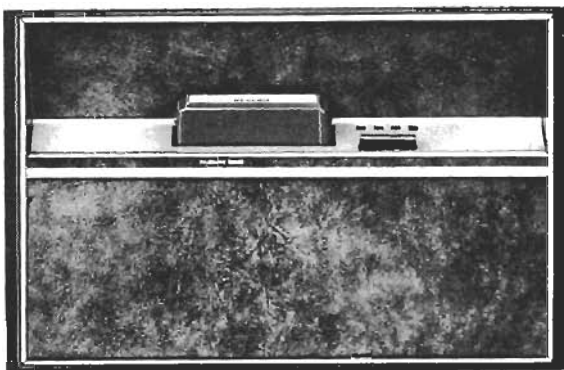


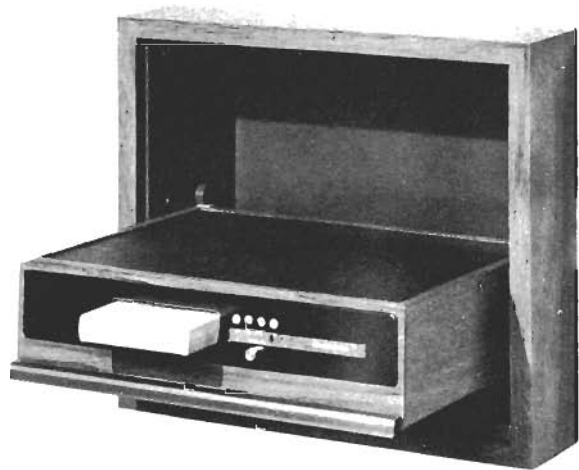
NuTone

SERVICE MANUAL

MODEL 2507



MODEL 2605



MODELS 2507 AND 2605

8-Track Tape Player

NuTone Housing Products

Scovill

MADISON & RED BANK ROADS

CINCINNATI, OHIO 45227

Part No. 46186 H1
Printed in U.S.A. 10-77

NUTONE MODEL 2507 AND 2605 8 TRACK STEREO TAPE CARTRIDGE PLAYER

GENERAL

The Model 2507 is designed for installation in the Master Unit of the Model 2500 MUSICOM Stereo Radio Intercom System.

The NuTone Model 2501 MUSICOM Master Unit is supplied complete with the 8-Track Tape Cartridge Player.

The Model 2605 is designed for installation with NuTone Model 2600 Stereo System and/or NuTone Models 2034, 2063/64; 2090/91; 2540/41; 2542 and N2561/62 Radio Intercom Systems. When used with NuTone Radio Intercom Systems other than the 2600 Stereo System—left and right outputs are automatically combined for monaural playback when one signal lead is plugged into Channel A or Channel B output jacks.

DISASSEMBLY

MODEL 2507

1. The Model 2522 Frame and Door Assy. must be removed: Remove the retaining screw in bottom of cabinet and lift Assy. from top mounting Brackets of the Model 2500.
2. Loosen two knurl nuts "B" each side of "B" Box Assy. and remove Front Panel. Figure 1.
3. Disconnect AC plug from AC socket in right side of Tape Player Compartment. Figure 2.
4. Disconnect the two shielded audio cables from "TAPE IN" jacks in bottom of 2500 Tuner Amplifier. Figure 2. NOTE: Access to bottom of Tuner/Amplifier is through Wiring Port in top of "B" Box Assy. Figure 1.
5. Open Record Changer Compartment by pulling record player down to play position.
6. Remove 4-screws "D" — inserted through top of Record Player Compartment into tinnerman clips on mounting brackets of Tape Player Chassis. Figure 1.

MODEL 2605

The Tape Player and Base Assembly is removed from cabinet and wall housing as follows:

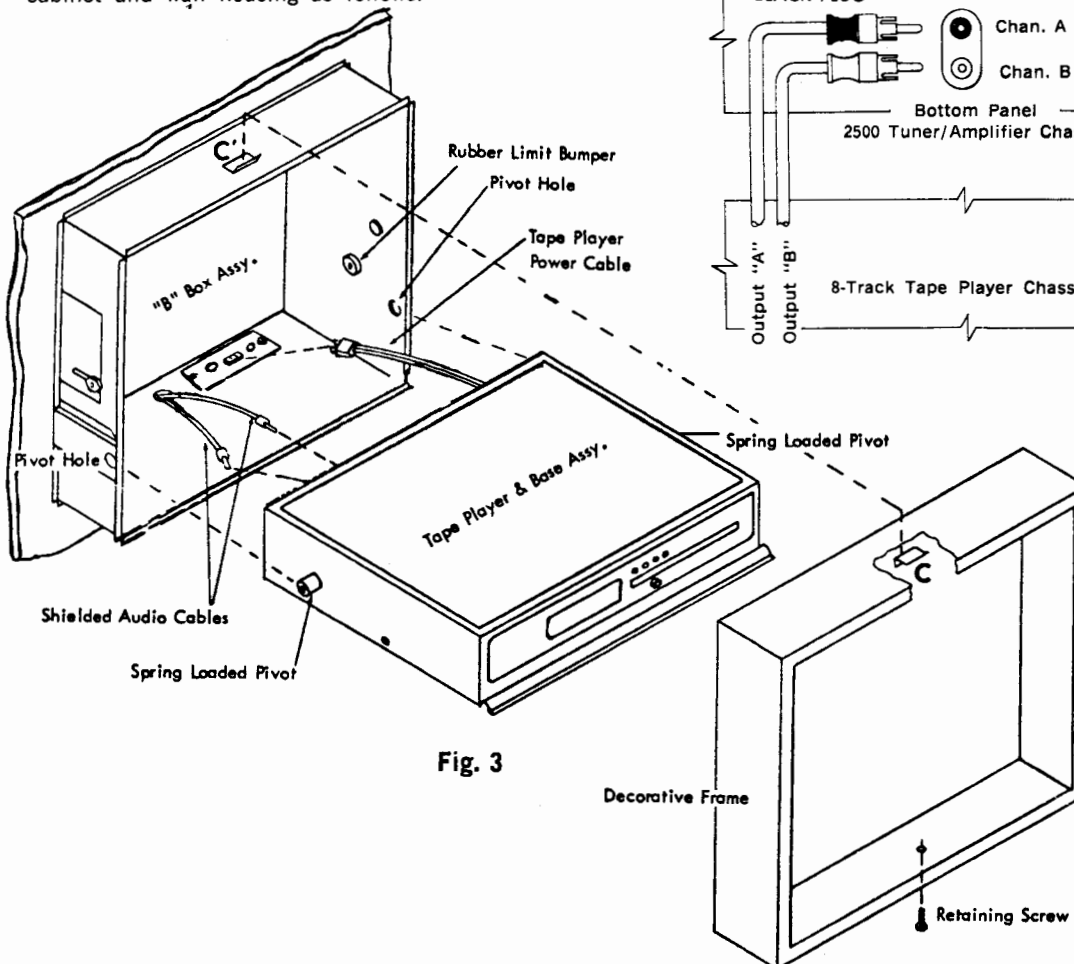


Fig. 3

1. Remove decorative frame by releasing the retaining screw located on bottom of frame and remove frame. Figure 3.
2. Push in on the two spring loaded pivots on each side of the housing and remove Tape Player and Base Assembly. Figure 3.

NOTE: Only one shielded audio cable is required when installed with mono intercom systems.

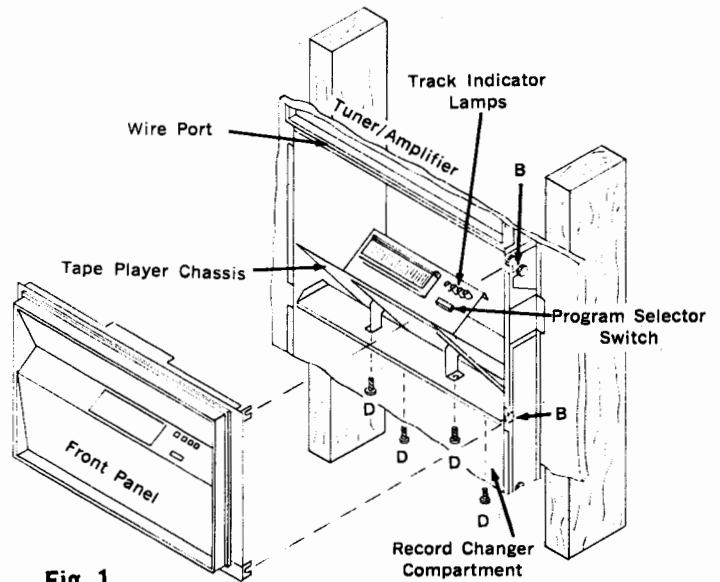


Fig. 1

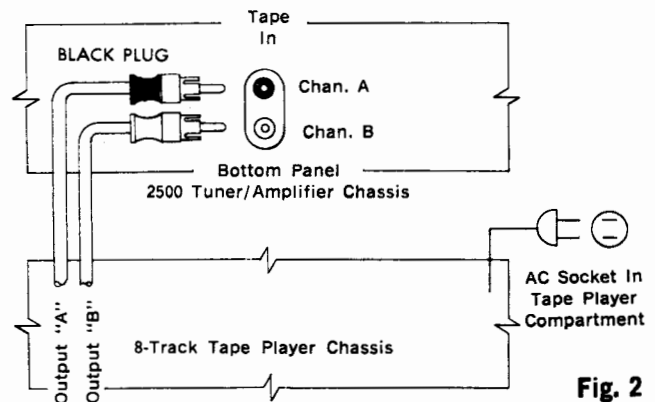


Fig. 2

SERVICING AND ALIGNMENT

Since all power to the tape player is supplied by the 120 Volt line cord, no special power supply is needed. Power to the Printed Circuit Board is supplied by a special winding on the motor.

DRIVE BELT ALIGNMENT

The position of the drive belt on the motor pulley and the flywheel is critical. If the drive belt tends to ride off the flywheel or if the motor should need replacing, the setting of the motor fan pulley should be adjusted as shown in Figure 4. The top of the motor fan pulley should be set $\frac{1}{16}$ " below the top of the flywheel.

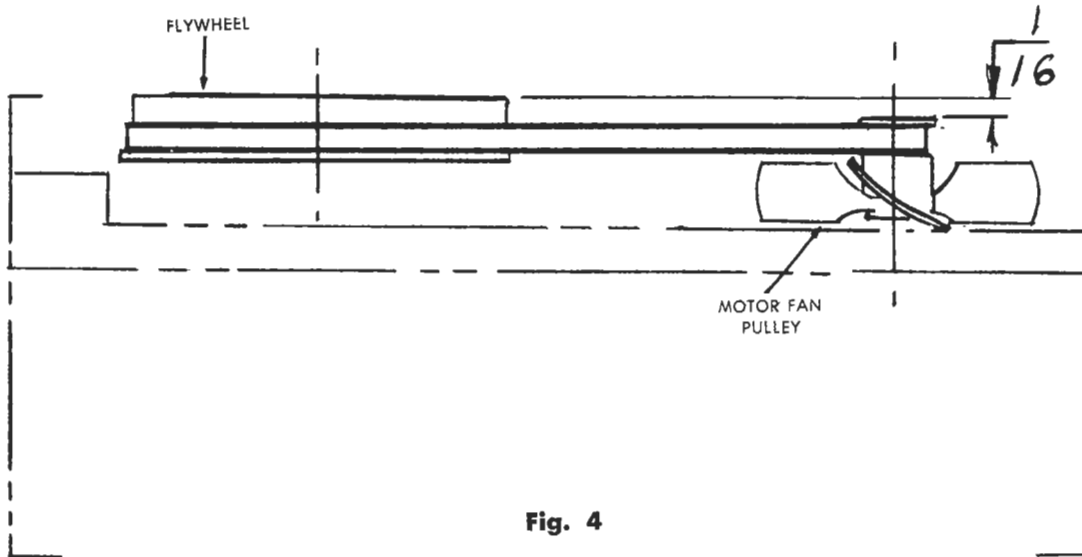


Fig. 4

HEAD AND AZIMUTH ALIGNMENT

CAUTION: This unit is correctly adjusted at the factory. Before making any adjustments, play several tapes to insure that the trouble is not due to a faulty tape. Should adjustment be necessary, the use of a test tape, RCA 321, will be helpful. This tape may be obtained from the RCA Record Division, Special Products Division, 1133 Avenue of the Americas, New York, N. Y. 10036.

MODEL 2507

Follow steps 1 and 2 under disassembly for Model 2507.

1. If cross talk occurs, adjust Head Height screw using track #2 and a known good tape until only the two desired channels are heard.
2. Using a high frequency tape, 8 KHz or higher, adjust Head Azimuth screw for maximum output. See Figure 5.

MODEL 2605

To gain access to the adjustments, remove the bottom screws on each side of the cabinet. (Fig. 6) Push base-plate in at bottom and remove.

Follow steps 1 and 2 under 2507 above.

NOTE: THE USE OF AN OSCILLOSCOPE IS RECOMMENDED. WHEN BOTH THE HEIGHT AND AZIMUTH ARE PROPERLY ADJUSTED, THE MOST LINEAR SIGNAL OF THE GREATEST AMPLITUDE WITH NO INDICATION OF CROSSTALK FROM ADJACENT CHANNELS SHOULD RESULT.

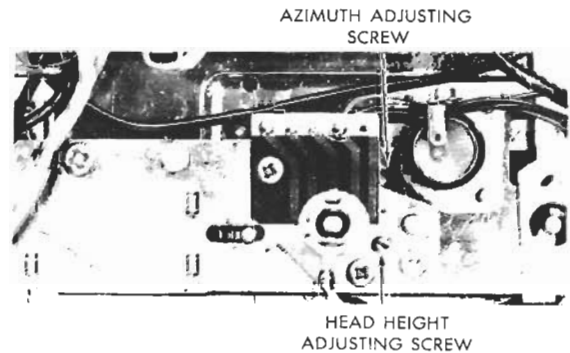


Fig. 5



Fig. 6

CLEANING

The Playback Head and the Capstan shaft should be kept clean and free of dirt and oxide coating. They should be cleaned after approximately 100 hours of playing time using a "Q-Tip" soaked in alcohol or a commercial cleaning agent. A commercial head cleaning tape may also be used. When using the "Q-Tip" and alcohol, keep away from shaft bearings and remove any traces of cotton fibers from Head and Capstan.

Failure to keep these areas clean may result in loss of high frequency response.

NOTICE:

For shop service on the Model 2507—follow procedure under disassembly—Model 2507.

Should shop service be required for the Model 2605, tape player may be disassembled from the cabinet to prevent the cabinet from becoming damaged.

To disassemble tape player from cabinet:

1. Remove bottom screws from each side of cabinet as in Step 1 under alignment.
2. Remove top screws from each side of cabinet and remove top and bottom covers.
3. Remove 4 self-tapping screws holding tape player to metal frame. Figure 7. Unsolder the shielded phono output leads and remove tape player.

HEAD DEMAGNETIZING

When a pre-recorded tape is played, the playback head is subject to a varying magnetic field. After a number of plays the head will become contaminated with some residual magnetism and this will limit the output and high frequency response as well as decrease the signal to noise ratio.

This residual magnetism should be removed with the use of a "Head Demagnetizer." The tip or pole of the demagnetizer should be held as close as possible without coming in contact with the playback head to insure complete degaussing of the head. Follow manufacturer's instructions for the demagnetizer you have.

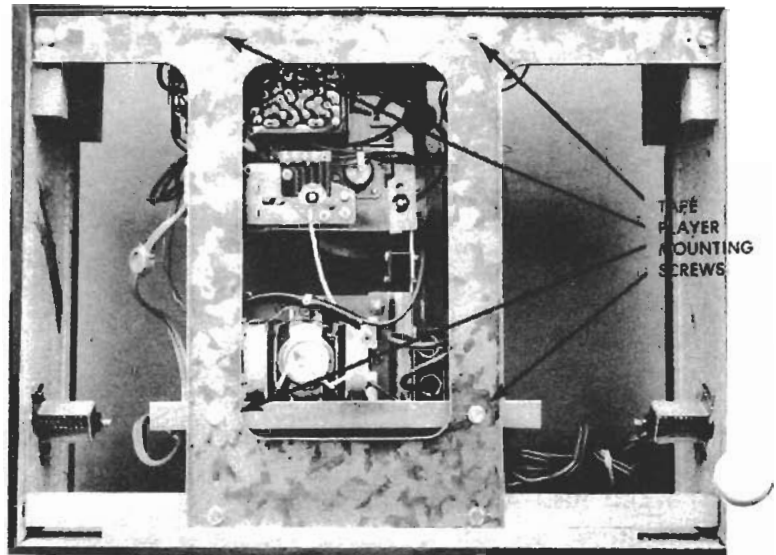
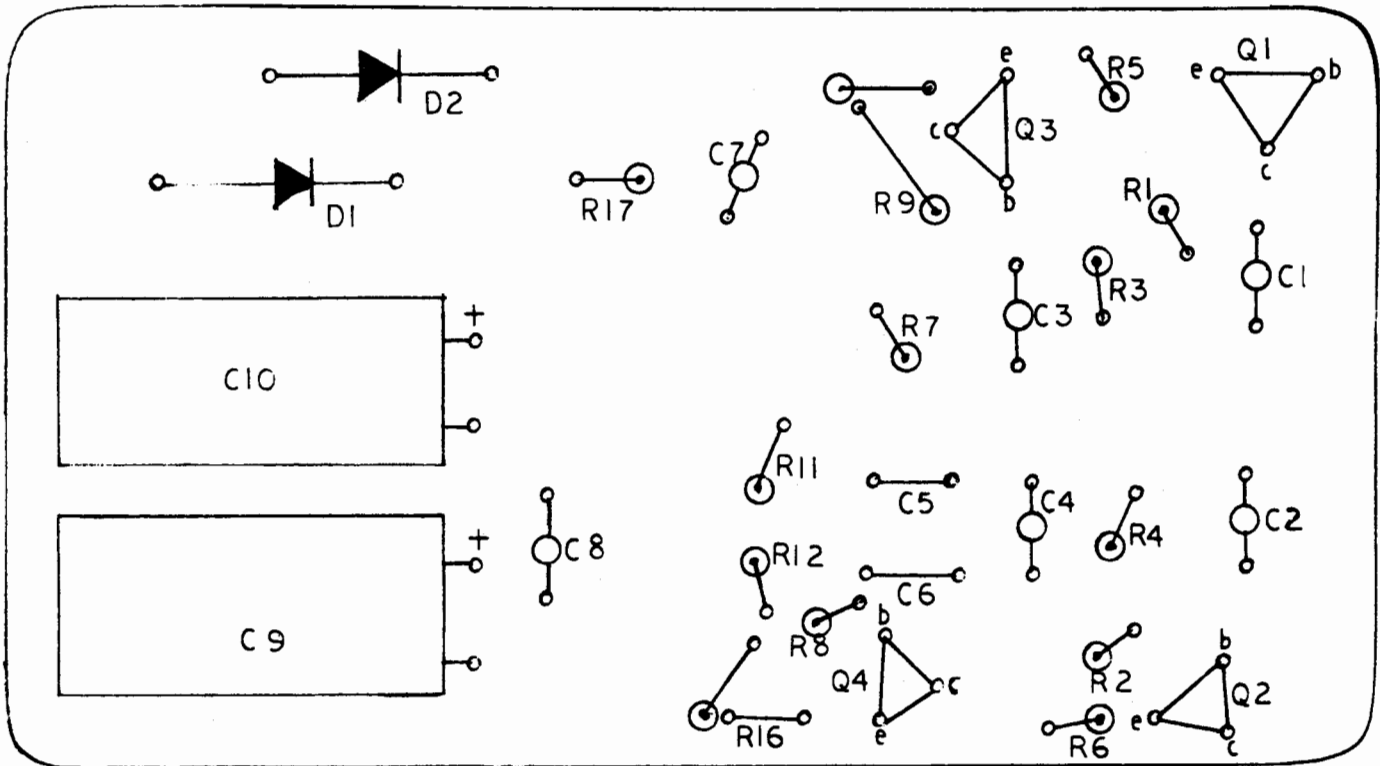


Fig. 7

Technical Data

Number of Tracks:	8 (4 stereo channels).
Tape Speed:	3 $\frac{3}{4}$ ins. per sec.
Program Selector:	Automatic and manual.
Tape Head:	Nortronics 4-track with hyperbolic face.
Pre-amp Outputs:	125 mv (nominal) 1 Kc. Standard Reference Level Tape.
Track Playback Sequence:	1 and 5, 2 and 6, 3 and 7, 4 and 8 and infinite repeat.
Wow/Flutter:	Less than 0-3% total.
Frequency Response:	Better than 50—10,000 Hz.
Power Supply:	105—130 volts 60 Hz. A.C.
Dimensions:	Cabinet: 10 $\frac{1}{4}$ " x 8 $\frac{1}{8}$ " x 3 $\frac{3}{8}$ ".
Net Weight:	5 $\frac{3}{4}$ lbs.
Cartridge Dimensions:	The unit will accept standard 8-track cartridges measuring: 5 $\frac{1}{2}$ " x 4" x $\frac{7}{8}$ ".



PREAMP PRINTED CIRCUIT BOARD

NOTE: Pre-Amp Board Part No. 61049 available as a complete assembly

ELECTRONICS PARTS LIST

REF. NO.	NUTONE PART NO.	DESCRIPTION
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TRANSISTORS

Q-1 thru Q-4 36580 Transistor, NPN low noise

DIODES

D-1, D-2 36549 Rectifiers, Motorola 1N4002

RESISTORS

R-1 3.9 Meg Ohm ½ Watt CC
R-2 3.9 Meg Ohm ½ Watt CC
R-3 27K Ohms ¼ Watt Film
R-4 27K Ohms ¼ Watt Film
R-5 150 Ohms ¼ Watt Film
R-6 150 Ohms ¼ Watt Film
R-7 22K Ohms ¼ Watt Film
R-8 22K Ohms ¼ Watt Film
R-9 390K Ohms ¼ Watt Film
R-10 390K Ohms ¼ Watt Film
R-11 15K Ohms ¼ Watt Film
R-12 15K Ohms ¼ Watt Film
R-17 2.7K Ohms ¼ Watt Film

NOT AVAILABLE FROM NUTONE

REF. NO.	NUTONE PART NO.	DESCRIPTION
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CAPACITORS

C-1 .47Mfd. 50V DC
C-2 .47Mfd. 50V DC
C-3 .47Mfd. 50V DC
C-4 .47Mfd. 50V DC
C-5 .005Mfd. 50V DC
C-6 .005Mfd. 50V DC
C-7 .47Mfd. 50V DC
C-8 .47Mfd. 50V DC
C-9 1000Mfd. 16V DC
C-10 1000Mfd. 25V DC

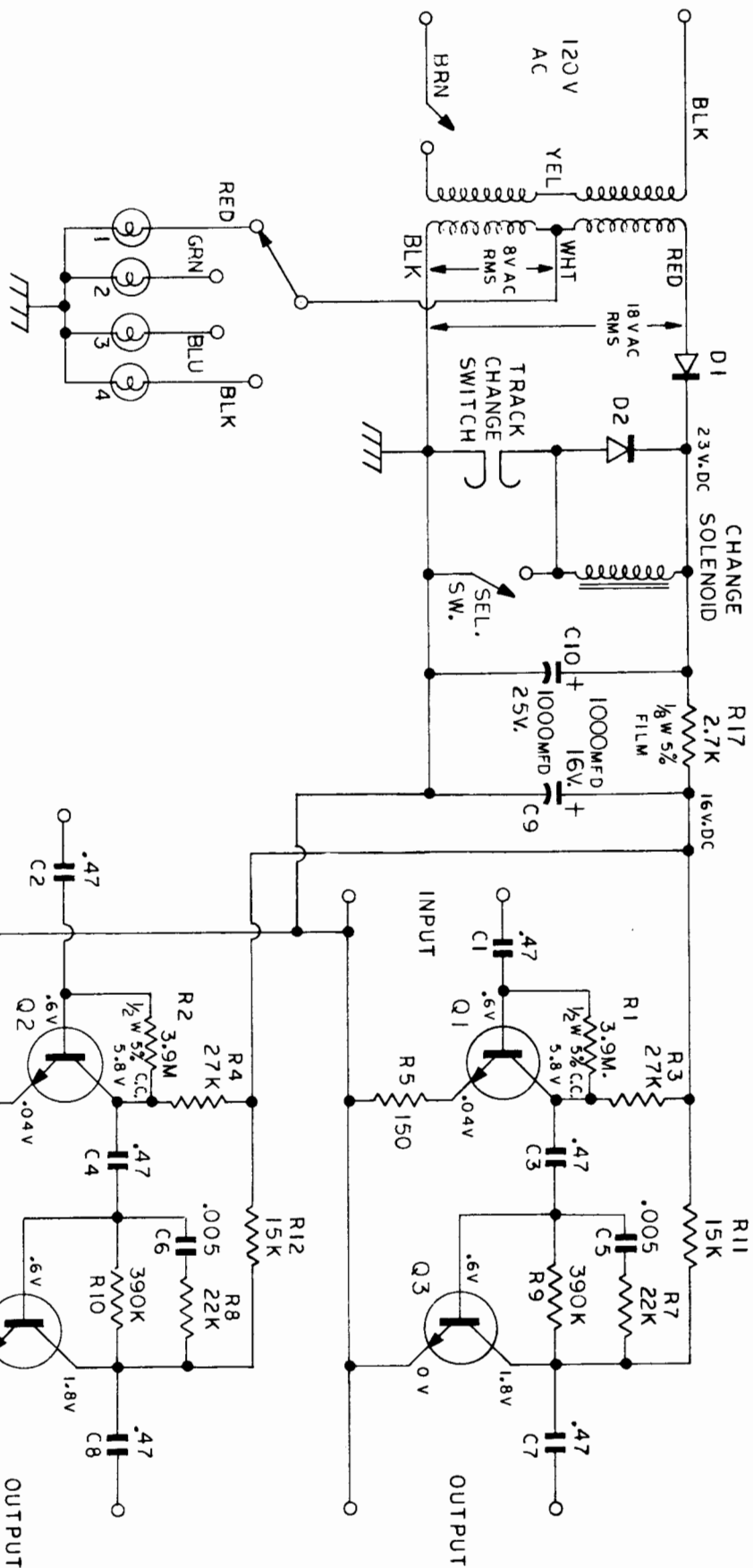
NOT AVAILABLE FROM NUTONE

PILOT LAMPS

P-1 61073 Program Indicator (Red Leads)
P-2 61074 Program Indicator (Green Leads)
P-3 61075 Program Indicator (Blue Leads)
P-4 61050 Program Indicator (Black Leads)

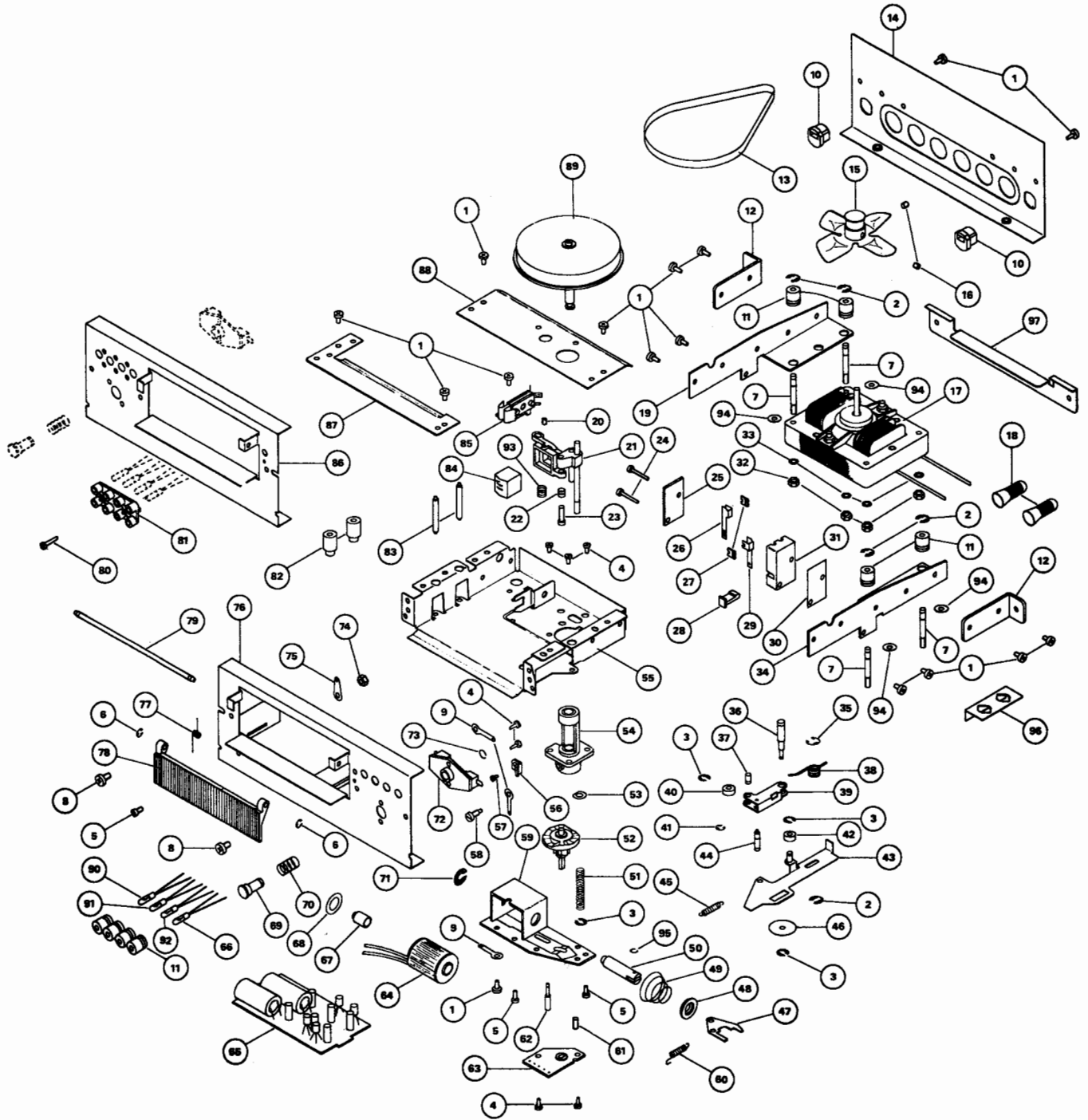
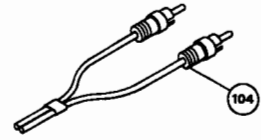
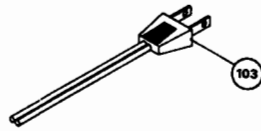
MISCELLANEOUS

Lens 39261 Program Indicator
Pushbutton 39254 Program Change
Pushbutton 39265 Program Change (Model 2507 Only)
P/C Board 61049 Pre-Amp, 2 Stage



NOTE:

1. ALL RESISTORS 1/2 WATT, 5% TOLERANCE, FILM TYPE, VALUE IN OHMS UNLESS NOTED, K=1000 M=1,000,000.
2. ALL CAPACITORS SHOWN AS DECIMALS ARE MFD. UNLESS NOTED
3. ALL CAPACITORS ARE 50V. UNLESS NOTED
4. ALL MEASUREMENTS MADE WITH A VTVM.



REF. NO.	BSR PART NUMBER	NUTONE PART NO.	DESCRIPTION
1	A.106510	60990	Screw 6 X 1/4" Pan Head
2	A.100762	60991	"C" Ring
3	A.100785	60992	"C" Ring
4	A.108794	60993	Screw Type B No. 4 X 1/4" Rec. Pan Head
5	A.109928	60994	Screw ISO M3 X 6 Pan Head
6	A.104077	60995	"C" Ring
7	A.109897	60996	Mounting Spindle
8	A.109929	60997	Screw Type B No. 8 X 3/8" Rec. Pan Head
9	A.102126	60998	Solder Lug
10	A.109718	60999	Strain Relief
11	A.109980	61000	Grommet
12	A.109893	61001	Support Bracket
13	A.109586	61002	Drive Belt
14	C.109709	61003	Mounting Bracket
15	A.109918	61004	50 Hz Motor Pulley Assy.
	A.109802	61005	60 Hz Motor Pulley Assy.
16	A.109930	61006	Set Screw ISO M3 X 3.5 Flat End
17		61007	F.P. 40 Motor Assy.
18	A.105472	61008	Wire Nut
19	B.109606	61009	Bracket (L.H.)
20	A.109931	61010	Hex. Socket Set Screw ISO M3 X 4 Cup End
21	A.109796	61011	Head Lifter Riv. Assy.
22	A.109782	61012	Spring
23	A.109932	61013	Screw ISO M3 X 12 Cheese Head
24	A.106512	61014	Screw Type BT 4-24 X 3/8" Rec. Pan Head
25*			Switch Cover
26*			Fixed Contact Carrier Assy.
27*	B.10965	61015	Solder Lug
28*			Switch Button
29*			Moving Contact Carrier Assy.
39*			Retaining Strip
31*			Switch Body
32	A.106945	61016	4 BA Full Nut
33	A.106918	61017	4 BA Lockwasher
34	B.109604	61018	Bracket (R.H.)
35	A.102109	61019	"C" Ring
36	A.109612	61020	Detent Pivot
37	A.109610	61021	Roller Pin
38	A.109587	61022	Detent Spring
39	B.109602	61023	Detent Lever
40	A.109582	61024	Roller (Short)
41	A.108334	61025	"C" Ring
42	A.109582	61026	Roller (Short)
43	B.109799	61027	Switch Slide Riv. Assy.
44	A.109617	61028	Switch Pin
45	A.106073	61029	Spring
46	A.105660	61030	Washer
47	A.109599	61031	Pawl

SWITCH ASSEMBLY

REF. NO.	BSR PART NUMBER	NUTONE PART NO.	DESCRIPTION
48	A.109613	61032	Washer
49	A.109585	61033	Spring
50	A.109615	61034	Core Pin
51	A.109726	61035	Spring
52	A.109792	61036	Cam Assy.
53	A.109596	61037	Washer
54	B.109801	61038	Bearing Housing Assy.
55	C.109887	61039	Mainplate Riv. Assy.
56	B.109588	61040	Tape Guard
57	A.106506	61041	Screw Type B No. 2 X 1/4" Rec. Pan Head
58	A.109621	61042	Screw
59	A.109793	61043	Control Plate Assy.
60	A.109725	61044	Pawl Spring
61	A.109933	61045	Set Screw ISO M3 X 8 Rad. End
62	A.109620	61046	Pawl Pivot
63	A.109939	61047	Switch Assy.
64	A.109813	61048	Solenoid Bobbin Assy.
65	A.109734	61049	2 Stage Pre-Amplifier
66	A.109736	61050	Bulb (Black Leads)
67	A.109618	61051	Core Plug
68	A.109654	61052	Washer
69	A.109711	61053	Button
70	A.109724	61054	Button Spring
71	A.102108	61055	"C" Ring
72	A.109938	61056	Switch Base and Contacts Assy.
73	A.109712	61057	"C" Ring
74	A.109855	61058	ISO M3 Full Nut
76	B.109787	61059	Front Cover Riv. Assy.
77	A.109727	61060	Door Spring
78	B.109723	61061	Door
79	A.109706	61062	Hinge Pin
80	A.109934	61063	Screw Type B No. 4 X 1/2" Rec. Pan Head
81	A.109896	61064	Bulb Holder
82	A.109583	61065	Roller (Long)
83	A.109614	61066	Roller Spindle (Long)
84	B.109708	61067	Play-Back Head
85	B.109798	61068	Tape Contact Assy.
86	B.109908	61069	Front Cover Riv. Assy.
87	B.109601	61070	Guide Plate
88	A.109795	61071	Support Plate Riv. Assy.
89	A.109927	61072	Flywheel Assy.
90	A.109735	61073	Bulb (Red Leads)
91	A.109738	61074	Bulb (Green Leads)
92	A.109737	61075	Bulb (Blue Leads)
93	A.108077	61076	Spring
94	A.109947	61077	Washer
95	A.109989	61078	"C" Ring
96	A.109986	61079	Retainer
97	A.109990	61080	Support-Bracket
103	B.109728	61081	AC Lead Assy.
	A.109860	39265	Program Change (Model 2507 Only)

*Available only as an assembly No. 61015 Switch Box Assembly

NuTone Housing Products

Seovill

MADISON & RED BANK ROADS

CINCINNATI, OHIO 45227

Part No. 46186 HI
Printed in U.S.A. 10-77