

GENERAL INSTRUCTIONS

FOR

TRON

INSTALLATION

1. Unlock and open the coin box door.
2. Remove four (4) "CABINET LEVELING LEGS" from inside the coin box.
3. Tip the cabinet to the side and remove the shipping cleats from its bottom.
 - ° Locate the threaded holes - one in each corner - and install the "CABINET LEVELING LEGS" in them.
 - ° Level the cabinet.
 - ° When finished, the cabinet should be stable in the upright position.
4. Plug the game into a **standard** A.C. wall outlet **ONLY!**

-----WARNING-----
Game **MUST** be
properly grounded.

5. The power ON/OFF switch is located:
 - ° UPRIGHT MODEL: On top of the cabinet toward the back.
 - ° MINI MODEL: In the center of the cabinet back just below the rear access door.
 - ° COCKTAIL TABLE MODEL: Underneath the cabinet on Player No. 2's side.

LINE VOLTAGE SAFETY INTERLOCK SWITCHES

Line voltage SAFETY INTERLOCK SWITCHES have been provided for your protection. The locations of these SAFETY INTERLOCK SWITCHES are:

1. UPRIGHT MODEL: Inside the rear of the cabinet on the left side of both rear access doors as you face them.

2. MINI MODEL: Inside the rear of the cabinet on the left side of the rear access door as you face it.
3. COCKTAIL TABEL: Inside the cabinet on the hinge side of the coin door.

When the cabinet access door(s) are secured in place, the SAFETY INTERLOCK SWITCH plunger(s) are in a fully depressed condition. The game circuit can function normally.

When any cabinet access door(s) are opened, the SAFETY INTERLOCK SWITCH plunger(s) are in a partially extended condition. This isolates the game circuit from the line voltage.

To restore power to the game circuit with the access door(s) open, gently pull the SAFETY INTERLOCK SWITCH plunger(s) out to the fully extended condition. THIS IS TO BE USED FOR SERVICING THE GAME ONLY!

SELF-TEST

A slide switch is provided to make the game run a "Self-Test" on itself. The SELF-TEST SWITCH is located just inside the cabinet on the right side of the coin door frame as you face it.

To put the game into the Self-Test mode; turn the game ON and let it warm up for a few minutes. Then slide the SELF-TEST SWITCH to the ON position and actuate the "TILT" switch on the back side of the coin door just below the door lock to obtain the Self-Test-Menu display on the monitor screen.

When in the Self-Test mode, the monitor screen will display the results of certain test functions the game has run on itself. (These will be discussed in more detail later.)

TO SERVICE THE CONTROL PANEL(S)

1. UPRIGHT MODEL:

- ° The control panel is held in place by two latches, one on the left side and one on the right side of the cabinet.

They are spring loaded to provide constant positive pressure on their latch plates.

They can be reached through the coin door AFTER turning power to the game off.

To release the latches, lift up and toward the center of the control panel.

Once they are released, unhook them from their latch plates.

- ° To remove the control panel:

Raise it up and tilt it toward you until you can see the cable behind it.

02 Cradling the control panel between yourself and the cabinet, disconnect it from its ca-
bling.

03 The control panel is now free and can be removed.

04 ° To reinstall the control panel, reverse this procedure.

05 2. MINI MODEL:

° The control panel is held in place by two latches, one on the left side and one on the right side of the cabinet.

06 They are spring loaded to provide constant positive pressure on their latch plates.

07 They can be reached through the coin door AFTER turning power to the game off.

08 To release the latches, lift up and toward the center of the control panel.

Once they are released, unhook them from their latch plates.

09 ° To remove the control panel:

10 Raise it up and tilt it toward you until you can see the cable behind it.

11 Cradling the control panel between yourself and the cabinet, disconnect it from its ca-
bling.

12 The control panel is now free and can be removed.

13 ° To reinstall the control panel, reverse this procedure.

14 3. COCKTAIL TABLE MODEL:

15 ° Each control panel is held in place by several screws, two on the inside of the cabinet
and three along the bottom edge of the control panel.

16 Turn the power off to the game.

17 Open the coin box door and release the two latches on the inside of the cabinet up next
to the table top.

CAUTION: The right hand latch is very close to the **HIGH VOLTAGE** on the monitor. **BE CAREFUL!!**

Once they're released, unhook them from their latch plates.

18 Grasp the table top in the center above the coin door lifting up and to the side to
tilt it open.

CAUTION: Due to the weight of the monitor, EXTREME CARE MUST be taken when opening
the cabinet.

Remove the screws which secure the control panel in place.

- ° To remove the control panel(s):

Disconnect it from its cabling.

The control panel is now free and can be removed.

- ° To reinstall the control panel(s), reverse this procedure.

REMOVAL OF THE MAIN-DISPLAY-GLASS AND/OR THE T.V. BEZEL ASSEMBLY

1. UPRIGHT MODEL:

NOTE: In order to do this, the control panel MUST be removed first. See the "Upright Model" procedure.

- ° Turn the power to the game off and remove the control panel. This gets the control stick out of the way so the main-play-glass can be removed.
- ° Remove the screws securing the windshield retainer (at its top edge) and the windshield (at its bottom edge) in place and lift out the windshield.
- ° By putting your finger in the hole in the middle of the main-display-glass support, you can lift it up and out.
- ° Loosen the screws which secure the T.V. bezel-glass-clamps in place.

Move the clamps to the side and the bezel glass may be removed.

Remove the above mentioned screws and the bezel with four bezel-glass-clamps may be removed.

- ° To reinstall the T.V. bezel assembly and the main-display-glass, reverse this procedure.

2. MINI MODEL:

NOTE: In order to do this, the control panel MUST be removed first. See above "Mini Model" procedure.

- ° Turn the power off to the game and remove the control panel.
- ° Remove the screws which secure the glass clamping plate.
- ° Lift out the glass clamping plate. This frees the main-display-glass so it can be lifted up.
- ° By putting your finger in the hole in the middle of the main-display-glass support, you can lift it up and out.

- ° Remove the screws which secure the T.V. bezel assembly and lift it out. See Figure 47.

NOTE: Use the hole in the center of the main-display-glass support to grasp it.

- ° Reverse this procedure to reinstall the T.V. bezel assembly and the main-display-glass.

3. COCKTAIL TABLE MODEL:

NOTE: This may be done with the table top in the closed or the open position. If you decide to open the table top, **TURN THE POWER TO THE GAME OFF FIRST.**

- ° Remove the screws which secure the table top glass clamps in place.
- ° Remove the table top glass.
- ° Lift out the T.V. bezel assembly.
- ° To reinstall the T.V. bezel assembly and the table top glass, simply reverse this procedure.

VOLUME CONTROL POT

The volume control pot is located just inside the cabinet on the RIGHT side of the coin door frame. For adjustment, it may be reached through the coin door on ALL models.

To make the sounds louder, turn the pot clockwise (↻) as you face it.

To make the sounds less loud, turn the pot counterclockwise (↺) as you face it.

VOLTAGE CONTROL POTS

The voltage control pots are located on the Linear Power Supply P. C. Board. They are pre-set at the factory and SHOULD NOT be tampered with at all unless the distributors service department is contacted first.

SELF-TEST

The Self-Test mode is a special mode for checking game play statistics as well as game switches and computer functions. It is the easiest and best way to check for proper operation of the entire game.

NOTE: Putting the game into Self-Test **WILL NOT** cause the game to erase any CREDITS it has in its memory when the Self-Test mode is entered.

You may begin a Self-Test at any time by sliding the Self-Test switch to the "ON" position after the power to the game is on (Self-Test switch located just inside cabinet on right side of coin door frame). When this is done, the game will react as follows:

1. If the game is in the Attract mode when the Self-Test switch is moved to the "ON" posi-

tion, it will finish the sequence and then go into the Self-Test mode. This is illustrated by the display of the Self-Test Mode Menue on the monitor screen.

2. If the game is in the Ready-To-Play mode or the Play mode when the Self-Test switch is slid to the "ON" position, it **WILL NOT** go into the Self-Test mode until **AFTER** the players last Tron has been eliminated (the game **MUST** be over). At this point, the game will go into the Self-Test mode. Again, this is illustrated by the display of the Self-Test Mode Menue on the monitor screen.
3. The fastest way to enter the Self-Test mode is to slide the Self-Test switch to the "ON" position and then activate the "TILT" switch located on the back side of the coin door just below the lock mechanism. The game will then **IMMEDIATELY** go into the Self-Test mode.

The Self-Test mode has eight (8) major catagories as illustrated by the following Figure of the Self-Test Mode Menue as it should appear on the monitor screen.

1. It is easy to select what catagory you want to enter. By pushing forward or pulling backward on the controler stick, the Cursor at the left of the screen can be moved UP and DOWN, (forward=UP) and (backward=DOWN), until it is in front of the catagory you want to test. Release the controler stick at this time.
2. After the Cursor has been positioned, pull the trigger on the controler stick (Upright and Mini models) or depress the fire button on the console (cocktail models) and the monitor screen will display the test catagory you have selected.

NOTE: There is one exception to this. If you position the Cursor in front of the "PRE-SET" catagory on the Self-Test Mode Menue, when you press the "KICK" button on the console - - EVERYTHING, I repeat - EVERYTHING; including ALL information in the "BOOKKEEPING" mode, and ALL operator selected options, will be set back to zero "0" and to the factory recommended settings - respectively.

° Once you are IN one of the Self-Test mode catagories, FOLLOW THE **ON-SCREEN INSTRUCTIONS TO COMPLETE THE TEST**.

3. The next group of Figures show the **CORRECT** screen presentation for **EACH** catagory of the Self-Test mode.

The first display of the Self-Test mode is the Self-Test-Mode-Menue. It should look like this:

SELECT DESIRED TEST

- | | |
|---|------------------|
| 1 | SELF DIAGNOSTICS |
| 2 | SOUNDS |
| 3 | PLAYER INPUT |
| 4 | BOOKKEEPING |
| 5 | MACHINE SETUP |
| 6 | CHANNEL TEST |
| 7 | PRESET |
| 8 | GRID DISPLAY |

(MENU - CONTINUED)

POSITION CURSOR BY USING
JOYSTICK UP AND DOWN

HIT FIRE BUTTON FOR TEST

During the SELF DIAGNOSTICS section of the Self-Test mode, you will first see a lot of different colored bars shown on the monitor screen. These bars will be UNPainted one at a time from the top down. Second, you will see the screen painted Red, Blue, and Green in bars from the top down. Third, another group of colored bars is displayed. This sequence is repeated several times. And finally, this sequence is replaced by this message: "HIT FIRE BUTTON TO EXIT".

If the SELF DIAGNOSTICS find one or more bad ROM or RAM chips: instead of going through what is described above, the game will give you a written message as to which parts are bad.

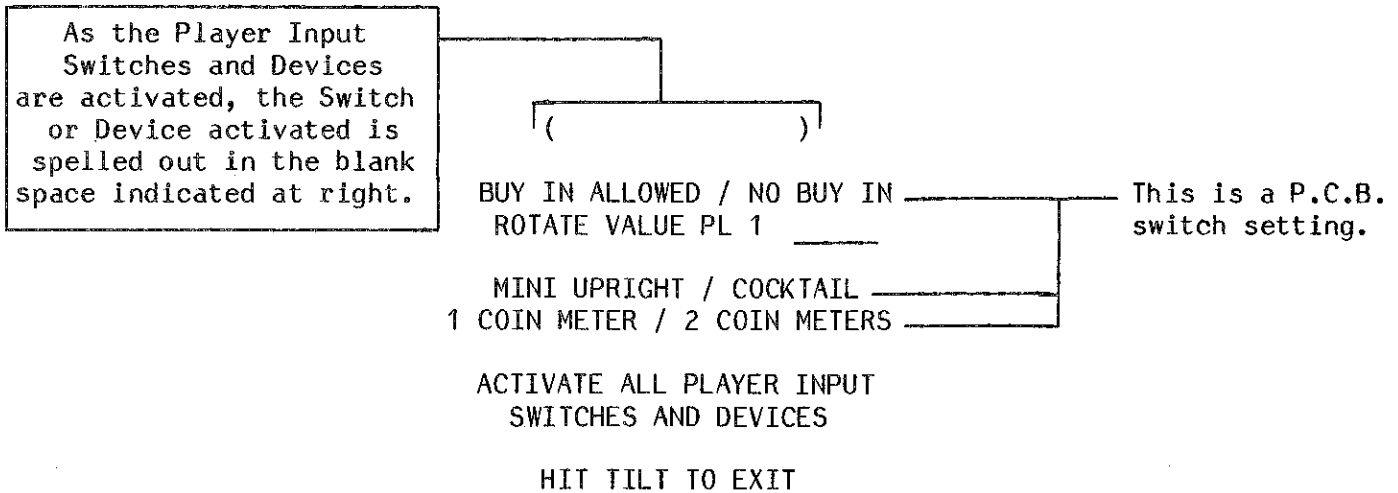
During the SOUNDS section of the Self-Test mode, the game will give a display which looks like the following:

SELECT A SOUND

- 1 ALL SOUNDS
- 2 EXIT
- 3 THROW DISK
- 4 HI GEAR HORZ
- 5 LOW GEAR HORZ
- 6 HI GEAR VERT
- 7 LOW GEAR VERT
- 8 MISSEL FIRE
- 9 BONUS BASE
- 10 TILT
- 11 ALL MCP BLOCKS HIT
- 12 IO TOWER MUSIC
- 13 COIN
- 14 SUCCESS MUSIC
- 15 FAIL MUSIC
- 16 ATTACK SOUND
- 17 TANK HORZ
- 18 TANK VERT
- 19 TANK FIRE
- 20 TANK BLIP
- 21 DEREZ
- 22 MCP BLIP
- 23 RELOCATE
- 24 TTY CLATTER
- 25 TOWER BEAM
- 26 TIMER WARNING

POSITION CURSOR BY USING
JOYSTICK UP AND DOWN
HIT FIRE BUTTON FOR TEST

During the PLAYER INPUT section of the Self-Test mode, the game will give a display which looks like the following:



During the BOOKKEEPING section of the Self-Test mode, the game will give a display which looks like the following:

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    SELECT A REPORT OR EXIT

    CHUTE 1 COINS _____
    CHUTE 2 COINS _____
    LONGEST GAME _____
    SHORTEST GAME _____
    HIGHEST SCORE _____
    BUY IN _____
    TIME REPORT
    SCORE REPORT
    EXIT
  
```

POSITION CURSOR BY USING
JOYSTICK UP AND DOWN
HIT FIRE BUTTON FOR TEST

In the TIME REPORT and SCORE REPORT sections of the BOOKKEEPING mode, the game will give displays which look like the following:

TIME REPORT			SCORE REPORT		
0	TO	30 SEC _____	0	TO	5000 PTS _____
30	TO	60 SEC _____	5000	TO	10,000 PTS _____
60	TO	90 SEC _____	10,000	TO	20,000 PTS _____

(TIME REPORT AND SCORE REPORT - CONTINUED)

90	TO	120 SEC	_____	20,000	TO	30,000 PTS	_____
120	TO	150 SEC	_____	30,000	TO	40,000 PTS	_____
150	TO	180 SEC	_____	40,000	TO	50,000 PTS	_____
3	TO	4 MIN	_____	50,000	TO	75,000 PTS	_____
4	TO	5 MIN	_____	75,000	TO	100,000 PTS	_____
5	TO	6 MIN	_____	100,000	TO	150,000 PTS	_____
	OVER	6 MIN	_____		OVER	150,000 PTS	_____

HIT FIRE BUTTON TO EXIT

HIT FIRE BUTTON TO EXIT

During the SETUP OPTIONS section of the Self-Test mode, the game will give a display which looks like the following:

SETUP OPTIONS

COIN CHUTE 1

*1 COINS FOR
*1 CREDITS

COIN CHUTE 2

*1 COINS FOR
*1 CREDITS

*1 CREDITS FOR
*3 BASES

1ST EXTRA BASE AT
*10,000 PTS

*1 DIFFICULTY LEVEL

EXIT

USE JOYSTICK UP AND
DOWN TO POSITION CURSOR
USE 1 AND 2 PLAYER
BUTTONS TO ALTER
OPTIONS

HIT 1 02 2 PLAYER BUTTON TO EXIT

* = Factory recommended settings.

The Difficulty Level setting has a range of 1 to 9 with 1 representing the easiest level of play and 9 representing the most difficult level of play. One is the factory recommended setting.

During the CHANNEL TEST section of the Self-Test mode, the game will give a display which looks like the following:

CHANNEL TEST

CHANNEL 1
CHANNEL 2
CHANNEL 3
CHANNEL 4
CHANNEL 5
CHANNEL 6

HIT FIRE BUTTON TO EXIT

Once you enter the CHANNEL TEST section of the Self-Test mode, the game automatically tests Channels 1 through 6 giving a tone for each one as it checks it. After the 6th Channel is tested, the game automatically repeats the test until the Fire button is hit. It then goes back to the Self-Test Mode Menu.

During the GRID DISPLAY section of the Self-Test mode, the game shows a white cross hatch pattern on the monitor screen. This is for alignment and/or test purposes. This pattern will remain on the monitor screen until the Fire button is hit. The game will then go back to the Self-Test Mode Menu.

To leave the Self-Test mode, go back to the Self-Test Mode Menu and then simply slide the Self-Test switch to the "OFF" position. Normal game functions will then return to the monitor screen.

T R O N										
O P T I O N S W I T C H S E T T I N G S										
//////////////////////////////////SWITCH NO. 1 - AT B 3 - LOCATED ON SOUND I/O P.C. BOARD//////////////////////////////////										
	SW#1	SW#2	SW#3	SW#4	SW#5	SW#6	SW#7	SW#8	SW#9	SW#10
2 COIN METERS 1 COIN METER	ON OFF			NOT USED	NOT USED	NOT USED	NOT USED	NOT USED	NOT USED	
MINI / UPRIGHT COCKTAIL TABLE		ON OFF								
BUY IN ALLOWED NO BUY IN			ON OFF							
FREEZE VIDEO NORMAL OPERATION										ON OFF
//////////////////////////////////SWITCH NO. 3 - AT D 14 - LOCATED ON SOUND I/O P.C. BOARD//////////////////////////////////										
	SW#1	**SW#2	**SW#3	**SW#4						
NORMAL OPERATION SOUND I/O DIAGNOSTIC MODE	OFF ON									
NORMAL OPERATION RAM/ROM TEST INDICATES TEST RESULTS VIA YELLOW L E D ON SOUND I/O BOARD: FAST FLASH = BAD ROM SLOW FLASH = BAD RAM		OFF ON								
NORMAL OPERATION OSCILLATOR TEST				OFF ON						
NORMAL OPERATION FILTER TEST										OFF ON

** NO EFFECT IF SW#1 OF SWITCH NO. 3 IS IN THE "OFF" POSITION.

THE REMAINDER OF TRON'S MOST COMMON OPTION SETTINGS ARE CONDUCTED DURING THE MACHINE SETUP PORTION OF THE SELF-TEST MODE. SIMPLY FOLLOW THE ON-SCREEN INSTRUCTIONS TO MAKE ANY ADJUSTMENTS YOU FEEL ARE NECESSARY.

M C R II SYSTEM									
P. C. BOARD JUMPER OPTIONS									
////////////////////////////////////VIDEO GENERATOR P. C. BOARD////////////////////////////////////									
MANUFACTURER	EPROM NO.	JW#1	JW#2	JW#3	JW#4	JW#5	JW#6	JW#7	JW#8
MOTOROLA	68764	#	*	*	#	*	*	*	*
	----- 68766	#	*	*	#	*	*	*	*
INTEL	2764	*	#	#	*	#	*	*	#
T. I.	2564	#	*	*	#	*	#	#	*
////////////////////////////////////SUPER C. P. U. P. C. BOARD////////////////////////////////////									
JUMPER OPTIONS FOR PROGRAM ROMS ONLY									
MANUFACTURER	EPROM NO.	JW#2	JW#4	JW#5	JW#6	JW#7	JW#18	JW#19	
MOTOROLA	68764	#	#	*	#	*	*	#	
	----- 68766	#	#	*	#	*	*	#	
T. I.	2564	#	#	*	#	*	*	#	
INTEL	2764	*	*	#	*	#	#	*	
JUMPER OPTIONS FOR BACKGROUND ROMS ONLY									
MANUFACTURER	EPROM NO.	JW#2	JW#4	JW#5	JW#6	JW#7	JW#18	JW#19	JW#1
MOTOROLA	68764	*	#	*	#	*	#	#	*
	----- 68766	*	#	*	#	*	#	#	*
T. I.	2564	*	#	*	#	*	#	#	*
INTEL	2764	#	*	#	*	#	*	*	#
////////////////////////////////////SOUND I / O P. C. BOARD////////////////////////////////////									
MANUFACTURER	EPROM NO.	JW#1	JW#2						
NUMEROUS MFR'S	2532	*	#						
NUMEROUS MFR'S	2732	#	*						

* = CUT JUMPER WIRES WHERE THIS SYMBOL "*" APPEARS.

= LEAVE JUMPER WIRES IN WHERE THIS SYMBOL "#" APPEARS.

The above table illustrates the fact that the Video Generator P.C. Board used in the MCR II System has 8 jumper wires, the SUPER C.P.U. P.C. Board used in the MCR II System has 19 jumper wires, and the Sound I/O P.C. Board used in the MCR II System has 2 jumper wires.

All of the above Boards can be used with a variety of different **SETS of EPROM chips**. However, these EPROMS are not all made by the same manufacturer and do have some internal differences. So, in order to make them function properly in their respective P.C. Boards, certain jumper wires on these Boards have to be cut.

The above table tells you which jumpers to cut (depending on which EPROM set you're going to use) by showing a "*" under that jumper wires number. If there is **NO "*" under a jumper wires number, THAT PARTICULAR JUMPER WIRE IS NOT TO BE CUT.**