

AMC Vector Drive



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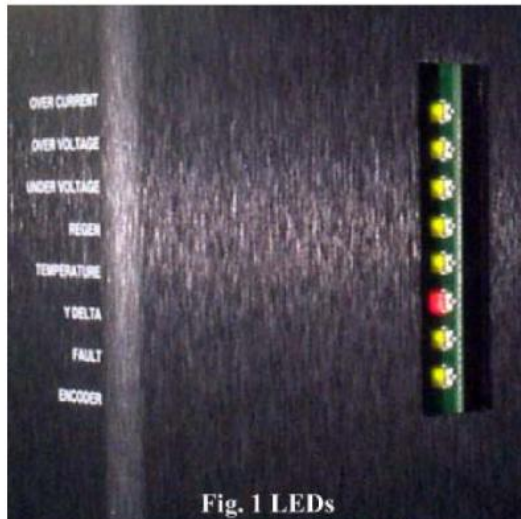
AMC Vector Drive

Adjusting AMC Vector Drive

The AMC VE150AD Vector drive works with all spindle controller cards. The AMC Drive HP rating must match the motor HP rating. If they are mismatched, the motor may not run to full speed.

LEDs

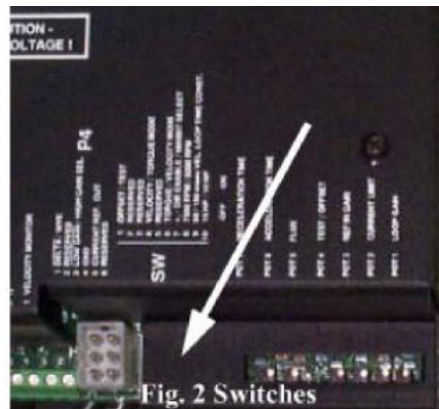
- Over Current - Red for overcurrent; otherwise green
- Over Voltage - Red for bus overvoltage; otherwise green
- Under Voltage - Red for bus undervoltage; otherwise green
- Regen - Red when regenning; otherwise green
- Temp Red for drive overtemp; otherwise green
- Wye/Delta - Red for Wye, green for Delta
- Fault – Red for fault; otherwise green
- Encoder pulses - flashes when encoder pulses received



Velocity Monitor Output Velocity Output P6-1 gnd P6-5 (0.1167V/100rpm)

- Switch Positions**
- 1=Test/Off setOff (Offset)
 - 2=Magnetizing Current Only Off
 - 3=NCOff
 - 4=Torque/Velocity Mode Off (Velocity Mode)
 - 5=Reserved Off
 - 6=Velocity/Torque Mode On (Velocity Mode)
 - 7= +- Direction Inhibit/Enable Select Off (Enable)
 - 8=5000/7500 Motor rpm On/Off (5000/7500 rpm)
 - 9=150/50 m/sec vel Loop time Constant On
 - 10=10hp/15hp Motor ON/OFF (10/15hp)

Note: Switches are located under cover, cover must be removed for access.
Switches should be preset only when switches 8 and 10 are changed (See Figure 2).



- POTs: (16 turn pots)**
- Deceleration Time* (CW to increase time)
 - Acceleration Time* (CW to increase time)
 - Flux (This pot has been removed)
 - Test/Offset
 - Ref. In Gain (signal gain)
 - Current Limit
 - Loop Gain
- * Accel & decel pots have no effect in rigid tap mode.*

Adjustments Switches and pots will be preset to initial settings by AMC.

- Switch Settings**
- 8 On-5000 rpm Off-7500 rpm
 - 10 On-10hp motor Off-15hp motor

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Pot Adjustments Adjust Accel, Decel, Loop gain, Offset, and Reference gain in the following order:



Figure 3

ACCEL/DECEL:

(These pots have no effect in rigid tap mode).

Machine must be off. Measure from P6-5 to test point below pot. 20k ohms for 2.2 sec Acc/Dec (11.8k for 3.5 sec). Turn CW to increase time.

LOOP GAIN:

Remove P2 connector and install jumper plug (FOR & REV to COM). Turn Loop Gain CW until it hums, then turn two turns CCW. Remove jumper plug and install P2 connectors.



Figure 5 Jumper

TEST/OFFSET:

Rigid Tap Machines:

In MDI enter "G84.2".

Adjust Offset for 0 VDC at P2 pins 4 and 6 (Ref In+ and Gnd).

Non Rigid Tap Machines:

Remove P2 connector and install jumper plug (FOR and REV to COM).

Adjust Offset until spindle stops.

Remove jumper plug and install P2 connector.

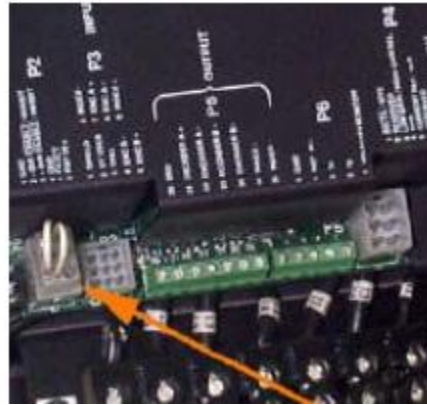


Figure 5 Jumper

REF. GAIN:

In MDI. enter "S1000 M49 M3".

Adjust Ref. Gain and read voltage at Velocity Monitors (P6-1, gnd P6-5).

10,000 Hi/Lo (2:1) Adjust Ref. Gain for -1.17VDC

7500 direct (1:1) Adjust Ref. Gain for -0.56VDC

15,000 direct (1:3) Use S6000. Adjust Ref. Gain for -1.17VDC

Note: If pots were not preset, or if problems are encountered, preset pots as follows:

LOOP GAIN: Turn fully CCW (minimum loop gain)

CURRENT LIMIT: Turn fully CW (maximum current)

REF. GAIN: Turn fully CW (maximum gain)

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TEST/OFFSET: Turn fully **CON**, then 8 turns CW (middle)

FLUX: Not Adjustable.

ACCEL/DECEL: 20k ohms for 2.2 sec Acc/Dec (11.8k for 3.5 sec) (Measure from P6-5 to Test Points below pots.

Machine must be off when setting pot with ohmmeter).