# SERVICE MANUAL & PARTS LIST

110 VOLTS

Series 7ME103-E 25 Cycle Only A7ME103-E 60 Cycle Only

MOVIE DIAL RADIO
WITH THE NEW ELECTRIC TOUCH CONTROL

# 10-Tube A.C.-Operated Superheterodyne Receiver

WITH

Three Tuning Bands

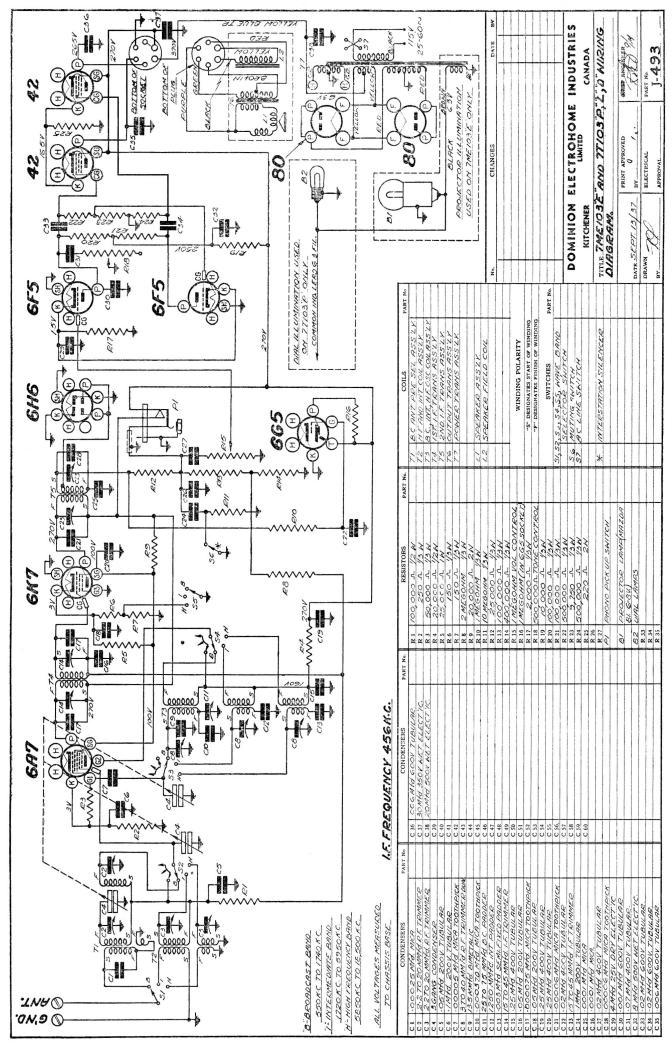
AND AUTOMATIC VOLUME CONTROL

000

AN ALL CANADIAN PRODUCT
MANUFACTURED BY

Dominion Electrohome Industries Limited

KITCHENER, ONTARIO, CANADA



CHANGES ON LATER MODELS ARE—(1) R5 is connected from the 6K7 screen to ground. (2) The 6K7 suppressor (G3) is connected to the 6K7 cathode instead of to ground... (3) R14 is replaced by two 200,000 ohm resistors connected in series. The AVC voltage is taken from the junction of these two resistors.

#### CIRCUIT DESCRIPTION

On intermediate or short wave, the 6A7 tube is coupled to the antenna circuit by a tuned antenna coil T2. On broadcast, however, the tube is preceded by a pre-selector stage consisting of two tuned coils T1. The desired band is obtained by a three-position selector switch. The oscillator coil is a self-contained unit consisting of three oscillator coils and a parallel trimming condenser TRIMMERS for each secondary.

Following the 6A7 pentagrid converter, which TRIMMERS acts as an oscillator and first detector, is a tuned I. F. transformer T4, the 6K7 I. F. amplifier tube, and the second tuned I. F. transformer T5. The SPEAKER two sections of the 6H6 twin diode tube are con-SOCKET nected and serve to rectify the I. F. signal. The diode load developed across resistors R13 and R14, is fed to the 6F5 audio tube through condenser C27 and volume control R15. The output of the 6F5 is resistance coupled by R20, R22, R23 and C33 to one of the 42 push-pull output tubes, and to the 6F5 phase inverter tube, the output of which is resistance coupled by R21, R24 and C34 to the other 42 push-pull output tube. The output of the push-pull stage is transformer coupled to the dynamic speaker.

The automatic volume control voltage developed across R14 supplies, through the isolating resistors R8 and R1, a negative voltage (which is automatically regulated in proportion to the incoming signal) to the 6K7 1st I. F. amplifier tube, and to the 6A7 tube also, when on the broadcast or intermediate bands.

A 6G5 tuning indicator tube is used, the function of which is to give a visual indication of the amount of automatic volume control voltage developed across the diode load network. Since the AVC voltage is highest at resonance, the 6G5 tube gives an accurate indication of tuning.

The power supply employs two 80 rectifier tubes, each is connected to serve as a half-wave rectifier, and the combination used as a full-wave rectifier. The speaker field L2 (900 ohms) is used as a filter reactance in series with the "B" supply. One self-regulating electrolytic condenser C37 is used, which, in addition to filtering keeps the "B" supply at a nominal voltage when the receiver is first turned on, thus protecting the component parts of the circuit from a high voltage surge.

Condensers C17 (2 used), C21 & C28 connected across the I.F. coils permit the use of very low capacity I.F. trimmers, thus reducing the I.F. drift to an absolute minimum. Frequency drift in the broadcast oscillator circuit is minimized by employing the low capacity padding condenser C11 shunted by the fixed condenser C10.

CAUTION—To protect the electric motor used for automatic drive in this receiver, a fuse has been incorporated. It is located on the side of the chassis. This fuse is of the screw type and rated at 5 amperes. Under no circumstances must it be removed while the receiver is connected to the 110-volt line.

Should the electric mechanism cease to function, this fuse should be replaced with a 5-ampere fuse. Serious damage may result if one of larger current capacity is used.

#### PHONOGRAPH ATTACHMENT

An electrical phonograph pickup, with its termina's connected to a telephone plug, may be attached to this receiver by plugging it into the jack at the rear of the chassis (as indicated on the chassis layout chart). When the plug is in place, the receiver will not function as a radio, but only as an audio amplifier. A separate volume control is unnecessary as the control on the receiver will operate on both pick-up and radio. When an electric phonograph motor is used, the motor frame and the pick-up arm must be grounded to the chassis.

#### VOLTAGES

All voltages indicated on the diagram are measured from the chassis with a voltmeter of 1000 ohms per volt. Readings were taken with volume control turned full on, line voltage at 115 volts and antenna and ground leads shorted together.

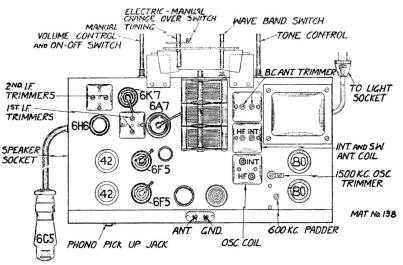


Fig. 1-Chassis Layout Chart.

#### SPECIFICATIONS

Broadcast Tuning Range530 K.C. t	o 1740 K.C.
Intermediate Tun. Range1720 K.C. t	o 5950 K.C.
Short Wave Tun. Range 5850 K.C. to	18,500 K.C.
Intermediate Frequency	456 K.C.
Power Consumption	110 Watts
Power Output	10 Watts

#### D. C. RESISTANCE OF WINDINGS

#### T1 Broadcast Antenna & Pre-Selector Transformer

B. C. Primary 19. ohms Secondary 3.2 ohms Pre-Selector Secondary 3. ohms

#### T2 H. F. and Intermediate Antenna Transformer

Int. Primary .73 ohms Secondary .55 ohms H. F. Primary .6 ohms Secondary .04 ohms

#### T3 Oscillator Transformer (Three Bands)

B. C. Primary 2.1 ohms
Int. Primary 1.2 ohms
H. F. Primary .84 ohms
Secondary 5.1 ohms
Secondary 1.1 ohms
Secondary .05 ohms

#### T4 1st I. F. Transformer

Primary 14. ohms Secondary 14. ohms

#### T5 2nd I. F. Transformer

Primary 13. ohms
Secondary
Start to tap 2.3 ohms
Finish to tap 14. ohms

#### T6 Output Transformer

Primary 196 ohms per half Voice Coil .27 ohms

#### T7 Power Transformer, 25 Cycle

Primary 3.4 ohms H. T. Sec. 132 ohms per half

#### T7 Power Tranformer, 60 Cycle

Primary 2.5 ohms H. T. Sec. 97 ohms per half

L2 Field Coil 900 ohms

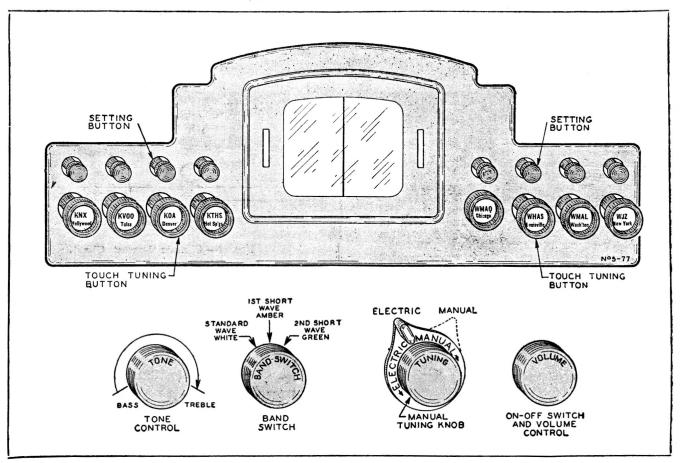


Fig. 2-Touch Tuning Buttons and Arrangement of Controls.

#### PROCEDURE FOR SETTING THE TOUCH TUNING BUTTONS

It is advisable to become familiar with the operation of this radio and tuning with the manual control (as described in the "Operating Instructions" Booklet) before attempting to set the Touch Turing Buttons.

There are eight buttons on the touch tuning dial by means of which eight stations may be set. Any button may be used for any station you can receive.

List your favourite stations, any number up to and including eight. Turn the electric manual lever to the electric position. (See Fig. 2.)

Push in one of the eight touch tuning buttons—the button will stay in. After the motor stops, push the setting button located directly above this touch tuning button all the way in and hold the setting button in. Be sure the setting button is pushed all the way in. If it is not pushed in far enough, the tuning knob will turn but the dial figures will not move.

Select one of the stations from the list you have made out and carefully tune in this station with the manual tuning knob in the usual way using the tuning eye as a guide.

The final motion of the tuning knob should be to the left. Turn this knob to the right, past the point of maximum closing of the eye. Then turn the knob back to the left and with the tension on the knob still in this direction release the setting button just before the point of maximum closing of the eye is reached.

Check the tuning by pushing in one of the other touch tuning buttons. After the motor stops, again push in the above mentioned touch tuning button which was set for a station and see whether this station is correctly tuned in.

Punch the correct station disc from the sheets supplied and push this disc into the bottom of the button which is depressed. It should be so placed that the letters will be horizontal. Push one of the clear celluloid discs into the button over the station disc.

Proceed in the same way to set the remaining touch tuning buttons.

# PROCEDURE FOR SETTING THE TOUCH TUNING BUTTONS—Continued

Never attempt to push in a setting button unless the touch tuning button directly beneath it has first been pushed in and the motor has stopped.

If a button which is set for one station is changed to another station, remove the clear celluloid disc and the station call letter disc with the point of a pin. The celluloid disc has a notch on the edge for this purpose. Then, insert the new call letter card and the clear celluloid disc.

# TUNING IN A STATION WITH A TOUCH TUNING BUTTON

Turn the electric manual lever to the electric position. Push the touch tuning button containing the call letters of the desired station all the way in. The button will remain depressed. After the station has been tuned in by means of the electric mechanism, the volume control may be adjusted if necessary.

Push in only one touch tuning button at a time. If two buttons have accidentally been pushed in, push in any other button to release them or turn the electric-manual lever to the manual position.

## MOVIE DIAL ADJUSTMENTS

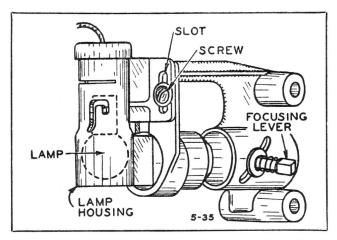


Fig. 3-Lamp height adjustment and focusing lever.

# KFEQ WMAQ Lamp Housing too Low KFEQ WMAQ Lamp Housing too High

Fig. 4-Effect of lamp housing assembly height.

#### BRINGING LENS ADJUSTMENT TO A FOCUS

IMPORTANT—Turn the Band Selector switch to the broadcast position.

Move the focusing lever (Fig. 3) up or down until the image on the screen is clearest. In Fig. 5 is shown the effect of correct and incorrect focusing.

#### REPLACING AND POSITIONING THE DIAL LAMP

CAUTION—If a new lamp is required, use only a No. 81 lamp. Order by Part No. K-695.

Turn the radio off and turn the Band Selector Switch to the Broadcast position.

Remove the lamp housing by unscrewing and removing the two screws which hold this housing in place  $-\mathrm{See}$  Fig. 3.

Remove the old lamp from the socket and put in the new one.

Replace the lamp housing by means of the two screws, but do not tighten these screws yet.

Turn the radio on.

Then grasp the top of the lamp housing assembly and move it up or down until the image on the screen is clearest and the lines are horizontal. The effect of having the lamp housing too high or too low is shown in Fig. 4. Tighten the two screws.



Image too Large - Blurred



Image in Focus



Image too Small - Blurred

#### ALIGNMENT AND CALIBRATION

These receivers are carefully aligned and calibrated at the factory with precision instruments. It is very important that all other causes of faulty operation be investigated before attempting to realign the receiver.

The equipment necessary for this consists of two essential items, namely:

- (1) A signal generator to supply with accuracy, the frequencies:
  - (a) 456 K.C., (b) 1500 K.C., (c) 600 K.C., (d) 15 M.C., (e) 5 M.C.
- (2) A dependable output meter.

When aligning, never use more R.F. signal than is required to produce half scale deflection on the output meter. The lower the R.F. input, the greater the accuracy of alignment.

#### I. F. ALIGNMENT

Set the signal generator to 456 K.C. and connect the output to the grid cap of the 6A7 tube through a .1 Mfd. condenser. The generator ground is connected to the chassis which must be externally grounded. The receiver dial is set at maximum frequency (gang open), the selector switch turned to the broadcast band position and the volume control turned full on.

The I.F. trimmers, located as shown on the chassis layout chart, are then adjusted by means of a non-metallic screw driver until maximum output is obtained.

The 1st I. F. sensitivity is 40 microvolts and the  $2nd\ 3000$  microvolts.

#### R. F. ALIGNMENT

#### **Broadcast Band**

and connect the output lead to the antenna of the receiver in series with a .00025 Mfd. condenser. The ground from the signal generator must be connected to the chassis, and externally grounded. With the band selector switch in the broadcast position, the dial of the receiver set at 1500 K.C., and the volume control turned full on, adjust the broadcast oscillator trimming condenser (located

as shown on the chassis layout chart) until a signal is heard.

Note: There may be two signals present, use the one obtained by the minimum capacity setting of the trimming condenser and adjust it to its peak. Then adjust the broadcast antenna and preselector trimming condensers for maximum output. 600 K. C. Set the receiver dial and the signal generator to 600 K.C. Adjust the 600 K.C. padding condenser for maximum output. While making this adjustment rock the tuning control back and forth through the signal until maximum out-

Following this, it is advisable to repeat the procedure outlined for 1500 K.C. to compensate for any slight discrepancy caused by the adjustment of the series padding condenser.

The broadcast band sensitivity is 5 microvolts at 1500 K.C. and 10 microvolts at 600 K.C.

#### Intermediate Band

put results.

5 M. C. Set the signal generator to 5 M. C. and connect its output to the antenna of the receiver through a 400 ohm resistor. The ground of the signal generator is connected to the chassis and externally grounded. Turn the band selector switch to intermediate band, the receiver dial to 5 M. C., and the volume control full on. Adjust the intermediate oscillator trimming condenser, shown on the chassis layout chart, until a signal is heard.

Note: There may be two signals present. Use the one obtained by the minimum capacity setting and adjust the trimming condenser to the peak of the signal. Then adjust the intermediate antenna trimming condenser for maximum output.

#### Short Wave Band

15 M. C. The same procedure is employed as outlined for the intermediate band, only, of course, the oscillator and antenna trimming condensers are adjusted at 15 M. C.

The high frequency sensitivity is as follows: 10 microvolts at 5 M. C.; 12 microvolts at 2 M. C.; 10 microvolts at 15 M. C.; 15 microvolts at 6 M. C.

#### ELECTRIC DRIVE PANEL ASSEMBLY

## TO REMOVE ELECTRIC DRIVE PANEL FROM CHASSIS

Remove the chassis from the cabinet, using extreme care not to damage the setting button shafts. Remove the touch tuning buttons by pushing down the lower end of the small hairpin spring at the back of the button and at the same time pulling the button off the shaft. It is not necessary to remove the setting buttons.

To remove the panel from the chassis, turn the electric-manual lever to the "electric" position. Unsolder the wire on the silencer switch on the front panel, and also the motor connections under the chassis.

Take off the collars from the volume and tone control shafts. Remove the glass screen from the panel by taking the screw out of the bracket in the upper right hand corner and loosening the screw in the lower left hand corner.

Remove the four screws with heads rainted red. Two at the bottom of the panel and two under the glass screen. DO NOT remove the screw on each side of the shaft extending through the center of the panel. The panel can then be pulled straight out from the chassis.

To replace the assembly, reverse the above procedure. When mounting the panel, care must be taken that the drive arm on the drive gear and spring clip on the gang condenser drive drum line up properly. To do this, allow the front part of the chassis to project two or three inches over the edge of the table. Turn the gang condenser until the spring clip on the drive drum is at its lowest position. Spread this spring clip with a small screw driver, bringing this screw driver up from beneath the chassis. Care should be taken not to spread the spring clip too far. Turn the gears on the electric drive panel until the drive arm is at its lowest position. Gently push the drive arm into position in the spring clip on the drive drum. The

screw driver will drop to he floor.

CAUTION

When the electric drive panel is removed from the chassis, lay it face down and not back down. The reason for this is that there is a possibility that the motor "ON-OFF" switch on the back of the panel will be damaged or thrown out of adjustment.

In handling the electric drive panel, do not carry it by the switch lever which actuates the "ON-OFF" switch. This bar may be bent and damaged by such handling.

#### MOTOR AND SILENCER SPRING ASSEMBLY

The electric motor supplies the mechanical power for tuning in a station when a touch tuning button is depressed. A reversible A. C. motor is used. Power is transmitted to the rotating mechanism by means of a pinion gear on the armature shaft which meshes with the first gear in the train of gears.

At the front of the motor is an assembly known as the silencer spring assembly. This assembly has a two-fold purpose. First, it establishes a contact while the motor is operating, which completes a circuit to the chassis ground that silences the radio. This switch (S6) and circuit is shown in the schematic diagram. Its second function is to exert a slight amount of spring tension on the end of the armature shaft which extends from the motor.

The small pinion gear inside the motor rotates freely on the front motor bearing. This pinion is always in mesh with first gear in the train of gears. There are two pins on the armature and two extensions on this pinion. The entire armature shaft assembly slides back and forth in its bearings.

When the circuit through the motor is complete, magnetic action causes the armature shaft to slide toward the front of the panel. The force is strong

#### ELECTRIC DRIVE PANEL ASSEMBLY—Continued

enough to overcome the tendency of the silencer switch spring to prevent this movement.

The pinion gear comes into close proximity with the armature and the two pins and two extensions mentioned above engage causing this gear to rotate with the armature. The electric tuning mechanism turns as a result. When the circuit through the motor is broken, the magnetic pull of the armature is released and the silencer spring forces the armature toward the back of the panel, causing the pinion gear to disengage from the armature proper.

The tension of the silencer spring is of great importance. If the tension is insufficient, it will not push back the armature shaft after the circuit is broken and the inertia of the motor will continue to exert a driving force on the train of gears. This will cause the tuning mechanism to go somewhat past the station after the setting disc has arrived at the "stop" position. The remedy is to tighten the spring by bending it.

If the tension of the silencer spring is too great, it will prevent the armature from moving forward when the circuit is completed and engaging the pinion gear. When this occurs, the pinion will not turn at all, or a chattering caused by the armature pins and pinion extensions will be heard. remedy, of course, is to reduce the tension of the spring by bending.

The contact and the spring of this assembly must close while the armature is in its operating position-otherwise the radio will not be silent between stations. Be sure that the assembly is not so bent that the contact and spring remain permanently in contact. This condition would, of course, short out all signals.

#### REPLACING A SETTING BUTTON PLUNGER

It is advisable to remove the electric drive panel from the chassis, and mount it in a vertical position by means of clamps or a vise. Turn the clutch release lever to the "manual" position.

Remove the two sections of the switch lever. the center section and the section at the rear of the plunger to be replaced.

Move the rocker arm shaft to the right or left, as necessary, to allow the stop lever and rocker arm above the setting button plunger to be taken off from the rocker arm shaft. After these are removed, the setting button plunger may be pushed

out from the front of the panel.

Replace the new plunger from the back of the panel and reassemble rocker arm and stop lever to the rocker arm shaft.

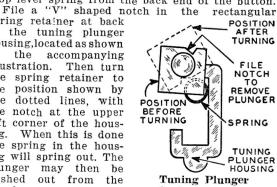
Reassemble switch lever and replace the electric drive panel on the chassis.

#### REPLACING A TOUCH TUNING BUTTON PLUNGER

Remove the electric drive panel from the chassis and mount it in a vertical position by means of clamps or a vise. Turn the clutch release lever to the "electric" position.

Remove the pin from the front of the button plunger by pulling it out. If this cannot be done file the pin flush with the plunger. Unhook the stop lever spring from the back end of the button.

spring retainer at back of the tuning plunger housing, located as shown in the accompanying illustration. Then turn the spring retainer to the position shown by the dotted lines, with the notch at the upper left corner of the hous-When this is done ing. the spring in the housing will spring out. The plunger may then be pushed out from the panel.



Spring Retainer To replace the plunger, push it into the housing

from the back, at the same time moving the clutch release lever slowly toward the "manual" position until the plunger slides all the way into place. Replace the spring in the plunger housing, de-

pressing it and at the same time moving the spring retainer into position to hold the spring in place. Hook the stop lever spring to the back of the plunger.

Insert the smooth end of the new stop pin in the hole in the front of the shaft, forcing it in by squeezing with pliers. CAUTION--Leave about 1/16" of the pin extending above the surface of the plunger.

Replace the electric drive panel on the chassis.

#### PARTS AND PRICE LIST

#### SERIES 7ME103-E-A7ME103-E

Part No.		rice Ea	Part No. Description I	list Price Ea.
	Round Rubber Chassis Bumper		L-204 Power Trans. Assembly (25 cy	
	Felt Knob Washer		D-286APower Trans. Coil only (25 cyc	
	Insulating Switch Cover		M-106Indicator Tube Mounting Brack	et25
	Reversing Switch Cover		N-134Wooden Knob (Plain) 3 used	
	A. C. Switch Cover		N-135Wooden Knob (with B.F.P. let	
	Tube Shield Base		1 used	
	Tube Shield		P-283A B. C. Pre-Selector Coil Assemb	
	Dial Escutcheon		P-199Intermediate and H. F. Antenna	
	Small Grid Clip		Coil Assembly	2.80
	Large Grid Clip		P-282B. C., Intermediate and H. F.	
	Square Zinc Coil Shield, 5" x 2"		Oscillator Coil Assembly	
	Square Zinc Coil Shield, 4 1/8" x 2"		P-2731st I. F. Transformer Assembly	$y \dots 3.70$
	Square Zinc I. F. Coil Shield		P-271 2nd I. F. Transformer Assemb	
	4 Mfd. 25 volt Tubular Electrolytic		Q-121A Phono Jack Switch	
	13.5 Mmfd. Bi-metallic Condenser		Q-139ASelector Switch	
	50 Mmfd. Toothpick Condenser		R-137Volume Control with Switch	
	75 Mmfd. Toothpick Condenser		R-138Tone Control	
	60 Mmfd. Toothpick Condenser		V-129 2.2 to 20 Mmfd. Dual R. F. Trim	
	370 Mmfd. Toothpick Condenser		V-1462.5 to 45 Mmfd. Dual Oscill. Tr	
J-448	Canadian Call Letter Sheet (Disc)	10	V-125A003 Mfd. Semi-fixed Padder	
	American Call Letter Sheets (Disc)		V-1381250 Mmfd. Semi-fixed Padder.	
T = 1 1	(5 sheets to set)se	t .35	V-149A15 to 45 Mmfd. Dual I. F. Trin	mer55
J-911	Package containing 25 58x184		V-151A40 to 120 Mmfd. Single B.C. Pa	ıdder
17.159	Celluloid DiscsFour-Prong Tube Socket	15	on Dual Base	
K-195	Six-Prong Tube Socket	15 15	V-1471.8 to 12 Mmfd. Air Tuning Tr SPEAKER AND SPEAKER PART	immer .30
K-151	Seven-Prong Tube Socket	15	P-245 E4, 12" Dynamic Speaker with	122
K-264	Eight-Prong Tube Socket	15	Output Transformer	16 00
K-509	Rubber A. C. Line Cord with Plug	15	A-148Rubber Grommet	
K-671	Indicator Cable and Socket	. 1.10	K-649 Six-Prong Speaker Plug	
K-699	Fuse Recentacle	40	D-296 Speaker Field Coil	3.55
K-700	5-Ampere Fuse	20	L-214 Output Transformer Assembly	
K-248A	Antenna and Ground Terminal Strip	20	D-297Output Transformer Coil only	
L-213	Power Trans. Assembly (60 cycle)	11.00	Cone and Voice Coil Assembly	
D-290A	Power Trans. Coil only (60 cycle)	5.00	for P-245 Speaker	3 25

### PARTS AND PRICE LIST-Continued

Part No.	Description	List Price	Ea.	Part No.	Description	List Price Ea
E	LECTRIC DRIVE PANEL A	SSEMBLY		0777400	Switch Lever)	
25A176	60 cycle Electric Drive				Bracket for Reversing Swite Silencer Spring Assembly of	
	includes Main Castings, Switches, Motor, Setting				with Shield	
	and Setting Button Plui			58X226	Glass Screen Clamp for Glass Screen	
	and Volume Indicators	,			Tone Indicator Assembly	
	denser and Movie Dial sembly, Tuning and Sett			15X108	Volume Indicator Assembly	
	Glass Screen & Screen C	lamps, On Req	uest		Spring for Tone or Vol. In Brass Collar (Used on Tone	
25A247	25 cycle Electric Drive Pa				Control Shafts)	
	same as above except Motor & No. 1 Gear Ass			25X405	Shipping Support Bracket (	Top of Elec-
57X8	Locking Plate		.95	8X23	tric Drive Panel to WoodRubber Cushion (Used with	
28X139	Spring for Locking Plate .Interlocking Lever		$.05 \\ .20$		Support Bracket)	
37X95A	Clutch Release Lever		.20	I	PROJECTOR ASSEMBLY PA	RTS
	Spring used for Above Lev		$\begin{array}{c} .05 \\ .20 \end{array}$	26A77	Gang Condenser and Proj	
26X259	Tuning Knob Shaft	ts Groove	.20		complete. Includes Conde Bracket, Condenser Drive	
	on Above Shaft)		.20		Drum Cables and Pulley	ys, Film Drum
19X88	Keyway Washer (Used on Bearing		.25		Support Bracket, Film	
24X294	Pulley for Manual Drive B	Belt	.20		Lamp Housing Bracket, Plug, Lens Housing,	Lens Housing
	(On Back of Tuning Sh	aft)	.55		Bracket, Color Filter, I	Projector Com-
	Roller Bearing for Above Clutch Plate		$\begin{array}{c c} .25 \\ .20 \end{array}$	054104	partment, Elevator and L Front Support Bracket for	ink Assem. 33.0
28X152	Clutch Release Spring (In	Front of		25A194	denser complete with t	
03788	Clutch Plate from Back o		.25		and Shafts	
	Manual Drive Belt Belt Tension Pulley & Brad		.55	8X43	. Rubber Cushion (Mounted above Bracket)	
28X150	Spring for Above Assemb	lypr.	.05	20X152	Stud—used with Rubber Gr	
	Belt Idler Pulley only Setting Disc Assembly		$\begin{bmatrix} .20 \\ 1.20 \end{bmatrix}$		(6X8) on Front Suppo	
	Tension Spring (Fastened		1.20	26A79	for Gang Condenser Drive Drum for Gang Cond	enser
	and Drum Release Lev	ers)pr.	.05		Support Bracket for Lens	Housing,
28X151	Tension Spring for Pawl of Disc		.05		Projector Compartment vator Lever	
26X255	Setting Disc Shaft		.70	25A198	Elevator Lever Arm and B	
20X192	Ball Bearings in Retainer		20	0.037.0.0	Link Assembly	
20X207	Disc Shaft) Bearing Cone (Without Se		.20		Lever Bearing Rod	
	On Setting Disc Shaft	)	.25		Lever Arm—Short (Faster	ed to
20X195	Bearing Cone (With Set S.) On Setting Disc Shaft		.35	90750	Band Switch Shaft	
24X288	Pulley for Drive Cable (On		.00	28299	Above Lever)	dz18
957409	Disc Shaft)		.40		Tension Spring for Elevator	
23A403	Support Bracket for Setting. (Left Side from Back		.20	29X.85	Support Bracket for Film I Shaft and Pulley	
25X412	Support Bracket for Setting		0.5		.Film Drum Pulley Assembl	ly
26A75	and Motor On-Off Swi Adjusting and Supporting		.25		Shaft for Film Drum	
	Motor On-Off Switch .		.20	20A100	Cable, less Tension Spi	
	Motor On-Off Switch Assem .Switch Lever (Right Sec. f		$\begin{bmatrix} 1.70 \\ .35 \end{bmatrix}$	24X236	Guide Pulley only for Above	
	Switch Lever (Left Sec. fro		.35		for Front Support Br Gang Condenser	
	Switch Lever (Center Sect		.25		Spring only for Tension Arm	m05
	Switch Lever Spring Stop Lever		$\begin{array}{c c} .05 \\ .20 \\ \end{array}$	6X8	Rubber Grommet—Small (for Rear of Gang Condens	
28X148	Stop Lever Spring	dz.	.25		Drum Support Bracket	)dz25
25A181	Rocker and Rocker Arm St bly Complete with Spr		.40	20X201 20X150	Stud (Used with Above Gron Stud (for Mounting Rear of	mmet)pr05
	Spring for Rocker Arm Sto	pdz.	.20		denser to Chassis)	
	Rocker Arm Shaft Setting Button Plunger		$\begin{bmatrix} .20 \\ .20 \end{bmatrix}$	25X362	"L" Bracket (for Mtg. rea	
	Setting Button only		.20	6X18	Condenser to Chassis) Rubber Grommet (Used on	
26X254	.Tuning Button Plunger wit	h Stop Pin	.25		Bracket)	
	Tuning Plunger Spring Tuning Button only		$\begin{bmatrix} .20 \\ .20 \end{bmatrix}$	ZX236	Rubber Washer—Flat (Use Above Bracket)	
28X129	Hairpin Spring for Tuning	Buttons, dz.	.20	10X25	Film Drum Drive Cable	
10X26	. Main Drive Cable complet Turnbuckle		1.35		Film Drum Only—Less Film Clamp for Holding Film to	
12X75	.60 Cycle Motor Complete		8.15		Color Filter Assembly Brace	
24X296	Pinion Gear only (On Motor		0.5		Lens Housing Casting, less	Condenser
12X82	Shaft (60 Cycle)	10	$\begin{bmatrix} .35 \\ 0.85 \end{bmatrix}$		and Projector Lens an Rods	
25A233	No. 1 Pinion & Gear Assen	1., 60 cycle	.75	29X84	Bearing Rod for Above Cast	ting
24X307	No. 1 Pinion & Gear Assen No. 2 Gear and Pulley	1., 25 cycle 1	1.15 $.35$	19X69	Horseshoe Washer (Used or	
25A184A	No. 3 Gear Assembly		.55	12X73	Above Rod)	dz25 est
25A185	No. 4 Gear Assembly		1.00		Dial Lamp)	
26A73	Pulley Bracket Assembly co	mplete with	.20	12X72	Lens Retaining Spring Projector Lens	2.00
	Gear No. 5. Pulleys a	and Roller		29X77	Focusing Lever Asembly	
25A186	Bearing Assembly No. 5 Gear and Drive Arm	Assem, only	2.80	26A81	Lamp Housing and Socket. Plug Assembly for Dial Lam	.55 n with Wire
2 4 9 7	Reversing Switch		.60		less Dial Lamp and Ho	ousing
28X158	Lever for Operating Revers Centering Spring (used on	sing Switch	.20	32X85	Projector Compartment Dial Lamp (Mazda No. 81)	
	- Canad (and on		•	· · · · · · · · · · · · · · · · ·	Land Damp (mada No. 01)	