



Operating Manual

Please Read Before Operating Unit



Model MMC200 Multi-Material Cutter

Please Call for Service or Spare Parts

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Always Moving Forward®



MODEL MMC200 MULTI-MATERIAL CUTTER



Production rate (in pieces per hour) at various feedrates						
Feedrate # / Length	1"	2"	6"	10"	20"	100"
0	5,792	4,129	2,009	1,327	718	154
1	6,058	4,411	2,571	1,935	1,196	295
2	6,963	5,354	3,363	2,613	1,679	435
3	8,042	6,495	4,359	3,410	2,207	578
4	8,366	6,843	4,689	3,781	2,549	707
5	8,533	7,024	4,858	3,992	2,801	827
6	8,731	7,240	5,062	4,192	3,032	943
7	8,822	7,339	5,157	4,279	3,180	1,049
8	8,822	7,339	5,157	4,279	3,237	1,140
9	8,822	7,339	5,157	4,279	3,251	1,183

SPECIFICATIONS

Maximum cut length 99,999" (or 99,999 cm)
 @ +/- 1% accuracy
 Minimum cut length 0.100" (2.5mm) or less
 @ +/- 0.02"(.05 cm) accuracy
 Maximum material size:
 Tubing..... 5/8" OD (15.8mm)
 Flat Material..... 3.94" (100mm) wide
 Wire 10 AWG (2.58mm) solid copper
 Tolerance 1% or better
 (dependent on material and feeding system)
 Batching.....up to 99 programmable batches

Power Requirements

Electrical 120V
 Consumption 200W
 Compressed air 40 to 90PSI
 Feed rates 10 selectable feed rates

MMC200 Feed belt speeds		
Feedrate #	inches/sec	cm/sec
0	6.6	16.8
1	9.9	25.2
2	13.2	33.6
3	16.6	42.1
4	19.9	50.5
5	26.5	67.3
6	29.8	75.7
7	33.1	84.1
8	36.4	92.5
9	39.7	100.9

ORDERING INFORMATION

AR7161..... 120V 60Hz

Optional Accessories

AR3801 (DE400) Vertical Dereeler
 AR0170 (DE700) Compensating dereeler
 TR1413 High speed steel lower blade
 TR1415 High speed steel upper blade

Replacement Parts

IR1205 Replacement guillotine(upper) blade
 IR1203 Replacement anvil (lower) blade
 PR0655 4A fuse (120V)

IMPORTANT SAFETY INSTRUCTIONS READ ALL 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

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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.

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

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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.

OPERATING INSTRUCTIONS

DO NOT OPERATE TOOL UNTIL YOU HAVE READ THOROUGHLY, AND UNDERSTAND COMPLETELY, ALL INSTRUCTIONS, RULES, ETC., ON THESE PAGES. THESE ARE IMPORTANT SAFETY INSTRUCTIONS AND SHOULD BE KEPT FOR FUTURE REFERENCE. CONTACT ERASER IF INSTRUCTIONS ARE NOT CLEAR.

When the machine is powered up, the "splash" screen will appear as shown:

**THE ERASER COMPANY
MMC200
(Firmware release date)**

SET-UP:

The MMC200 is supplied with one fixed, stationary blade (lower) and one moveable blade (upper).

Also included are three Allen wrenches; 1/8", 3/16" & 9/64"

! CAUTION: The MMC200 comes with the blades completely installed. These blades are intended for use on wire and tubing and are extremely sharp. Caution must be used when removing or installing these blades.

Place the unit on a sturdy workbench with the right side exit chute even with the right side of the bench. Short and long cut lengths will drop out the right side of the exit chute. Material collection bins can be placed to collect the cut material as it exits. If using the DE700 (or any other tensioning de-reeler) place the de-reeler to the left of the unit at least 24" from the entrance.

Insert the power cord into the IEC connector. Plug the unit into a 120V 60Hz mains supply. Connect clean, dry, compressed air at 40 to 90 P.S.I.

! CAUTION: The MMC200 should be operated in a well-ventilated open workspace. The unit is rated for continuous use and is protected by one fuse located in the IEC connector.

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

OPERATION:

Turn the MMC200 on using the I/O switch on the side of the unit. Do not turn the unit on and off repeatedly without waiting 5 seconds. Removing the guard during a run is not recommended. It will stop the stepper motors and the piece being processed will not be of the correct length.

Open the belt feed by turning the switch counterclockwise to disengage the belt feed. Rotate the knobs on the front of the unit to open the guides wide enough to accommodate the material being cut. Feed the material through the guides until it protrudes past the blades on the right side of the unit. Make certain the material is between the two sets of guides located on the left and right side of the belt feed.

Turn the switch clockwise to close the belt feed and engage the upper belt.

Material can be fed through the feed belts by using the manual control keys located on the keypad (the <JOG>, <+> and <-> keys). The <+> key jogs

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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. When using the <JOG> key, this 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 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.

PROGRAMMING:

START UP:

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

```

THE ERASER COMPANY
MMC200
(Firmware release date)
  
```

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 feedrate). 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 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 current maximum of 99 batches is reached.

Press the <ENTER> key to select the default batch, or type in a new 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 where that is incorrect—the values would not have to be entered again. 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 place. For example, 123456, 123.45 and 1234.5 are permissible but the value 1234.56 isn't allowed. The MMC200 is capable of 1% cut

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length accuracy.

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 MMC200 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" (25.4cm) is entered as the desired length, but the actual average cut piece measures 9.8" (24.9cm), a length compensation of +2% will increase the cut length by .200 (0.5 cm) to the desired 10" (25.4 cm). 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. An alternate, more accurate, method would be simply to enter the desired cut length, run several pieces, measure/calculate the average error and add/subtract the error to/from the targeted length as necessary (e.g. a desired 10.00" is entered into the length parameter; a measured 9.82" is cut. The operator compensates for this by adding 0.18" to the targeted cut length value. The new cut length value becomes 10.18").

After the quantity is entered, cut 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 belts. The units for acceleration are in revolutions per second² and the units displayed for speed is revolution per second. Press <+> or <-> to increment or decrement the feed rate value. 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 belts:

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 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	Length out of range
F	Too many decimal places

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In general, an **<ENTER>** key press advances to 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 back 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 comes up:

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 parameter. 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), a 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 decremented 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 a 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 a little as three key presses. After running a batch, the batch remains the default batch number until it is edited again. If the operator chooses to run the same length, quantity and rate on a number of different materials (e.g. several colors of the same wire), the operator would push any key as instructed in the screen above, press the **<RUN>** key at the batch select menu (the previous batch is the default at this point) and press the **<RUN>** key again to start the batch at the batch start menu. Alternatively, a different batch may be selected by pressing the key representing that batch's number (i.e. selecting a batch number that already exists in memory) and the pressing the **<ENTER>** key.

A number of events can interrupt a batch during processing and stop the machine. If the MMC200 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 MMC200 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**

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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.

When the guard is opened during a running batch, it is considered an exceptional event as well:

GUARD OPEN!

The machine will stop immediately. When the guard is closed, we again see the exceptional event recovery screen:

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

The MMC200 checks for the presence of material continually during a feed. If the wire or tubing is depleted during a feed, the operator will see:

MATERIAL OUT!

This screen remains until the operator reloads the machine with material. The count displayed on the subsequent batch run screen will display the correct count. At this point, the firmware displays the event recovery screen as in the two conditions above. The processing of material can be halted by a <ESC/PAUSE> keypress as well. When the operator presses the <ESC/PAUSE> key, the MMC200 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 MMC200 will continue to feed to 28" when the continue option is selected).

KIT FEATURE:

The MMC200 also has a kit feature. This allows a collection (or set) of batches to be run sequentially. A kit can be defined (for an example) to be batches 4 (one 6.0" pieces), 5 (three 8.0" pieces) and 6 (one 2.0" pieces) (not necessarily in that order). The MMC200 will then feed and cut all pieces in batch number 4, then batch 5, then batch 6 will run. The quantity of kits are entered when defining a kit. The default batch select screen below:

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

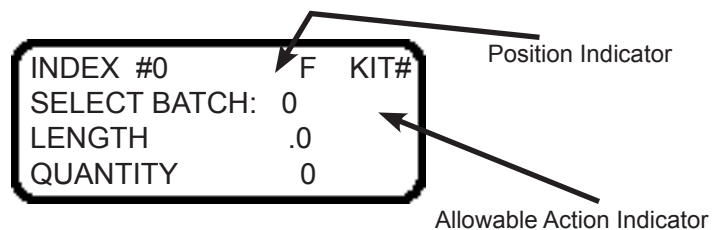
Allows the user to enter kit mode by a <.> key press. The screen will then go to the kit selecting screen:

SELECT KIT 1

NEXT NEW KIT #2

At this point, the operator has 3 options.

- 1) The operator selects a kit previously defined and assigned a number. The screen then moves on to the first kit editing screen, displaying the first batch in that kit [see kit editing screen below].
- 2) The operator can back out of the kit mode (back to first screen) by pressing the <ESC> key.
- 3) The operator can define a new kit. This looks similar to the kit editing screens except that a zero appears as the batch.



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The index is the “place holder” in the kit that stores the batch. The first batch in any kit is stored at index 0, the next position in the kit is index 1 and so forth. When the operator gets to this screen, the cursor is at the batch select parameter. The position indicator displays an “F”, meaning that this is the first batch in this kit (see table below for position indicator key). In addition, the allowable action indicator displays an “A”, meaning that a batch may be added (see table below).

POSITION INDICATOR	
Symbol	Definition
F	First batch in kit (index #0)
M	Middle batch
L	Last batch (last index in kit, can be deleted)
N	New batch (this status is temporary until this index is saved)

ALLOWABLE ACTION INDICATOR	
Symbol	Definition
E	Edit - Can change batch # at current index
D	Delete - Remove 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

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 enters 4 and then press the <ENTER> key.

```

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

The batch #, length and quantity are displayed for this batch and the allowable action indicator changes to a “D”, signifying that this batch number is removable (see table above for complete explanation). When the operator is satisfied he/ she has chosen the correct batch, press the <+> or <ENTER> key to move to the next index:

```

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” (a batch can be added to this location). The operator then presses the <5> key and then the <ENTER> key to place batch number five in the second place in this kit:

```

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

The location 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). Only the last batch in a kit may be deleted.

Also this batch number may be edited at this point. The cursor is at the select batch prompt and is ready to accept another batch number. The operator can accept this batch by, again, pressing the <+> or the <ENTER> key to advance to the next indexed location:

```

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

The position indicator displays an “N” (a new location is to be assigned) and the action indicator displays an “A” (a batch can be added). To enter the last batch in this kit, the operator presses the <6> and <ENTER> keys:

```

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

With this last batch, the example kit is completely defined at this point. The operator presses the <RUN> key to continue or the <ESC> key to go back to the kit select menu. A <RUN> key press brings:

```

QUANTITY: 0    KIT#1

ENTER 0 FOR MANUAL
OR # FOR AUTOMODE
    
```

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If the operator presses the **<ENTER>** / **<RUN>** key (and accepts "0" for the default quantity), the machine will start up in the manual mode (outputs 1 kit with a **<RUN>** key press and waits for another key press). If a quantity is entered, the machine will output the kits continuously until the given quantity is complete. The next screen:

```

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

A **<JOG>**, **<+>**, and **<->** key press will jog material.
A **<CUT>** key press will cut material.

The manual mode screen:

```

# OF KITS 0      KIT#1

PRESS ESC TO BREAK
PRESS RUN TO PROCEED
  
```

The top line keeps a running count of kits completed thus far and indicates which kit is processing. A **<RUN>** key press gives the kit run screen:

```

# OF KITS 0      KIT#1
CURRENT BATCH XX
PIECES LEFT    X
PRESS ESC TO STOP
  
```

The top line indicates the number of kits completed thus far and the identifying kit number. The second line indicates which batch number is currently executing (on smaller, faster pieces this screen will quickly update as the batch pieces are outputted). The third line displays the number of pieces left to complete the current batch. Once the kit is completed, the machine waits for input from the operator:

```

# OF KITS 1      KIT#1

PRESS ESC TO BREAK
PRESS RUN TO PROCEED
  
```

In our example above, a kit consists of a 6.0" piece, three 8.0" pieces and a 2.0" piece. Therefore, in the example above, 5 pieces would output and then wait for operator input from the keypad. The auto-

mode is quite similar to the manual mode with the exceptions that there is no pause between kits and that a running count of the kits left until completion is displayed:

```

# OF KITS 0      KIT#1
KITS LEFT       XX
CURRENT BATCH XX
PIECES LEFT    X
  
```

Where the kits left indicator displays kits to be processed. The quantity of kits must be entered each time it is called up and processed; it isn't retained from the last run.

The quantity of kits must be entered each time it is called up and processed as it is not retained from the last run.

Some notes on kit editing:

An existing kit can always be edited (i.e. add/delete or change batches within a kit). Batches always need to be defined before being entered into a kit. Only the batch at the last (greatest number) index location may be erased. You can use **<>** or **<BACKSPACE>** keys to quick jump to the first or last batches within a kit. To delete a batch from a kit with, say, 6 elements and the batch is located at the third position (index #2), will require the operator to reassign the batch in index #3 to index #2, reassign batch in index #4 to index #3, reassign batch in index #5 to index #4, and so on. A total of 84 kits may be entered into memory, depending on memory usage. 1148 batches total may be programmed into one kit (with no memory remaining to create another kit).

BLADE REPLACEMENT:

! CAUTION: Always remove compressed air supply and unplug electrical supply when replacing blades or servicing the unit.

NOTE: Whenever a blade or both blades are replaced follow the adjustment procedure.

- 1) Remove guard and chute assembly by removing the four thumbscrews.
- 2) Manually raise the upper blade to its highest position (if it is not currently there) by forcing the upper blade holders up.

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- 3) Using the 9/64" Allen wrench provided, remove the fixed lower blade by removing the three cap screws securing it to the lower blade holder.
- 4) Remove the cap screw securing the upper moveable blade to the right upper blade holder using the 3/16" Allen wrench provided. Rotate the upper blade holder block out to reveal the threaded hole in the blade (if the blade holder block does not rotate easily, try sliding it up and down while rotating). Insert the screw that was just removed into the threaded hole about 3 full turns. Use this screw to support the blade while removing the screw from the left upper blade holder (*see Specification Photo 1*). Rotate the left upper blade holder out and insert the removed screw back into the threaded hole.

! CAUTION: The blade is now free and may fall if not supported. Use the screws in the blade as handles to safely remove the blade (*see Specification Photo 2*). Move the blade back until it disengages from the knuckle key. Then move the blade down and out of the machine.
- 5) Replace the lower blade by securing it with the three fasteners using the 9/64" Allen wrench provided.
- 6) Replace the upper blade by inserting the cap screws into the threaded holes and using them as handles to raise the blade up into the machine so that it engages the knuckle key. Remove the left screw and swing the blade holder over the blade and insert the screw into the holder. Snug the screw with the 3/16" Allen wrench. **DO NOT TIGHTEN.** Remove the screw from the right side of the blade and swing the right blade holder over the blade. Insert the screw into the hole and tighten with the 3/16" Allen wrench provided. Tighten the left side blade holder. Make sure upper blade is centered with the lower blade.
- 7) Whenever a blade or both blades are replaced follow the adjustment procedure.
- 2) Tip the machine back onto its feet and loosen the two tension screws in the bottom of the lower blade holder with the 3/16" Allen wrench. Push the lower blade holder towards the center of the machine.
- 3) Lower the upper blade so that only the leading edge of the upper blade covers the lower blade.

! CAUTION: Ensure the upper blade does not hit the top of the lower blade as this will damage the upper blade.
- 4) Tighten the tension screw in the lower blade holder so the lower blade comes in contact with the upper blade. Raise the upper blade and slowly lower it down again to ensure the upper blade does not come down on top of the lower blade.
- 5) Lower the upper blade all the way down and tighten the left tension screw on the lower blade holder until the lower blade is snug against the upper blade.
- 6) Raise the upper blade and slowly lower it back down. There should be a smooth shearing action like a pair of scissors. If not, repeat steps 3 thru 5 again until you achieve a smooth shearing action.
- 7) Tip the machine onto its backside and tighten the two screws securing the lower blade holder with the 3/16" Allen wrench.
- 8) Return the machine to an upright position and recheck the shearing action of the blades.
- 9) Return the machine to service by installing the safety guard, air supply and power.

BLADE ADJUSTMENT:

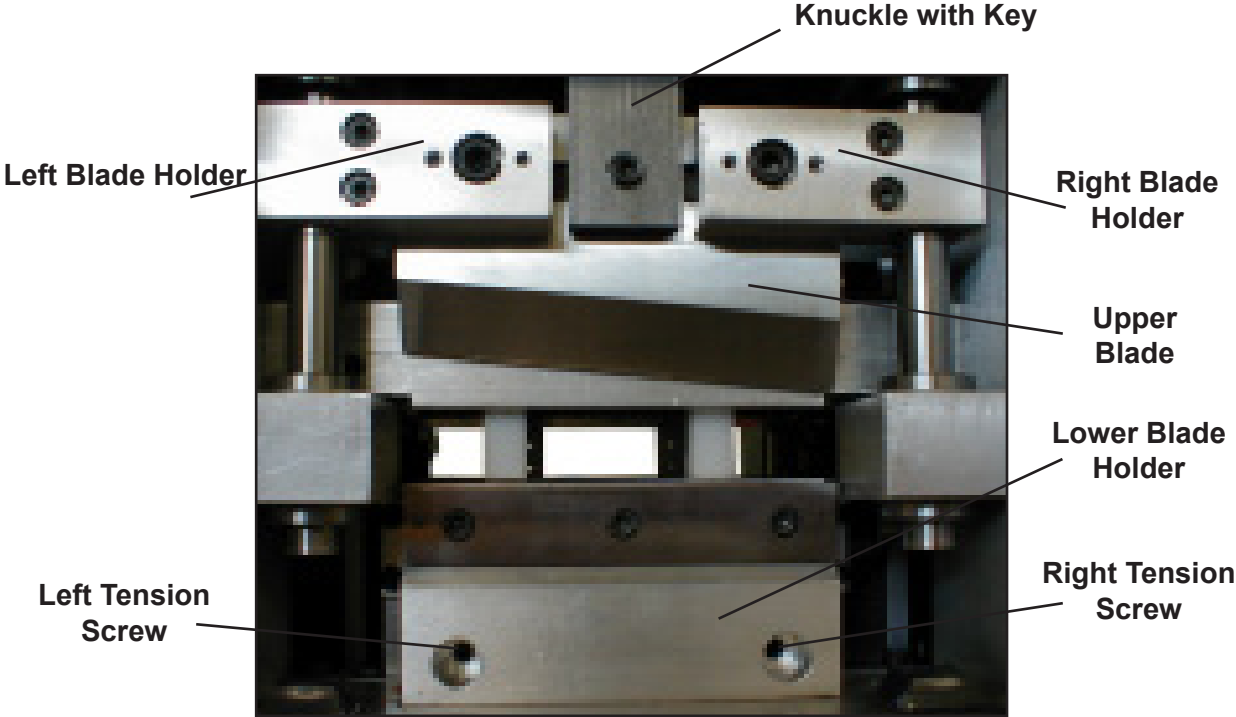
- 1) Tip the machine onto its backside and loosen the two large screws on the bottom of the machine with the 3/16" Allen wrench (*see Specification Photo 4*).

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TROUBLESHOOTING

Problem	Possible Cause	Possible Solution
Material does not feed	Feed System not closed	Close Feed System with Engage Belt Feed Switch
	Inadequate Air Supply	Check Air Supply per set up
	Guard Open	Install Guard
	Out of Material	Load Material
Display not functioning	Blown Fuse	Replace with recommended Fuse
No cut	Inadequate air supply	Check air supply per set up
	Material over specification	Check maximum size per specification
	Blades out of adjustment	See Blade Adjustment procedure
	Dull blades	Replace with recommended blades
Poor Cut	Dull or chipped blades	Replace with recommended blades
	Blades out of adjustment	See Blade Adjustment procedure
Erratic Cut Lengths	Uneven Dereeler Tension	Adjust tension on dereeler or use a power
		Assisted dereeler for high speeds

Model MMC200 Specification Photos

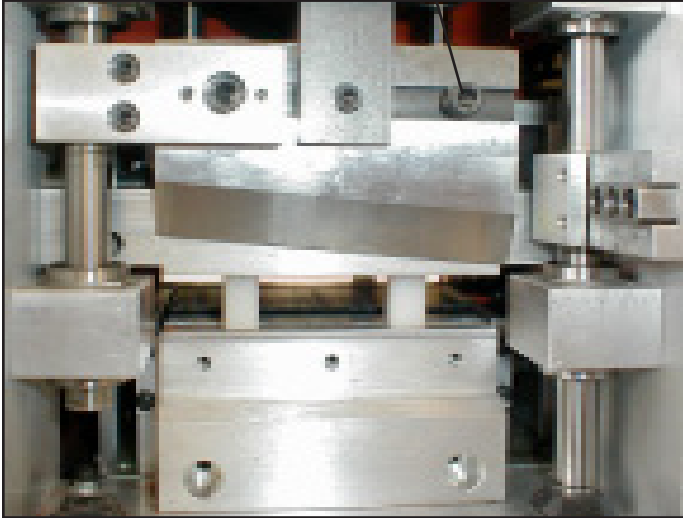


Specification Photo 1

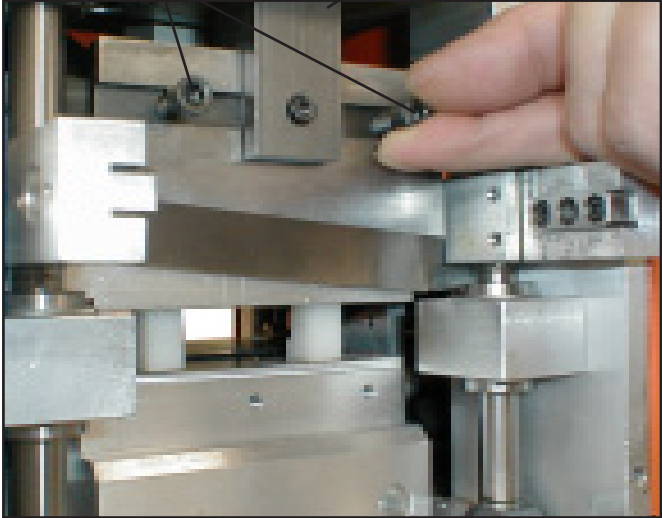
Replace screw to use as a Handle (repeat for left side)

Firmly grasp both cap screws and push blade off of the knuckle key, lower blade and remove from machine.

Knuckle with Key



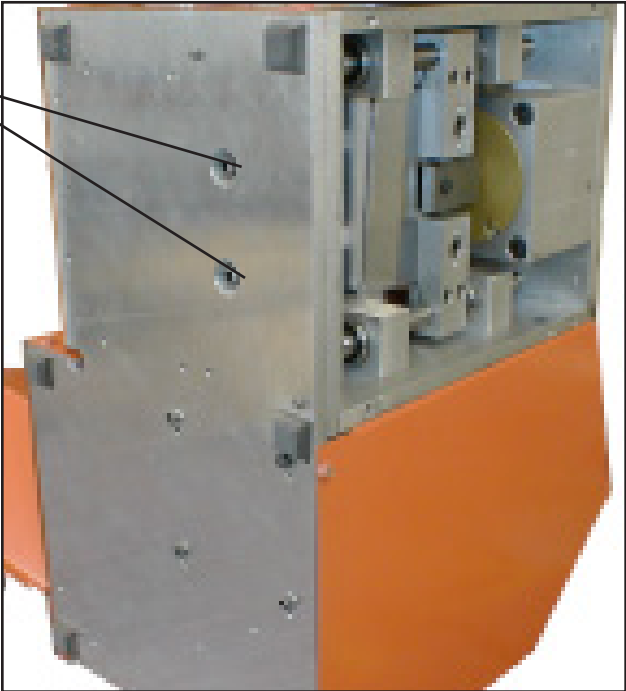
Specification Photo 2



Specification Photo 3

Model MMC200 Specification Photos

Lower Blade
Holder Screws



Specification Photo 4



Specification Photo 5

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