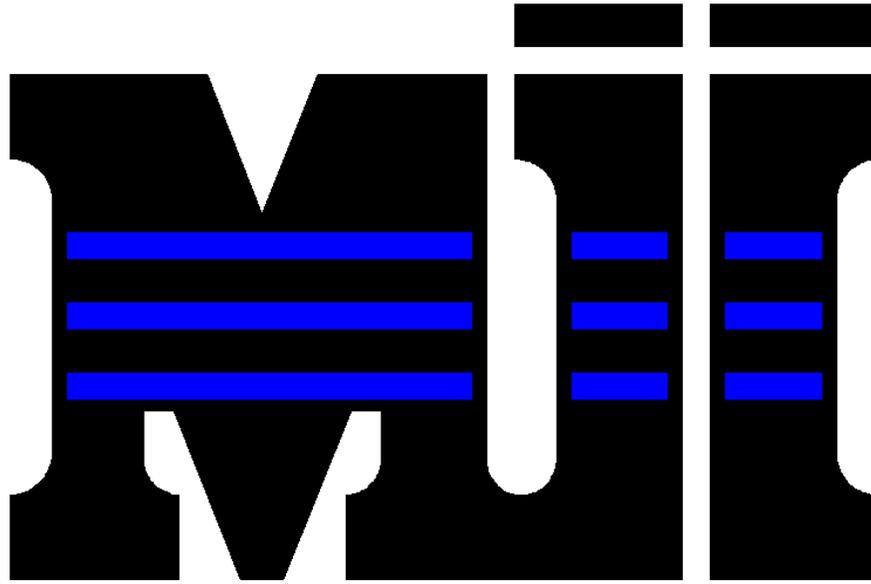


Catcher Display Installation

001057 Rev. H





**MiTek[®] CYBER[®] SAW AND MiTek CYBER A/T
CATCHER DISPLAY INSTALLATION
INSTRUCTIONS**

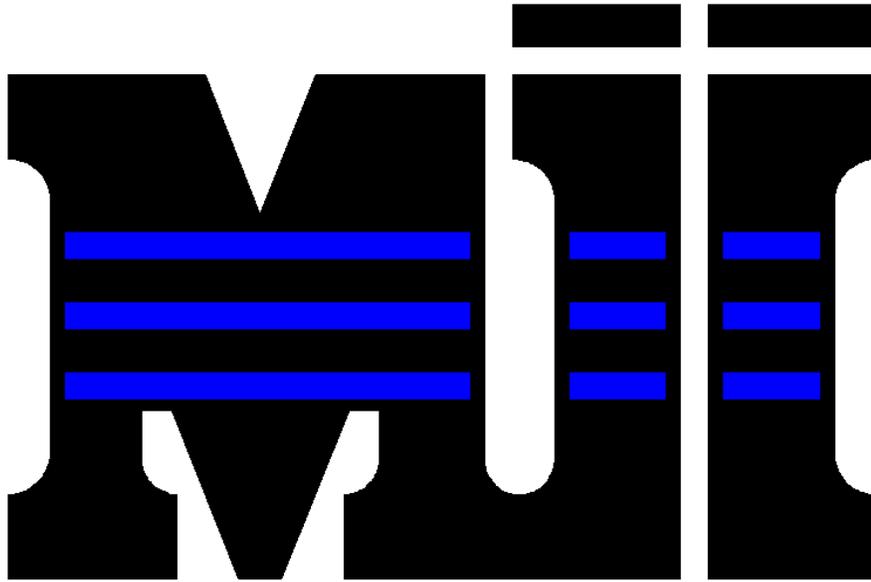
Part Number: 001057 Revision H
15 October 2007

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**MiTek[®] CYBER[®] SAW AND MiTek CYBER A/T
CATCHER DISPLAY INSTALLATION
INSTRUCTIONS**

Part Number: 001057
February 24, 2012
Revision: H

Applicability: 60122KIT, 60182-501, 60182KIT

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Hardware Requirements

CYBER SAW 128MB Ram minimum in touch screen computer. A 351 or 363 PLC CPU.

CYBER A/T No additional requirements.

If the requirements above cannot be met, please contact your *MiTek* customer service representative to order the necessary parts or return this kit.

Drawings to Use

If you have an Ann Arbor touch screen with UPS software installed, it **MUST** be removed and the UPS Serial Cable must be disconnected from the computer.

If you have a PC enclosure, Drawing number 60260 applies to your machine. Refer to this drawing for questions on your hardware.

Required Software

CYBER SAW

- ✓ Cimplicity Project v3.90 or v5.00 – you will need to replace an existing .exe file with a new file. Contact MiTek Machinery Division Customer Service.
- ✓ PLC program version 3.6 or 5.0
- ✓ LM90 PLC programming software

NOTE: The *MiTek* **CYBER A/T** does not require any software changes.

Required Tools

7/8" Step drill or 1/2" conduit knockout	5/16" drill bit
3/8"-16 UNC tap with handle	#2 Phillips screw driver
Wire strippers	5/16" hex key wrench
1/8" slotted screw driver (terminal block screwdriver)	9/64" hex key wrench
	Tape Measure
	Pliers



Hardware Installation

Refer to the Parts List on pages 15 and 16 to clarify parts discussed in these procedures.

- A. Shut down the saw and lockout power.
- B. Mount the Catcher Display on the rear guard of the **CYBER SAW** or **CYBER A/T** saw. Use the brackets and fasteners supplied with this kit.
- C. Inside the stationary-end enclosure, use rags or paper to protect electrical components from metal chips and filings that will be created in step E.
- D. Knockout the new hole required in the stationary-end enclosure as shown on the correct drawing for your machine listed at the beginning of this procedure. Using either a 7/8" step drill or a 1/2" conduit knockout.
- E. Manufacturing installation: Do **not** "trim to fit" the operator pendant cable. All excess length should be coiled up and tie wrapped to the saw's stationary end away from moving parts.
- F. Customer site installation: The operator pendant cable may be trimmed to fit at customer's request when locating the pendant for the customer. Mounting options should be discussed with customer before installation of cable into cable tray.

PC Enclosure Wiring

This portion of the manual is for customers with the computer inside a PC enclosure and NOT a computer inside the touch screen enclosure.

Figure 1: System With Catcher Display Only and PC Enclosure

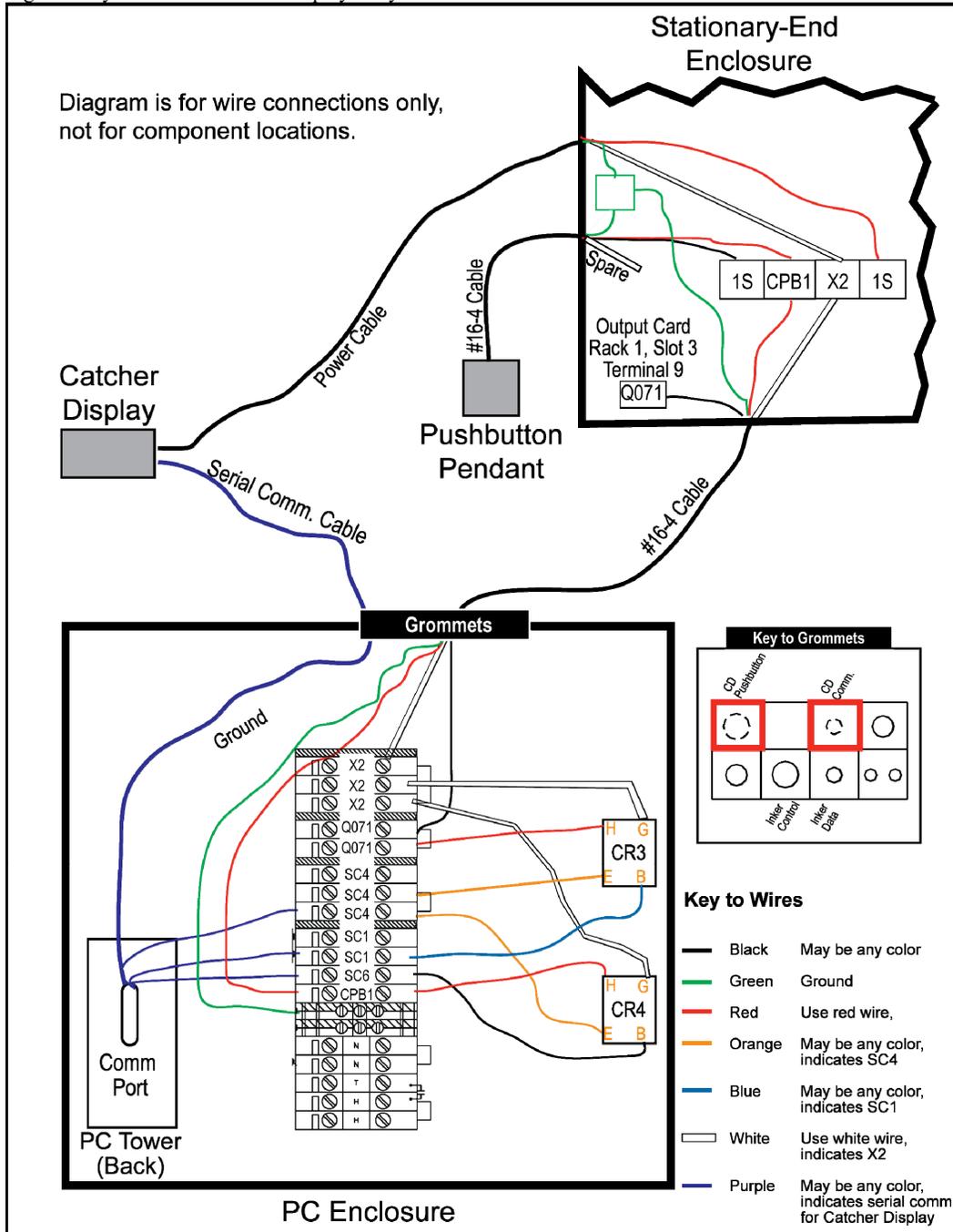
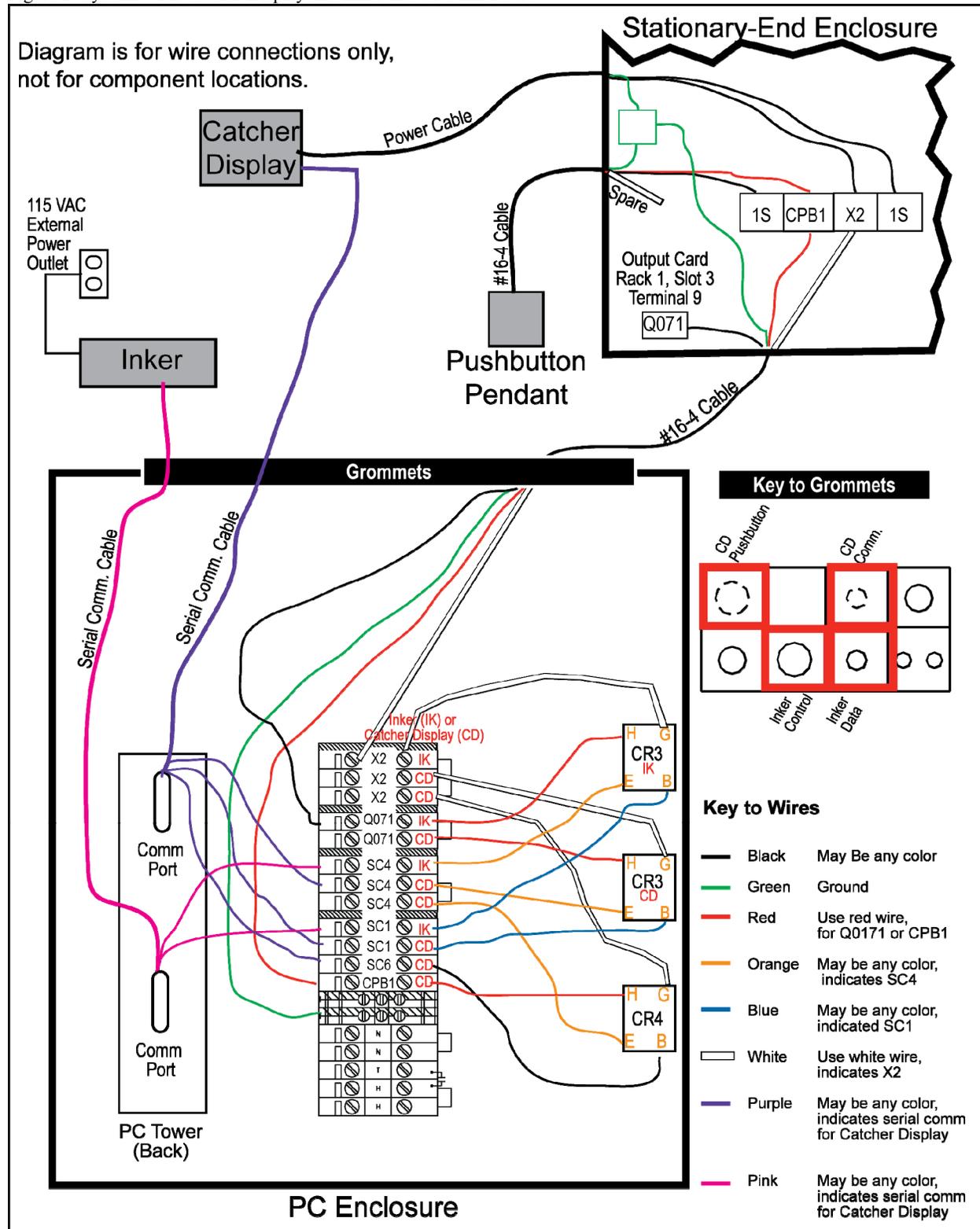


Figure 2: System With Catcher Display and Inker and a PC Enclosure



1. Refer to Figure 1 or Figure 2 while connecting the Catcher Display to a computer in a PC enclosure.
2. Shut down and lockout/tagout power to the saw.
3. If this is a field install, drill holes in the left side of the stationary-end enclosure for the power cable and the pushbutton pendant cable. Refer to Drawing 60182 for the location of the holes.
 - a. Use rags or paper to protect the electrical components inside the stationary-end enclosure from metal chips and filings.
 - b. Using a 7/8" step drill or a 1/2" conduit knockout, cut 2 holes in the left side of the stationary-end enclosure, as shown in Drawing 60260.
4. Install a 1/2-in. straight cable connector with locknut in each of the 2 holes in the left side of the stationary-end enclosure.
5. Install the power cable between the Catcher Display and the stationary-end enclosure:
 - a. The power cable is the top cable on the Catcher Display. Route the power cable into the stationary-end enclosure through the upper cable connector in the stationary-end enclosure's left wall.
 - b. Connect the power supply cable wiring inside the stationary-end enclosure as follows:
 - the red wire to terminal 1S
 - the white wire to terminal X2
 - the green ground wire to the ground block
6. Install the serial communication cable between the Catcher Display and the PC enclosure:
 - a. The 2 communications cables should already be joined together using an adaptor.

- b. Route the serial communication cable through the correct grommet on the back of the PC enclosure. See Figure 1 or Figure 2 for the correct grommet.
 - c. Plug the serial communication cable into Comm Port 3 or 4 on the back of the computer.
 - d. Connect the 3 extra wires to SC1, SC4, and SC6.
7. Install the pushbutton pendant cable between the pushbutton enclosure and the stationary-end enclosure:
 - a. Route the pushbutton pendant cable into the stationary-end enclosure through the lower cable connector in the stationary-end enclosure's left wall.
 - b. Connect the pushbutton pendant cable wiring as follows inside the stationary-end enclosure:
 - the red wire to terminal CPB-1
 - the black wire to terminal 1S
 - the green wire to the ground block
8. If this is a field install, drill a hole in the bottom of the stationary-end enclosure for the #16-4 cable going to the PC enclosure:
 - a. Use rags or paper to protect the electrical components inside the stationary-end enclosure from metal chips and filings.
 - b. Referring to the drawing for your machine and using a 7/8" step drill or a 1/2" conduit knockout, cut a hole in the bottom of the stationary-end enclosure.
9. Install the 1/2-in. straight cable connector with locknut in the bottom of the stationary-end enclosure.
10. Use the supplied grommets to replace the blank grommets in the back of the PC enclosure. Refer to Figure 1 or Figure 2 for the intended location of each grommet.

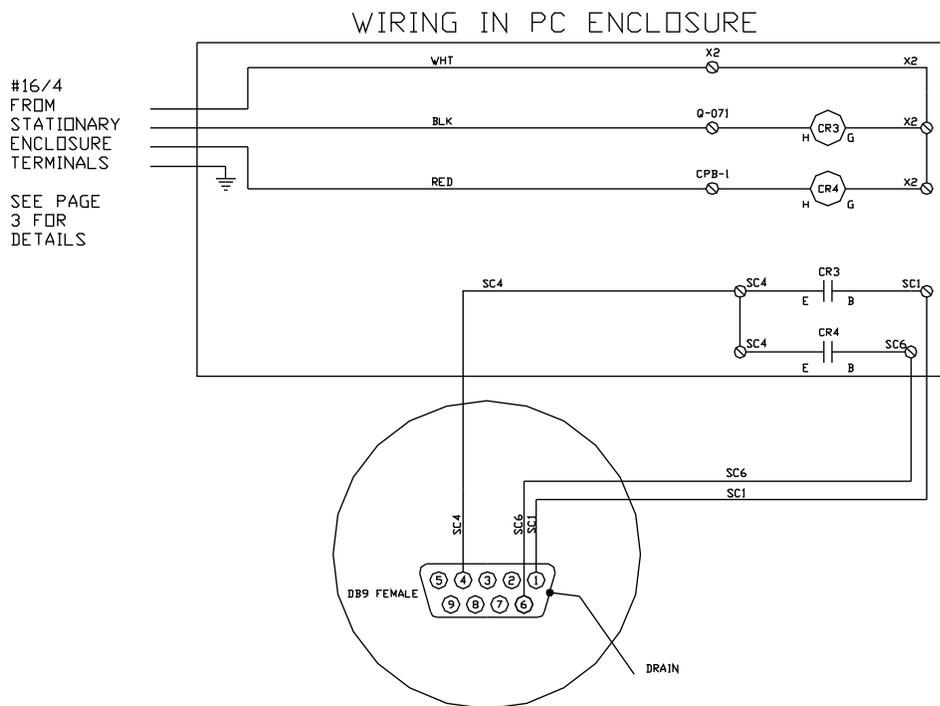
11. Install the #16-4 cable from the stationary-end enclosure to the PC enclosure as follows. Also refer to Figure 1 or Figure 2.

- a. Cut the supplied #16-4 cable to length, so it will reach from the terminals in the stationary-end enclosure to the terminals in the PC enclosure.
- b. Connect the enclosed #16-4 cable wiring as follows inside the stationary-end enclosure:

- the black wire to the Q-071 terminals
- the red wire to the CPB-1 terminals
- the white wire to the X2 terminals
- the green ground wire to the ground block



- c. Wire CR3 and CR4 per Figure 1 or Figure 2.



NOTE: Upon completion of the wiring steps above, complete the software installation section located on page 13 of this manual.

Touch Screen Computer Wiring

This portion of the manual is for customers with a touch screen computer inside the touch screen enclosure rather than inside a PC enclosure.

Figure 3: System With Catcher Display and Touch Screen Enclosure

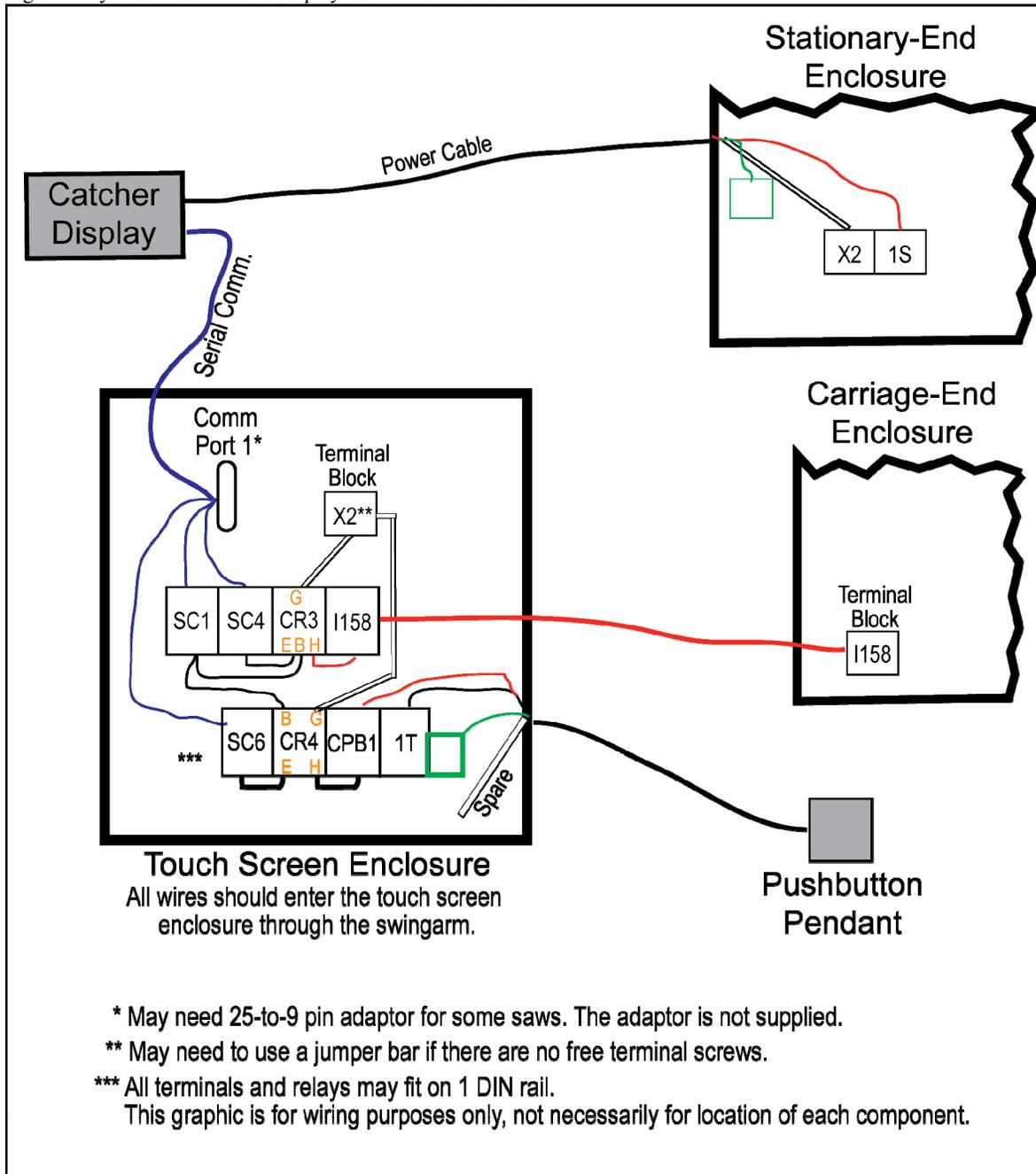
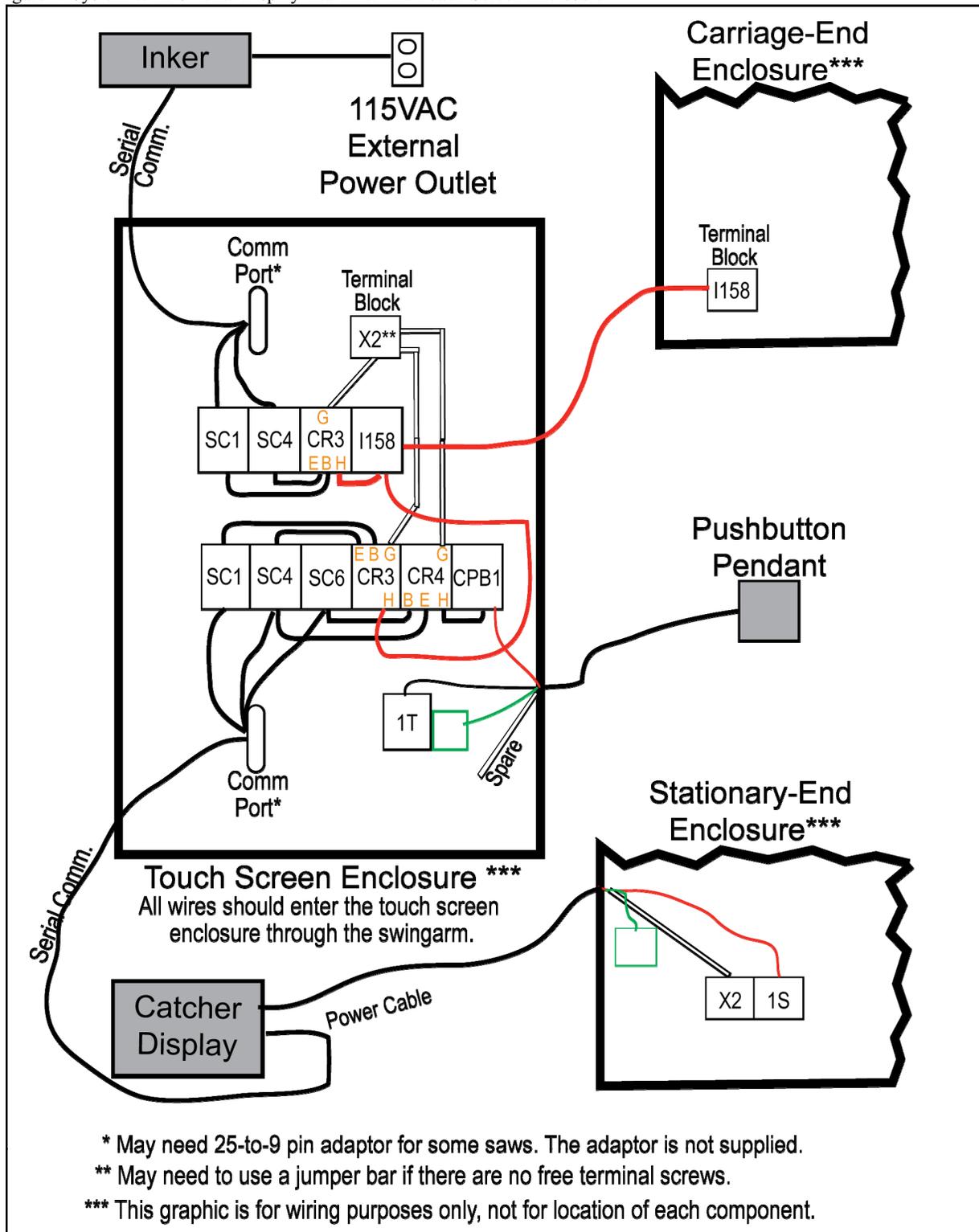
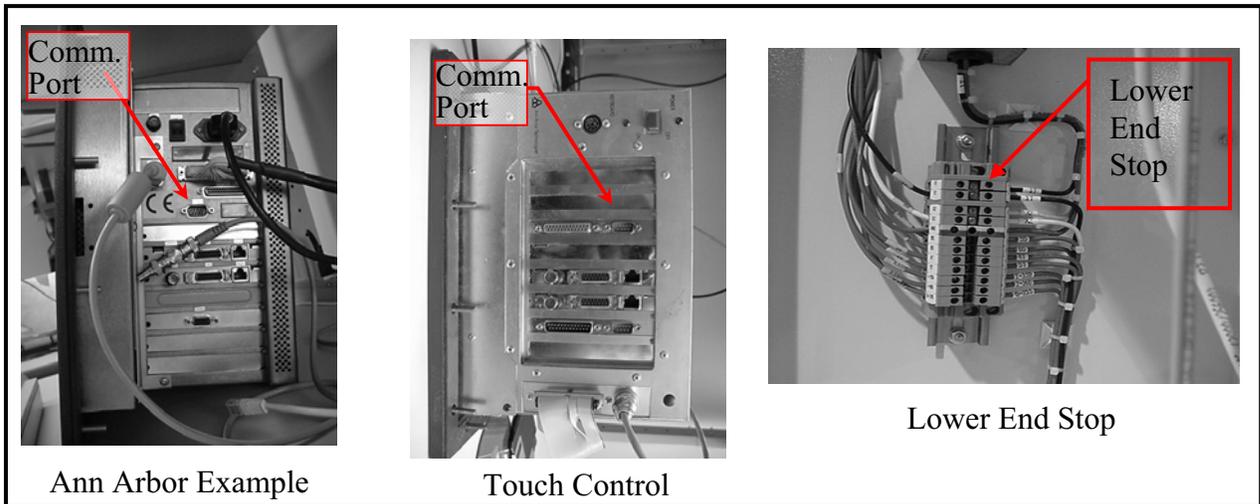


Figure 4: System With Catcher Display and Inker and Touch Screen Enclosure

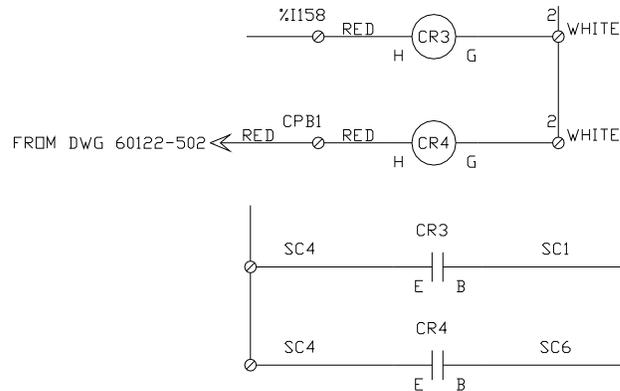


1. Refer to Figure 3 or Figure 4 while connecting the Catcher Display to a computer in a touch screen enclosure.
2. Shut down and lockout/tagout power to the saw.
3. If this is a field install, drill a hole in the left side of the stationary-end enclosure for the power cable.
 - a. Use rags or paper to protect the electrical components inside the stationary-end enclosure from metal chips and filings.
 - b. Using a 7/8" step drill or a 1/2" conduit knockout, cut a hole in the left side of the stationary-end enclosure, as shown in Drawing 60182.
4. Install a 1/2-in. straight cable connector with locknut in the hole in the left side of the stationary enclosure.
5. Install the power cable between the Catcher Display and the stationary-end enclosure:
 - a. The power cable is the top cable on the Catcher Display. Route the power cable into the stationary-end enclosure through the connector in the stationary-end enclosure's left wall.
 - b. Connect the power supply cable wiring inside the stationary-end enclosure as follows:
 - the red wire to terminal 1S
 - the white wire to terminal X2
 - the green ground wire to the ground block
6. Install the serial communication cable between the Catcher Display and the touch screen enclosure:
 - a. The 2 comm. cables should be joined together with an adaptor.
 - b. Route the serial communication cable through the swingarm and into the touch screen enclosure.

- c. Plug the serial comm. cable into Comm Port 1 or 2 on the computer.
- d. Connect the 3 extra wires to SC1, SC4, and SC6.

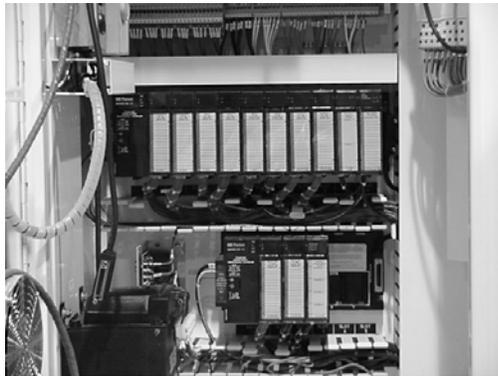


7. Inside the touch screen enclosure, add the terminal blocks and control relays enclosed. It may be necessary to add a DIN rail.
8. Install the pushbutton pendant cable between the pushbutton enclosure and the touch screen enclosure:
 - a. Route the pushbutton pendant cable into the touch screen enclosure through the swingarm.
 - b. Connect the pushbutton pendant cable wiring as follows inside the stationary-end enclosure:
 - the red wire to terminal CPB-1
 - the black wire to terminal 1T
 - the green wire to the ground block



SC1, SC4 AND SC6 ARE PART OF THE COMMUNICATIONS CABLE.

9. Wire the control relays inside the touch screen enclosure as shown in Figure 3 or Figure 4.
10. Connect a red wire labeled I0158 from the carriage-end enclosure to the added touch screen enclosure per Figure 3 or Figure 4.
 - a. Connect one end of the red wire to the input I0158, located on rack 2, slot 4 in the carriage-end enclosure.



- b. Route it through the trough, conduit and swing arm assembly.
- c. Connect the other end of the red wire to I158 input in the touch screen enclosure.

NOTE: *All wiring connections must be completed before returning power to the saw. Upon completion of the wiring steps above, complete the software installation section.*

Software Installation

*Required for the MiTek **CYBER SAW** only. **CYBER A/T** owners should proceed to the next section.*

- A. Perform an "All Home" setup from the semi-automatic screen.
- B. Load the PLC processor with the CYBV5_0 program using LM90 PLC programming software.
- C. Connect a keyboard to the touch screen computer.
- D. Shut down and restart the computer, DO NOT PRESS OK AT THE LOGON PROMPT, see the next step.
- E. At the logon prompt, press and hold the shift key while pressing the enter key. *Hold the shift key down until Windows95 is finished loading.* This will prevent the Cimplicity software from starting.
- F. Copy the enclosed Cimplicity Project software to the **CYBER SAW** touch screen computer. The file setupex.exe should be placed in the C:\Cimplicity Project\ folder.
- G. Press "Start".
- H. Press "Run"
- I. Browse to the C:\Cimplicity Project\ folder and highlight the setupex.exe file.
- J. Press "Open".
- K. Press "OK".
- L. You will be prompted to press "Next" to continue three times, then the software will install.
- M. After the installation is completed, re-boot the computer.

Setting Parameters

A. *Making Cimplicity Recognize the Catcher Display*

1. After rebooting the computer, logon and start *Cimplicity* as normal.
2. When the logo screen appears touch the screen to advance to the Main Menu.
3. Make sure the calibration key is turned on and press the “Defaults” button.
4. Press the “Speeds” button.
5. Press the “Advanced” button.
6. When it asks for a password, just press “OK”. No password is required.
7. Press the “Member Labeling” button.
8. Turn on the Catcher Display by pressing the “ON” button in the “Catcher Display” box.
9. Press the “Main Menu” button and wait approximately 1 minute.
10. Press the “Automatic” button.
11. Press the “Catcher” button at the bottom of the screen. This will display the Catcher Display program. You do NOT need to make any changes to the communication settings. The software is pre-configured to use Comm port 1. Help for setting up the display format is provided within the program under Help and in the User Manual.

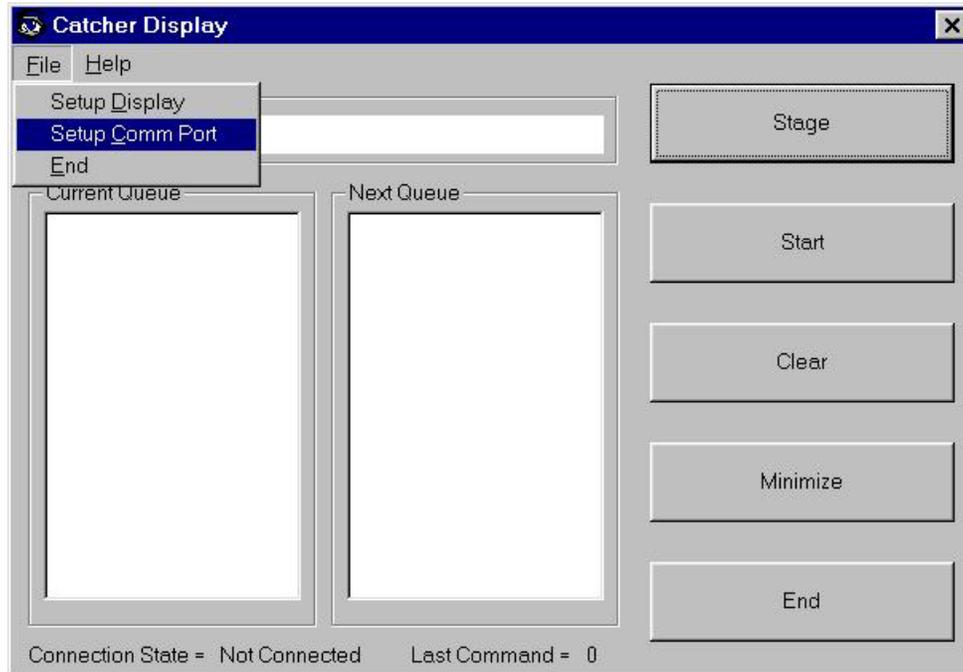
B. *Setting the Blade Sizes*

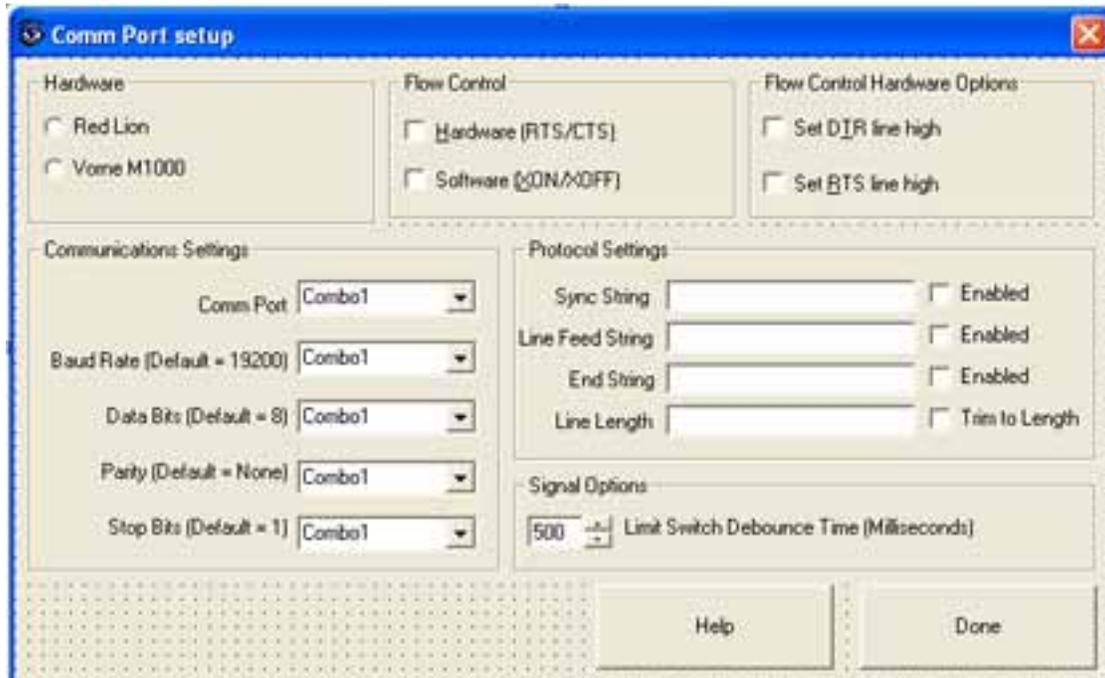
ON THE MITEK **CYBER SAW**, YOU MUST SET THE BLADE SIZES ON THE DEFAULTS SCREEN AND VERIFY CALIBRATION BEFORE RESUMING NORMAL OPERATIONS. ON THE MITEK **CYBER A/T**, YOU DO NOT NEED TO SET THE BLADE SIZES.

1. From the Main Menu, press “Defaults”.
2. Press the correct diameter for blade 1 under “Blade 1 Diameter”.
3. Press OK when it asks, “Do you really want to change blade 1 diameter...?”
4. Repeat for remaining blades.

C. Setup the Comm Port and Communications Protocol

1. From the Main Menu, select “Automatic Mode”.
2. Select the “Catcher” button on the lower part of the screen.
3. Clicking “File”, then “Setup Comm Port”, can change the Comm port and communications protocol settings.





Communications Settings

The communications Port, baud rate, data bits, parity and stop bits are selected from drop down lists. These settings are set at MiTek to match the settings programmed on the display. Verify that they match these guidelines:

- Comm. 1 or 2 for all non-*Dell* computers or Comm. 3 or 4 for *Dell* computers.
- Baud rate should be 19200 with 8 data bits and 1 stop bit.
- Parity None.

Flow Control

Flow Control settings CANNOT be changed.

Protocol Settings

There are 4 parts of the communications protocol that can be enabled.

- I. The Sync or Start Message string. Signals the start of the message to be displayed.

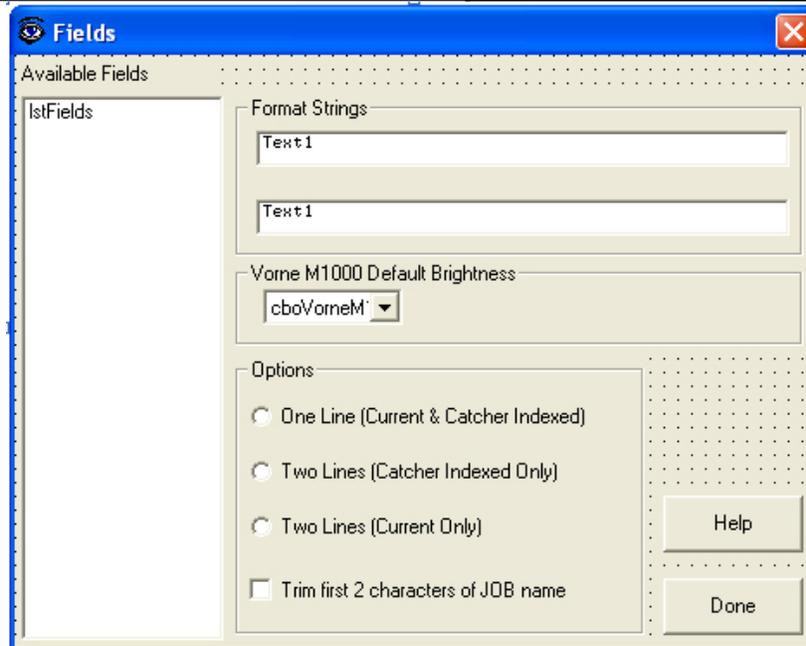
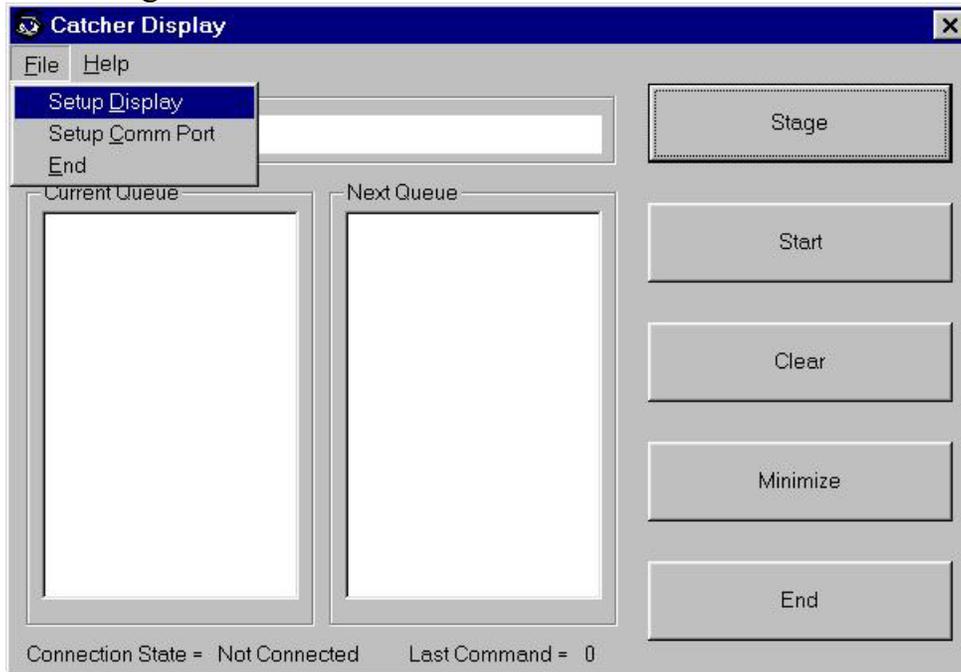
- II. The Line Feed String. Indicates where to start displaying on the next line.
- III. The End of Message String indicates all of the text to display has been sent.
- IV. The Line Length is the number of characters per line on the display. It is possible to configure the display to show more characters than there are on the display. If this happens, the display will scroll the message so that all of the text can be seen. Enabling this option will cause the message to be shortened to fit the display in order to prevent scrolling.
- V. The values for these characters can be ASCII codes in the range of 1 to 125 excluding ASCII codes 3, 8, 22 and 34, which are ctrl-c (copy), Backspace, ctrl-v (paste) and ctrl-x (cut) respectively. All character codes are typed directly from the keyboard. Appendix A illustrates how to enter ASCII codes.

Limit Switch De-Bounce Time

This value is used for the de-bounce timer on the signal switches to avoid false inputs. The value can be in the range of 1 to 1000. This represents .001 to 1 seconds.

D. Setup the Display

1. From the Main Menu, select “Automatic Mode”.
2. Select the “Catcher” button on the lower part of the screen.
3. Clicking “File”, then “Setup Display”, can change the message format settings.



Line Options determine how many lines on the display are used to display information for each piece cut.

One Line (Current and Catcher Indexed)

The top line of the display will show the selected information for the current piece being cut. The bottom line of the display will show the information for pieces that have already been cut; this line is manually indexed by the catcher using the pushbutton provided. The display will scroll up to the current piece being cut.

Two Lines (Catcher Indexed Only)

Both lines of the display will show the information for each piece being cut. The catcher using the pushbutton provided manually indexes the information for pieces that have been cut. The display will scroll up to the current piece being cut.

Trim First 2 Characters of Job Name

This option will remove the first 2 characters of the Job name for display purposes, this reduces the number of characters required to display the Job name.

Format Strings

The format strings determine what information is displayed. The available fields listed below are items that can be extracted from the member information and displayed for the Catcher. The top format string determines what information will be displayed on the first line of the display. The bottom format string determines what information will be displayed on the second line of the display if the two-line option is used. To insert one of the available fields (listed below) into one of the format strings, place the cursor at the desired insertion location. Then double click on the field to be inserted in the list.

- The format strings area must be setup with the available fields data desired between <> brackets and must be written exactly as listed in the available fields area.
- An example is <Job>.
- Multiple data fields can be displayed on single line as long as space is available to display the message on the display.

Constant text can also be placed in the format string. The values for these characters can be ASCII codes in the range of 1 to 125 excluding ASCII codes 3, 8, 22, and 34, which are ctrl-c (copy), Backspace, ctrl-v (paste) and ctrl-x (cut) respectively. All character codes are typed directly from the keyboard. Appendix A illustrates how to enter ASCII codes.

Available Fields

Count – This is a counter that increments as the pieces are cut.

QTY – This is the Quantity for the current piece.

Job – The Job name.

Batch – The EZY/CYB file name.

Truss – The Truss name.

Member – The Member ID.

Length – The length Setting for the **CYBER SAW**, This is also the Centerline Length.

StkLen – The Stock Length as determined by *CyberSort™*.

Size1 – The 2 in 2 x 4.

Ssize2 – The 4 in 2 x 4.

SPR2 – This field holds the crowning value, 0 = No Crowning, 1 = Crown Up and 2 = Crown Down.

SPR3 – Currently not used.

SPR4 – Currently not used.

GRADE – the Lumber grade for the current piece.

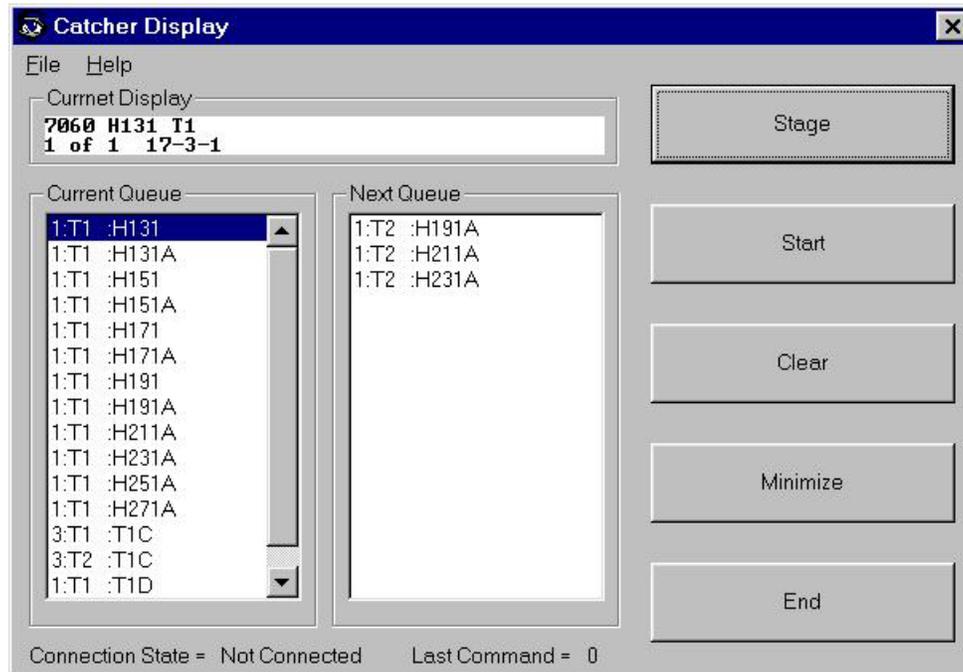
EXTRA – Used only in Australia.

Blink – Placing this field on both sides of any text or field will cause that portion of the line to blink. If only one blink field is inserted in a line then the text from the blink field to the end of the line will blink.

Installation Checklist

1. Verify Communication Cable Connections: Ensure that both ends of the serial cable are plugged in and tight.
2. Verify Power to the Catcher Display. If no power, check S1 and X2.
3. Turn on Catcher Display in the defaults.
4. Verify Comm. Port Settings in the Project software.
5. Verify the Setup Display Settings in Project Software.
6. Check Operation of the Catcher Display:
 - a. Press the Catcher button in Automatic Mode and the Catcher Display screen displays. Info should be displayed in the Next Queue section referring to the current setup for the saw.
 - b. Press “Stage” and then “Start” to transfer the data from Next Queue to Current Queue.
 - c. Once you see the data shift position then the Catcher Display should light up and display this information on the back side of the saw. If it does display then you should be finished and can minimize the Catcher data screen in the project. If it does not display, try selecting the other comm. port setting.
7. Verify the Indexing Button Operation:
 - a. Run three or four setups without pressing the indexing button.
 - b. After this, press the indexing button one time and the display should indicate the second setup’s information.
 - c. Press the button again and the display should advance to the next setups displayed information.
 - d. Continue to press the button until the display matches the current setup information. If this occurs, everything is working. If not verify cable connections and that you are communicating correctly with the display.
8. Verify that the PLC version is adequate: For *Cyber A/T* saws with a PC, must have at least v12.3. For *Cyber* saws with a PC, a software upgrade is necessary, but must contact Customer Service and Engineering to obtain it at this time.
9. Once setup is complete, write down all setting information in the chart supplied in the Appendices to help in future trouble shooting sessions.

Software Operation



Current Display - Shows the message being displayed. If the display is configured for two lines, both lines will appear here on a single line.

Current Queue - Shows the list of pieces currently being cut. The format is Quantity:Member:Truss. The current piece is highlighted and displayed as they are cut. Once the last member is being cut, the catcher can scroll through the data for all the pieces in the current setup.

Next Queue - Shows the list of pieces for the next setup.

Clear – Clears the current message displayed and both message queues.

Stage – Gets the data for the next setup. This is done automatically when a new member is loaded either by the sawyer or during automatic operations of the **CYBER SAW**.

Start – Transfers the next queue to the current queue and sends the message for the first piece to the display. This is done automatically when the start button is pressed on the automatic screen of the **CYBER SAW**.

Minimize – Hides the Catcher Display program on the screen.

End–Closes the catcher Display. The display will retain the last message displayed.

The other two items on the screen are “Last Command” and “Connection State”. These are intended to provide information to *MiTek* Service Personnel.

Appendix A: ASCII Codes

NOTE: ^ denotes the Ctrl Key.

ASCII Code	Key	ASCII Code	Key	ASCII Code	Key	ASCII Code	Key
1	^A	33	!	65	A	97	a
2	^B	34	“	66	B	98	b
3	^C	35	#	67	C	99	c
4	^D	36	\$	68	D	100	d
5	^E	37	%	69	E	101	e
6	^F	38	&	70	F	102	f
7	^G	39	`	71	G	103	g
8	^H	40	(	72	H	104	h
9	^I	41	)	73	I	105	i
10	^J	42	*	74	J	106	j
11	^K	43	+	75	K	107	k
12	^L	44	‘	76	L	108	l
13	^M	45	-	77	M	109	m
14	^N	46	.	78	N	110	n
15	^O	47	/	79	O	111	o
16	^P	48	0	80	P	112	p
17	^Q	49	1	81	Q	113	q
18	^R	50	2	82	R	114	r
19	^S	51	3	83	S	115	s
20	^T	52	4	84	T	116	t
21	^U	53	5	85	U	117	u
22	^V	54	6	86	V	118	v
23	^W	55	7	87	W	119	w
24	^X	56	8	88	X	120	x
25	^Y	57	9	89	Y	121	y
26	^Z	58	:	90	Z	122	z
27	^[	59	;	91	[	123	{
28	^\	60	<	92	\	124	|
29	^]	61	=	93	]	125	}
30	^^	62	>	94	^	126	~
31	^	63	?	95	_		
32	{Space}	64	@	96	`		

Appendix B: Catcher Display Settings

The following settings are the recommended starting point for the Catcher Display. Document any deviation from these setting during installation.

Specification	Recommended Settings	Actual Setting at Installation	Adjustments <i>Record settings and dates for changes made after initial installation.</i>
Comm. Port	1 or 2 for all non-Dell computers or Comm. 3 or 4 for Dell computers		
Baud Rate	19200 with 8 data bits and 1 stop bit		
Parity	None		
Format Strings			

Appendix C: Drawing Set

- 60260-501 Catcher Display Kit for PC, for a saw with the computer inside
the PC enclosure.
- 90503 PC enclosure for *Cyber A/T* saw

Drawings are inserted at the back of this manual.

Appendix D: Parts List

TS Enc. 60122 KIT	PC Enc. 60182 KIT	QTY	Description	Part Number
	Includes All	1	CATCHER DISPLAY KIT, 230V, FOR COMPUTER INSIDE PC ENCLOSURE	60260KIT
✓	✓	1	INST. MANUAL CYBERSAW CATCHER DISPLAY INSTALL	001057
✓	✓	4	C'SCW, SKTHD, 8-32X3/4	326065
✓	✓	2	C'SCW, SKTHD, 3/8-16X1	326261
✓	✓	4	WSHR, LCK, #8, TYP. M	364022
✓	✓	2	WSHR, LCK, 3/8 (EXP)	364042
✓	✓	30 ft	WIRE, 16, MTW, COLOR=RED	508006
✓	✓	1	ENCLOSURE, MSSG-DISPLAY, ENC70000, (RED LION)	509730
	✓	1	CABTITE, GRMMT, KT6, 0.24-0.28, 1826490000 (WDMLLR)	511762
	✓	1	CABTITE, GRMMT, KT6, 0.39-0.43, 1826530000 (WDMLLR)	511764
✓	✓	2	RELAY, MODULE, 010011.17,RB122AR, 110V- AC/DC (ENTR)	514186
✓		1	TERM, BLCK, 115116.07, FLD-FLD(ENTR)	518223
✓		1	ENCLSR, PB, E-1PBGX, 22M, 1HL (HOFMN)	519308
	✓	2	MOUNTING BRACKET	60031
✓		1	CYBER, 2001, PENDANT, ELE, ASSY, 230V, US	60122-502
✓		1	CYBER, 2001, MSG, DSPL, ELE, ASSY,230V,US	60122-503
	✓	1	CATCHER DISPLAY, ASSY, PENDANT, ELEC, ASS	60182-502
	✓	1	CATCHER DISPLAY, ASSY CATCHER DISPLAY	60182-503