

TECNOPLAY SPACE TEAM

INSTRUCTION MANUAL

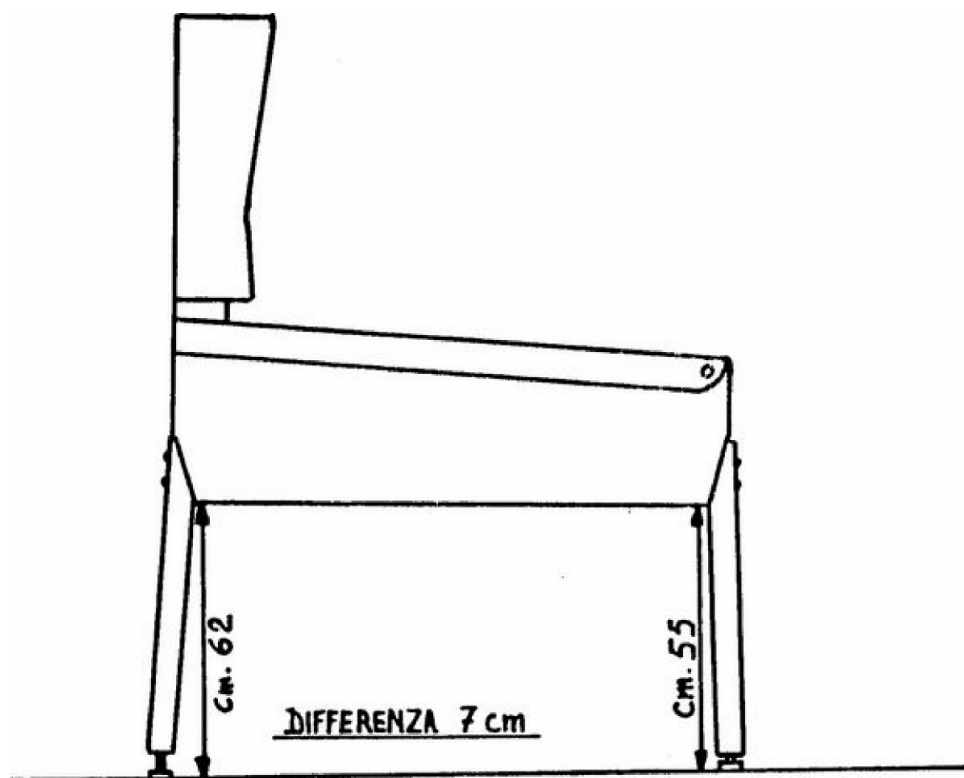
Compiled by Zaccaria Keith from Tecnoplay X-Force manual and reverse engineering of Space Team machine.

Issue 1.0 June 2024

ASSEMBLY

- 1) Fix legs to the cabinet by using proper bolts located inside cash box.
- 2) Pull out power cord with care and put it inside its proper housing. Make sure the knot is inside the cabinet for cable restraint.
- 3) Remove the strap from the backbox and raise the backbox to the upright position, then fix it by proper sliding bracket to the right hand. Remove backglass and fix backbox with correct bolts and washers.
- 4) Adjust pinball inclination as shown by the drawing here below. If legs of different size are utilized, height doesn't correspond, but the difference between front and back legs must be 7 cm.

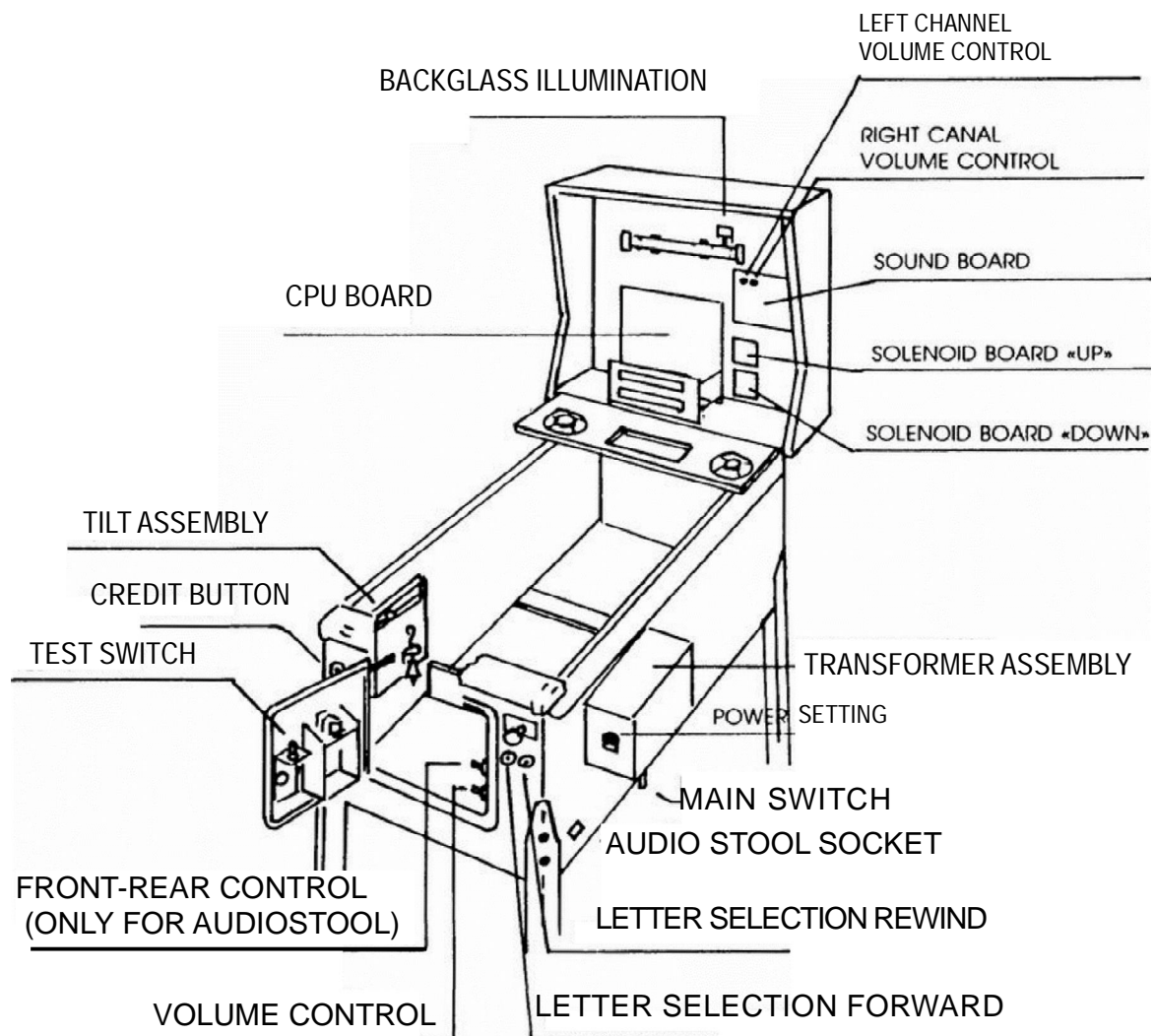
When high back stool with stereo speakers is mounted, front legs must be 72 cm maximum, otherwise the two feet of front legs do not fit inside stool housing.



For good game operation, observe height as indicated above, 62 and 55 cm. from the floor to the bottom of the cabinet.

When audio stool is installed, height will be 64 and 57 cm.

ASSEMBLY DRAWING AND CONTROL LOCATIONS



GENERAL OPERATION

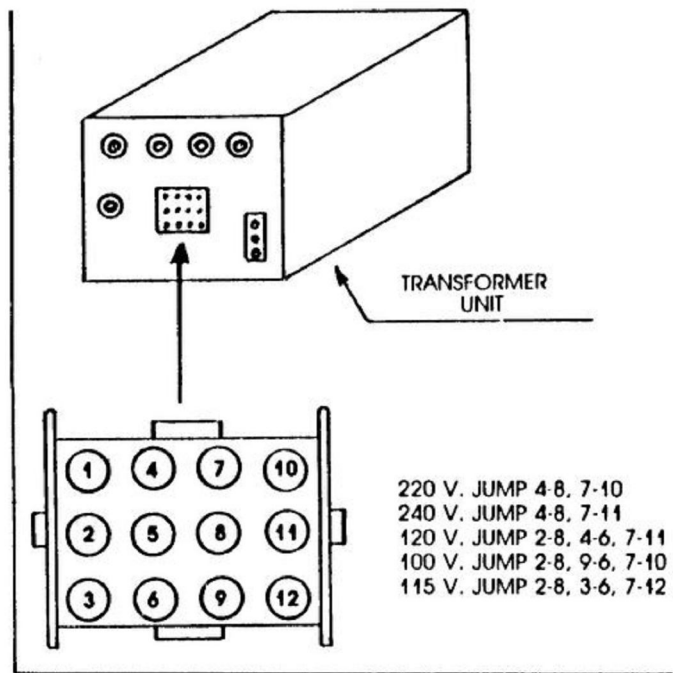
CHECK FOLLOWING POINTS BEFORE SWITCHING THE MACHINE ON:

- 1) Make sure correct voltage is selected (Voltage selection is located on transformer box visible from coin door)
- 2) Make sure all the connectors are firmly connected (they may get loosened during transportation)
- 3) Check tilt contacts sensitivity (all in open position)

NOTICE

Ground wire (yellow/green) of power cord MUST be connected.
The Manufacturer is not responsible for any damage due to wrong installation.

- 4) Plug the pinball in and switch it on,



- Displays lit show: INSERT COIN, 1 TO 6 PLAYERS CAN PLAY, entered advertising message and 5 highest scores in sequence from 1st to 5th,
- Playfield lamps start flashing in attract mode,
- 10 sec. of background music indicate correct operation of sounds.
- When credits are inserted CREDIT - 3 BALLS PER GAME - PRESS START BUTTON - are displayed alternatively,
- When 1/2 credit is inserted ONE MORE COIN PLEASE is displayed.
- Put the 4 balls inside hole, one by one are released automatically.
- Insert some credits and press CREDIT button, 1st ball is released and game starts.
- When in game over, match is displayed in two numbers (If match setting is YES MATCH). When the numbers correspond to play score one credit is given.
- When more than one player is playing the credit is given to the first player having correspondent number.
- When one of the 5 highest scores is overcome after match, INSERT YOUR INITIALS is displayed. Select letters by pressing LETTER SELECTION button to the right hand and enter them by CREDIT button, Each letter can be selected in 8 sec. maximum.
- After this function GAME OVER is displayed with end of play music.
- YOU CAN CONTINUE THE GAME IF YOU INSERT COIN IN 10 SECONDS appears immediately after. Balls captured on the bridge during the play are held and squad can be completed by the next play.
- Up to 6 players can play. Score of player on play is displayed on 1st line, score of the other players appears one by one on 2nd display line.

ACCOUNTING CONTROL

Any time program is reviewed, answer the following questions first:

What is present program?

What is winning average?

Is the play too long?

Is the play too short?

Is maximum score to be reset?

Pinball accounting must be checked in the interest of the operator. Income is good when player is excited to play, Best operation is win average between 25 and 30% In locations with customary clients, 10% with play win on match and 1 ball or score win on Specials in seasonal locations..

Maximum score is increased any time a player overcomes it, up to unattainable score.

Score reset to the minimum (8,000.000 points) after few weeks is recommended.

ROUTINE MAINTENANCE

Some pieces of advice are given here below in order to maintain the machine in good order and avoid unnecessary service calls. It is still more important to maintain the machine in optimal conditions for the players. It is well known that players lose interest in the game if the machine does not work well, if flippers and bumpers do not react well, if playfield is dirty, lights are burnt out, etc.

The following operations should be carried out any time the machine is adjusted, even when it is working all right.

- 1) Check and tighten, if necessary, screws of ring holding posts.
- 2) Check rings and replace them when necessary. Adjust contacts any time rings are replaced,
- 3) Clean playfield with care. Do not use corrosive products.
- 4) Check flipper units (tie rods, pads, contacts and coils). Replace coils when efficiency is poor.
- 5) Check bumpers (tie rods and pads).

ACCOUNTING - ADJUSTMENT - SELFDIAGNOSIS

45 tests as follows:

ACCOUNTING	from test 1 to test 15
ADJUSTMENT	from test 17 to test 40
SELF-DIAGNOSIS	from test 41 to test 45

Act on lever switch inside coin mech. door to enter the tests. Press UP button to go forwards, press DOWN button to go backwards.

TEST TABLE

ACCOUNTING

TEST	FUNCTION	DATA	DATA	DEFAULT
1	Coins inserted in left hand coin mech. 1 (left/contact 04)			
2	Coins inserted in right hand coin mech. 2 (contact 05)			
3	Coins Inserted in middle coin mech. 3 (middle/contact 06)			
4	Total plays (total games)			
5	Total plays won (games won)			
6	Total balls won (balls won)			
7	Total Superbonus won (superbonus won)			
8	Highest score (maximum score) HI-score won			
9	Winning score (score won)			
10	Orange Special hit			
11	Red Special hit			
12	Tilts (play tilts)			
13	Power On time (by minutes) (total time)			
14	Operating time (by minutes) (game time)			
15	Average play time (by minutes and seconds) (average)			

All accounting tests (from 1 to 15) are set to zero one by one by acting as follows When on test to be set zero, press both LETTER SELECTION buttons located to the right hand of coin mech. door, and CREDIT button at the same time.

16	Basic program reset (setting program default) see end table instructions			
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GAME ADJUSTMENT

TEST	FUNCTION	DATA	DATA	DEFAULT
17	Highest Score selection (normal or random)			normal
18	Highest Score minimum			8.000.000
19	Coins for 1 credit in coin mech. 1 (left/contact 04)			2
20	Credits per coin in mech. 1 (left/contact 04)			1
21	Coins for 1 credit in coin mech. 2 (right/contact 05)			1
22	Credits per coin in coin mech. 2 (right/contact 05)			1
23	Coins for 1 credit in coin mech. 3 (middle/contact 06)			1
24	Credits per coin in coin mech. 3 (middle/contact 06)			2
25	Balls per play (from 1 to 7)			3
26	Match setting (yes match - no match)			yes match
27	1st winning score			4,000,000
28	2nd winning score			8,000,000
29	3rd winning score			12,000,000
30	Highest Score win (record) (1 replay, 2 replays, superb.no win)			1 replays
31	1st score win (replay, extra ball, superb., no win)			extra ball
32	2nd score win (replay, extra ball, superb., no win)			No win
33	3rd score win (replay, extra ball, superb., no win)			No win
34	Orange Special win (replay, extra ball, superb., (1.000.000), no win)			extra ball
35	Red Special win (replay, extra ball, superb., 1.500.000), no win)			replay
36	Play automatic adjustment (self-adjust, no-adjust) (see end table Instructions)			self-adjust
37	Orange Special time (5 sec., 10 sec., 15 sec., 20 sec.)			15 sec.
38	Red Special time (5 sec., 10 sec., 15 sec., 20 sec.)			5 sec.
39	Game Adjust (0, 1, 2) Bonus Advance			2 bonus advance
40	Advertising messages (spot) - see end table instructions			

All game setting tests can be modified as follows:

when on test to be modified press FORW button of LETTER SELECTION and CREDIT button at the same time.

SELF-DIAGNOSIS

45	RAM TEST	Press CREDIT button when on test 45. OK Is displayed If RAM is good, FAULT if it is not.
44	DISPLAY TEST	Press CREDIT button when on test 44. Alphabet letters and numbers from 0 to 9 are displayed.
43	CONTACT TEST	Press CREDIT button when on test 43. Contact number and OFF/ON condition are displayed. Press CREDIT button again to check next contact.
42	LAMP TEST	Press CREDIT button when on test 42. Number of the lamp to be switched on is displayed. Press the button continuously for fast advance.
41	SOLENOID TEST	Press CREDIT button when on test 41. The number of solenoid to be temporary excited is displayed. When pressing FORW and CREDIT buttons at the same time excitement of same solenoid Is repeated.

BASIC PROGRAM RESET (test 16)

Function of this test is to clear the whole RAM and reset the game automatically to basic program. Check last right-hand column of test table to know how reset was made. Control above is required when RAM contains unusual data which do not correspond to test functions. It may occur when the machine is not operated for several weeks (8 at least) or battery recharge circuit is out of use.

Act as follows to operate on test 16: press both LETTER SELECTION buttons and CREDIT button at the same time, when on test 16. Then check game setting tests from 17 to 40 for possible changes of basic program.

AUTOMATIC GAME ADJUSTMENT (test 36)

Function of this test is to make the game easy or difficult depending on average time of each play. Test 36 acts on Orange and Red Special time, on right hand lateral canal closure time and ball rescue on left hand lateral canal.

Average time is 2 minutes per 3 balls play and 3,20 minutes per 5 balls play,
When for any reason longer or shorter average time is desired, set test 36 on NO ADJUST (automatic adjustment excluded).

Average time is to be calculated after 50 plays minimum. Automatic adjustment acts as above however average time different from time stated by automatic adjustment can appear on accounting after several games played due to game setting.

Average time per play can't be higher or lower than 50% of time set (2 minutes for 3 balls and 3,20 for 5 balls).

ADVERTISING MESSAGE (test 40)

Advertising message can be entered on 16 digits displays of SPACE TEAM.

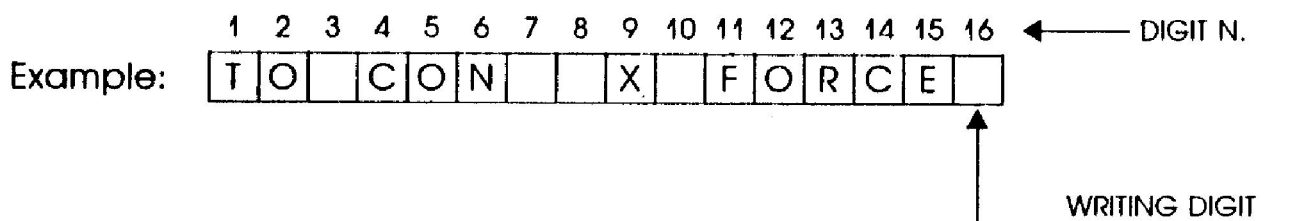
Operators can use these advertisements as desired by entering messages relating to their company, to the location on choice of Its owner, and also contracts for advertising vending products can be made. The message is displayed on the machine when in game over at 15 sec. Intervals.

Act as follows to enter the message:

1) Press CREDIT button when on test 40. DISPLAY MESSAGE appears on first line, second line is clear. Otherwise if INSERT LETTER or other wordings appear, move to test 39 or 41, then return on test 40. Now DISPLAY MESSAGE Is displayed.

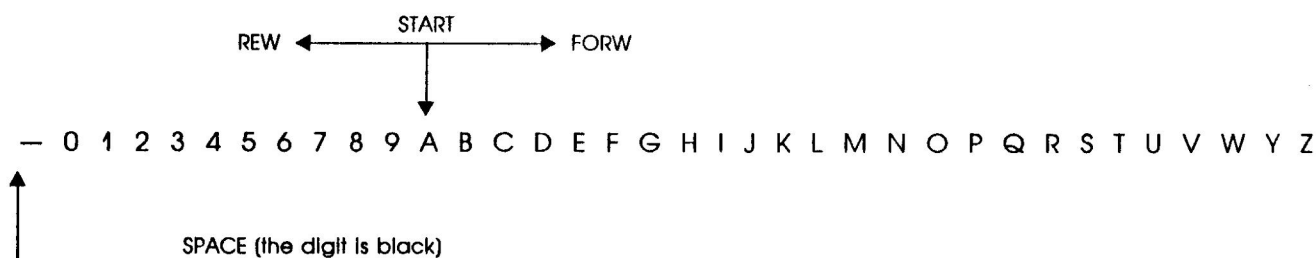
If no message was entered before, INSERT LETTER is displayed directly without passing through DISPLAY MESSAGE. Press REWIND button of LETTER SELECTION 5 times minimum and last message entered appears from left hand to right hand any time REWIND button is pressed. By pressing FORW button the message moves back towards left hand. If a new message is not entered, move message towards left hand as originally.

2) Now enter a message further to the existing one. Press REWARD button untill letter of end message occupies the penultimate right hand digit (15) so that digit (16) is the next one.



Now press CREDIT button. INSERT LETTER appears on first line and letter A on digit 16 starts flashing, which means that letters desired can be selected and entered by pressing CREDIT button.

Letters and numbers available:



Insert 4 spaces before entering the message to separate it from previous one. 150 digits are available for one or more messages, spaces included.

Repeat operations 1 and 2 and bring first letter of first message on digit 16 then press REW button and CREDIT button at the same time to clear the old message and enter new one. When INSERT LETTER appears previous message is cleared and new one can be entered. If this is first message to be entered, press CREDIT button when on test 40 and INSERT LETTER appears. Select letters desired as above.

To review possible mistakes, when on DISPLAY MESSAGE bring wrong letter on digit 16, go in INSERT LETTER, select correct letter and enter 11 by pressing CREDIT button.

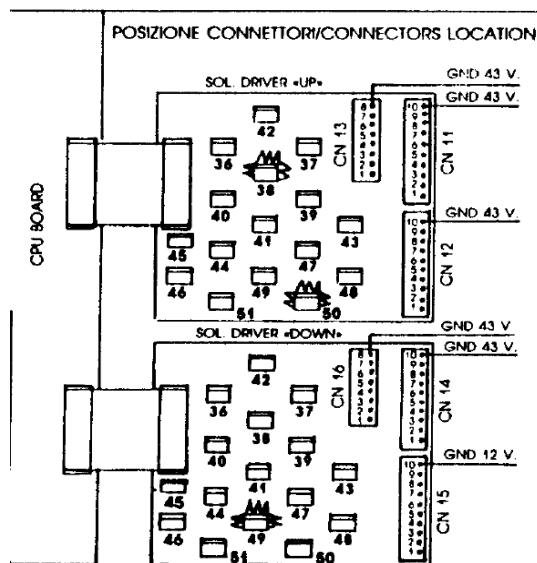
SUPERBONUS WINNINGS

Winning 1 super bonus corresponds to a special prize which can be granted by expulsion of 1 token. By applying a tube token dispenser with coil (TOKEN DISPENSER) and connecting it as described, the token will be ejected and recorded in the accounting.

Connect a coil with minimum resistance of 7 ohms (50V 6 Amp) with a parallel diode IN4003 or better. Positive connection (cathode/stripe of diode) to Pin 1 of J13M (Violet wire). Negative connection (anode of diode) to Pin 4 of J13M (Red/White wire). J13M is a 12 pin Molex connector on the right inside the coin door – or may just be two unterminated wires of the above colours.

SOLENOID TABLE - SPACE TEAM									
SOL N°	DRIVER trans	CONN N°	CONN PIN	WIRE COL.	FUNCTION	COIL/LAMP	COIL OHMS	FUSE N°	6.3x32 T
1	36 UP	CN13	7	Y	KNOCKER (TIC-TOC)	40/1200	10.8R	Unfused fire hazard. Fit T1.6A inline fuse holder.	
2	37 UP	CN13	6	R/W	TOKEN DISPENSER (Option)				
3	38 UP	CN11	7	R/W	LEFT CANAL KICKER	50/1500	9.7R	9	1.6A
4	39 UP	CN11	5	Bk/Bn	LEFT SLINGSHOT	40/1200	10.8R	5	2A
5	40 UP	CN11	4	Y/W	RIGHT SLINGSHOT	40/1200	10.8R	5	2A
6	41 UP	CN11	3	R/Bu	HEAD LIGHT EFFECT	2x 10W LAMP (speakers)		via 2 pin connector in head	
7	42 UP	CN11	9	NC					
8	43 UP	CN11	6	R/Bk	MOVING TARGET RED	45/1000-14/5000	6.5/500R	3	1.6A
9	45 UP	CN11	2	O/Bk	MOVING TARGET ORAN.	45/1000-14/5000	6.5/500R	4	1.6A
10	44 UP	CN12	9	R/Y	TOP LEFT 3FLASH	3x 5W LAMP(pfield)			
11	47 UP	CN12	8	Bk/Pk	TOP RIGHT 3FLASH	3x 5W LAMP(pfield)			
12	46 UP	CN12	6	NC					
13	49 UP	CN12	5	Gn/W	TOP MULTIBALLS EJECT	50/1500	9.7R	10	1.6A
14	48 UP	CN12	4	Bu/Bk	LEFT BUMPER	45/1000	6.8R	7	1.6A
15	51 UP	CN12	3	Y/Bk	RIGHT BUMPER	45/1000	6.8R	6	1.6A
16	50 UP	CN12	2	Y/R	AIM MOTOR (12V)				
17	36 DWN	CN16	7	Bk/Gn	LAMP POWER LEFT	LAMP			
18	37 DWN	CN16	6	Bn/R	LAMP POWER RIGHT	LAMP			
19	38 DWN	CN14	7	Pk/W	MOVING MINI POST	45/1000-14/5000	6.5/500R	8	1.6A
20	39 DWN	CN14	5	Bk/Gy	FLIPPER RELAY	48VDC	21.8R 10.8R 21R	5 5 5	2A 2A 2A
21	43 DWN	CN14	6	Bu/Y	PF.EFFECT LAMP LASER	3x 10W LAMP(pfield)			
22	42 DWN	CN14	9	Bk/W	TOP KICKER	40/2200			
23	41 DWN	CN14	3	Pk/Bu	OUTHOLE KICKER	40/1200			
24	40 DWN	CN14	4	Gy/R	HOLE EJECT	355/2600			
25	45 DWN	CN14	2	W	LAMP BOOST 6	BA15 12V/5W			
26	44 DWN	CN15	9	O	LAMP BOOST 5	BA15 12V/5W			
27	47 DWN	CN15	8	Bu	LAMP BOOST 4	BA15 12V/5W			
28	46 DWN	CN15	6	V	LAMP BOOST 3	BA15 12V/5W			
29	49 DWN	CN15	5	Y	LAMP BOOST 2	BA15 12V/5W			
30	48 DWN	CN15	4	Gn	LAMP BOOST 1	BA15 12V/5W			
31	51 DWN	CN15	3	O/W	LAMP RIGHT BUMPER	BA15 12V/5W			
32	50 DWN	CN15	2	R/V	LAMP LEFT BUMPER	BA15 12V/5W			

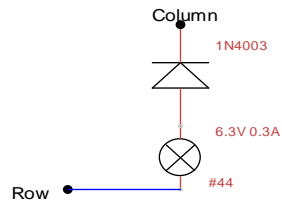
J8	2	Pk	FLIPPER LEFT	56/600-21/4500	2.4/175R	1	4A
J8	1	O	FLIPPER RIGHT	56/600-21/4500	2.4/175R	2	4A



Colour Codes	
Bk	Black
Bn	Brown
R	Red
O	Orange
Y	Yellow
Gn	Green
Bu	Blue
V	Violet
Gy	Grey
W	White
Pk	Pink

LAMP MATRIX - Space Team

		CN6 Pin	5	6	7	8	9	10	11	12
		Column #	1	2	3	4	5	6	7	8
CN5 Pin	Row #	Colour	Bk/W	Bn/W	R/W	O/W	Y/W	Gn/W	Bu/W	V/W
4	1	Black	#1 Bonus Multiplier x80	#2 Bonus Multiplier x40	#3 Bonus Multiplier x20	#4 Bonus Multiplier x10	#5 Black Hole 1	#6 Black Hole 2	#7 Black Hole 3	#8 Black Hole 4
5	2	Brown	#9 Thrust 1	#10 Thrust 2	#11 Thrust 3	#12 Countdown 60k N	#13 Countdown 70k U	#14 Countdown 80k O	#15	#16
6	3	Red	#17 Extra Ball	#18 Countdown 30k O	#19 Countdown 40k D	#20 Countdown 50k T	#21 Thrust 4	#22 Thrust 5	#23 Thrust 6	#24 AIM
7	4	Orange	#25 Top Target 1	#26 Top Target 2	#27 Top Target 3	#28 Top Target 4	#29 Countdown 100k Special	#30 Countdown 90k C	#31	#32
8	5	Yellow	#33 Black Hole 5	#34 Red Special	#35 Orange Special	#36 Countdown 20k W	#37 Countdown 10k C	#38 50k Left Rollover	#39 50k Right Rollover	#40 100k Right Rollover
9	6	Green	#41 Top Target 5	#42 Top Target 6	#43 Top Target 7	#44 Top Target 8	#45 Countdown 100k Special	#46	#47	#48
10	7	Blue	#49 Horseshoe 1	#50 Horseshoe 2	#51 Horseshoe 3	#52 Horseshoe 4	#53 Horseshoe 5	#54	#55	#56
11	8	Violet	#57 Horseshoe 6	#58 Horseshoe 7	#59 Horseshoe 8	#60 Horseshoe 9	#61 Horseshoe 10	#62	#63	#64



SWITCH MATRIX - Space Team

		CN3 Pin	1	8	7	6	5	4	3	2
		Column #	0	1	2	3	4	5	6	7
CN3 Pin	Row #	Colour	Bk/W	Bn/W	R/W	O/W	Y/W	Gn/W	Bu/W	V/W
18	0	Black	#0 Test Up	#1 Test Down	#2 Tilt2 (Vertical)	#3 Left Door Push	#4 Coin Switch Left	#5 Coin Switch Right	#6 Not used	#7 Letter Selection Forward
17	1	Brown	#8 Letter Selection Rewind	#9 Credit	#10 Tilt 1 (Horizontal)	#11 Start	#12 Right Door Push	#13 Not used	#14 Not used	#15 Not used
16	2	Red	#16 Outhole	#17 4th Ball Trough	#18 3rd Ball Trough	#19 2nd Ball Trough	#20 1st Ball Trough	#21 Exit Canal Right 100k	#22 Inner Canal Left 50k	#23 20k Left Target
15	3	Orange	#24 Not used	#25 Inner Canal Right 50k	#26 Exit Canal Left (Black Hole)	#27 Left Kicker	#28 Right Kicker	#29 Horseshoe Gate Left	#30 Horseshoe Gate Right	#31 Right Pop Bumper
14	4	Yellow	#32 Left Pop Bumper	#33 Not used	#34 Not used	#35 Not used	#36 Space Station Left	#37 Space Station Right	#38 Thrust 1	#39 Thrust 2
13	5	Green	#40 Thrust 3	#41 Thrust 4	#42 Thrust 5	#43 Thrust 6	#44 Top Left/Right Rubbers	#45 Top Target 1	#46 Top Target 2	#47 Top Target 3
12	6	Blue	#48 Top Target 4	#49 Not used	#50 Not used	#51 4th Ball Multiball	#52 3rd Ball Multiball	#53 2nd Ball Multiball	#54 1st Ball Multiball	#55 Top Target 5
11	7	Violet	#56 Top Target 6	#57 Top Target 7	#58 Top Target 8	#59 Not used	#60 Lift Off Target	#61 Not used	#62 Not used	#63 Not used

