Machine Model	CS-326, A, B	Owners Manual
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Artos Engineering Company
21605 Gateway Court
Brookfield, WI 53045
Phone 262-252-4545 Fax 262-252-4544
www.artosnet.com
service@artosnet.com

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ARTOS CS 326

WITH GRAPHIC USER INTERFACE (GUI)

CUSTOMER SAFETY NOTICE

The* CS 326 B B*s supplied to you must only be used with all the guards and safety devices in place and secure to meet the intended requirements. The safety interlocks must not be tampered with or overridden in any way. Should any guards, interlock, or other safety device be found to be damaged or non-operative the machine cannot be used until appropriate repairs have been effected.

All safety guards and interlocks should be tested daily or at the beginning of each shift change. It is recommended that these checks be documented.

SAFETY INTERLOCKS

FRONT GUARD: Opening the front guard will stop the machine and display the warning "Front Guard Open". The same message will appear if the **MASTER START** is pressed with the guard open.

SCRAP DRAWER: Opening the scrap drawer will stop the machine and display the warning "Scrap Drawer Open". The same message will appear if the **MASTER START** is pressed with the scrap drawer open.

SEE APPENDIX "A" FOR MORE DETAILS OF THE GUARD INTERLOCK AND EMERGENCY STOP SYSTEM.

All electrical enclosures must be kept closed and secured. Only authorized persons with appropriate training should access these enclosures. In the event that it is required to access electrical enclosures with main power on, only persons properly trained and familiar with acceptable Safety Regulations may do so.

When performing routine maintenance, adjusting, or cleaning, the machine must be electrically isolated from the power supply.

Above all else **"Think Safety"** and insure that the machine is in fact safe.

SAFETY WARNINGS!!

The following explicit directions apply in this manual. **Do not disregard these directions.**

WARNING: personal injury may occur-**Do not disregard.**

CAUTION: Equipment damage may occur.

NOTE: Inconvenience only if disregarded. No immediate danger of damage or personal injury.

WARNING!! The **CS 326** Uses sharp cutting tools to perform its function. Great care must be taken to protect the operator and others from harm.

WARNING!!

- ➔ **Never attempt in any way to operate this machine with the guards removed.**
- ➔ **Never attempt in any way to operate this machine with the guards open.**
- ➔ **Never attempt in any way to disable the safety guard switches.**

MACHINE DESCRIPTION

The **Artos CS 326** is a compact, electronic control linear feed wire processing machine that is designed to process a wide variety of cables. The **CS 326** can accept flat or round material. A rugged machine intended for long continuous operation, the **CS 326** uses
a precise electronic measuring system and the latest in wire processing technology to quickly and accurately process your material.

The **CS 326** is the product of more than 80 years of design research experience, and continues in the fine tradition of quality **Artos** products.

SPECIFICATIONS

A. WIRE CUT LENGTHS:

1. Maximum: 7874” (200M)
2. Minimum: .25” (6,4 mm^2)

B. WIRE SIZE: (WIRE DEPENDENT)

Machine with standard wire guide kit

1. Maximum OD 0.5” (12,5mm) or 4AWG (25 mm^2).
   The maximum ID (inside diameter) of the guides is 0.53 inches (13.4mm)
2. Minimum: 30 AWG (0,05mm^2.)
   The minimum ID of the guides is 0.060 inches (1.52mm)

Machine with large wire guide kit

1. Maximum OD 0.63” (16,0mm) or 2AWG (34 mm^2)
   The maximum ID of the guides is 0.69 inches (17.5mm)
2. Minimum: 30 AWG (0,05mm^2.)
   The minimum ID of the guides is 0.060 inches (1.52mm)

C. STRIP LENGTHS:

1. Maximum: 39.37"(999 mm^2) Leading end
2. Minimum: 0.01” (.254 mm^2)

D. MACHINE SIZE:

1. Length: 34” (863 mm^2)
2. Width: 24..5” (622 mm^2)
3. Height: 37..3” (952,5 mm^2)/ 67.3 with cart (1709,4 mm^2)

E. MACHINE WEIGHT:

400 lbs. (182 Kg.) [packed weight]

F. Electrical

1. Power Supply:
   115±10% or 230±10% VAC
   47-63 Hz
   Single Phase
   0.4 kW (Nominal)
2. Connection to Supply:
   Detachable cord
3. Protection Against Electric Shock
   Grounded metal enclosure

G. Environmental

1. Temperature:
   Operating 0°C to +45°C
   Storage -25°C to +55°C
2. Relative Humidity:
   30% to 95%
   (Non- condensing)
3. Altitude:
   Up to 4000 ft. MSL (1200 m MSL)
4. Sound Level
   54 dbA quiescent
   73 dbA automatic cycle

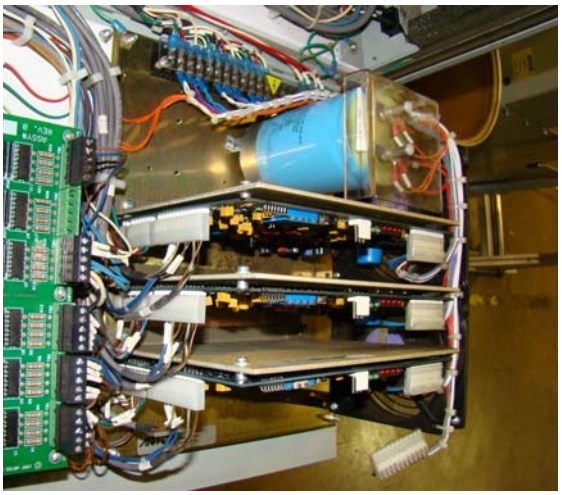
Other:

This equipment is designed for normal operation in a dry location where it is not likely to be subjected to drip, splash or spray of water or other liquid

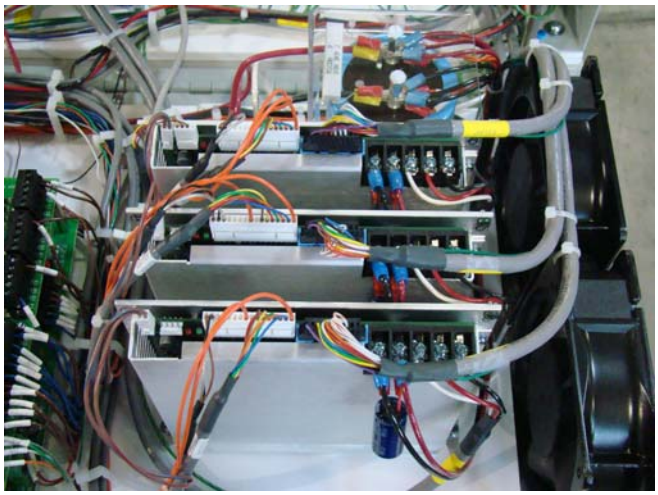
MACHINE VERSION IDENTIFICATION 326, 326A, 326B

There have been 3 versions of CS326 machines released over the years.

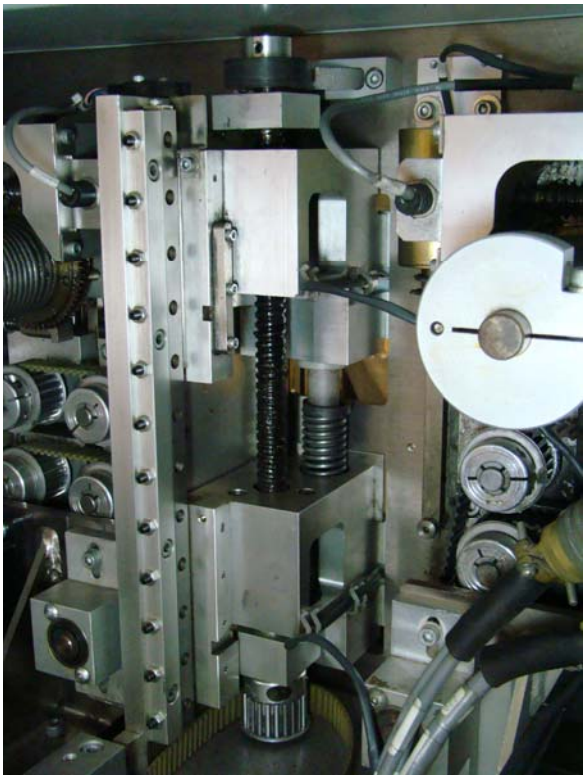
CS326 1997-2008 Analog servo drives and motors, V-Way bearing cutterhead
CS326A 2008-2010 Digital servo drives and motors, V-Way bearing cutterhead
CS326B 2010- Digital servo drives and motors, Linear bearing cutterhead



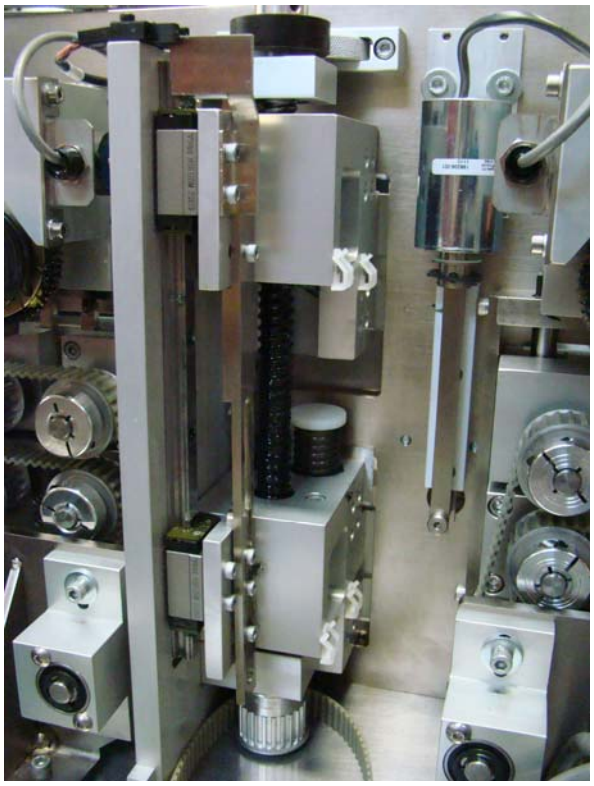
Analog servo drive only used in CS326



Digital drive in CS326A, B



V-Way bearing cutter used in CS326, A



Linear bearing cutter only used in CS326B

INSTALLATION

WARNING: HEAVY EQUIPMENT. The machine weight is 400 lb. (182 kg)
Use suitable lifting procedures.

A. Once you have received your **CS 326 ,** un-crate the unit and make a thorough inspection to determine if any loss of contents, or damage, has occurred during shipping. **Any shipping related damage must be reported to the carrier immediately**. Remove the rust protective coating from the unpainted surfaces.

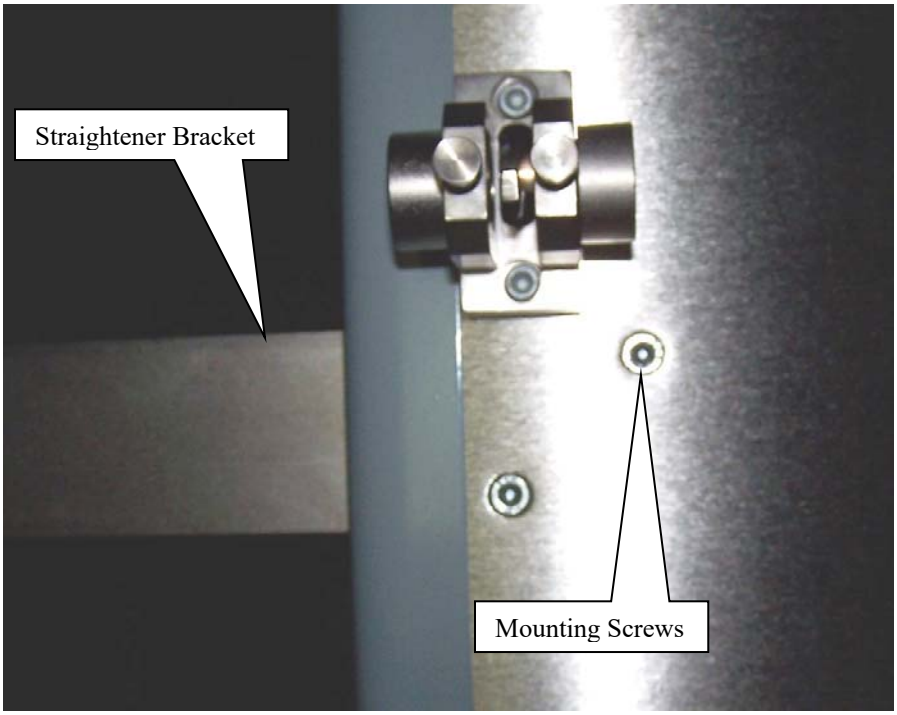
B. This equipment is designed for normal operation in a dry location where it is not likely to be subjected to drip, splash or spray of water or other liquids. Select a suitable location for which allows adequate perimeter access for maintenance.

C. Un-pack the monitor and place it on the upper shelf. Insert the video cable through the notch in the back of the top cover and out the hole in the front. There is a ramp built in to the cover to help guide the cable through the cover. Connect the power cord pigtail that extends from the notch to the monitor. (Store the carton and packing material in the event of a failure the monitor has to be returned in the original carton.)

D. Un-pack and install the computer.
1. Along with the computer you will find the manual and operating system disks for the operators station PC. (Store these items along with the carton in a safe location. In the event of a failure of this unit it will be necessary to return it along with the operating system disks in the original carton.)
2. Set the computer on the machine.
3. On the back of the computer check to see if there is a power selection switch for 110VAC or 220VAC. If there is confirm that it is in the correct location, depending on the voltage your machine is to be connect to.
4. Plug in the power cord to the computer.
5. Connect the video cable to the video port and secure it with the thumb screws.
6. Connect the serial cable to the COM port, the COM number on the cable and the computer should match.
7. Plug in the mouse and place it on the right side of the computer.
8. Plug in the keyboard and place it on the sloped area at the front of the machine.

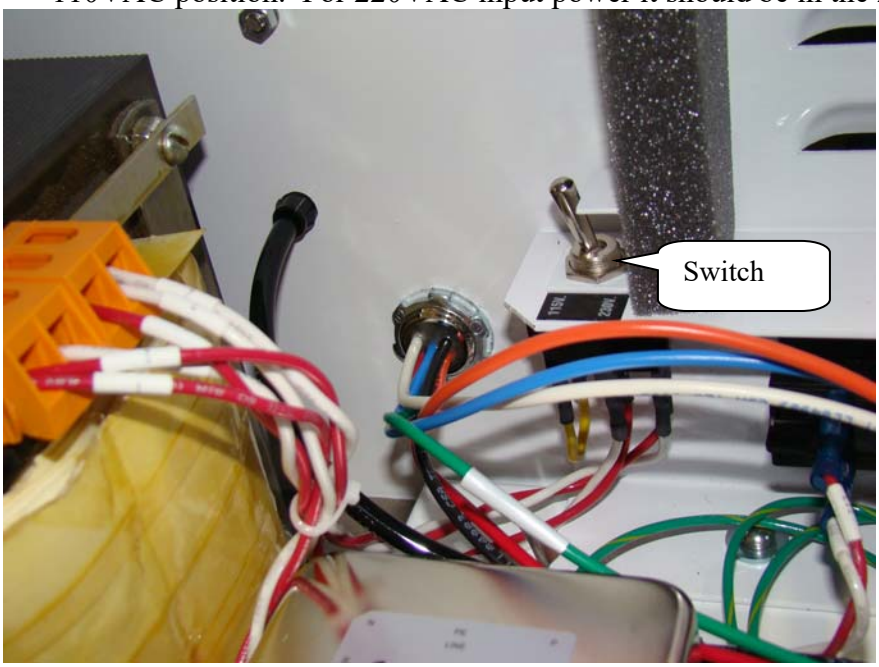
E. Insert the wire straightener bracket through the hole in the left end of the cabinet and secure it with the screws provided.

Caution: To avoid any shock hazard do not insert the bracket into the cabinet with electrical power on. Do not insert the bracket any further than necessary into the cabinet as damage may occur.



WIRE STRAIGHTENER BRACKET

F. Confirm the machine is configured for the correct input voltage.
   1. Open the back of the machine.
   2. Look at the voltage selection switch. For 110VAC input power it should be in the 110VAC position. For 220VAC input power it should be in the 220VAC position.



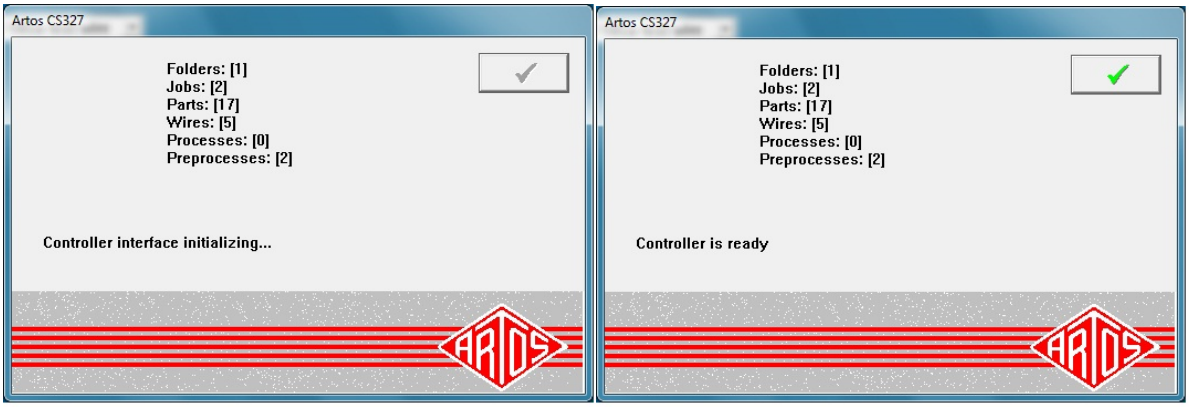
G. Connect to specified electrical supply using the power cord provided.

H. Set-up and attach optional equipment in the appropriate locations in relation to the main unit.

Caution: When using the **CS 326** on a mobile cart take care to insure the keyboard and monitor are not damaged during movement.

MACHINE POWER UP

Turn on the main switch on the right side of the cabinet. The Operator interface (PC) will boot-up and **Windows** will start. The **ARTOS CS 326 GUI** program will start automatically.



If communications are working these two screens will appear and automatically close.

Close the guard and release the E-Stop button. Pressing the **Master Start** button (See page 16) will energize the power system in the machine. Pressing the Cycle Start will initialize the start up sequence (a series of beeps will start). The Feed system will open and the cutterhead will reference. When the start up reference is complete, the beeping will stop. Click the check boxes to clear the dialog windows.

Note: When shutting the machine down follow these steps.

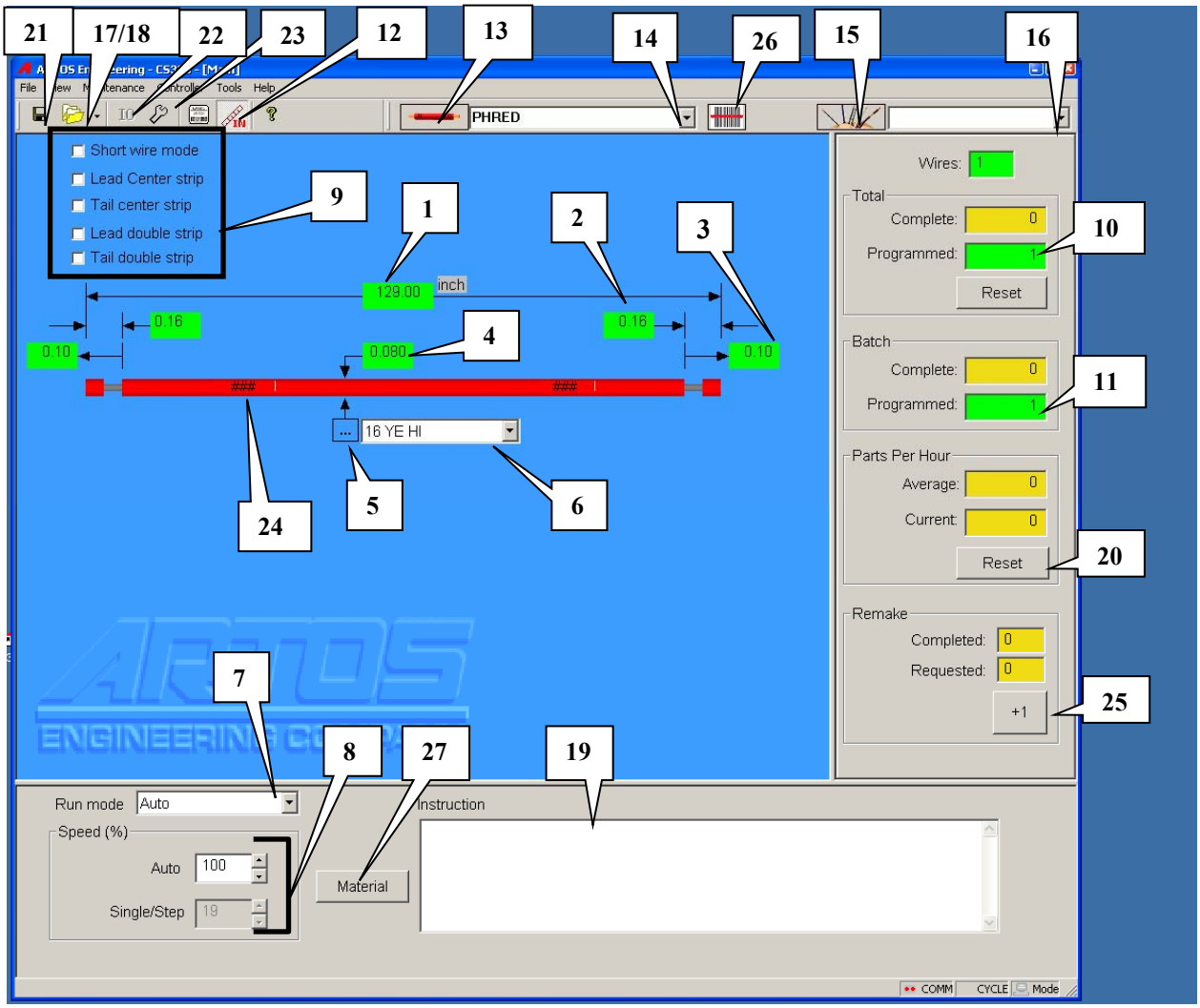
Close the CS 326 software
Shut down the computer by clicking start - shutdown.
When the computer is off turn off power to the machine

OPERATION

The following information will allow you to put your **CS 326** into production in a minimum amount of time. Additional features and maintenance functions will be discussed in future sections

RUN SCREEN

The RUN SCREEN is the primary screen the operator will use to run and program the **CS 326 .**



SCREEN LEGEND:
THE FOLLOWING ITEM NUMBERS WILL BE REFERRED TO THROUGHOUT THIS MANUAL

1. Enter - Wire length tip to tip. (See page 18)

2. Enter - Strip length (typical both ends) (See page 18)

3. Enter - Strip pull length (values the same or larger then Strip Length will remove the strip. Values smaller will leave the strip on by the differential) (See page 18)

4. Enter - Blade opening distance corresponds with approximate conductor diameter. (See page 20)

5. **Wire:** This will open the **Wire Properties** window where the wire characteristics are set up (see page 24)

6. Drop down menu to select previous qualified wires. Selection will be displayed in adjacent window.

7. **Mode:** Allows selection of Auto, Single, or Step modes of operation. (see page 24)

8. This allows the control of the global speed of the machine in the selected mode. (5 to 100%)

9. This selects the stripping method: **Short mode, Center Stripping,** and **Double Strip**,

10. **Total Parts/ / Programmed:** Enter – Total number of parts desired. (See page 20)

11. **Batch Parts/ / Programmed:** Enter – Number of parts desired in a batch. (See page 20)

12. Click on **Ruler Icon** to switch between Inch and Metric measuring mode.

13. Click on the **Wire Icon** to set up or modify the part properties.(see page 24)

14. Drop down menu to select previous programmed parts. Selection will be displayed in adjacent window.

15. Click on the **Wire Array Icon** to set up or modify the Job properties.(see page 30)

16. Drop down menu to select previous programmed Jobs.

17. Click on the **Folder Icon** to set up or modify data folders.(see page 32)

18. Drop down menu to select previous established folders. Selection will be displayed in adjacent window.

19. Operator instructions programmed with the part.

20. Shows current and real time production rates.

21. Saves all changes made to current programs.

22. Opens **Maintenance I/O statues** screen (Including machine states, I/O data, and servo data)

23. Opens the **Machine Configuration** Window. (See page 44)

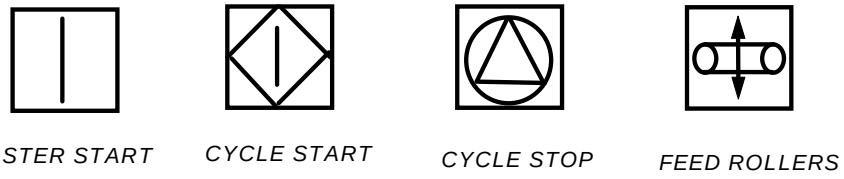
24. Preprocess-Marking / Slitting ### indicates a preprocess is selected. (see page 69)

25. Remake. As you make batches of parts you may need to make an extra part. By pressing the remake button, one part extra will be made for the current batch. When running in job/batch mode, this

button will be inactive as the machine changes over from one part to the next. The button is always inactive for in Job/Harness mode.

26. Bar code scan. For selecting part name by scanning a bar code.

27. Material. Opens a window for verifying the wire via bar code scan.



PUSH BUTTON LEGENDS

MASTER START: Activates the main contactor. This must be on for any action to occur.
CYCLE START: Activates the cycle function that is selected. **AUTO, SINGLE, or STEP MODES**
CYCLE STOP: Will stop the current cycle at the end of the cycle.
FEED ROLLERS: Will alternately open and close the feed system. (**Master Start** must be on)
EMERGENCY STOP (The red mushroom button) will stop all motion immediately.

GETTING STARTED

To put your **CS 326** into production follow these easy steps:

1) Insure the proper blades are installed in the cutterhead. (See 99)

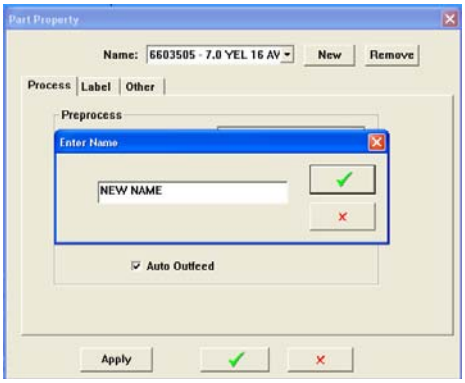
2) Select the measuring mode desired, inch or metric, by clicking on "**Ruler Icon**" at the top of the screen (#12). The selection will toggle between inch and metric.

3) Click on "**Wire**" (#5) to setup a new wire or click on Drop down button (#6) to select from existing wires. For more information configuring the wire properties see section WIRE PROPERTIES page 24.

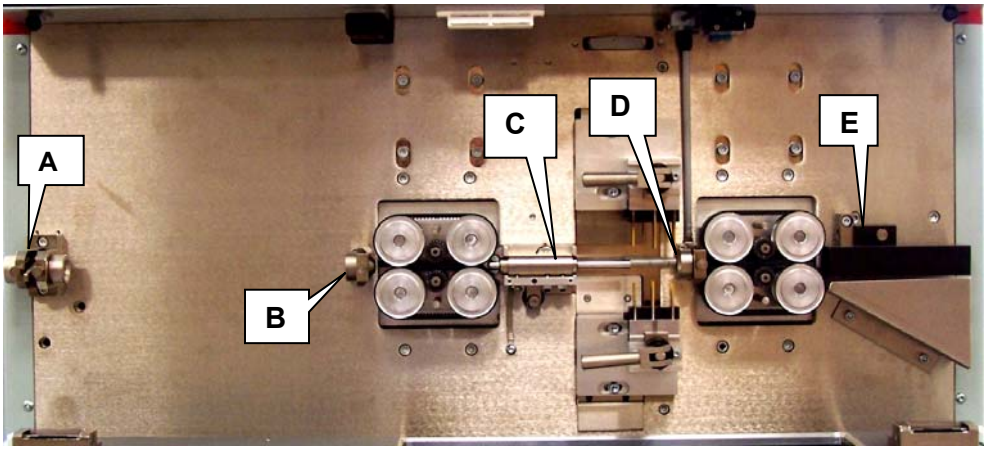
4) Click on Drop down button (#14) to select part, select **MDI** (Manual Data Input).

5) Enter data in #'s 1, 2, and 3. Select Preprocess if required.

6) Now to save this information as a **Part** to be used again click on the "**Part Icon**" (#13) the **Parts Properties** dialog window will appear. Click on the "**New**" button and enter the name you wish to use in the window that appears. Click on the green check box. For more information on configuring the part properties see section PART PROPERTIES page 21.



7) Insert the proper size wire guides. (See document "CS-326 Guide Selection.pdf")



A. Wire run out guides. Remove the smaller guide to run larger wire.

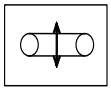
B. Select Infeed guide based on wire size.

C. Select feed tube based on wire size

D. Select outfeed guide based on wire size.

E. Select discharge guide based on wire size

8) To open the feed rollers or belts press the "**Feed Rollers**" button.



The EMERGENCY STOP button must be released, the guard closed and MASTER START pressed before the Feed Roller button will function To release the Emergency Stop button rotate the button clockwise until the button pops up.

9) Insert the wire though the guides and position the leading end of the wire at the right end of the feed tube. The **CS 326 B** will feed the length of wire set in the Machine Configuration (see page 44), and cut it off to qualify the end of the wire for first piece accuracy. This will happen each time the Feed Roller / Wheels are opened and closed or the Emergency Stop button is used.

Close the feed rollers or belts by pressing the "**Master Start** and **Feed Rollers**" buttons.

10) Select the "**Single**" mode (#7) and press the "**Cycle Start**" Button. This will produce one sample piece. Examine the part, make necessary adjustments, and repeat as necessary. When results are satisfactory select "**Auto**" mode press "**Cycle Start**" to commence production.

Pieces made In Single Or Step are not counted as part of the total quantity

WIRE AND STRIP LENGTH SETTINGS

Wire (#1) and strip (#2) length are entered by double clicking on the appropriate field, when doing so it will turn blue, type in the desired values and press **ENTER**.

STRIP STROKE (FULL OR PARTIAL)

Strip Stroke (#3) length is entered by double clicking on the appropriate field, when doing so it will turn blue, enter the desired values and press **ENTER**. If the value is the same as or longer than the strip length the slug will be pulled of completely. If the value is less than the strip length value the slug will only be pulled that far leaving it on the end of the wire. Elasticity of the insulation may determine the pull required to break the slug free from the wire.

STRIP METHOD SELECTION

The strip method option (#9) allows the ability to select several types of stripping methods.

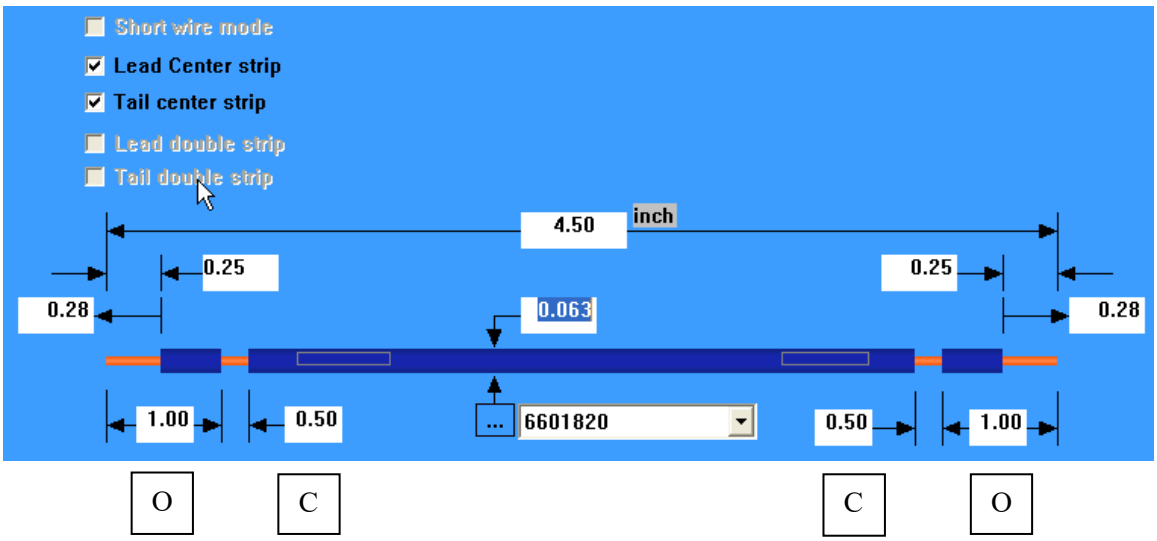
- **Short Wire** This is for wires that need to have both ends stripped but are too short to reach the out feed belts. In this mode the machine strips a length of insulation off the lead that is the total length of both the lead and tail strip. It then slides down the wire the length of insulation that should be left in the center of the wire. Then it cuts the wire off to the correct length. **NOTE: It is very important that the body length of insulation is able to slide on the conductor. For insulation lengths that cannot be slide along the wire without damage or slipping the wire in the belts this mode will not work. You may need to enter values program values different on the screen to get the measured values you need. This is because of the flexibility of various insulations.**

- **Lead /Tail Center Stripping** This mode will allow you to program a Center (window) strip near the end of the wire.

  To accomplish a leading or trailing Center Strip select one or both in the upper left corner of the screen.

  Then program the over all wire length and the **"T"** and "**L"** strip lengths as usual.

  Enter the desired center strip length value in the **"C"** field (Center Strip) and the distance between the end of the wire and the near edge of the center strip in the **"O"** field (Off Set).

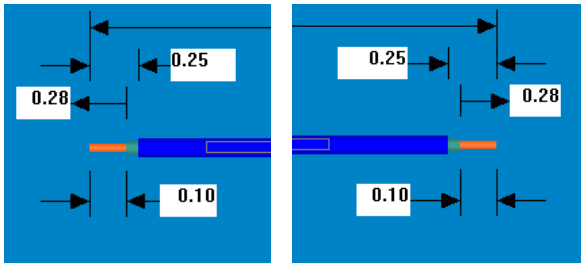


Above is an example of a wire with a .25 in center strip 5 inches from the end of the wire.

NOTE: It is very important that the body length of insulation is able to slide on the conductor. If the insulation is difficult to slide, it may be necessary to adjust values to accomplish a center strip successfully.

- **Lead / Tail Double Strip** gives the ability to strip a wire that requires a 2 step strip such as coax cable. When this is selected the wire image will change. Entry fields for the window strip position and length will appear. The normal strip values are the **Primary** values. (smaller

diameter) The added windows are the **Secondary** values. (larger diameter) The **Strip Diameter** for the Secondary strip is found in the **Wires Properties** (#5) The order of the stripping, inner conductor first or outer conductor first, is selectable through the **Machine Configuration** (#23)



STRIP DIAMETER

Strip Diameter is entered by double clicking on the appropriate window (#4), the field will turn blue, enter the desired values and press **ENTER**. (Secondary Strip Diameter is found in Wire Properties)

PROGRAM QUANTITIES

Total Parts

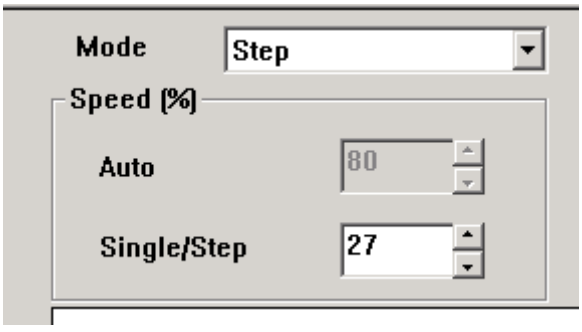
Click on "**Programmed**" window, Enter the total number of pieces to be produced. Press **Enter.** The value in "**Complete"** window will increase until it matches **Programmed** the value. Then the **CS 326** will stop cycling.

Batch Parts

Click on "**Programmed**" window, Enter the total number of pieces to be in a batch. Press **Enter.** The value in "**Complete"** window will increase until it matches the **Programmed** value. Then the **CS 326** will stop cycling.

CYCLE MODES

NOTE: The MASTER START button must be on to activate any cycle mode.



All the machine cycling functions are controlled by the **CYCLE START** button. To select which mode is used (**AUTO, SINGLE, or STEP**) click on the drop down button (#7) and select.

Auto Mode

When the **AUTO** mode is selected the **CS 326** will start producing the desired wires in the quantities programmed in the **Total Parts** field, divided into the amounts programmed in the **Batch Parts** field using the selected **Batch Control** mode.

Single Mode

When the **SINGLE** mode is selected the **CS 326** will produce one complete wire. This is usually used to check the quality of the piece. The **CS 326** does not count this piece.

Step Mode

When the **STEP** mode is selected the **CS 326** will produce one wire at a time progressing through the process step by step. With each press of the **CYCLE START** button the process will advance one step. This will allow the operator to view each step of the process. The **CS 326** does not count this piece.

Speed%

The value in these windows is the percentage of the total speeds the machine will run in the selected mode.

SETTINGS

PART PROPERTIES

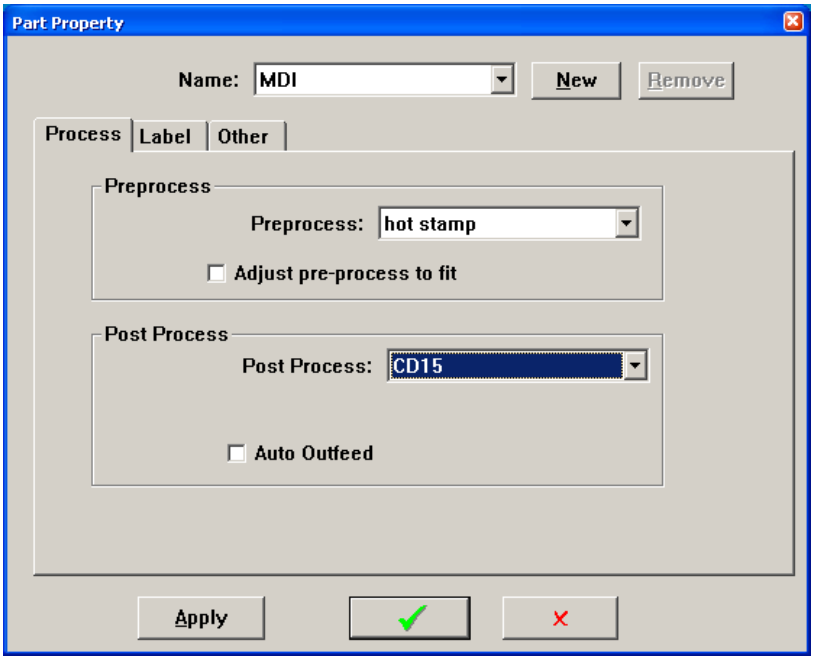
Process tab

Preprocess dropdown Select the name of the pre-process you would like to perform on the wire (see section PRE PROCESS PROGRAMMING page 69). Leave blank if no pre-process.

Adjust pre-process to fit – If this box is checked the software will automatically change the programmed lengths of the pre-process so it will fit on the programmed length of wire. For example you may have programmed a Hot Stamp pre-process that has a mark 6 inches from each end of the wire. Then you programmed a length of wire to be 10 inches. The software will automatically change the mark to be 4 inches from each end of the wire so it will fit.

Post Process drop down Select the name of the post process device connected to the machine (see section Post Process Config page **Error! Bookmark not defined.**)

Auto Outfeed – If this box is checked the machine will feed each part completely clear of the machine before it start processing the next part. This is sometimes necessary depending on the type of post process that is selected or in the way in is necessary for the operator to handle the parts. Having this box checked will reduce the parts per hour.



Label Tab

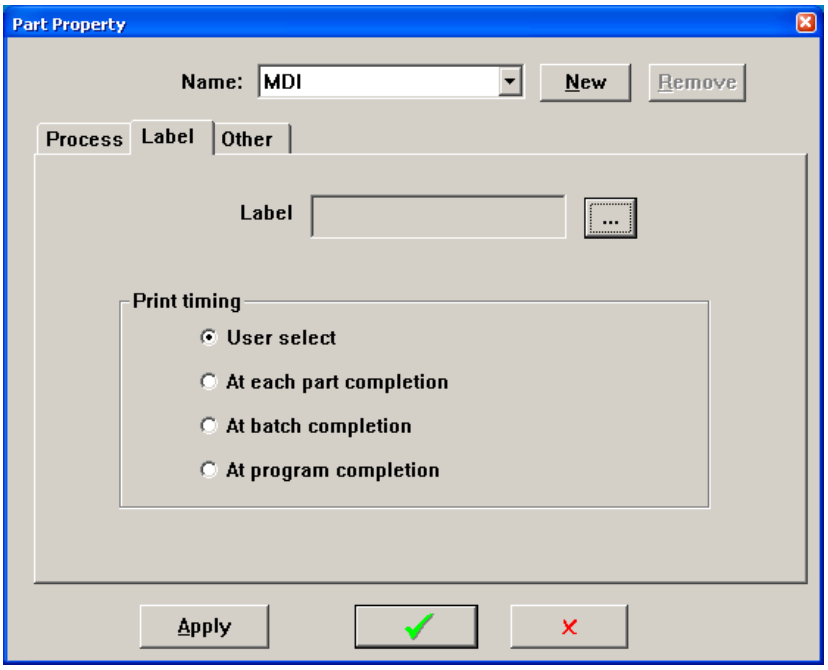
The label feature can only be used if the Nicelabel software and printer are installed on the machine. See section Label printing option (page **Error! Bookmark not defined.**) for more details.

Click the browse button  . Select the name of that label and click the green check. For information on creating and editing labels see section CREATING A LABEL on page**Error! Bookmark not defined.**.

Select the Print Timing you want to use,

- User Select (The label will print whenever you click on the label icon )
- At each part completion (print a label after each part)
- At batch completion (print a label after each batch)
- At program completion (print a label after special stripping)

For more information see section PRINT TIMING on page **Error! Bookmark not defined.**.



Other Tab

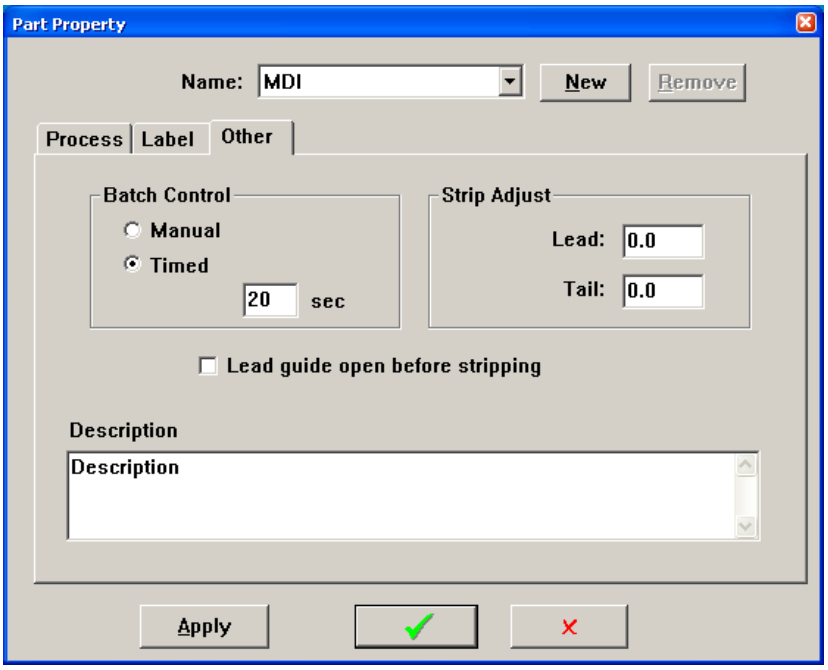
Batch Control – The method the machine stops at the end of each batch can be controlled in two ways.

1. In Manual the machine will re-start the next batch only when the **CYCLE START** button is pressed.
2. In **Timed** the machine will automatically start the next batch after a pre-set time which is set in the adjacent window up to 99 sec.

Lead Guide Open Before Stripping – When this box is checked the the outfeed guide will move forward to allow the strip slug to drop. This should be used if the lead end strip length of the wire will enter the outfeed guides but not the outfeed belts. For shorter strip lengths do not check this box because it does reduce the parts per hour.

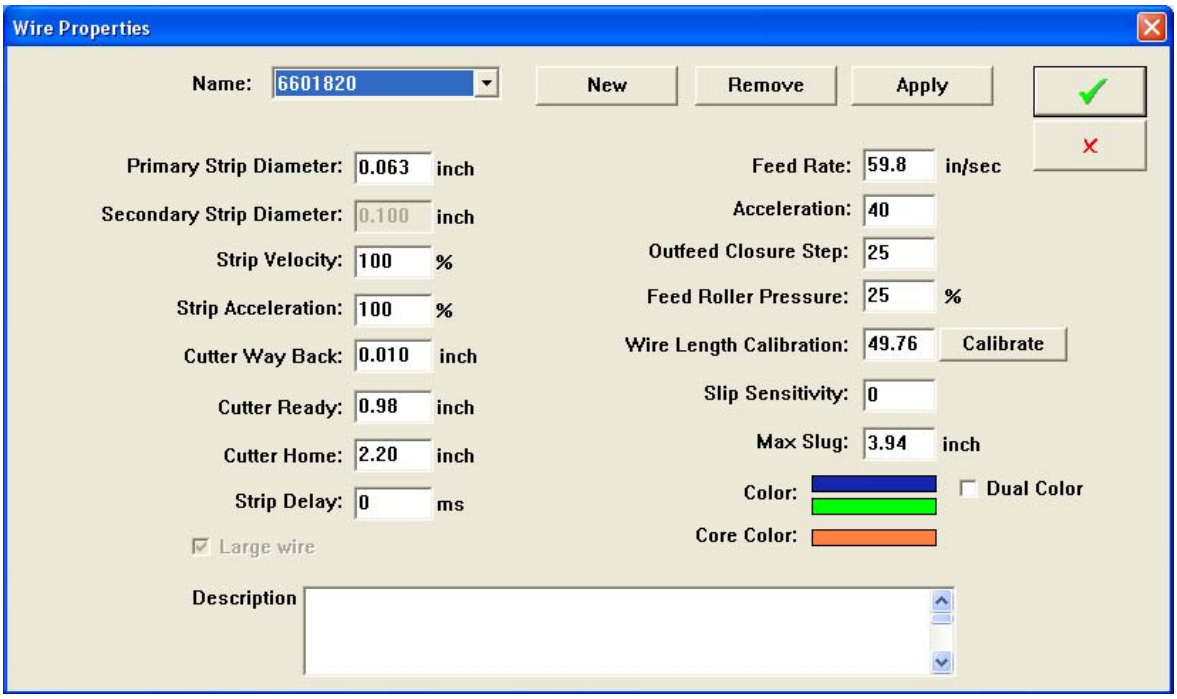
Strip Adjust – This is to calibrate the strip end so that you measure the same strip length as you program. This is a compensation value so if you program a 10mm lead strip and it measures to be 11mm, you would enter a -1.0mm for the lead strip adjust.

Description – This is for any notes that are related to the part. This text is not displayed or used in any other location.



WIRE PROPERTIES SETTINGS

Wire Properties (#5) is the data required to define the settings needed to run the wire.



Wire Properties (#5) is the data required to define the settings needed to run the wire.

Name. The name of the wire selected

New: Click on this to identify a new wire. Enter the name in the window and click on the green check box.

Remove. This removes the selected wire from the file if it is not used by a part.

Apply. While making changes in the **Wires Properties** window click on "**Apply**" to effect the change before closing the window. Samples may be run with window open

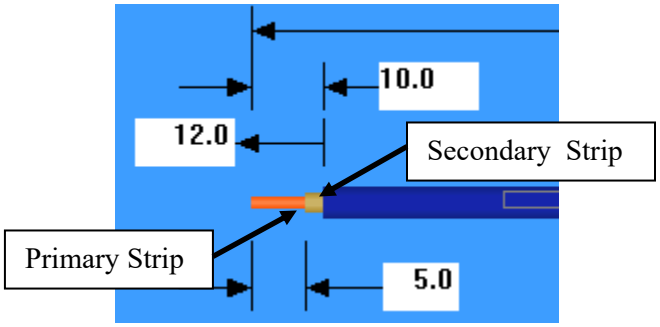
Primary Strip Diameter. (0.0 -.500 in. / 0.0 – 12.7mm)

This setting is the distance between the points of the **"V"** in the stripping blades when they close to strip. This value is a linear movement and not numerically relative to the gauge or cross sectional area of the wire conductor. Changing blade types i.e. "V" to Radius will require different settings for the same gage wire.

NOTE: This value will change with the change of the value in (#4) on the RUN screen.

Secondary Strip Diameter. (0.0 -.500 in. / 0.0 – 12.7mm)

This is the same as the **Primary** above but used for the secondary strip. Secondary strip is used in the double strip mode. Note the order of the stripping is programmed in Machine Settings / Strip.



Strip Velocity (1-100%)

This setting is the maximum speed to which the wire will accelerate during the strip portion of the cycle. Lowering this and/or the **strip acceleration** may assist in stripping hard to strip materials by lessening the tendency for the feed to slip.

Strip Acceleration. (3-120%)

This is the rate at which the wire accelerates and decelerates during the strip portion of the cycle. Rates in excess of 100% should only be used when the wire is easily striped. Lowering this and/or

the **strip velocity** may assist in stripping hard to strip materials by lessening the tendency for the feed to slip.

Cutter Way Back (0.0-.2000 in./ 0.0-5.08 mm)

This setting allows the stripping blades to be retracted from the conductor during stripping to avoid nicking of strands and excessive blade wear.

Cutter Ready (0.00-1.750 in./ 0.0-44.45 mm)

This setting allows for optimization of servo cutterhead cycle time. After initiation of the feed cycle and before the end of the feed the cutterhead will pre close to a distance from the wire determined by the value entered.

Cutter Home (0.00-1.750 in./ 0.0-44.45 mm)

This is the dimension the cutterhead opens to between each wire feed. A bigger dimension will allows the wire to pass over the blades more easily. However larger dimensions can reduce the parts per hour when running short wire lengths.

Strip Delay (0-999 msec.)

This setting allows the blades to settle in to the insulation for the programmed time before the strip stroke occurs.

Feed Rate. (20-197 in./sec./ 0.05- 5.00 M/sec.)

This setting is the maximum speed to which the wire will accelerate during the feed portion of the cycle.

Acceleration. (5-120% increments of 5%)

This is the rate at which the wire accelerates and decelerates during the feed portion of the cycle. Rates in excess of 100% should only be used when the wire is adequately pre-fed.

Outfeed Roller Stop (0- 2400 steps)

This setting provides a gap between the upper and lower outfeed rollers or belt. This gap allows the stripped leading end of the wire to enter the outfeed rollers or belts without damage.
This setting is determined by the diameter of the stripped conductor or the OD of the wire if the leading end is not stripped. It is suggested that the setting initially be 50% of the conductor OD. The final setting can be obtained by further adjusting this gap for best performance with your wire.
Use the following table to obtain the approximate “STEPS” value for the desired gap.

Note: The feed rollers or belts must be opened and closed to affect a change in this setting.

SETTING IN STEPS	GAP IN IN.	GAP IN MM
2400	0.39	9.91
2000	0.33	8.26
1600	0.26	6.60
1200	0.20	4.95
800	0.13	3.30
400	0.07	1.65
0	0.00	0.00

Table 1 OUTFEED GAP

Feed Roller Pressure (1-100%)

This sets the amount of gripping pressure used to feed and strip the wire by the feed wheels or belts.

Note: The feed rollers or belts must be opened and closed to affect a change in this setting.

Wire Length Calibration. (50.00± 3.94in. / 1270± 100.0mm)

This setting compensates for the different measuring characteristics of the various types of wire.

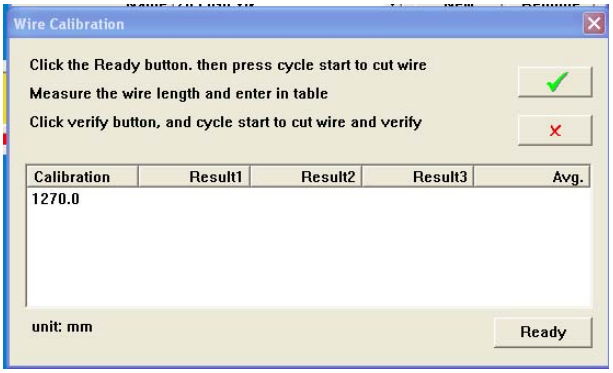
Wire calibration by manually entering the calibration value in the Wire Properties screen.

1. Open the Wire properties screen.
2. Set the Wire Length Calibration value to 50.
3. Click the green check to exit.
4. Run the length of wire you need.
5. Measure the wire.
6. Open the Wire properties screen
7. Use the following formula to determine the calibration number.
   In Inches
   (50*measured length)/programmed length = calibration value

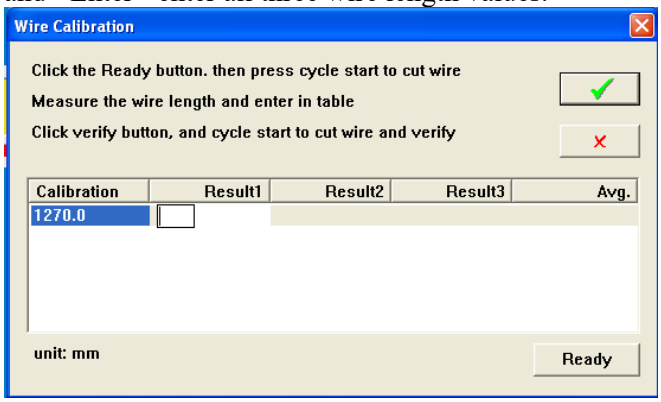
   In metric
   (1270*measured length)/programmed length = calibration value
8. Enter the number you calculated above for the calibration value.

Wire calibration using the calibration routine in the Wire Properties screen.

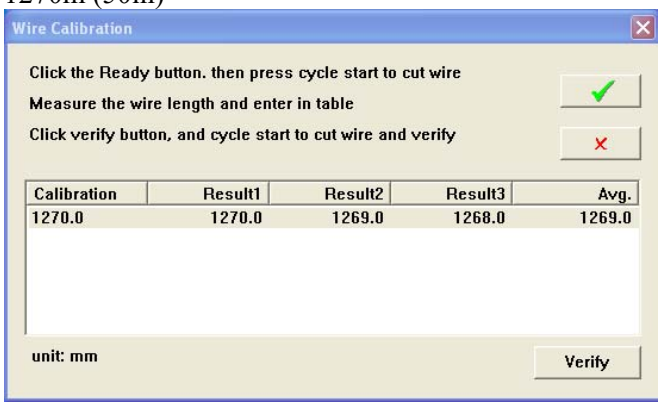
1. Open the wire properties screen shown above.
2. Click the calibration button.



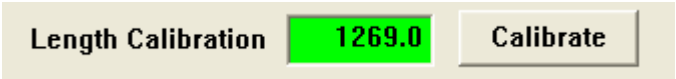
3. Click **Ready** then press Cycle Start. The machine will produce three wires of approximately 1270mm (50in.)
4. Measure the wires.
5. Double Click on the calibration line. The first results field will open. Enter first length data and <Enter> enter all three wire length values.



6. When all values are entered Click **Verify**. Then press Cycle Start. The wires should now be 1270m (50in)



7. Use the Green check to exit. Your Average number should appear in the Length Calibration window.



Slip Sensitivity. (0-20)

Slip sensitivity is used when the machine is equipped with the “Slip and Snag Detector” option or this machine is built with a wire measuring encoder. When this is set for 1 or higher the machine will compare the motion of the wire with the motion of the infeed motor. The slip sensitivity setting determines the allowable differential. 0 = no detection, 20 = max sensitivity.

Max Slug.

This is the maximum length of the scrap slug. If the strip length is greater than this setting the end will be stripped in multiple cuts. This happens when the nibble function is selected in Machine Configuration.

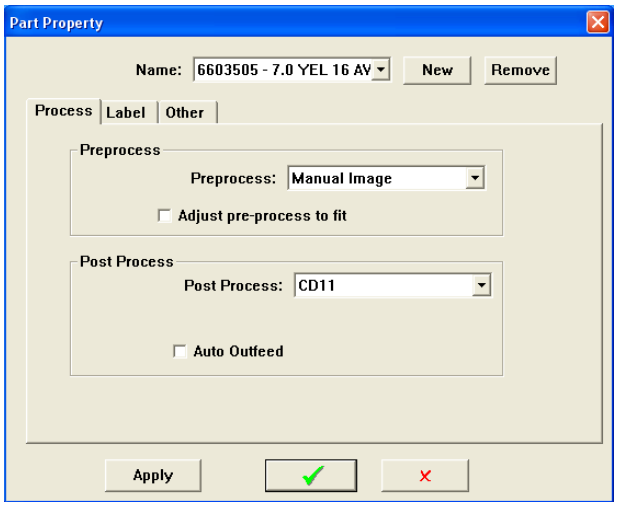
Color.

This allows the wire image to be display in it actual color. Check “Dual Color” to display a stripe on the wire. Core or conductor color can also be displayed.

FILE MANAGEMENT

CREATING AND EDITING PARTS

The complete wire file that consists of wire name, wire overall length, strip length, strip stroke and pre and post process information is called a “PART”. Click on the **PART** icon to open the “Parts properties” window to create a part. 

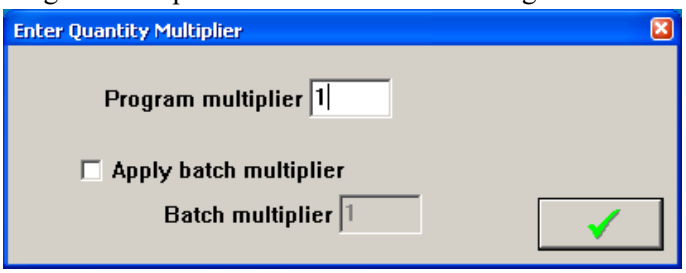


Click on **New** and enter the part identification name in the window. All the information that is currently on the screen will be associated to that name and saved to it when you click the “File Save” icon. 

CREATING AND EDITING JOB PROGRAMS

The CS326 can be programmed to run a Job Program. This is a series of existing part programs run either in a batch or harness. **A maximum of 500 parts can be entered on a job list.** There are two modes to run the machine, Batch and Harness, both are described below.

Batch Mode will produce all the parts programmed in the total quantity of a part program in the batch sizes desired and will then change to the next programmed part. The quantities of wires to be produced can be pre-programmed in the job list or they can be entered at run time. If you want to pre-program the number of wires to be produced simply enter the Total number and Batch number on the list. When you start to run a job program in the software you will be given the following message. Make sure the Program multiplier is set for 1 and click the green check to use the pre-programmed quantities.



If you want to determine the number of parts to make at run time enter the number 1 for the batch and total, unless you know that for a particular wire you need twice as many parts then you should enter a 2 for the total.

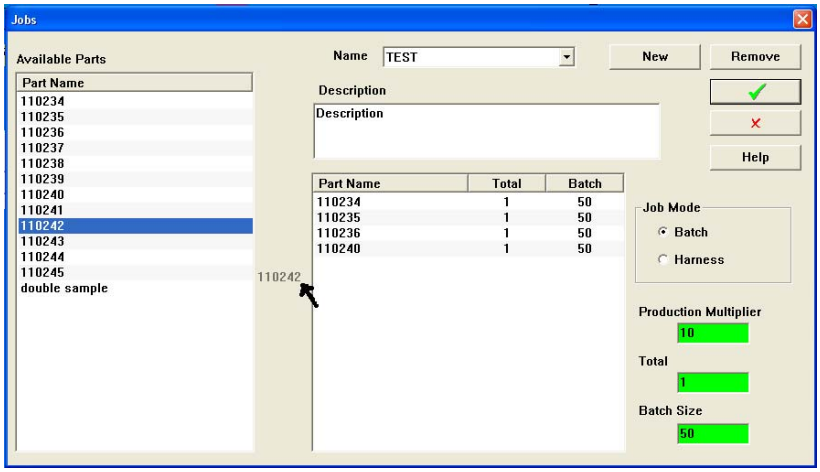
When you go to run the part the message above will appear. Enter the number of parts you need to run in the program multiplier. If you want to divide these totals into batches then check the "Apply batch multiplier" box and enter the batch size you would like to run.

Harness Mode will produce a set of wires for a harness. It does this by producing 1 piece of the first part in the list then 1 pc of the next part in the list and so on. When one piece of each part in the list has been completed the machine dumps this harness, informs the operator to remove it from the machine, and then starts the next harness. If you need 2pc of the same part you will need to program it twice in the list. The quantity of harness to be produced can be preprogrammed in the "Loop" field, or you can set the Loop field to 1 and enter the number of harnesses to make at run time. When you go to run the part the same box that is shown above will appear. If the job has the quantity of Loops pre-programmed enter 1 and click the green check. If the job has the loops set to 1, enter the number of harnesses to make in the Program multiplier box and click the green check.

Creating a New Job Program

To create a new Job Program click on JOB: the following screen will appear.

WARNING!!!
When establishing a job with marking on any part all components must have marking. If no mark is desired on a part in the job enter a mark of "spaces". Failure to do this will result in misplaced



Programming for Batch Mode

Click on NEW, enter the Job Program name, and click ✓. To add parts, Click on the desired part in the left column and "drag" it to the box at the right. The parts will be produced in the order they were dragged into the job. To remove a part, click on it and drag it out of the box and drop it anywhere. It will disappear.

HINT: Before bringing parts over, set the desired batch size. Also the Total value is best set to "1" this will allow you to multiply it to any value when the program runs.

Individual entry quantity can be modified once they have been dropped in to the job. To change quantity click on it and a box will open. Enter the new value.

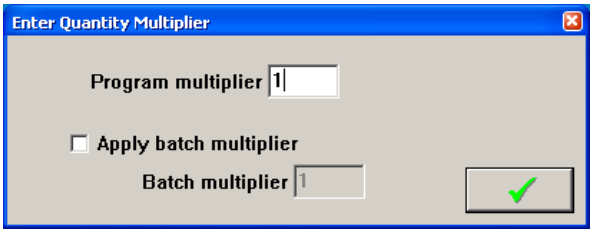
The list of parts will run one item at a time in the batch sizes prescribed until the total is reached. Follow the prompts on the screen; the next Part Program will be loaded. After the operator has made any changes that may be required a push of the Cycle Start button is required to start production again.

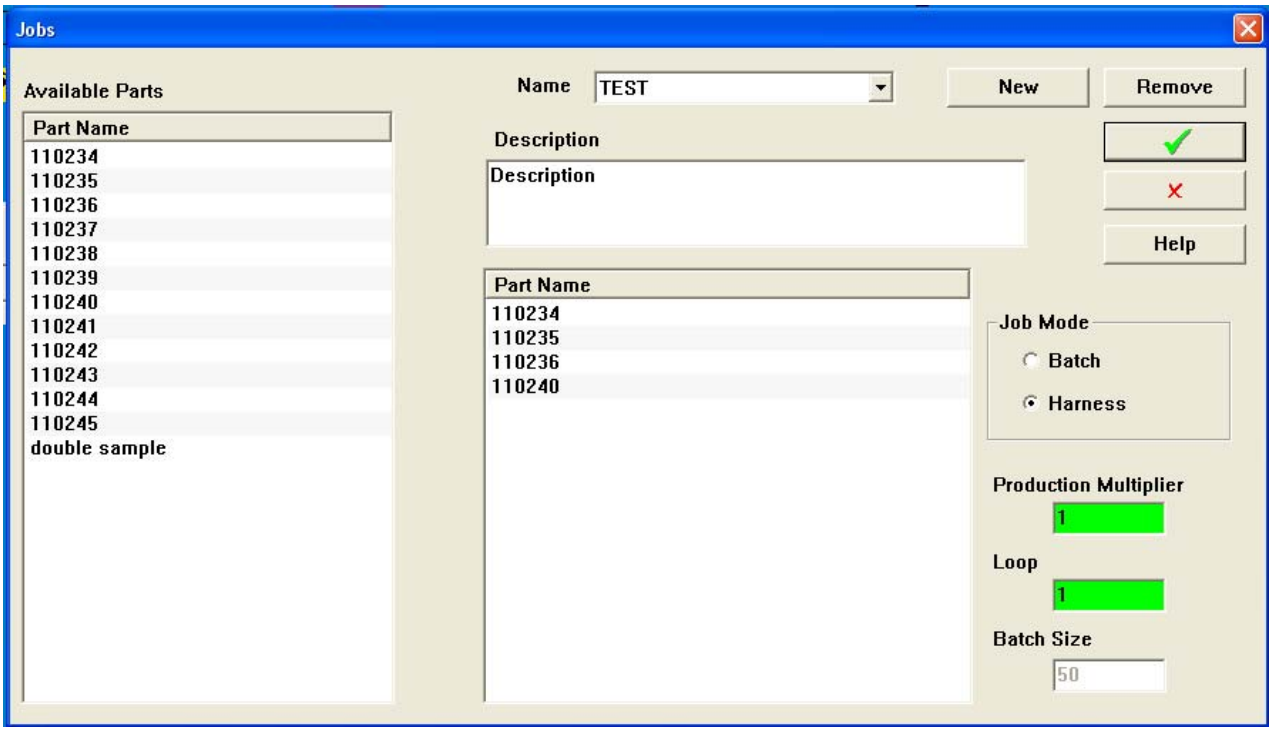
Programming for Harness Mode

Harness Mode is a special mode for running the machine where it makes one of each part in the list as a batch. The operator then removes this batch or harnesses and the machine repeats this for whatever loop quantity is programmed.

Click on NEW, enter the Job Program name, and click ✓. To add parts, Click on the desired part in the left column and "drag" it to the box at the right. The parts will be produced in the order they were dragged into the job. To remove a part, click on it and drag it out of the box and drop it anywhere. It will disappear.

The Production Multiplier can multiply the loop count, the value you program in the field will automatically appear in the Enter Quantity Multiplier box. You can still change this value at run time.

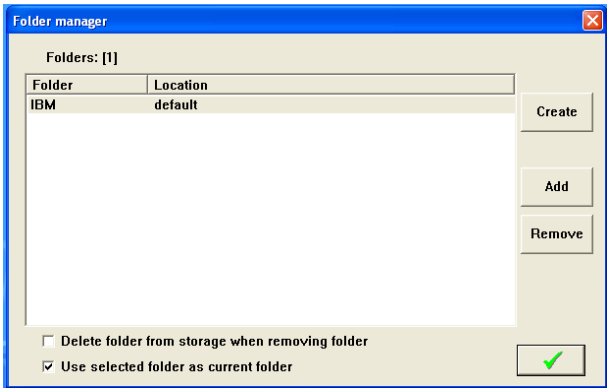




In the above sample each harness will have 4 wires and there will be 10 harnesses. Each Time You Select A Job To Run, The Multiplier Can be Changed.

FOLDERS

All of your data is stored in folders, The default folder is called **MAIN**. Additional folders can be made allowing you to organize your data in a way that works best for you. I.E. by customer or products. To create a folder click on the folder icon. 



Click on Create to make a new folder or Add to add a folder from another source such as a network.

DATA STORAGE IN CS326

Internally the CS326 uses the following database files to store the job, part, wire and process data. For each folder the user creates in the CS326 software, there is a set of these files. These folders and files are stored in C:\program files(x86)\Artos Engineering\CS326GUI\Folders\

Data base name	**Location in CS326 software to enter a name and program the item.**
Assemblies.mtx	Part Properties screen
Mtxjobs.mtx	Jobs screen
Preprocess.mtx	Pre process screen
Wires.mtx	Wire Properties screen

These files are in binary format, they are not man readable and they are not compatible with any other format. The structure of these files can change when upgrading the CS326 software. For these reasons the files listed above should **not** be used as a means to transfer data.

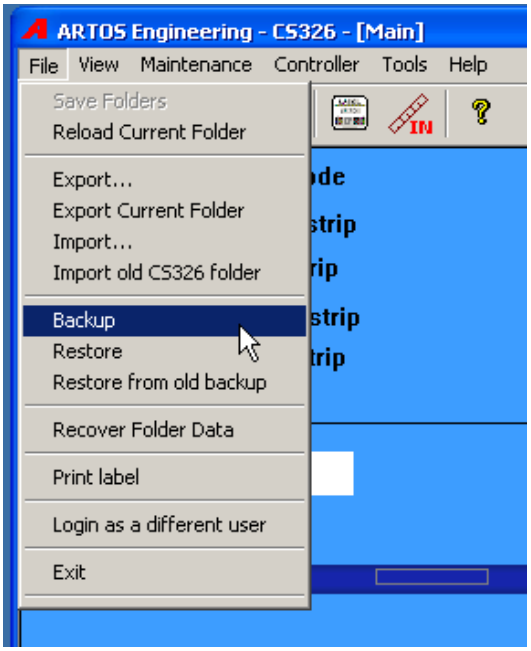
To view the folders and the contents of the folders, from the main menu bar click Tools – Data Organizer

Data Backup

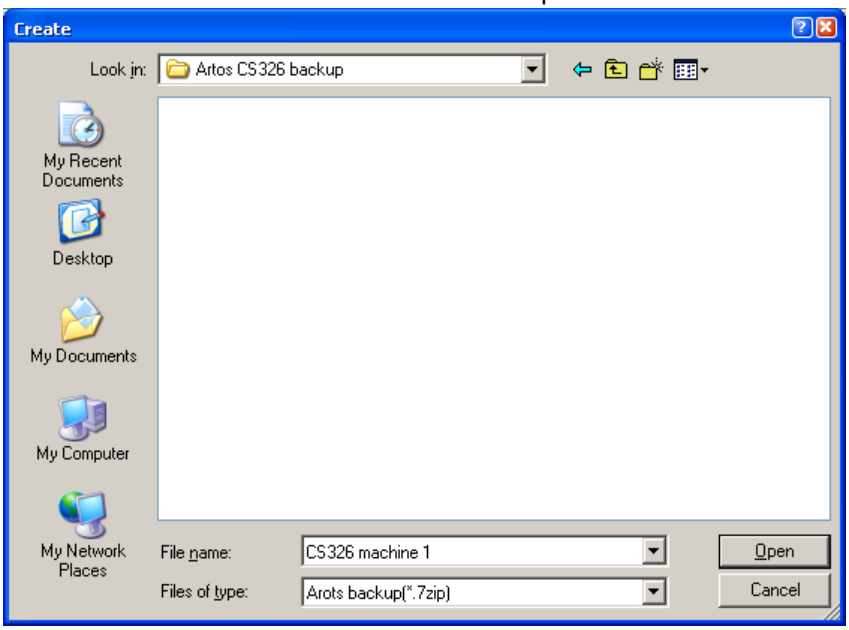
There are two methods that can be used to backup the data in the CS326 machine

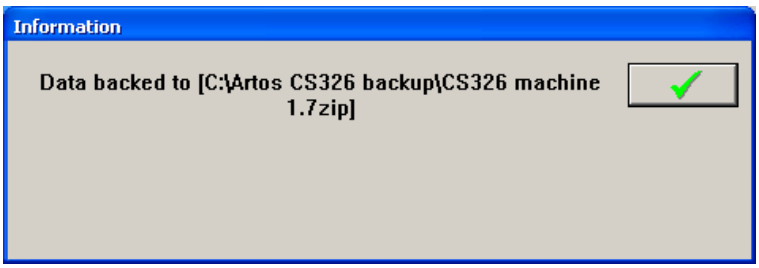
Manual Method

This method saves all the CS326 parts, jobs, and machine configuration data to a single zipped file. From the main menu bar click File – Backup



Select the location and file name of the backup file to be made.





Automatic Method

This method is only for the condition where the CS326 machine is on a company network. Also the company server has to have software that connects to individual computers on the network and automatically backs up selected data on that computer.
The directory to select to be backed up on such a company network would be C:\program files(x86)\Artos Engineering\CS326GUI if the (x86) directory does not exist on the computer then backup C:\program files\Artos Engineering\CS326GUI.
This directory contains all the parts, jobs and machine configuration.

Data Restore

This process is normally reserved for disaster recovery. It will overwrite the data that is currently on the machine.

If data was backed up using Manual Method

From the main menu bar click File – Restore.
Select the most recent working backup file, and then select Open.

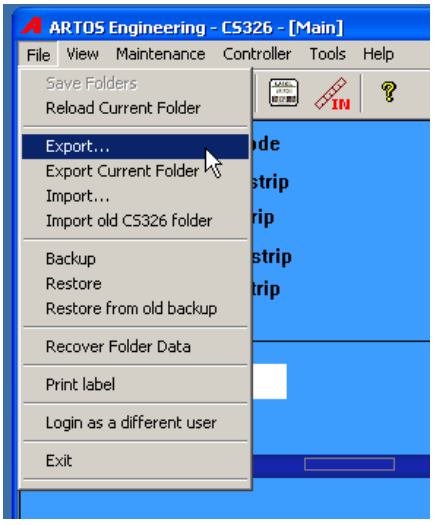
If data was backed up using Automatic Method

Delete the directory C:\program files(x86)\Artos Engineering\CS326GUI if the (x86) directory does not exist on the computer then delete C:\program files\Artos Engineering\CS326GUI.
Copy the most recent working backup directory to C:\program files(x86)\Artos Engineering\CS326GUI if the (x86) directory does not exist on the computer then copy to C:\program files\Artos Engineering\CS326GUI.

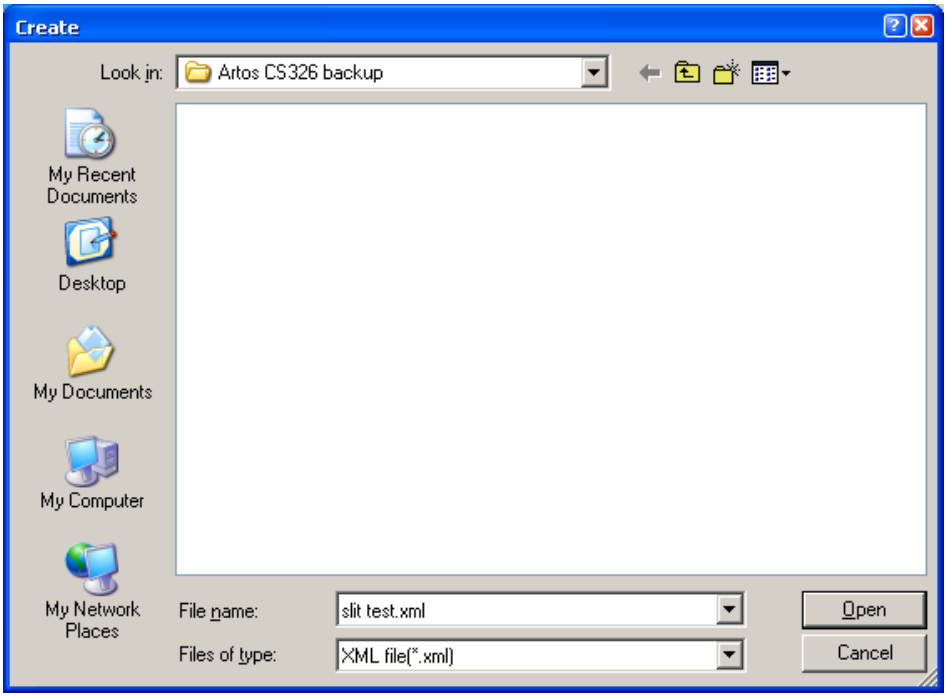
Data Export

The data export and data import functions can be used to transfer parts, jobs, wires and process data between machines or between a desktop computer and the machine.
There are two type of data export

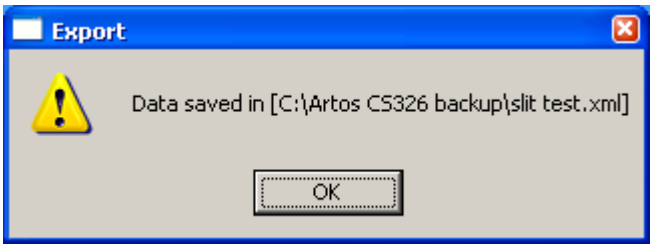
1. Export the current part and job that is on the screen. This export will include the Wire Parameters, process and pre-process data that is used to make the part. From the main menu bar click File – Export



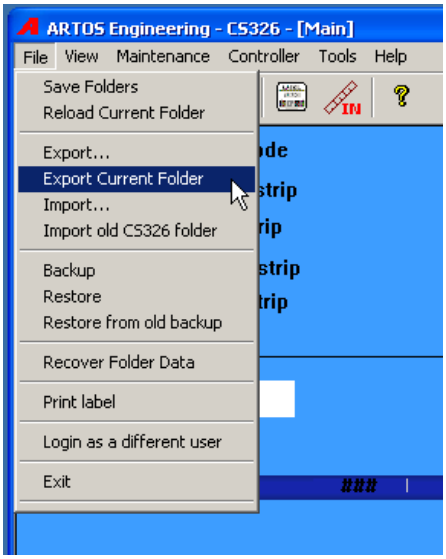
Select the location to create the file in. The file name will already be filled in with the current part name. If you need a name different than this, change it now.



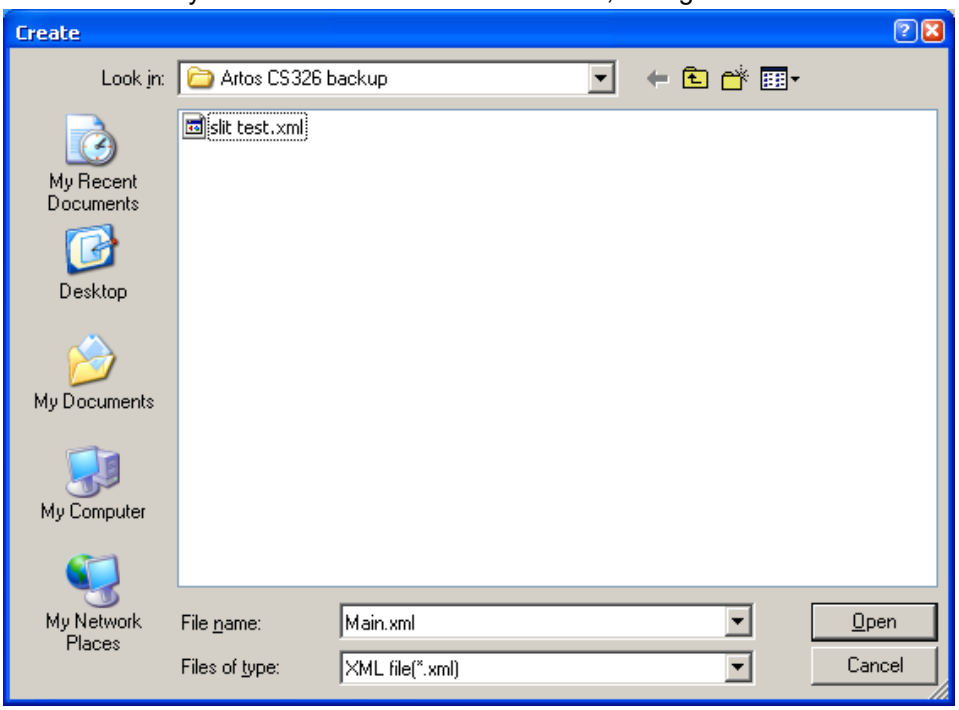
The following window will appear after the data has been saved.



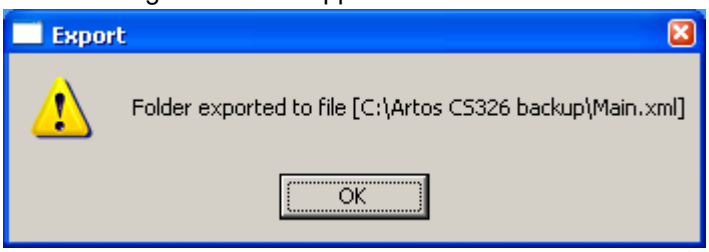
2. Export the all the data that is in the currently selected folder. This will save all the parts, jobs, wires and processes that are accessible in the currently selected folder. From the main menu bar click File – Export Current Folder.



Select the location to create the file in. The file name will already be filled in with the current folder name. If you need a name different than this, change it now.



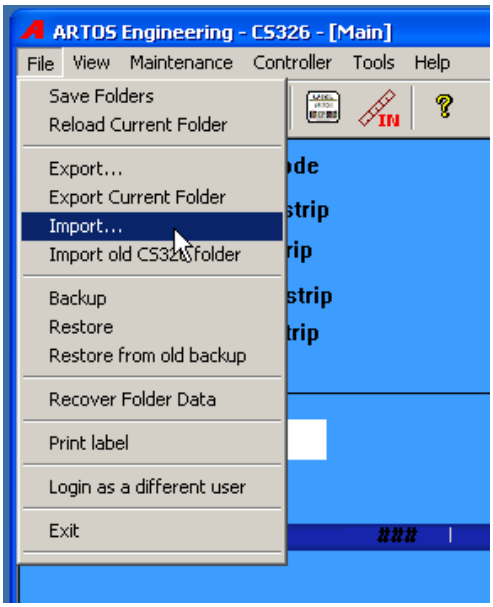
The following window will appear after the data has been saved.



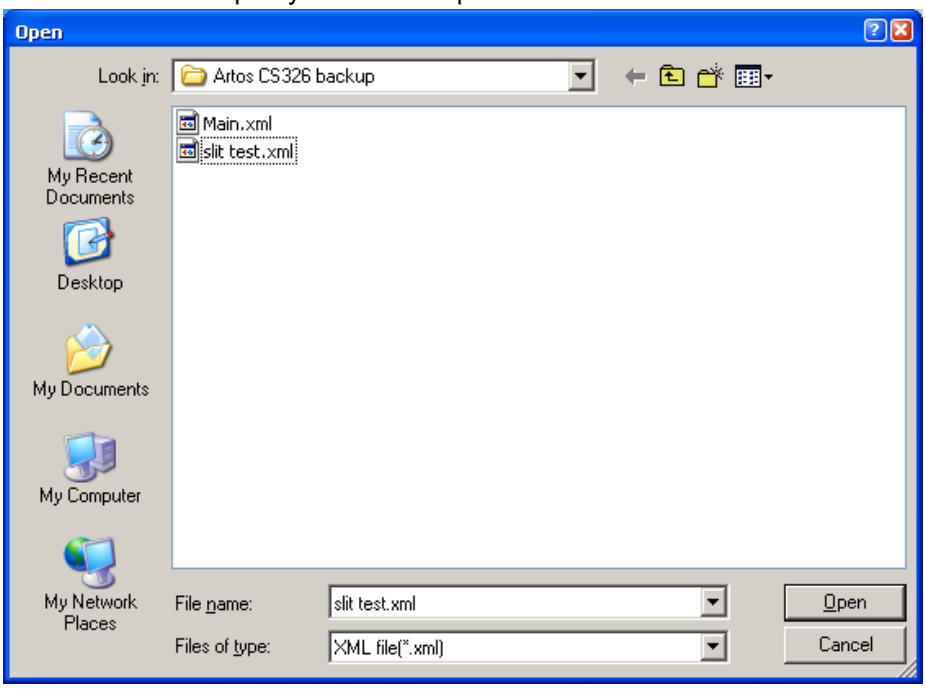
Data Import

The data import function takes a previously saved *.xml file and imports it into the folder that is currently open. The new data is added to the folder, existing data will not be erased. If the item like a Part already exists in the folder the new imported data will overwrite this existing Part properties. This is true for any of the stored items.

From the main menu bar click File – Import.



Select the folder or part you wish to import.



DATA ORGANIZER

The data organizer allows you to move, copy or delete part programs, jobs, wires, or preprocesses. This tool is especially useful if you are working with multiple folders and there is data, such as Wires that you would like to copy from one folder to another.

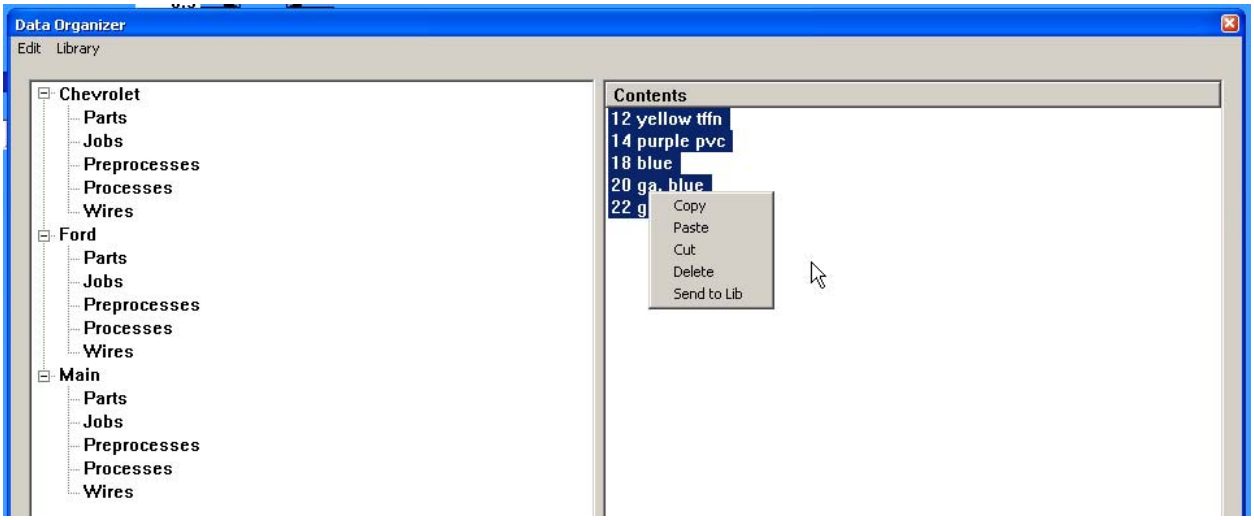
To use the Data Organizer, from the main menu select Maintenance – Data Organizer. This window works similar to Windows File Explorer.

Selecting items.

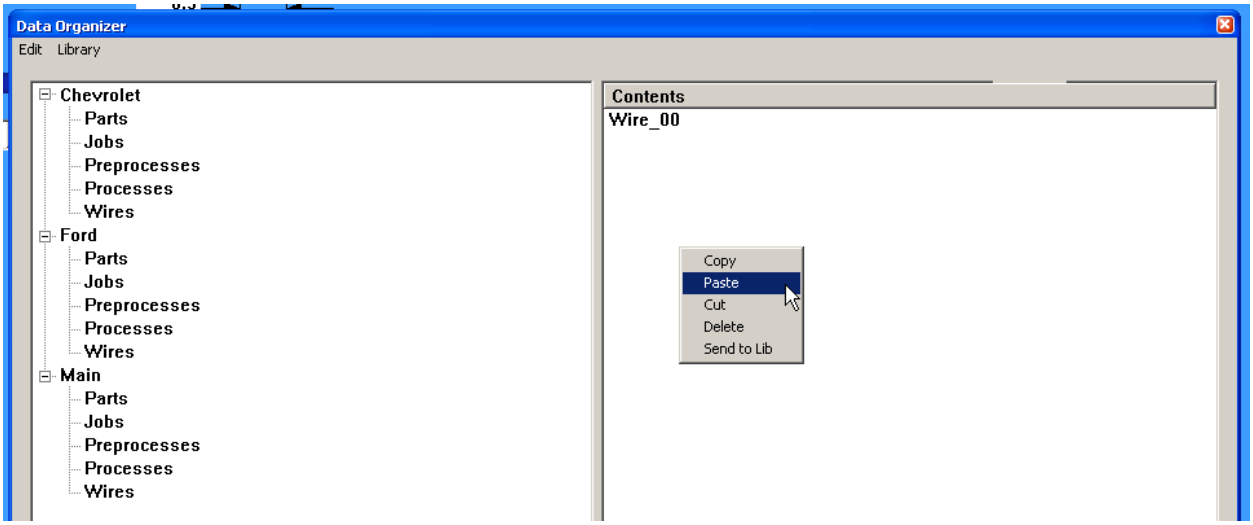
- Click on the folder name to expand it.
- Click on the sub folder name (Parts, Jobs, Preprocesses, Wires) to view the contents. NOTE the Processes folder is not used by the CS326.
- If you wish to work on a single item, right click on the name of the item you wish to manipulate.
- If you wish to work on a numbers of items that are in a row. Click on the first item to highlight it. Hold down the Shift key and click on the last item. All the items in between will be selected. Then right click to show the menu.
- If you wish to select a number of items that are not in a row. Hold down the Control key and click on each item you desire. Then right click to show the menu.

Copying or moving items.

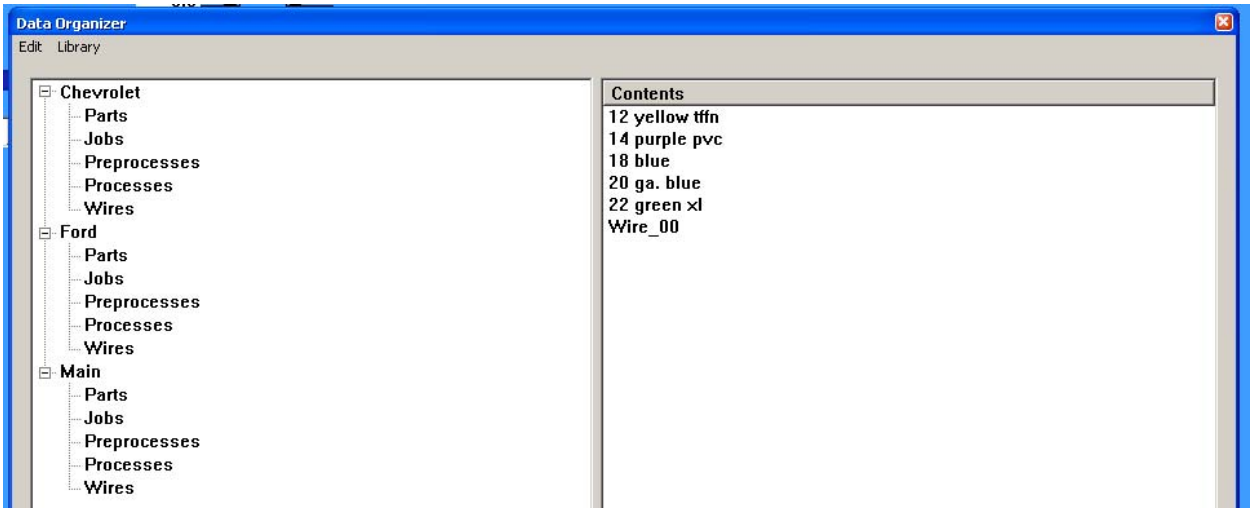
1. Select the folder and sub folder the data is located in. (example, Main - Wires)
2. Select the items to copy, right click and select copy. (example, the wires in Main)



3. Navigate to the folder you wish to copy the items to. (example, the wires in Ford)
4. Right click in the right window and select paste.



5. The wires will be copied to the folder.



6. To move an item just select Cut in step 3 instead of copy.

Deleting items

The wire or Preprocess cannot be called up in a part, if it is you must first change or delete the part. If you delete a wire or preprocess that is used in a part, you will get an error when you try to load the part to run.

The Part cannot be called up in a job, if it is you must first change or delete the job. If you delete a part that is used in a job, you will get an error when you try to load the part to run.

1. Select the folder and sub folder the data is located in. (example, Main - Wires)
2. Select the items to delete, right click and select delete.

Using the Library for wires, instead of the current folder.

You can choose to run the machine in a mode where the wires displayed in the drop down of the main menu are from a library instead of the particular folder you are in.

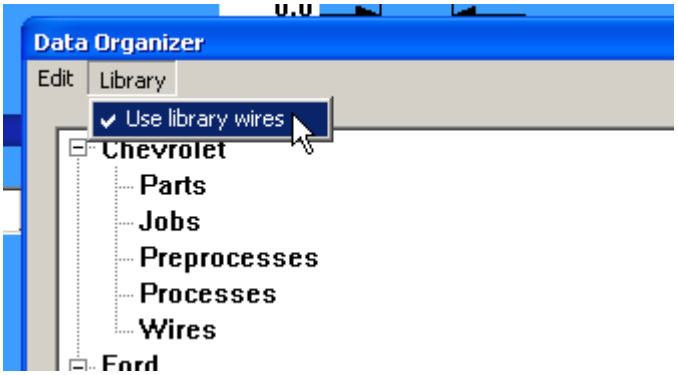
The location of the wires library is internally fixed at C:\Program Files (x86)\Artos Engineering\CS326GUI\Folders\wires.mtx. If the (x86) directory does not exist then it is in location C:\Program Files\Artos Engineering\CS326GUI\Folders\wires.mtx.

This way you can use the same wire list no matter what folder you are in. The only problem with this mode is that when you add new wires or make changes they will not show up in any folder. This means you cannot export or backup these new wires or changes. That's why it is recommended that when adding or changing wires, you follow these steps.

1. Turn off library mode
2. Select to work in the Main folder. This will keep all your wire info in
3. Add the new wire or make changes.
4. Go to the data organizer – Main – Wires
5. Select the wire you added or changed.

6. Add it to the library.
7. Turn on Library mode.

To activate or deactivate Library mode.
From the main menu select – Maintenance – Data Organizer
Select library. When it is checked it is active. When it is not checked it is not active.



Using a common folder on a network drive.

It is possible to run several machines from a common network folder. The parameters that are machine specific are part of the wire properties, these include the strip diameter and length calibration.
Using library mode as described above will allow you to make these machine specific changes and have common part and job data. The trade off when using library mode is that new wires must be added individually to each machine.

MAIN MENU SELECTIONS

File

Save folders – Save current work. This is the same as clicking the disk icon to save your work.
Reload Current Folder – Restore the folder to the last saved condition. This is useful if you made some changes that you know you don't want to save.
Export – Export the part, if a job is active it will export the job and the part. See section "Data Export"
Export Current Folder – Export, all the data in the current folder. See section "Data Export"
Import – Import data from an .XML file. This can any combination of wires, pre-processes, parts or jobs.
Import old CS326 folder – This is to import data that was created using the obsolete CS326 Classic view software. It is normally only used when first upgrading a machine from the old classic view software to the windows view software.
Backup – This saves all the CS326 parts, jobs, and machine configuration data to a single zipped file. See section "Data Backup"

Restore – This restores all the CS326 parts, jobs, and machine configuration data to a single zipped file. See section "Data Restore"

Restore from old backup – If the backup to be restored was made in a very old version of the CS326 software, the backup will consist of a group of directories rather than a single zipped file. This function if for this type of backup.

Recover Folder Data- Not currently implemented.

Print Label – If you have the optional batch label printing system installed on the machine, you can click this to print the label at any time during the batch. See section "LABEL PRINTING OPTION" for labeling details.

Login as a different user – If you have the machine configured to have the operator log in. See section "Machine Software Login" You can use this option to login as a different user.

Exit – Close the machine software

View

Production Log – This feature is currently not available.

Control Message – Not available.

Status Message – This is a list of functions performed by the HMI software and shut down errors that have appeared on the screen. This is generally only used for software development.

Display in Inch – If this is checked all dimensions will be displayed in inches. If this is not checked all the dimensions are displayed in millimeters.

Display in English – When you have the software configured so that a language other than English is being displayed, you can click this to temporally display all the screens other than the main run screen, in English.

Select Font – You can change the size and style of all the characters displayed in the software. This feature is especially useful if you want to display larger characters for operators with poor eyesight. To change back to the font type that shipped originally with the software you will need to edit the registry. The font key needs to be blank. Only an experienced IT person should make this change.

Close any open machine software

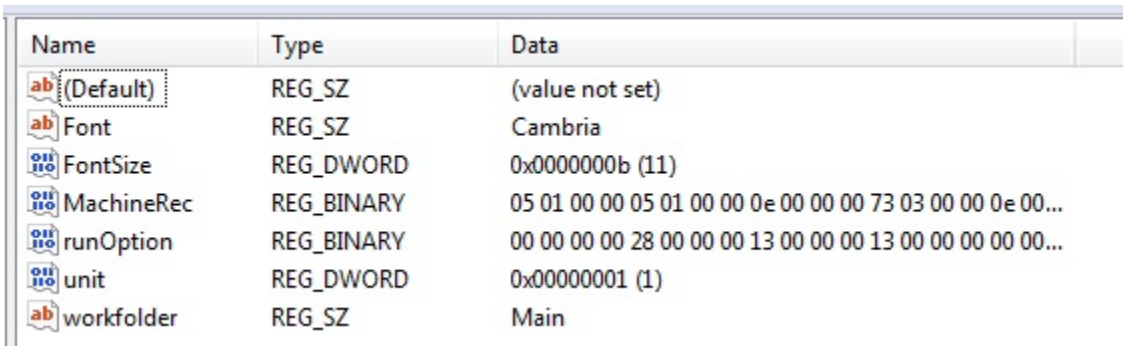
To open the registry editor, click Start / Run / type in "regedit" and click O.K.
The registry should be exported to a file before making changes so there is some hope of recovering the computer if the registry is damaged. To do this click file – export save the file to a memory stick or network drive.

The registry key for the Artos software is:

HKEY_LOCAL_MACHINE
SOFTWARE
(directory name varies see Note)

Note: Because Windows places the Artos Engineering key under different directory names depending on the version of Windows it is best to do a search on the registry for the key name **MachineRec**. Once the search feature finds it check to make sure you are in the CS327GUI directory.

If the CS327GUI directory is missing in the registry or the key name is missing do not attempt to add it. The CS327 software will have to be re-installed in the computer. The install software will and the registry keys and add drivers and path names to other portions of the Windows operating system.



Name	Type	Data
(Default)	REG_SZ	(value not set)
Font	REG_SZ	Cambria
FontSize	REG_DWORD	0x0000000b (11)
MachineRec	REG_BINARY	05 01 00 00 05 01 00 00 0e 00 00 00 73 03 00 00 0e 00...
runOption	REG_BINARY	00 00 00 00 28 00 00 00 13 00 00 00 13 00 00 00 00 00...
unit	REG_DWORD	0x00000001 (1)
workfolder	REG_SZ	Main

Right click over Font and delete the key.
Right click over FontSize and delete the key.

Maintenance

Machine Settings – This is for the configuration of the machine. See section "CONFIGURATION".

IO Status – To display the I/O and Servo motor information. Only used for maintenance of the machine. See section "I/O status".

IMAJE test – Diagnostics screen for the Imaje printer. See section "IMAJE TEST"

Counters – Displays the number of parts produced, the number of cycle start hours and master start hours since machine installation. Also 2 counters for cycle start hours and parts produced that the customer can reset.

Maintenance schedule – Not available

Maintenance task – Not available

Data Organizer – For coping or removing parts and wires. See section "DATA ORGANIZER"

User Administration – For setting passwords and what function each user has access to. See section "Adding Users And Passwords"

Cell Manager Config – This feature is for a customer specific application

Cell Mode – This feature is for a customer specific application

Allow Cell control - This feature is for a customer specific application.

Controller

Connect to Controller – If the computer and Artos machine software was started before the machine controller, you can click this to establish communications. This is instead of closing the software and reopening it.

Comm Status – You can click this to determine if the software is communicating with the control. If this test fails you would have to trouble shoot the serial communications. See service document "serial communication problems gui.pdf"

IO Status - To display the I/O and Servo motor information. Only used for maintenance of the machine. See section "I/O status".

Download image – This forces a download of the firmware to the controller. Only do this if directed by an Artos service document.

Tools

Reset Wire Qualification – Not available

Reset Process Qualification – Not available

Turn On Qualification – Not available

Translation List – Text translations screen for all parts of the software other than the I/O Status screen. See section "LANGUAGE CONFIGURATION AND TRANSLATION"

IO Translation list – Text translations screen for the I/O Status screen. See section "LANGUAGE CONFIGURATION AND TRANSLATION"

Log Servo – Not available

Help

About CS326 – Shows the version number of the Windows software and the Firmware in the machine.

BAR CODE SCANNING

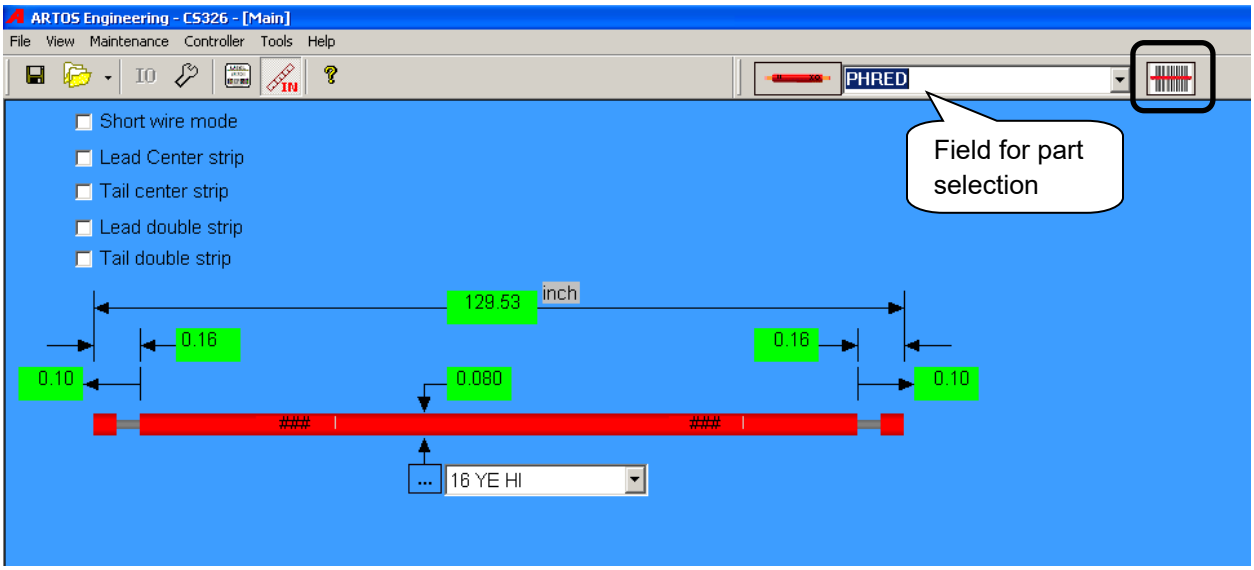
PART SELECTION

The bar code scanner should be configured so that it outputs data in USB keyboard format and has a CR suffix. This means you can scan information into any data field that accepts keyboard entry. For companies that name the parts the same in both the Artos software and on their work orders, a bar code scanner can be used to select the part. This is especially useful when you have large number of parts programmed in the Artos software.

Using the scanner to select an item in a drop down menu.

This is the direct method. Exactly what is scanned is selected.

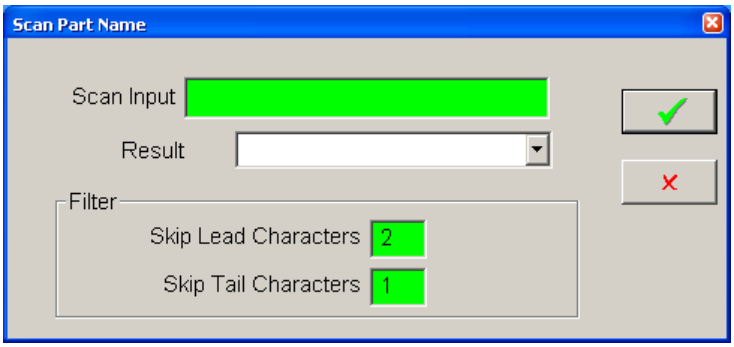
1. Use your mouse to click in the drop down field. The field will be highlighted in blue.
2. Scan the bar code on your work order your work order.



Using the scanner to select an item.

This is the indirect method. With this method you the barcode does not have to exactly match the name of the part. You can program the scanner not to read a certain number of lead and tail characters. These programmed values, *skip lead characters* and *skip tail characters* will be saved for future use when you exit this screen.

1. Use your mouse to click the bar code symbol on the main run screen.
2. Scan the bar code on your work order your work order.
3. Click the green check box, to exit and load the part program.

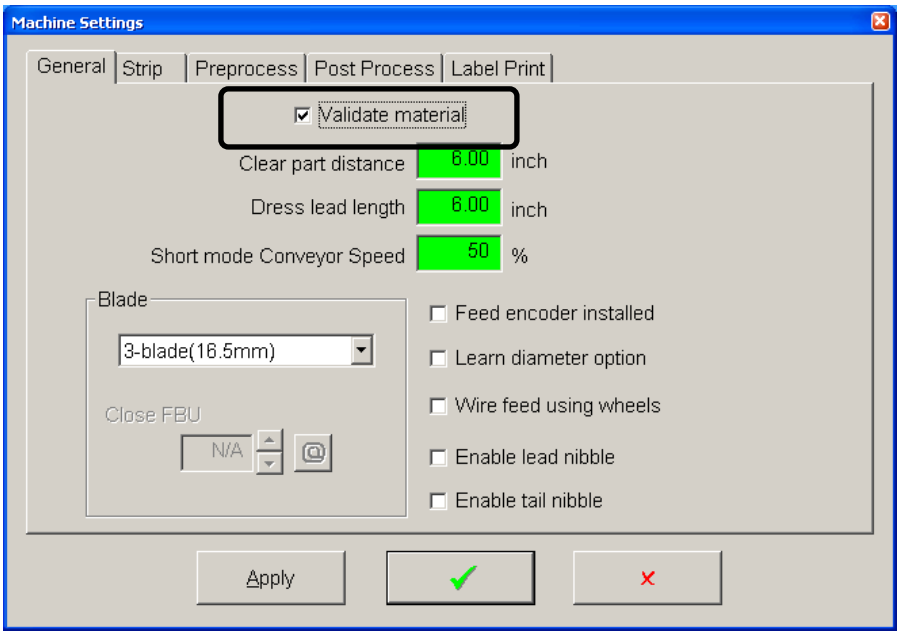


MATERIAL VALIDATION

When the machine is set for material validation mode, you have to scan the bar code of the wire, terminals, and applicators before you are allowed to run. It should be noted here that the bar code scanner should be configured so that it outputs data in USB keyboard format and has a CR suffix. This means you can scan information into any data field that accepts keyboard entry.

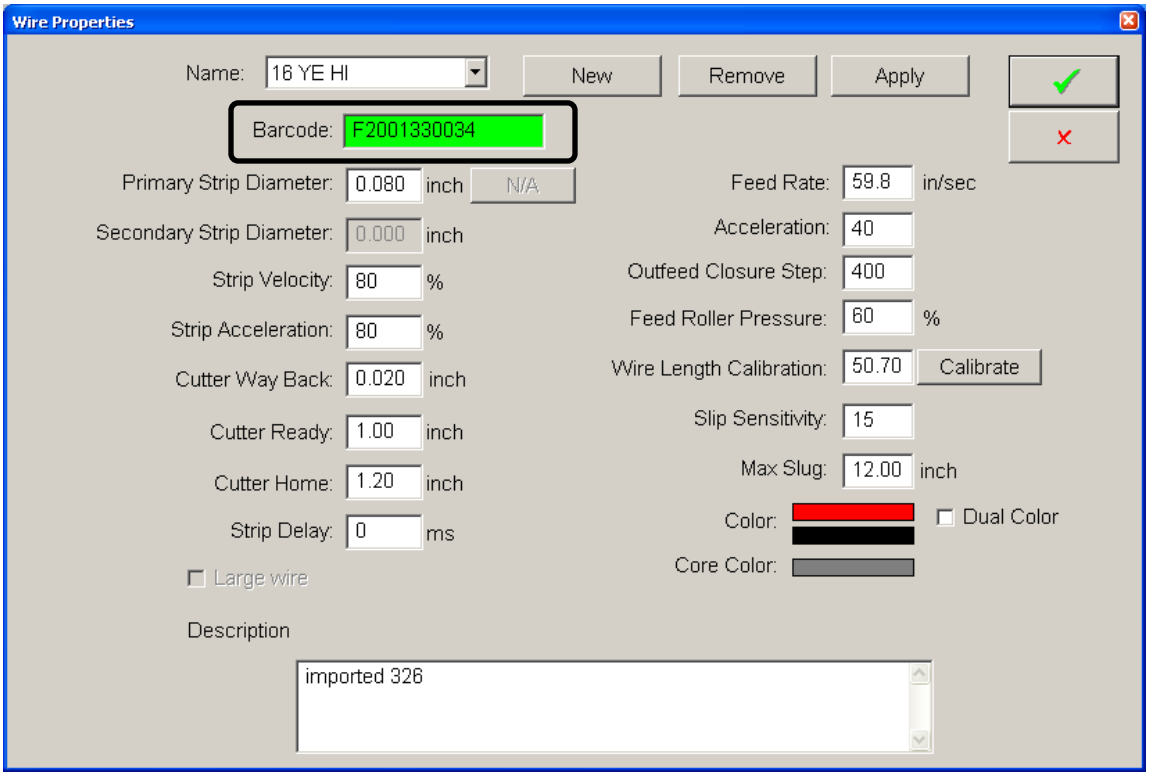
Configuring the machine for material validation.

From the menu bar on the main run screen click Maintenance – Machine settings and go to the General tab. Check the box for Validate material



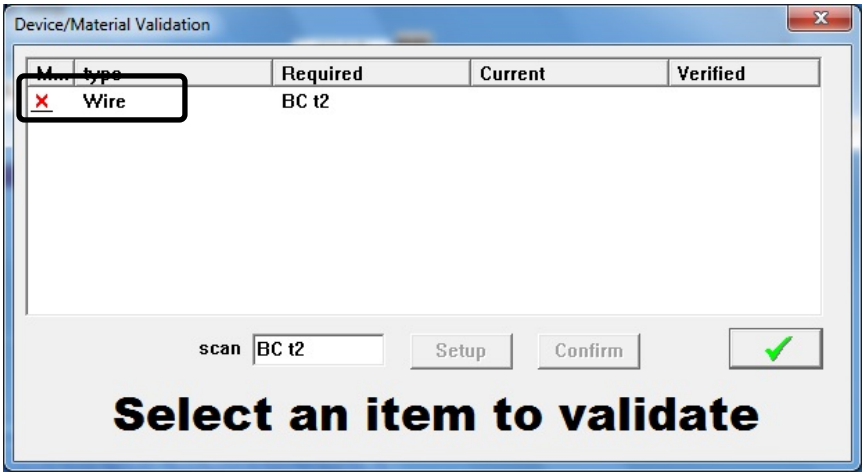
Entering bar code data for the Wire

Go to the wire properties window of the wire you wish to enter the bar code for. Click in the barcode data field. Scan the bar code. Click the green check to save and exit



Operation of material validation

When the machine is configured to use material verification and a part program is called up the following window will appear.



Scan the barcode of the wire. Then click the name Wire. If the barcode matches what is programmed the red X will change to a green check. After it is a green check you will be ready to run.

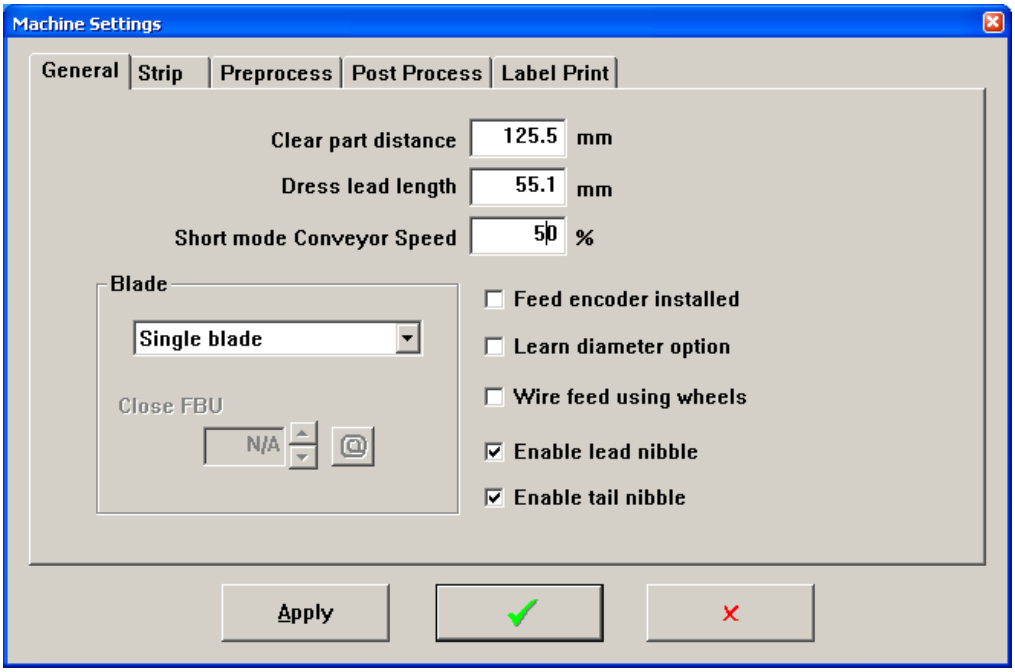
- If the part you are about to run has the same wire as on the last part you ran, then the software will not ask you to scan the wire again.
- It is possible to enter new bar codes while in this mode. Just select the wire in the list and click setup.
- You can manually open this screen by clicking the material button on the main run screen.

CONFIGURATION

Configuration is used to configure the **CS 326 B** with its options as well as set-up associated position and timing values.

Click on the wrench symbol  to open the tabbed menu:

PROGRAMMING MACHINE OPTIONS



The **General** tab is information about the basic unit;

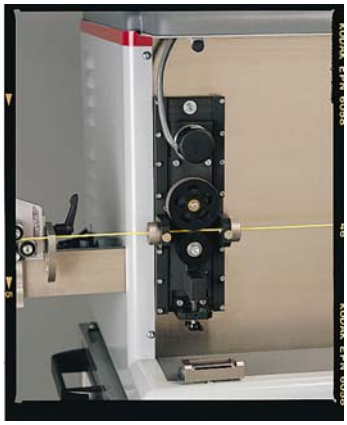
- **Blade type** selection for configuring the type of blade holder mounted on the machine.
    - **Single** is one pair of blades that cut and strip the wire
    - **Double** has one pair of pivoting cut off blades and one pair of stripping blades
    - **Three blade 16.5mm** has 3 or more pairs of blades 1 pair of cut off and separate stripping blades for each end of the wire.
    - **Three blade 21.0mm** has 3 or more pairs of blades 1 pair of cut off and separate stripping blades for each end of the wire.
    - **Pneumatic** is similar to the Double but with air driven pivoting devices
    - **Pneumatic COAX** This is for a pneumatic coax cable cutting and stripping tool holder assembly. Part number 4-145880

- **SK blade** is for the pneumatic steel cutting blade holder assembly. Part number 4-144407

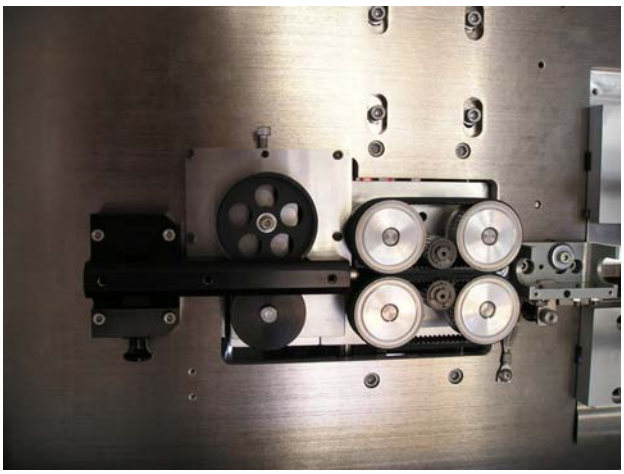
- **Feed encoder installed** is checked when the Slip and Sag detection device is attached (optional). Do **NOT** check this if your machine has a wire measuring encoder. This encoder will detect an interruption in the wire supply. The cause of which may be a knot or a snag in the wire supply. It will also detect a material run out condition.

  This option may be sensitive to certain length, acceleration and feed rate combinations. Sensitivity levels are adjustable through the configuration window.

  The tension wheel under the encoder wheel will lock open when pushed down to load the wire. Be sure to release the tension roller before running by pulling out the lock pin located in the lower right corner. Failure to do so will result in a slip detection error.



Slip and snag detector



Wire measuring encoder (do not check the box)

- **Wire feed using wheels** is checked when wheels instead of belts are used for the wire feeding.

- **Wire feed using wheels** is checked when wheels instead of belts are used for the wire feeding.

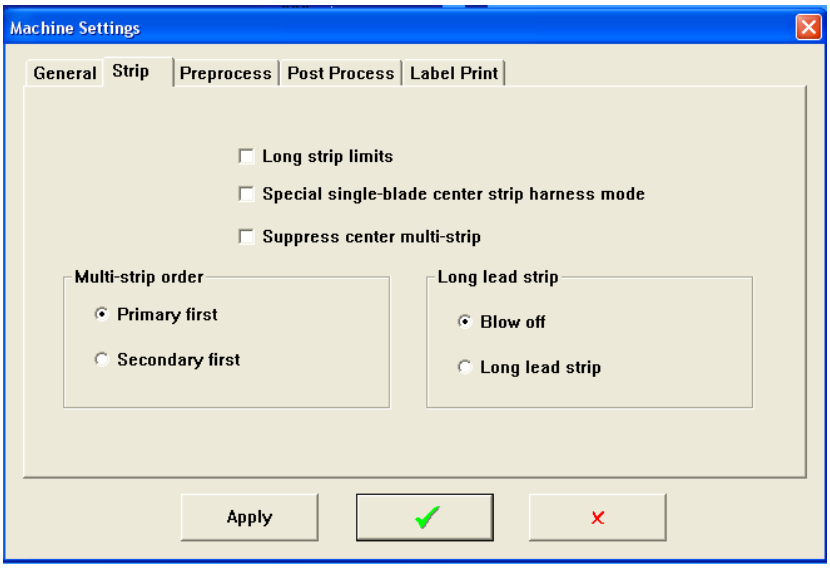
- **Enable lead / tail nibble** When these are checked the machine will obey the maximum slug length programmed in the wire properties screen. If the maximum slug length is less than the programmed strip length the machine will remove the slug in pieces with no length greater than the maximum slug length.

- **Clear part distance** is the distance the outfeed drive will travel when discharging a finished part. This occurs at the end of the programmed quantity or on every part when Auto outfeed is selected.

- **Dress lead length** is the length of wire that is cut of the leading end of the wire at the start of a feed to justify the starting end of the wire. (min .5" - 12.6mm^2)

- **Short mode conveyor speed** is the percentage of full speed at which the out feed will turn in short wire mode.(the out feed does not close when in short wire mode and only acts as a conveyor for parts long enough to reach it)

STRIP MODE AND BELT OPENER PROGRAMMING



The **Strip** tab configures the variable stripping methods available

- **Long strip limits** allows for the maximum strip length on both ends of the wire. When not checked the Lead end strip length is limited to 2"- 50,8 mm^2

- **Special single-blade center strip harness mode** allows for multiple window stripping where the insulation is displaced but not removed (perf. only). This method of window stripping is obsolete. The new method is to use the pre-process called Slit+Perf. If your software does not have this process, upgrading the software is recommended.

- **Suppress center multi-strip** is a form of window stripping used in conjunction with a slitter. In this case the insulation is cut but removed in a secondary operation (slit and perf.). (see 94). This method of window stripping is obsolete. The new method is to use the pre-process called Slit+Perf. If your software does not have this process, upgrading the software is recommended.

- **Multi- strip order** is the selection for the order in which the strips occur when using Double Strip. The one that is selected will occur first

- **Long lead strip**

    - **Blow off** is a jet of air blown across the blade as they open to eject the stripping scrap usually used with Three blade options. The air blast is timed to coincide with the opening of the blade assembly during the strip cycle. This can help keep the blade area clear of stubborn stripping slugs. On shorter wires the time is such that the air blast stays on through the whole cycle.

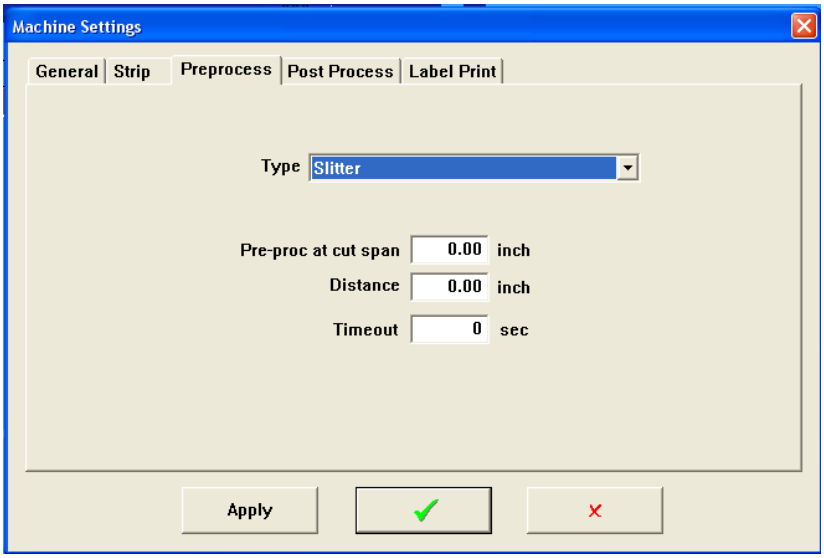
The pressure of the blast is dependent on the pressure of the air supply to the connection tube coming out the back of the **CS 326 B**. The volume can be adjusted by means of a flow control mounted on the control valve. This is located directly above the blades on the underside of the top guard. To increase volume, turn the screw out. Turn in to decrease. Tighten the jam nut when adjustment is complete.

- **Long lead strip** The Long lead strip option allows long strips on the leading end of the wire. Long strips being those that reach into the out feed system.

  The device will open the outfeed system during the lead end strip to relieve the grip on the wire being stripped.

- **NOTE** on old machines with partial I/O boards only one of these options can be used. The same output is used for both options.

PRE-PROCESS CONFIGURATION



Preprocess tab configures any Preprocess options that may be installed

- **Pre-proc at cut span** sets a tolerance for preprocess activation relative to the distance from blades to device. If the wire length is the same as Distance plus or minus this value the unit will mark on the cut. If not it will stop for the preprocess then feed the difference and then cut.

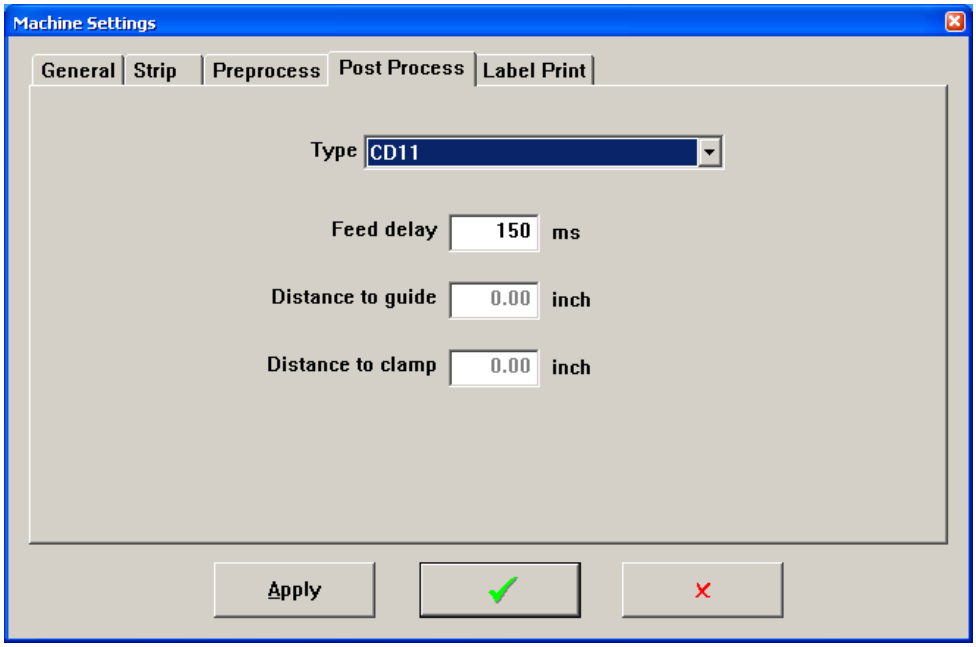
- **Distance** is the position of the preprocess device relative the cut blade.

- **Time out** is the amount of time allowed for the preprocess to activate and complete. If it does not occur in this time a "Preprocess Fault" error will appear.

- **Type** is the type of Preprocess installed

- **None** is no preprocess installed
- **Inkjet** is for an Imaje S8 ink jet marker
- **Inkjet – Imaje-9040M** is for an Imaje 9040 M head ink jet marker
- **Inkjet- Imaje-9040G** is for an Imaje 9040 G head ink jet marker
- **Inkjet – CodeBox-3** is for a Domino Codebox 3 printer, this interface has limited functionality and is not recommended for new installations.
- **Hot stamp** is a heat transfer type marker. Examples are WM6, KIP 20. For these markers the moment the ready signal activates the wire can be pulled.
- **Hot stamp with FB+75** is a heat transfer type marker. Examples are HS4140. The difference between this and the Hot Stamp is that the machine waits for 75mS after receiving the ready signal, before it starts pulling wire. This is for markers that are basically using the stamping cylinder power as the ready signal.
- **Wraptor** is for the Brady Wraptor labeler. This process will trip the Wraptor to put the label on. The user must select the label to be printed on the Wraptor before running the CS326 does not transmit the label data.
- **Slitter** is for axial slitting of the wire
- **Steady on / other** turns on a preprocess and looks for a ready feedback. This would be for use with a Clinton HF-15A Spark tester or an ultraviolet curing light.
- **Continuous II** is a heat transfer type marker. Examples are WM6, KIP 20. This process is the same as the Hot Stamp except that it is a special mode of printing that hot stamp does not have. This is just for continuous printing and you can program a distance from the end of the wire to the first mark and you can program the distance between the marks.

POST PRCOCESS CONFIGURATION



Post-Process configures the installed post process devises.

Besides the values defined below there are two other parameters in the General tab that can have an effect on the how the post process operates

- **Clear part distance** is the distance the outfeed drive will travel when discharging a finished part. This occurs at the end of the programmed quantity or on every part when Auto outfeed is selected. Making this distance longer will cause the post-process device to operate for a longer time. For example on a CD-11 coiler, making this distance longer will cause the bowl to turn for a longer time thus pulling the end of the wire out of the tube and into the coil.

- **Dress lead length** is the length of wire that is cut of the leading end of the wire at the start of a feed to justify the starting end of the wire. (min .5" - 12.6mm). For many devices if this length is set too long or short, the justification piece will get stuck somewhere in the outfeed.

Items on the post process tab

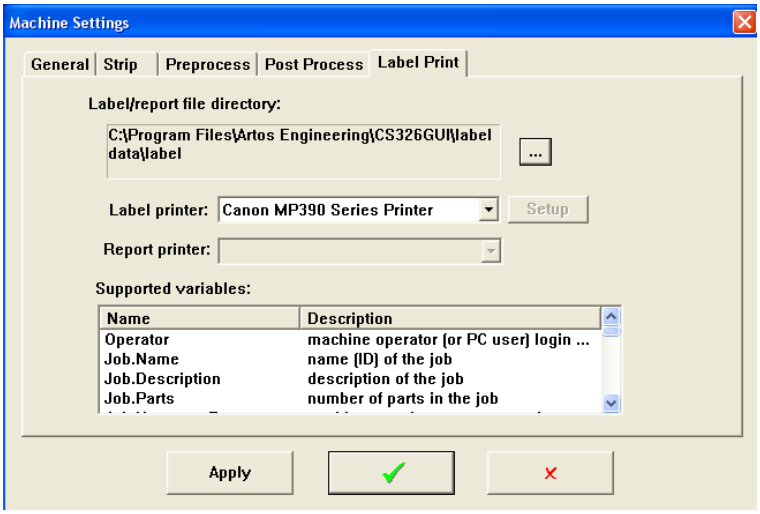
- **Feed delay** is the delay between parts to allow the post process to complete

- **None** is no post process installed
- **CD11**- Artos twin coiling bowl device.
- **CD15** - Artos pin coiler
- **CD15 with long lead** - Artos pin coiler for use with non-standard table
- **AL** – AL1500 to AL10000 linear collectors OR Schleuniger WS1000. The feed delay time controls how long the machine waits between parts for the collector to get the wire dumped. Output A41 activates for the same period as the feed delay time.
- **MS type** – Maxi-Seal custom unit

        - Distance to guide
        - Distance to clamp
- **KRI** – not used on CS326
- **GR1**–
- **GR2**– Special coiler for Grundfos. GR1 and GR2 work in conjunction with each other. When GR1 is selected as the Post process in the part properties window, the machine first feeds out the length of wire programmed in GR1distance then waits for an input, then feeds out the remainder of the programmed part length. When GR2 is selected as the Post process in the part properties window, the machine first feeds out the length of wire programmed in GR2 distance then waits for an input, then feeds out the remainder of the programmed part length.
        - GR1 distance – feeds this amount when GR1 is selected
        - GR2 distance – feeds this amount when GR2 is selected
-
- **CD16 -** not used on CS326
- **CD17** – not used on CS326
- **KRI-2** Ramatech KRI-800T coiling system.
- **CP1250** - Schleuniger CP1250 coiling device.
- **MINCO -**
        - Wait for A16 input
        - Feed the amount programmed in Feed 1 distance
        - Wait for A16 input
        - Feed the amount programmed in the Feed 2 distance
        - Wait for A16 input
        - Feed the remaining length of wire.

LABEL CONFIGURATION

A stand-alone printer is available for the **CS 326 B**. This would allow you to print labels as you desire IE by part, batch, or lot. This requires a specific printer and the associated software.
See section "LABEL PRINTING OPTION" for information for configuration and usage.



LANGUAGE CONFIGURATION AND TRANSLATION

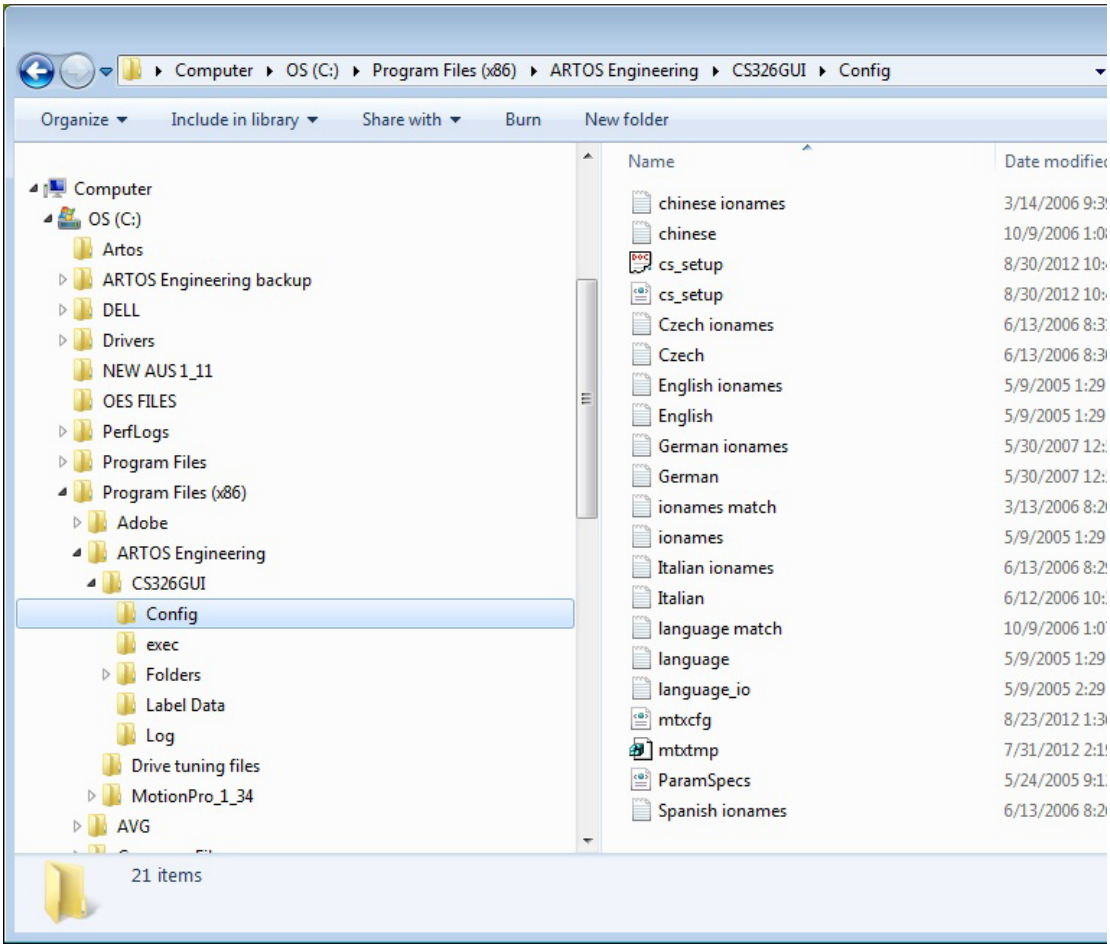
CONFIGURING THE MACHINE FOR A LANGUAGE

The software gets all the text strings that are shown on the screen from two files.

Language.txt
Language_io.txt

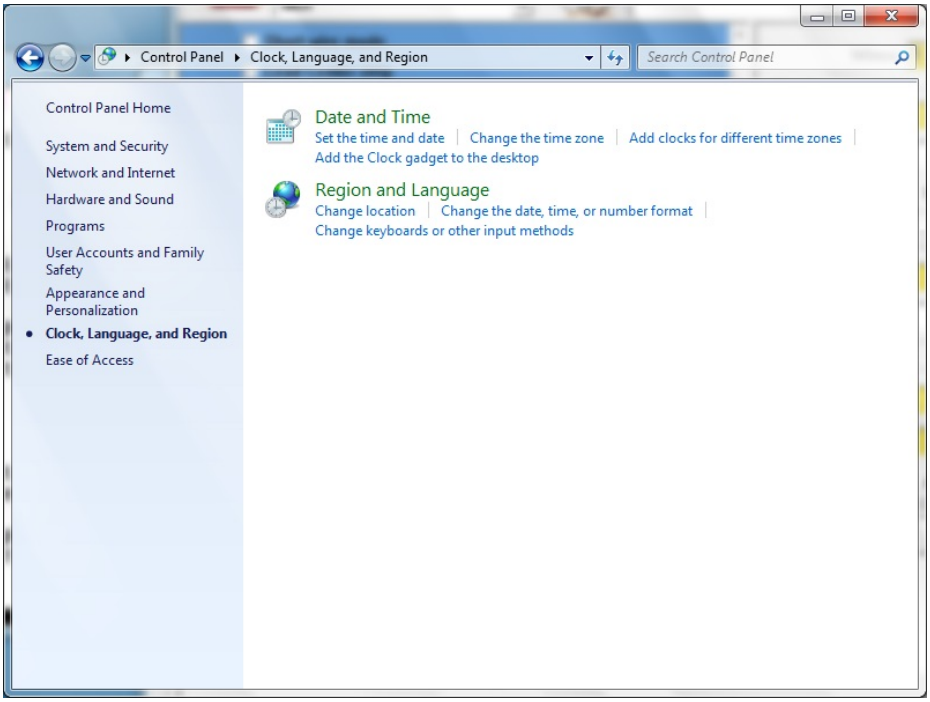
To display a different language you must

1. Locate the language files.
   Use file explorer to navigate to C:\program files(x86)\Artos Engineering\CS326GUI\Config\. If the directory C:\program files(x86) does not exist then the location is C:\program files(x86)\Artos Engineering\CS326GUI\Config\.

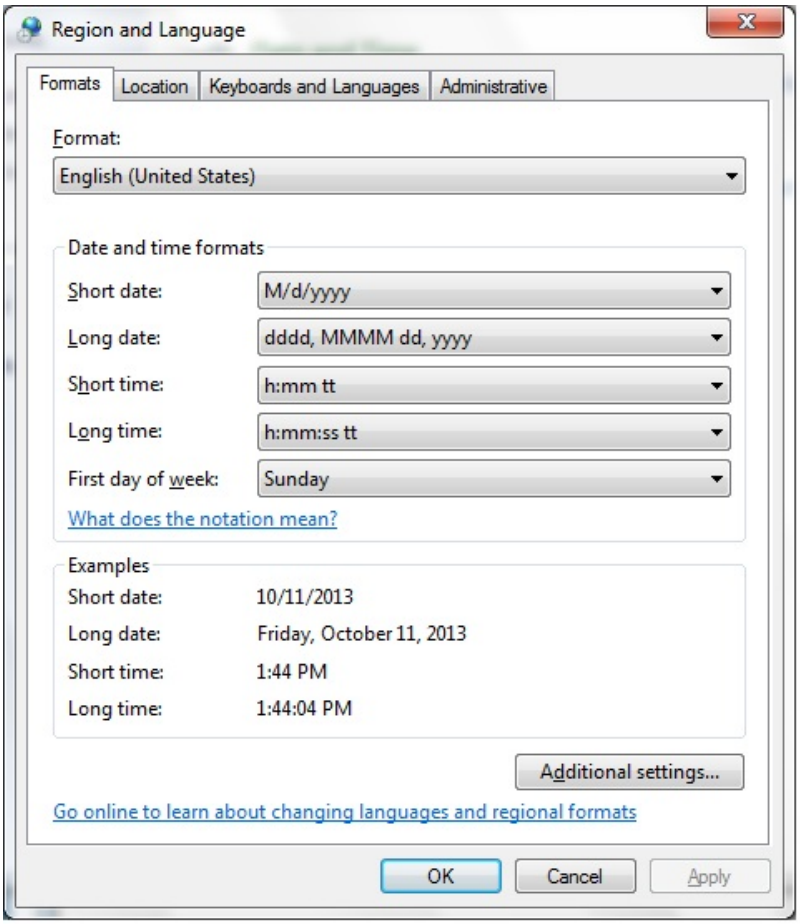


2. Rename the files language.txt and language_io.txt to
   a. Language.txt to language.bak
   b. Language_io.txt to language_io.bak
3. Copy the appropriate two language files
4. Rename the two copied files to language and language_io.txt

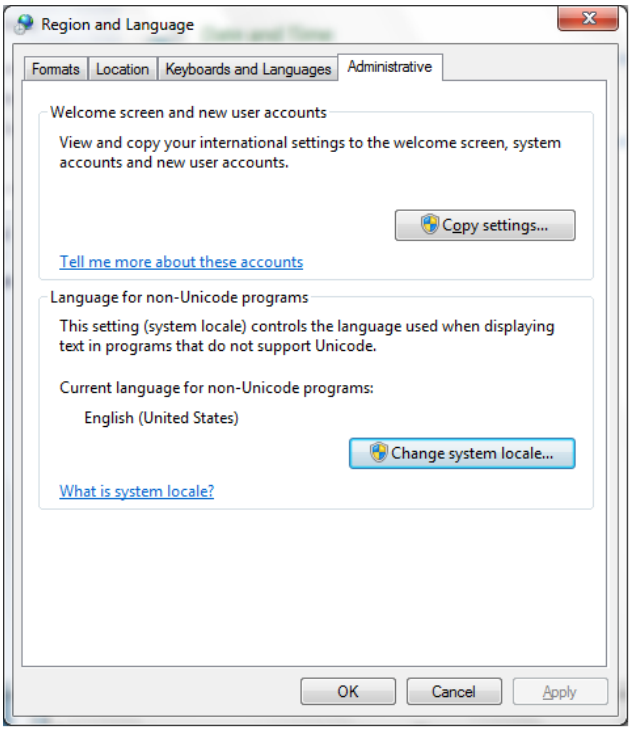
5. For some languages to display properly you may also have to configure Windows to use the language you need.
    a. Go to windows Control panel and select Clock Language and Region.



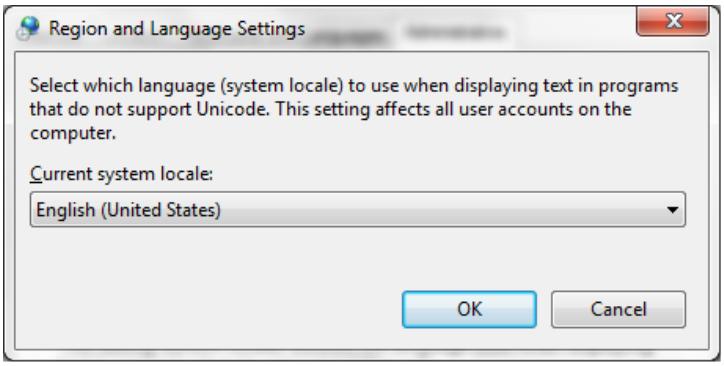
    b. Click Region and Language, Change the Format to the needed language.



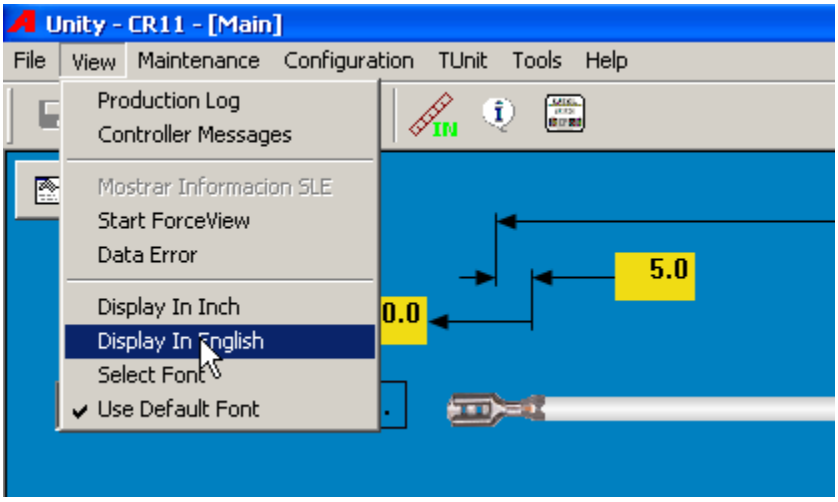
c. Click the Administrative tab. If using Windows XP you can change the language in this window. If windows 7 continue to the next step.



d. Click the Change system locale… box. Then change the current system locale to the desired language.



When working in a language other than English it is possible to temporarily display the screens in English. From the main menu in the CS326 software select View – Display in English. To change back to the language that the Set Language screen is set for just, select View – Display in English.



Translated text files

The text within the software can be translated to any language. The translated text for a particular language is stored within two files. One file is for the I/O status window (example: Spanish_io.txt), the other file is for the rest of the software (example: Spanish.txt). The location of these files is in C:\program files(x86)\Artos Engineering\CS326GUI\Config\. If the directory C:\program files(x86) does not exist then the location is C:\program files(x86)\Artos Engineering\CS326GUI\Config\. After the translation is done these files can be copied to other machines.

If a the language you need to translate to is not in the list, then contact Artos Engineering.

CHANGING THE TRANSLATION FOR A TEXT STRING IN THE SOFTWARE

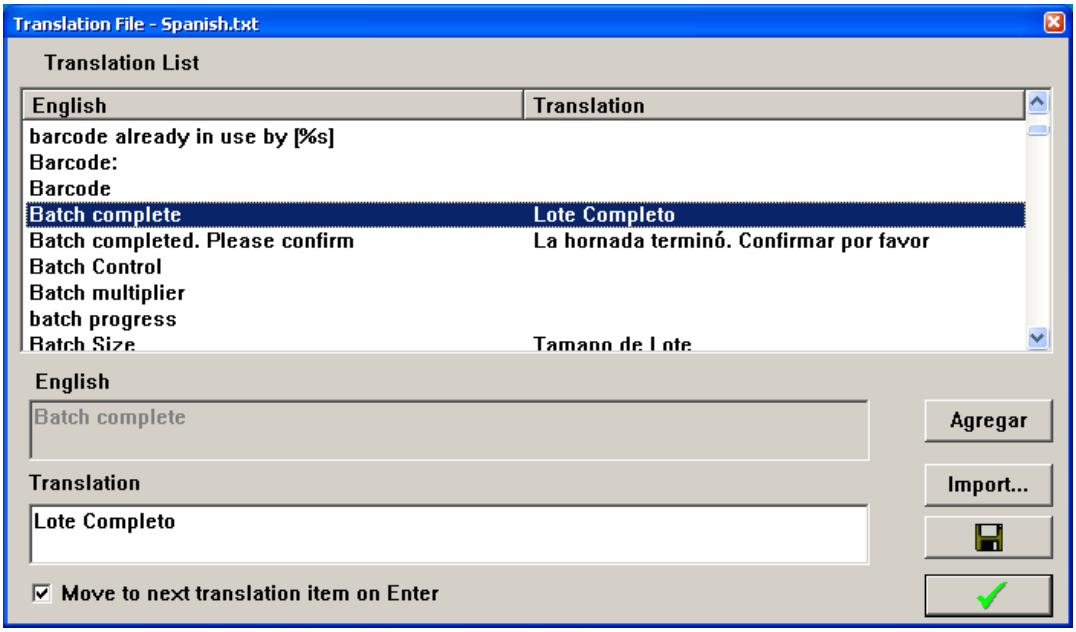
Each word or phrase in the software can be translated to a different language. Remember for each language there are two language files one is for the I/O status window and the other is for all the other windows. There are two methods to perform the translation.

The first method is to use the language translator.

Select the language to operate the software in see “configuring the machine for a language” above.

To edit the main translation file.

- From the main menu in the CS326 software select Tools - Text Translation
- Select the text string you would like to translate.
- In the translation window type in the text you would like to see. Keep in mind that if you use too long of a text string it may be cut off on when displayed in the software
- Press enter, to add the text string to the translation list.



To edit the IO translation file.

- From the main menu in the CS326 software select Tools - IO Translation
- Select the text string you would like to translate.
- In the translation window type in the text you would like to see. Keep in mind that if you use too long of a text string it may be cut off on when displayed in the software
- Press enter, to add the text string to the translation list.

The second method is to directly edit the language files.

The location of these files are listed in section “Translated text files”. There are two files for each language open the file you wish to change in a text editor like Notepad. The file contains a

list of text strings used in the software. To perform the translation, enter the text you would like to see on the screen after the Semi Colon. For example:

Batch complete;

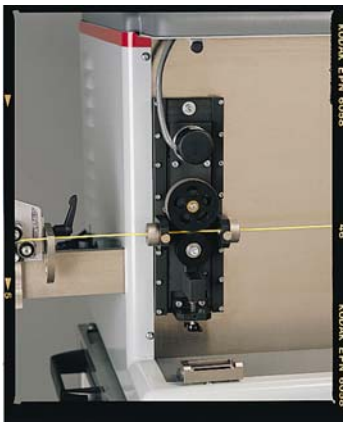
To show this phrase in Spanish enter the following

Batch complete;Lote Completo

OPTIONS

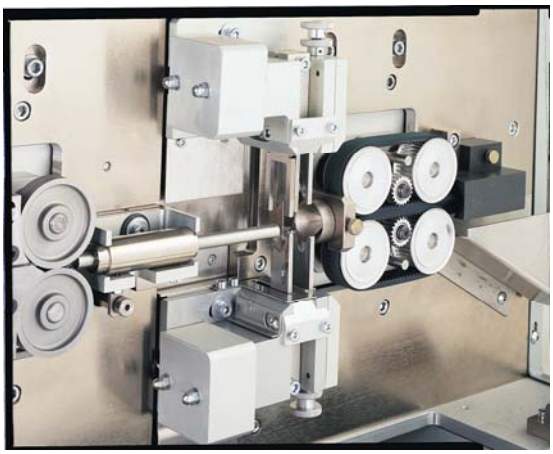
General Machine Options:

- Encoder Slip/Snag Detector measures wire feeding through the CS-326 and will detect slippage.
  - 4-138679



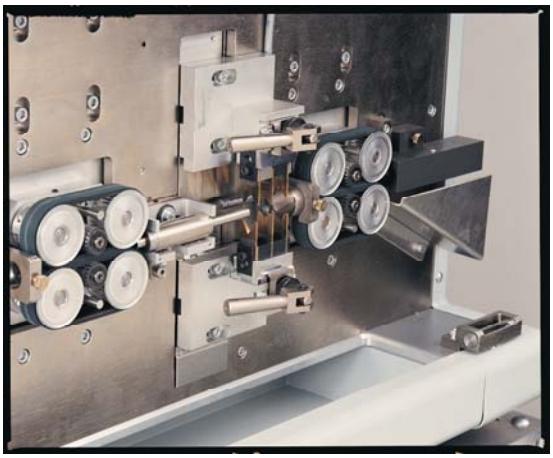
- Wire Straightener – Either heavy duty or light duty available. Heavy duty may be purchased in 2 versions, vertical axis only, or vertical and horizontal axis. Light duty handles wires from 30 to 12 AWG (0,05 – 4.5 mm sq.)
  - 4-138035-500 Vertical straightener. 9 rollers 19mmDia x 10mm Wide.
  - 4-138035-510 Horizontal staightener. 9 rollers 19mmDia x 10mm Wide.
  - 4-138035-520 Extra wire guides for both sides of the striaghtener
  - 4-138035-530 Ceramic inserts for .180 hole in guide. 2pc.
  - 4-138035-540 Vertical straightener for flat wire 0.31 wide. 9 rollers.
  - 4-138035-550 Vertical straightener for flat wire 0.42 wide. 7 rollers.
  - 4-138035-560 Vertical straightener for large wire. 7 rollers 1.125Dia x 0.394Wide.
  - 4-138035-570 Horizontal straightener for large ware. 7 rollers 1.125Dia x 0.394Wide.

- Dual Blade Cutterhead allows two sets of blade to be utilized, one set for cutting and one for stripping. The major advantage is that the strip blades will stay sharp for a much longer time because they are not cutting the conductor.
  - 4-136807



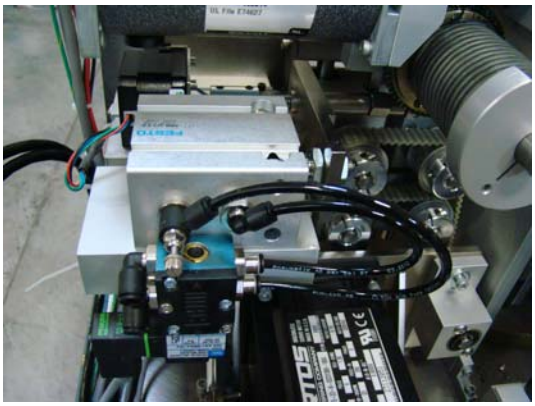
- Air Blow-off Kit is standard with 3-Blade Cutterhead, optional on other cutterheads.
  - 5-137982-1 Air blowoff for single blade and 2 blade standard wire machines
  - 5-137982-2 Air blowoff for 3 blade tool holder. Standard wire machine
  - 5-137982-3 Air blowoff for single blade and 2 blade large wire machines
  - 5-137982-4 Air blowoff for 3 blade tool holder. Large wire machine.
  - 5-137982-5 Air blowoff for 3 wire machine, full strip, with 3 blade tool holder.

- Three Blade Cutterhead, allows for high speed processing of small wire sizes. Also limits stripping lengths.
  - 4-137827

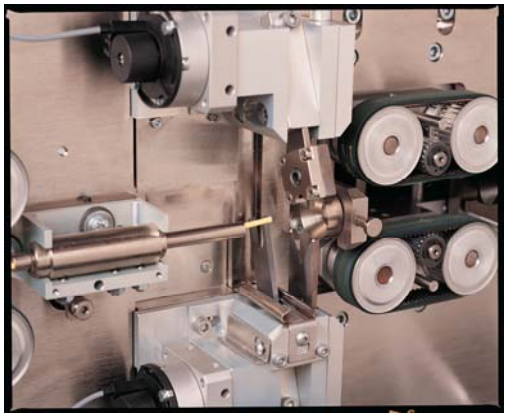


- Barrel Cone, for feeding wire direct from wire barrel.
  - 87093-500

- Outfeed belt opener recommended for use when performing long stripping on leading end.
    - 5-140961



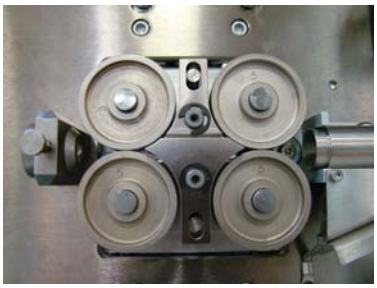
- Pneumatic Pivoting blade holders
    - 4-139233 Kevlar Fiber Optic Cable (pictured).
    - 4-144407 Steel cable cutting
    - 5-144758 Standard cutting blades
    - 4-145880 Coaxial cable cutting



- Additional wire guide sets. Special wire oversize kit is available for wires to 0.625 inch (15mm). See document “CS-326 Guide Selection.pdf” for all available wire guides.

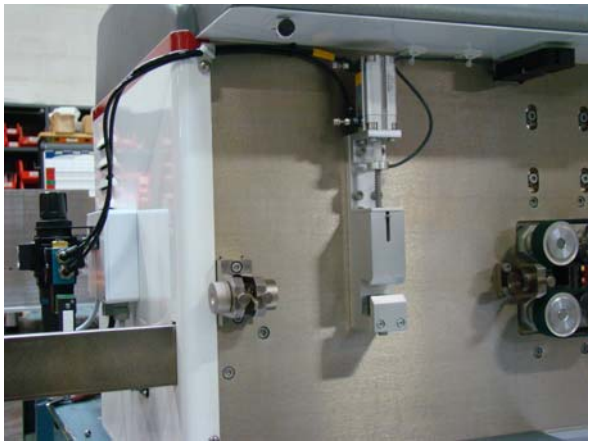
- Additional Feed Belts including Green for standard use, 138906 Red (softer) and 138905 Black (harder). Also, 1 inch (25mm) wide belt kit is available. See document “CS326 Belts and wheels .pdf” for all available belts and feed wheels.

- Roller feed drive kit. See document “CS326 Belts and wheels .pdf” for all available belts and feed wheels.



- Machine Cart .
  - 4-137658

- Sencor wire diameter sensing device .
  - 5-145228



- Special Wire Processing Kits for 3 wires at once, coax cable processing, flat wire processing.

Wire Prefeeding Options:

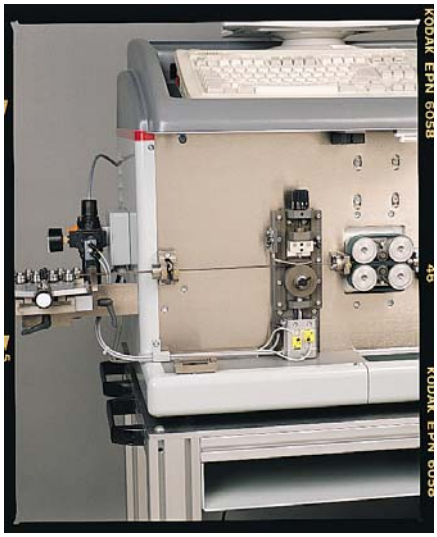
- PF-6 Wire Prefeeder (Right) for reels up to 16 inch wide x 24 inch diameter (400 x 600mm).

- PF-7 Heavy Duty Prefeeder for reels up to 28 inch wide by 39 inch diameter (750mm x 1000mm). (obsolete 1-1-2012)

- PF-10 Heavy Duty Prefeeder for reels up to 38 inch wide by 48 inch diameter (965mm x 1220mm).

Pre-Process Accessories (only 1 may be used at once):

- Wire Slitting Unit (right) for axial slitting of wire.
  - 4-138518 Slitter assembly. Does not include electrical or pneumatics.
  - 5-142144-1 Slitter pneumatic.
  - 5-138734-1 Slitter electrical



- Hot Stamp wire markers including WM-6 and KIP-20.
  - 4-137820 WM6 hot stamp marker. Mounts on the wire bar. (marker only)
  - 5-142474 WM6 mounting to CS326. (does not include marker 4-137820)
  - 5-138018 Internal cable for Hot stamp interface
  - 5-140205 External interface cable for Kingsley KIP-20

- Ink Jet Wire marker, Imaje 9040.
  - 2-137871-500 Imaje marker assembly. Includes interface, mounting bar, encoder assembly. Does not include the printer.
  - 918-085 Imaje printer for black ink, M head.
  - 918-061 Imaje printer for colored ink, M head.
  - 918-784 Imaje printer for black ink, G head.
  - 918-785 Imaje printer for colored ink, G head.

- Brady Wraptor labeling machine
  - 5-145483 Brady Wraptor, Interface kit that goes inside the Wraptor, includes cable to plug into machine.
  - 5-138018 Brady Wraptor,Interface cable that goes inside the CS326.
  - 4-147087-500 Brady Wraptor mechanical mounting and bar. Does not include electrical interface.

Wire Collection Accessories:

- Free standing collector part number 2-54912-500 for wires up to 39 inches (1M).

- AL-Series Motorized Collectors (Right) in lengths of 1,5M, 3M, 5M, and 10M.
  The out feed guide is removed from the **CS 326 B** and the **AL Collector** guide is positioned in its place to receive the wire from the outfeed system. There is no electrical connection to the **CS 326 B** required. The collector is activated by the passage of the wire.

  Max **CS 326 B** feed rate is 78 in./sec (2 M/sec.) when using the AL collectors

  In the configuration window set the "Feed delay" to the desired delay

  The first cut (justification piece) should be short. It is recommended to set the "Lead dress length" in the General Configuration to minimum .5 so the cut off piece drops in the scrap tray.

- CD-11 Dual Bowl Collection System (Right), available in 12 or 16 inch diameter (305 or 405mm) bowls for collecting long wires. The system consists of two rotating collectors (bowls). These bowls are filled alternately. One is filling while the other is stopped to be emptied. The amount of time allowed to empty the stationary bowl is controlled by the "Feed Delay" setting in the Post Process Configuration.

- CD-15 Level Wind Adjustable Coiling System.
  The CD-15 Pin Coiler will collect the wire around a series of adjustable pins. This helps control the size of the coils. After each coil the pins retract and the guard opens. The operator removes the coil and presses the button. The guard will close and the next coil is produced.

PREPROCESS PROGRAMMING

A preprocess is a process done to the wire before it is cut and stripped. Typically they are wire marking or pre slitting. Preprocesses are stored separately under unique names and automatically applied to the wire as part of the **Part Program**.

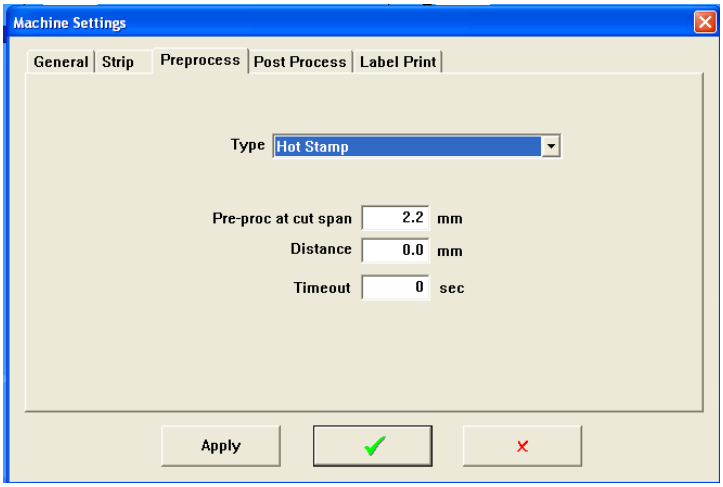
To open the Preprocess window click on the wire image at #24 at either end of the wire. Click on **New** then enter a unique name for the preprocess in the window.

SLITTING (SLITTER)

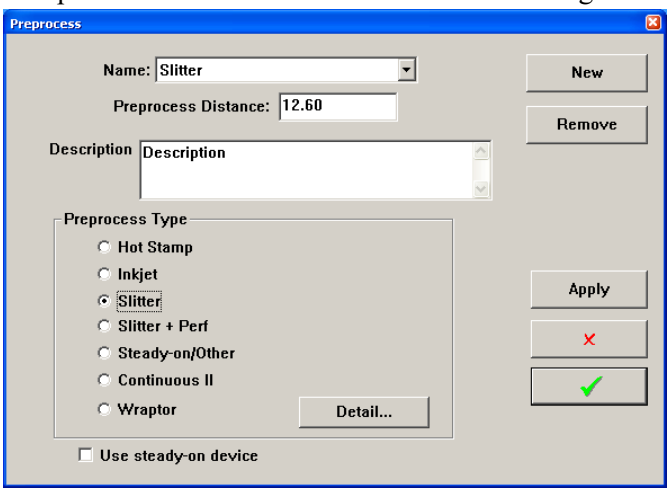
This device allows the user to slit axially a wire according to pre- programmed lengths. This data is saved and stored when the program is saved. This allows single and multiple slit locations along the wire.

Slitter Set Up

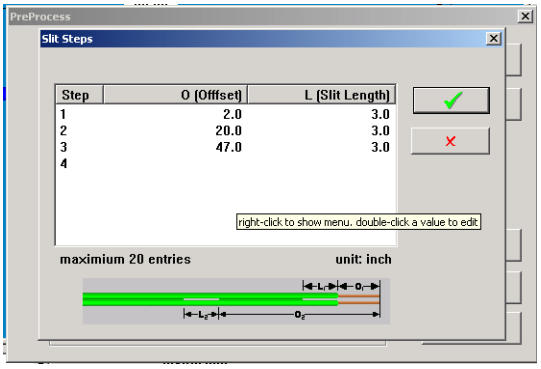
The slitter should first be set-up with the proper roller and blade to run the selected wire The Slitter is mounted on the face plate approximately 12 In. from the cutting blades. The exact distance will change depending on the type of Cutterhead installed on the **CS 326 B.** This Distance value is entered in the Preprocess configuration  window but can be adjusted here.



To open the window below click on the wire image at #24 (XXX) at either end of the wire



The slit position and length is set-up in the **Detail Setting** window. The below sample would slit a wire 3 times. First 2” from he lead end 3” long, second at 20 from the lead end 3” long, and the third 47” from the lead end 3” long.

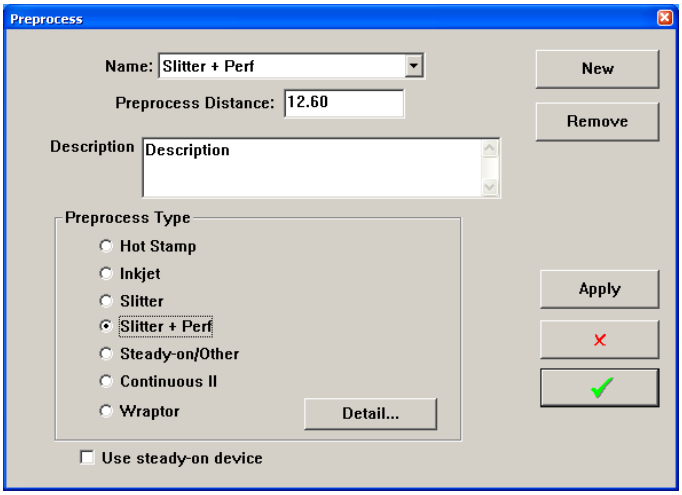


To slit a wire at both ends, for example a 60” wire with a 2” slit at each end, the settings would be as follows

Step	O (Offfset)	L (Slit Length)
1	0	2
2	58	2
3	0.0	0.0

WINDOW STRIPPING (SLITTER+PERF)

This process has the same setup as the **Slitter** process with only one difference. In this mode the stripping blades will come down at the end of each slit and cut a ring in the insulation. This allows a window of insulation to be removed by hand.



SLITTER TOOLING SET UP

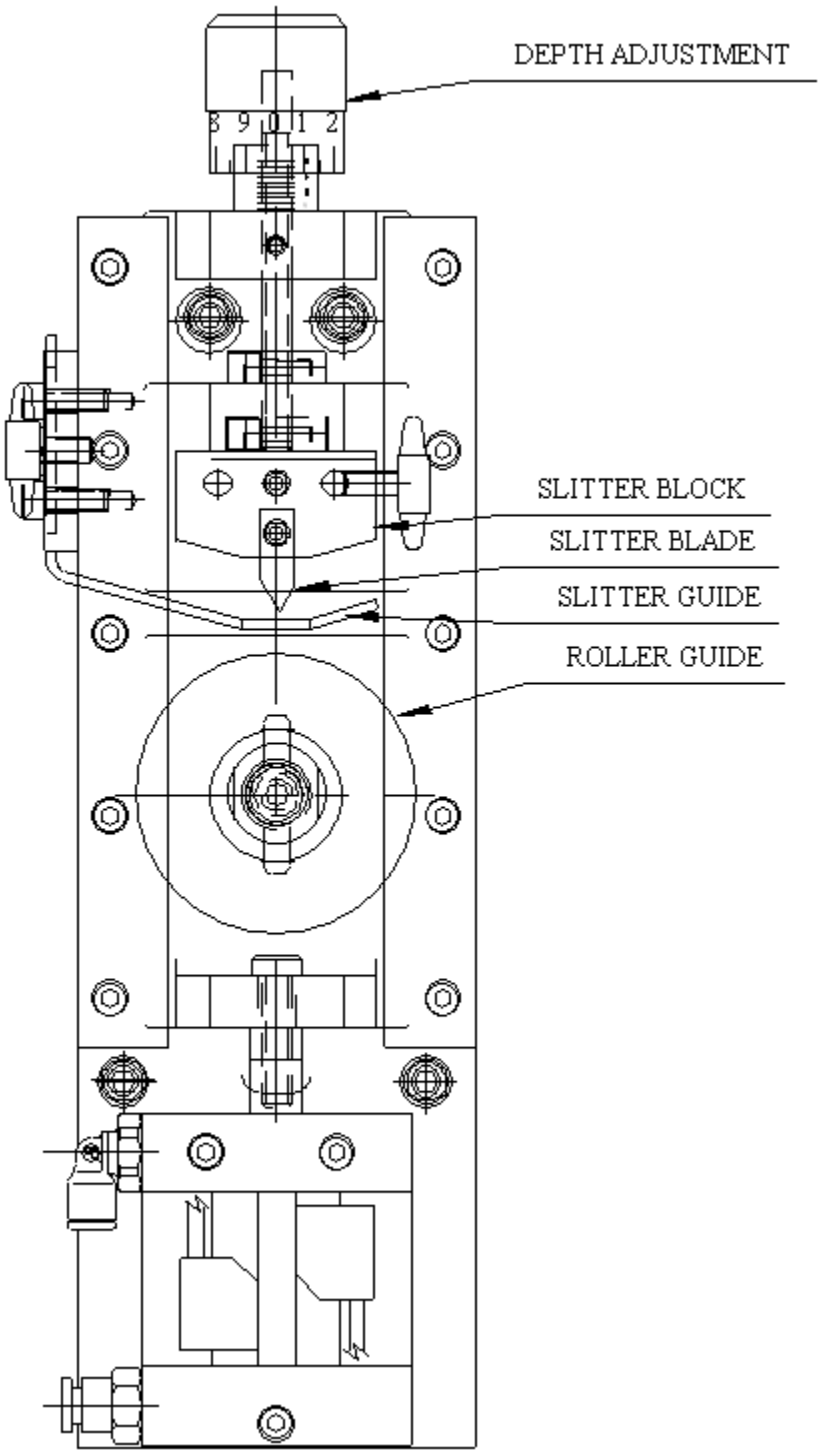
The slitter has three pieces of tooling which are customer variables.

1. The **ROLLER GUIDE** which is sized to the width and height of the wire
2. The **SLITTER BLOCK**, which is set up with the proper slitting blades.
3. The **SLITTER GUIDE** which holds the wire in the **ROLLER GUIDE.**

Contact **ARTOS** for sizing of customer variables.

TO SET-UP THE TOOLING:

1. Install the slitter block on the guide pins and secure with the thumbscrew.
2. Install the guide roller on the shaft and secure with the thumbscrew.
3. Install the slitter guide and adjust the height so it just clears the top of the wire. The wire should not be able to twist out of the horizontal plain. Secure with the thumbscrew.
4. Set the depth of cut using the micrometer adjustment at the top. Set the depth so the slitter blade just parts the web. To deep will cause excessive drag and may contact the roller guide causing damage to both pieces.



NOTE: Remove all tooling when not slitting

WIRE MARKING

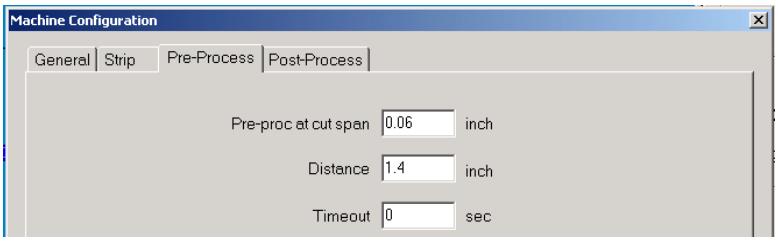
The **CS 326 B** can be equipped with wire a marking Preprocess. Artos WM 6, Kingsley hot stamp and Imaje Ink jet can be connected with an optional interface device. Consult Artos for the correct interface for your marker.

Marker Physical Setup

The marker should be prepared to run as prescribed in the markers manual. Position the marker in line with the wire path of the **CS 326 B** using a marker bar or suitable stand or table. Connect specified air and power supply. It is important that the position of the marker relative to the **CS 326 B** cutter blades remain stable and not be allowed to shift during wire processing. Connect the marker interface cable to the **CS 326 B**.

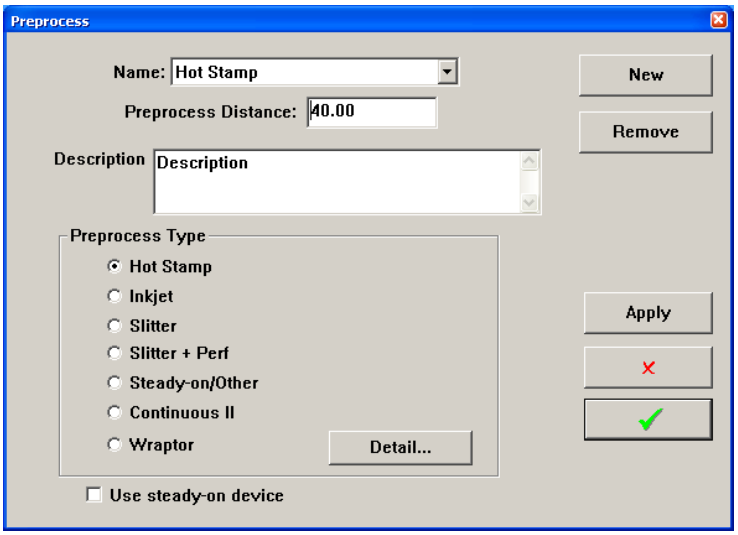
Measure the distance from the center of the marker to the cut-off blade

Distance value is entered in the Preprocess configuration  window but can be adjusted here.



HOT STAMP MARKER (HOT STAMP)

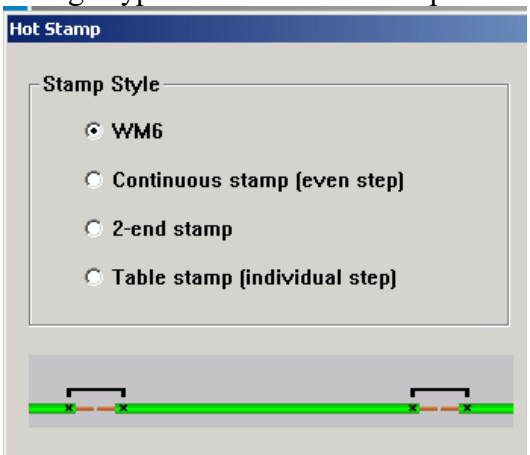
To open the window below click on the wire image at #24 at either end of the wire.



The PreProcess window allows you to select from existing preprocesses or make a new one. Click on **Detial Setting** and the window on the right will open.

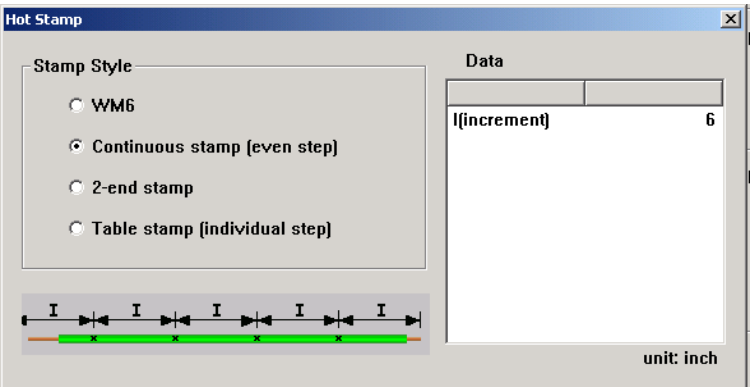
WM6

With the WM 6 two type sets are used. This allows for same or unique making on either end of the wire as depicted at the bottom of he window. The wire will be cut between the marks. Using a single type holder or two holders that make up one message makes the Wm 6 useable in any of the Hot Stamp configurations.
A single type holder maker cannot practically be used as a WM 6 type marker.



Continuous Stamp (Even Step)

This is a continuous repeating mark spaced evenly along the wire. The example above would produce a wire with marks every 6".



2-End Stamp

This allows you to use a single type-set marker to mark the same mark on both ends of the wire with same or different spacing from the ends. The example above would space the marks 2' from each end.

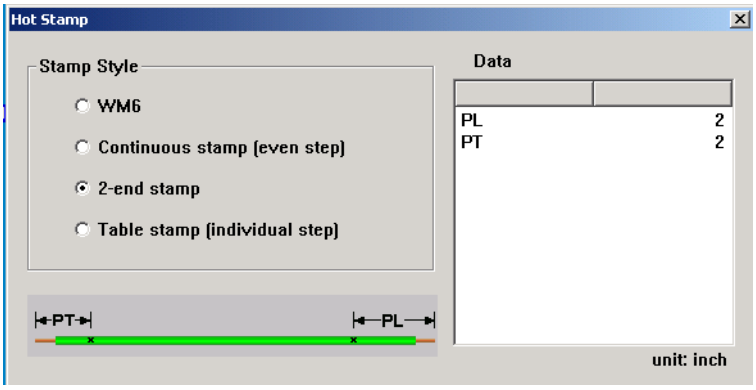
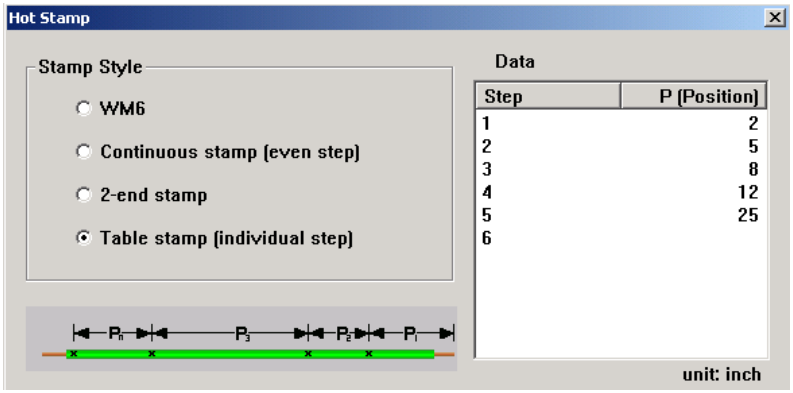


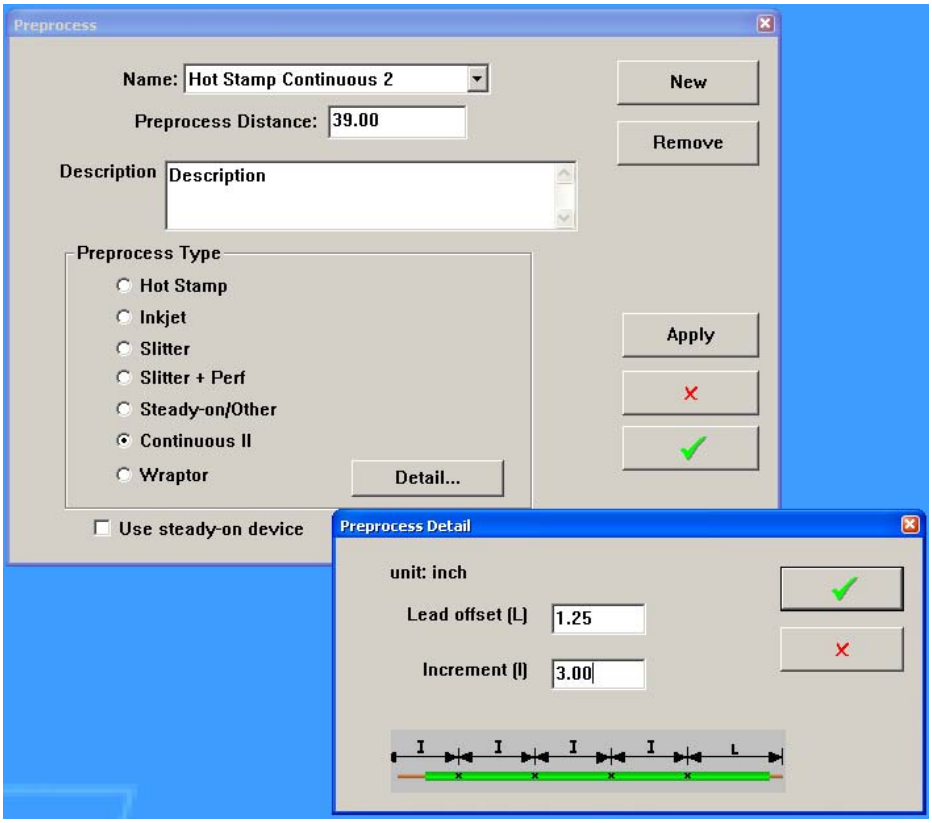
Table Stamping (Individual)

This is similar to continuous stamping but allows for uneven spacing of the marks. In the example above the marks would occur at the following distances from the lead end of the wire 2”, 5”, 8”, 12”, and 25 “



HOT STAMP MARKER (CONTINUOUS II)

This is a hot stamp marking process that is a variation of the Continuous stamp (even step) style of printing. With this style you can program the distance from the end of the wire to the first mark and then the distance between each mark.



INK JET PRINTING (INK JET)

Ink jet marking uses an Imaje printer to place an ink marking on the wire.

Fonts

The printer only uses one style of font. It is a Mono-spaced, block type font.

The font type Small, Medium, and Large print the characters readable when holding the wire horizontally. The font Small- Chimney, Medium – Chimney, Large – Chimney print the characters readable when holding the wire vertically.

The size is measured across the diameter of wire. Perpendicular to length along the wire.

The size can vary by the distance the face of the ink jet is from the wire. Normally we try to get this pretty close but too close and it will be hard to change the wire guide. Too far and quality will suffer

Font height and width

Size in dots = H x L/+S

H = the number of dots printed perpendicular to the length of the wire

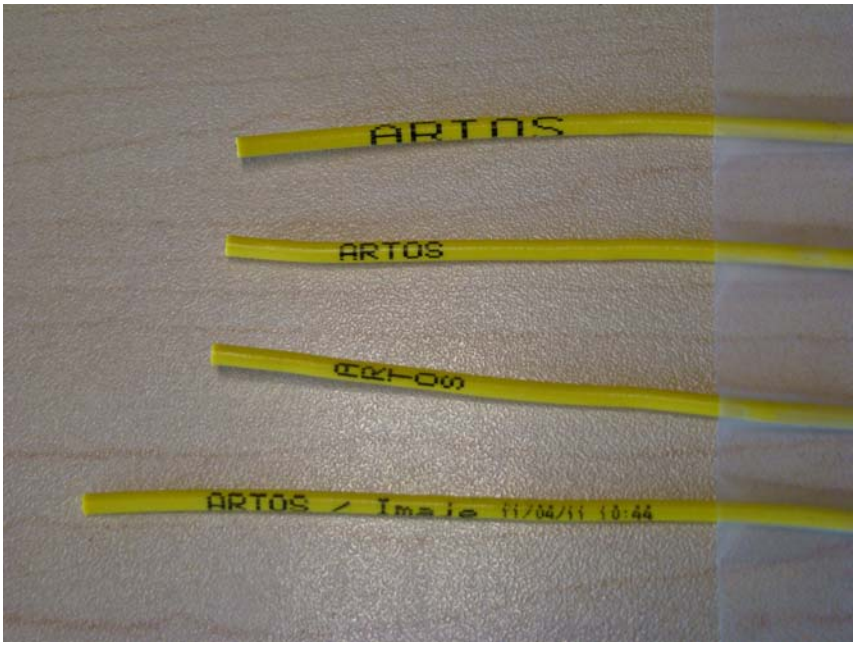
L = the number of dots printed parallel to the length of the wire for the character only.

+S = the number dots printed parallel to the length of the wire for the character plus the space between the characters.

M head DPI (dots per inch) = 115 (G head DPI = 71 (only used on CS326/CS327 machine))

Type	Scale	Size in dots	Height
Normal M head			
	Small	5 x 5/6	1.1mm
	Medium	7 x 5/6	1.5mm
	Large	11x6/8	2.4mm
Chimney M head			
	Small	5 x 5/6	1.1mm
	Medium	5 x 7/8	1.1mm
	Large	6 x 9/11	1.3mm
Normal G head			
	Small	5 x 5/6	1.8mm
	Medium	7 x 5/6	2.5mm
	Large	11x6/8	3.9mm
Chimney G head			
	Small	5 x 7/8	1.8mm
	Medium	6 x 9/11	2.1mm
	Large	11x16	3.9mm

The height can vary, smaller if the ink jet is close to the wire. Larger if it's further away.
The character width along the length of the wire will change only by the Bold factor, not distance from head.



Examples of printing on 2.2mm diameter wire. From the top, Large font, Medium font, Medium chimney font, Medium font with small date and time.

Font boldness

The way the printer forms a character is that when an encoder pulse comes in one line of the character is printed. The encoder pulses come from the wire feed encoder. In a medium normal font with the boldness set to 1, 5 lines are printed to form the character. If the boldness is set for 2 then the each of

the 5 lines is printed twice, consuming 10 encoder pulses. If the boldness is set to 3 then each of the 5 lines is printed 2 times, consuming 15 encoder pulses. The visual effect of boldness is the portions of the character that are perpendicular to the wire length are twice as thick, the portions of the character that are parallel to the wire length are twice as long.

DIN mode

This mode only works in End Marking Single format. This type of print is readable so that when you fold the wire over and hold the ends together the messages will both read from left to right.

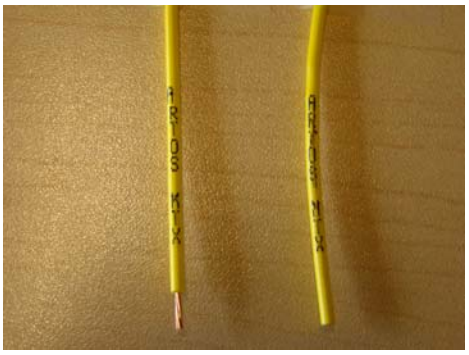
Reversal mode

The Reversal box is only valid in DIN mode, it changes the direction that the message is readable from the leading end of the wire. In the examples below the leading end is stripped.

Example of Medium font, DIN checked.

Medium font, DIN checked, Reversal checked

Example of Medium chimney font, DIN checked



Medium chimney font, DIN checked, Reversal checked.

Include date/time

When checking this box a date and time stamp will be added to the end of the message programmed. The characters of the date and time stamp are always printed with the small font and a boldness of 1. The date and time is derived from the clock in the Imaje ink jet printer. All the marks on the wire will have the time stamp appended to it.

DIN not checked.

- In end marking the time stamp will be appended to end of the message on the lead, to the beginning of the message on the tail. Basically the stamps are toward the inside of the wire.
- In continuous marking the time stamps are appended to the end of the message. For the last message printed it is appended to the beginning of the message. Basically for the marks at the end the stamp is toward the inside of the wire.
- In continuous marking simple the time stamp is appended to the end of the message.
- If using Chimney fonts the message will be printed in chimney but the date time stamp will be printed in standard font.

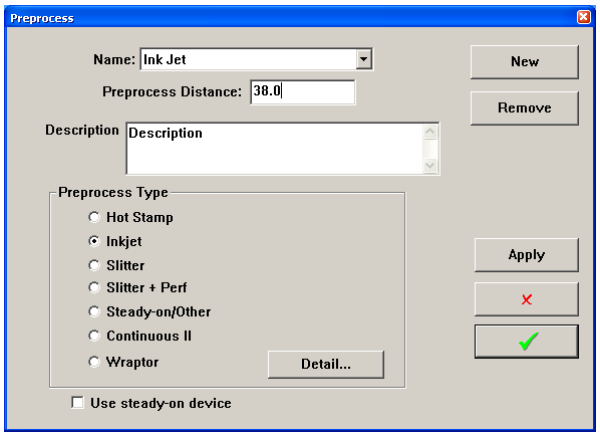
DIN checked

- This will produce time stamps on the wire but the lead end of the wire will have a time stamp appended to the beginning and the end of the message.

Mark from Shoulder

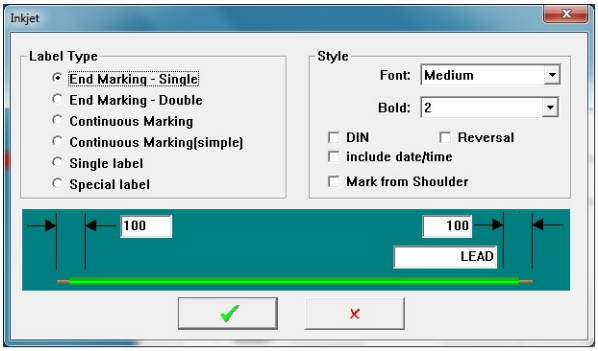
- When this box is checked the dimension you enter will be from the strip should of the wire to the mark. If this box is not checked the dimension you enter will be from the end of the wire to the mark.

Marking Formats



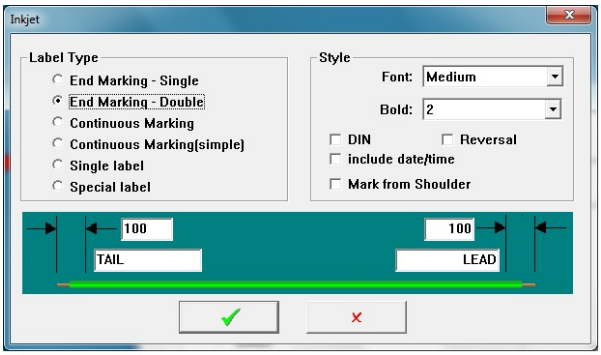
The opening window allows you to determine the type of marking, set the makers position relative to the cutting blades (Preprocess Distance)

Click “Detail” for the further information about the marking formats

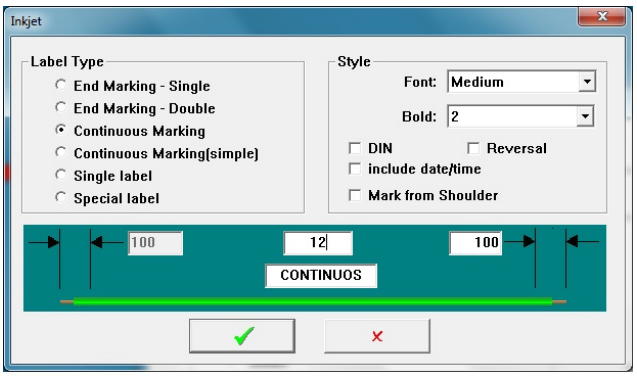


Label Type.
The next window will allow you to select the marking format as listed. You can also select Font, Bolderization, Din, or Reversal printing. The date and time can also be added.

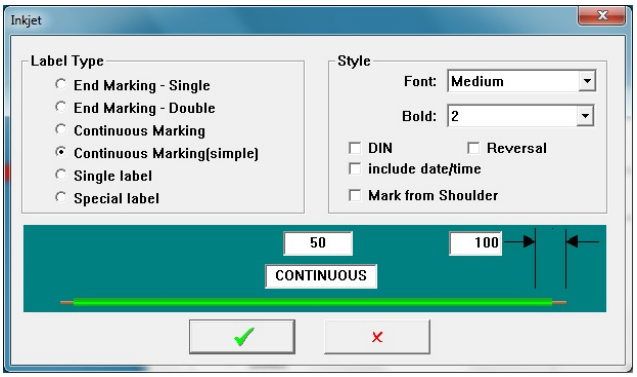
End Marking-Single This will apply the same mark to both ends of the wire, spaced from the end as set.



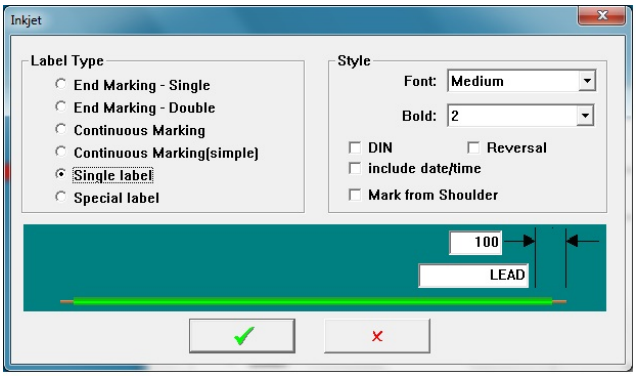
End Marking-double This will apply different marks to each both end of the wire, spaced from the end as set.



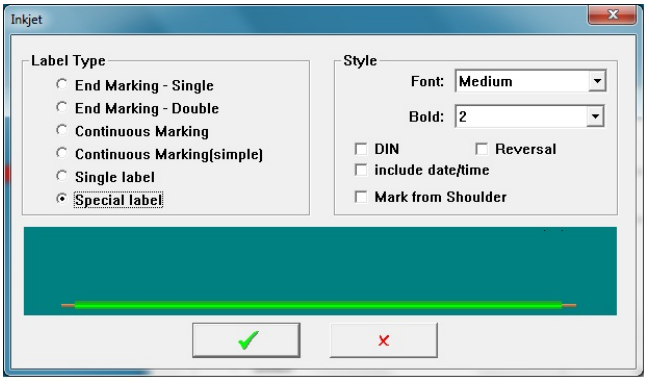
Continuous Marking This will apply the same mark to both ends of the wire, spaced from the ends as programmed. It will also place marks along the length spaced according to the value set in the center window. This mode causes the machine to produce less parts per hour as compared to Continuous marking (simple)



Continuous Marking (Simple) This will apply the same mark along the length of the wire starting from the leading end at the distance programmed. The spacing between the marks is determined by the distance programmed in the center window.



Single Label This will apply the mark to the leading end of the wire,



Special Label When this is active, the print signal and encoder enable signals are turned on, whenever we are feeding wire. No other information is transferred to the printer.

Wire feeding speeds when ink jet marking is in use

When printing the maximum feed rate is determined by the chart below as long as printing is called for in the part program. If a user programs a value of feed rate higher than below the machine will automatically use the value shown below. These fonts are part of the Artos high speed font set installed in the printer. See also, document "Verify ARTOS 9040 fonts installed.doc" and "Installation of ARTOS Fonts in a 9040 printer.doc".

2.9M/sec ; 5x5/6 (small) normal font
2.0M/sec ; 7x5/6 (medium) normal font
1.6M/sec ; 11x6/8 (large) normal font
2.9M/sec ; 5x5/6 (small) chimney font
2.9M/sec ; 5x7/8 (medium) chimney font
2.0M/sec ; 6x9/11 (large) chimney font

UV CURING LIGHT OR SPARK TESTER (STEADY-ON/OTHER)

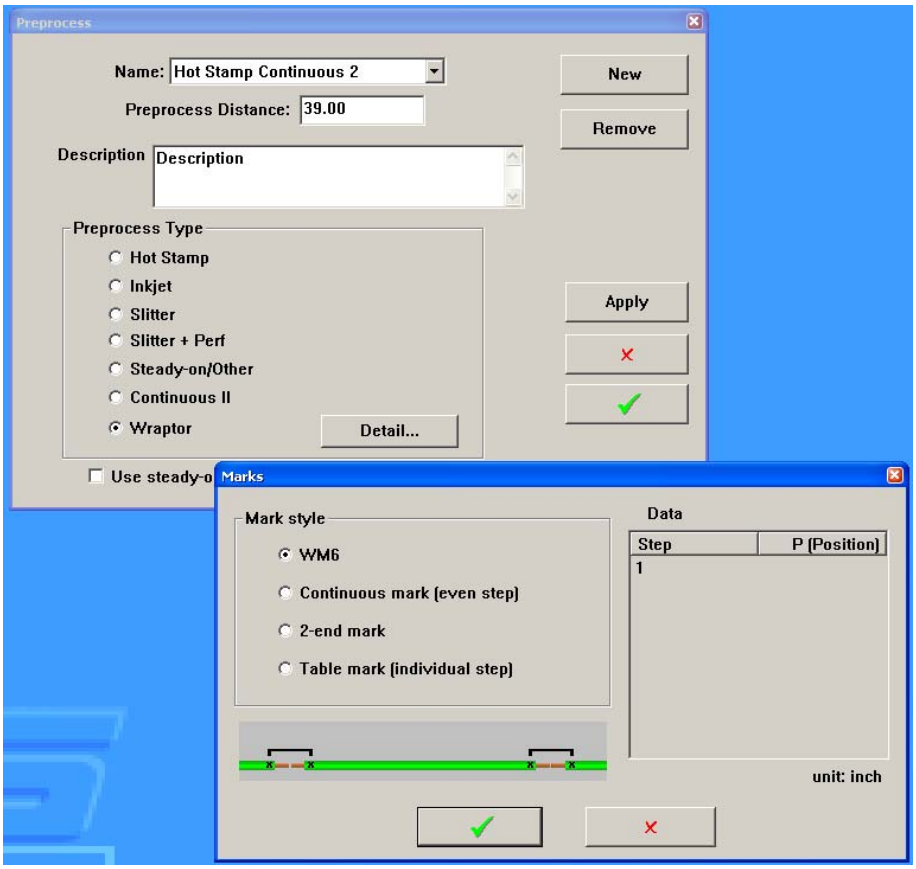
When this pre-process is called up in a part the light or spark tester is turned on whenever the machine is pulling wire. There can also be a signal back from the device to indicate a fault has occurred. When a fault does occur the machine will either not start or it will shut down and it will display a message pre-process fault.

BRADY WIRE WRAPTOR LABELER (WRAPTOR)

The Brady wire Wraptor is a labeling machine that wraps a label around the wire. The positioning of this label is the same as the positioning of a hot stamp mark.

WM-6 mode – The Wraptor can only apply 1 label, unlike the WM-6 that can do two stamps. However this feature may be useful if you need to apply just 1 label at the tail of the wire and you have many different wire lengths. The marker will apply the label near the cut area of the wire. You just adjust the pre-process distance to get the label in the correct place. The position will not change even if you change wire lengths. This type of label positioning can also be done with table mark, the only problem is, that in table mark you would need to create a pre-process for each different length of wire.

You can use section "HOT STAMP MARKER (HOT STAMP) to learn about programming the other 3 mark styles.



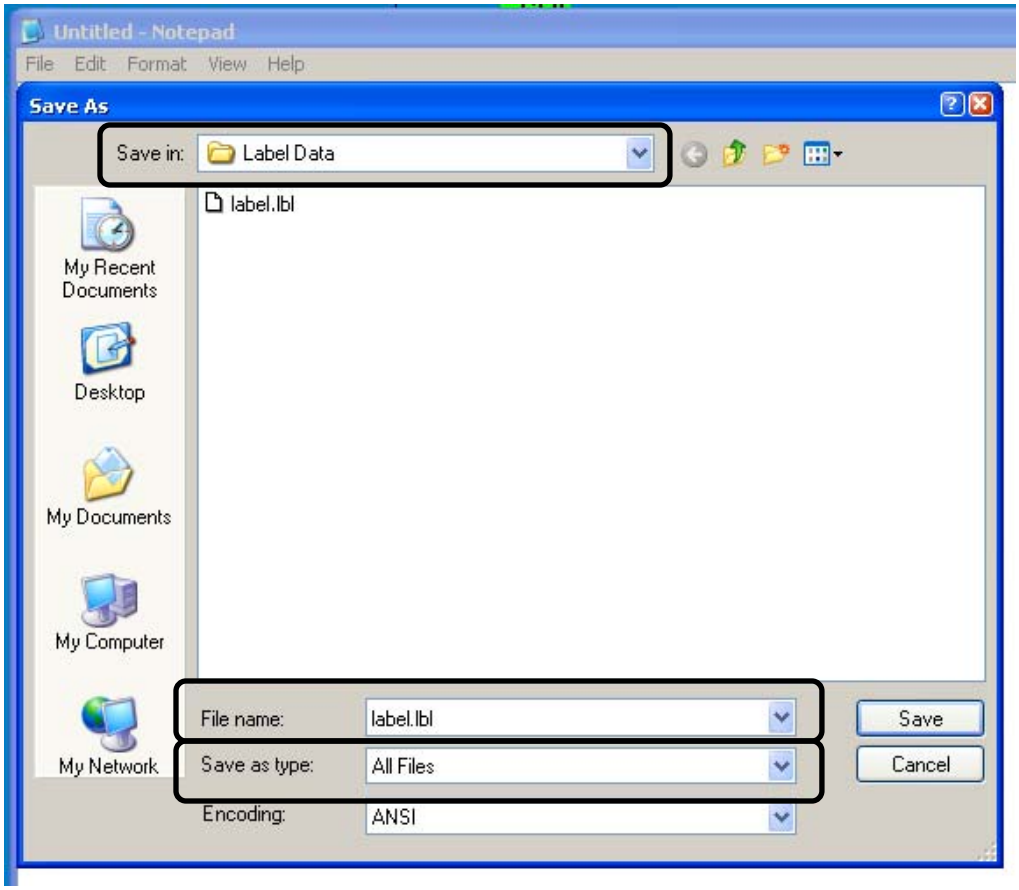
LABEL PRINTING OPTION

System Requirements:

CS 326: GUI version 4.13 Exec version 3.19 or higher

CONFIGURING THE COMPUTER

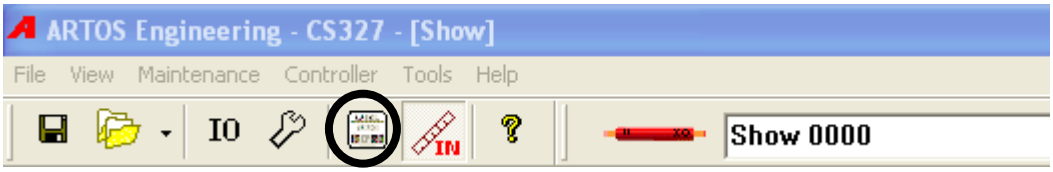
1. Install “Nicelabel” software Ver. 4 or higher on this machine, if it is not already installed.
2. Create a directory called “Label Data” in C:\Program Files(x86)\Artos Engineering\CS326GUI\. If the (x86) directory does not exist then create a directory called “Label Data” in C:\Program Files\Artos Engineering\CS326GUI\
3. Create a text file named label.lbl
   - In Windows click Start – Programs - Accessories – Notepad
   - Click file save.
   - Navigate the **Save In** location to be C:\Program Files(x86)\Artos Engineering\CS326GUI\Label Data. If the (x86) directory does not exist then go to C:\Program Files\Artos Engineering\CS326GUI\Label Data
   - Change the **Save as** Type to All Files
   - Enter the **file name** as label.lbl
   - Click Save and exit notepad.



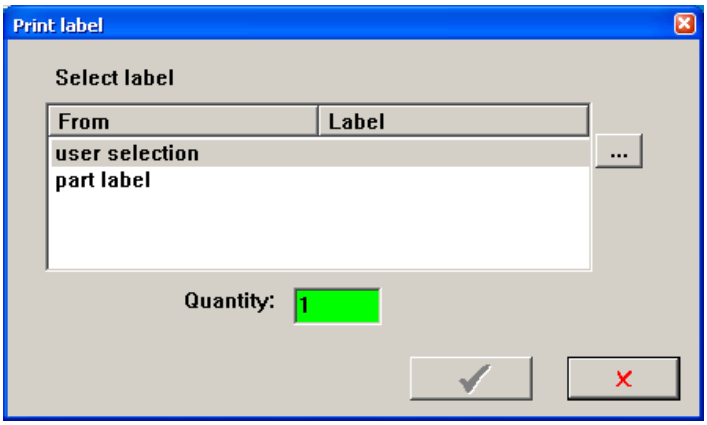
CONFURING THE LINK TO THE NICELABEL SOFTWARE

You may need to link the CS326 software to the printer software.

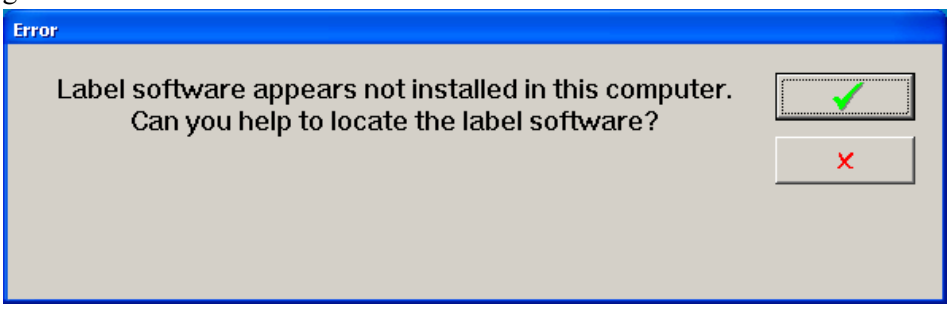
- Click the label printer icon



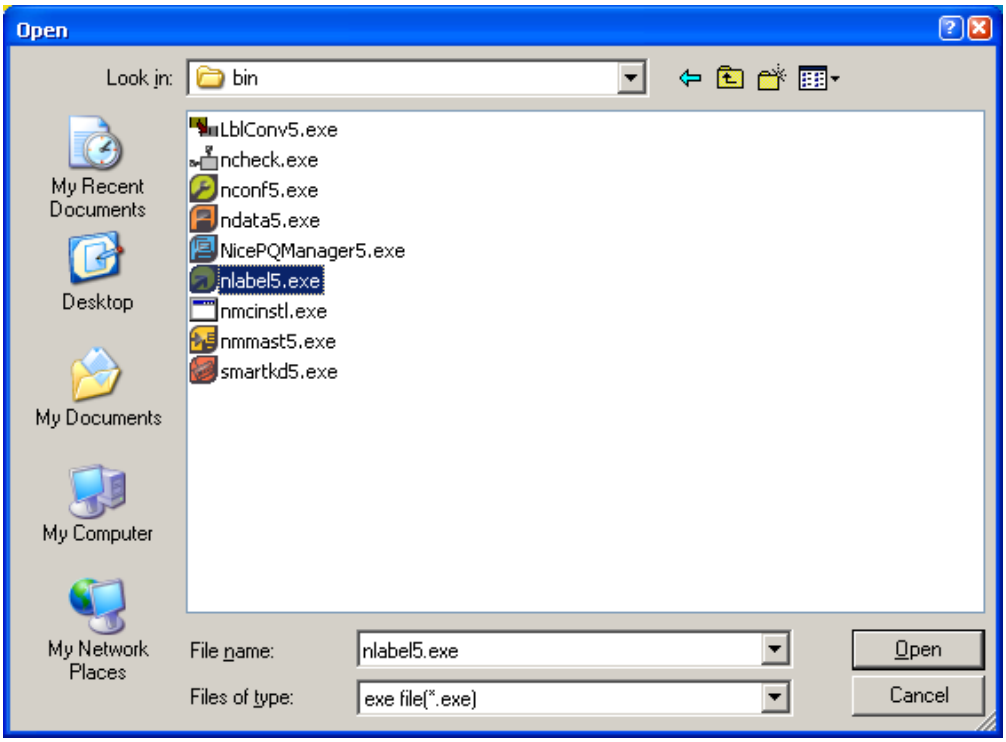
- If the CS326 software goes directly to the print label window then you are finished with this section.



- If an error message comes up that says the Label software appears not installed…. Then click the green check.



Navigate to C:\Program Files (x86)\ EuroPlus\NiceLabel 5\Bin\nlabel5.exe If the (x86) directory does not exist then navigate to C:\Program Files\EuroPlus\NiceLabel 5\Bin\nlabel5.exe . Then click open. You may have a newer version of Nicelabel, if so select the current version number.



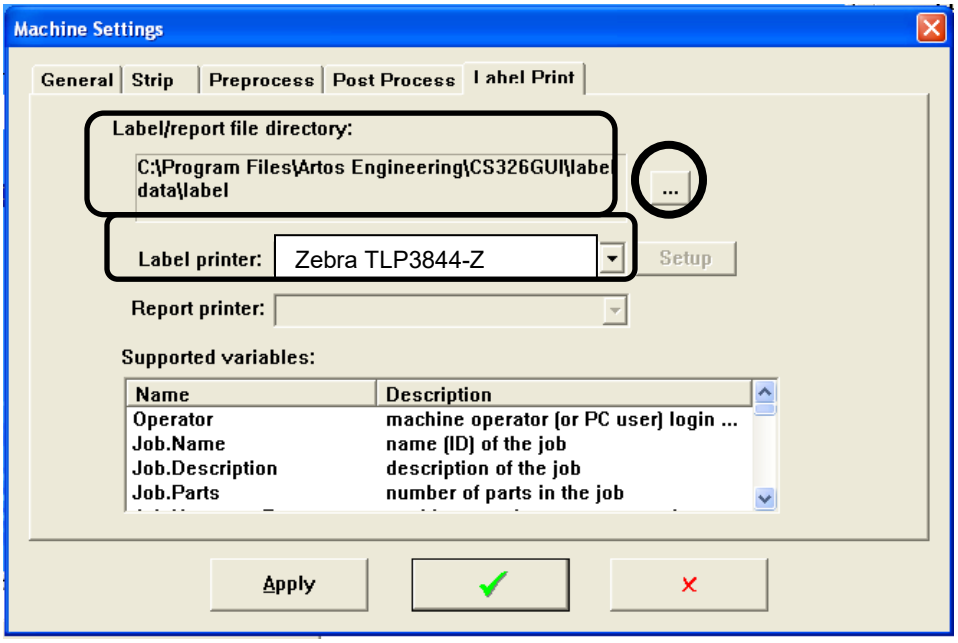
SELECTING THE PRINTER

This section will assume that the printer is connected to the computer and installed in Windows.

Click on the wrench to open the Machine Setup window. Select the Label Print tab.

Drop down the “**Label printer**” and select the desired printer. Example “Zebra TLP3844-Z”.

The “Label /report file directory“should default to C:\program files (x86)\Artos Engineering\CS326GUI\Label Data\label or if (x86 does not exist then it should default to C:\program files\Artos Engineering\CS326GUI\Label Data\label . If it doesn’t browse and select the file listed above.



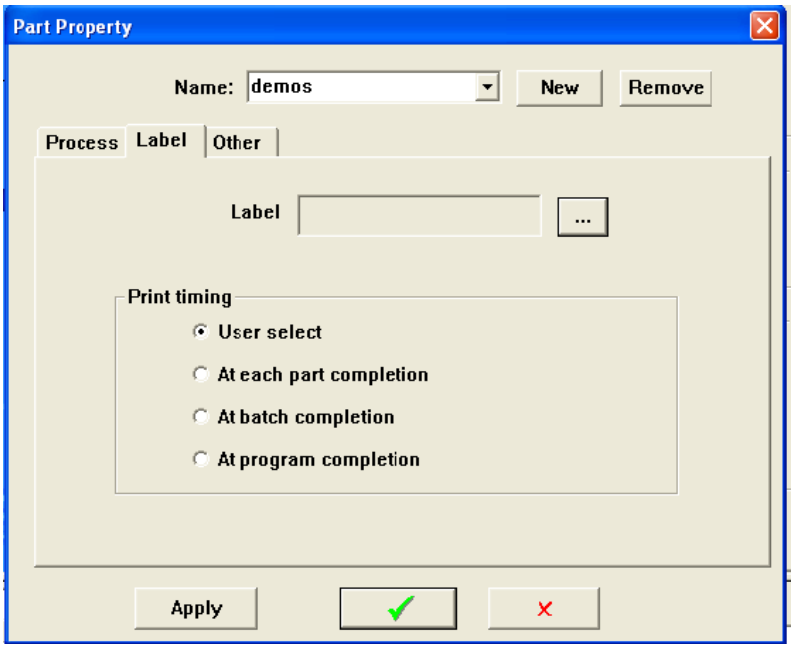
Supported variables:
This is a list of the machines information variables that can be applied to the current label The current data that appears in these variable is printed on the label.

Report printer:
This is for future development.

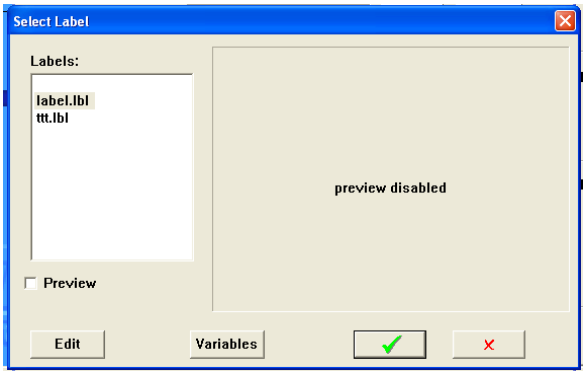
CREATING A LABEL

Opening a new label, existing label to edit, or existing label to save to a new name.

1. Click on the Parts Properties Icon  to open the Parts Properties window.



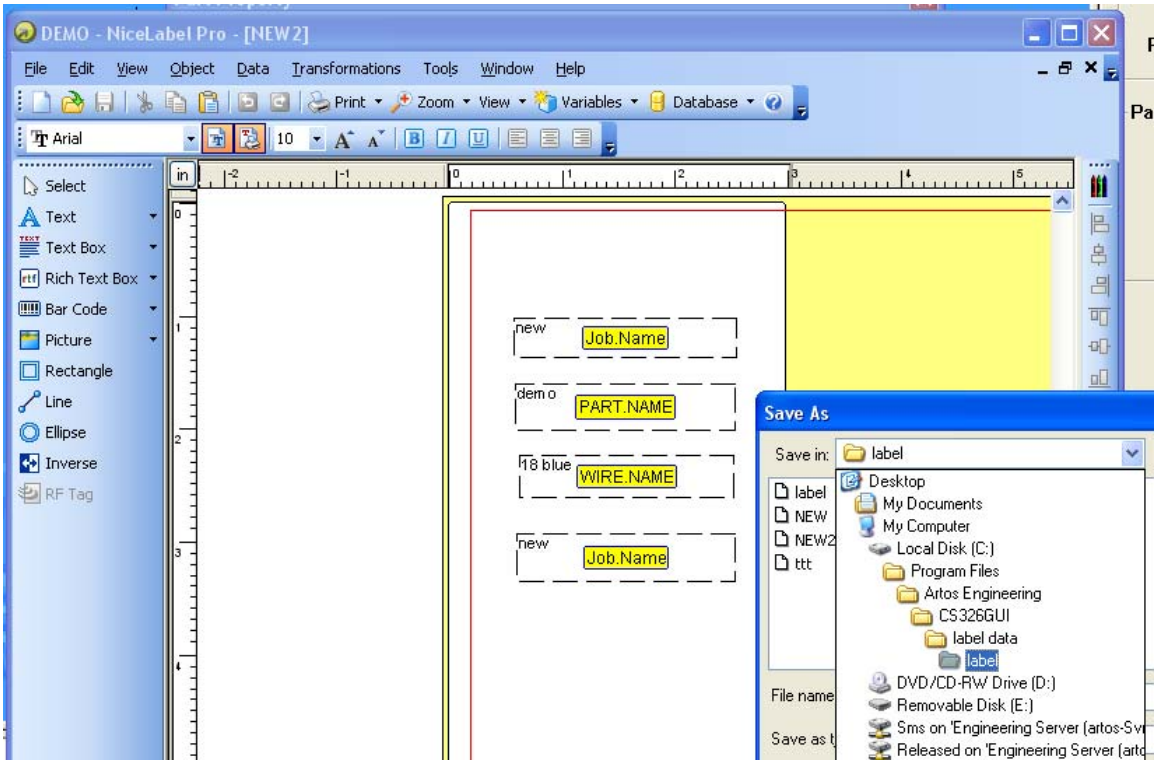
2. Select the Label tab. Click the browse button  . If you would like to edit an existing label select the name of that label and click Edit (you can edit an existing label and save to a new name). To create a new label select the blank line at the top of the list and click EDIT. Clicking Edit will open the NiceLabel Pro software.



3. If the Artos software is covering the Nicelabel window, go to the task bar and click the "Nicelabel Pro" icon to bring it forward.

4. If you opened an existing label that you plan on saving as a new name, or you opened a new blank label this is a good time to click File – Save As. Enter the new name you would like to use for this label. The location you should save this to is C:\Program Files (x86)\Artos

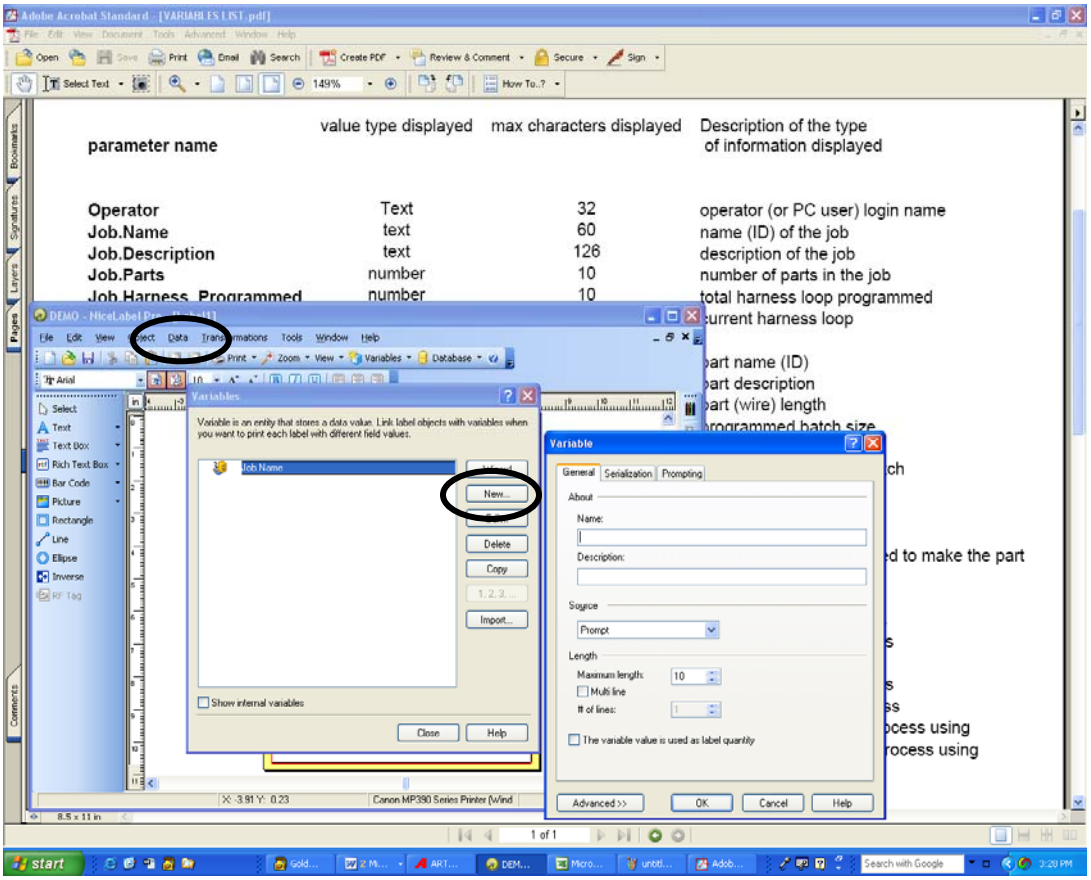
Engineering\CS326GUI\Label Data if the (x86) directory does not exist then save it to C:\Program Files\Artos Engineering\CS326GUI\Label Data.



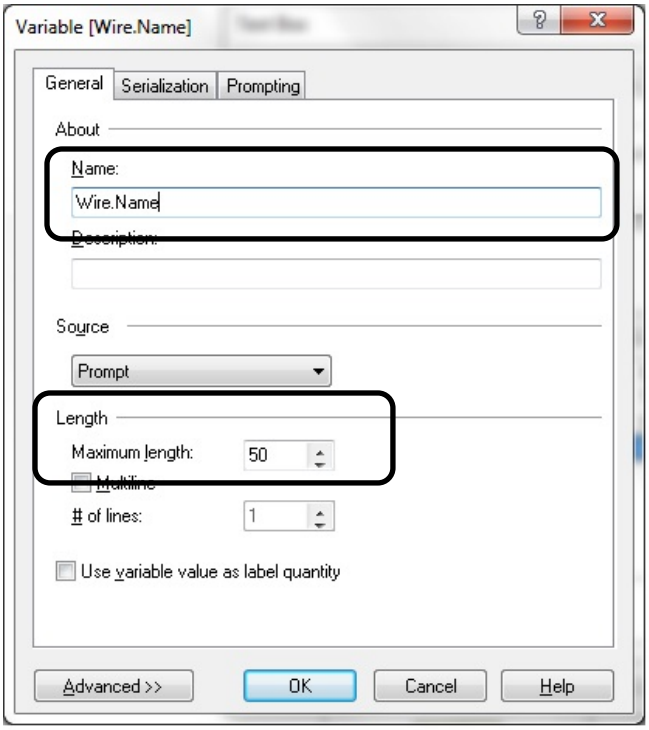
Programming the variables to print

When starting to create a label you first need to load the variable values you want to display on your label in to the “Nicelable Pro” variable list. The available variables are listed in the section “Variable list” below.

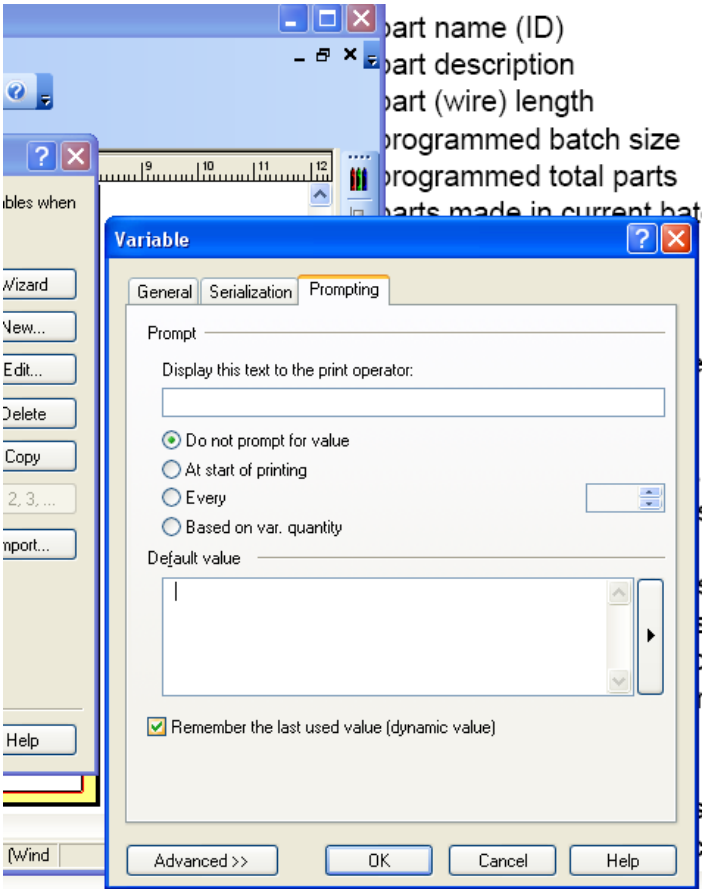
1. From the NiceLabel main menu click on Data -Variables.
2. On the variables window click New.



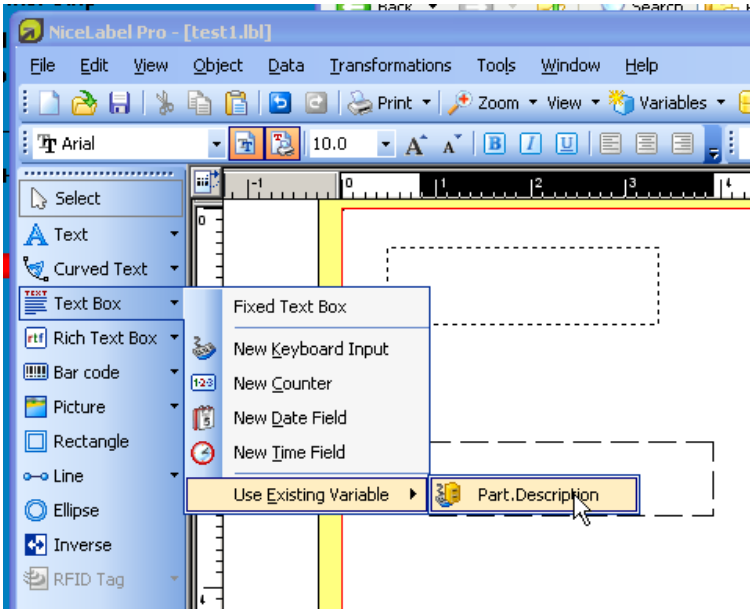
3. In the Name field enter a parameter name from the Variable list below. Type this name exactly as you see it in the list. I.E. **Job.Name. (Note the period)**. NOTE. This manual is a PDF document, you can use windows copy and paste routines to copy a string of text from a PDF to this Variable window.
   In the Description line you can enter information about the variable, up to 60 characters. However, this is not displayed anywhere in the label and is only for information about the variable.
4. Enter the maximum length to be 50.



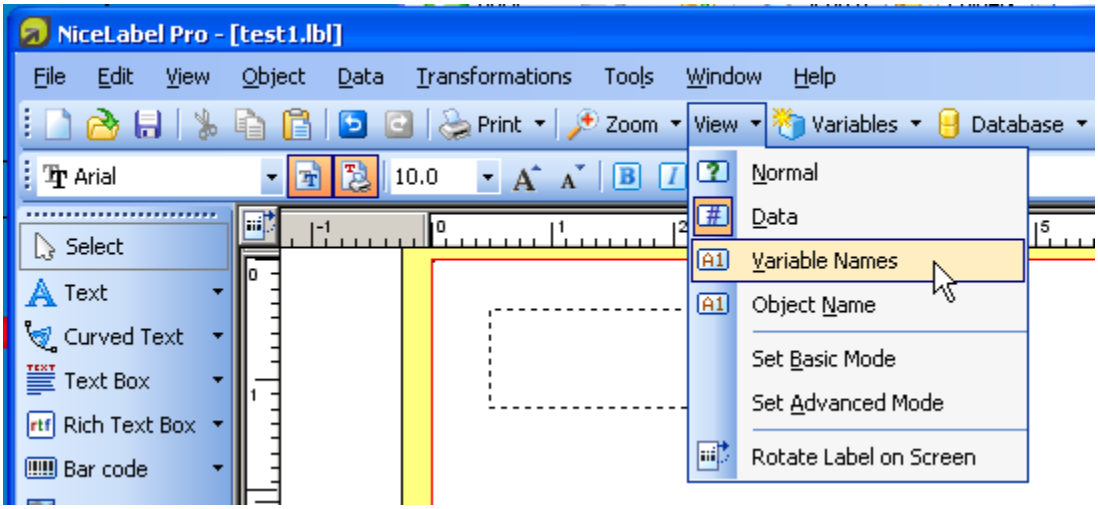
5. After you have entered the entire information click the **Prompting** Tab.
6. Select "**Do not prompt for value**"
7. Click In the "**Default value**" box and hit space bar twice.
8. Check the "**Remember the last used value (dynamic value)**



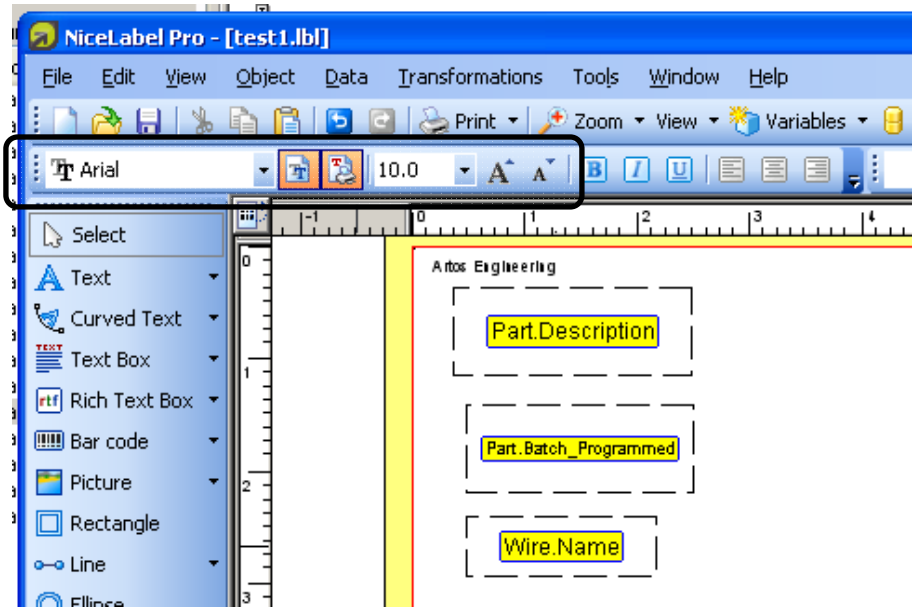
9. Click O.K. to return to the variable list.
10. If you need to add another variable go back to step 2.
11. After you have loaded all the variables you plan to use click ok to close the dialog boxes back to the Nice Label main window.
12. To place the variable on the label select Text Box – Use Existing Variable – Variable name . Or if you would like to use Rich Text select Rich Text box– Use Existing Variable – Variable name. The difference between the two types of text are explained in the Nicelabel help menu.



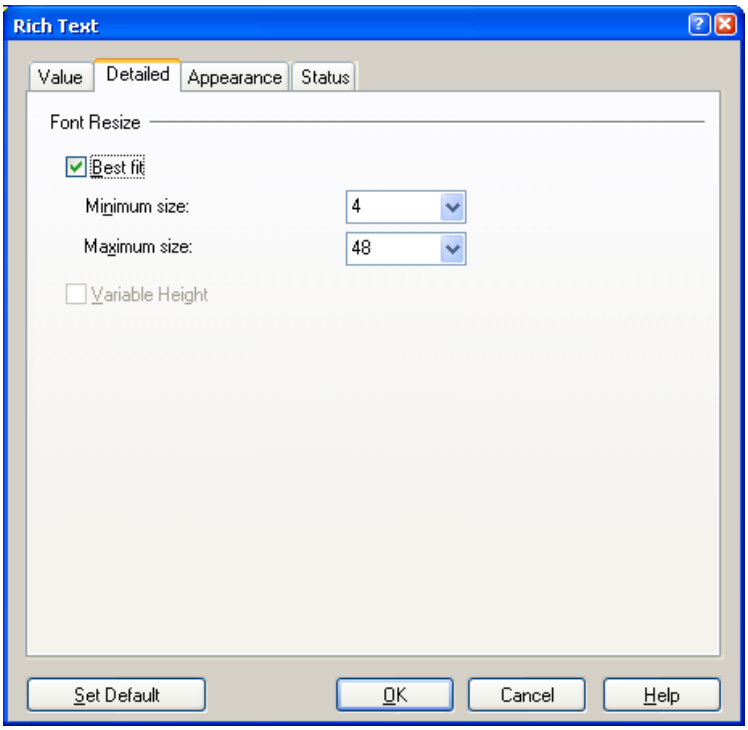
13. To view what variable name is in each text box click View – Variable names.



14. To add other text or objects to the label see the Nicelabel help menu.
15. To change the font or size of text, click on the variable box, and use the menu ribbon to select the desired attributes.



16. To change the position of the text in the window, enable font resizing , or rotation. Double click on the variable box

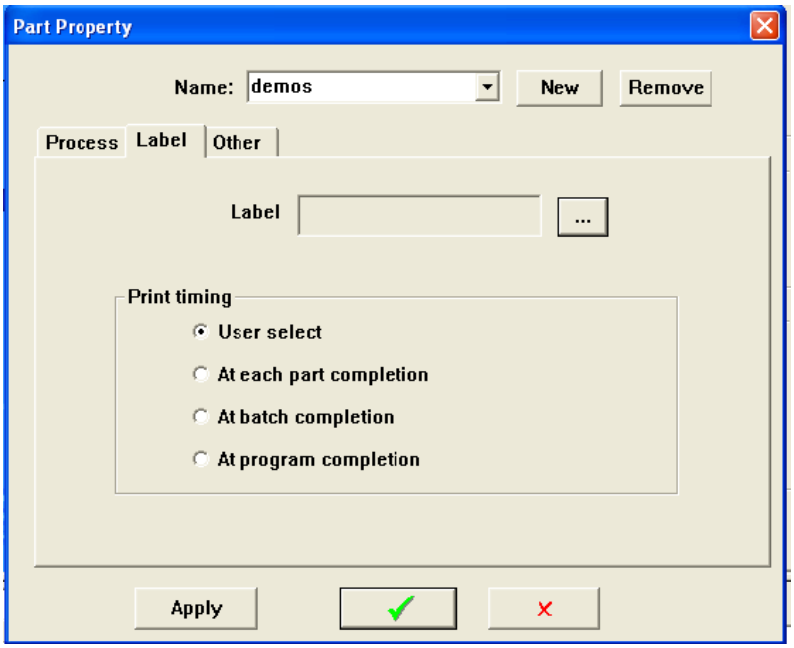


17. When finished editing remember to click File – Save.

PRINT TIMING

You can select at what time you want the label to print.

Click on the Parts Properties Icon  to open the Parts Properties window.



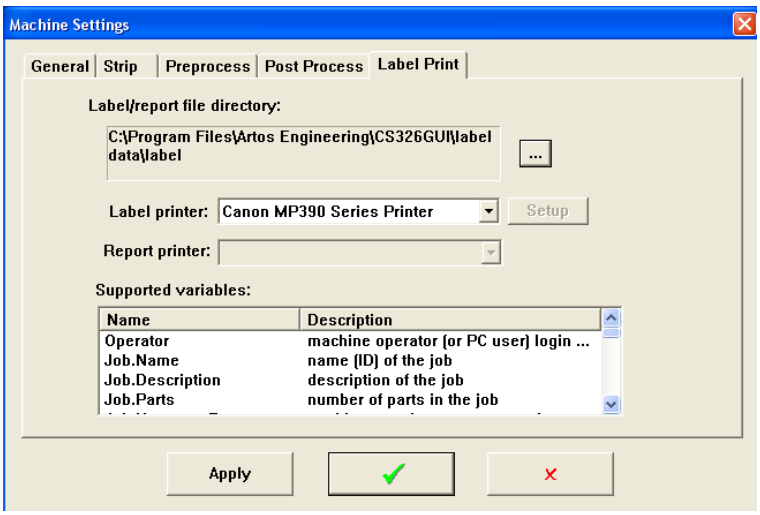
Select the Print Timing you want to use;

- User Select (The label will print whenever you click on the label icon )
- At each part completion (print a label after each part)
- At batch completion (print a label after each batch)
- At program completion (print a label after special stripping)

Variable List

Parameter Name	Value type displayed	Maximum characters	Description
Operator	Text	32	Machine operator (or PC user) login name
Job.Name	text	63	Name (ID of the job
Job.Description	text	126	Description of the job
Job.Parts	number	3	Number of parts in the job
Job.Harness_Programmed	number	6	Total harness loop programmed
Job.Harness_Current	number	6	Current harness loop
Part.Name	text	63	Part name (ID)
Part.Description	text	126	Part description

Part.Length	number	8	Part (wire) length
Part.Batch_Programmed	number	6	Programmed batch size
Part.Total_Programmed	number	6	Programmed total parts
Part.Batch	number	6	Parts made in current batch
Part.Total	number	6	Total parts made currently
Wire.Name	text	63	Name (ID) of the wire using to make the part
Wire.Description	text	126	Description of the wire
PreProcess.Name	text	63	Name (ID) of the pre-process
PreProcess.Description	text	126	Description of the pre-process
The next variables or for dual end termination machines like an MTX or Cr11/22			
LeadProcess.Name	text	63	Name (ID) of the lead process
LeadProcess.Description	text	126	Description of lead process
LeadProcess.Terminal	text	63	Terminal name of lead process
LeadProcess.Seal	text	63	Seal/boot name of lead process
TailProcess.Name	text	63	Name (ID) of tail process
TailProcess.Description	text	126	Description of the tail process
TailProcess.Terminal	text	63	Terminal name of tail process
TailProcess.Seal	text	63	Seal/boot name of tail process



SPECIAL STRIPPING

Multiple Center (Window) strip mode

This is an obsolete window stripping mode only for customers who have not yet converted over to using the Pre-Process called Slit +Perf.

If your machine does not have the Pre-Process called Slit+Perf, you should upgrade your software.

Modified to run special harness/slitting mode where individual parts with multiple center (window) strips are possible. There are several pre-requisites for this feature to function:

* The slitter option must be mounted.
* The Cutterhead must be in single blade configuration.
* The "Special single blade Center Strip harness mode" flag in Machine Configuration must be set.
* The part is defined as a succession of Part (.PRT) programs in a Job (.JOB) program run in Harness mode.
* Each part of the Job must have the slitter programmed and activated.

In this mode the CS326 will only cut off the wire at the end of each harness resulting in a single part defined by the harness program elements. The job does not cycle stop at the end of each harness as in normal run mode. The harness loop count now defines the number of total parts made.

What does this mean?

This mode provides a method for a customer to do multiple center (window) stripping where the customer is willing to peal the jacket and insulation out of center strip windows. The critical feature of this mode is that the wire is not cut between parts that define the harness. The wire is only cut between each harness. The customer can define a part which has multiple (up to 253) window strips of various widths and placement along the part. The CS326 does not actually remover the insulation at these points but rather perforates the insulation to the programmed depth, at the programmed strip shoulders and slits it longitudinally from perforation to perforation so that the insulation can be removed latter. With 2.08-m and above this works. A window can be defined where the outer jacket is perforated in a wide window and the inner conductor insulation is perforated in a smaller contained window. The outer jacket is slit the entire length of the wider windows defined.

Take a look at the example part drawing. (Drawing is not to scale, segments of the jacket which are not slit have been compressed.)

To do this notice that the single part has been subdivided into four smaller segments each of which can be defined using the normal part (.PRT) definition of the CS326. The special mode allows you to program these parts and list them in proper order inside a JOB program. When this JOB is run as a harness with the special mode activated the CS326 will not cut the wire between parts at 1-2, 2-3 & 3-4 therefor manufacturing the desired single part.

Look at the listing of variables for part 1, 2, 3 and 4. Notice that in addition to the length of the segment, strip lengths and diameters that the Slitter type pre process is specified and values are programmed which will slit from each large strip shoulder to the corresponding end of the part segment. This is necessary for the function to work.

As the insulation is perforated and the outer jacket slit at locations other than the end of the wire, the slug pull function is NOT implemented when running in this special mode.

Of course variations on the use of this mode are possible. However keep in mind the basic rules stated earlier. For one thing the spacing and size of the windows do not have to be so uniform as in the example. Anything within the normal part programming parameter limits may be used.

Note also that in order to get perforations and slitting to line up properly it is necessary to have the wire feed properly calibrated for the wire being used and to place an appropriate value in the pre-process distance (@___).

Part 1 definition:

275	length
35	lead outer strip length
6	lead inner strip length
37.5	tail outer strip length
6	tail inner strip length
2.8	large diameter (really from wire table)
1.3	small diameter
slitter - ON	pre-process type
0	O1
35	L1
237.5	O2
37.5	L2

Part 2 definition:

225	length
37.5	lead outer strip length
6	lead inner strip length
37.5	tail outer strip length
6	tail inner strip length
2.8	large diameter (really from wire table)
1.3	small diameter
slitter - ON	
0	O1
37.5	L1
187.5	O2
37.5	L2

Part 3 definition:

225	length
37.5	lead outer strip length
6	lead inner strip length
37.5	tail outer strip length

6	tail inner strip length
2.8	large diameter (really from wire table)
1.3	small diameter

slitter - ON

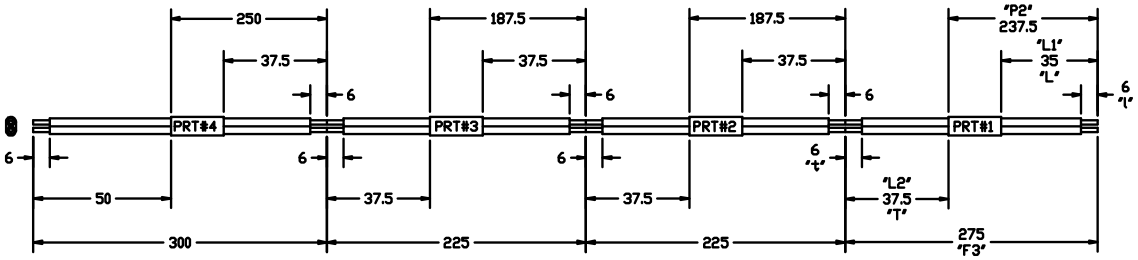
0	O1
37.5	L1
187.5	O2
37.5	L2

Part 4 definition:

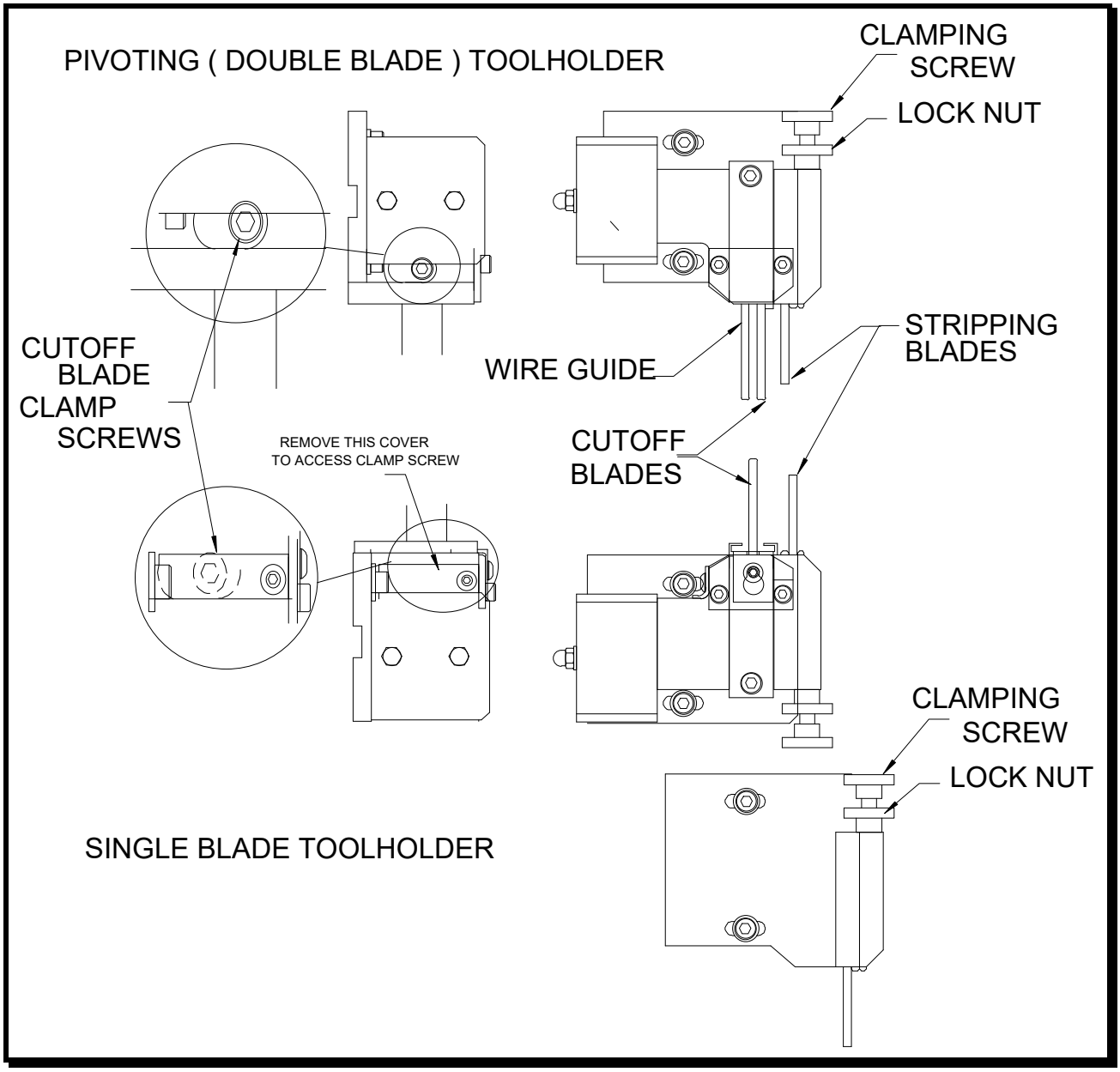
300 length	
37.5	lead outer strip length
6	lead inner strip length
50.0	tail outer strip length
6	tail inner strip length
2.8	large diameter (really from wire table)
1.3	small diameter

slitter - ON

0	O1
37.5	L1
250	O2
50	L2



BLADE REPLACEMENT



CAUTION: Stripping and cutting blades are very sharp. Do not handle sharp edges.

STRIPPING BLADE REPLACEMENT

(ONE AND TWO BLADE ASSEMBLIES)

The **CS 326 B** has a uniquely simple method of securing the stripping blades. To change stripping blades in the single or pivoting toolholder open the cutterhead to the full open position using the "Manual

Closure Wheel". Loosen the locknuts and turn the clamping screws counterclockwise until the blade is released.

NOTE: Clear all stripping scrap from the lower toolholder to avoid having scrap fall into the blade cavity.

Install the new blades with the cutting edges (flat side) facing each other. The upper blade cutting edge faces to the right and the lower faces to the left.. Insert the blade into the toolholder until it seats in the bottom of the holder. Tighten the clamping screw firmly and secure it with the lock nut.

Manually close the cutterhead and insure the blades bypass freely with the cutting edges in contact with each other.

CUTOFF BLADE REPLACEMENT (PIVOTING TOOLHOLDER ONLY)

To change the cutoff blades loosen the "Cutoff Blade Clamping Screws". The lower blade screw can be accessed by removing the scrap cover. Loosen the cover screw and slide the cover off. Loosen the "Cutoff Blade Clamping Screws" about one full turn and pull the blades out. The wire guide is not slotted and will stay in place. Install the new blades with the proper cutting edge relationship. The upper cutting edge faces to the left and the lower faces to the right. Tighten the "Cutoff Blade Clamping Screws". Replace the lower toolholder scrap cover.

To replace the wire guide the "Cutoff Blade Clamping Screw" will have to be removed completely.

MULTIPLE BLADE TOOLHOLDER

(Reference drawing 5-132742)

To replace all the blades loosen the cap screw until the blades are loose, remove and replace one blade at a time to maintain spacer position. Be sure all the blades are seated completely. Tighten the cap screw.

BLADE SELECTION

Each **CS 326 B** is shipped with a pair of universal "V" style blade Part Number 137470-1. These are the most generally useful blades for small to medium gauge discrete wires. These come with 20 or 30 degree cutting edges.

SEE CATALOG "CS326 blades for1 and 2 blade cutter head.pdf" OR "CS326 blades for 3 blade cutter head.pdf" for blade selection

The 20 degree blades works well on soft resilient insulation where the extra sharp edge is required.

The 30 degree blades work well on harder plastics like cross linked PVC. The 30 degree blades are most often recommended for the single blade toolholder because of the stronger cutting edge.

A selection of “Radius” style blades is also available. These also come with 20 or 30 degree cutting edges.

The “Radius” style blades will give a fuller cut around the circumference of the cable.

MAINTENANCE

PREVENTIVE MAINTENANCE

Daily Maintenance

The **CS 326 B** has been designed to be as maintenance free as possible. Daily care consists of keeping the machine clean and free of stripping debris. Blade and feed belt condition should be monitored daily and replaced as needed.

Semi-Annual Maintenance

Semi-annually the cutterhead ballscrew and the feed system tensioning worm gear, pinion, chains and sprockets should be wiped clean and greased with ARTOS BALLSCREW GREASE part number 916-450.

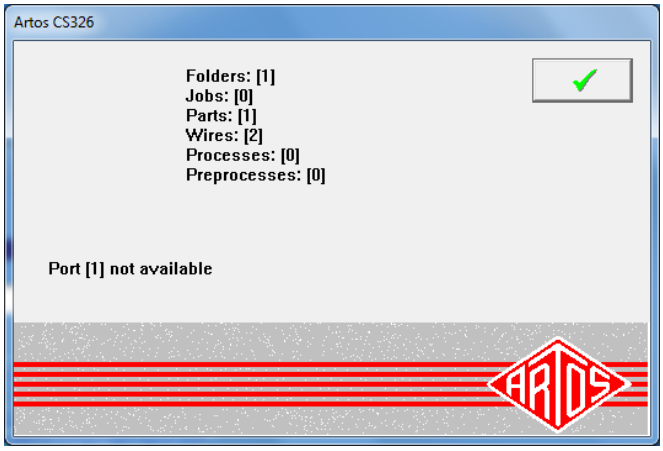
Check belt tension and adjust as needed. See “Belt Adjustments”. (See page **Error! Bookmark not defined.**)

Clean any debris from inside of cabinet.

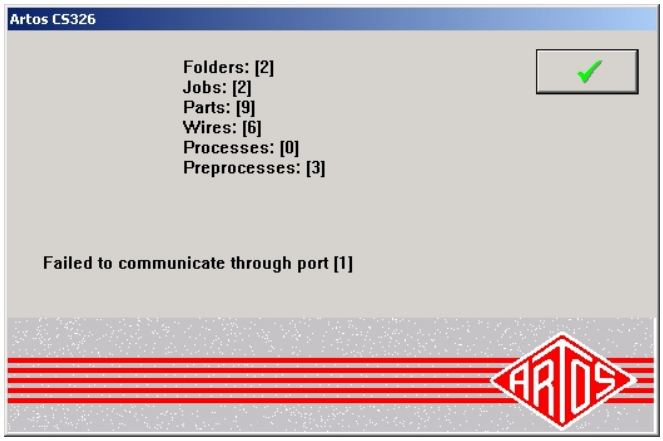
Computer to machine controller communications

This section is to determine why the computer is not communicating with the CS326 CPU board. The problem may show up in one of the three following ways.

1. The message Port [1] not available. This means that the computer either has a problem with the COM port [1] or there is another program that is using this port. The CS326 software can be configured to use a different COM port for testing. Edit the file Program Files(x86)/ Artos Engineering/CS326GUI/config/mtxcfg.xml. After saving the file, restart the CS326 software. If Programs Files (x86) does not exist then go to Program Files. Remember to make sure the serial cable from the machine is plugged into the right port on the computer.



2. The message failed to communicate will appear on startup of the machine. See **Items to check** below.



3. A message regarding "Unable to receive ACK for request……..." may appear. This means the machine started properly but communication was lost after that time. In this case the machine should be powered down and restarted. If the problem keeps occurring see **Items to check** below.

Items to check

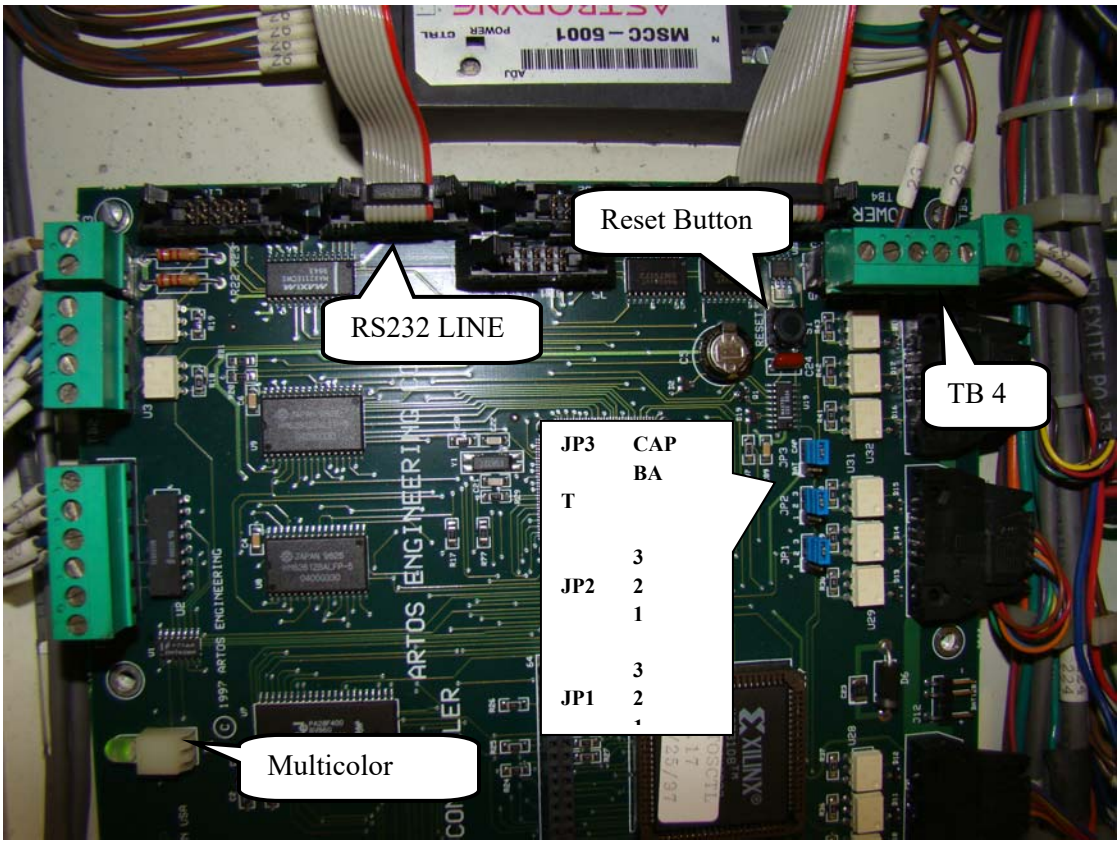
1. The serial cable must be plugged into the COM port of the computer. The default settings are COM 1. Make sure it is not loose.
2. The software configuration file must have properly defined the COM port number that the cable is plugged into. The configuration file is C:\program files(x86)\Artos Engineering\CS326GUI\Config\mtxcfg.xml. If the (x86) directory does not exist then go to C:\program files\Artos Engineering\CS326GUI\Config\mtxcfg.xml. To edit the file right click on

it and select Edit. The COM port is in the line *<portnumber value="1" />*. Change only the number.

THIS IS WHAT THE START OF THE FILE LOOKS LIKE.

```
<?xml version="1.0" ?>
<mtx_config name="MTX" version="2.1.49" siteName="Test" fullScreenModeOption="false"
qualifyParts="false" skipPasswd="true" >
        <language file="language.txt" />
        <threads>
                <thread type="mtxif" >
                        <rs232>
                                <portnumber value="1" />
                                <baudrate value="19200" />
                                <databits value="8" />
                                <stopbits value="1" />
                                <parity value="none" />
```

3. The other end of the serial cable must be plugged into **RS-232 LINE 2** of the CPU board. Make sure it is not loose.



4. Check the supply voltage of the CPU board. Between terminals **TB4-P1** and **TB4-P3** it should be between 4.95VDC and 5.1VDC if not adjust the power supply PS1 so it is.

5. Make sure the jumpers, JP1,2,3 are in the correct position on the CPU board.
   a. JP1 1-2
   b. JP2 1-2

c. JP3 Does not matter

6. With power turned on to the machine press the Reset Button. The LED will turn off then Orange then turn off. The sequence of turning orange then off must happen. If not, then the CPU board must be replaced.
7. If none of the above steps resolved the issue then the RS232 cable, CPU board or Computer can be at fault.
   To determine if the computer is the problem
   a. Find a portable computer with a serial port, the operating system must be Windows 2000, XP, Vista, or 7. Load the CS326 software for Windows.
   b. Connect serial cable to COM 1 of the computer.
   c. Press the reset button on the CPU board.
   d. Start the CS326 software on the computer.
   e. If communication begins and the CPU reset screen appears then the CS326 computer needs to be replaced.
   f. If communication still does not work then replace the CPU board and the serial cable.

Replacement part numbers

5-140109 CPU board with jumpers set for Windows view software
5-137549 Serial cable, CPU to computer.
5-140199-500 Computer replacement kit. See document "computer replacement windows only.doc" for more information about this kit.
6-142623 CS326 windows view software for Windows 2000, XP, Vista, 7

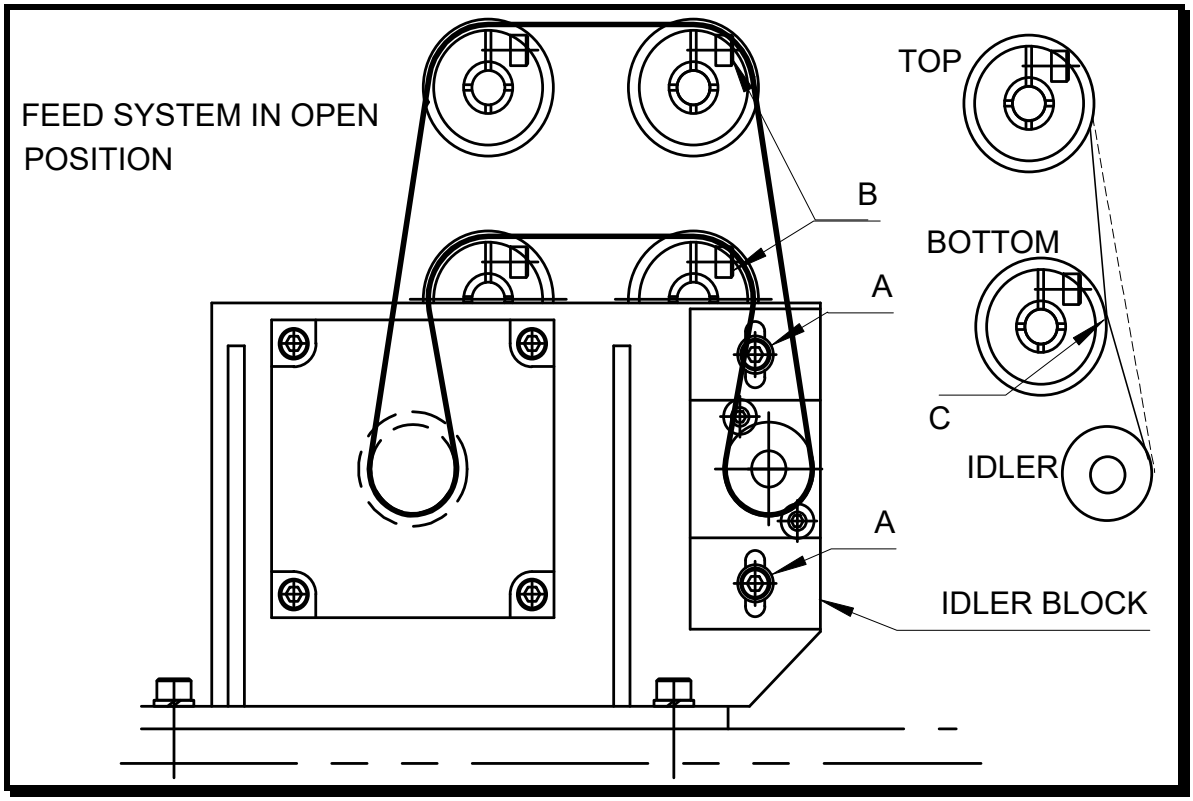
CABINET ACCESS

WARNING: Disconnect the electrical supply before accessing the cabinet to avoid shock hazards!

Access to the inside of the cabinet is through the rear panel. This panel is hinged at the bottom and secured with two special tamper proof screws at the top. A special key has been provided for these screws. If greater access is desired the molded cover can be removed and the hinged top can be flipped forward.

CAUTION: There are electrical components mounted on the inside of the rear panel. Care should be taken when lowering the rear panel, as it may be slightly heavier than expected.

BELT ADJUSTMENTS



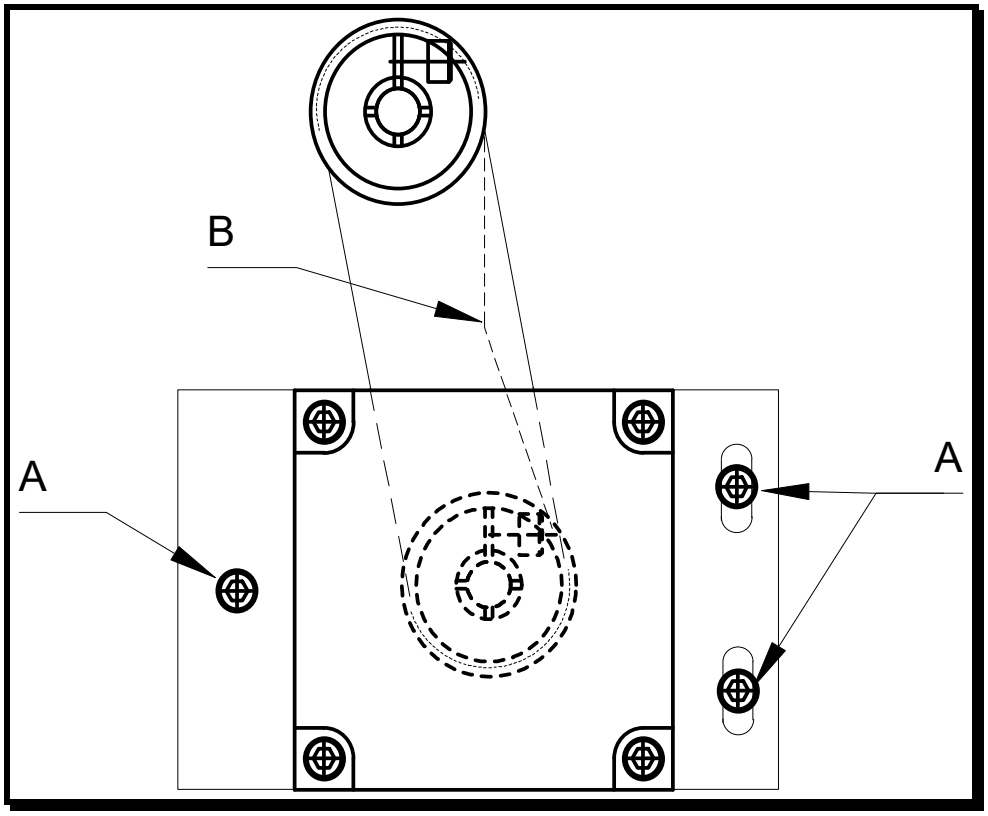
FEED BELT ADJUSTMENT

Feed Drive Belt Adjustment

The feed drive belt adjustment must always be made with the system open. Before turning off the power press the feed roller open button and insure the feed system is open.

Then:

- If the **CS 326 B** is equipped with feed belts, the screws marked "B" must be loosened first. If it is equipped with feed rollers proceed to the next step.
- loosen the screws marked "A". Apply moderate down force on the idler block and tighten screws "A".
- Check the deflection of the belt section between the top driven pulley and the idler pulley at the bottom by applying moderate pressure at the point marked "C". The belt should just touch the lower driven pulley.
- Tighten screws "B" to 100 in. lb



Cutterhead Belt Adjustment

Cutterhead Belt Adjustment

Adjust the cutterhead drive belt as follows:

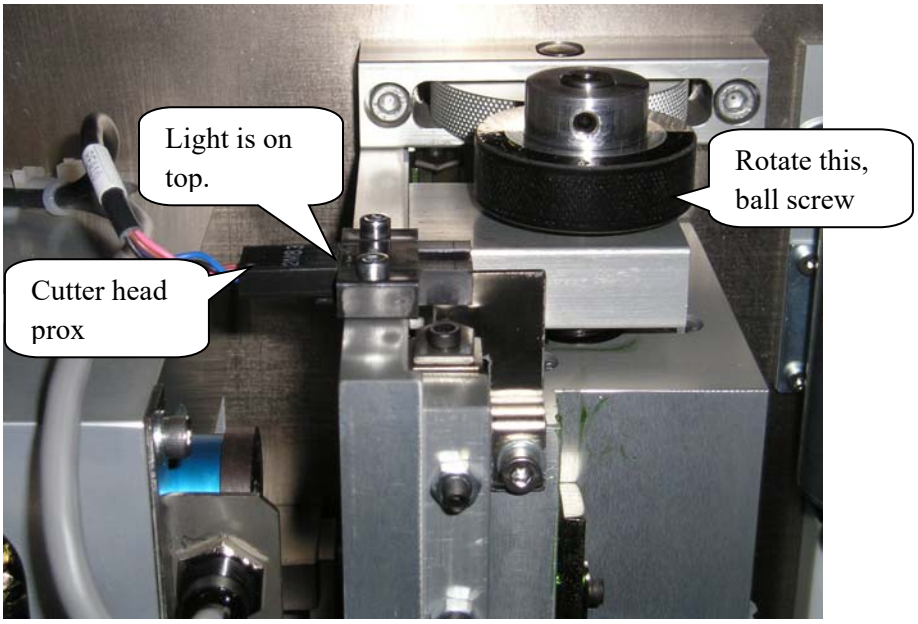
- Loosen the screws marked “A”. Apply moderate force on the cutterhead motor rotating it toward the back of the machine and tighten screws “A”.
- Check the deflection of the belt section between the pulleys by applying moderate pressure at the point marked “B”. The belt should deflect no more than .100”/ 2,5 mm.
- If the belt has been removed or the relationship between the motor and the ballscrew shaft has been change it will be necessary to check the cutterhead reference position.

Cutterhead Belt Replacement

For this procedure it is best to have the timing belt in position but very loose so that the ball screw and the motor shaft can independently rotated.

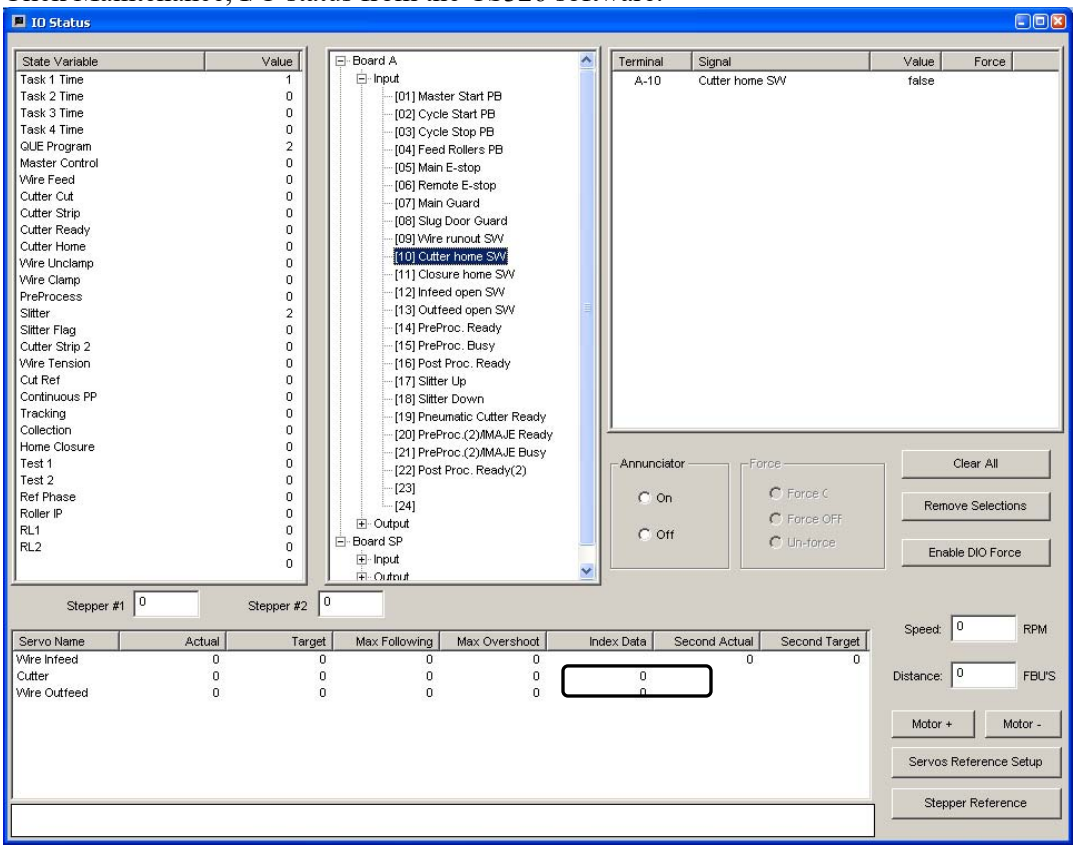
1. Power must be on. The machine must be in E-STOP.

2. Rotate the ball screw in the cutterhead opening direction until the light on the cutter prox light turns off.



3. Rotate the ball screw in the cutter head closing direction about ½ turn and stop

4. Click Maintenance, I/O status from the CS326 software.

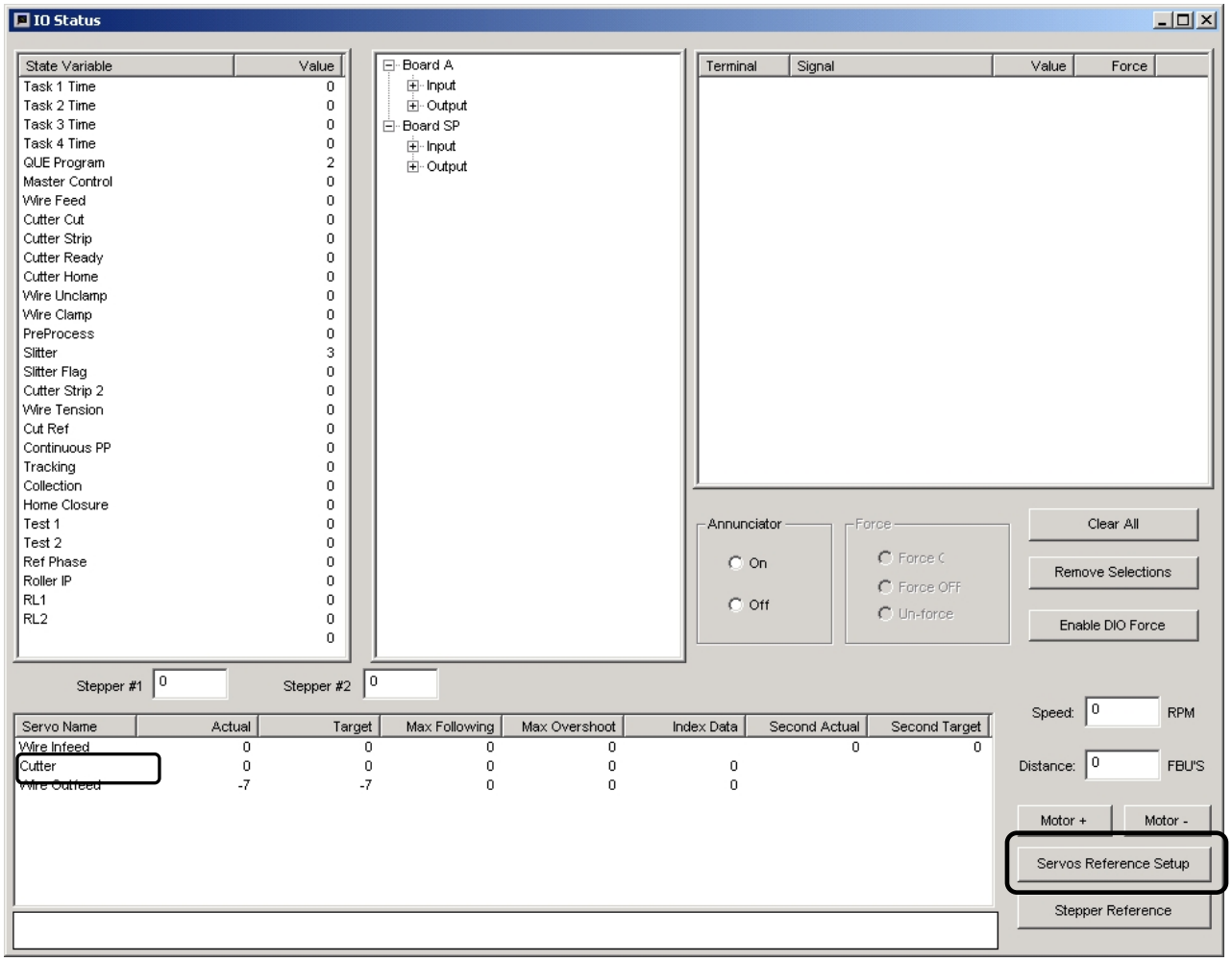


5. Very slowly rotate only the motor shaft until you see the Cutter Index Data number increment. At this point position the timing belt and tighten.

6. After the belt is tightened recheck the position by very slowly rotating the cutterhead in the opening direction until the light on the prox turns off. Then turn in the closing direction until you see the Cutter Index Data number increment. Note how far you turned the ball screw, it should be between ¼ to ¾ of a revolution away from the prox. If not repeat this procedure.

Cutterhead Reference position

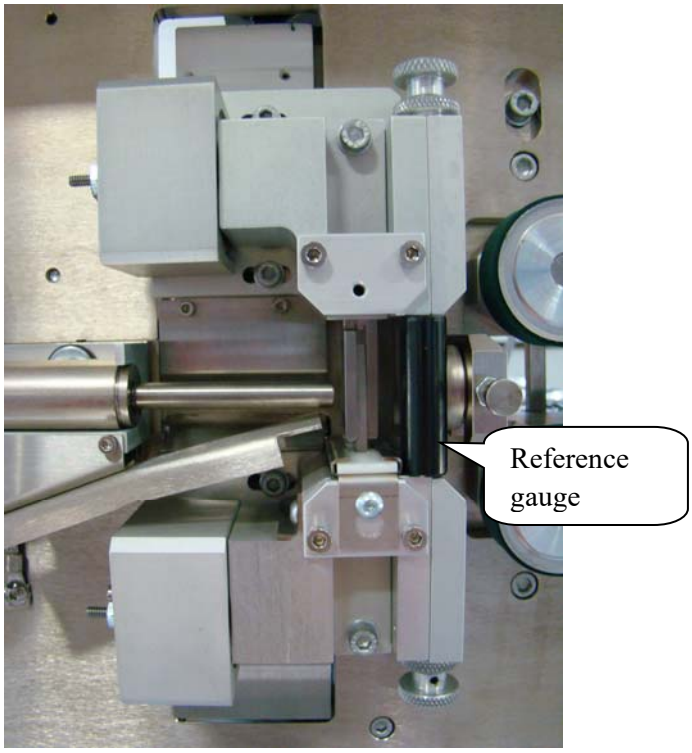
1. Click Maintenance – I/O status. From the CS326 software.



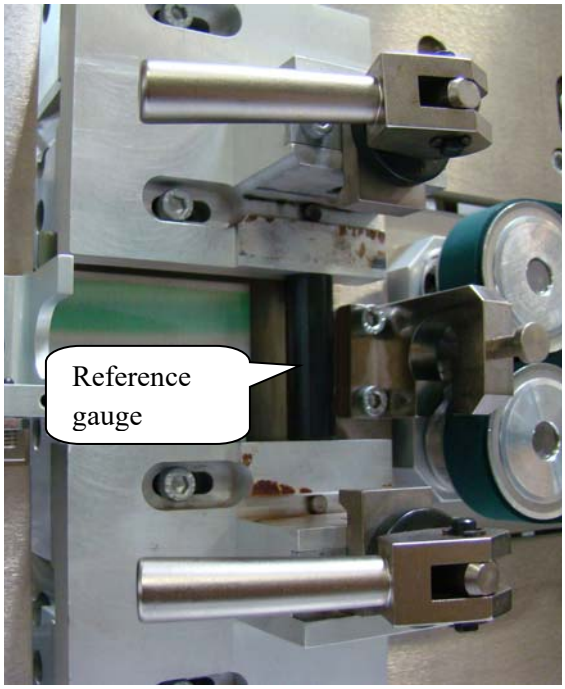
2. Open and remove the front guard.

3. Hold the referencing gauge on the flat surface of the lower tool holder next to the stripping blade. The reference gauge is Artos part number 137569, the length is 1.680 inches.

Single blade machine

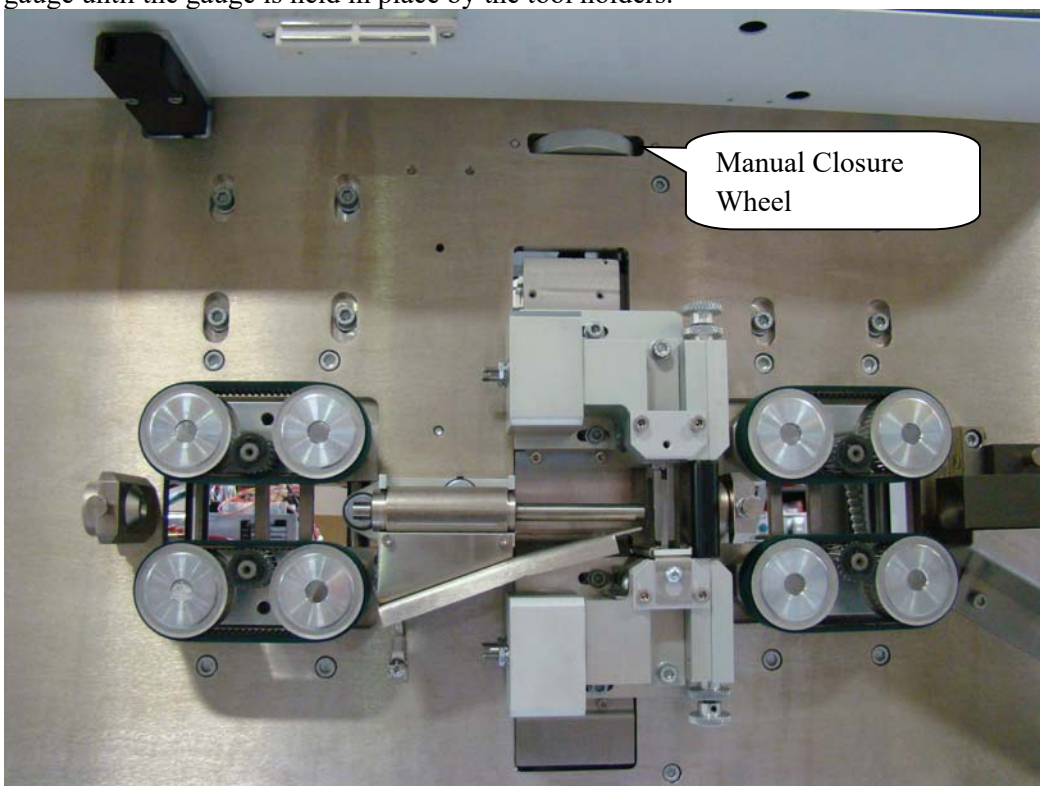


Dual blade machine

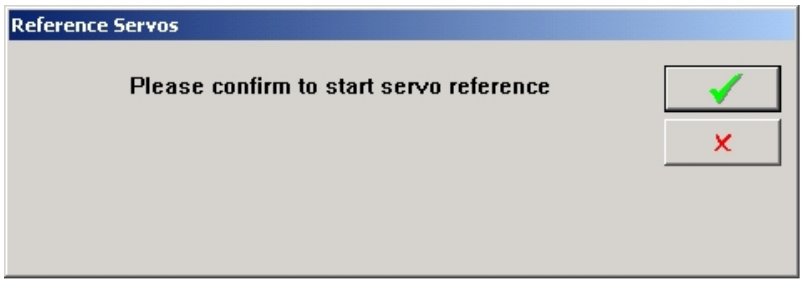


Three blade machine, remove blade packs.

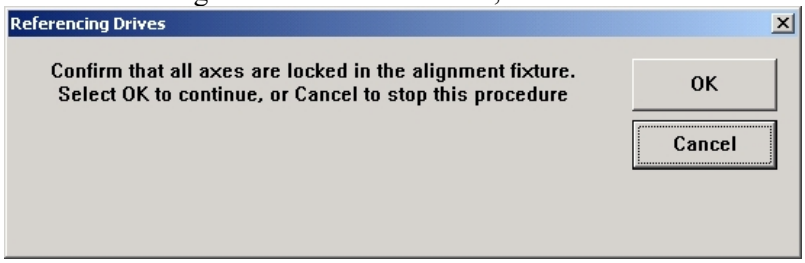
4. Using the Manual Closure wheel at the top of the cutterhead close the cutterhead on the reference gauge until the gauge is held in place by the tool holders.



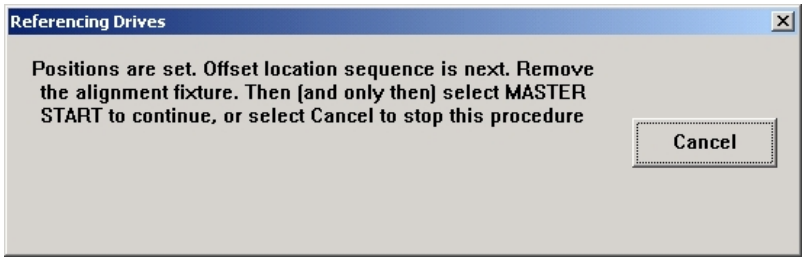
5. On the reference screen click the box “Servo Reference setup” The following window will appear. Click the Green check box to continue.



6. While continuing to hold the thumbwheel, click on the OK button.

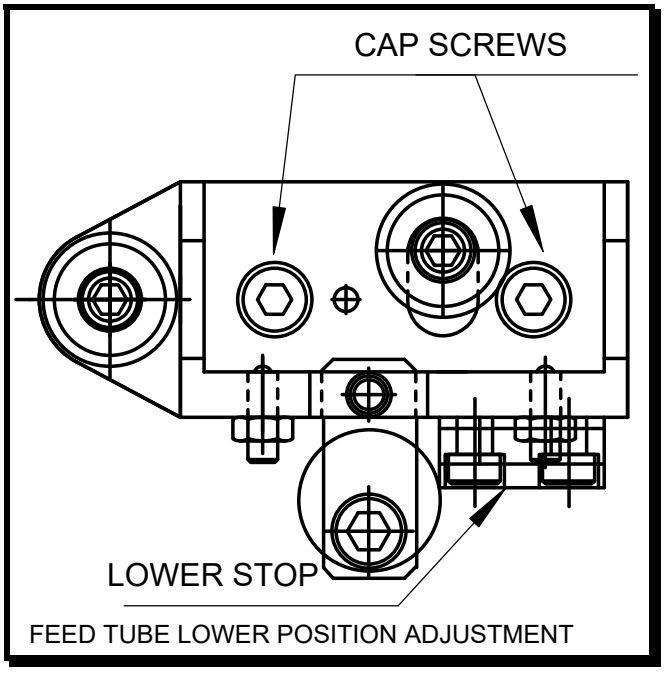


7. Now release the thumbwheel, remove the reference gauge and replace the door.



Master start the machine. It will finish the reference process automatically. If the process does not complete it means the index mark is in the wrong location. Loosen the cutterhead timing belt and go to Section "Cutterhead belt replacement"

FEED TUBE ADJUSTMENTS

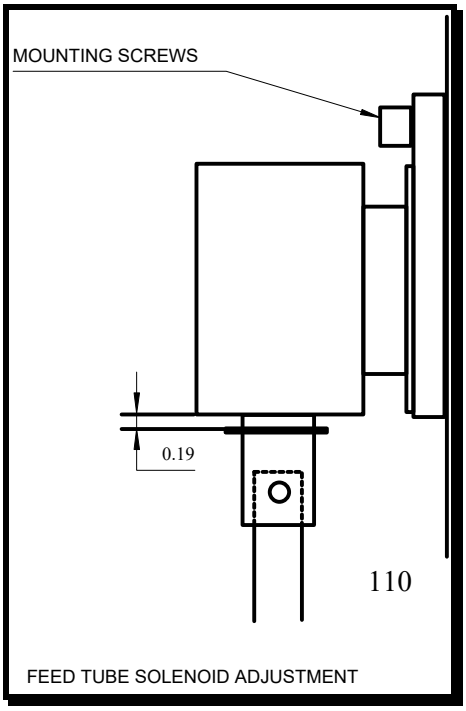


Feed Tube Lower Position Adjustment

The feed tube lower position is adjusted at the tube mounting bracket. Remove the tube and loosen the two socket head cap screws in the mounting plate. Position the tube so it is centered in line with the wire guide at the right of the blades. Retighten the cap screws.

Feed Tube Solenoid Adjustment

Lower position must be set before adjusting the solenoid.



The feed tube solenoid controls the lift of the feed tube. This is adjusted at solenoid mounting plate. The assembly is mounted through slotted holes to allow adjustment.

Adjust the solenoid with the tube pivot resting on the lower position stop. The distance between the snap ring on the solenoid core and the solenoid body is 0.190".

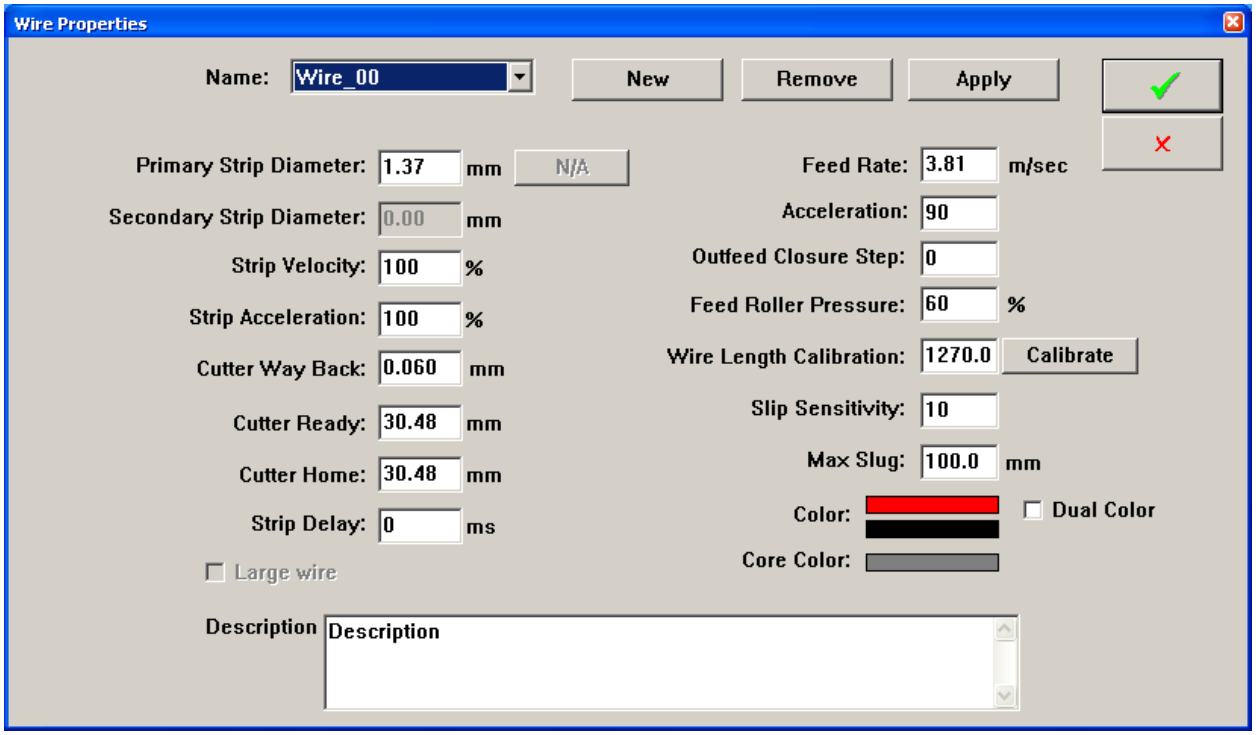
TROUBLESHOOTING GUIDE

NOT ABLE TO PULL OFF THE SLUG

When the wire will not strip the most likely cause is that the wire is slipping in the belts during the strip motion. Below is a list of items that can affect the machines ability to pull the slug.

Software adjustments for normal strip mode.

1. Strip diameter . The strip diameter should be set so that the blades come in and just about touch the conductor. If they do not go far enough the machine has to tear the insulation apart, if they go too far the conductor will be damaged. Either way will increase the amount of force required to remove the slug, this causes slipping in the belt.
2. Cutter way back. The cutter way back value is the amount the blades open before stripping begins. To prevent the blades from dragging on the conductor during the strip, the cutter way back value should be set as large as possible, without the slug slipping through the blades.



3. Feed roller pressure. This is how hard the belts close on the wire. The maximum feed roller pressure is 100%. You must open and close the rollers for the new setting to take effect.
4. Outfeed closure stop. If the wire is only slipping for the tail strip then the most likely problem is that the outfeed closure stop is set too big. Decrease this value and then open and close the rollers for the new value to take effect.

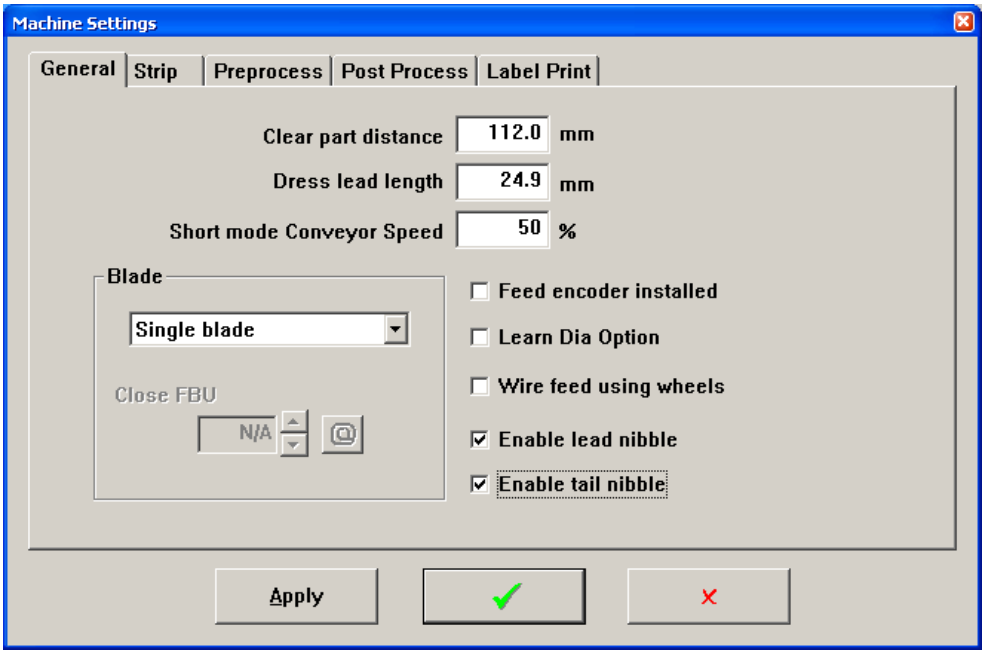
5. Strip Velocity. This is the stripping speed, generally when the stripping speed is lowered the wire slip is reduced. If adjusting this value reduce it to 10% as a first try. The maximum velocity is 100%
6. Strip Acceleration. This is the acceleration to get up to the stripping speed. By lowering this you reduce the amount the wire jerks as the strip begins, this can help reduce slipping in the belts. If adjusting this value reduce it to 10% as a first try. The maximum acceleration is 100%
7. Strip Delay, This is how long the blade waits after it arrive at the strip diameter. Increasing strip delay allows elastic insulations expand outward and cut while the blade is squeezing down on it.

Nibble mode.

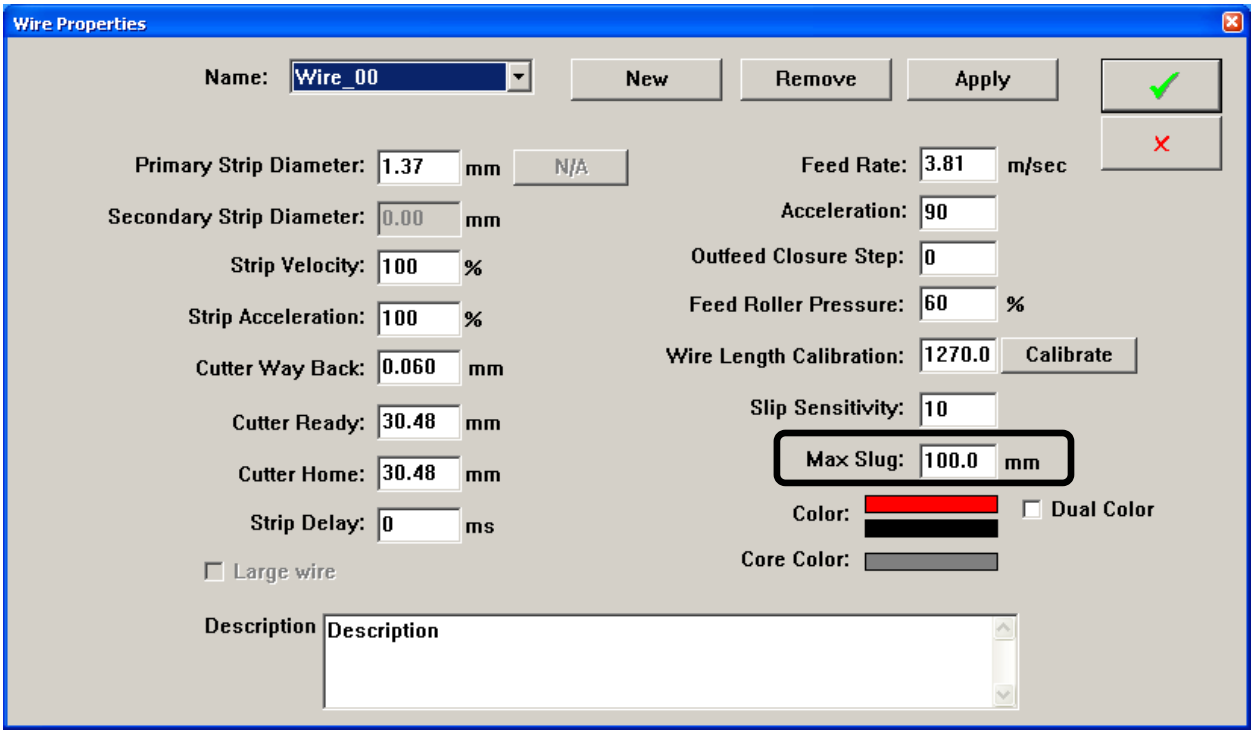
If none of the adjustments above where able to solve the problem of the wire slipping in the belt then you will need to try nibble mode. This mode removes only a part of the total strip length at a time.

To determine if this mode will help you, first try reducing your strip length to a value where the machine will strip the wire. If this strip length is 25-99% of the total desired strip length, you should try using nibble mode. If this strip length 24% or less of the total length, nibble mode is going to take too much time and other solutions should be found. Note: 25% means that the machine will remove the desired strip length in 4 pieces.

To use this first enable it by clicking Maintenance – Machine Settings. Then click the check boxes for Enable nibble.



Then in the wire properties windows, set the Max slug to be the strip length you found works in the step above.



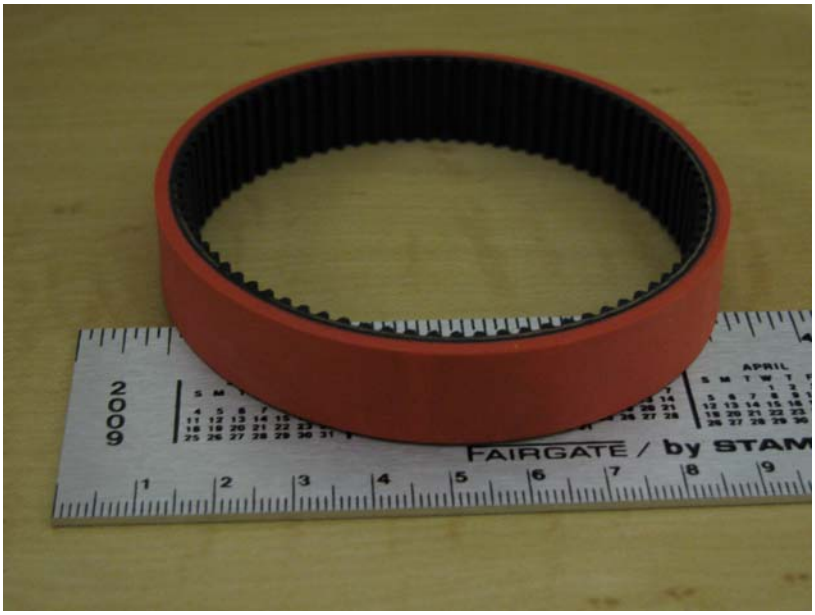
Blade type.

For larger wires, changing from a V type stripping blade to a radius blade may help. This will give a more complete cut around the conductor of the wire.

Belt type and wheels.

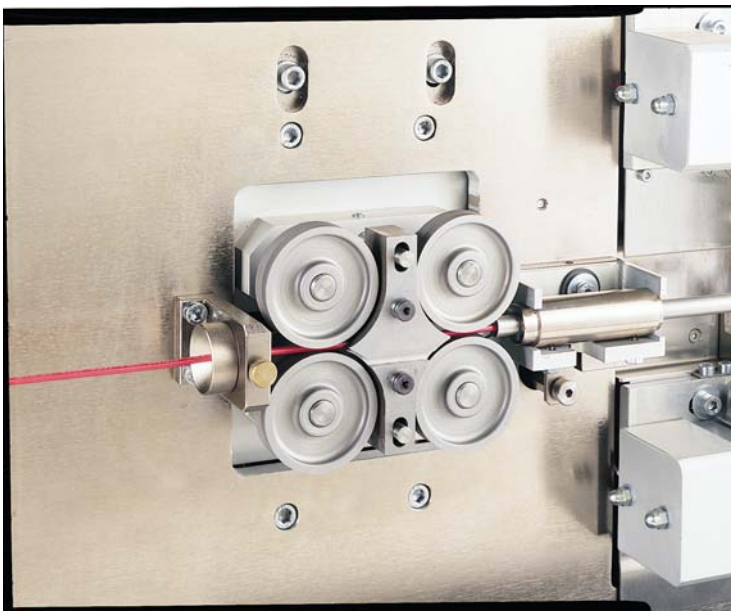
To help prevent the wire from slipping in the belts a different type of belt can be used.

138906 15mm wide red (Softer than green belt) 4pc required per machine



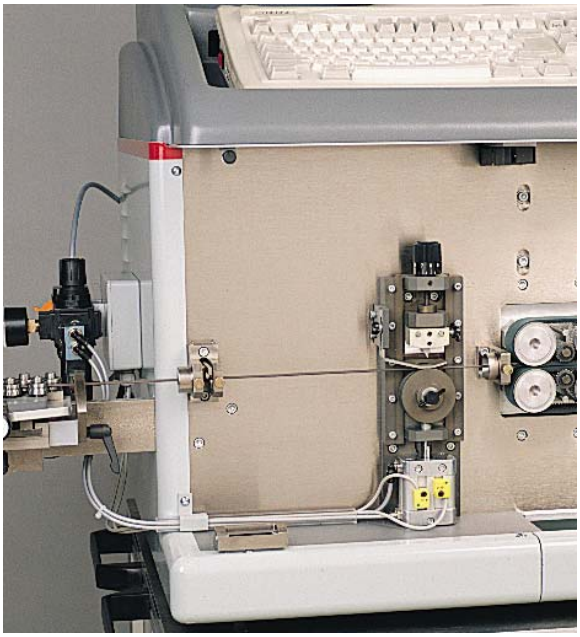
Another thing that can be done is to replace the belts with steel wheels.

4-136975-500 steel feed wheel set 2pc required per machine.



Wire slitter.

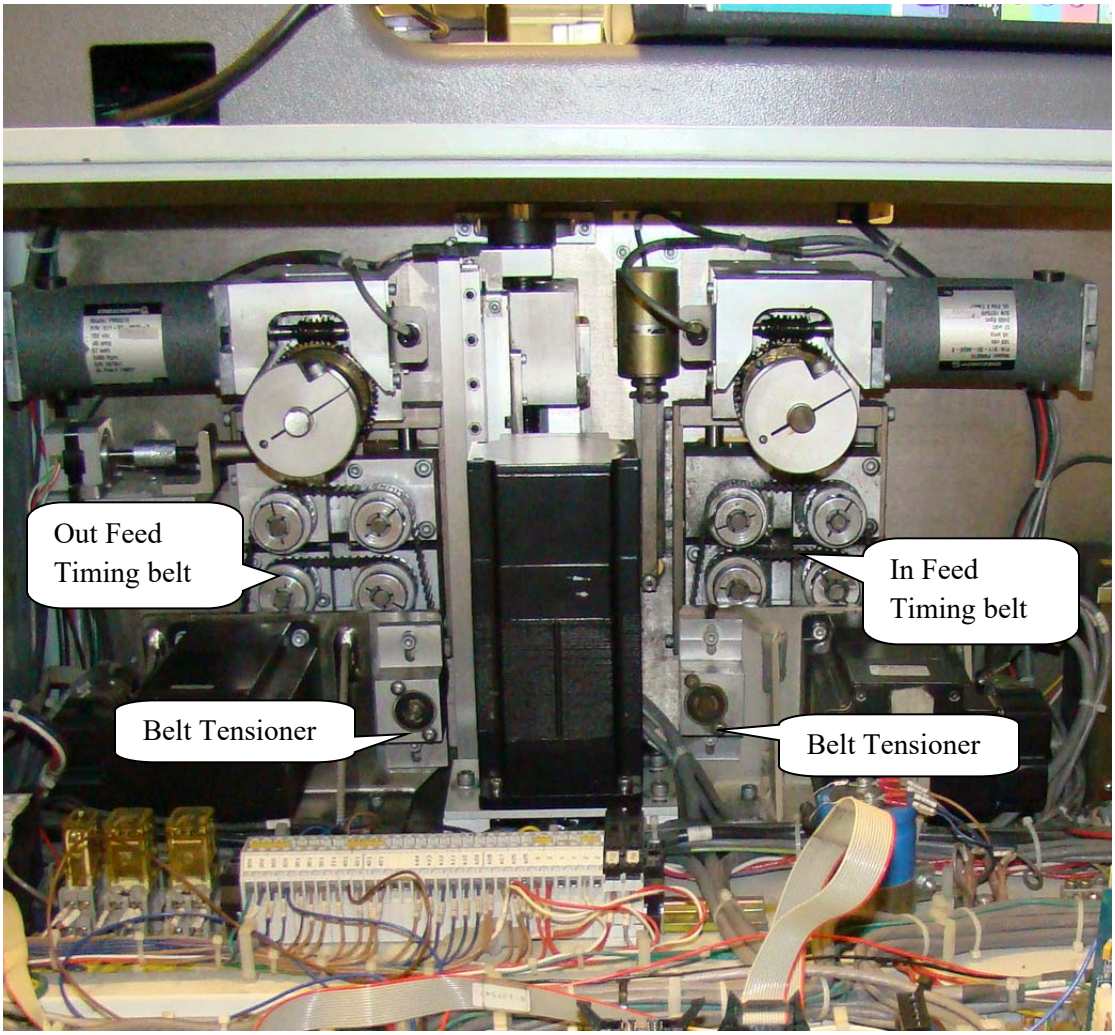
For wires that have the insulation embedded in the strands the best option may be to slit the wire before it is stripped. This can be accomplished by adding the wire slitter assembly 4-138518 to the machine.



INCONSISTANT STRIP LENGTH

1. Make sure the wire feed belts do not have grooves worn in them that are larger than the wire you are trying to process. If so replace the belts.
2. If the tail strip is inconsistent, make sure that you do not have the outfeed closure gap set too large. Too large a gap will not allow the belt to grip the wire properly. See the wire properties screen to adjust this.

3. Make sure you have enough feed roller pressure programmed to properly grip the wire. See the wire properties screen to adjust this.
4. Reducing the wire feed acceleration may help with positioning the wire.
5. Measure the insulation slug to see if it is the correct length. If it is correct and the stripped end of the wire is not correct this would indicate that either the core of the wire is moving in the finished part or that the insulation is stretching on the finished part during the strip.
6. The most common issue with strip length variation is loose timing belts inside the machine. To tighten a timing belt;
    a. Loosen the pulleys for the wire feed belts on the outside of the machine.
    b. Tighten the timing belt inside the machine by adjusting the idler pulley.
    c. Tighten the pulleys for the wire feed belts on the outside of the machine.



7. Check at the teeth of the aluminum wire feed pulleys. The teeth should be flat across. If they are worn concave replace the pulleys.
8. Making changes to the part while you are operating the machine in job mode has caused some issues of the wrong strip lengths and/or parts being made. The problem becomes especially noticeable if there is a pre-process such as ink jet marking or hot stamp marking. Updating the

machine to the latest version of software will help this situation but may not completely eliminate it.

WIRE LENGTH NOT CONSISTANT

1. If the machine is equipped with a wire measuring encoder. In the wire properties screen make sure the Slip Sensitivity is set for a value of 1 or greater. A setting of 0 disables the wire measuring encoder.
2. Check if lengths are consistent without stripping. If they are, the variation is caused by improper strip setting. See "Wire Not Stripping" for solutions.
3. Calibrate wire length using wire length calibration procedure.
4. Reduce wire feed rate and acceleration.
5. Increase feed roller pressure.
6. Check for proper prefeeding. The wire should be fed into the CS-326 using consistent backpressure. Also check straightener for proper setting.
7. Try using roller drive system instead of belt drive system. Also consult with Artos on other available feed belt types.
8.

LEAD END STRIP FOLDS BACK

1. Check for proper wire guide selection. See drawings “CS-326 Guide Selection.pdf” for part numbers
2. In the Wire Properties window, increase outfeed roller gap setting.
3. Use partial strip.
4. Check for travel obstructions in the infeed and outfeed drives. They must open fully.

SYSTEM LOGIN / PASSWORD

The first thing to understand about passwords and logins is the difference between the Windows login and the machine software login.

Windows Login

When the computers are shipped from the Artos factory, Microsoft Windows is configured to require a log in. This log in is to gain access to Windows. **This log in is not for logging into the CS326 software it is only for logging into the computer.** Many times companies will add or change windows users, especially if this computer is put on a company network. If there are problems with this log in contact your network administrator.

Example of the Windows log in screen.

When the machine is shipped from Artos there are 3 users

Account 1 Full access, administer privileges

Username Artos

Password

The Artos account must always be on the computer, even if you do not use it. The CS326 software will not work properly without this account.

Account 2 Full access

Username Manager

Password

Account 3 Full access

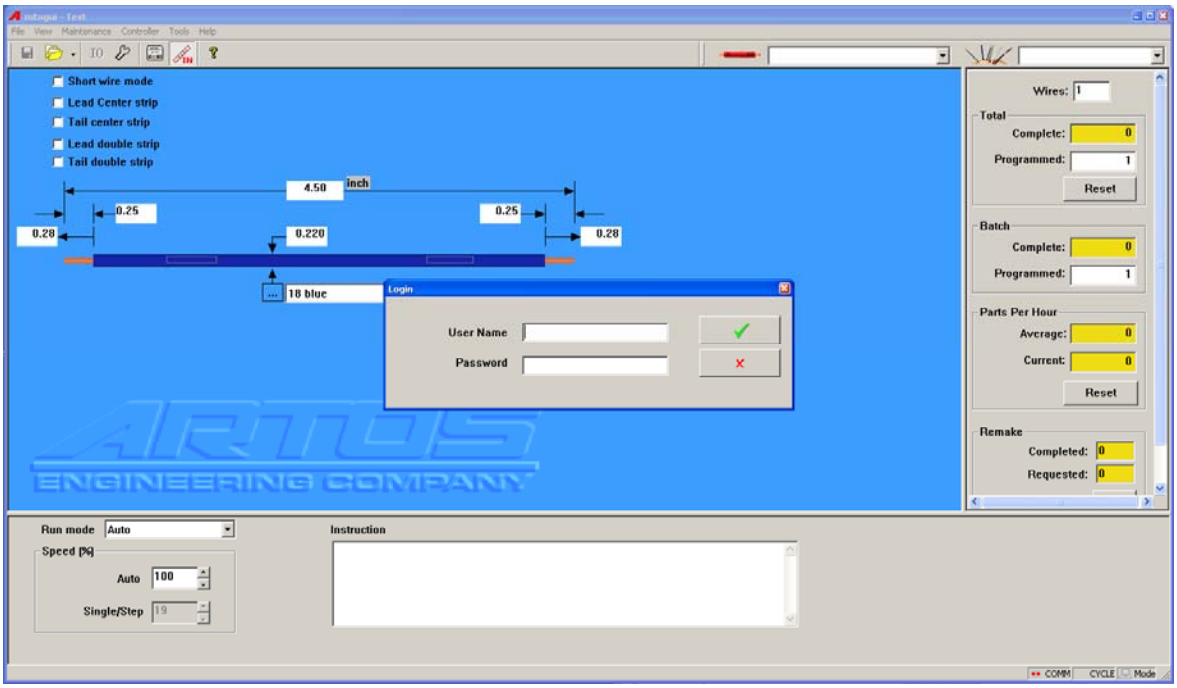
Username Operator

Password (no password required)

Windows privileges for users

The CS326 software must have administrator privileges in Windows to work properly. If the user that is currently logged in does not have administrator privileges, the CS326 software will automatically log itself in to the user called Artos. The Artos user must always have administrator privileges. If the CS326 software has to log itself in as the Artos user then only the CS326 software will have administrator privileges, all other items in Windows will obey the privileges for the logged in user.

Machine Software Login



This is the log in screen for the machine software.

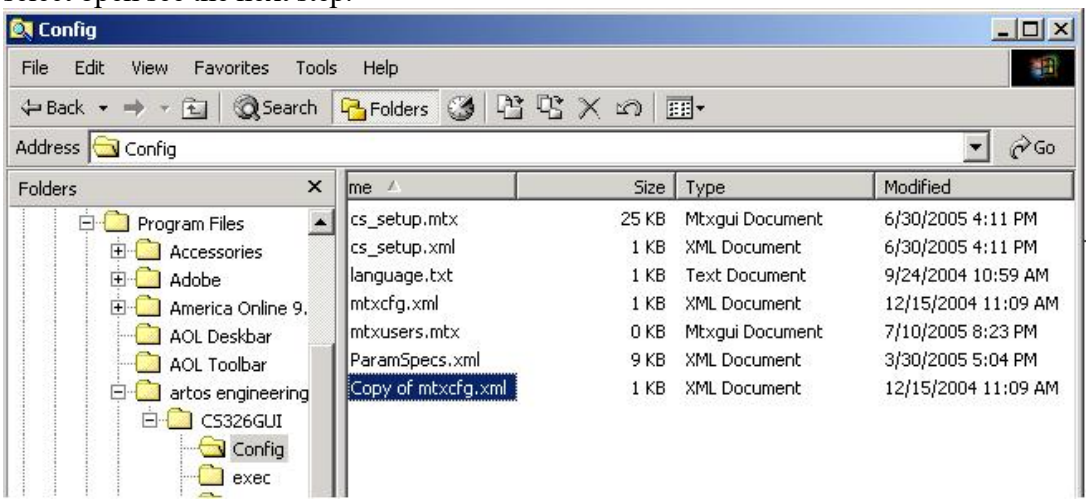
Configuring the software to require a log in

The control can be password protected. To do this a change in the <mtxconfig .xml> is required.

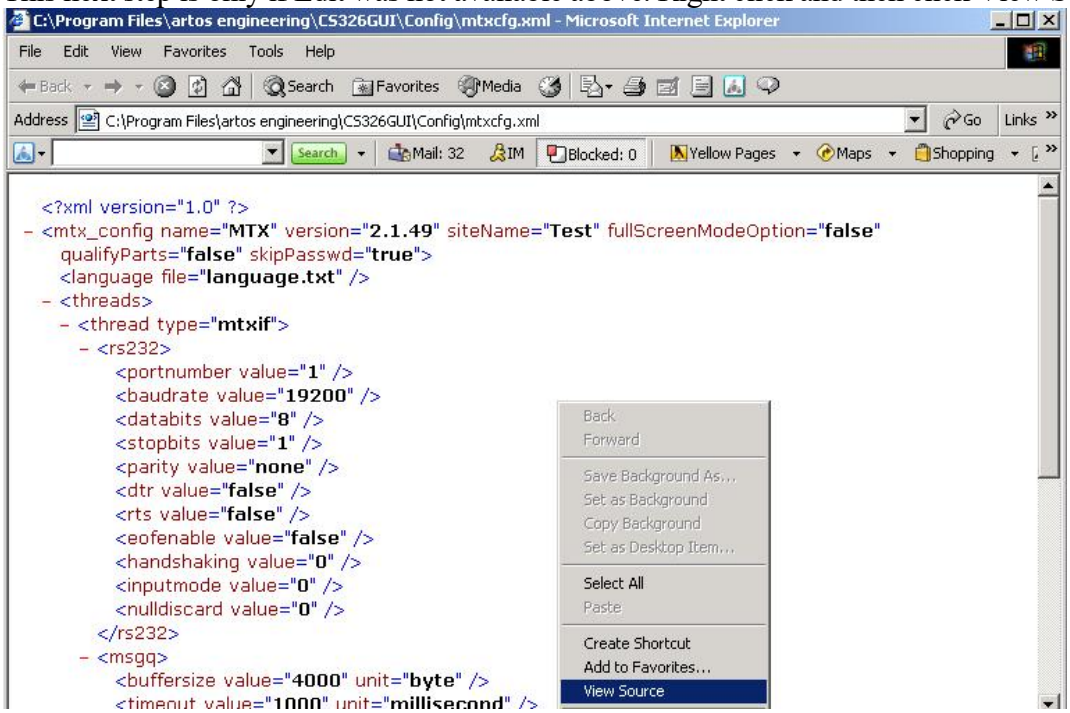
Use Windows File Explorer to locate the mtxcfg.xml file in C:\Program Files (x86)\Artos Engineering\CS326GUI\Config. If the (x86) directory does not exist then go to C:\Program Files\Artos Engineering\CS326GUI\Config.

It is suggested that you make a copy of the existing file before proceeding. Just click copy and paste to copy it.

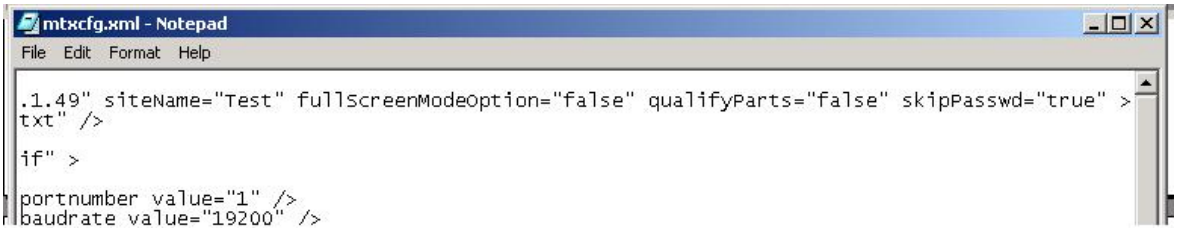
Right click on the original file and then click edit. If edit is not available from the drop down then select open see the next step.



This next step is only if Edit was not available above. Right click and then click View Source



The file will open in Note Pad.



If the password flag is <skipPasswd=”true”> password control will be disabled.

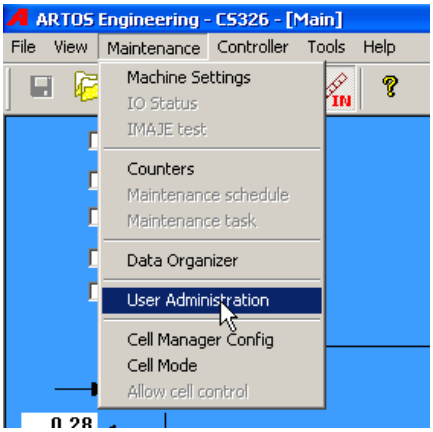
If the password flag is <skipPasswd=”false”> password control will be enabled

Format and punctuation must not change!!!

Save the change in Note pad.

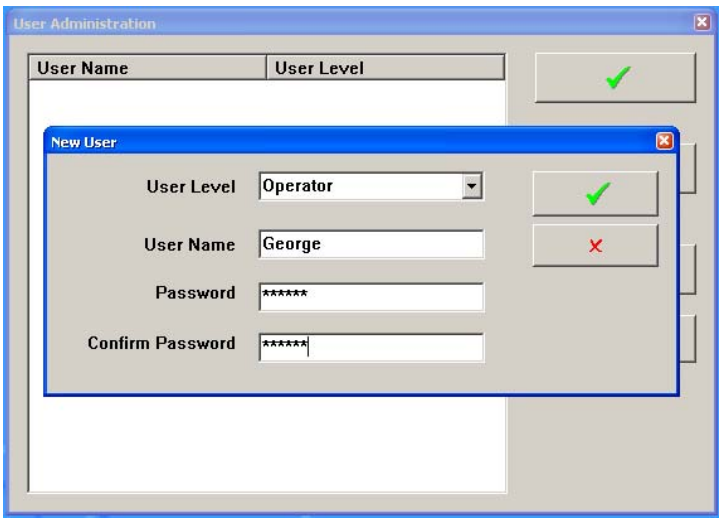
Follow the process below to set up an administrator User and Password. You will need this next time you start the **CS 326 B** software

Adding Users And Passwords



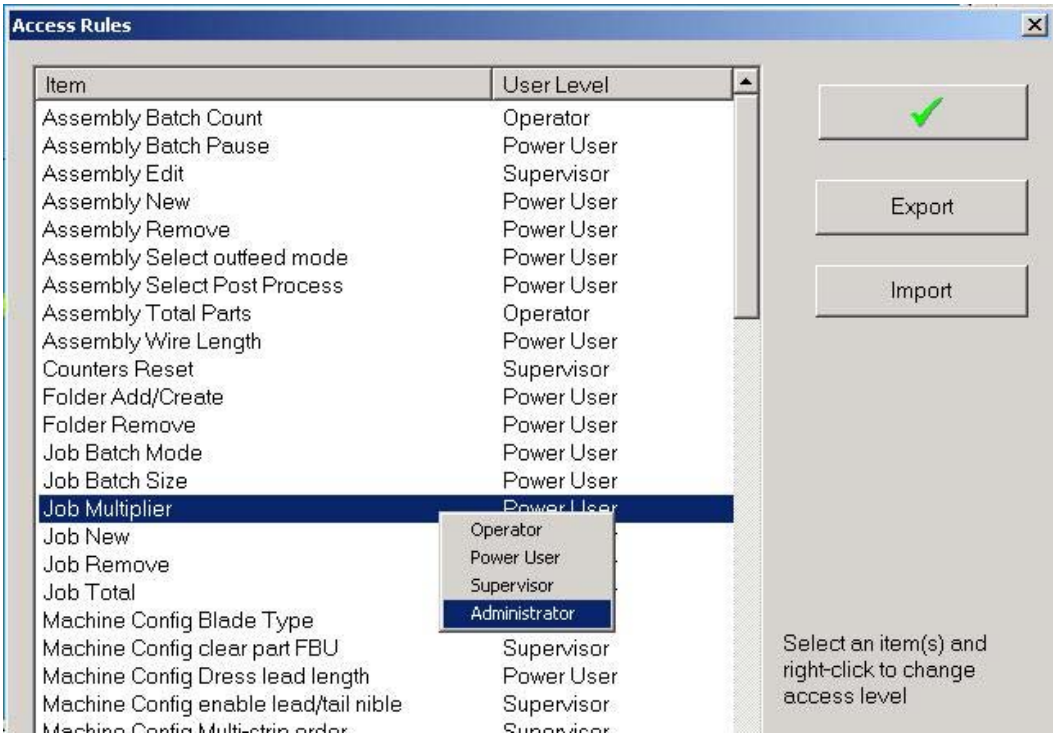
The user administration will let you assign passwords and user levels. There are four levels, **Administrator** that allows complete access, **Supervisor, Power user, and Operator.** The lower three all can have their access levels determined by an Administrator. The levels are progressive. A **Supervisor** can access all **Power users** and **Operators** accesses. Power user can also access **Operator**. **Operator** can only access **Operator.**

Click **New User** and fill in the window as shown below. To Change a password remove the user and make it new again.



Setting Password Access Levels

To assign access levels to select **Access Rules** on the User Administration window.



This is a list of all the interactive features of the machine. Select the feature by right clicking on it then select the level desired.

Import allows the installation of a password file from another machine. And **Export** allows copying this file to another machine via network or portable storage media.

I/O STATUS

CPU REFERENCE STATES

There are six status values that when the **CS 326 B** is in the process Servo Reference has to be met. If they are not met the machine will not finish the reference.

Prime to determining what may be causing the machine not to complete the startup reference procedure are **Home Closure**, **Cut Ref**, and **Ref Phase** If anyone of these three are not 0 when the machine is trying to complete reference that device is the problem.

Roller IP, RL1 and RL2 are normally not 0 and are only useful in attempting to determine what the problem is the if **Ref Phase** is not 0.

On initialization of the machine reference cycle the **Home Closure, Cut Ref** and **Ref Phase** progress immediately to 1 and then to 2 and should when complete and become 0. If you watch the display you will most likely miss state 1 and only see state 2 and state 0.

If either **Home Closure** or **Cut Ref** stay in state 2 check each device's sub systems to determine the problem.

If **Ref Phase** remains in state 2 check **Roller IP** to determine which of the two feed rollers is not referencing properly and check it, if both look for a common problem with power.

Home Closure - Indicates the state of the Stepper motor reference. This is the stepper motor that is used to set the outfeed closure limit.

0 - OK, this is correct value for completion of initialization cycle.
1 - reference initiated
2 - waiting for completion of stepper reference.

Cut Ref - Indicates the state of the Cutter Servo motor reference.

0 - OK, this is correct value for completion of initialization cycle.
1 - reference initiated
2 - waiting for completion of servo reference.

Ref Phase - Indicates the state of opening the Infeed and Outfeed rollers.

0 - OK, this is correct value for completion of initialization cycle.
1 - reference initiated
2 - waiting for completion of open rollers, looking for Roller IP = 3.

Roller IP - Indicates when each of the infeed and outfeed rollers is in the commanded position.

0 - neither in position
1 - infeed in position
2 - outfeed in position
3 - both in position, this is correct value for completion of initialization cycle.

RL1 - indicates the status of the infeed roller.

-1 - closing
0 - closed
1 - opening
2 - open, this is correct value for completion of initialization cycle.

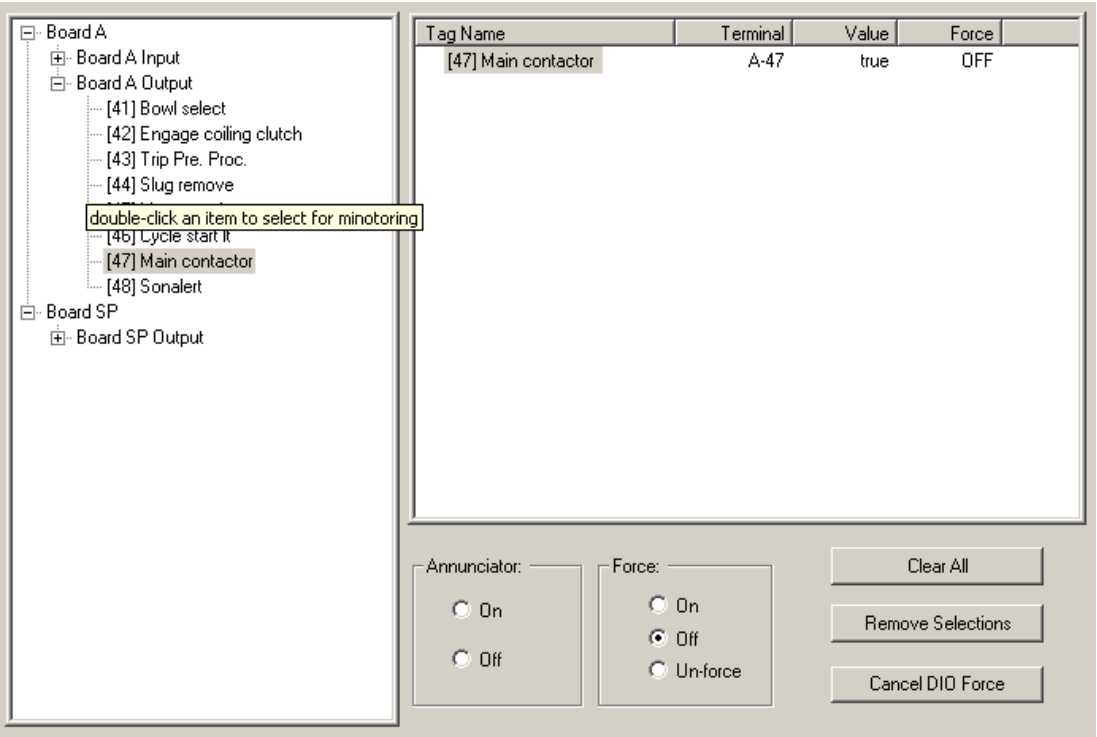
RL2 - indicates the status of the outfeed roller.

Same as RLI

Variable Name	Value
Task 1 Time	1
Task 2 Time	8
Task 3 Time	0
Task 4 Time	0
QUE Program	6
Master Control	2
Wire Feed	0
Cutter Cut	0
Cutter Strip	0
Cutter Ready	0
Cutter Home	2
Wire Unclamp	0
Wire Clamp	0
PreProcess	0
Slitter	3
Slitter Flag	0
Cutter Strip 2	0
Wire Tension	0
Cut Ref	0
Continuous PP	0
Tracking	0
Collection	0
Home Closure	0
Test 1	24
Test 2	0
Ref Phase	0
Roller IP	3
RL1	0
RL2	0

DIGITAL I/O

The Digital I/O window will allow you to monitor and activate the I/O points of the control.



This is laid out in a Windows style directory divided by board and inputs and outputs.

To monitor a point, find it in the left panel, double click on it. It will appear in the right Panel.

The normal state will appear in the "value" column, **true is on** and **false is off.**

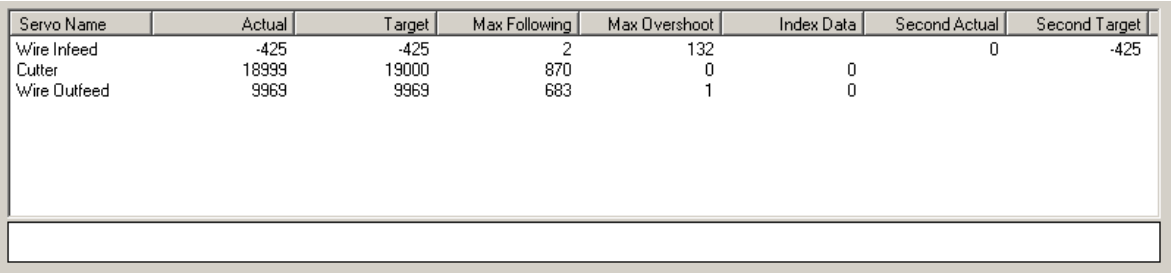
You can manually manipulate these points by clicking 

. This will activate "Force" function.

NOTE: When using the forcing feature the machine control is over ridden and will respond to any request YOU make. Be careful!!

SERVO MOTOR POSITION

The servomotors are controlled by command and feed back data. This data is displayed in the screen below.



Servo Name	Actual	Target	Max Following	Max Overshoot	Index Data	Second Actual	Second Target
Wire Infeed	-425	-425	2	132		0	-425
Cutter	18999	19000	870	0	0		
Wire Outfeed	9969	9969	683	1	0		

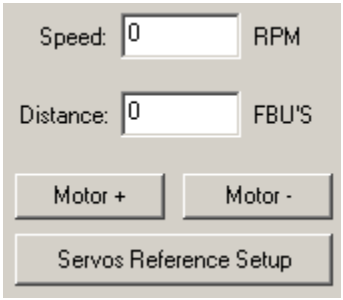
The **Target** is the commanded position for the servomotor. Then **Actual** is the actual position of the motor. The actual will follow target value until the position desired is reached. **Max Following** is the amount of lag in actual to target values. Max Overshoot is the amount actual surpasses target at the end of the move.

Second Target and **Second Actual** are the slip and snag detector encoder data

Index Data shows the one revolution marker in the encoder

Forcing the servo motors can be done by putting the speed and distance values in the windows and click Motor + or Motor -

See page 107 to explain the "Servo Reference Set-up" button function.



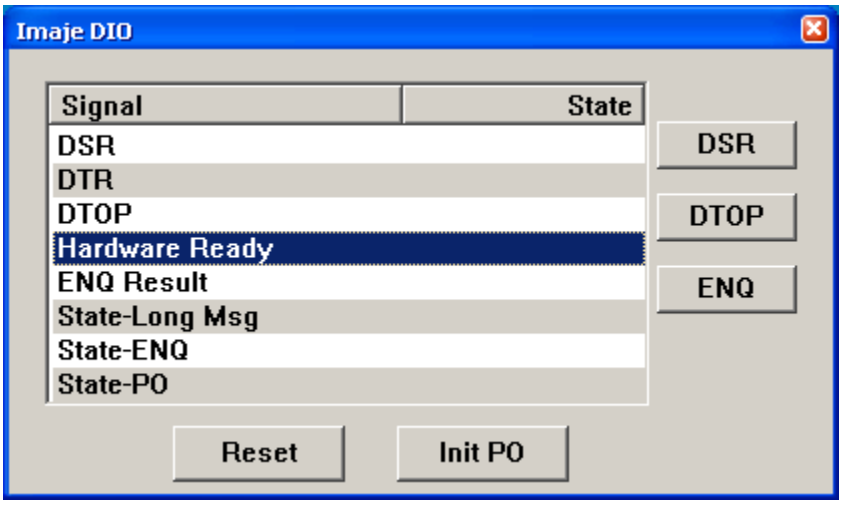
IMAJE TEST

When powering up the Imaje 9040 unit you may get an error message that says "Font not found". This means the original test message created by Imaje is not using the Artos fonts. To get rid of this error on

power up edit the Imaje test message. Delete everything that is in the Imaje test message and create a new one using one of the fonts that are now available.

Imaje Diagnostics

This screen is available on software versions 4.39 and above.



GUI Dialog

This diagnostic dialog can be accessed by the Maintenance – Imaje DIO pull down. The dialog has these functions:

1. Displays the active state of DSR from controller.
2. Displays the active state of DTR from Imaje
3. Allows toggle of DSR by clicking on the button.
4. Displays the active state of DTOP.
5. Allows toggle of DTOP by clicking on the button.
6. Display the hardware Ready input state.
7. Allow a click on button to tell the control to send an ENQ to the Imaje.
8. Display result of ENQ when Control sends it, which could be:
    a. DSR/DTR handshake problem
    b. ACK received.
    c. NAK received.
    d. Loop back detected. (Data received is same as sent.)
    e. Timed out with no response.
9. Display the Imaje state machine values for:
    a. Long Msg
    b. ENQ
    c. PO
10. Click on Reset button to clear all Imaje states if one gets stuck at non-zero.
11. Init a PO cycle which sends a brief burst of TACKY pulses to the Ink Jet. This can be used to test the TACKY wiring.

Trouble shooting suggestions

When there is a problem with the ink jet on a CS326 it can be one or more of several problems. On a new machine or one that has just been fitted with and ink jet interface problems mostly have to do with the wiring. However, in testing the interface and wiring, if all the wiring checks out either the ARTOS interface board or the Imaje industrial interface board may be bad. On older machines that have been running the ink jet interface chances of a board failure does arise a bit more often and wiring issues have to do more with loose or failed connections.

If using the 5-142096 or newer ARTOS Imaje interface board there are diagnostic LEDs which will help in trouble shooting, these will be mentioned in the following procedures. If you have an older interface board without these LEDs you will have to check and ring out wiring to and from the board and actually check signal voltage levels to isolate problems.

Before checking out a possible wiring problem, make sure you have the correct Imaje interface schematic for either the (S4/S8) interface or the 9040 interface as they are slightly different.

Pay special attention when checking wiring to make certain that all the jumpers have been installed on the ARTOS interface and the Imaje industrial interface.

Also the cable to the Imaje industrial interface is made up of twisted pairs and one wire of each pair is black. With this many black wires in one cable there is a chance that the labeling got mixed up from one end to the other on these black wires. This is not good, so pay close attention to this possibility. Often ringing out the wires is the only way to find a problem if it is isolated to the cable.

The Imaje DIO diagnostic dialog can help isolate problems. I would suggest following these steps:

1. Make sure that the Imaje is connected to the machine by the interface cable. Also that all connections to the ARTOS ink jet interface are connected.
2. Turn the Imaje on, go though jet startup and make sure that it is running and that the Imaje LCD display is on one of the Menu screens and not in a programming or maintenance sub screen.
3. Launch the diagnostic Maintenance – Imaje DIO pull down.
4. Check the Hardware Ready state, if it is 1 go on to next step. If not:
    a. Verify conditions of Imaje ink jet in step #2.
    b. If the Imaje is ready and there is no Ready then check the wiring for the hardware Ready line. If using the 5-142096 board, start with the READY LED on board:
        i. If it is on then check wiring between the controller and the interface board.
        ii. If it is off then check the wiring between the interface board and the Imaje.
5. Click on the DSR button:
    a. State of DSR should toggle from 0 to 1.
    b. State of DTR should follow state of DSR indicating that the Imaje is ready for RS232 communications. If it does Click on DSR again to toggle it Off and verify that DTR follows, IF so go to the next step.
    c. IF DTR remains 0 when DSR is 1 you should check the following:
        i. Verify conditions of Imaje in step #2.
        ii. Check the wiring of the DSR/DTR signals.
6. Click on the ENQ button, notice that the ENQ state should go to a non-zero value for a while. After a while ENQ Result should display one of the following:
    a. Possible DSR/DTR problem – Did you perform step 5? If not go back and fix that problem first.

b. ACK received – this is good and you can go to the next step.
c. Timed out with no response – this is bad indicates that either or both of the TX and RX lines are not working, could be one of the following problems:
    i. Imaje serial interface is not setup properly. (19200,N,8,1 – direct option)
    ii. Wiring problem of TX and or RX lines.
d. NAK received – this is bad, indicates the Imaje cannot respond to the data sent. Check that you have the proper pre-process type selected on the machine interface either:
    i. Imaje ink jet for S4 and S8 types.
    ii. 9040 for that family of Imaje ink jets.
e. Loop back detected – this is good if you intentionally put a jumper accros TX and RX lines for testing. (Check out the section below for intentional use of the Loop back test feature.) Otherwise it's bad and indicates that there is a short between these two lines somewhere.
f. Data – indicates that something was received from the Imaje but it was not one of the three acceptable Codes, ACK, NAK or ENQ. Check the instructions for setting up an Imaje for use on an ARTOS machine and make sure everything is set correctly on the Imaje printer. Use the Loop Back test method to isolate where the problem is.

7. If you went though steps 1 – 6 and everything is OK, then most of the interface is checked out OK. You should not get any Pre process not ready warnings. However, you may still not get any marking on the wire. What is Left to check, other than having a valid ink jet preprocess set up in the part there are two main items that can prevent marking:
    a. DTOP circuit, the Imaje DIO dialog can help you here:
        i. Click on theDTOP button to set DTOP state to 1.
        ii. If using the 5-142096 board check the DTOP LED on the interface board:
            1. If it's OFF check wiring to the board from the control.
            2. If it's ON check for the signal at the Imaje industrial interface board to determine if it's the cable or the Imaje board and it's wiring to the cable.
    b. TACKY circuit:
        i. Start by clicking on the Init PO button, this will enable the ARTOS ink jet interface board to send a short burst of TACKY pulses to the Imaje industrial interface. You can use this to trace the signal. If a 5-142096 board is in use you should see the OSC EN LED come on briefly to indicate this. Also the TACKY LED should come on at the same time:
            1. If neither LED comes on check wiring to the Board from the controller.
            2. If both LEDs come on check cable and connectors to the Imaje.
            3. If one LED come on but not the other or if wiring on both sides of the board check out, then replace the board.
        ii. If the PO signal traces OK then you actually need to cycle the machine and check to see if the Imaje industrial interface receives TACKY pulses. If a 5-142096 board is in use watch the TACKY LED on the ARTOS board and on the Imaje board. To see if it's flashing as the wire feeds. If it does you are OK if not and the PO cycle does then there may be a problem with the ARTOS ink jet interface board or the wiring of the board to the Wire feed wheel encoder. You should also see the ENC EN LED come on when the wire is feeding. If it does not check wiring to the controller if it's OK the interface board may be bad.

Intentional use of TX / RX Loop back

As indicated above in Step 6 the Send ENQ test has a loop back detection message. This means that the control received back the same ENQ code it sent to the Imaje. Something that does not happen without a short of TX to RX lines somewhere. We can use this to our advantage in trouble shooting.

If you are having problems with Step 6 above and always get the Timed out with no response message and the serial interface of the ink jet is properly setup you can try to isolate the problem as follows:

1. Remove the RX and TX lines at the Imaje Industrial Interface board. This is on the B1 terminal strip but the actual terminals are different between the S4/S8 and the 9040 versions, check the appropriate wiring diagram.
2. Connect the two wires you just removed together.
3. Click on the Send ENQ button:
    a. If you get a Loop back detected message the interface cable and connectors from the ARTOS interface board are all OK. Following are some possible problems and or further testing:
        i. Reconnect the RX and TX wires to the Imaje Industrial Interface board but reversing the connections from what they were before.
        ii. The Imaje Industrial interface could be the problem, if it works find out why and fix. Wires or pins in connectors are mixed somewhere.
        iii. Check the Jumpers that are suppose to be installed, see wiring diagrams for either S4/S8 or 9040 wiring, there is a difference
        iv. Call Imaje if all the above does not find the problem, you need to have the Imaje industrial interface board checked or replaced.
    b. If you still get a timeout then you have only confirmed that there is a problem on the ARTOS side. First isolate and fix the ARTOS problem first as follows:
        i. At the ARTOS ink jet interface board disconnect the TX and RX lines from the control to the ARTOS ink jet interface board.
        ii. Short these disconnected lines together.
        iii. Click on the Send ENQ button:
            1. If you still get a timeout then check the wiring back to the ARTOS controller board, if this is correct you may have to replace the controller board, but first check the other wiring to the board on the ARTOS controls side and especially the power supply wiring. If all is correct replace the board.
            2. If you get a Loop back detected message the ARTOS controller RS232 port and wiring to the ink jet interface board is OK and the problem is elsewhere.
                a. Reconnect the wires.
                b. Pull the DB25 connector.
                c. Jumper pins 2 and 3 on the ARTOS ink jet interface board DB25 connector
                d. Click Send ENQ:
                    i. If you get loop back detected the problem is in the Cable and connectors going to the Imaje. You will need to ring out the cable from end to end.
                    ii. If you do not get a loop back detected the problem is probably the Board. Replace it and try again.

    Once you fix the ARTOS problem reconnect the RX and TX wires, removed in step #1, to the Imaje Industrial interface. (Basically go back to step #3) Try the Send ENQ again

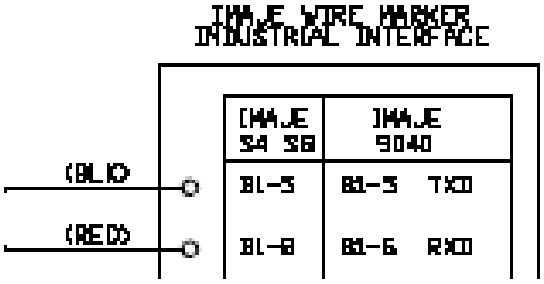
if you still get a Timeout with no response there is a problem with the Imaje industrial interface. Look at possibilities in Step #3-a. Just double check the cable wiring and jumpers installed on that card before contacting Imaje.

Additional Engineering Information about how the ENQ test works.

When you click on ENQ in the Imaje Diagnostic dialog this is the sequence:

- The Control asserts the DSR hardware line:
  - If the Imaje responds by setting the DTR hardware line the control continues with the test.
  - If the DTR line does not get asserted the Test stops and displays the DSR/DTR message.
- The Control clears the RX buffer for the Ink jet port.
- The Control sends the ENQ code (ASCII byte 05h) out the TX line to the printer.
- The Control looks for something received in the RX buffer:
  - If ACK (ASCII byte 06h) is received this is normal and the test ends indicating this.
  - If NAK (ASCII byte 15h) is received this is indication from printer of error. The test ends and indicates this
  - If ENQ (ASCII byte 05h) is received this is indication of TX and RX lines connected together somewhere. Test ends and indicates this.
  - If any other Data than the three codes above is received in the RX buffer the test ends and indicates this.
  - If nothing is received after two (2) seconds the test ends indicating a Time out.

How the Loop back test works:
Disconnecting the TX and RX lines connected at the Imaje industrial interface board and connecting them together creates a circuit so that the ENQ byte sent out the TX line from the Control port goes back in the RX line to the control port. For the ENQ test loop back to succeed with the display of ENQ in the results all the following must be OK:



- The Controller port for the ink jet interface lines, DSR,DTR,RX and TX.
- Wiring from the controller port to the ARTOS ink jet interface board, lines DSR,DTR,RX and TX.
- The ARTOS ink jet interface, lines DSR,DTR,RX and TX.
- Wiring from the ARTOS ink jet interface out to the Imaje Industrial Interface board, lines DSR,DTR,RX and TX.

If the Loop back works in this case there is most likely a problem with the connection of the RX and TX lines to the Imaje Industrial interface board, incorrect jumpers on the Imaje Industrial interface board or something else internal to the Imaje.

APPENDIX

APPENDIX A

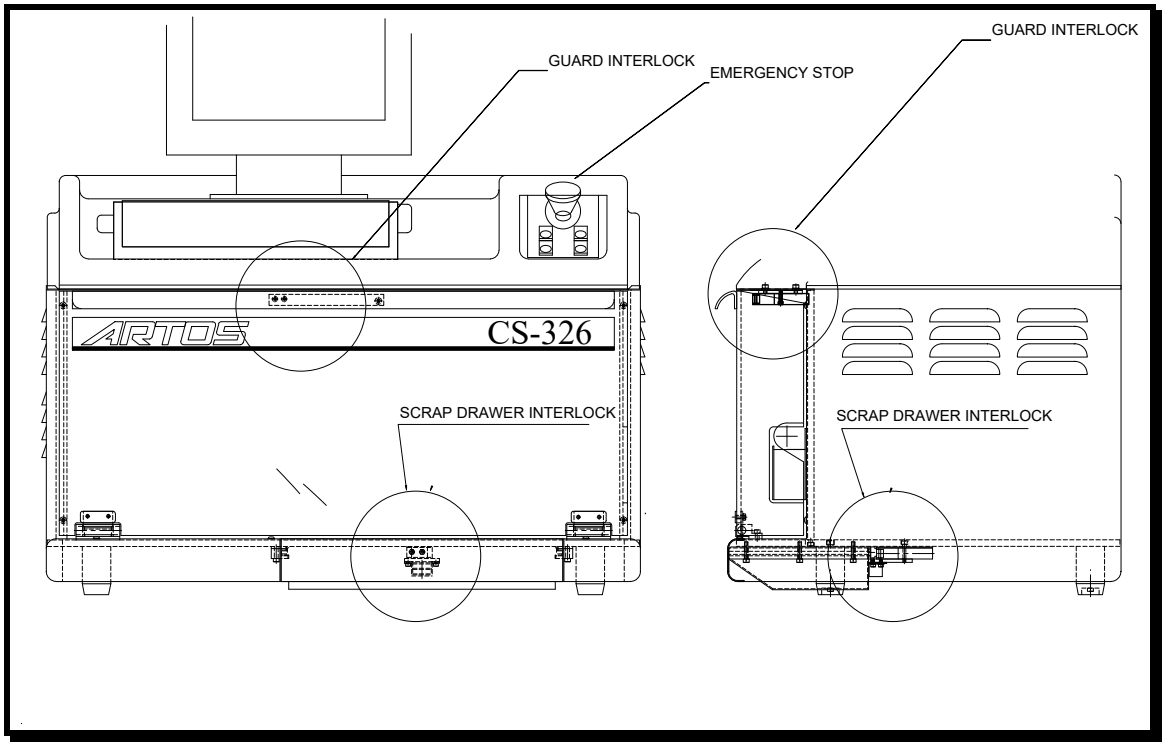
CS 326 B **Guard Interlock and Emergency Stop System**

CS 326 B machine stop functions include a Category 0 emergency stop including removable guard interlocks, and a Category 2 cycle stop.

The **CS 326 B** is equipped with two removable barrier guards (see SAFETY INTERLOCK below) which are electrically interlocked with the emergency stop safety circuit of the machine. These guards, the main front guard and the slug chute drawer, must be in place in order for the machine to operate. Do not attempt to operate the machine with the guards removed or defeat the interlocks in any way.

FOR TROUBLESHOOTING PRODUCEDURE REFER TO DOCUMENT "Safety relay fault 326.pdf"

SAFETY INTERLOCK GENERAL DESCRIPTION



Refer to electrical schematic 7-137003 for a CS326, 7-143333 for a CS326A or CS326B, sheets 1, 3, 4, and 5 for details of the emergency stop guard interlock circuit. Emergency stop and guard interlock switches employ normally open - held closed positive mode contacts in a hard wired circuit which is monitored by the machine control CPU. A contact from the hardwired safety relay (CRES) directly

enables the output (A47) from the machine control CPU to energize the master control relay (CRM). The CPU will only energize output A47 in response to an input (A01) from the master start push button and only if it senses the emergency stop, the main guard, and the slug chute drawer switches to be closed, (inputs A05, A06, A07, and A08). Output A47 will be maintained by the CPU only until it detects a fault condition from the servo motion control system, any one of the emergency stop or interlock switches opening, or it halts execution of the machine control operating software. Note that the CRES contact will open when any emergency stop or interlock switch opens or the 24 VDC power supply turns off. This will cause CRM to de-energize. Like wise, output A47 will de-energize when the CPU senses any emergency stop or interlock switch to be open, causing CRM to de-energize.

Master control relay (CRM) in conjunction with servo power contactor (CON1) provides hardwired control of electrical power to all motors and actuators in the machine. When CRM is de-energized power is completely removed from all motors and actuators, and the servo power amplifiers are disabled by the open contacts of the servo enable relay (CR1).

If the emergency stop button is operated or a guard removed while CRM is energized, or a servo fault detected while the machine is operating, CRM will de-energize immediately removing power from all motors and actuators and cause the machine stop operation. CRM will not re-energize when the emergency stop is released, or the guard replaced, or fault condition corrected. The master start push button must be actuated to energize CRM and restore operating power the motors and actuators.

APPENDIX B

Trouble shooting the servo drive.

CONTACT ARTOS FOR ANY OF THE PROCEDURES LISTED BELOW

If the machine is able to run at low speeds but at high speed the machine shuts down and displays the message “Servo NIP” then the balance needs to be set on the servo motors.

For a CS326 use procedure “CS326 potentiometer readings and balance windows.pdf

For a CS326A, or CS326B use procedure “CS326A setting the balance.pdf”

If the machine is causing the wire to stretch or form a loop between the infeed belt or outfeed belts, this would be around the cutterhead area, then the following error needs to be calibrated.

For a CS326 use procedure “CS326 Following error calibration windows.pdf”

For a CS326A, or CS326B use procedure “CS326A Following error calibration.pdf”

If the machine is getting a “Feed Servo NIP” message and shutting down, then there is a problem with the feed motor servo system.

For a CS326 use procedure “CS326 feed servo NIP windows.pdf”

For a CS326A, or CS326B use procedure “CS326A Wire Feed Servo NIP.pdf”

If the machine is getting a “Cutter Servo NIP” message and shutting down, then there is a problem with the cut motor servo system.

For a CS326 use procedure “CS326 cutter servo NIP windows.pdf”
For a CS326A, or CS326B use procedure “CS326A Cutter Servo NIP windows.pdf”

APPENDIX C

CS 326 B **Push Button Function Description**

MASTER START

Master Start is a momentary illuminated push button, the function of which is to enable the machine for operation. For normal operation, it requires mains power to be connected, main circuit breaker to be ON, all interlocks to be in place and the Emergency Stop released. When operated under normal conditions, the machine will initialize and the button will illuminate indicating that power has been applied to the actuators of the machine and it is ready for operation. If the Master Start is operated with mains power applied and main circuit breaker ON when the Emergency Stop is active or one of the interlocks is open, the machine will not initialize and the button will not illuminate. Under these circumstances the audio enunciator will sound and an alarm message will be displayed on the monitor. Power is not applied to the actuators.

Master Start may be reset by operating the Emergency Stop button, opening a guard interlock, operating the main circuit breaker to the OFF position and/or disconnecting the mains power cord.

If Master Start is OFF, all power is removed from the actuators of the machine.

CYCLE START

Cycle Start is a momentary illuminated push button, the function of which is to initiate an operating cycle of the machine. It requires Master Start to be active for normal operation. When operated under normal conditions, the machine will respond by performing a single step, single cycle, or automatic cycle, depending upon the mode selected on the Run . The button will illuminate for the duration of the operation selected. If operated when Master Stop is OFF, nothing will happen.

CYCLE STOP

Cycle Stop is a momentary push button, the function of which is to interrupt and stop the automatic operation of the machine. When operated, it will stop the operation of the machine at the end of the current cycle.

FEED ROLLERS

Feed Rollers is a momentary push button, the function of which is to cause the feed drive system to open or close. It requires Master Start for normal operation. When operated under normal conditions, if the feed rollers are closed, then they will open and vice versa.

EMERGENCY STOP

Emergency Stop is a positive mode mushroom head switch the function of which is to remove power from all actuators and reset Master Start. It requires a twist to release, which will not initiate a restart. Operation of the Emergency Stop switch during automatic operation will cause an immediate stop of the machine and may result in a scrap part.