

Trendsetter VLF

EMI Compliance Upgrades for the Powerbox

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Revision History

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1. SCOPE

Tests involving the Trendsetter VLF (TS-VLF) have shown the machine will benefit from lowered EMI emissions with the following changes:

1. Inside the powerbox, replace the drum brake resistor assembly 10-3493A with a similar assembly, 10-4588A, which has a shielded cable that is grounded to the powerbox;
2. Inside the powerbox, replace the drum motor cable 10-3547A with a similar assembly, 10-4592A, which has a shielded cable that is grounded at the drum end;
3. Inside the powerbox, add a ferrite choke, 10-4589A, between the drum cable, above, and the drum servo amp;
4. Remove the flexible bonding strap from the flextrack and the powerbox.

This document describes how to complete these changes on a TS-VLF or TS-AL machine in the field using upgrade kit 05-0217.

2. MACHINES NEEDING THIS UPGRADE

All VLF Trendsetters (TS VLF) and VLF Trendsetter Autoloaders (TS AL) machines from B311 to B480 inclusive require these changes, with the expception of B478 and B479 (these machines require the bonding strap to be removed only).

3. PARTS

The following is a list of key parts contained in the upgrade kit 05-0217;

- drum motor cable: 10-4592A
- drum brake resistor: 10-4588A
- ferrite common mode choke: 10-4589A
- two sizes of cable ties (20 each) and cable tie mounts
- hardware for mounting the drum brake resistor shielding clamp to the wall of the powerbox (including a spare clamp)

4. REQUIRED TOOLS

- small side cutters
- metric hex key set
- metric nut driver set
- 1/4" or M6 drill bit
- drill, electric or air
- anti-static wrist strap

5. INSTALLATION INSTRUCTIONS

5.1 Replacing old assemblies

1) Power down the machine.

2) Open the door to the powerbox, ground and put on the anti-static wrist strap.

3) Remove the old drum brake resistor (10-3493A). Carefully remove it from the spring mounts, remove the cover to the wiring duct below it, and cut the cable ties that bind the assembly to the other cables. Unplug the 2 pin connection to the servo amp. Discard the assembly.

4) Install the new drum brake resistor (10-4588A). Before mounting the resistor on the two spring mounts, route the two black wires through the appropriate slots in the wiring duct directly below. Install the resistor onto the spring mounts, being careful not to bend or put any pressure on the tabs that connect the black wires to the resistor.

5) The drum brake resistor cable has a metal clamp (52-4970) that needs to be mounted to the grounding bracket above the servo amp. The left mounting screw needs to be removed, however, because it is too big for the hole in the metal clamp. Remove the screw, and mount the metal clamp onto the grounding bracket with the M5 hardware from the upgrade kit 05-0217. See Figure 1. Discard the old mounting hardware.



Figure 1: Installed Drum Brake Resistor

6) Plug the two pin connector into the socket on the servo amp. Tie wrap the cable onto the two push mounts inserted in the grounding bracket, trim the ends, and re-install the cover to the wiring duct under the resistor.

7) Remove the old drum motor cable (10-3547A). This cable comes out the back of the powerbox and goes through the cable duct on the away side of the machine, to the drum motor. Unplug the cable on both ends (in the powerbox, it is a 4 pin connection to the servo amp), cut all the cable ties and remove the cable. Remember how it is routed, as this cable will be replaced in the next few steps.

8) Before installing the new drum motor cable, two 1/4" holes have to be drilled on the left lip of the powerbox to accommodate the cable tie push mounts. These push mounts will hold the new drum motor cable in place. See Figure 2. Drill the holes as follows:

Top hole:	45 cm from the bottom of the powerbox (centered side to side)
Bottom hole:	35 cm from the bottom of the powerbox (centered side to side)

9) Insert a 18-3133 push mount into each hole.

10) The new drum motor cable will be routed through the machine in the same way as the old one, with the following exception: the old cable was routed around the right side of the servo amp, and over the top of the grounding bracket. The new cable will be routed underneath the servo amp, up along the left side of it, and then will be plugged into the new ferrite choke (10-4589A) that will be installed in the next few steps. See Figure 2.

11) Once the cable is routed, loosely tie wrap it (using two 18-3049 cable ties) to the two push mounts installed in step 9. The height of the cable will be determined when the new ferrite choke is installed.

12) Install the new ferrite choke (10-4589A). Plug one end into the 4 pin connector on the top of the servo amp, and plug the other end into the drum motor cable just installed. Mount two 18-3061 cable tie bases onto the wall behind the choke, and tie wrap it down with two 18-3049 cable ties. Try to keep the tie wrap bases straight. It may be easier to mount the bases before installing the choke. In this case, mount the two bases onto the left wall of the powerbox as follows:

Left mount:	centered 20 cm from the left lip, 60 cm from the top
Right mount:	centered 70 cm from the left lip, 60cm from the top

13) Once the correct position of the drum motor cable has been determined, tighten down the cable ties that secure it to the edge of the powerbox.

14) Check for any loose cables or untrimmed cable ties before closing up the powerbox.



Figure 2: Routing of the new drum motor cable

5.2 Removing the bonding strap

The bonding strap that is connected between the inside back wall of the powerbox and the end bracket of the flextrack is to be removed. See Figure 3.



Figure 3: Bonding strap connected to the back wall of the powerbox

1) The bonding strap is mounted to the inside back wall of the powerbox with a metal plate. Remove the plate from the wall and cut off the bonding strap. Trim off any excess strap around the edges of the metal, and re-install the plate. This plate is put back on the wall to fill the screw holes and keep the powerbox light tight. Remove the bonding strap from the powerbox.

2) On the head end of the flextrack, the bonding strap is attached to the metal bracket. Cut off the bonding strap, and remove it from the entire length of the flextrack. The flextrack does not have to be opened to remove the strap, as it can be cut and pulled out through the gaps between the flextrack links.

5.3 Testing the new installation components

1) Power up the machine.

2) Test the newly installed components by spinning and stopping the drum a few times. Ensure the drum stops quickly.