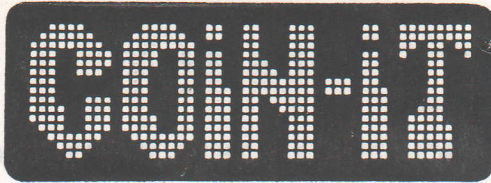


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COMPANIES

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A CONVERSION FOR
**VERTICAL
MONITORS**



FILTER BOARDS

TWO FILTER BOARDS ARE INCLUDED IN THIS KIT TO COMPLY WITH F.C.C. REGULATIONS.

TO USE THESE BOARDS CONNECT THE HARNESES TO THE LABELED CONNECTORS ON THE MAIN P.C.B. ASSEMBLY, AND MOUNT THE FILTER BOARDS IN ANY CONVENIENT LOCATION.

F.C.C. CAGE

POSITION MAIN P.C.B. ON THE COVER OF THE F.C.C. CAGE. (SECTION WITHOUT PUNCHED HOLES) MARK HOLES IN RESLOCK MOUNTING FEET. PUNCH HOLES IN F.C.C. CAGE WHERE MARKED.

HARNESS INSTALLATION

INSTALL P.C.B. ASSEMBLY IN CABINET. CONNECT HARNESS TO BOARDS. THE BARE END OF HARNESS HAS BEEN SEPARATED WITH WIRE TIES AND LABELED IDENTIFYING ITS LOCATION. ROUTE THE HARNESS TO THE PROPER AREA AND HOLD IT IN PLACE WITH CABLE CLAMPS.

POWER SUPPLY

4 BLACK WIRES TO GROUND
4 RED WIRES TO +5VDC
1 BROWN WIRE TO -5VDC
2 BLUE WIRES TO +12VDC
1 YELLOW WIRE TO +13VDC

THE YELLOW WIRE IS THE AUDIO SUPPLY. IF 13VDC IS NOT AVAILABLE ON YOUR POWER SUPPLY THE +12VDC IS USUALLY SUFFICIENT.

HARNES INSTALLATION (CONTINUED)MONITOR

- 1 RED WIRE TO VIDEO RED
- 1 BLUE WIRE TO VIDEO BLUE
- 1 GREEN WIRE TO VIDEO GREEN
- 1 WHITE WIRE TO HORIZONTAL AND VERTICAL SYNC
- 1 BLACK WIRE TO VIDEO GROUND

THE WHITE WIRE MUST BE CONNECTED TO BOTH HORIZONTAL AND VERTICAL SYNC CONNECTIONS ON THE MONITOR.

CONTROL PANEL

THE HARNES WAS DESIGNED TO ACCOMODATE DUAL CONTROL MACHINES, SUCH AS COCKTAIL TABLES.

TO CONVERT AN UPRIGHT CABINET WITH SINGLE CONTROLS, SIX WIRES MAY BE LEFT UNUSED:

BROWN/BLUE	ORANGE/GREEN
ORANGE/WHITE	BROWN/BLACK
WHITE/ORANGE	YELLOW/WHITE

THE STRIPPED ENDS OF THESE WIRES SHOULD BE CUT OFF AND THE WIRES TIED TO THE HARNES WITH WIRE TIES.

CONTROL PANEL CONNECTIONS

- 1 PINK/BLACK - 1 PLAYER SELECT
- 1 RED/BLACK - 2 PLAYER SELECT
- 1 ORANGE/BLACK-1 PLAYER UP
- 1 GREEN/BROWN- 1 PLAYER DOWN
- 1 RED/ORANGE - 1 PLAYER RIGHT
- 1 GREEN/BLUE - 1 PLAYER LEFT
- 1 RED/WHITE - 1 PLAYER FIRE
- 1 WHITE/PINK - 1 PLAYER WARP
- 1 BLACK - COMMON GROUND

HARNES INSTALLATION (CONTINUED)COIN DOOR

- 1 WHITE/YELLOW - COIN SWITCH "A"
 1 GREEN/YELLOW - COIN SWITCH "B"
 1 BLACK - COIN SWITCH COMMON
 1 WHITE/BROWN - TILT SWITCH

COIN METER

- 1 BLUE/ORANGE - COIN METER "A"
 1 WHITE/VIOLET - COIN METER "B"

IN ORDER FOR THE GAME TO
 "COIN-UP" YOU MUST USE A COIN METER!!

THE COMMON SIDE OF THE COIN METERS MUST BE CONNECTED TO +12VDC.
 THERE IS NO WIRE IN THE HARNES FOR THIS AND IT MUST BE ADDED.

SERVICE SWITCH

- 1 BROWN/WHITE - SERVICE SWITCH
 1 BLACK - COMMON GROUND

IF YOU USE ONLY ONE COIN METER, WIRE COIN SWITCH "A" WHITE/YELLOW
 TO BOTH COIN SWITCHES AND CONNECT COIN METER "A" BLUE/ORANGE TO
 METER.

SPEAKER

- 1 WHITE/BLACK - SPEAKER +
 1 BLACK - SPEAKER -

PIN CONNECTION PLAN FOR "HALLEY'S COMET"

F

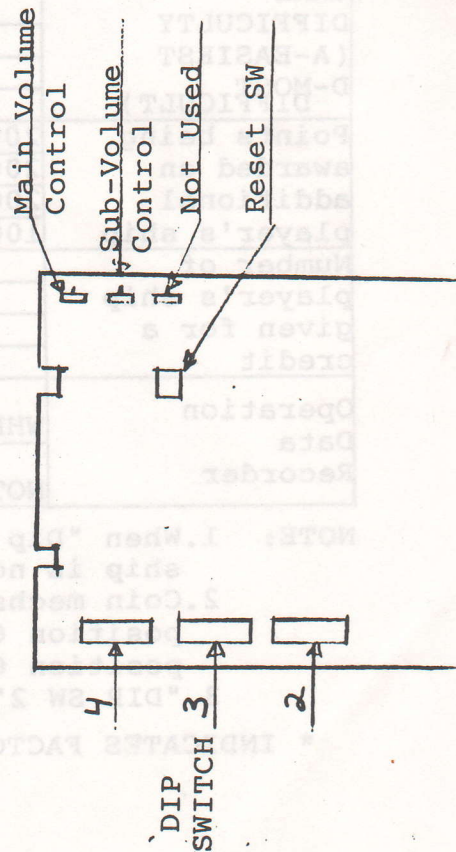
1	GND-black
2	GND-black
3	GND-black
4	GND-black
5	+5V-red
6	+5V-red
7	+5V-red
8	-5V-brown
9	+13V-yellow
10	Post
11	+12V-blue
12	+12V-blue

G

Component side	Solder side
GND-black	1A GND-black
GND-black	2B GND-black
GND-black	3C GND-black
GND-not used	4D GND-n/u
V-GND-black	5E V-GND-n/u
V-Sync-White	6F V-Sync-n/u
Post	7H Post
Video R-red	8J Video R-n/u
Video G-grn	9K Video G-n/u
Video BL-blv	10L Video BLn/u
-5V-not used	11M -5V-n/u
-5V-brown	12N -5V-n/u
+12V-n/used	13P +12V-n/used
+12V-blue	14R +12V-blue
+5V-not used	15S +5V-n/used
+5V-red	16T +5V-red
+5V-red	17U +5V-red
+5V-not used	18V +5V-n/used

C

Component side	Solder side
GND-black	1 A GND-black
Not Used	2 B Not Used
Not Used	3 C Not Used
Not Used	4 D Not Used
Sound out-Wh/blk	5 E Sound out-black
Post	6 F Post
Not used	7 H P-On-Reset-not used
Coin SW A-WH/Yel	8 J Coin SW B-Green/Yel
Coin meter A-B1/Or9	K Coin meter B-WH/Yel
CoinLockoutA-W/Gr10	L CoinLockoutB-Yel/B1
ServicesW-BN/WH	11 M Tilt SW-White/Brown
Select 1-pink/Blk12	N Select 2-Red/Black
1P UP-orange/Blk	13 P 2P UP-Brown/Blue
1P Down-green/Bn	14 R 2P Down-Orange/White
1P Right-red/Or	15 S 2P Right-White/Or
1P Left-green/bl	16 T 2P Left-Orange/Green
Not Used	17 U Not Used
Not Used	18 V Not Used
Not Used	19 W Not Used
Not Used	20 X Not Used
1P FIRE-Red/White21	Y 2P FIRE-Brown/Black
1P WARP-Wh/Pink	Z 2P WARP-Yellow/White



DIP SWITCH SETTING PLAN FOR "HALLEY'S COMET"DIP SWITCH 4

OPTION	POSITION	1	2	3	4	5	6	7	8
GAME STYLE	TABLE	OFF							
	UPRIGHT	ON *							
SCREEN INVERSION	NORMAL		OFF						
	INVERSION		ON						
TEST MODE	NORMAL			OFF *					
	TEST			ON					
DEMO SOUND	NORMAL				OFF *				
	NO SOUND				ON				
PLAY PRICING COIN A	1COIN-1PLAY					OFF	OFF *		
	1COIN-2PLAY					ON	OFF		
	2COIN-1PLAY					OFF	ON		
	2COIN-3PLAY					ON	ON		
PLAY PRICING COIN B	1COIN-1PLAY					OFF	**OFF		
	1COIN-2PLAY					ON	OFF		
	2COIN-1PLAY					OFF	ON		
	2COIN-3PLAY					ON	ON		

DIP SWITCH 3

OPTION	POSITION	1	2	3	4	5	6	7	8
GAME DIFFICULTY (A-EASIEST D-MOST DIFFICULT)	B	OFF **	OFF						
	A	ON	OFF						
	C	OFF	ON						
	D	ON	ON						
Points being awarded an additional player's ship	200K/500K			OFF **	OFF				
	200K/800K			ON	OFF				
	200K/1000K			OFF	ON				
	100K/500K			ON	ON				
Number of player's ship given for a credit	3					OFF **	OFF		
	2					ON	OFF		
	4					OFF	ON		
	3					ON	ON		
Operation Data Recorder	WHEN FIXED								ON
	NOT FIXED								OFF *

- NOTE: 1. When "Dip SW 3" is set at 5-"on"/6-"on", number of player's ship is not increased throughout game.
 2. Coin mechs system can be optioned by setting "DIP SW 1".
 position 6-"on" for single coin selector
 position 6-"off" for twin coin selector
 3. "DIP SW 2" is not used and all contacts should be set "off".

* INDICATES FACTORY SETTINGS