

Summary	Fast Fold USEM to SEW Eurodrive Retrofit				
Products Affected	Fast Fold				
Key Word Tags	US, SEW, Motor, Retro, FS				
Tools/Equipment (If Required)	Lift, Sockets and Wrenches, Allen Wrenches, Misc. Screwdrivers				
Parts/Materials (If Required)	See Below				
Related Media					
Author	Jason Freimuth, RevA Mike Burzlaff	Issue Date	4/30/2002	Status	Active

Please Read The Entire Bulletin Before Proceeding

NOTE: The motor cable supplied with the new motor must be used. Failure to do so will void any motor warranty.

Prior to April of 2002, the Fast Fold doors shipped with a USEM electric motor assembly. The gearbox on the USEM motors has a different mounting pattern than that of the SEW Eurodrive motors currently in use. This service bulletin outlines the procedure to retrofit a SEW Eurodrive motor onto a door that originally shipped with a USEM motor.



This retrofit involves high voltage electrical wiring.
Technicians must be qualified to perform such functions.

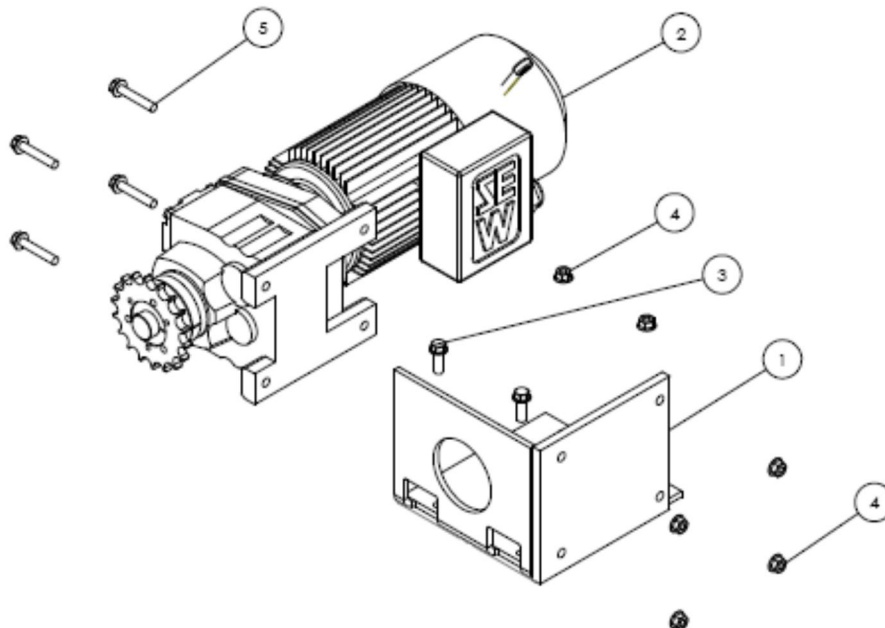
ASSY,MTR,460V or 230V,0.5/.3HP,2SP,M6 POS,DG,FF	Part Number Will Vary
DRIVE MOUNT BRKT, LH, SEW R37 (1ea)	R01992120
OR	
DRIVE MOUNT BRKT, RH, SEW R37 (1ea)	R01992121
WELDT, BRAKE RELEASE PULLEY,FF6CGS,10" (1ea)	R01992181
PULLEY, BRAKE RELEASE (1ea)	R0204013
LOCKNUT FOR 1/2 CORD GRIP (1ea)	R0014492
CORD GRIP 1/2" NPT 90DEG BLK (1ea)	R0014824
ROPE,3/16",YELLOW (180")	R0007139
CRIMPS, ROPE (2ea)	R0004181
HFSMS, 1/4-20 x 3/4, GR5.2 ZN (4ea)	R0550016
NUT, 1/4-20, HEX, FLNG, LOCK, ZN (4ea)	R0553103
HWSDS, #10-16 x 1/2, STL ZN (2ea)	R0551325
HFSMS,5/16-18 X 1-3/4,GR5.2 ZN (4ea)	R0550199
HLNSF, 5/16-18, STL ZN (6ea)	R0553104
HSFMS, 5/16-18 x 1, GR5.2 ZN (2ea)	R0550060

WARNING

The disconnect must be in the OFF position and properly locked and tagged before performing the next step of the procedure.

Retrofit Mechanical Instructions:

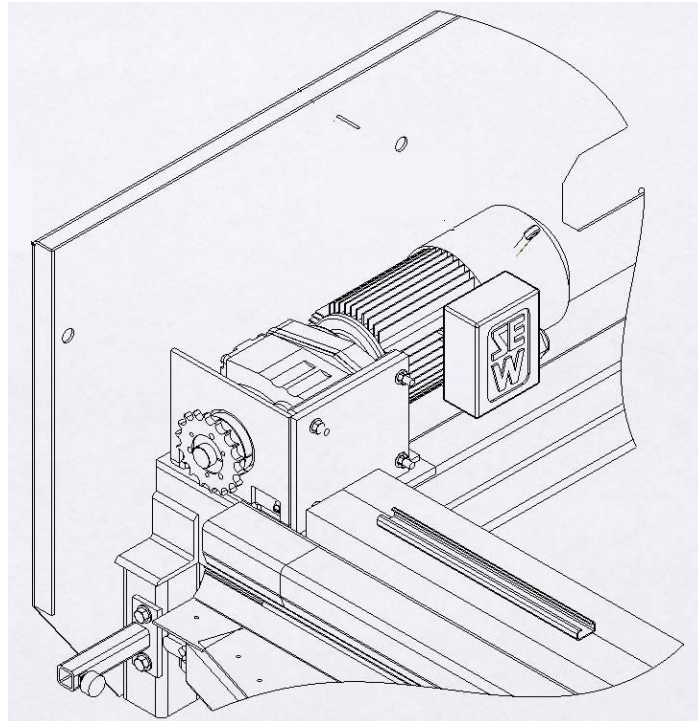
- 1) Remove the front covers / hoods from the door head assembly.
- 2) Loosen the adjustment sprocket on the opposite side of the door head from the motor and remove the drive chain from the motor sprocket.
- 3) Disconnect the motor wires from the non-motor junction box and make sure the wires are numbered for reference when reconnecting them to the new motor. Disconnect the manual brake release components from the motor. Remove the motor mount bolts and nuts and remove the motor from the door.
- 4) Attach the adapter plate to the new motor using the four supplied 1 ¾ in bolts and nuts per drawing R01992122. Do not tighten the bolts until all four are in place. Loctite thread sealant is recommended to use on all motor mounting bolts.



Assembly R01992122

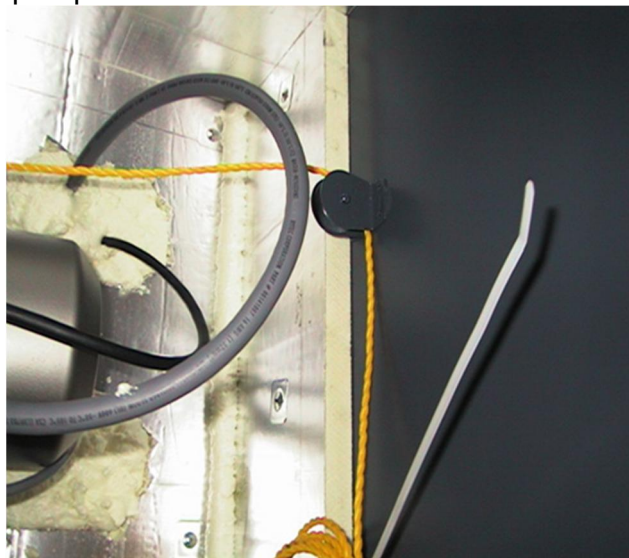
- 5) Place the motor / adapter plate assembly on the original motor mounting plate and secure with

the provided nuts and bolts. The assembly will fit in the head per drawing X199148. If there are obstructions such as a blower, it may be easier to attach the adapter plate to the door first and then install the motor.



Layout, Fast Fold, SEW Motor

- 6) On older Fast Fold doors, the two mounting holes closest to the bend may not allow bolts to fit into them. In this case, new holes will need to be drilled into the original plate to line up with the holes on the adapter plate.



- 7) Install the taper-lock bushing and sprocket onto the motor shaft. Follow the assembly

procedures in the box that contains the taper-lock bushing. Failure to do so will result in sheared bolts on the sprocket. When installing the sprocket, make sure the centerline of the sprocket is aligned with the centerline of the roller track. Do not put the taper-lock bushing on the motor before the motor and plate are assembled to the door. The bushing will not fit through the hole in the adapter plate if you decide to separate the motor from the plate during installation.

- 8) Reattach the drive chain to the motor sprocket and tension the chain per the instructions in the Rytec Fast Fold Owner's Manual.
- 9) If the manual brake release is needed, mount the provided pulley assembly to the head directly behind the brake lever and above the position where the cable should drop. Reference the attached photos that depict the manual brake release for a Freezer door and a non-Freezer door.
- 10) Reconnect the motor leads to the existing wiring. The wire numbers will match the wire numbers used on the USEM Motor. If you are reusing the existing SOW cord (not recommended), take note of which terminals in the motor the new SOW cord are attached to before you remove it.
- 11) Look on the motor nameplate and identify the motor rated FLA. There will be two numbers for High Speed / Low Speed. If necessary, adjust the Overload Relays to match these numbers.
- 12) Remove the lockout from the power supply and turn on the power to the door.
- 13) Check the rotation of the motor. When the M1O contactor is energized, the door should open at high speed. When the M1C contactor is energized, the door should close at low speed. If the rotation is incorrect on any contactor, swap two of the motor leads at the main terminal strip that come from that contactor. Once the correct rotation is achieved, set the limit switches and test the operation of the door per the instructions in the Rytec Fast Fold Owner's Manual.

****NOTE****

Freezer door brake release - attach pulley to rear of head assembly using tek screws. Using rope crimps provided, attach yellow nylon rope to the brake release eye bolt and route through pulley.

The Electroid motor had different electrical connections than the SEW Eurodrive. This will require modifying the wires on the new contactors in the control box. The following instructions can be used as a general guide on how these changes can be done.

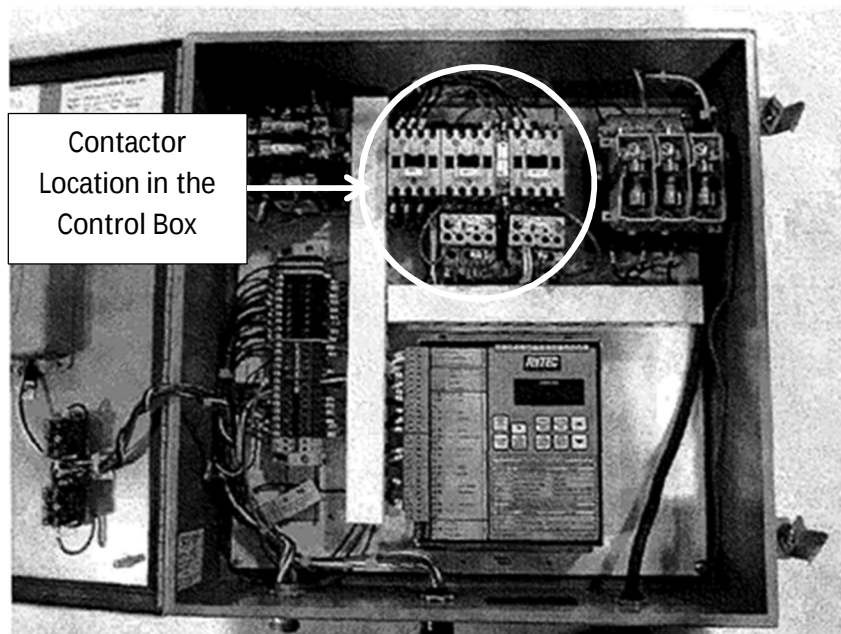
Read the instructions carefully and completely before beginning the retrofit. Only a qualified electrician should perform this work. It is imperative to have an understanding of these changes to prevent damage to the electrical controls and any possible injury.

WARNING

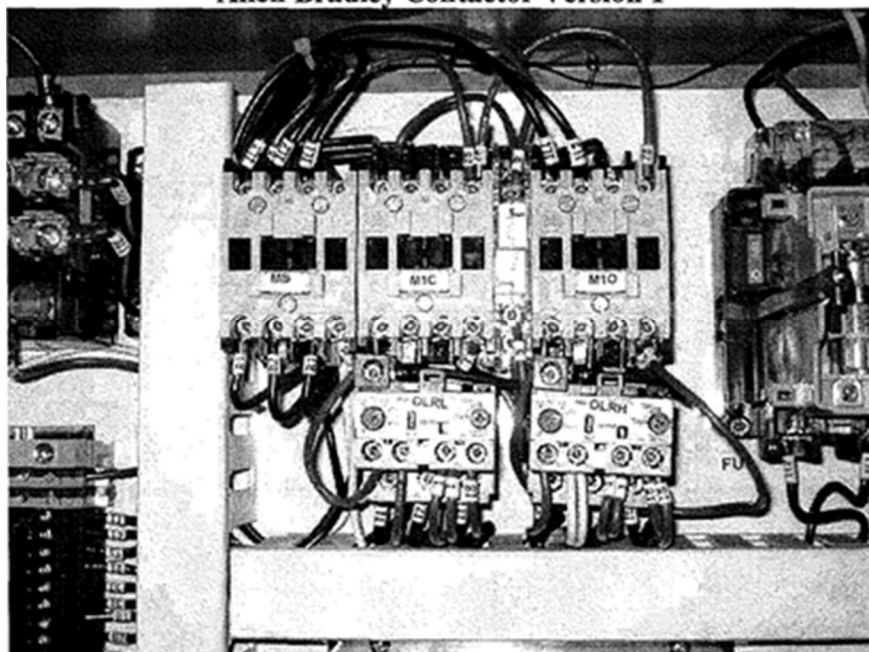
The disconnect must be in the OFF position and properly locked and tagged before performing the next step of the procedure.

Two Speed Motor Connections:

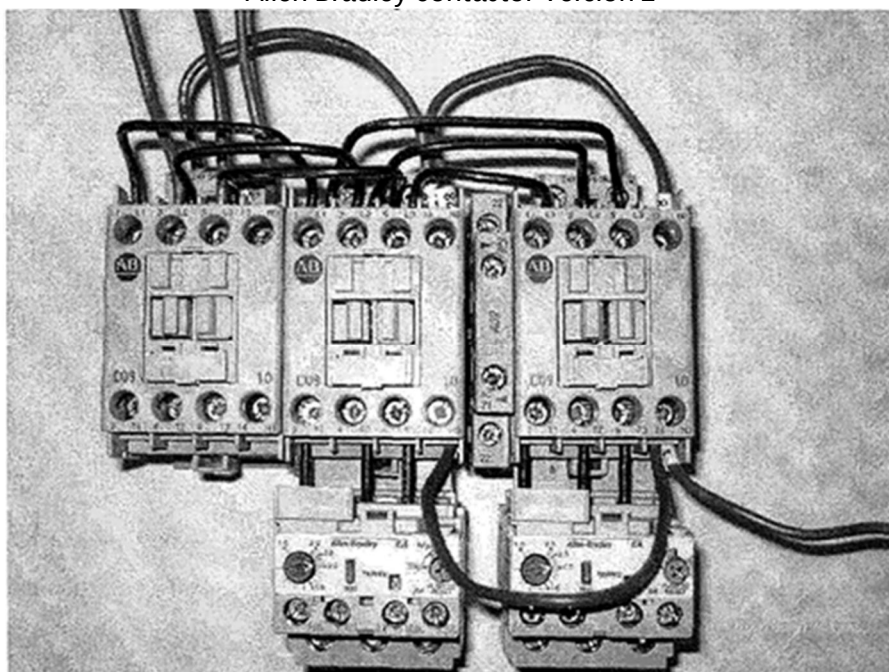
1. If you have a 2 speed motor, continue to step 2 below. If you have a single speed motor, continue to step 12.
2. The beginning wiring is shown below. It is important to note that several versions of the Allen Bradley contactor have been used in the Predadoor control box. While they may look slightly different, the wiring in each step of the process will be the same. Two versions are shown below.

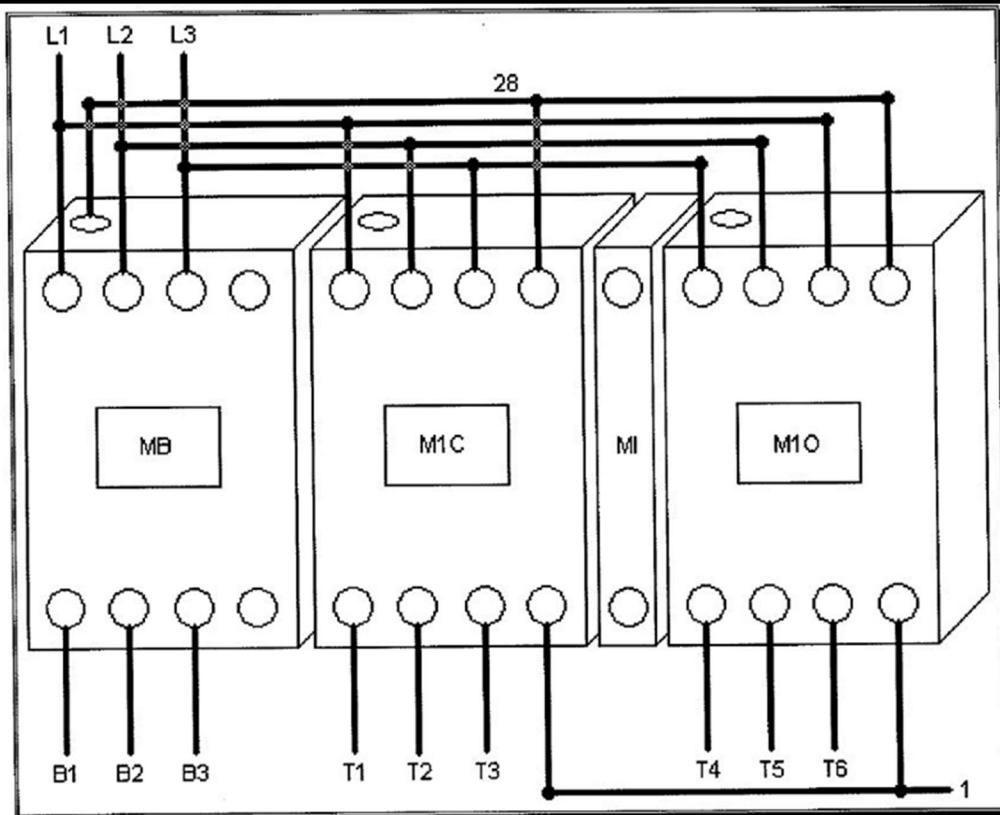


Allen Bradley Contactor Version 1



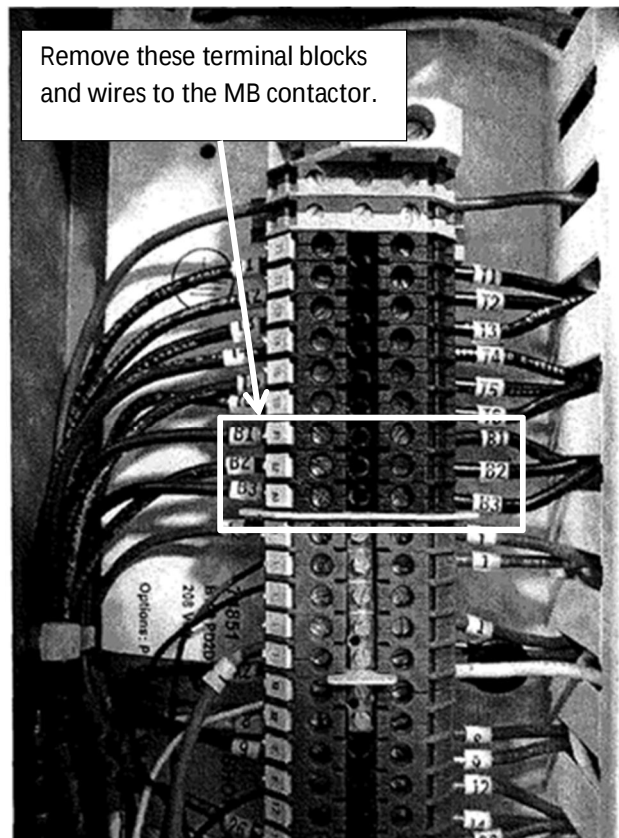
Allen Bradley Contactor Version 2



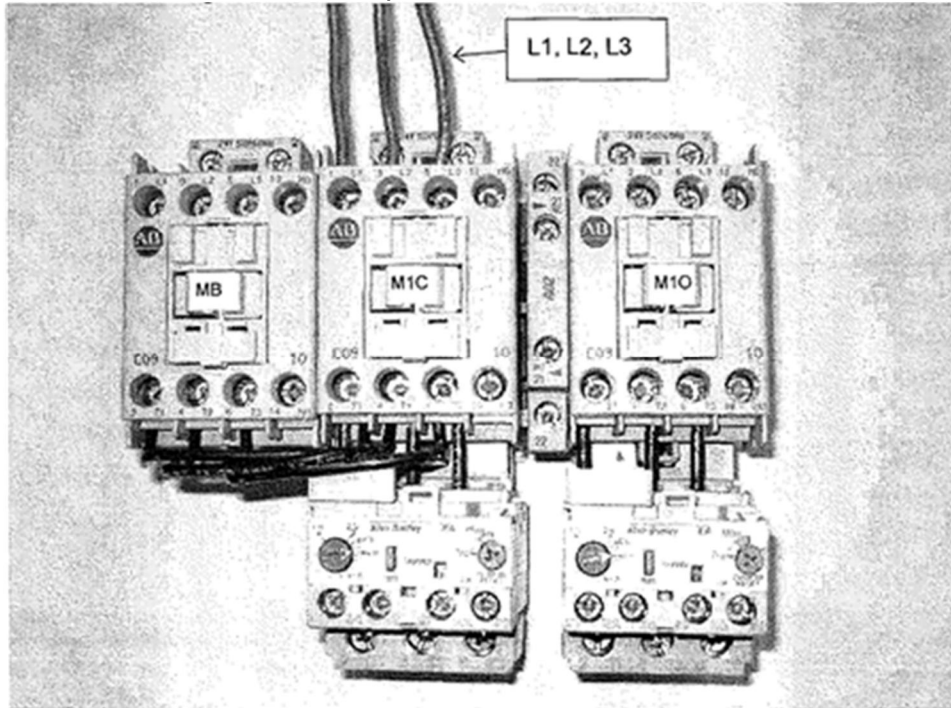


Original Wire Layout

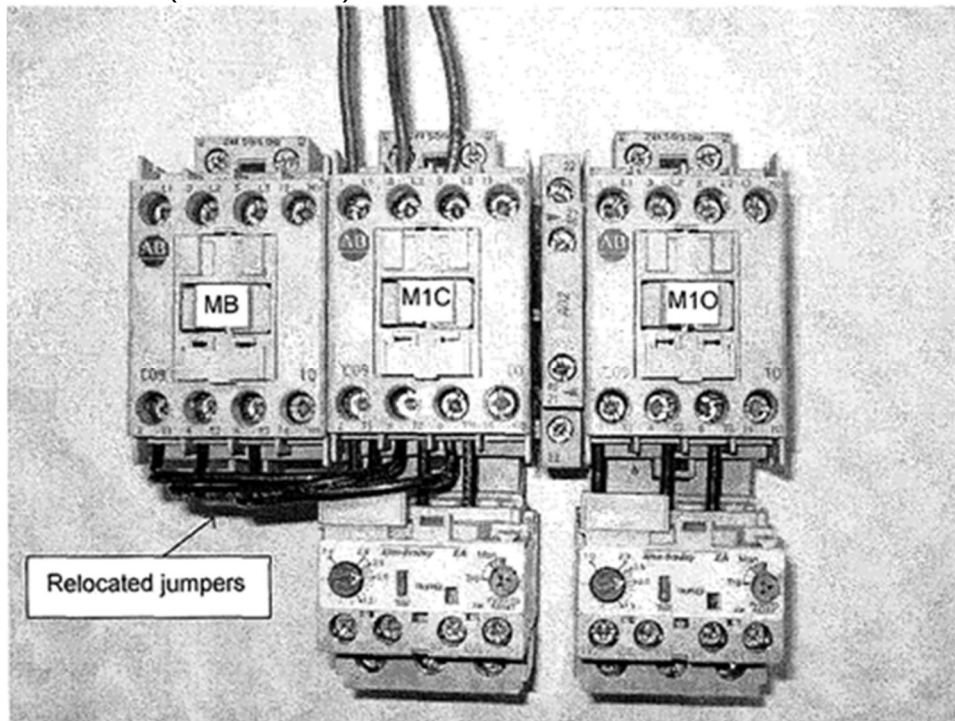
3. Remove terminal blocks B1, B2, and B3 from the controller along with the wires that are attached between it and the MB contactor.



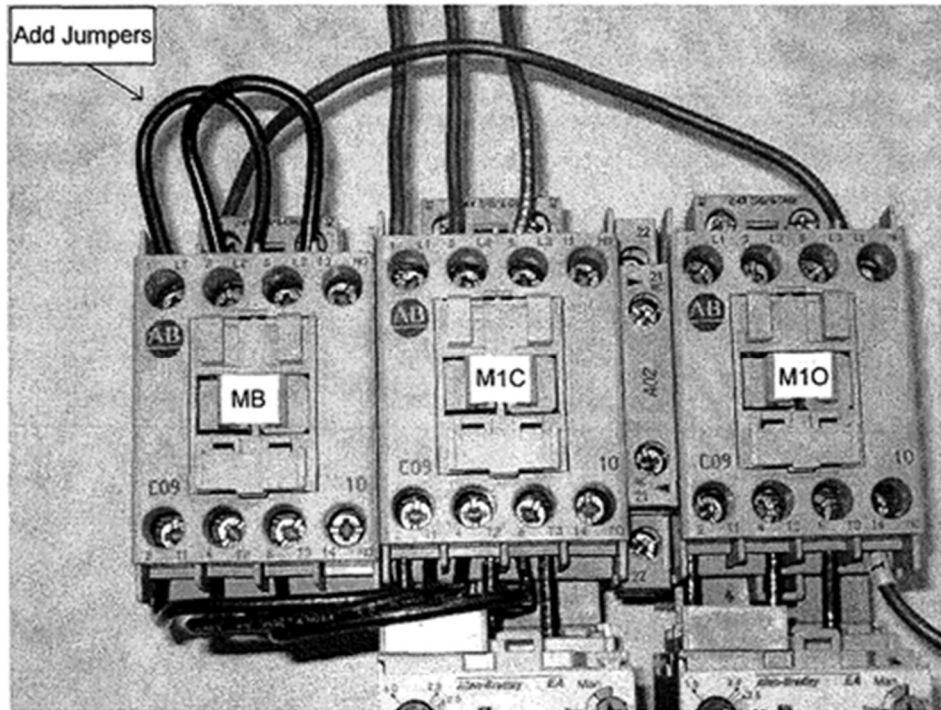
4. If the incoming power L1, L2, and L3 are connected to the top of the MB contactor, remove them and relocate them to the top three terminals of the M1C contactor.



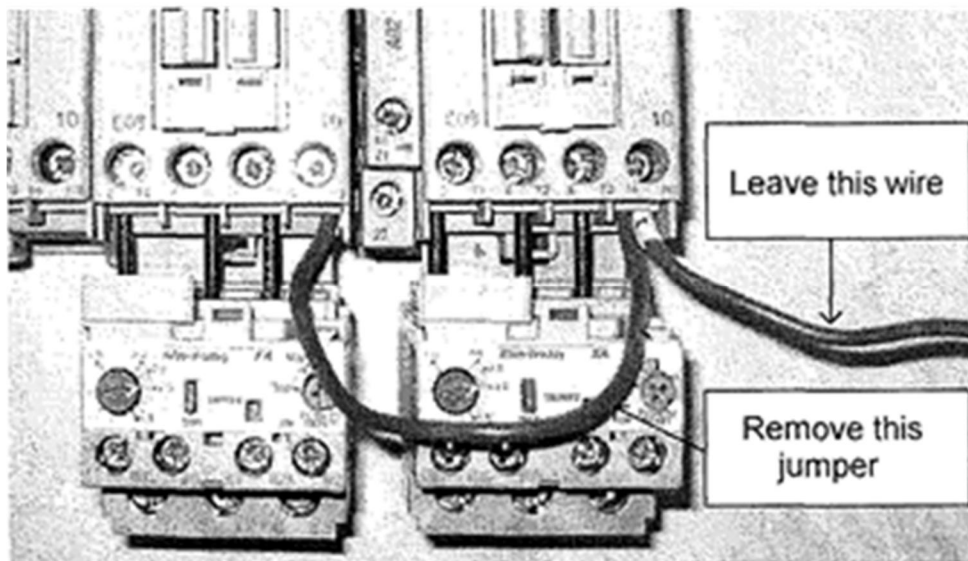
5. Remove the three black jumpers from the top of the MB contactor that connect to the top of the M1C contactor. Re-use these jumpers to connect from the bottom left three terminals of the MB contactor to the bottom left three terminals of the M1C contactor where the OLRL (overload left) attaches to the M1C.



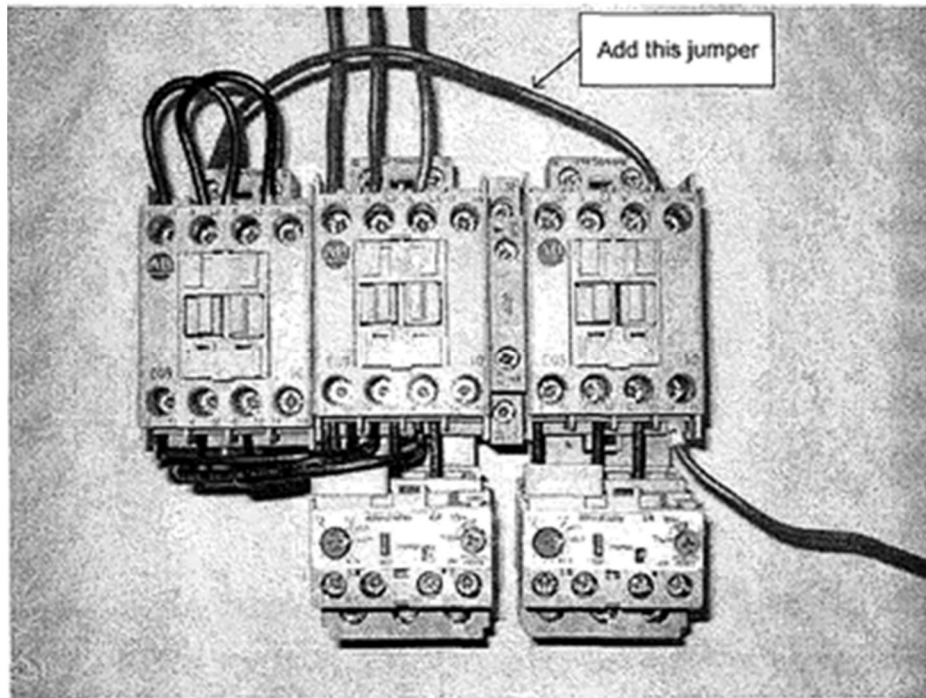
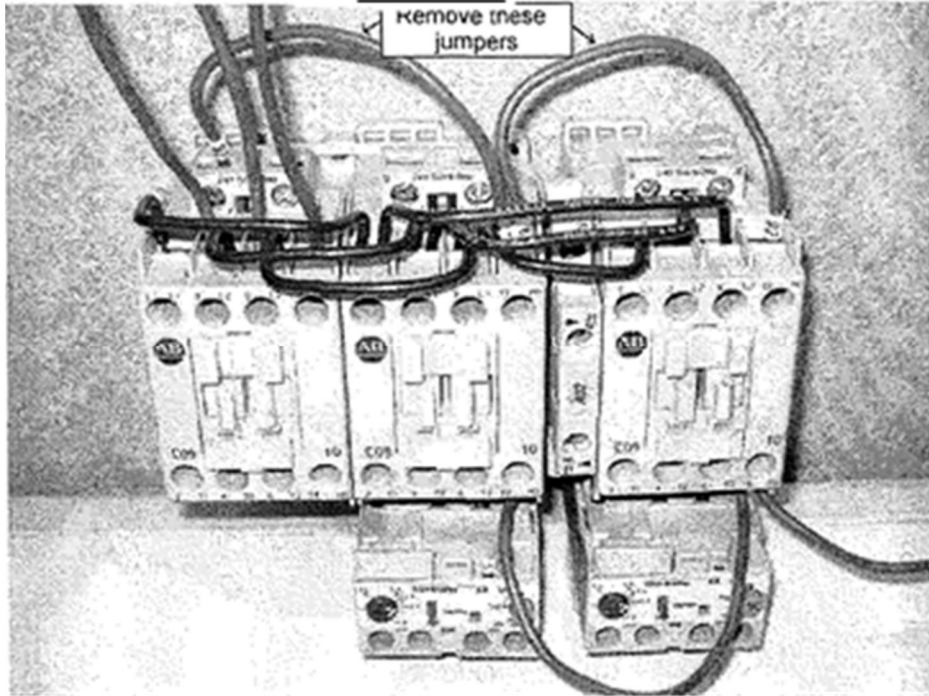
6. Install two jumpers on the top three terminals of the MB contactor that will bridge from the 1st to the 2nd terminal and from the 2nd to the 3rd terminal.



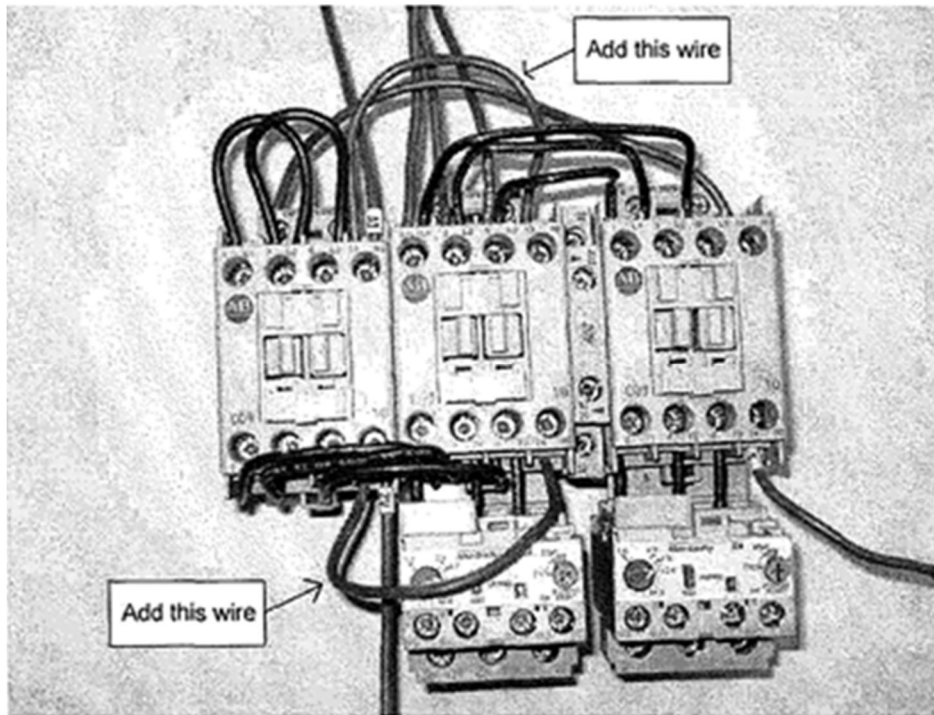
7. Remove the red wire that connects the fourth bottom terminal of the M10 to the fourth bottom terminal of the M1C. Leave the other red wire labeled #1 in place on the M10.



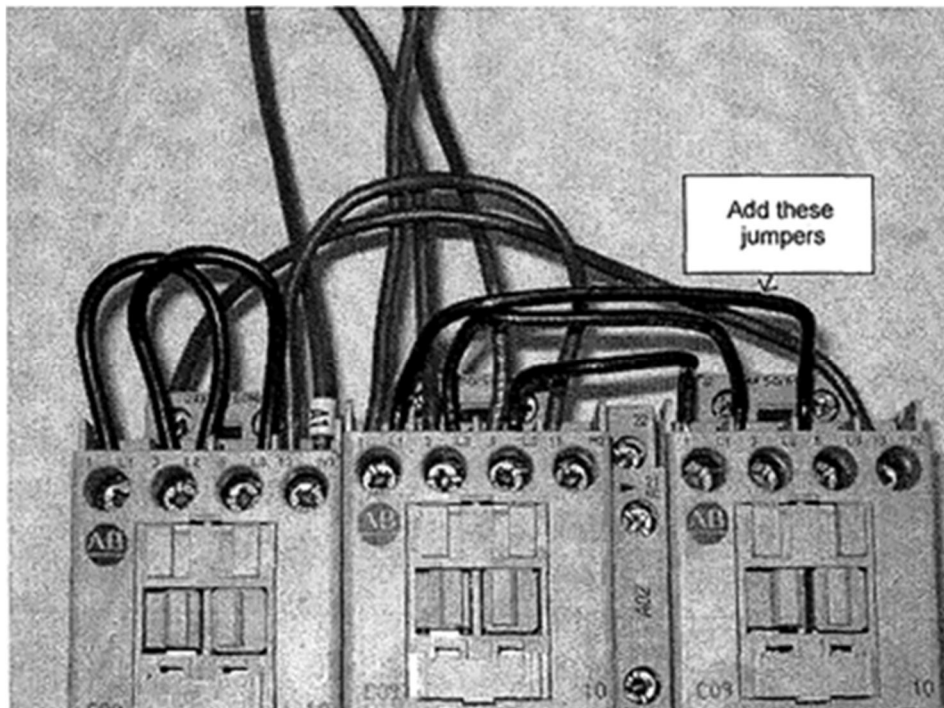
8. Remove the two red wires that are connected to the fourth top terminal on the M1C. The wires should lead to M1O and MB. Replace the old wires with one long wire that connects from the fourth top terminal of the M1O to terminal A1 on the MB contactor.



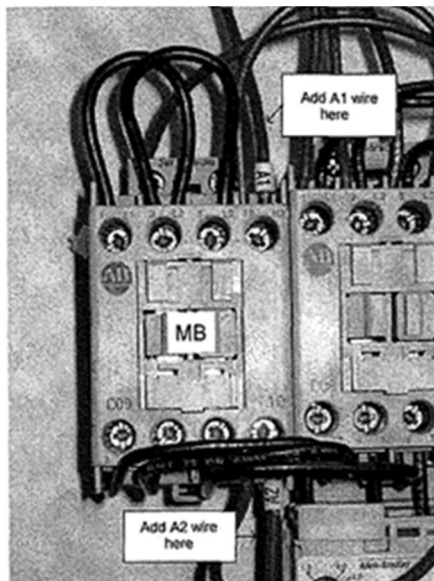
9. Install a jumper from the fourth top terminal of the MB contactor to the fourth top terminal of the M1C contactor. Install another jumper from the fourth bottom terminal of the MB contactor to the fourth bottom terminal of the M1C



10. Install a jumper from the M1C contactor terminal 1 to the M1O terminal 3. Install a jumper from the m1C terminal 2 to the M1O terminal 2. Install a jumper from the M1C terminal 3 to the M1O terminal 1.

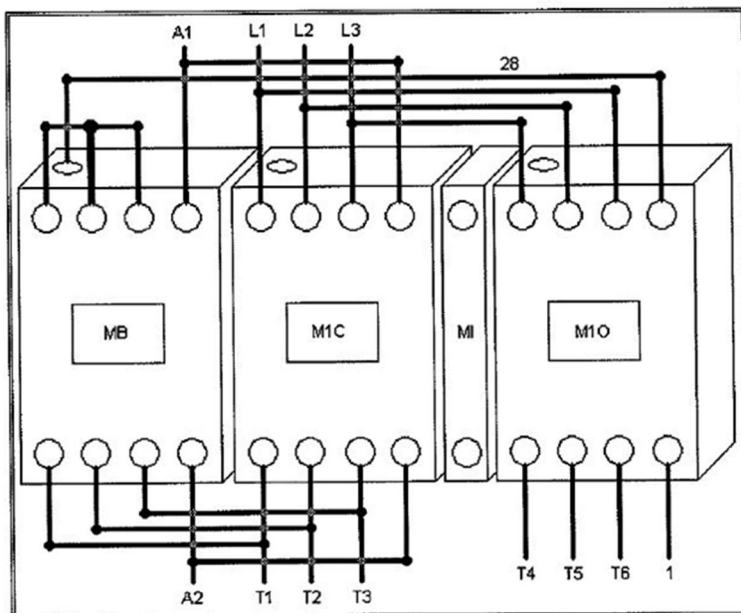


11. Run a wire from the fourth top terminal of the MB contactor to an unused terminal block. (Use the old B1 and B2 terminal blocks for this step.) This terminal should be re-labeled A1. Run a wire from the fourth bottom terminal of the MB contactor to the other unused terminal block. This terminal block should be re-labeled A2. (NOTE: These terminals have nothing to do with and do not represent the A1 and A2 terminal on the coils of all the contactors.)



IMPORTANT!!!

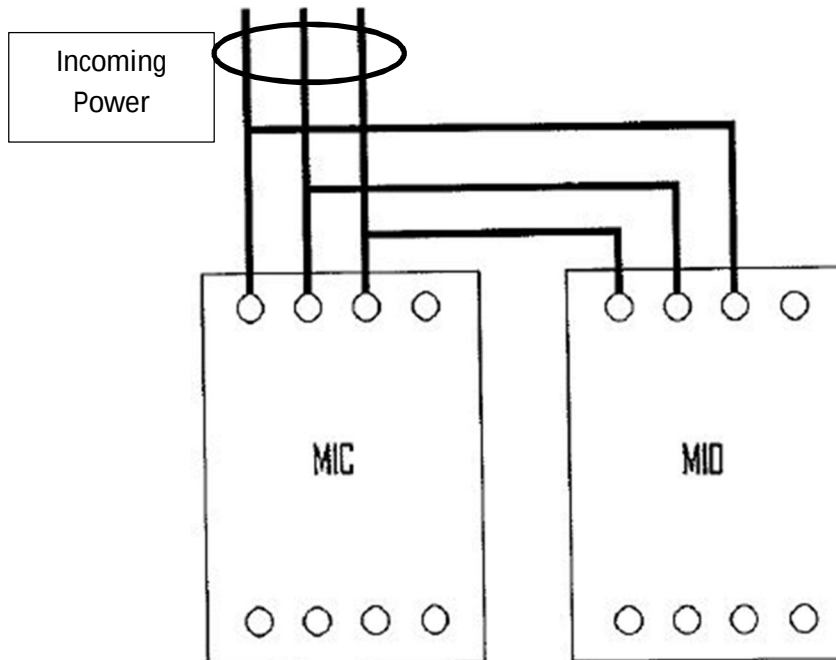
The new contactor setup will short out wires A1 and A2 whenever the M1O or the M1C contactors pull in. This allows the brake to grab immediately upon release. In addition, the MB contactor will ONLY pull in when the M1O is energized. When the MB contactor pulls in, it will short together all three legs of the low speed motor. It is important to double check all of the above steps. If the MB contactor pulls in with the M1C, you will blow all of your line fuses and possibly burn and fuse the two contactors.



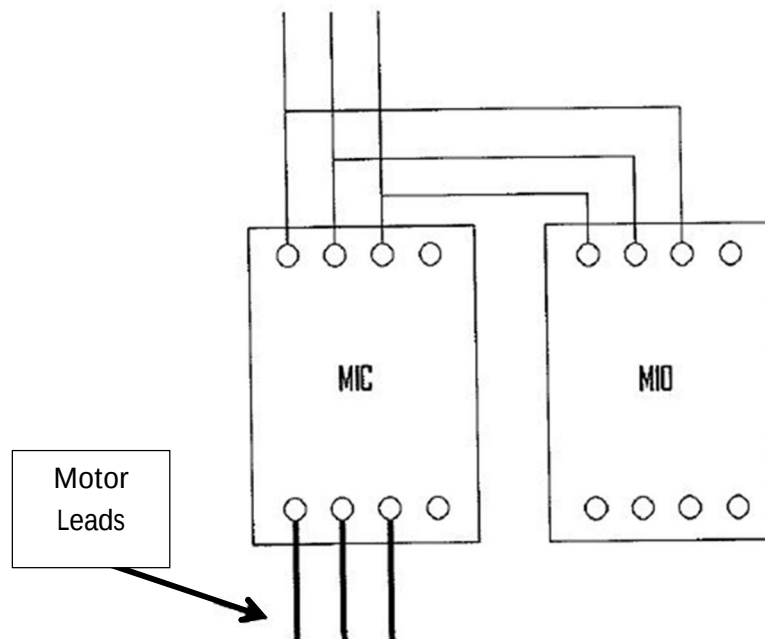
Final Wire Layout

Single Speed Motor Connections

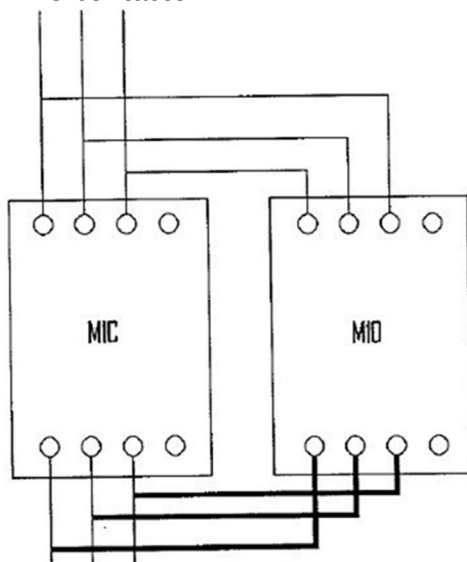
12. With a Single Speed motor you will NOT be using the MB contactor. You will only use the M1C and M1O contactors.
13. Connect the incoming power to L1, L2, and L3 on your M1C contactor.
14. Put a jumper from L1 on the M1C contactor to L3 on the M1O contactor. Put a jumper from L2 on the M1C contactor to L2 on the M1O contactor. Put a jumper from L3 on the M1C contactor to L1 on the M1O contactor.



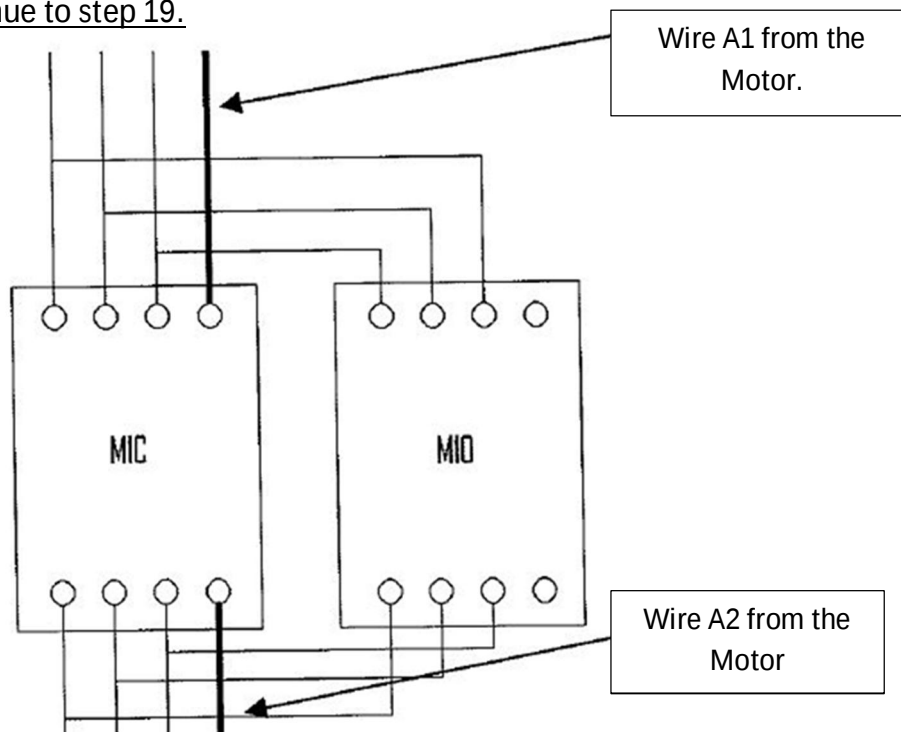
15. Connect T1, T2, and T3 from the motor leads to T1, T2, and T3 on the M1C contactor.



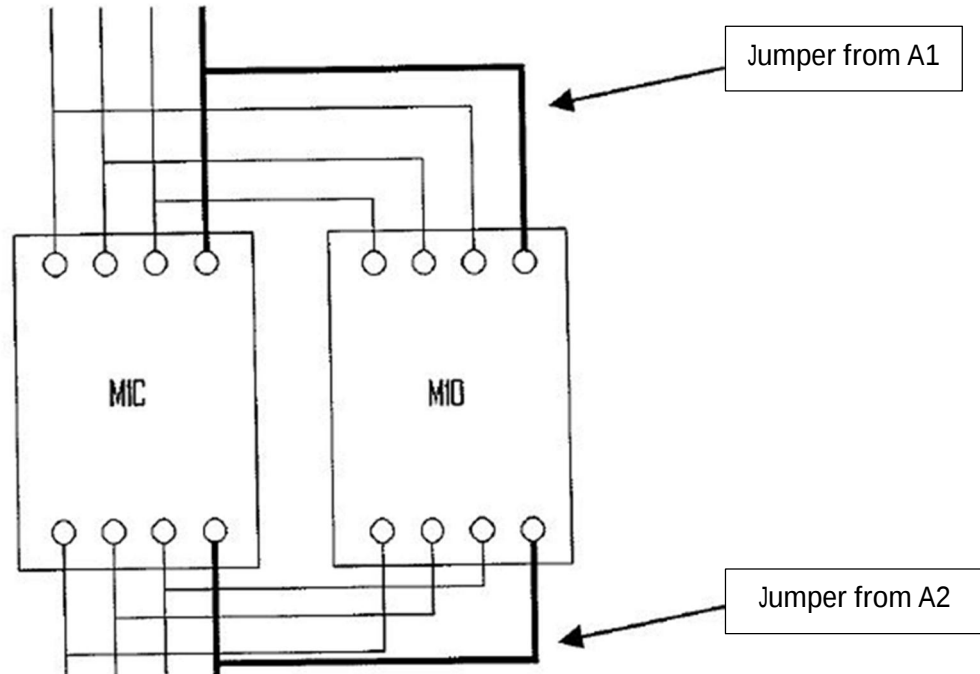
16. Put a jumper from T1 on the M1C contactor to T1 on the M1O contactor. Put a jumper from T2 on the M1C contactor to t2 on the M1O contactor. Put a jumper from T3 on the m1C contactor to T3 on the M1O contactor.



17. If there is an A1 and A2 from the motor, connect the A1 to terminal 13 on the M1C contactor and A2 to terminal 14 on the M1C contactor. If there is no A1 or A2 coming from the motor, continue to step 19.



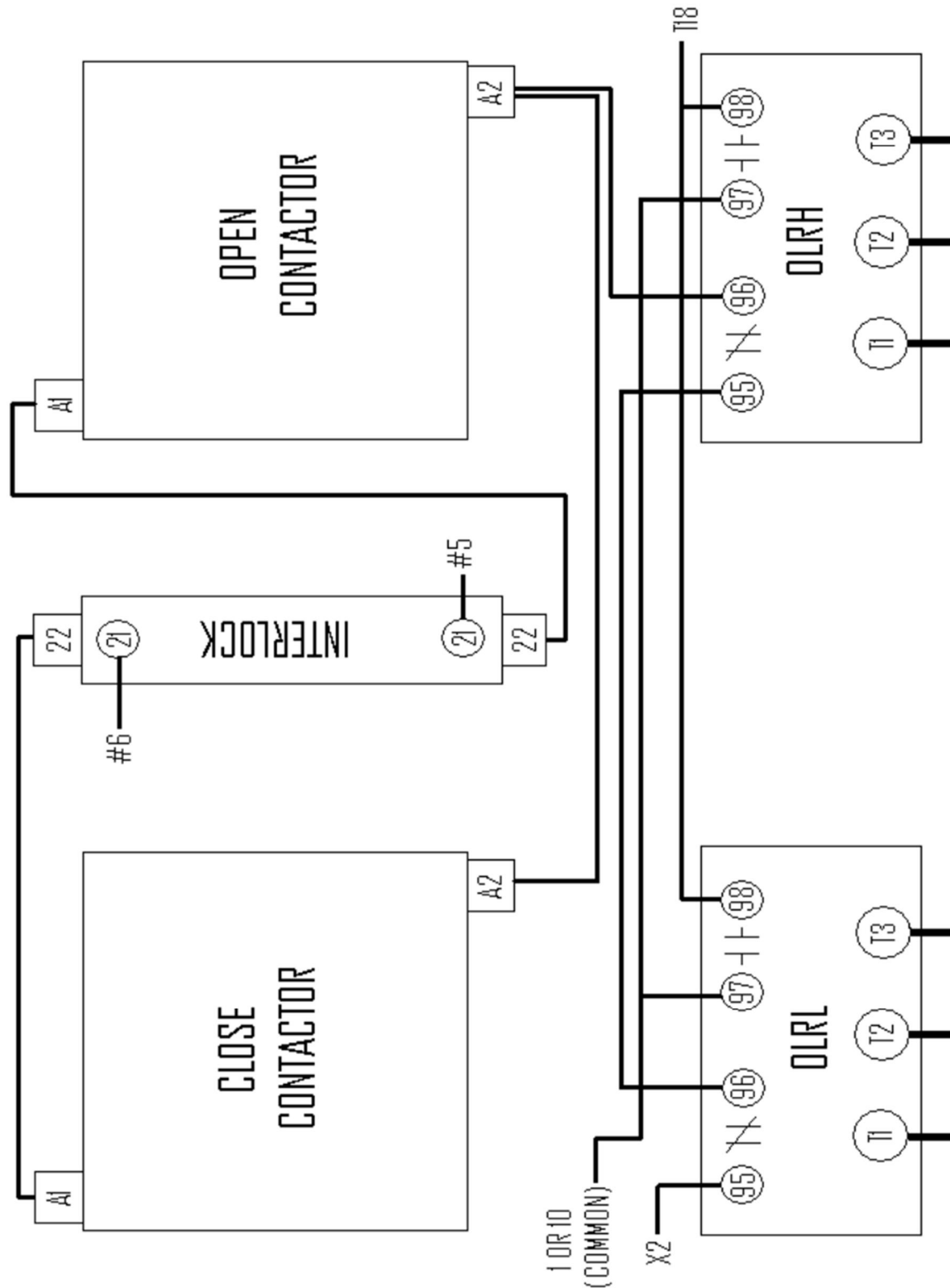
18. Put a jumper from terminal 13 on the M1C to 13 on the M1O. Put a jumper from terminal 14 on the M1C to terminal 14 on the M1O.



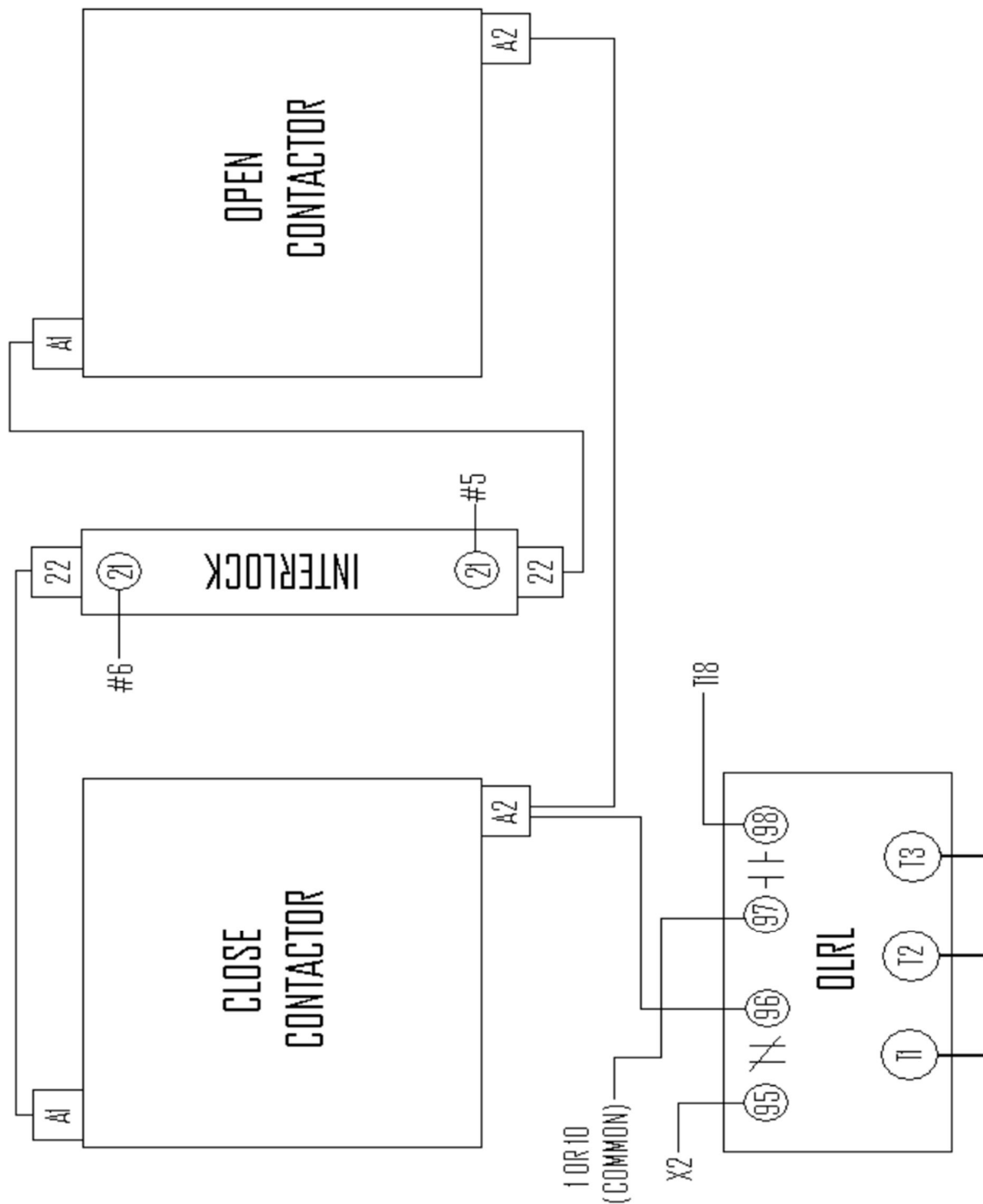
19. Cap wires from the motor T4, T5, and T6 and move them out of the way so that they do not interfere with any other wiring or contactors. After double checking all the connections turn power on and run the door. Make sure there is no mechanical binding and that the door runs freely.

Reference drawings below for Interlock and Overload specific wiring, and Complete Schematics.

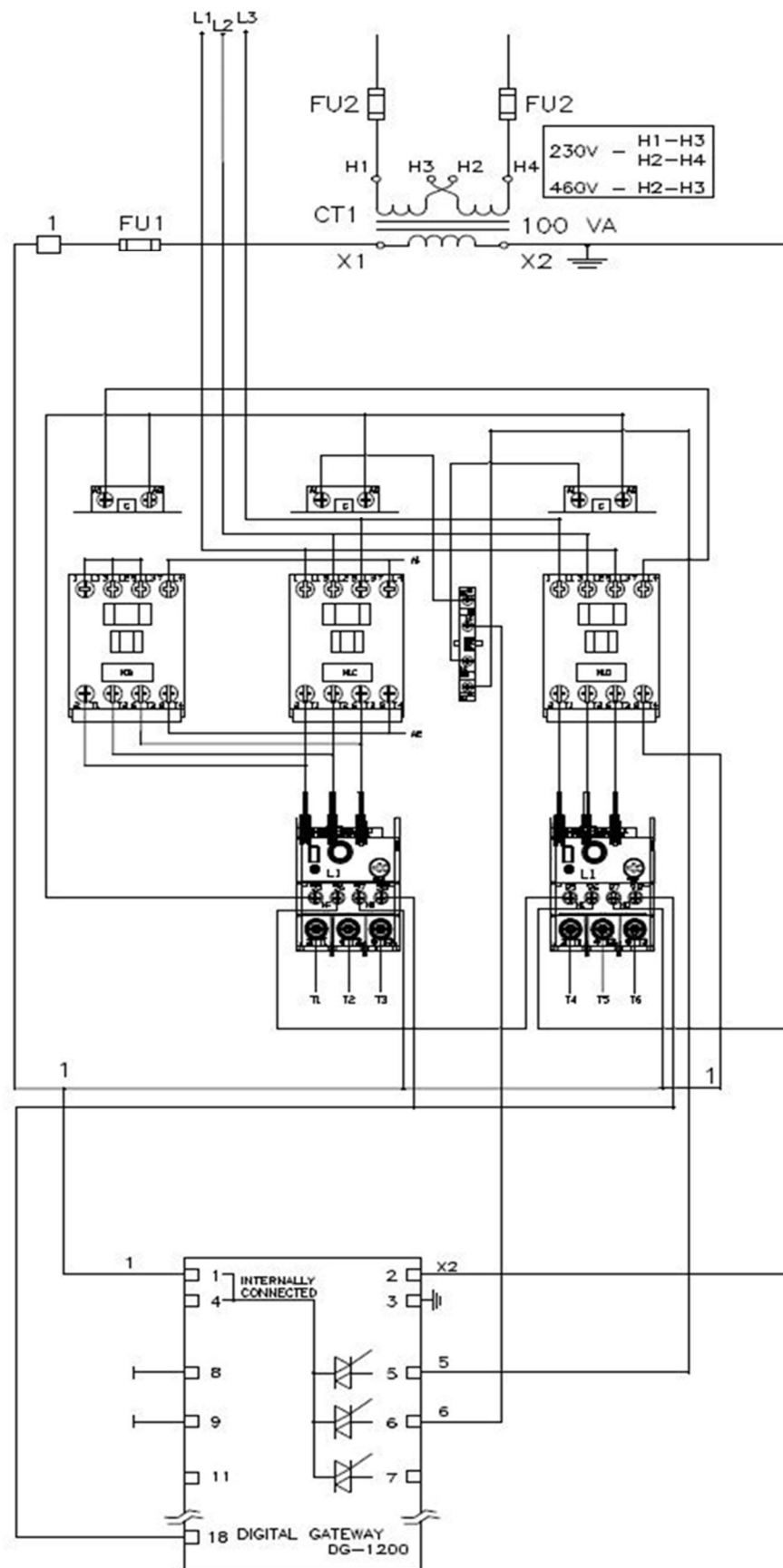
If you have any questions please contact Rytec Customer Support at 1-800-628-1909.

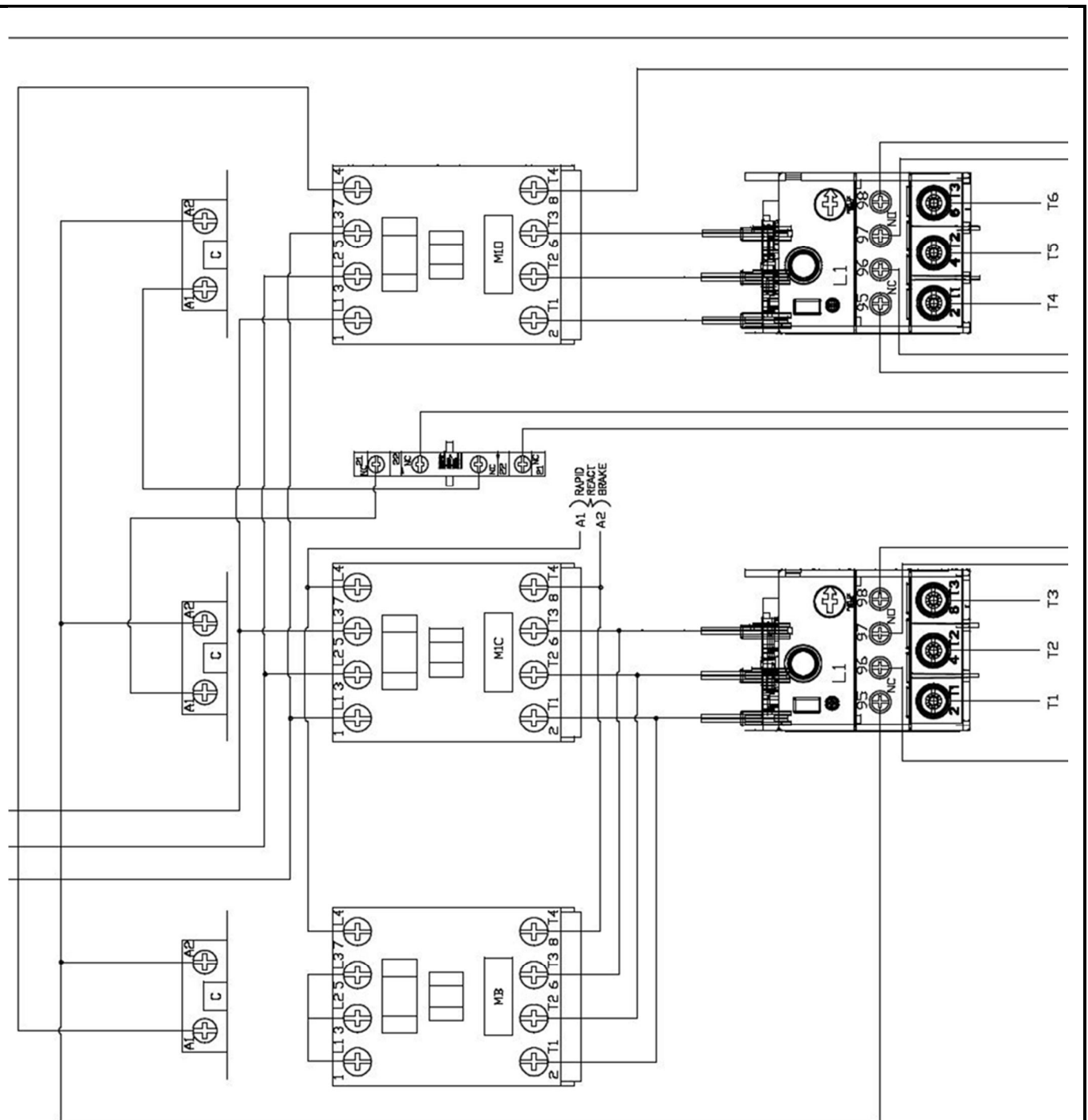


Two Speed Interlock and Overload Connections



Single Speed Interlock and Overload Connections





Close up of contactors, overloads, and interlock for 2 speed motor

