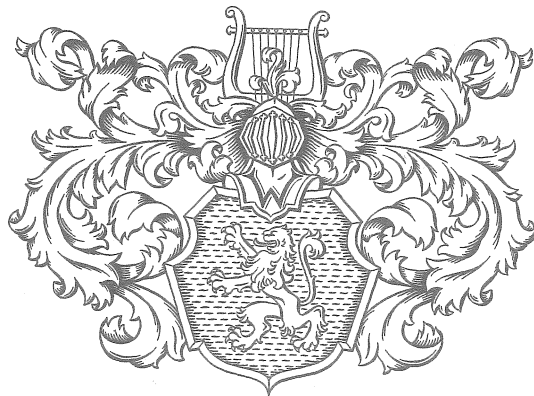


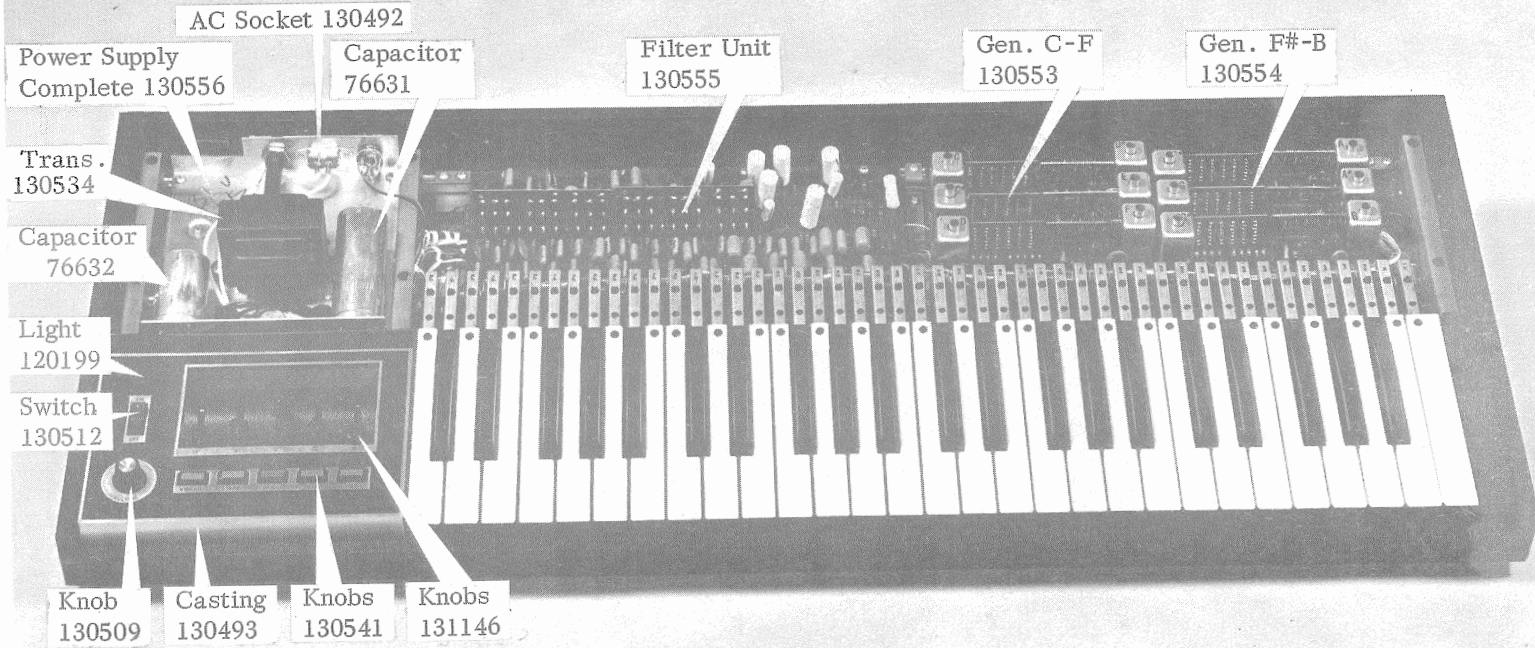
WURLITZER
Combo-organ
MODEL 7300 ORGAN

SERVICE INSTRUCTIONS
and
PARTS CATALOG

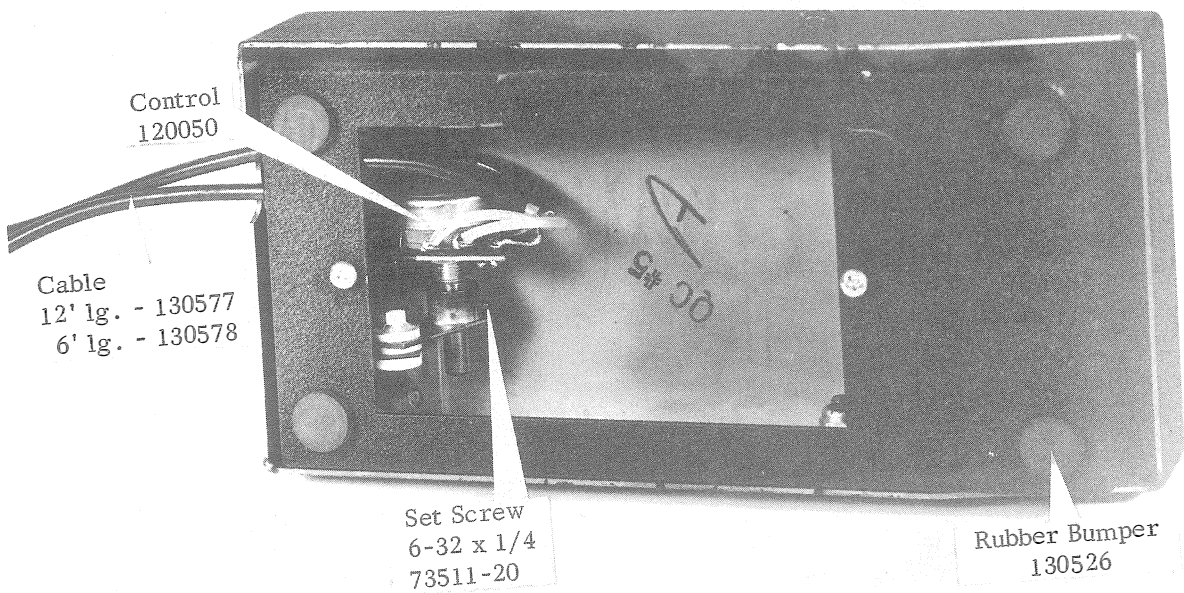
PART No. 131512



M - 7300 COMBO ORGAN



EXPRESSION PEDAL
130558 Complete



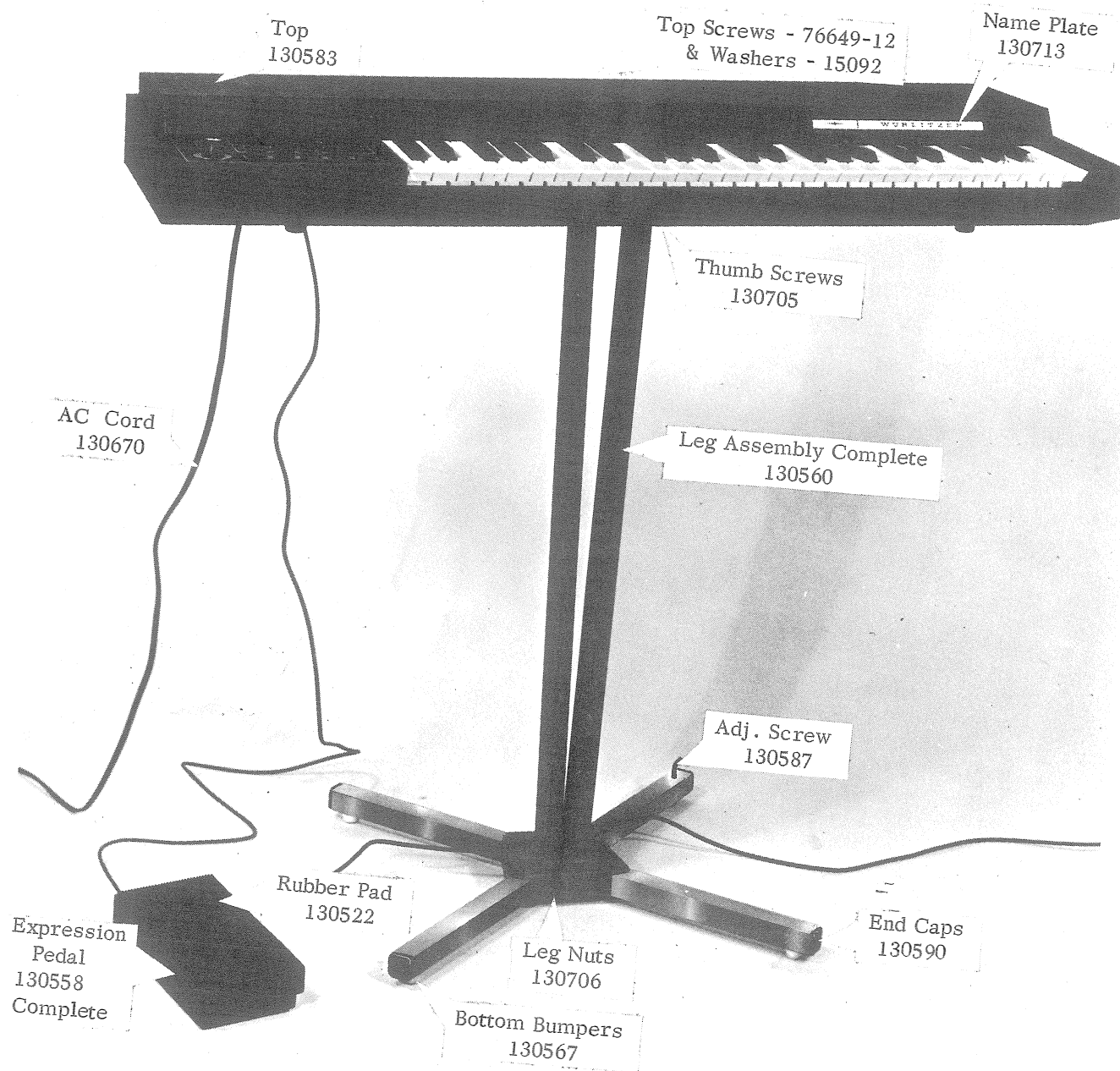
Control
120050

Cable
12' lg. - 130577
6' lg. - 130578

Set Screw
6-32 x 1/4
73511-20

Rubber Bumper
130526

M - 7300 COMBO ORGAN



WURLITZER MODEL 7300 COMBO ORGAN

The Model 7300 Wurlitzer Combo Organ is a compact organ using the most modern types of semi-conductors and integrated circuits (I C) to generate, filter, and amplify the wide range of sounds found in this versatile musical instrument.

SPECIFICATIONS:

Height 34 inches with legs attached
Depth 14 inches
Width 36 inches
Console only without legs 4 inches
Weight - 24 lbs., with legs 42 lbs.
Electrical power requirements - 117 Volts, 60 Cycle - 35 Watts

General Circuit Description

The organ consists of four major electrical assemblies.

1. Generators
2. Keyboard
3. Power Supply
4. Sound and Filter System

The instant the organ is turned "on" the generators supply the range of frequencies or signals to the keyboard. These signals are direct keyed by the keyboard and sent through both passive and active tone filters. The output of these filtered signals are amplified in separate transistors before being switched into the overall "Pre-Amp." stage. Finally the signals out of the "Pre-Amp." stage are controlled by the Expression Pedal prior to feeding into any external power amplifier. A "Vibrato" is also part of the tonal effects found in this organ.

More detailed circuit descriptions of each individual assembly will be found in this manual along with "Trouble-Shooting Suggestions".

Generators - Refer to Schematic No. 130684

The heart of the Wurlitzer Combo Organ is the generator units. The circuitry has been simplified by the use of INTEGRATED CIRCUITS for the frequency dividers. Hereafter, we will refer to these small and compact units as just IC's. The total range of the audio frequencies handled by the generators is approximately 65 Hz to 8,000 Hz. There are two printed circuit boards used. One board covers notes from C to F and the other F# to B. The physical layout of a typical board is shown on drawing No. 130677. Both of these printed board circuits are identical. Each board contains the same number of discrete components and IC's. For the different notes, value changes of the capacitors will be found on Schematic Drawing No. 130684. These changes are shown in chart form.

Each note of the frequency range for the musical keyboard will consist of an Hartley type master stage TR-7 oscillating at the top of the range. Hereafter, we will use the "A" note to describe the circuitry. The exact frequency is controlled by three selective capacitors and the fine tuning of the hex-slotted head slug in each coil. These "master oscillators" are tuned to the "equal tempered musical scale" based on A-440. The signal from this stage is then fed into a "Buffer Stage", TR-8. This stage besides isolating the master stage also is used as the top note of the organ. In addition, it also feeds the first divider through Pin 2 of the IC. Both of these signals are taken from the collector of TR-8. Point 82* coded on the drawing is the output top frequency which is wired directly to the keyboard. The first IC after the "Buffer" will divide the signal and provide two notes octavely related. The output points are shown as letters C and B, also shown as 70* and 58*. These numbered points are signals wired to the keyboard. This IC will feed a signal to the second IC to divide the signal again. This stage will provide two output signals shown as letters D and E and also points 46* and 34*. These points are again octavely

related and wired directly to the keyboard. This IC stage then feeds the next IC stage to further divide the signal and again two outputs are available shown as letters H and F and numbered points 22* and 10* wired to the keyboard. The original A signal started out as 7040Hz. and through successive IC circuit dividers finally ended up at 110 Hz the lowest A found in the combo organ. The signal feeding one IC to another IC is from Pin 9 to Pin 2. The voltage to drive the IC circuits is wired to Pin 11 of each IC and shown on the schematic as letter V + 3.45V. Ground for all the IC's is shown as the letter G. Note that three IC's - Part No. 130680, are mounted on a printed board. All of these boards are identical. The frequencies are numbered from the lowest 1* to the highest 84*. These same numbers will be found on the Keyboard Schematic No. 130708. All of the other notes are read the same way as the "A" note described above. Tuning procedure and suggested troubleshooting data will be given in another section.

The Keyboard - Refer to Schematic No. 130708

The keyboard consists of 49 keys from C No. 1 Bass end to C No. 49 Treble end. The underneath side of the keyboard is shown on the drawing. The keyboard wiring is shown in chart form. With the exception of the master wires from the generator signals to the keyboard all of the wiring is part of the printed foil of the keyboard. The master wires, all color coded in accordance with the color code schedule shown on Schematic 130708, are soldered to Melco pins located on the back of the keyboard and numbered from 1 through 84. These are the numbered pins from the bass end to the treble end. The 84 signals are then isolated by 6.8 K resistors or 100 K resistors before being wired through printed copper foil to each key contact spring. A typical key signal schematic is shown on the drawing. Note that the 16' - 8' - 4' signals are isolated with a 6.8 K resistor and the mixture - 2-2/3' - 2' - 1-3/5' - 1' signals are isolated with an 100 K resistor.

When a key is depressed, the contact springs roll against signal buss rods. The signal buss rods for the 16' - 8' - 4' rows of contacts are broken down into six groups shown as lettered points S - T - V - W - X - Y and identified notewise as shown in the schedule. For example, the first group of note signals are C to G# - 9 notes. The remaining five groups are 8 notes in length. Therefore, at position S on the keyboard whenever the first nine keys are depressed 16' signals will appear on the black wire - 8' signals on the purple wire - 4' signals on the red wire. The pitch of these signals is shown in the chart below the keyboard. The other group divisions for the rest of the keyboard are handled the same way. These group signals will be shown on the Sound and Filter System Drawing No. 130716 as small boxes going into the filters.

The Mixture Buss is a single continuous wire. When single keys are played from C-1 to B-36, four signals appear on this buss; keys from C - 37 to G - 44 three signals; keys from G# - 45 to B- 48 two signals; and the last key C - 49 a single signal. The pitch of these signals is shown in chart form and again these numbers correspond to points found on the Generator, Schematic No. 130684. Key cap replacements and troubleshooting of this unit is covered in a separate section.

Sound and Filter System - Refer to Schematic 130716

The generator and keyboard supplies all the signals for the different tonal voices of the filters before amplification. The group signal from the keyboard for the 16' - 8' - 4' Flute is shown on the schematic as rectangular boxes - Example: (1) - [65-104]. The figures in the boxes refer to the approximate frequency range of this group. A 16' signal path will be described from the keyboard through the 16' Flute Filter, switching and amplifier. The example used is the first group of nine signals shown on the schematic in the upper left. Signal group 1 - [65-104] is wired by means of a black coded wire to a passive filter consisting of capacitors and resistors numbered on the schematic as 202, 203, 204, 201, and 200. This filter shapes the signal to a proper flute tone. The shaped signal is then fed through numbered components 199 and 205 into the base of TR-7 labeled the 16' Pre-Amplifier. The transistor is properly biased to amplify the signal. From the collector of TR-7, the signal path is through numbered components 110 and 111 to the common of the 16' Stop Switch. At the switch this signal can be picked off at four different sound levels before wiring to a Brightness Control marked M on the organ. This control will, as it is moved from the "OFF" position to the "ON" position, accent the treble quality of the signal. The modified signal will then appear across the 1.8

K (260) load resistor. The signal is then taken from across this resistor through numbered components 118 and 112 to the base of TR-8. This stage is properly biased to amplify the signal. The output of TR-8 is taken from the collector through numbered component 120 to the Volume Control (264) to ground. The wiper of the Volume Control is then wired through components 129 and 130 to the base of TR-9. This stage is properly biased to amplify the signal. The output signal is coupled from the collector of TR-9 through numbered component 143 and appears across the load resistor 100 K (141). The signal is then wired to the hi-side of a 1/4" standard phone jack. When the expression pedal input phone plug is plugged into the output phone jack, the signal will appear across the 10K expression control to ground. The wiper of the control is wired to another shielded cable to a 1/4" standard phone plug. This plug will then fit into any known EXTERNAL POWER AMPLIFIER input. Each of the other five groups for the 16' Flute voice will follow the same path as described above.

The 8' and 4' Flute filters are similar to the 16' Flute filter except that both of these sections have additional components mounted on plug-in boards. These two plug-in boards are shown on Drawing 130716 in the dotted border. The 8' and 4' Flute filters receive the signal from the keyboard. The lower section below these signals become the Flute signal to be amplified in TR-6 for the 8' Pre-Amplifier and TR-5 for the 4' Pre-Amplifier. Both of these stages are properly biased to amplify the Flute signals before going into their respective Stop Switches and Brightness Control M to be handled in transistor stages TR-8 and TR-9 the same as the 16' Flute signal.

In addition to the 8' and 4' Flute signal, these two filters also provide the signal for the String, Brass and Reed tonal voices in the Combo Organ. The path of the signal will be described using the first signal groups of the 8' and 4' filter section. This signal from the 8' filter group is coupled through components 146 and 144 to the input base of TR-1 Complex Pre-Amplifier. It is also joined by a signal from the 4' Filter through components 70 and 71. The signal is mixed and amplified in TR-1 stage. The complex signal is then coupled through a .18 mfd (15) capacitor from the collector of TR-1 to a load resistor 150 K (254). From across this load resistor a common lead is then wired to the three Stop Switches - String, Bass and Reed. The sound level of these three stops can be set by the solo switch. This switch controls a 39 K resistor (3) across the normal 470 K (2) feedback resistor in the collector - base circuit of stage TR-1. With the 39 K (3) resistor across the 470 K (2) greater feedback is provided to lower the level of this stage. When the 39 K (3) is removed by the Solo Switch less feedback is provided to assure a higher level of signal out of this stage. The string Stop Switch, when closed, will take the complex signal from across the 150 K (254) load resistor and couple the signal through numbered components 16 and 17 to the input base of TR-2. This stage is properly biased to amplify and also the circuit constants are chosen to provide a good string quality output signal. This stage is referred to as the active String Filter. The output of this stage TR-2, taken from the collector through numbered components 130 and 31, is then wired to the junction of items 118 and 112 before the signal is passed to the base of TR-8 through the 10 mfd capacitor (112). Note, that this stage TR-8 receives all the signals described so far. The path of this signal will follow the same pattern as the 16' Flute signal described previously.

When the Brass Stop is used, the signal is again taken from across the 100 K (254) resistor and coupled to the base input of stage TR-3 through numbered components 42 and 43. This stage is properly biased to amplify the signal and also the circuit constants are chosen so that the output signal is of good quality for a Brass sound. This is an active filter whose output is then coupled through numbered components 51 and 60 to the same point as the output of the String filtered signal. The signal is then handled in the pre-amplifier stage TR-8 the same as the 16' Flute signal.

The Reed stop also takes the same complex signal from across the 150 K (254) load resistor and will couple the signal into a passive filter consisting of numbered components 63, 62, 65, and 64 before joining the same input to the Pre-Amplifier stage TR-8.

The mixture IV signal is provided from the keyboard to the input base of stage TR-4 through numbered component 72. This stage is properly biased to amplify. The output of this stage taken from the collector through components 87 and 86 will then be wired to the IV stop switch. The switch handles the four different levels of signal the same as the 16' Flute Switch. The output of the switch is then coupled to the common point going into the M (Brightness) switch. This is is-

olated from the 16' - 8' - 4' signal by means of the 4.7 K (251) resistor. The signal out of the M Control for the IV Mixture will follow the same path as all the rest of the voices through the Pre-Amplifier stage TR-8.

The vibrato section consists of a low frequency oscillator and an isolating buffer stage. Stage TR-14 oscillates at approximately 6 cycles per second. The circuit components in the resistor/capacitor network are chosen to assure dependable oscillation of this stage at this low frequency. In addition, a regulated base bias voltage is taken from the emitter of TR-15 and wired through resistor 206 to the base of the oscillator TR-14. This also assures stable oscillation. The output signal from the oscillator is taken from the collector of TR-14 and coupled through components 185 and 186 to the output base of buffer stage TR-13. This stage isolates the oscillator, and its output from the collector through components 172 and 171 and appears across the load resistor 82K (183). The output across the resistor is then wired through a 100 K resistor to each base of the twelve master oscillators in the generators. When vibrato is "OFF", this low frequency signal line is shunted to ground through the vibrato switch. The vibrato switch, when "ON", will affect the master oscillators causing them to swing sharp and flat to provide a smooth tonal effect for all of the generated frequencies of the Combo Organ.

The +10 Volt DC regulated voltage out of the Zener used transistor TR-15 is also wired through a 100 K resistor to each master oscillator base to help assure stable operation of these oscillators.

Power Supply - Part of Schematic No. 130716

The Power Supply is mounted on a separate chassis and is the unit providing regulated D. C. Voltage for the Combo Organ.

A step-down power transformer having two isolated secondary windings is used. Silicon diodes are used in a conventional rectifier configuration. The low voltage section taken out of diodes D-1 and D-2 is filtered to ground by a large 10,000 mfd capacitor (241). The DC output is then fed to two transistors TR-16 and TR-12 to provide extremely good +3.45 Volts DC regulation. This regulated voltage is used to operate the circuits within the IC's found on the generator boards.

The higher voltage section taken out of diodes D-3 and D-4 is filtered by a two-section capacitor 1,000 mfd. (239B) and 1,500 mfd. capacitor (239A). The DC output will follow two paths. One path through the 47 ohm 2 watt resistor (240) +14.8 will be used to operate the master oscillator and buffer transistors in the generator. The other path will be connected to two transistors TR-11 and TR-10. These two transistors act as voltage regulators too provide a regulated DC voltage of +14.5V for all of the pre-amplifier transistors on the filter board and also the two active string and bass filter stages. This voltage line is shown as point 8* on Schematic No. 130716.

In addition to the above three DC voltages, another voltage - +.75 V is taken from a voltage divider consisting of components 150 (18 K) and 142 (1K) filtered by capacitor 152 (175 mfd.). This voltage is wired to all of the six group signal buss rods for the 16' - 8' - 4' stops. Also this same voltage +.75 V, will be found on the continuous mixture buss. The schematic shows this voltage wired to these points through 1.8 K resistors. For example, the 16' first buss receives this voltage through component 210 (1.8 K). This +.75 V DC will always be found on these buss rods to assure smooth keying of the generator signal.



MAINTENANCE

TOP

The combo top is held on by means of three screws and cup washers - one at each end and one in the center back.

KEYBOARD ASSEMBLY

The entire keyboard assembly can be removed from the case as follows:

1. Remove the top.
2. Six screws hold the assembly to the case. One sheet metal screw is located just to the left of the "C" oscillator shield can and one to the left of the power transformer and fuse post. This is the longer of the two screws. The remaining screws are accessible by turning the organ over and removing the four screws under which are cup washers. The organ should be laid on a pad or blanket to protect the keys.

WHITE KEY CAPS

The white key caps can be removed as follows:

1. Remove the top of the organ.
2. Remove the small black screw holding the key cap to the frame.
3. With the thumb and forefinger grip the front of the key cap and pull forward. The new cap can be replaced by reversing the above procedure.

BLACK KEY CAPS

The black key caps can be removed as follows:

1. Remove the top of the organ.
2. Remove the small black screw holding the key cap to the frame.
3. Depress the two white keys straddling the black key.
4. With the thumb and forefinger grip the front of the black key and pull forward. The new black key cap can be replaced by reversing the above procedure.

KEY CONTACTS

The key contacts have been factory adjusted and should not require any further adjustments. Should the contacts require cleaning, the following is the procedure:

1. Remove the top.
2. Remove the keyboard from the console case. Be sure to lay the assembly on a pad.
3. Using a soft brush and denatured alcohol, the springs and buss bars can be cleaned. Be careful not to catch any of the contact springs in the brush.

EXPRESSION PEDAL

The 10 K control found inside of the housing of the Expression Pedal can be changed as follows:

1. Turn the pedal over and remove the cover plate.
2. The socket head set screw holding the shaft and arm is a No. 6-1/4" long screw. A No. 6 set screw wrench is used to loosen the screw.
3. The four leads can be unsoldered. Be sure that the External Amplifier lead always goes to the center lug of the control.
4. Remove the 1/2" nut holding the control to the mounting plate and remove the control.
5. Place the new control in the proper position on the plate. Be sure that the small index ear is positioned properly in the hole found on the mounting plate. Tighten the 1/2" nut.
6. Replace the four wires. Be sure that No. 3 above is carefully followed.
7. DO NOT TIGHTEN THE SET SCREW.
8. Plug the cables into the Combo and External Amplifier.
9. Operate the 16' - 8' and 4' stop tabs and rotate the console volume control on full. Play a chord on the organ and with your finger rotate the shaft of the new expression control until maximum volume is heard out of the External Amplifier. The procedure should be done several times to be sure that the maximum point is reached. Do not rotate the shaft any farther than this point.
10. Hold the shaft & depress the Expression shoe to the full "ON" position.
11. Tighten the No. 6 set screw and replace the cover plate.

TUNING

The generators including the master oscillators have been carefully tuned at the factory and should not require any tuning unless some component in the "master oscillator stage" has been changed. The tuning consists of adjusting twelve tuning slugs controlling the top octave notes. Tuning will require the use of a Strobe-Tuner indicator and an insulated tuning hex-head wrench. General Cement No. 8606 or Walsco No. 2543. The procedure is as follows:

1. Remove the top.
2. Unplug the cable to the External Amplifier and plug this end into the Strobe-Tuner. The level of the signal to drive the Strobe-Tuner can be controlled by the Expression Pedal.
3. Before attempting any tuning, the technician should visually locate the tuning slugs for each note. The shield cans are properly marked. Turning the slug with the hex-head wrench clockwise will decrease the pitch or flatten the note; turning the slug counter-clockwise will increase the pitch or sharpen the note.
4. Cancel all stops on the organ.
5. Move the 8' Stop to the highest position.
6. The second octave, which are the keys from C-13 to B-24, will be used for the tuning.
7. Depress key C-13 and observe the Strobe-Tuner. If the note is not in tune, the slug should be rotated until the Strobe pattern stands still.
8. All the other notes in the octave are handled the same way. When all the twelve slugs have been adjusted, the entire organ is tuned, because these "twelve master" top octave notes control the entire range of the organ no matter what stop is used.

ELECTRONIC UNITS

Important - Before replacing electronic components indiscriminately the technician should always perform a visual check looking for broken wires, cold solder joints, etc.

One of two types of meters are to be used in troubleshooting the electronic units - a Vacuum Tube Voltohmyst or a 20,000 ohms per voltmeter.

A convenient signal tracing probe and system can be employed by using the input phone plug out of the Expression Pedal Cable and touching signal points in the Combo system. For example, the output signal from the generators can be probed and heard at the IC's or the keyboard by touching the phone-plug center to any of the numbered points found on Schematics No. 130684 and 130708. This procedure can quickly isolate the service to either the generator or the keyboard.

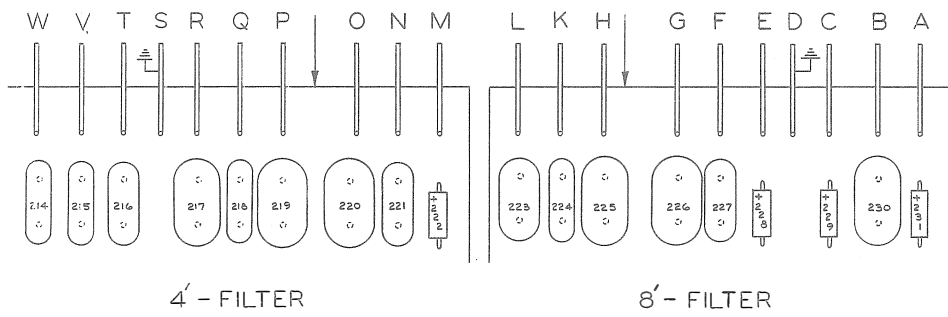
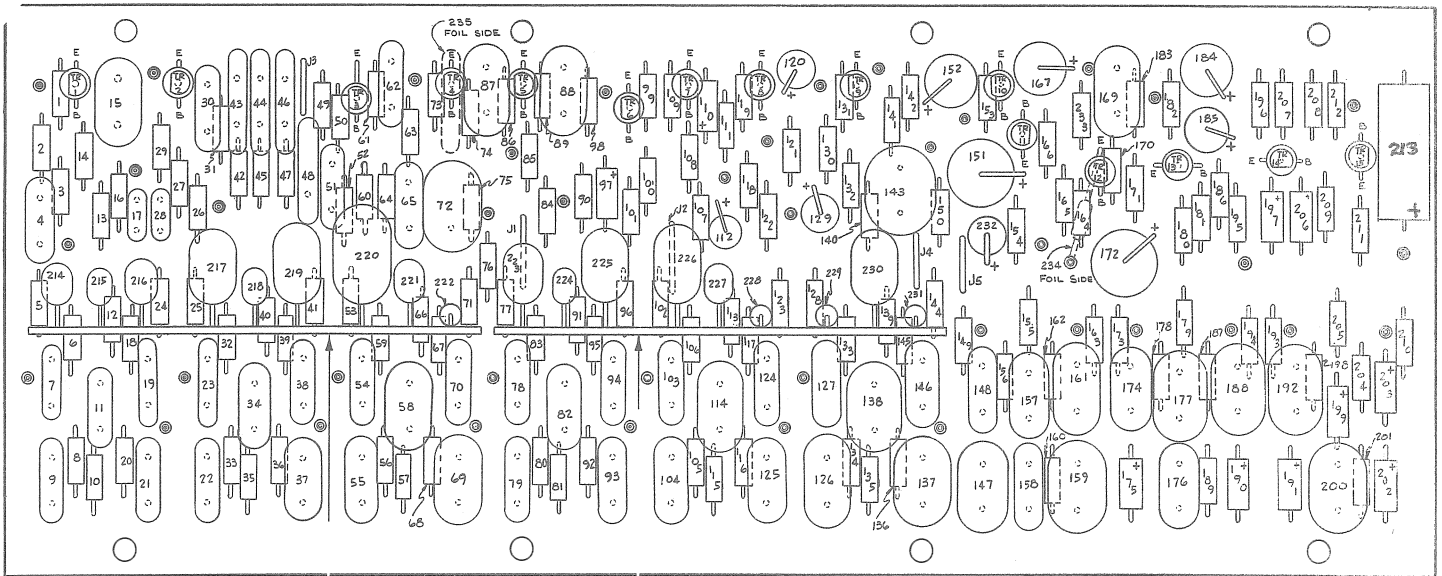
The following troubleshooting suggestions are given in chart form and cover the majority of service the technician may be called on to perform:

<u>I. COMBO DEAD</u>	<u>CHECK</u>
A. Neon pilot lamp off	1. ON/OFF Switch 2. Fuse 3. Power cord connection.
B. Pilot lamp on No hum or noise out of the system.	1. Cables to Expression Pedal. 2. Check TR-8 and TR-9 Stages. 3. Check M Brightness Control.
C. Pilot lamp on. Only hum or noise out of the system.	1. Check 10 V and 14.8 V to Master Oscillator. 2. Check 3.45 V to IC's 3. Check TR-8 and TR-9 Stages. 4. Check Phone Jack. 5. Check External Amplifier. 6. Check set screw on Expression Control Pot.

<p>II. PARTIAL OPERATION</p> <p>D. Only push button stops operate.</p>	<p>1. Check wire connections to and from "M" Switch.</p>
<p>E. Push button stops do not operate.</p>	<p>1. Check TR-1 Stage. 2. Check TR-1 3. Check common signal load to all switches.</p>
<p>F. 16' Stop dead.</p>	<p>1. Check TR-7 Stage. 2. Check J-4 Jumper on foil of Printed Circuit Board. 3. Check 1 mfd (110) Capacitor. 4. Check Lever Switch.</p>
<p>G. 8' Stop dead.</p>	<p>1. Check TR-6 Stage. 2. Check J-2 Jumper. 3. Check .47 mfd. (97) Capacitor. 4. Check Lever Switch.</p>
<p>H. 4' Stop dead.</p>	<p>1. Check TR-5 Stage. 2. Check J-1 Jumper. 3. Check .22 mfd (88) Capacitor. 4. Check Lever Switch.</p>
<p>I. IV Mixture dead.</p>	<p>1. Check TR-4 2. Check .15 mfd (87) Capacitor 3. Check 3.3 K (86) Resistor 4. Check Lever Switch.</p>
<p>J. A group of nine or eight consecutive notes not operating on 16'-8'-or 4' Stops.</p>	<p>1. Check wire connections from group signal take-off points shown on Schematic No. 130708 to Filter Unit.</p>
<p>K. One note dead on entire keyboard. Example: All "C" notes dead.</p>	<p>1. Check Master Oscillator. Check note by signal tracing method outlined. 2. Check all solder connections at master circuit. 3. Check Master Transistor Stage.</p>
<p>L. All octaves of one note sound above the dead note but none below it.</p>	<p>1. Check appropriate IC divider by signal tracing method outlined. 2. Check IC solder connections to Printed Circuit Board.</p>
<p>M. Single note does not sound, but all similar note sound above and below it.</p>	<p>1. Check note take-off cable from generator to keyboard. 2. Check keyboard Melco pin connections.</p>
<p>N. Single note does not sound on one footage. Example: 16' note dead, 8' - 4' OK.</p>	<p>1. Check key contact on dead note. Wash with alcohol.</p>
<p>O. Dead String Stop.</p>	<p>1. Check String Stop Switch. 2. Check TR-2 Stage.</p>

<p>P. Dead Brass Stop.</p>	<ol style="list-style-type: none"> 3. Check .022 mfd. (130) Capacitor. 4. Check 27 K (31) Resistor. 1. Check Brass Stop Switch. 2. Check TR-3 Stage. 3. Check .01 mfd (51) Capacitor. 4. Check 27 K (60) Resistor.
<p>Q. Dead Reed Stop.</p>	<ol style="list-style-type: none"> 1. Check Reed Stop Switch. 2. Check components numbered 62-63-64-65.
<p>R. Vibrato dead.</p>	<ol style="list-style-type: none"> 1. Check TR-14 Stage 2. Check TR-13 Stage. 3. Check Vibrato Switch. 4. Check wire from Vibrato Switch to Generators
<p>S. All keys sound electrically noisy on all stops.</p>	<ol style="list-style-type: none"> 1. Check .75 V supply to signal buss rods of keyboard. All buss rods should measure .75 V when no keys depressed. 2. Check 175. mfd (15) Capacitor in Power Supply.

FILTER BOARD MODEL 7300 COMBO ORGAN

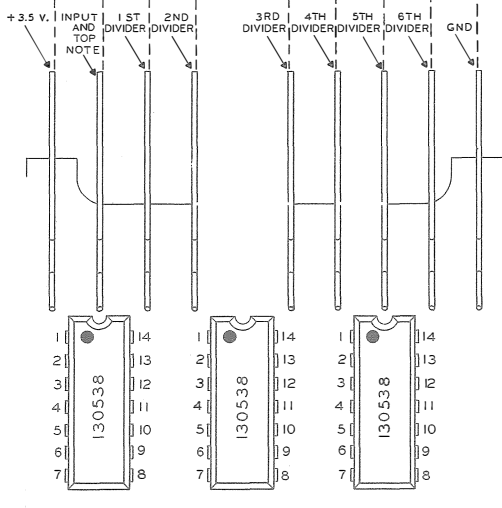
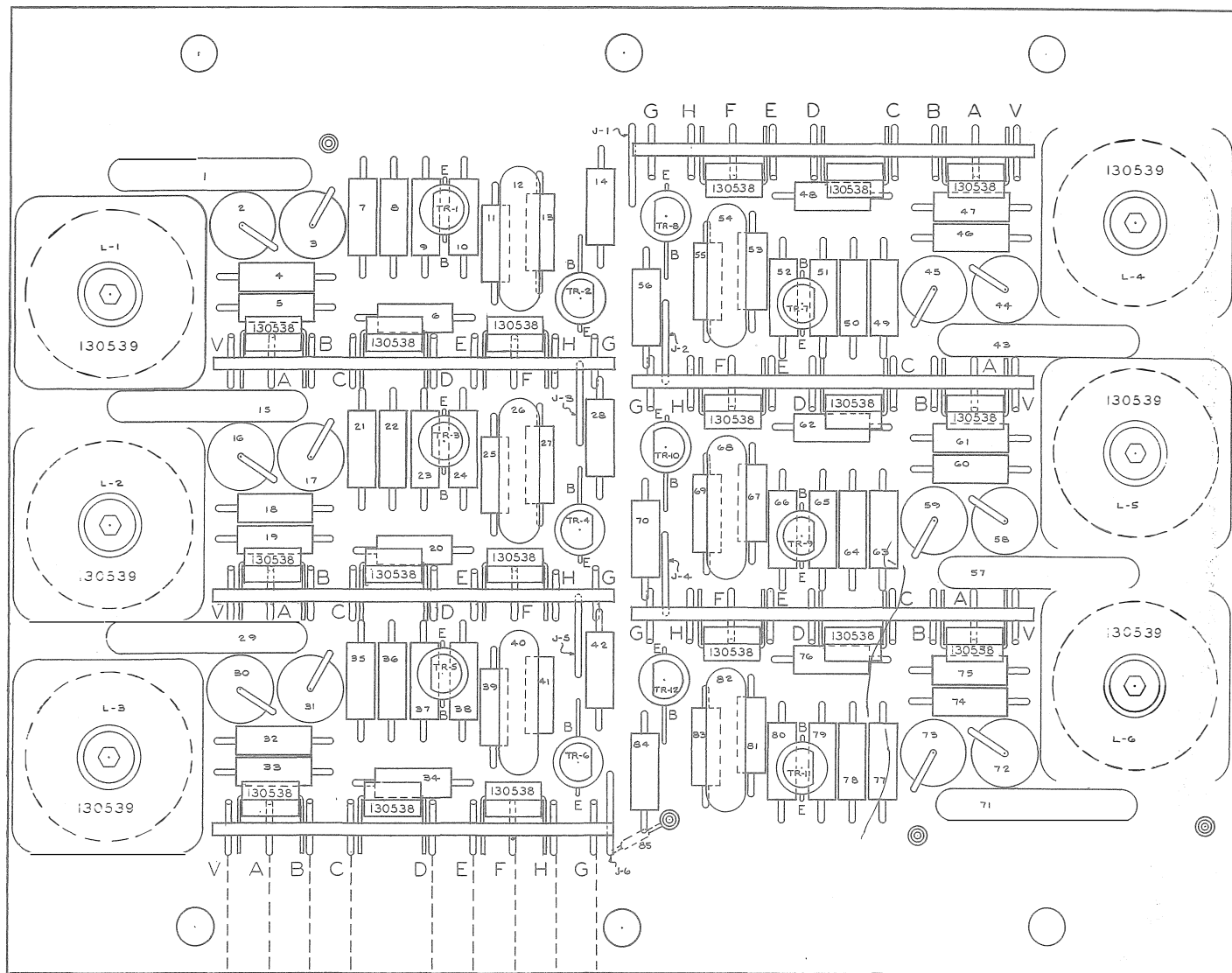


- NOTES**
1. SEE SCHEMATIC NO. 130716 FOR CONNECTIONS AND COMPLETE CIRCUITS
 2. NUMBERS AND LETTERS ON COMPONENTS CORRESPOND TO IDENTIFICATION ON SCHEMATIC NO. 130716
 3. SEE PRINTED BOARD ASSEMBLY 8' NO. 130696 FOR ITEMS 223-231
 4. SEE PRINTED BOARD ASSEMBLY 4' NO. 130681 FOR ITEMS 214-222

THE WURLITZER CO. - ELKHART DIVISION - ELKHART, INDIANA
 MODEL 7300 COMBO ORGAN
 TITLE FILTER BOARD
 STARTING SERIAL NO. E-200,000

PART NO. 130692-31-EG
 DATE 2-14-67

GENERATOR PRINTED BOARD MODEL 7300 COMBO ORGAN



130680 DIVIDER BOARD

NOTES

1. BOARD ASSEMBLIES USED
C TO F AND F* TO B
2. SEE SCHEMATIC 130684 FOR CONNECTIONS
AND COMPLETE CIRCUITS
3. NUMBERS ON COMPONENTS CORRESPOND
TO NUMBERS ON SCHEMATIC 130684
4. DOT ON I.C. INDICATES POSITION OF PIN NO. 1

THE WURLITZER CO. - ELKHART DIVISION - ELKHART, INDIANA

MODEL 7300 COMBO ORGAN
TITLE GENERATOR PRINTED BOARD
STARTING SERIAL NO. E-200,000

PART NO. 130677-S1-E4
130678-S1-E4
DATE 2-14-67

MODEL 7300 COMBO ORGAN

PART NO.	PART NAME	PART NO.	PART NAME
130583	Top Assembly	76201-17	Capacitor .18 MFD. 75V
130713	Name Plate	76199-17	Capacitor .15 MFD. 75V
73655-7	Speed Cup	76197-17	Capacitor .12 MFD. 75V
76649-12	Screw 6x1 Fl. Type A BL. 02.	76195-11	Capacitor .1 MFD. 100V
130670	Line Cord & Plug Assembly	76193-11	Capacitor .082 MFD. 100V
130559	Carrying Case Console	76191-11	Capacitor .068 MFD. 100V
130782	Carrying Case - Leg Assembly	76189-11	Capacitor .056 MFD. 100V
TONE GENERATOR C_THRU F COMPLETE 130553		76187-11	Capacitor .047 MFD. 100V
130677	Printed Board Assembly	76185-11	Capacitor .039 MFD. 100V
130537-4	Transistor	76183-11	Capacitor .033 MFD. 100V
130537-3	Transistor	76181-11	Capacitor .027 MFD. 100V
130537-4	Transistor	76179-11	Capacitor .022 MFD. 100V
130537-5	Transistor	76177-11	Capacitor .018 MFD. 100V
130539	Tuning coil	76175-11	Capacitor .015 MFD. 100V
130679	Cover	76173-11	Capacitor .012 MFD. 100V
130680	Divider Board Assembly	76171-11	Capacitor .01 MFD. 100V
130538	Integrated Circuit	76167-11	Capacitor .0068 MFD. 100V
TONE GENERATOR F# THRU B 130554		76165-11	Capacitor .0056 MFD. 100V
130678	Printed Board Assembly	76392-141	Capacitor .0047 MFD. DISC.
130537-4	Transistor	76396-141	Capacitor .0033 MFD. DISC.
130537-3	Transistor	76403-141	Capacitor .0018 MFD. DISC.
130537-4	Transistor	76409-141	Capacitor .001 MFD. DISC.
130537-5	Transistor	76411-141	Capacitor 820 MMFD. DISC.
130539	Tuning coil	130682	Printed Board Assembly
130679	Cover	76642-120	Capacitor .56 MFD. 10% 2V
130680	Divider Board Assembly	76207-17	Capacitor .33 MFD. 75 V
130538	Integrated Circuit	76203-17	Capacitor .22 a MFD. 75V
FILTER BOARD ASSEMBLY COMPLETE 130555		76197-17	Capacitor .12 MFD. 75V
130692	Printed Board Assembly	76191-11	Capacitor .068 MFD. 100V1
130537-5	Transistor	76187-11	Capacitor .047 MFD. 100V
130537-3	Transistor	76181-11	Capacitor .027 MFD. 100V
130537-4	Transistor	76171-11	Capacitor .01 MFD. 100V
130537-5	Transistor	76193-11	Capacitor .082 MFD. 100V
130537-1	Transistor	130696	Printed Board Assembly
130537-2	Transistor	76556-120	Capacitor 1 MFD. 10% 2V
130537-3	Transistor	76642-120	Capacitor .56 MFD. 10%
130537-4	Transistor	76639-120	Capacitor .39 MFD. 10% 2V
130537-5	Transistor	76203-17	Capacitor .15 MFD. 75V
652091	Transistor	76203-17	Capacitor .22 MFD. 75V
130536	Transistor	76197-17	Capacitor .12 MFD. 75V
76561-120	Capacitor 2.2 MFD. 10% 2V	76195-11	Capacitor .1 MFD. 100V
76557-120	Capacitor 1.2 MFD. 10% 2V	76187-11	Capacitor .047 MFD. 100V
76644-120	Capacitor .82 MFD. 10% 2V	76177-11	Capacitor .018 MFD. 100V
76640-120	Capacitor .47 MFD. 10% 2V	POWER SUPPLY ASSEMBLY COMPLETE 130556	
76558-125	Capacitor 1.5 MFD. 10% 25V	130492	Receptacle - 110V
76556-123	Capacitor 1 MFD. 10% 15V	73627-38	Rivet
76640-123	Capacitor .47 MFD. 10% 15V	125693	Socket - Transistor
76211-17	Capacitor .47 MFD. 75V	73627-40	Rivet
76207-17	Capacitor .33 MFD. 75V	76631	Elec. Capacitor
76205-17	Capacitor .27 MFD. 75V	76632	Elec. Capacitor
76203-17	Capacitor .22 MFD. 75V	130534	Transformer
		600378	Fuse Post
		71591-3	Fuse .3A
		130535	Transistor
		600369	Speaker Jack

PART NO.	PART NAME
POWER SUPPLY ASSEMBLY (CONTD.)	
130607	Rectifier
KEYBLOCK & SWITCH ASSEMBLY COMPLETE 130557	
130493	Escutcheon - Casting
130591	Switch, Brkt. & Wire Assembly
130541	Button
130593	Mtg. Pl. & Switch Assembly
130512	Switch ON/OFF
130595	Control
120199	Neon Glow Lamp
73655-43	Speed Nut
130509	Sleeving
130597	Switch & Mtg. Brkt. Assembly
130598	Switch
130599	Switch
EXPRESSION PEDAL ASSEMBLY COMPLETE 130558	
130572	Felt Pad
130526	Rubber Bumper
130522	Rubber Pad
LEG ASSEMBLY COMPLETE 130560	
130705	Thumb Screw
130706	Special Nut

