



CLASS 6815 (FORMERLY 1315) TYPE A MAGNET CONTROLLERS

SERIES A, 230 VOLTS DC

STANDARD TYPES A-80 & AW-80 RATED 31-80 AMPS

STANDARD TYPES A-130 & AW-130 RATED 81-130 AMPS

FOR USE WITH 230-250V DC GENERATOR SUPPLY

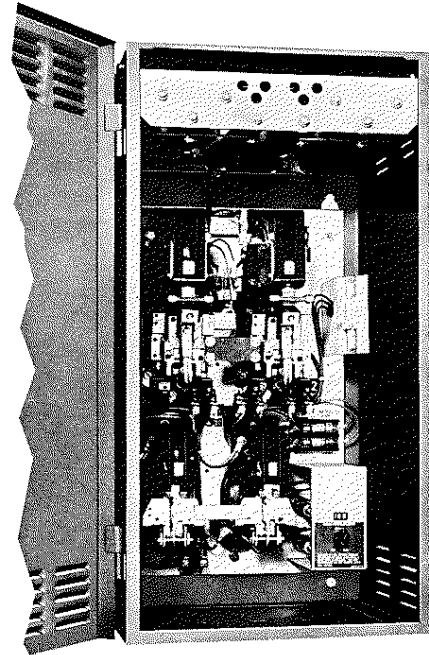
IMPORTANT: CONSULT SQUARE D BEFORE USING WITH A RECTIFIER POWER SUPPLY.

Amp Ratings shown above apply to the "cold" current drawn by a magnet when its internal temperature is 68° - 77° F. Note: Types A-130 and AW-130 are rated 50 Amps minimum if generator is at least 20KW.

Installation:

- Unpack controller carefully. Verify receipt of correct device by checking main nameplate on panel.
- Thoroughly inspect equipment for any transit damage. Tighten any electrical connections that might have loosened during shipment.
- Bolt controller securely into desired position.
- Wire all external power and control circuits in accordance with wiring diagram.
- Before applying power or connecting magnet, manually operate contactors to check for free movement without binding, and make sure all four arc chutes are pivoted to their fully down position.

WARNING: Electrical Shock Hazard when enclosure door is open. Contactor arcing is normal for control operation and this arcing may result in emission of hot particles. To avoid injury from emission of hot particles, service personnel should wear safety glasses and stand back and to the side when operating control with enclosure door open.



Start-Up: (With Magnet Disconnected)

- Place pilot device in "DROP" position. Apply voltage to controller. Check voltage, it should be between 230-250V for best performance.
- Check polarity with a voltmeter. The positive lead should be connected to the terminal at the top of the top left contactor, as you face the controller. The negative terminal is located at the top of the top right contactor. *NOTE: Controller will NOT operate if polarity is reversed. Set rheostat above mid point.*
- Energize controller, *without magnet connected*, by placing pilot device in "LIFT" position. Lift contactor should close freely.
- De-energize controller by placing pilot device in "DROP" position. The following should occur in rapid sequence:
 - Drop contactor closes
 - Lift contactor opens
 - Drop contactor re-opens in approx. 4 seconds.
- Remove power from the controller. Connect the magnet. Apply power to the controller and repeat steps C and D. *With magnet connected, the drop contactor should re-open after 1-3 seconds.*

Adjustment For Clean Drop: To adjust the controller for a clean drop without "repicking", a reverse current rheostat is provided. On standard Type A controllers, it is located on a bracket inside the enclosure. To obtain the best setting for a given magnet, start with the knob set near MIN, then make lifts and drops at successively

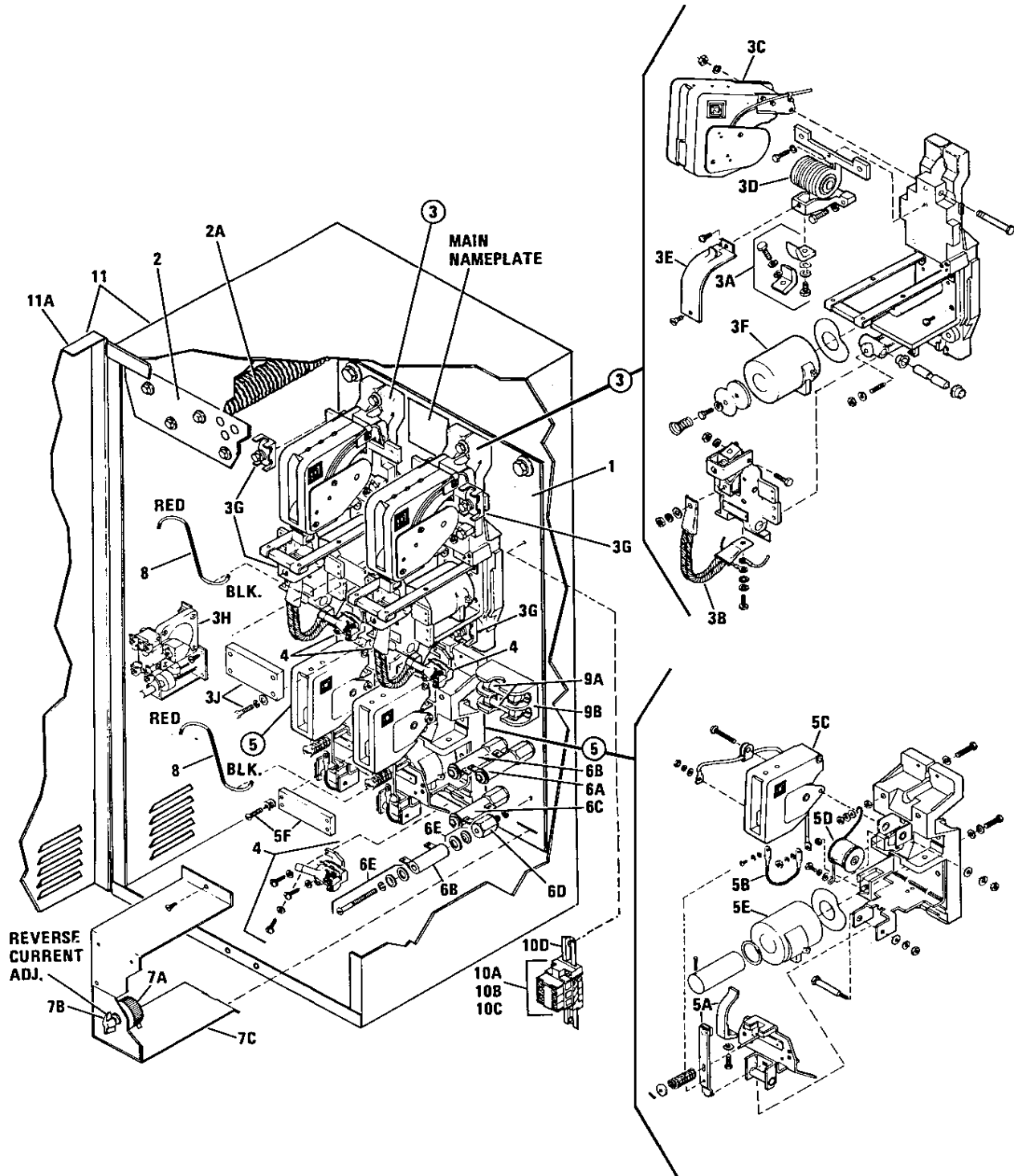
higher settings until a clean drop is obtained. Do not set higher than necessary to get a clean drop on all types of loads being handled. Rheostat should be reset if magnet is changed.

Preventive Maintenance and Troubleshooting:

- Contact Tips* should be inspected on a regular basis for wear and excessive pitting, before a malfunction occurs. *Tips should be replaced in sets* (one set for the larger, upper pair of Lift contactors; one set for the smaller, lower pair of Drop contactors). Each set is available in a kit (see Items 3A and 5A on pages 3 and 4). It is recommended that both kits be kept on hand.
- Periodic Inspection During Operation* can reveal abnormal conditions. While dropping a load, if excessive or unequal arcing occurs when the two Lift contactors open, or when the two Drop contactors open, the system should be shut down to prevent further damage, and the following items checked:
 - Contact tips and "pigtail" connectors on all four contactors.
 - Electrical continuity of all resistors and the reverse current rheostat.
 - Electrical continuity of all electrical interlocks.
 - Shorts and grounds in the system, including the generator, cable, reel and magnet. Because ohm-meters may not detect grounds, a 500V or 1000V Megger should be used.



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PARTS INFORMATION

SYMBOL on Wiring Diagram	ITEM NO. From Pg. 2	DESCRIPTION <i>Note:</i> Indented items listed directly under a device are component parts of that device	TOTAL QTY. in Controller	ORDER PARTS BY NUMBERS SHOWN BELOW (Part Number or Class & Type Number)	
				(For Types A-80 & AW-80)	(For Types A-130 & AW-130)
	1	Assembled Control Panel (Does not include Item 2 resistor assy.)	1	Class 6815 Type AP-80	Class 6815 Type AP-130
	—	Wiring Kit (contains replacement control & power wiring)	1	50910-506-50	50910-506-50
1R1, 2R1, 3R1, 4R1	2	Discharge Resistor Assembly, with resistors	1	50910-514-50	50910-514-51
	2A	Discharge Resistors only	→	(4 required) 26114-52330 (3.0 ohms each)	(8 required) 26114-52337 (3.75 ohms each)
1L, 2L	3	Lift Contactors (Complete except for Items 3G, 3H, 3J, & 4)	2	Class 7004 Type MEMO-1 with 120V coil (See Service Bul. 7004-65 for components not listed below).	Class 7004 Type MFMO-1 with 120V coil (See Service Bul. 7004-67 for components not listed below).
	3A	Set of Contact Tips for <i>both</i> Lift contactors (1L and 2L.	1	Class 9998 Type ME-1 Kit (Contains 2-moveable tips, 2-stationary tips, & hardware)	Class 9998 Type MF-1 Kit (Contains 2-moveable tips, 2-stationary tips, & hardware)
	3B	Connector	2	51017-204-50	51018-204-50
	3C	Arc Chute	2	51017-217-50	
	3D	Blowout Coil	2	51017-205-50	
	3E	Blowout Coil Guard	2	51017-237-01	
	3F	Operating Coil, 120 volt	2	51017-056-51	
1L, 2L	3G	Set of Power Terminal Lugs	1	Class 9999 Type ML-1 Kit (Contains 4-clamshell lugs)	
1L	3H	Backup Timer (actuated by 1L contactor)	1	Class 9999 Type MK-5 Pneumatic Timer Kit <i>Note: Mount at right of 1L contactor, then set for 4-second off-delay</i>	
1L-2L	3J	Tie-Bar	1	Class 9999 Type MT-2 Kit	
1L, 2L, 1D	4	Electrical Interlocks (For Items 3 and 5) (qty. shown for std. controllers)	4	Class 9999 Type MX-11 Kit (Each kit contains 1-N.O. & 1-N.C interlock) 1 kit required for 1L contactor; 2 kits required for 2L contactor; 1 kit required for 1D contactor	

(Continued on Page 4)

**PARTS INFORMATION (continued)**

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1D, 2D	5	Drop Contactors (Complete except for Items 4 & 5F)	2	Class 7004 Type MXCO-1 with 120V coil (See Service Bul. 7004-61 for components not listed below)
	5A	Set of Contact Tips for <i>both</i> Drop contactors (1D and 2D)	1	• Class 9998 Type MX-1 Kit (Contains 2-moveable tips, 2-stationary tips, & hardware)
	5B	Connector (Shunt)	2	51016-220-50
	5C	Arc Chute	2	51016-221-50
	5D	Blowout Coil	2	51015-205-50
	5E	Operating Coil, 120 volt	2	51015-056-51
1D-2D	5F	Tie-Bar	1	Class 9999 Type MT-1 Kit
R2	6A	Control Resistor, 5000 ohm, 25 watt	1	52906-024-78
R3, R4	6B	Control Resistor, 500 ohm, 25 watt	2	52906-024-66
R5	6C	Control Resistor, 250 ohm, 25 watt	1	52906-024-63
	6D	Resistor Standoffs (for Items 6A, 6B, 6C)	4	29903-01481
	6E	Sets of Resistor Mounting Hardware (for Items 6A, 6B, 6C)	4	52927-060-50
1RH	7A	Rheostat, 1000 ohm, 50 watt (Reverse Current Adjustment)	1	26198-34310
	7B	Pointer Knob (for Item 7A)	1	29203-04002
	7C	Mounting Bracket (for Item 7A) (for standard controllers)	1	51124-479-01
1REC, 2REC	8	Diode Assembly	2	50910-030-50
1FU, 2FU	9A	Fuses, 15A. 250V.	2	25405-00150
	9B	Fuse Block	1	25408-30200
TB	10A	Control Terminal Blocks (qty. shown for std. controllers)	3	Class 9080 Type GB3
	10B	Terminal End Barrier	1	Class 9080 Type GB-3B
	10C	Terminal End Clamps	2	Class 9080 Type GH-10
	10D	Terminal Mounting Channel	1	Class 9080 Type GH-105
11	11	Enclosure only, with door (Add Item 12 for Type AW controllers)	1	50910-005-51
	11A	Door only	1	50910-010-52
	12	NEMA 3R Mounting Strap Kit (for Type AW controllers)	1	50910-506-51

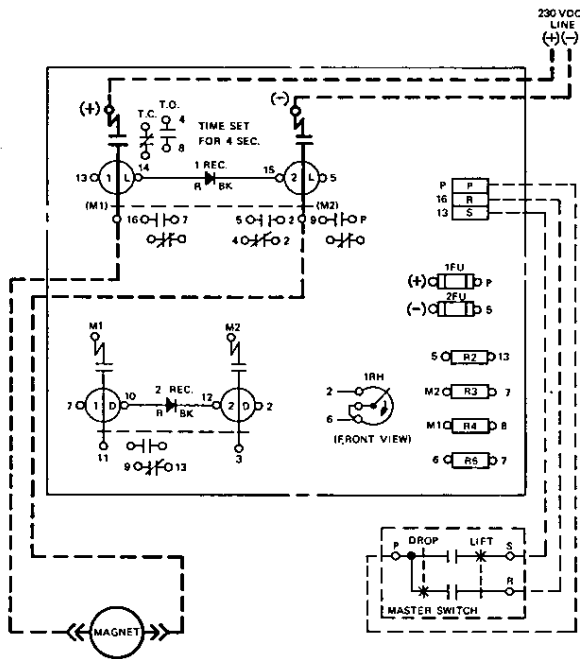
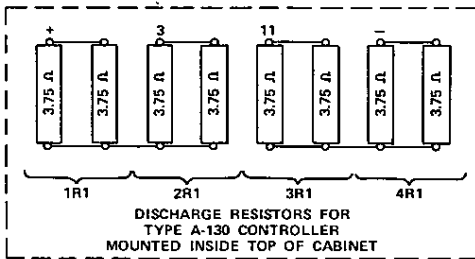
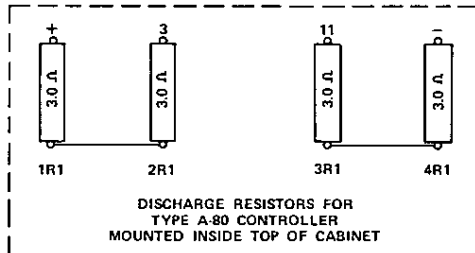


STANDARD TYPE A MAGNET CONTROLLERS

WIRING DIAGRAM

NOTE: CONTROLLER WILL ONLY OPERATE WHEN USING INDICATED POLARITY

CONNECTION DIAGRAM



ELEMENTARY DIAGRAM

