MagneTek Drives & Systems

For Saber 3202
DC Drives

THREAD MODIFICATION
PCB P/N 46S02445-0010

INTRODUCTION

This modification PCB is one of a series available for the Saber 3202 drive. It consists of components necessary for modifying the basic controller for the Thread function. It also includes modification diagrams for the basic Saber 3202 manual.

DESCRIPTION

The Thread modification enables the DC motor to accelerate under LAC control to the speed set by the THREAD ADJUST pot after the THREAD push button on the Operator Control Station (OCS) has been pressed, and continue to rotate at Thread speed until the RUN or STOP push button is pressed. If the STOP push button is pressed, the motor will coast to a stop.

If the drive is non-reversing, when the RUN push button is pressed, normal motor speed will be obtained.

If the drive is the reversing type, when the STOP push button is depressed, the motor will coast to a stop. Normal motor speed may then be obtained by pressing the RUN push button after the motor has come to a complete stop.

In the Thread mode of operation, the Thread output replaces the SPEED pot LAC input reference voltage to the Tach Feedback Speed Regulator or Armature Voltage Regulator (3PC). The THREAD ADJUST setting determines the amount of reference voltage supplied to the

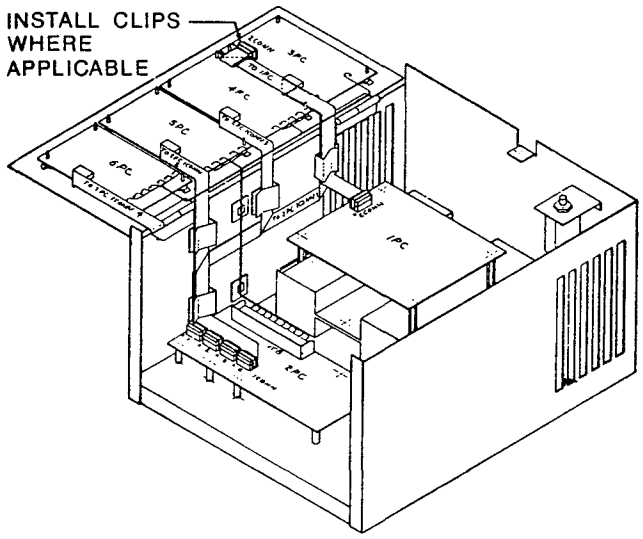

Figure 1. Layout

regulator LAC circuit. Component values for the Thread modification have been selected so Thread speed may be adjusted from zero to 45% of top speed.

This modification circuit operates through the contacts of relay 2CR on the modification PCB. When the THREAD push button is pressed, relay contacts interrupt the SPEED pot reference input and apply the Thread output as LAC input reference, and latch the relay to keep the Thread reference applied until the STOP or RUN push button is pressed to break the latching circuit.

E-STOP: The E-STOP (Emergency Stop) push button is an optional feature. If present, it provides an alternate method

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of stopping the motor. The push button may be mounted either in the Operator's Control Station (OCS) or in any optimum location selected by the user.

DBR: The DBR (Dynamic Braking Resistor) is also an optional feature installed at time of manufacture.

When the STOP or E-STOP push button is pressed, relay switching places the DBR across the motor armature bringing the motor to a very rapid stop. During this period, the motor acts as a generator and the rotational energy is dissipated by the DBR in the form of heat.

INSTALLATION: (See Figure 1)

WARNING

REMOVE ALL INPUT POWER TO DRIVE BEFORE INSTALLING THIS MODIFICATION.

Install this modification PCB into any available modification position (4PC, 5PC, or 6PC) as shown in Figure 1, Layout.

If E-Stop is not present, the customer may install an E-Stop by removing the jumper between 7TB-7 and 7TB-8; and installing a normally closed push button between 7TB-7 and 7TB-8. The E-Stop push button may be supplied by the customer or else ordered from MagneTek Drives & Systems.

INTERCONNECTION

There are many combinations of modifications and optional features available with the Thread modification. The relay logic and interconnection diagrams, as well as the jumpers on 1TB through 5TB, will change according to which combination you have.

To cover all possibilities, each modification kit consists of separate and unique relay logic and interconnection diagrams for each possible combination. The Thread modification kit contains the interconnection diagrams listed below. Place a check alongside the one which pertains to your drive.

IMPORTANT

Use only the diagram which illustrates your drive with BOTH new and previously installed modifications. Remaining diagrams may be set aside for future use or discarded.

☐	THREAD, E-STOP	02Y00025-0309
☐	THREAD, V/I FOLL, E-STOP	02Y00025-0310
☐	THREAD, V/I FOLL, CONTR STOP, E-STOP *	02Y00025-0311
☐	THREAD, CONTROLLED STOP, E-STOP	02Y00025-0312
☐	THREAD, JOG, E-STOP	02Y00025-0327
☐	THREAD, JOG, V/I FOLL, E-STOP **	02Y00025-0328
☐	THREAD, JOG, CONTR STOP, E-STOP **	02Y00025-0330

* This combination cannot be used in a reversing Controller, due to the Anti-Plug PCB.

** To use these combinations in a reversing Controller, the Thread/Jog modification must be used in place of the separate Thread and Jog modifications.

There are two types of interconnections to be made; Internal and External. Internal connections consist of wiring within the Saber 3202 controller. External connections consist of wiring

between the controller and Operator Control Station (OCS). The interconnections are described below.

Internal

Route and dress the ribbon cable as shown in Figure 1 - Layout, and connect it to 2PC-1CONN (position 2, 3, or 4). Install locking clip.

Route and dress the individual wires (A1, A2, A3, A4, A6) as indicated, and connect as described below.

WIRE NUMBER	CONNECT TO
A1	2PC-1TB-8
A2	2PC-1TB-6
A3	2PC-1TB-3
A4	2PC-1TB-9
A6	2PC-1TB-11

IMPORTANT

Both internal and external connections must be completed as illustrated in the Relay Logic and Interconnection diagram for your drive. Installation of multiple modification kits may require the REMOVAL of various terminal jumpers. Always verify that the wire/jumper connections are completed as illustrated in the interconnection diagram specific to your drive before applying input power.

External

Connect the OCS to the controller as shown on the appropriate interconnection diagram.

ADJUSTMENTS

After performing the adjustments in the Saber 3202 manual, adjust the modification PCB as follows:

1. Turn the SPEED pot fully counterclockwise (CCW) and apply power to the drive.

2. Turn the THREAD ADJUST pot fully CCW and press the THREAD push button.

3. Adjust the THREAD ADJUST pot clockwise (CW) as required to obtain desired THREAD speed.

4. Press the RUN push button and then advance the SPEED pot to accelerate the drive to run speed.

5. If the desired action cannot be obtained, perform the troubleshooting procedure.

MODIFICATION RECORDS

Place this instruction sheet, with the appropriate relay logic and interconnection diagram, in the back of your Saber 3202 manual.

TROUBLESHOOTING

If other modifications have been installed, be sure to troubleshoot them thoroughly before discarding this option as faulty.

1. REMOVE INPUT POWER, and then insure all required interconnections and jumpers are properly installed. Check the ribbon cable from 1CONN on 2PC to the modification PCB.

2. Place a DC voltmeter, capable of measuring -10 VDC, across the wiper of the THREAD ADJUST pot and common (2PC-4TB-1).

3. Apply power and then press the THREAD push button; relay 2CR should energize. Adjust the THREAD ADJUST pot from fully CCW to fully CW; at fully CCW, the DC voltmeter (step 2) will measure 0 VDC. As the pot is turned CW, the voltage will change in a negative direction, until at the full CW position, a voltage of -10 VDC ±5% is attained.

4. If the conditions of Step 3 are not attained, replace the Thread PCB.