DATA EAST

Celebrating our 5th Anniversary
in Pinball

STAR TREK®

25th Anniversary Pinball

"Live long and prosper."

Melrose Park, IL 60160
708-345-7700
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1-800-KICKERS

DATA EAST PINBALL®

Skill Shot (View Screen)

Shoot Warships (located in the display) with flashing Photon Torpedo Launch button (located at cabinet front).

Multiball

Shoot flashing crystals (1) to Lite the primary Crystal. Shoot the lit Primary Crystal (3) to open the Transporter Ramp (2). Shoot the ball under Transporter Ramp (2) to beam & Transport crew (Located in Back box) Auto 3 Ball begins.
Ramps in multiball collect 500K.
Multiball scores 1 Million Points.

Jackpot

In Multiball, shoot the moving Primary Crystal target (3) to re-open the Transporter Ramp (2). Shoot under the Ramp (2) to collect the Jackpot.
Additional Jackpots require completing the Left & Right Ramps and then shooting the Primary Crystal to open the Transporter.
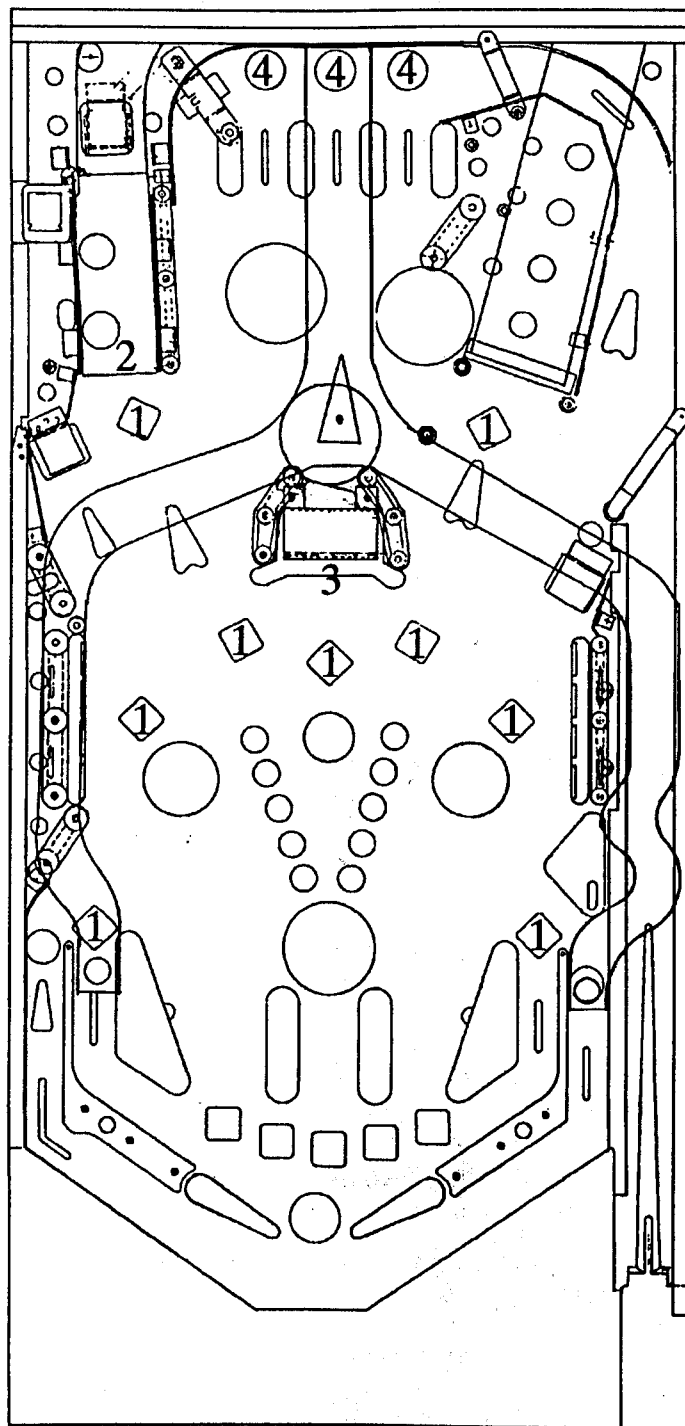Jackpot Sequence:
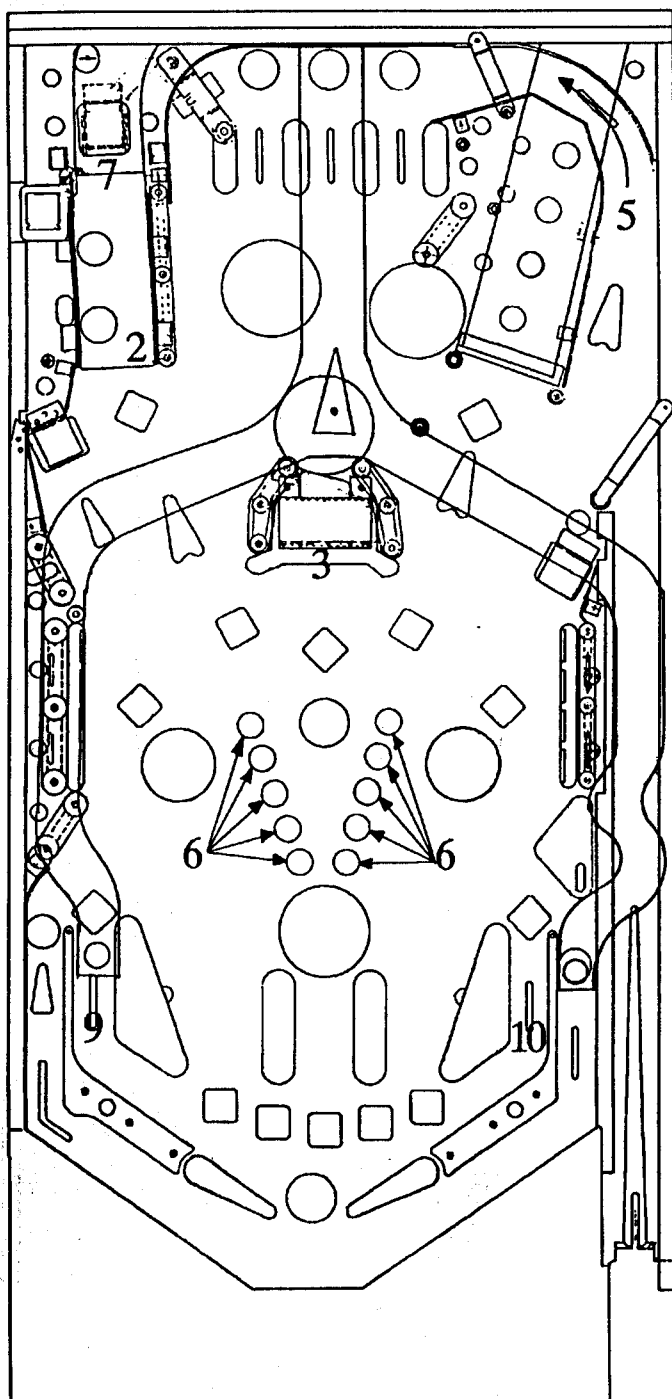5, 10,15, 20, 25 Million
50 Million -Super Jackpot &
100 Million Super Duper Jackpot.

Multiplier

Completing the Top 3 Lanes (4) advances the Multiplier.
The Scanner also lites the " X " Values.

Laser Kick

Shoot Lanes (5) to re-lite Laser Kick (6). The Scanner will also randomly relite the Laser Kick

Primary Crystal

Shoot the Primary Crystal (Moving Target) (3) to advance phasers for Unlimited Millions. Shoot the Primary Crystal to open the Transporter for Multiball & Jackpot.

Unlimited Millions

Shoot Left and Right Ramps (7) & (8) or the Primary Crystal to advance phasers (6). When phasers (6) are complete, Target (3) is lit for Unlimited Millions (Timed Event).

Video Mode

Video mode starts with the scanner selection of Video Mode.
The player has 12 seconds, 10 ships and 10 shots.
Each ship, shot in Video Mode is worth 1,000,000 points. Shooting all 10 ships awards a 5 Million point Sharp Shooter Bonus.

Ice Planet

During the player's 2nd or 3rd ball the Random Ice planet will begin. Light (11) or (12) will illuminate. Based upon which lamp is lit, complete the associated remaining Drop targets (13) or (14) to collect an Extra Ball for (11) or 10 Million points (12).

Scanners

Shoot Left hole (15) to lite Scanner value. Shoot Right hole to collect value.

Special

The Special is lit randomly from the Scanner. Shoot the open Transporter Ramp to collect.
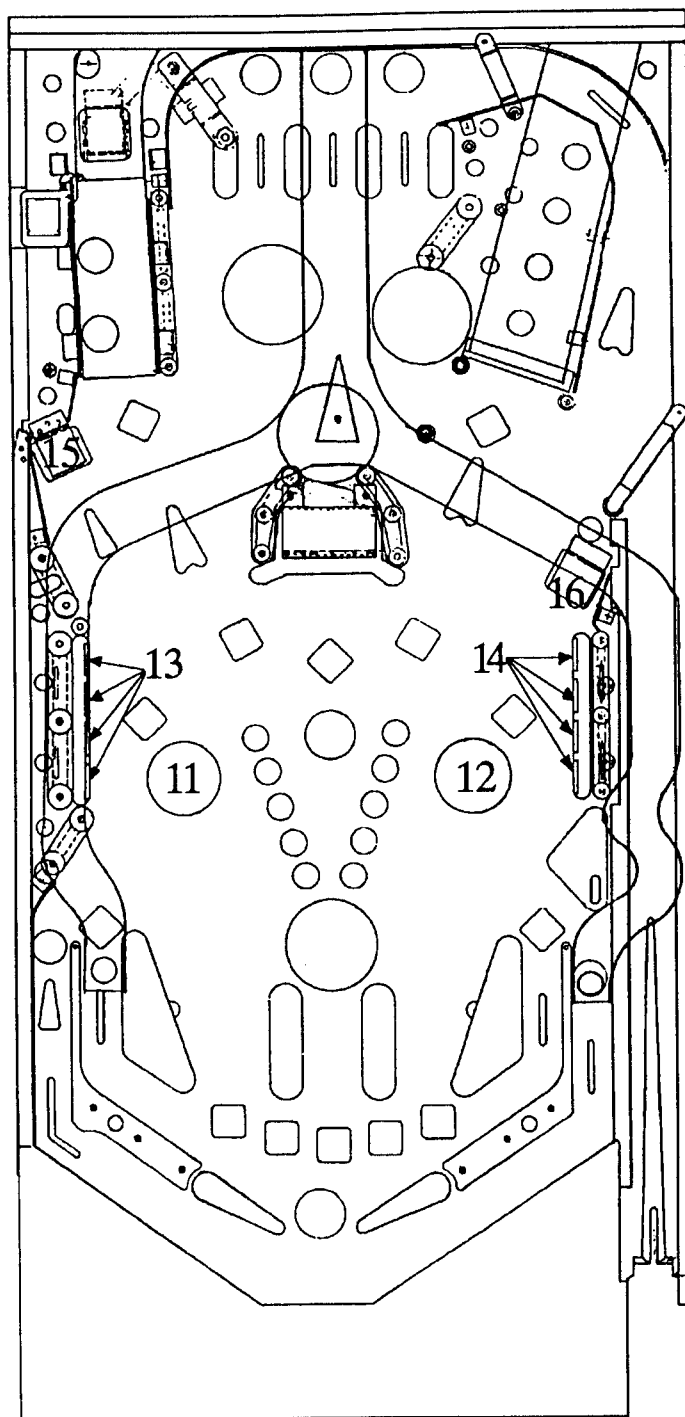
Victory Laps

After collecting Replay shoot the Right and Left Ramps for the next 15 Seconds to earn 1 Million points for each completed Ramp shot. Each successive Ramp completion also advances the Ramp Value by 500K on the next Ramp shot.

Bonus

5,000 points per switch.
500,000 points maximum.
5 Million points Total Bonus per ball utilizing the Bonus multiplier.

Switches are configured in an 8 x 8 matrix of columns (switch drives) and rows (switch returns) with up to 64 switches possible. The switch tests include three parts; switch test, active switches, and bad switches. Row and column wire colors are indicated in each test using corresponding resistor color code numbers.

Switch Test

From the Display Manual test, operate STEP push-button switch. Player 1 and 2 displays indicate SWITCH TEST. Close each switch and observe the displays. The Player 1 and 2 displays will indicate the switch name, the Player 3 display indicates the row and column wire colors, and the Player 4 display indicates the switch number. When a switch is released, the name and number disappear until another switch is closed or the test is exited.

Active Switches

Operate the STEP push-button switch from the Switch Test. Player 1 and 2 Displays indicate ACTIVE SWITCHES. If any switches are stuck closed (or made from the presence of a ball), the Player 1 and 2 displays sequence through switch names, the Player 3 display indicates the row and column wire colors, and the switch numbers are indicated in the Player 4 display. This cycle continues until all switches are cleared or until the STEP push-button switch is depressed.

SWITCH MATRIX CHART

COLUMN / ROW	1 Q55 GRN-BRN CN8-1	2 Q54 GRN-RED CN8-2	3 Q53 GRN-ORN CN8-3	4 Q52 GRN-YEL CN8-4	5 Q51 GRN-BLK CN8-5	6 Q50 GRN-BLU CN8-7	7 Q49 GRN-VIO CN8-8	8 Q48 GRN-GRY CN8-9
1 WHT-BRN CN10-9	Plumb Tilt 1	Not Used 9	Left Outlane 17	Moving Target 25	Left Turbo Bumper 33	Left Top Lane 41	Right Outlane 49	Not Used 57
2 WHT-RED CN10-8	Not Used 2	Outhole 10	Left Return 18	Right Standup Tgt. 26	Center Turbo Bumper 34	Center Top Lane 42	Right Return 50	Not Used 58
3 WHT-ORN CN10-7	Credit Button 3	Trough #1 Left 11	Left Slingshot 19	Lower Left Hole 27	Right Turbo Bumper 35	Right Top Lane 43	Right Slingshot 51	Not Used 59
4 WHT-YEL CN10-6	Right Coin 4	Trough #2 Center 12	Left Drop Tar. 1 Bot. 20	Upper Left Hole Top 28	Enter Left Ramp 36	Right Drop Tar. 1 Top 44	Upper Left Hole Bottom 52	Not Used 60
5 WHT-GRN CN10-5	Center Coin 5	Trough #3 Right 13	Left Drop Tar. 2 21	Moving Target Hole 29	Exit Center Ramp 37	Right Drop Tar. 2 45	Not Used 53	Not Used 61
6 WHT-BLU CN10-3	Left Coin 6	Shooter Lane 14	Left Drop Tar. 3 22	Ball Launch Button 30	Enter Right Ramp 38	Right Drop Tar. 3 46	Not Used 54	Not Used 62
7 WHT-VIO CN10-2	Slam Tilt 7	Left EOS 15	Left Drop Tar. 4 Top 23	Transp. Crew Visible 31	Up/Down Ramp Up 39	Right Drop Tar. 4 Bot. 47	Not Used 55	Not Used 63
8 WHT-GRY CN10-1	Not Used 8	Right EOS 16	Left Standup Tgt. 24	Transp. Crew Gone 32	VUK 40	Top Right Rollover 48	Not Used 56	Not Used 64

Star Trek- Switch Part Numbers

Number	Description	Part No.	Number	Description	Part No.
01*	Plumb Tilt	See Cabinet	10	Out Hole	180-5011-00
02	Not Used	-	11	Trough #1 (Left)	180-5009-00
03*	Credit Button	500-5097-02	12	Trough #2 (Center)	180-5009-00
04*	Right Coin	180-5024-00	13	Trough #3 (Right)	180-5010-00
05*	Center Coin	180-5024-00	14	Shooter Lane	180-5053-00
06*	Left Coin	180-5024-00	15*	Left Flip. Cab. Switch	180-5067-00
07*	Slam Tilt	180-5022-00	16*	Right Flip. Cab. Switch	180-5067-00
08	Not Used	-	17	Left Outlane	500-5142-00
09	Not Used	-	18	Left Return Lane	500-5142-00
			19	Left Slingshot Sw. (2)	180-5054-00
			20	Left Drop Target 1 Bottom	180-5092-00
			21	Left Drop Target 2	180-5092-00
			22	Left Drop Target 3	180-5092-00
			23	Left Drop Target 4 Top	180-5092-00
			24	Left Stand-Up Target	500-5336-08
			25	Moving Target	180-5081-08
			26	Right Stand-Up Target	500-5336-08
			27	Lower Left Hole	180-5057-00
			28	Upper Left Hole Top	180-5057-00
			29	Moving Target Hole	180-5057-00
			30 *	Ball Launch Button	500-5410-02
			31	Transport Crew Visable	180-5094-00
			32	Transport Crew Gone	180-5094-00
			33	Left Turbo Bumper	180-5015-00
			34	Center Turbo Bumper	180-5015-00
			35	Right Turbo Bumper	180-5015-00
			36	Enter Left Ramp	500-5382-00
			37	Exit Center Ramp	500-5382-00
			38	Enter Right Ramp	500-5382-00
			39	Up/Down Ramp - Up	180-5010-00
			40	VUK	180-5064-00
			41	Left Top Lane	515-5138-00
			42	Center Top Lane	515-5138-00
			43	Right Top Lane	515-5138-00
			44	Right Drop Target 1 Top	180-5092-00
			45	Right Drop Target 2	180-5092-00
			46	Right Drop Target 3	180-5092-00
			47	Right Drop Target 4 Bottom	180-5092-00
			48	Top Right Rollover	515-5138-00
			49	Right Outlane	500-5142-00
			50	Right Return Lane	500-5142-00
			51	Right Slingshot Sw. (2)	180-5054-00
			52	Upper Left Hole Bottom	180-5057-00
			53	Not Used Through 64	

* Indicates Cabinet Switches
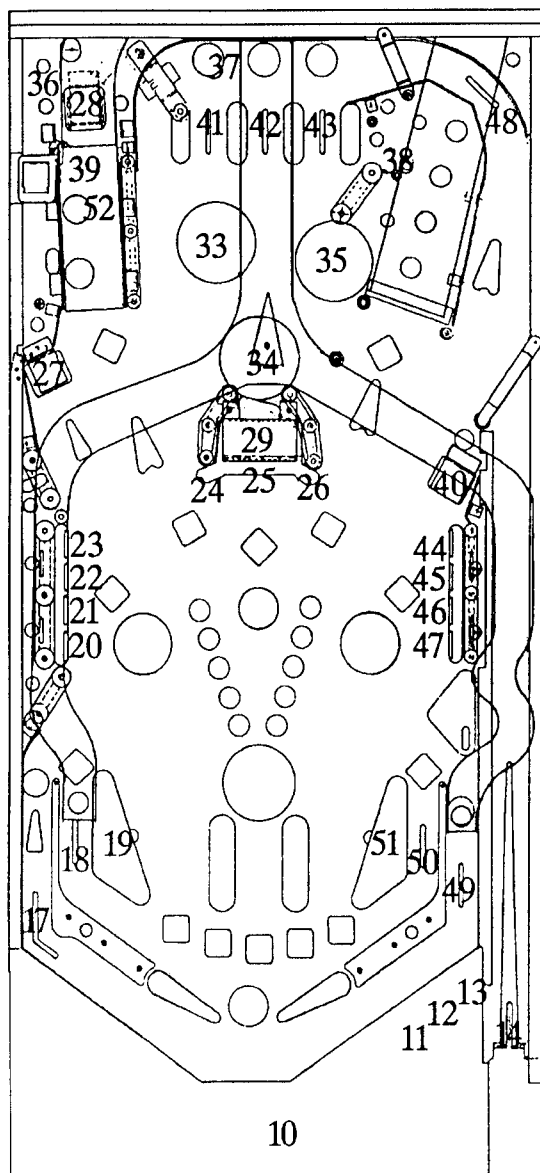
Switch Locations

LAMP TESTS

Controlled lamps are configured in an 8 x 8 matrix of columns (lamp drives) and rows (lamp returns) with up to 64 lamps possible. The lamp tests include four parts, all lamps, lamp return (row), lamp drive (column), and discrete (individual) lamps. Row and column wire colors are indicated in the discrete lamp test using corresponding resistor color code numbers.

All Lamps

From the Active Switch test, operate the STEP push-button switch. Player 1 and 2 displays indicate ALL LAMPS and all controlled lamps will light.

Lamp Returns

From the ALL LAMPS test, depress the STEP push-button switch. The top display indicates LAMP RETURNS and the Bottom display indicates wire color and the LAMP RETURN driver transistor. All controlled lamps in row 1 should be lit. Operating the Game Start push-button switch cycles through each of the rows separately.

Lamp Drives

From the LAMP RETURNS test, depress the STEP push-button switch. The Top display indicates LAMP COLUMNS and the bottom display indicates wire color and the LAMP DRIVES driver transistor. All controlled lamps in column 1 should be lit. Operating the Game Start push-button switch, cycles through each of the columns separately.

SingleLamp

From the LAMP DRIVES test, depress the STEP push-button switch. The top display indicates lamp name. The bottom display indicates the row and column wire colors and the lamp matrix number. Lamp 01 should light. With the FORWARD/REVERSE push-button switch in the FORWARD (up) position, operating the Game Start push-button switch selects higher-numbered lamps; with it in the REVERSE (down) position, Game Start selects lower-numbered lamps.

LAMP MATRIX CHART

COLUMN / ROW	1 Q71 YEL-BRN CN7-1	2 Q70 YEL-RED CN7-2	3 Q69 YEL-ORN CN7-3	4 Q68 YEL-BLK CN7-4	5 Q67 YEL-GRN CN7-6	6 Q66 YEL-BLU CN7-7	7 Q65 YEL-VIO CN7-8	8 Q64 YEL-GRY CN7-9
1 Q72 RED-BRN CN6-1	2X 1	Left Phaser #1 9	Right Phaser #1 17	Extra Ball Arrow 25	Left Toplane 33	Ship's Left Engine 41	Shoot Again 49	Crystal Bank #5 57
2 Q73 RED-BLK CN6-2	4X 2	Left Phaser #2 10	Right Phaser #2 18	Playfld. Crystal #2 26	Center Toplane 34	Ship's Right Engine 42	L.&R. Turbo Bumper 50	Crystal Bank #6 58
3 Q74 RED-ORN CN6-3	6X 3	Left Phaser #3 11	Right Phaser #3 19	Right Scoop 27	Right Toplane 35	Jackpot Arrow 43	Unlimited Millions 51	Crystal Bank #7 59
4 Q75 RED-YEL CN6-5	8X 4	Left Phaser #4 12	Right Phaser #4 20	Playfld. Crystal #1 28	Backbox #5 36	Left Ramp Red 44	Playfld. Crystal #4 L. 52	Crystal Bank #8 60
5 Q76 RED-GRN CN6-6	10X 5	Left Phaser #5 13	Right Phaser #5 21	Backbox #4 29	Ship's Body 37	Left Million Green 45	Crystal Bank #1 53	Crystal Bank #9 61
6 Q77 RED-BLU CN6-7	Ice Planet X-Ball 6	Playfld. Crystal #3 14	Backbox #3 22	Ball Launch Button 30	Laser Kick 38	Lite Scanner Arrow 46	Crystal Bank #2 54	Playfld. Crystal #4 R. 62
7 Q78 RED-VIO CN6-8	Playfld. Crystal #7 7	Backbox #2 15	Ice Planet 10 Mil. 23	Cab.- Start Button 31	Playfld. Crystal #6 39	Playfld. Crystal #9 47	Crystal Bank #3 55	Right Million Green 63
8 Q79 RED-GRY CN6-9	Backbox #1 8	Playfld. Crystal #5 16	Playfld. Crystal #8 24	Re-lite Laser Kick 32	Left Shields On 40	Right Shields On 48	Crystal Bank #4 56	Right Ramp Red 64

Lamp Number	Description
01.	2X
02.	4X
03.	6X
04.	8X
05.	10X
06	Ice Planet Extra Ball
07.	Playfield Crystal #7
08.*	Backbox #1
09.	Left Phaser #1
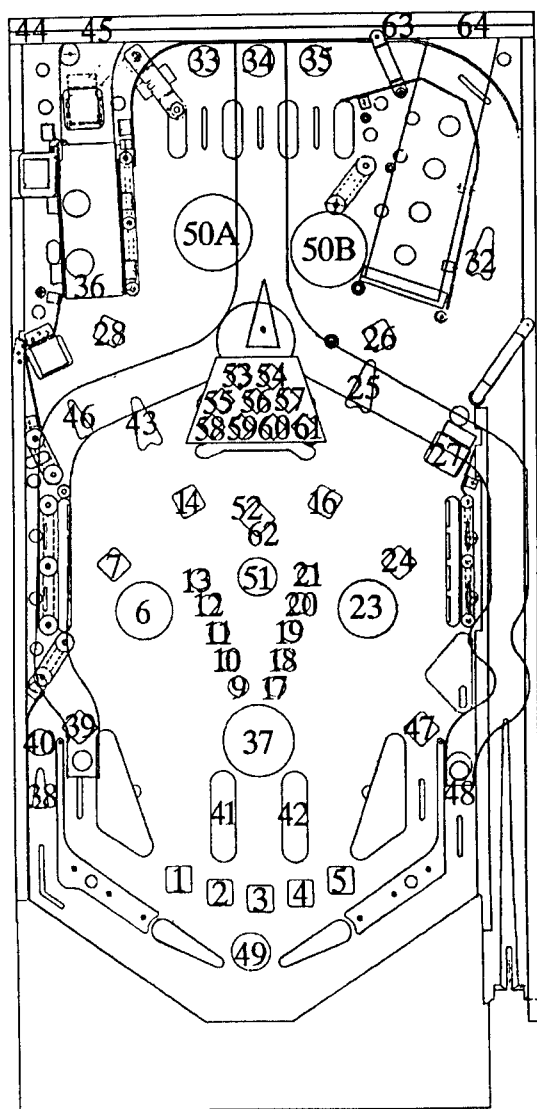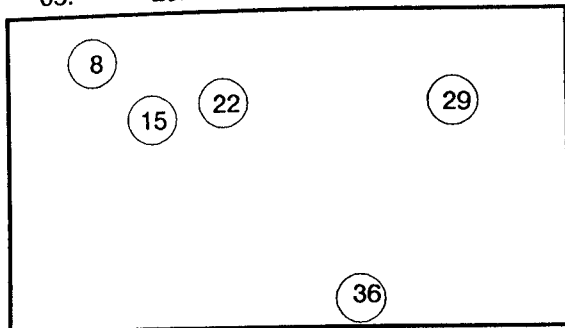
10.	Left Phaser #2
11.	Left Phaser #3
12.	Left Phaser #4
13.	Left Phaser #5
14.	Playfield Crystal #3
15.*	Backbox #2
16.	Playfield Crystal #5
17.	Right Phaser #1
18.	Right Phaser #2
19.	Right Phaser #3
20.	Right Phaser #4
21.	Right Phaser #5
22.*	Backbox #3
23.	Ice Planet 10 Million
24.	Playfield Crystal #8
25.	Extra Ball Arrow
26.	Playfield Crystal #2
27.	Right Scoop
28.	Playfield Crystal #1
29.*	Backbox #4
30.	Ball Launch Button
31.	Cabinet Start Button
32.	Re-Lite Laser Kick
33.	Left Top Lane
34.	Center Top Lane
35.	Right Top Lane
36.*	Backbox #5
37.	Ships Body
38.	Laser Kick
39.	Playfield Crystal #6
40.	Left Shields On
41.	Ships Left Engine
42.	Ships Right Engine
43.	Jackpot Arrow
44.	Left Ramp Red
45.	Left Million Green
46.	Lite Scanner Arrow
47.	Playfield Crystal #9
48.	Right Shields On
49.	Shoot Again
50.	Left & Right Turbo Bumper
51.	Unlimited Millions
52.	Playfield Crystal #4 Left
53.	Crystal Bank #1
54.	Crystal Bank #2
55.	Crystal Bank #3
56.	Crystal Bank #4
57.	Crystal Bank #5
58.	Crystal Bank #6
59.	Crystal Bank #7
60.	Crystal Bank #8
61.	Crystal Bank #9
62.	Playfield Crystal #4 Right
63.	Right Million Green
64.	Right Ramp Red

* Indicates Insert Panel or Backpanel Lamps

Lamp Locations

FLASH LAMP COIL TESTS

Twenty-Two regular (pulsed under microprocessor control) coil drivers are provided to switch ground to coils. The Left/Right relay is used in conjunction with drives 1 through 8 to switch +32 volts between coils or flash lamps; these sets are termed "left" and "right". This relay is located on the PPB board which provides isolation diodes and current limiting resistors. This effectively provides 29 regular coils.

Flash Lamp

From the Single Lamp test, depress the STEP push-button switch. All Flash lamps will fire randomly. This allows the Technician to easily spot any burned out bulbs and replace them without steping through the tests below.

Automatic Test

From the Flash Lamps test, depress the STEP push-button switch. Player 1 and 2 displays indicate ALL COILS. The test pulses each regular solenoid or flash lamp sequentially with the coil/flash lamp name indicated in the Player 1 and 2 displays and the wire colors in the Player 3 and 4 displays.

Select Coil

From the Coil Test, depress the STEP push-button switch. Player 1 and 2 displays indicate SELECT COIL and then the name of 1st drive, the wire colors are indicated in the Player 3 and 4 displays. Operate either Flipper push-button switch to select the coil or flash lamp to be tested. With the desired drive number indicated in the Player 4 display, depress the START push-button switch to cause it to be pulsed repeatedly.

RETURN TO GAME OVER

From the Select Coil test, depress the STEP push-button switch once. The game returns to the game-over mode.

CPU Controlled Auxiliary Solenoids

| Coil Number	Coil Description	Control Line (CPU to Coil)	Power Line (PS to Coil)	Drive Transistor	Coil Type
17	Left Turbo Bumper	BLU-ORN CPU CN19-3	RED PS CN3-6	Q8	23-800
18	Center Turbo Bumper	BLU-RED CPU CN19-4	RED PS CN3-6	Q9	23-800
19	Right Turbo Bumper	BLU-YEL CPU CN19-6	RED PS CN3-6	Q10	23-800
20	Left Slingshot	BLU-BRN CPU CN19-7	RED PS CN3-6	Q11	23-800
21	Right Slingshot	BLU-GRN CPU CN19-8	RED PS CN3-6	Q12	23-800
22	Gate(See Schematic)	BLU-BLK CPU CN19-9	RED PS CN3-6	Q13	31-1800

Flipper Solenoids

| Coil Description	Flipper GND CPU to Coil	Sw. to Flip.PCB	Power Lines FlipPc toCoil	Coil Type	Power Input To Flip PCB
Left Flipper 090-5030-00	ORN-GRY CPU CN19-2	BLU-GRY CN1-9	GRY-YEL CN2-1,2	23-1100	BLK-WHT 50VDC
RightFlipper 090-5030-00	ORN-VIO CPU CN19-1	BLU-VIO CN1-1	BLK-WHT CN1-1	23-1100	GRY, GRY-GRN 8VAC

Backbox Flash Lamps

Game Diagnostics
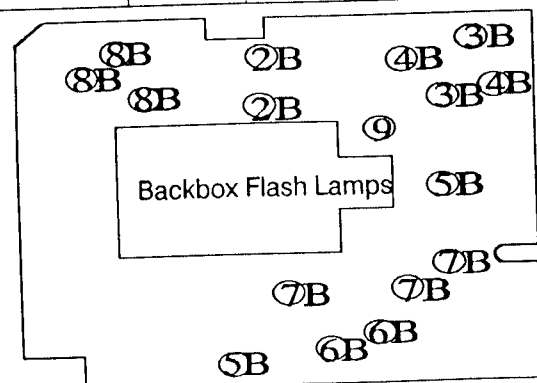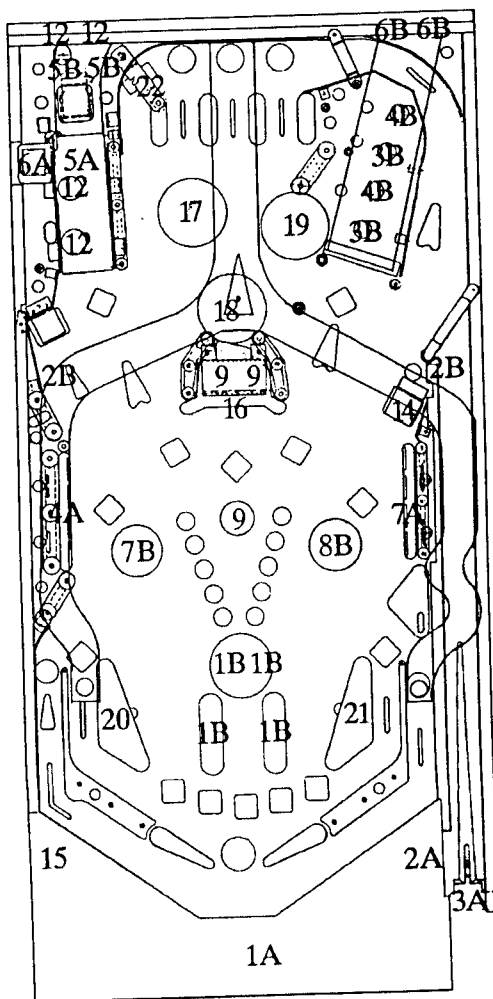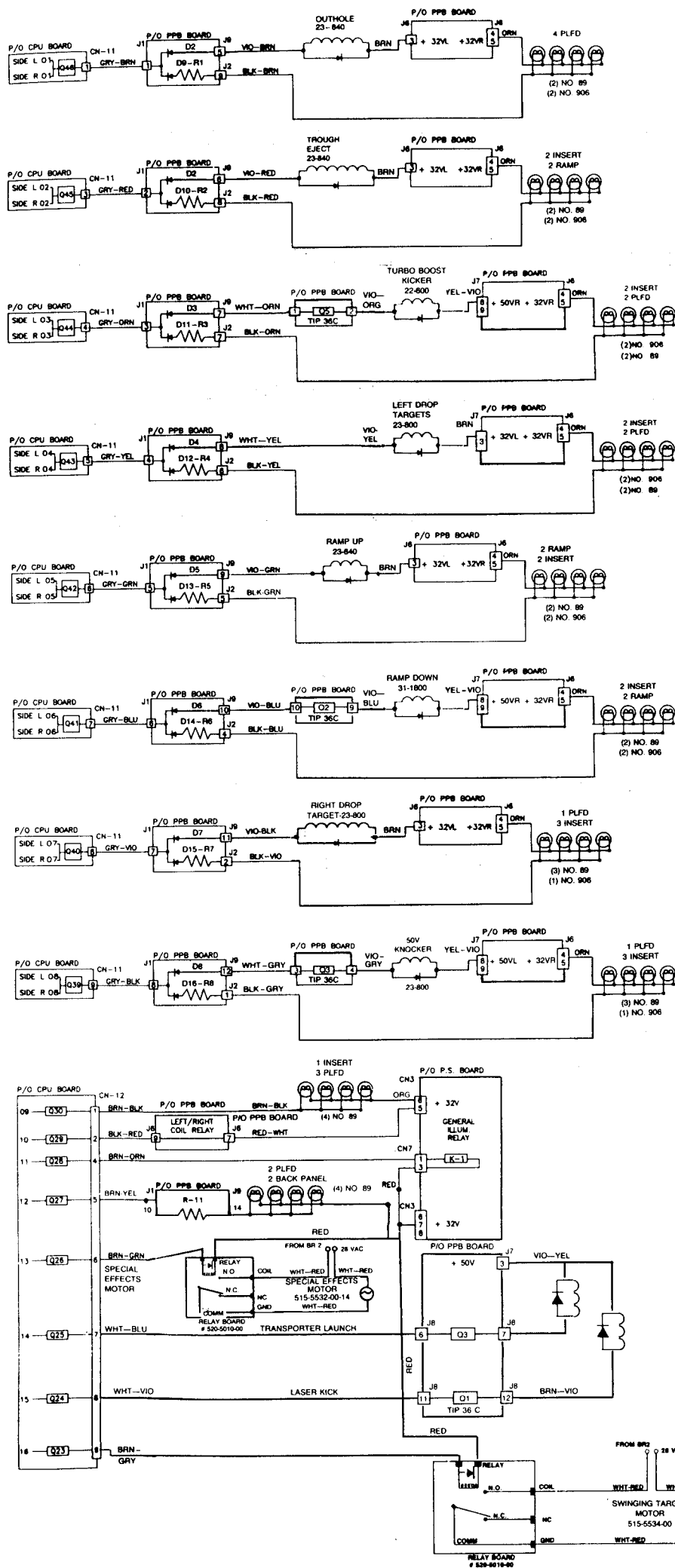
Playfield - Major Assemblies
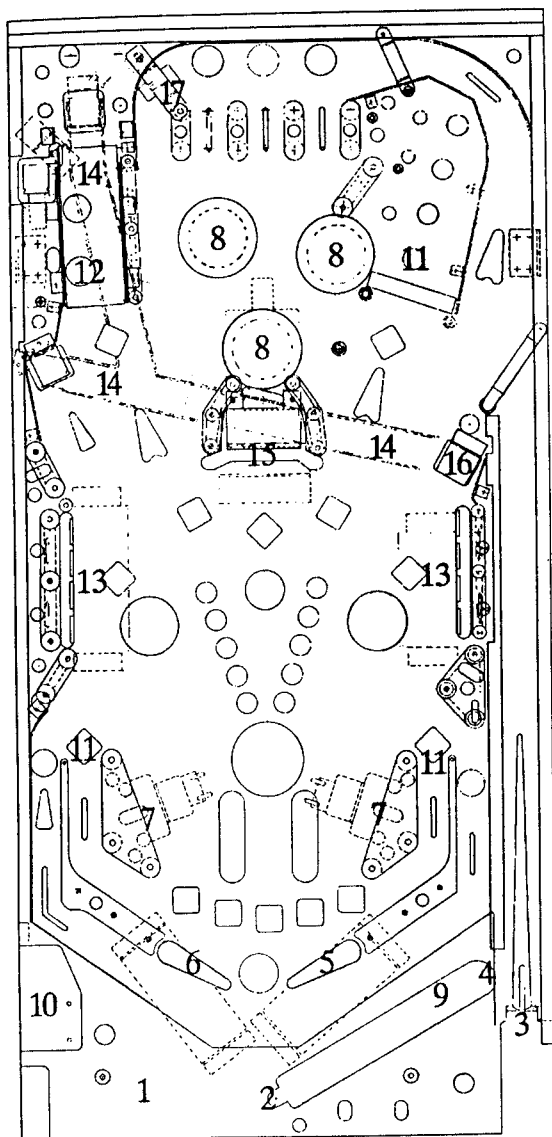
Item	Description	Part Number
1.	Bottom Arch	545-5231-04
2.	Outhole Kicker	500-5082-00
3.	Turbo Kicker	500-5406-00
4.	Ball Trough Eject	500-5012-01
5.	Flipper Assy. Right	500-5177-71
6.	Flipper Assy. Left	500-5177-72
7.	Sling Shot Assy.	500-5226-00
8.	Turbo Bumper Assy.	500-5227-00
9.	Ball Trough	500-5044-00
10.	Kick Back Assy.	500-5080-00
11.	Plastic Ramp Assy.	500-5377-00-14
12.	Up/Down Ramp parts	See Page 34
13.	Drop Target 4 Bank	500-5437-02
14.	Under Chute Assy.	500-5400-00
15.	Moving Target Assy.	500-5370-00
16.	Super VUK	500-5116-05
17.	Gate Lift Coil Plate Assy.	515-5465-00

Individual part breakdowns for most of
these assemblies can be found
on pages 34 through 41 and 63 64& 65.

BACKBOX PARTS ILLUSTRATION
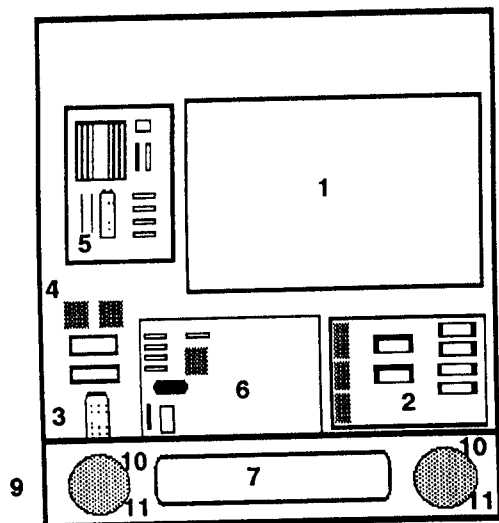
Item	Description	Part No.
1	CPU Board Assy.(Non-Reflx)	520-5003-03 †
2	Sound Board Assy	520-5050-01†
3	Capacitor 2C1	125-5000-00
4	Bridge Rectifiers	112-5000-00
5	Power Supply Bd. Assy	520-5047-00
6	PPB Board	520-5021-05
7	Dot Matrix Display Bd	520-5042-00 †
8	Display Ribbon Cable*	036-5000-24-10
9	Speaker Housing	515-5416-00
10	Speakers (2)	031-5004-00
11	Speaker Grill (2)	830-5612-00
12	Back Box Glass (Clear)*	660-5000-00
13	Roto-Lock Top*	355-5006-02
14	Backglass Artwork*	830-5214-01
15	Chaser Light PCB.*	520-5054-00

* Not Shown

† When ordering PC Boards with ROMs
please specify game name

RUBBER PARTS ILLUSTRATION

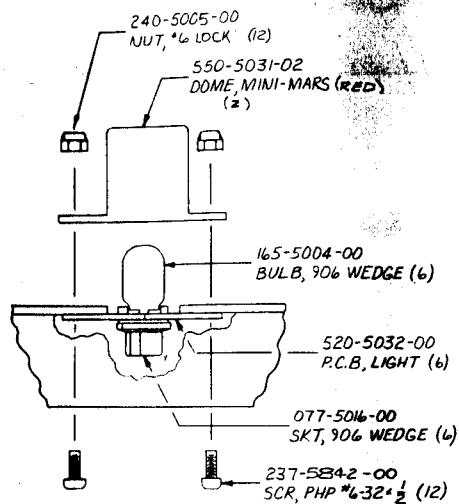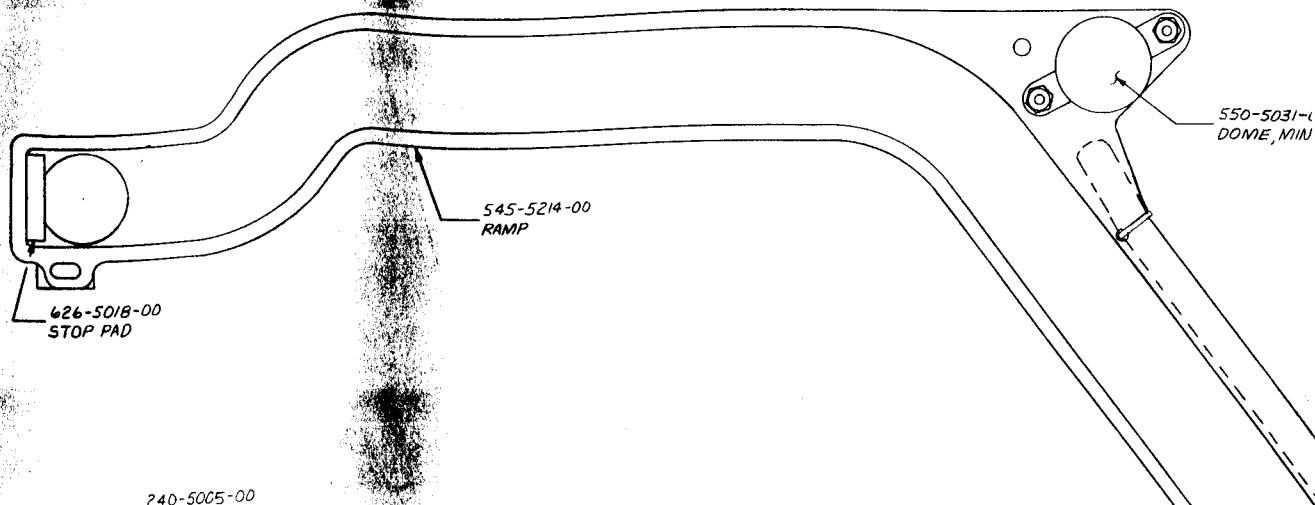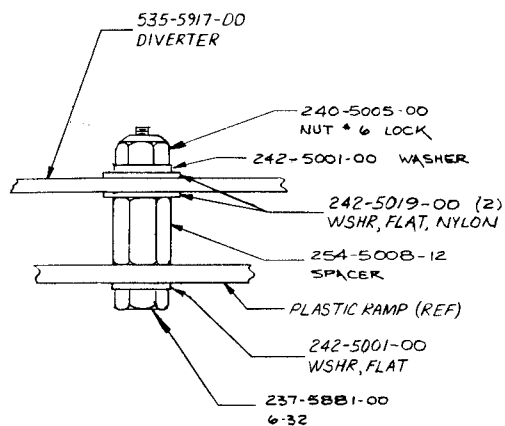| Item	Description	Part #
A.	3/16"(3)	545-5025-01
B.	5/16" (8)	545-5025-02
C.	1" (2)	545-5025-05
D.	1 1/4 (1)	545-5025-06
E.	1 1/2 " (3)	545-5025-07
F.	2 1/2" (4)	545-5025-09
G.	3" (1)	545-5025-10
H.	Rubber Post -Short (13)	545-5151-00
I.	Rubber Post -Long(2)	545-5260-00
J.	Shooter Tip	545-5276-00
K.	Flipper (2)	545-5277-00
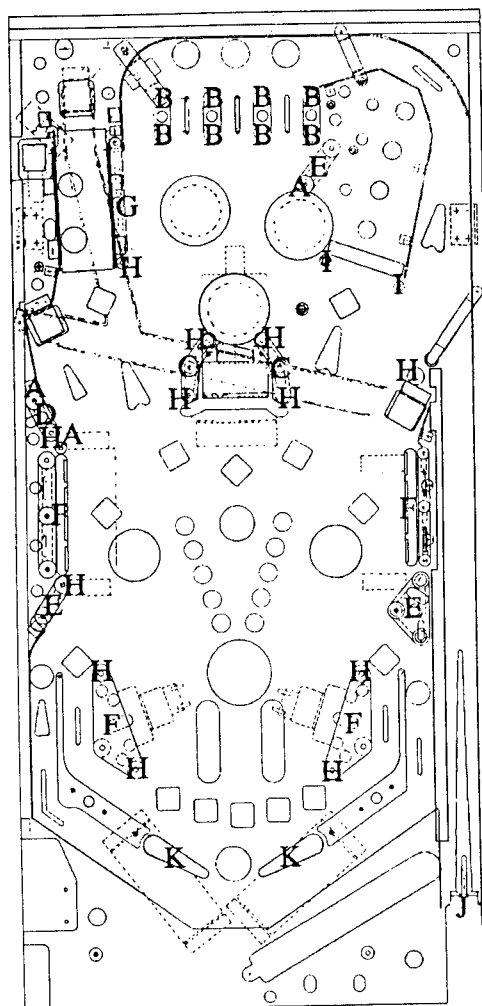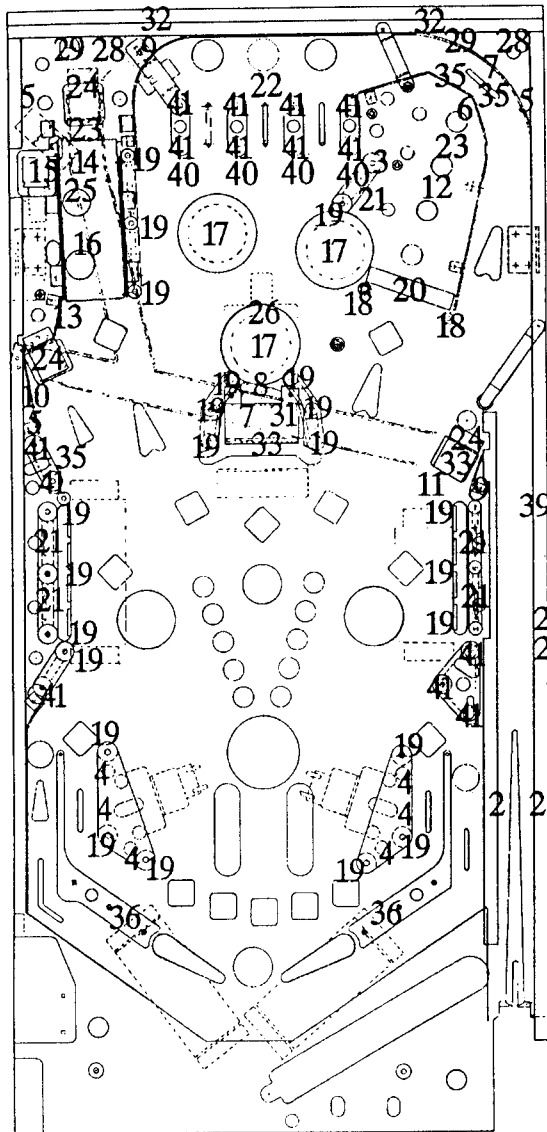
No.	Description	Part Number
1.	Chase Lights*	165-5009-01
2.	Plastic Spacer (4)	254-5000-02
3.	$^5/_8$" Hex Spacer (2)	254-5008-02
4.	4 $^1/_2$" Hex Spacer (3)	254-5008-03
5.	1 $^1/_2$"Hex Spacer (3)	254-5008-09
6.	Ball Guide Assy.	500-5288-00
7.	Ball Guide Assy.	500-5290-00
8.	Crystal Sign	500-5379-00-14
9.	Ball Guide Assy.	500-5380-00
10.	Ball Guide Assy.	500-5383-00
11.	Stand Up Sign	500-5393-00-14
12.	Screened Plastic Set	830-5427-XX
13.	Ball Guide	500-5405-00
14.	Ball Guide	515-5431-00
15.	Pivot Side Plate	515-5459-00-14
16.	Mtg. Brkt. Transporter	535-6120-00
17.	Turbo Bumper Caps (3)	545-5225-01
18.	Bumper Post (2)	530-5007-00
19.	Metal Standoff (23)	530-5035-01
20.	Spring Plate	535-5022-00
21.	Wire From 1" (5)	535-5300-05
22.	Wire Gate	535-5625-00
23.	Wire Gate	535-5960-02
24.	Ball Deflector	535-5308-01
25.	Wire Form	535-5642-00
26.	Diverter	535-5917-00
27.	Ball Deflector	535-6101-00
28.	Light Cover Red	545-5014-02
29.	Light Cover Green	545-5014-04
30.	Light Cover Yellow	545-5014-06
31.	Crystal Insert	545-5274-00
32.	Mirror Back Panel	545-5275-00
33.	SB Mini Mars Red	550-5031-02
34.	SB Mini Mars Yellow	550-5031-06
35.	SB Mini Mars Blue	550-5031-05
36.	Return Lane Guides	550-5037-01
37.	Decal Sheet*	820-5061-XX
38.	P/F Mylar*	820-5819-00
39.	Screened Plastics*	830-5427-XX
40.	Plastic Hood (4)	545-5012-01
41.	Plastic Post (14)	545-5013-01

Note:
See page 25 for switch part numbers

* Indicates not shown

550-5031-0
DOME, MIN

545-5214-00
RAMP

626-5018-00
STOP PAD

240-5005-00
NUT, #6 LOCK (12)

550-5031-02
DOME, MINI-MARS (RED)
(2)

535-5917-00
DIVERTER

240-5005-00
NUT #6 LOCK

242-5001-00 WASHER

165-5004-00
BULB, 906 WEDGE (6)

242-5019-00 (2)
WSHR, FLAT, NYLON

254-5008-12
SPACER

520-5032-00
P.C.B, LIGHT (6)

PLASTIC RAMP (REF)

242-5001-00
WSHR, FLAT

077-5016-00
SKT, 906 WEDGE (6)

237-5842-00
SCR, PHP #6-32 x 1/2 (12)

237-5881-00
6-32

SEE DETAIL 'B'

88 FL CABLE
036-5220-01

DETAIL A

DETAIL B

626-5018-00
STOP PAD

249-5001-00(2)

500-5393-00

830-5427-25

830-5427-26

E
(2)

550-5031-06
DOME, MINI MARS, YE

232-5003-00
254-5000-03

232-5001-00
254-5000-02

237-5006-00
254-5000-03
254-5000-02

VIARS, BLUE

500-5382-00
GATE & SWITCH ASS'Y

237-5809-00
SCR, PHP #6x½ TRUSS HD (2)

SEE DETAIL A

237-5808-00
SCR, PHP #6-32x³/16
240-5008-00
NUT #6 KEPS

CHASE LITE ASSY
500-5413-00 (2)
4" BLACK TIE WRAP
040-5007-00 (10)

GATE & SWITCH
500-5314-00

254-5008-09
1½" HEX SPACER

237-5809-00
(7)

036-5196-00
RAMP CA

237-5809-00
(2)

(2)
CHASE LITE ASSY
500-5413-00
REF

GUIDE PLATE
535-6161-00

B30-5427-30

(2) 249-5008-00
⅛ x ⅝ RIVET

500-5382-00
GATE & SWITCH ASS'Y

550-5031-05

535-6185-00
RAMP PLATE

6188-00 RAMP
TECT PLATE.
WITH (4) 249-5001-00
³/16 RIVETS.

500-5395-00
ARCH ASS'Y

237-5809-00
SCR, PHP #6x½ TRUSS HD (2)

550-5031-05

254-5008-09
1½" HEX SPACER

TOLERANCE UNLESS OTHERWISE SPECIFIED		REQ. 1	NEXT ASSEM.	DWK.	DATE 5-7-91	TITLE	
DIM XX±05 XXX±005 XXX±015 XXXX±		MAT.		CHK'D.	SCALE FULL	FLASTIC RAMP ASSY	
ANGLES±½° FRACTIONAL-USA		H.T.					
		FIN.		DATA EAST PINBALL, INC. 1990 JANICE AVE, MELROSE PARK, IL 60160		PART NO. 500-5377-00	

63

237-5809-00 #6 x ½ TRUSS

830-5427-37
(CLEAR COVER)

036-5208-00

249-5007-0
RIVET

500-5262-01 (4)

040-5001-00 (3)
TY WRAP

040-5002 (3)
TY WRAP MOUNT

535-6151-00

626-5015-00
.5 FT

?07-00 (8)
:T

545-5269-00

REQ.	1	NEXT ASSEM.		DWN. 111	DATE 4·26·91	TITLE
MAT.				CH'KD.	SCALE 1:1	BOTTOM RAMP ASS'Y
H.T.						
FIN.			DE DATA EAST PINBALL, INC.		PART NO.	500-5400-00

1990 JANICE AVE., MELROSE PARK, IL. 60160

237-5504-00
(REF)

535-6195-00
HOLD DOWN PLATE (2)

515-5530-00
BIAXIAL FLUOR. TUBE ASSY.

237-5502-00 (2)
#6-32 x 1/2

010-5007-XX
BALLAST CHART

PT. NO.	COUNTRY	ROBERTSON PT. NO. OR EQUIVALENT
-00	U.S.A	#SP2 110V/60
-01	EUROPE	#01525 220V/50
-02	JAPAN	#138-5 100V/50

237-5504-00
SCR #6-32 x 3/4 (9)

545-5301-01
GLIDE STRIP (6)

535-6184-00
PAD (2)

545-5301-00
GLIDE STRIP (2)

535-6193-00
SHIM (2)

535-6183-00
BASE PLATE (2)
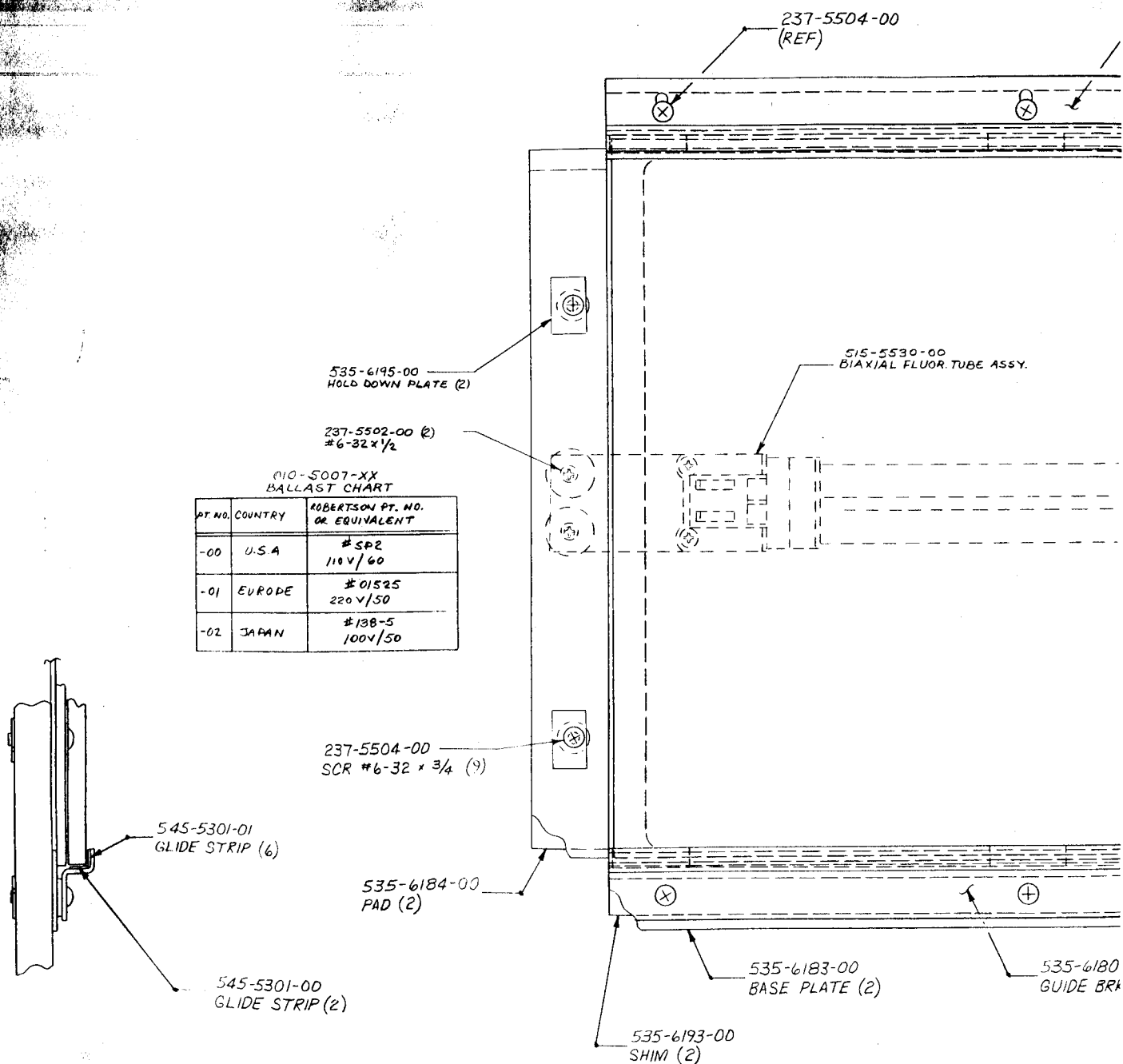
535-6180
GUIDE BRK

BACKSIDE OF ASSEMBLY
545-5289-00 LIGHT DEFUSER (WHITE
545-5298-00 REFLECTOR (MIRROR

NO. 100A-22x24

535-6180-01
GUIDE BRKT TOP
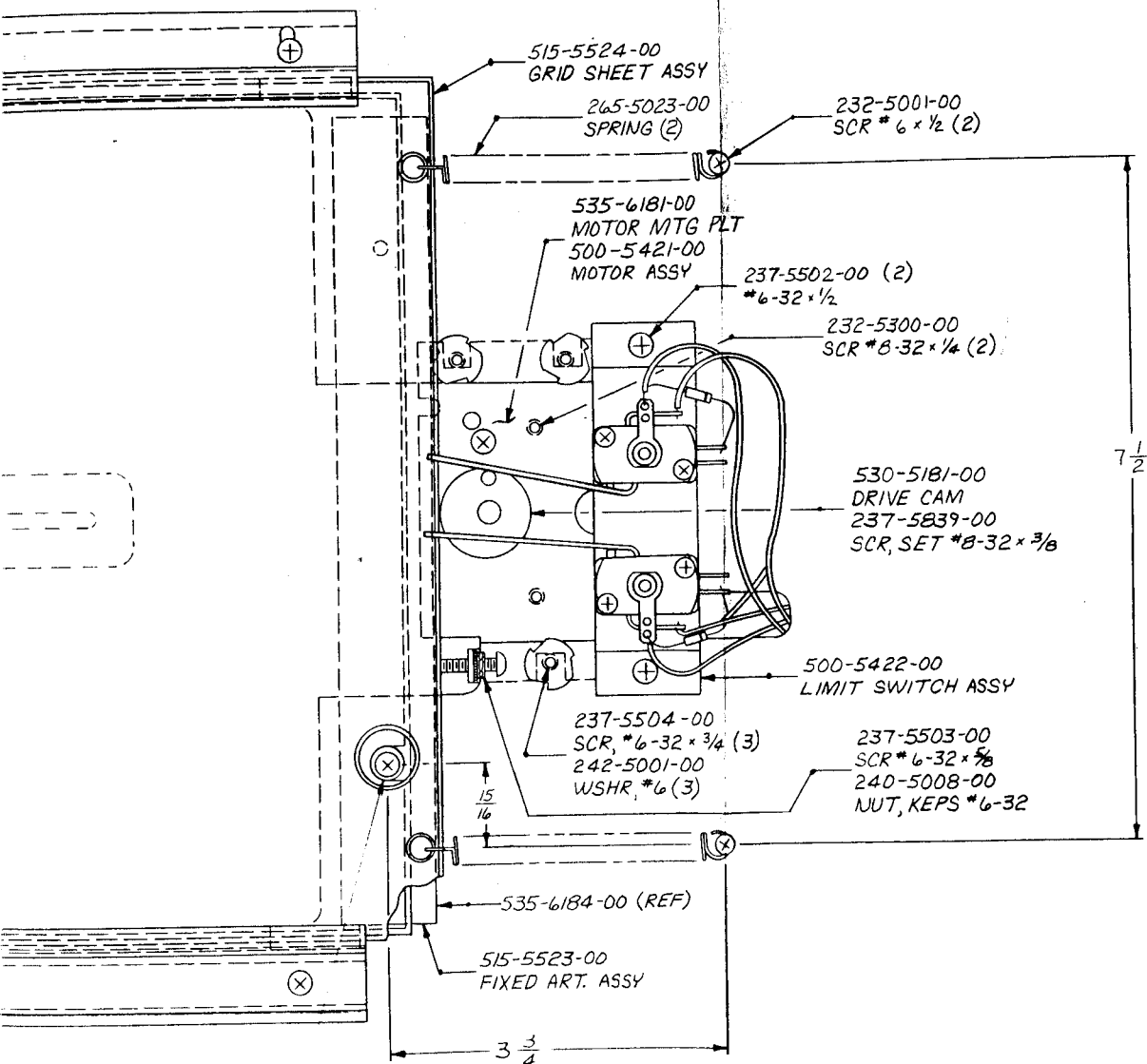
515-5524-00
GRID SHEET ASSY

265-5023-00
SPRING (2)

232-5001-00
SCR #6 × ½ (2)

535-6181-00
MOTOR MTG PLT
500-5421-00
MOTOR ASS'Y

237-5502-00 (2)
#6-32 × ½

232-5300-00
SCR #8-32 × ¼ (2)

530-5181-00
DRIVE CAM
237-5839-00
SCR, SET #8-32 × ⅜

500-5422-00
LIMIT SWITCH ASSY

237-5504-00
SCR, #6-32 × ¾ (3)
242-5001-00
WSHR #6 (3)

237-5503-00
SCR #6-32 × ⅝
240-5008-00
NUT, KEPS #6-32

7 ½

535-6184-00 (REF)

515-5523-00
FIXED ART. ASSY

15/16

3 ¾

'O
BOT.

242-5015-00
WSHR #6 (1)

(LAR)

D

R1 R2 R3

U1

U2

CN2

HCT04

ULN2003

CN1

C1 C2

DATA
EAST

520-5054-00
REV-A

R1-R3 = 10K

C1

C2

10uF
16V

0.1uF

R1 R2 R3

GND   CN1-1

KEY   CN1-2

GND   CN1-3

+5V   CN1-4

IN 1   CN1-5

IN 2   CN1-6

IN 3   CN1-7

1

3

5

U1 = 74HC

C

B

A

9 U1D 8   N.C.

11 U1E 10   N.C.

13 U1F 12   N.C.

7 U2G
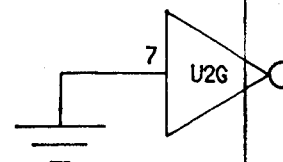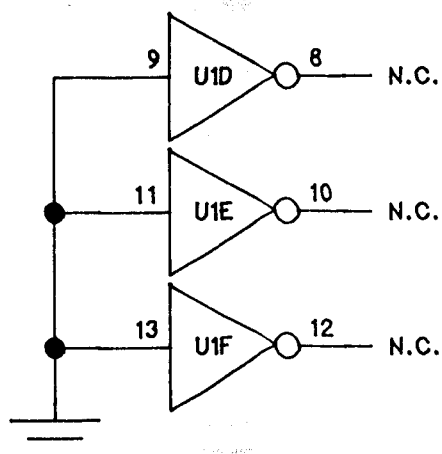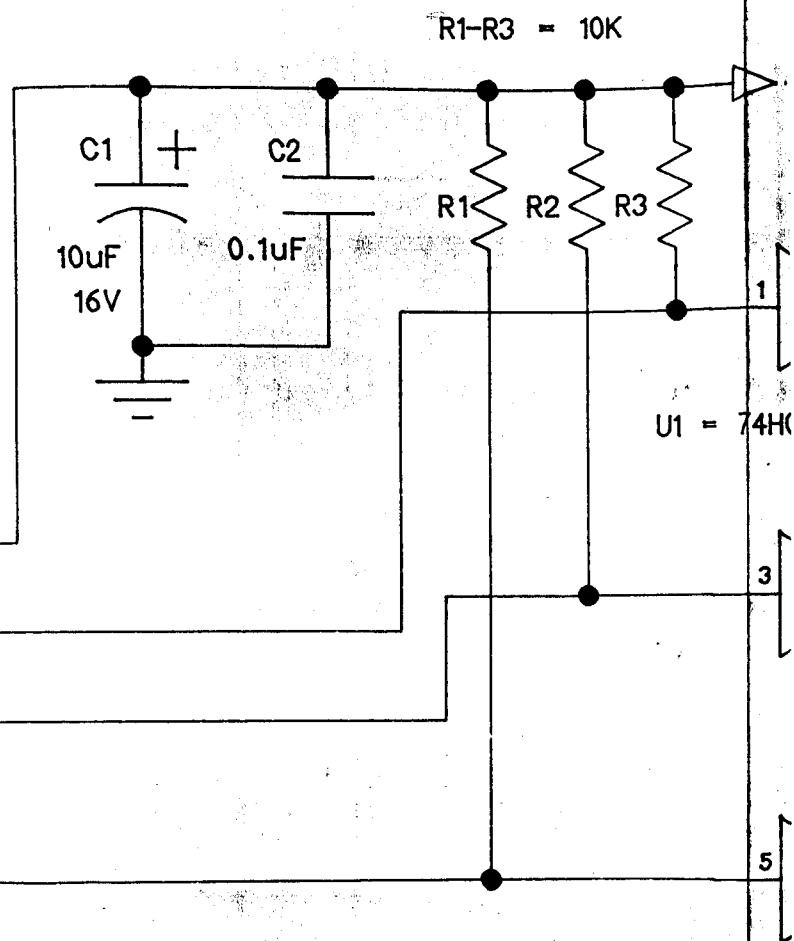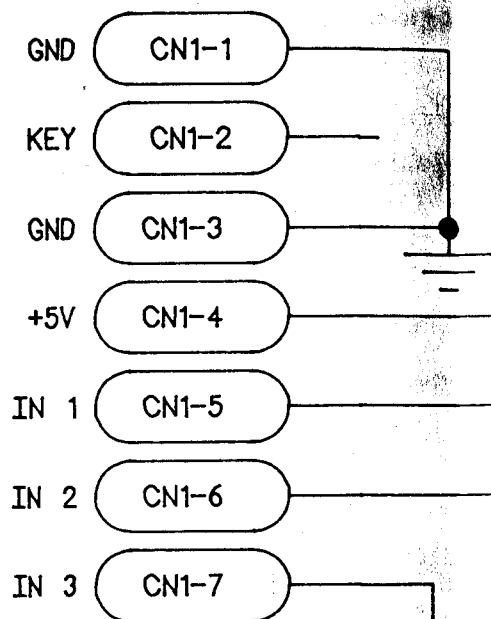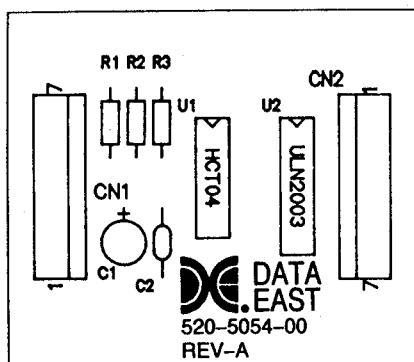
NOTES:
 - ALL RESISTOR VALUES ARE IN OHMS, 1
   5% UNLESS OTHERWISE SPECIFIED.
 - ALL CAPACITOR VALUES ARE IN MICROF
   UNLESS OTHERWISE SPECIFIED.

D

+5V

U2 = ULN2003

1   U1A   2

74HCT04

1   U2A   16   CN2-7   OUT 1A

2   U2B   15   CN2-6   OUT 1B

CN2-5   KEY

3   U1B   4

3   U2C   14   CN2-4   OUT 2A

4   U2D   13   CN2-3   OUT 2B

CN2-2   OUT 3A

5   U1C   6

5   U2E   12   CN2-1   OUT 3B

6   U2F   11

8

10   N.C.

C

B

HMS. 1/4W.
.D.
MICROFARADS

A
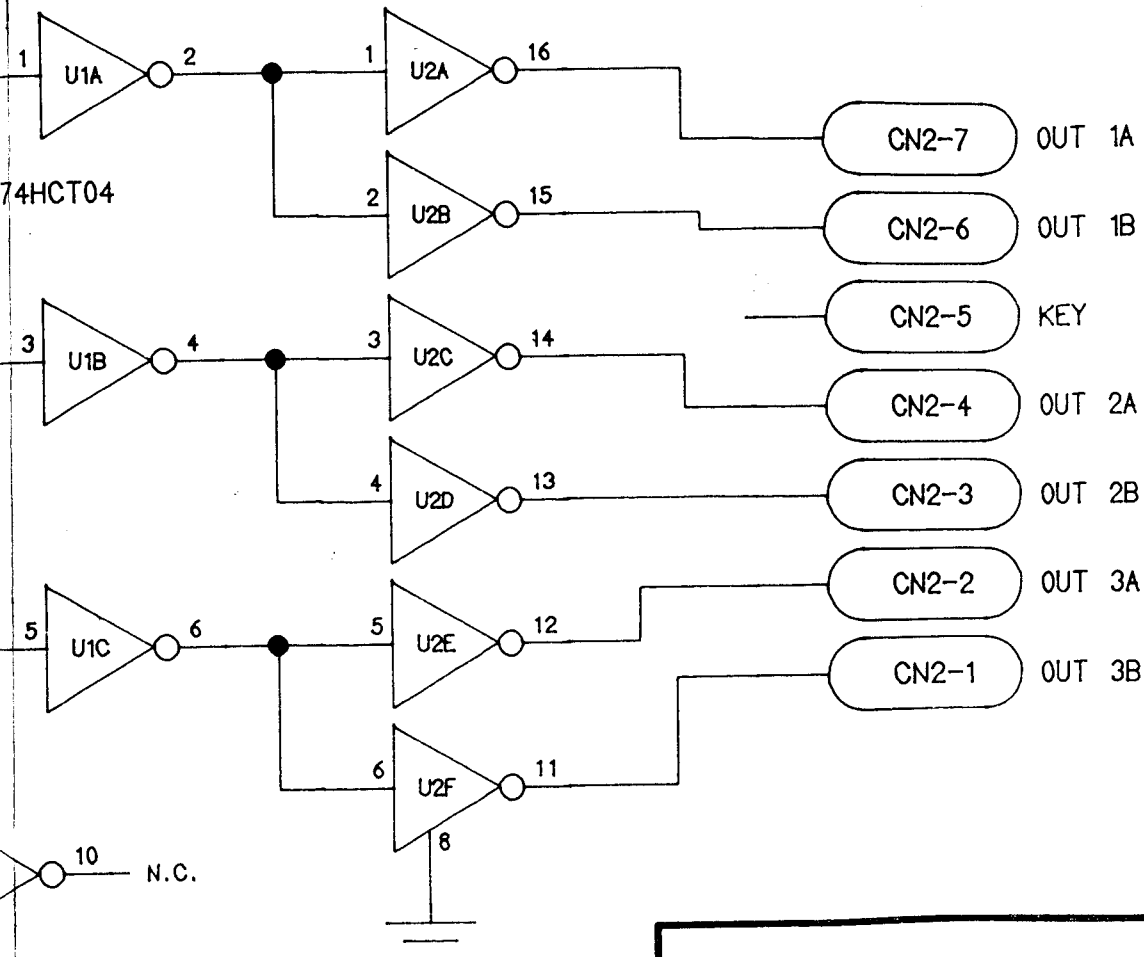
DATA EAST

LIGHT CHASER BOARD

SIZE	PART NO.		REV.
B	520-5054-00		A
PREPARED BY:	C.E.S. INC.	SHEET 1 OF 1	