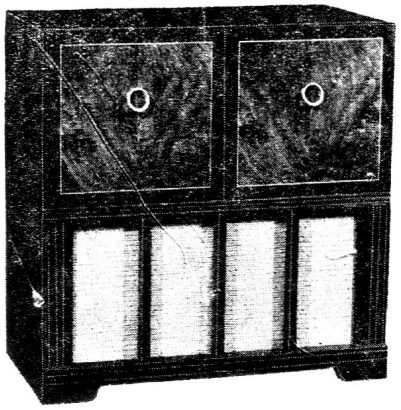
# Installation, Operating Instructions

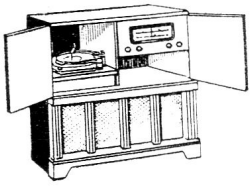
—AND—

# Service Information

*for Your—* **VIKING**

## Model 51-100





## RADIO-PHONOGRAPH COMBINATION

with a 3-SPEED AUTOMATIC RECORD CHANGER, and a
6-Tube, Single Band A.C.-D.C. Operated Superheterodyne Receiver

**FINISH — WALNUT - MAHOGANY**

**For operation on 110 to 120 volts A.C.—Cycle as listed only.**

## IMPORTANT

READ THIS CAREFULLY AND RETAIN
FOR FUTURE REFERENCE

THE T. EATON Co LIMITED
CANADA

# INSTALLATION

### IMPORTANT

Locate and remove all packing.

Before operating changer it must be floated freely on the mounting springs. (See Caution Card).

### ANTENNA

A short antenna is mounted inside the cabinet of this receiver and will provide satisfactory reception in some locations. **The use of an outdoor antenna is recommended, however;** it should comprise 50 to 100 ft. of copper wire mounted as high as possible and clear of buildings to minimize interference from electrical equipment.

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

PH — Phonograph Operation

BC — Broadcast 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 record changer is thereby connected to the audio amplifier in place of the radio receiver portion of the circuit. The volume and tone controls are operated in the same manner as when used in radio reception.

# WEBSTER-CHICAGO MODEL 100 AUTOMATIC RECORD CHANGER

## DESCRIPTION AND OPERATION

The Webster-Chicago Model 100 is a three speed automatic record changer. Simple in design and operation, it provides automatic playing of up to a 1-inch stack of 7-inch, 10-inch or 12-inch records at speeds of 33⅓, 45 or 78 rpm.

It features Automatic Indexing for all three record sizes, an "Automatic Manual" position, a "flat" record drop, an improved spindle that carefully lowers the unplayed record stack to the spindle step, ready for the next record change cycle.

The Pickup Arm returns to the Rest position after playing the last record; the motor continues to revolve until the Speed Selector Lever is moved to the nearest "OFF" position. Two "OFF" positions are available for ease of operation. The idler wheel is also pulled away from the motor shaft when the Speed Control Lever is in an "OFF" position, eliminating the possibility of a flat spot developing in the rubber wheel.

Model 100 features the Webster-Chicago Velocity-Trip Mechanism which gives an unusually fast record change. The pickup arm is not actuated by "lead-in" springs so there is almost no lateral pressure. The arm travels freely in either direction. This lack of lateral pressure adds immeasurably to the life of records and is considered to be as important as extra-light vertical pressure. The free floating arm permits "home recordings" or "inside out" records up to 12" size to be played manually.

Model 100 will change warped or rough-edged records, at the same time assuring maximum protection to the finest discs.

## CARTRIDGE

The special pickup cartridge has Replaceable Needles. A lever on the cartridge is moved to "78" or "33-45" as indicated to place the proper point into playing position. All 78 rpm and some 33⅓ rpm records, including "Books for the Blind", require the (standard) 78 rpm point. The 33⅓ and 45 rpm. (Microgroove) records require the 33-45 micro point.

## AUTOMATIC RECORD CHANGE

Place up to a 1-inch stack of any one size of records on the Spindle and swing the record ballast arm back to the spindle, allowing it to drop in position with the spindle in the hole. The automatic Index will remain away from the record until the change cycle starts. It will then move in to feel the diameter of the record and automatically index the pickup needle to the proper playing position.

Move the Speed Selector Lever to the correct speed for the records being played and push the START-REJECT button.

To reject any record while playing in the Automatic Position, push the Reject Control button.

## MANUAL RECORD CHANGE

Lift the Record Ballast Arm and swing it and the Automatic Index Lever away from the spindle. The changer is then automatically in "manual" until the Record Ballast arm is moved in to playing position and the "Reject" button is pushed and the pickup arm can be moved in or out without tripping the Velocity Trip automatic mechanism.

Place a record on the turntable. Move the Speed Control Lever to the correct speed for the record being played and place the needle gently on the record being played. To stop the mechanism at any time turn the Speed Selector Lever to the Stop position.

## 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.

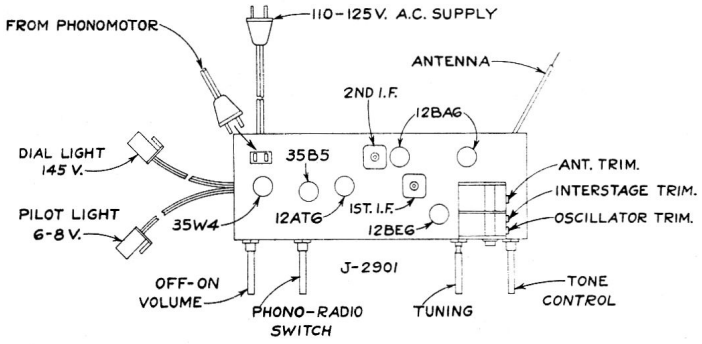
It is adjusted by the screw which is accessible through the hole in the top rear of the Pickup Arm. Turning the screw clockwise indexes the needle toward the spindle; counter-clockwise indexes it toward the outside edge of the record. The adjustment should be made on a standard 10" record so that the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

# SERVICE INFORMATION

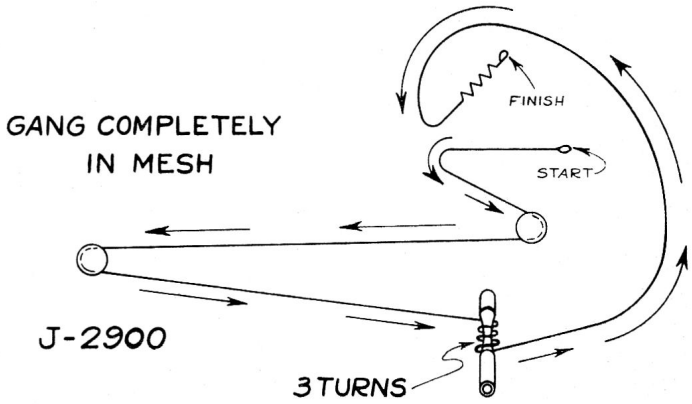
### SPECIFICATIONS

| | |
|---|---|
| Standard Broadcast Range | 535 Kc. - 1650 Kc. |
| Intermediate Frequency | 455 Kc. |
| Power Consumption (Radio Only) | 30 Watts |
| Power Consumption (Radio and Phono) | 48 Watts |
| Undistorted Output | 600 mw. |
| Maximum Power Output | 800 mw. |

When writing for Service Information or Parts, please quote Model Number 51-100 and Serial Number as shown on License Plate.




CHASSIS LAYOUT CHART




STRINGING DETAIL

### 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. (Refer to chassis layout chart.) Unless this procedure is carefully followed the receiver will not function and the tubes may be seriously damaged.**

## SERVICE REPLACEMENT PARTS LIST

A-2309.....Dial Scale

B-2731-9.....Drive Shaft

G-538-2.....Four Section Electrolytic & Clamp

K-839.....Pilot Light (Indicator) No. 47, .150A, 6-8 Volt

K-1133.....Pilot Light Mazda 6S6, 145 Volt, 6 Watt

LK-422-3.....Output Transformer

MP-1204-12...Pointer & Slider Assy.

P-1734-2.....B.C. Ant. Coil
P-2183.....BC Interstage Coil
P-2184.....BS Oscillator Coil
P-1843-1.....1st IF Transformer
P-1844-1.....2nd IF Transformer

Q-264-1.....Phono—BC Switch

R-318-3.....Volume Control & AC Switch
R-310-1.....Tone Control

V-367-3.....Gang Condenser & Drum Assy.

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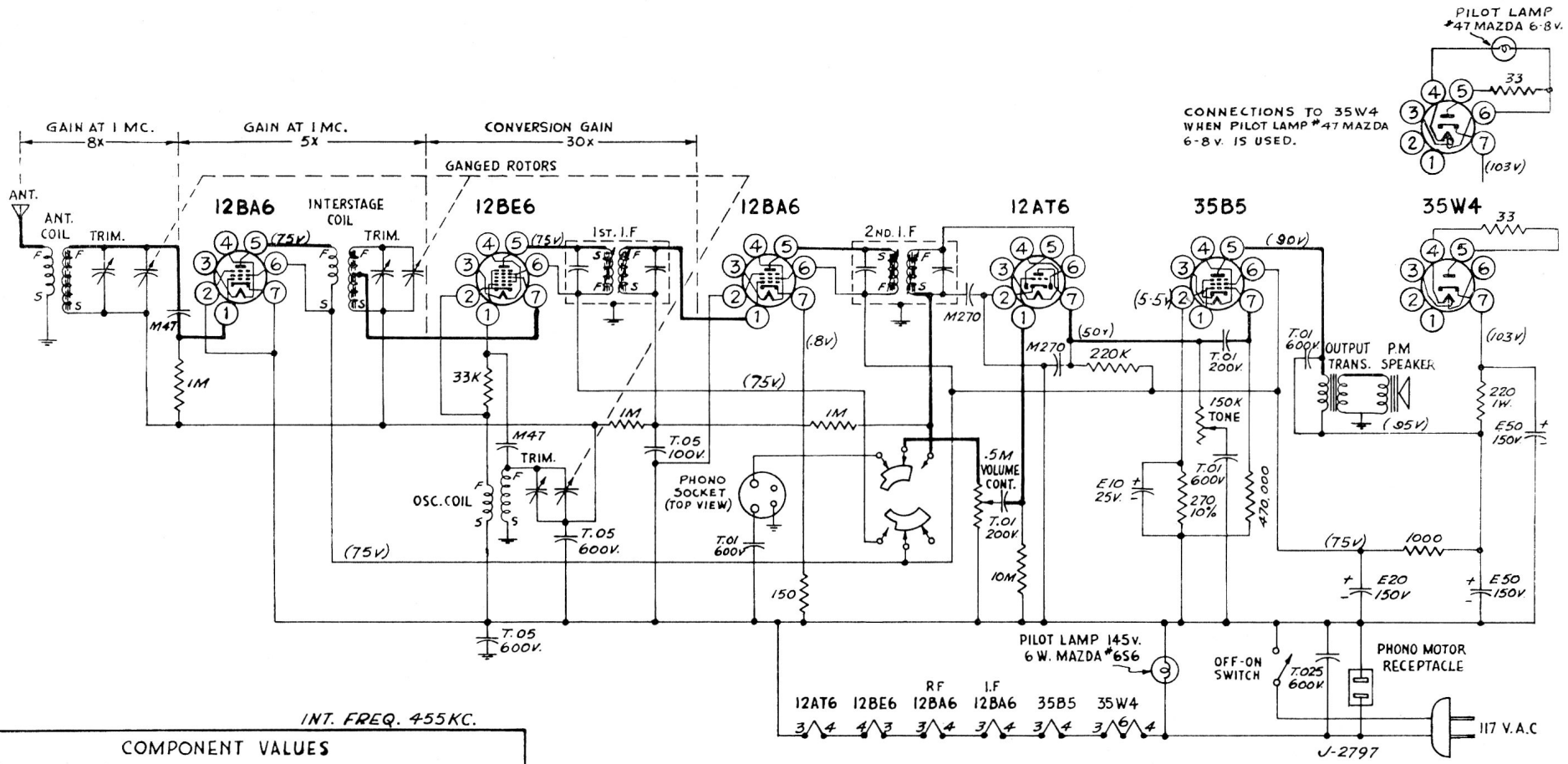
P-2243-2.....10" PM Speaker Lead & Plug Assy.

P-2199-29.....Webster Model 100, 60 cycle Changer with Crystal Cartridge

P-2200-28.....Webster Model 100, 25 cycle Changer with Crystal Cartridge
ASTATIC ACD—MJ Cartridge

N-325-1.....Walnut Knob
N-326-1.....Walnut Knob—Indicator
N-325-2.....Mahogany Knob
N-326-2.....Mahogany Knob—Indicator




INT. FREQ. 455KC.

## COMPONENT VALUES

RESISTORS: HALF WATT UNLESS OTHERWISE SPECIFIED.
20% TOLERANCE UNLESS OTHERWISE SPECIFIED.
K = 1000 OHMS.
M = 1,000,000 OHMS.

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

## ALIGNMENT AND SENSITIVITY

SIGNAL GENERATOR MODULATED 30% AT 400 CY.

| STEP | APPLY SIGNAL AT KC | APPLY SIGNAL TO | THRU SERIES DUMMY | SET GANG AT | ADJUST FOR MAX. OUTPUT | NOMINAL SENSITIVITY FOR 50 MILLIWATTS OUTPUT. |
|---|---|---|---|---|---|---|
| 1 | 455 | I.F. 12BA6 #1 PIN | .05 | | 2ND. I.F | 5000 μv. |
| 2 | 455 | 12BE6 #7 PIN | .05 | MINIMUM CAPACITY | 1ST. I.F 2ND. I.F | 130 |
| 3 | 1460 | R.F. 12BA6 #1 PIN. | .05 | 1460 KC. | OSC. & INTERSTAGE TRIMMER | 30 |
| 4 | 1460 | ANT. | 200 μμfd. | 1460 KC. | ANT. TRIM. | 3 |
| 5 | 600 | ANT. | 200 μμfd. | 600 KC. | CHECK ONLY | 4 |

| C.N.No. | DATE | CHANGE | SYMB. | CK. |
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ALL VOLTAGES ± 10% MEASURED TO B- WITH 20,000 OHM/VOLT METER, 117 V. LINE.
RADIO PHONO SWITCH SHOWN IN PHONO POSITION.

J-2797