

For use with Saber DC Drives.

**TORQUE REGULATED SPEED FOLLOWER (TRSF)  
OPTION ASSEMBLY  
46S02371-0130 SCHEMATIC 45S02371-0130**

DESCRIPTION

The option is one of a series available for Louis Allis Saber DC drives. It compares an external tension potentiometer feedback signal and current feedback signal to modify the normal speed regulating function by generating current into the speed regulating node. The circuit interaction of this option is limited to 20% of top speed.

The option provides:

- A. Reference supply and connection for customer's external tension pot (10K ohms).
- B. Relay logic ON/OFF control with 115 VAC or 24 VDC interfacing.
- C. A maximum tension pot which will determine the range of external tension pot (2 to 1 ratio).

D. A simple type WK<sup>2</sup> adjustment using voltage follower output signal as the driving force to compensate the system inertia during accel or decel.

E. A sensitivity adjustment pot which sets the gain of the circuitry.

F. A droop adjustment pot which sets the level of droop required.

INSTALLATION

WARNING

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

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

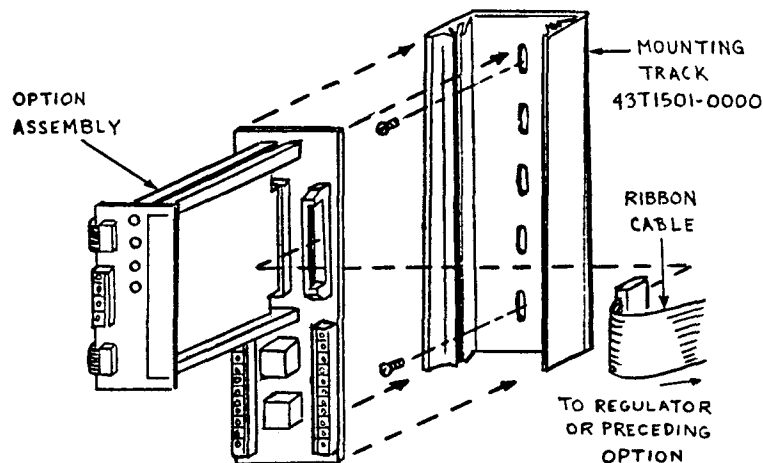


Figure 1.

CHANGE RECORD				DWG. NO. 02Y00025-0068	
1	STD-1381	1/6/82		SHEET 1 OF 3	
2	STD-2666	2-3-82	RR	EFF. 5/11/82 (L)	
3	STD-2718	3-17-82	RR		

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 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 interface between this option and the Controller 40 pin data bus.

#### INTERCONNECTION

This option requires an external 10K ohm tension pot. Wire the pot as follows:

FROM POT	TO I/O PCB
CW	1TB [1]
Wiper	1TB [2]
CCW	1TB [3]

Connect the ON/OFF control signal and install jumpers as listed below:

ON/OFF CONTROL	JUMPERS
115 VAC $\pm 15\%$ between 1TB [4] and 1TB [5]	Not Required
24 VDC $\pm 15\%$ between 1TB [4] (+) & 1TB [5] (-)	Across 4R and 5R on I/O PCB

#### ADJUSTMENTS

1. Set external TENSION pot, MAXIMUM TENSION (1RH), SENSITIVITY (3RH), and DROOP (4RH) to 0%.

2. Set WK2-A (2RH) at 50%.

3. Run the drive and set the external TENSION pot and DROOP (4RH) at desired level.

4. Adjust the SENSITIVITY pot (3RH) to make the drive as sensitive to the loading of the machine as desired.

5. If the Voltage/Current Follower is used on the main drive, adjust WK2-A (2RH) for optimum performance.

#### TROUBLESHOOTING

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

If the desired operation of the option can not be obtained, perform the following troubleshooting steps.

1. With power applied to the drive, measure the following voltages with respect to common, 3TP.

+15 VDC  $\pm 5\%$  at 1TP

-15 VDC  $\pm 5\%$  at 2TP

2. As the external TENSION pot is rotated from 0% to 100%, the voltage at 10TP should vary from 0.00 VDC to -10 VDC  $\pm 10\%$ .

3. Adjust the external TENSION potentiometer for -5.00 VDC at 10TP. With MAXIMUM TENSION (1RH) and SENSITIVITY (3RH) at 0%, measure +5.00 VDC  $\pm 10\%$  at 11TP and -5.00 VDC  $\pm 10\%$  at 12TP.

4. Now turn MAX TENSION (1RH) to 100% and measure +10.000 VDC  $\pm 10\%$  at 11TP.

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5. Turn SENSITIVITY (3RH) to 100%.  
The voltage at 12TP should be equal to  
the maximum swing output voltage of 2MC,  
which is about 14 VDC max.

6. Set the external TENSION pot to  
0%, and run the drive at 50% loading.  
Measure at least -4.00 VDC at 11TP.

OPTION RECORDS

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

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