

# TACH LOSS (ARM. RANGE) OPTION ASSEMBLY

## 46S02371-0010 SCHEMATIC 45S02371-0010

DESCRIPTION

This option is one of a series available for Louis Allis Saber DC drives. It consists of components necessary for the detection of tachometer generator malfunction. This option compares scaled motor armature and scaled tachometer voltage levels for its basic operation.

Tachometer malfunctions include, but are not restricted to: loss of electrical connection between the tachometer and the controller; or incorrect polarity of tach connection; or physical deterioration of tachometer output voltage. This Tach Loss option can be used with either the reversing or nonreversing Saber DC drives.

A tachometer bias adjustment is provided by means of a potentiometer (4RH) on the Option Adjust PCB. This bias adjustment

is provided to compensate for increased motor armature resistance voltage drop during periods of motor acceleration.

INSTALLATION

WARNING

REMOVE ALL INPUT POWER TO THE DRIVE BEFORE INSTALLING OPTION COMPONENTS.

See Figure 1. Install the option in the following manner:

1. Install PVC mounting track (L.A. part no. 43T1501-0000) to panel where option is to be mounted, using appropriate hardware.
2. Install option assembly by pressing firmly into mounting track.
3. Using 40-conductor ribbon, fabricate and install a double-ended ribbon

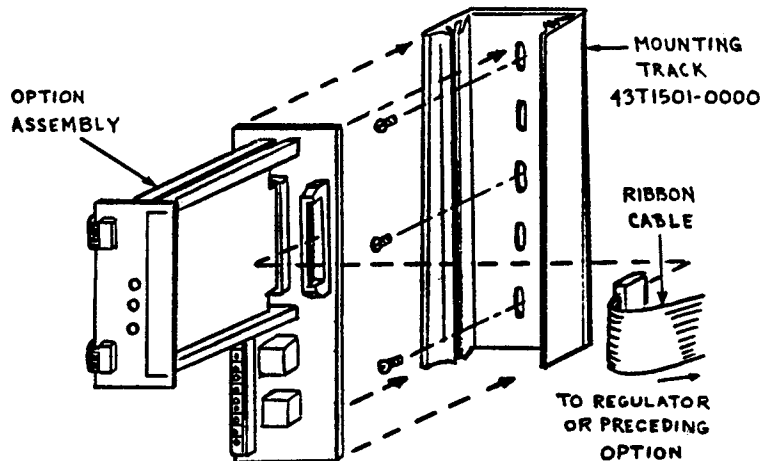


Figure 1.

**CHANGE RECORD**

1	STD-0284	3/1/84	
2	STD-2666	2-3-87	Red

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cable of sufficient length to fit from 12CONN on the right side of the option to 12CONN on the Main PCB in the regulator power cube, or to 12CONN on the left side of a previously installed option.

Cable 12CONN provides the power and signal (scaled tach and armature voltage) interface between this option and the Controller 40 pin data bus.

INTERCONNECTION

See Figure 2. Remove wire 25B from Controller-to-OCS wiring (1TB (16) to STOP push button).

Using 18 gauge wire, make connections as listed below and shown in Figure 2.

FROM	TO
Option I/O PCB, 1TB (10) (or 1TB (14) *)	Controller, 1TB (16)
Option I/O PCB, 1TB (11) (or 1TB (15) *)	OCS, STOP Push Button
Option I/O PCB, 1TB (1)	Controller, 1TB (13)
Option I/O PCB, 1TB (4)	Controller, 1TB (15)

\* These alternate connections must be used together.

ADJUSTMENTS

After installing the option, 4RH may be adjusted to increase the tach bias. Tach bias is necessary to avoid drive shutdown due to higher IR drops during drive acceleration. Tach bias is increased by clockwise rotation of 4RH.

TROUBLESHOOTING

If other options have been installed, troubleshoot them thoroughly before discarding this option as faulty.

1. If the drive fails to start, check 5LED (TRIP) on the Option Adjust PCB. The LED should be on if a tach malfunction exists. If the LED is not lit, disconnect cable 3CONN from the Option Adjust PCB; use a meter to check voltage from pin 4 to pin 11 of the cable connector. A reading of 24VDC indicates a tach malfunction. If the voltage is low, consult the troubleshooting section of the controller instruction manual.

2. If 5LED or the 3CONN voltage indicates a tach malfunction, check the continuity of the tach leads to the Power Cube. The tach leads must be connected to 2TB 20 and 22 for proper drive operation.

3. If the tach leads are good, switch the connections at terminals 20 and 22 and attempt to start the drive.

4. If the drive again fails to start, close the contacts of the nickel switch (ISS) on the Option Adjust PCB by turning the screw fully CW. Caution must be observed, since motor overspeed is possible.

5. If the drive starts, check the tach voltage for the correct magnitude for a known motor speed. Also check the armature voltage signal from 9TP to common (33TP on the Volt/Speed Main PCB, 63TP on Regulator PCB). It should be 9.2 VDC for rated bridge voltage. If the drive still fails to start, check the troubleshooting section of the Controller instruction manual.

6. If the tach output and 9TB voltages are correct, replace the Option Function PCB.

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OPTION RECORDS

After completing installation of this option, insert this instruction sheet immediately behind the front cover of the Controller instruction manual.

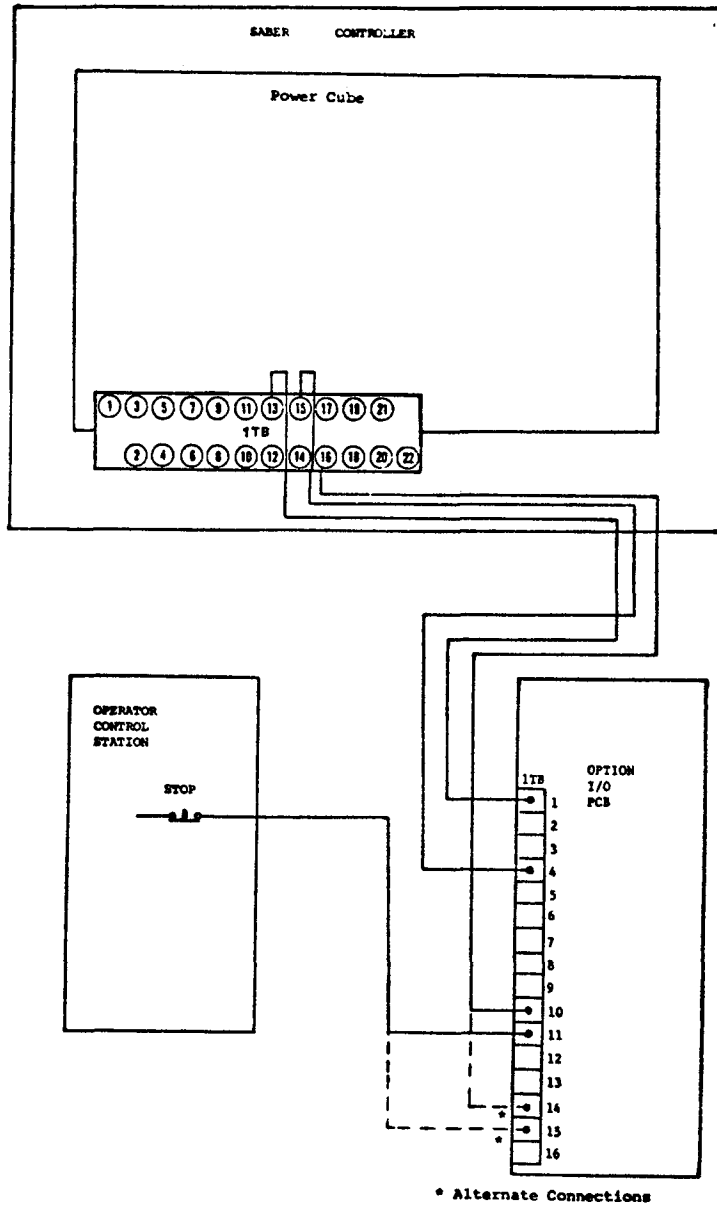


Figure 2. Interconnection Diagram

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