

Vector Drive - 20 HP and 40 HP - Replacement

AD0056

Applies to machines built from: February, 1997

Introduction

This procedure tells you how to replace a 20 hp or a 40 hp vector drive.



Haas machines have one of these vector drive types:

1. Type 1: Smart vector drive, with built-in filter (current style)
2. Type 2: Smart vector drive, with front cover
3. Type 3: Smart vector drive, without front cover
4. Type 4: Classic vector drive

All of the replacement vector drives look like Type 1. The procedure varies depending on which type is currently installed.

Note: PN: [93-3754 CABLES FOR UPGRADE TO SMART VD HFD2/HFD4](#) needs to be ordered when replacing a **Type 4** Vector Drive.

⚠ Caution: Make sure you correct the root cause of the vector drive failure before you power on the new vector drive. Failure to correct the root cause of the vector drive failure can cause the new vector drive to fail. Refer to the [HAAS VECTOR DRIVE TROUBLESHOOTING GUIDE](#).

- KIT PN: 93-32-5559D, VECTOR DRIVE, 20HP SMART WITH BUILT-IN FILTER
- KIT PN: 93-32-5558D, VECTOR DRIVE, 40HP SMART WITH BUILT-IN FILTER

Electrical Safety

⚠ Caution: When you do maintenance or repair on CNC machines and their components, you must always follow basic safety precautions. This decreases the risk of injury and mechanical damage.

- Set the main circuit breaker to the **[OFF]** position.

⚠ Danger: Before beginning any work inside the control cabinet the High Voltage indicator light on the 320V Power Supply / Vector Drive must have been off for at least 5 minutes.

Some service procedures can be dangerous or life-threatening. DO NOT attempt a procedure that you do not fully understand. If you have any doubts about doing a procedure contact your Haas Factory Outlet (HFO) and schedule a service visit.

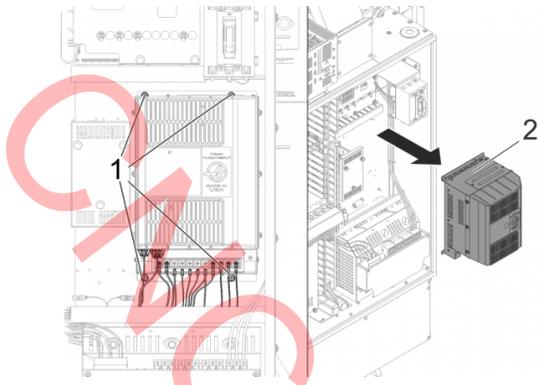
Replacement

1

Push **[POWER OFF]**.

Set the main circuit breaker to the **[OFF]** position. Lock the main circuit breaker.

⚡ Danger: After turning off the machine, wait at least 5 minutes before working in the control cabinet, to allow power to dissipate. Wait for the voltage indicator LED on the vector drive to go off completely.

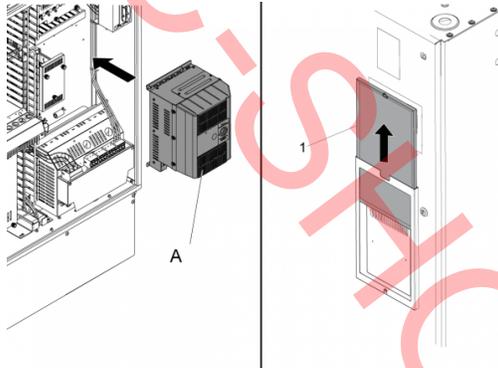


2
Put a label on each cable connected to the vector drive. Disconnect all of the cables from the vector drive.

Loosen the (2) bottom screws [1].

Remove or loosen the top (2) screws [1].

Remove the vector drive [2].



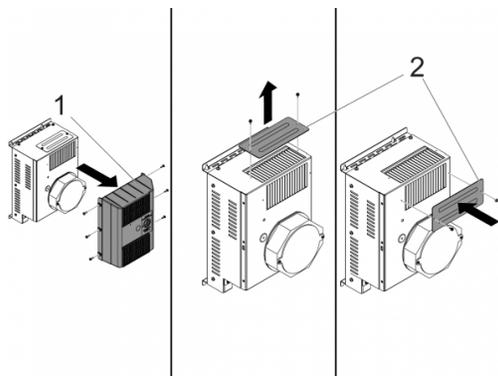
3
Do this step to replace a Type 1 or Type 2 vector drive assembly only.

Install the replacement VECTOR DRIVE [A].

Tighten the (4) screws.

Connect all of the cables.

📄 Note: The door intake filter [1] is not necessary when installing a Type 1 vector drive. To prevent confusion remove and discard the door intake filter and frame if equipped. Having both filters will cause inadequate air flow to the vector drive.



4
Do this step to replace a Type 3 or Type 4 vector drive assembly only.

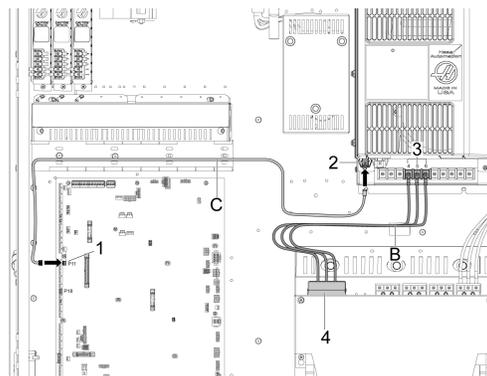
Remove and discard the VECTOR DRIVE [A] cover [1].

Move the heatsink cover [2] to the front.

Install the replacement vector drive.

Tighten the (4) screws for the vector drive.

For only type Type 3: vector drives connect all of the cables.



5
Do this step only for Type 4: vector drives.

📄 Note: PN: **93-3754** needs to be ordered when replacing a **Type 4** Vector Drive.

Remove cable **33-4049A**. This cable is connected between J1 on the vector drive and P11 on the I/O PCB.

📄 Note: For machines made before **January 2000**, the cable is connected to **P18**.

Remove cable **33-0969A**. This cable is connected between the vector drive and the transformer.



Connect **CABLE 970 [C]** between **J1 [2]** on the vector drive and **P11 [1]**.

 **Note:** For machines made before **January 2000**, connect the cable to **P18**.

Connect **CABLE 77/78/79 [B]** between the power-distributor block **[4]** for the transformer and the vector drive terminals **4, 5, and 6 [3]**.

6

Set the main circuit breaker to the ON position.

Push POWER ON.

Classic Haas Control

Change parameter 57:29, INV BUSS PWR FAULT to 1.

For machines with lathe software versions 7.02, 8.04, 8.05, and 8.06: Change parameter 712, VDI/MINI P.S. TYPE to 2.

For machines with mill software versions 14.05, 15.04, 15.05, and 15.06: Change parameter 712, VDI/MINI P.S. TYPE to 2.

