



OPERATION MANUAL

⚠ CAUTION

In order to safely use this machine, be sure to carefully read this operation manual and the manual of the cabinet in which this machine to be installed before installation and operation.

This operation manual should be kept together with the machine.

DISTRIBUTED BY:

NAMCO LIMITED
2-8-5 TAMAGAWA, OHTA-KU, TOKYO, 146, JAPAN

1. Cautions

- (1) Be sure to turn off the cabinet whenever installing or removing the PC board. Otherwise you may be hurt by an electric shock.
- (2) Be sure to use an edge connector which is applied to the JAMMA standard. Any modifications such as cutting the edges of PC boards will cause a failure and also will be out of our guarantee for repair.
- (3) Never test the PC boards for conductivity with a multimeter or similar device. The PCB contains sensitive chips which could be destroyed even by the internal voltage of such a device.
- (4) Foreign matters or dust on the PC boards will cause a failure. Turn off the power and clean the PC boards with a brush or similar thing.
- (5) When transporting the PC boards, wrap them with sponges or air caps and pack them in a card board box so that they can avoid a direct impact from outside during shipment.
- (6) For maintenance, contact your distributor.

2. Specifications

- (1) Control panel: One-side 2-P specifications
 - 8-direction lever: 2 (1P, 2P, 1 each)
 - Button switch: 4 (1P, 2P, 2 each)
 - Start switch: 2 (1P, 2P, 1 each)
- (2) PC board size: 230 x 210 mm
- (3) Direction of monitor: Vertical

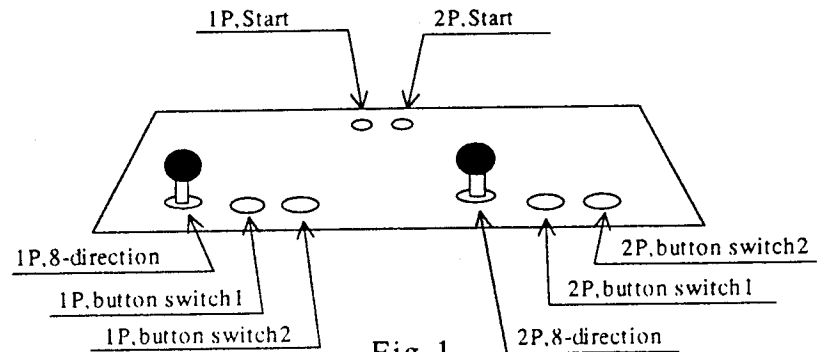


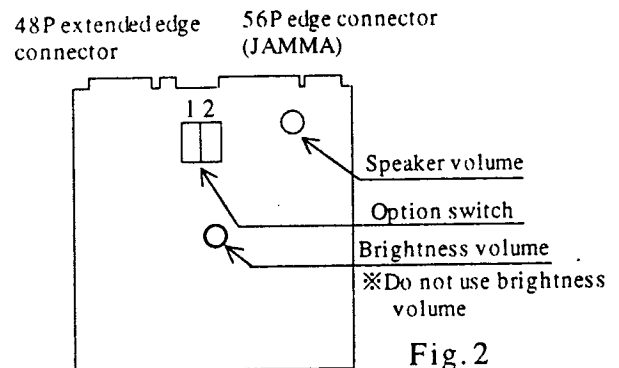
Fig. 1

3. Connection

- (1) Connection of control panel
See above to connect JAMMA harness and extended harness(accessory) to control panel through the cabinet (see P5 : PC board connector table)
Connecting expanded harness to the right speaker allows you to enjoy a stereophonic effect.
- (2) Connection of PC board
Set the PC board in the cabinet and connect JAMMA edge connector and 48P extended edge connector (DDK 225D-10024C2-2312) to the PC board.

4. Explanation of PC Boards

- (1) Option switches
No.1 to "ON" for Test Mode.
No.2 to "ON" for Screen Freeze.
Normally, all of the option switches are "OFF".
- (2) Speaker volumes
To decrease the sound volume of the speaker, turn the speaker volume counter-clockwise.



5. Test Mode

- (1) The PC Board enters the test mode by setting the test switch on the PC Board to "ON" on the game screen. And the test menu screen is displayed on the monitor. Use the test switch (For connection, see P5: PC Board Connector Table) on the cabinet or the option switch on the PC Board. (see P1: 4.(1) Option switches)
When an item is selected by operating the 1P control lever up and down and the 1P button switch1 is pushed, the selected testscreen is displayed.
- (2) Game fees can be changed on the coin option screen, and the game difficulty can be changed on the game option screen. Select an item by operating the 1P control lever up and down, and change its contents using the 1P button switch1 (see the option setting table). After that, push the 1P button switch2 to return to the test menu screen.

- SWITCH TEST ————— (a) Switch test screen
- SOUND TEST ————— (b) Sound test screen
- COIN OPTIONS ————— (c) Coin option screen (Setting of game fees)
- GAME OPTIONS ————— (d) Game option screen (Setting of game difficulty)
- OBJECT TEST ————— (e) Object test screen
- SCROLL TEST ————— (f) Scroll test screen
- A.D.S. ————— (g) A.D.S. screen
- COLOR TEST ————— (h) Color test screen (for monitor adjustment)
- CONVERGENCE TEST ————— (i) Cross hatch pattern (for monitor adjustment)

(Test Menu Screen)

[COIN OPTIONS]	
GAME COST: _____	1
1 COIN 1 CREDIT	
DISCOUNT TO CONTINUE: _____	2
NO	
COIN 1 MECH VALUE: _____	3
1 COIN COUNT AS 1 COIN	
COIN 2 MECH VALUE: _____	4
1 COIN COUNT AS 1 COIN	
COIN 3 MECH VALUE: _____	5
1 COIN COUNT AS 1 COIN	
COIN 4 MECH VALUE: _____	6
1 COIN COUNT AS 1 COIN	
BONUS FOR QUANTITY BUY IN: _____	7
NONE	
FREE PLAY: _____	8
NO	

(Coin Option Screen)

[GAME OPTIONS]	
MUSIC IN ATTRACT: _____	9
YES	
SPEAKER OUT: _____	10
STEREO	
COIN COUNTER: _____	11
COMMON	
OLD GALAGA OPTIONS _____	12
NEW GALAGA OPTIONS _____	13
OLD XEVIOUS OPTIONS _____	14
SUPER XEVIOUS OPTIONS _____	15
NEW XEVIOUS OPTIONS _____	16
OLD MAPPY OPTIONS _____	17
NEW MAPPY OPTIONS _____	18

(Game Option Screen)

(Option Setting Table)

(< Standard Setting)

Item	Contents	
1. Game fees	one count required for one game (one credit)	1 < [1 - 9]
2. DISCOUNT	50% discount when continuing a play	NO < YES
3. COIN 1 MECH VALUE	Count per coin	1 < [1 - 9]
4. COIN 2 MECH VALUE	Count per coin	1 < [1 - 9]
5. 6.	Not used	
7. BONUS COIN	One additional coin per the specified number of coins	NONE < 2 Coins Give 1 Coin ~ 9 Coins Give 3 Coins
8. FREE PLAY	NO < YES	
9. MUSIC IN ATTRACT	YES < NO	
10. SPEAKER OUT	STEREO < MONO	
11. COIN COUNTER	COMMON (1Coin counter for 2slots) < EACH ONE (1Coin counter for each 1slot)	
12. OLD GALAGA OPTIONS	Push 1P button switch1 to enter OLD GALAGA OPTIONS screen	a
13. NEW GALAGA OPTIONS	Push 1P button switch1 to enter NEW GALAGA OPTIONS screen	b
14. OLD XEVIOUS OPTIONS	Push 1P button switch1 to enter OLD XEVIOUS OPTIONS screen	c
15. SUPER XEVIOUS OPTIONS	Push 1P button switch1 to enter SUPER XEVIOUS OPTIONS screen	c
16. NEW XEVIOUS OPTIONS	Push 1P button switch1 to enter NEW XEVIOUS OPTIONS screen	d
17. OLD MAPPY OPTIONS	Push 1P button switch1 to enter OLD MAPPY OPTIONS screen	e
18. NEW MAPPY OPTIONS	Push 1P button switch1 to enter NEW MAPPY OPTIONS screen	f

Example	Game fees		①	2	③,④	⑦	Credit display	(Note) Set ③,④ corresponded to Coin Mech 1&2 in use.
	1 game	Continue						
	100 yen	100 yen						
100 yen	50 yen	2 COINS 1 CREDIT	YES	1 COUNT 2 COINS	NONE	CREDIT 0/2		

a. Original Galaga Option Screen

[OLD GALAGA OPTIONS]	
DIFFICULTY LEVEL: NORMAL	1 9
RANK UP: NO	2 0
FINAL STAGE: 31 STAGE	2 1
FIGHTER & EXTEND: 3 FIGHTERS (14/32)	2 2
1ST 30000 PTS 2ND 120000 PTS EVERY 120000 PTS	

[NEW GALAGA OPTIONS]	
DIFFICULTY LEVEL: NORMAL	2 3
FIGHTER: 3 FIGHTERS	2 4
EXTEND: 1ST 50000PTS 2ND 200000PTS	2 5

(Option Setting Table)

(< Standard Setting)

Item	Contents	
1 9 . DIFFICULTY LEVEL	NORMAL < [NORMAL,EASY,HARD,VERY HARD]	
2 0 . RANK UP	Increase difficulty from 32nd stage	NO < YES
2 1 . FINAL STAGE	Set final stage to end a game compulsorily	31 < [31,63,95,ENDLESS]
2 2 . FIGHTER & EXTEND	3 FIGHTERS 1ST 30000PTS 2ND 120000PTS EVERY 120000PTS < (initial 3,add 1 at 30000 points,another at 120000,hereafter 1 for every 120000 points) [selectable from 32 patterns]	
2 3 . DIFFICULTY LEVEL	NORMAL < [EASY,NORMAL,HARD]	
2 4 . FIGHTER	3 < [2,3,4,5]	
2 5 . EXTEND	1ST 50000PTS 2ND 200000PTS < [NO BONUS,1ST 50000PTS,1ST 50000PTS 2ND 200000PTS]	

c. Original Xevious Option Screen
(Super Xevious Option Screen)

[OLD XEVIOUS OPTIONS]	
DIFFICULTY LEVEL: HARD	2 6
RANK UP: YES	2 7
FINAL LAP: 1 LAP	2 8
SPECIAL FLAG: 1UP 1 TIME	2 9
SOLVALOU & EXTEND: 3 SOLVALOU (36/36)	3 0
1ST 20000 PTS	

d. Arranged Xevious Option Screen

[NEW XEVIOUS OPTIONS]	
DIFFICULTY LEVEL: NORMAL	3 1
SOLVALOU: 3 SOLVALOU	3 2

(Option Setting Table)

(< Standard Setting)

Item	Contents	
2 6 . DIFFICULTY LEVEL	HARD < [NORMAL,EASY,HARD,VERY HARD] (*Default setting of Super Xevious is VERY HARD)	
2 7 . RANK UP	Increase difficulty from 2nd lap	YES < NO
2 8 . FINAL LAP	Set final lap to end a game compulsorily	1LAP < [1LAP,2LAP,3LAP,4LAP,ENDLESS]
2 9 . SPECIAL FLAG	Set effect of Special Flag	1UP 1 TIME < (1UP,once at a place) 1UP (1UP) 10000PTS (add 10000points)
3 0 . SOLVALOU & EXTEND	3 SOLVALOU 1ST 20000PTS < (initial 3,add 1 at 20000 points) [selectable from 36 patterns]	
3 1 . DIFFICULTY LEVEL	NORMAL < [EASY,NORMAL,HARD]	
3 2 . RANK UP	3 < [2,3,4,5]	

e. Original Mappy Option Screen

[OLD MAPPY OPTIONS]

DIFFICULTY LEVEL: _____ 3 3
NORMAL

FINAL ROUND: _____ 3 4
15 ROUND

MAPPY & EXTEND: _____ 3 5
3 MAPPY (5/32)
1ST 20000 PTS

f. Arrange Mappy Option Screen

[NEW MAPPY OPTIONS]

DIFFICULTY LEVEL: _____ 3 6
NORMAL

MAPPY: _____ 3 7
3 MAPPY

EXTEND: _____ 3 8
60000PTS

(Option Setting Table)

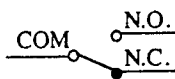
(< Standard Setting)

Item	Contents	
3 3 . DIFFICULTY LEVEL	NORMAL < [EASY,NORMAL,HARD,HARD+1,HARD+2,HARD+3,HARD+4,HARD+5]	
3 4 . FINAL ROUND	Set final round to end a game compulsorily	15 < [15,23,31,39,ENDLESS]
3 5 . MAPPY & EXTEND	3 MAPPY 1ST 20000PTS < (initial 3,add 1 at 20000 points) [selectable from 32 patterns]	
3 6 . DIFFICULTY LEVEL	NORMAL < [EASY,NORMAL,HARD]	
3 7 . MAPPY	3 < [2,3,4,5]	
3 8 . EXTEND	60000PTS < [NO BONUS,60000PTS]	

JAMMA edge connector (56P 3.96 mm pitch)

Solder side	Terminal No.	Parts side
GND	A 1	GND
GND	B 2	GND
+5V	C 3	+5V
+5V	D 4	+5V
	E 5	
+12V	F 6	+12V
Insertion error preventing	H 7	Insertion error preventing
Coin counter 2	J 8	Coin counter 1
	K 9	Coin lockout 1
Speaker (-)	L 10	Speaker (+)
Audio (GND)	M 11	Audio (+)
Video GREEN	N 12	Video RED
Video SYNC	P 13	Video BLUE
Service switch	R 14	Video GND
	S 15	Test switch
Coin switch 2	T 16	Coin switch 1
2P start switch	U 17	1P start switch
2P lever UP	V 18	1P lever UP
2P lever DOWN	W 19	1P lever DOWN
2P lever LEFT	X 20	1P lever LEFT
2P lever RIGHT	Y 21	1P lever RIGHT
2P button Switch 1	Z 22	1P button Switch 1
2P button Switch 2	a 23	1P button Switch 2
	b 24	
	c 25	
	d 26	
GND	e 27	GND
GND	f 28	GND

- Do not connect anything to the blank connectors.
- Both lockout solenoid and coin counter operate on +12V.
- Connect the switches to N.O. terminals such as a microswitch, and the GND to the COM terminal.



- The supply voltage is available within $\pm 5\%$. For use in the best condition, get the supply voltage as close to the specified voltage as possible.

(Recommended power capacity)

+5V $\pm 5\%$	2.5A or more
+12V $\pm 5\%$	2.0A or more

Extended edge connector (48P 2.54 mm pitch)

Solder side	Terminal No.	Parts side
Speaker R (-) [YEL]	A1	B1 Speaker R (+) [ORG]
	A2	B2
	A3	B3
	A4	B4
Insertion error preventing key	A5	B5 Insertion error preventing key
	A6	B6
	A7	B7
	A8	B8
	A9	B9
	A10	B10
	A11	B11
	A12	B12
	A13	B13
	A14	B14
	A15	B15
	A16	B16
	A17	B17
	A18	B18
	A19	B19
	A20	B20
	A21	B21
	A22	B22
	A23	B23
	A24	B24

[Connection to stereo cabinet]

(1) STEREO / MONO setting

Select SPEAKER OUT in the game option screen at the test menu screen.

<Caution> Monophonic cabinets do output only the left-hand sound even if the stereophonic setting is selected.

(2) Connection to speakers

- Connect the (L) speaker to the speaker output of 56P edge connector (JAMMA) on the PC board.
- Connect the (R) speaker to Speaker R (+), (-) of 48P extended edge connector.

* Use a DDK 225D-10024C2-2312 as a 48P extended edge connector.