

HANDLER



SYNCRO⚡TORQUE III

**IMPORTANT INSTRUCTIONS
DO NOT DISCARD**



HANDLER 
MANUFACTURING CO., INC.

Over Eighty Years of Quality Manufacturing and Service...

612 NORTH AVENUE EAST, WESTFIELD, N.J. 07090

Ph: (908) 233-7796 • Fax: (908) 233-7340 • 800-27-HANDL • E-Mail: info@handlermfg.com • web site: www.handlermfg.com

SYNCRO TORQUE III

OPERATING MANUAL

Thank you for purchasing the SYNCRO TORQUE Please examine the unit, fully, plus the packing and packaging. Make certain all items listed, below, are included with this shipment. Should damage have occurred in shipment, contact the freight forwarder, immediately. Failure to contact the freight forwarder promptly, may result in loss of your ability to claim possible damage to the product

Should you have questions regarding the procedure to claim damage, please contact your distributor or Handler Manufacturing. Read this manual completely. Should you have questions regarding the Syncro/Torque III, please contact your distributor or Handler Manufacturing, directly.

The Syncro/Torque III is designed for use in the dental laboratory, jewelry manufacturing, industry, hobby craft and many other industries where handpiece use is necessary. Please read all caution and operating instructions.

- Read all cautions carefully, and use Syncro/Torque III only as intended or instructed.
- Safety instructions are intended to avoid potential hazards that could result in personal injury or damage to the device. Safety instructions are classified as follows in accordance with the seriousness of the risk.

Class and Risk Degree

WARNING

A hazard that could result in serious personal injury or damage to the device if the safety instructions are not followed.

CAUTION

A hazard that could result in minor to medium personal injury or damage to the device if the safety instructions are not followed.

NOTICE

General information needed to operate the device safely.

WARNING

•For your own safety and health, wear an eye protection and use a splash hood or safety shielded device with a dust collector when using the Model 500 Syncro/Torque III.

•Be careful not to spill water, chemicals or any other liquid on the Control Unit or Handpiece. It may result in an electric shock, short circuit or possible fire damage to the unit.

•Do not disassemble or alter the unit in any manner. Failure to observe this warning will result in damage and a possible malfunction of your Model 500 Syncro/Torque III. Should you require service, please contact your distributor or Handler Manufacturing, promptly.

•Place the Control unit on a flat, stable surface. Connect the cordset to the appropriate voltage and current for which it was designed. Failure to follow these instructions will result in damage to the unit and loss of your warranty.

•Should a strange odor or smoke ever emanate from the handpiece or the control box, immediately disconnect the unit from the electrical source and contact your distributor or Handler Manufacturing for service.

HANDLER

MANUFACTURING COMPANY, INC.

Do not let the motor cord set come near a flame. Do not repair the shorted motor cord set, Replace it with a new cord set.

- Do not connect the unit's cord set with wet or damp hands. This may result in electric shock or damage to your unit.

Always use a bur or mandrel below the maximum speed specified by the manufacturer or distributor. Injury could result due to bending or disconnection of the bur or mandrel. Further, the handpiece may become unbalanced, causing vibration and damage to the operator or handpiece.

- Use burs and mandrels which are balanced and concentric. Use of a bent bur or mandrel will cause vibration and possible injury or damage to the handpiece.

- Separating discs should be used at lower speeds to prevent possible breakage. Always use safety glasses, a protective shield and dust collector as described, above. Handler builds a full line of protective shields, hoods, and dust collectors for your use with any grinding or polishing unit.

- If you utilize an abrasive wheel with a mandrel, make certain the abrasive wheel is balanced and is concentric to prevent possible injury or damage to the handpiece.

- Before use, set the maximum speed within the specified maximum speed for the bur or mandrel by using the Speed Control Knob. If using the foot pedal, preset the maximum speed of the bur or mandrel by using the speed control knob on the control console.

- Should the fuse malfunction, use a fuse with the specified rating- (3.15A L/125V)

CAUTION

The operating temperature of the Syncro/Torque III is 32 degrees FC to 105° F (0 degrees C to 40 degrees C), free of moisture or condensation. Failure to observe this may result in a short-circuit or an electric shock.

- Before using, make sure there is no flammable gas or liquid near the Control Unit or Motor Handpiece. Using close to flammable materials may result in a possible fire hazard. No lubrication is required in the Micro-Motor or Handpiece bearings as lubrication-free grease is packed into the bearing used to assemble the Syncro/Torque III. Lubrication may cause the unit to over heat, or malfunction.

- Run the Syncro/Torque III at no load and check for vibration, noise, heat generation before actual use. If an abnormality is found, contact your distributor or Handler for repair.

- Never move Bur Locking Ring into the OPEN (0) position while motor is running. It may cause the Micro-Motor or Handpiece to malfunction. Make sure that the Micro-Motor/Handpiece combination is completely stopped, and the Power Switch is turned off, when changing bur or mandrel.

- When using the bur with a large cutting blade (Diameter larger than 4mm), use in the slow speed range only.

HANDLER

MANUFACTURING COMPANY, INC.

- Do not operate the Syncro/Torque III with excessive pressure on a bur or mandrel that could cause the Protective Circuit to function. This may result in bur breakage and premature Micro-Motor and Handpiece wear, reducing the life of the Syncro/Torque III.
- Clean the collet at least once a week. Failure to observe this caution may result in bur or mandrel vibration and low tool retention, caused by accumulated dust in the collet.
- Operating at mid to low speeds for an extended time may cause the Model 500 Syncro/Torque III to generate heat. Allow the unit a proper cooling down period to prevent possible Micro-Motor damage.

NOTICE

- Always clean the shank of the bur or mandrel before inserting it into the collet. Dirt on the bur shank may result in bur vibration and poor bur retention in the collet.
- Keep bur or bur blank inserted when the Syncro/Torque III is not in use.
- Turn the Power Switch OFF after each use. If the Syncro/Torque III will not be used for a long period of time, disconnect the power cord from the power supply.
- You are responsible for operational control, maintenance and inspection. Make certain to review this instruction, periodically to keep your Syncro/Torque in proper condition.
- Store the Syncro/Torque III in a clean, dry area when not in use, away from excessive temperature variations from below freezing to over 100 degrees F.

SPECIFICATIONS

Your Model 500 Syncro/Torque III was shipped with the following parts:

- 1.....Model 500 Console Control
- 1.....Micro-Motor with Handpiece and cord set
- 1.....Foot Pedal with connection to Console (may be used as a knee switch)
- 1.....115Volt/60Hz Cord set (220V/50Hz-if specified)
- 1.....Handpiece resting Cradle

DESCRIPTION OF MODEL 500 SYNCRO/TORQUE PARTS & OPERATION

SPEED: 0 - 35,000 rpm

MAXIMUM OUTPUT: 71 watts

See Figure 1 & 2

- No. 1 Power Switch
- No. 2 Motor ON/OFF LED
- No. 3 Motor ON/OFF Switch
- No. 4 Speed Display
- No. 5 Auto Cruise LED
- No. 6 Auto Cruise Switch
- No. 7 Hand LED
- No. 8 Foot LED
- No. 9 Hand/Foot Selector Switch
- No. 10 Reverse LED
- No. 11 Forward LED
- No. 12 Forward/Reverse Switch
- No. 13 Speed Control Knob
- No. 14 HP Output Connector
- No. 15 Foot Pedal
- No. 16 Micro/Motor-Handpiece
- No. 17 Handpiece Cradle
- No. 18 Connect Foot Pedal Cord
- No. 19 A/C Power Fuse
- No. 20 Power Cord se

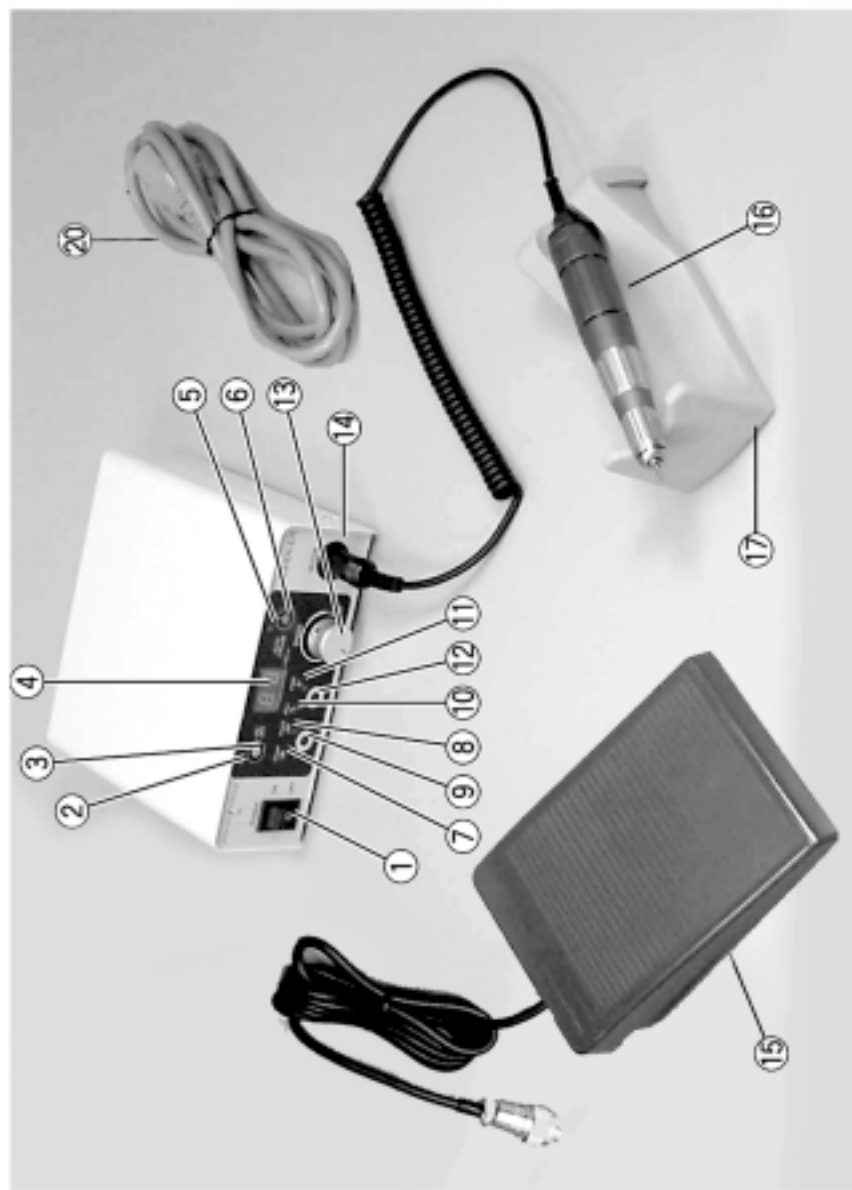


Figure 1

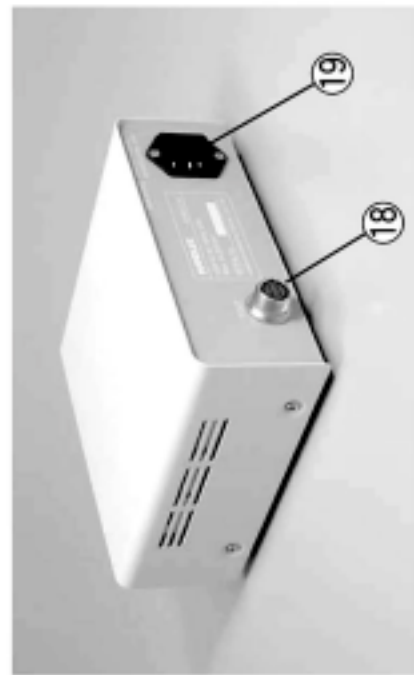
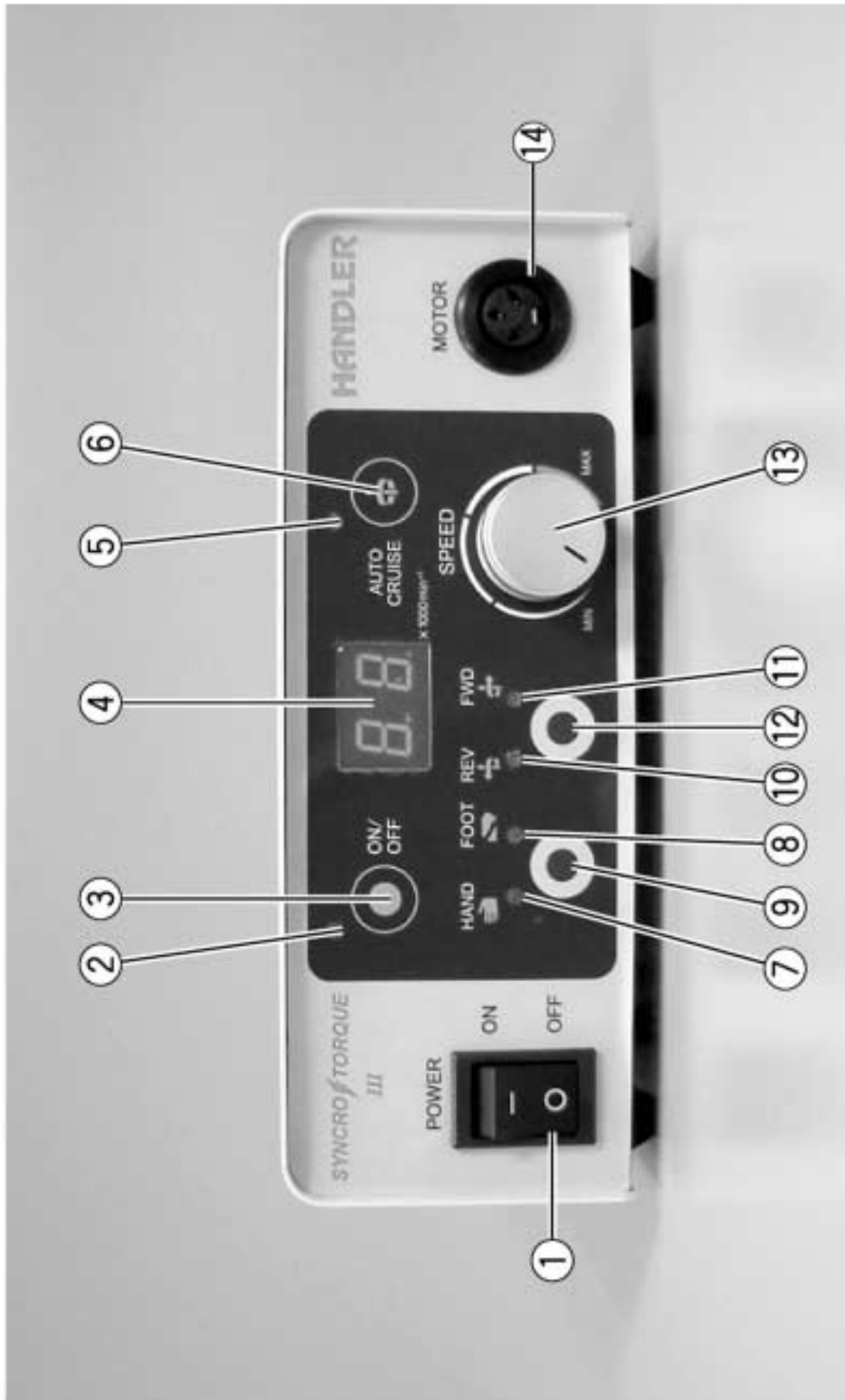


Figure 2



- | | | | |
|------------|---------------------|-------------|---------------------------|
| No. 1..... | Power Switch | No. 8..... | Foot LED |
| No. 2..... | Motor ON/OFF LED | No. 9..... | Hand/Foot Selector Switch |
| No. 3..... | Motor ON/OFF Switch | No. 10..... | Reverse LED |
| No. 4..... | Speed Display | No. 11..... | Forward LED |
| No. 5..... | Auto Cruise LED | No. 12..... | Forward/Reverse Switch |
| No. 6..... | Auto Cruise Switch | No. 13..... | Speed Control Knob |
| No. 7..... | Hand LED | No. 14..... | HP Output Connector |

INSTALLATION

1. Connect the Micro Motor/Handpiece Cord set into the HP Output Connector No 14.
2. Connect the 115 Volt Power Cord set No. 20 into the rear right of the console.
3. Connect the Foot Pedal Cord set into the Foot Pedal Output Connector on the Left rear of the consol. If you are using the unit without a foot pedal connection, there is no need to make this connection.
4. The Micro-Motor/Handpiece Stand is molded to accommodate the handpiece collect wrench. You may place the wrench into the appropriate slot in the bottom of this stand.

MANUAL OPERATION:

1. Insert the power cord set (No. 20) into a 115 Volt Outlet (220Volt if specified)
2. Turn the speed control knob to the lowest speed.
3. Depress the power Switch (No. 1) and check speed control LED
4. Select the rotation you wish the handpiece to function at using the FORWARD or REVERSE selector switch.
Note: Each time you push the switch, the unit will alternate between Forward and Reverse.
5. Select either HAND or FOOT control from the Hand/Foot Control switch. Note: Each time you press this switch, the unit will alternate between Hand and Foot Control.
6. Adjust the SPEED CONTROL Knob (No. 13) to the speed you desire. The LED Speed will display on the LED Screen.
7. Make certain that you have set the speed to the correct speed rotation for the tool in the collet.
8. To activate the handpiece, press the On/Off switch (No. 3). The switch will light when the unit is ON and turn off when the unit is not in operation. To STOP the unit, press the ON/OFF switch to the OFF (light off) position.

OPERATION WITH FOOT PEDAL

1. Press the HAND/FOOT selector switch (No. 9) to select Foot Operation. The Foot LED will light.
2. Adjust the speed of the handpiece by using the speed control knob. Check the speed display making certain the speed is properly set for the bur or mandrel being used.
3. Apply pressure to the Foot Pedal. The speed of the rotation may be varied by applying additional pressure to the Foot Pedal until the maximum speed displayed on the speed LED is reached (preset speed).
4. To stop the handpiece, stop applying pressure to the Foot Pedal.

AUTO CRUISE CONTROL

1. To operate the Handpiece at a constant speed below the maximum speed shown on the preset speed display, press the AUTO CRUISE CONTROL switch when the handpiece reaches the required speed

The Auto Cruise LED (No. 5) lights and the rotational speed will remain constant, even though the foot pedal is released.

NOTE: MAKE CERTAIN THAT THE CHUCK CONTROL COLLAR IS IN THE SHUT (S) POSITION WHEN OPERATING THE HANDPIECE.

PROTECTIVE CIRCUIT

If the control unit is overloaded or the Chuck Control Collar is operated in the Open (O) position, the protective circuit will activate and stop the handpiece. The Motor Speed Display will display an ERROR code(s).

To RESET the Protective circuit, remove the handpiece from the appliance being created and press the On/Off switch. If the handpiece was placed in the "O" position, place a bur in the collet and close the collet to the "S" position. Press the ON/OFF switch to deactivate the protective circuit.

ERROR CODES

Should the micro motor stop during operation The Speed Display will display an Error Code and indicate the difficulty with the unit. Refer to the Trouble shooting listing, below, following the corrective action to be taken with this 500-III

OPERATION OF THE HANDPIECE

1. To replace a bur or mandrel into the hand piece collet, turn the Collet Chuck Collar to the "O" position (Open Position). Place a 3/32" diameter bur or mandrel into the collet, and turn the Collet Chuck Collar in the opposite direction (to S) to tighten the tool in the collet. See Figure 8 below.

2. To clean or replace the handpiece collet, move the Collet Chuck Collar to the iOï position. Using the collet wrench, supplied, place the wrench onto the slotted end of the collet and turn counterclockwise. Loosen and remove the collet completely from the handpiece.

Clean the collet in an ultrasonic cleaner or with steam. Dry the collet completely, making certain no dusts or debris are left in the collet. Lightly coat the collet with light machine screw oil (No. 10) and replace it into the handpiece, screwing the collet clockwise, by hand, with a bur in the collet. Secure the bur into the collet using the collet wrench. Move the Collet Chuck Collar to the "S" position. The bur should hold securely into the collet.

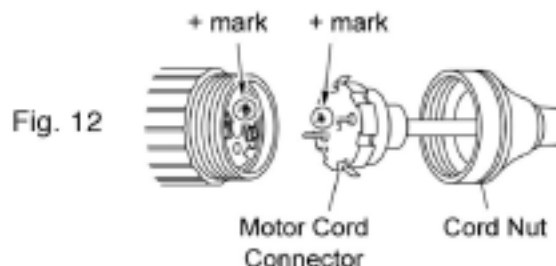
The collet should be cleaned and lubricated every week under heavy use. Failure to accomplish this procedure could result in the collet sticking in the handpiece, and the unit will have to be returned to Handler for repair.

DISCONNECTING MICRO-MOTOR CORDSET

To remove the Micro-Motor cord set connection, loosen the cord nut at the back of the motor.

To reconnect, align the two + marks of the Micro-Motor and the motor cord connector. Insert the pins, completely, aligning the cord nut with the Micro-Motor, and tighten the cord nut completely

See Figure 12

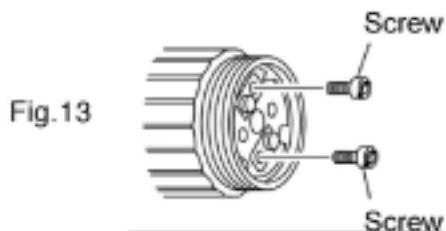


Caution: if cord nut is connected in the inverse direction, the Micro-Motor will run in reverse.

REPLACING THE CARBON BRUSHES

1. Loosen the cord nut from the Micro-Motor
2. Remove the two screws which hold the carbon brushes in place with a small flat bladed screwdriver.

See Fig 13, below



3. Remove the used carbon brushes from the hole into which the two brush holding screws were placed.
4. Place the NEW carbon brushes into the hole into which the brush holding screws were placed
5. Replace the brush holding screws, and secure these in place
6. Align the + marks and tighten the cord nut into place as described, above.

REPLACING THE AC SAFETY FUSE

A Safety Fuse is located in the Power Fuse Box on the rear of the console. Should the Safety Fuse burn out, push both the upper and lower sections of the Fuse Box and remove the shorted fuse.

Replace the fuse with a 115 Volt 3.15 Amp fuse, only, and replace it into the Power Fuse Box.

HANDLER

MANUFACTURING COMPANY, INC.

WARRANTY

Your Handler product warranted for a period of one year from date of sale by Handler. Should a defect appear within the warranty period, the unit will be repaired to proper operating condition or replaced at no charge, except for the cost of necessary transportation at the option of Handler Manufacturing. Before returning the unit contact:

Handler Mfg. Co., Inc.
PO Box #520
612 North Ave., East
Westfield, New Jersey 07090

No other warranties are implied or intended. Your warranty will become null and void if the unit is not maintained, missused or utilized as suggested.

For additional information on handler's complete line of dust collectors and related jewelry/industrial products or if you wish us to forward our current catalog and price list, please complete the form below and return to:

FAX OR E-MAIL TODAY FOR A

**FREE
CATALOGUE**

Handler Manufacturing Co., Inc.
612 North Avenue East
Westfield, NJ 07090

1-908-233-7796 • 1-800-27Handl

FAX: (908) 233-7340

• E-Mail: info@handlermfg.com

Website: www.handlermfg.com

PLEASE SEND ME MORE INFORMATION ON HANDLER PRODUCTS TO:

NAME _____

ADDRESS _____

CITY _____ STATE _____ ZIP _____

COMMENTS _____

E-MAIL: _____

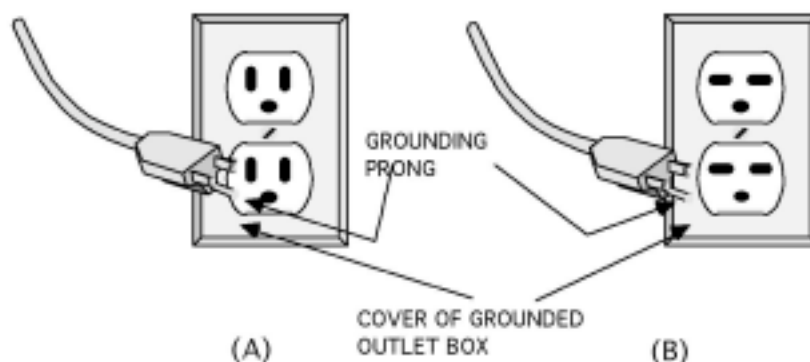


SAFETY INSTRUCTIONS

I. GROUNDING INSTRUCTIONS

This tool should be grounded while in use to protect the operator from electric shock. The 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 and yellow) conductor in the cord is the grounding wire. Never connect the green (or green and yellow) wire to a live terminal. If your unit is for use on less than 150 volts, it has a plug that looks like that shown in sketch (A) in Figure 1. If it is for use on 150 to 250 volts, it has a plug that looks like that shown in sketch (B). Use of an extension cords or a 2 prong adapter is not recommended.

FIGURE 1
GROUNDING METHODS



TOOL SAFETY INSTRUCTIONS

1. Keep Work Area Clean

Cluttered areas and benches invite accidents.

2. Avoid Dangerous Equipment

Don't expose power tools to rain. Don't use power tools in damp or wet locations. Keep work area well lit.

3. Keep Children Away

All visitors should be kept safe distance from work area and appliance.

4. Store Idle Tools

When not in use, tools should be stored in dry, high, and locked location out of the reach of children.

5. Don't Force Tool

It will do the job better and be safe at the rate for which it was designed.

6. Use Right Tool

Don't force small tool or attachment to do the job of a heavy-duty tool.

7. Wear Proper Apparel

Do not wear loose clothing or jewelry which may get caught in moving parts. Tie back long hair or use a proper hair net.

8. Use Safety Glasses

Use safety glasses with all rotating tools. Also use a face or dust mask if cutting operation is dusty.

9. Don't Abuse Cord

Never carry tool by cord or yank it to disconnect from receptacle. Keep cord from heat, oil, and sharp edges.

10. Secure Work

Use clamps or a vise to hold work. It's safer than using your hand and it frees both hands to operate tool.

11. Don't Overreach

Keep proper footing and balance at all times.

12. Maintain Tools with Care

Keep tools sharp and clean for best and safest performance. Follow instructions for lubricating and changing accessories.

13. Disconnect Tools

When not in use; before servicing; when changing accessories such as blades, bits, cutters, etc.

14. Avoid Accidental Starting

Be sure switch is OFF when plugging in.