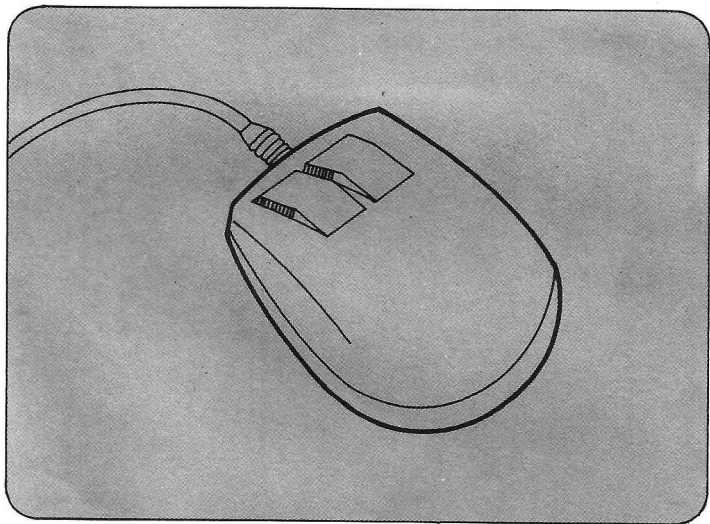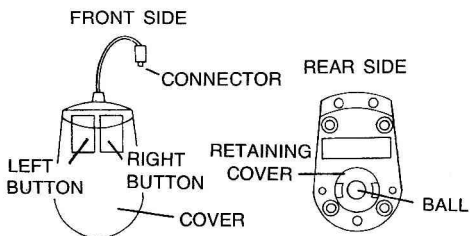# INSTRUCTION

Parallel Mouse
MS-10 200 COUNT

Introduction.

- Thanks for buying MS-10 Mouse
- MS-10 is an input device corresponding to the operation of mouse or joy stick software. It can release you from key board operation and let you enjoy the game with greater reality. It also provides an operation for other software.
- Before using, please read these INSTRUCTIONS carefully.

1. Compatible devices.
    - It is compatible with any kind of MSX series. Please refer to the software manual to decide which joy stick port should be connected.
    - The software corresponding to the joy stick can be used in "joy stick mode".

2. Name of parts.

3. Operating method
    - Remove the packing inserted in the gap between the ball and retaining cover which is to prevent rattling of ball during transportation.
    - Insert MS-10 connector to the corresponding port.

4. Maintenance
    - Please clean the ball and roller inside the cover with cloth smoetimes. The retaining cover can be removed easily by turning to the left.

- Don't open the rear cover or disassemble the inside parts. Otherwise, you will lose your guarantee.

5. Mouse mode.
   - When using software that corresponds to a mouse, please use in this mode.
   - Detect the mouse movement of four directions by moving forward, backward, left and right.
   - a) PAD command & STRIG command can not be used in MSX1. In such a case, it is necessary to make a program corresponding to PAD command by refering to the following sample program.

   = = MSX1 SAMPLE PROGRAM = =

```
10   REM *** MSX1 sample ***
20   SCREEN 2:CLS
30   CLEAR 256, &HDFFF
40   FOR N=0 TO 127
50   READ M$:M=VAL ("&H"+M$)
60   POKE &BE000+N,M
70   NEXT N
80   C=15
90   XX=127:YY=96
100  DEF USR0=&HE000
110  ON INTERVAL=4 GOSUB 150
120  INTERVAL ON
130  PSET (XX, YY), C
140  GOTO 140
150  A=USR0 (0)
160  Y=PEEK (&HE200):IF Y>127 THEN Y=Y-256
170  X=PEEK (&HE201):IF X>127 THEN X=X-256
180  XL=XX:YL=YY
190  XX=XX-X:IF XX<0 THEN XX=0 :IF XX>255 THEN
     XX=255
200  YY=YY-Y:IF YY<0 THEN YY=0 :IF YY>191 THEN
     YY=191
210  IF STRIG (1) THEN LINE (XL, YL)-(XX, YY),C ELSE
     PRESET STEP (0,0)
```

```
220 IF STRIG (3) THEN CLS: GOTO 90
230 RETURN 130
240 DATA 3E, 0F,CD,96,00,E6,8F,F6,30,5F,00,3E,0F,CD,
    93,00
250 DATA 06,1A,10,FE,00,3E, 0E,CD,96,00,57,7B,E6,8F,
    06,02
260 DATA 5F,10,FE,00,3E,0F,CD,93,00,3E,0F,A2,07,07,
    07,07
270 DATA 4F,06,07,10,FE,00,3E,0E,CD,96,00,57,7B,F6,30,5F
280 DATA 00,3E,0F,CD,93,00,3E,0F,A2,B1,67,06,07,10,
    FE,00
290 DATA 3E,0E,CD,96,00,57,7B,E6,8F,5F,00,3E,0F,CD,
    93,00
300 DATA 3E,0F,A2,07,07,07,07,06,07,4F,10,FE,00,3E,0E,00
310 DATA CD,96,00,57,3E,0F,A2,B1,6F,22,00,E2,C9,00,
    00,00
```

b) PAD command & STRIG command can be used for MSX2
   and MSX2+

   = = MSX2 (MSX2+) SAMPLE PROGRAM = =

```
10   REM *** MSX2 only sample ***
20   SCREEN 5:CLS
30   C = 15
40   XX = 127:YY = 96
50   PSET (XX,YY),C
60   XL = XX:YL = YY
70   XX = XX + X:IF  XX < 0  THEN  XX = 0  :IF  XX > 255
     THEN  XX = 255
80   YY = YY + Y:IF YY < 0 THEN YY = 0 :IF YY > 191 THEN
     YY = 191
90   Z = PAD (12)
100  X = PAD (13)
110  Y = PAD (14)
120  IF STRIG(1) THEN  LINE  (XL,YL)-(XX,YY),C  ELSE
     PRESET STEP (0,0)
130  IF STRIG(3) THEN CLS:GOTO 40
140  GOTO 50
150  END
```

6. Joy stick mode.
   - Use this mode when using that corresponds to a joy stick software.
   - Detect the mouse movement of eight directions by moving forward, backward, left ward, right ward and obliguely.
   - When changing to the joy stick mode, turn OFF the power switch, press and hold left button of MS-10 then turn ON the power switch. Please don't release the button until BASIC comes up.
   - In this mode, STICK command & STRIG command can be used.

```
= = JOY STICK MODE SAMPLE PROGRAM = =
10   REM *** JOY STICK sample program ***
20   SCREEN 5:CLS
30   C = 15
40   XX = 127:YY = 96
50   PSET (XX,YY),C
60   ON STICK(1) GOSUB 100,110,120,130,140,150,160,170
70   IF STRIG(1) THEN PSET (X,Y),C ELSE PRESET
     STEP(0,0)
80   IF STRIG(3) THEN CLS:GOTO 40
90   GOTO 50
100  Y = Y-2:RETURN
110  X = X + 2:Y = Y-2:RETURN
120  X = X + 2:RETURN
130  X = X + 2:Y = Y + 2:RETURN
140  Y = Y + 2:RETURN
150  X = X-2:Y = Y + 2:RETURN
160  X = X-2:RETURN
170  X = X-2:Y = Y-2:RETURN
180  END
```

7. Specification

1. Resolution: 200 counts/inch
2. Moving speed: 250 mm/sec.
3. Pin assignment:

pin no	1	2	3	4	5	6	7	8	9
mouse mode	DATA0	DATA1	DATA2	DATA3	+5V	LEFT	RIGHT	STROBU	GND
joy stick mode	FWD	BACK	LEFT	RIGHT	+5V	TRG1	TRG2	STROBU	GND

4. Operating temperature: $-10°C — +45°C$
5. Operating humidity: 5%   — 95%
6. Storage temperature: $-40°C — +60°C$
7. Storage humidity: 5%   — 95%
8. Weight: 126g
9. Switch: Tact switch×2
10. Connector: D-Sub 9P female
11. Interface: MSX
12. Electric source: +5V DC
13. Power consumption: 50mA MAX.