



HAPP CONTROLS

OPTICAL GUN 96-2100-XX

XX = Color

10 = Red

119 = Pink

12 = Blue

112 = Light Blue

17 = Orange



The Happ Optic Gun is intended to be used on a video game to optically sense a small area of the screen and provide a synchronization signal via a trigger to the game hardware.

The player aims the gun to select a target on the screen and pulls the trigger when he wants to "shoot" the target. The game system determines if a valid target was selected when the trigger is pulled and reacts accordingly. The gun will operate with projection monitors, in bright or dim ambient light conditions and is sensitive to all CRT colors, although it operates best when the screen is flashed white or cyan for one frame each time the trigger is pulled. Most optic gun games currently made will do this.

The gun is injection molded from Polycarbonate plastic and contains a sensor, PCB and lens to detect light from a CRT screen. A gold contact switch is included to provide the trigger signal.

The gun is powered by +5 vdc. The optical output signal is a negative going pulse from a LM311 voltage comparator pulled up with a 4.7k resistor. This output is given at the horizontal frequency and is present whenever the gun is aimed at the screen. The trigger signal is a single negative going pulse pulled up with a 4.7k resistor and is active as long as the trigger is pulled. The harness has a four pin .100 center connector to connect to the game system with the following pinouts: Pin 1 - +5vdc - red wire, Pin 2 - trigger signal - white wire, Pin 3 - circuit ground - black wire, Pin 4 - optic signal - blue wire.

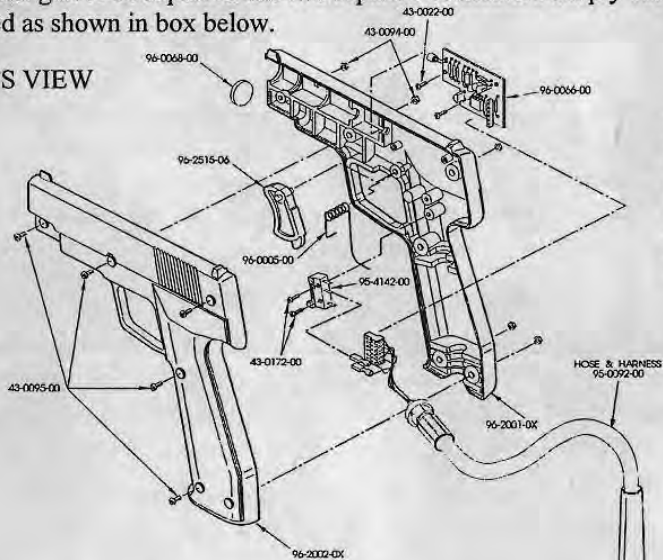
The gun is anchored to the game cabinet with a highly flexible 12 mm diameter, 1.2 meter long hydraulic hose able to withstand 6,000 lbs. of pressure. The hose can withstand twisting and pulling without damage and will protect the high-flex wire used to connect the gun to the game system. The hose is securely anchored to the gun and cabinet and cannot be twisted or pulled off. There is a strain relief boot on the hose as well as a special mounting bracket where it fastens to the cabinet.

-OVER-

To replace Konami Lethal Enforcer gun:

Locate where Konami gun harness is connected at connectors CN7 (player 1) and CN8 (player 2) on game pcb. Note where red wire from Konami gun is connected. Plug connector from Happ gun harness into game pcb so red wire on Happ harness is connected this pin. If connector from Happ gun is accidentally plugged in backwards, it will not damage the Happ gun. Simply reverse the connection. If Konami gun to be replaced has two separate connectors simply cut and splice wires into existing Konami connectors on gun to be replaced as shown in box below.

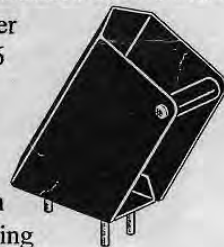
EXPLODED PARTS VIEW



Konami Wire Color	Function	Happ Wire Color
Red	+5vdc	Red
White	Trigger Signal	White
Black	Circuit Ground	Black
Yellow	Optic Signal	Blue
Orange	Not Used	-

**ALSO AVAILABLE:
GUN HOLSTER FOR OPTIC GUN**

Part Number
96-0750-16



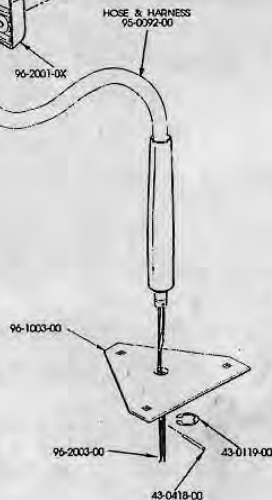
For Use On
Flat Mounting
Surface

Tamperproof T-10 Wrench Sold Separately
Part Number 49-0452-00

HAPP CONTROLS

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