The D12-3 is identical to the D12 with the exception of speaker field provision. The D12-3 no longer will excite electro dynamic speaker fields, consequently PM speakers must be used.

The Model D12-3 is a 12 watt P.A. amplifier having high impedance input stages for one microphone and one phonograph pickup.

**Power Rating:** 105-125 volts, AC, 60 cycles consumes 80 watts.

**Tubes Used:** Total 6, 1-6F5; 2-6CG6, 2-6N6G; and 1-5Y4G.

**Connections:** Phonograph:

A high impedance type of phono pickup may be connected by means of a shielded wire to the input terminal strip on the left of the chassis. Ground the shield to terminal #1 and connect the wire to terminal #2.

**Microphone:**

Any high impedance type microphone, such as Velotron, Velocity, Crystal or Dynamic may be connected to the screw type microphone connector provided. A shielded microphone cable is essential and may be fitted to the female cable connector supplied with the amplifier by the method described and illustrated on the reverse of this sheet.

**Output:** The two speaker sockets are mounted on the rear of the chassis, additional speakers having their own field supply or other PM types may be connected to the output terminal strip in accordance with the impedance values shown in the diagram. Use wire #18 between speakers and amplifier. If the distance is over 100 feet, use #16 or #14 to prevent loss of volume and quality of tone.

**Fuse:** A 1 ampere fuse is located under metal cover on top chassis. If fuse blows, examine wiring and equipment for possible short circuits or other troubles before attempting to operate system again.

**Remote Control:** When provided on special order, an 8 prong socket is mounted on the rear of the amplifier. It is marked "Remote" and will accommodate any type of Bogen Remote Control Unit.

**Remarks:** If any hum is noticed when using the microphone, reverse the line polarity by pulling out the AC line plug, giving it a half turn, and reinserting. Hum may be caused by faulty tubes. If hum is noticed with correct line polarity, check all tubes carefully. Some microphones tend to pick up hum when placed near stray electrical fields. Try disconnecting microphone temporarily to determine whether hum comes from this source. It may be necessary to use the microphone in a slightly different location. In some cases, an external ground may be necessary. Terminal #1 of input or #1 of output may be used to ground the system.