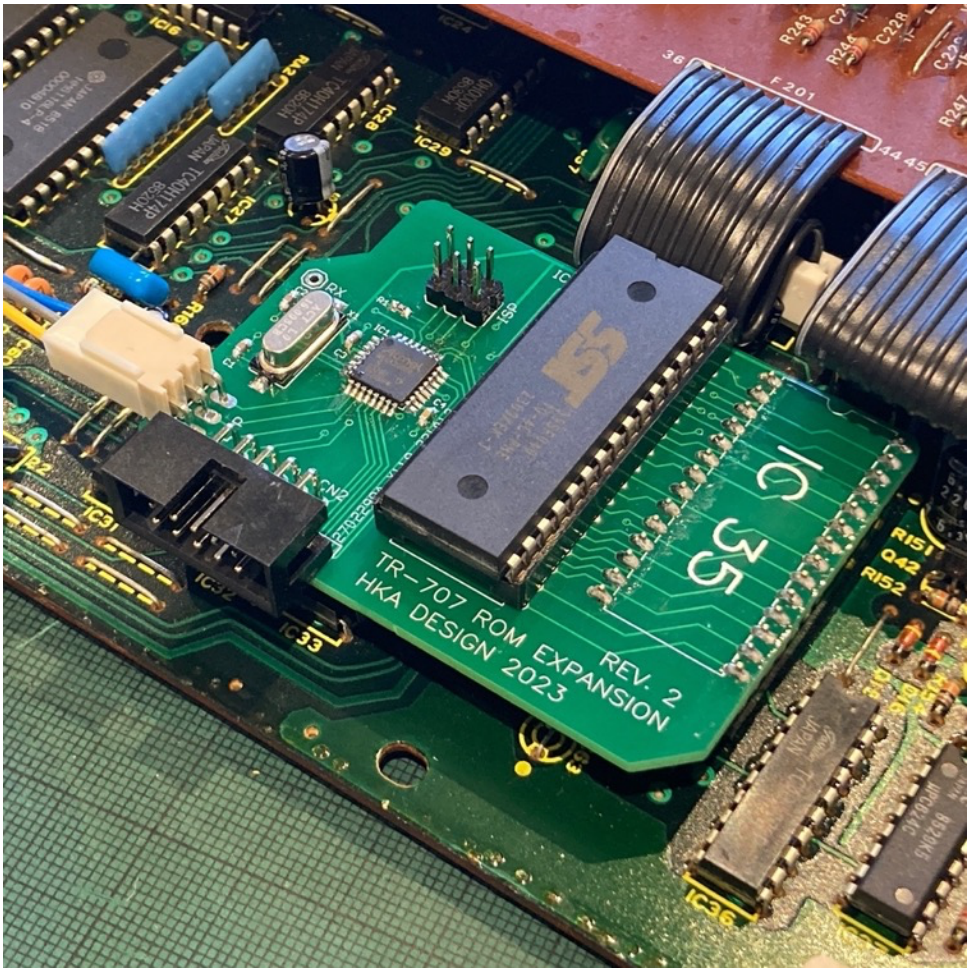

TR-707 ROM Expansion Installation Instructions

December 2023
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Introduction

Thank you for purchasing the TR-707 ROM Expansion kit. This manual is primarily intended for the new surface-mount version of the board (labelled REV. 2), but is also appropriate for the previous version (labelled REV. 1B), with the exception of step 9 on page 4. Skip this step if you're installing the previous version.

Although this document refers to the TR-707 throughout, as it is the more common machine, the kit can be installed in the TR-727 too and the installation procedure is identical. Either way, read the instructions all the way to the end before starting.

Please note that installing this kit is not a job suitable for beginners. The installation requires a good level of skill in both soldering and de-soldering. Unless you are absolutely sure of your abilities, have good quality tools and sufficient practice using them, I do not recommend that you fit it yourself.

The printed circuit boards in the TR-707 cannot take as much abuse as modern ones. Overheating solder joints will very easily cause tracks and pads to lift, requiring time-consuming rework to put right. If you are not comfortable performing the work yourself, I offer an installation service for customers in the UK; otherwise, a local synth repair technician should be able to do this work.

Finally, your TR-707 must be fully functional **before** installing the kit. This should go without saying, but if your machine has voice issues, power issues, etc., the kit will not magically fix them for you, and the additional variables introduced by installing the kit will probably further complicate any repairs. The only exception to this is if the original sound ROMs IC34 and/or IC35 are known to be faulty, as the expansion board replaces these. That said, it is extremely rare for these chips to fail, apart from as a result of circuit-bending disasters.

Installation

1. Remove the batteries from their compartment. Back up your patterns first if you don't want to lose them.

2. Remove all of the slider caps (an IC puller works really well for this), putting them somewhere safe, and remove the 7x screws on the underside of the case.

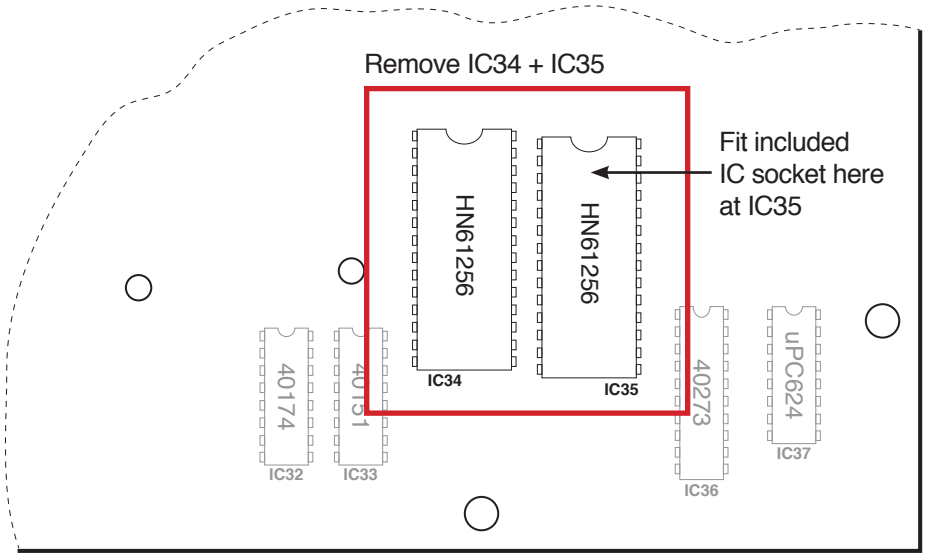
3. With the machine face down on a soft surface, lift off the bottom cover. De-solder or clip the wires going to the battery compartment, noting the positive and negative connections. Set the bottom cover aside.

4. Carefully disconnect the flat flex ribbon going from the main board off to the cartridge connector. To do so, pry the retaining clip away from the body of the connector, and the ribbon will slide out. Temporarily remove the cartridge connector (2x screws) for better access to the main board.

5. Remove the screws that secure the main PCB assembly into the top case:
   2x screws either side of the MIDI sockets on the back panel
   2x screws in opposite corners of the circuit board assembly (top right and bottom left)
   1x screw holding the ground wire to the panel board (2x screws + wires on early units)

6. Lift the main PCB assembly out of the case, while disconnecting the two cables that join it to the panel board. This is most easily done by holding the machine on end, with sockets facing downwards, and the power button pressed in.

7. With the main board assembly out of the case, locate IC34 and IC35 in the front right-hand corner of the PCB (both marked HN61256P). Carefully de-solder and remove them, and solder the included chip socket in place of IC35. The IC34 location is left unpopulated.



Front right-hand corner of TR-707 main board

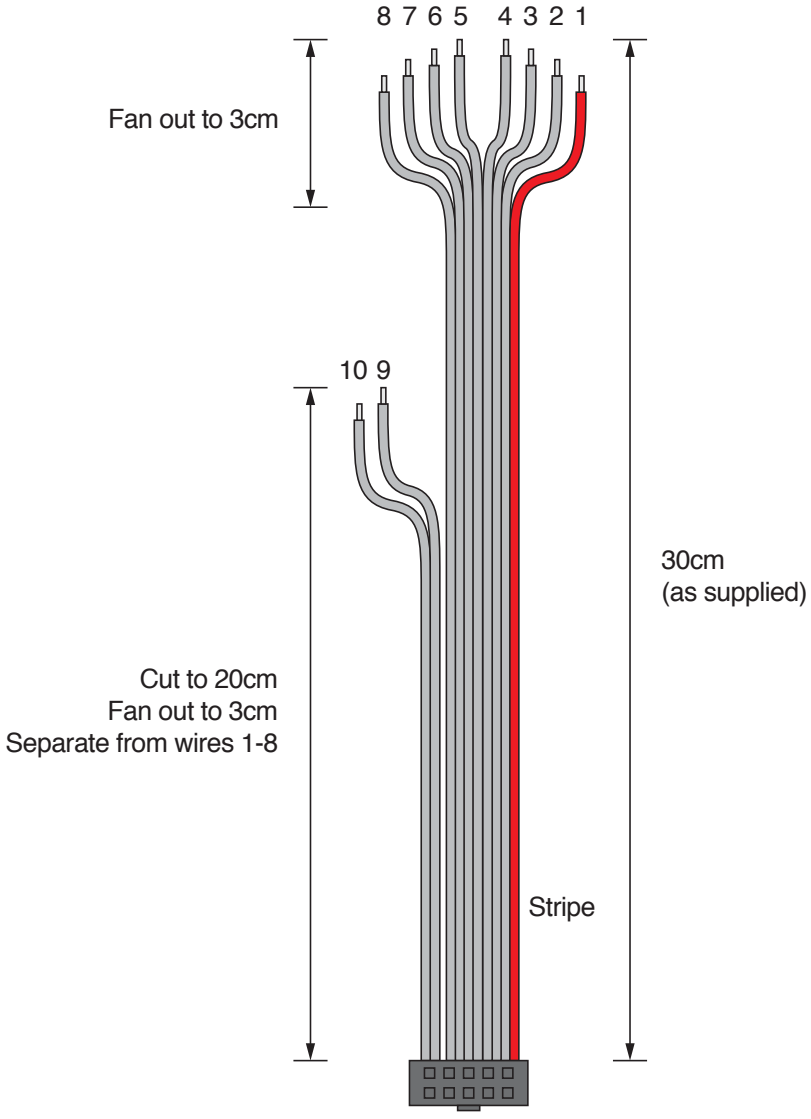
- **If you're also installing the optional Cymbals Board, now is the best time to do so. Follow the instructions given in the Cymbals Board manual then return to this point to continue the installation for the ROM Expansion kit.**

Installation (continued)

8. Plug the expansion board into the socket, ensuring that the pins are lined up correctly. You will probably need to adjust the two flat cables going to the mixer board to make room: the left-hand cable marked ‘F201’ can be folded down behind the rear edge of the expansion board, and the right-hand cable marked ‘F202’ can overhang the top.

9. Solder the included 30cm wire between the pad labelled ‘RX’ on the expansion board and pin 4 of IC6 (PC900 optocoupler) on the top side of the TR-707 main board. This picks up the incoming MIDI signal and allows the ROM Expansion board to respond to MIDI program changes. If you don’t want this functionality, you can skip this step.

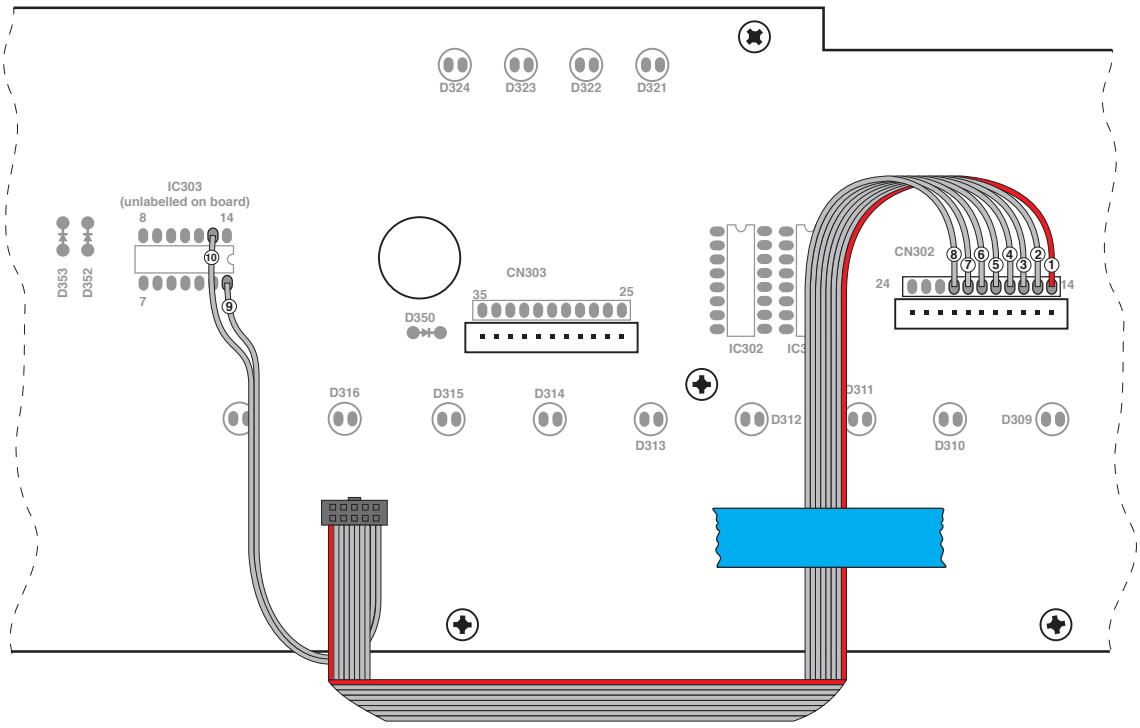
10. Prepare the 10-way ribbon cable. The first 8 wires of the ribbon cable need to be fanned out to 3cm, stripped to 2mm and tinned with solder. Wires 9 & 10 should be separated from the first 8, all the way back to the connector, and cut to 20cm total length. As with the others, these should be fanned out to 3cm, stripped to 2mm and tinned.



Drawing not to scale!

Installation (continued)

11. Solder the wires from the ribbon cable to locations on the panel board as shown below. Once this is done, fold it as shown and secure the ribbon cable down with a piece of insulation tape.



Wire	Connect to	Signal
1 (stripe)	CN302-14	Data bus D0
2	CN302-15	Data bus D1
3	CN302-16	Data bus D2
4	CN302-17	Data bus D3
5	CN302-18	Data bus D4
6	CN302-19	Data bus D5
7	CN302-20	Data bus D6
8	CN302-21	Data bus D7
9	IC303-1	Panel row select 1 (step keys 1-8)
10	IC303-13	Panel row select 3 (group with ENTER key)

12. Reinstall the main PCB assembly in the top case, reconnecting the two cables that join it to the panel board. Like the disassembly, this is easiest done with the machine on end. Plug the ribbon cable into the expansion board.

13. Replace the screws that you removed in Step 5, also replacing the ground wire(s). Reinstall the cartridge connector and reconnect the flat flex ribbon. Re-solder the wires to the battery compartment.

14. Replace the bottom cover, 7x case screws, slider caps, and put the two AA batteries back in the battery compartment.

15. Test the machine. After replacing the batteries, the pattern memory will be scrambled and the sequencer may behave strangely until you do a factory reset. To do so, power on the TR-707 while holding down the TRACK and PATTERN GROUP A buttons.

Troubleshooting

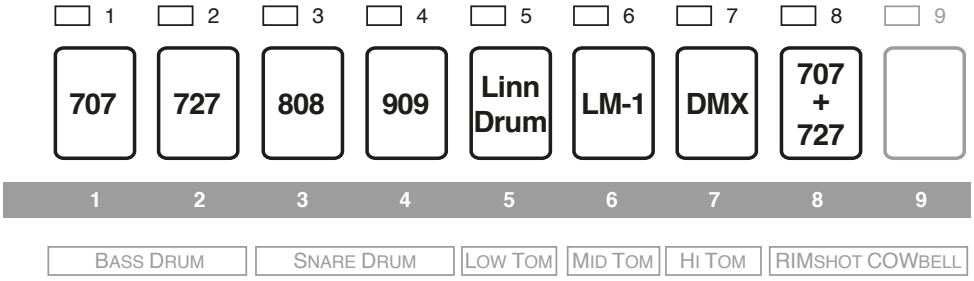
- If the sounds are playing back with digital distortion, it is likely that there is either a connection problem between the expansion board and the IC35 socket, or traces were damaged when removing the original ROM ICs to install the socket. Ensure that the expansion board is correctly seated in the socket and inspect for any solder bridges between pins, dry joints, or in particular, damaged pads or traces. If necessary, traces will have to be reinstated using fine wire.

- If the bank selection is not working properly or at all, firstly check that the wires from the ribbon cable have all been soldered to the correct locations and in the correct sequence. If you are also finding that one or more of the panel buttons (usually the step buttons) are not working, it's likely that one of the wires in the two ribbon cables connecting the panel board to the main board has broken, usually at the main board end where they are soldered with no strain relief. The two ribbon cables going to the mixer board are also susceptible to this, which can result in missing sounds.

- If the machine is totally locked up and not responding to any button presses, firstly make sure that the two ribbon cables that connect the panel board to the main board are plugged in all the way, and that no wires have broken off as described above. Also check for any solder bridges where wires 1-8 connect to the panel board at CN302, as these are the TR-707's data bus.

Selecting banks

To select banks, hold down the ENTER button and press one of the first 8 step keys. This can be done at any time while the TR-707 is running. The currently selected bank is remembered when the power is turned off.



The new REV. 2 version of the expansion board also allows banks to be selected with MIDI Program Change messages. This is fixed on Channel 10 and responds to the first 8 programs (1-8 or 0-7, depending on how the transmitting device numbers them).