for Pinion Gear
31	30-010	Switch, Single Pole, Single Throw, 230V, Model 5 and 5C
32	31-800	Crimp-on Wire Connector
33	20-060	Screw, Grounding
34	31-000	Power Cord Assembly, U.S.A. Standard.
35	30-020	Switch, Speed Controller, 110 VAC, Model 5-Pro Only
36	30-030	Wire, lead, tinned, 18 AWG
37	99-900	Shrink Wrap, Rear Handle BLACK for Model 5, 5C, 6CE only
39	20-072, 076, 078	VES Weighted Inserts Please refer to polisher/scrubber page for additional information
40	30-320	Field, 230V - 50Hz, Model 5C, 5C-Pro, 6CE and 6CE-Pro
41	30-220	Armature, 230V - 50Hz, Model 5C, 5C-Pro, 6CE and 6CE-Pro
42	30-025	Switch, Speed Controller, 250VAC for Model 5C-Pro and 6CE-Pro
43	31-210	Wire, lead, tinned, 20 AWG for Model 5C, 5C-Pro, 6CE and 6CE-Pro
44	31-025	Power Cord Assembly, European CE Standard
45	99-902	Shrink Wrap, Rear Handle, Blue for Model 5-Pro, 5C-Pro and 6CE-Pro
47	30-030	Noise Suppression Capacitor
48	30-040	RFI Power Line Filter
49	10-020	Metal Cover Plate, Model 5 and 5C Model Only
50	10-010	Main Gear Case Model 5, Model 5C and Model 6CE
51	10-045	Motor Case, Model 6CE and 6CE-Pro

IMPORTANT INFORMATION: –GR armatures work with –GR fields only, and standard armatures work with standard fields only. Do not mix types. When ordering parts please specify Polisher Model Number, Part Number and Part Description; provide serial number if not sure which version of part is required. Send orders to your Cyclo Toolmakers dealer. If you need information on a dealer in your area, please visit our website at www.cyclotoolmakers.com.

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LOOK FOR THE SPACE-AGE BODY WITH THE ORBITING HEADS. Polisher configuration, including tapered conical motor housing, dual heads, and t-grip handle, is a registered design trademark of RUPES USA, Inc.