MagneTek Drives & Systems

For Saber 3202
DC Drives

CONTROLLED STOP MODIFICATION

PCB P/N 46S02444-0010

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 Controlled Stop function. It also includes modification diagrams for the basic Saber 3202 manual.

DESCRIPTION

When the STOP push button is pressed, the motor speed will decrease at a rate determined by the DECEL potentiometer on the regulator board. At a speed range from 0 to 30% of top speed, relay switching opens the armature circuit and the motor coasts to a stop. The speed at which the armature opens is set by the DROP OUT pot.

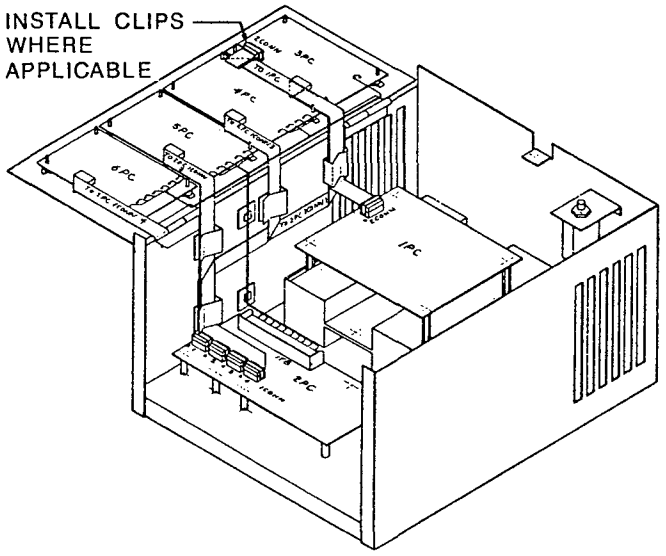

Figure 1. Layout

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

IMPORTANT

For drives with both dynamic braking and Controlled Stop, an auxiliary EMERGENCY STOP (E-STOP) push button should be used so that the Controlled Stop function can be bypassed in the event of an emergency. The E-STOP push button disengages the main contactor immediately, thereby opening the armature circuit and engaging the dynamic braking resistor.

INSTALLATION: (See Figure 1)

WARNING

REMOVE ALL INPUT POWER TO DRIVE BEFORE INSTALLING THIS MODIFICATION.

CHANGE RECORD					DWG. NO. 02Y00025-0307 SHEET 1 OF 3 EFF. 2/23/89 (P)

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 Controlled Stop 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 Controlled Stop 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.

☐	CONTROLLED STOP, E-STOP	02Y00025-0322
☐	CONTROLLED STOP, V/I FOLL, E-STOP	02Y00025-0323
☐	THREAD, V/I FOLL, CONTR STOP, E-STOP *	02Y00025-0311
☐	THREAD, CONTROLLED STOP, E-STOP	02Y00025-0312
☐	JOG, V/I FOLL, CONTR STOP, E-STOP *	02Y00025-0315
☐	JOG, CONTR STOP, E-STOP	02Y00025-0316
☐	THREAD/JOG, V/I FOLL, CONTR STOP, E-STOP *	02Y00025-0320
☐	THREAD/JOG, CONTR STOP, E-STOP *	02Y00025-0321
☐	THREAD, JOG, CONTR STOP, E-STOP **	02Y00025-0330

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

** To use this combination 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 (D3 thru D8) as indicated, and connect as described below.

WIRE NUMBER	CONNECT TO
D3	2PC-3TB-4
D4	2PC-1TB-6
D5	2PC-1TB-11
D6	2PC-1TB-1
D7	2PC-1TB-17
D8	2PC-1TB-4

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 DROP OUT pot to midrange, the SPEED pot fully counterclockwise (CCW), and start the drive by pressing the RUN push button.

2. Advance SPEED pot fully clockwise (CW) and press the STOP push button. Observe that, after pushing the STOP push button, the drive speed decreases and the main contactor deenergizes (drops out) at a low speed point.

3. Adjust the DROP OUT pot to give the desired low speed drop out point (in step 2). Turning the potentiometer CW causes drop out at a higher speed.

4. 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. Turn the DROP OUT pot to midrange and apply power to the drive.

3. As soon as the RUN push button is pressed, relay 4CR should be energized. If not, replace the Controlled Stop PCB.

4. Set the SPEED pot for 100% speed; relay 5CR should be energized. If 5CR is not energized, replace the Controlled Stop PCB.