

Gear Motor, Power Supply, and Safety Circuit Build Instructions

Revision 1

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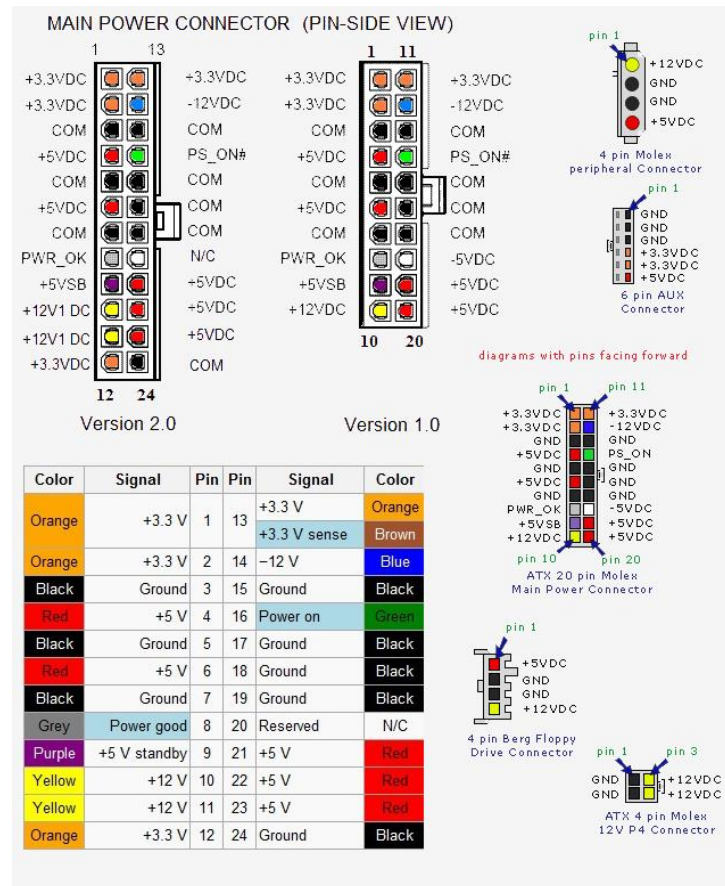


The high voltage (208 v, 3 ϕ) wiring must be performed by a licensed electrician due to the potentially lethal danger involved with getting shocked.

Gear Motor

1. Once the motor mounts are installed in the main chassis, the motor can be bolted in.
2. Nearby the motor will be an isolation panel for installing the motor contactor, the motor controller, and the circuit breaker. On the right side panel near the back of the dyno, the lockout switch should be installed.
3. A hole for the power cord for the dyno should be drilled and fitted with a cable clamp sized for the power cable.
4. The power cable and plug should be ready for the electrician when they come to perform the wiring.
5. Wire the motor contactor actuation coil (this is low voltage) as shown in the schematic.

DC Power Supply



- The PC power supply needs to be mounted in the chassis as well. Care should be taken to allow for the fan to properly cool the power supply. The power supply should be mounted close to the microcontroller circuit so that the main connector will plug into it.
- On the inside front panel, the lighted power switch should be installed. This will be behind the front door to reduce the risk of accidentally shutting the unit off during operation.
 - Wire the common (C) pin of the switch to the microcontroller board so that it connects to a COM pin.
 - Wire the normally open (NO) contact of the switch to the microcontroller board so that it connects to pin PS_ON#. These pins are different based on the main power connector size.
 - Wire the LED to the
- The 12v DC fan should be mounted to a bracket so that it blows on the gear motor to keep it cool. It should connect to pins 1 and 2 on one of the 4-pin peripheral connectors. The fan will run whenever the dyno is on.
- Clip the plug (that goes into a wall outlet) off of the end of the power cable so that the electrician can wire the power supply to the high voltage circuit.
- Identify and label the line, neutral, and ground wires.

Safety Circuit

1. Mount the emergency stop switch in an easily accessible location so that an operator doesn't have to search for it if something goes wrong and it needs to be pressed.
 - a. The normally closed contacts should be wired in series with the rest of the interlock circuit as shown in the schematic diagram.
2. Mount the three interlock switches to the doors of the chassis (front and rear doors of the base and the safety enclosure door).
 - a. Make sure the alignment of the key is such that they work together smoothly.
 - b. Wire the normally open contacts in series with the rest of the interlock circuit as is shown on the electrical schematic.

Electrician Work

1. Once the motor, motor contactor, motor controller, lockout/tagout switch, and PC power supply are mounted have the electrician wire up the high voltage circuit as shown in the schematic.