Installation, Operating Instructions

—AND—

Service Information

for Your— **"VIKING" ...**

Model 53-120

Finishes—Walnut, Mahogany, Autumn Leaf Mahogany

RADIO-PHONOGRAPH COMBINATION

with a 3-SPEED AUTOMATIC RECORD CHANGER, an 8-Tube, 2-Band, 3-Gang, A.M. A.C. Operated Superheterodyne Receiver with a Tuned Radio Frequency Stage on Both Bands and Built-in Broadcast Band Loop and Short Wave Antennas, Tuning Eye and Phonograph Preamplifier

For operation on 110 to 120 volts A.C.—Cycle as listed on license plate.

IMPORTANT

READ THIS CAREFULLY AND RETAIN FOR FUTURE REFERENCE

THE T. EATON Co LIMITED
CANADA

INSTALLATION

IMPORTANT

Locate and remove all packing.

ANTENNA

This receiver is equipped with an efficient built-in loop antenna which will work effectively in some locations. If the reception with the loop antenna is too weak, as may be the case in steel reinforced buildings or in places remote from desired broadcast stations, connect the external antenna to terminal "A".

GROUND

While this receiver will operate without a ground connection, the use of a good ground is recommended, particularly if an outside antenna is used.

This may be obtained by connecting "G" to a water pipe or metal rod driven into the ground.

POWER SUPPLY

This receiver is intended to be operated only on the power supply specified. Before connecting, make sure that the voltage and frequency shown on the serial name plate correspond to those of your power company.

OPERATION

SELECTOR SWITCH

There are three positions at which the switch may be set. These are indicated by lettering on the cabinet as follows:

PH — Phonograph Operation
BC — Broadcast Band
SW—Short Wave

SHORT WAVE BAND

The band selector switch is set on short wave as indicated on the front of the cabinet by the letters "SW" and the station selector operated in the same manner as for use on the broadcast band. It is important however that the station selector be rotated very slowly when a search is being made for short wave stations as the tuning is much more critical on this band.

TONE AND VOLUME CONTROLS

The tone control offers a wide latitude in choice of overall response, permitting a range, from treble in the full right position, to bass in the extreme left.

The volume control, in addition to performing its usual function, incorporates an On-Off Switch.

PHONOGRAPH OPERATION

For the reproduction of phonograph records, the band selector switch is set in the phonograph position as indicated by the letters "PH" marked above the knob. The automatic record changer is thereby connected to the audio amplifier portion of the receiver. The volume and tone controls are operated in the same manner as when used in radio reception.

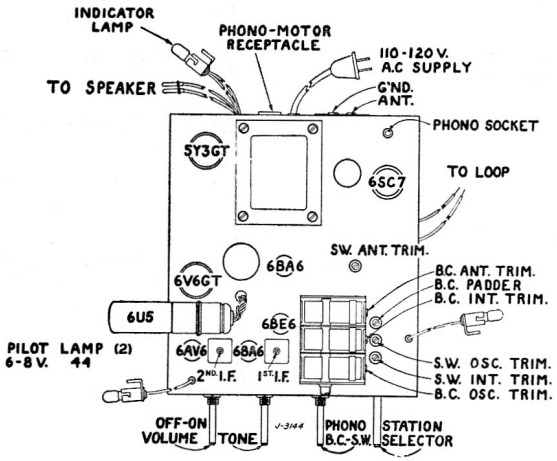
SEE CHANGER INSERT FOR RECORD CHANGER OPERATION.

SERVICE INFORMATION

SPECIFICATIONS

Standard Broadcast Range	535 Kc. - 1650 Kc.
Short Wave Range	9.0 Mc. - 18.0 Mc.
Intermediate Frequency	455 Kc.
Power Consumption (Radio Only)	62 Watts
Power Consumption (Radio & Phono)	75 Watts
Undistorted Output	3.5 Watts
Maximum Power Output	6.5 Watts

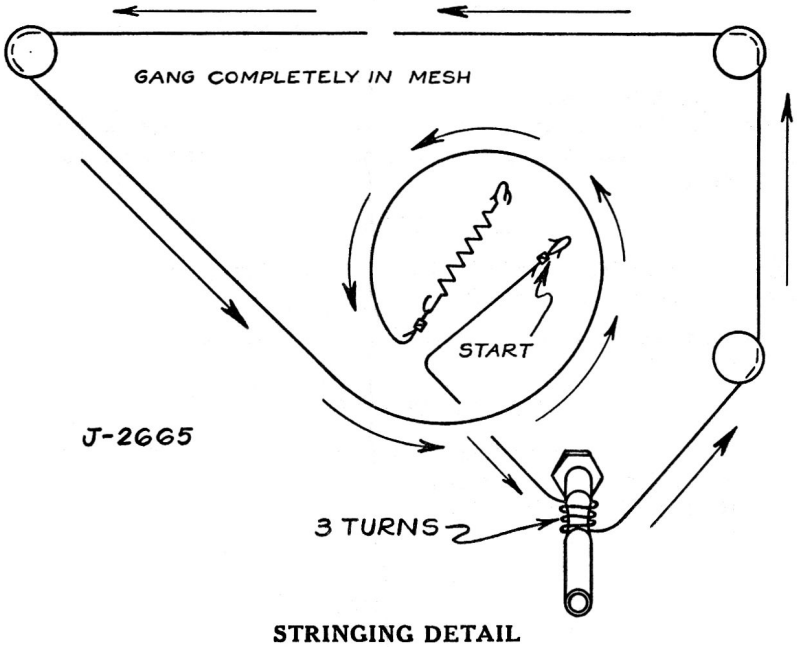
When writing for Service Information or Parts, please quote Model 53-120 and Serial Number as shown on License Plate.



CHASSIS LAYOUT CHART

TUBES

If at any time it is necessary to replace tubes care must be taken to insure that they are inserted in their proper sockets as shown above. Unless this procedure is carefully followed the receiver will not function and the tubes may be seriously damaged.



STRINGING DETAIL

FOR ALIGNMENT AND SENSITIVITY DATA SEE SCHEMATIC

SERVICE REPLACEMENT PARTS LIST

A-2487.....Glass Dial Scale

B-4165-3.....Drive Shaft

G-520.....Four Section Electrolytic
G-531.....Dual Section Electrolytic

K-771A.....Pilot Lamp 6 - 8V. .25 Amp (No. 44)
K-995.....Tuning Eye Socket Assy.

LK-452-3.....Power Transformer 25 cy.
LK-453-3.....Power Transformer 60 cy.
LK-512-3.....Output Transformer

MP-1204-38...Pointer & Slider Assy.

P-1843-1.....I.F. Transformer—1st.
P-1844.....I.F. Transformer—2nd.
P-2499-1.....B.C. Ant. Loading Coil
P-2279-2.....B.C. Interstage Coil
P-1965.....B.C. Osc. Coil
P-2500-1.....S.W. Ant. Coil
P-1986.....S.W. Interstage Coil
P-1987.....S.W. Osc. Coil

Q-308-2.....Selector Switch

R-339-2.....Vol. Control and A.C. Switch
R-340-2.....Tone Control

V-371-1.....Gang Condenser and Drum Assy.

INSTALLATION

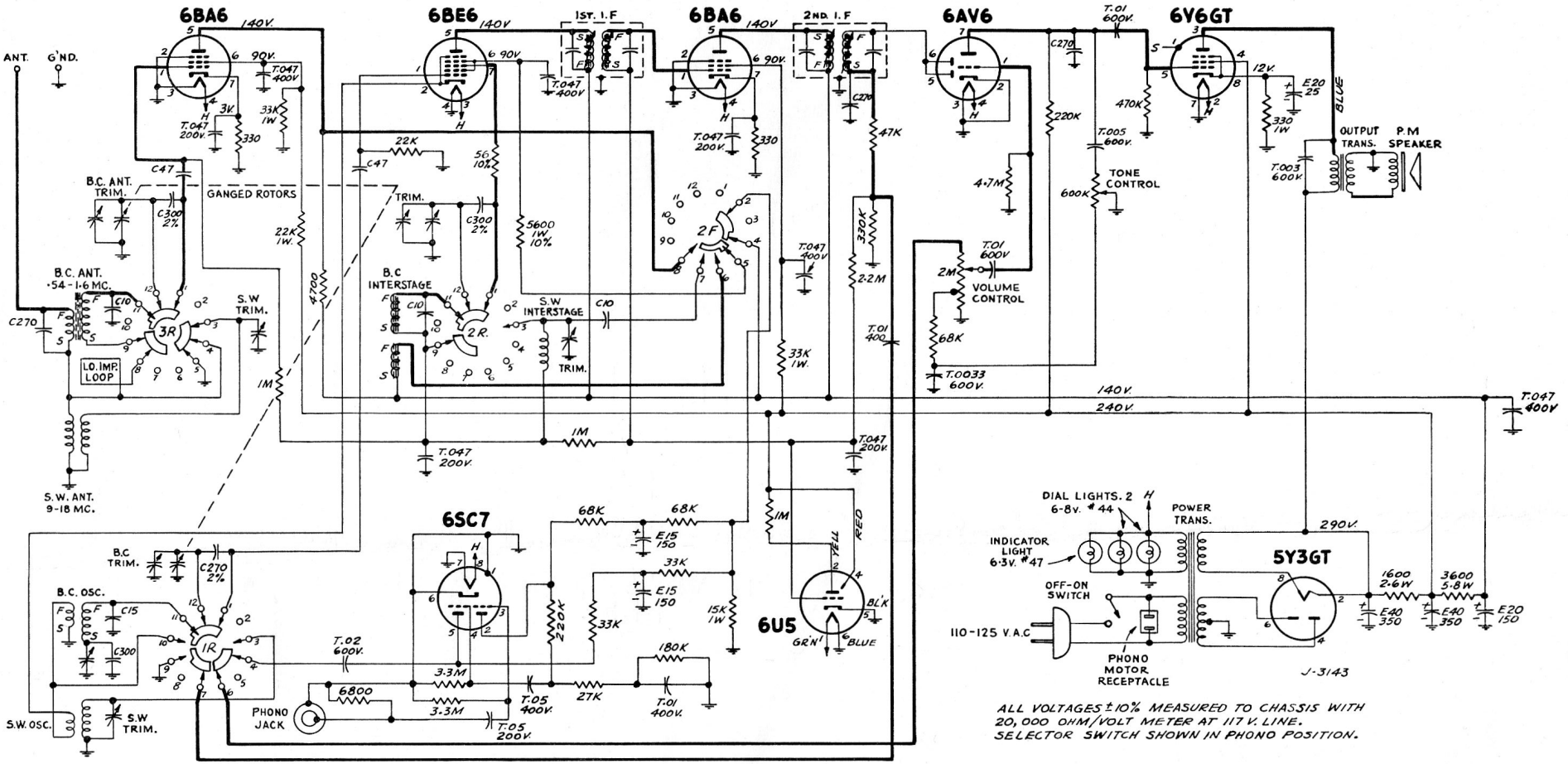
C-835.....Record Adapter Insert

K-1200-1.....12" P.M. Speaker Assy.

N-348-2.....Knobs (3) For Walnut Fin. Cabinet
N-356-1.....Knob (1) Selector Switch For Walnut Fin. Cabinet
N-348-3.....Knob (3) For A.L.M. Fin. Cabinet
N-356-2.....Knob (1) Selector Switch For A.L.M. Fin. Cabinet
N-348-4.....Knob (3) For Mahogany Fin. Cabinet
N-356-3.....Knob (1) Selector Switch For Mahogany Fin. Cabinet

P-2487-8.....Model 110 Record Changer—25 cycle
P-2506-3.....Model 110 Record Changer—60 cycle

K-1308-1.....G.E. Cartridge with Reversible Needle.



ALL VOLTAGES ± 10% MEASURED TO CHASSIS WITH 20,000 OHM/VOLT METER AT 117 V. LINE. SELECTOR SWITCH SHOWN IN PHONO POSITION.

ALIGNMENT AND SENSITIVITY
SIGNAL GENERATOR MODULATED 30% AT 400 C.P.S.

APPLY SIGNAL AT KC.	APPLY SIGNAL TO	THRU SERIES DUMMY	SET GANG AT	ADJUST FOR MAX. OUTPUT.	NOMINAL SENSITIVITY FOR 500 MILLIWATTS OUTPUT
455	6BA6 I.F. #1 PIN	.05 μfd.		2ND. I.F. IRON CORES.	3500 μv.
455	6BE6 #7 PIN	.05 μfd.	MIN. CAP.	1ST I.F. & 2ND. I.F.	75 μv.
1460	6BE6 #7 PIN	.05 μfd.	1460 KC.	B.C. OSC. TRIM.	85 μv.
1460	ANT.	*	1460 KC.	B.C. ANT. & INTERSTAGE TRIM.	20 μv/M.
600	ANT.	*	600 KC.	B.C. OSC. PADDER	50 μv/M.
16 MC.	ANT.	400 Ω	16 MC.	S.W. OSC. INTERSTAGE & ANT. TRIM.	15 μv.
10 MC.	ANT.	400 Ω	10 MC.	CHECK POINT	20 μv.

* FASHION LOOP OF SEVERAL TURNS OF WIRE AND RADIATE SIGNAL INTO LOOP OF RECEIVER. ADJUST FOR MAXIMUM OUTPUT. FOR STEPS 4 AND 5 LOOP ON CABINET MUST BE CONNECTED OR DUPLICATED.

INT. FREQ. 455 KC.

COMPONENT VALUES.

RESISTORS: HALF WATT, UNLESS OTHERWISE NOTED.
20% TOLERANCE UNLESS OTHERWISE NOTED.
K = 1000 OHMS
M = 1000,000 OHMS.

CONDENSERS: T - TUBULAR, FOLLOWED BY CAP. IN MFD & D.C.W.V.
E = ELECTROLYTIC, FOLLOWED BY CAP. IN MFD & D.C.W.V.
C - CERAMIC, FOLLOWED BY CAP. IN MMFD. & TOL IF CRITICAL.
M = MICA, FOLLOWED BY CAP. IN MMFD. & TOL. IF CRITICAL

C.N.No.	DATE	CHANGE	SYM	CK.

J-3143

WEBSTER-CHICAGO MODEL 110 AUTOMATIC RECORD CHANGER

Using Variable Reluctance Cartridge with "Dual Stylus" Assembly

DESCRIPTION AND OPERATION

The Webster-Chicago Model 110 is a three speed automatic record changer that will automatically play a 1-inch stack of any of the three popular diameter records 7", 10" or 12", at speeds of 33⅓, 45 or 78 rpm.

Simple in design and operation it features

1. "Automatic Shut-off" after last record in a stack has been played.
2. "Automatic Indexing" (adjustment) for correct record size.
3. "Automatic-Manual" position—no adjustment needed for playing records "one at a time".
4. "Instant-Start" for simplified playing of records "one at a time"—lift the Pick-up arm and the motor starts, return it to the Rest position and the motor stops.
5. "Velocity-Trip Mechanism" to provide a fast record change cycle.
6. "Minimum Vertical" Pick-up Arm friction to reduce warped record hiss.
7. "Minimum Lateral" needle pressure to reduce wear of the delicate sides of the record grooves.
8. An improved center drop record spindle that provides a flat record drop, and carefully lowers the unplayed record stack to the spindle step, ready for the next record change cycle.
9. Two Neutral positions (●) on Speed Selector to remove pressure on idler, and reduce the possibility of a flat developing in the rubber wheel, when records are not being played.

IMPORTANT ALWAYS RETURN THE SPEED SELECTOR TO A NEUTRAL POSITION (●) WHEN THROUGH WITH THE CHANGER TO RETRACT THE IDLER WHEEL FROM THE MOTOR SHAFT.

CARTRIDGE

The special cartridge has a Dual Stylus for playing Standard and Microgroove Records. A button on the cartridge is pushed down and turned to place the proper stylus into playing position. All 78 rpm. (standard) and some 33⅓ rpm. records, including "Books for the Blind" require the Standard Point, 78 as marked on the arm. The 33⅓ and 45 rpm. (Microgroove) records require the Microgroove point, 33-45 as marked on the arm. The proper needle is in position for playing Standard (78) or Microgroove (33-45) records when the arrow on the button points to → 78 or 33-45 ← respectively.

AUTOMATIC RECORD CHANGE

1. Load the Changer.

   Lift the Record Ballast Arm and swing it and the Automatic Index Lever away from the spindle until it latches. Place up to a 1" stack of records, any one size, on the spindle. Swing the Record Ballast Arm Back over the spindle, allowing it to drop into position with the spindle in the hole.

2. Select the Speed and Needle.

   Move the Speed Selector Lever to the correct speed, and turn the Needle Selector Lever for the groove, of the records being played.

3. Start the changer by pushing the Start-Reject button.
4. To reject any record while playing in the Automatic Position, push the Reject Button.

TO PLAY RECORDS MANUALLY—"ONE AT A TIME"

1. Lift the Record Ballast Arm and swing it and the Automatic Index Lever away from the spindle until it latches. Place a record on the turntable, tilting it slightly to clear the step of the spindle.
2. Move the Speed Selector Lever to the correct speed, and turn the Needle Selector Lever for the groove of the record being played.
3. Move the Pick-up arm to the record, the motor and turntable start—return the Pick-up arm to the Rest position, the motor and turntable stop.

The changer is in "Manual" as long as the Record Ballast Arm is not moved in and placed over the Spindle and the Pick-up arm can be moved in or out without tripping the Velocity Trip Mechanism.

IMPORTANT ALWAYS RETURN THE SPEED SELECTOR TO A NEUTRAL POSITION (●) WHEN THROUGH WITH THE CHANGER TO RETRACT THE IDLER WHEEL FROM THE MOTOR SHAFT.

J-3110 1000-9-52-D.P.

CARE OF RECORDS

Records should be protected as much as possible from dust and lint. Dust will not only interfere with perfect reproduction, but may collect in the delicate parts of the pickup cartridge. If dust is allowed to collect on the record surface, it should be gently removed with a soft, slightly damp, lint free cloth. Water should not be allowed to stand on the labels, particularly around the centre hole where it might roughen the label edge. Do not use oils or solvents on your records, since these will only increase their tendency to accumulate dirt.

Reasonable care should be exercised in handling to prevent scuffs and scratches which may damage the fine music grooves and thereby produce poor reproduction or affect the functioning of the mechanism.
Keep your records in a cool, dry, clean place where they are not likely to be damaged. When not in use records should be stored in envelopes either Flat or Vertically never propped at an angle which will allow them to warp. They should never be exposed to high temperatures, such as might be encountered near a radiator or above a hot air register. Always remove records from the record player and place in file after playing.

SERVICE INFORMATION

This changer has been adjusted, lubricated and tested at the factory and should require no further adjustment in the field. Should servicing be required consult your dealer or Authorized Serviceman.

INDEX ADJUSTMENT

The single adjustment which is accessible from the top of the changer, and which may be made at the discretion of the user, is the index, or point at which the needle is set down on the edge of the record.

It is adjusted by the screw which is accessible through the hole in the top rear of the Pickup Arm. Turning the screw clockwise indexes the needle toward the spindle; counter-clockwise indexes it toward the outside edge of the record. The adjustment should be made on a standard 10" record so that the needle is set down approximately in the first groove. The 12" and 7" indexing will be correct when the 10" index is properly set.