

GENERAL INSTRUCTIONS

FOR

MS.PAC-MAN

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 right side of the rear access door.

2. MINI MODEL: Inside the rear of the cabinet on the right side of the rear access door.
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 on the right hand side of the coin door frame just inside the cabinet.

To put the game into the Self-Test mode; turn the power on and slide the SELF-TEST SWITCH to the ON position.

When in the Self-Test mode, the monitor screen will display the results of certain test functions it 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 three latches, one on the left side, one on the right side, and one in the center of the front 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.

Cradling the control panel between yourself and the cabinet, disconnect it from its cabling.

- ° The control panel is now free and can be removed.

2. MINI MODEL:

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

Cradling the control panel between yourself and the cabinet, disconnect it from its cabling.

The control panel is now free and can be removed.

3. COCKTAIL TABLE MODEL:

- ° 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.

Turn the power off-to the game.

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.

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.

SPECIAL NOTE: TO REINSTALL ANY OF THE ABOVE REMOVED ITEMS, REVERSE THE PROCEDURE YOU USED TO REMOVE IT.

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

1. UPRIGHT MODEL:

NOTE: To do this, the latches which secure the control panel **MUST** be released. The control panel need not be removed. See the "UPRIGHT MODEL" procedure.

- ° Turn the power to the game off and remove the rear access door.
- ° Remove the screws from the glass support bracket and lift it out the back of the cabinet.
- ° Grasp the main-display-glass in the top center, lift up slightly and pull it out the rear of the cabinet.
- ° 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 the "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.

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 open or the closed 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, reverse this procedure.

VOLUME CONTROL POT

The volume control pot is located on the Main Game Logic Board in the top right hand corner. There is only one pot. For adjustment, it may be reached through the rear access door on the UPRIGHT and MINI models. On the COCKTAIL TABLE models, you will have to open the table top to reach it.

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 (↶).

SELF-TEST

The Self-Test mode is a special mode for checking 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 cause it to erase any CREDITS on the game from its memory.

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. When this is done, the game will react as follows:

1. First, you will see random colored parts of the picture, then a moving pattern of white letters and numbers followed by moving multicolored patterns on the screen.
2. Immediately following this, a rightside up test display is shown on the monitor screen. This will remain until you set the Self-Test switch back to the "OFF" position. This test display is shown below.

SELF - TEST DISPLAY
AND BOARD LOCATION COORDINATES

MEMORY OK or (M-Rom-1 / Bad C Ram-0 / Bad W Ram-1 / etc.)

*1 COIN *1 CREDIT
BONUS *15000
MS. PAC-MEN *3
UPRIGHT or (TABLE)

* = switch selectable

3. If a bad ROM or RAM chip is found by the games internal check system during the Self-Test, the game indicates this to you by showing the location code of the bad chip(s) in place of the "MEMORY OK" message. The following table translates the chip location codes into actual positions on the game logic P.C. Board.

DISPLAY	DESCRIPTION
MEMORY OK	All RAMs are good.
BAD V RAM-0	RAM located on Logic PC board at position 4K is bad.
BAD V RAM-1	RAM located on Logic PC board at position 4N is bad.
BAD C RAM-0	RAM located on Logic PC board at position 4L is bad.
BAD C RAM-1	RAM located on Logic PC board at position 4P is bad.
BAD W RAM-0	RAM located on Logic PC board at position 4M is bad.
BAD W RAM-1	RAM located on Logic PC board at position 4R is bad.
MEMORY OK	All ROMs are good.
M-ROM-0	ROM located on Logic PC board at position 6E is bad.
M-ROM-1	ROM located on Logic PC board at position 6F is bad.
M-ROM-2	ROM located on Logic PC board at position 6H is bad.
M-ROM-3	ROM located on Logic PC board at position 6J is bad.

4. The detection of bad components on the Auxiliary Logic PC Board is not quite as simple as is the case for the Main Logic PC Board. The following table lists the components that are on this Auxiliary PC Board and what symptoms they will cause to appear on the monitor when each is bad.

BAD COMPONENT	SYMPTOM DISPLAYED ON MONITOR (<u>GAME IS NOT IN SELF-TEST</u>)
Z-80 CPU	<u>STATIONARY color garbage (parts of pictures)</u> --- CPU located on Auxiliary PC board at position U4
E-ROM-0	<u>Game goes through warm-up routine over & over & over---</u> ROM located on Auxiliary PC board at position U5
E-ROM-1	<u>Game goes through warm-up routine over & over & over---</u> ROM located on Auxiliary PC board at position U6
E-ROM-2	<u>FLASHING color garbage (parts of pictures)</u> --- ROM located on Auxiliary PC board at position U7

- - -BAD COMPONENT/SYMPOM TABLE CONTINUED- - -

BAD COMPONENT	SYMPTOM DISPLAYED ON MONITOR (GAME <u>IS NOT</u> IN SELF-TEST)
CUSTOM CHIP CG-820	Monitor screen reads out "ROM 0" With game in Self-Test - Screen reads "BAD ROM 0" CG-820 located on Auxiliary PC board at position U0
CUSTOM CHIP CG-821	Monitor screen displays FLASHING color garbage (parts of pictures) CG-821 located on Auxiliary PC board at position U1
CUSTOM CHIP CG-822	Screen display is same as for CG-821 With game in Self-Test - Screen reads out <u>UPSIDEDOWN</u> "BAD W RAM-0" CG-822 located on Auxiliary PC board at position U2
CUSTOM CHIP CG-823	Screen display is same as for CG-821 CG-823 located on Auxiliary PC board at position U3

5. To check your game function switches and buttons (coin counter switches, TEST CREDIT button, 1 PLAYER and 2 PLAYER buttons): activate each one while the game is in the Self-Test mode. You should hear a game sound for each activation. If you do not hear it, the switch/button is either not working, miswired, or disconnected. Check it out thoroughly.
6. When finished with the Self-Test mode, slide the Self-Test switch back to the "OFF" position.
 - ° A cross hatch pattern appears on the monitor screen for about 1 to 2 seconds.
 - ° If you wish to keep this test pattern on the monitor screen for further use, slide Self-Test switch to the "ON" position after the cross hatch pattern appears and before it disappears.
 - ° When finished with the cross hatch pattern, set the Self-Test switch to the "OFF" position.
 - ° Normal game functions will now return to the monitor screen.

OPTION SWITCH SETTINGS:

To change the option switch settings, you DO NOT have to take the Main Game Logic Board out of the game. They can be easily reached through the rear access door on the Upright and Mini models. On the Cocktail Table model, you do have to open the table top to reach them.

When changing any options, ALWAYS put the game into the Self-Test mode, make your changes, check the results on the monitor screen, take the game out of the Self-Test mode, and play the game to be sure the switches have worked properly and that no switches were accidentally moved that were not ment to be. (These switches are small and this can happen.)

The option switch settings and what they will make the game do are shown in the following Figure.

MS. PAC-MANOPTION SWITCH SETTINGS

////////////////////////////////////METHOD OF PLAY////////////////////////////////////											
				SW#1	SW#2	SW#3	SW#4	SW#5	SW#6	SW#7	SW#8
FREE PLAY				ON	ON						
1 COIN 1 PLAY				OFF	ON						
1 COIN 2 PLAYS				ON	OFF						
2 COINS 1 PLAY				OFF	OFF						
////////////////////////////////////NUMBER OF MS. PAC-MEN PER GAME////////////////////////////////////											
1 MS. PAC-MAN					ON	ON					
2 MS. PAC-MEN					OFF	ON					
3 MS. PAC-MEN					ON	OFF					
5 MS. PAC-MEN					OFF	OFF					
////////////////////////////////////BONUS MS. PAC-MEN////////////////////////////////////											
BONUS MS. PAC-MAN AT 10,000 POINTS						ON	ON				
BONUS MS. PAC-MAN AT 15,000 POINTS						OFF	ON				
BONUS MS. PAC-MAN AT 20,000 POINTS						ON	OFF				
NO BONUS						OFF	OFF				
////////////////////////////////////SPECIAL FUNCTIONS////////////////////////////////////											
AUTOMATIC RACK ADVANCE						ON	OFF				
FREEZE VIDEO (MONITOR PRESENTATION STOPS MOVING)						OFF	ON				
GAME OPERATES NORMALLY						OFF	OFF				