

Aikenhead's



AIKENHEAD HARDWARE LIMITED

17-21 TEMPERANCE STREET

TORONTO 2

**POWER
AMPLIFIERS**



**SOUND
EQUIPMENT**



P. A. 380 POWER AMPLIFIER

This amplifier has a first stage of amplification using one UX 226 tube and a second stage using two UX 245 tubes in Push Pull with a UX 280 full wave Rectifier. An ideal pack for adding to your favorite tuner.

Price, pack only, less tubes.....\$135.00
Tubes extra 16.00

P. A. 440 POWER AMPLIFIER

The P. A. 440 Amplifier using two UX 210 tubes in push pull with a UX 226 first stage and two UX 281 half wave Rectifiers is a very powerful pack for amplifying phonograph music or speech.

Price, pack only, less tubes\$170.00
Tubes extra 47.50

P. A. 460 POWER AMPLIFIER

P. A. 460 is an ultra powerful Double push pull amplifier using two UX 250 tubes and two UY 227 tubes with two UX 281 half wave rectifiers. Volume enough to fill a large hall or theatre can easily be obtained with this unit.

Price, pack only, less tubes\$215.00
Tubes extra 57.50

SOUND EQUIPMENT

Sound Equipment Experts will furnish advice and information on your Sound Equipment problems.

Write for special Sound Equipment Circular.

HAMMOND B ELIMINATORS AND A.B.C. UNITS



Absolutely no acids, liquids or moving parts. Nothing to wear out, deteriorate, or cause trouble. Positively no hum, noises or disturbances. Easily connected. Requires no attention.

S-135

Input volts 100-125
Input watts 15-22
Cycles 25-60
Output voltages 45, 67, 90, 135
Output milliamps 35
Uses Raytheon BH Rectifier Tube
Size 8 1/2 x 4 1/2 x 6 1/4
Weight—17 pounds
List Price \$37.50
For sets using 3 to 6 tubes
Raytheon Tube, \$6.00 extra.

MODEL J-180

Input volts 100-125
Input watts 25-35
Cycles 25-60
Output voltages 45, 67, 90, 130, 180
Output milliamps 50
Uses Type UX280 Rectifier Tube

Size 12" x 4 1/2" x 7 1/4"
Weight—20 pounds
List Price, \$47.50
For all large sets using 171 power tubes
UX280 Rectifier Tube, \$4.50 extra.

No. 180 A.B.C.

Provides all A B and C voltages necessary to change a Battery Set into an AC set. The following few rules will guide in changing over set.

1. All old filament is disconnected from sockets and grounded.
 2. All R. F. and 1st Audio filaments are connected in parallel and run to 1.5 tap on power unit without being grounded as C Bias is provided in unit.
 3. Detector socket is replaced with a 5-prong UY socket and heater terminals are connected to 2.5 tap. The prong marked K or Kathode is grounded. The grid and plate are connected as before.
 4. The last stage Audio socket is connected to 5V terminal on unit.
 5. All rewiring is done with double twisted wire.
 6. If oscillation occurs simply insert 500 or 1,000 ohm resistors in grid circuit of radio frequency.
 7. Volume can be controlled by connecting a 3,000 ohm variable resistor across aerial and ground.
- Price \$59.50
UX280 Rectifier Tube, \$4.50 Extra.

No. 250 A.B.

Supplies power for six heater tubes and two 245 power tubes in push-pull.

Let the new HAMMOND AB250 "powerize" that new powerful screen grid set you are planning. The advent of the wonderful new 245 and 224 radio tubes has made it necessary to use entirely new power supply units. The Hammond Manufacturing Company have developed a unit especially for this work.

It is a power unit containing power transformer supplying A current for 2 UX 245 power tubes and up to six heater tubes (screen grid or 227) as well as filament and plate current for 280 Rectifier. The transformer is properly fused and housed in steel, compound-filled case in accordance with Hydro regulations. All chokes and filter condensers are of ample dimensions and ratings and provide superb filtering.

No resistance or bypass condensers are included, as latest engineering practice necessitates placing these parts in set—which simplifies construction and improves selectivity.

By using a Hammond AB 250 you get a totally shielded, compact and efficient power supply that is fully approved.

Hydro approved
Input volts 110 AC
Input watts 50-60
Input cycles 25-60
Output voltage 300 DC. (250B, 50C) no divider system.

Output milliamps 100
Type UX 280 Rectifier Tube
Size 12 1/2 x 7 1/4 x 5
Weight—18 pounds
List Price, \$65.00
UX280 Rectifier Tube, \$4.50 extra.



HAMMOND SUPER POWER PACKS

MODEL A.B.C. 400



For 250 Power Tube—Singly or Push-Pull. Also Supplies A and B current for Radio Set.

The Ideal Power Pack for powerizing special power amplifiers, high power sets, television apparatus, super sets, etc.

The Hammond ABC 400 is a thoroughly proven Power Pack employing two type UX281 Rectifier Tubes and one UX874 Regulator tube. B current is supplied at 45, 67, 90, 135 and 400 volts at up to 100 mills (sufficient for 250's in push pull).

A.C. taps are also provided which supply 1.5v at 6 amps.

1.5v at 6 amps.

2.5v at 3 amps.

7.5v at 3 amps.

These are not centre tapped as this is best done with resistors in set or amplifier.

A 110v AC receptacle is provided in one end of unit to connect dynamic speaker or other apparatus. This is controlled by switch.

Two control knobs on the front are provided. The left knob controls C Bias on 250 or 210 power tubes and normally is kept pointing straight up when one tube is used and to the left when two power tubes are used.

The right hand knob controls the B power to the 135v and lower taps. Turning to right increases power. When there is considerable load on these taps or 874 tube flickers or goes out, it is best to operate without 874 in socket.

MODEL A.B.C. 410

The Model 410 is similar to Model 400 excepting the AC filament taps. Due to the popularity of 227 and AC screen grid tubes the Hammond Mfg. Co. has provided a power unit to supply the heavy current at 2.5 volts necessary for these tubes.

Designed, engineered and developed in Canada especially for Canadian needs and conditions. All parts fabricated in our own factory or made expressly to meet the exacting requirements of Hammond standards. Built ruggedly to stand the steady use which this type of work entails.

Specifications Model A.B.C. 400

Input volts 110.

Input watts 80-100.

Input cycles 25-60.

Output voltages 45, 67, 90, 135, 400 V. DC.

Output voltages 1.5v 6 amp. 2.5v 3 amp. 7.5v 3 amp. AC.

Output milliamps 100.

Tubes required—2—281 Rectifiers. 1—874 Regulator.

Size $15\frac{1}{4} \times 9\frac{3}{4} \times 9\frac{1}{2}$.

Weight 40 lbs.

Price, Models 400 and 410\$95.00

Tubes Extra 26.50





J-180

HAMMOND 180 VOLT "B" ELIMINATOR

This is a highly efficient B Battery eliminator, using 280 Rectifier Tube. Supplies current for any type of battery set, giving clear and full-toned reception.

Output voltages are provided as follows: 45, 67, 90, 135 and 180. Best results will be had by using 171A Power Tube but the Hammond Model J-180 can be used on sets requiring only 135 volts.

There is only one adjustment—this being the knob on front, which controls the power to all terminals.

Operates perfectly on either 25 or 60 cycles, 110 volts. Fully Guaranteed.

Price—Less tube\$39.50
UX-280 tube extra 2.65

HAMMOND A.B.C. 400 POWER UNIT

A High-Power Unit for Power Amplifiers, Large Radio Sets, Amateur Transmitters, Television and any other apparatus requiring approximately 450 volts. The Model A.B.C. 400 employs two 281 rectifier tubes and one 874 Regulator tube. Output taps are provided to give the following voltages:

1.5 Volts 7 Amps. A.C.	45 Volts D.C.
2.5 Volts 3 Amps. A.C.	67 Volts D.C.
7.5 Volts 3 Amps. A.C.	90 Volts D.C.
	135 Volts D.C.
	450 Volts D.C.

Two variable controls are provided. The left one varies the C Bias and the right controls the current to the 135, 90, 67 and 45 Volt taps.

Price—Less Tubes\$67.50

Model 410 exactly similar to Model 400, but has A.C. output taps of:

2.5 Volts at 7 Amps.	2.5 Volts at 7 Amps.	7.5 Volts at 3 Amps.
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Price—Less Tubes\$67.50



A.B.C.—400



France "A"

FRANCE "A" ELIMINATOR

Replaces the 6-volt "A" storage battery. Operates direct from the light-socket. Always delivers the power of a fully charged battery. Simple to install. No rewiring to do. Connect as you would to a battery and plug in. Operates only during reception. Is never charged or discharged. No hum.

Will supply filament current to the tubes of any set employing not more than ten 201-A quarter ampere tubes. Maximum output is 2½ amperes. Bone-dry—no liquids, bulbs or moving parts.

Housed in a heavy, beautifully finished case. Size 9" H. x 4" W. x 11" L. Shipping weight, 28 lbs. each.

List Price, 25 cycle\$50.00



TYPE TR.

HAMMOND POWER TRANSFORMERS

Hammond Transformers and Chokes are liberally designed and made of the highest grade materials—the right amount of insulation—the correct type of impregnating material—type of winding—testing, etc.

A complete line of Power Transformers and Chokes for Power Amplifiers, Electric Radio Sets, Electrification of Battery Sets, Amateur Transmitters, designed in accordance with Hydro Electric Power Commission's requirements, but are not approved separately as finished apparatus is required to be submitted to the Commission.

POWER TRANSFORMERS

Type—TR-700	240 V.A. Capacity
Primary—115 volts 25 to 60 cycles.	
Secondary—720 volts each side of centre-tap.	
Filaments—7.5V. 2.5A For 2 No. 250 Tubes	
7.5V. 2.5A For 2 No. 281 "	
2.5V. 10.5A For 6 No. 224 or 227 "	
Net Weight 19 lbs.	
Insulation Test 2500 Volts A.C.	
Price	\$33.15
Type—TR-410	175 V.A. Capacity
Primary—115 volts 25 to 60 cycles.	
Secondary—600 Volts each side of C.T.	
Filaments—7.5V. 2.5A For 2 No. 250 Tubes	
7.5V. 2.5A For 2 No. 281 "	
2.5V. 10.5A For 6 No. 224 or 227 "	
Net Weight 16 lbs.	
Insulation Test 2500 Volts A.C.	
Price	\$24.65
Type—TR-400	175 V.A. Capacity
Primary—115 volts 25 to 60 cycles.	
Secondary—600 Volts each side of C.T.	
Filaments—7.5V. 2.5A For 2 No. 250 Tubes	
7.5V. 2.5A For 2 No. 281 "	
2.5V. 10.5A For 6 No. 227 or 224 "	
1.5V. 7.0A For 4 No. 226 "	
Net Weight 16 lbs.	
Insulation Test 2500 Volts A.C.	
Price	\$24.15
Type—TR-350	100 V.A. Capacity
Primary—115 volts 25 to 60 cycles.	
Secondary—425 Volts each side of C.T.	
Filaments—5.0V. 2.0A For 1 No. 280 Tube	
2.5V. 3.5A For 2 No. 245 Tubes	
2.5V. 3.5A For 2 No. 227 or 224 "	
Net Weight 13 lbs.	
Insulation Test 2000 Volts A.C.	
Price	\$17.35

Type—TO-250	100 V.A. Capacity
Primary—115 volts 25 to 60 cycles.	
Secondary—370 Volts each side of C.T.	
Filaments—5.0V. 2.0A For 1 No. 280 Tube	
2.5V. 3.0A For 2 No. 245 Tubes	
2.5V. 10.5A For 6 No. 227 or 224 "	
Net Weight 10 lbs.	
Insulation Test 1800 Volts A.C.	
Price	\$16.25

Type—TO-180	60 V.A. Capacity
Primary—115 volts 25 to 60 cycles.	
Secondary—300 volts each side of C.T.	
Filaments—5.0V. 2.0A For 1 No. 280 Tube	
5.0V. .5A For 2 No. 171A Tubes	
2.5V. 1.75A For 1 No. 227 Tube	
1.5V. 7.0A For 4 No. 226 Tubes	
Net Weight 8½ lbs.	
Insulation Test 1800 Volts A.C.	
Price	\$13.95

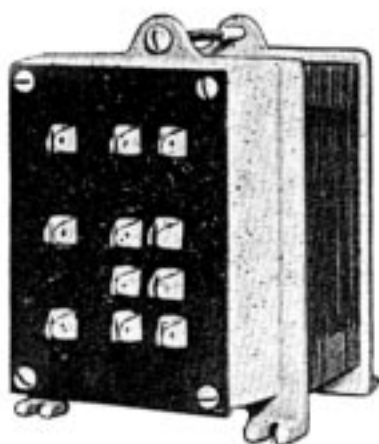
Type—TO-185	60 V.A. Capacity
Primary—115 volts 25 to 60 cycles.	
Secondary—300 Volts each side of C.T.	
Filaments—5.0V. 2.0A For 1 No. 280 Tube	
5.0V. .5A For 2 No. 171A Tubes	
2.5V. 10.5A For 6 No. 227 or 224 "	
Net Weight 8½ lbs.	
Insulation Test 1800 Volts A.C.	
Price	\$14.65

FILAMENT TRANSFORMERS

Type TF-30	35 V.A. Capacity
Primary—115 volts 25 to 60 cycles.	
Filaments—2.5V. 3 A. For 2 No. 245 Tubes	
2.5V. 10.5A For 6 No. 227 "	
Net Weight 7½ lbs.	
Insulating Test 1800 Volts A.C.	
Price	\$8.35

NOTE TO ONTARIO CUSTOMERS.—All electrical devices which operate from a light socket must have the approval of the Ontario Hydro Electric Power Commission before they are legal for sale in the Province of Ontario. Separate transformer units cannot be so approved until they are installed in the device in which they are used. They are, therefore, sold with the understanding that it is necessary to submit complete devices to the H.E.P.C. for approval.

Hammond Chokes and Condenser Blocks



TYPE T O

TYPE N-30—FILTER CHOKE OPEN FRAME

Inductance 30 henries.
Capacity 65 mills.
D.C. Resistance 450 ohms.
Net Weight 3¼ lbs.
Insulation Test 1000 Volts A.C.
Price \$4.10

TYPE N-15—FILTER CHOKE OPEN FRAME

Inductance 15 henries.
Capacity 115 mills.
D.C. Resistance 325 ohms.
Net Weight 4¼ lbs.
Insulation Test 1200 Volts A.C.
Price \$5.10

TYPE N-60—FILTER CHOKE OPEN FRAME

Inductance 60 henries.
Capacity 40 mills.
D.C. Resistance 900 ohms.
Net Weight 3¼ lbs.
Insulation Test 1000 Volts A.C.
Price \$4.75

CONDENSER BLOCKS

AEROVOX BLOCK No. 917
Size 2" x 5" x 5" high

2-mfd. 600V. Working D.C. Voltage
2-mfd. 400V. Working D.C. Voltage
2-mfd. 400V. Working D.C. Voltage
Complete with mounting feet and ten-inch colored leads.
Price \$8.35

AEROVOX BLOCK No. 2088
Size 3" x 5" x 5" high

2-mfd. 800V. Working D.C. Voltage
2-mfd. 600V. Working D.C. Voltage
2-mfd. 200V. Working D.C. Voltage
2-mfd. 200V. Working D.C. Voltage
1-mfd. 200V. Working D.C. Voltage
Complete with mounting feet and ten-inch colored leads.
Price \$12.95

NEW RADIO ITEMS ARE
COMING OUT FROM TIME TO TIME
WRITE US FOR INFORMATION



FLECTHEIM BY-PASS and FILTER CONDENSERS

TYPE B—250 VOLTS D.C.

B-10	.1	mfd.	.....	\$ .65
B-25	.25	"	.....	.75
B-50	.5	"	.....	.80
B-100	1	"	.....	.95
B-200	2	"	.....	1.50

TYPE F—450 VOLTS D.C.

F-100	1	mfd.	.....	\$1.25
F-200	2	"	.....	2.00
F-400	4	"	.....	3.50

TYPE U.F.—450 VOLTS D.C.

Uncased, dipped in pitch.

U.F.-100	1	mfd.	.....	\$1.10
U.F.-200	2	"	.....	1.50
U.F.-400	4	"	.....	2.75

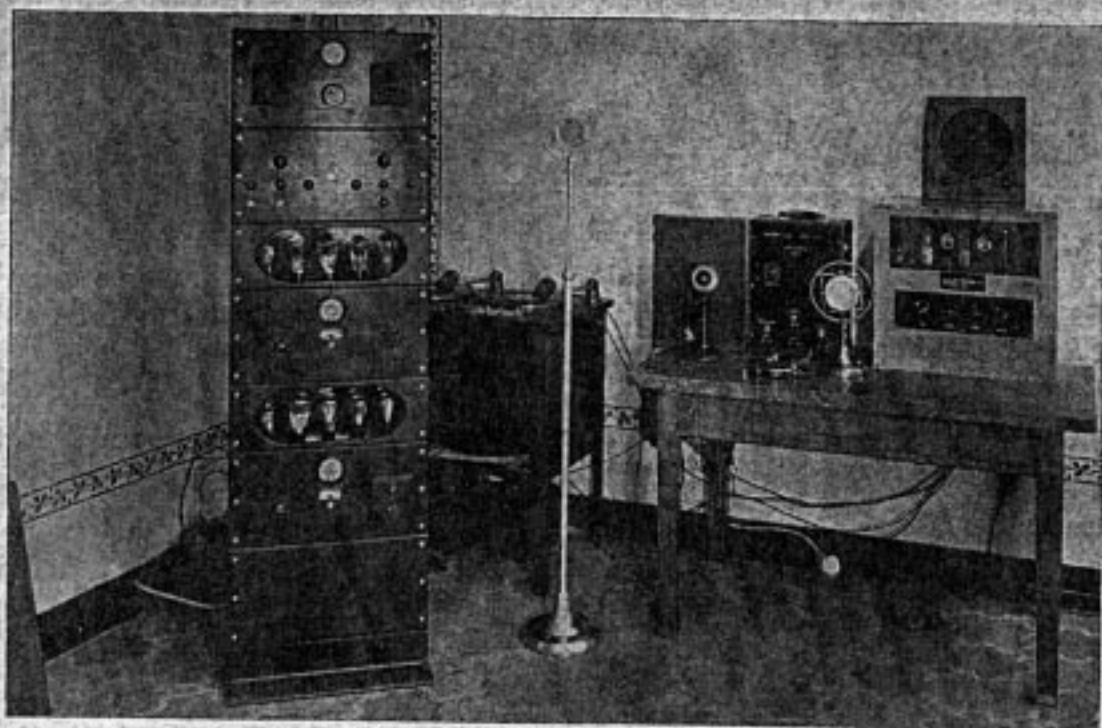
TYPE H.V.—800 VOLTS D.C.

Smallest high voltage condensers made.

H.V.-100	1	mfd.	.....	\$3.00
H.V.-200	2	"	.....	5.00
H.V.-400	4	"	.....	9.00

Aikenhead's

RADIO



"IN RADIO SINCE RADIO BEGAN"

AIKENHEAD HARDWARE LIMITED

17-21 TEMPERANCE STREET

TORONTO 2