Always Moving Forward®

Operating Manual

Please Read Before Operating Unit

Model WC302 Automatic Wire & Tubing Cutter

Service and All Spare Parts Available

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Made In The U.S.A.

MODEL WC302 AUTOMATIC WIRE & TUBING CUTTER

SPECIFICATIONS

Maximum cut length .....99,999” (or 99,999cm)
Minimum cut length .....0.050” (0.13cm)
Maximum material size:
Tubing.....1/4” (0.63cm) OD
Wire .....12 AWG (ø2.05mm) stranded conductor
or 14 AWG (ø1.62mm) solid conductor
Tolerance..... At cut lengths under 2” on most materials, the tolerance is ±0.01” (.025cm). All other cut length tolerances are 1% or better dependent on material and feed. Programmable length compensation of ±99% is built into the unit to accommodate unusual materials.
Batching.....up to 99 programmable batches

WC302 Linear Speeds		
Feedrate #	inches/sec	cm/sec
0	7.8	19.8
1	15.6	39.6
2	19.5	49.5
3	27.3	69.3
4	31.2	79.2
5	35.1	89.1
6	42.9	108.9
7	46.8	118.8
8	54.6	138.6
9	58.5	148.5

ORDERING INFORMATION

WC302 Automatic Wire and Tubing Cutter
AR7211.....120V 60Hz

Included Parts

WC302 ships with the following parts/tools:
- Qty 1 of 5/64” allen wrench for the bushing & feed belt pulley set screws (Part: TG3028)
- Qty 1 of 7/32” allen wrench for the material exit chute screw (Part: TG3760)
- Qty 1 of part IR1582 cut blade (installed)
- Qty 1 of part IR1592 cut bushing (installed)
- Qty 1 of part PR2727 IEC power cord

Optional Accessories

AR0010 (DE100) ..... Optional Turntable Dereeler
AR3801 (DE400) ..... Optional Vertical Dereeler
AR0170 (DE700) ... Optional Compensating Dereeler
TR5169.....Optional Knurled Drive Roller
IR1876.....Optional Custom Cut Bushing
(*Send material for sizing*)

Replacement Parts

IR1592.....Replacement Cut Bushing
IR1582..... Replacement Cut Blade
IR1659.....Replacement Idler Roller
PR0470.....Replacement Urethane Drive Roller

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IMPORTANT SAFETY INSTRUCTIONS

Read all instructions

! WARNING: DO NOT OPERATE MACHINE UNTIL YOU HAVE READ THOROUGHLY, AND UNDERSTAND COMPLETELY, ALL INSTRUCTIONS, RULES, ETC. ON THIS PAGE, AND IN THE OPERATING MANUAL. WHEN USING ELECTRIC TOOLS, BASIC SAFETY PRECAUTIONS SHOULD ALWAYS BE FOLLOWED TO REDUCE RISK OF FIRE, ELECTRIC SHOCK, AND PERSONAL INJURY, INCLUDING THE FOLLOWING:

GROUNDING INSTRUCTIONS

In the event of a malfunction or breakdown, grounding provides a path of least resistance for electric current to reduce the risk of electric shock. This tool is equipped with an electric cord having an equipment-grounding conductor and a grounding plug. The plug must be plugged into a matching outlet that is properly installed and grounded in accordance with all local codes and ordinances. Do not modify the plug provided – if it will not fit the outlet, have the proper outlet installed by a qualified electrician.

Improper connection of the equipment-grounding conductor can result in a risk of electric shock. The green conductor with or without yellow stripes is the equipment-grounding conductor. If repair or replacement of the electric cord or plug is necessary, do not connect the equipment-grounding conductor to a live terminal.

Check with a qualified electrician or service personnel if the grounding instructions are not completely understood, or if in doubt as to whether the tool is properly grounded.

Use only 3-wire extension cords that have 3-prong grounding plugs and 3-pole receptacles that accept the tool's plug. Repair or replace damaged or worn cord immediately.

GENERAL INSTRUCTIONS

REMOVE ADJUSTING KEYS AND WRENCHES Form habit of checking to see that keys and adjusting wrenches are removed from tool before turning on.

KEEP WORK AREA CLEAN Cluttered areas and benches invite accidents.

DON'T USE IN DANGEROUS ENVIRONMENTS Don't use power tools in damp or wet locations, or expose them to rain. Keep work area well lighted.

ALWAYS USE SAFETY GLASSES Everyday eyeglasses only have impact resistant lenses; they are NOT safety glasses. Also use face or dust mask if cutting operation is dusty.

WEAR PROPER APPAREL Do not wear loose clothing, gloves, neckties, rings, bracelets, or other jewelry that might get caught in moving parts. Non-slip footwear is recommended. Wear protective hair covering to contain long hair.

DON'T OVERREACH Keep proper footing and balance at all times.

MAINTAIN TOOLS WITH CARE Keep tools sharp and clean for best performance and to reduce the risk of injury. Follow instructions for lubricating and changing accessories.

DISCONNECT TOOL before servicing; when changing accessories, such as blades, wheels, cutters, and like.

USE RECOMMENDED ACCESSORIES Consult the operating manual for recommended accessories. The use of improper accessories may cause risk of injury to persons.

CHECK DAMAGED PARTS Before further use of the tool, a guard or other part that is damaged should be carefully checked to determine that 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 conditions that may affect its operation. A guard or other part that is damaged should be properly repaired or replaced.

DO NOT EXCEED THE MAXIMUM MATERIAL SPECIFICATIONS.

DO NOT OPERATE UNIT WITHOUT GUARDS IN PLACE OR GUARDS NOT IN WORKING ORDER.

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DO NOT PERFORM MAINTENANCE OR ADJUSTMENTS WITH POWER ON.
DO NOT PLACE FINGERS OR APPENDAGES IN OR NEAR OPENINGS IN GUARDS.

DO NOT RUN UNIT WITH INCORRECT LINE VOLTAGE. REFER TO LABEL PLACED TO THE RIGHT OF THE IEC CONNECTOR.

DO NOT ALLOW UNTRAINED OR UNQUALIFIED PERSONNEL TO OPERATE UNIT.

DO NOT DEFEAT ANY OF THE SAFETY FEATURES

IMPORTANT: NO LIABILITY WILL BE INCURRED BY THE ERASER CO. FOR INJURY, DEATH, OR PROPERTY DAMAGE CAUSED BY A PRODUCT WHICH HAS BEEN SET UP, OPERATED, AND/OR INSTALLED CONTRARY TO ERASER'S WRITTEN OPERATING MANUAL, OR WHICH HAS BEEN SUBJECTED TO MISUSE, NEGLIGENCE, OR ACCIDENT, OR WHICH HAS BEEN REPAIRED OR ALTERED BY ANYONE OTHER THAN ERASER, OR WHICH HAS BEEN USED IN A MANNER OR FOR A PURPOSE FOR WHICH THE PRODUCT WAS NOT DESIGNED.

OPERATING INSTRUCTIONS

When the machine is powered up, the "splash" screen will briefly display:

THE ERASER COMPANY
WC302 [firmware revision date]

SET-UP:

Check your shipment to be sure all items listed under the Included Parts section are in the box. If anything is missing, please let us know immediately.

Place the unit on a sturdy workbench. A material collection bin can be placed by the right side of the unit, to collect cut material as it exits the WC302.

The WC302 may also be used with a tensioning dereeler or an automatic pre-feed system. Use of the Model DE700 Compensating Dereeler is recommended. This device will improve the accuracy and/or the productivity of the WC302. If using the DE700, or any other dereeling system, place the dereeler to the left side of the WC302, approximately 24" (for elastic materials the distance may be reduced) from the entrance bushing in a straight line and align the exit pulley of the dereeler with the entrance bushing of the WC302. If using the DE700, refer to the operating manual for further set up details.

Insert the power cord into the IEC connector, and plug the unit into a 120V 60Hz main supply.

! CAUTION: Environmental conditions for proper operation should be 50°F-90°F (10°C-32°C). The operation of the WC302 should be in a well-ventilated open workspace. This machine may be affected by outside environmental disturbances. The unit is rated for continuous use and is protected with two fuses located in the IEC connector.

! CAUTION: Safety glasses or other suitable eye protection should be worn when operating this unit.

OPERATION:

Turn the WC302 on using the lighted I/O switch on the back side of the unit. Feed the tubing or wire through the entrance guide block between the feed rollers into the cutting bushing and through the exit chute. Most wire and tubing can be fed through the feed wheels by using the manual control keys located on the keypad (the **<JOG>**, **<+>** and **<->** keys). The **<+>** key jogs the material through the machine and the **<->** key reverses this movement. Press the **<CUT>** key when the material has successfully been fed through to the exit chute to eliminate the excess length on the first piece. Tighten the pressure between the idler roller and the feed roller, by turning the adjusting knob clockwise. The roller adjustment will prevent tubing and wire from slipping, but it can also affect length. If the material is slippery, more tension may be applied to the feed rollers by turning the tension-adjusting knob clockwise. Apply only enough tension to transport the material. Do not over-tighten the feed rollers. Over tightening the feed rollers may cause sticky material to stick to the feed rollers, thus creating excessive drag. The feed rollers should be adjusted by tightening until there is enough

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tension to transport the material or tubing. More feed roller pressure may be added if the cut lengths are inconsistent.

Once material has been inserted through the feed bushing, and the roller tension is set, use the **<JOG>**, **<+>** and **<->** keys to feed the material manually and the **<CUT>** key to cut the material. Using the **<JOG>** key will place the controller in Manual mode.

When in the Manual mode, the following indication comes to the display:

MANUAL PROCESS
LENGTH: 0.0
ABORT -ESC

The length indication increases or decreases with regard to the motion induced by the **<+>**, **<->** or **<JOG>** keys. The indicator resets to zero when the cut key is pressed. Press the **<ESC/PAUSE>** key to return to the Batch select screen. The unit now is ready for programming.

PROGRAMMING:

START UP:

When the unit is turned on, the initial screen will display briefly:

THE ERASER COMPANY
WC302 01/15/09

The model number and the firmware revision date are displayed in the third line.
The main Batch Select screen is displayed next:

DO ONE OF THESE: 0
0 FOR NO BATCH SAVE
ENTER . FOR KIT
NEXT NEW BATCH #1

The number on the first line will be the last batch run, or in this case, 0, since no processing has occurred after power-up. A “batch” is a set of parameters for a quantity of one length to be cut (i.e. the units, the cut length, length correction, quantity and feed rate). The number on the last line is the next available batch that has not yet had parameters stored (i.e. it is an empty memory location and is the location of the next batch to be stored). The system requires that batches be created in sequence, so numbers higher than the number on the last line will not be accepted. As batches are created, the number on the last line will increase, until the maximum of 99 batches is reached.

Press the **<ENTER>** key to select the default batch, or type in a desired number and press **<ENTER>**. The line being edited will display a blinking cursor. Parameters entered while using batch 0 are never stored (i.e. the “0” batch is a “scratch pad” memory location). Parameters for all other batches are stored, so the next time that particular batch is called, those parameters will be presented as defaults. If any parameters are edited, the new edited values will be stored for the next time that batch is entered. All batches that have parameters stored can be edited by entering the desired batch number.

CREATING A NEW BATCH:

Enter the number on the last line of the batch prompt screen, in this case 1, and then press the **<ENTER>** key.

The first edit screen will appear:

UNITS in #1
CUT LENGTH 0.0
LENGTH ADJUST 0
QUANTITY 0

The current batch number is shown beside the # at the top right. The cursor will be flashing just before the in (inch), indicating that the field is currently editable. In general, the line being edited will display a blinking cursor. Press the **<ENTER>** key to accept the default of inches, or press the **<+>** or **<->** key to toggle to cm, for centimeters, then press the **<ENTER>** key to store cm. Each time the **<ENTER>** key is pressed, the cursor advances to the next parameter.

Enter a value for the length parameter. If the **<ENTER>** key is pressed accidentally before a value is entered, press the **<ESC>** key to go back to the main batch select menu. If a mistake is made during data entry, press the **<BACKSPACE>** key to back space over the entry. If the **<ENTER>** key has been pressed, press the **<ESC>** key and start over. All values entered so far will have been stored, so you would only have to press the **<ENTER>** key until you returned to the parameter that were

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incorrectly entered and the values would not have to be entered again. The cut length parameter requires a value between .05 and 99,999 to be entered. The limitation here is that the value can be a maximum of 6 characters, including the decimal place. For example, 123456, 123.45 and 1234.5 are permissible but the value 1234.56 isn't allowed. Due to variations in materials, pre-feed systems and feed wheel pressure, actual cut length may vary from the inputted length by a proportional amount. If the cut lengths are consistent with each other, the machine requires no further adjustment to pre-feed system or feed wheel pressure. The WC302 incorporates a length compensation feature to provide an easy adjustment in these cases. The length can be compensated +/-1% to +/- 10% of the inputted length. The length compensation display will show (-) for a negative value. Example: If 10" is entered as the desired length, but the actual average cut piece measures 9.8", a length compensation of +2% will increase the cut length by .200 to the desired 10". The **<+>** or **<->** keys may be used to add or decrease length compensation value.

NOTE: Often it will not be known if length compensation is needed until after a trial run is completed. When programming a batch, leave the field at 0 and edit the batch later if necessary to add length compensation. Once a value has been entered, or if the default of 0 is to be used, press the **<ENTER>** key. The length compensation will remain with the batch program.

After the quantity is entered, the rate edit screen appears:

FEED RATE 3 #1
-MAX SPEED 8.0
-MAX ACCEL 20.0
-MAX DECEL 40.0

The default feed rate is feed rate #3, as depicted above. The feed rate can be changed at this point by entering a number (0 through 9) or by pressing the **<+>** or **<->** keys. Feed rate #3 is a good starting point. Adjust this value upward if the production rate isn't high enough and adjust this value down if there is a lot of slippage at the feed rollers. As the value is changed, the rate values are updated to show what values are active for that feed rate.

The following table represents the maximum speed at any feed rate of the feed rollers:

WC302 Linear Speeds		
Feedrate #	inches/sec	cm/sec
0	7.8	19.8
1	15.6	39.6
2	19.5	49.5
3	27.3	69.3
4	31.2	79.2
5	35.1	89.1
6	42.9	108.9
7	46.8	118.8
8	54.6	138.6
9	58.5	148.5

NOTE: The slower the feed rate, the more accurate in length the cut pieces will be. It is advised to start with the lowest feed rate and check results, then adjust the feed rate if desired.

If an incorrect key is pressed for a given parameter input (e.g. a number key is pressed at the prompt for a unit of measure or for the length correction factor), a long beep will sound that is distinctly longer than the confirmatory beep heard after each key press. Also, if the value entered is out of range or isn't acceptable as an input for that parameter (e.g. to enter more than 99,999 inches as a length, to use more than 1 decimal point, etc.) a letter appears in the lower right corner of the display indicating the error:

UNITS in #1
CUT LENGTH 0.0
LENGTH ADJUST 0
QUANTITY 0 R

A legend to determine the cause of the input error is given below:

INPUT ERROR DIAGNOSTIC LEGEND

Error Indicator	Explanation
R	Data out of range
D	An extra decimal point
W	A decimal only was entered as an input
N	Nothing to delete. Backspace key pressed too many times
L	Too many digits total after decimal
F	Too many decimal places

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In general, an **<ENTER>** key press advances to the next parameter, a **<RUN>** key press jumps over items on the current screen and advances to the next screen or menu and an **<ESC/PAUSE>** key press returns to the previous screen. Also, when editing an existing batch parameter, an **<ENTER>** key press is necessary to re-write a new value into memory. A **<RUN>** key press simply advances to the next screen without over- writing the old value.

Once the feed rate is decided, press the **<ENTER>** key to advance to the batch start screen:

JOG - JOG
CUT - CUT
MAIN MENU - ENTER
START - RUN

This menu allows several options: to run a test piece, to cut a piece, to enter the newly created batch parameters into memory without running the batch and to run the batch. If the operator chooses to run some test pieces before commencing the batch, press the **<JOG>** key and the manual process screen appears.

MANUAL PROCESS
LENGTH: 0.0

ABORT -ESC

This screen looks like the manual mode screen but has a subtle difference. When the **<JOG>** or **<+>** keys are pressed, the wire or tubing will transport the cut length distance. If 5.0” was entered as a cut length, 5” of material would move through the machine and 5.0 would be displayed for a length. Another **<JOG>** key press would again advance 5 inches of material through the machine and 10.0 would be displayed as the length. When the **<CUT>** key is pressed, the cut mechanism activates and the length is reset to zero.

If the start option is selected (a **<RUN>** key press), the batch run screen is displayed:

PIECES XXXX #1
PIECES LEFT XXXX
ESC TO STOP/BREAK
RUN TO CONTINUE

The first line indicates the quantity parameter and the current batch number and the second line indicates a running count of the pieces left to process. The pieces left count is reduced after each piece is cut. When a batch is successfully completed, a batch completion screen appears:

RUN COMPLETE #1
PIECES LEFT 0

PUSH ANY KEY

This screen indicates successful completion of a batch and the batch number. A key press brings the main batch select menu back to the screen.

RUNNING AN EXISTING BATCH:
Once a set of one or more batches are created, a batch may be started with two key presses. Enter the existing bath number and press the **<RUN>** key at the batch select menu and press the **<RUN>** key again to start the batch at the batch start menu.

JOG - JOG
CUT - CUT
MAIN MENU - ENTER
START - RUN

If the WC302 is paired with the Eraser APF100 pre-feeder and the optional communication cable is in place, a mis-feed or wire jam at the pre-feeder will stop the WC302 from processing any more pieces:

EXTERNAL
MISFEED!

When the condition is relieved, the exceptional event recovery screen appears:

JOG - JOG
CUT - CUT
ABORT - ESC
CONTINUE - RUN

This menu allows the operator to continue the batch if the current piece is unaffected, to discontinue the batch, or to remedy the current piece by allowing a manual jog and cut until the machine is setup to resume.

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The processing of material can be halted by a **<ESC/PAUSE>** key press as well. When the operator presses the esc key, the WC302 immediately comes to a halt and again displays the exceptional event recovery screen:

JOG	**- JOG**
CUT	**- CUT**
ABORT	**- ESC**
CONTINUE	**- RUN**

This action allow the operator to halt the machine for any reason and to resume with concern to the piece being fed (e.g. if a 28” piece is interrupted at 8”, the WC302 will continue to feed to 28” when the continue option is selected).

POWER FAILURE:

In case of a power failure, the WC302 will reinitialize. All parameters stored in a batch program will remain in memory. The controller is protected by 2 fuses and a line filter located in the IEC connector.

! CAUTION: BE SURE TO UNPLUG THE UNIT AND EMPLOY APPROPRIATE ANTI-STATIC PROCEDURES/DEVICES BEFORE PERFORMING ANY MAINTENANCE.

BLADE REPLACEMENT:

Blade Removal:

1) Remove the exit chute by loosening the 2 screws that secure it to the housing and lift up.
2) Remove clear plastic guard using the 5/64” hex wrench by removing the 3 button head screws.
3) Using the same wrench loosen the set screw retaining the “cut bushing” and push the bushing away from the blade.
4) Using the 7/64” hex wrench, remove the hex socket screw and blade from the blade holder.

Blade Installation:

1) Replace the dull blade with the new blade and tighten the screw Using the 7/64” hex wrench
2) Rotate bushing to maintain even wear
3) Gently push the bushing against the blade and tighten the bushing set screw Using the 5/64” hex wrench.
4) Replace the plastic guard with the 3 button head screws using the 5/64” hex wrench.
5) Replace the exit chute and tighten the 2 chute retaining screws.

Check the blade for wear after prolonged use. Due to the number of different materials, this maintenance should be reviewed by your plant maintenance personnel and adjusted accordingly.

No other maintenance is required for the WC302.

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TROUBLESHOOTING

Problem	Possible Cause	Possible Solution
Material doesn't feed properly	Feed roller not adjusted correctly	Tighten the roller feed adjusting knob clockwise to increase tension (Do not over tighten, this will cause material to jam)
	Feed roller tension loss	Tighten the set screw on the tension block. Adjusting knob should turn with some friction
Display not functioning	Blown fuse	Replace with recommended fuse
	Unit not powered up	Turn power switch on, in the rear of the unit
	Incorrect voltage supplied	Make certain the incoming voltage is correct and is NOT being influenced by large equipment upstream.
Poor quality of cut or no cut	Dull or chipped blades	Dull or chipped blades must be replaced.
	Cutting Bushing worn	Rotate Cutting Bushing
	Gap between blade and cutting bushing	Loosen the cutting bushing set screw and slightly press the bushing to the blade, tighten the set screw
Erratic cut lengths	Uneven Dereeler tension	Use a power assisted dereeler at higher speeds
	Feed roller not adjusted correctly	Tighten the feed roller adjusting knob clockwise to increase tension, counter clockwise to reduce tension
	Bushing is incorrect diameter	Purchase a correct diameter bushing

SYMBOLS

GROUND LOCATION
This protective Earth ground label is located inside the housing beside the ground wire. This wire is connected to the Power Supply Cable and is wired back through the Mains supply to ground.

CAUTION LABEL
Refer to the operating instructions before using this unit. High voltage is inside this unit and power must be disconnected before servicing.

O I

ON/OFF LABEL
This is the ON/OFF switch. Press I for on and press O for off. This switch is also the anti-start switch. In case of power outage, this switch must be reset for the unit to operate

IMPORTANT: No liability will be incurred by the Eraser Company for injury, death, or property damage caused by a product that has been set up, operated, and/or installed contrary to Eraser's written operating manual, or that has been subjected to misuse, negligence, or accident, or which has been repaired or altered by anyone other than Eraser, or which has been used in a manner or for a purpose for which the product was not designed.

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