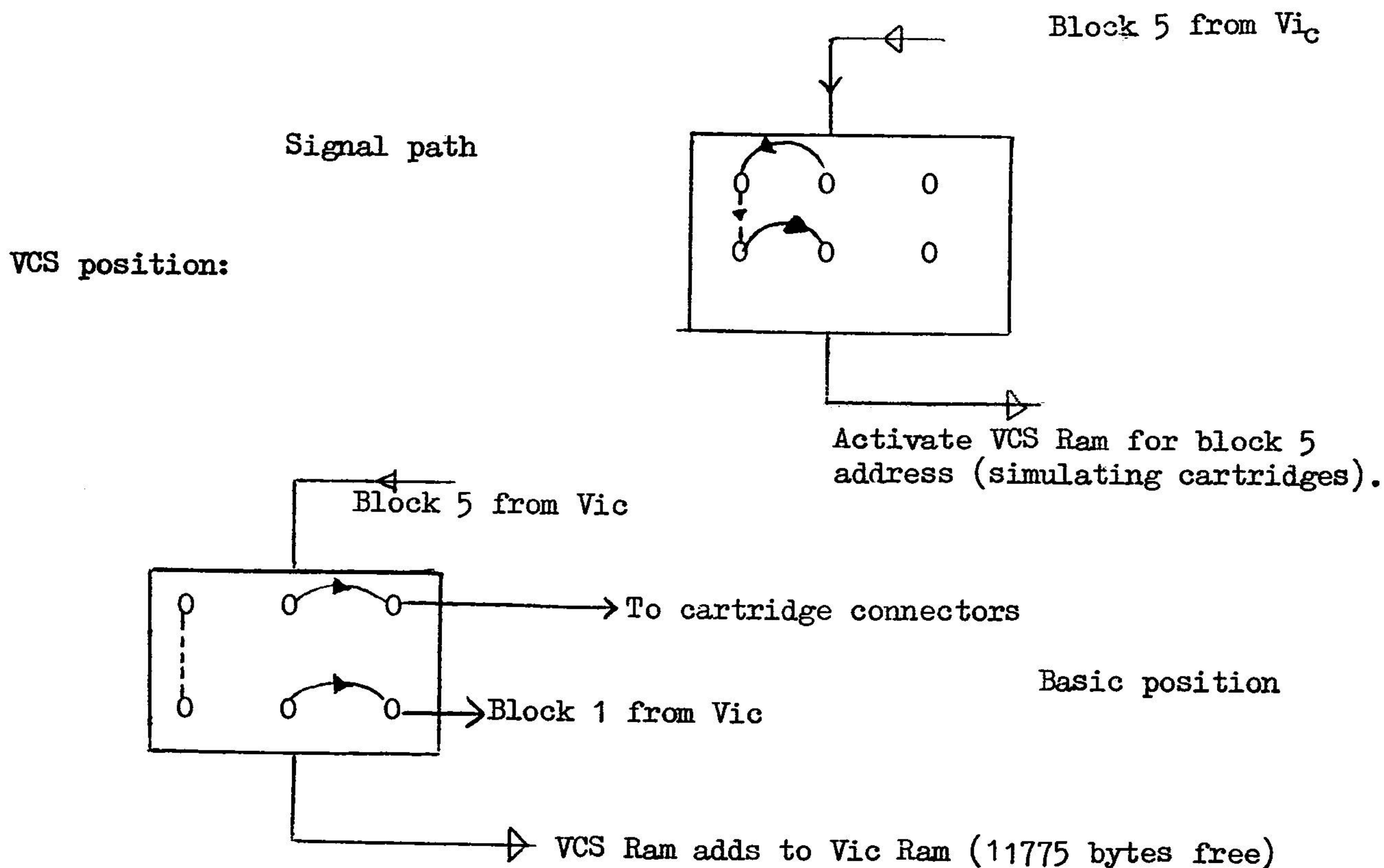


## VIC CARTRIDGE SIMULATOR

1) **MODE:** This is a small removable block (colour blue) on the left side of the VCS Board, between the first and second cartridge connector. The block is used to address the VCS RAM and/or disable the cartridges. Removing the block will disable not only the VCS RAM, but also the cartridges.



2) **WRITE JUMPER:** Situated at the right of the mode block, this can be a simple metal link or a small resistor. If the jumper is removed, the VCS RAM cannot be overwritten, thus protecting it from accidental erasure.

3) **THE RAM:** The RAM used on the VCS is Hitachi HM 6116. Each chip offers 2K bytes of RAM. Ram chips are to be added from right to left (1, 2, 3, and 4).



4) THE BATTERY: A 9V battery connector is provided with the VCS, and it is suitable for use with an ordinary PP3 size battery. A rechargeable model is available from Maplin's in Southend complete with charger for around £10.00. This is only required if you need to back up the memory when powered off.

APPLICATION: The VCS, when delivered to you, is set in basic mode with the 'WRITE' jumper installed.

1) Upgrading Vic memory: Simply insert the VCS into the expansion slot on the Vic. Power on. The screen should show:

```

X X X X  CBM BASIC  V2  X X X X
11775 BYTES FREE
READY
```

There is no need for a battery in this application.

2) Duplicating Cartridges:

a) Remove the mode block and install one cartridge in any slot. Power on.

b) Insert the mode block in 'BASIC' position.

c) Enter:

```

10 M = 8 * 1024 : N = M * 5
20 FOR I = 0 TO M : POKE M + I, PEEK (N+I):
NEXT
RUN
```

d) When the 'READY' reappears, install the 9V battery, pull out the 'WRITE' jumper. Power off.

e) Remove the cartridge. If you want to make a tape back up insert the Commodore programmer aid cartridge or load in the monitor program:

Save on tape from \$2000 to \$3FFF.

f) Remove the mode block, insert it into 'VCS' mode. Power on. The same program as per the cartridge will run automatically.

g) Basic programs can also be saved on the VCS but at present the routine for this is not yet available.



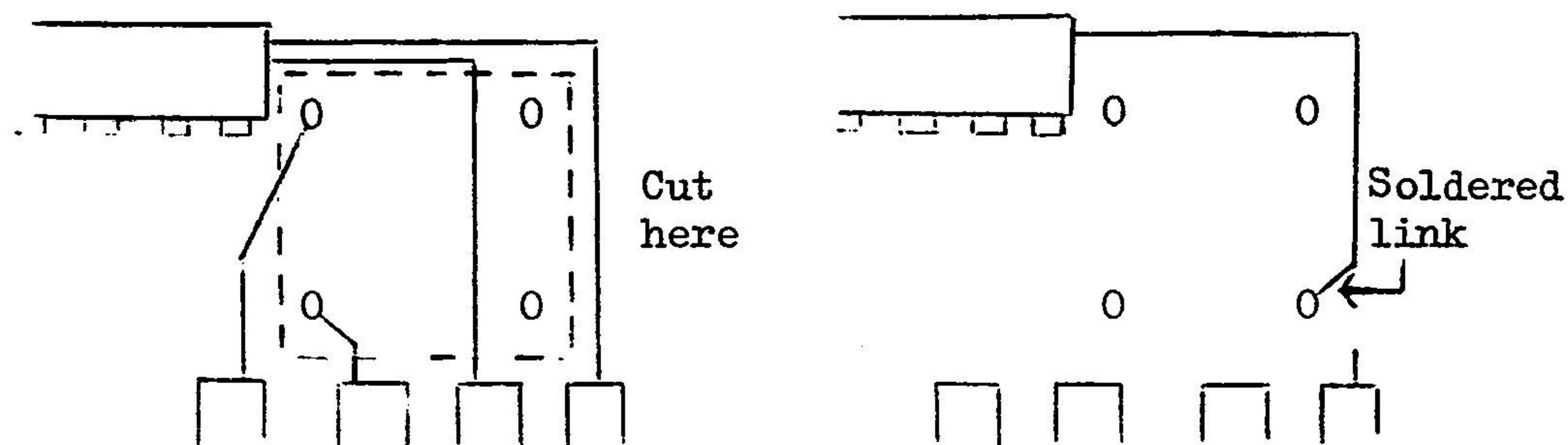
# MODIFICATION WHEN USING THE 8K VCS + VCR - 20

There are several ways to connect the VCR to the VCS depending on how much memory you have in the VCR cartridge.

- a) If you have an 8K VCR - 20 then the 8K of RAM should go to block 2 (16K to 24K). You can simply remove the 4 RAM chips and re-install them in sockets No. 7, 9, 11 and 12.
- b) If you have a 16K VCR - 20 or a 20K VCR - 20 then 8K of the RAMs on the VCR - 20 cartridge will have to go to block 3 (24K - 32K). We can carry out the modification free of charge.

The modification is best illustrated as follows:

## SOLUTION 1:



SOLUTION 2: Pull out pin 15 of VCR's IC 13 (74LS139) and solder a wire from that pin to point B3.

SOLUTION 3: Only if you are developing some special software and prefer to use the VCS 8K RAM where you want it. You have to connect the track leading to pin 1 of the VCS IC5 (74LS139) to the desired memory block.

Important: When inserting any cartridge into the VCS the legend printed on the cartridge must face towards the keyboard.

WE DENY ANY RESPONSIBILITY IF DAMAGING ANY EQUIPMENT IS DUE TO MIS-SOCKETTING.