M.other L.ess C.assette

DATA EAST'S SKULLFANG

SKULL FANG ™

INSTRUCTIONS

DATA EAST

DATA EAST USA, INC.

CONTENTS

1	510-0255-00	PCB, SKULL FANG
1	830-0080-00	MARQUEE, SKULL FANG
1	406-0514-00	INSTRUCTION CARD, SKULL FANG
1	780-5037-00	MANUAL, SKULL FANG
1	001-0001-00	WHITE VIDEO KIT CARTON (BOX)

BEFORE OPERATING THIS CASSETTE

This Cassette is software for commercial use VIDEO GAME only.

CAUTION

1. Do not operate this product with anything other than JAMMA standard and / or the accompanying connectors. Use of other connectors may result in fire or damage to Cassette.

2. Do not under any circumstances dismantle or modify Cassette. Dismantling or modifying Cassette may result in fire, electric shock, or damage to the unit.

3. Do not obstruct the air vents. When in use, do not wrap Cassette in cloth or other materials. Do not install Cassette in such a way that the air vents become obstructed. Cassette will give off heat during normal operation. Obstruction of the air vents may result in fire.

4. Do not install in places that are dusty, humid, or are in direct sunlight. Installing Cassette in such places may result in damage to the unit.

5. Do not get cassette wet, or touch it with wet hands. Doing so may result in electric shock.

6. Always turn the machine off before connecting Cassette. Connecting Cassette while the power is on may result in damage to the unit.

7. Do not under any circumstances remove the protective seals from Cassette. Cassette units with removed or damaged seals may not be accepted for repair by Data East.

SPECIFICATIONS

POWER CAPACITY

+5V (±5%) 2.5A

+1.2V (±5%) 1.5A

OPERATING ENVIRONMENTS

OPERATION 5~35℃/20~80%(No condensation)

STORAGE −15~65℃/10~90%

MONITOR

COLOR SIGNALS : R.G.B.

BALK : 0~+0.04V

PICTURE SIGNAL : +0.04V~+4.5V

SYNCH SIGNAL : 0 (0~+0.05V)

: 1 (+3V~+5V)

TERMINAL

JAMMA STANDARD CONNECTOR (×1)

EXT CONNECTOR (×1)

DIMENSIONS

(W) 241mm× (D) 168mm× (H) 58.5mm

WEIGHT

800g

MLC PARTS IDENTIFICATION
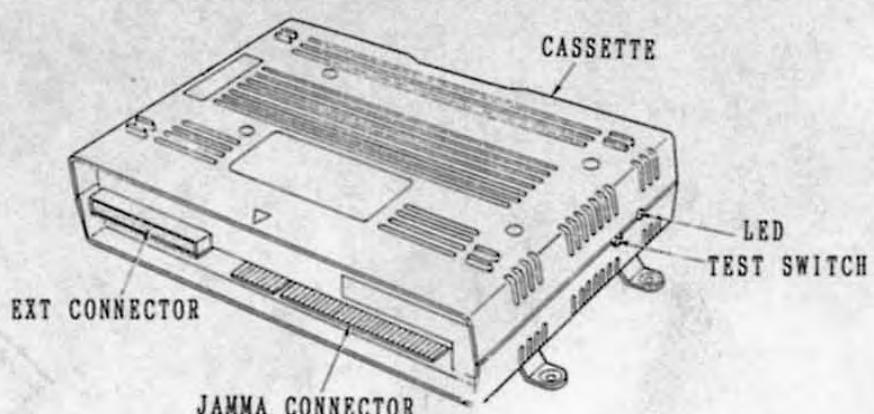
This product generates heat when in operation and may remain hot after electricity is turned off. Do not touch the cassette while in operation or soon after the unit is switched off.

When installing the unit into the game cabinet be sure the JAMMA connector is plugged in correctly, with the parts side facing upwards. Plugging the unit in incorrectly may damage components.
If plugged in incorrectly, turn the unit off immediately.
Re-insert the JAMMA connector correctly and switch the unit on again.

ATTACHING THE MLC ANCHOR FEET

Anchor foot screw

Anchor foot

DO NOT REMOVE SEAL
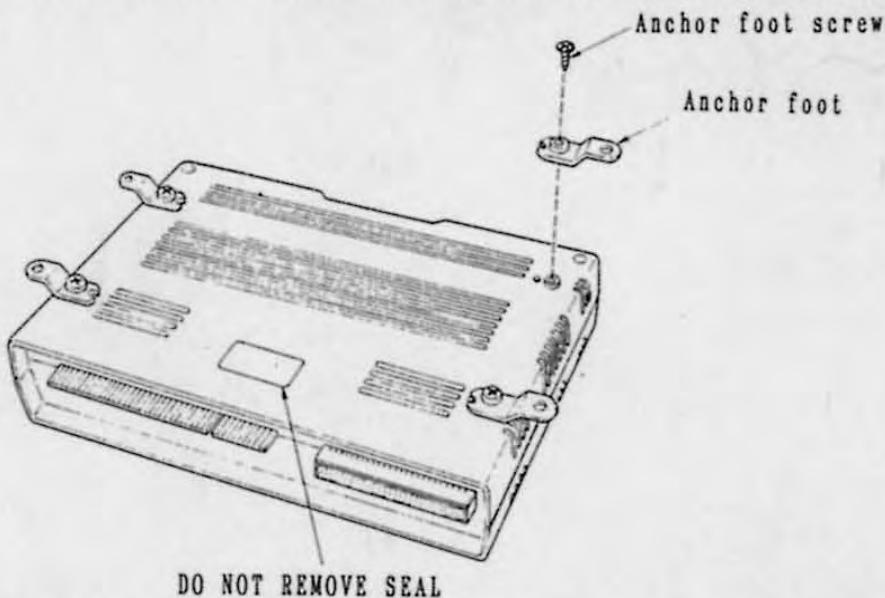
The anchor feet included in the MLC kit are attached to the main unit by using the four anchor feet screws (also included).

When attaching the anchor feet, avoid turning the screws too tightly. Turning the screws too tightly may damage the MLC unit.

ATTACHING THE MLC UNIT TO THE CABINET

MLC cabinet screw.

PCB base board.
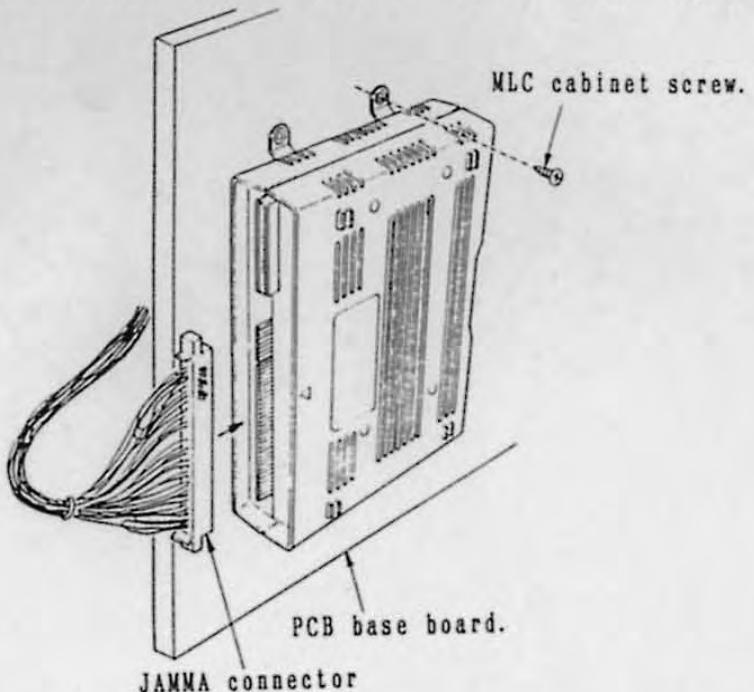
JAMMA connector

We recommend attaching the MLC unit to the game cabinet in the manner illustrated above.

Always turn off the power before plugging in the connectors. Avoid plugging in the JAMMA connector upside-down.

1. INSTALLATION

1-1 CRT MONITOR

(VERTICAL SCREEN)

1P ○   ○ 2P

8 WAY JOYSTICK

1-2 CONTROL PANEL

8WAY JOYSTICK   BUTTON 1   BUTTON 2   BUTTON 3
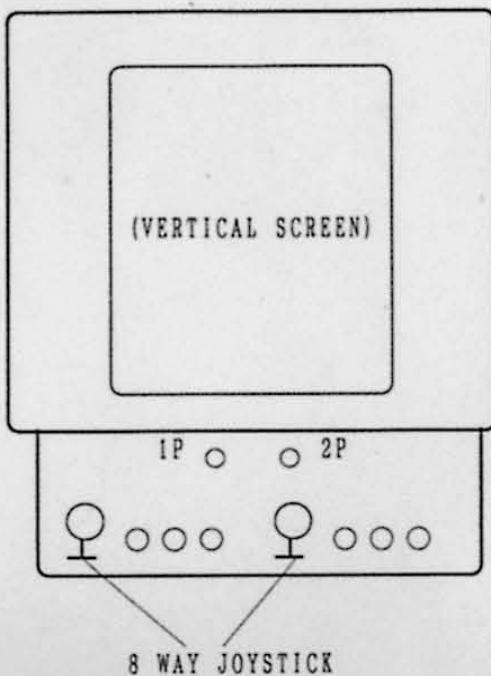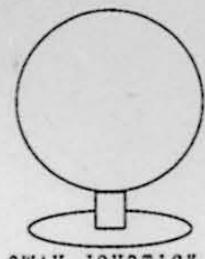
RED BUTTON 1 (PUSH 1) Shot button

WHI BUTTON 2 (PUSH 2) Throttle (speed shift) button

BLU BUTTON 3 (PUSH 3) Barrel Roll and Bomb button

2. HARNESS CONNECTION

2-1 TERMINAL NUMBERING

CONNECTOR   CR7E-56DA-3.96E(HRS) 3.96mm pitch
1168-056-009(KEL) 3.96mm pitch

```
            f ←        SOLDER SIDE      → A
        __|‾‾|‖‖‖|_____|‾‾|__
                                              JAMMA
           28 ←        PARTS SIDE       → 1
```
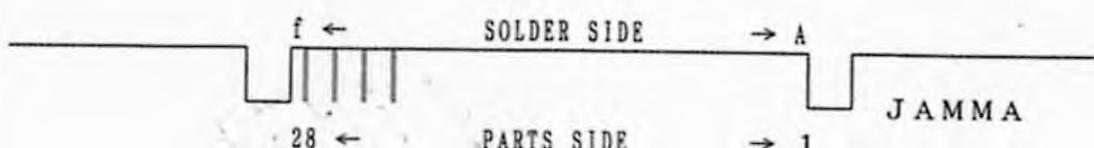
2-2   SIGNAL TO TERMINAL

| SOLDER SIDE	PIN #		PARTS SIDE
GND	A	1	GND
GND	B	2	GND
+5V	C	3	+5V
+5V	D	4	+5V
	E	5	
+12V	F	6	+12V
	H	7	
	J	8	COIN COUNTER 1
(GND)	K	9	(GND)
SPEAKER (-)	L	10	SPEAKER (+)
	M	11	
VIDEO GREEN	N	12	VIDEO RED
VIDEO SYNC	P	13	VIDEO BLUE
SERVICE SWITCH	R	14	VIDEO GND
	S	15	TEST SW
COIN SWITCH 2	T	16	COIN SWITCH 1
START SWITCH 2	U	17	START SWITCH 1
2P UP	V	18	1P UP
2P DOWN	W	19	1P DOWN
2P LEFT	X	20	1P LEFT
2P RIGHT	Y	21	1P RIGHT
2P PUSH 1	Z	22	1P PUSH 1
2P PUSH 2	a	23	1P PUSH 2
2P PUSH 3	b	24	1P PUSH 3
2P PUSH 4	c	25	1P PUSH 4
	d	26	
GND	e	27	GND
GND	f	28	GND

※ JAMMA

Be careful to avoid plugging the JAMMA connector in upside-down.
Installing cassette in upside-down may result in damage to the unit.

3. TEST MODE

This PCB is equipped with a self-test feature. Self-test will automatically be carried out after turning the game unit on.
An error screen will appear should any malfunction be discovered during the self-test.

```
WARNING
GAME MODE SETTING ERROR
```

Should the error screen be displayed, please contact either your distributor or Data East Corporation.

```
PUSH TEST SWITCH TO RESET OPTIONS
```

4. TEST SWITCH

A small black test switch is located on the side of this PCB. Pressing this switch will bring up the game setting menu. The options available from the game setting menu are; I/O CHECK. GAME OPTIONS, COIN OPTIONS, SOUND OPTIONS. Coin settings, Sound volume setting, etc... can be carried out from these screens.

```
                    MENU

      GAME      OPTIONS
      COIN      OPTIONS
      SOUND     OPTIONS
      I/O       CHECK
      COLOR     CHECK
      SCREEN    CHECK
      INITIAL


      GAME  MODE
```

Game Options and Coin Options can be reset to the default (factory) settings by selecting "YES" at the INITIAL option prompt.

Highlight "GAME MODE" and press the 1P BUTTON 1.

5. GAME OPTIONS

Highlight the GAME OPTIONS selection. Press the 1P button 1 (Punch) to enter this screen. Game difficulty levels etc.... can be adjusted from this screen.

```
                        GAME OPTIONS

     SCREEN  ROTATION              NORMAL   (REVERSE)
     ATTRACT SOUND                 OFF (ON)
     START BUTTON SELECT           START BUTTON  (SHOT BUTTON)
     GAME DIFFICULTY               MEDIUM
     SHIELD                        MEDIUM
     CHARGE                        MEDIUM
     STAGE RECOVER                 EASY

     EXIT
```

○ SCREEN ROTATION

○ ATTRACT SOUND
   Switching to "OFF" will cancel sound during demo mode.

○ START BUTTON SELECT
   Determines which button will initiate game start.

○ GAME DIFFICULTY
   There are eight different difficulty levels to choose from.
   For normal difficulty select "MEDIUM ".
  EASIEST ⇔ VERY EASY ⇔ EASY ⇔ MEDIUM ⇔ MEDIUM HARD ⇔ HARD ⇔ VERY HARD ⇔ HARDEST

○ SHIELD
   Select player shield power at this option. Shield power (recovery rate) can be set
   at 4 different levels. Default setting is MEDIUM.
                    EASY ⇔ MEDIUM ⇔ HARD ⇔ VERY HARD
              VERY STRONG   STRONG   WEAK   VERY WEAK

○ CHARGE
   Select rate of power meter recharge at this option. Power meter recharge can be set
   at 4 different levels. Default setting is MEDIUM.
                    EASY ⇔ MEDIUM ⇔ HARD ⇔ VERY HARD
              VERY FAST   FAST   SLOW   NO

○ STAGE RECOVER
   Select rate of stage clear shield recovery at this option. Upon successfully clearing
   each stage, player's shield energy will automatically recover at the determined ratio.
   Default setting is EASY.
                    EASY ⇔ MEDIUM ⇔ HARD ⇔ VERY HARD
                    100%   50%   25%   0%

6. COIN OPTIONS

Highlight the "COIN OPTIONS" selection and press the 1P button to bring up the coin
options menu. The number of credits required for each game can be set from this menu.
From the COIN OPTIONS selection, coin, or free play options can be selected.
Coin Credit counter stops counting after 99 credits. Any credits after the 99th credit
will not be registered.

6-1 GAME START MODE : COIN

```
                        COIN OPTIONS

        GAME START MODE         COIN
        START COIN              1 ~ 9
        CONTINUE COIN           1 ~ 9
        COIN CHUTE              1 (2)
                                ↑ ↓
      ...........................................................
        COIN CHUTE              2 (1)
        COIN MODE               CONCENTRATE   (INDEPENDENT)
      ...........................................................

        EXIT
```

○ GAME START MODE
  Coin option settings.

○ START COIN
  Number of coins required to start game.

○ CONTINUE COIN
  Number of coins required to continue game.

○ COIN CHUTE
  Coin mechanism settings.

○ COIN MODE
   1. C O N C E N T R A T E = Selecting "CONCENTRATE" will pool all inserted coins
                             regardless of coin slot used.

   2. I N D E P E N D E N T = Selecting "INDEPENDENT" will activate only the play
                             station connected with the coin slot used.

6-2 GAME START MODE : CREDIT

```
                         COIN OPTIONS

    GAME START MODE              CREDIT
    START CREDIT                 1 ~ 9
    CONTINUE CREDIT              1 ~ 9
    COIN CHUTE                   1 (2)
    COIN MODE                    CONCENTRATE  (INDEPENDENT)
        CHUTE #1                 1 COIN
                                 1 CREDIT
        CHUTE #2                 1 COIN
                                 1 CREDIT
    EXIT
```

○ GAME START MODE
  Coin option settings.

○ START CREDIT
  Number of coins required for 'start' credit.

○ CONTINUE CREDIT
  Number of coins required to continue game.

○ COIN CHUTE
  Coin mechanism settings.

○ COIN MODE
  1. CONCENTRATE = Selecting 'CONCENTRATE' will pool all inserted coins
                   regardless of coin slot used.
  2. INDEPENDENT = Selecting 'INDEPENDENT' will activate only the play
                   station connected with the coin slot used.
     CHUTE 1 (COIN MECH #1) = 1 - 9 coins
                             1 - 9 credits
     CHUTE 2 (COIN MECH #2) = 1 - 9 coins
                             1 - 9 credits

6-3 GAME START MODE : FREE PLAY

◎Selecting FREE PLAY will allow the game to be played for free (for exhibitions,
  shows, etc...).

```
                         COIN OPTIONS

    GAME START MODE              FREE PLAY
```

7. SOUND OPTIONS

Sound output and sound volume can be adjusted at the SOUND OPTIONS screen.

```
                        SOUND OPTIONS


    SOUND  OFF
    SE     TEST  CODE                0 ~
    VOICE  TEST  CODE                0 ~
    B.G.M. TEST  CODE                0 ~
    VOLUME                           0 ~ 255 (MAX)



    EXIT
```
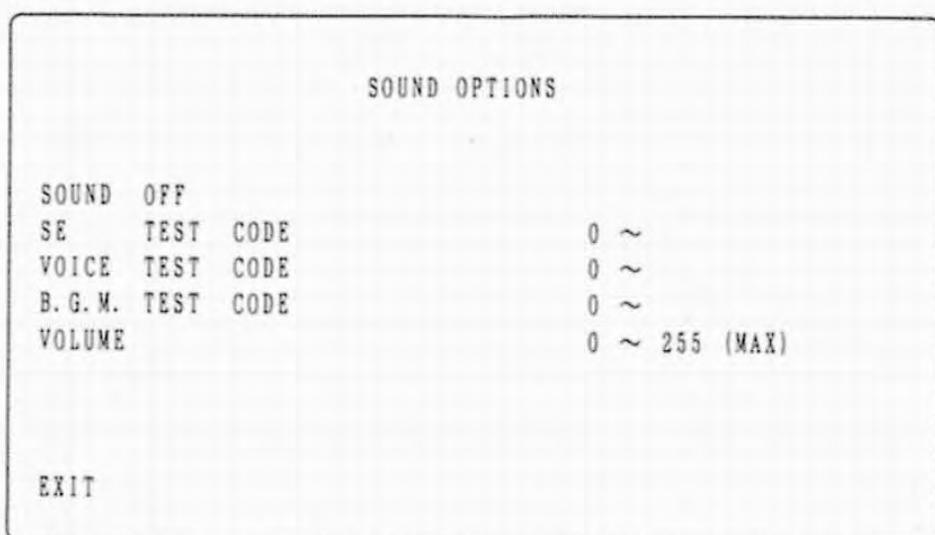
○ SOUND OFF
   If you select this the sound will be turned off

○ SE TEST CODE
   Used for testing sound effects code.

○ VOICE TEST CODE
   Used for testing voice code.

○ BGM TEST CODE
   Used for testing background music code.

○ VOLUME
   Used for adjusting sound volume.

TROUBLESHOOTING

Check the following before sending your unit in for repair.

1. No picture.
   - Is the JAMMA connector plugged in correctly? Make sure the connector is not plugged in upside-down. Always use JAMMA standard connectors.

   - Is the machine running at the proper voltage? Check to make sure the voltage is at the appropriate level. Adjust the voltage if necessary.

   - Check to make sure there is no break in the RGB line. Check the monitor and JAMMA connector wiring.

2. No sound.
   - Is the volume set at an appropriate level? Raise the volume from the test mode. Adjust the cabinet volume control if necessary.

3. Sometimes malfunctions.
   - Check the voltage. Adjust if necessary.

4. Cassette case becomes hot.
   - Are the air vents obstructed? make sure the air vents are unobstructed during operation. Do not operate near heating equipment or in direct sunlight.

WHAT TO DO IF THE LED LAMP STARTS BLINKING

If, under normal operating conditions, the LED lamp on the side of cassette case starts blinking, please contact your Data East dealer immediately.

If you notice any problems in game play or screen display, stop operation and contact your Data East distributor immediately.
Operting a defective cassette unit may result in damage to the cabinet.

WARRANTY INFORMATION:

Data East USA, Inc. (Seller), warrants only to the initial purchaser of its products that the items listed below are free from defects in material and workmanship under normal use and service for the warranty periods specified:

1. Printed Circuit Boards (PCB) 90 days.

No other parts of the Seller's products are warranted.

Warranty periods are effective from the initial date of shipment from the Seller to its authorized distributors.

Seller's sole liability shall be at its options, to repair or replace products which are returned to Seller during the Warranty periods specified, provided:

1. Seller is notified promptly upon discovery by buyer that stated products are defective.

2. Such products are properly packaged and then returned, prepaid to Seller's plant.

This warranty does not apply to any parts damaged during shipping or handling, or due to improper installation or usage, or alternation. In no event shall the Seller be liable for any anticipated profits, loss of profits, loss of use, incidental or consequential damages or any other losses incurred by the customer in connection with the purchase or a Data East USA, Inc. products.

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