

GB-7

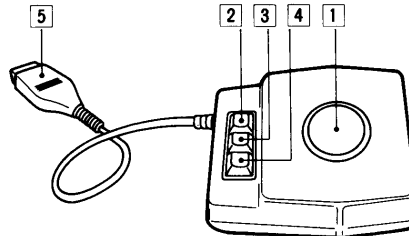
SERVICE MANUAL

This is a Track Ball to be used as a data input device for the softwares which can be displayed and operated on the TV monitor.

- Use this Track Ball with a computer having the **MSX** mark. **MSX** is a trademark of Microsoft Corporation.
- Read these instructions thoroughly before using this unit. When you operate software with this Track Ball, read the software manual as well.

PRECAUTIONS

- Do not carry or disconnect the unit by pulling or holding the unit's cord.
- Do not drop the unit or bump it against other objects.
- Use the Track Ball with its ball on the right side, and the buttons on the left side. It will not work properly if you reverse the positions.
- Always make sure your hands are clean when using the Track Ball. If the ball becomes dirty, it will not operate properly.
- Clean the surface with a soft dry cloth. Do not use any type of solvent, such as thinner or benzine, which might damage the finish.



PARTS IDENTIFICATION AND CONNECTION

- 1 Ball
- 2 White button
- 3 Orange button
- 4 Red button
- 5 Plug

Insert the Track Ball plug into either the A (or No. 1) or B (or No. 2) joystick connector on your computer, according to the software used with this Track Ball. For the information about where to insert the plug, read the software manual.

- Track Ball is not utilized for all types of software. Certain software may malfunction during operation if the Track Ball is left connected to the computer. Remove the Track Ball if you operate this type of software.

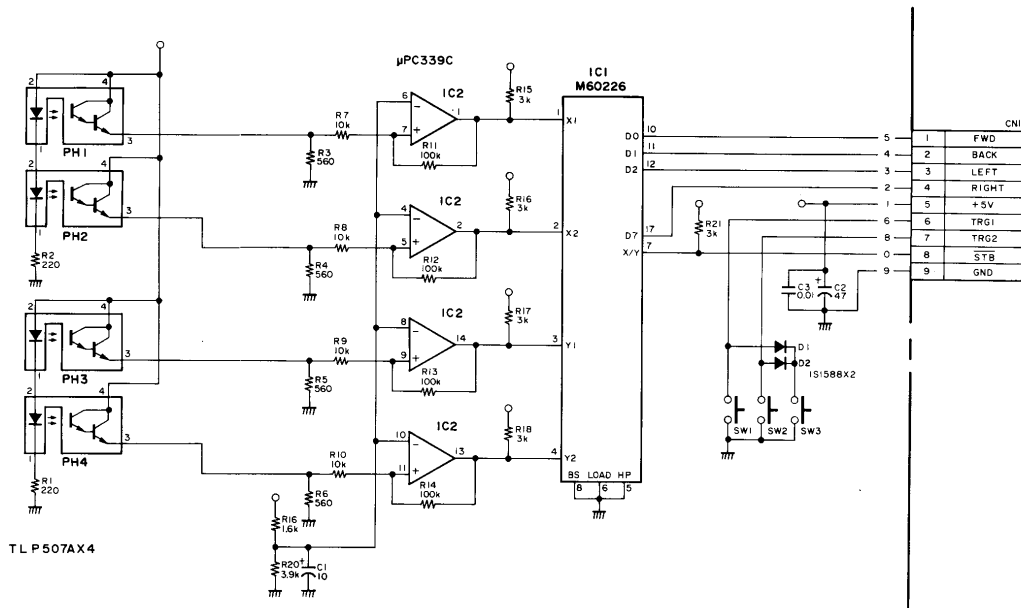
TRACK BALL
SONY[®]

*Scanned and converted to PDF by HansO, 2001
Original by Bas Kornalijslijper, MCWF*

The track Ball can also be utilized in your program if the following BASIC program is installed.

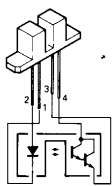
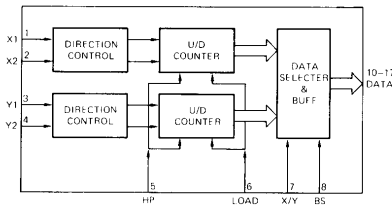
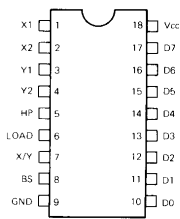
```
100 CLEAR 300, &HCFFF
110 DEFUSR=&HD000
120 SCREEN 2,2 'Sets the sprite size to 16x16 dot standard.
130 '
140 B$=""
150 RESTORE 310
160 FOR I=1 TO 16
170   READ A$:B$=B$+CHR$(VAL("&H"+A$))
180   READ A$:C$=C$+CHR$(VAL("&H"+A$))
190 NEXT
200 SPRITE$(0)=B$+C$ 'Defines shape of the pointer to the current position.
210 '
220 RESTORE 360
230 FOR I=&HD000 TO &HDOAD
240   READ A$
250   POKE I,VAL("&H"+A$)
260 NEXT
270 X=USR(0) 'Moves the pointer on the screen as the track ball rolls.
280 Y=USR(1) 'Gives the X and Y coordinates of the current pointer position.
290 END
300 '
310 DATA 80,00,60,00,78,00,3E,00
320 DATA 3F,80,1F,00,1F,00,0F,00
330 DATA 0C,80,04,40,04,20,00,10
340 DATA 00,08,00,00,00,00,00,00
350 '
360 DATA 3A,63,F6,FE,02,00,3A,F8
370 DATA F7,A7,28,05,FE,01,28,47
380 DATA C9,ED,5B,AC,30,3E,02,CD
390 DATA D8,00,A7,20,2E,CD,60,D0
400 DATA D5,3E,00,CD,87,00,D1,7B
410 DATA D6,08,CD,4D,00,23,06,00
420 DATA 7A,D6,07,FE,F9,38,04,C6
430 DATA 20,C3,F8,CD,4D,00,23,23
440 DATA CD,4A,00,E6,7F,80,CD,4D
450 DATA 00,18,CA,21,F8,F7,72,23
460 DATA 36,00,ED,53,AC,D0,C9,ED
470 DATA 5B,AC,D0,21,F8,F7,73,C9
480 DATA CD,85,D0,47,82,CD,94,D0
490 DATA 57,D5,3E,0F,1E,EF,CD,93
500 DATA 00,D1,CD,85,D0,47,83,CD
510 DATA 9F,D0,5F,D5,3E,0F,1E,CF
520 DATA CD,93,00,D1,C9,3E,0E,CD
530 DATA 96,00,E6,0F,EE,08,C3,5F
540 DATA C8,F6,FO,C9,C3,78,20,04
550 DATA D0,3E,FF,C9,D8,AF,C9,C3
560 DATA 78,20,06,FE,3F,D8,3E,BF
570 DATA C9,D8,AF,C9,00,00
```

SCHEMATIC DIAGRAM



SEMICONDUCTOR PIN ASSIGNMENTS

M60226
- TOP VIEW -

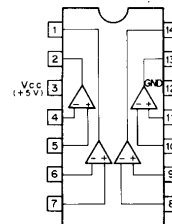


TLP507A



15S1588

LM339 (NSC)
uPC339C (NEC)
COMPARATOR
- TOP VIEW -

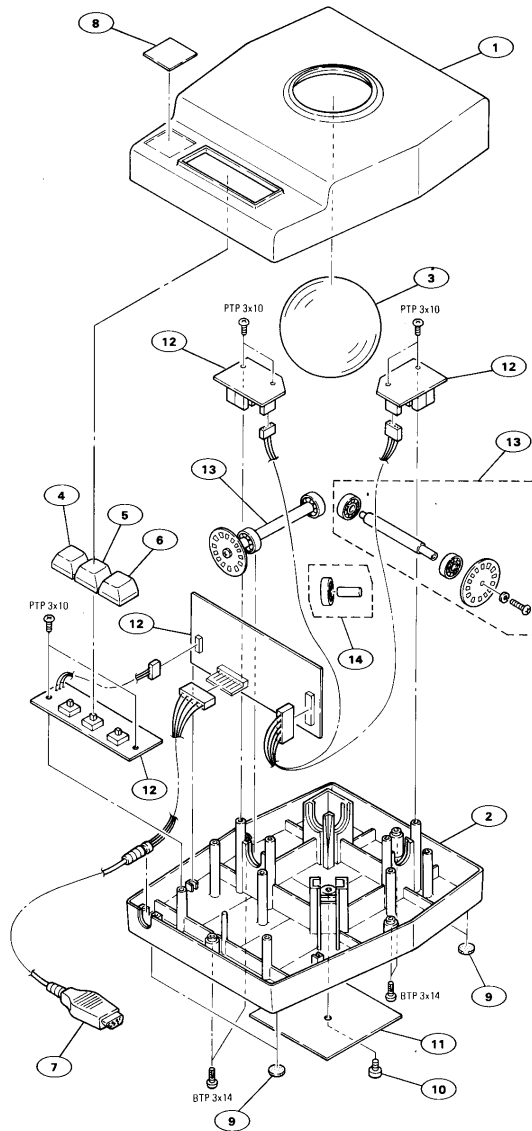


REPAIR PARTS

EXPLODED VIEW

No.	Parts No.	Description
1	9-989-836-01	CASE (UPPER)
2	*9-989-837-01	CASE (LOWER)
3	*9-989-838-01	BALL
4	9-989-839-01	KEY TOP (WHITE)
5	9-989-840-01	KEY TOP (ORANGE)
6	9-989-841-01	KEY TOP (RED)
7	9-989-596-01	CABLE, D SUB
8	9-989-842-01	LABEL (SONY)
9	*9-989-595-01	FOOT, RUBBER
10	9-989-843-01	SCREW, FIX, BALL
11	*9-989-844-01	LABEL, CAUTION
12	*9-989-845-01	MOUNTED PCB ASSY
13	*9-989-846-01	BEARING ASSY (LARGE)
14	*9-989-847-01	BEARING ASSY (SMALL)

• No. 12 the mounted PCB ASSY includes all the mounted PCB.



NOTE:

1. The shaded and Δ -marked components are critical to safety. Replace only with same components as specified.
2. Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
3. Item with no part number and/or no description are not stocked because they are seldom required for routine service.

ELECTRICAL PARTS LIST

Ref. No.	Parts No.	Description
C1	1-123-356-00	ELECT 10 20% 50V
C2	1-123-332-00	ELECT 47 20% 25V
C3	1-161-063-00	CERAMIC 0.1 10% 50V
IC1	9-989-605-01	M60226
IC2	8-759-133-90	μPC339C
PH1	9-989-848-01	TLP507A
PH2	9-989-848-01	TLP507A
PH3	9-989-848-01	TLP507A
PH4	9-989-848-01	TLP507A
R1	1-247-704-11	CARBON 220 5% 1/4W
R2	1-247-704-11	CARBON 220 5% 1/4W
R3	1-247-125-00	CARBON 560 5% 1/4W
R4	1-247-125-00	CARBON 560 5% 1/4W
R5	1-247-125-00	CARBON 560 5% 1/4W
R6	1-247-125-00	CARBON 560 5% 1/4W
R7	1-247-725-11	CARBON 10K 5% 1/4W
R8	1-247-725-11	CARBON 10K 5% 1/4W
R9	1-247-725-11	CARBON 10K 5% 1/4W
R10	1-247-725-11	CARBON 10K 5% 1/4W
R11	1-249-469-11	CARBON 100K 5% 1/4W
R12	1-249-469-11	CARBON 100K 5% 1/4W
R13	1-249-469-11	CARBON 100K 5% 1/4W
R14	1-249-469-11	CARBON 100K 5% 1/4W
R15	1-247-142-00	CARBON 3K 5% 1/4W
R16	1-247-142-00	CARBON 3K 5% 1/4W
R17	1-247-142-00	CARBON 3K 5% 1/4W
R18	1-247-142-00	CARBON 3K 5% 1/4W
R19	1-247-136-00	CARBON 1.6K 5% 1/4W
R20	1-247-145-00	CARBON 3.9K 5% 1/4W
R21	1-247-142-00	CARBON 3K 5% 1/4W

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