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Technical Service Bulletin

TSB 82-071F
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Alternator / Transfer Control Kit Operating Instructions *Part Number 70195 (99234/99250)*

Applicable to: All McIntire CAD / XE 8000, 12000, 17000 and 25000 Series Air Dryers

This kit is used for installations where the air consumption is equal to or less than the capability of one air dryer's output. The Alternator kit extends the life of the Air Dryer system, utilizes less energy and provides less heat rejection into a given area.

Purpose: The self-contained Alternator / Transfer kit is designed to alternate individual air dryer systems. The Alternator provides complete back-up protection should the on-line dryer malfunction or, if the cable demand (load) exceeds the capacity of the on-line dryer system. If this occurs, the stand-by dryer will energize to continue providing dry air and maintain cable plant pressure.

In the Alternate mode, this kit will alternately run each dryer system for a 24 hour period with approximately 15 to 30 minutes of overlap (dwell) time.

In the Transfer mode, this kit will allow one dryer to be used as a primary dryer while the second is used as a back-up or stand-by unit. Switching of the dryers periodically from primary to secondary is accomplished by simply depressing a switch.

Alternator Specifications:

Dimensions:9"H x 9"W x 4"D
 Weight:20 lbs.
 Power requirement:115 Volts AC (supplied by either air dryer)
 Control cable length:25 Ft.

Materials Included:

Part No.	Description	Quantity in Kit
N/A	Alternator Control Box Assembly	1
M-40443	Outlet Check Valve Assembly	2
ADK-125D	Compression Nut	4
M-P427-4	1/4" OD Cap	2
M-120-9	Tee 1/8" NPT (1/4" run x 1/4" drop)	2
ADK-130A	1/4" Plastic Tubing	50'
TSB 82-071F	Installation Instructions	1



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Installation Instructions:

If the Alternator is to be used with a model number other than those listed at the beginning of this TSB, call the factory for additional installation information.

For All Dryer Models:

1. Install the control box assembly convenient to each machine; either between the two machines on a wall or rack or to the side of one machine. Be sure that the control cables will reach the connector at the rear of the electrical box of each machine.
2. Shut off the electrical power to each system.
3. Remove the fitting at the low pressure air outlet connection. Install the modified outlet check valve with tee in the outlet.
4. If both High and Low pressure outlets are being used on the dryers, an additional check valve and coupling (p/n 11021 and 60702) are necessary in the High pressure outlet of each machine.

ALL DRYER SYSTEMS WITH SERIAL NUMBER "XXX-030701" AND HIGHER DO NOT REQUIRE ANY WIRING CHANGES TO THE DRYER. HOWEVER, DRYERS WITH OLDER (LOWER) SERIAL NUMBERS DO REQUIRE THE WIRING CHANGES OUTLINED BELOW, AND MAY REQUIRE SOME ADDITIONAL HARDWARE. CONSULT THE FACTORY FOR DETAILS

5. The following steps are determined by the model of air dryer to be used with the alternator kit. If the installation requires the kit to be installed on two different air dryers (For example, an 8000 XE and a 12000 L1), follow the instruction steps for each model, independently.

For CAD 8000L1 and 12000L2 Only:

6. Refer to Figure 1. Remove the 1/8 inch plug from the bottom of the Output Pressure Regulator and install a "tee" fitting (provided). Disconnect the 1/4 O.D. tube that is connected to the underside of the low pressure outlet and connect this tube to the "tee" at the Output Pressure Regulator. Install a 1/4 inch cap fitting at the low pressure outlet where the tube was removed. Proceed with the installation of the 1/4 O.D. tube from the Output Pressure regulator to the modified outlet check valve as outlined in paragraph 3.
7. In the dryer electrical box, locate Terminal Board #2 (TB2) Refer to the dryer operating manual. Disconnect the black (drain solenoid) wire connected to TB2 at the bottom of position 15.

Note: There are two (2) black wires connected to TB2 at position 15. Only the wire that can be traced going out the right side of the electrical box needs to be removed. Make sure to leave other wire in-place and tighten the screw on the terminal board.



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Locate the small, brown (18 gauge) wire attached to the bottom of the Power Relay. Connect the black drain solenoid wire to the Power Relay along with this brown wire.

For 8000 XE and 12000 XE Only:

8. In the dryer electrical box, locate Terminal Board #2 (TB2). Refer to the dryer operating manual. Disconnect the black (drain solenoid) wire connected to TB2 at the bottom of position 15.

Note: There are two (2) black wires connected to TB2 at position 15. Remove only the wire that can be traced going out the right side of the electrical box. Make sure to leave other wire in-place and tighten the screw on the terminal board.

9. Locate the small, brown (18 gauge) wire attached to the bottom of the Power Relay. Connect the black drain solenoid wire to the Power Relay along with this brown wire.

For CAD 17000 and 25000 Only:

10. In the dryer electrical box, locate Terminal Board #1 (TB1). Refer to the dryer operating manual. Disconnect the white/black wire connected to TB1 at the bottom of position 10. Tighten the now vacant terminal screw. There are two options available at this point. This white/black wire needs to be extended by approximately 6". This can be accomplished by cutting the spade terminal from the wire and, using a piece of 18 gauge wire and a butt splice, simply adding to the length of the white/black wire. The other option is to replace the white/black wire (still connected to TB2, position 14) with an entirely new length of 18 gauge wire. Either option will work. The loose end of the wire should be stripped about 1/4"
11. Locate the Power Contactors in the dryer electrical box. Coming from the bottom of both contactors are white/brown, 18 gauge wires. One contactor has two white/brown wires, the other has only one. Connect the new length of white/black wire into the contactor with the single white/brown wire.

For 17000 XE and 25000 XE Only:

12. A Float Switch Relay Kit, p/n M-99369, should be installed into each 17000 XE or 25000 XE dryer system when connected to the alternator kit. Follow the instructions included with the kits.

~~NOTE: EFFECTIVE JUNE 2003, P/N M-99369 FLOAT SWITCH RELAY KITS MUST BE ORDERED SEPARATELY FOR DRYERS WITH SERIAL NUMBERS OLDER (LOWER) THAN XXX-030701. CONSULT FACTORY IF YOU ARE NOT SURE ABOUT YOUR DRYER SERIAL NUMBER~~



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FOR ALL DRYER MODELS:

13. Remove the eliminator plug assembly from the connector at the rear of the electrical compartment on each dryer. (Turn collar counter-clockwise and pull out.) Save the eliminator plug for possible future use.
14. Connect the control cables to the now vacant receptacles on each dryer.

Note: Installation appearance may be enhanced by routing the electrical cable with the 1/4 O.D. tube on each dryer and fastening them together with cable ties or tape.

It is recommended that appropriate McIntire Multiple Dryer Manifold be utilized to conveniently connect the air supply of each dryer together. Consult Factory for details.

Test and Operation

"Alternate" Mode Pre-Check

15. Restore power to both air dryers and allow the flow of air to stabilize.
16. If a humidity alarm exists on either dryer, allow several minutes for the alarm(s) to clear and for the dryers to return to normal operation (23 PSI system pressure / 10 - 15 PSI output pressure)

"Alternate" Mode Test

17. Push the Alternator power switch "ON"; This will provide power to the timer and related Alternator controls. Move the Alternator / Transfer toggle switch *all* the way down to the "Alternate" position. With the toggle switch in this position the Air Dryer Selector switch, located between the "A" and "B" dryer lights, has no function.
18. Check that both "A" and "B" override switches are in the "OFF" (down) position. Air dryer "A" and "B" indicating lights should remain lit.
19. Push the compressor reset switch. This is a momentary switch and will return when released. One of the dryer systems will shut down, depending on the sequence of the timer cams, and the corresponding dryer light on the Alternator will go out. In the event the timer is in the overlap (dwell) position, both dryers will remain running for several minutes after the compressor reset switch has been pressed. After this overlap period, one dryer will shut down.

CAUTION: DO NOT ATTEMPT TO ADJUST INDIVIDUAL TIMER CAMS. TURN TIMER KNOB CLOCKWISE ONLY.

Note: Advancement of the timer can be accomplished by slowly turning the timer knob toward you (clockwise). Manually setting the timer to the overlap position (both dryers running), with the controls set to "Alternate", will cause the dryers to switch over at that same time each day. (i.e. If it is 10:00 A.M. when you set the timer to the overlap position, the dryers will switch over at 10:00 A.M. each day.)



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20. The on-line dryer will now operate until the timer calls on the second system or the output pressure on the running dryer drops. If the output pressure drops below 11 PSI, the pressure switch in the Alternator will activate the Compressor Latching Relay (also in the Alternator) and the stand-by dryer system will start.
21. The Alternator Pressure Switch is factory set to activate at 11 +/-1 PSI. To check for proper low pressure start-up, turn the Output Pressure Regulator of the on-line (running) dryer slowly counter-clockwise to reduce output pressure. At approximately 11 PSI, the low pressure alarm light on the dryer should be lit and the stand-by dryer will start.

Note: If the pressure does not drop below 11 PSI, open the high pressure valve at the rear of the on-line dryer (if it's not being used) to lower output pressure or, disconnect the plastic tube at the Alternator control box. The stand-by dryer will start. If the output pressure on the dryer is normally set lower than 15 PSI, it is recommended that the Alternator Pressure Switch be set 2 PSI below the Low Pressure Alarm setting in the dryer. (I.E. If the dryer output pressure is normally set to 13 PSI, the Low Pressure Alarm setting in the dryer should be set to 11 PSI and the Alternator Pressure Switch should be set to 9 PSI.)

22. Return the on-line dryer to normal output pressure.

"Transfer" Mode Test

23. Move the Alternator / Transfer toggle switch to the "Transfer" position. With the toggle switch in this position, control of the dryers is removed from the Alternator Timer and placed onto the Dryer Selector Switch (located between the "A" and "B" dryer lights.) The timer now has no function.
24. Push the compressor reset switch. One of the dryer systems will shut down depending on the position of the Dryer Selector Switch.
25. With the Dryer Selector Switch toward "A" or "B" light, that particular dryer will become the primary dryer while the other will remain in the "stand-by" mode. Should an exceptionally high cable demand occur or the primary dryer malfunction, the back-up dryer will re-start to maintain cable pressure.
26. Depending on local practice, it is recommended that the primary and secondary operation of the dryers be reversed periodically to ensure equal wear of the dryer systems. Prior to moving the Dryer Selector Switch to the stand-by dryer, press the Override Switch up for the stand-by dryer to turn it on and allow pressures to stabilize. After both the output and system pressures stabilize, move the Dryer Selector Switch in the desired direction and push the Override Switch back to the down position. (The dryer that was the primary should now be in the stand-by mode.)
27. If the Alternator / Transfer kit is to be used in the "Transfer" mode of operation, simply leave the system as it is. If the "Alternate" mode is the preferred method of operation, we recommend returning to paragraph 3.1 and follow through to paragraph 3.3.



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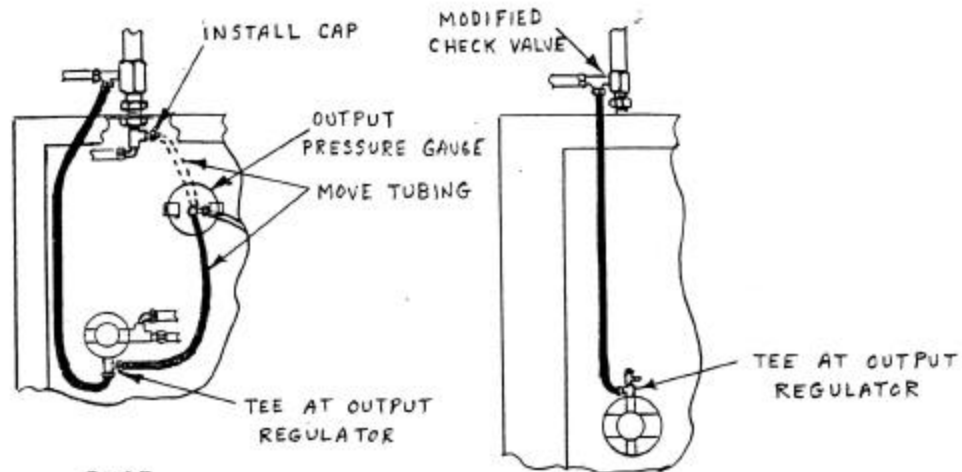
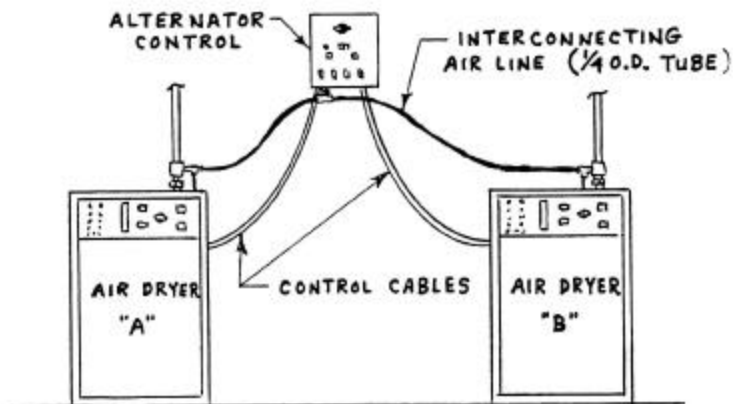
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8000 / 12000

FIG. 1

REAR
17000 / 25000

FIG. 2



(TYPICAL)



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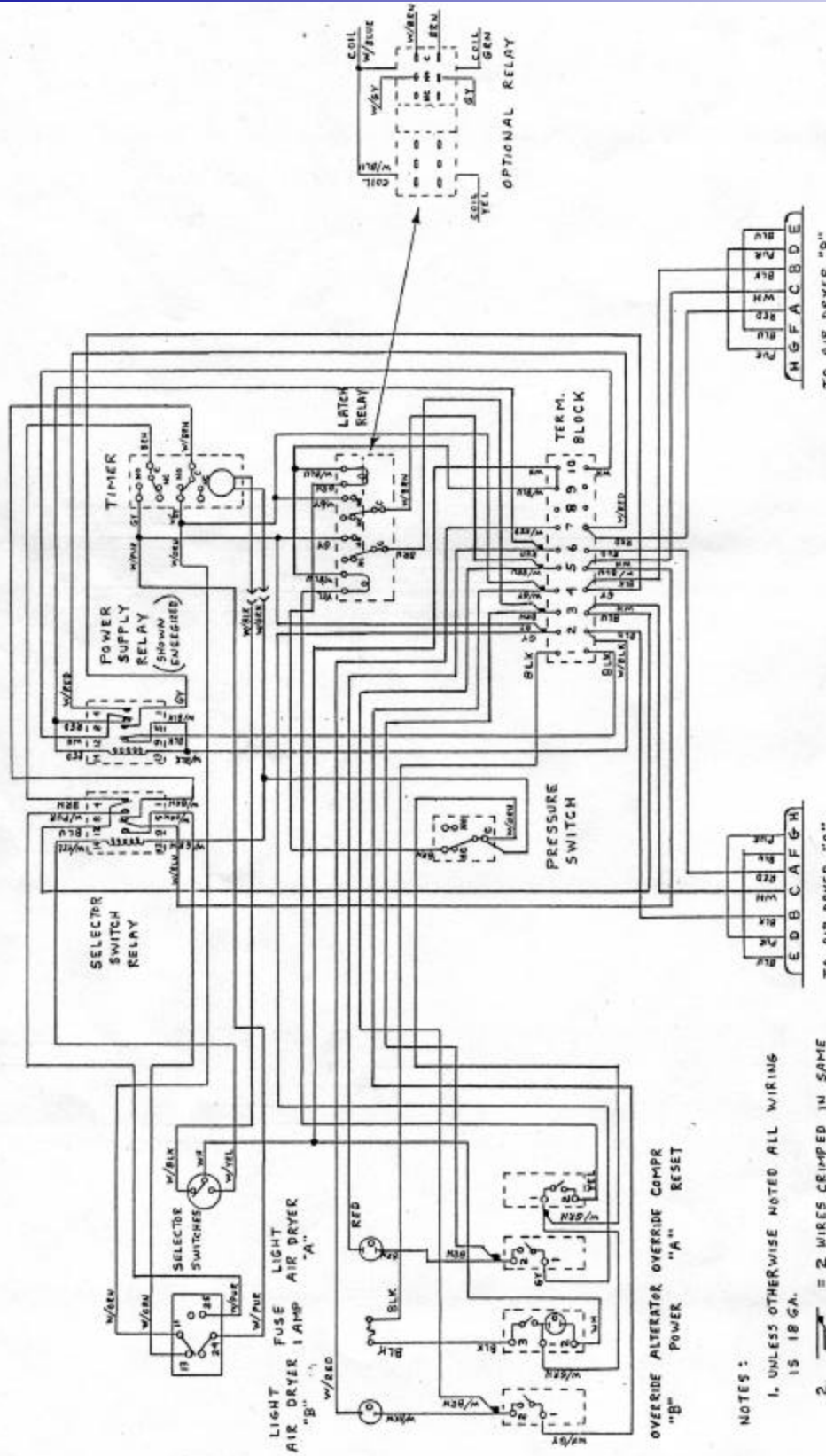


Figure 3 - Wiring Diagram

- NOTES:
1. UNLESS OTHERWISE NOTED ALL WIRING IS 18 GA.
 2. — = 2 WIRES CRIMPED IN SAME TERMINAL.
 3. RELAYS AND SWITCHES SHOWN IN "ALTERNATE" POSITION.



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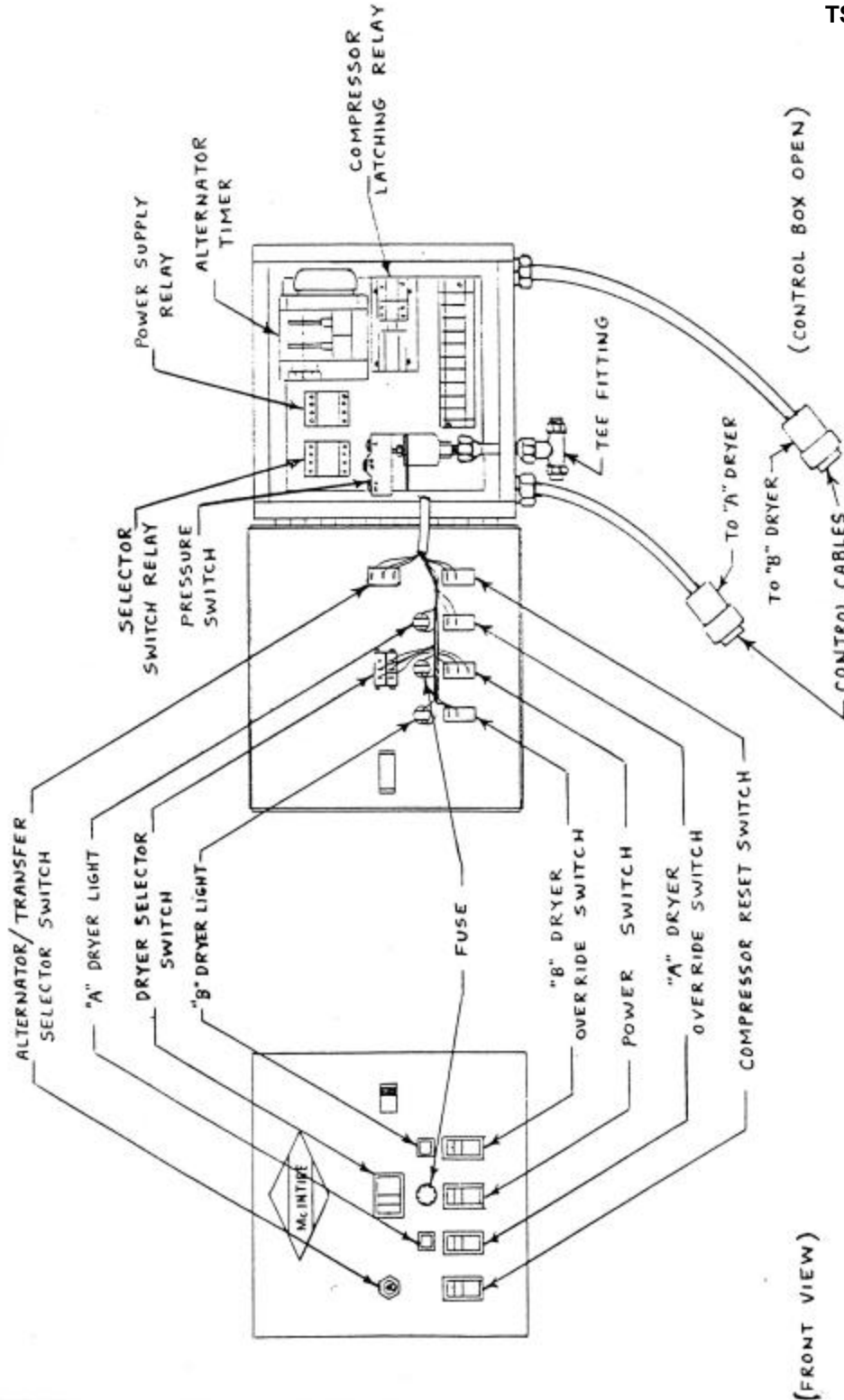


Figure 4 - Component Identification