

MiTek Machinery

Service Bulletin

Product(s)
Affected *Cyber® A/T Saw*
Description Installing an Angled-Fitting Encoder
Date 7/27/2004



MiTek
301 Fountain Lakes Industrial Dr.
St. Charles, MO 63301
Phone (800) 523-3380
Fax (636) 328-9222
www.mii.com

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Introduction

This Service Bulletin is part of *Mitek[®]* part number SB150KIT. The contents of SB150KIT are listed in Table 1. Follow these instructions to install the enclosed angled-fitting encoder onto the *Cyber[®] A/T* saw.

Table 1: Parts Included in SB150KIT

Quantity	Part Number	Description
1	504460	Angled-fitting encoder with cable
1	SB150	Service Bulletin document

The last page of this document lists spare parts related to encoders. It is recommended that you keep at least that page of this Service Bulletin in your saw's *Operations and Maintenance Manual* for future reference.

If there are any questions, please have your electrician call *Mitek Machinery Division Customer Service* at 800-523-3380.



If the encoder is the angulation encoder for quad 5 or quad 6, you must modify the guard to fit over the angled-fitting encoder prior to installing the guard. Refer to the end of this Service Bulletin for modification procedures.

All spare parts related to the encoder are listed at the end of the document also.

Procedure

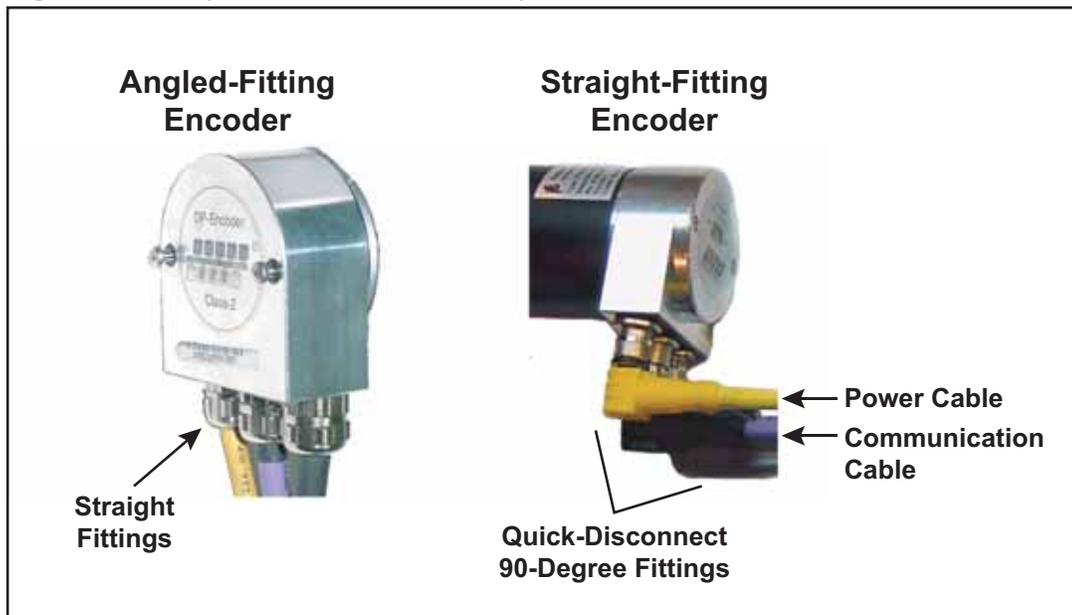
Preparing the Saw

1. Identify the defective encoder.

The saw's computer monitor will indicate when an encoder is off-line. On angled-fitting encoders, the indicator light (on the encoder) labeled ERR for error indicates if the encoder has power. The indicator light labeled STA for status indicates if the computer is communicating with the encoder.

2. Refer to Figure 1 to identify the encoder style of the faulty encoder. Notice the angled fitting has a 90-degree quick-disconnect on the cable.

Figure 1: Identify the Current Encoder Style on Your Saw



3. Configure the saw so you can reach the encoder. Use the buttons on the saw's computer screen to move saw components. See Figure 2.
 - a) Move the carriage away from the stationary end to allow movement of the horizontal hold-down and the horizontal infeed conveyors.
 - b) Move the horizontal hold-down and horizontal infeed conveyor out of the way.
 - c) Position the saw blades in their home position (90 degrees).
 - d) If replacing an angle encoder, raise the centerline of the applicable quadrant up so you can reach it.

Figure 2: Preparing the Saw



DANGER	
	<p>All electrical work must be performed by a certified electrician and shall conform to all national electrical codes.</p> <p>Do not turn on electrical power until you have read the entire procedure.</p> <p>Follow approved lockout and tagout procedures (OSHA 29 CFR 1910.147).</p>

4. Turn off all power to the saw.
 - a) Engage an E-stop.
 - b) Turn off and lockout and tagout all power to the network and saw.
5. Remove any saw blades that may prevent you from easily reaching the encoder. Refer to the *Maintenance* chapter of the *Cyber A/T* manual for blade removal instructions.

Removing the Faulty Encoder



In the following procedure, the fastening hardware will vary for the different guards.

1. Remove the fastening hardware from the encoder guard. One example is shown in Figure 3.
2. Disconnect the defective encoder's electrical supply.
 - a) For **straight-fitting** encoders:
 - 1) Disconnect the encoder's power cable from the power tee shown in Figure 4.
 - 2) Disconnect the encoder's Profibus data cable from the busline.
 - b) For **angled-fitting** encoders:
 - 1) Remove the power cable using the quick-disconnect at the rear of the encoder housing.
 - 2) Disconnect the Profibus data cable at the quick-disconnect at the rear of the encoder housing.

Figure 5: Quick-Disconnect on Angled-Fitting Encoders



Figure 3: Encoder Guard

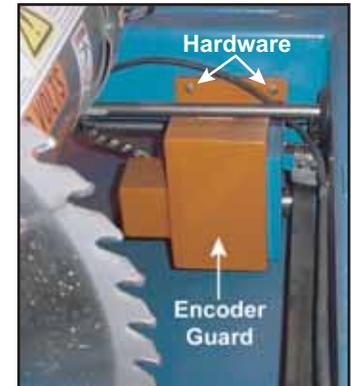
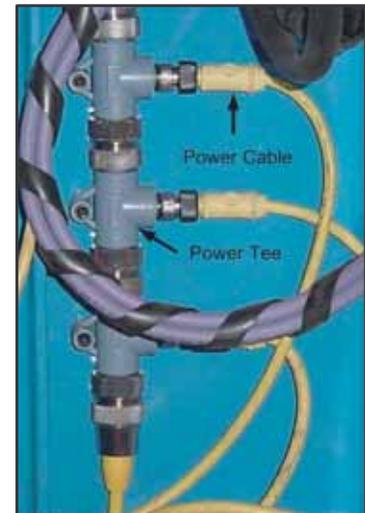
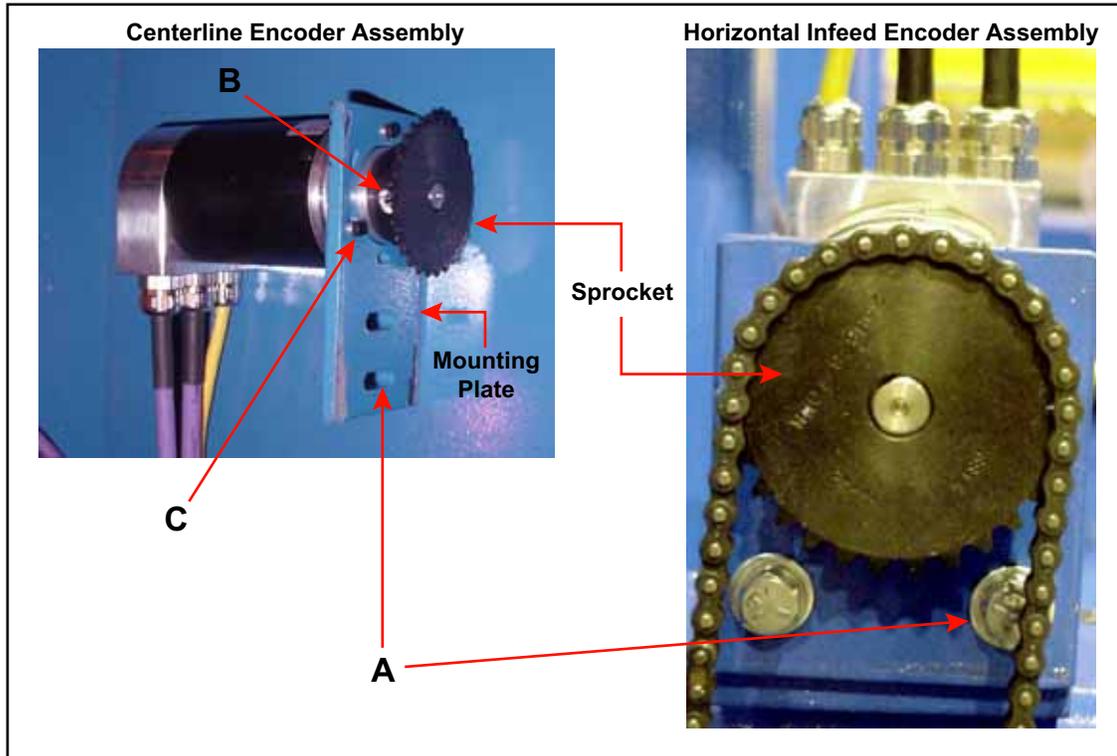


Figure 4: Disconnecting Straight-Fitting Encoders



3. Remove the defective encoder from the saw. Perform the following steps while referring to Figure 6.

Figure 6: Removing the Encoder Assembly



- a) Remove the mounting bracket screws labeled “A” in Figure 6.
- b) Disconnect the sprocket (or coupling) from the mounting plate by removing the set screws labeled “B”.
- c) Remove the screws labeled “C” with a 10-mm socket wrench while holding onto the encoder so it doesn’t fall.
- d) Discard the defective encoder unless it is covered under warranty.



If your saw frame is less than one year old, the encoders should be covered under warranty. DO NOT DISCARD THE ENCODER IF IT IS UNDER WARRANTY. Contact the MiTek Customer Service Department to obtain instructions on returning the defective encoder to receive warranty credit.

- e) Determine which other parts to keep:
 - 1) If you are replacing a straight-fitting encoder, you may also discard the cable and use the quick-disconnect cable that comes with the replacement encoder.
 - 2) If you are replacing an angled-fitting encoder, it is easier to use the same cable that was previously used.

Installing the Replacement Encoder

1. Remove the encoder housing cover on the replacement encoder by removing the two (2) screws shown in Figure 7.

Figure 7: Housing Cover



2. Set the correct DIP switch address according to the following steps. Refer to Figure 8 for a straight-fitting encoder and Figure 9 for an angled-fitting encoder.

Figure 8: Setting the Address for a Straight-Fitting Encoder

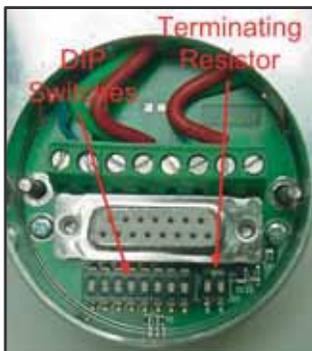
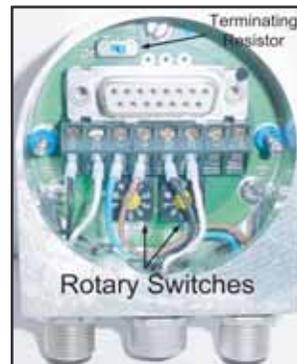


Figure 9: Setting the Address for an Angled-Fitting Encoder



The address on the replacement encoder must match the address used on the encoder it is replacing! If the address is set incorrectly, the saw will not function properly. Refer to your electrical drawing if you do not know the address that was used on the encoder being replaced.

- a) When replacing a straight-fitting encoder with an angled-fitting encoder, refer to Table 2 and Table 3 while following these steps.
 - 1) Note the DIP switch settings on the faulty encoder.
 - 2) Find the address that the straight-fitting encoder was using in the DIP SWITCH column in Table 2.
 - 3) Note its ENCODER ADDRESSES number in the left column.
 - 4) Find that number in the ADDRESS column in Table 3.
 - 5) Set the replacement encoder rotary switches to the address indicated in the ADDRESS column in Table 3.
 - 6) Set the terminator resistor to the off position. It is the position opposite of the side marked ON.

- b) When replacing an angled-fitting encoder with an angled-fitting encoder, follow these steps.
 - 1) Note the address on the rotary switches of the defective encoder.
 - 2) Set the address on the replacement encoder to match the defective encoder.

Table 2: Straight-Fitting Encoder Addresses

Address (NOT encoder #)	Dip Switch Positions								Terminating Resistor	
	1	2	3	4	5	6	7	8	1	2
2	0	1	0	0	0	0	0	0	0	0
3	1	1	0	0	0	0	0	0	0	0
4	0	0	1	0	0	0	0	0	0	0
5	1	0	1	0	0	0	0	0	0	0
6	0	1	1	0	0	0	0	0	0	0
7	1	1	1	0	0	0	0	0	0	0
8	0	0	0	1	0	0	0	0	0	0
9	1	0	0	1	0	0	0	0	0	0
10	0	1	0	1	0	0	0	0	0	0
11	1	1	0	1	0	0	0	0	0	0
12	0	0	1	1	0	0	0	0	0	0
13	1	0	1	1	0	0	0	0	0	0
14	0	1	1	1	0	0	0	0	0	0
15	1	1	1	1	0	0	0	0	0	0
16	0	0	0	0	1	0	0	0	0	0
17	1	0	0	0	1	0	0	0	0	0
18	0	1	0	0	1	0	0	0	0	0

Table 3: Angle-Fitting Encoder Addresses

Address (NOT encoder #)	Rotary Switches	
	x10	x1
2	0	2
3	0	3
4	0	4
5	0	5
6	0	6
7	0	7
8	0	8
9	0	9
10	1	0
11	1	1
12	1	2
13	1	3
14	1	4
15	1	5
16	1	6
17	1	7
18	1	8

3. Install the replacement encoder.
 - a) Re-attach the mounting bracket and sprocket (or coupling) to the encoder.
 - b) Replace the encoder assembly in its position and secure the hardware.
 - c) Reconnect all cables.
 - d) If you are replacing a centerline encoder, loop the cables to fit them inside the tube. A centerline encoder and a tube are shown in Figure 10 and Figure 11.
 - 1) Group all encoder cables together and make a loop.
 - 2) Put the loop inside the tube and insert all the fittings through the hole at the bottom of the tube.

Figure 10: Centerline Encoder



Figure 11: Looping the Cable



4. Return power to the saw. Remove the lockout and tagout equipment.
5. Re-calibrate the newly replaced encoder through the Calibration screen on the touch screen. Refer to the *Calibration* chapter in your manual.

Modifying the Guard for Angulation Encoders on Quads 5 and 6

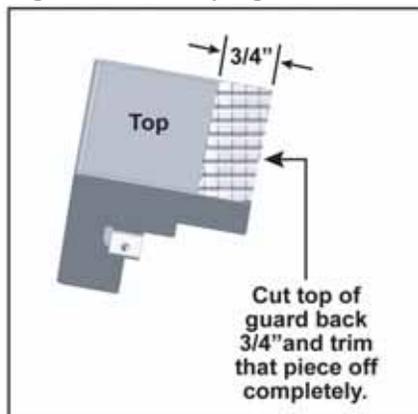


If you prefer to order an angled-fitting guard rather than modifying the existing guard, a new guard can be purchased from MiTek. The part number is listed at the end of this Service Bulletin.

If your angulation encoder guards on quad 5 and quad 6 were designed for the straight-fitting encoders, they need to be modified to fit over the angled-fitting encoders.

To modify a guard for a quad 5 or quad 6 angulation encoder, remove the guard from the saw. Trim the top of the guard back 3/4" and trim that section completely off. See Figure 12. File all sharp edges to prevent a safety hazard.

Figure 12: Modifying the Guard



Spare Parts List (as of March 2004):

508967	Power cable quick-disconnect
508968	Profibus data cable, straight to male
508969	Profibus data cable, straight to female
504460	Angled-fitting encoder with cable
60145-501	Guard for angled-fitting angulation encoders for quad 5 or quad 6

END OF SERVICE BULLETIN