

## SYNCHRO DEMODULATOR OPTION ASSEMBLY 46S02371-0101 SCHEMATIC 45S02371-0101

### NOTE

This option PCB is also used in custom designed drives. For those applications, disregard the INSTALLATION section of this instructions sheet.

### DESCRIPTION

This option is one of a series available for Louis Allis Saber DC drives. It consists of the components necessary for controlling two synchros.

The function of the Synchro Demodulator option is to generate an analog signal proportional to the angular difference between the rotor positions of two 60HZ, size 5 synchros. The analog signal then can be used to drive a meter display and modify the speed reference signal to the

Saber DC drive in order to control or synchronize the operations of such equipment as machine tools and conveyor belts. The rotor position difference signal can be switched into or out of the speed reference signal by means of the TRIM ON switch.

### 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

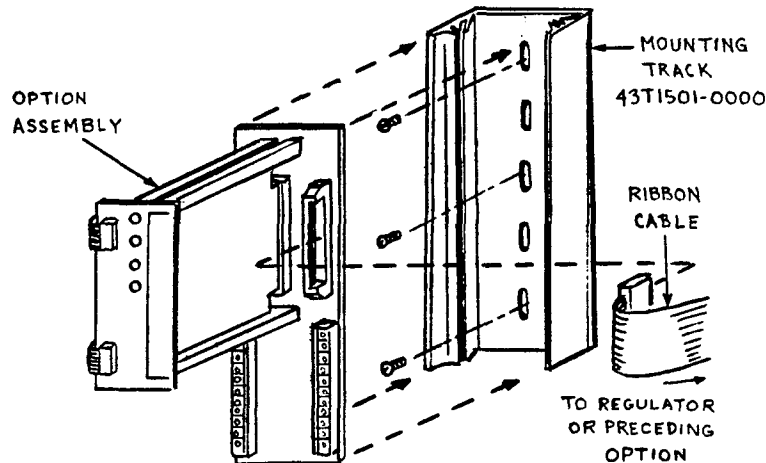


Figure 1.

### CHANGE RECORD

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DWG. NO. 02Y00025-0177  
SHEET 1 OF 3  
EFF. 7/31/83 (N)



option is to be mounted, using appropriate hardware.

2. Install option assembly by pressing firmly into mounting rack.

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

Wire switches, meters, and synchros according to Figure 2.

#### ADJUSTMENTS

After performing the adjustments in the Controller instruction manual, adjust the Synchro Demodulator Option.

1. Adjust NULL METER CAL (11RH) for desired meter sensitivity.

2. Adjust GAIN (12RH) for a  $\pm 10V$  output voltage range at the Synchro Ref Out Trim output, 2TB(21), over the desired angular displacement range for the synchros.

3. With the TRIM ON switch in the OFF (open) position, and the drive running, adjust RATIO (14RH) for the desired drive speed setting.

4. With the TRIM ON switch in the ON (closed) position, adjust POSITION TRIM (13RH) for the desired drive speed setting.

#### TROUBLESHOOTING

Troubleshooting consists of monitoring the output voltage levels as the relative angular displacement of the synchros is changed.

1. Verify that the input switch and synchros are properly wired and that the input signals are getting to the assembly.

2. Refer to the schematic diagram of the Synchro Demodulator Option and check the voltages at 21TP, 12TP, and 14TP. Voltages should vary from positive to negative as the relative angular displacement of the synchros is changed.

3. With the TRIM ON switch in the OFF (open) position, verify that 22TP is at a logic high and that the synchros have no effect on the voltages at 19TP and 20TP.

4. With the TRIM ON switch in the ON (closed) position, verify that 22TP is at a logic low and that the synchros affect the voltages at 19TP and 20TP.

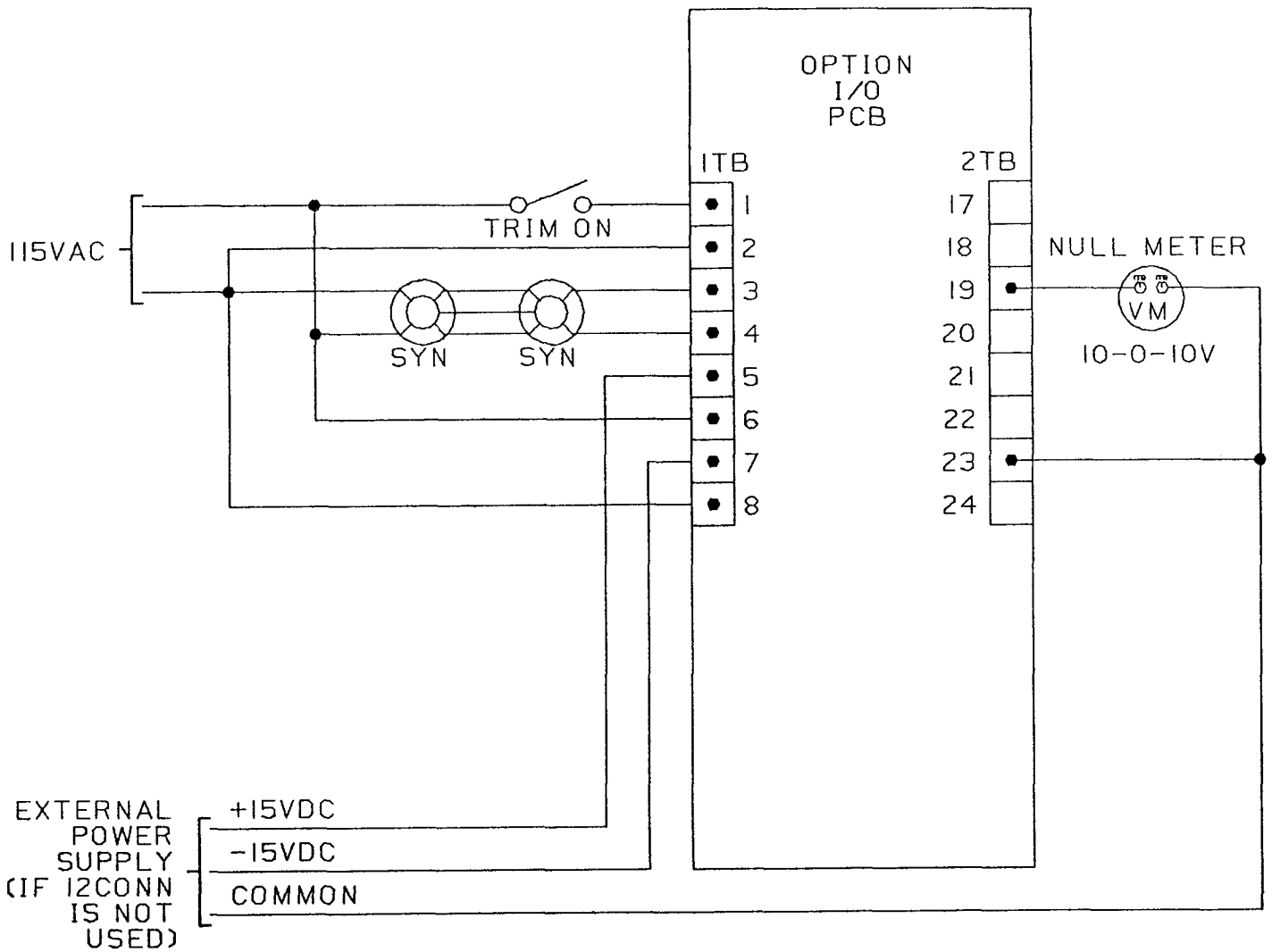
5. If voltages do not vary with changes in angular displacement of the synchros, then replace the Synchro Demodulator Option.

#### MODIFICATION RECORDS

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

DWG. NO. 02Y00025-0177  
SHEET 2 OF 3  
EFF. 7/31/83 (N)





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Figure 2. Interconnection Diagram

DWG. NO. 02Y00025-0177  
 SHEET 3 OF 3  
 EFF. 7/31/83 (N)

