



Operating Manual

Please Read Before Operating Unit



Model WC601D Automatic Tubing Cutter

Service and All Spare Parts Available

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Always Moving Forward®



WC601D AUTOMATIC TUBING CUTTER

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SPECIFICATIONS

Minimum material size..... ½" (12.7 mm) tubing
Maximum material size..... 1 1/8" (28.5 mm) tubing
Maximum number of pieces 99,999 (per batch)

Minimum cut length 0.10" (0.25 cm) or less;
material dependent

Maximum cut length 99,999" or 99,999 cm
Length Resolution..... 0.01" or 0.01 cm

Dimensions..... 12 1/8"W x 16 ¾"D x 10"H
Weight 45 LBS (20.5 kg)

Tolerances

Repeatability..... +/- 0.005" (0.13 mm) to 5% of total
length; dependent on material and dereeling system

Squareness of cut..... 0° +/- 2°; material dependent

Performance

Cut Rates..... 10 selectable cut rates (0-9)
Feed Rates..... 10 selectable feed rates (0-9)

Programming

Batching..... up to 99 programmable batches
Kits..... up to 10 kits
(depending upon available memory)

WC601D Linear Speeds		
Feedrate #	inches/ sec	cm/sec
0	4.8	12.1
1	9.5	24.2
2	11.9	30.2
3	16.7	42.3
4	19.1	48.4
5	21.4	54.4
6	26.2	66.5
7	28.6	72.6
8	33.3	84.6
9	35.7	90.7

Power & Usage

Voltage; Frequency..... 120V; 60Hz
Consumption 150 Watts
Usage rating Continuous

Operating Environment

Operating temperature 50° - 90°F (10° - 32°C)
Airflow..... Unobstructed, well-ventilated workspace

ORDERING INFORMATION

AR7151 (WC601D):
Automatic Large Tubing Cutter, 120V

Included Parts

WC601D ships with the following parts/tools:

- (1) 5/64" Allen wrench (for the 3 bushing set screws)
(item #TG3028)
- (1) 3/32" Allen wrench (for the 2 blade stop screws)
(item #TG3790)
- (1) 5/32" Allen wrench (for the 2 blade retention screws)
(item #TG0026)
- (2) PR1029 Feed belts (installed)
- (1) IR1296 Cut blade (installed)
- (1) Power cord

Replacement Parts

IR1296..... Cutting Blade
(1 required; 1 supplied)
PR1029..... Timing Feed Belt
(2 required; 2 supplied)
PR3146..... Blade Return Spring
(1 required; 1 supplied)
PG1032 O Ring, Blade Cushion
(1 required; 1 supplied)
IR0977 Set of Custom Bushings
(sold separately)
PR0655..... Fuse, for 120V IEC connection
(1 required; 1 supplied w/AR7151)
PR2727..... Power cord, 120V
(1 required; 1 supplied w/AR7151)
PR1026..... Flat Belt for Rotary Head

(Please call us for pricing and availability of replacement parts.)

Optional Parts/Accessories

IR1390 Optional Carbide Cutting Blade
AR0010(DE100) Turntable Dereeler
AR3801(DE400) Bench Mounted Dereeler
AR0170(DE700) Compensating Dereeler

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IMPORTANT SAFETY INSTRUCTIONS

IMPORTANT! DO NOT OPERATE MACHINE UNTIL YOU HAVE READ THOROUGHLY, AND UNDERSTAND COMPLETELY, ALL PRECAUTIONS, INSTRUCTIONS AND INFORMATION ON THESE PAGES. THIS MANUAL CONTAINS IMPORTANT SAFETY AND OPERATING INSTRUCTIONS. IT SHOULD BE RETAINED WITH THE MACHINE FOR FUTURE REFERENCE.

SAFETY PRECAUTIONS - MECHANICAL

- ! DO NOT OPERATE UNIT WITHOUT GUARDS IN PLACE OR WITH DAMAGED GUARDS.**
- ! DO NOT DEFEAT ANY OF THE SAFETY FEATURES.**
- ! DO NOT PLACE FINGERS OR APPENDAGES NEAR MOVING PARTS OR IN OR NEAR OPENINGS IN GUARDS.**

SAFETY PRECAUTIONS - ELECTRICAL

- ! ALWAYS UNPLUG UNIT FROM POWER SUPPLY PRIOR TO ANY MAINTENANCE.**
- ! DO NOT RUN UNIT WITH INCORRECT LINE VOLTAGE.**
- ! NEVER RUN MACHINE WITH DAMAGED OR WORN POWER CORD.**
- ! NEVER MODIFY THE PLUG PROVIDED. IF IT WILL NOT FIT INTO THE OUTLET, HAVE THE PROPER OUTLET INSTALLED BY A QUALIFIED ELECTRICIAN.**

GROUNDING INSTRUCTIONS Grounding provides a common return path for electric current to reduce the risk of electric shock. This machine is supplied with an electric cord with 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.

Improper connection of the equipment-grounding conductor can result in a risk of electric shock. Check with a licensed electrician if in doubt as to whether the machine is properly grounded.

SAFETY FIRST - USE BEST PRACTICES

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.

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

KEEP WORK AREA CLEAN Cluttered areas and benches invite accidents. Always leave at least 12" (305 mm) of space around all sides and top of unit.

DON'T USE IN DANGEROUS ENVIRONMENTS Do not use or locate machine in high-humidity environments, or expose to rain. Keep work areas well lighted.

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

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

MAINTAIN BLADES WITH CARE Keep blades sharp and clean for optimal performance. Follow instructions for lubricating and changing blades and all accessories.

DISCONNECT MACHINE FROM POWER SUPPLY Unplug the unit before servicing and when changing accessories.

DO NOT EXCEED THE UNIT'S MAXIMUM MATERIAL SPECIFICATIONS Eraser's warranty will be null and void if machine has been used in any manner that is contrary to these instructions.

CHECK FOR DAMAGED PARTS Before continued use of the machine, the guard and all moving parts should be carefully inspected to ensure that nothing is damaged.

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ENSURE PROPER ALIGNMENT OF MOVING

PARTS Check for any binding of moving parts, breakage of parts, and any other condition(s) that may affect operation. Any damaged part(s) should be properly repaired or replaced prior to any continued use of the machine.

ONLY ALLOW TRAINED AND QUALIFIED

PERSONNEL TO OPERATE UNIT Always keep these instructions within reach of the machine.

USE RECOMMENDED ACCESSORIES ONLY

Consult this operating manual for recommended accessories. Use only parts supplied by The Eraser Company, Inc. Use of improper accessories will void Eraser's warranty and may increase risk of injury.

ALL REPAIRS SHOULD BE PERFORMED BY AN ERASER COMPANY REPRESENTATIVE ONLY

Unauthorized disassembly of machines will void Eraser's warranty.

WHEN USING MACHINERY, ALL SAFETY PRECAUTIONS – INCLUDING, BUT NOT LIMITED TO, THOSE LISTED ABOVE - SHOULD BE FOLLOWED TO REDUCE THE RISKS OF FIRE, ELECTRIC SHOCK, AND PERSONAL INJURY, AND DEATH.

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 THE ERASER COMPANY, OR WHICH HAS BEEN USED IN A MANNER OR FOR A PURPOSE FOR WHICH THE PRODUCT WAS NOT DESIGNED.

SET-UP: Check your shipment to be sure all items listed under the parts section are in the box. If anything is missing, please let us know immediately.

Place the model WC601D on a sturdy workbench. A material collection bin can be placed on the right side of the unit, beneath the clear guard.

NOTE: It is possible for the WC601D to be controlled by an external device or process, by using the DB9 connector located on the rear panel of the unit. Contact

a sales representative for more details.

The WC601D 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 productivity of the WC601D. If using the DE700 (or any other dereeling system), place the dereeler to the left side of the WC601D, 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 WC601D. If using the DE700, refer to the operating manual for further set up details.

First, remove the unit's front cover/guard by loosening the (2) thumb screws located on the front and top of the front cover. Referring to the drawing on page 16, locate the blade stop adjusting screw on the cutting head.

Prior to shipment, the blade stop adjusting screw has been set to lock the blade holder in the open position, to secure it during transport. Prior to bushing installation (see below) loosen the locking set screw (which secures the blade stop screw), then back the blade stop screw away from the blade holder mechanism.

BUSHING INSTALLATION: (Refer to the drawing on page 15)

The WC601D requires one (1) set of custom bushings. A bushing set consists of one (1) of each of the following: the entrance bushing (7/8" long w/ hub); the head (middle) bushing (2 5/8" long); & the exit bushing (1 3/8" long), for a total of 3 bushings. If different sizes of material are going to be cut, additional bushing sets may be ordered.

First install the head bushing. Lift the clear guard on the right side of the unit and insert the ID-chamfered end of the head bushing into the hole under the clear guard. Slide the head bushing completely past the blade on the cutting head.

Manually actuate the blade holder (see Set-up, above) and slide the head bushing back toward the blade until the clearance between the bushing & the blade is approximately 1/32". Tighten the head bushing in place, then lift the clear guard and insert the exit bushing until the bushing is approximately 1/32" from the opposite side of the blade from the

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head bushing and tighten with the set screw. Make certain that the blade moves freely by manually actuating it.

Reposition & retighten the head bushing (keeping it as close as possible to the blade without interference) if it interferes with the blade path. This will provide the squarest possible cut and allow small pieces to be run. Also, head bushings that are not close to the blade may cause material to jam, when cutting short pieces.

Lastly, install the entrance bushing into the bushing block to the left of the feed belts, until the hub of the bushing is flush with the bushing block. Tighten the head bushing and replace front cover/guard.

OPERATION:

Insert the power cord into the machine's IEC connector, and plug the unit into a 120V 60Hz mains supply.

! CAUTION: Prior to connection, ensure that the power supply is properly grounded.

Turn the WC601D on using the I/O switch on the back side of the unit (located within the IEC connection housing). To open the front cover, unscrew the top and front thumb screws. Most tubing can be fed through the feed belts by using the manual control keys located on the keypad (the <JOG>, <+> and <-> keys). The <JOG> and <+> keys jogs the material through the machine and the <-> key reverses this movement. Insert the material through the entrance bushing to the feed belts and press the <JOG> key or the <+> key. Press the <CUT> key when the material has been completely fed through the exit bushing to eliminate the excess length on the first piece.

If the material won't feed through the machine correctly, feed the material into the entrance bushing and open the belt feed by turning the adjusting knob counterclockwise. Manually feed the material between the belts and through the head and exit bushings. Clockwise rotation of the belt feed tension knob will result in more tension. Counterclockwise rotation will result in less tension. If the material is slippery, more tension may be applied to the belt feed by turning the tension adjusting knob clockwise. Apply only enough tension to transport the material consistently - do not over-tighten feed belts. Over

tightening the feed belts causes excessive drag in the bushings and accelerates feed belt wear.

The feed belts should be adjusted by tightening them just until the material can no longer be pulled between them by hand. More belt pressure may be added if cut lengths are inconsistent. Once material has been fed through the bushings and belt tension is set, tighten the lock nut (located underneath the belt feed tension adjusting knob), then replace the front cover.

NOTE: Using the <JOG> key places the controller in Manual mode. When in Manual mode, the MANUAL PROCESS screen displays:

**MANUAL PROCESS
LENGTH: 0.0**

ABORT -ESC

The length indication increments or decrements 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

START UP:

Turn the WC601D on using the I/O switch on the rear face of the unit. When the unit is turned on, the splash screen will display briefly:

**THE ERASER COMPANY
WC601D [firmware revision date]**

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**

NOTE: Do not turn the unit on and off repeatedly without waiting 5 seconds.

With the cover off the unit, open the feed belts enough to accommodate the material being fed. Material can now be fed through the feed belts semi-automatically by first pressing the <JOG>, <+> and <-> keys. The <+> key jogs the material forward (toward the cutter) and the <-> key reverses this movement. Press the <CUT> key when the

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material has been fed past the blade by at least $\frac{1}{4}$ ". This will eliminate the excess material length on the first piece of a programmed batch. When using the <JOG> key, the controller is in manual mode, and the MANUAL PROCESS screen displays:

MANUAL PROCESS
LENGTH: 0.0

ABORT –ESC

The length indication increments or decrements with regard to the motion induced by the <+>, <-> or <JOG> keys. The length indicator resets to zero after 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:

EXPLANATION OF BATCH PROGRAMMING

Referring to the BATCH SELECT screen above, 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 program, or a set of parameters for a quantity of a specified length to be cut (i.e. the unit of measure, the cut length, length adjustment [compensation], quantity, cut rate 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 a clean memory location and is the location of the next batch to be programmed). 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 of the BATCH SELECT screen will increase, until the maximum of 99 batches is reached. Parameters entered while using batch 0 are never stored after the unit is turned off (the "0" batch is a "scratch pad" memory location). Parameters for all other batches (1-99) are stored, so the next time that particular batch is called, those parameters will be presented as entered.

PROGRAMMING BATCHES:

Press the <ENTER> key to select the Default Batch (0), or type in either an existing stored batch (to edit or review), or input a new batch number as indicated on the last line of the main menu. ("NEXT NEW BATCH #"). Press the <ENTER> key. Values will be stored for the next time that batch is entered (except

batch 0). All batches that have parameters stored can be edited, reviewed or run by entering the desired batch number at the "DO ONE OF THESE" prompt.

CREATING A NEW BATCH:

Enter the number on the last line of the BATCH SELECT screen, using the above example, Batch # 1, then press the <ENTER> key. The BATCH EDIT screen will appear:

UNITS	in #1
CUT LENGTH	.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 default input of "in" (inches), indicating that the field is currently editable. The line being edited will display a blinking cursor.

"UNITS" parameter: 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 the selected unit of measure.

NOTE: Each time the <ENTER> key is pressed, the cursor advances to the next parameter.

"CUT LENGTH" parameter: Enter a value for the length parameter. If the <ENTER> key is pressed accidentally before a value is entered, the unit will sound a long beep, to prompt the entry of a number greater than zero (CUT LENGTH and QUANTITY fields). If a mistake is made prior to pressing the <ENTER> key, press the <BACKSPACE> key to back space over the entry. If the <ENTER> key has been pressed after an incorrect entry, a long beep is heard and an error code is displayed (see "DATA ENTRY ERROR CODES & SOUNDS" section below). The cursor then returns to the field where the entry error was made. The CUT LENGTH parameter requires a value between .01 and 99,999 to be entered. The limitation here is that the value can be a maximum of 6 characters – including the decimal point - if a decimal point is used. The maximum decimal value is two places (hundredths of a unit). For example, 123.45 and 1234.5 are permissible but the value 1234.56 isn't allowed. If a decimal is not used, the maximum number of characters is 5 for this field.

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NOTE: Due to variations in materials, pre-feed systems, belt feed tension or feed rate, actual cut length may vary from the inputted length by a proportional amount.

After running a batch or manual single piece (see BATCH START screen instructions below), it is recommended to measure the length of the cut piece(s). If the cut length(s) are consistent with each other, the machine requires no further adjustment to either the pre-feed system (if applicable), belt feed tension or feed rate.

“LENGTH ADJUST” parameter: The WC601D incorporates a length compensation feature to provide an easy adjustment in these cases. The length can be compensated in increments of 1%, from -10% to +10% of the value entered into the CUT LENGTH field. 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, it is recommended to leave the LENGTH ADJUST field at 0 and edit this field later if necessary to incorporate length compensation. Once a value has been entered, or if the default of 0 is to be used, press the <ENTER> key.

“QUANTITY” parameter: Enter a quantity from 1 to 99,999. Only integers (no decimals) will be accepted for this field.

After the quantity is entered, the CUT RATE screen appears:

```

CUT RATE      3 #1
-CUT SPEED    70%
-POST DELAY   1250
CUT TIME      1.0
  
```

The Cut Rate is the rate at which the rotary blade cuts material. The default cut rate is 3, as shown above. The Cut Rate can be changed at this point by entering a number (from a minimum rate of 0 through a maximum rate of 9) or by pressing the <+> or <-> keys. As the value is changed, the CUT

SPEED and POST DELAY values (not editable) are updated to show what values are active for the selected cut rate. Input the desired cut rate and press the <ENTER> key. Then enter the desired Cut Time in seconds. This is the amount of time that the rotary head is powered during the cut cycle. The default cut time 1.0 second for all cut rates. 1 second is the recommended minimum cut time.

After the cut rate is entered, the FEED RATE screen now appears:

```

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

The Feed Rate is the rate at which material will travel through the feed belts prior to the cut cycle. The default feed rate is 3, as shown above. As with the CUT RATE screen, the FEED RATE can be changed at this point by entering a number (from a minimum rate of 0 through a maximum rate of 9) or by pressing the <+> or <-> keys. Input the desired feed rate and press the <ENTER> or <RUN> key.

NOTES:

- The slower the feed rate, the more accurate in length the cut pieces will be. It is recommended to start with a middle-range feed rate (3 or 4) and check results, then adjust the feed rate up or down as needed.
- For the FEED RATE screen, the MAX SPEED, MAX ACCEL & MAX DECEL parameters are not editable.

DATA ENTRY ERROR CODES & SOUNDS:

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 short 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. entering more than 99,999 as a length, or using more than 2 decimal places, etc.) a letter appears in the lower right corner of the display ('R' as highlighted in the example below) indicating the error:

```

UNITS in #1
CUT LENGTH  .0
LENGTH ADJUST 0
QUANTITY 0 R
  
```

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INPUT ERROR DIAGNOSTIC LEGEND

- R** - Data out of range.
D - An extra decimal point.
W - A decimal only was entered as an input (no numbers)
N - Nothing to delete. Back Space key pressed too many times.
L - Length out of range.
F - Too many decimal places.

KEYPAD LEGEND:

<ENTER> key: Advances to next parameter or screen. When editing an existing batch parameter, an **<ENTER>** key press is necessary to re-write a new value for a parameter into memory.

<RUN> key: Advances to the next screen/menu without over writing existing values.

<ESC/PAUSE> key: Returns to the previous screen. Pauses batch processing.

Once the feed rate is entered, press the **<ENTER>** or **<RUN>** 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 (**<JOG>** & **<CUT>** keys);
- to cut a piece (**<CUT>** key);
- to enter the newly created batch parameters into memory without running the batch (**<ENTER>** key);
- or to simply run the batch as programmed (**<RUN>** key).

<JOG> key: If the operator chooses to run some test pieces before commencing the batch, press the **<JOG>** key to display the MANUAL PROCESS screen:

MANUAL PROCESS
LENGTH: 0.0

ABORT -ESC

NOTE: This screen looks like the MANUAL PROCESS screen (as described under Start up, above) but has a subtle difference. When the **<JOG>** or **<+>** keys are pressed, material will feed

the distance that is programmed in the cut length parameter of the current batch. For example, if 5.0" was entered as a cut length, a **<JOG>** or **<+>** key press would advance 5" of material through the machine and 5.0 would be displayed for a length. Another **<JOG>** or **<+>** key press would again advance 5 inches of material through the machine and 10.0 would be displayed as the total length run in this mode. Following this example, pressing the **<->** key next would reverse the material by 5 inches, and 5.0 would again be displayed as the length, giving you the total amount of material remaining to be cut.

<CUT> key: The cut mechanism activates and the length is reset to zero.

<RUN> key (START option): 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 displays a running count of the pieces left to process. The PIECES LEFT count is decremented after each piece is cut. Pressing the **<ESC/PAUSE>** key during batch processing stops the machine and displays the BATCH ESCAPE/GUARD REPLACE screen:

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

To resume the batch, press the **<RUN>** key, or press the **<JOG>** or **<+>** key to advance material, or the **<->** to reverse material.

Press the **<CUT>** key to cut material.

Press the **<ESC/PAUSE>** key again to abort the batch. This will bring the use to the BATCH COMPLETION screen, as shown below. The number of pieces remaining to be cut (unprocessed portion of the batch) is displayed in the PIECES LEFT parameter.

When a batch is successfully completed, the BATCH COMPLETION screen appears:

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RUN COMPLETE #1
PIECES LEFT 0

PUSH ANY KEY

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

RUNNING AN EXISTING BATCH:

Once a batch has been created and run, it may be started with a little as three key presses: After running a batch, it remains the default batch number until another batch is run or edited. To run the batch again, press any key at the BATCH COMPLETION screen, then press the <RUN> key twice.

Alternatively, a different batch may be selected and run by pressing any key from the BATCH COMPLETION screen, then entering the batch number (i.e. selecting a batch number that already exists in memory) at the "DO ONE OF THESE" prompt, then pressing the <RUN> key twice.

In addition to manually pausing a batch, removing the guard will also interrupt processing. If the guard is removed during a running batch, or when pressing <RUN> to begin a batch, the message:

GUARD OPEN!

appears on the screen. When the guard is removed, the machine will stop immediately, and will not run until the guard is replaced. When the guard is replaced, the BATCH ESCAPE/GUARD REPLACE screen appears:

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

For descriptions of these functions, refer to the instruction under the BATCH ESCAPE/GUARD OPEN screen above.

KITTING FEATURE:

The WC601D also has a Kitting feature. This allows a collection (or set) of batches to be run sequentially. A Kit can be defined, for example, to be Batches 4 (one 6.0" piece), 5 (three 8.0" pieces) and 6 (one 2.0"

piece). The WC601D will then process all pieces in batch number 4, then batch 5, then batch 6. However, batches do not need to be programmed in sequential (batch-numbered) order within a kit.

First, a kit is programmed by assigning batches to it, and then the quantity of kits to be processed is entered at the end of the Kit programming. Kit quantities are not saved or stored within kit programming.

Kit programming is initiated by entering pressing the < . > (decimal) key at the default BATCH SELECT screen.

After the < . > (decimal) key is pressed, the KIT SELECT screen appears:

SELECT KIT 1

NEXT NEW KIT #2

At this point, the operator has 3 options:

- 1) The operator can define a new kit.
- 2) The operator selects an existing kit number, if previously defined. To run a defined kit, enter the kit number, then press the <RUN> key twice to go directly to the KIT QUANTITY screen (shown below, just before the Automode Kit Operation section).
- 3) The operator can return to the BATCH SELECT screen by pressing the <ESC/PAUSE> key.

Since we'll be describing kit programming, we'll follow option #1 above. Press the <ENTER> key at the KIT SELECT screen above, using the default of '1' as the kit to be programmed. The KIT EDIT screen displays:

INDEX #0	F KIT#1
SELECT BATCH: 0	A
LENGTH	.0
QUANTITY	0

INDEX is the "place holder" within the kit that stores the batch. The first batch in any kit is stored at Index #0, the second batch position in the kit is Index #1, and so forth. Therefore, Batch position = [Index #] +1. After inputting '1' at the KIT SELECT screen, the cursor is at the 'SELECT BATCH:' parameter of the KIT EDIT screen (above). The Position Indicator (see table below for Indicator definitions) displays an "F", meaning that this is the "first" batch in this kit. In addition, the Allowable Action Indicator (see

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table below for Indicator definitions) displays an “A”, meaning that a batch may be “added”.

POSITION INDICATOR – Located between INDEX # and KIT #, on the first (top) line.

Symbol Definition

F - First batch in kit (index #0).

M - Middle batch.

L - Last batch (last index in kit, can be deleted/changed).

N - New index position (this status is temporary until this index/batch is saved).

ALLOWABLE ACTION INDICATOR – Located after Batch number, on the second line.

Symbol Definition

E - Edit - can change batch # at current index.

D - Delete - remove or change batch from current index (only possible for the last index in the kit), also implies an edit if it is necessary.

A - Add - add batch and index location to kit (batch not yet selected for current INDEX).

To continue with the example outlined above, Batch 4 will be the first batch to be run in this kit so it will be entered at index 0. The operator presses the <4> key, then the <ENTER> key, to enter Batch #4 as Index #0 of the kit. The KIT EDIT screen displays:

```
INDEX #0      F KIT#1
SELECT BATCH: 4  D
LENGTH       6.0
QUANTITY     1
```

The batch number, length and quantity are displayed for the entered batch (in this example, Batch 4) and the Allowable Action Indicator (see table above) changes to a “D”, meaning that this batch number can be “deleted” from the kit. When the operator is satisfied he/she has chosen the correct batch, press the <+> or <ENTER> key to move to the next index, and to enter the next batch in the kit’s sequence. The KIT EDIT screen displays:

```
INDEX #1      N KIT#1
SELECT BATCH: 0  A
LENGTH       .0
QUANTITY     0
```

The second location is numbered INDEX #1 (the counting for indexes starts at zero), the Position Indicator displays an “N” (indicating a “new” index

position) and the Allowable Action Indicator displays an “A”, meaning that a batch number can be “added” to this location. The operator then presses the <5> key, then the <ENTER> key to place Batch 5 into the second sequence in this kit. The KIT EDIT screen displays:

```
INDEX #1      L KIT#1
SELECT BATCH: 5  D
LENGTH       8.0
QUANTITY     3
```

The Position Indicator now displays an “L” (the “last” batch in this kit so far) and the Allowable Action Indicator displays a “D”, meaning that this batch can be “deleted” from the kit. Only the last batch in a kit may be deleted. When the “D” is displayed, the operator can delete the batch from the kit by pressing the <CUT> key. When the operator is satisfied he/she has chosen the correct batch, press the <+> or <ENTER> key to move to the next index, and to enter the next batch in the kit’s sequence. The KIT EDIT screen displays:

```
INDEX #2      N KIT#1
SELECT BATCH: 0  A
LENGTH       .0
QUANTITY     0
```

The Position Indicator displays an “N” (indicating a “new” index position) and the Allowable Action Indicator displays an “A”, meaning that a batch can be “added” to this location. To enter the last batch in this example kit, the operator presses the <6> key and then the <ENTER> key. The KIT EDIT screen displays:

```
INDEX #2      L KIT#1
SELECT BATCH: 6  D
LENGTH       2.0
QUANTITY     1
```

With this last batch, the example kit is completely defined. When the kit is fully defined, the operator presses the <RUN> key to run the kit, or the <ESC/PAUSE> key to go back to the KIT SELECT screen. A <RUN> key press displays the KIT QUANTITY screen:

```
QUANTITY: 0   KIT#1
```

```
ENTER 0 FOR MANUAL
OR # FOR AUTOMODE
```

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AUTOMODE KIT OPERATION:

(PROCESSING A KIT AT A SPECIFIC QUANTITY)

Kit quantities must be entered each time a kit is called up and processed, they are not stored in the kit's program or from the last run. The cursor is now at the 'QUANTITY:' parameter. For our example, we'll process a quantity of ten (10) kits, as programmed (Kit #1). When a kit quantity is entered, the machine will output kits continuously until the entered quantity of kits has been processed. The operator presses the <1> key, the <0> key, then the <ENTER> or the <RUN> key. The KIT START screen displays:

JOG	- JOG
CUT	- CUT
SAVE	- ENTER
START	- RUN

MANUAL MODE & SAVE OPERATIONS:

A <JOG> or <+> key press at this screen will advance material through the feed belts (Manual Mode) for as long as the key is held. A <-> key press will reverse material (Manual Mode) for as long as the key is held.

A <CUT> key press will cycle the blade once (Manual Mode).

An <ENTER> key press saves the kit and brings the operator back to the BATCH SELECT screen.

Continuing our example of 10 kits of Kit #1, the operator presses the <RUN> key at the KIT START screen (above). As soon as the <RUN> key is pressed, kit processing begins, and the KIT PROCESSING STATUS screen displays:

# OF KITS 10	KIT #1
KITS LEFT	X
CURRENT BATCH Y	
PIECES LEFT	Z

During Automode Kit Processing (running a quantity of kits) the KIT PROCESSING STATUS screen (above) displays the quantity of kits programmed and the kit number on the first (top) line. This line is static – it will not change during kit processing. The second line ('KITS LEFT') counts down the number of kits left to be processed. The third line ('CURRENT BATCH') displays the current batch

being processed. The fourth (bottom) line ('PIECES LEFT') displays the number of pieces left in the current batch (not the kit) being processed.

During kit processing, the operator can press the <ESC/PAUSE> key to stop kit processing and display the KIT ESCAPE screen:

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

At this point the operator can jog or cut material manually (see Manual Mode & Save Operations section above), or continue the kit run by pressing the <RUN> key. The kit will resume processing from the point at which it was stopped. Pressing the <ESC/PAUSE> key from the KIT ESCAPE screen (ABORT command) brings the operator to the KIT RUN COMPLETE screen (below). When all kits have been processed, the KIT RUN COMPLETE screen displays:

RUN COMPLETE	KIT #1
KITS LEFT	0

PUSH ANY KEY

Pressing any key will bring the operator back to the BATCH SELECT screen. To return to kit processing/programming from the BATCH SELECT screen, press the < . > key.

MANUAL (SINGLE) KIT OPERATION:

(Using the default kit quantity of '0')

In Manual Kit Mode, one (1) kit is processed per <RUN> key press (even though '0' is entered as a quantity – in this instance, '0' designates Manual [Single] Kit Mode). After pressing the <ENTER> or <RUN> key to accept Quantity of '0' in the KIT QUANTITY screen (above), the KIT START screen displays (see above).

Continuing our example of manual/single kit processing of Kit #1, the operator presses the <RUN> key at the KIT START screen. The SINGLE KIT MODE RUN screen displays:

# OF KITS 0	KIT#1
--------------------	--------------

PRESS ESC TO BREAK
PRESS RUN TO PROCEED

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Pressing the **<ESC/PAUSE>** key from this screen brings the operator to the BATCH SELECT screen.

Following our Manual Mode example, a **<RUN>** key press begins kit processing of (1) kit only, and displays the KIT PROCESSING STATUS screen (see above).

Once the first kit is completed in Manual Mode, the machine waits for input from the operator with the SINGLE KIT MODE RUN screen:

OF KITS 1 KIT#1

PRESS ESC TO BREAK
PRESS RUN TO PROCEED

In our example kit (Kit #1), a kit consists of one 6.0" piece, three 8.0" pieces and one 2.0" piece. Therefore, in the example above, 5 total pieces would output and then wait for operator input from the keypad.

Pressing **<RUN>** again will process another kit, and the SINGLE KIT MODE RUN screen would display '# OF KITS 2', and so forth.

Pressing the **<ESC/PAUSE>** key from this screen brings the operator to the BATCH SELECT screen.

NOTES ON KIT PROGRAMMING & EDITING:

- Batches need to be defined prior to being entered into a kit.
- Kit quantities must be entered each time a kit is called up and processed, they are not stored in the kit's program or from the last run.
- During Kit programming, you can use the **<+>** key to advance to the next batch; or the **<->** key to return to the previous batch.
- During Kit programming, you can use the **< . >** (decimal) key to advance to the last batch in the kit, or the **<BACKSPACE>** key to return to the first batch in the kit.
- Only the batch at the last (greatest number) Index location may be erased. This batch is always designated with a "D" as the Allowable Action Indicator code (see table above).
- To delete the last batch in a kit, first display the batch within the kit, then press the **<CUT>** key. The 'SELECT BATCH' parameter will change to "0" and the Allowable Action Indicator code (see table above) will change to "A", indicating that a batch can be added.

- A total of 50 kits may be entered into memory, depending on memory usage.

BLADE CHANGE/ADJUSTMENT PROCEDURE:

! CAUTION:

- **BE SURE UNIT IS UNPLUGGED BEFORE CHANGING BLADES OR BELTS.**
- **BLADES ARE EXTREMELY SHARP, HANDLE CAREFULLY TO PREVENT INJURY.**

Please refer to the drawing on page 16 for clarification on this procedure.

BLADE CHANGE:

To replace the blade, first remove the front cover, then remove the exit bushing. Next, remove one of the two screws holding the blade in place using and loosen the other one. Slide the blade out from under the remaining screw and washer. Replace blade, screw, and tighten. Reinstall exit bushing.

NOTE: If this is the first time the blade has been used, it may be used again by turning the blade around and using the other side. The cutting edge of the blade is offset from center, so that the blade may be used twice.

BLADE ADJUSTMENT:

To adjust the depth of the blade, locate the blade stop adjusting screw located on the rotary head and loosen the locking set screw.

Blade depth is properly set when the blade stops slightly deeper than the inside diameter of the tubing being cut.

Adjust the blade stop adjusting screw counter-clockwise to allow the blade to cut deeper, and clockwise to stop the blade sooner.

Once blade depth has been set, tighten the locking set screw.

NOTE: NEVER ALLOW THE BLADE TO GO PAST CENTER OF THE BUSHING.

FEED BELT REPLACEMENT:

Please refer to the drawing on page 15 for clarification on this procedure.

Loosen the set screws on the feed belt pulleys. Slide the pulleys and belts together from the spindles.

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Slide the new belt onto the pulleys first, then reinstall pulleys and belts together on spindles and tighten the set screws onto the flats of the spindles.

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

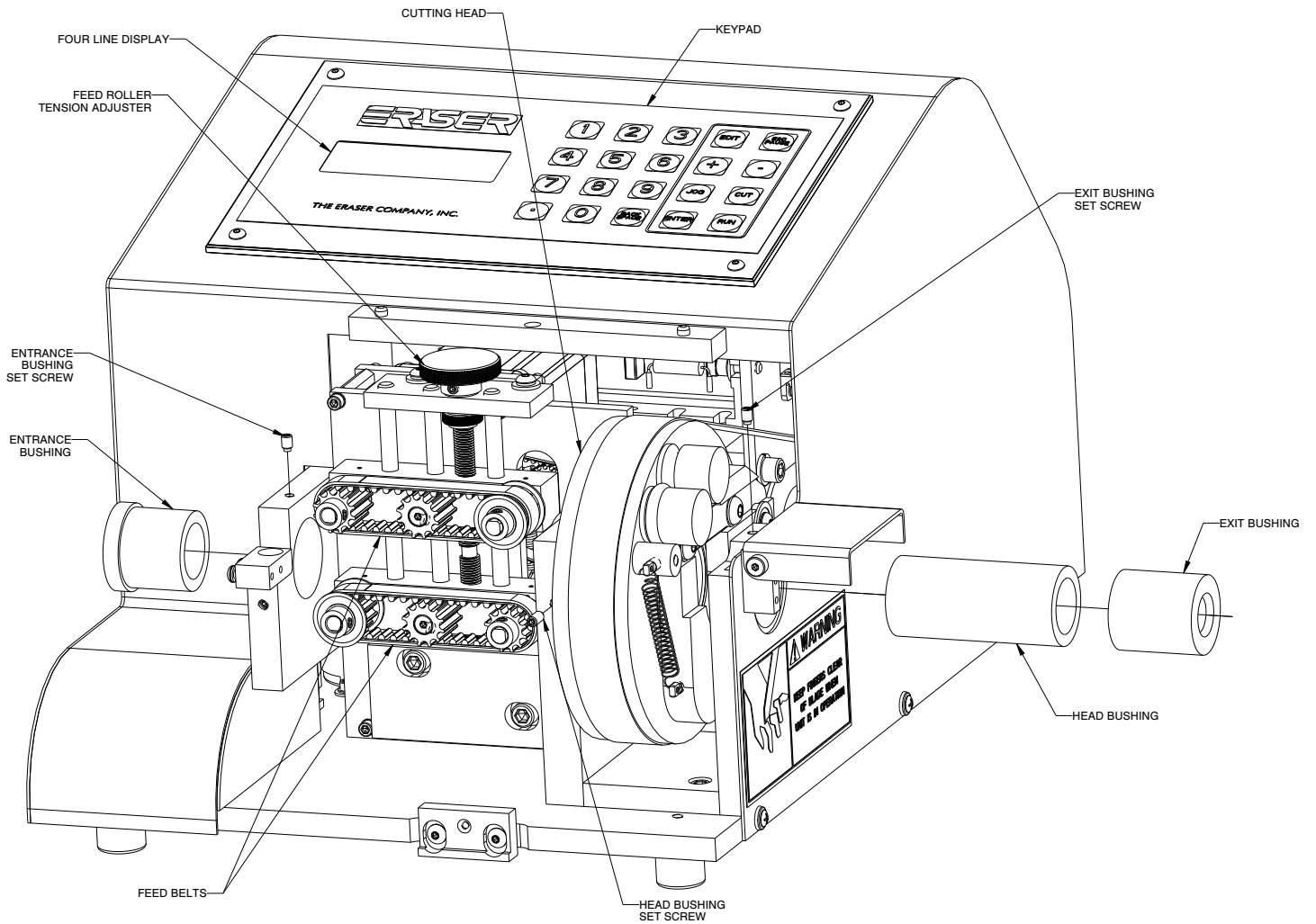
OPERATING MANUAL, OR WHICH HAS BEEN SUBJECTED TO MISUSE, NEGLIGENCE, OR ACCIDENT, OR WHICH HAS BEEN REPAIRED OR ALTERED BY ANYONE OTHER THAN THE ERASER COMPANY, OR WHICH HAS BEEN USED IN A MANNER OR FOR A PURPOSE FOR WHICH THE PRODUCT WAS NOT DESIGNED. TROUBLESHOOTING

TROUBLESHOOTING

PROBLEM	POSSIBLE CAUSE	POSSIBLE SOLUTION
BLADE STUCK IN THE CLOSED POSITION	Blade hitting the head bushing	Re-Install head bushing; See "Bushing Installation"
	Blade return spring worn or broken	Remove and replace worn or broken blade return spring; See "Replacement Parts"
MATERIAL NOT FEEDING PROPERLY	Belt feed not adjusted correctly	Re-adjust belt feed tension; See "Unit Operation"
	Blade stuck in the closed position	See above PROBLEM (this table): "Blade stuck in the closed position"
	Improper size bushings	Send in sample material to Eraser for proper bushing sizing
	Uneven Dereeler tension	Make certain dereeler is functioning properly
DISPLAY NOT FUNCTIONING	Unit not powered up	Make sure unit is plugged in & switched on
	Blown fuse	Replace with recommended fuse; See "Replacement Parts" NOTE: If fuse blows more than once, contact factory.
	Incorrect voltage supplied	Make certain the incoming voltage is correct and is not being influenced by large equipment connected to the same circuit
POOR QUALITY OF CUT OR NO CUT	Dull or chipped blades	See "Blade Change/Adjustment Procedure"
	Blade depth needs to be increased	Increase the blade depth. See "Blade Change/Adjusting Procedure"
	Improper Cut Speed	Reduce or increase Cut Rate; See "Programming Batches"
	Improper Cut Time	Increase Cut Time; See "Programming Batches"
	Head bushing not installed correctly	Re-Install head bushing; See "Bushing Installation"
INCONSISTENT CUT LENGTHS	Uneven Dereeler tension	At high feed speeds, a power assisted dereeler is recommended
	Belt feed tension is loose	Tighten the belt feed adjusting knob clockwise to increase tension
	Improper size bushings	Send in sample material to Eraser for proper bushing sizing

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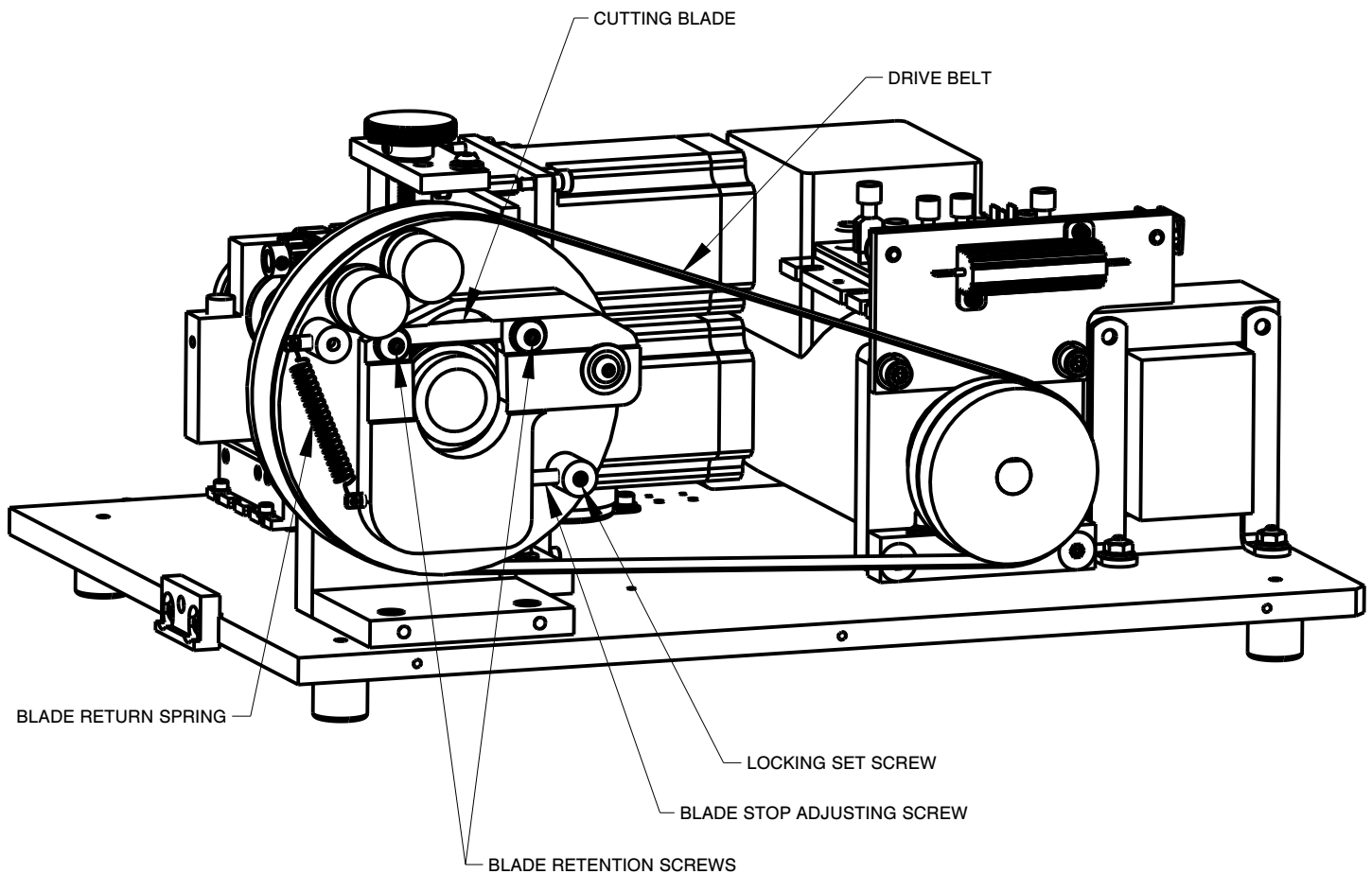
Material Bushing(s) Details



(SHOWN WITH COVER REMOVED)

Model WC601D Automatic Tubing Cutter

Cutting Head Blade Details



(SHOWN WITH COVER, HOUSING, GUARD, EXIT BUSHING AND EXIT BUSHING SUPPORT REMOVED)

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