SERVICE MANUAL

No. 1.

SEEBURG

SYMPHONOLAS

•

1941 Models

7800, 7880, 8800, 9800 .

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J. P. SEEBURG CORPORATION

1500 DAYTON STREET • CHICAGO, U. S. A.

FOREWORD

This manual has been prepared to assist the service engineer in making any adjustments and repairs that may be necessary on 1941 Seeburg Symphonolas.

In preparing this manual every effort was made to present the material in as simple a form as possible.

Seeburg maintains a nation-wide organization of field engineers to instruct and co-operate with your service department. You will find these men up to date on all information pertaining to service.

In addition, we maintain a home service department at the factory to help you and to furnish you with any technical or service information you may desire.

When requesting information by wire or letter relative to the Symphonola, please give model and Serial Number. When ordering a part, it is especially important to give the name of the part and the part number as well as the Model and Serial Numbers of the Unit on which it is used.

Always give a full description of the problem at hand so that we may be better able to serve you.

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INSTALLATION

A. UNPACKING

We advise that the packing case be carefully examined before unboxing the instrument, and should there be any indication of concealed damages, the transportation company should be notified. When unpacking we advise the following procedure:

(1) Remove the screws holding the back of the packing case to the sides.

(2) Carefully remove the instrument from the packing box.

(3) Open the doors in the back by means of the keys which are contained in cloth bag attached on the-bacl,.

(4) Remove the fastening from the tone arm to the tone arm post bracket.

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(5) Remove the shipping block holding the rec­ord trays, and the shipping brace and wooden block wbich hold the motor rigidly for transportation purposes. It is advisable to keep these braces in

the bottom of the instrument and use them agatn when transporting the machine.

(6) Remove the wood screws and blocks holding the brackets on the bottom of the record changer mechanism.

(7) Remove the four wing nuts in each corner oi' the chassis.

NOTE: The wing nuts should be removed so that the chassis may be resiliently suspended in the spring mounting. This is absolutely es­sential in order that the best tone quality may be obtained. When the instrument is again to be moved, these wing nuts should be replaced and tightened down so that they nold th.e chassis rigidly.

B. CURRENT SUPPLY FOR INTRUMENT

On the back of each instru­ment will be found a name plate which gives the type of current upon which the instrument is de­signed to operate. If in doubt as to whether or not the type of current at the location is cor­rect, look at the house watt meter or call the local power company for ·this information.

C. INSTRUCTIONS FOR INSTPLING RECORDS

A set of record support discs will be found fastened in­side of the cabinet. One disc should be used as a support under­neath each record. It is not necessary to remove the record support discs from the trays when records are being changed, but it is important to make certain that both the discs and records are centered properly in the record trays.

When installing or replacing the records in 'the instrument, it

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is best to install or replace the record in No. 20 tray first.

Install or change the balance of the records starting with No. 1 tray and work down thrpugh the stack of record trays until all the records are in their respec­tive trays. As each record is put in its tray the title for that particular record should be put in its proper place in the program holder.

After all trays have been filled they must be returned to their original position by hand excepting No. 20 which should re­main over the turntable.

D. NEEDLE

The Symphonola Pickup is de­signed to use any standard phono­graph needle, however, we recom­mend the type supplied with the instrument. The needle should be installed having the flat part of the needle aligned parallel to the grooves in the record.

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clockwise as its correponding record comes to playing position. A reading can be taken by first allowing the Symphonola to come to a stop after it has played No. 20-record, tnen lift­ing the cabinet lid and looking at the individual escutcheon dials under the. shelf. To reset

Z. AMP l I

A. GENERAL

The amplifier in the 1941 Symphonola is the source of power for all equipment located in the cabinet and also repro­duces the sound recorded on a record. Tbe power is supplied to various units by means of a plug and socket arrangement in which no plug can be put into the wrong socket. The distribu­tion of power from the amplifier can best be taken up by describ­ing the functions of each socket located on the front of the amplifier panel.

B. FUNCTIONS OF SOCKETS AND SWITCHES

The power to all units in the Symphonola is controlled by the main switch (Fig. 11, Item 1; Fig. 14, Item 1; Fig, 17, Item 1). When this switch is in the dovm posi tlon, the Symphonola is in­operative. \vi th the sritch in the up position, standby power is supplied and the instrument is ready ror operation.

Tne octal socket (Fig. 10,Item 3· Fig. 13, Item 3; Fig. 16, Item 3} supplies 25 volts to the solenoid drum from which point the 25 volts supply j,s distrib­uted to the various relays and coils on the solenoid drum and electr·ical selector. This socket also has two lugs which the dials, turn them counter­

clockwise by hand until they reach the stop position. On 1nodels 8800 and 9800 it will be necessary to open the front door and turn on light by means of switch on right side of cab:Lnet

before playmeter can be read.

F I E R S

are connected to the contacts of the motor control relay and they

carry the power to the motor and amplifier when these contacts

are closed. In addition, this socket provides the power to

operate the counter unit located on the solenoid drum.

It vtill be noted that there is another octal socket (Fig. 10, Item

Fig. 13, Item 2; Fig. 16, Item

This socket supplies the power

to a type T-3Z trans­mitter when one is used. l''rom the schema tic diagrams it will be seen that these two octal sockets (Fig. 9, Items M-21 and M-22; Fig. 12, Items M-21 and 1"!22; fig. 15, Items M-18 and 1{-19) are wired in parallel so that the solenoid drum and transmitter plugs can be interchanged without any narm resulting. The small 4 contact socket (Fig. 10, Item 1;Fig. 13, Item 1; Fig. 16, Item 1) receives the R.F. output from a type T-32 transmitter and carries the output to the A-C line.

The 9 contact socket (Fig.

10, rtem 4; Fig. 13, Item 4;

F!g. 16 Item 4) is the source of

power for any remote control

equipment that may be added to the

Symphonola. The 2 contact outlet

(Fig. 10, Item 5; Fig. 13, Item 5;

Fig. 16, Item 5) supplieS power to

rnotor when the motor control relay

contacts are closed.

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The small 2 contact polarizedsocket (Fig. 10, Item 7; Fig. 13, Item 7) supplies 6 volts for the electrical selector and upper pilaster lights on the Model 8800 and 9800 Symphonolas. These lights are on when the main switch (Fig. 11, Item l; Fig. 14, Item l) is in the "on11 position.

The

1 contact socket (Fig. 10, tem

Fig. 13, Item 6; Fig. 16, Item

supplies 117 volts to the primary of the lighting transformer (Fig. 1, Item 17;

F1g. 2, Item 17; Fig. 3, Item 13)., The power to this transformer is controlled by the light switch (Fig. 11, Item 2; Fig. 14, Item 2; Fig. 17, Item 2). v.'hen this switch is in the do1m position, all lights energized by the light­ing transformer are on continu­ously. With the switch in the middle position, the above lights are off at all times. With the switc.h in the up pos'ltion, these lights are on only when the motor control relay contacts are

closed. The 4 contact socket (Fig. 16, Item 6) on Models 7800 and 7850 also supplies 117 volts to the program lights. These lights are on as long as the main switch {Fig. 17, Item 1) is in the "on" position.

The small 5 contact socket (Fig. 16, Item 7) on Model 7800 supplies 25 volts to the magazine magnet through the coin switches.

C. FUSES ON PPLIFIER

There are two fuse recepta­cles (Fig. 10, I terns 14 and 16; Fig. 13, Items 14 and 16; Fig. 16lItems 14 and 16) on the amplifier. The fuse (Fig. 10, Item 15; Fig. 13, Item 15; Fig. 16, Item 15) in the covez'ed receptacle (Fig. 10, Item 14; Fig. 13, Item 14; Fig. 16, !em 14) is a 2-l/2 ampere cartridge type light fuse. The fuse (Fig. 10, Item 17; Fig. 13, Item 17; Fig. 16, Item 17) in the sc·ew type socket (Fig. 10, Item 16; Fig. 13, It;em 16; Fig. 16, Item 16) is a 2-1/2 ampere non­tamperable type fuse for tbe Sym­phonola motor. It is very impor­tant that a blown fuse be replaced with one of the correct value.

3. ELECTRI CAL SELECTOR

A. GENERAL

The Electrical Selector supplements the mechanical selector; it is an electrical device located on the front of the Symphonola at which selec­tions are made. Two models of the Electrical Selector differ­ing in mechanical arrangement of parts are discussed in this manual. One is the type E selector which is almost identi­cal to the 1940 selector except the operating voltage is 25 volts. The other is the type C selector which has the same electrical characteristics as the type B out differs in tbat it consists of two comoonents the SA-62 Swi tcb Assembly (Fig. -­23) and the RB-6Z Relay Box (F·ig. 24) --which are inter­connected by means of a Selector Cable.

The Electrical Selector works in conjunction with the Solenoid Drum (Fig. 25) to con­trol the rear helix of the Sym­phonola Chassis and effect the desired selection. The primary

unctions of the mechanism in the electrical selector are (l)

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(Fig. 19, Item M9) and the con­

tact set C (Fig. 19) is used.

Its function is to prolong the

energy pulse through counter re­

lay (Fig. 26, Item 8) when

Credit Switch contacts D (Fig.

19) break. The register is

merely a means of limiting cur­

rent through the circuit.

J. CREDIT INDICATING CIRCUIT

The credit on the ratchet wheel in the Electrical Selector is indicated to the customer by means of the credit indicating

II, SOLENOID

A. GENERAL

The Solenoid Drum Assembly(Fig. 25) works in conjunction vdth the Electrical Selector (Fig. 22 or Fig. 23 and 24) and the Symphonola Chassis (Fig. 40).

The Solenoid Drum assembly

stores both selections and credit simultaneously. l•1eans is also provided to cancel off selections as they are played from the Sym­phonola Chassis. The function of the component parts can best be taken up by a study of the indi­vidual functions performed.

B. SELECTIONS ON 80LENOIDS

When a selection is made in the Electrical Selector, a pulseof current travels to the Sole­Drum J1ssembly (Fig. 25) through one of the selector solenoids (Fig. 25, Item 11; Fig. 28, Item Ml) and pushe s up the plunger and selector stop pin of that solenoid. The rotating selector disc (Fig. 25, Item 8) on the· solenoid drum has a stop (Fig. 40, Item 7) which engages the selector stop pin (Fig. 25, Item 10) . The coupling shaft couples dial (Fig. 22, Item 34) . This dial is visible through the small window in the front escutch.eon. The orinted i.nstruc-tions on the front escutcheon explain this credit in terms of the number of selections the customer may

make. The printing is not visi­ble until credit is established and is illuminated with white light.

The type B selector includes

a credit light switch which turns on the indicating lamps (Fig. 22,

Item 53) .

DRUM AS SHBLY

the rotating selector disc to the rear helix of the Slphonola

Chassis and selects the corre­responding record tray. After the proper record tray has been selected, the selection cancel

switch (Fig. 25, Item 16) is

closed and the selector stop pin

is pushed dovm to its original

posiion by means of the pin

cancel relay (Fig. 25, Item 6),

C. CREDIT ON PINS

When a solenoid plunger is pushed up, credit is established on the solenoid drum. Contact is made between the plu\_ger con­tact spring (Fig. 25, Item 13) and the grooved metal contact on the lower nortion of the sole­noid plunger assembly (Fig. 25, Item 12). This completes a cir­cuit (Fig. 27) operating the motor control relay (Fig. 27, Item 12).

The motor control relay (Fig. 27, Item 12) contacts oper­ate the Symphonola motor. These contacts close whe11 a selector pin is up and

do not open again

until after the last selection

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has been played and the turntable

has returned to its lowest posi­

tion. The solenoid plunger and

selector pin are pushed down be­

fore the record has moved to the

playing position, but the motor

carry-over switch (Fig. 25, Item

17; Fig. 27, Item F-12) located

on the rear of the Symphonola Chassis, keeps the motor control

relay energized until the record has been played.

D. COUNTER UNIT

The Solenoid Drum type SD20-7Z is equipped with an elec­trically operated counter that operates every time a selection

is made from either the electrical

selector or from a remote control box. If one number is selected twice, the counter will register two selections. It operates every time a selecting pulse travels through any of the selec­tor solenoids.

The counter unit is located inside the Solenoid Drum sub panel, and only the numerals are visable through the window in the side of the sub panel. To pre­vent tampering with the counter unit, the sub panel bottom plate is sealed with a small lead and wire seal, making it impossible to open the Solenoid Drum sub panel without breaking the seal.

Fig. No. 25 is a photographof the Solenoid Drum SD20-7Z showing its assembly and miscel­laneous parts and Fig. No. 27 is a Schematic Wiring diagram show­ing its electrical circuits.

OPERATION AND MAINTENANCE

I. GEN ERAL

A. APPEARANCE

It is important that the general upkeep and the good ap­pearance of the inscrument be maintained. A careful selection of good quality records appro­priate for he location should be made. Typewritten or printed title slips should be used at all times. Thts not only adds to the attractiveness of the in­strument, but increases !ts earnings.

B. LUBRICATION

Oil the gears occasionally using an automobile oil having a viscosity of SAE-10. Oil all friction points, such as the high speed transmission bearings

2.

A. TONE ARM \'lEIGHT ADJUSTMENT

On Model 7800 the weight of the tone arm at the needle with the needle just barely clearing

the record should be approximate­ly 3.5 ounces.

On Models 7850, 8800 and 9800, Which use tone arm F-3110, the weight when tested as above should be· 2.5 ounces.

When using the weight scale in Fig. 5, the indicator pointer of the scale should be directlyopposite the needle screw just as the needle is leaving the groovesof the record.

If a weight test is made while the instrument is playing, and the selector feed clu·Lch

plates on the toothed rack. \ve recommend this oil inasmuch as

ordinary light sewing machine oil

on the turntable shaft, the

transmission shaft, or the trans­

mision bearings has not enough

body to retain proper lubrica­

tion. The slide grooves may be

oiled sparingly should the record

carriers become binding or

sticky. If grease has been used

in the slide grooves or the

grooves become gritty or gummy,

the record carrier may bind.

They should be washed thoroughly

with a light grade of good qual­

ity lubricating oil. Wipe clean

and re-oil sparingly. DO NOT USE

VASELINE OB .ANY GREASE IN THE

SLIDE GROOVES AS IT IILL GUN UP

QUICKLY CAUSING A HEAVY LOAD ON

THE SELECTOR SLIDE PLATE.

TONE ARM

it is easy to determine just when the needle starts lifting out of the grooves.

It is best to make all weight tests near the start of a record.

On Model 7800 correct weight may be obtained by bend­ing the flat spring underneath the tone arm upward or dovmward to decrease or increase the weight.

On Models 7850, 8800 and 9800 the correct weight may be obtained by turning the screw (located in the top and approx­imate center of the tone arm) in to decrease the weight, and out to increase the weight.

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. INSTRUCTIONS FOR INSTALLATION OF WIRED REMOTE SPEAKER

These instructions concern the remote speaker and the speaker volume control box for 1941 Symphonolas. A total of three speakers, inclding the speaker in the Symphonola, maybe connected to these Symphon­olas.

The speaker control box is mou..Dted on the inside of the ex­tra speaker cabi.net for packing purposes only. It should be re­moved and mounted on the bottom of the amplifier shelf with the control key 2-7/811 from the left hand wall (when viewing the Syrn­phonola from the rear) on lodels 8800 and 9800. On Models 7800 and 7850, it should be mounted on the right hand wall (when viewing the Symphonola from the

r

rear) with the control key 6-1/2" below the top of the mechanism mounting shelf. A plate which covers the hole for the control key must be removed for access to the control key of the speaker control box.

When connecting the speaker control box for use with the re­mote speaker, the following pro­cedure is advised:

1.

Remove the green dummy plug (Fig. 10, Item 10; Fig. 13, Item 10; Fig, 16, Item 10) from the amplifier.

2.

Insert the plug from the speaker control box into either one of the

two 7-prong speaker sockets (Fig. 10, Items ll and 12; Fig. 13,

Iterns 11 and 12; Fig. 16, Items 11 and 12) .

3-. Insert the plug from the remote speaker into either one of the 7-prong sockets in the control box.

4. Se the link on the speaker impedance match­ing panel (Fig. 10,

Item 13; Fig. 13, Item 13; Fig. 16, Item 13) to correspond with the TOTAL number of speakersin use.

There are six positions on the key switch control in the speaker control box. vllien the control ls in the full counter­clockwise position, the greatest amount of speaker energy reaches the Symphonola speaker. When the control is turned to the full clockwise position, the external remote speakers receive the greatest amount of energy. When the control is in the third posi­tion, turning in a clockwise position from the left, the en­ergy reaching the Syrnphonola and external speakers is approximate­ly the same.

The regular instrument volume control (Fig. 11, Item 3; Flg. 14, Item 3; Fig. 17, Item 3) is used to set the overall volume level desired.

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armature is brought down it will

push the selector stop pin into its normal position. If the

reset shaft spring is too stiff,

the armature may lack the nec­

essary power to reset the selec­tor stop pin. The strength of

the spring may be reduced by re­moving a turn.

F. SELECTOR DISC AND STOP PIN ADJUSTJ•mN'r

Under normal operating con­ditions, no adjustment of the Selector Disc (Fig. 25, Item 8) is necessary. However, if the Solenoid Drum is removed from the chassis and dismantled, some ad­justments should be checked. If the plunger is pushed up slowly, the selector stop pin (Fig. 25,

Item 10) should mechanically en­

gage the Selector Disc Stop be­fore electrical contact is made between the solenoid plunger con­tact and the contact spring (Fig. 25, Item 13) .

G. SELECTOR SHAFT ADJUSTMENT

There is an adjustment screw at the bottom of the sole­noid drum assembly which regu­

lates the end thrus t of the

selector shaft. There should be no side thrust of the shaft. The

selector disc, which is on the

shaft, should rotate freely. When this adjustment has been

made, the locking nut on this

adjustment screw should be tightened.

H. COUNTER UNIT

Should the counter unit (Fig. 26, Item 7) fail to regis­ter each selecting pulse or fail to register at all, a check should be made to determine posi­

tively that the unit is actually defective.. If the unit proves defective, it should be returned

for factory repairs and adjust­

ment. The adjustment of unit in the field is not mended. this recom­

I. COUNTER RELAY

The counter relay (Fig. 26, Item 8) controls the couner unit (Fig. 26, Item 7) . Each

time the counter relay contacts are closed, the c ounter unit will register one more unit on the dials. Other than seeing that the contacts of the counter relay are kept clean (by using a con­tact burnisher when necessary) , no adjustments are recommended for this unit as the cont<.ct ad­justments are rather critical.

It is recommended that defective units be returned to the factory for adjustment or replacement.

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Service Manual '41 Models 7800, 7850, 8800 and 9800

line with the selector pawl 6A, No. 1222) slightly upward or springs, the adjustment can be downward until the proper align­greatly simplified by bending the ment of he roller th the helix roller mounting stud (Fig. selector pawl spring is attained.

5. TURHTABLE DOES HOT FUHCTION PROPERLY

A. TURNTABLE rAILS TO niSE TOPLAYING POSITiON

If the turntable fails to rise to the playing position, there may be insufficient or faulty lubrication on the turn­table spindle bearings. Use SAE-10 oil. DO NOT USE a light

se.wing machine oil.

Foreign obstacles such as dust or grit mny enter the turn­table bearings and cause the shaft to bind. Dlrt and .foreign matter may be removed from the turntable spindle as follows:

With the turntable in its upper­most position and the motor cut

off, by means of the main switch,

flood generously will oil, mov­ing the turntable up and down with t;he fingers, and wipe off with a clean cloth . Repeat this operation until the shaft and bearings are clean. Re-o11 lightly with No . SfE-10 oil.

If the turntable 11ft springs (Fig. SA, No. 1009) are too weak, replace with new springs from the factory.

It is possible that the turntable gears may be meshed too tightly. There should be slight play between the teeth of the turntable worm gear (:i"ig. 4, No. l528A) and steel worm (F'i g.

4, No. 1022) . he transmission

r

casing (Fig. 4, No. 1040) con­

taining c;he steel worm assembly

can be moved away from the turn­

table worm gear (Fig. 4, No.

l528A) to allow about .1)05" play between the teeth of the gears .

B. TURNTABLE DOES NOT ROTATR WHEN IN PLAYING POc;ITION

The turntable clutch (Fig.'1, Wo. 1014) in the lower end of the turntable soindle should have a slight siippage to absorbthe jar as it engages with the clutch pin underneath the turn­Lable gear (No. 1528/,) . If th is clutch is too loose it will not drive the turntable. In thls event, the clutch spring (No. 1315) should be replaced.

The turntable clutch (Fig.4, No. 1014) should engage the pin underneath the turntable

gear (Fig. SA, No. 1528A) . With te turntable in the raised posi­tion, the turntable elevating

cam (No. 1006) should be clear of the cam roller (Fig. SA, No . 1016) so that; the turntable clutch will engage the clutch pin in the turntable gear. If the turntable elevating cam does not stop in the correct playing posi­tion, it n be sl!ghly adjusted

ca

by means of the adjusting screw on the clutch release pawl (No. 1077) ounted on the turntable

elevating cam (Fig. 1, No. 1006) .

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Service Manual '41 Models 7800, 7850, 8800 and 9800

ing. Tt should sllde back and tempting any adjustments. forth freely. The steel worm gear (Fig. 4, No. 1071) and the

n

'-'• lNCOiilicCT CUT-OFF ADJUSTr··lENTS large worm gear (Fig. 10, No. 3054) may mesh too tightly,

The chenging mechanism should causing the shaft to bind be set in operat.ion when the slightly, or the flat spring needle enters the s!.op groove and (Fig. 4, No. 1075) may be too

trave:..led to within a distance weak. The spring may be strength­

l-7 /811 from the center of the ened by removing and reforming turntable spindle. Should adjust­the bend., taking care no1; make ments be necessary, refer to the bend too sl'1arp or the spring(Fig. 6C) and mal.!:e adju.stments make break.

with the adjusting screw (No. 1085)until tne proper setting has been E. BINDING OF TRIP LEVER made. Occasionally a record may be found where the music has beer. If the trip lever in the recor(ied nst the limits set for rear of the cabinet is binding in the cut-oi'f mechanism. It is ad­the hole through the rear panel, visable to reset the mechanism to it may cause pressure against the trip off or such a record. clutch retaining yoke (Fig. 6C,

l.o. 1508) prevent tng the yoke

D. BlNDHW OF TRMvSNISSION 1,10\il'l from engaging the clutch retain­

SEAFT L'"lg lever (No. 1052) . The tripr lever should wor freely with the

The tre.nsmission worm shaft rear panel i.nstalled. (Fig. 4, No. 1044) may be bind­

8. NEEDLE DOES HOT ENTER

RECORD GROOVE PROPERLY

b. AL I GNMEHT 01'' NEED:.E WI'rli EDGE not enter the playing groove> itOF RECORD may t>e caused t>y binding o:: the tone arm suppor t rod (Fig. 6A,

As the turntable comes up No. 1121). It is also possiblewith a record, the needle sl:ould 'Lhat the ins trument may be tqo

contact the reco!'d about 3/32" far out of level. imy binding in

f'rom its edge. Ol'his is tne con­the tone arm support rod (No.

dition for an average record 1121) should be traced down and

which will be found to be approx­remedied, as this will cause im­

imately 9-7/8" in diameter. The proper reproduction of music as

adjustable support hook (Fig. 6A, well a$ excessive record wear.

No. 1846) or 3115 that hol<ls the

tone arm in position as the turn­If the instrument is too fGr

table is being raised, may be ad­out of level, it should be lev­

justed so that the needle will eled up so all parts may func Lion

rest in its proper position on properly.

the record.

A tone a.rm booster spring

B. NEEDLE FAILS TO ENTER GROOVE (No. 1124) is sho\m in Fig. SA. This may be adjusted if necessary

If the needle stays in one :;o assist the movement of the po.si 'tion on the record anC. does needle toward the playing grooves

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of the record . If the tone arm

booster spring is adjusted with

too much tension, it may cause

9. MOTOR CARRY OVER

A. CONTACT PRESSURE

The Motor Carry Over Switch (Fig. 8, No. 6179A) should be so adjusted that it will just open when 125 grams pressure (approx. 5 oz. ) is applied with a gra.m gauge on the movable blade at 1 inch from the end. This adjust­ment is made by means of a spring bender.

3. DEGREE OF CONTACT OPENING

When in the "o:ff" position contact's should be adjusted so that they wlll be open from 1/1611

0 1/811•

C. Tn 1ING OF .10TOR CARRY OVF.R

5\'.ITCll

Afer the contact nressure and spacing have been adjusted, as described above, the tming is to be done by means of adjusting the switch position. In order to ac­;;omplish this adjustment , the Symphonola chassis is to be oper­

10. WARBLE 0 R TREMOLO

Sometimes the music will ap­pear to be wavering or varying in l oudness at a rather high rate causing a warbling of steady notes or a tremolo . Several things may contribute to this.

Occasionally iron filings near the permanent magnet or the needle in the pickup may be set in vibration distorting the tone . Very often loose needles or de­fective needles will cause tone

warble. ·

the tone arm to skid across the record when the turntable rises to the playing position.

SWITCH ADJUSTMENT

ated until the turntable is .iust

at the bottom of it s stro.ke. Under this condition, the switch

is to be loosened and slid up or do1m until it j ust opens the con­tacts. It should then be thor­oughly tightened at this point. After this is done, the Sym­phonola chassis should be oper­ated and checked to see that the turntable stops just at the bot­tom of its downward stroke . This is a test of tn e timing ad­

j us t:nent. If it stops too late,

the helix may be rotated over the r:ext p:Ln. If this happens

and the next oin is selected it

will be imposs ible for thls pin

to be pusr"ed all the way up be­cause lt will be stopped by the Selector Disc Stop. If this par ­

ticular number is selected , no play will result. On the other hand, if it stops too early, the turntable will not be completely at the bottom of its stroke and, as a result, it will be impossi­

ble to sl ide out the lower record

trays .

EFFECTS IN THE MU Sl C

Gummy oil or dry bear ings wJ.ll contri'bute to tone warble. The bearings should be washed clean and new oil applied .

The motor should be mounted free in its spring suspension and the couplings on the motor shaft should run true . If these

couplers are eccentric or if the shaft is not properly aligned it might contribute to th is warble

effect.

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17. MOTOR DOES NOT IS MADE ON THE

fl. GENERAL

In all of the folloiVing discussions concerning the failure of the motor to sLarL,

it is assumed that the selections were made and that the series re­lay in the electrical selector has operated. A cancellation of

credit is an indication that the series rel&y has operated.

B. SOLENOID PLUNGF.R DOFS NOT

PUSH UP

If the solenoid plunger

(Fig. 25, Item 12) does not push

up, it is probably caused by a defective coil, or by dirt and

•grease gwruning the plunger and

the solenoid stop pin (Fig. 25,

Item 10) . It is also possible

that the selector stop pin may

strike the stop on the rotating

selector disc, which •Nould pre­vent the solenoid plunger contact from being raised high enough to

close the motor control relay, ee timig of motor carry over

switch Section 9, paragraph 11C11.)

If the selector solenoid

(Fig. 25, Item 11) is defective,

it should be replaced as dis­cussed under "Operation and Maintenance.''

\olhen the solenoid plunger and selector stop pin are stick­ing due to oil or dirt, the foreign matter should be cleaned from the moving parts so that they may slide freely . These parts should not be lubricaLed.

START WHEN A SELECT ION ELECTR ICAL SELECTOR

C. MOTOk CONTROL RELAY DOES NOT OPERATE PROP r:RLY

'llhen a solenoid plunger is

pushed up, the grooved contact surface on the lower portion of

the solenoid plunger makes con­

tact with the plunger contact

spring (Fig. 2!', Item 13) and

operates the motor control relay.

If the relay does not oper­

ate, it may be defective or 1t

may not be receiving energy. The

relay receives its energy from the 25 volt transformer on the

amplifier.

If the relay operates and the motor does IIOt run, the motor is probably defectlve or the con­tacts on the motor control relay

are not completlng the circuit,

also the n;otor fuse (Fig. 27,

Item 2) may be defective.

If the contacts are dirty,they may be cleaned with a burnishing tool. If they fail to make contact, the lower contact

blade may be bent with a contact

bending tool until there is wear allowance of at least 1/3211•

D. MOTOR CONTROL CIRCUI

Fig. 27 is a schematic dia­gram of the motor control relayand the Symphonola motor. This diagram is simplified to show only the circul t of the motor control relay and the Symphonola motor and is self-explanatory.

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Service Manual '41 Models 7800, 7850, 8800 and 9800

which is set to just close it. If the adjusting screw is too

far in, the rear scavenger gate

(Fig. aO, Item 0) will be held

open.

The

undersize gauge (Fig.aO, Item

must work freely at all times.

If any adjustment is made here the unit should also

be tested with dimes since the wire feeler on this gauge also serves to deflect dimes into the proper path.

The rotary quarter sizer (Fig. 30, Item L) has no adjust­ment, but it is important that it work freely at all times, turning easily under the weight of a quarter. USE NO LUBRICANTS.

The scavenger wiper blade (Fig. 30, Item N) is effected by the adjustment of the deflector for fast m0ving 25¢ size slugs (Fig. 30, Item C) . It is im­portant that this part move freely and returns to its normal position when the scavenger is released, otherwise a quartermay be rejected.

(Fig. 30, Item P) is the slug outlet and Items "Q" , 11R" and 11S11 are the outlets for 25¢, 5¢ and 10¢ coins respectively.

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F-1.180

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r...l!Soi -Selector Slide

F-1509 F-1&11

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r-1.-001 ­

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J'-1815 ­

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F-!.085 ­

F-000 ­

RQ(I.l' IJGlix tippr Bearing

Rar Hl!x bft •

}'-3?.01 ­

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REAR VIEW (CUTAWAY)

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SYI<PMOMOLA CllASSIS -REAR VIE PARTS ll ST

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Fl GURE NO. 7 -SYMPHON

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>LA CHASSI S -END VIEt/

PART NO. llESCRIPTIOll

F-1010 -Turntable Spindle. , • , • F-1058 -Turntable Spindle Brack. F-llll -Record Tra,y Stop . , . . . F-1121 -Tone Arm Spindle F-ll23 -Tone Arm I:ID.la):!Ce Spring. •

F-1126 -Tone l<rm llalance spring t«>unting Block F-1130 -Tone Arm Pickup Head • ..

. •

F-1135 -Tone Arm Pivot Block ••••••

P-1137 -Tone Arm Pivot Spindle Screw

azine Veeder Coter • ••

?-1168 -Mag•.

P-1169 -Magazine Counter Oporating Cam

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F-ll?O -Ma.gazinu Counter Operating Crank .. F-l.l.7l ->lagazine Counter Operating Swivel.

NO. USJ::D PRICE

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F-ll72 -.'agazine Counter Mounting Bracket. 1

F-146 -Front elx Elevating Link •••• 2 eu.

F-1250 F-1251 J.l'-1252 Y-125

F-1507

1,..-1572

1'-1800

F-1844

F-1850

P-1851

-Front Helix Co.neilliog Lever • • •

Front He Cancelling Cam -Front Helix Cancolling cam Roller. -Front Helix Cancelling Ca Roller Sere.

-

Transmission Clutch Release Lever. Turntable Ass embly

-Roar Helix Oper<.ting c;..,,

-Tone Arm • • •

-Record Counter Fra..e •

•

-Aecord Counter Dial•••

•

F-1859 -Pcord Counter Ratchet

?-1860 -P£cord\_ Counter Escapement.

F-1865 -Record; Counter Escapement Spring

.l .25

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1 .os l .OS l .25 1 .75

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2o Ascembly

F-1592

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f-3022 -Stud (Shorting Switch) . . . • 1 .os

F- -TTan$mi$sion Dearing Support l .25

F'-&l54 -Co..t. Shaft Drive +..rorm Ge{lr. 1 2.50

F-5005 -Shorting S·.dt.ch.. • • • • • l -15

E'-6062 -Front Helix St'.a!'t A:$sembly 1 1.:.5 F-6065 -Magazine Coven· ASSOII\b:cy. • l .55

"C':.fONT VIEW-U:VE ASSEMBLY

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-Dulll 20 tfd. 450 Volt., Single 20 1<\fd •

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25 Volt

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Dry Electrolytic Con­

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12 84200 1.25

7 Contact Spe.Xer Socket denser

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FIGURE HO. Ill -BOTTO!'! VIEW OF TYPE 825-5 AMPLIFIER

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FIGURE NO. 23-SWITCH ASSEMBLY TYPE SA-6Z

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FIGURE NO. 26 -SOLENOID DRUM ASSEI·IBLY TYPE S020-7Z (BOTTOM VIEW}

rm PART lW. DESCRIPTION NO.R;;Q. PRICE ITEf•l PART NO. DESCRIPTION NO.REQ. PRICE

1 11754 -Selector Disc Stop. • 5 ea. $ .OS 5 86045 -.1 MFD 600 Volt Con­

•

2 71047 -Selector Shaft Adjust-denser. . .. . . . . . 1 $ .15ing Screw • • 1 doz •15 6 11806 -Counter \.indow. . • • 1 .05

• • • • . •

5 70005 -Adjustine Screw Lock-7 11785 -Counter Unit •• .•• 1 4.25

nut • • • • • • . • • • •

l doz ••10 8 11782 -Counter Relay • •• . 1 1.80

4 62100 -10 Offi·1 1/2 Watt R.e-9 ll785 -Wire Seal • • • 1 .05

sistor. . • l .07 10 11784 -Sub Panel Bottom. • . 1 .55

FIGURE NO. 28 -SCHEIATIC DIAGRAM SOLENOID DRUM TYPE S020-7Z

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F-613?

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F-428 Slut: Ejector (S¢-10¢-25¢) .

F-6198-A

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Slug Rcur Chute Asse.bly .

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FIGURE NO. 30-SLUG REJ ECTOR

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FIGURE NO. 35 -MODEL 7850 CAB INET (FRONT VI EW)

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F-7200

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Front. 1.85 l 2.00

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7 F-9400

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FIGURE NO. 37 -MOOEL 7850 CABINET (REAR VIEW)

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!':'£:.( PART NO. DE:lCR!PTIOZI NO.P.EQ. PRICE ITE' ?AR": 110. DESC?.IP'I'!ON NO.:U:Q. PRICE

7 Jo.-770:) -Lock Shaft . 1 $ .501 F-8321 -Cnncoll1n<: ovor. 1 $ .15

8 "-94C>l -27 Contact Plug 1 1.00

2 ?-1824 -Indica t1ne Dial

9 fs:s -Sl,.tg Rejector

Sprockt. 1 .20

3 F-9'-72 -mp Socket 2 ... . •10

•

;ttg . Bracket. 1 l.OO

4 F-7611 -f'langed Reflee­

10 F-7809 -Horizontal Re-tor 2 ..;a . .50

flector (Lower) 1 .35 5 F-6745 -£5-SZ . l 28.50

11 F-7815 -Transfor1oor 1 5. 25

6 F-7829-A -Lock Assomb1y l .75

12 F-7016 -1$11 Jensen Spe.t.kP.r 1 11.00

79

FIGURE NO. 39 -MODEL 9800 CABI NET (FRONT VIOl)

lTW. PIJ\T NO. D.CJUPTim4

l f-8862 'l)olr.(:.

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2 f-6196-A -Grill Cloth ar.d

Screen Mscm­

Ol.y R.H

5 f-9821 -Grill Pil.a.stcr·.

 F..6197-J, -G)•ill Clot..'o:l a.'ld

Screen A:>sc...-nbl.y­

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tiO. Wlo PRICE

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i'-6207

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F-9821

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tiO. REQ. PRICE

-Coin Slot and

Di(.l Escu tcb­

tXJn •\$6C:11bl:; 1 &1.10 -Corner Pilaster 2 ea. 9.00 .. GlttsR Panel l 4.00 -Slug Recepta cl e 1 -Grill Cloth o.nd

Screen Assemb:cy 4 ... -Curved Pilaster 2 '16.. 1.95 -Grill Pilaster. 4 ••• .90

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FI GURE HO. '0 -HI-TONE CAB INET ASSEMBLY (REAR VIEW)

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?-6179-A -

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1 .zs

82 FIGURE NO. 41 HI -TOHE CABI HET ACCESSORIES (UPPER REAR VI EW)

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FIGURE NO. 1111 FRONT DOOR LIGHT ING ASSEMBLY