



Kurz-Kasch, Inc.

Electronics Division
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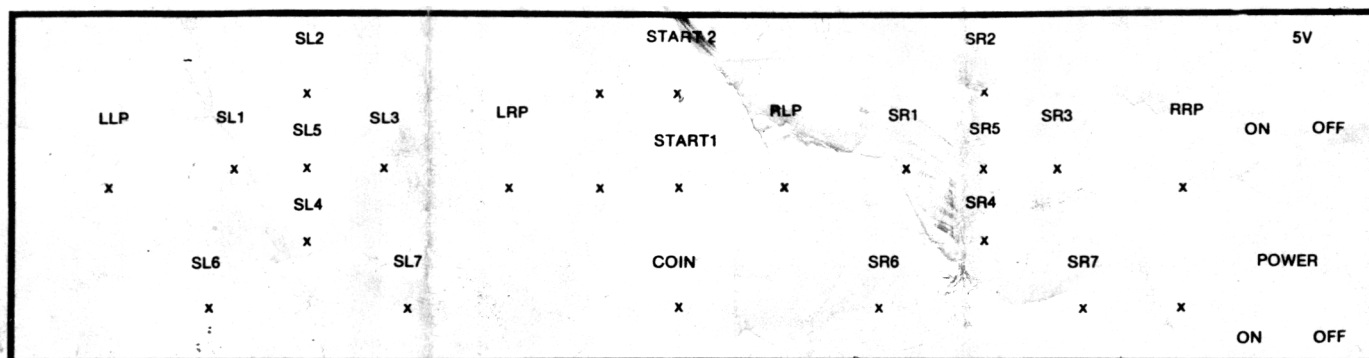
Operating Instructions

For Model

322AB - 287C or 171C

ASTROIDS

ATARI



1. Insert the 322B card into Program "B" connector, number side up.
2. Insert the 322A card into Program "A" connector, number side up.
3. Connect a speaker to the speaker leads.
4. Insert a 287C or 171C card into the test fixture.
5. Insert the ASTROIDS game board into the "C" card connector.

NOTE: There will not be any video on the monitor. An oscilloscope can be connected to the X, Y and Z outputs from the game board.

6. Slide the +5 Volt switch to "ON".
7. Slide the POWER switch to "ON".
8. PUSH:

COIN	for	Right Coin
SR-7		Center Coin
SR-6		Left Coin
START 1		1 Player
Start 2		2 Player
SL-5		Fire
SL-3		Rotate Right
SL-1		Rotate Left
SL-6		Thrust
SL-7		Hyperspace
SR-5		Slam



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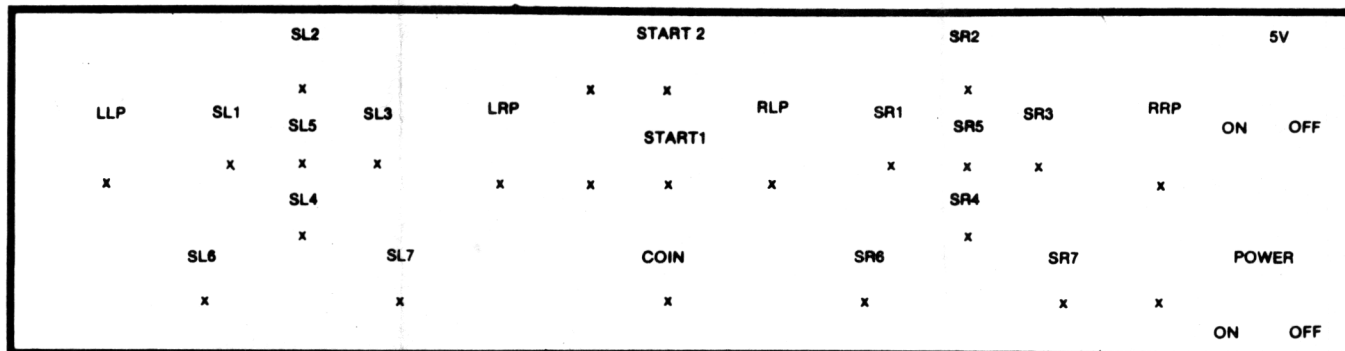
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Operating Instructions

For Model 326AB----287C or 171C

GALAXIAN

MIDWAY



1. Insert 326B card into program "B" connector, number side up.
2. Insert 326A card into program "A" connector, number side up.
3. Insert 287C card into test fixture.
4. Insert Galaxian game board into 287C card.
5. Connect a speaker to the speaker leads.
6. Select "Table" or "Upright" on 326A card.
7. Turn on AC power.
8. Push COIN or SR-6 to coin game.
9. PUSH: START 1 for 1 Player, START 2 for 2 Player.

UPRIGHT

SL-1	#1L
SL-3	#1R
SL-5	#1 FIRE
SL-1	#2L
SL-3	#2R
SL-5	#2 FIRE

TABLE

SL-1
SL-3
SL-5
SR-1
SR-3
SR-5

10. To check for all three colors, check for a low-going-high signal with a logic probe at pins 16, T, and U of the edge connector.

NOTE: This card set is programmed to use the black and white monitor through the TF-650.....



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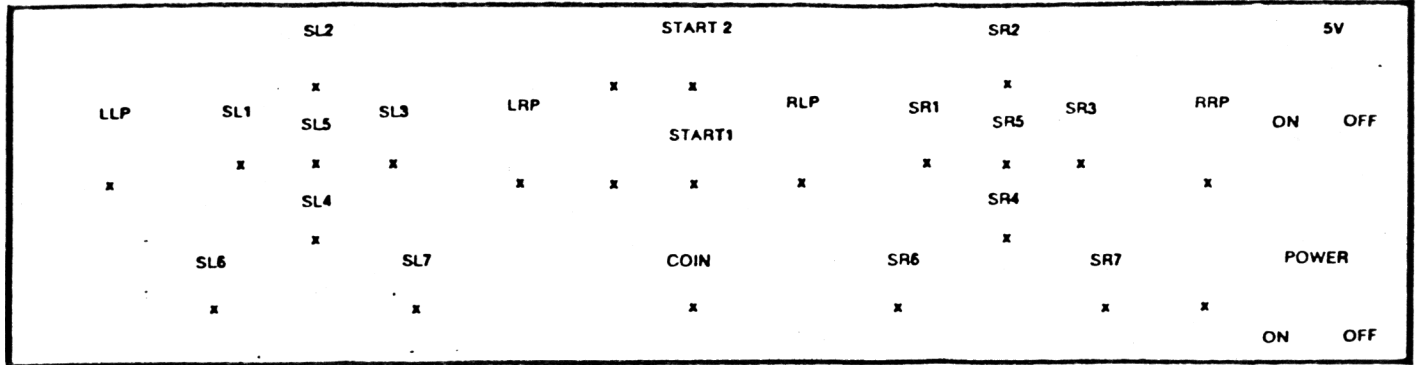
Operating Instructions

For Model

351A/332B

GORF

MIDWAY



1. Insert 332B program card into "B" connector on TF-650 with number side up.
Connect 9-pin connector to power supply header on cage.
2. Insert 351A program card into "A" connector on TF-650 with number side up.
3. Connect 21 and 28 pin connectors from 351A card to GORF GAME BOARD connectors J1 and J2. Connect GND CLIP to card cage.
4. Slide 5-VOLT switch to ON.
5. Slide POWER switch to ON.
6. COIN is COIN 1.
SR6 is COIN 2.
7. START 1 is 1 PLAYER.
SL7 is 2 PLAYER.
8. 1 & 2 PLAYER UPRIGHT
SL1 is LEFT
SL2 is UP
SL3 is RIGHT
SL4 is DOWN
SL5 is FIRE
9. SL6 is TEST
10. START 2 is RESET.
- 2nd PLAYER COCKTAIL
SR1 is LEFT
SR2 is UP
SR3 is RIGHT
SR4 is DOWN
SR5 is FIRE

SIGNATURES

<u>LOCATION</u>	<u>ROM TYPE</u>	<u>SIGNATURE</u>	<u>MARKING</u>	<u>PERSONALITY BOARD</u>
X1	9332	5928	M873A-08S0	9332
X2	9332	36P3	M873B-08S0	9332
X3	9332	838C	M873C-08S0	9332
X4	9332	0A9C	M873D-08S0	9332
X5	9332	40HA	M873E-08S0	9332
X6	9332	9629	M873F-08S0	9332
X7	9332	7A76	M873G-08S0	9332
X8	9332	5F94	M873H-08S0	9332

ALTERNATE ROM TYPE

X1	2732	PPC4	M873A-08S0	2732/M24
X2	2732	F130	M873B-08S0	2732/M24
X3	2732	4135	M873C-08S0	2732/M24
X4	2732	UUA1	M873D-08S0	2732/M24
X5	2732	5U58	M873E-08S0	2732/M24
X6	2732	HU91	M873F-08S0	2732/M24
X7	2732	A77H	M873G-08S0	2732/M24
X8	2732	8723	M873H-08S0	2732/M24



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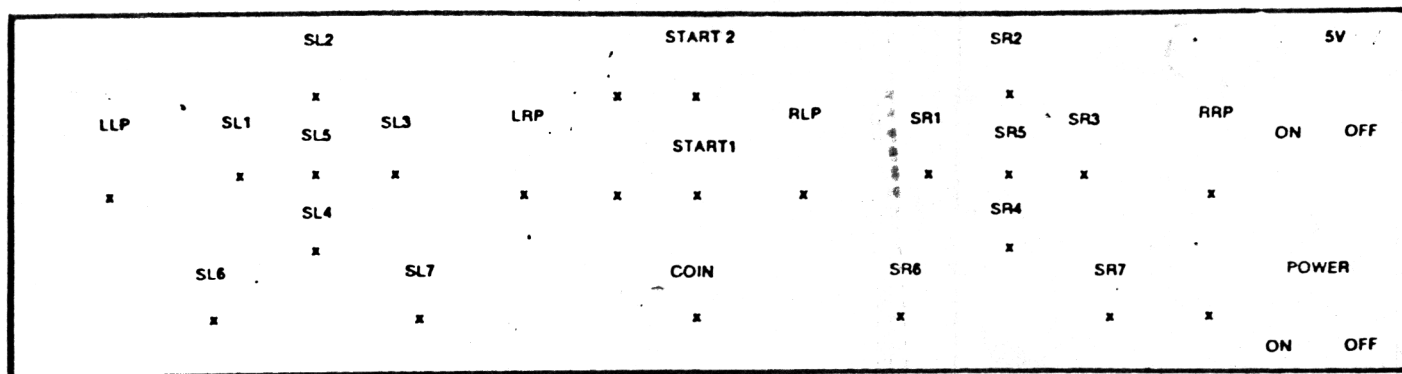
Operating Instructions

For Model

365A

SCRAMBLE/SUPER COBRA

STERN



1. Insert 365A program card into "A" connector on TF-650, number side up.
2. Connect cable connector to GAMEBOARD with RED DOT facing up.
3. Connect speaker across 6 inch pigtail leads on cable connector.
4. Slide 5 VOLT switch to ON.
5. Slide POWER switch to ON.
6. Controls are:

COIN is COIN 1
SR 6 is COIN 2
START 1 is 1 PLAYER START
START 2 is 2 PLAYER START
SR1 is 1 PLAYER LEFT
SR2 is 1 PLAYER UP
SR3 is 1 PLAYER RIGHT
SR4 is 1 PLAYER DOWN
SR5 is 1 PLAYER SHOOT 1
SR7 is 1 PLAYER SHOOT 2
SL1 is 2 PLAYER LEFT
SL2 is 2 PLAYER UP
SL3 is 2 PLAYER RIGHT
SL4 is 2 PLAYER DOWN
SL5 is 2 PLAYER SHOOT 1
SL7 is 2 PLAYER SHOOT 2
SL6 is SERVICE SWITCH



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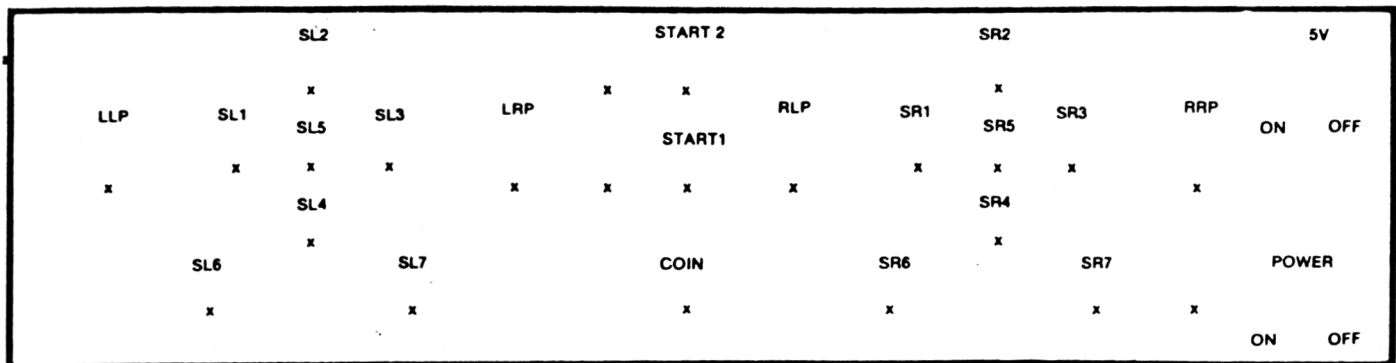
Operating Instructions

For Model

368A

OMEGA RACE

MIDWAY -- X-Y Type



1. Insert 368A program card into "A" connector on TF-650, number side up.
2. Connect 2 ribbon cable connectors exiting left hand side of program card to Mother-Board header pins J5 and J6, with connector slots facing up.
3. Connect remaining 3 ribbon cable connectors to Game-Board J1, J2 and J3 header pins with connector slots facing up.
4. Connect 2 speakers., one from each RED wire to GND.
5. Solder a short piece of wire to X and Y lines at location 9E for scope probe inputs or for X-Y monitor input pickups.
6. Slide 5 volt switch to ON.
7. Slide POWER switch to ON.
8. Controls are:

COIN is COIN 1 } coin counter LED is on 368A card
SL7 is COIN 2 }

START 1 is 1P1C START-LED is on 368A card
START 2 is 1P2C START-LED is on 368A card
SL6 is 2P1C START-----LED Is on 368A card
SL3 is 2P2C START-----LED is on 368A card
SL2 is 1 PLAYER, THRUST
SL5 is 1 PLAYER, FIRE
SL4 is 2 PLAYER, THRUST
SR5 is 2 PLAYER, FIRE

Steering Encoder bits are: SR1-Bit 0
SR2-Bit 1
SR3-Bit 2
SR4-Bit 3
SR6-Bit 4
SR7-Bit 5

PUSH SWITCHES DOWN BEFORE PUSHING THRUST. ANY COMBINATION OF BITS GIVE DIFFERENT SHIP MOVEMENTS.....

9. Test switch is on 368A card.

OMEGA RACE SIGNATURES

<u>LOCATION</u>	<u>MARKING</u>	<u>SIGNATURE</u>	<u>TYPE</u>	<u>PERSONALITY BOARD</u>
1E	O. R. Vector	UA3A	MBM2716	2716/I24
1F	O. R. Vector	5PFF	MBM2716	2716/I24
7/8 M	O. R. 4	111U	MBM2732	2732/M24
7/8 L	O. R. 3	FA62	MBM2732	2732/M24
7/8 K	O. R. 2	P1F6	MBM2732	2732/M24
7/8 J	O. R. 1	871H	MBM2732	2732/M24
6G		5U89	HM3-7611-5	A16

GAME BOARD

5K	7649	MBM2716	2716/I24
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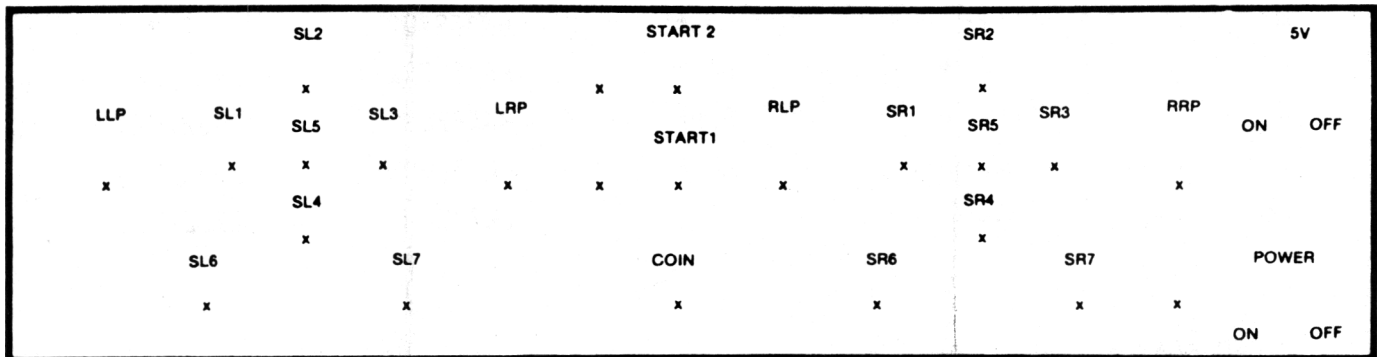
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Operating Instructions

For Model _____

374A

_____ GALAGA _____



Insert 374A program card into "A" connector on TF-650 with number side up

2. Connect 6-pin ribbon cable connector to J2 on GAME VIDEO BOARD
3. Connect 22/44 pin ribbon cable connector to GAME CPU BOARD with RED DOT UP.
4. Connect speaker across two short leads leaving 22/44 pin ribbon cable connector.
- 5 Slide 5-VOLT switch to ON.
- 6 Slide power switch to ON
7. CONTROLS ARE

COIN is CREDIT
START 1 is 1 PLAYER START
START 2 is 2 PLAYER START
SR1 is 1 PLAYER LEFT
SR3 is 1 PLAYER RIGHT
SR5 is 1 PLAYER FIRE
SL1 is 2 PLAYER LEFT
SL3 is 2 PLAYER RIGHT
SL5 is 2 PLAYER FIRE
SR6 is CREDIT

8. Test switch is on 374A card.
- 9 SL6 is TILT.

MPU BOARD

<u>LOCATION</u>	<u>MARKING</u>	<u>SIGNATURE</u>	<u>TYPE</u>	<u>PERSONALITY BOARD</u>
N3	GG2-1	A664	HN462732	2732/M24
M2	GG2-2	CU46	HN462732	2732/M24
L2	GG2-3	54C1	HN462732	2732/M24
K2	GG2-4	67PF	HN462632	2732/M24
J/H2	GG2-5	A808	HN462632	2732/M24
E2	GG2-7	C3C9	D2732	2732/M24

VIDEO BOARD

L4	GG1-9	4H33	MB8532-45	2732/M24
F4	GG1-10	FP73	MB8532-45	2732/M24
D4	GG1-11	H717	MB8532-45	2732/M24