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Operating Instructions

For Model

312ADE

GAME PLAN PINBALL

MPU BOARD

		SL2				START 2			SR2			5V	
		x				x	x		x				
LLP	SL1	SL5	SL3	LRP			RLP	SR1	SR5	SR3	RRP	ON	OFF
		x	x			START1			x	x			
x		SL4		x	x	x	x		SR4		x		
		x							x				
	SL6		SL7			COIN		SR6		SR7		POWER	
	x		x			x		x		x	x		
												ON	OFF

1. Insert 312A card into "A" port of TF-650, number side up.
2. Connect the 9 & 15 pin connectors on cable from 312A to J-1 & J-8 on MPU board.
3. Connect the 312D card to MPU board by mating P-2 & J-2.
4. Connect the 4 pin connector on cable from 312A to connector on 312D card.
5. Connect P-3 edgeboard connector on 312E card to J-3 on MPU board.
6. 15 pin connector on cable from 312E card connects to J-5 on MPU board. 9 pin connector on cable from 312E card connects to J-7 on MPU.

Turn 5V SW ON.

312D CARD OPERATION

The 3 switches on 312D card are lamp enable lines. (1-4 is a spare) These switches allow the 16 LEDs to show all the decoded lamp address and enable outputs of the MPU. This board performs all functions of the GAME PLAN LDU-2 board. Switch L-1 causes LEDs 1-16 to read the data which U-1 would read out if LDU-2 was connected to MPU. L-2 simulates U-2; L-3; U-3 & L-4, U-6.

312E CARD OPERATION

1. The 4 slide switches are the display clocks. The display clocks cause different displays to function.

For example---Upright Game-----CLOCK 1 -- PLAYER 1 -- SCORE
 CLOCK 2 -- PLAYER 2 -- SCORE
 CLOCK 3 -- PLAYER 3 -- SCORE
 CLOCK 4 -- PLAYER 4 -- SCORE
 CLOCK 5 -- LEFT 2 Digits display Ball in Play &
match number at end of game.
RIGHT 2 Digits display Credits

- NOTE: only one switch should be on at any one time.

2. FOR COCKTAIL TABLE CLOCK 1 -- NOT USED (switch must be away from "1")
 CLOCK 2 -- PLAYER 1
 CLOCK 3 -- PLAYER 2
 CLOCK 4 -- PLAYER 3
 CLOCK 5 -- PLAYER 4

- 3: Cocktail version uses 2 sets of seven digit readouts (LDU-1). The extra digits are BALL/CREDIT/MATCH and are controlled by the clock line switches.

CLOCK 2 -- Number of Players
 CLOCK 3 -- Ball Number
 CLOCK 4 -- 1st digit of Credit
 CLOCK 5 -- 2nd digit of Credit

4. The Black & White push button switches are the strobes (ST-Black,-0-4) and lines (L-white, 0-7).

These switches simulate the playfield and cabinet switches. Refer to the GAME PLAN manuals and drawings to determine which switches to use.

NOTE: one strobe & one line must be pushed simultaneously.

An Example of the use of Strobe & Line switches for:

Sharp Shooter--Model 130 Cabinet Harness--J-6 Pins on CPU 9 pin connector are:

1=Line 1	6=Line 5
2=Key	7=Line 4
3=Strobe Ø	8=Line 6
4=Line 2	9=Strobe 3
5=Line 7	

If we look at Coin 1 (CC-1) on schematic of cabinet harness we find one side of switch goes to strobe Ø (pin 3 of J-6) and the other side of CC-1 goes to Line 6. So if we push St-Ø and L-6 at the same time we exercise coin 1 inputs to MPU board. Credit would be strobe Ø and line 1.

Model 130 Playfield--an example, "LOOP 4" which is strobe 3, and line 4 when pushed gives 100 points. Outhole is strobe 1 and line 2.

SOLENOID LEDS

5. The Solenoid Leds (1-15) correspond to the outputs of U-1 on SDU-1 and associated transistor drivers. These decoded MPU outputs are checked in accord with the diagnostic routine spelled out in GAME PLAN'S MANUALS.

Switches strobe 3 & line 1 are the "test switch" exercise.

We urge you to follow the manufacturers service routines. By doing so, these program cards will allow you to stimulate each MPU input and to observe the MPU response to each stimuli.

Signature Analysis, using the Kurz-Kasch Signature II will isolate a failure down to the component level. For more information contact KURZ-KASCH.