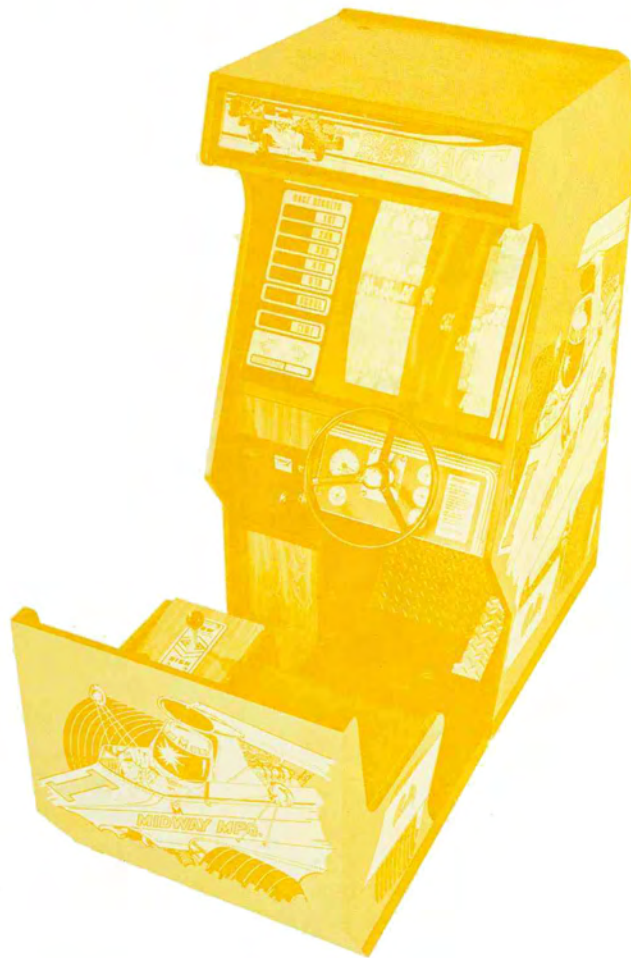


GAME NO. 762  
NOVEMBER, 1979

# **MIDWAY'S SUPER SPEED RACE PARTS AND OPERATING MANUAL**



**MIDWAY MFG. CO.**

A BALLY COMPANY

10750 WEST GRAND AVENUE  
FRANKLIN PARK, ILLINOIS 60131  
U.S.A.

PHONE: (312) 451-1360 CABLE ADDRESS: MIDCO TELEX NO.: 72-1596

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**WARNING**

**THIS GAME MUST BE GROUNDED. FAILURE TO DO SO MAY RESULT IN DESTRUCTION TO ELECTRONIC COMPONENTS.**

## **"GENERAL INSTRUCTIONS FOR SUPER SPEED RACER"**

### **INSTALLATION:**

1. Remove shipping cleats located on bottom of cabinet.
2. Install four (4) provided leg levelers to bottom of cabinet and level cabinet.
3. The power is controlled by a switch located on top of the cabinet. Plug into A.C. only, 115 volts, 60 cycles. In low line areas, a boost in the output voltage of the transformer may be obtained by removing the wire from the 115 volt tap and rewiring to the 100 volt tap.

### **VOLTAGE CONTROL POTS:**

Located on Power Supply (P.C. A082-90401-C000) are preset at the factory and should not be tampered with unless the Distributor Service Department has been contacted.

### **MASTER VOLUME CONTROL POT:**

Located on Audio board (P.C. A084-90900-C762) controls the volume of all sounds and may be varied as desired by rotating pot shaft.

### **LINE VOLTAGE SAFETY SWITCH:**

A line voltage safety switch has been provided for your protection. It is located on the right rear side of the cabinet in the back door area. When the back door is removed, it opens the circuit to the line voltage. To restore power (when servicing), pull switch fully out.

### **COIN, TIME AND EXTENDED PLAY ADJUSTMENT SWITCHES:**

Located on Mother Board (P.C. A082-90004-C000) and may be adjusted as indicated on separate instruction card in back box area.

### **TO ADJUST ACCELERATOR PEDAL ENCODER:**

1. Place adjustment switches 6, 7 and 8 located on Mother Board (P.C. A082-90004-C000) in position indicated on instruction card in back box area.
2. Loosen set screws on Accelerator Encoder gear.
3. Rotate Encoder shaft until time display reads "02".
4. Tighten set screws on Accelerator Encoder gear.
5. Place switches 6, 7 and 8 in Game Mode as indicated on instruction card in back box area.

### **RAM/ROM TEST:**

Place adjustment switches 6, 7 and 8 located on Mother Board (P.C. A082-90004-C000) in positions indicated on instruction card in back box area. The program will begin a sequence count shown on all Score Displays, 0000, 1111, etc. to 9999. If all Rams and Roms are good, the program will continually repeat. If a Ram is bad, the program will stop and show the faulty Ram's location in the first or second race results Score Display. Example: Ram 2 is faulty. First race results Score Display will show 0022. If a Rom is bad, it's location will be shown in the third or fourth race results Score Display. When test is completed, place switches 6, 7 and 8 in Game Mode as indicated on instruction card in back box area.

### INSTALLATION OF SEAT ASSEMBLY:

1. Remove shipping cleats located on bottom of seat assembly.
2. Install four (4) provided leg levelers to bottom of seat assembly and level seat.
3. Position seat assembly in front of cabinet.
4. Slide tongue on left side of seat assembly into provided slot in cabinet.
5. Assemble support straps on each side of cabinet and seat assembly (see sketch below) using provided cap screws and washers.
6. Relevel seat assembly.
7. Open shift assembly access door and feed shift cable into cabinet as indicated on instructions in shift assembly cavity.

### SEAT ADJUSTMENT:

To adjust seat for additional leg room:

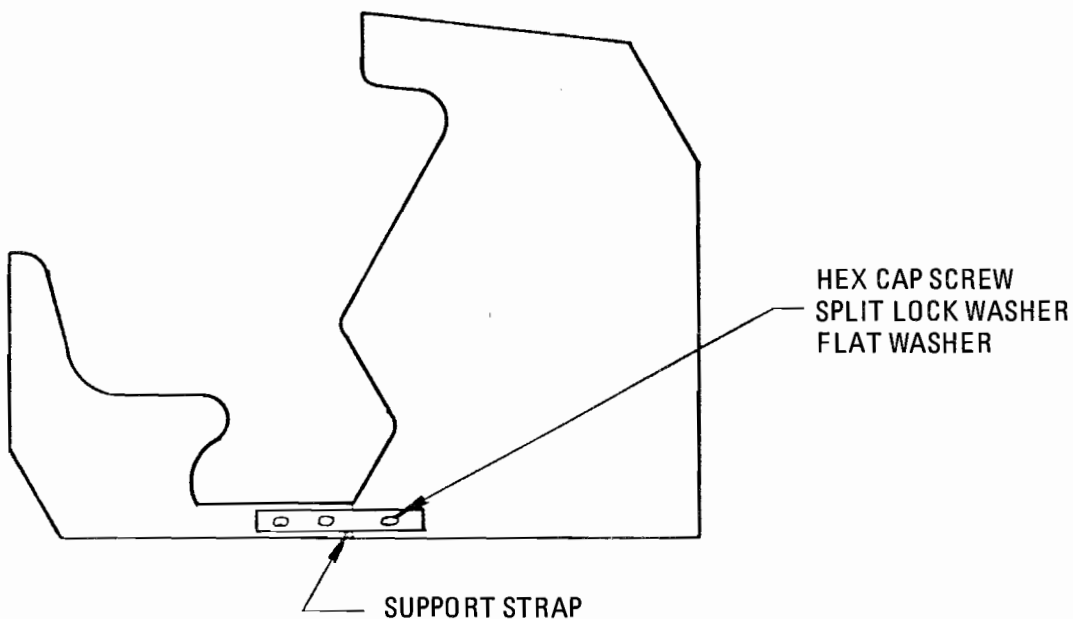
1. Loosen four (4) bolts in seat assembly support strap.
2. Position seat at desired location.
3. Tighten four (4) bolts in seat assembly.

### TO SERVICE SCORE DISPLAY:

1. Remove upper rear access door.
2. From rear, loosen two (2) screws in cross member at top of glass.
3. Remove glass from front. Score display may now be adjusted or removed.

### TO REMOVE STEERING PANEL:

1. Unlock and remove access panel below steering assembly.
2. Unlatch two (2) clamps on sides of steering panel assembly.
3. Remove steering panel for service.



M051-00762-A015

## ADJUSTMENT SWITCHES

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### COINS

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	SW. 1	SW. 2
1 COIN = 1 PLAY	ON	ON
2 COINS = 1 PLAY	OFF	ON
1 COIN = 2 PLAYS	ON	OFF
2 COINS = 3 PLAYS	OFF	OFF

---

### TIME

---

	SW. 3	SW. 4
60 SECONDS	ON	ON
70 SECONDS	OFF	ON
80 SECONDS	ON	OFF
90 SECONDS	OFF	OFF

---

### EXTENDED PLAY

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	SW. 5
EXTENDED PLAY = 20 SECONDS	ON
EXTENDED PLAY = 30 SECONDS	OFF

---

### TEST - PLAY

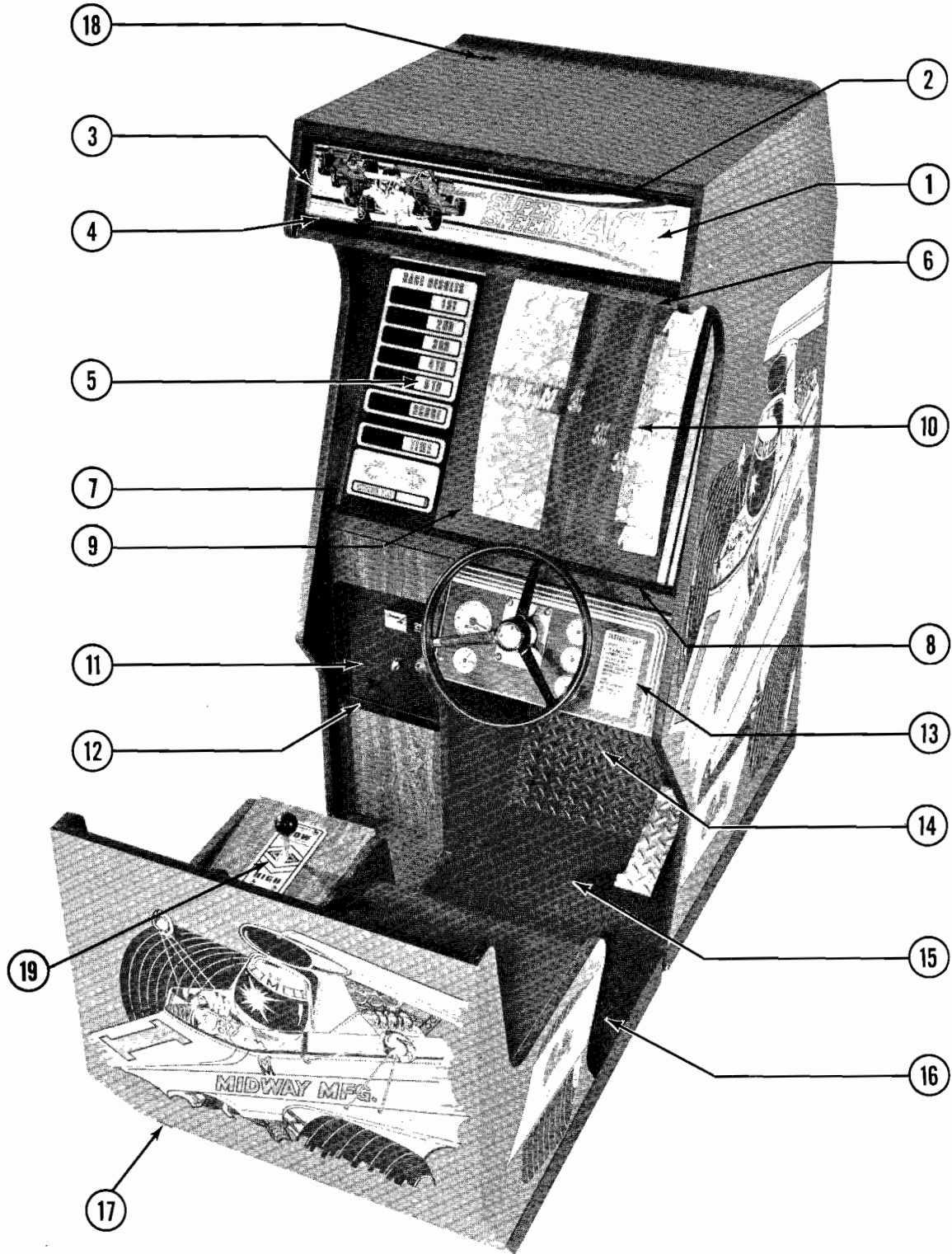
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	SW. 6	SW. 7	SW. 8
PLAY MODE	OFF	ON	ON
RAM/ROM TEST	OFF	ON	OFF
ACCELERATOR ADJUSTMENT	OFF	OFF	OFF

---

M051-00762-B016

**NO. 762 – SUPER SPEED RACE – PICTURE**



**NO. 762 – SUPER SPEED RACE – PICTURE**  
**ORDER BY PART NUMBER ONLY**

ITEM	PART NO	DESCRIPTION
1	0762-00906-00XF	NAME DISPLAY PLEX – 27-7/8" x 6-1/8"
2	0537-00903-0023	GLASS CHANNEL – 27-3/4" LG.
3	0537-00903-0044	GLASS CHANNEL – 5" LG. (2 REQ'D.)
4	0629-00902-0500	GLASS LIFT CHANNEL – 27-7/8" LG.
5	0762-00905-01XF	MAIN DISPLAY PLEX – 27-7/8" x 26-1/2"
6	0537-00903-0023	GLASS CHANNEL – 27-3/4" LG.
7	0537-00903-0045	GLASS CHANNEL – 25-3/8" LG. (2 REQ'D.)
8	0629-00902-0500	GLASS LIFT CHANNEL – 27-7/8" LG.
9	0762-00901-0000	T.V. BEZEL
10	0017-00003-0204	25" T.V. MONITOR – COLOR
	0017-00102-0052	1/4-20 x 1" HEX HD. BOLT (4 REQ'D.)
	0017-00104-0072	FLAT WASHER (4 REQ'D.)
	0017-00103-0073	1/4-20 TINNERMAN (4 REQ'D.)
11	A090-00056-0000	COIN DOOR ASSY.
12	0090-00002-01BK	COIN DOOR FRAME
	0017-00101-0555	#6-32 x 5/16 HEX HD. S.T.M.S. (3 REQ'D.) (MOUNTS TO DOOR FRAME)
	0017-00003-0102	COUNTER METER (MOUNTS TO COIN DOOR)
13	0762-00114-00XF	CONTROL PLATE
14	0762-00109-00XF	FRONT FLOOR PLATE
15	0767-00108-00XF	REAR FLOOR PLATE
16	0762-00110-00XF	CHAIR FLOOR PLATE
	0017-00101-0088	#8 x 1/2 PHIL. FLAT HD. BLK. S.M.S. (18 REQ'D.-TOTAL)
17	0017-00102-0048	LEG LEVELERS (8 REQ'D.)
	0017-00103-0026	LEG LEVELER NUTS (8 REQ'D.)
18	0586-00036-0000	ON-OFF SWITCH
	0567-00106-0000	SWITCH MTG. PLATE
19	0762-00111-00XF	GEAR SHIFT PLATE
		<u>NOT SHOWN LIST</u>
	0762-00116-0000	C.R.T. CABINET BRACE
	0017-00102-0026	1/4-20 x 2" CARRIAGE BOLTS (4 REQ'D.)
	0017-00104-0014	1/4 PERIPHERY WASHER (4 REQ'D.)
	0017-00103-0018	1/4-20 HEX NUT (4 REQ'D.)
	A161-00002-0000	DAG SPRING ASSY.
	3000-17155-0000	GROUND STRAP
	0017-00009-0033	BASSICK CLAMP (2 REQ'D.)
	0603-00131-0000	STRIKE (2 REQ'D.)
	0017-00003-0259	SPEAKER
	0017-00009-0450	SPEAKER GRILL – BLACK
	0017-00101-0642	#8-32 x 1-1/2 CARRIAGE BOLTS (4 REQ'D.)

**NO. 762 – SUPER SPEED RACE – PICTURE**  
***ORDER BY PART NUMBER ONLY***

<b>ITEM</b>	<b>PART NO</b>	<b>DESCRIPTION</b>
	A762-00018-0000	NAME DISPLAY INSERT ASSY.
	0017-00031-0040	LAMP SOCKET (5 REQ'D.)
	0017-00003-0219	LAMP – 14 V. (5 REQ'D.)
	A762-00017-0000	GAME OVER INSERT ASSY.
	0017-00031-0040	LAMP SOCKET (3 REQ'D.)
	0017-00003-0219	LAMP – 14 V.
	0017-00003-0226	LAMP – 6 V. (2 REQ'D.)

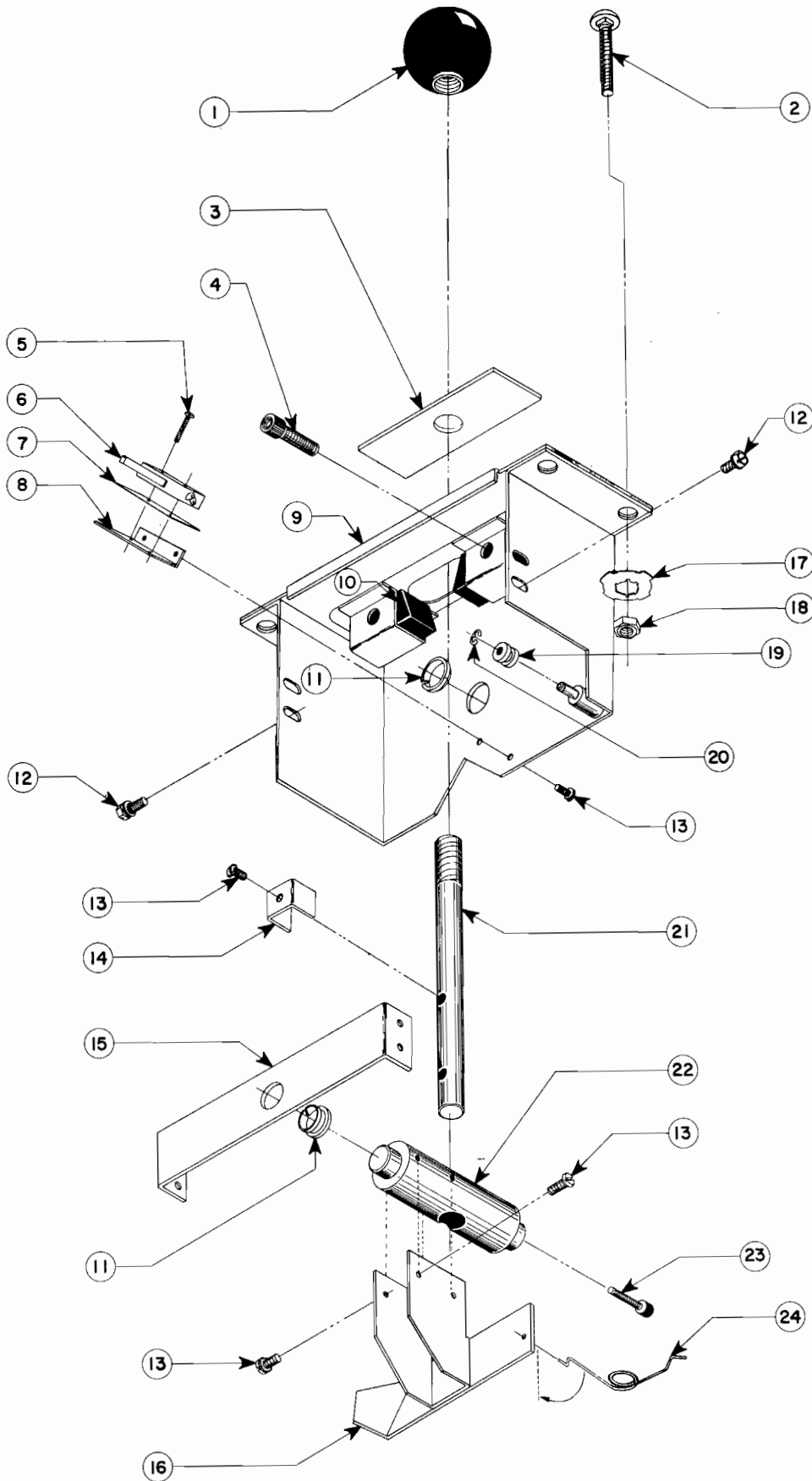


# NOTES

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**NO. 762 – SUPER SPEED RACE – GEAR SHIFT ASSY.**

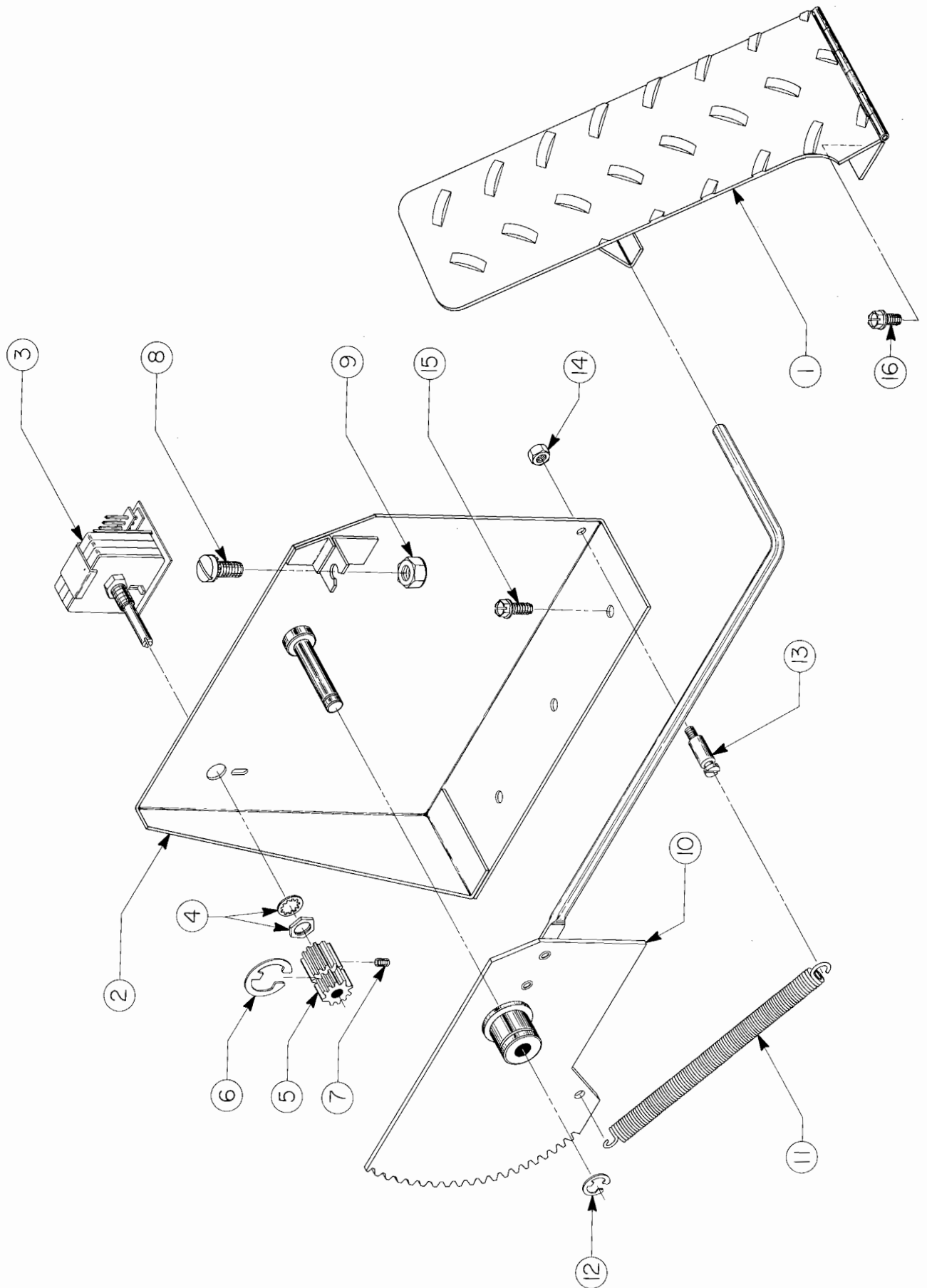


**NO. 762 – SUPER SPEED RACE – GEAR SHIFT ASSY.**

***ORDER BY PART NUMBER ONLY***

<b>ITEM</b>	<b>PART NO</b>	<b>DESCRIPTION</b>
1	0017-00009-0386	KNOB – PHENOLIC BALL
2	0017-00102-0019	CARRIAGE BOLTS 1/4-20 x 1-1/2 (4 REQ'D.)
3	0591-00902-0000	SLIDE
4	0017-00102-0065	5/16 x 18 x 3/4" LONG SOCKET HD. CAP SCREW (2)
5	0017-00101-0510	#4-40 x 1/2 PAN HD. M.S. (2 REQ'D.)
6	0017-00032-0006	MICRO SWITCH
7	0588-00911-0000	INSULATOR
8	0610-00123-0000	SWITCH MOUNTING BRACKET
9	0610-00001-0000	CONTROL HOUSING WELDING ASSY.
10	0544-00907-0000	RUBBER BUMPER (2 REQ'D.)
11	0017-00042-0021	NYLINER (2 REQ'D.)
12	0017-00101-0598	#8-32 x 5/16 HEX HD. S.T. M.S. (4 REQ'D.)
13	0017-00101-0593	#8-32 x 1/4 PAN HD. M.S. SEMS (7 REQ'D.)
14	0591-00127-0000	"U" BRACKET
15	0610-00102-0000	REARING SUPPORT PLATE
16	0610-00009-0000	BRACKET & PLATE ASSY.
17	0017-00104-0014	PERIPHERY WASHER (4 REQ'D.)
18	0017-00103-0018	1/4-20 HEX NUT (4 REQ'D.)
19	0591-00702-0000	SPRING ROLLER
20	0017-00100-0015	"E" RING
21	0610-00703-0000	GEAR SHIFT ROD
22	0610-00704-0000	PIVOT BUSHING
23	0017-00101-0720	#10-32 x 3/4 LOCKING SOCKET CAP SCREW
24	0010-00227-0000	TORSION SPRING

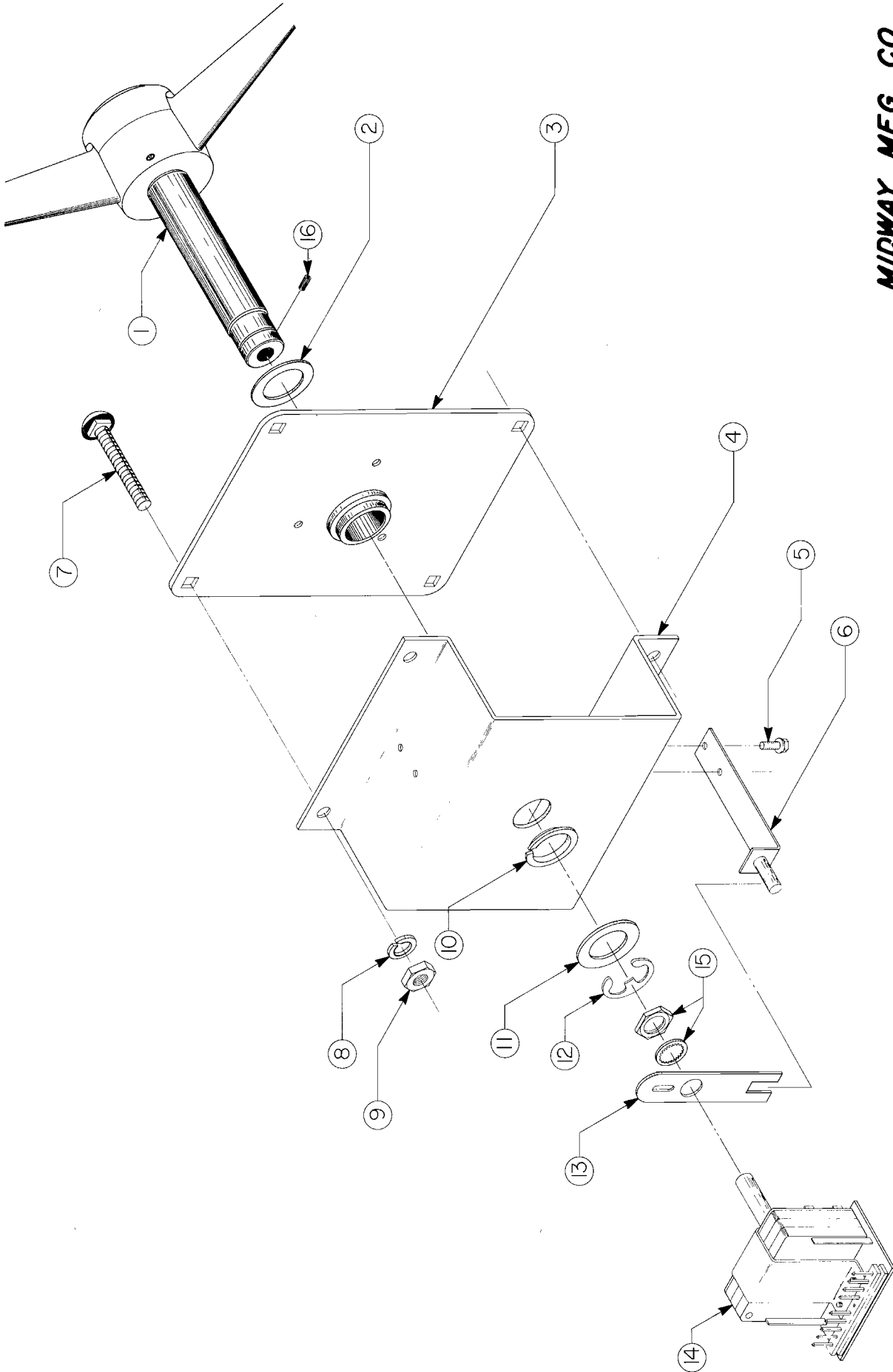
**NO. 762 -- SUPER SPEED RACE -- ACCELERATOR PEDAL ASSEMBLY**



**NO. 762 – SUPER SPEED RACE – ACCELERATOR PEDAL ASSEMBLY*****ORDER BY PART NUMBER ONLY***

<b>ITEM</b>	<b>PART N<sup>o</sup></b>	<b>DESCRIPTION</b>
1	A762-00001-00XF	ACCELERATOR PEDAL & HINGE ASSY.
2	A762-00002-0000	MOUNTING BRACKET ASSY.
3	A082-91101-B000	SHAFT ANGLE ENCODER SWITCH
4		HARDWARE FOR ITEM NO. 3
5	0583-00723-0000	16 TOOTH GEAR
6	0017-00100-0050	"E" RING
7	0017-00101-0308	#8-32 x 3/16 SOCKET SET SCREW (2 REQ'D.)
8	0017-00101-0785	1/4-20 x 1/4 SLT. PAN HD. EXT. S.T.M.S.
9	0653-00734-0000	STOP – POT LIMIT
10	A762-00003-0000	GEAR & LEVER ASSY.
11	0010-00228-0000	SPRING
12	0017-00100-0031	"E" RING
13	0011-00100-06XF	POST – PIVOT
14	0017-00103-0011	#10-32 LOCK NUT
15	0017-00101-0769	#10 x 3/4 SLT. HEX HD. W/WASH. S.T.M.S. (3 REQ'D.)
16	0017-00101-0728	#10 x 1/2 SLT. HEX HD. W/WASH. S.T.M.S. (2 REQ'D.)

**NO. 762 -- SUPER SPEED RACE -- STEERING WHEEL ASSEMBLY**



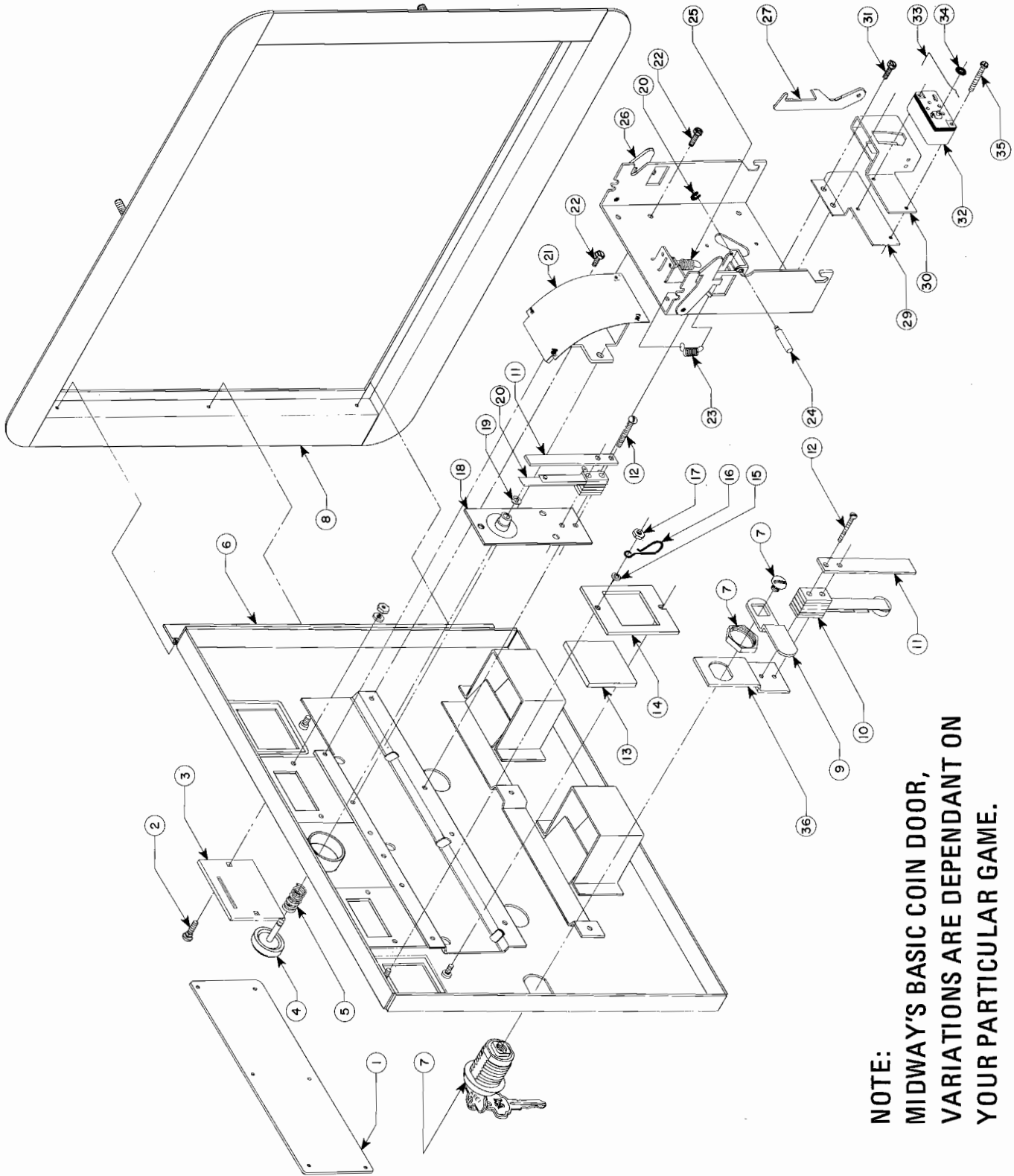
**MIDWAY MFG. CO.**  
A BALLY COMPANY

NO. 762 – SUPER SPEED RACE – STEERING WHEEL ASSEMBLY

*ORDER BY PART NUMBER ONLY*

ITEM	PART N <sup>o</sup>	DESCRIPTION
1	A762-00012-0000	STEERING WHEEL & SHAFT ASSEMBLY
2	0610-00111-0000	NYLON WASHER – 29/32 x 1-1/2 x 1/16
3	0610-00016-0000	FRONT MOUNTING PLATE ASSY.
4	0624-00113-0000	MAIN MOUNTING BRKT.
5	0017-00101-0555	#6 x 5/16 HEX HD. S.T.S. (2 REQ'D.)
6	0610-00007-0000	BRKT. & POST SUB ASSY.
7	0017-00102-0019	1/4-20 x 1-1/2 CARRIAGE BOLT (4 REQ'D.)
8	0017-00104-0005	1/4 SPLIT LOCK WASHER (4 REQ'D.)
9	0017-00103-0018	1/4-20 HEX NUT (4 REQ'D.)
10	0017-00042-0168	NYLINER
11	0017-00104-0080	STEEL WASHER – 3/4 x 1-1/4 x 1/16
12	0017-00100-0109	"E" – RING
13	0591-00105-0100	POT LOCATOR
14	A082-91101-B000	ANGLE ENCODER SWITCH ASSY.
15		HARDWARE FOR ITEM NO. 14
16	0017-00101-0309	#8-32 x 1/4 SET SCREW (2 REQ'D.)

**NO. 762 – SUPER SPEED RACE – FRONT DOOR ASSY.**



**NOTE:  
MIDWAY'S BASIC COIN DOOR,  
VARIATIONS ARE DEPENDANT ON  
YOUR PARTICULAR GAME.**

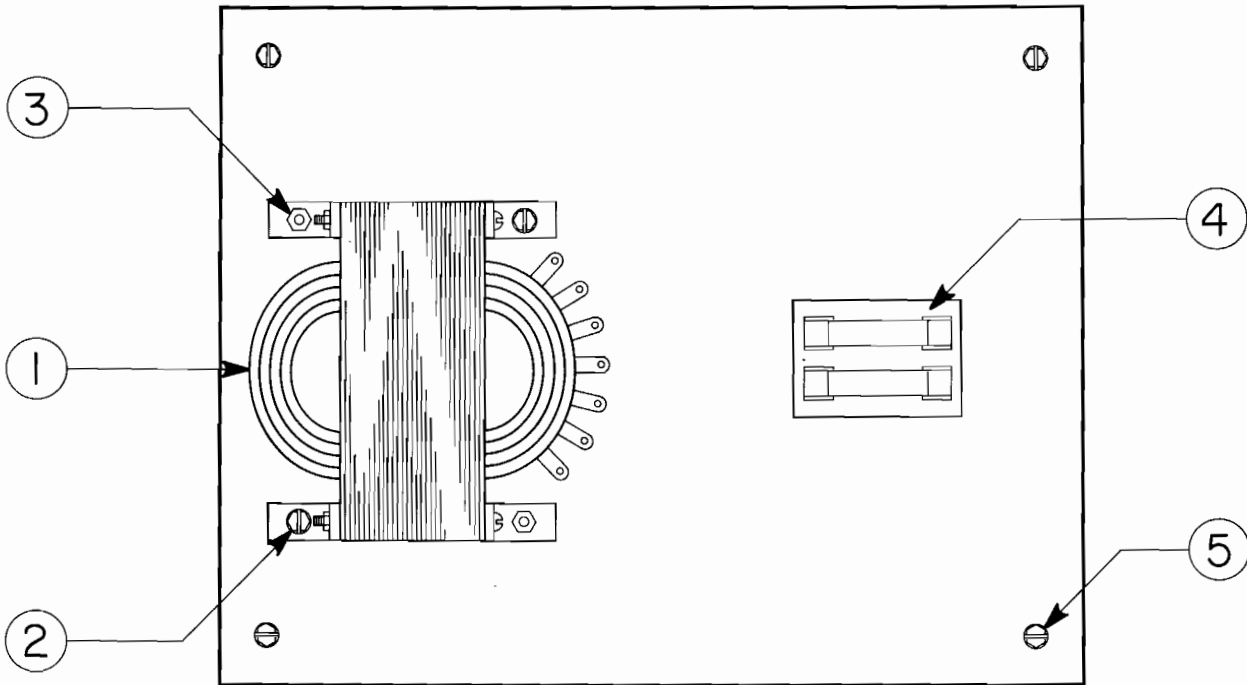


NO. 762 – SUPER SPEED RACE – FRONT DOOR ASSY.

ORDER BY PART NUMBER ONLY

ITEM	PART NO	DESCRIPTION
1	0090-00902-0000 0090-00902-0100	DRESS PLATE DRESS PLATE (W/O PRESS BUTTON TO START GAME)
2	0017-00101-0552	#6-32 x 1/4 CARRIAGE BOLT (2)
3	0090-00117-03XF	COIN ENTRY PLATE (25¢)
4	0090-00906-0000	PLASTIC START BUTTON
5	0010-00007-0000	COMPRESSION SPRING
6	0090-00013-0200	DOOR ASSY. DOUBLE ENTRY
7	0017-00005-0050	DOOR LOCK & KEY WITH SCREW & NUT
8	0090-00002-02BR	DOUBLE DOOR FRAME
9	0017-00005-0041	421 N.S. CAM
10	0090-00901-0000	DOOR SWITCH
11	0090-00126-01XF	SWITCH BACKUP PLATE
12	0017-00101-0528	#5-40 x 3/4" LNG. M.S.
13	0090-00903-0040	25¢ WINDOW
14	0090-00143-0000	COIN PLEX RETAINER
15	0017-00104-0002	SPLIT LOCK WASHER
16	0017-00007-0019	KEY HOOK
17	0017-00103-0005	#6-32 HEX NUT
18	0090-00010-0000	SW. PLATE & OILLITE ASSY.
19	0017-00100-0018	"E" RING
20	0090-00131-0000	SWITCH
21	0090-00104-0000	TOP & BTM. COIN CHUT W/BRKT. ASSY.
22	0017-00101-0598	#8-32 x 5/16 SCREW
23	0010-00181-0100	SPRING
24	0090-00129-00XF	PIVOT POST
25	0010-00134-0000	SPRING
26	0090-00008-0000	ACCEPTOR FRAME ASSY.
27	0093-00155-00XF	REJECTOR LEVER
28	0017-00100-0012	"E" RING
29	0093-00151-00XF	COIN GUIDE MTG. BRACKET
30	0090-00005-0000	COIN GUIDE ASSY.
31	0017-00101-0555	#6-32 x 5/16 SCREW
32	0017-00005-0039	COIN SWITCH
33	0010-00557-2500	TRIP WIRE
34	0017-00007-0132	PUSH-ON RING (BIK)
35	0017-00101-0507	#4-36 x 3/4 SCREW
36	0090-00128-00XF	SWITCH BRKT. – DOOR TILT

**NO. 762 – SUPER SPEED RACE – TRANSFORMER BOARD ASSY.**

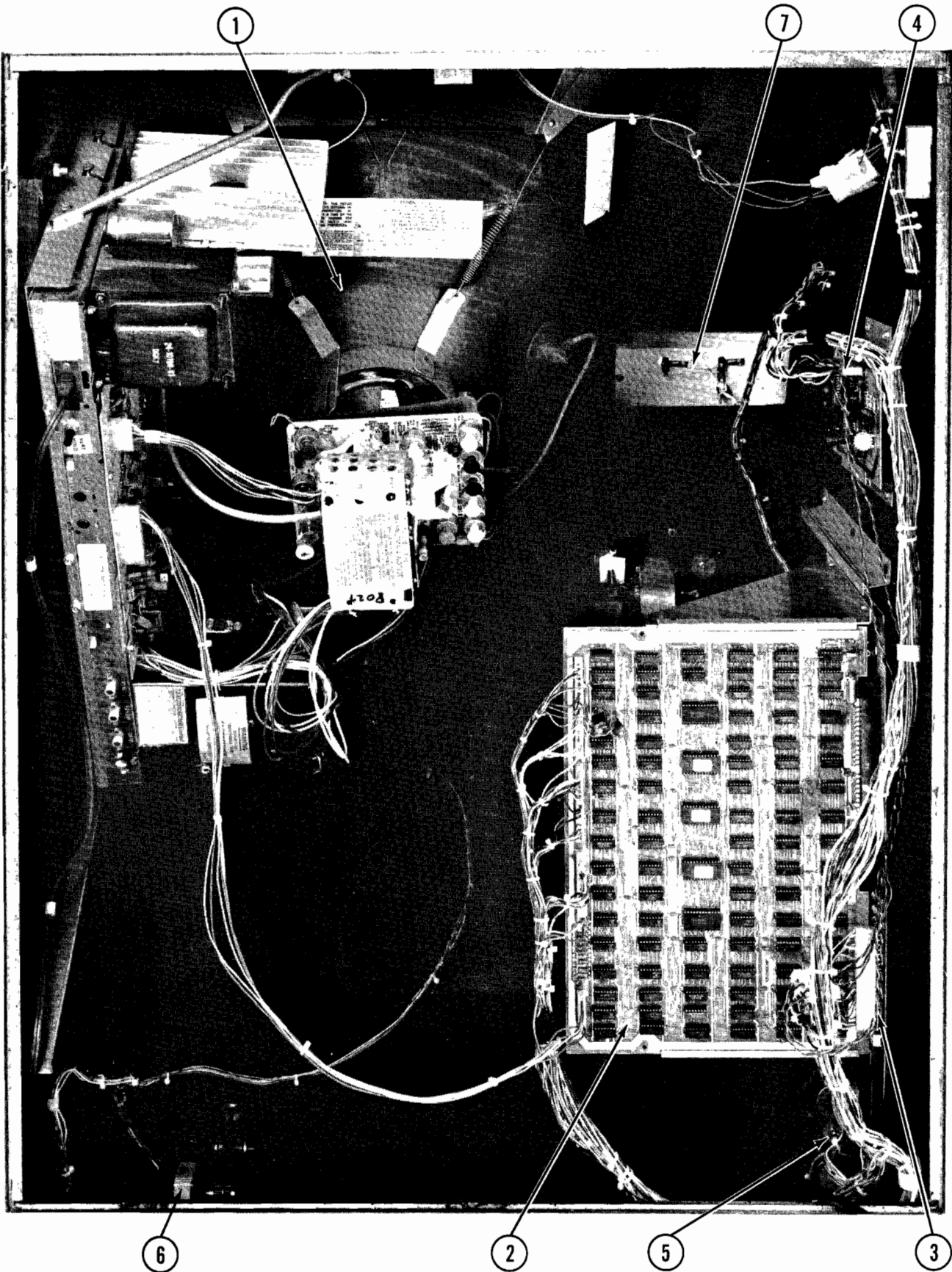


**NO. 762 – SUPER SPEED RACE – TRANSFORMER BOARD ASSY.**

***ORDER BY PART NUMBER ONLY***

<b>ITEM</b>	<b>PART NO</b>	<b>DESCRIPTION</b>
1	MT00-00077-0000	TRANSFORMER – UNIVERSAL
2	0017-00101-0017	#6-1/2 SLT. HEX HD. WD. SCR. (2 REQ'D.)
3	0017-00101-0637	#8-32 x 1" CARRIAGE BOLT (2 REQ'D.) WITH
	0017-00103-0008	#8-32 HEX NUT (2 REQ'D.)
4	0720-00001-0200	2 POSITION FUSE BLOCK
	0017-00003-0103	FUSE 1 AMP
	0017-00003-0006	FUSE 3 AMP
5	0017-00101-0018	#6 x 3/4 SLT. HEX HD. SCREW (5 REQ'D.)
	0017-00003-0064	16 FT. LINE CORD – NOT SHOWN

**NO. 762 – SUPER SPEED RACE – OPEN BACK VIEW**



**NO. 762 – SUPER SPEED RACE – OPEN BACK VIEW**

***ORDER BY PART NUMBER ONLY***

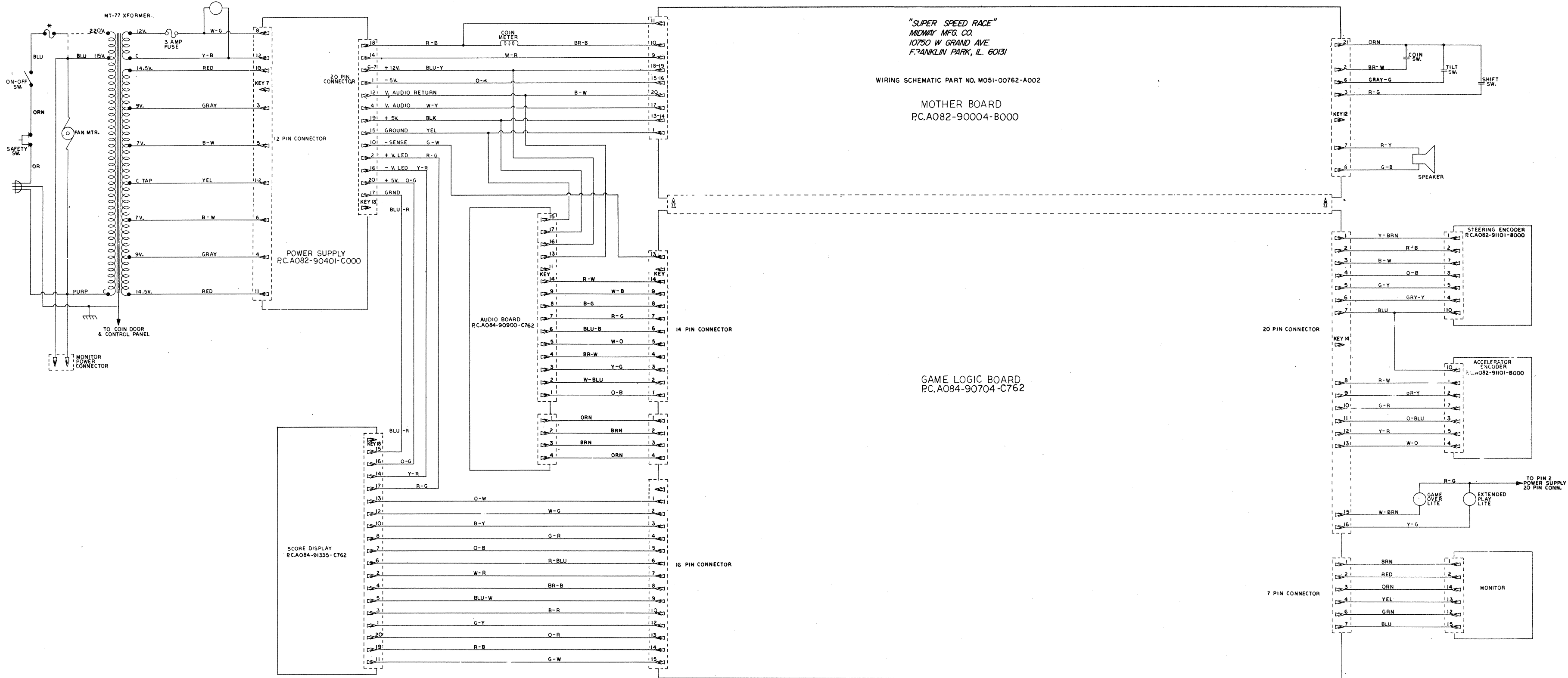
<b>ITEM</b>	<b>PART N<sup>o</sup></b>	<b>DESCRIPTION</b>
1	0017-00003-0204	25" T.V. MONITOR – COLOR
2	A082-90004-B762	MOTHER BOARD ASSY.
3	A084-90704-C762	GAME BOARD ASSY.
4	A084-90900-C762	AUDIO BOARD ASSY.
5	A082-90401-C000	POWER SUPPLY BOARD ASSY.
6	A762-00001-00XF	ACCELERATOR PEDAL ASSY.
7	A762-00017-0000	GAME OVER INSERT ASSY.

**NO. 762 – SUPER SPEED RACE – ADDITIONAL PARTS LIST**

***ORDER BY PART NUMBER ONLY***

ITEM	PART NO	DESCRIPTION
	A762-00016-0000	BACK DOOR ASSY.
	A097-00001-0000	LOCK ASSY. (1 BACK DOOR, 1 ACCESS DOOR)
	0762-00903-0000	PROTECTIVE BUBBLE
	0017-00101-0628	#8-32 x 3/4 CARRIAGE BOLTS (4 REQ'D.)
	0017-00101-0619	#8-32 x 1/2 CARRIAGE BOLTS (2 REQ'D.)
	0017-00104-0021	#8 BRASS WASHER 7/16 x 3/16 x 1/32 (6 REQ'D.)
	0017-00103-0061	#8-32 HEX LOCKNUT SEMS. (6 REQ'D.)
	A627-00003-0000	CASH BOX ASSY.
	A762-00013-0000	CASH BOX COVER ASSY.
	A625-00024-0000	CASH BOX GUIDE BRKT. ASSY.
	0625-00117-0000	CASH BOX SIDE CHANNEL
	0017-00101-0628	#8-32 x 3/4 CARRIAGE BOLTS (4 REQ'D.)
	0017-00103-0061	#8-32 HEX NUT SEMS. (4 REQ'D.)
	0017-00104-0022	#8 STL. WASHER (4 REQ'D.)
	0762-00900-0000	HINGE – GEAR SHIFT PANEL
	0017-00101-0639	#8-32 x 1-1/4 CARRIAGE BOLTS (4 REQ'D.)
	0017-00103-0061	#8-32 HEX NUT SEMS. (4 REQ'D.)
	0017-00003-0225	CHEAT INTERLOCK SW.
	0625-00133-00B0	MOUNTING BRKT. – INTERLOCK SW.
	A775-00013-0000	FAN ASSY.
	0618-00117-00ZN	VENT GRILL (2 REQ'D.)
	A082-90004-B762	MOTHER BOARD ASSY.
	A084-90704-C762	GAME BOARD ASSY.
	A082-90401-C000	POWER SUPPLY BOARD ASSY.
	A084-90900-C762	AUDIO BOARD ASSY.
	A084-01335-C762	DISPLAY DRIVER P.C. ASSY.
	0762-00115-0000	READ OUT SUPPORT MTG. BRKT.
	0624-00902-0100	P.C. BRKT. SUPPORT – 12 IN. (4 REQ'D.)
	0624-00902-0300	P.C. BRKT. SUPPORT – 2-1/2 IN. (6 REQ'D.)
	0624-00902-0500	P.C. BRKT. SUPPORT – 6 IN.
	0017-00101-0017	#6 x 1/2 HEX HD. WD. SCREW (20 REQ'D.)
	0017-00104-0027	FLAT WASHER – 3/4 x 3/16 x 1/16 (20 REQ'D.)
	0017-00009-0419	PIN EXTRACTOR TOOL (PIN POPPER) (MOLAX JACKS ONLY)

\* USE 4 AMP SLO BLO AT 115V, 60 CYCLE  
 USE 2 AMP SLO BLO AT 220V, 50 CYCLE











# NOTES

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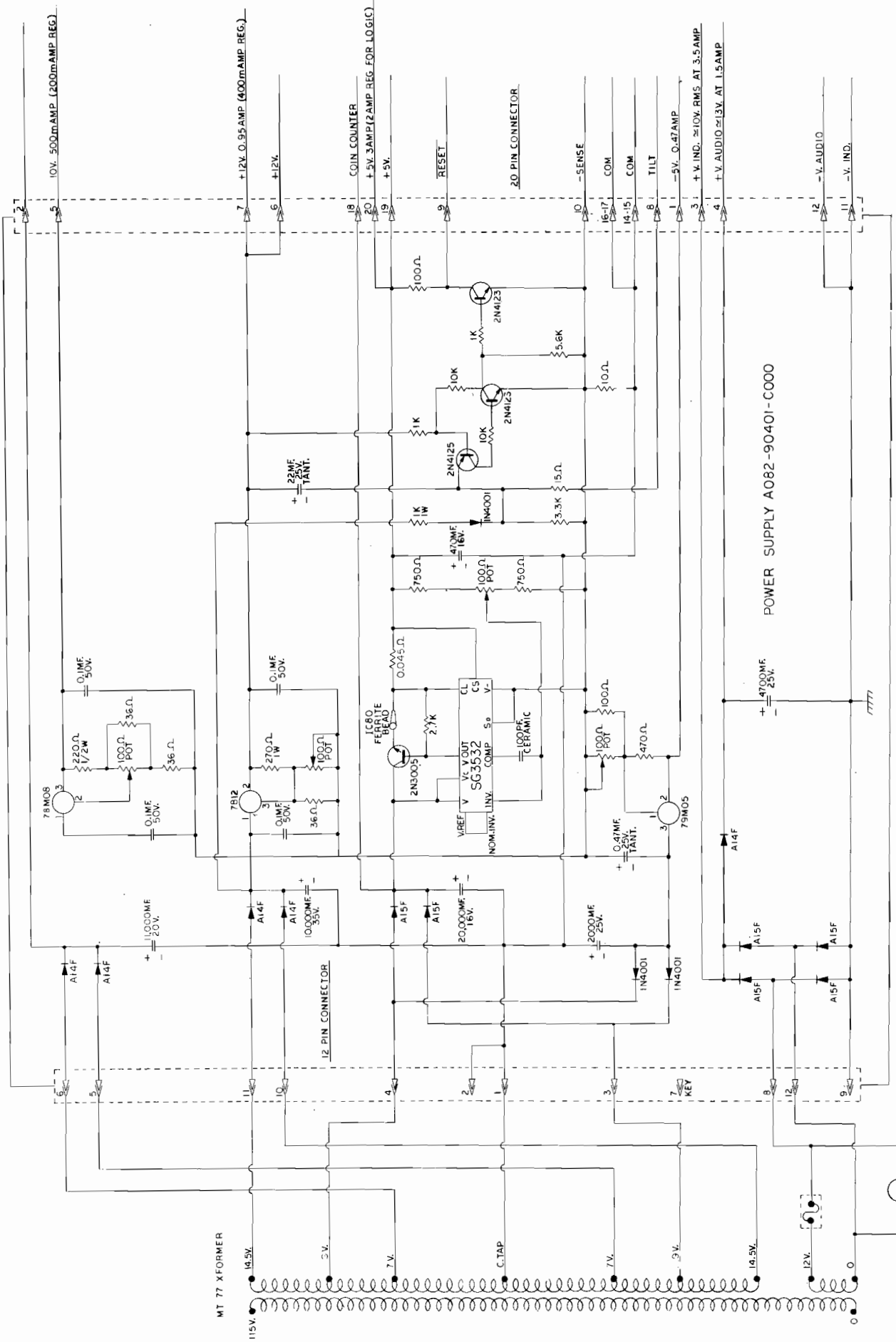
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# NOTES

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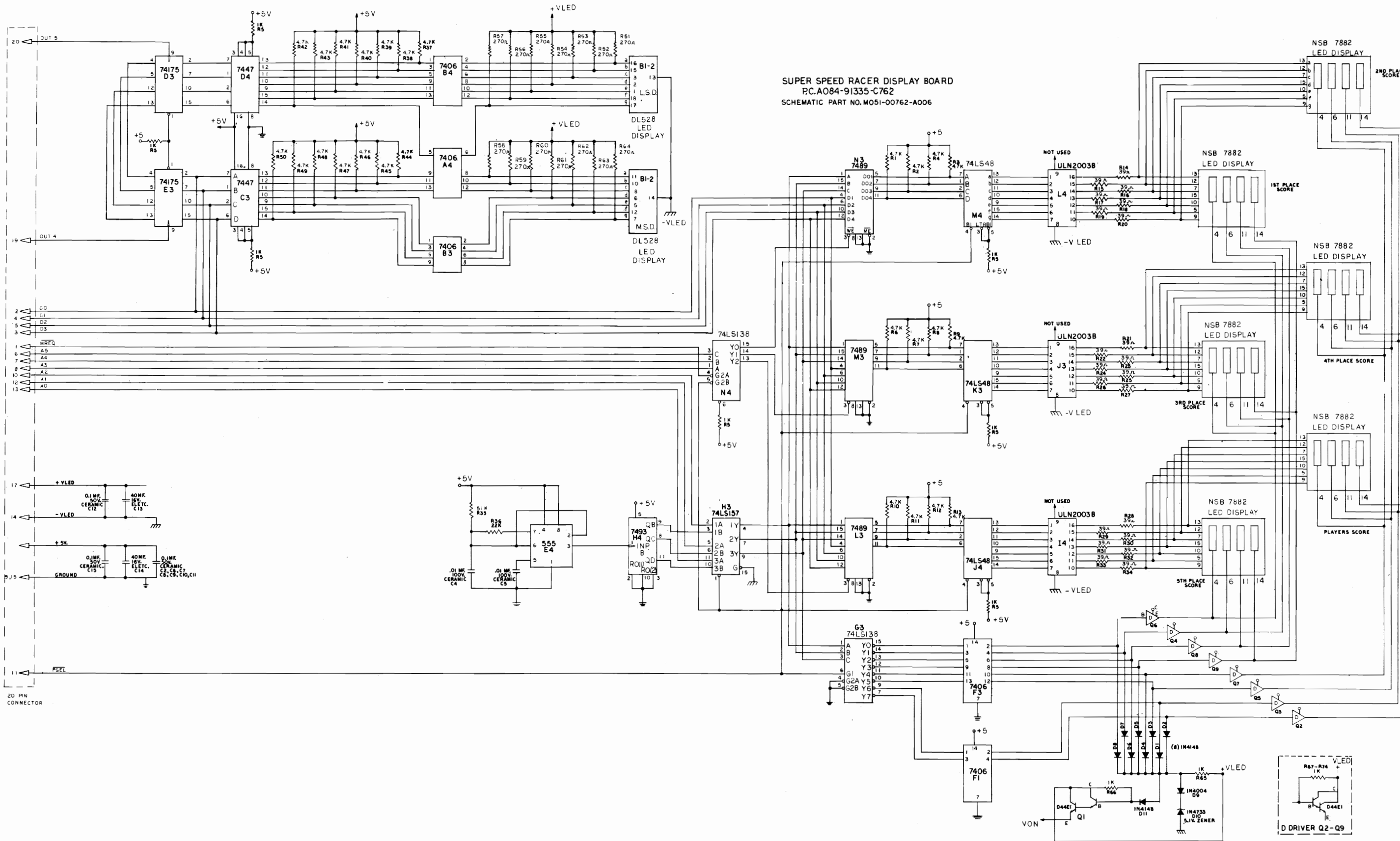




POWER SUPPLY A082-90401-C000

SCHEMATIC PART NO M051-00762-A018

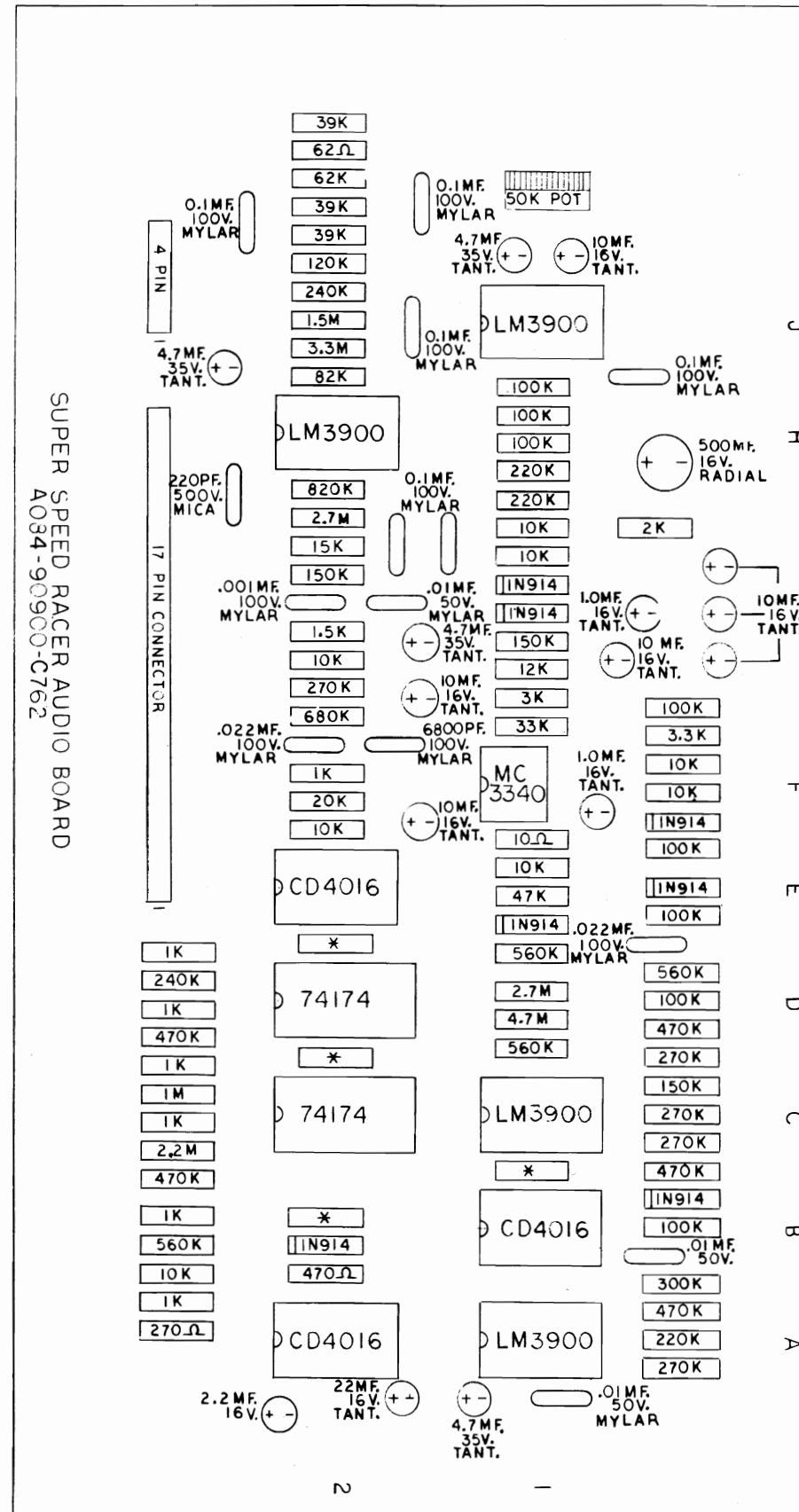






# NOTES

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\* INDICATES 0.1MF. 50V. AXIAL LEAD CERAMIC CAP.

COMPONENT LAYOUT PART NO. M051-00762-A004



## SUPER SPEED RACE

### Game Logic A084-90704-C762

Chip Number	Function
7400	Quad 2 input nand
7402	Quad 2 input nor
7404	Hex inverter
7406	Buffer (inverting)
7407	Buffer
7408	Quad 2 input and
7410	Triple 3 input nand
7420	Dual 4 input nand
7421	Dual 4 input and
7425	Dual 4 input nor with strobe
7430	8 input nand
7432	Quad 2 input or
7474	Dual "D" flip-flop
7486	Quad 2 input exclusive or
7427	Triple 3 input nor
74107	Dual "JK" flip-flop
74154	4 line to 16 line decoder
74157	Quad 2 line to 1 line selector
74161	4 bit counter
74174	Hex "D" flip-flop
74175	Quad "D" flip-flop
74191	Up-down counter
74367	Hex Bus Driver
74368	Hex Bus Driver (inverting)
TIP110	NPN transistor
14.318	Crystal
2716	16K Prom

Note: LS chips should be replaced with LS chips only.

## SUPER SPEED RACE

### Audio Board A084-90900-C762

Chip Number	Function
LM3900	Quad op. amp.
4016	Quad switch
MC3340	Attenuator
74174	Hex "D" flip-flop

## SUPER SPEED RACE

### Display Board A084-91335-C762

Chip Number	Function
7406	Buffer (inverting)
7447	BCD to 7 segment decoder
7448	BCD to 7 segment decoder
7489	64 bit Ram
7493	4 bit counter
74LS138	3 to 8 line decoder
74LS157	Quad multiplexer
74175	Quad "D" flip-flop
555	Timer
ULN2003B	Transistor driver pack
DL528	LED display (time)
NSB7882	LED display (score)
D44E1	NPN transistor

### Z80 COMPACT MOTHER BOARD

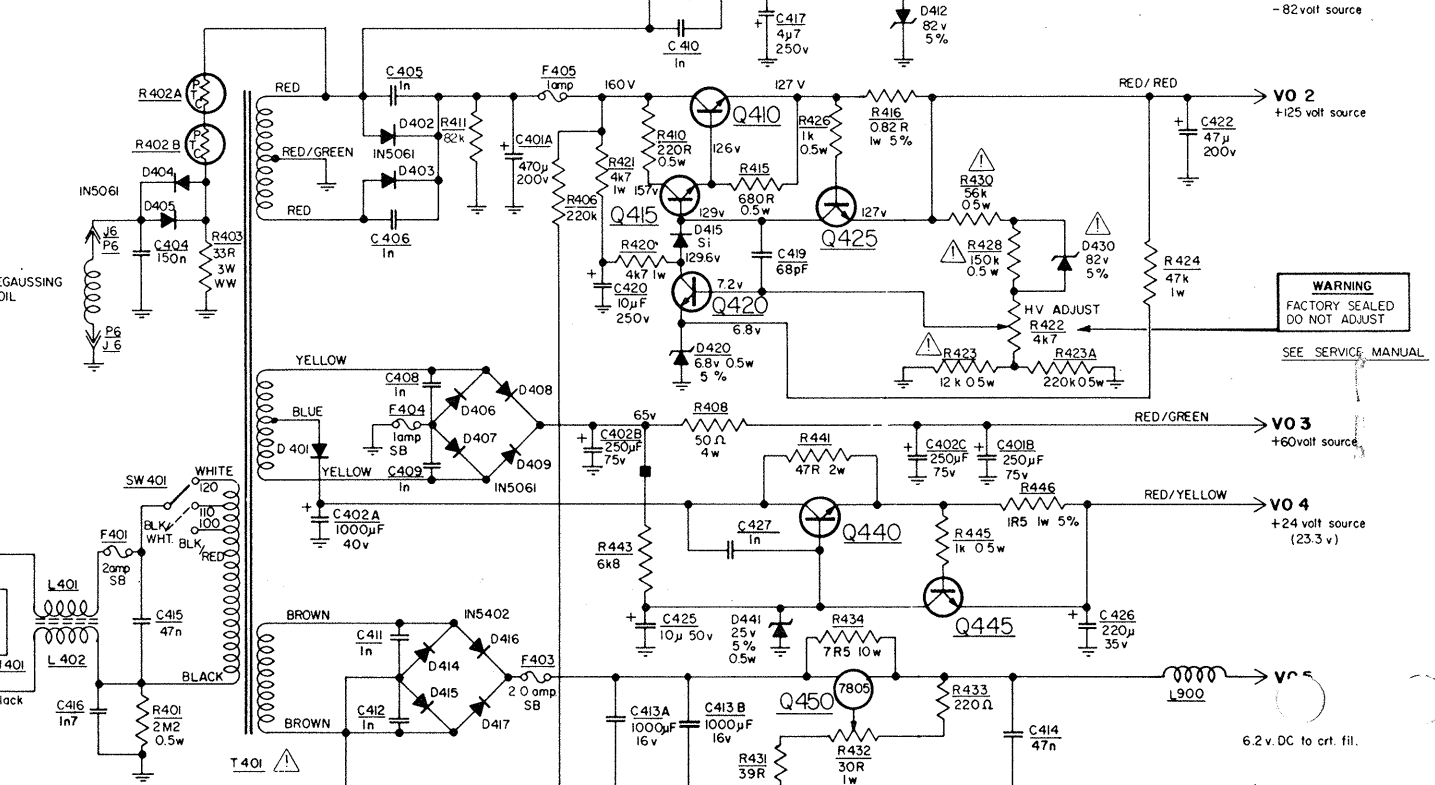
Chip Number	Function
7400	Quad 2 input Nand gate
7404	Hex inverter
7427	Triple 3 input Nor gate
7493	4 Bit counter
74LS138	3 to 8 Line decoder
74LS139	3 to 8 Line decoder
74161	4 Bit counter
74367	Hex bus driver buffer
4006	18 Bit shift register
4030	Quad Ex. Or.
6810	128 X 8 Bit static RAM
2716	PROM 16K
9316	ROM 16K
Z80	CPU
8216	Bi-directional driver
LM339	Voltage comparitor
LM377	Amplifier
555	Timer

#### Additional Devices:

TIP 110	Transistor (NPN)
19,968	Crystal
LS	Low schottky

NOTE: When an I.C. is a low schottky, it should be replaced by a low schottky device.

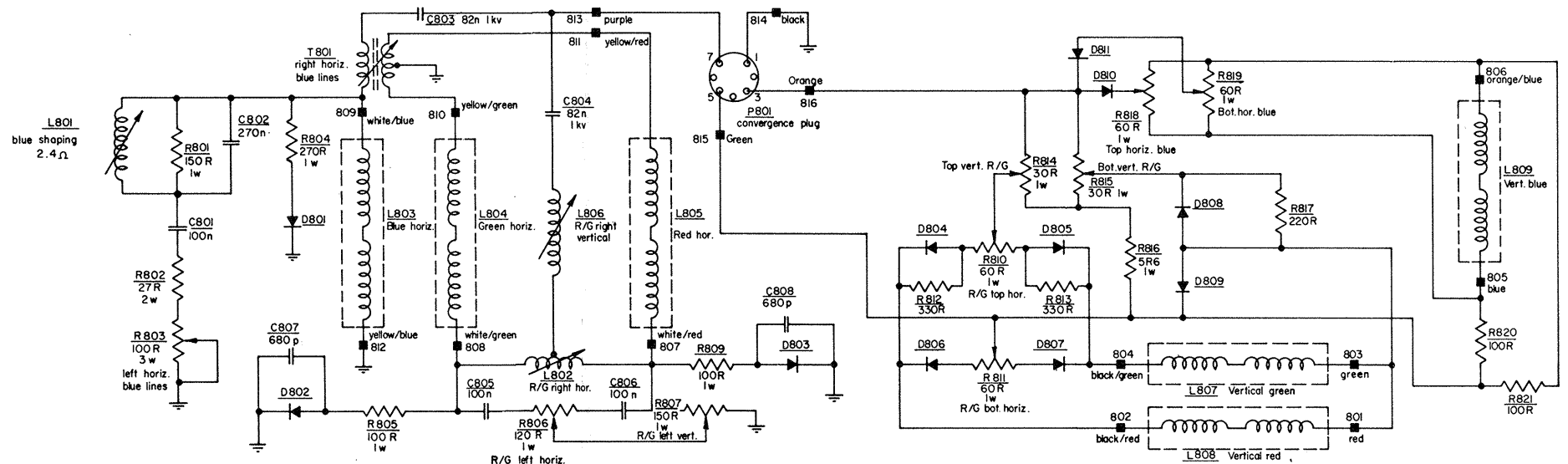
**POWER SUPPLY**



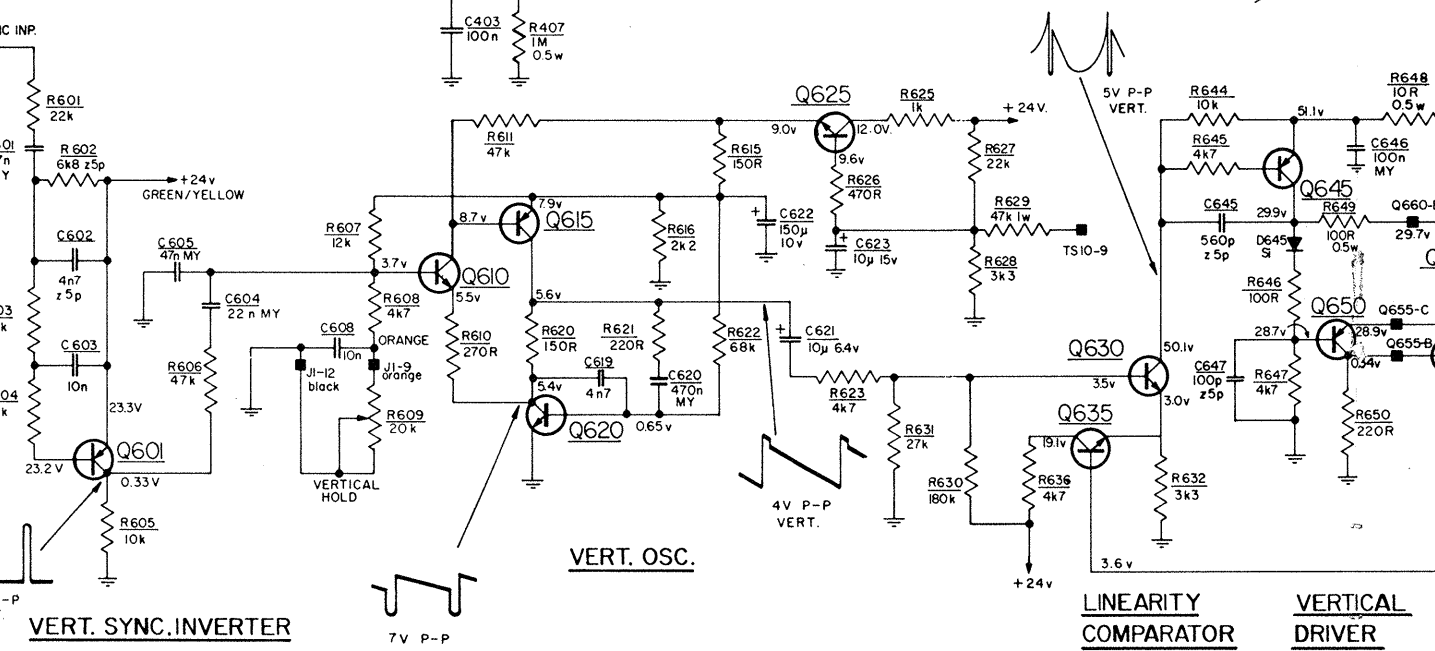
**TRANSISTORS**

Q 410	I4-60I-35
Q 415	I4-915-23
Q 420	I4-915-23
Q 425	I4-806-12
Q 440	I4-929-12
Q 445	I4-806-12
Q 450	I4-2032-01 7805

**THERMISTOR** 42-60-01 120 V 60R

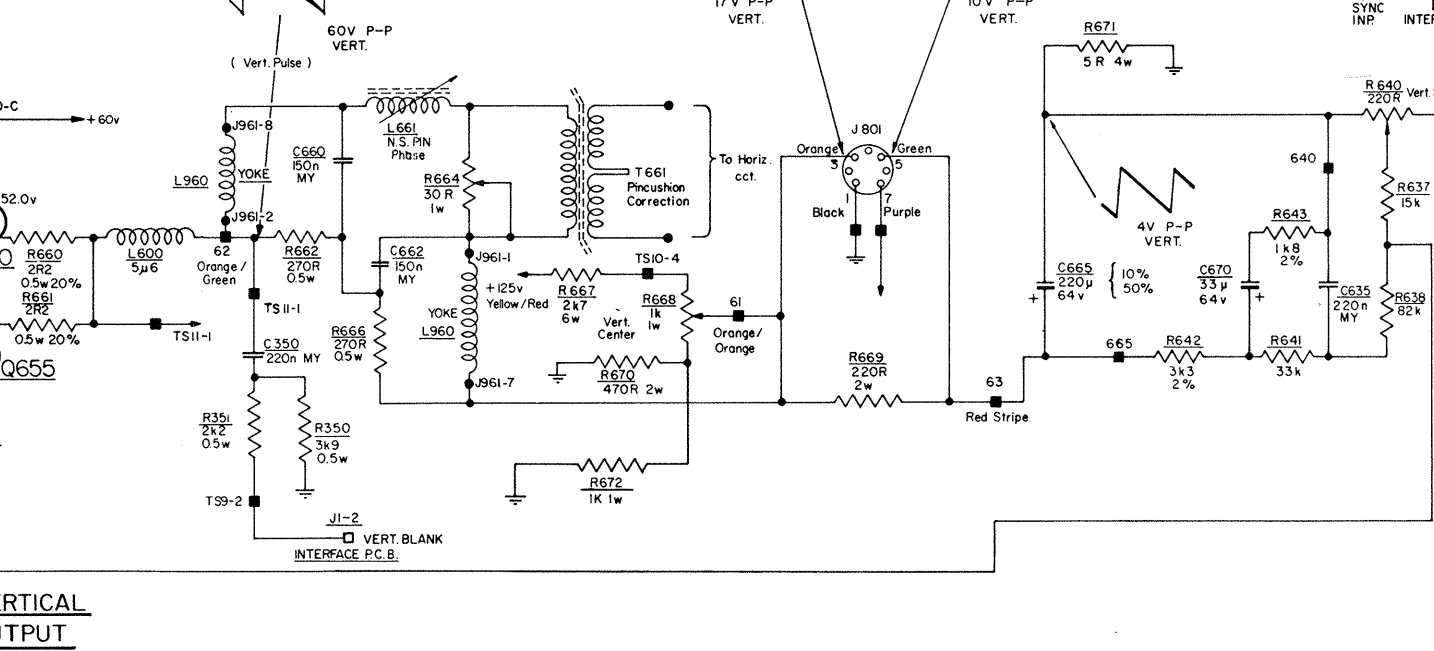


**DYNAMIC CONVERGENCE**



**VERT. OSC.**

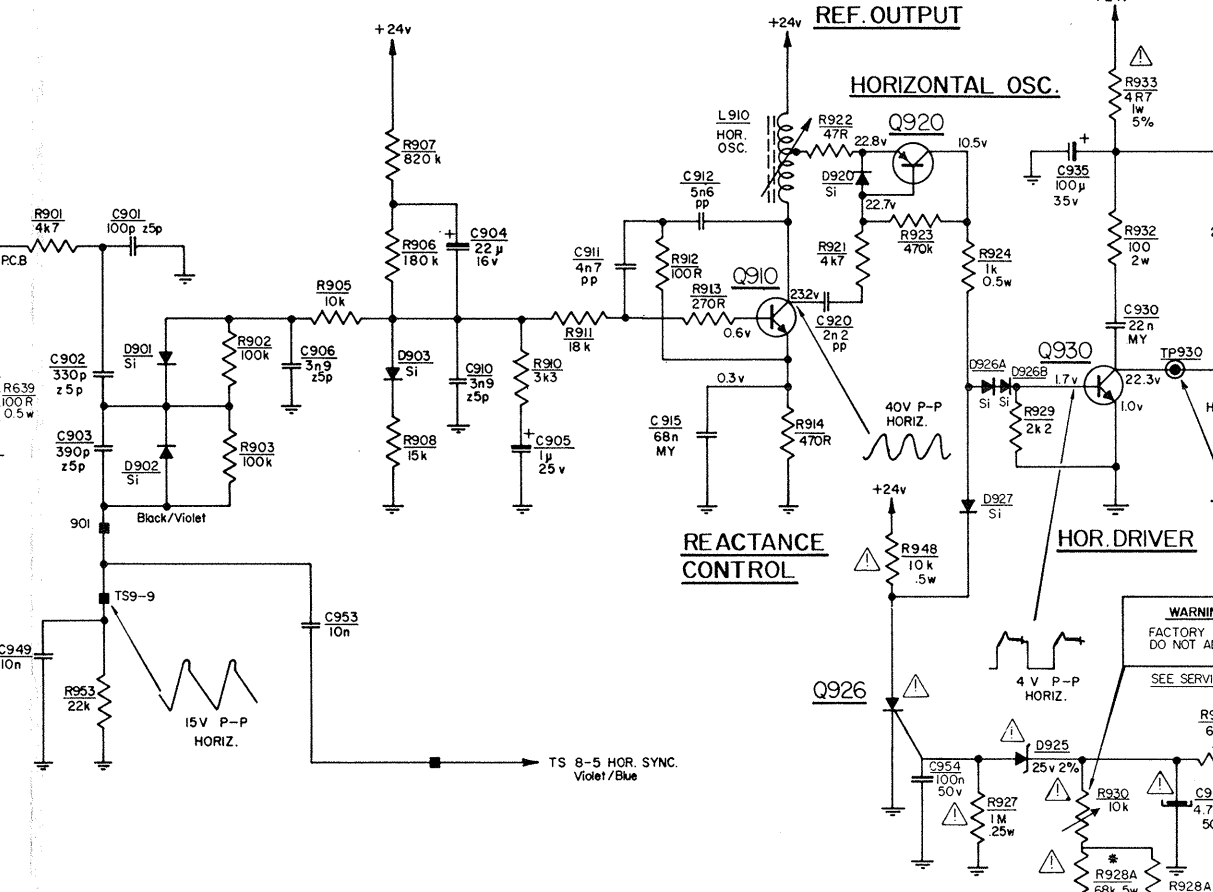
**VERT. SYNC. INVERTER**



**LINEARITY COMPARATOR**

**VERTICAL DRIVER**

**VERTICAL OUTPUT**



**REF. OUTPUT**

**HORIZONTAL OSC.**

**REACTANCE CONTROL**

**HOR. DRIVER**

WARNING: FACTORY SEALED DO NOT ADJUST. SEE SERVICE MANUAL.

CLIPPED AS REQUIRED FOR PRO3 ADJUSTMENT AT FACTORY

NOMINAL VALUE FACTORY SELECTED

DO NOT MEASURE

WARNING: FACTORY SEALED DO NOT ADJUST. SEE SERVICE MANUAL.

CLIPPED AS REQUIRED FOR PRO3 ADJUSTMENT AT FACTORY

NOMINAL VALUE FACTORY SELECTED

DO NOT MEASURE

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NOMINAL VALUE FACTORY SELECTED

DO NOT MEASURE

WARNING: FACTORY SEALED DO NOT ADJUST. SEE SERVICE MANUAL.

CLIPPED AS REQUIRED FOR PRO3 ADJUSTMENT AT FACTORY

NOMINAL VALUE FACTORY SELECTED

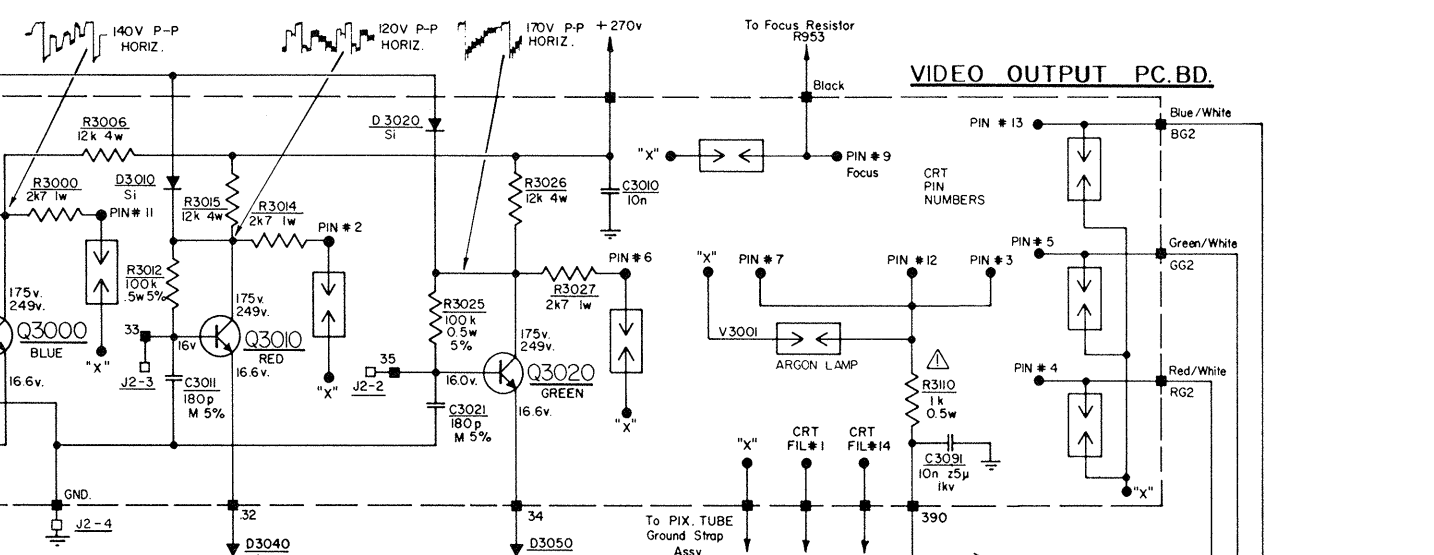
DO NOT MEASURE

WARNING: FACTORY SEALED DO NOT ADJUST. SEE SERVICE MANUAL.

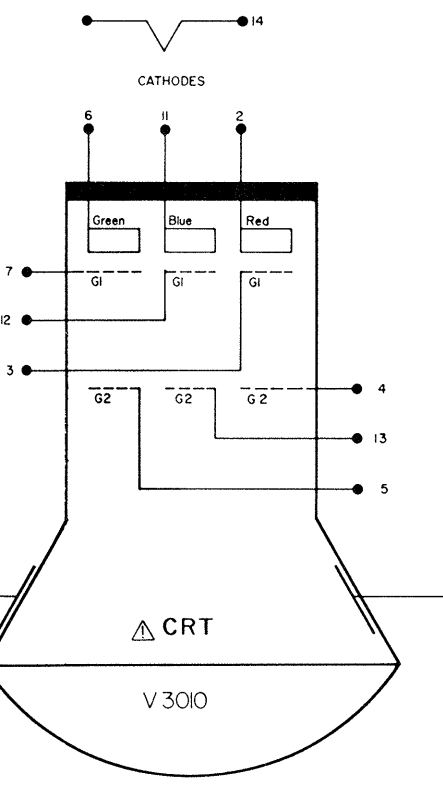
CLIPPED AS REQUIRED FOR PRO3 ADJUSTMENT AT FACTORY

NOMINAL VALUE FACTORY SELECTED

DO NOT MEASURE



**VIDEO OUTPUT PC.BD.**



**CAUTION** - FOR CONTINUED SAFETY, REPLACE THOSE COMPONENTS INDICATED BY  $\Delta$  WITH EXACT REPLACEMENT PARTS ONLY. CONSULT SERVICE MANUAL PARTS LIST "SAFETY COMPONENTS".

**GO2 CHASSIS** Issue 1 **00-4085-01**

**TRANSISTOR REFERENCE**  
SEE DRAWING NO. 00-1758-03.

**DC VOLTAGES**  
MEASURED WITH HIGH-IMPEDANCE METER AND 120 VAC LINE. ALL THE DC VOLTAGES INDICATED ARE POSITIVE  $\pm 10\%$ . A PAIR, LIKE 240V, 190V INDICATES VOLTAGES RESULTING FROM MINIMUM AND MAXIMUM CONTROL SETTINGS.

**CAUTION** - USE ONLY H.V. METER OR PROBE IN HORIZONTAL OUTPUT CIRCUIT.

**WAVEFORMS**  
VOLTAGE GIVEN IS PEAK-PEAK USING A WIDE-BAND OSCILLOSCOPE WITH HIGH IMPEDANCE PROBE. CONTROLS ARE SET FOR AVERAGE COLOR PICTURE VIEWING. OSCILLOSCOPE SWEEP RATES USED ARE 30 Hz (VERT.) OR 78.75 Hz (HORIZ.).

**LEGEND**  
RESISTORS - RESISTANCE IN OHMS, K (KILO-OHMS), OR M (MEG-OHMS),  $\frac{1}{4}$  WATT, 5% TOLERANCE UNLESS OTHERWISE NOTED.  
CAPACITORS - CAPACITY IN p (PICOFARADS), n (NANO-FARADS) OR  $\mu$  (MICRO-FARADS), DCW AND TOLERANCE NOTED WHERE CRITICAL.

**SPECIAL CAPACITORS ARE IDENTIFIED AS FOLLOWS:**  
P.S. POLYSTYRENE  
P.P. POLYPROPYLENE  
M.Y. METALIZED MYLAR  
M MICA  
NPO TEMPERATURE COEFFICIENT = NEGATIVE POSITIVE ZERO  
N150 TEMPERATURE COEFFICIENT = NEGATIVE 150 PPM/°C

**INDUCTORS** - INDUCTANCE IN  $\mu$ H (MICRO HENRIES).

**ZENER DIODES** - ZENER VOLTAGE IN VOLTS. ELECTROLYTICS OR TANTALUMS  $\mu$  - CAPACITY IN  $\mu$ F DCW IN VOLTS.

**MULTIPLIER NOTATION**  
MULTIPLIER OR SUB-MULTIPLE PREFIX SYMBOL  
 $10^0$  MEGA M  
 $10^3$  KILO k  
 $10^6$  MILLI m  
 $10^{-6}$  MICRO  $\mu$   
 $10^{-9}$  NANO n  
 $10^{-12}$  PICO p

**EXAMPLE FOR CAPACITORS**  
 $1n = 1nF$   
 $10^4 = 10^4 FARAD$   
 $.001 = .001 \mu F$   
 $1000 = 1000pF$

**NEW NOTATION**  
 $\mu = \mu F$   
 $n = nF$   
 $p = pF$

**OLD NOTATION**  
 $\mu F = \mu F$   
 $k = k$   
 $mmf = mmf$

**IMPORTANT SAFETY NOTICE**  
 Components identified by the shaded areas in the parts list and the  $\Delta$  symbol on the schematic have special characteristics for the shaded areas. These critical safety components are designed to "fail safe" under abnormal conditions. The failure of any one component in other components which could lead to smoke or fire or other hazards. Because of this, components are selected and tested under actual fault conditions to ensure safe operation. Replacement with anything other than the identical Electrohome part may present a hazard.

Symbol	Description	Part Number	Remarks
C350	220nF 2% 200V Capacitor	48-172242-62	
R350	3K9 5W 10% Resistor	40-223921-01	
R351	2K2 5W 10% Resistor	40-222221-01	
R352	Snap Twist Lug Control 100K	41-600227-48	kine bias
R391	100KR 5W 5% Res.	40-221045-01	
C401	470uF 250V and 250uF 175V Elec.	44-000202-32	
C402	250/250/1000uF-75/75/40V Elec.	44-000203-20	
C403	100nF 10% 40V Capacitor	48-171044-02	
C404	150nF 10% 400V Cap.	48-171544-62	
C405	1nF -20% +80% 50V	46-310268-50	
C406	1nF -20% +80% 50V	46-310268-50	
C408	1nF -20% +80% 50V	46-310268-50	
C409	1nF -20% +80% 50V	46-310268-50	
C410	1nF -20% +80% 50V	46-310268-50	
C411	1nF 10% 100V Cap.	48-171021-62	
C412	10% 100V Cap.	44-310203-07	
C413A	1000uF 15.0 - 16.0V Elect.	44-310203-07	
C414	47nF 10% 200V Cap.	48-174732-62	
C415	Cap. across the line 47nF N.A.	48-000265-01	
C416	4.7nF 20% UL and CSA App. Cap.	46-204722-43	
C417	4.7uF 250V Elect.	44-347511-06	
C419	68pF 10% 1750 500V Cap.	46-310268-50	
C420	10uF 250V Capacitor	44-310006-03	
C425	10uF 50V Elect.	44-310006-03	
C426	22uF 35V Electro.	44-322105-06	
C427	1.0nF ZSU 0+100% 500V Cap.	46-310277-01	Foil Side B to C Q440
C428	57uF 250V Electrolytic	44-147015-23	
D401	Rectifier 1A 600V	28-000022-27	GI IN5061 GP
D402	Rectifier 1A 600V	28-000022-27	GI IN5061 GP
D403	Rectifier 1A 600V	28-000022-27	GI IN5061 GP
D404	Rectifier 1A 600V	28-000022-27	GI IN5061 GP
D405	Rectifier 1A 600V	28-000022-27	GI IN5061 GP
D406	Rectifier 1A 600V	28-000022-27	GI IN5061 GP
D407	Rectifier 1A 600V	28-000022-27	GI IN5061 GP
D408	Rectifier 1A 600V	28-000022-27	GI IN5061 GP
D409	Rectifier 1A 600V	28-000022-27	GI IN5061 GP
D410	Rectifier 1A 600V	28-000022-27	GI IN5061 GP
D412	Zener Diode 8.2V 5% 5W	14-000515-42	MOT IN5253B
D414	Rectifier 3A 200V	28-000022-26	ITT IN5402
D415	Rectifier 3A 200V	28-000022-26	ITT IN5402
D416	Rectifier 3A 200V	28-000022-26	ITT IN5402
D417	Rectifier 3A 200V	28-000022-26	ITT IN5402
D420	Zener Diode 8.2V 5W 5%	14-000515-50	MOT IN5253B
D421	Zener Diode 25V 5W 5%	14-000515-28	MOT IN5253B
F401	2A 125V slow blow fuse	27-000005-18	
F403	2A 125V slow blow fuse	27-000005-18	
F404	1A slow blow fuse	27-000005-02	
F408	Quick Acting Fuse 1A 250V	27-000014-09	
L400	Choke 12UH	21-001410-02	
L401-2	Dual Line Choke	21-001410-35	
Q410	Power Transtr. (TO-3 Case) 2A 100W	14-000601-35	DELCO DTS 801
Q415	Plastic Power Transtr. NPN 40W	14-000915-23	TI TIP 48
Q420	Small Sig. Tran. 800MW 60V	14-000806-12	TI TCS 100
Q425	Small Sig. Tran. 800MW 60V	14-000806-12	TI TCS 100
Q445	5V Regulator	14-000932-01	Motorola MC 7805
R401	2M2 5W 10% Resistor	40-222513-03	
R402A	Thermistor 120 60R	42-000060-01	Philips 2322-662-93003
R402B	Thermistor 120 60R	42-000060-01	Philips 2322-662-93003
R403	4W 33R 10% WW Res.	42-113301-03	
R405	27K 5W 5% Res.	40-222735-01	
R406	22K 5W 5% Res.	40-222735-01	
R407	1MR 5W 5% Res.	40-221055-01	
R408	4W 50R 10% WW Res.	42-115001-03	
R409	22R 5W 5% Res.	40-222151-01	
R411	82K 5W 5% Resistor	40-228235-01	
R415	68R 5W 5% Res.	40-228151-01	
R416	10R 5W 10% Resistor	40-228285-98	
R420	4K7 1W 5% Resistor	40-242725-01	
R421	4K7 1W 5% Resistor	40-242725-01	
R422	Preset Control 4K7	41-000192-24	

Symbol	Description	Part Number	Remarks
R423	12K 5W 5% Resistor	40-222451-01	
R424	22K 5W 5% Resistor	40-222451-01	
R425	47K 1W 5% Resistor	40-242735-01	
R426	150K 5W 5% Resistor	40-221545-01	
R430	56K 5W 5% Resistor	40-225635-01	
R431	39R 5W 5% Resistor	40-223905-01	
R432	Linear Taper 30R	41-000281-02	
R433	220R 5W 5% Resistor	40-222215-01	
R434	7.5R 10W Resistor	42-147571-01	
R441	47R 2W Resistor	40-424705-01	
R443	6.8 5W 5% Resistor	40-126825-31	
R445	1K 5W 10% Resistor	40-221021-31	
R446	1R5 2W 10% Resistor	40-621198-18	
SW401	Slider Switch 3PST	46-000002-40	
T401	Power Transformer	24-010198-01	
C801	47nF 10% 200V Cap.	48-174732-22	
C802	4.7nF ZSP 10% 500V Cap.	46-347213-60	
C803	10nF ZSP 10% 500V Cap.	46-310313-02	
C804	22nF 10% 200V Cap.	48-172232-22	
C805	47nF 10% 200V Cap.	48-174732-22	
C806	10nF ZSP 2V + 80% 50V Cap.	46-310368-60	
C819	4.7nF ZSP 10% 50V Cap.	46-347213-60	Foil Side Q620C8
C820	470nF 10% 200V Cap.	48-174742-42	
C821	10uF 10V Elect.	44-310002-01	
C822	150uF 10V Elect.	44-315102-03	
C823	10uF 15.0/16.0V Elect.	44-310003-02	
C824	220nF 10% 200V Cap.	48-172242-22	
C845	500pF ZSP 10% 500V Cap.	46-356113-06	
C846	100nF 10% 200V Cap.	48-171042-22	
C847	100pF ZSP 10% 500V Cap.	46-310113-02	
C860	150nF 10% 200V Cap.	48-171542-22	
C862	150nF 10% 200V Cap.	48-171542-22	
C865	22uF 60.65V Electro. Cap.	44-000190-01	
C870	33uF 75V Elect.	44-333007-05	
D845	Diode Signal ST Taped	14-000514-64	TI IN4148 IN914
L800	RF Choke 5.6 UH	21-001400-03	
L801	Pincushion Phase Coil	21-001099-02	
O801	Small Sig. Trans. 200MW 30V	14-000803-12	TI 2B14P
O810	Small Sig. Trans. 300MW 80V	14-000806-32	MOT MPS A06
O815	Small Sig. Trans. 300MW 80V	14-000807-12	MOT MPS U56
O820	Small Sig. Trans. 360MW 60V	14-000802-12	TI TIS 98
O825	Small Sig. Trans. 300MW 80V	14-000806-12	MOT MPS A06
O812	Small Sig. Trans. 310MW 100V	14-000812-12	TI TIS100
O835	Small Sig. Trans. 360MW 60V	14-000802-12	TI TIS98
O845	Small Sig. Trans. 300MW 80V	14-000807-12	MOT MPS U56
O850	Small Sig. Trans. 300MW 80V	14-000807-12	MOT MPS U56
O855	Plastic P Trans. 35W 70V	14-000905-23	Vert. TI TIP 48
O860	Plastic P Trans. 35W 70V	14-000905-23	Vert. TI TIP 48
R801	22K 25W 5% Resistor	40-122235-31	
R802	6K8 25W 10% Resistor	40-126821-31	
R803	47K 25W 10% Resistor	40-124731-31	
R804	10K 25W 10% Resistor	40-121031-31	
R805	10K 25W 10% Resistor	40-121031-31	
R806	47K 25W 10% Resistor	40-124731-31	
R807	12K 25W 10% Resistor	40-121235-31	
R808	4K7 25W 10% Resistor	40-124725-31	
R809	Control SS SE 20K	41-000309-59	Vertical Hold
R810	270R 25W 10% Resistor	40-122711-31	
R811	47K 25W 10% Resistor	40-124731-31	
R815	150R 25W 10% Resistor	40-121511-31	
R816	2K2 25W 10% Resistor	40-122231-31	
R817	150R 25W 10% Resistor	40-121511-31	
R818	2K2 25W 10% Resistor	40-122231-31	
R819	47K 25W 10% Resistor	40-124731-31	
R820	100R 25W 5% Resistor	40-124731-31	
R821	10K 25W 5% Resistor	40-121031-31	
T801	Coil RT Horizontal Lines Blue	21-001093-01	
C901	100pF ZSP 10% 500V Cap.	46-310113-02	
C902	330pF ZSP 10% 500V Cap.	46-333113-02	
C903	390pF ZSP 10% 500V Cap.	46-339113-06	
C904	22uF 15.0/16.0 Elect.	44-322003-02	
C905	1uF 35V Elect.	44-310505-01	
C906	3.9nF ZSP 10% 500V Cap.	46-339213-19	
C910	3.9nF ZSP 10% 500V Cap.	46-339213-19	
C911	4.7nF 10% Poly Cap.	48-304721-01	
C912	5.6nF 10% Poly Cap.	48-305621-01	
C915	68nF 200V 10% mylar Cap.	48-176822-12	
C920	2.2nF 10% Poly Cap.	48-302321-01	
C930	22nF 10% 200V Cap.	48-172232-22	
C935	100uF 35V Elect.	44-310105-05	
C939	47pF 10% ZSP 6000V Cap.	46-547016-90	
C940	4.7uF 50V Elect.	44-310505-01	
C941	10nF 20% 200V ZSU Cap.	46-510322-77	
C942	Fail Safe Ext. Pulse 12nF 1600V	49-000024-01	
C943	XTRM Pulse Cap 22nF 10% 600V	49-000019-19	
C945	56pF ZSP 10% 500V Cap.	46-356113-01	
C946	270pF ZSP 10% 500V Cap.	46-327113-01	
C949	10nF ZSP 10% 500V Cap.	46-310313-22	
C950	470pF ZSP 200V N1500 Cap.	46-547283-83	
C951	470pF ZSP 200V N1500 Cap.	46-547283-83	
C953	10nF ZSP 10% 500V Cap.	46-310313-22	
C954	100nF ZSP 10% 500V Cap.	46-310313-22	
C961	2.2uF 20% 200V Cap.	48-172252-01	
C962	470nF 400V 10% HC Cap.	49-000019-24	
C963	150R 25W ZSP 1000V Cap.	46-512323-30	
C971	22uF 350V Elect.	44-122017-18	
D901	Diode Signal S1 Taped	14-000514-70	TI UG2367
D902	Diode Signal S1 Taped	14-000514-70	TI UG2367
D903	Diode Signal S1 Taped	14-000514-64	TI IN4148 - IN914
D920	Diode Signal S1 Taped	14-000514-64	TI IN4148 - IN914
D925	Zener Diode 25V 2%	14-000515-43	
D926A	Diode Signal	14-000514-64	TI IN4148 - IN914
D926B	Diode Signal	14-000514-64	TI IN4148 - IN914

Symbol	Description	Part Number	Remarks
R662	270R 5W 10% Resistor	40-222711-13	
R664	Linear Taper 30R	41-000281-02	
R666	270R 5W 10% Resistor	40-222711-13	
R667	6W 2K 10% GP Resistor	42-122723-01	
R668	Wirewound control 1K	41-000283-03	Vertical center
R669	220R 2W 10% Resistor	40-622211-11	
R670	470R 2W 10% Resistor	40-624711-01	
R671	5W 5R 10% WW Resistor	42-115011-01	
R672	1K 1W 10% Resistor	40-421071-11	
T661	Combination Transducer	24-140008-01	Pincushion Transformer
C801	1000F 10% 200V Cap.	48-171042-22	
C802	270F 10% 200V Cap.	48-172742-42	
C803	82nF 10% 600V Cap.	49-000019-13	
C804	82nF 10% 600V Cap.	49-000019-13	
C805	100F 10% 200V Cap.	48-171042-22	
C806	100F 10% 200V Cap.	48-171042-22	
C807	680pF ZSP 10% 500V Cap.	46-368113-06	
C808	680pF ZSP 10% 500V Cap.	46-368113-06	
D801	Diode Signal	14-000514-64	TI IN4148 - IN914
D802	Diode Signal	14-000514-64	TI IN4148 - IN914
D803	Diode Signal	14-000514-64	TI IN4148 - IN914
D804	Diode Signal	14-000514-64	TI IN4148 - IN914
D805	Diode Signal	14-000514-64	TI IN4148 - IN914
D806	Diode Signal	14-000514-64	TI IN4148 - IN914
D807	Diode Signal	14-000514-64	TI IN4148 - IN914
D808	Diode Signal	14-000514-70	TI UG 2367
D809	Diode Signal	14-000514-70	TI UG 2367
D810	Diode Signal	14-000514-64	TI IN4148 - IN914
D811	Diode Signal	1	