ACH580-01 VxR, UL Type 1 Frame R2/R3/R4

Base drive replacement instructions

Purpose or Scope

The following are the instructions for replacing an ACH580-01 UL Type 1 (Frames R2, R3 & R4) drive in VxR enclosures.

Equipment required*:

– Replacement drive (see note below)
– T20 bit
– T25 bit
– T30 bit
– PZ2 bit
– PZ3 bit
– Torque wrench
– Zip ties

Basic overview of steps

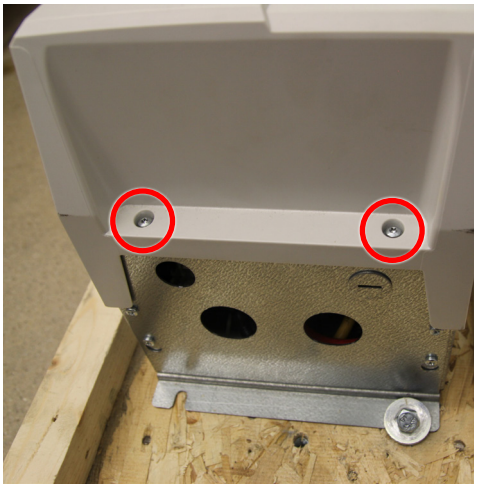
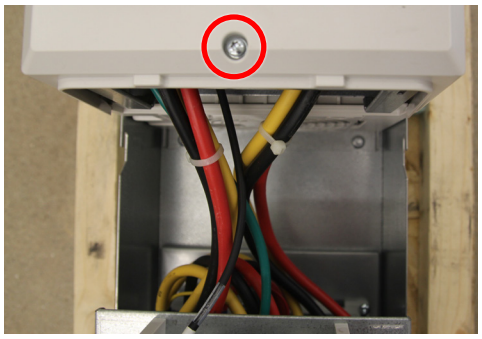
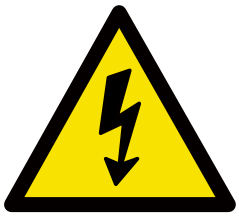
– Back-up drive parameters (if you can)
– Remove power and verify after 5 minutes
– Remove covers
– Disconnect all wiring
– Remove drive
– Prepare replacement drive
– Remove conduit assembly
– Install in reverse order
– Check connections
– Power drive
– Reprogram and test

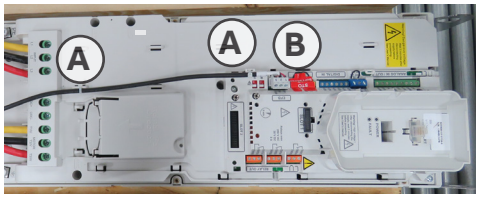
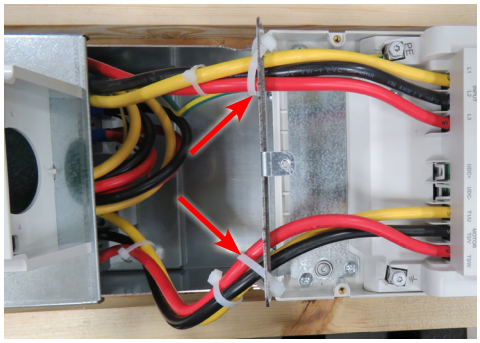
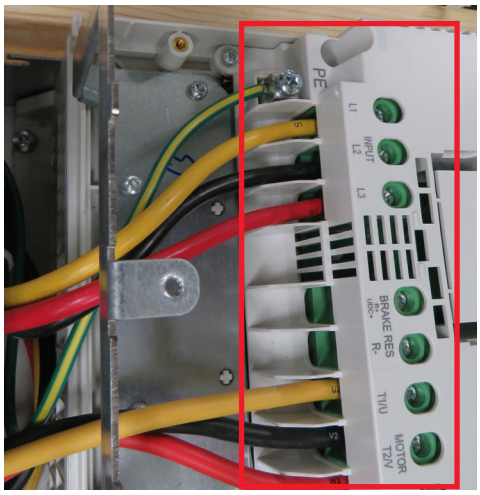
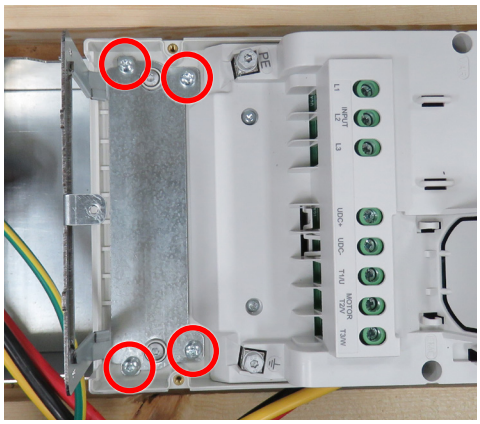
Notes and cautions

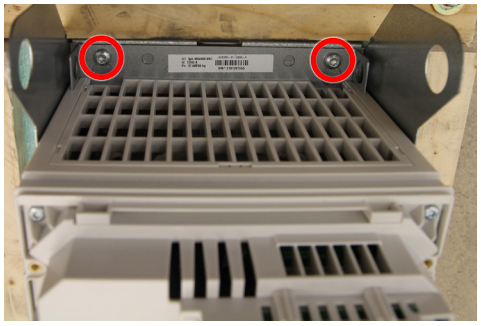
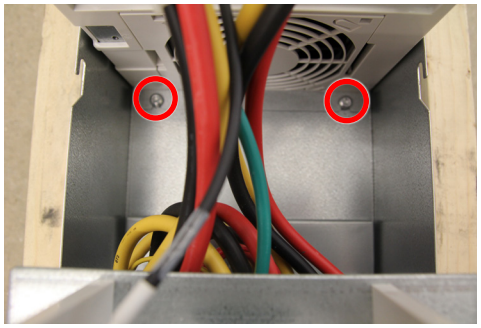
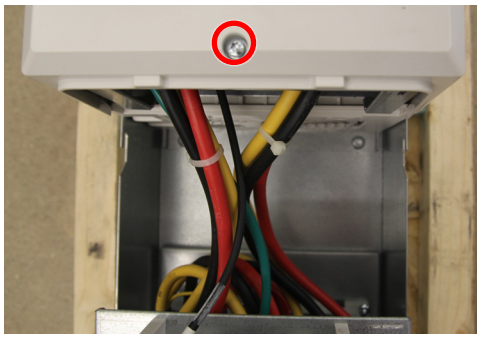
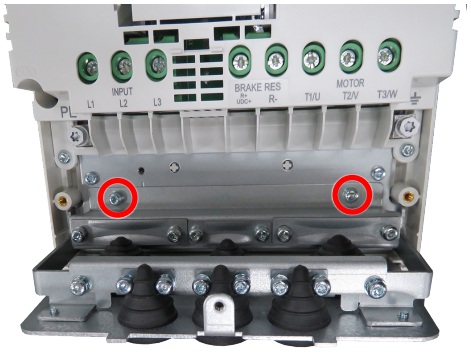
CAUTION! Review complete safety and electrical considerations prior to replacing the drive. See ACH580 IOM (3AXD50000049127).

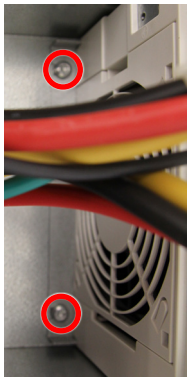
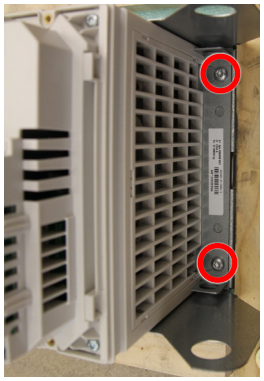
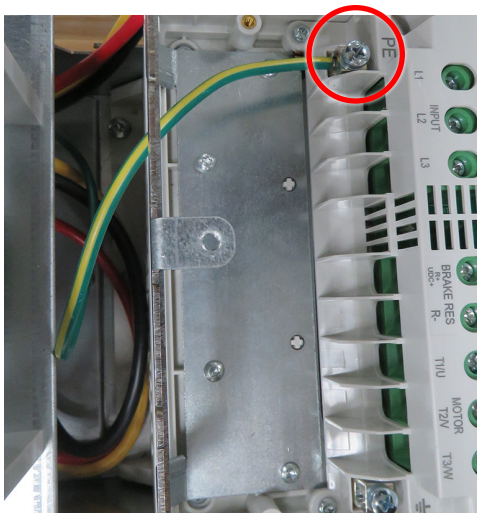
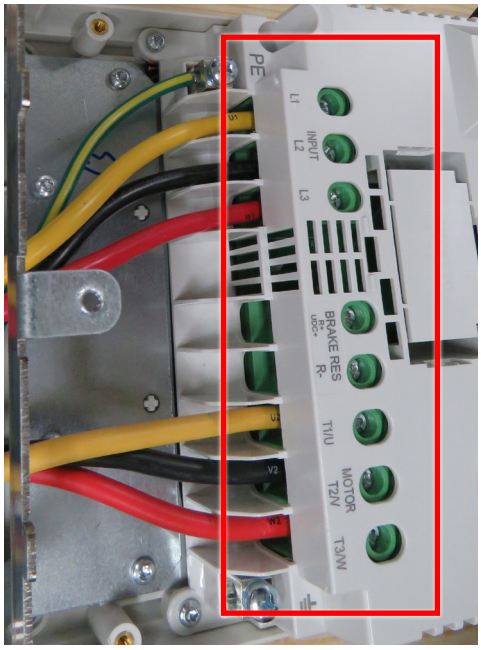
CAUTION! Two people are recommended for this job. The drive is heavy and can fall, causing property damage and injury.

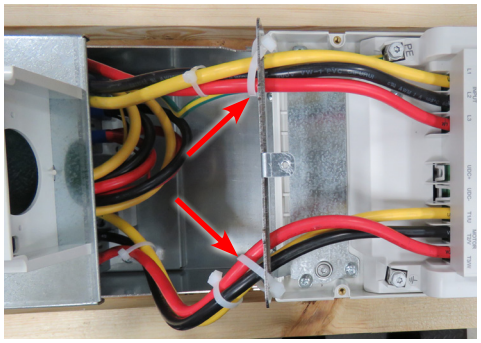
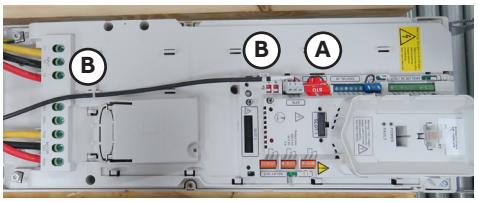
* Not all of these tools are needed for each frame size.

Step	Instruction	Diagram
1	**NOTE:** If needed, back-up parameters prior to disconnecting power. Turn off source power and wait 5 minutes for the DC bus capacitors to discharge. Turn handle to the off position.	
2	Using a T20 bit, loosen and remove two (2) M4x16 screws securing the enclosure cover. Save hardware.	
3	Using a T20 bit, loosen and remove one (1) M4x16 screws securing the inverter cover. Recycle drive cover.	
4	Perform voltage check to confirm no voltage is present. **NOTE:** If you have control wiring connected to the Control Unit, disconnect at this time.	

Step	Instruction	Diagram
5	Cut zip ties (A) and disconnect the RS485 cable (B) from the drive by pulling out the terminal block. **NOTE:** Remove any additional drive I/O wiring.	
6	**R4 Frame:** Remove zip ties securing the input and output wires to the drive conduit plate.	
7	**R2 & R3 Frame:** Using a PZ2 bit, loosen and remove wires from the input and motor terminals of the drive. **R4 Frame:** Using a T20 bit, loosen and remove wires from the input and motor terminals of the drive. Using a PZ3 bit, loosen and remove ground wire from the drive.	
8	**R2 Frame:** Using a T20 bit, loosen and remove two (2) M4x8 screws. Remove conduit assembly. **R3 Frame:** Using a T20 bit, loosen and remove four (4) K40x12 screws. Remove conduit assembly. **R4 Frame:** Using a T25 bit, loosen and remove four (4) M5x16 screws. Remove conduit assembly.	

Step	Instruction	Diagram
9	Using a T30 bit, loosen the two (2) bottom M6 screws securing the drive, four (4) turns of the screw. **NOTE:** Do not remove the screw completely. Only loosen enough to be able to lift the drive off the screws.	
10	Using a T30 bit, loosen and remove the top two (2) M6 screws securing the drive. Carefully lift the drive out of channel.	
11	Unpack the replacement drive. **R2 Frame:** Remove drive cover by pushing up on the sides as indicated by arrow. **R3 & R4 Frame:** Using a T20 bit, loosen and remove one (1) M4x16 screws securing the inverter cover.	
12	**NOTE:** If the drive conduit plate is not reusable, DO NOT remove the conduit plate on the replacement drive. Remove knockouts from the conduit assembly. Install Romex into conduit plate to protect the wires.	
13	**R2 Frame:** Using a T20 bit, loosen and remove two (2) M4x8 screws. Remove conduit assembly. **R3 Frame:** Using a T20 bit, loosen and remove two (2) M4x16 screws. Remove conduit assembly. **R4 Frame:** Using a T25 bit, loosen and remove four (4) M5x25 screws. Remove conduit assembly. Recycle the conduit assembly and hardware.	

Step	Instruction	Diagram
14	**CAUTION!** Use two people to install the drive. Slide the drive mounting holes over the bottom two (2) screws and slide drive in place. Using a T30 bit, replace the two (2) M6 screws that were removed earlier. Torque all four (4) mounting screws to 27 in-lb (3 Nm).	 
15	Secure the ground wire to the drive. **R2 & R3 Frame:** Using a PZ3 bit, torque to 14 in-lb (1.5 Nm). **R4 Frame:** Using a PZ3 bit, torque to 27 in-lb (3 Nm).	
16	Connect the input wires (from fuse block) to the Input Terminals of the drive. Yellow U1 to L1 Black V1 to L2 Red W1 to L3 **R2 Frame:** Using a PZ2 bit, torque to 14 in-lb (1.5 Nm). **F3 Frame:** Using a PZ2 bit, torque to 31 in-lb (3.5 Nm). **R4 Frame:** Using a T20 bit, torque to 35 in-lb (4 Nm). Connect the motor wires (from 1M contactor) to Motor Terminals of the drive. Yellow U2 to T1/U Black V2 to T2/V Red W2 to T3/W **R2 Frame:** Using a PZ2 bit, torque to 14 in-lb (1.5 Nm). **F3 Frame:** Using a PZ2 bit, torque to 31 in-lb (3.5 Nm). **R4 Frame:** Using a T20 bit, torque to 35 in-lb (4 Nm).	

Step	Instruction	Diagram
17	**R4 Frame:** Secure input and motor wires to the conduit plate.	
18	Reconnect the RS485 terminal block (A) to EFB on control unit and secure with zip ties (B). Reconnect any control wiring removed in steps 4 and 5. **WARNING!** This configuration does not support Safe Torque Off (STO) functionality in bypass mode.	
19	Place the top of the drive cover on first, then press down on the bottom. **R3 & R4 Frame:** Using a T20 bit, torque to 14 in-lb (1.5 Nm).	
20	Place enclosure cover in place and secure using two (2) M4x16 screws that were removed earlier. Using a T20 bit, torque to 14 in-lb (1.5 Nm).	
21	Power and reprogram the drive.	

Step	Instruction	Diagram
22	Test and verify drive operation and motor direction.	
23	Back-up and save parameters to the keypad prior to putting the drive back into service.	