Always Moving Forward®

OPERATING MANUAL

Please Read Before Operating Unit

M700 MODULAR SERIES

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DECLARATION OF CONFORMITY

We hereby declare that the machine complies with all the relevant specifications of the following EU Directives:

EU Directive: 2006/95/EC Low Voltage
EC 60204-1 Revision / Edition: 5.1 Chg.: Date: 02/00/09 SAFETY OF MACHINERY - ELECTRICAL EQUIPMENT OF MACHINES - PART 1: GENERAL REQUIREMENTS
BS EN 60204-1 Revision / Edition: 06 Chg.: W/ CRGD Date: 05/31/10

Reference Specs
ISO/TR 14121-2:2012 Safety of machinery -- Risk assessment -- Part 2: Practical guidance and examples of methods
BS EN ISO 13849-1 Revision / Edition: 09 Chg.: W/ CRGD Date: 08/31/10 SAFETY OF MACHINERY - SAFETY-RELATED PARTS OF CONTROL SYSTEMS PART 1: GENERAL PRINCIPLES FOR DESIGN
BS EN ISO 13849-2 Revision / Edition: 12 Chg.: Date: 10/31/12 SAFETY OF MACHINERY - SAFETY-RELATED PARTS OF CONTROL SYSTEMS PART 2: VALIDATION
BS EN ISO 13850 Revision / Edition: 08 Chg.: Date: 09/30/08 SAFETY OF MACHINERY - EMERGENCY STOP - PRINCIPLES FOR DESIGN
BS EN ISO 4414 Revision / Edition: 11 Chg.: Date: 07/31/11 PNEUMATIC FLUID POWER. GENERAL RULES AND SAFETY REQUIREMENTS FOR SYSTEMS AND THEIR COMPONENTS

EU Directive: 2006/423/EC Machinery
BS EN ISO 12100 Revision / Edition: 10 Chg.: W/ CRGD Date: 01/31/11 SAFETY OF MACHINERY - GENERAL PRINCIPLES FOR DESIGN - RISK ASSESSMENT AND RISK REDUCTION

Reference Specs
BS EN ISO 13857 Revision / Edition: 08 Chg.: Date: 04/30/08 SAFETY OF MACHINERY - SAFETY DISTANCES TO PREVENT HAZARD ZONES BEING REACHED BY UPPER AND LOWER LIMBS
DIN EN 349 Revision / Edition: 08 Chg.: CRGD Date: 01/00/09 SAFETY OF MACHINERY - MINIMUM GAPS TO AVOID CRUSHING OF PARTS OF THE HUMAN BODY

EU Directive: 2004/108/EC Electromagnetic Compatibility (EMC)
EN 61000-6-2: 2005-08: Electromagnetic compatibility (EMC) - part 6-2: Generic standards: immunity for industrial environments
EN 61000-6-3: 2007-01, Electromagnetic compatibility (EMC) - part 6-3: Generic standards: Emission standard for residential, commercial and light -industrial environments

Reference Specs
EN 61000-4-2 Electromagnetic compatibility (EMC) - Part 4-2: Testing and measurement techniques - Electrostatic discharge immunity test
EN 61000-4-6 Electromagnetic compatibility (EMC). Testing and measurement techniques. Immunity to conducted disturbances, induced by radio-frequency fields (British Standard)
EN 61000-4-3 Electromagnetic compatibility (EMC) - Part 4-3 : Testing and measurement techniques - Radiated, radio-frequency, electromagnetic field immunity test
EN 61000-4-4 Electromagnetic compatibility (EMC) - Part 4-4: Testing and measurement techniques - Electrical fast transient/burst immunity test
EN 61000-4-5 ELECTROMAGNETIC COMPATIBILITY (EMC) - PART 4-5: TESTING AND MEASUREMENT TECHNIQUES - SURGE IMMUNITY TEST
EN 61000-4-11 Electromagnetic compatibility (EMC) - Part 4-11: Testing and measurement techniques - Voltage dips, short interruptions and voltage variations immunity tests"

DEFINITIONS AND LABELS

OPERATING MANUAL SYMBOLS

Take notice: Failure to heed instruction may result in injury, or even death

MODULE LABEL SYMBOLS

Warning: Cutting of Fingers or Hand, Blade

Warning: Pinch Point Hand Entanglement

Warning: Cutting of Fingers or Hand, Moving Part

Emergency Stop Button (Terminates power to unit)

Turn Knob Symbol

On/Off Button: I = On / O = Off

Ground Point Symbol

SAFETY PRECAUTIONS

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.

! Note: Not following the precautions and instructions in this manual will impair the protection of the operator/user and the equipment.

! Note: Any time the M700F (Feeder Module) is used, the operator/user must ensure that the material path (both downstream and upstream modules) is free of any obstructions. These areas may be a hazard and should be managed accordingly.

MECHANICAL

! DO NOT OPERATE UNIT WITHOUT GUARDS IN PLACE OR WITH DAMAGED GUARDS.
! DO NOT DEFEAT OR BYPASS ANY OF THE SAFETY FEATURES.
! DO NOT PLACE FINGERS OR APPENDAGES NEAR MOVING PARTS.
! NEVER ALTER OR MODIFY THE MACHINE IN ANY WAY.

ELECTRICAL

! ALWAYS UNPLUG UNIT FROM POWER SUPPLY PRIOR TO ANY MAINTENANCE.
! DO NOT RUN UNIT ON INCORRECT VOLTAGE SETTING.
! 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.
! NEVER ALTER OR MODIFY THE MACHINE IN ANY WAY.

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.
Use face or dust mask if cutting operation is dusty.

DO NOT MOVE ASSEMBLED UNITS

Always disassemble units prior to moving units. Keeping them connected during moving may harm interface connector.

REMOVE ADJUSTING KEYS AND WRENCHES

Form a habit of checking to see that keys and adjusting wrenches are removed from the machine before turning it on.

KEEP WORK AREA CLEAN

Cluttered areas and benches invite accidents. Always leave at least 12" (30.5cm) of space around all sides, and on top of unit.

DO NOT 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 (This is not an all-inclusive list.)
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. Wear protective hair covering to contain long hair. Non-slip footwear is recommended.
DO NOT OVERREACH
Maintain proper footing and balance at all times.
MAINTAIN BLADES WITH CARE
Keep blades sharp and clean for optimal performance. Follow instructions for changing blades and 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 a copy of the operating manual within reach of the machine. The pneumatic powered cutters require 90 psi of air. Proper training on pneumatic equipment is required.
USE RECOMMENDED ACCESSORIES ONLY
Consult the operation 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. Using improper tools such as hammers or leveraging tools can overtighten and destroy threaded parts; also may cause tools to slip or break causing hand injury.
ALL REPAIRS SHOULD BE PERFORMED BY AN ERASER COMPANY REPRESENTATIVE ONLY
Unauthorized disassembly of the machine will void Eraser's warranty. Anything that is done to modify the machine in any way to override safety, will void all warranty. Covers may not be removed in any way, otherwise the warranty will be null and void.

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 Company 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 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.

QUICK START INSTRUCTIONS

1. Install the proper size bushings for the material being processed.
2. Open clamping latch on rear, align module and close clamping latch. Repeat for as many modules as necessary.
3. Insert Endcap into last module using same technique as step 2.
4. Feed material from left to right through the bushings and adjust feed belts as needed (if applicable).
5. Close the door to the Feeder and/or cutter module.
6. Plug in and turn on power to the Control Module.
7. Program length, quantity, feed rate, cut rate and/or cut time as needed.*
8. Make a manual cut to check cut quality and make adjustments if needed.
9. If feeding manually, advance material to length stop.
10. If using the Feeder Module, press run and check length of first piece and utilize the feed adjust if needed.

*See programming instructions

M700 MODULAR SERIES

CONCEPT:
The M700 Modular Series is a compact table top system designed to cut various wire and tubing material to repeatable accurate lengths. A variety of swappable M700 modules, including a Control Module, Feeder Module and a number of cutting modules, are designed to quickly and seamlessly connect and work together as either an automatic or manual material processing system.

SAFETY FEATURES:
- Emergency Stop Button; located on Control Module
- Latching Safety Doors with Coded Sensors; located on all processing modules
- Transparent Module Windows; located on all processing module doors
- Out of Material Sensor; located inside Feeder Module
- System Endcap; installed into last connected module's interface connection
- Grounded power cord; supplied with Control Module

SYSTEM TECHNICAL DATA:

Material Specifications:*
Minimum system material size:
1/64" (0.4mm) OD
Maximum system material size:
1-1/8" (28.6mm) OD
Minimum feed/cut length: 0.100" (.254cm)
Maximum programmable feed/cut length:
99,999.0 (in or cm)
Maximum programmable quantity:
99,999 pieces

Feed/Cut Tolerances:*
Material Length
Under 2" (5.08cm): ±0.010 (±0.025cm)
Over 2" (5.08cm): ±1%
Squareness of cut: ±2°
**Specification is material dependent and/or dependent on de-reeling system*

System Dimensions (L x W x H):
Control Module + 1 module: 16" x 16.75" x 8" (40.64cm x 42.55cm x 20.32cm)
Control Module + 2 modules:16" x 24" x 8" (40.64cm x 60.96cm x 20.32cm)

Operating Environment:
Operating Temperature: 32°F - 104°F (0°C - 40°C)
Relative Humidity: @ 90%: 32°F - 70°F (0°C - 21°C) @ 50%: 70°F - 104°F (21°C - 40°C)
Airflow: Unobstructed and well ventilated

Intermittent Usage:
This system has no minimum intermittent duty cycle limitations.

SYSTEM PERFORMANCE:
Supported Modes
Continuous Mode
Single Piece Flow Mode

Jobs/Batches:
Up to 100 programmable Jobs; 1-20 Batches per Job

Feed/Cut Parameters:
Feed Rates:10 selectable rates (0-9)
Cut Rates:10 selectable rates (0-9)
Cut Time: 0.2 seconds - 3.0 seconds

M700 CONTROL MODULE (AR3300)

OVERVIEW:
The M700 Control Module (M700C) contains the system's user interface and also provides the power and the distributed intelligence to all downstream modules connected to it. The M700C can be used with the Feeder Module alone, a cutter module alone, or with both the Feeder Module and a cutter module for automated material processing.

TECHNICAL DATA:

Programmable Material Specifications:
Minimum programmable feed length: 0.100" (.254cm)
Maximum programmable feed length: 99,999.0 (in or cm)
Maximum programmable quantity: 99,999 pieces

Module Dimensions (L x W x H):
16" x 9.5" x 8"
(40.64cm x 24.13cm x 20.32cm)

Module Weight: 14.5lb (6.6kg)

PERFORMANCE:
Supported Modes
Continuous Mode
Single Piece Flow Mode

Jobs/Batches:
Up to 100 programmable Jobs;
1-20 Batches per Job

Feed/Cut Parameters:
Feed Rates: 10 selectable rates (0-9)
Cut Rates: 10 selectable rates (0-9)
Cut Time: 0.2 seconds - 3.0 seconds

POWER:
The system employs auto range selection and operates over the input power range of 100–240VAC at 50/60Hz.

FUSES:
The system uses (2) 6.3A 5x20mm fuses. The M700C ships with fuses already installed.

Fuse Replacement:
1. Locate the fuse box on the rear side of the M700C unit.
2. Using a small flat head screwdriver carefully release the fuse box latch.
3. Using the same screwdriver, carefully remove the fuse cartridge, and replace both fuses.

OPTIONAL PARTS
Foot Switch: IR3323
Job Manager Application: IR3325

SETUP AND OPERATION:
Plug in the M700C unit to power source.
Turn on the unit using power rocker switch located on the back of the unit.
When power is on, the screen will display the Main Menu (after a brief Eraser Company splash screen).

Splash Screen

```
THE ERASER COMPANY
M700
FIRMWARE VX.XX.XX
```

Main Menu (1-4)

```
1. System Status
2. Manual Mode
3. Run Job
4. Create/Edit Job
```

Pressing ENTER will display the remainder of the Main Menu options:

Main Menu (5-6)

```
5. Supervisor
   password settings
6. Change Defaults
```

NOTE: Pressing the ESC key will always return operation to the previous menu screen. Repeating this action will lead back to the main menu with the applicable number of key presses.

#1 System Status:

The System Status menu option is used for checking the overall status of the modular system.

Pressing the 1 key (from the Main Menu) will display the System Status menu screen:

System Status Menu

```
Modules: FST
Door: CLOSED
Material: PRESENT
```

Modules: Informs the user which module(s) are in service and currently connected to the M700C.

Example:
F = Feeder Module
ST = Small Tube Module
FST = Feeder and Small Tube Modules

NOTE: Currently, any single module or a feeder and any cutter module combination are the only permissible configurations accepted by the system.

DOOR: Informs the user the status of all system safety interlocks by displaying any of the following:
CLOSED– All safety interlocks are in place and the system is ready to use.

FEEDER OPEN– Feeder Module door switch is open; close door to operate.

CUTTER OPEN– Attached cutter module door switch is open; close door to operate.

ENDCAP OPEN– Downstream Endcap is not installed on the last module; install Endcap to operate.

EMERGENCY STOP– Emergency stop switch is activated; close switch (pull up) to operate.

Material: Informs the user if material is currently loaded in the machine by displaying one of the following:
EMPTY– No material loaded in the machine.
PRESENT– Material is loaded into the machine.

Additionally, pressing ENTER (from the System Status Menu) will display the current firmware version loaded onto the connected modules:

System Status Menu: Module Firmware

```
Module Firmware
Interface: VX.XX.XX
Feeder: VX.XX.XX
Cutter: VX.XX.XX
```

ESC back to the System Status menu or further to the Main Menu.

#2 Manual Mode:

The Manual Mode menu option is used when manual material processing is desired without utilizing a preprogrammed job. The Manual Mode menu allows the user to modify the Feed and Cut parameters.

NOTE: All doors must be closed and the downstream Endcap installed for the system to function.

Pressing the 2 key (from the Main Menu) will display the Manual Mode menu screen:

Manual Mode Menu

```
JOG Feed Material
CUT Cut Material
EDIT Change Params
LENGTH 0.000in
```

JOG: Press Jog to feed material to a predetermined length.

NOTE: Pressing the + key will advance the material incrementally as displayed in the LENGTH line and pressing the – key will retract the material.

CUT: Press CUT to make a manual cut (using default cutting parameters). Pressing the CUT key will also zero out the LENGTH line.

The Edit Feed & Cut screen allows the user to set or change the default parameters for the JOG and CUT settings. These parameters can be changed at any time. The last entered values will be stored, even when the unit is powered off.

Pressing the EDIT key will display the Edit Feed & Cut screen:

Manual Mode Menu; Edit Feed & Cut

```
JOG Length > 1.000in
Feed Rate 3
Cut Rate 5
Cut Time 1.0sec
```

Jog Length: This function adjusts the feed length value associated with the JOG key. Using the keypad, enter a value from 0.1 to 99,999. The Units can toggled (and converted) between inches and centimeters by pressing the + or – key. Press ENTER to advance to the next line.

NOTE: See instructions under #4 Create/Edit Job for information on Feed Rate, Cut Rate and Cut Time. The Jog Length parameter is not applicable when a Feeder Module is not connected to the system. Similarly, the Cut Rate and Cut Time parameters are not applicable when a pneumatic powered Module is connected to the system.

ESC back to the Manual Mode menu or further to the Main Menu.

#3 Run Job:

The Run Job menu option is used to run preprogrammed jobs. When running a Job, it is recommended to make a manual feed and/or cut (as per instructions under #2 Manual Mode) prior to running the Job to ensure the first piece of processed material returns the desired length.

NOTE: All doors must be closed and the downstream Endcap installed for the system to function.

Pressing the 3 key (from the Main Menu) will display the Run Job menu screen:

Run Job Menu

```
Enter Job:_
Job [001] xxxxxxxxxx
Job [002] xxxxxxxxxx
Job [003] (empty)
```

At this screen the user may scroll through the list of jobs using the + and – keys to page down and page up respectively.

Using the keypad, enter a preprogrammed Job number (1-100) and press ENTER.

Once a Job has been selected to run, the Job Status screen will display the job number, units and the job name. Additionally, the first and last programmed Batch (B) along with their respective Lengths (L) and Quantities (Q) will be displayed:

Run Job Menu; Job Status

```
Job [xxx] Units [in]
[xxxxxxxxxxxxxxxx]
BXX L:X.XXX
```

```
Q:XXXXX
BXX L:X.XXX
Q:XXXXX
```

To run the Job, press RUN.

While a Job is running, the Running Status screen is displayed.

Run Job Menu; Running Status

```
Job [xxx] Running
[xxxxxxxxxxxxxxxx]
Batch: X/X
Count: XXXXX/XXXXX
```

The Running Status screen will show the following statuses: Running, Paused, or Complete.

Also displayed are the current Batch number and the Count of how many pieces have been processed of the programmed quantity (ex. 1/5 = the first of 5 programmed pieces). If the Job is set up for Continuous Mode, the Count will not display a programmed quantity (ex. 1/Cont. = the first of an indefinite number of pieces).

While running, the Batch field will alternate with a real time Feed Length readout. Note: If the Job is programmed in such a way that doesn't allow for enough time for the Feed Length to display, this readout may not be displayed.

When a Job is paused, the Paused Status screen is displayed:

Run Job Menu; Paused Status

```
Job [xxx] Paused
RESUME PRESS RUN
Batch: X/X
Count: XXXXX/XXXXX
```

NOTE: To pause a Job before it is completed, press the ESC key and it will pause the Job after finishing the piece in process.

To resume the Job, press the RUN key. ESC will not stop the machine from feeding or cutting mid-process.

To stop the machine for safety reasons press the Emergency Stop Button. This will immediately stop all feeding or cutting in process.

When a Job is complete, the Complete Status screen is displayed:

Run Job Menu; Complete Status

```
Job [xxx] Complete
[xxxxxxxxxxxxxxxx]
BXX
Count: XXXXX/XXXXX
```

If desired, the user can press RUN to repeat the same Job or ESC back to the Run Job menus or further to the Main Menu.

#4 Create/Edit Job:

The Create/Edit Job menu option is used to create new preprogrammed Jobs and Batches or edit existing preprogrammed Jobs and Batches.

Batches: A Batch contains the information for measuring and cutting identical sets of material. It consists of a Length and a Quantity as well as other feed and cut parameters (described ahead in further detail in the #4 Create/Edit Job section).

Jobs: A Job is a set of up to 20 Batches. Up to 100 Jobs can be programmed on the M700C. A Job that does not contain any Batches is called an Empty Job.

Pressing the 4 key (from the Main Menu) will display the Create/Edit Job menu screen. Note: If the Supervisor Password setting is enabled, the Enter Supervisor Password screen will display first:

Enter Supervisor Password

```
Enter Password:
<*****>
```

The default supervisor password is 12345 (to change the password or to toggle this feature on/off, see instructions under **#5 Supervisor Password Settings**).

After the password has been entered (or if the password setting is not enabled), the Create/Edit Job menu screen is displayed:

Create/Edit Job Menu

```
Enter Job:_
 Job [001] xxxxxxxxxx
 Job [002] xxxxxxxxxx
 Job [003] empty
```

The scrolling feature is available on this screen as well, using the + and – keys to page up or page down respectively. Each Job is listed in numerical order and will display the beginning of the Job name. The "Enter Job" line will remain at the top, even if the user is scrolling through the jobs. Initially, the list will scroll to display the last two programmed jobs and the first empty Job so that the user can easily identify the next empty Job number. If a Job is empty, the name will display "(empty)". If a Job was created without a name, the name field will be left blank. A user may create/edit any Job.

Using the keypad, enter a Job number (1-100) and then press ENTER to create or edit the Job.

Once a Job has been selected to be created or edited, the Job Status screen will display the job number, units, job name and the first and last programmed Batch:

Create/Edit Job Menu; Job Status

```
Job [xxx] Units [in]
[xxxxxxxxxxxxxxxx]
BXX L:X.XXX
 Q:XXXXX
BXX L:X.XXX
 Q:XXXXX
```

The Job Number is not available for edit. The Units can toggled (and converted) between inches and centimeters by pressing the + or – key. The Job Name is available for input/edit using the alpha numeric keys on the keypad: (2 = A B C, 3 = D E F, 4 = G H I, 5 = J K L, 6 = M N O, 7 = P Q R S, 8 = T U V, 9 = W X Y Z)

Once the Units and Job Name have been entered, press ENTER to display the Batch Length & Qty screen:

Create/Edit Job Menu; Batch Length & Qty

```
Batch xx
Length >x.xxxin
Qty xxxxx
```

This screen is for selecting the length and quantity needed for the first Batch in the Job that is being created or edited.

LENGTH: Input the desired length for the Batch and press ENTER. The cursor will advance to QTY.

QTY: Input the desired quantity of the chosen length.

NOTE: Leaving a "0" in the QTY (quantity) field in Batch 1 only, will act as "Continuous Mode," i.e., the system will process continuously until either the Feeder Module senses the material has fully been dispensed, or the user manually stops the Job. Entering a "1" in the QTY field in any batch will act as "Single Piece Flow Mode," i.e., the system will process a single piece of material at a time and is activated by

pressing the RUN key (or optional foot pedal).

Once the Length and Qty have been entered, press ENTER to display the Edit Feed & Cut screen:

Create/Edit Job Menu; Edit Feed & Cut

```
Feed Rate >3
Feed Adjust 0.0%
Cut Rate 5
Cut Time 1.0sec
```

Feed Rate: This function adjusts the speed which the material will be fed through the machine. Using the keypad, enter a number 0-9 to select a feed rate for feeding the material (see chart below). The + or – keys can also be used to change the value. Press ENTER to advance to the next line.

M700F Linear feed Rate:

Feed Rate	in/sec	cm/s
0	4.3	10.9
1	8.7	22.1
2	13.0	33.0
3	17.4	44.2
4	21.7	55.1
5	26.1	66.3
6	30.4	77.2
7	34.8	88.4
8	39.1	99.3
9	41.3	104.9

Feed Adjust: This function adjusts the length (as a plus or minus percentage) of each processed piece of material to make the feeding of material more accurate, which could vary depending on the type of material. Inputting a value will be recognized as a positive value. To input a negative value, press the – key prior to inputting the desired value. The accepted Feed Adjust range is between -10.0% to +10.0%. Press ENTER to advance to the next line.

NOTE: Feed Rate and Feed Adjust parameters are not applicable when a Feeder Module is not connected to the system.

Cut Rate: This function adjusts the speed or RPM of the rotary cutter head on an applicable cutter. Using the keypad, enter a number 0-9 to select a speed. The + or – keys can also be used to change the value. Press ENTER to advance to the next line.

Cut Time: This function adjusts the dwell time that the rotary cutter head will rotate on an applicable cutter. Using the keypad, enter a value from 0.2 to 3.0 to determine the length of time, in seconds, needed to cut using the chosen Cut Rate.

NOTE: The needed Cut Rate and Cut Time adjustments will vary depending on the material being processed and will directly affect cut quality. The Cut Rate and Cut Time parameters are not applicable to pneumatic powered modules.

Once the Feed and Cut parameters have been entered, press ENTER to display the Batch Length & Qty screen (again):

Create/Edit Job Menu; Batch Length & Qty

```
Batch xx
Length >x.xxxin
Qty xxxxx
```

Only input additional Batch data if more than one Batch is desired. Leaving a "0" in the LENGTH or the QTY field in the Batch 2 or higher screen and then pressing ENTER will end the Job at that Batch. The screen will display Job and Batches Saved! and will return to the Enter Job Menu (shown below).

If additional batches are desired, proceed to input the parameters using the same method as the first Batch. When the desired number of batches has been entered, leave a "0" in the LENGTH or the QTY field in the subsequent Batch and press ENTER to end the

Job at that Batch.
The screen will display Job and Batches Saved! and will return to the Enter Job Menu:

Job and Batches Saved!

ESC back to the Main Menu.

#5 Supervisor Password Settings:

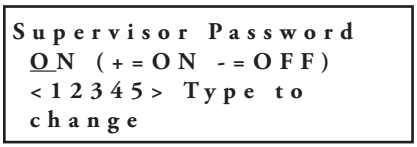
The Supervisor Password Settings menu option is used to enable/disable supervisor password protection and to change the supervisor password.

Pressing the 5 key (from the Main Menu) will display the Enter Supervisor Password screen:

Enter Supervisor Password

After the password has been entered, the Supervisor Password Settings menu screen is displayed:

Supervisor Password Settings Menu



This screen allows the user to toggle the supervisor password ON or OFF by pressing the + or – key. Notice that the cursor starts under the "O" for ON. If the user toggles the password from ON to OFF, the third and fourth lines become non-applicable and disappear. Pressing ENTER will briefly display the Password Disabled! screen and then return back to the Main Menu.

Password Disabled!

If a user toggles the password from OFF to ON, pressing ENTER will advance the cursor to the next row where a new password may be entered. Only numeric and function keys (., EDIT, +, –, JOG, CUT and RUN) are valid for the password. Use the BACK SPACE button to correct any mistakes during the process. Pressing ESC exits back to the Main Menu without saving. Once a new password has been entered, pressing ENTER will briefly display the Password Saved! screen and then return back to the Main Menu.

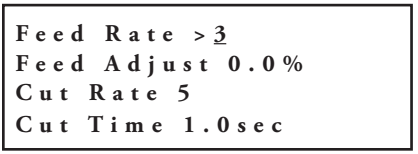
Password Saved!

#6 Change Default Settings

The Change Default Settings menu option is used to set the default parameters for programming Jobs and Batches.

Pressing the 6 key (from the Main Menu) will display the Change Default Settings menu screen:

Change Default Settings Menu



The default parameters are displayed above. A user can edit each parameter by entering a new value and pressing the ENTER key to save and move to the next line.

NOTE: Saved Manual Mode parameters are unaffected by changing the default settings. ESC back to the Main Menu.

M700F FEEDER MODULE (AR3400)

OVERVIEW:

The M700 Feeder Module (M700F) feeds material to precise lengths for use as a standalone feeding/measuring device or in conjunction with M700 cutting modules for automated material processing. The Feeder Module can also be used to feed compatible user-specific material processing setups. The M700F must always be connected directly to the Control Module when in service.

TECHNICAL DATA:

Material Specifications:*

Minimum material size: 1/64" (0.4mm) OD
Maximum material size:1-1/8" (28.6mm) OD
Minimum feed length: 0.100" (.254cm)
Maximum feed length: 99,999.0 (in or cm)
Maximum programmable quantity:
99,999 pieces

Feed Tolerances:*

Material Length
Under 2" (5.08cm): ±0.010 (±0.025cm)
Over 2" (5.08cm): ±1%

*Specification is material dependent and/or dependent on de-reeling system

Module Dimensions (L x W x H):

16" x 7.25" x 8"
(40.64cm x 18.42cm x 20.32cm)

Module Weight:

21.25lb (9.6kg)

PERFORMANCE:

Supported Modes

Continuous Mode
Single Piece Flow Mode

Jobs/Batches:

Up to 100 programmable Jobs; 1-20 Batches per Job

Feed Parameters:

Feed Rates:10 selectable rates (0-9)

POWER:

Voltage supplied by the Control Module

REQUIRED PARTS:

Custom Bushings: (Material sample is required to properly size bushings)

OPTIONAL PARTS:

Material Length Stop: IR3324

REPLACEMENT PARTS:

Feed Belts: PR1029

BUSHING INSTALLATION:

1. Turn off machine and disconnect from power supply.
2. If necessary, decouple the Feeder Module from the system.
3. Choose the proper size bushing set for the material to be processed.
4. To install the entrance bushing, slide the bushing from left to right into the upstream entrance bushing sleeve. Ensure the bushing is fully inserted and then tighten the set screw.
5. **Control/Feeder setup only:** To install the exit bushing, slide the bushing from right to left into the downstream exit bushing sleeve. Ensure the bushing is fully inserted and then tighten the set screw.

   Control/Feeder/Cutter setup: The Feeder Module exit bushing must be removed if a cutting module is added to the setup. If using a cutting module, the cutting module's upstream cut bushing will properly align with the Feeder Module once coupled.

MODULE ASSEMBLY:

1. Turn off machine and disconnect from power supply.
2. Open the clamping latch on the backside of the Control Module by first loosening the thumb screw and then pulling the latch out and away from the module.
3. Align the Feeder Module's upstream interface connection (alignment pins and electrical connector) with the Control Module's downstream interface connection, and gently slide the Feeder into the Control Module so that it just begins to engage.

4. On the backside of the Control Module, push the clamping latch back in toward the module and it will draw the Feeder Module into the Control Module.
5. Once the clamping latch is in the closed position, fasten the clamping latch's thumb screw to the rear panel of the Control Module.
6. Install the Endcap into the Feeder Module's downstream interface connection using the same technique. If a cutter module is also being used, install the Endcap into the cutting module's downstream interface connection. Note: The Endcap (supplied with the M700C) must always be installed into the last connected module's downstream interface connection.

NOTE: All doors must be closed and the downstream Endcap installed for the system to function.

BELT ADJUSTMENT:

1. Unlock the adjustment knob mechanism by turning the locking set screw (located in the block directly below the knurled knob) counter clockwise (CCW).
2. Turn the adjustment knob CCW to open the belts enough to easily fit material through
3. Feed material through the entrance bushing, under the out of material sensor, between the belts and into the next available bushing.
4. Tighten belts by turning the adjustment knob clockwise (CW) until contact is made with the material and the belts exert enough pressure on the material so that the material cannot be pulled back out without significant force. Be careful to not over tighten the belts because this may distort or harm the material.
5. Turn the locking set screw CW to lock the adjustment knob mechanism in place.

NOTE: If an excessive amount of adjustment is required, the provided T-Handle Allen Wrench may be inserted through the top of the adjustment knob to make course adjustments easier to perform.

BELT REPLACEMENT:

1. Turn off machine and disconnect from power supply.
2. Unlock the adjustment knob mechanism by turning the locking set screw (located in the block directly below the knurled knob) counter clockwise (CCW).
3. Loosen the set screws on the feed belt pulleys.
4. Slide the pulleys and belts together from the spindles.
5. Slide the new belt onto the pulleys first then reinstall pulleys and belts together on spindles.
6. Tighten the set screws onto the flats of the spindles.

CARE AND MAINTENANCE

Servicing/Setup:

Use only supplied/specified tools. Use of improper tools can result in damage to the equipment, operator and/or technician.

Preventative Maintenance:

! NEVER LAY A MODULE UNIT ON ITS SIDE, RESTING ON ITS MATING TABS OR CONNECTORS.

- Always disconnect machine from power (and air if applicable) while servicing.
- Always keep machine clean and free of dust and debris.
- Ensure blades and belts are in good condition and repair where applicable.
- Ensure all electrical cords are in good repair and electrical connections are solid.
- Ensure proper alignment of all bushings, moving parts, and additional modules.

- Ensure proper air pressure is supplied when applicable.
- Inspect machine routinely for excessive wear and damage.

Lubrication:
No lubrication is necessary. All moving components are pre-lubricated. Lubricating or over lubricating of modules may present hazards, such as debris build up, component failure, and slip hazards.

Cleaning:
Wipe the unit with a damp cloth and mild soap. Avoid contact with the IEC connection, or any of the module interface connectors.

Disposal:
Dispose of units in accordance with local laws and regulations.

TROUBLESHOOTING GUIDE

PROBLEM	PROBABLE CAUSE	POSSIBLE SOLUTION
Display not functioning	Blown fuses	Replace with recommended fuses
	Unit not plugged in or powered up	Plug in unit and turn power switch on
	Incorrect voltage supplied	Make certain the incoming voltage is correct
Blade stuck in the closed position	Blade hitting a bushing	Reinstall bushings
Material doesn't feed properly	Belt feed not adjusted correctly	Tighten the belt feed adjusting knob clockwise to increase tension
	Bushings too small for material	Reinstall proper sized bushings
Poor quality of cut or no cut	Dull or chipped blades	Dull or chipped blades must be replaced
	Bushings not installed correctly	Reinstall bushings
	Incorrect rotary cutter head speed	Readjust cut rate and/or cut time
	No air supply to guillotine cutter	Connect 90 psi air supply
	Low air supply to guillotine cutter	Connect 90 psi air supply
Erratic cut lengths	Material is not feeding properly	Make sure dereeler is used or material is unobstructed and feeding freely
	Feed belts not adjusted correctly	Tighten the feed belt adjusting knob clockwise to increase tension
	Bushings too small for material	Reinstall proper sized bushings
	Uneven de-reeler tension	Adjust tension if possible or use a power assisted de-reeler
Machine stops processing material	Machine is out of material	Check for error and load new length of material
	Door is open	Check for error and close applicable door
	Emergency Stop button actuated	Turn clockwise to release
	Loss of power	Check plug or power connection
	Module not making good connection	Check module alignment and mechanical/ electrical connections
	Downstream Endcap not installed properly	Ensure downstream Endcap is installed and making solid connection

GLOSSARY OF TERMS

Adjustment Knob	Knob which controls the belt feed mechanism
Alignment Pin	Module upstream guides to aid in the interconnection of modules
Batch	A length and quantity of material to cut or feed within a Job
Bushing	Used to guide and support the material or as a cutting surface in certain modules
Clamping Latch	Latch on rear of modules which couples/decouples modules together/apart
Continuous	Nonstop consecutive feeding and cutting without a given quantity
Control Module (C)	The brain of the modular system
CUT	The interface key which manually actuates the cutter to make a cut
Cut Bushing	The bushing directly upstream of the cutting mechanism
Cut Rate	The speed of rotation of a rotary cutter head
Cut Time	The duration of time that a rotary cutter head will need to rotate to complete the cut
Door	The safety cover and access to the feed belts or cutter heads
Downstream	Right side of module (when facing from front)
EDIT	The interface key which initiates a parameter menu (when applicable)
Electrical Connector	Inter-module electrical connection for power and control
Endcap	Terminating bracket on downstream side of last module to complete the safety interlock
Entrance Bushing	The bushing on the upstream side of the Feeder Module
ENTER	The interface key which accepts a change or advances a menu
ESC	The interface key which backs up or exits a menu screen
Exit Bushing	The bushing directly downstream of the cutting or feeding mechanism
Exit Chute	A guide to help material exit certain cutter modules
Feed Rate	The speed at which material is fed through the Feeder Module
Feeder Module (F)	Feeds material through the modular system
Guillotine	Air actuated blade
Hard Wire Module (HW)	Pneumatic semi-rotary style cutter
Job	A series of one or more Batches
JOG	The interface key which incrementally transfers material through the Feeder Module

GLOSSARY OF TERMS

Large Tube Module (LT)	Large rotary style cutter
Locking Set Screw	Locks adjustment knob mechanism in place
Out of Material Sensor	A sensor arm in the Feeder Module to indicate when material runs out
PAUSE	The interface key which pauses a job
Required Parts	Parts needed to operate the machine that are sold separately (such as bushings)
Rotary Cutter	A cutter head that rotates a blade around tubing material until it cuts through
RUN	The interface key which initiates a Job
Single Piece Flow	The ability to run one piece or cycle at a time
Small Tube Module (ST)	Small rotary style cutter
Tube/Wire Module (TW)	Pneumatic guillotine style cutter
Upstream	Left side of module (when facing from front)
+	The interface key that incrementally advances material through the system
–	The interface key that incrementally retracts material through the system

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