

**CUE AMPLIFIER****356Q-1**

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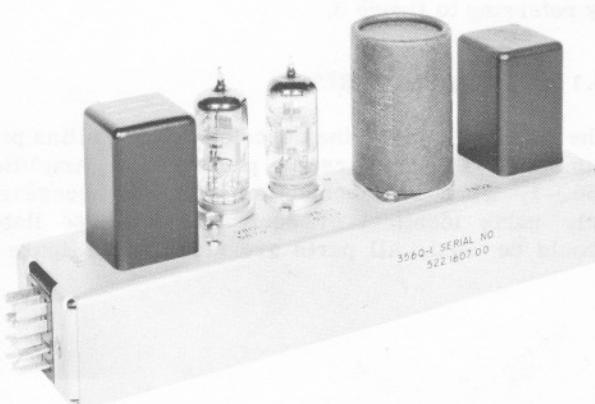


Figure 1. Cue Amplifier 356Q-1

C583-14-P

**1.1 PURPOSE OF EQUIPMENT.**

Cue Amplifier 356Q-1 is intended for use as an audio amplifier with broadcast equipment, such as Collins Broadcast Console 212G-1. It may be used in AM, FM, and TV broadcast service or program control in audio systems for cueing tapes and records.

**1.2 PHYSICAL DESCRIPTION.**

The 356Q-1 (figure 1) is a plug-in module containing the necessary circuitry for two stages of audio amplification. The 356Q-1 is 4-5/8 inches high, 2-1/8 inches wide, and 9-1/2 inches long and weighs approximately 2-1/4 pounds.

**1.3 TUBE COMPLEMENT.**

FUNCTION	SYMBOL	TUBE TYPE
Input amplifier	V801	5879
Output amplifier	V802	5879

**1.4 ELECTRICAL CHARACTERISTICS.**

a. CONNECTORS. One 12-pin connector, P801, is located at the front end of the chassis. All connections to the 356Q-1 are made at this connector.

b. POWER REQUIREMENTS. Power requirements for Cue Amplifier 356Q-1 are as follows: 250-300 volts d-c filtered at 6.5-7.5 ma and 6.3 volts a-c or d-c at 0.3 ampere.

c. FREQUENCY RANGE. The frequency range of the 356Q-1 is 300 to 10,000 cycles per second.

d. INPUT IMPEDANCE. Cue Amplifier 356Q-1 is factory wired for 600 ohms unloaded transformer input impedance.

e. GAIN. A -30-dbm nominal input signal produces an output of +20 dbm nominal. Gain through the amplifier is 55 db.

f. OUTPUT IMPEDANCE. Cue Amplifier 356Q-1 is factory wired for 4 ohms output impedance.

g. FREQUENCY RESPONSE. The frequency response of the 356Q-1 is within 3 db from 300 to 10,000 cps.

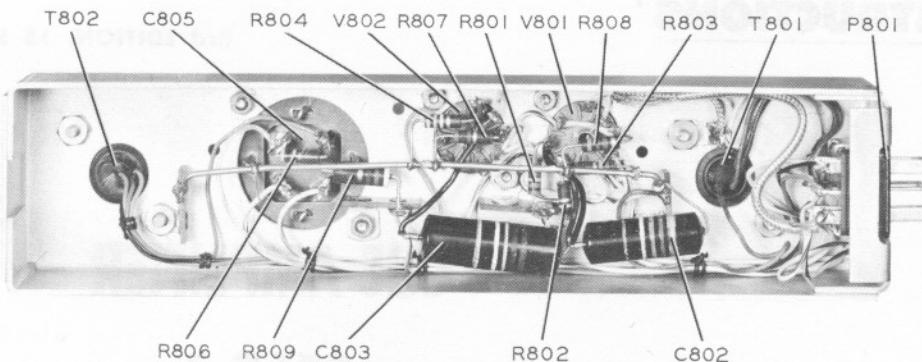


Figure 2. Cue Amplifier 356Q-1,  
Bottom View

C583-22-P

h. NOISE LEVEL. The equivalent input noise level of Cue Amplifier 356Q-1 is -100 dbm. When the 356Q-1 is used with Collins Power Supply 409X-2, the filaments are maintained at approximately +30 volts d-c above ground. This positive bias minimizes a-c noise in the amplifier.

## 2.1 CIRCUIT DESCRIPTION.

Figure 3 is a schematic diagram of Cue Amplifier 356Q-1. Input to the 356Q-1 is coupled by transformer T801 and the CUE gain control, R58, in the 212G-1, to the grid of V801.

### NOTE

If Cue Amplifier 356Q-1 is used in equipment that does not provide a cue gain control, a 50,000-ohm potentiometer must be connected between terminals 8, 12, and 3 of P801. The potentiometer tap must be connected to terminal 8. Terminal 3 is ground.

The input amplifier, V801, is a pentode-connected type 5879. Its output is resistance-capacitance coupled to the grid of a triode connected type 5879, V802. Output from V802 is taken from the secondary winding of transformer T802. All connections to the 356Q-1 are made at P801.

## 3.1 MAINTENANCE.

Normal maintenance consists of tube replacement. Voltage and resistance measurements may be made by referring to figure 3.

## 4.1 REPLACEABLE PARTS.

The parts list gives the description and Collins part number for all replaceable parts in Cue Amplifier 356Q-1. When replacement of parts is necessary, only parts identical or equivalent to those listed should be used. All parts are identified in figure 2.

ITEM	DESCRIPTION	COLLINS PART NUMBER
CUE AMPLIFIER 356Q-1		
C801	NOT USED	
C802	CAPACITOR, FIXED, PAPER: 400 v dc; 47,000 uuf, $\pm 10\%$	931-0295-00
C803	CAPACITOR, FIXED, PAPER: 0.1 uf $\pm 10\%$ , 400 v dc w	931-0299-00
C804	NOT USED	
C805	CAPACITOR, FIXED, ELECTROLYTIC: 4 sections; 1 & 2, 450 v dc working, 20 uuf; sections 3 & 4, 50 v dc working, 50 uuf	183-1260-00
P801	CONNECTOR, RECEPTACLE, ELECTRICAL: 12 male contacts, 10 amps, 730 v ac	365-2120-00
R801	RESISTOR, FIXED, COMPOSITION: 0.16 megohms $\pm 5\%$ , 1/2 w	745-1445-00
R802	RESISTOR, FIXED, COMPOSITION: 0.10 megohms $\pm 10\% 1/2$ w	745-1436-00
R803	RESISTOR, FIXED, COMPOSITION: 51,000 ohms $\pm 5\%$ , 1/2 w	745-1424-00
R804	RESISTOR, FIXED, COMPOSITION: 0.47 megohms, $\pm 10\% 1/2$ w	745-1464-00
R805	NOT USED	
R806	RESISTOR, FIXED, COMPOSITION: 30,000 ohms $\pm 5\%$ , 1/2 w	745-1413-00
R807	RESISTOR, FIXED, COMPOSITION: 820 ohms $\pm 5\%$ , 1/2 w	745-1348-00
R808	RESISTOR, FIXED, COMPOSITION: 8200 ohms, $\pm 10\%$ , 1/2 w	745-1391-00
R809	RESISTOR, FIXED, COMPOSITION: 9100 ohms, $\pm 5\%$ , 1 w	745-3392-00
R801	TRANSFORMER, AUDIO, FREQUENCY: input type, primary 600 ohms, secondary 50,000 ohms; primary current rating-zero; secondary current rating-zero; metal encased. 1-5/16 x 1-5/16 x 2-1/16 in. h two threaded stud type terminals	667-0442-00
T802	TRANSFORMER, AUDIO, FREQUENCY: output type; primary 16,000 ohms; secondary 4 ohms; primary current rating-7 ma; secondary current rating-zero; metal encased 1-9/32 x 1-9/32 x 1-61/64 in. h; wire lead terminals	667-0441-00
V801	ELECTRON TUBE: type 5879	257-0104-00
V802	ELECTRON TUBE: same as V801	257-0104-00
XV801	SOCKET, ELECTRON TUBE: 9 contact miniature top mtg tube socket w/o shield base; plastic	220-1274-00
XV802	SOCKET, ELECTRON TUBE: same as XV801	220-1274-00

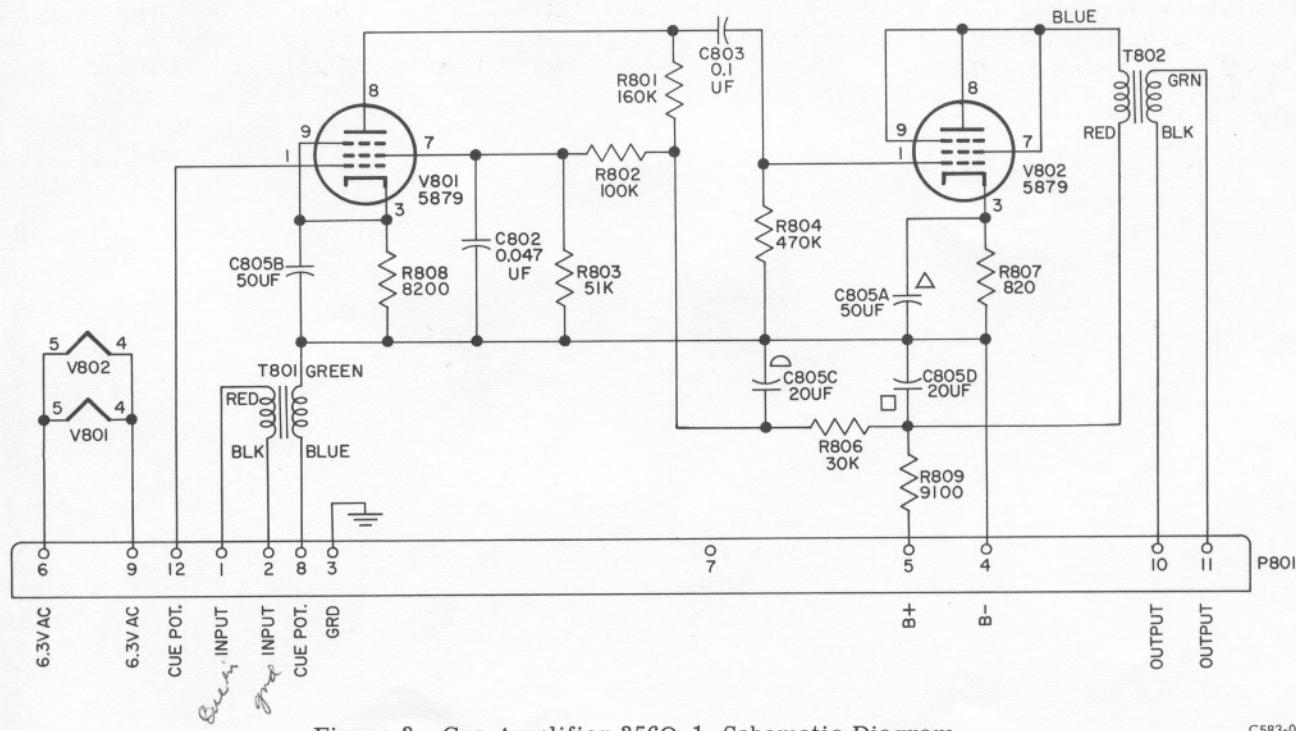


Figure 3. Cue Amplifier 356Q-1, Schematic Diagram