

UNIT INSTRUCTIONS

TD-328

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POWER SUPPLY 409X-2

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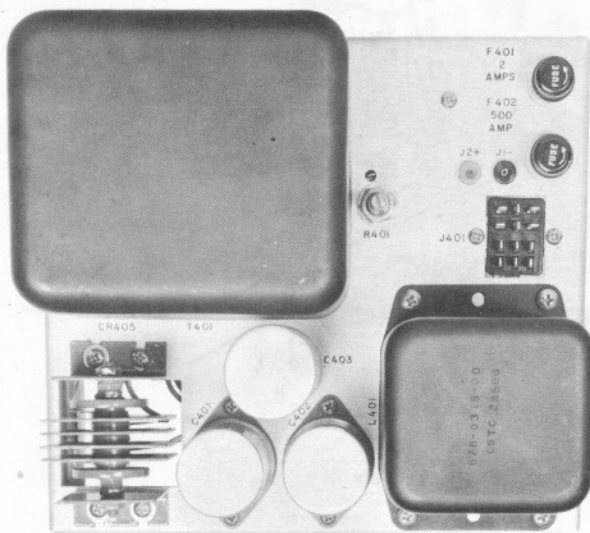


Figure 1. Power Supply 409X-2

C583-17-P

1.1 PURPOSE OF EQUIPMENT.

Power Supply 409X-2 furnishes power for filaments, plate circuits, and relays in Collins Broadcast Consoles 212E-1, 212F-1, and 212G-1.

1.2 PHYSICAL DESCRIPTION.

Power Supply 409X-2 (figure 1) is a plug-in power supply. It is 9 inches long, 8 inches wide, and 6 inches high and weighs 25 pounds.

1.3 ELECTRICAL CHARACTERISTICS.

a. CONNECTORS. One 12-pin connector, J401, is located on top of the chassis. All connections to Power Supply 409X-2 are made at this connector.

b. POWER SOURCE. The 409X-2 requires a 115- or 230-volt a-c $\pm 10\%$, 50/60-cps, single-phase power source capable of supplying 225 watts maximum power.

c. OUTPUT VOLTAGES. The output of the 409X-2 is as follows: 250 to 300 volts d-c (adjustable) at 250 ma maximum, 6.3 volts a-c at 6.0 amperes, biased at approximately +30 volts d-c, 12 volts d-c at 1 ampere.

2.1 CIRCUIT DESCRIPTION.

Figure 3 is a schematic diagram of Power Supply 409X-2. The 409X-2 is factory wired for a 115-volt a-c operation, but may be connected to a 230-volt source if transformer T401 primary terminals are connected as follows: disconnect the wires from terminal 1 to terminal 2 and from terminal 3 to terminal 4 on TB401. Connect terminal 2 to terminal 3. Replace F401 with a 1.0-amp fuse. The power supply is protected by fuse F401 in the transformer primary circuit and by fuse F402 in the B- output lead. The 409X-2 has an unregulated output.

Four type 1N1492 silicon rectifiers, CR401 through CR404, are utilized to provide the high-voltage output. This output is filtered by C401, C402, and L401. The high-voltage output may be adjusted from 250 to 300 volts d-c by R401. A selenium rectifier, CR405, provides 12 volts d-c for operation of relays. The 12-volt supply is filtered by C403. The a-c power is supplied to the rectifying circuits from windings on T401. The winding associated with the 12-volt supply has a high-voltage tap to be used when necessary to compensate for aging of CR405. Another winding on T401 provides the 6.3-volt a-c for the filament string. This winding is biased with approximately +30 volts d-c to minimize a-c noise in the preamplifiers.

3.1 MAINTENANCE.

Normal maintenance consists of fuse replacement. Refer to figure 4, if necessary, to perform continuity or voltage checks. Test points J1- and J2+ are located on top of the chassis for ease of B+ adjustment.

4.1 REPLACEMENT PARTS.

The parts list gives the description and Collins part number for all replaceable parts in Power Supply 409X-2. When replacement of parts is necessary, only parts identical or equivalent to those listed should be used. All parts are identified in figure 2.

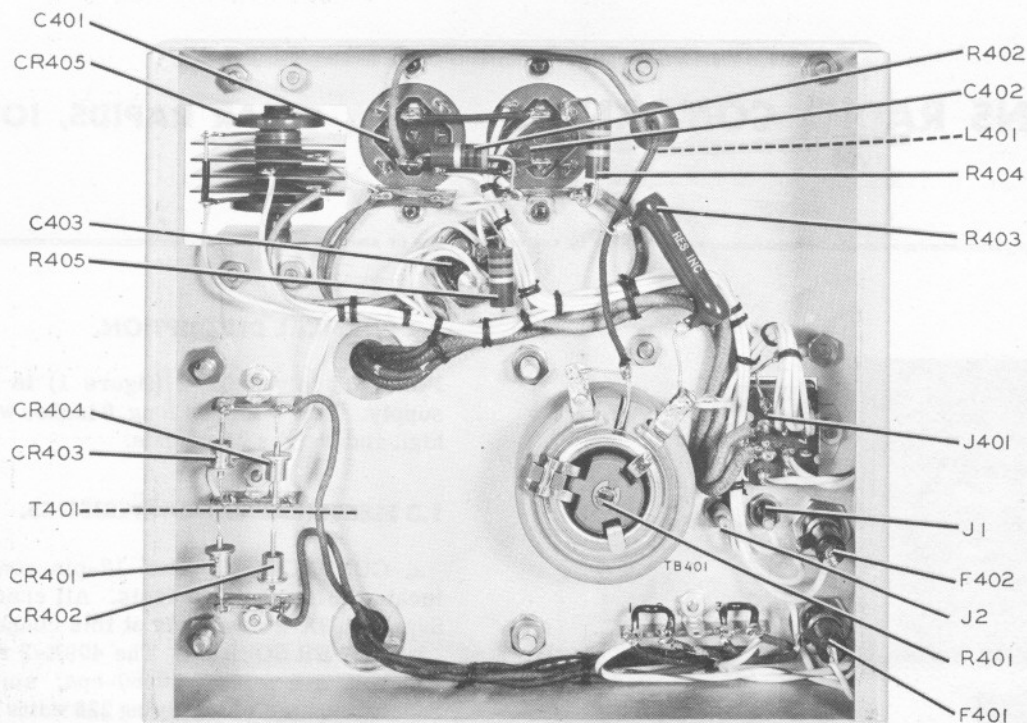
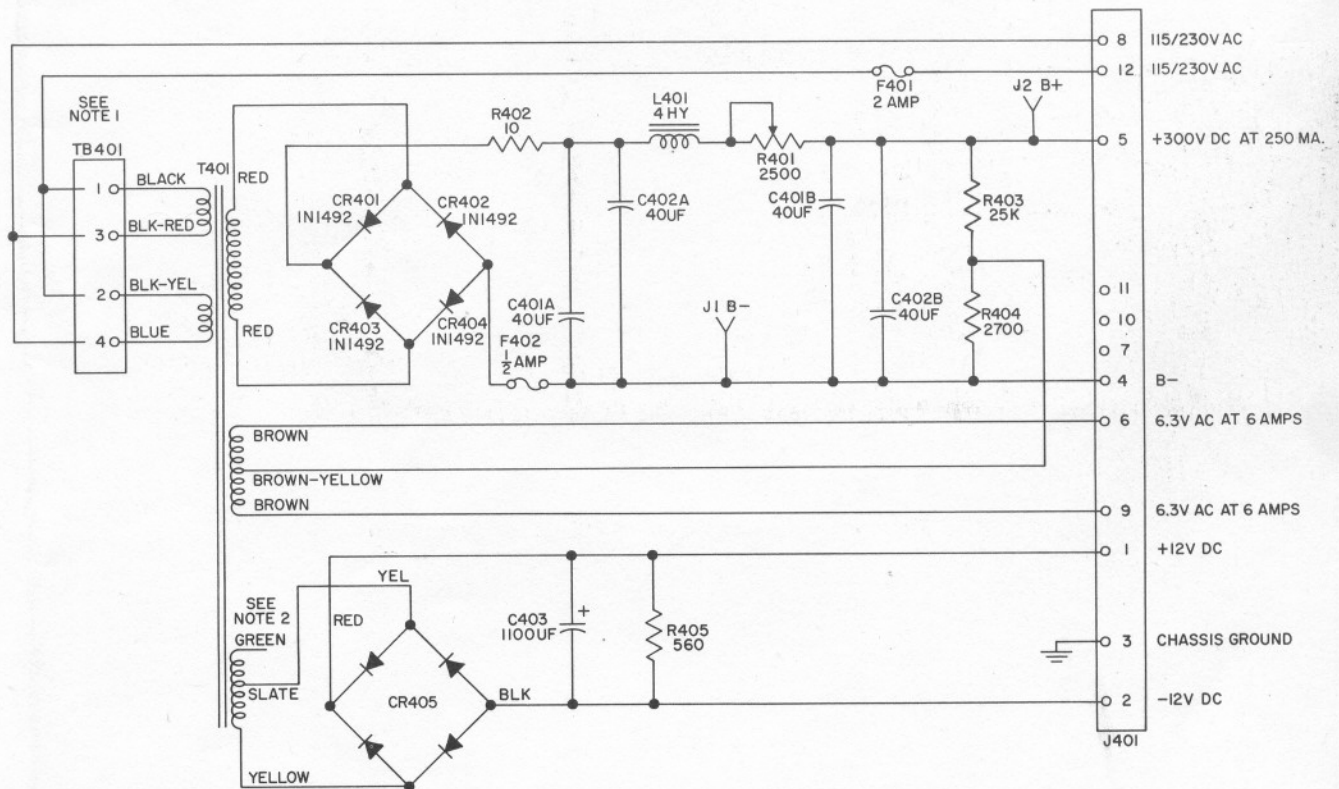


Figure 2. Power Supply 409X-2, Bottom View

C583-19-P

PARTS LIST

ITEM	DESCRIPTION	COLLINS PART NUMBER	ITEM	DESCRIPTION	COLLINS PART NUMBER
POWER SUPPLY 409X-2		522 1691 000	L401	REACTOR: 4.0 hy inductance 275 ma dc, 100 ohms dc resistance, metal encased, 3-1/4 in. by 4-1/32 in. by 3-7/8 in. h	668 0446 00
C401	CAPACITOR, FIXED, ELECTROLYTIC: dual section, 40 uf ea, +5% -10%, 450 v dc	183 1259 00	R401	RESISTOR, VARIABLE, WIRE WOUND: 2500.0 ohms, $\pm 10\%$, 50 w	736 0231 00
C402	CAPACITOR, FIXED, ELECTROLYTIC: same as C401	183 1259 00	R402	RESISTOR, FIXED, COMPOSITION: 10 ohms, $\pm 10\%$, 2 w	745 5568 00
C403	CAPACITOR, FIXED, ELECTROLYTIC: 1100 uf, 25 v dc	184 2000 00	R403	RESISTOR, FIXED, WIRE WOUND: 25,000 ohms, $\pm 10\%$, 10 w	710 9068 00
CR401	RECTIFIER: silicon, General Electric 1N1492	353 1661 00	R404	RESISTOR, FIXED, COMPOSITION: 2700 ohms, $\pm 10\%$, 2 w	745 5670 00
CR402	RECTIFIER: same as CR401	353 1661 00	R405	RESISTOR, FIXED, COMPOSITION: 560 ohms, $\pm 10\%$, 2 w	745 5642 00
CR404			T401	TRANSFORMER POWER STEP-UP, STEP-DOWN: encased, metal case, primary winding no. 1 and no. 2, 115 v each 230 connected, 50/60 cps secondary windings 265 v, 12.0 v, 13.5 v, 6.3 v ct	662 0445 00
CR405	RECTIFIER, METALLIC: selenium; Sarkes-Tarzian type 5N26-1B-1BBS	353 0254 00	TB401	TERMINAL BOARD: phenolic; incl 5 solder lug terminals; 1/16 in. by 3/8 in. by approx 1-15/16 in.	306 0550 00
F401	FUSE, CARTRIDGE: 2 amp, 125 v dc; time delay, ferrule type terminal	264 0008 00	XF401	FUSEHOLDER: extractor post type; 250 v, 15 amp	265 1003 00
F402	FUSE, CARTRIDGE: 1/2 amp, 250 v; time delay, ferrule terminals; 1/4 in. dia. by 1-1/4 in. lg o/a	264 0293 00	XF402	FUSEHOLDER: same as XF401	265 1003 00
J401	CONNECTOR, RECEPTACLE, ELECTRICAL: 12 male contacts, 10 amps, 730 v ac; straight shape	356 2120 00			
J1	JACK, TIP: accommodates standard phone tip, black plastic insulation, precious metal plated contact, terminal lug for wire accommodation	360 0063 00			
J2	JACK, TIP: accommodates std phone tip, red plastic insulation, precious metal plated contact, terminal lug for wire accommodation	360 0062 00			



NOTES:
1. T401 WIRED FOR 115V OPERATION. FOR 230V OPERATION MAKE FOLLOWING CHANGES ON TB401: REMOVE JUMPERS 1 TO 2 AND 3 TO 4, ADD JUMPER 2 TO 3. REPLACE F401 WITH 1 AMP FUSE.
2. GREEN LEAD OF T401 IS AN AGING TAP.

Figure 3. Power Supply 409X-2, Schematic Diagram

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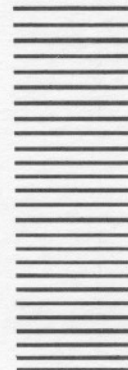
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