

HEIDELBERG

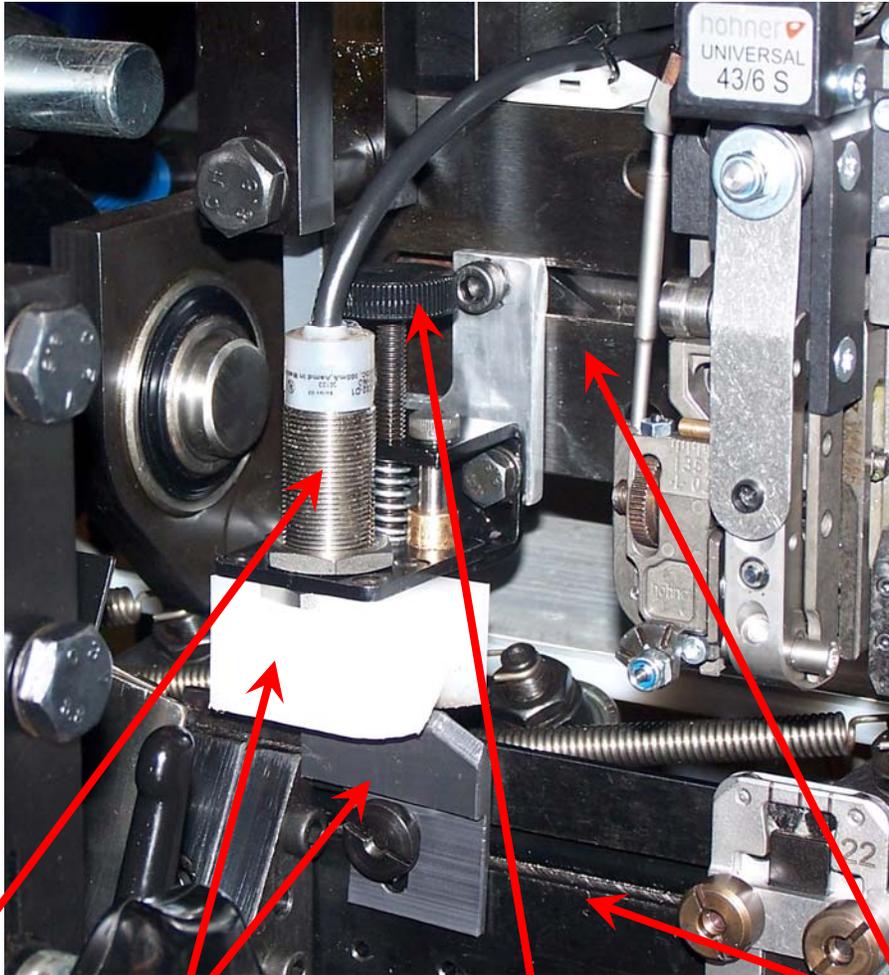


ST90 SADDLE STITCHER
TP10564
MISSING STITCH
INSTALLATION MANUAL

MISSING STITCH INSTALLATION GUIDE

OVERVIEW

The Missing Stitch option is an add-on to the ST-90 saddle stitcher. This unit mounts to the stitch head bars so that the sensor sees each stitch per book and compares it to a register in the PLC. If the two counts don't match the book is rejected. Below is a picture of the missing stitch unit assembly.



Sensor

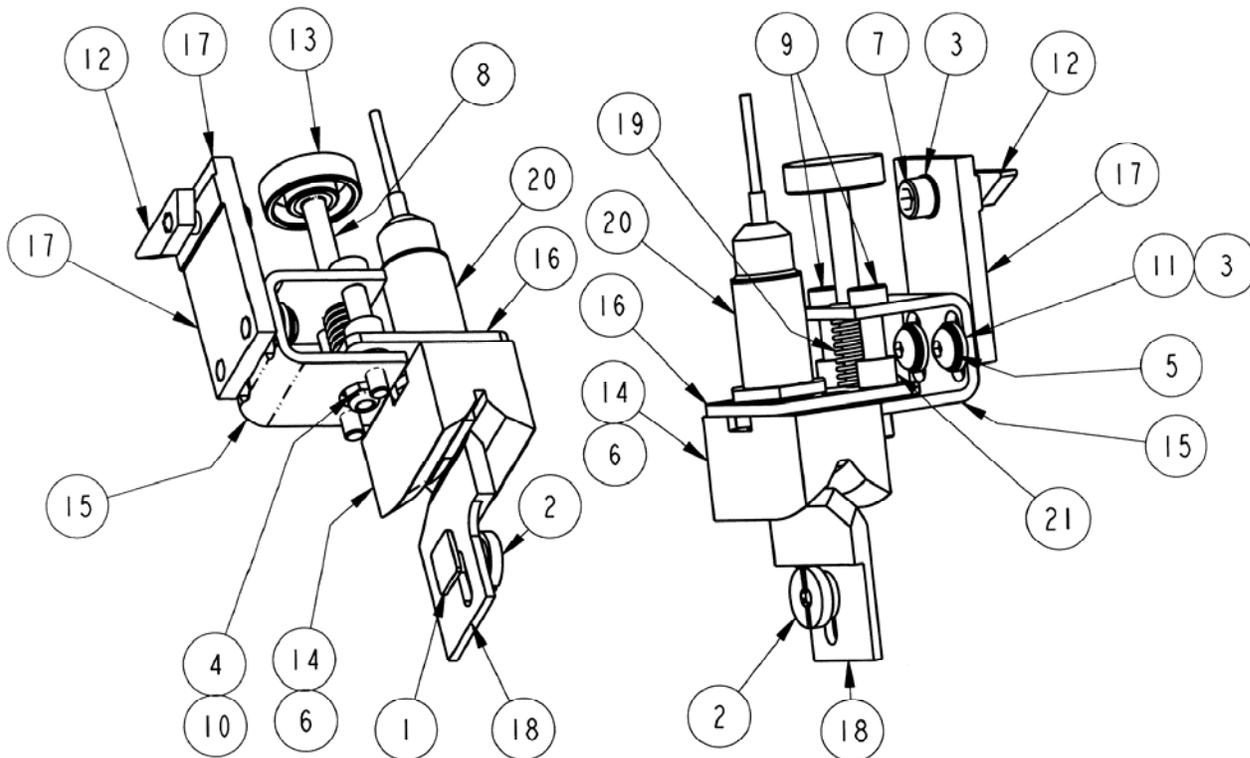
Guide Blocks

Height Adjustment Screw

Mounting bars

The sensor is adjusted by the height adjustment screw; this allows the sensor and the upper guide block to be adjusted to allow for different book thicknesses. The lower guide block is to help stabilize the book and get the stitch in position so the sensor can see each stitch.

PARTS LIST – MISSING STITCH SENSOR ASSEMBLY



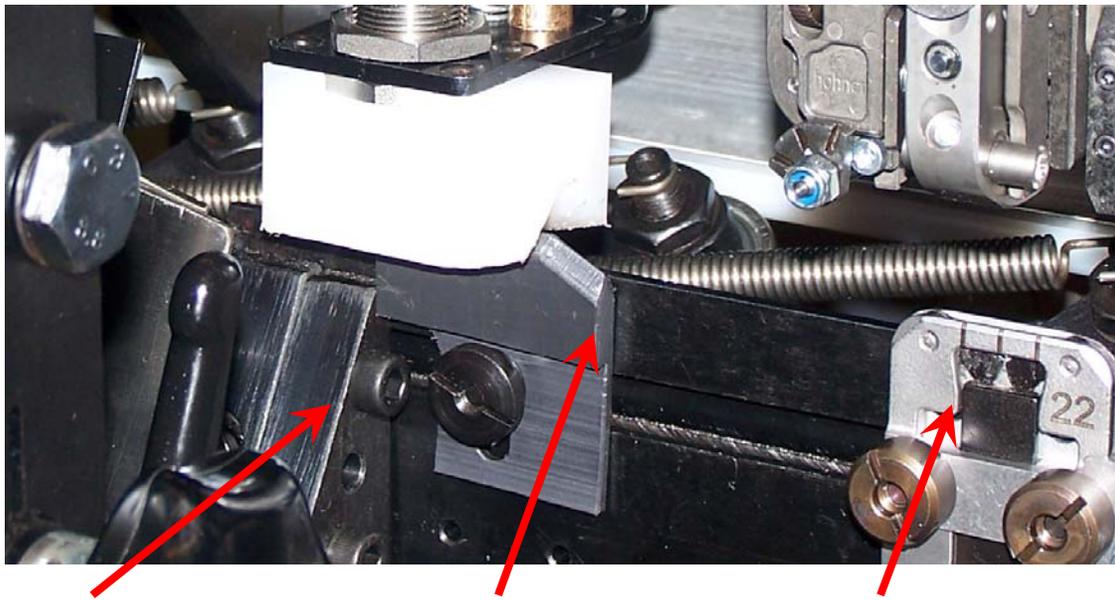
FK5000997			
ITEM #	PART DESCRIPTION	PART #	QTY.
1	BOLT-CLINCHER	013-0302	1 -
2	NUT	013-0304	1 -
3	WASHER-LOCK M06 INT TOOTH †	260-304-09-00	3 -
4	NUT-LOCK,ELASTIC STOP M5 REG	260-309-06-00	1 -
5	SCREW-BUT HD CAP M6X10 BLK	261-053-02-00	2 -
6	SCREW-FLT HD SOC M3X8 BLK	261-515-08-00	4 -
7	SCREW-SOC HD CAP M6X16 BLK	262-320-07-00	1 -
8	SCREW-SOC HD CAP M6X55 BLK	262-320-16-00	1 -
9	SCREW-SHLDS SOC 6DXM5X25	262-497-02-00	2 -
10	WASHER-PLAIN M4 4.3X9X0.8 BLK	262-709-02-00	1 -
11	WASHER-PL. M6 6.4X12.5X1.6 BLK	262-709-04-00	2 -
12	NUT- BRUSH,STAPLER	275-416-01-00	1 -
13	CAP-KNOB M6	34062	1 -
14	BLOCK-MOUNTING, STITCH SENSOR	FK3002196	1 -
15	BRACKET-MOUNTING, STITCH SENSOR	FK3002197	1 -
16	PLATE-MOUNTING, STITCH SENSOR	FK3002198	1 -
17	PLATE-MOUNTING STOP STITCH	FK3002223	1 -
18	PLATE-MISSING STITCH	FK3002225	1 -
19	SPRING-COMP., 9.14x1.02x25.4	FK7000492	1 -
20	SENSOR-PROXIMITY	FK7002035	1 -
21	BRG-SLEEVE, METRIC 06X10X10	FK7002104	2 -

PARTS LIST – MISSING STITCH OPTION

MODEL: FK5000951		DATE: 12-Aug-09	
DESCRIPTION: ASSY- OPTION MISSING STITCH		REV: 12-Aug-09	
ASSEMBLY: FK5000951		PRINTED: 13-Aug-09	
		MASTER PARTS LIST	
ASSEMBLY LEVEL		U/M = FT, OZ, EA, RL	
SEQ	1 2 3 4 5 6 7		
NO.	COMPONENT	DESCRIPTION	QTY. REQD. U/M
1	FK5000951	ASSY- OPTION MISSING STITCH	
2	FK5000997	ASSY- MISSING STITCH SENSOR	1 EA
3	24322	ANCHOR- WIRE	4 EA
4	30986	WIRE- TIE	10 EA
5	260-659-01-00	STRAIN RELIEF- CABLE PG9	1 EA
6	TP10564	MISSING STITCH OPTION- INSTALLATION MAN	1 EA

INSTALLATION PROCEDURE

- 1) Mount lower guide block (ITEM# 18) using stud and nut (ITEM# 1 & 2) to the clincher mounting bar as shown below. NOTE: the top edge of the lower guide block should be in line with the top of the clincher. Left side of lower guide block should be flush against the frame.

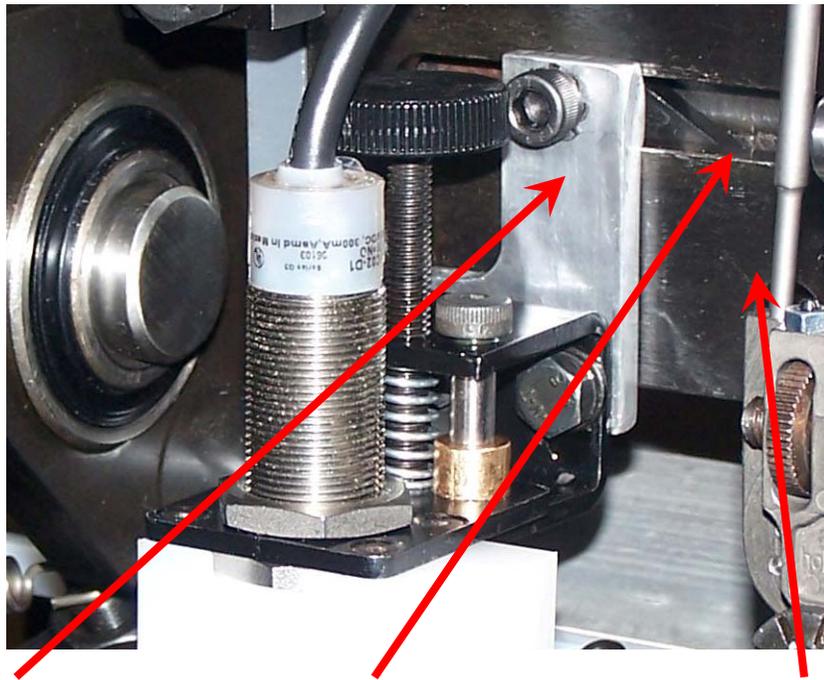


Frame

Lower Guide Block

Clincher

- 2) Mount missing stitch sensor assembly on to the stitch head mounting bar. NOTE: mounting plate rib (ITEM# 17) must completely set into mounting groove for proper alignment (as shown below). Location of assembly should be as far left as possible, left side of mounting plate should rest against the head of a socket head screw on the stitch head mounting bar.

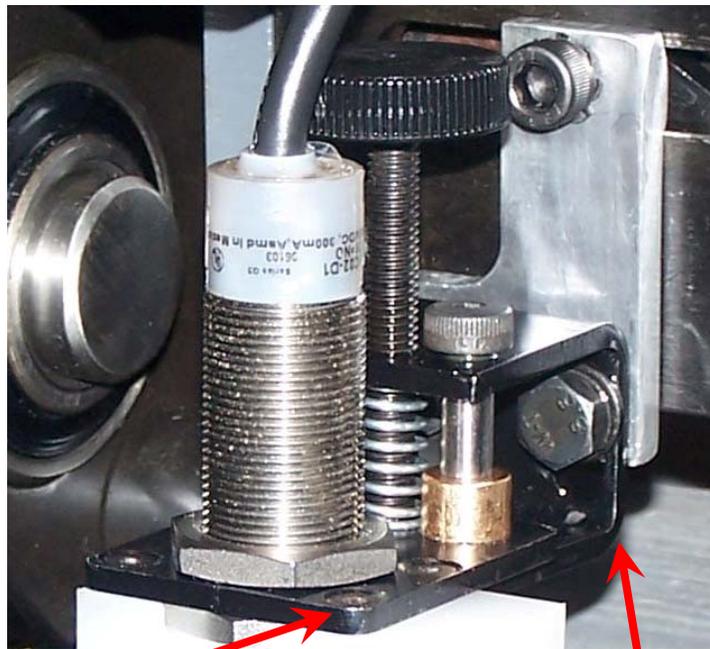


Mounting Plate

Mounting Groove

Stitch Head Mounting Bar

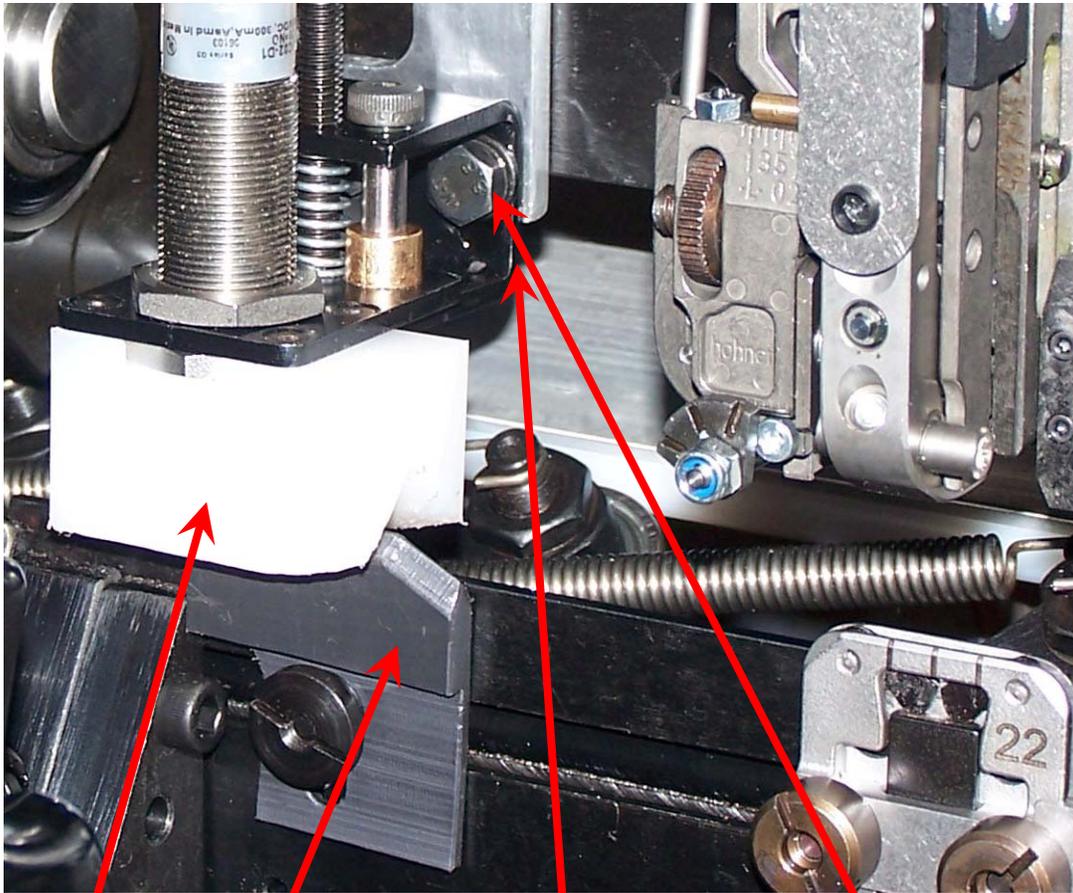
3) Adjust sensor height adjustment knob so that the sensor plate (ITEM# 16) is in its lowest position, flush against the inside of bracket (ITEM# 15) as shown below.



Sensor Mounting Plate

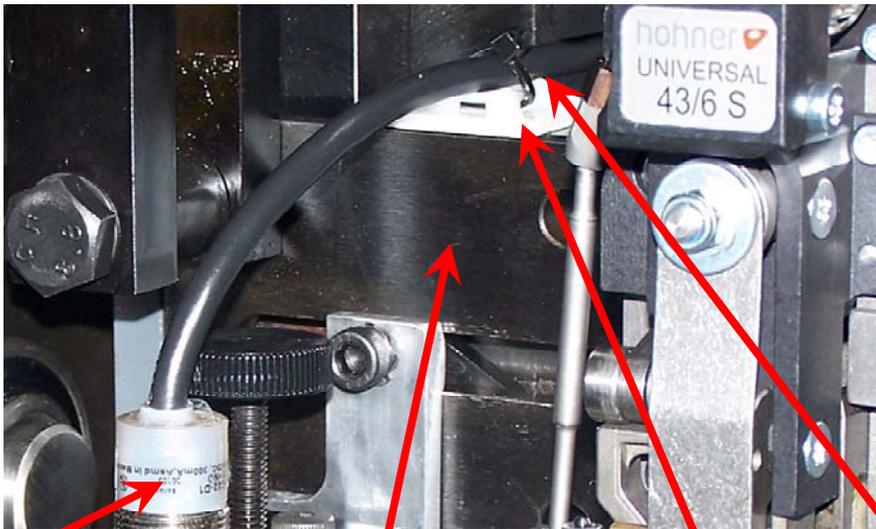
Mounting Bracket

4) Adjust mounting bracket (ITEM# 15) so that the upper guide block (ITEM# 14) is approximately 5mm above the lower guide block (ITEM# 18) and the two guide blocks are parallel. Tighten both button head screws (ITEM# 5) to secure bracket.



Upper Block Lower Block Mounting Bracket Button Head Screw

5) With sensor in lowest position, attach cable anchor to the top of the stitch head mounting bar above the missing stitch sensor attach cable to the anchor with wire tie. Then attach three more anchors as shown, run cable under shaft and attach to anchors with cable ties. NOTE assure that cable doesn't rub against the corner of bar as cable transitions from top to side of bar. Wire tie sensor cable to and follow the stop stitch solenoid as it goes down the stitcher frame, loops under frame and follows cables toward the main electrical enclosure. NOTE assure that the cable doesn't come in contact with the corners of the stitcher frame as it loops under it. See pictures on following pages.

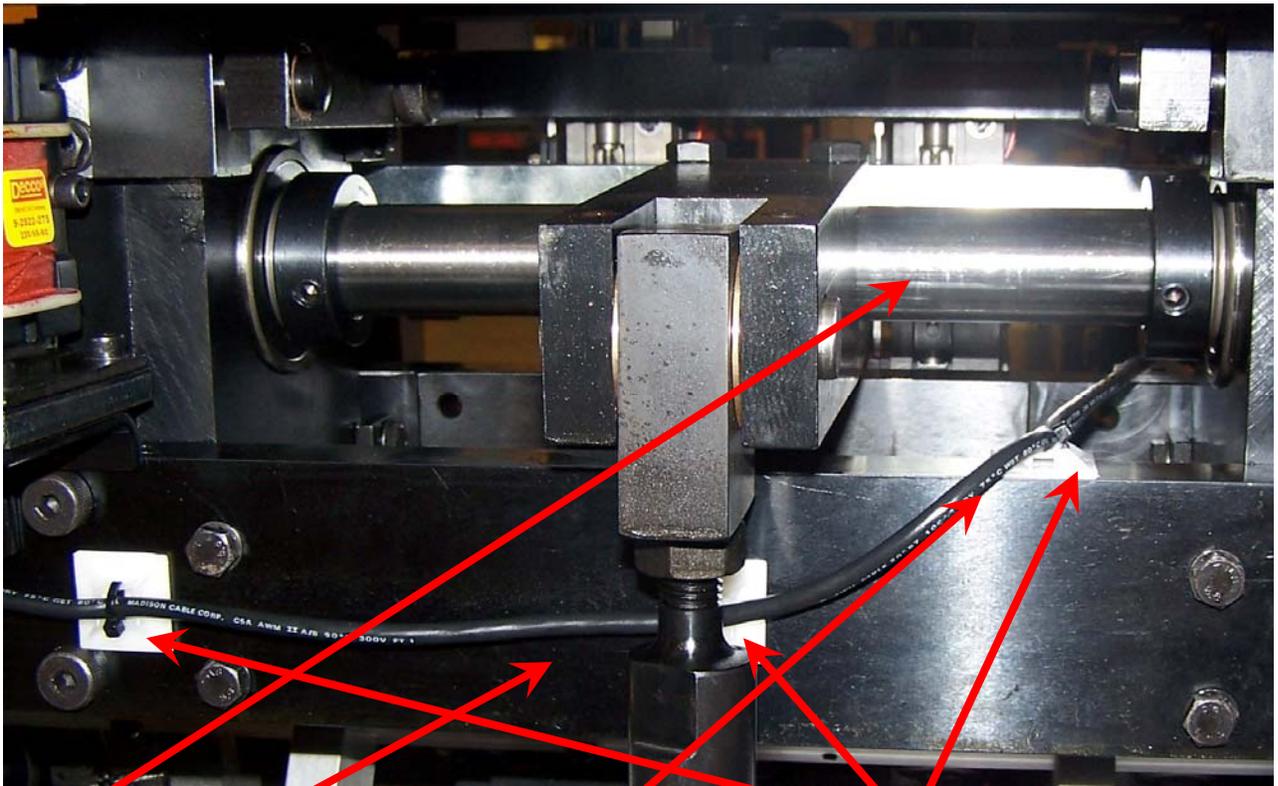


Sensor

Stitch Head Mounting Bar

Anchor

Wire Tie

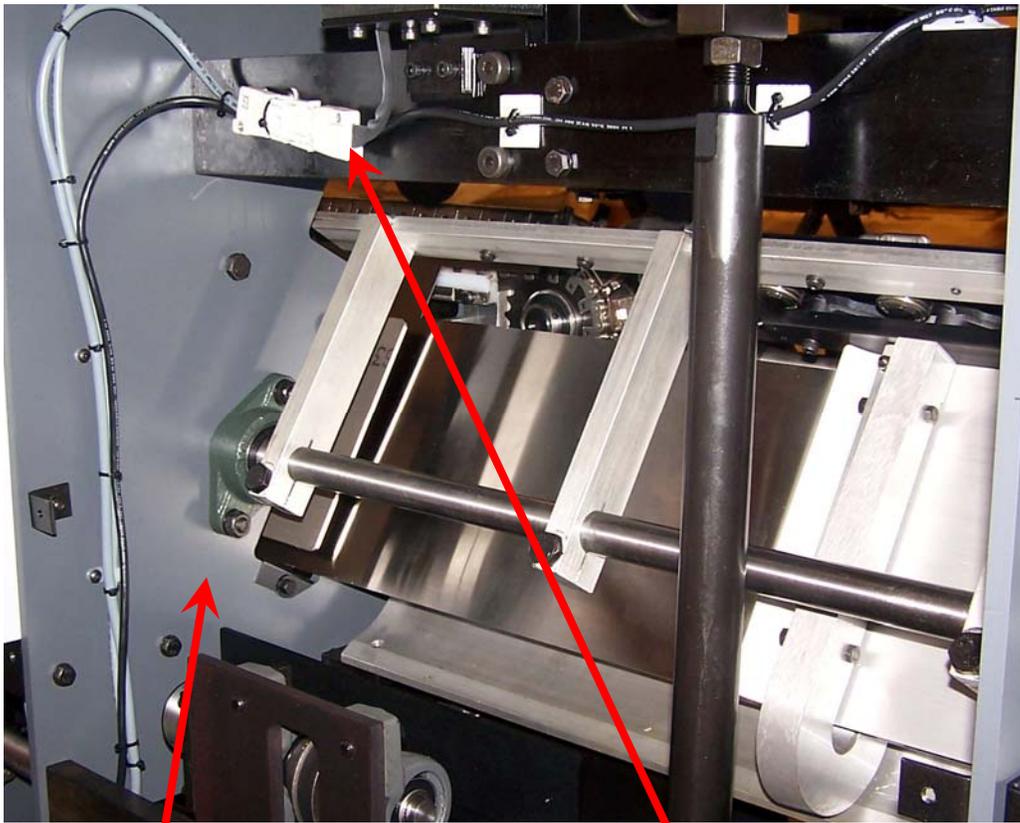


Shaft

Bar

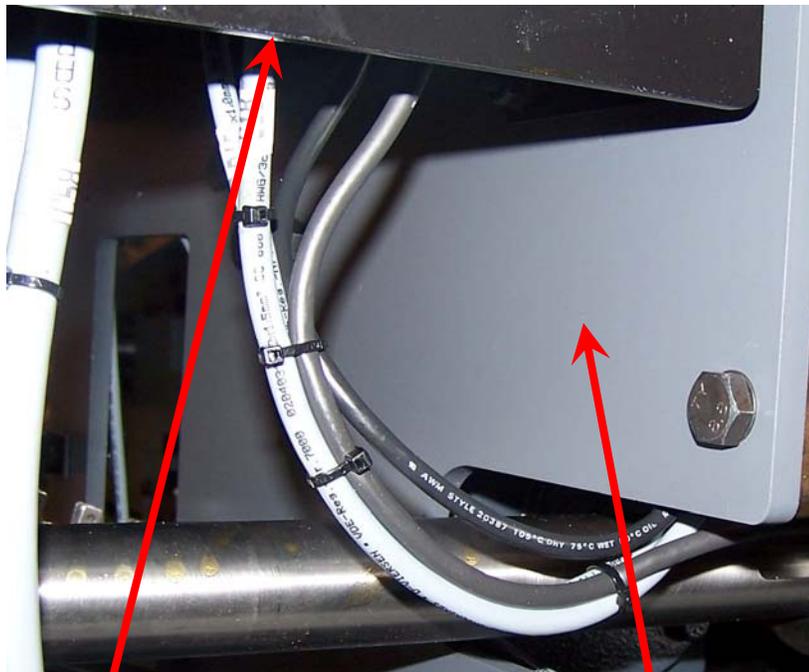
Transition Point

Anchors and Wire Ties



Stitcher Frame

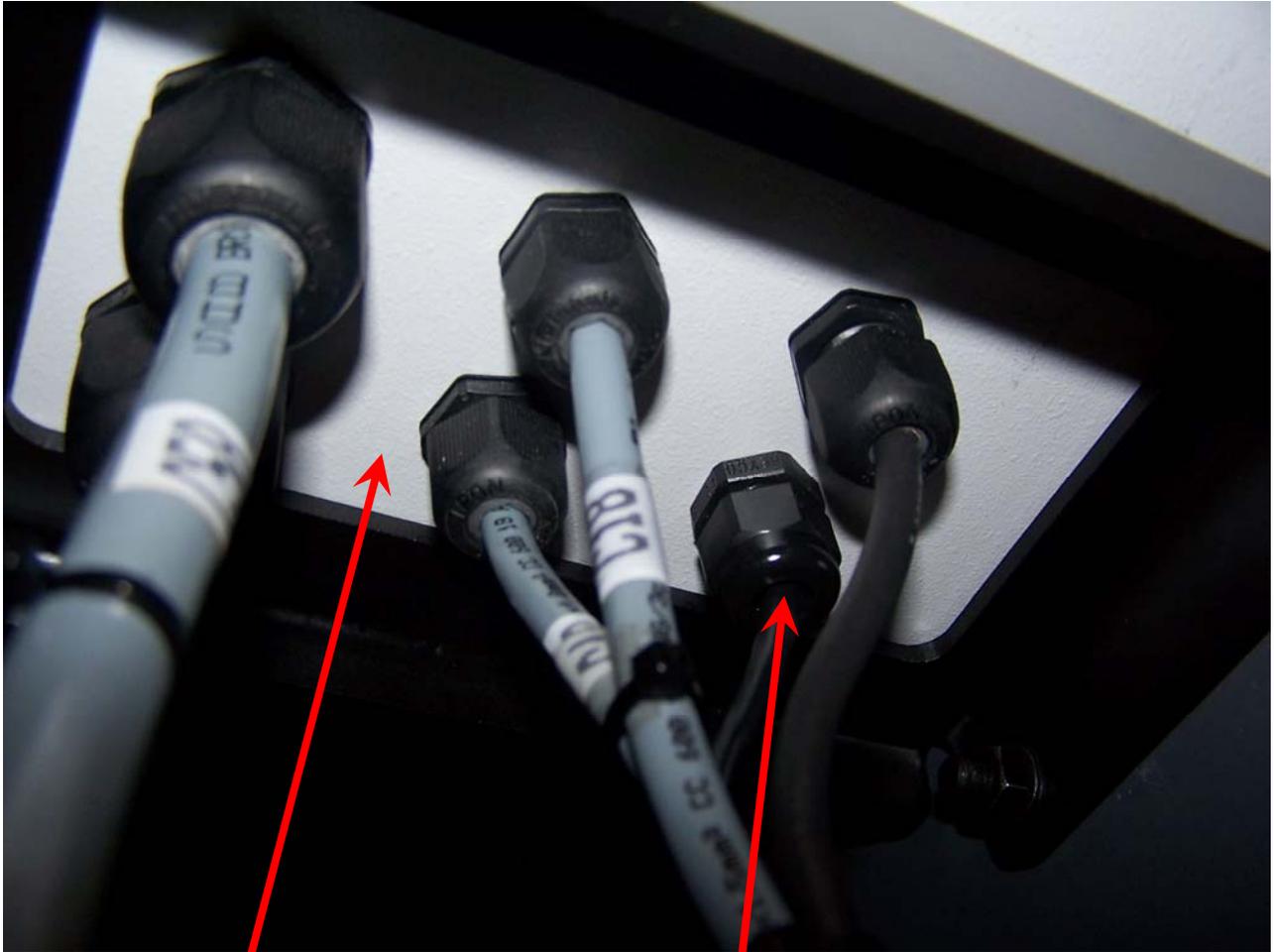
Stop Stitch Solenoid Connector



Main Electrical Enclosure Bracket

Stitcher Frame

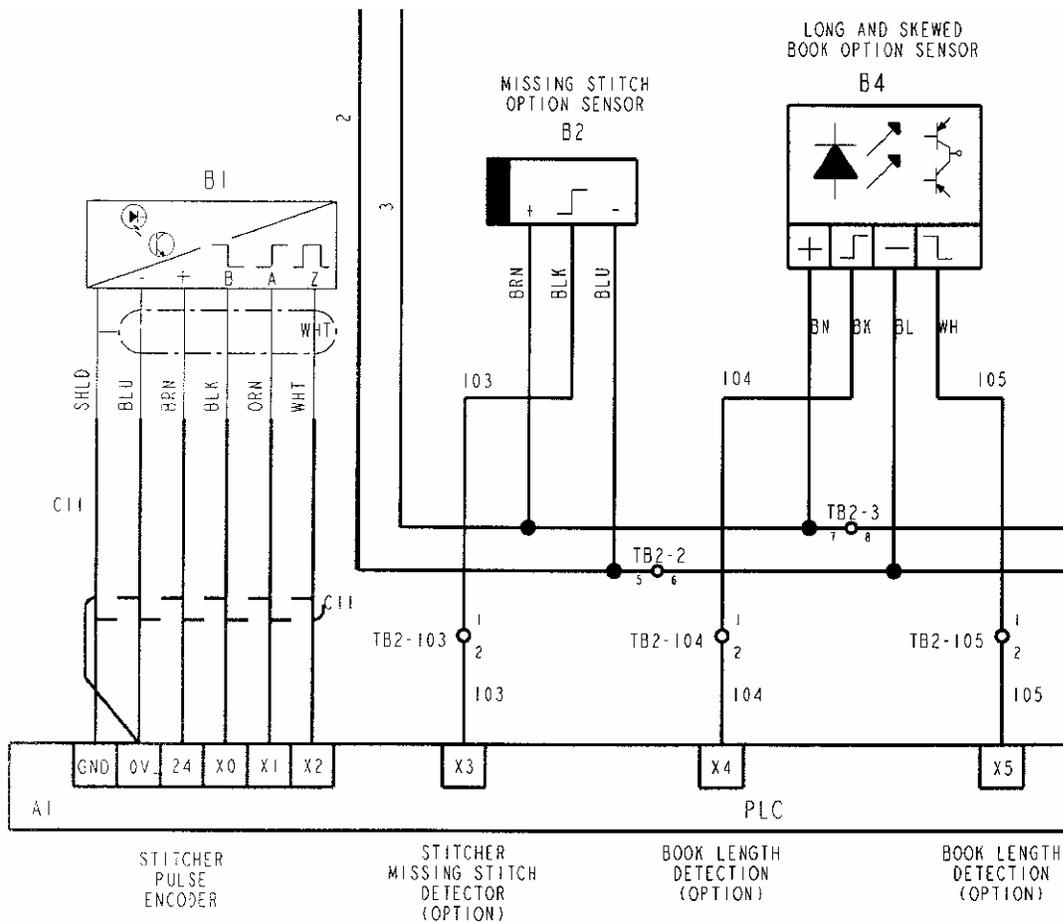
- 6) The hole plug in the bottom far right corner of the main electrical enclosure will need to be removed and replaced by the cable strain relief. Run cable through the strain relief and tighten strain relief around the cable. Remove the lower wire channel cover, to run cable in the channel.



Main Electrical Enclosure

Cable Strain Relief

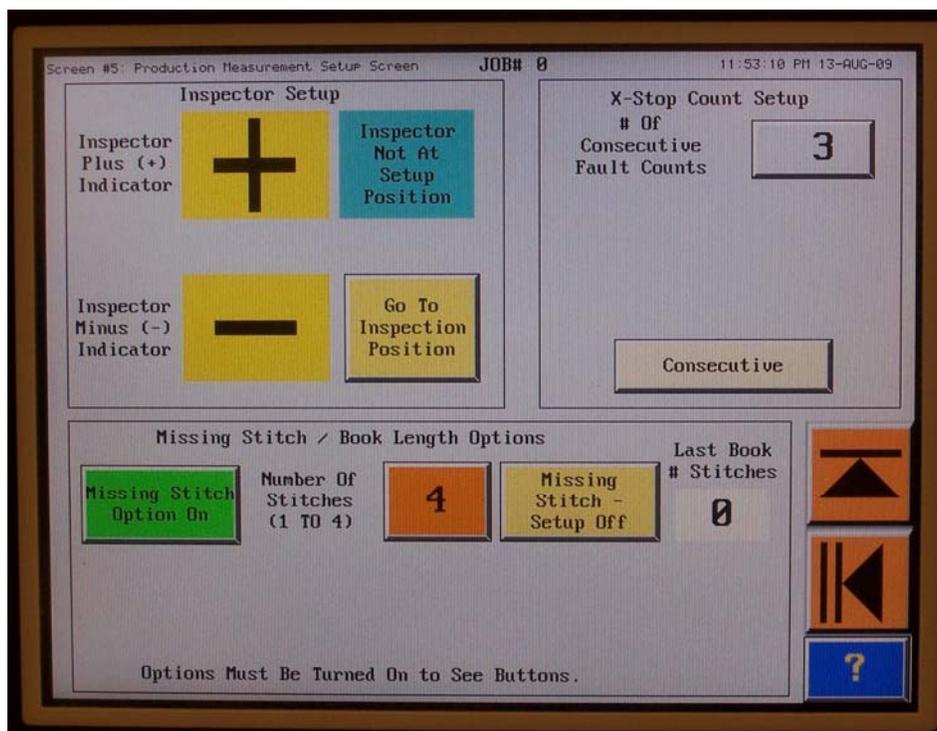
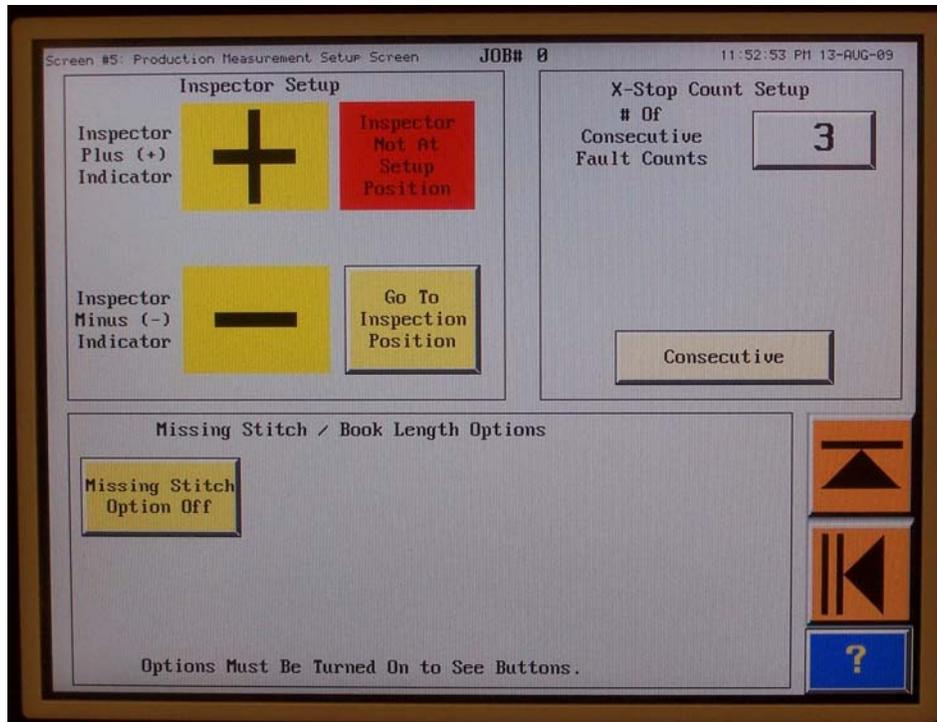
- 7) Assure that the ST-90 machine is powered down before wiring in the sensor into the terminal block in the main enclosure. Strip back the cable jacket by 6 to 8 inches. The brown wire attaches to the terminal block circuit number 3. The blue wire attaches to the terminal block circuit number 2. The black wire attaches to the terminal block circuit number 103. See circuit schematic on next page.



- 8) Close up wire channel and the main enclosure. Power up ST-90, the sensor LED should be green at this time, if not raise sensor up by loosening the button head screws, lifting sensor until it just turns green then retighten screws. Go to interface troubleshooting screen and look at X3 input. It should show red until the sensor sees a piece of steel then it should show green.
- 9) To activate the Missing stitch in the program, go to the Heidelberg service screen and press the missing stitch button and enter password 45365 and press enter, the missing stitch button should now be green.

OPERATIONAL PROCEDURES

- 1) All other normal machine setups should have already taken place before setting up the Missing Stitch Detector.
- 2) To turn on or off the missing stitch inspection, go to the Production Measurement Setup Screen and press the Missing Stitch Option button in the Missing Stitch / Book Length Options area. When the button is green the rest of the Missing Stitch control displays and the fault count displays on the Production Screen.



- To set the Missing stitch, press the orange button and set the amount of stitches per book that is going to be set up on the machine. The Missing Stitch setup button allows for an audible sound ever time the sensor picks up a stitch or just use the built in LED on the sensor casing to set the sensor height.

- 4) The Last Book Number of Stitches readout, displays the amount of stitches read on last book through sensor. This can be use to watch the sensor count readings to make sure sensor was setup correctly.
- 5) To setup the Missing Stitch assembly, set machine to make ready position 4 or 5 or degree angle 0 or just jog machine to where the shuttle fingers are just ready to start to close. Slide a sample book (with stitches in the spine) onto the saddle and slide through the Missing Stitch assembly. Adjust the adjusting knob to move the upper guide block up and down to get a consistent on/off indication from the sensor.
- 6) NOTE: The goal is to get the sensor as close to the passing stitches as possible with out creating too much restriction of the book as it passes in between the two guides. Also on thin books assure that the sensor turns off right away after a stitch leaves the sensor field. If not the sensor must be adjusted up so that the sensor is only influenced by the stitch.