CARPENTER MFG. CO., INC.
110 Fairgrounds Drive • P.O. Box 188 • Manlius, NY 13104-0188 USA • 315.682.9176 • FAX: 315.682.9160

OPERATOR'S MANUAL

Model 97A
Compu-Strip®

PRODUCTION WIRE PROCESSING EQUIPMENT

Website: www.carpentermfg.com • e-mail: wire@carpentermfg.com

CARPENTER MODEL 97A COMPU-STRIP

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INTRODUCTION

Thank you for choosing Carpenter Mfg. Co. Inc. Wire Processing Equipment.
For over 55 years Carpenter has been a leader in
Wire Processing Technology and Service.
Our desire has always been to bring you reliable products.
We look forward to a long healthy relationship with you and our company.

The Model 97A can process a wide range of cables as referenced on the following page.
These stripping specifications are based upon the
most commonly manufactured cables.
Special applications may arise with cables that are
within the specification limits of the machine but are very difficult
or unsuccessful to strip.
Likewise, cables that exceed the specified limits
of the machine can sometimes be processed.
Because there are many variables involved in Wire Processing
we strongly recommend a free Wire Evaluation at our factory
followed by a demonstration from a Carpenter representative
to insure the ultimate success of your Wire Processing Application.

This operating manual explains how to operate
the Model 97A as well as some troubleshooting tips.
To ensure the best performance of your machine,
read this manual carefully until you familiarize yourself
thoroughly with its operation and features.
After you have read through the manual, keep it available for reference.

Use this manual as a quick and handy reference
tool for clarifying any questions that may arise.
If you have any questions about this
machine or service please let us know.
Our phone number is 315.682.9176, fax number 315.682.9160.

Carefully unpack the Carpenter Model 97A.
We recommend that you keep the original box and packaging
as it will protect the machine for future transportation if necessary.

IMPORTANT NOTICE

The products in this shipment left our facility in good working condition.
Their safe delivery is the responsibility of the carrier that
delivered this shipment to you.
Our stated shipping terms are F.O.B. our facility at
110 Fairgrounds Drive, Manlius, NY 13104.
According to applicable laws, the responsibility for this
shipment was transferred to you as soon as the carrier
accepted the goods at our warehouse.
If concealed damage is discovered after unpacking this shipment,
you must submit a damaged freight claim with the carrier.
Carpenter Mfg. Co., Inc. cannot submit your claim for you.
In order for you to collect for concealed damage,
the carrier must be notified with 5 days
of the date you receive this shipment.
You must leave the damaged items and packing material as is
(i.e. return all merchandise and all packing material to the shipping container)
until the claim has been inspected by the carrier.
Also, the carrier will not accept a claim if the goods have
been moved from the point of the
carriers delivery to another street address.
If you have any questions or problems,
please give us a call at 315.682.9176.

CAUTION

This equipment comes equipped with a LEXAN safety guard, containing a safety interlock switch. The machine will not operate unless the guard is in the closed position.

IMPORTANT

Do not attempt to defeat the function or purpose of the safety interlock switch. Serious injury to the operators' eyes, fingers or other body parts may result from attempts to operate this equipment with the safety guard in the raised position.

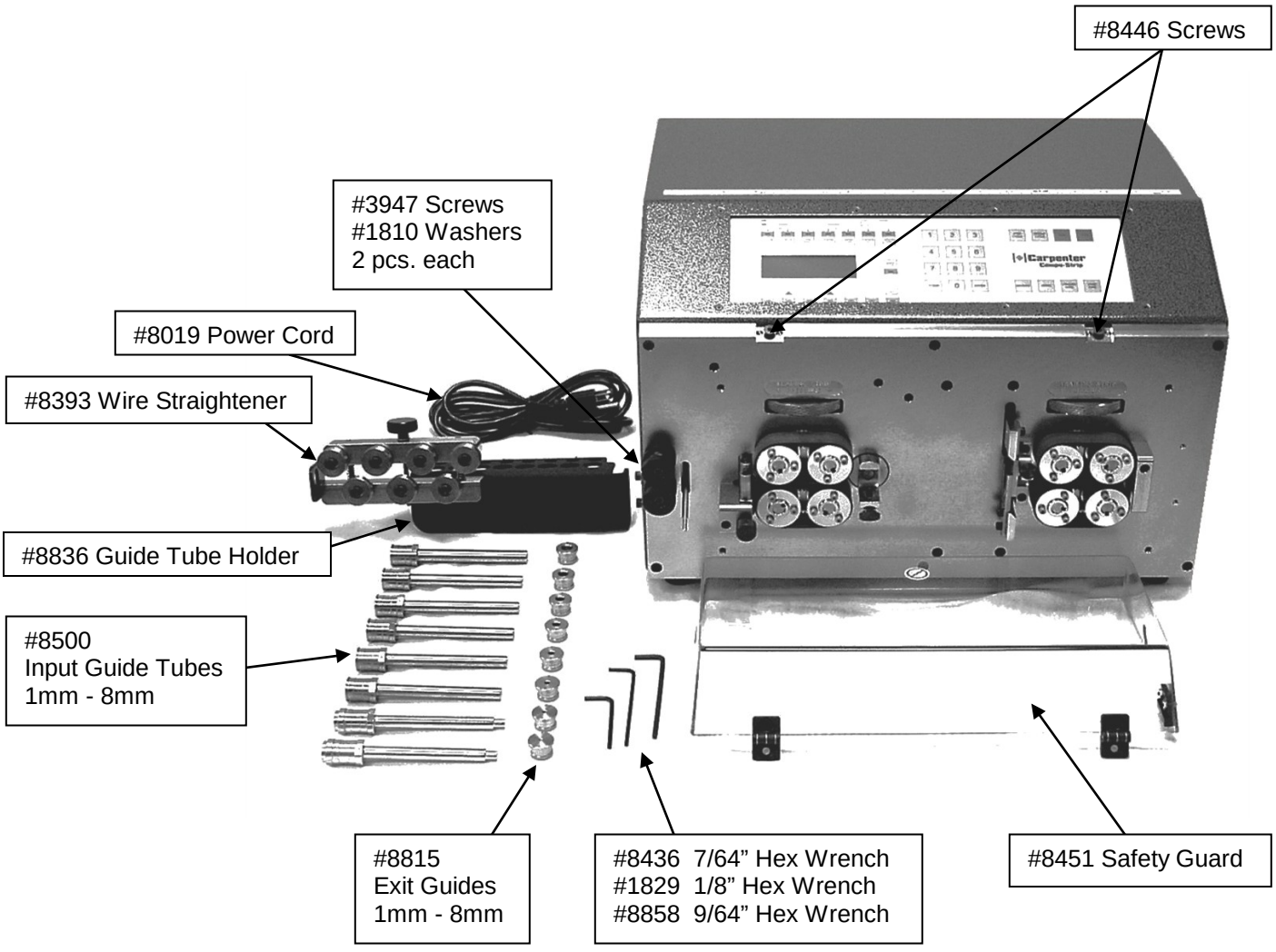
CARPENTER MODEL 97A COMPU-STRIP

MACHINE CONTENTS

Machine comes complete with the following:

1pc. **#8019** Power Cord
1pc. **#8393** Single Plane Wire Straightener
1pc. **#8836** Guide Tube Holder
8pcs. **#8500** 1-8 Input Guide Tubes
8pcs. **#8815** 1-8 Exit Guides
1pc. **#8858** 9/64" Hex Wrench
1pc. **#1829** 1/8" Hex Wrench
1pc. **#8436** 7/64" Hex Wrench
1pc. **#8451** Safety Guard
1pc. Operators Manual

PLEASE REFER TO PAGE 6 FOR INSTALLATION INSTRUCTIONS.



INSTALLATION INSTRUCTIONS

SAFETY GUARDING

The Model 97A comes equipped with a LEXAN guard containing a safety interlock switch. The machine will not run unless the guard is in the closed position ****IMPORTANT** DO NOT ATTEMPT TO DEFEAT THE FUNCTION OR PURPOSE OF THE SAFETY INTERLOCK SWITCH. SERIOUS INJURY TO THE OPERATORS EYES, FINGERS OR OTHER BODY PARTS MAY RESULT FROM ATTEMPTS TO OPERATE THE MODEL 97A WITH THE SAFETY GUARD IN THE RAISED POSITION.**

WIRE GUIDE HOLDER / WIRE STRAIGHTENER

The Model 97A comes equipped with **#8836** Guide Tube Holder with **#8393** Wire Straightener attached. Install holder to the left side of the cabinet with (2) **#3947** Screws and (2) **#1810** Washers. After installation place the Input GuideTubes and Exit Guides into the holes. The Wire Straightener is used to remove or reduce the memory (curvature) in the wire. Adjust the rollers to allow for straightening without restricting movement.

CARPENTER MODEL 97A COMPU-STRIP

****IMPORTANT****

PLEASE READ ENTIRE INSTRUCTIONS BEFORE OPERATING MACHINE

APPLICATIONS

The Model 97A Compu-Strip is designed to cut and strip solid or stranded wire, multi conductor cable and flat cable with any of the following applications.

- Cut wire or tubing to length only.
- Cut and full strip single or both ends.
- Cut and partial strip single or both ends.
- Cut and full strip single or both ends with window strip on right.
- Cut and partial strip single or both ends with window strip on right.

NOTE: A motorized Prefeed, Carpenter Model 56A or 58B, may be necessary to assist the Model 97A.

SPECIFICATIONS

ELECTRICAL CONNECTION	88-264 VAC, 47-63 Hz Self Adjusting
AIR CONNECTION	30-50 P.S.I. ****CLEAN & DRY****
MAIN FUSES	2 - 5 x 20mm 6AMP Fast Action
MAXIMUM CABLE DIAMETER	8mm, .312”
STRANDED COPPER WIRE	32AWG through 8AWG
SOLID COPPER WIRE	32AWG through 12AWG
FLAT CABLE	Up to .520” width
LENGTH	0.01 through 9,999.99inches or 0.2 through 99,999.9mm(longer lengths obtainable in inches)
BLADE DEPTH	0.01 through 8.9mm or .001 through .350 inches
QUANTITY	1 - 999,999 pcs.
LEADING END STRIP LENGTH	0.2 through 152.4mm or 0.01 through 6.00 inches
TRAILING END STRIP LENGTH	0.2 through 76.2mm or 0.01 through 3.00 inches
UNIT OF MEASURE	mm or Inches User selectable
TRANSPORT SPEEDS	4 Programmable
PULL SPEEDS	5 Programmable
BLADE SPEEDS	4 Automatic Default or User selectable.
MEMORY	500 Programs
PROGRAM STACKING	5 Programs
PASSWORD PROTECTION	User Programmable
NOISE LEVEL	70 dB
DIMENSIONS	LxDxH 437.5 x 406.3 x 275.0 mm or 17.5 x 16.25 x 11.0 inches
WEIGHT	77 lb or 35 kg.

PRODUCTION RATES

18 AWG Stranded Copper Wire

LENGTH	STRIPPED BOTH ENDS
2.5”	4260 Pcs./Hr.
4”	3960 Pcs./Hr.
10”	2880 Pcs./Hr.
20”	2280 Pcs./Hr.
36”	1620 Pcs./Hr.

SETUP

MACHINE SETUP

- Plug female end of Power Cord into the Power Entry Module, located on the left side of machine. Plug the male end into a proper electrical outlet. Turn on power switch.
- Optional – Install 1/4" airline into fitting on back side of machine for use with Air Blast feature.

INPUT GUIDE TUBE SELECTION

The Model 97A comes equipped with eight different Input Guide Tubes 1-8 (sizes are stamped on each guide). An Input Guide Tube must be used in all cases. Select the guide tube with the smallest inside diameter that slips freely over the outside diameter of the wire to be stripped. To change an Input Guide Tube simply loosen **#8087** Thumb Screw. After replacement make sure the thumb screw is securely tightened.

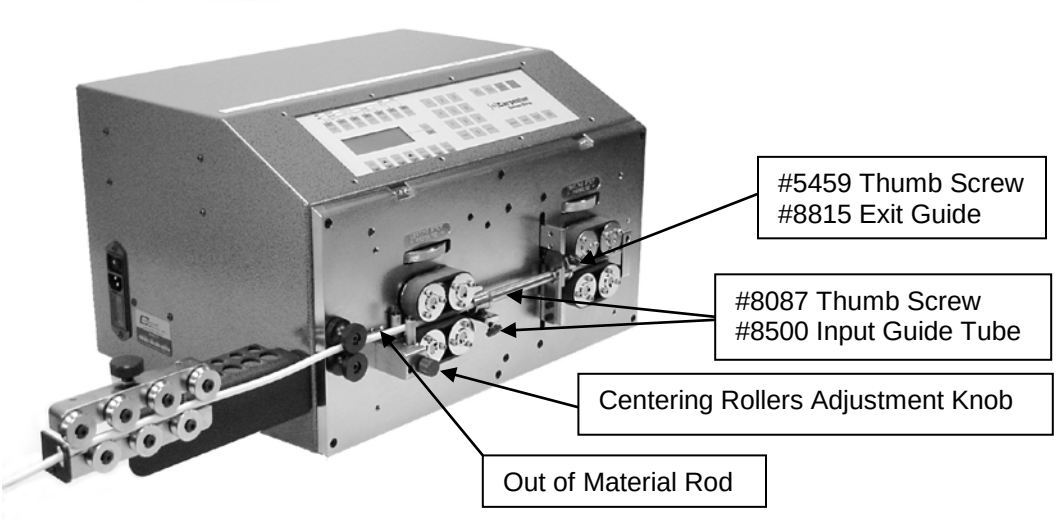
EXIT GUIDE SELECTION

The Model 97A comes equipped with eight different Exit Guides 1-8 (sizes are stamped on each guide). Select the Exit Guide that is numbered the same as the Input Guide Tube selected above. Example: A #2 Input Guide Tube will use a #2 Exit Guide. NOTE: The Exit Guide must be removed when processing wire in the Short Wire Mode. To change an Exit Guide simply loosen **#5459** Thumb Screw**.**

LOADING WIRE

LOAD WIRE

Load wire through Wire Straightener, and place wire underneath Out of Material Rod. Feed wire through Centering Roller Guides and adjust rollers to center the wire into the entrance of the Feed Belts. Select **LOAD WIRE** key and keep it pressed down until the wire is completely fed through the machine. Once the wire has exited, release the switch. This will cut the wire and feed the slug from the machine. The Model 97A is now ready to program and process your wire.

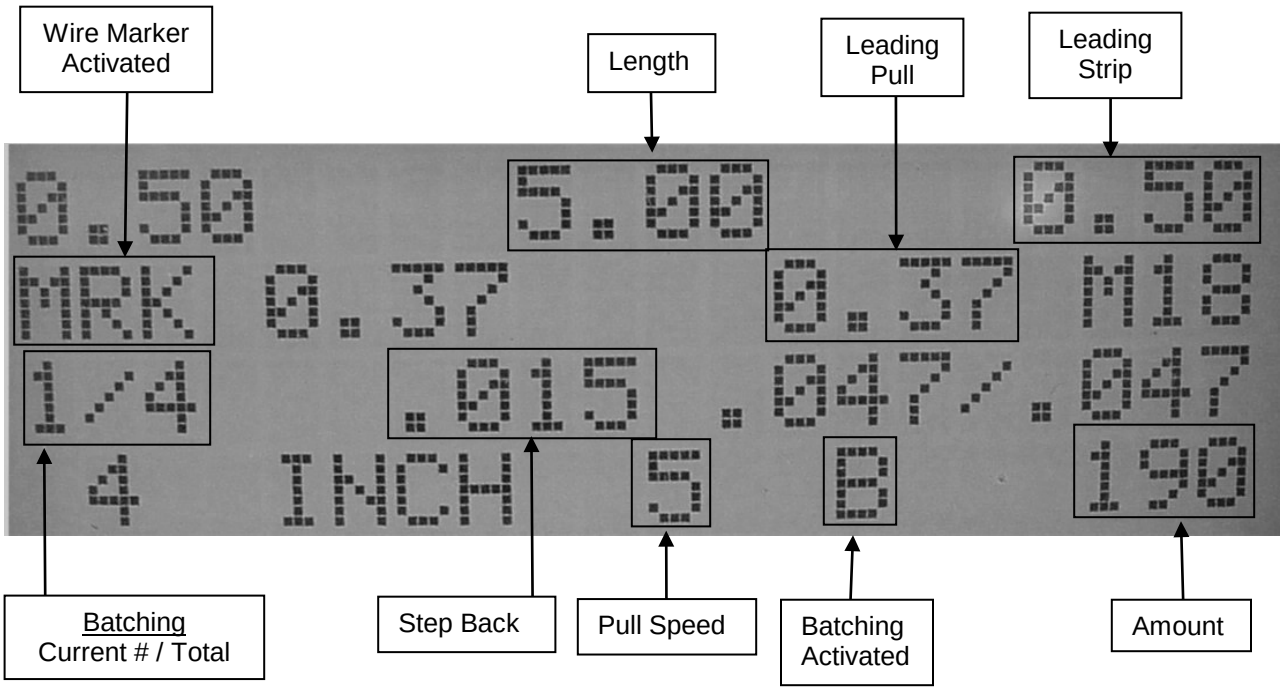


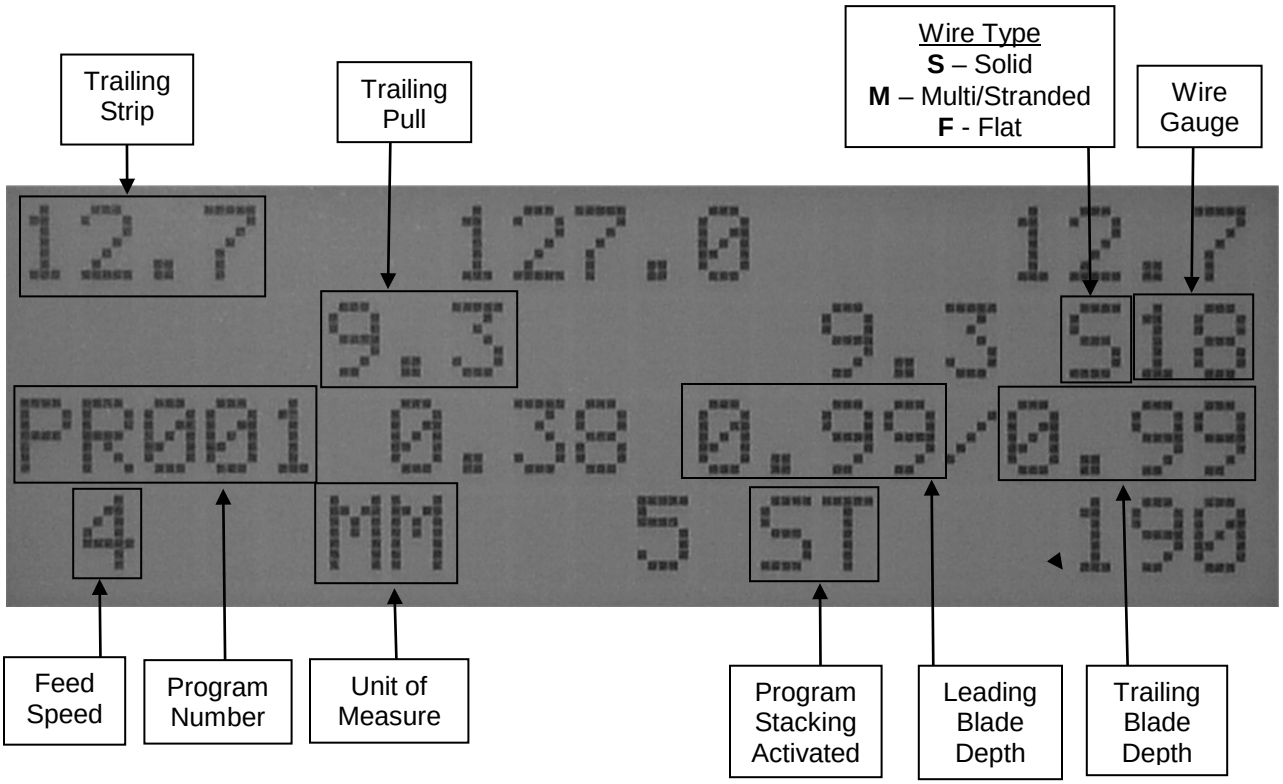
PLEASE NOTE THE MODEL 97A IS PICTURED WITHOUT THE SAFETY GUARD FOR DEMONSTRATION PURPOSES ONLY.

CARPENTER MODEL 97A COMPU-STRIP

PROGRAMMING

LCD DISPLAY SAMPLES





CARPENTER MODEL 97A COMPU-STRIP

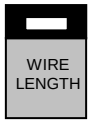
PROGRAMMING

NORMAL MODE

IMPORTANT

DO NOT USE SHARP OBJECTS ON KEYBOARD SWITCHES. FINGER TIP PRESSURE IS SUFFICIENT.

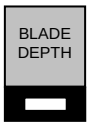
Turn on power switch located at the left side of machine. Red LED next to NORMAL MODE wire sample will light.

LCD DISPLAY PROMPT	ACTION REQUIRED
CARPENTER MFG. **MODEL 97A COMPU STRIP** **VERSION** **PLEASE PRESS ENTER**	Press **ENTER.**
	Press **TRAILING STRIP** key. This value is the length of insulation to be stripped from the left end (trailing end) of wire.
0.00 **PLEASE ENTER** **TRAIL STRIP LENGTH**	Enter dimension. Press **ENTER.**
PLEASE ENTER **NUMBER OF PULL STEPS** **STEPS = 1**	Enter number of strip steps. Press **ENTER. NOTE:** The Step Stripping feature enables the user to program the Model 97A to remove the desired insulation in a series of steps from 1 to 9. Step Stripping can be of benefit when doing long strips or when processing wire with hard to slide insulation. If more than 1 step is desired the Model 97A will automatically calculate the amount of insulation to be removed at each step to achieve the overall programmed strip length. **IMPORTANT:** Caution should be used when using the Step Strip feature as the more steps used to remove the insulation, the more the wire is shuttled back and forth increasing the chance of wire slippage, resulting in inconsistent wire lengths.
	Press **TRAILING PULL** key. This value is the distance the slug of insulation is pulled on the trailing end of the wire
0.00 **PLEASE ENTER** **TRAIL PULL LENGTH**	Enter dimension. For a full strip enter a value greater than the overall trailing strip length. For a partial strip enter a value less than the overall trailing strip length. Press **ENTER**.
EJECT BEFORE TUBE **OFF - ON**	This feature is useful when processing long trailing strips on multi-conductor cables. When selected (ON) the finished piece is ejected from the machine while the Wire Guide Tube is in the "UP" position. To select or deselect press the appropriate arrow key directly under the desired option. Press **ENTER.**
	Press **WIRE LENGTH** key. This value is the overall length of pieces being processed.

PROGRAMMING

NORMAL MODE

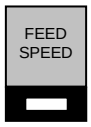
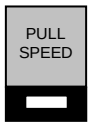
cont.

LCD DISPLAY PROMPT	ACTION REQUIRED
0.00 **PLEASE ENTER** **OVERALL WIRE LENGTH**	Enter dimension. Press **ENTER.**
	Press **LEADING STRIP** key. This value is the length of insulation to be stripped from the right end (leading end) of the wire.
0.00 **PLEASE ENTER** **LEAD STRIP LENGTH**	Enter dimension. Press **ENTER.**
PLEASE ENTER **NUMBER OF PULL STEPS** **STEPS = 1**	Enter number of strip steps. Press **ENTER.** **NOTE:** The same notes and warning under **PLEASE ENTER NUMBER OF PULL STEPS** on the previous page, apply to this set up also. Please reread them.
	Press **LEADING PULL** key. This value is the distance the slug of insulation is pulled on the leading end of the wire.
0.00 **PLEASE ENTER** **LEAD PULL LENGTH**	Enter dimension. For a full strip enter a value greater than the overall leading strip length. For a partial strip enter a value less than the overall leading strip length. Press **ENTER.**
	Press **BLADE DEPTH** key. This key allows access to answer questions about wire being processed. Ex. Wire Type, Wire Gauge, Strip Depth, Stepback, Blade Speed, Guide Tube Size.
SELECT WIRE TYPE **1 – SOLID (S)** **2 – STRANDED (M)** **3 – FLAT (F)**	Use the number keys to select wire type. Arrow will indicate current setting. Press **ENTER.** When Flat Cable is selected proceed to Page 30 for specific programming instructions.
PLEASE ENTER WIRE GAUGE HERE OR STRIP DEPTH ON NEXT MENU. **WIRE GAUGE=**	Enter wire gauge of cable, 32 to 8 gauge. Press **ENTER.** NOTE: If processing multi conductor or flat cable proceed to next screen.
PLEASE ENTER LEAD BLADE STRIP DEPTH OR PRESS ENTER **STRIP DEPTH =**	The Model 97A will default to a preset nominal blade depth based upon wire gauge previously entered. You may accept this or change according to cable being processed. To open blades enter a higher value and to close blades enter a lower value. To process multi conductor cable enter strip depth dimension based upon overall dimension of inner conductors. Press **ENTER.**

PROGRAMMING

NORMAL MODE

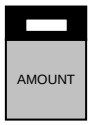
cont.

LCD DISPLAY PROMPT	ACTION REQUIRED
PLEASE ENTER TRAIL BLADE STRIP DEPTH OR PRESS ENTER STRIP DEPTH =	The trailing strip depth will always default to the same as the leading strip depth. This value may be changed if necessary.
PLEASE ENTER BLADE DWELL TIME 0.00 SECONDS	This controls the length of time the blades will pause at both the Leading and Trailing strip depths. When stripping thick or hard to cut insulation a longer dwell time may be necessary to allow the blades to cut through the insulation and provide a clean strip. Enter a value between 0.01 – 2.50 seconds. Press **ENTER**.
PLEASE ENTER STEP BACK DISTANCE STEP BACK =	The step back controls the amount which the blades retract after cutting the wire insulation and before pulling the insulation off the wire. Example: After running a test wire through the Model 97A you see that the inner conductor has been scraped. You would now enter a value (.001"-.050") to retract the blades. This value is automatically added to the entered Blade Depth so that a clean strip can be obtained. **IMPORTANT**: There is a big difference between "nicking" and "scrapping" the inner conductors of the wire. Nicking is when the blades cut too deep into the insulation, and is observed right at the shoulder of the stripped wire. Scraping is observed not at the shoulder of the strip, but along the length of the inner conductor as the insulation slug is stripped from the wire. Nicking is corrected using the **Blade Strip Depth** feature and scrapping is corrected using the **Step Back** feature. Press **ENTER.**
PLEASE ENTER BLADE SPEED(1 THRU 4) DEFAULT IS 1 SPEED =	The Model 97A will default to a blade speed appropriate to the type of wire/cable being processed. You may accept or change this value. Press **ENTER**
PLEASE ENTER GUIDE TUBE SIZE GUIDE TUBE =	Enter the Guide Tube Size previously determined and installed on machine. Press **ENTER. NOTE:** It is important to enter the correct Guide Tube number because this entry controls the blade opening.
	Press **FEED SPEED** key. This setting determines the speed of the wire passing through the machine.
PLEASE ENTER FEED SPEED (1 THRU 4) SPEED =	Select 1-slow, 2-slow/medium, 3-medium ,4 -fast. Press **ENTER.** **NOTE**: When selecting speed 1 or 2 the maximum Pull Speed that can be selected is 4.
	Press **PULL SPEED** key. This setting determines the pull force of insulation being removed.

PROGRAMMING

NORMAL MODE

cont.

LCD DISPLAY PROMPT	ACTION REQUIRED
PLEASE ENTER PULL SPEED (1 THRU 5) SPEED =	Select pull speed 1(maximum pulling force),2 & 3(medium pulling force), 4 & 5(minimum pulling force). Press **ENTER.**
	Press **AMOUNT** key. This value is the number of wires to be processed. Also allows access to Multiple Batch Processing mode.
CHANGE CURRENT AMOUNT OR PRESS ENTER	**NOTE:** If using the multiple batch feature; during initial programming this entry can be ignored and proceed to next screen. During the actual processing this screen may be used to change the current batch total without affecting any subsequent batches.
PLEASE ENTER NUMBER OF BATCHES TO RUN	The batch feature allows you to process required pieces in a single or multiple batch(es). To process required pieces in one batch enter "1". Press **ENTER**. To process total amount in multiple batches, enter number of batches to process. Press **ENTER**.
PLEASE ENTER AMOUNT TO PROCESS PER BATCH	Enter amount of pieces to process per batch. Press **ENTER**.
PLEASE SELECT AMOUNT TO DISPLAY DISPLAY = BATCH BATCH TOTAL	Use the arrow keys to select **BATCH** or **TOTAL** display mode. Press **ENTER. BATCH** mode will count DOWN the number of pieces per batch. **TOTAL** mode will count UP the number of pieces per batch. Both modes will display on the screen the descending or ascending piece count of the current batch being processed. The display will also show the current batch number being processed/total batches to be processed.
PRESS CLEAR TO RESET TOTAL COUNTER OR PRESS ENTER TOTAL=	This screen will display the running total number of pieces that have been processed from the current batch sequence. This amount maybe reset to zero or left alone. Press **ENTER.**
	Press the **BELT PRESSURE** key. The Model 97A comes equipped with a digital display for Feed Belt pressure adjustment. These adjustments control the grip or pressure between the belts and the material.

PROGRAMMING

NORMAL MODE

cont.

LCD DISPLAY PROMPT	ACTION REQUIRED
STRIP PRESSURES **LEADING TRAILING** **REQ** **CUR**	Belt pressure is adjusted by turning the knobs on the front of the machine labeled LEADING STRIP PRESSURE and TRAILING STRIP PRESSURE. The display readings will increase or decrease as you turn the knobs left or right. The goal is to achieve enough pressure to hold the wire and remove any insulation. Too little pressure allows the wire to slip between the feed belts. Slippage may cause incorrect "slug pull" dimension. Too much pressure may result in wire not tracking straight through the machine and premature belt wear. As you adjust the pressure the **CUR** (current) reading will change. Once you have determined the pressure and have run a piece of wire the current reading and **REQ** (required) reading will be the same. You may have to adjust the pressure a couple of times to achieve the desired grip. In most cases the LEADING and TRAILING pressure settings will be the same.

The following is a chart to assist in your Belt Pressure Setup.

FEED BELT PRESSURE SETTINGS

WIRE GAUGE	WIRE TYPE	APPROXIMATE SETTING
32-28 AWG	PVC	170-200
	TFE	190-240
	Crosslink	190-240
26-20 AWG	PVC	150-180
	TFE	170-200
	Crosslink	160-200
18-14 AWG	PVC	140-180
	TFE	150-190
	Crosslink	150-190
12-8 AWG	PVC	110-160
	TFE	120-180
	Crosslink	120-180

The Model 97A is now programmed to process your wire. You are now ready to run a sample wire and check for initial strip quality. The following will assist you in processing your sample.

SINGLE CYCLE

SINGLE CYCLE

Select **SINGLE CYCLE** key to produce one complete sample wire to check for accuracy. If corrections are necessary for anything but overall length, then select the corresponding key on the Control Panel and make your adjustments. If length corrections are necessary then proceed to **LENGTH CORRECTION**.

PROGRAMMING

NORMAL MODE

cont.

LENGTH CORRECTION

The Model 97A has a Length Correct feature that allows the operator to make adjustments from the preprogrammed length versus the actual sample length. Small variations are normal due to differences in material, tension, friction, wire diameter etc. If the sample wire was not the correct length select the **LENGTH CORRECT** key for adjustments.

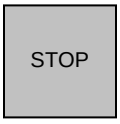
LCD DISPLAY PROMPT	ACTION REQUIRED
PLEASE ENTER	Measure the length of the sample wire produced; enter this value for length.
MEASURED WIRE LENGTH	Press **ENTER**. The Model 97A will automatically calculate the correction necessary.
0.00	The next sample should be the exact length you programmed.

The possible range of correction is +/- 10% of the overall wire length. If a value outside of this range is entered an error message will appear and display the acceptable range of values.
The length correct value may be changed multiple times but typically a single entry is all that is required if the sample wire was measured accurately and the data entered correctly.

RUN PROGRAM

After you have produced a satisfactory sample wire and all settings are correct press **RUN.** This will process your current program.

STOP PROGRAM



If at any time you need to stop your processing press **STOP.** This action will stop the processing and wire feed.

UNLOADING WIRE

Unload wire by pressing the **UNLOAD WIRE** key. Wire will automatically feed backwards through machine as long as the switch is depressed.

CARPENTER MODEL 97A COMPU-STRIP

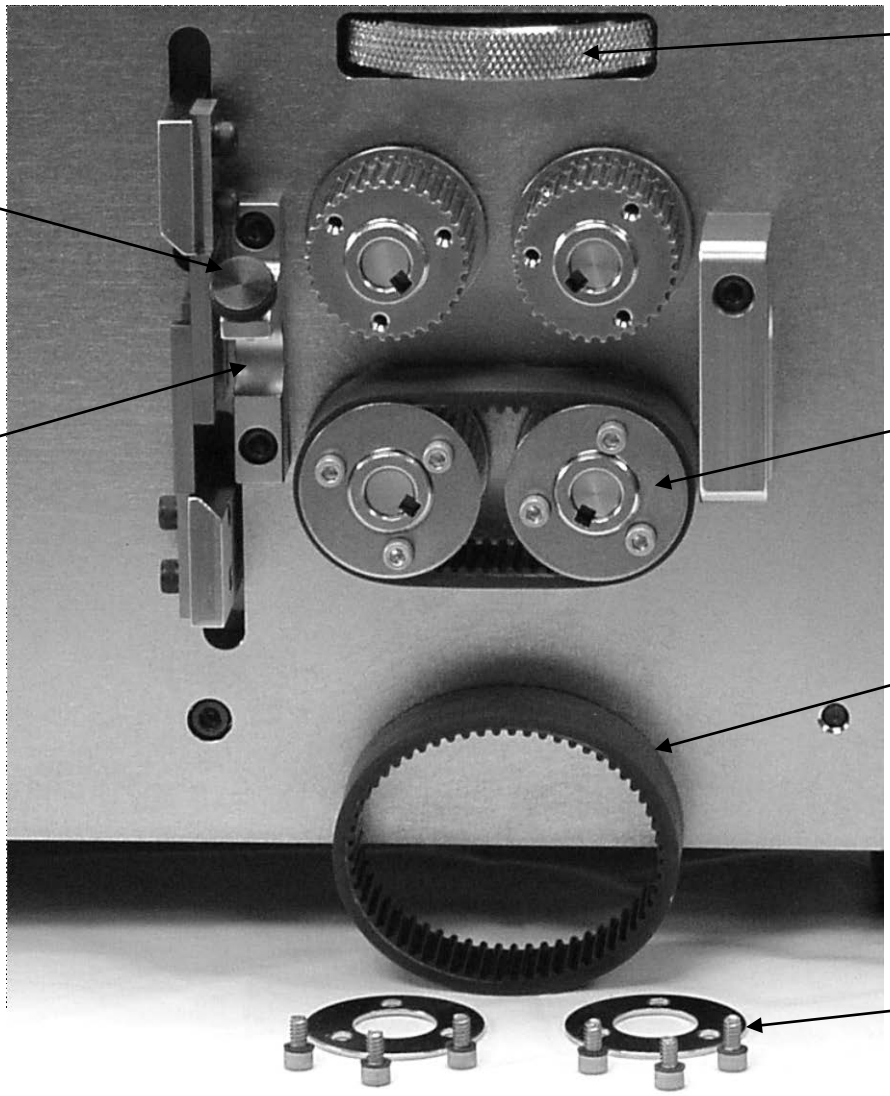
SHORT MODE

MACHINE SETUP

The Model 97A has the capability of processing wire with stripping specifications of two inches or less of insulation left between the stripped ends. To process wire in SHORT MODE you must first prepare the Model 97A. Please refer to the following instructions and photograph for this procedure.

1. Turn machine off and unplug.
2. Separate belts via the BELT PRESSURE ADJUSTMENT KNOB.
3. Remove **#5451** Screws and **#8514** Belt Guides. Then remove **#8447** Feed Belts.
4. Loosen **#5459** Thumb Screw and remove the Exit Guide.

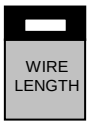
Proceed to the next page and follow the programming instructions for SHORT MODE.



PROGRAMMING

SHORT MODE

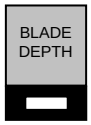
The Model 97A has the capability of processing wire with stripping specifications of two inches or less of insulation left between the stripped ends. The LCD display will read **SHORT** when the short wire mode is activated based upon the stripping parameters you have entered.

LCD DISPLAY PROMPT	ACTION REQUIRED
CARPENTER MFG. **MODEL 97A COMPU STRIP** **VERSION** **PLEASE PRESS ENTER**	Press **ENTER.**
	Press **TRAILING STRIP** key. This value is the length of insulation to be stripped from the left end (trailing end) of wire.
0.00 **PLEASE ENTER** **TRAIL STRIP LENGTH**	Enter dimension. Press **ENTER.**
PLEASE ENTER **NUMBER OF PULL STEPS** **STEPS = 1**	Machine will default to "1". Press **ENTER.** When operating machine in SHORT MODE only one pull step is allowed due to the short processing lengths.
	Press **WIRE LENGTH** key. This value is the overall length of pieces being processed.
0.00 **PLEASE ENTER** **OVERALL WIRE LENGTH**	Enter dimension. Press **ENTER.**
	Press **LEADING STRIP** key. This value is the length of insulation to be stripped from the right end (leading end) of the wire.
0.00 **PLEASE ENTER** **LEAD STRIP LENGTH**	Enter dimension. Press **ENTER.**
PLEASE ENTER **NUMBER OF PULL STEPS** **STEPS = 1**	Machine will default to "1". Press **ENTER.** When operating machine in SHORT MODE only one pull step is allowed due to the short processing lengths.

PROGRAMMING

SHORT MODE

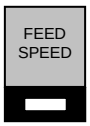
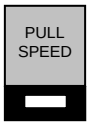
cont.

LCD DISPLAY PROMPT	ACTION REQUIRED
	Press **LEADING PULL** key. This value is the distance the slug of insulation is pulled on the leading end of the wire.
0.00 **PLEASE ENTER** **LEAD PULL LENGTH**	Enter dimension. For a full strip enter a value greater than the overall leading strip length. For a partial strip enter a value less than the overall leading strip length. Press **ENTER.**
	Press **BLADE DEPTH** key. This key allows access to answer questions about wire being processed. Ex. Wire Type, Wire Gauge, Strip Depth, Stepback, Blade Speed, Guide Tube Size.
SELECT WIRE TYPE **1 – SOLID (S)** **2 – STRANDED (M)** **3 – FLAT (F)**	Use the number keys to select wire type. Arrow will indicate current setting. Press **ENTER.** When Flat Cable is selected proceed to Page 30 for specific programming instructions.
PLEASE ENTER WIRE GAUGE HERE OR STRIP DEPTH ON NEXT MENU. **WIRE GAUGE=**	Enter wire gauge of cable, 32 to 8 gauge. Press **ENTER.** NOTE: If processing multi conductor or flat cable proceed to next screen.
PLEASE ENTER LEAD BLADE STRIP DEPTH OR PRESS ENTER **STRIP DEPTH =**	The Model 97A will default to a preset nominal blade depth based upon wire gauge previously entered. You may accept this or change according to cable being processed. To open blades enter a higher value and to close blades enter a lower value. To process multi conductor cable enter strip depth dimension based upon overall dimension of inner conductors. Press **ENTER.**
PLEASE ENTER **BLADE DWELL TIME** **0.00 SECONDS**	This controls the length of time the blades will pause at both the Leading and Trailing strip depths. When stripping thick or hard to cut insulation a longer dwell time may be necessary to allow the blades to cut through the insulation and provide a clean strip. Enter a value between 0.01 – 2.50 seconds. Press **ENTER**.
PLEASE ENTER **STEP BACK DISTANCE** **STEP BACK =**	The step back controls the amount which the blades retract after cutting the wire insulation and before pulling the insulation off the wire. Example: After running a test wire through the Model 97A you see that the inner conductor has been scraped. You would now enter a value (.001”-.050”) to retract the blades. This value is automatically added to the entered Blade Depth so that a clean strip can be obtained. **IMPORTANT**: There is a big difference between “nicking” and “scrapping” the inner conductors of the wire. Nicking is when the blades cut too deep into the insulation, and is observed right at the shoulder of the stripped wire. Scraping is observed not at the shoulder of the strip, but along the length of the inner conductor as the insulation slug is stripped from the wire. Nicking is corrected using the **Blade Strip Depth** feature and scrapping is corrected using the **Step Back** feature. Press **ENTER.**

PROGRAMMING

SHORT MODE

cont.

LCD DISPLAY PROMPT	ACTION REQUIRED
PLEASE ENTER BLADE SPEED(1 THRU 4) DEFAULT IS 1 SPEED =	The Model 97A will default to a blade speed appropriate to the type of wire/cable being processed. You may accept or change this value. Press **ENTER**
PLEASE ENTER GUIDE TUBE SIZE GUIDE TUBE =	Enter the Guide Tube Size previously determined and installed on machine. Press **ENTER. NOTE:** It is important to enter the correct Guide Tube number because this entry controls the blade opening.
	Press **FEED SPEED** key. This setting determines the speed of the wire passing through the machine.
PLEASE ENTER FEED SPEED (1 THRU 4) SPEED =	Select 1-slow, 2-slow/medium, 3-medium ,4 -fast. Press **ENTER.** **NOTE**: When selecting speed 1 or 2 the maximum Pull Speed that can be selected is 4.
	Press **PULL SPEED** key. This setting determines the pull force of insulation being removed.
PLEASE ENTER PULL SPEED (1 THRU 5) SPEED =	Select pull speed 1(maximum pulling force),2 & 3(medium pulling force), 4 & 5(minimum pulling force). Press **ENTER.**
	Press **AMOUNT** key. This value is the number of wires to be processed. Also allows access to Multiple Batch Processing mode.
CHANGE CURRENT AMOUNT OR PRESS ENTER	**NOTE:** If using the multiple batch feature; during initial programming this entry can be ignored and proceed to next screen. During the actual processing this screen may be used to change the current batch total without affecting any subsequent batches.
PLEASE ENTER NUMBER OF BATCHES TO RUN	The batch feature allows you to process required pieces in a single or multiple batch(es). To process required pieces in one batch enter "1". Press **ENTER**. To process total amount in multiple batches, enter number of batches to process. Press **ENTER**.
PLEASE ENTER AMOUNT TO PROCESS PER BATCH	Enter amount of pieces to process per batch. Press **ENTER**.

PROGRAMMING

SHORT MODE

cont.

LCD DISPLAY PROMPT	ACTION REQUIRED
PLEASE SELECT **AMOUNT TO DISPLAY** **DISPLAY = BATCH** **BATCH TOTAL**	Use the arrow keys to select **BATCH** or **TOTAL** display mode. Press **ENTER.** **BATCH** mode will count DOWN the number of pieces per batch. **TOTAL** mode will count UP the number of pieces per batch. Both modes will display on the screen the descending or ascending piece count of the current batch being processed. The display will also show the current batch number being processed/total batches to be processed.
PRESS CLEAR TO **RESET TOTAL COUNTER** **OR PRESS ENTER** **TOTAL=**	This screen will display the running total number of pieces that have been processed from the current batch sequence. This amount maybe reset to zero or left alone. Press **ENTER.**
	Press the **BELT PRESSURE** key. The Model 97A comes equipped with a digital display for Feed Belt pressure adjustment. These adjustments control the grip or pressure between the belts and the material.
STRIP PRESSURES **LEADING TRAILING** **REQ** **CUR**	Belt pressure is adjusted by turning the knobs on the front of the machine labeled LEADING STRIP PRESSURE and TRAILING STRIP PRESSURE. The display readings will increase or decrease as you turn the knobs left or right. The goal is to achieve enough pressure to hold the wire and remove any insulation. Too little pressure allows the wire to slip between the Feed Belts. Slippage may cause incorrect “slug pull” dimension. Too much pressure may result in wire not tracking straight through the machine and premature belt wear. As you adjust the pressure the **CUR** (current) reading will change. Once you have determined the pressure and have run a piece of wire the current reading and **REQ** (required) reading will be the same. You may have to adjust the pressure a couple of times to achieve the desired grip. In most cases the LEADING and TRAILING pressure settings will be the same. **NOTE: PLEASE REFER TO THE CHART ON PAGE 14 TO ASSIST IN BELT PRESSURE SETTINGS.**

The Model 97A is now programmed to process your wire. You are now ready to run a sample wire and check for initial strip quality. The following will assist you in processing your sample.

PROGRAMMING

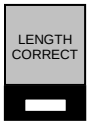
SHORT MODE

cont.

SINGLE CYCLE

LCD DISPLAY PROMPT	ACTION REQUIRED
SINGLE CYCLE	Press SINGLE CYCLE key. This will produce one complete sample wire to check for accuracy.
PREPARE UNIT FOR SHORT WIRE MODE LENGTH CORRECTION THEN PRESS RUN	This warning statement will appear to remind you to remove the Exit Guide and right side Feed Belt pair. Press **RUN.** If corrections are necessary for anything but overall length, then select the corresponding key on the Control Panel and make your adjustments. If length corrections are necessary then proceed to **LENGTH CORRECTION**.

LENGTH CORRECTION



The Model 97A has a Length Correct feature that allows the operator to make adjustments from the preprogrammed length versus the actual sample length. This feature allows for correction for both overall cut length and strip length. Small variations from the programmed value to the actual value are normal due to differences in material, tension, friction, wire diameter etc. If the sample wire did not have the correct length and/or strip length select the **LENGTH CORRECT** key for adjustments.

LCD DISPLAY PROMPT	ACTION REQUIRED
PLEASE ENTER MEASURED WIRE LENGTH	This screen is used to make corrections to the **overall** length. Measure the length of your sample piece. If overall length correction is necessary enter the actual measured value and then Press **ENTER.** The Model 97A will automatically calculate the correction necessary. Run several test pieces to check correction. NOTE: If the overall length requires no correction do not enter a value.
PLEASE ENTER SHORT MODE CORRECTION VALUE CORRECT= 0.00	This screen is used to make corrections to the **strip** length. If strip length corrections are necessary proceed as follows: First, run several test pieces to insure overall length is correct. Then, measure the Leading End of your sample pieces. The CORRECTION VALUE will be the difference between the programmed dimension and the actual measured dimension. Enter this value and then Press **ENTER**. Run several test pieces to check correction. NOTE:If the strip length requires no correction do not enter a value.

The possible range of correction is +/- 10% of the overall wire length. If a value outside of this range is entered an error message will appear and display the acceptable range of values.
The length correct value may be changed multiple times but typically a single entry is all that is required if the sample wire was measured accurately and the data entered correctly.

PROGRAMMING

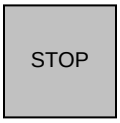
SHORT MODE

cont.

RUN PROGRAM

After you have produced a satisfactory sample wire and all settings are correct press **RUN.** This will process your current program. The same warning will appear as noted above in SINGLE CYCLE. Make sure that the Exit Guide and right side Feed Belts are removed.

STOP PROGRAM



If at any time you need to stop your processing press **STOP.** This action will stop the processing and wire feed.

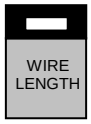
UNLOADING WIRE

Unload wire by pressing the **UNLOAD WIRE** key. Wire will automatically feed backwards through machine as long as the switch is depressed.

PROGRAMMING

WINDOW STRIP MODE

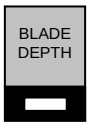
The Model 97A is equipped with a Window Strip Mode feature. It is very **IMPORTANT** that all dimension values be entered in the sequence shown or an error message will display. When the Window Strip Mode is activated the Red LED next to the WINDOW MODE sample, on the Front Panel, will light.

LCD DISPLAY PROMPT	ACTION REQUIRED
CARPENTER MFG. **MODEL 97A COMPU STRIP** **VERSION** **PLEASE PRESS ENTER**	Press **ENTER.**
	Press **TRAILING STRIP** key. This value is the length of insulation to be stripped from the left end (trailing end) of wire.
0.00 **PLEASE ENTER** **TRAIL STRIP LENGTH**	Enter dimension. Press **ENTER.**
PLEASE ENTER **NUMBER OF PULL STEPS** **STEPS = 1**	Enter number of strip steps. Press **ENTER.** **NOTE:** The same notes and warning under **PLEASE ENTER NUMBER OF PULL STEPS** on Page 10 apply to this set up also. Please reread them.
	Press **TRAILING PULL** key. This value is the distance the slug of insulation is pulled on the trailing end of the wire
0.00 **PLEASE ENTER** **TRAIL PULL LENGTH**	Enter dimension. For a full strip enter a value greater than the overall trailing strip length. For a partial strip enter a value less than the overall trailing strip length. Press **ENTER**.
	Press **WIRE LENGTH** key. This value is the overall length of pieces being processed.
0.00 **PLEASE ENTER** **OVERALL WIRE LENGTH**	Enter dimension. Press **ENTER.**
	Press **LEADING STRIP** key. This value is the length of insulation to be stripped from the right end (leading end) of the wire.
0.00 **PLEASE ENTER** **LEAD STRIP LENGTH**	Enter dimension. Press **ENTER.**

PROGRAMMING

WINDOW STRIP MODE

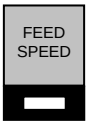
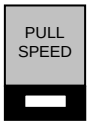
cont.

LCD DISPLAY PROMPT	ACTION REQUIRED
PLEASE ENTER NUMBER OF PULL STEPS **STEPS = 1**	Enter number of strip steps. Press **ENTER.** **NOTE:** The same notes and warning under **PLEASE ENTER NUMBER OF PULL STEPS** on Page 10 apply to this set up also. Please reread them.
	Press **LEADING PULL** key. This value is the distance the slug of insulation is pulled on the leading end of the wire.
0.00 **PLEASE ENTER LEAD PULL LENGTH**	Enter dimension. For a full strip enter a value greater than the overall leading strip length. For a partial strip enter a value less than the overall leading strip length. Press **ENTER.**
	Press **WINDOW STRIP** key.
PLEASE ENTER WINDOW STRIP LENGTH **0.00**	Enter window strip dimension. This value is the length or distance from the beginning of the window strip to the right end of the wire. Press **ENTER.**
	Press **WINDOW PULL** key.
PLEASE ENTER WINDOW PULL LENGTH **0.00**	Enter window pull dimension. This value is the actual length of the window strip or the distance between the beginning of the window strip and left end of the slug. Press **ENTER.**
	Press **BLADE DEPTH** key. This key allows access to answer questions about wire being processed. Ex. Wire Type, Wire Gauge, Strip Depth, Stepback, Blade Speed, Guide Tube Size.
SELECT WIRE TYPE **1 – SOLID (S)** **2 – STRANDED (M)** **3 – FLAT (F)**	Use the number keys to select wire type. Arrow will indicate current setting. Press **ENTER.** When Flat Cable is selected proceed to Page 30 for specific programming instructions.
PLEASE ENTER WIRE GAUGE HERE OR STRIP DEPTH ON NEXT MENU. **WIRE GAUGE=**	Enter wire gauge of cable, 32 to 8 gauge. Press **ENTER.** NOTE: If processing multi conductor or flat cable proceed to next screen.

PROGRAMMING

WINDOW STRIP MODE

cont.

LCD DISPLAY PROMPT	ACTION REQUIRED
PLEASE ENTER LEAD BLADE STRIP DEPTH OR PRESS ENTER STRIP DEPTH =	The Model 97A will default to a preset nominal blade depth based upon wire gauge previously entered. You may accept this or change according to cable being processed. To open blades enter a higher value and to close blades enter a lower value. To process multi conductor cable enter strip depth dimension based upon overall dimension of inner conductors. Press **ENTER.**
PLEASE ENTER BLADE DWELL TIME 0.00 SECONDS	This controls the length of time the blades will pause at both the Leading and Trailing strip depths. When stripping thick or hard to cut insulation a longer dwell time may be necessary to allow the blades to cut through the insulation and provide a clean strip. Enter a value between 0.01 – 2.50 seconds. Press **ENTER**.
PLEASE ENTER STEP BACK DISTANCE STEP BACK =	The Step Back controls the amount which the blades retract after cutting the wire insulation and before pulling the insulation off the wire. Example: After running a test wire through the Model 97A you see that the inner conductor has been scraped. You would now enter a value (.001"-.050") to retract the blades. This value is automatically added to the entered Blade Depth so that a clean strip can be obtained. **IMPORTANT**: There is a big difference between "nicking" and "scrapping" the inner conductors of the wire. Nicking is when the blades cut too deep into the insulation, and is observed right at the shoulder of the stripped wire. Scraping is observed not at the shoulder of the strip, but along the length of the inner conductor as the insulation slug is stripped from the wire. Nicking is corrected using the **Blade Strip Depth** feature and scrapping is corrected using the **Step Back** feature. Press **ENTER.**
PLEASE ENTER BLADE SPEED(1 THRU 4) DEFAULT IS 1 SPEED =	The Model 97A will default to a blade speed appropriate to the type of wire/cable being processed. You may accept or change this value. Press **ENTER**
PLEASE ENTER GUIDE TUBE SIZE GUIDE TUBE =	Enter the Guide Tube Size previously determined and installed on machine. Press **ENTER. NOTE:** It is important to enter the correct Guide Tube number because this entry controls the blade opening.
	Press **FEED SPEED** key. This setting determines the speed of the wire passing through the machine.
PLEASE ENTER FEED SPEED (1 THRU 4) SPEED =	Select 1-slow, 2-slow/medium, 3-medium ,4 -fast. Press **ENTER.** **NOTE**: When selecting speed 1 or 2 the maximum Pull Speed that can be selected is 4.
	Press **PULL SPEED** key. This setting determines the pull force of insulation being removed.

PROGRAMMING

WINDOW STRIP MODE

cont.

LCD DISPLAY PROMPT	ACTION REQUIRED
PLEASE ENTER PULL SPEED (1 THRU 5) SPEED =	Select pull speed 1(maximum pulling force),2 & 3(medium pulling force), 4 & 5(minimum pulling force). Press **ENTER.**
	Press **AMOUNT** key. This value is the number of wires to be processed. Also allows access to Multiple Batch Processing mode.
CHANGE CURRENT AMOUNT OR PRESS ENTER	**NOTE:** If using the multiple batch feature; during initial programming this entry can be ignored and proceed to next screen. During the actual processing this screen may be used to change the current batch total without affecting any subsequent batches.
PLEASE ENTER NUMBER OF BATCHES TO RUN	The batch feature allows you to process required pieces in a single or multiple batch(es). To process required pieces in one batch enter "1". Press **ENTER**. To process total amount in multiple batches, enter number of batches to process. Press **ENTER**.
PLEASE ENTER AMOUNT TO PROCESS PER BATCH	Enter amount of pieces to process per batch. Press **ENTER**.
PLEASE SELECT AMOUNT TO DISPLAY DISPLAY = BATCH BATCH TOTAL	Use the arrow keys to select **BATCH** or **TOTAL** display mode. Press **ENTER.** **BATCH** mode will count DOWN the number of pieces per batch. **TOTAL** mode will count UP the number of pieces per batch. Both modes will display on the screen the descending or ascending piece count of the current batch being processed. The display will also show the current batch number being processed/total batches to be processed.
PRESS CLEAR TO RESET TOTAL COUNTER OR PRESS ENTER TOTAL=	This screen will display the running total number of pieces that have been processed from the current batch sequence. This amount maybe reset to zero or left alone. Press **ENTER.**
	Press the **BELT PRESSURE** key. The Model 97A comes equipped with a digital display for Feed Belt pressure adjustment. These adjustments control the grip or pressure between the belts and the material.

PROGRAMMING

WINDOW STRIP MODE

cont.

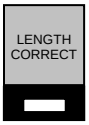
LCD DISPLAY PROMPT	ACTION REQUIRED
STRIP PRESSURES **LEADING TRAILING** **REQ** **CUR**	Belt pressure is adjusted by turning the knobs on the front of the machine labeled LEADING STRIP PRESSURE and TRAILING STRIP PRESSURE. The display readings will increase or decrease as you turn the knobs left or right. The goal is to achieve enough pressure to hold the wire and remove any insulation. Too little pressure allows the wire to slip between the feed belts. Slippage may cause incorrect "slug pull" dimension. Too much pressure may result in wire not tracking straight through the machine and premature belt wear. As you adjust the pressure the **CUR** (current) reading will change. Once you have determined the pressure and have run a piece of wire the current reading and **REQ** (required) reading will be the same. You may have to adjust the pressure a couple of times to achieve the desired grip. In most cases the LEADING and TRAILING pressure settings will be the same. **NOTE: PLEASE REFER TO THE CHART ON PAGE 14 TO ASSIST IN BELT PRESSURE SETTINGS.**

The Model 97A is now programmed to process your wire. You are now ready to run a sample wire and check for initial strip quality. The following will assist you in processing your sample.

SINGLE CYCLE

Select **SINGLE CYCLE** key to produce one complete sample wire to check for accuracy. If corrections are necessary for anything but overall length, then select the corresponding key on the Control Panel and make your adjustments. If length corrections are necessary then proceed to **LENGTH CORRECTION**.

LENGTH CORRECTION



The Model 97A has a Length Correct feature that allows the operator to make adjustments from the preprogrammed length versus the actual sample length. Small variations are normal due to differences in material, tension, friction, wire diameter etc. If the sample wire was not the correct length select the **LENGTH CORRECT** key for adjustments.

LCD DISPLAY PROMPT	ACTION REQUIRED
PLEASE ENTER **MEASURED WIRE LENGTH** The **0.00**	Measure the length of the sample wire produced; enter this value for length. Press **ENTER**. The Model 97A will automatically calculate the correction necessary. next sample should be the exact length you programmed.

The possible range of correction is +/- 10% of the overall wire length. If a value outside of this range is entered an error message will appear and display the acceptable range of values.
The length correct value may be changed multiple times but typically a single entry is all that is required if the sample wire was measured accurately and the data entered correctly.

PROGRAMMING

WINDOW STRIP MODE

cont.

LENGTH CORRECTION ON WINDOW PULL ONLY

LCD DISPLAY PROMPT	ACTION REQUIRED
PLEASE ENTER	Measure the window pull on the sample wire. Enter the value of this measurement.
MEASURED WINDOW PULL	The Model 97A will automatically calculate the correction necessary.
00	Press **ENTER.**

NOTES:

- A correction value may be entered only once. After the value has been entered, the software will only display the previously entered value, it will not allow it to be changed. The correction feature is very accurate and assuming the "window" was measured correctly and the correct measured value was entered, the software will correct it with only one entry. If it becomes necessary to re-enter the correction data, you must first re-enter the "Window Pull" dimension. Run a few sample pieces, measure window and then if necessary re-enter measured length.

- If, after running a few pieces, it becomes necessary to use both the Window Pull correct and Length Correct features, the Window Pull correction must be done first and the RUN or SINGLE CYCLE key pressed to run a few sample pieces with the new values. After this has been done, the Length Correct value can be entered. It is imperative that the information be entered in this sequence. If the Length Correct value is entered before the Window Pull correct value, the Length Correct value will be reset to the Wire Length value when the Window Pull correct information is entered.

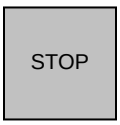
- If either the Window Strip or Window Pull dimensions are changed after a Length Correct value has been entered, it will be necessary to re-check the actual wire length and re-enter the Length Correct information, as this data is reset when modifying either Window Strip or Window Pull.

- The Window Pull correct feature will be disabled if the unit is programmed to control a Wire Marker and Window Strip at the same time. If it is necessary to adjust the Window Pull dimension in this case, it will need to be done by increasing or decreasing the actual Window Pull value by the appropriate amount.

RUN PROGRAM

After you have produced a satisfactory sample wire and all settings are correct press **RUN.** This will process your current program.

STOP PROGRAM



If at any time you need to stop your processing press **STOP.** This action will stop the processing and wire feed.

PROGRAMMING

WINDOW STRIP MODE
cont.

UNLOADING WIRE

Unload wire by pressing the **UNLOAD WIRE** key. Wire will automatically feed backwards through machine as long as the switch is depressed.

CLEAR WINDOW STRIP MODE

To clear Model 97A from the WINDOW STRIP mode you must do the following:

1. Press **WINDOW STRIP** key.
2. Press **CLEAR** key.
3. Press **ENTER** key.

After this procedure the WINDOW MODE red LED turns off and the NORMAL MODE red LED lights.

FLAT CABLE MODE

MACHINE SETUP

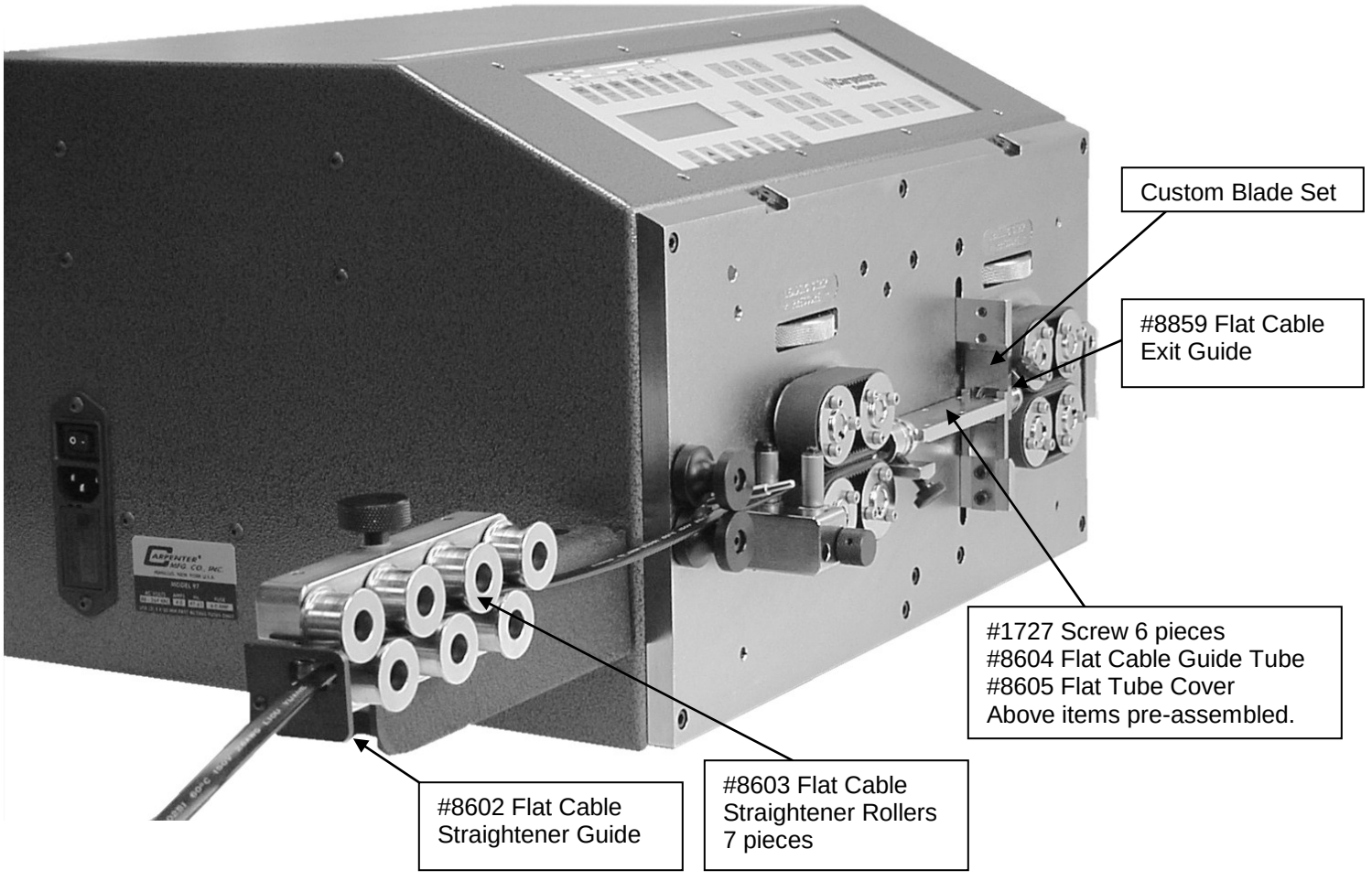
The Model 97A can be converted to process Flat Cable by purchasing and installing the **#8880** Flat Cable Stripping Kit.

CONTENTS

Kit comes complete with the following:
6 pcs. **#1727** Screws
1 pc. **#8602** Flat Cable Straightener Guide
7 pcs. **#8603** Flat Cable Straightener Rollers
1 pc. **#8604** Flat Cable Guide Tube
1 pc. **#8605** Flat Tube Cover
1 pc. **#8859** Flat Cable Exit Guide

Custom Blade Set must be purchased separately.

To set up the Model 97A for Flat Cable you will need to install all of the above items. Please remove the corresponding items from your current set up and replace with the Flat Cable accessories.

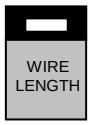


PLEASE NOTE THE MODEL 97A IS PICTURED WITHOUT THE SAFETY GUARD FOR DEMONSTRATION PURPOSES ONLY.

PROGRAMMING

FLAT CABLE MODE

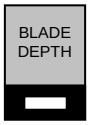
Please use the following programming instructions for operation in the Flat Cable Mode.

LCD DISPLAY PROMPT	ACTION REQUIRED
CARPENTER MFG. **MODEL 97A COMPU STRIP** **VERSION** **PLEASE PRESS ENTER**	Press **ENTER.**
	Press **TRAILING STRIP** key. This value is the length of insulation to be stripped from the left end (trailing end) of wire.
0.00 **PLEASE ENTER** **TRAIL STRIP LENGTH**	Enter dimension. Press **ENTER.**
PLEASE ENTER **NUMBER OF PULL STEPS** **STEPS = 1**	Enter number of strip steps. Press **ENTER. NOTE:** The Step Stripping feature enables the user to program the Model 97A to remove the desired insulation in a series of steps from 1 to 9. Step Stripping can be of benefit when doing long strips or when processing wire with hard to slide insulation. If more than 1 step is desired the Model 97A will automatically calculate the amount of insulation to be removed at each step to achieve the overall programmed strip length. **IMPORTANT:** Caution should be used when using the Step Strip feature as the more steps used to remove the insulation, the more the wire is shuttled back and forth increasing the chance of wire slippage, resulting in inconsistent wire lengths.
	Press **TRAILING PULL** key. This value is the distance the slug of insulation is pulled on the trailing end of the wire
0.00 **PLEASE ENTER** **TRAIL PULL LENGTH**	Enter dimension. For a full strip enter a value greater than the overall trailing strip length. For a partial strip enter a value less than the overall trailing strip length. Press **ENTER**.
	Press **WIRE LENGTH** key. This value is the overall length of pieces being processed.
0.00 **PLEASE ENTER** **OVERALL WIRE LENGTH**	Enter dimension. Press **ENTER.**
	Press **LEADING STRIP** key. This value is the length of insulation to be stripped from the right end (leading end) of the wire.

PROGRAMMING

FLAT CABLE MODE

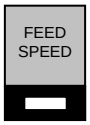
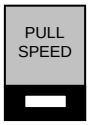
cont.

LCD DISPLAY PROMPT	ACTION REQUIRED
0.00 **PLEASE ENTER** **LEAD STRIP LENGTH**	Enter dimension. Press **ENTER.**
PLEASE ENTER **NUMBER OF PULL STEPS** **STEPS = 1**	Enter number of strip steps. Press **ENTER.** **NOTE:** The same notes and warning under **PLEASE ENTER NUMBER OF PULL STEPS** on the previous page, apply to this set up also. Please reread them.
	Press **LEADING PULL** key. This value is the distance the slug of insulation is pulled on the leading end of the wire.
0.00 **PLEASE ENTER** **LEAD PULL LENGTH**	Enter dimension. For a full strip enter a value greater than the overall leading strip length. For a partial strip enter a value less than the overall leading strip length. Press **ENTER.**
	Press **BLADE DEPTH** key. This key allows access to answer questions about wire being processed. Ex. Wire Type, Wire Gauge, Strip Depth, Stepback, Blade Speed, Guide Tube Size.
SELECT WIRE TYPE **1 - SOLID (S)** **2 - STRANDED (M)** **3 - FLAT (F)**	Use number keys to select wire type. Arrow will indicate current setting. Select **3**, Press **ENTER.**
PLEASE ENTER LEAD **BLADE STRIP DEPTH** **OR PRESS ENTER** **STRIP DEPTH =**	You will need to measure the diameter of the conductors of the cable you are stripping. Enter this value using the number keys. Press **ENTER.**
PLEASE ENTER TRAIL **BLADE STRIP DEPTH** **OR PRESS ENTER** **STRIP DEPTH =**	The trailing strip depth will always default to the same as the leading strip depth. This value may be changed if necessary.
PLEASE ENTER **STEP BACK DISTANCE** **STEP BACK =**	The Step Back controls the amount which the blades retract after cutting the wire insulation and before pulling the insulation off the wire. Example: After running a test wire through the Model 97A you see that the inner conductor has been scraped. You would now enter a value(.001"-.050") to retract the blades so that a clean strip can be obtained. **IMPORTANT**: There is a big difference between "nicking" and "scrapping" the inner conductors of the wire. Nicking is when the blades cut to deep into the insulation, and is observed right at the shoulder of the stripped wire. Scraping is observed not at the shoulder of the strip, but along the length of the inner conductor as the insulation slug is stripped from the wire. Nicking is corrected using the **Blade Strip Depth** feature and scrapping is corrected using the **Step Back** feature. Press **ENTER.**

PROGRAMMING

FLAT CABLE MODE

cont.

LCD DISPLAY PROMPT	ACTION REQUIRED
PLEASE ENTER BLADE SPEED(1 THRU 4) DEFAULT IS 1 SPEED =	The Model 97A will default to a blade speed 1 when in the Flat Cable Mode. You may accept or change this value. Press **ENTER**
	Press **FEED SPEED** key. This setting determines the speed of the wire passing through the machine.
PLEASE ENTER FEED SPEED (1 THRU 4) SPEED =	Select 1-slow, 2-slow/medium, 3-medium, 4 -fast. Press **ENTER.** **NOTE**: When selecting speed 1 or 2 the minimum Pull Speed that can be selected is 4.
	Press **PULL SPEED** key. This setting determines the pull force of insulation being removed.
PLEASE ENTER PULL SPEED (1 THRU 5) SPEED =	Select pull speed 1(maximum pulling force),2 & 3(medium pulling force), 4 & 5(minimum pulling force). Press **ENTER.**
	Press **AMOUNT** key. This value is the number of wires to be processed. Also allows access to Multiple Batch Processing mode.
CHANGE CURRENT AMOUNT OR PRESS ENTER	**NOTE:** If using the multiple batch feature; during initial programming this entry can be ignored and proceed to next screen. During the actual processing this screen may be used to change the current batch total without affecting any subsequent batches.
PLEASE ENTER NUMBER OF BATCHES TO RUN	The batch feature allows you to process required pieces in a single or multiple batch(es). To process required pieces in one batch enter "1". Press **ENTER**. To process total amount in multiple batches, enter number of batches to process. Press **ENTER**.
PLEASE ENTER AMOUNT TO PROCESS PER BATCH	Enter amount of pieces to process per batch. Press **ENTER**.

PROGRAMMING

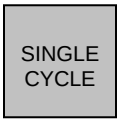
FLAT CABLE MODE

cont.

LCD DISPLAY PROMPT	ACTION REQUIRED
PLEASE SELECT **AMOUNT TO DISPLAY** **DISPLAY = BATCH** **BATCH TOTAL**	Use the arrow keys to select **BATCH** or **TOTAL** display mode. Press **ENTER.** **BATCH** mode will count DOWN the number of pieces per batch. **TOTAL** mode will count UP the number of pieces per batch. Both modes will display on the screen the descending or ascending piece count of the current batch being processed. The display will also show the current batch number being processed/total batches to be processed.
PRESS CLEAR TO **RESET TOTAL COUNTER** **OR PRESS ENTER** **TOTAL=**	This screen will display the running total number of pieces that have been processed from the current batch sequence. This amount maybe reset to zero or left alone. Press **ENTER.**
	Press the **BELT PRESSURE** key. The Model 97A comes equipped with a digital display for Feed Belt pressure adjustment. These adjustments control the grip or pressure between the belts and the material.
STRIP PRESSURES **LEADING TRAILING** **REQ** **CUR**	Belt pressure is adjusted by turning the knobs on the front of the machine labeled LEADING STRIP PRESSURE and TRAILING STRIP PRESSURE. The display readings will increase or decrease as you turn the knobs left or right. The goal is to achieve enough pressure to hold the wire and remove any insulation. Too little pressure allows the wire to slip between the feed belts. Slippage may cause incorrect "slug pull" dimension. Too much pressure may result in wire not tracking straight through the machine and premature belt wear. As you adjust the pressure the **CUR** (current) reading will change. Once you have determined the pressure and have run a piece of wire the current reading and **REQ** (required) reading will be the same. You may have to adjust the pressure a couple of times to achieve the desired grip. In most cases the LEADING and TRAILING pressure settings will be the same. **NOTE: PLEASE REFER TO THE CHART ON PAGE 14 TO ASSIST IN BELT PRESSURE SETTINGS.**

The Model 97A is now programmed to process your wire. You are now ready to run a sample wire and check for initial strip quality. The following will assist you in processing your sample.

SINGLE CYCLE



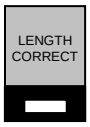
Select **SINGLE CYCLE** key to produce one complete sample wire to check for accuracy. If corrections are necessary for anything but overall length, then select the corresponding key on the Control Panel and make your adjustments. If length corrections are necessary then proceed to **LENGTH CORRECTION**.

PROGRAMMING

FLAT CABLE MODE

cont.

LENGTH CORRECTION



The Model 97A has a Length Correct feature that allows the operator to make adjustments from the preprogrammed length versus the actual sample length. Small variations are normal due to differences in material, tension, friction, wire diameter etc. If the sample wire was not the correct length select the **LENGTH CORRECT** key for adjustments.

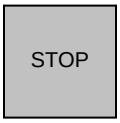
LCD DISPLAY PROMPT	ACTION REQUIRED
PLEASE ENTER	Measure the length of the sample wire produced; enter this value for length.
MEASURED WIRE LENGTH	Press **ENTER**. The Model 97A will automatically calculate the correction necessary.
The **0.00**	next sample should be the exact length you programmed.

The possible range of correction is +/- 10% of the overall wire length. If a value outside of this range is entered an error message will appear and display the acceptable range of values.
The length correct value may be changed multiple times but typically a single entry is all that is required if the sample wire was measured accurately and the data entered correctly.

RUN PROGRAM

After you have produced a satisfactory sample wire and all settings are correct press **RUN.** This will process your current program.

STOP PROGRAM



If at any time you need to stop your processing press **STOP.** This action will stop the processing and wire feed.

UNLOADING WIRE

Unload wire by pressing the **UNLOAD WIRE** key. Wire will automatically feed backwards through machine as long as the switch is depressed.

ADDITIONAL FEATURES

STORING PROGRAMS

The Model 97A will store up to 500 programs. You may access this function by pressing the **MEMORY** key.
NOTE: Program number will appear as **PR**_ _ _ on display screen.

LCD DISPLAY PROMPT	ACTION REQUIRED
PLEASE SELECT FUNCTION STORE - RECALL	Press **ARROW** key to select STORE
STORE PLEASE ENTER PROGRAM NUMBER PROGRAM #_ _ _	Enter up to any 3 digit program number you choose. Press **ENTER** If you enter a # already stored the Model 97A will ask you to overwrite YES or NO. YES will overwrite the previously stored program NO will allow you to choose a new number.

RECALLING PROGRAMS

You may access this function by pressing the **MEMORY** key.

LCD DISPLAY PROMPT	ACTION REQUIRED
PLEASE SELECT FUNCTION STORE - RECALL	Press **ARROW** key to select RECALL
RECALL PLEASE ENTER PROGRAM # PROGRAM #_ _ _	Enter stored program number. Press **ENTER**
****ERROR** PRESS ENTER TO CHECK LEAD & TRAIL STRIP PRESSURES.**	The belt pressure values must be changed to match the program that is being recalled from memory. Press **ENTER**.
STRIP PRESSURES LEADING TRAILING REQ CUR	The display will show the current belt pressure values in the machine. Turn the knobs to adjust the current values to the required values for the program that you are recalling. Press **ENTER**.

NOTE: When recalling a program from memory keep in mind that the values for blade depth and belt pressure can not compensate for excessive blade wear and belt wear. If you experience a problem, stored values may need to be changed.

ADDITIONAL FEATURES

cont.

BELT PRESSURE ALERT

The Model 97A is equipped with a belt pressure warning alert. If the belt pressure becomes out of adjustment while processing a cable the operator will be alerted.

LCD DISPLAY PROMPT	ACTION REQUIRED
****ALERT****	If you choose to accept the new belt pressure values press the arrow key under **RUN**.
STRIP PRESSURES HAVE	This will change the current belt pressure settings to the new value.
BEEN CHANGED	If you choose not to accept the new belt pressure values press the arrow key under
RUN CHECK	CHECK**.** This will allow you to adjust the CUR (current) value back to the REQ (required) value previously programmed. This alert will activate whenever the belt pressure knobs have been moved while running a program.

NOTE: To check the belt pressure settings at any time press the BELT PRESSURE key.
To exit press the same key or ENTER.

STEP CYCLE

The Model 97A has a Step Cycle feature which when selected will cycle the machine once completely at slow speed. This allows the operator to view the complete program cycle at a very slow speed. This feature is useful when troubleshooting a setup problem.

SPECIAL FEATURES

MENU

To access these features press the **MENU** key. Continue to press **MENU** to scroll through the options. To select a feature Press **ENTER** and follow the appropriate instructions.

WIRE MARKING

Factory installed option. See page 41 for program instructions after installation.

PROGRAM STACKING

The Model 97A offers a program stacking feature allowing you to stack up to 5 different programs for the same cable. The differences between programs being the strip length, overall length, feed and pull speed specifications. If there is any change from one program to another in the blade depth the display will advise you that you have different parameters and will not allow you to proceed. You may access the stacking function by pressing the **MENU** key.

LCD DISPLAY PROMPT	ACTION REQUIRED
STACKING IS OFF	Press **ARROW** key to select ON. Press **ENTER.**
PLEASE ENTER FIRST PROGRAM NUMBER PROGRAM #_ _ _	Enter first program number to stack. You may enter/stack up to 5 programs. Press **ENTER.**
PLEASE ENTER AMOUNT TO PROCESS	Enter amount. Press **ENTER.**

The Model 97A will repeat the above sequence for all 5 program screens. You will have to go through all 5 screens even if you are not stacking 5 programs. On the screens you do not use enter zero values for the prompts.

PROGRAM STACKING CHANGOVER – MANUAL

This option will stop the machine and require the operator to press the **RUN** key at the completion of each program.

LCD DISPLAY PROMPT	ACTION REQUIRED
CHANGEOVER IS MANUAL MANUAL AUTO	Press **ARROW** key to select MANUAL. Press **ENTER.** Press **RUN.** Stacking appears on display as _ ST.
BATCH COMPLETE PLEASE PRESS ENTER TO RUN NEXT BATCH OR CLEAR TO QUIT	Press **ENTER** to continue. Press **RUN.** or Press **CLEAR** to quit. When you are ready to resume this stacking sequence the Model 97A will start up where it left off. At that time Press **RUN.**

The machine will stop at the end of the stacking sequence. You may also stop it at anytime by pressing **STOP.**

SPECIAL FEATURES

cont.

PROGRAM STACKING CHANGOVER – AUTOMATIC

This option will automatically process all stacked programs without operator assistance.

LCD DISPLAY PROMPT	ACTION REQUIRED
CHANGEOVER IS MANUAL **MANUAL AUTO**	Press **ARROW** key to select AUTO. Press **ENTER.**
PLEASE ENTER **CHANGEOVER** **PAUSE TIME** **000 SECONDS**	Enter a time value between 1-240 seconds. Press **ENTER.** Pause time is the same for all programs. Press **RUN.**

The machine will stop at the end of the stacking sequence. You may also stop it at anytime by pressing **STOP.**

AIR BLAST

The Model 97A offers an Air Blast feature. This feature is used to clear away insulation slugs when performing a full strip on the leading end of the wire. This feature may not always be necessary to use.

LCD DISPLAY PROMPT	ACTION REQUIRED
AIR BLAST ON/OFF	Press **ENTER** to select this option.
AIR BLAST IS ON/OFF **OFF ON**	Press the arrow key under **ON**. Press **ENTER**.
AIR BLAST MODE **AIR MODE IS ON** **BURST STEADY**	This feature offers two modes. **STEADY** will maintain a steady blast of air whenever the machine is in the run mode. **BURST** will only give an air blast at the specific time the strip is performed. Select a mode and press the arrow under your selection. Press **ENTER.**

WIRE STACKER

Factory installed option. See page 43 for program instructions after installation.

UNIT OF MEASURE

The Model 97A can be programmed in either Millimeter or Inches.

LCD DISPLAY PROMPT	ACTION REQUIRED
PLEASE SELECT UNITS **MM INCH**	Select **ARROW** key for the unit of measure desired. Press **ENTER.**

SPECIAL FEATURES

cont.

PASSWORD ON/OFF

The Model 97A comes equipped with a Password feature. When the password is activated the ability to change program data is prohibited.

LCD DISPLAY PROMPT	ACTION REQUIRED
PASSWORD IS OFF **OFF ON**	Press **ARROW** key to select ON. Press **ENTER.**
PASSWORD IS ON **ENTER PASSWORD**	Enter factory set password "123". Press **ENTER.**

STORE NEW PASSWORD

This option will allow you to change the password at your discretion.

LCD DISPLAY PROMPT	ACTION REQUIRED
PLEASE ENTER **OLD PASSWORD**	Enter old password. Press **ENTER.**
PLEASE ENTER **NEW PASSWORD**	Enter a new password up to 5 digits. Press **ENTER.**

WIRE SENSOR

The Model 97A comes with a Wire Sensor/Out of Material switch. If the sensor is activated the Model 97A will automatically shut off when it runs out of material. If the sensor is not activated the machine will continue to run and finish the current program until programmed amount reaches zero. You may choose to turn this option on or off.

LCD DISPLAY PROMPT	ACTION REQUIRED
WIRE SENSOR IS OFF **OFF ON**	Press **ARROW** key to select ON or OFF. Press **ENTER.**

REPRESENTATIVES

Factory use only.

RESERVED

Factory use only.

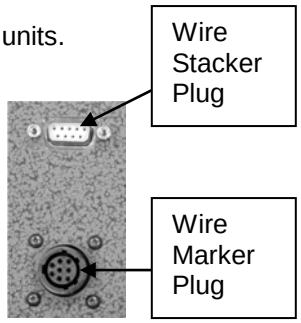
OPTIONAL FEATURES

WIRE MARKER

The Model 97A is capable of interfacing with various manufacturers of Hot Stamp Wire Marking units.

****IMPORTANT****

Please read their operators manual before proceeding.



MACHINE SETUP

- To activate interface between the Model 97A and Wire Marker, install exterior cable between both units. Plug receptacle on Model 97A is located on the back of the cabinet.
- To access Wire Marking program setup press the **MENU** key.
- After Wire Marking mode is activated **MRK** will appear on the left side of the LCD display.
- All dimensions entered during setup will correspond with the unit of measure that is programmed into the machine.

LCD DISPLAY PROMPT	ACTION REQUIRED
WIRE MARKING	Press **ENTER.**
WIRE MARKER IS **OFF ON**	Press arrow key under **ON.** Press **ENTER.**
PLEASE ENTER **MARK DWELL TIME** **_.__ SECONDS**	******Refer to Wire Marker manufacturers operators manual for suggested settings. Enter dwell time using numeric keys. Press **ENTER.**
PLEASE ENTER **MARKER CENTER TO** **BLADE DISTANCE _.__**	With a tape measure, measure the distance from the center of the marking disc to the center of the blades on the Model 97A. Once measurement is made enter that amount using the numeric keys. Press **ENTER.**
PLEASE ENTER **LEADING END MARK** **DISTANCE. _.__**	This measurement is the distance from the leading end(right end) of the wire to the center of the mark on the wire. Enter distance amount using numeric keys. Maximum distance is (Wire Length/2). Press **ENTER.**
PLEASE ENTER **TRAILING END MARK** **DISTANCE. _.__**	This measurement is the distance from the trailing end(left end) of the wire to the center of the mark on the wire. Enter distance amount using numeric keys. Maximum distance is ((Wire Length/2) - .20). Press **ENTER.**
PLEASE ENTER **CONTINUOUS MARKING** **DISTANCE _.__**	The Model 97A/Wire Marker system allows you to program continuous marking along the wire in addition to the end marking. To choose that option enter the distance between each marking along the wire. Minimum distance is 0.50” or 0.00”(off). Enter “0” to bypass this option. Press **ENTER.**
RUN SINGLE CYCLE	Press either key to activate Marker Setup Cycle. At this point the Model 97A and the attached marker will go into a setup cycle. The two units are now automatically synchronized to apply the marks in the locations along the wire as previously programmed.

Process a few sample pieces. Measure the location of the center of the leading end mark from the leading end of wire. If the measured dimension is not equal to the programmed Leading End Mark dimension, proceed with the following:

OPTIONAL FEATURES

cont.

WIRE MARKER

cont.

LEADING END MARK DISTANCE CORRECTION

- Press **MENU** key until you reach WIRE MARKER. Press **ENTER.**
- Scroll through WIRE MARKER by pressing **ENTER** key until the statement below is displayed.
- The following prompt will only display after a sample piece has been run using the **SINGLE CYCLE** or **RUN** key.

LCD DISPLAY PROMPT	ACTION REQUIRED
PLEASE ENTER MEASURED LEADING END MARK DISTANCE _._	Enter the measured Leading End Mark distance of sample wire. Press **ENTER.**
RUN SINGLE CYCLE	Press either key to activate Marker Setup Cycle. The Model 97A and the attached marker will again go into a setup cycle and at this point the marks will have been shifted to their correct locations and normal processing can begin.

NOTES:

- A marker correction value can only be entered once. After the value has been entered, the software will only display the previously entered value, it will not allow it to be changed. The correction feature is very accurate. Assuming the mark position was measured correctly and the correct measured value was entered, the software will correct it adequately with only one entry.

- If it becomes necessary to re-enter the correction data, you will first have to re-enter the Leading End Mark Distance. This will cancel out the original correction value and allow entry of a new value after the marker has cycled through the setup cycle.

- If, after setting up the marker and running a few pieces, it becomes necessary to use both the Leading End Mark correction and Length Correct features, the Leading End Mark correction must be done first and the **RUN** or **SINGLE CYCLE** key pressed to setup the system with the new values. After this has been done, the Length Correct value can be entered. It is imperative that the information be entered in this sequence. If the Length Correct value is entered before the Leading End Mark correction, the Length Correct value will be reset to the Wire Length value when the Leading End Mark correction information is entered.

- If the unit is set up to both mark and window strip, the Window Pull Correct feature will be disabled. If it becomes necessary to adjust the Window Pull Dimension, it will need to be done by increasing or decreasing the Window Pull value by the appropriate amount.

- If the unit is set up for marking and the **LOAD WIRE** or **UNLOAD WIRE** keys are pressed at any time after the marker setup, all correction values will be lost and must be re-entered before processing can continue.

- To turn marker option off, press **MENU** and **WIRE MARKER** will appear on screen. Press arrow key under **OFF** and Press **ENTER.** Marker option is now turned off.

OPTIONAL FEATURES

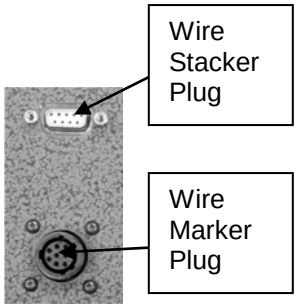
cont.

WIRE STACKER

The Model 97A offers the capability to add on a Wire Stacker to collect longer wire lengths. The electrical interface necessary to add this equipment must be purchased separately and installed at the factory.

****IMPORTANT****

Please read their operators manual before proceeding.



MACHINE SETUP

- To activate interface between the Model 97A and Wire Stacker, install exterior cable between both units. Plug receptacle on Model 97A is located on the back of the cabinet.
- To access Wire Stacking program setup press the **MENU** key.
- After Wire Stacking mode is activated a small square will appear on the lower left side of the LCD display.
- All dimensions entered during setup will correspond with the unit of measure that is programmed into the machine.

LCD DISPLAY PROMPT	ACTION REQUIRED
WIRE STACKER ON/OFF	Press **ENTER** to select this option.
WIRE STACKER IS ON/OFF **OFF ON**	Press the arrow key under **ON**. Press **ENTER.**
PLEASE ENTER **STACKER DWELL TIME** **_ _ _ SECONDS**	Enter the stacker dwell time. This time is determined by the time it takes the stacker to complete it's cycle for the current wire being processed. The dwell time range is from 0 to 2.50 seconds. Enter selected time and press **ENTER.**

CARPENTER MODEL 97A COMPU-STRIP

MAINTENANCE PROCEDURES

SLUG REMOVAL

When doing a full strip, the insulation (slug) that is pulled off may cling to blade area due to static electricity. If this occurs you may need to use the Air Blast Feature, detailed on Page 39 of the operating instructions. To remove slugs from the blades and surrounding areas it is suggested to use a small bristle brush.

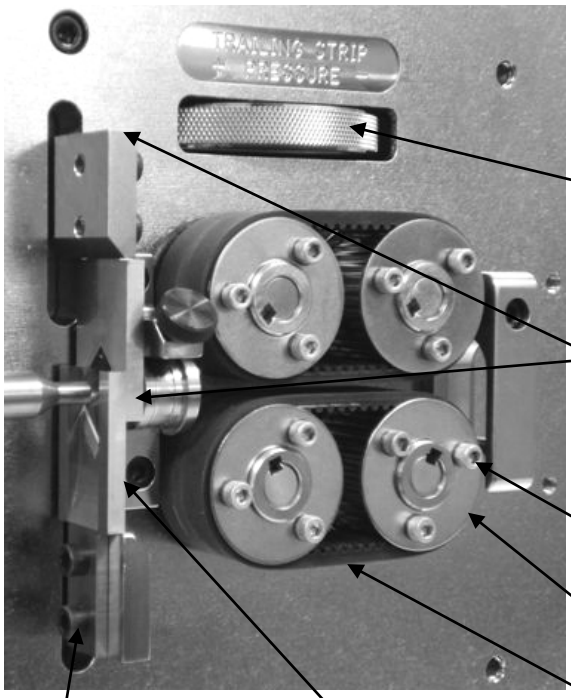
BELT CHANGE OR REMOVAL

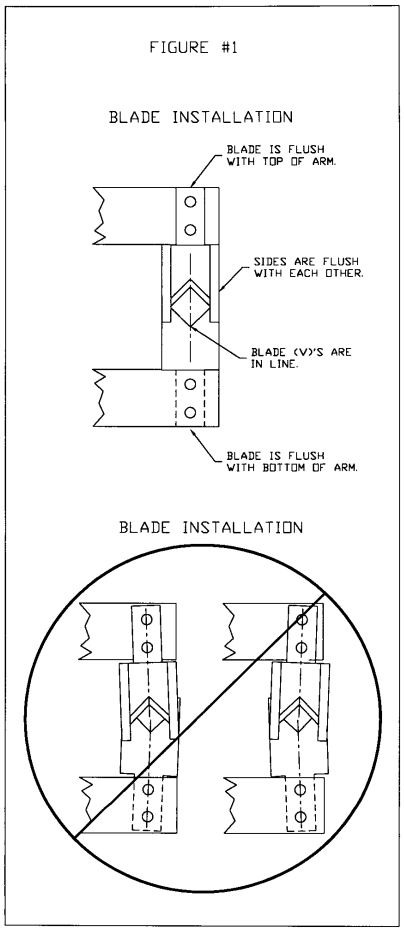
1. Turn machine off and unplug.
2. Separate belts via the BELT PRESSURE ADJUSTMENT KNOB.
3. Remove **#5451** Screws and **#8514** Belt Guides. Then remove **#8447** Feed Belts.

Reverse procedure to reinstall

BLADE CHANGE

1. Turn machine off and unplug.
2. Use **#8858** Wrench to remove 4 pieces of **#3876** screws**.**
3. Remove blades. Brush all components clean.
4. Install new blades. ****IMPORTANT****:Referring to **Figure #1** make sure the blades are vertically square to each other and flush with the top and bottom of the Blade Holders.
5. Replace and tighten 4 pieces of #**3876** Screws.
6. Turn machine on and press **ENTER** button.





TROUBLE SHOOTING

KEY ELEMENTS FOR TROUBLE FREE OPERATION

Make certain:

- Unit is plugged into a proper electrical outlet.
- Unit is turned on.
- Wire Straightener is adjusted properly.
- Belt Pressure is adjusted properly.
- Correct Input Guide Tube and Exit Guide are being used.
- Data entered is correct and accurate.
- Prefeed is being used if required.

COMMON PROBLEMS	SOLUTIONS
Display reads: **ERROR-CHECK GUIDE TUBE**	1. Check for proper Wire Guide. 2. Check adjustment on Wire Straightener. 3. Check Feed Speed. 4. Check Belt Pressure.
Display reads: **INCREASE TRAILING** **FEED BELT PRESSURE**	1. Increase Trailing Feed Belt Pressure. 2. Check for proper Wire Guide. 3. Check adjustment on Wire Straightener. 4. Check Feed Speed.
Display reads: ***** BLADE ERROR ***** **PLEASE PRESS ENTER**	1. Check Blade Speed and select slower speed. 2. Check gauge of material being processed.
Length Inaccuracies	1. Check Feed Speed. 2. Check Belt Pressure. 3. Verify Length setting. 4. Check adjustment on Wire Straightener. Wire must have proper/consistent pressure through straightener. 5. Check adjustment on Centering Roller Guides. 6. Motorized Prefeed may be required.
Wire Jams	1. Check for proper Input Guide Tube. 2. Check for proper Exit Guide. 3. Check for slugs in Exit Guide. 4. Air Blast feature may be necessary. Check for proper PSI. 5. Check Belt Pressure. Setting may be to high. 6. Check Feed Speed. 7. Check for possible wire splice 8. Check for foreign material / debris. 9. Large gauge wire: may need to remove Exit Guide or semi-strip leading end of wire. 10. Check Blade Depth setting. Make sure the correct Guide Tube number has been entered. The next size larger Guide Tube number may need to entered.
Nick, Scrapes or Cut Conductors	1. Check condition of Blades. 2. For nicks, check Blade Depth setting. 3. For scraping, check blade Step Back setting.

TROUBLE SHOOTING

cont.

COMMON PROBLEMS	SOLUTIONS
Stripped Insulation Not Pulling Off	1. Check Blade Depth setting. 2. Check Step Back setting. 3. Check Pull Speed. 4. Check Belt Pressure. 5. Check strip pull setting. 6. Blade Dwell timing may need adjustment.
Short Mode	1. Incorrect data value entered into Lead Pull.

RECOMMENDED SPARE PARTS

2 pairs **#8447** Feed Belt Pair
1 set **#8961C** HSS Coated V-Blade Set

OPTIONAL EQUIPMENT

#8520 Wire Marker/Wire Stacker Electronic Interface - Factory Installed
#8880 Flat Cable Stripping Kit w/o Blades
#8439 Wire Collection Assembly

WARRANTY

Carpenter Mfg. Co., Inc. manufactures its products to be free from defects in materials and workmanship. Should any defect occur within 1 year after shipment, Carpenter Mfg. Co., Inc. will at its option, exchange or repair the defective device.

Repairs or adjustments to equipment under warranty can be performed at our factory or at the customer location, at the option of Carpenter Mfg. Co., Inc. In most cases a 1-2 day turn around time will be necessary to repair equipment at our facility. When equipment is returned to our factory for repair or replacement, freight charges will be borne by the customer. Repaired or replaced equipment will be returned at Carpenter's expense via U.P.S. ground service. If alternate shipping is requested by the customer, the difference in shipping charges will be billed to the customer.

This is a limited warranty and is in lieu of all other representations and expressed and implied warranties (including the implied warranties of merchantability and fitness for use.) Under no circumstances shall Carpenter Mfg. Co., Inc. be liable for any incidental or consequential property damages or losses subsequent to misuse or improper maintenance of this equipment.

NOT COVERED BY THIS WARRANTY ARE:

- Consumable parts (blades, belts, guides, springs, inserts, stripping wheels, etc.).
- Cosmetic problems (nicks, scratches, etc.).
- Damages caused by any repairs or modifications by unauthorized personnel.
- Abuse.
- Damage caused by shipping.
- Damage caused by environmental and/or atmospheric conditions.
- Damage caused by the use of contaminated compressed air.