

INSTALLING YOUR



NEW GAME PACKAGE

ROMSTAR

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→ **BEFORE YOU GET STARTED...STOP!** ←

- 1) Does your ***new game*** package include all listed parts?
(Is it complete?)
 - 2) Is the game you have chosen to transform able to supply all the required voltages for the ***new game***?
NOTE: Some games, [i.e. Ms. Pac Man, Galaxian, etc.] regulate their voltages on the main P.C.B. This makes the existing power supply inefficient. These games will require a change in power supply for your ***new game***. Many game supply houses can offer you a switching regulated power supply for a relatively low cost.
 - 3) Is the monitor configuration compatible? In most games it is rather difficult to change the monitor from a vertical mount to a horizontal mount. We recommend you choose a game cabinet with the same mount as your ***new game*** requires.
 - 4) Do you have the necessary tools? (See the recommended tool list)
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CAUTION

F.C.C. REGULATION COMPLIANCE

THE P.C. BOARD CAGE SUPPLIED WITH THIS NEW GAME KIT MUST BE UTILIZED AND TERMINATED TO GROUND AT THE TIME OF INSTALLATION.

THIS IS TO AVOID RADIO FREQUENCY RADIATION AND COMPLY WITH THE LIMITS FOR A CLASS "A" COMPUTING DEVICE PURSUANT TO SUB-PART "J" OF PART 15 OF F.C.C. RULES, WHICH ARE DESIGNED TO PROVIDE REASONABLE PROTECTION AGAINST INTERFERENCE WHEN OPERATED IN A COMMERCIAL ENVIRONMENT.

OPERATION OF THIS EQUIPMENT IN A RESIDENTIAL AREA IS LIKELY TO CAUSE INTERFERENCE - IN WHICH CASE, THE USER AT HIS OWN EXPENSE, WILL BE REQUIRED TO TAKE WHATEVER MEASURES MAY BE REQUIRED TO CORRECT THE INTERFERENCE.



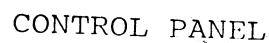
NEW GAME PACKAGE CONTENTS:

- 1- MAIN PRINTED CIRCUIT BOARD (PCB)
- 1- PCB CAGE (FCC REQUIRED)
- 1- CONNECTING WIRE HARNESS
- 2- 4-WAY JOYSTICKS
- 4- PLAYER BUTTONS
- 1- MARQUEE
- 1- CONTROL PANEL OVERLAY
- 1- PLEX CONTROL COVER
- 1- SET PLAY INSTRUCTION & FUNCTION LABELS
- 1- NEW GAME PACKAGE INSTALLATION MANUAL

NOTE: Replacement accessories available through your distributor

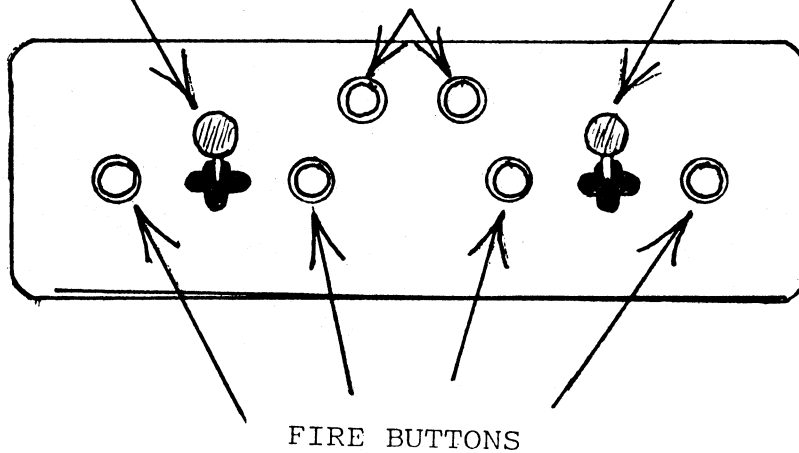
POWER REQUIREMENTS		MONITOR REQUIREMENTS
+5 VDC	5 amp	HORIZONTAL MOUNT
+12 VDC	1 amp	NEGATIVE COMPOSIT SYNC

The diagram shows the rear panel of the device. It features two DIP switches, labeled "DIP SW 2" and "DIP SW 1", arranged vertically. Below the switches is a circular potentiometer labeled "VR". At the bottom of the panel, there is a row of ten vertical slots, likely for a ribbon cable or connector.

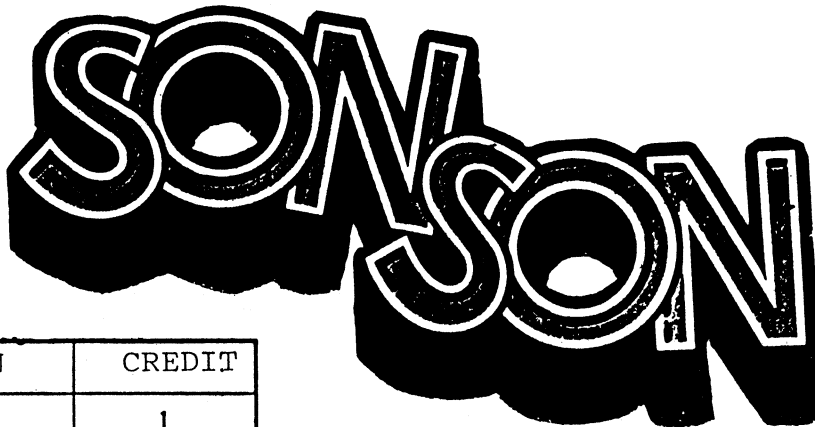


4 - WAY JOYSTICKS

1 & 2 PLAYER BUTTONS



GND	1	2	GND
	3	4	
+5V	5	6	+5V
	7	8	
COIN 1	9	10	COIN 2
1P	11	12	2P
START SW	12	14	START SW
<hr/>		<hr/>	
	17	18	
	19	20	
	21	22	
	23	24	
	25	26	
SHOT 1	27	28	SHOT 1
	29	30	
LEFT	31	32	LEFT
RIGHT	33	34	RIGHT
UP	35	36	UP
DOWN	37	38	DOWN
(R)	39	40	(C)
(B)	41	42	COP SYNC
	43	44	
+12V	45	46	+12V
SPEAKER ⊕	47	48	SPEAKER ⊖
COIN 1 COUNTER	49	50	COIN 2 COUNTER
GND(12V)	51	52	GND(12V)
GND	53	54	GND
	55	56	



DIP SW 1

COIN - CREDIT

SW	1	2	3	4	COIN	CREDIT
<input type="radio"/>	OFF	OFF	OFF	OFF	1	1
	ON				1	2
	OFF	ON			1	3
	ON	ON			1	4
	OFF	OFF	ON		1	5
	ON				1	6
	OFF	ON			1	7
	ON	ON	ON		2	1
	OFF	OFF	OFF	ON	2	3
	ON				2	5
	OFF	ON			3	1
	ON	ON			3	2
	OFF	OFF	ON	ON	3	4
	ON				4	1
	OFF	ON			4	3
	ON				FREE PLAY	

<input type="radio"/>	SW6	ATTRACT MODE
	OFF	NO SOUND
	ON	SOUND ON

<input type="radio"/>	SW7	TEST
	OFF	NORMAL
	ON	TEST

<input type="radio"/>	SW8	PICTURE FLIP
	OFF	NORMAL
	ON	FLIP

DIP SW2

SONSON TONTON

SW	1	2	SONSON TONTON	SW	4	5	BONUS LEVEL
<input type="radio"/>	OFF	OFF	3		OFF	OFF	20,000
	ON	OFF	4		ON	OFF	30,000
	OFF	ON	5	<input type="radio"/>	OFF	ON	20,000 2nd- 80,000 3rd-100,000
	ON	ON	7		ON	ON	30,000 2nd- 90,000 3rd-120,000

SW	6	7	DIFFICULTY	8	PICTURE
<input type="radio"/>	OFF	OFF	EASY	OFF	NORMAL
	ON		NORMAL		
	OFF	ON	HARD	ON	FREEZE
	ON	ON	VERY HARD		

\$ SOMETHING TO THINK ABOUT \$

Your final product will be a ***new game***.

You have made a wise decision to transform a game that has seen better days in the all important cash box into a ***new game***. This is by far the most cost effective alternative to maximize the return of your initial investment. All you provide is the cabinet with a power supply and a monitor. Oh yes, you will need a touch of elbow grease. And that's it! We provide the rest. The end result is ... A ***new game*** at a very low cost.

FACT: Spend a little time on the cabinet's appearance [i.e. marquee, control panel and cabinet graphics]. With a little paint, some wood putty and new lights, you will raise the profits of any game...especially with the introduction of a ***new game*** package.

The ***new game*** look should always apply to the inside of your game as well as the outside. A few wire ties and shrink tubing on your harness; some fastening hardware on your subassemblies and a sweep with the ol' vacuum cleaner will ensure that unnecessary *glitches* do not occur.

REMEMBER: You are creating a ***new game***.

If you have any questions or just need some advice on any of your ***new game*** transformations, don't hesitate in giving a member of our technical staff a call.

Phone: (213) 539-2744

Telex: 182426



LET'S GET OUR HANDS DIRTY



PREPARING THE ORIGINAL GAME FOR THE *new game*

Remove the following:

- 1) Main logic board(s)**
- 2) Control panel**
- 3) Monitor plexiglass**
- 4) Monitor Bezel**
- 5) Marquee**
- 6) Graphics**

I would recommend painting your cabinet to give it a fresh new look.

(If it is geographically inconvenient to make use of our **facilities**, you may consider having an auto body shop take care of your painting needs.)

If you intend to use your original plexiglass, be sure it is in mint condition or it should be replaced.

Thoroughly clean out your cabinet.



TIME TO INSTALL YOUR NEW GOODIES



BEFORE YOU START... REMEMBER DO NOT DO THIS WORK WITH THE POWER ON!

LOGIC P.C.B. CAGE

Mount the logic cage securely (away from power supply).

- A) Mark and drill pilot holes (3/32").**
- B) Place the logic cage (required by FCC) over the holes and secure it with some of the wood screws you have lying around the shop. Use enough screws to be sure the cage is secure to the cabinet wall.**
- C) Install the P.C.B. into the logic cage.**
NOTE: Leave the cage cover off until you have attached the entire wire harness and have tested the game for proper operation.

WIRE HARNESS

Attach the wire harness connector to the main logic board.

CAUTION: Sometimes the connector is not keyed and it is very easy to install it reversed on the logic board. Even if it is keyed, always **triple check** to be sure the wire inputs were connected correctly to the connector and the connector to the logic board.

CONNECTING THE WIRE HARNESS TO THE EXISTING WIRES:

When you hook up the control panel, power supply, monitor or other subassemblies that remain in the game cabinet to your new wire harness, try and use their existing secondary connectors.

- 1) Cut the original wire approximately three inches from the original connector. Strip off about one half inch of the insulation.
- 2) Solder the new wire designated for that position to the original wire you just stripped.

WARNING: DO NOT JUST TIE THE WIRES TOGETHER. THIS CAN CAUSE NAGGING INTERMITTENT PROBLEMS THROUGH LOOSE CONNECTIONS OR OXIDATION OR BOTH. **ALWAYS TAKE THE TIME TO DO IT RIGHT.**

- 3) Melt shrink tubing around all your in-line wire connections. Do not use electrical tape. Tape could unravel over a period of time due to the cabinet heat and cause you a great deal of trouble.
- 4) Use wire tie wraps, and secure the cable to the cabinet whenever it seems necessary. Remember this is a ***new game***, not a sloppy conversion.

POWER WIRES:

- 1) Connect the wires that are designated for your power supply. You will need a supply of +5V, +12V & ground. Your ***new game*** package may not require all of the voltages that were used in the original game. Tie off any unused wires.
- 2) You will notice that you probably have more than one wire for each voltage. It is a good idea to use all wires supplied (double up if it is necessary). This will help to ensure that you don't overload the edge connector pins and cause them to "burn".

MONITOR WIRES:

You will be connecting the wires designated for the RED, GREEN & BLUE video guns along with the SYNC & GROUND wires.

NOTE... CONCERNING SYNC:

Your *new game* only calls for one sync wire connection, this is called *composit sync* (horizontal and vertical tied together). This composit sync is also *negative*. Most monitors have supply positions for both negative and positive sync. You can check your monitor manual or call our technical department for assistance

SPEAKER WIRES:

Find the two wires that are designated for the speaker and hook 'em on up.

COIN DOOR WIRES:

- 1) Connect the designated wires to the coin switches and meter.
- 2) You can connect your door lamps to the unused -5V power supply. Some games have separate power outputs for the coin door lamps.

GUESS WHAT?

You are almost done with the electrical connections of your *new game*. All you have left is the control panel wiring. But we are going to hold off on that for right now. We have a few other things we need to do first. So why don't you go ahead and get yourself a drink of water and stretch your legs. When you return, we can take a fresh look at your progress and then move forward.

SMOKE TEST

WHAT TEST?

Don't worry. All this means is that you are ready to apply power to the system for the first time and you pray that there will be no smoke from a simple oversight.



You are just about ready to power up the logic board. But first we need to recheck your work.

- 1) Carefully inspect the game for loose power wires, exposed connections and extra fastening hardware.**
- 2) Make sure the logic board, board cage, monitor and power supply are securely fastened in place.**
- 3) Double check the connectors to be sure they are wired and hooked up properly.**
- 4) Set the dip switches on the logic board to the factory recommendations. Also, be sure you set the dip switches for "DEMO WITH SOUND". This will enable you to hear as well as see that your new P.C.B. is functional.**

TIME TO APPLY POWER:

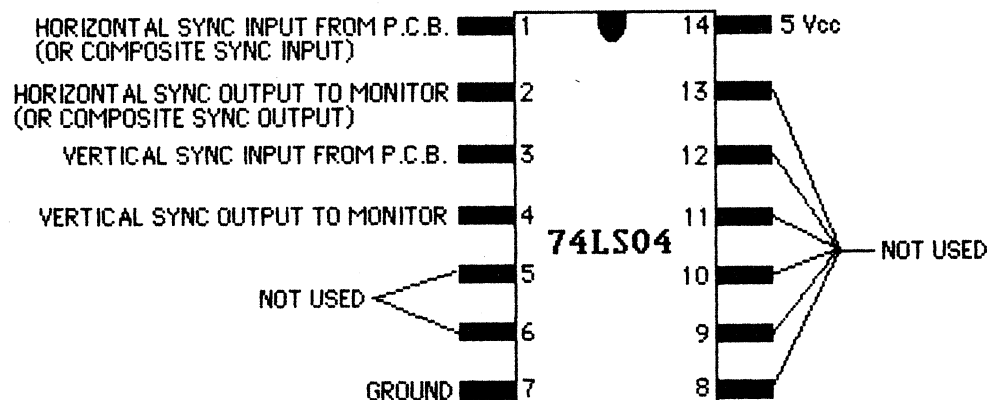
- 1) Look and smell for smoke. (TURN OFF IMMEDIATELY IF ANY IS NOTICED)**
- 2) Listen for game sounds.**
If after one minute you have not heard any sounds:
 - A) Check for proper dip switch settings.**
 - B) Adjust volume control and check speaker connections.**
 - C) Check the +12V power supply to the logic board****NOTE: If you do get sounds, but they are a little fuzzy, switch the wires around on the speaker.**

3) How is the monitor image?

A) Is the picture in sync?

If your picture has the top and bottom halves of the screen reversed and it will not stop rolling, change your sync polarity on the monitor. (Positive to negative).

If your monitor does not have dual polarity positions for sync, then you will need to reverse the sync yourself by installing a simple one I.C. circuit between the logic board and the monitor. (The following illustration shows a hookup for both *composite* and *separate* syncs.



B) Now how's your picture?

- Is it centered?
- Is it too bright or dim?
- Is it in focus?

Check your monitor manual for these adjustments. If your screen looks "off", then your *new game* transformation may have been in vain. So let's take the time to make the monitor look great.

✿ CONTROL PANEL ASSEMBLY ✿

- 1) Remove the buttons, joysticks and wire harness and put them aside for now. Do not remove the original panel overlay until the new holes have been drilled.

- 2) Mark positions on the panel for the new holes as specified in your ***new game*** manual.

☞ **ROMSTAR** supplies a clear 1/8" thick piece of plexiglass with every ***new game*** package to cover the control panel. We feel that your ***new game*** investment is well worth protecting...and the control panel is the first place to show wear and tear.

- You will need to cut this piece to size. Use the control panel as a template.
- Use a razor knife to score the plexiglass deeply. Then use a pair of pliers to break away the extra plexiglass.

- 3) Now drill the holes in your panel that you have marked off for the ***buttons, joystick and bolts***.

HINT: For best results, use a chassis or sheet metal punch for button holes.

- 4) Drill the same holes on your plexiglass panel protector. Once again use your panel as a template.

HINT: To avoid chipping while you are drilling the holes, place the plexiglass securely on a soft wood surface and use a plexiglass drill bit and hole cutter.

- 5) The holes are now all cut. Smooth them out on your panel and plexiglass with a fine toothed file.

- 6) Remove the original graphics overlay from the panel. Clean up the panel and install your ***new game*** graphics.

MAKE IT EASIER: Peel the top half of the protective backing off of your ***new game*** graphics. Start from the center and smooth out your overlay. Make sure you have about an inch extra coming off the top. *No bubbles please*. Now peel off the bottom half and do the same as you did for the top.

- 7) Adhere the instruction and function labels. (Jump, Fire, Players 1 & 2, Etc.)

- 8) Install the Plex Control Cover over your completed ***new game*** panel.

NOTE: Be sure to bolt the plexiglass securely to the panel.

- 9) Mount the joystick and the buttons to the panel and wire them up. (Use the existing Panel wiring if possible)

💡 MARQUEE INSTALLATION 💡

Using the original marquee as a template, Center your ***new game*** marquee graphics and score the new marquee deeply to fit the cabinet. Break off the excess with pliers.

Be sure the light behind the marquee works. Everything should always work on a new game.

Take your time ... Don't forget this is going to be a *new game***.**

✍ FINISHING TOUCHES ✍

- 1) Check the game inside and out for any imperfections. Secure any loose wiring or fastening hardware.
- 2) Make sure the coin door is tight and the coin mechs are well adjusted. A game is no good to anybody if you can't get a coin into it.
- 3) Once again go over every step of this ***new game*** transformation in your mind. Be sure everything is correct and to your liking.
- 4) Power up the game.
 - A) Check all the coin switches. (Does the coin meter work?)
 - B) Play your ***new game***.
 - Are all the player controls working?
 - Are the game sounds present?
 - Is the volume level proper?
 - Are the dip switches set properly?

Well, thats about it. Good Luck .

RECOMMENDED TOOLS AND SUPPLIES



ROMSTAR *new game* package.

PHILLIPS AND SLOT SCREW DRIVERS

SOCKET SET

ENTHUSIASTIC ATTITUDE

WIRE CUTTERS AND STRIPPERS

PLIERS OR CHANNEL LOCKS

PLANNING AND CAREFUL THOUGHT

ELECTRIC DRILL

3/32" • 1/4" • 7/16" DRILL BITS

1/4" PLEX BIT

1 1/4" CHASSIS OR SHEET METAL PUNCH

1 1/4" PLEX HOLE SAW

GLASS OF WATER AND A SNACK

SMALL FILE

RAZOR KNIFE AND SHARP BLADES

STRAIGHT EDGE

PATIENCE

PAINTING SUPPLIES (if you do your own painting)

- PAINT BRUSH AND PAINT (don't forget the primer)

- PAINT ROLLER AND PAN

- SAND PAPER

- PUTTY KNIFE AND WOOD PUTTY

A GOOD NIGHTS SLEEP

STAPLE GUN AND STAPLES

SOLDERING IRON AND 60/40 RESIN CORE SOLDER

VACUUM CLEANER

ASSORTED FASTENING HARDWARE

SHRINK TUBING: 3/32" • 1/8" • 3/16"

MASKING TAPE

COMMON SENSE

3 1/2" OR 4" WIRE TIES

SPRAY WINDOW CLEANER AND RAGS (baby diapers work GREAT!)

