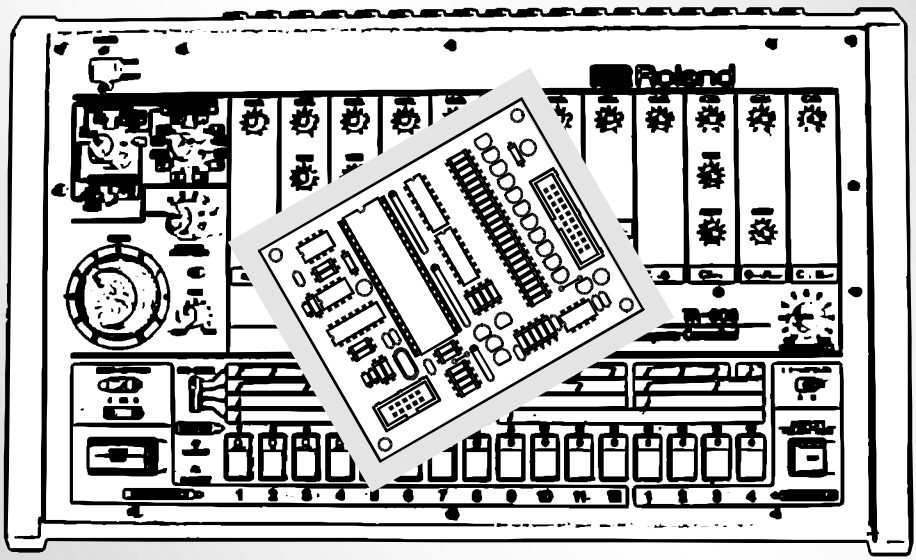
ROLAND TR-808 MIDI INTERFACE



Model 8-448 ver. 2.0

INSTALLATION MANUAL

Contents

Appendices

Manufacturer :
CHD Elektroservis
9.května 78/35, 198 00 Praha 9, Czech Republic
www.chd-el.cz
info@chd-el.cz

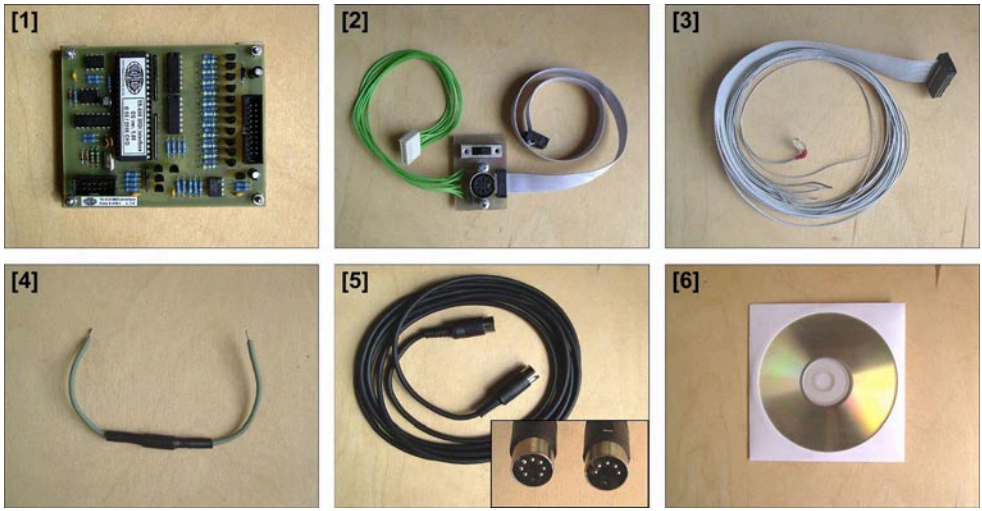
1. INTORDUCTION

The TR-808 MIDI retrofit enables your Roland TR-808 to be synchronized with other MIDI devices and work like polyphonic velocity sensitive MIDI drum expander. More over all original features of the TR-808 are not changed. It is not necessary to drill any holes in the vintage instrument. All changes can be replaced without visible changes.

1.1. MIDI INTERFACE KIT COMPONENTS

The TR-808 MIDI interface kit package contains all necessary components and material for the installation, including detailed description of the installation procedure. The TR-808 kit package contains :

[1] MIDI Interface main board (MAIN) including the material (self-adhesive supports, nuts and washers)
[2] Synchronization terminals board (SYNC IN / OUT) including the material and cables (screws, washers and plastic stripes)
[3] 20-core multi-cable with the connector and indication LED
[4] Ground cable with the isolating capacitor
[5] Special MIDI cable - reduction
[6] CD-ROM with user and installation manuals and software



1.2. GENERAL INSTRUCTIONS

Installation of all MIDI interface parts is very easy and non-destructive. The optical appearance of the TR-808 remains the same after the installation and it is possible to remove the interface at any time. For the most comfortable and easy installation please follow the steps described in this manual exactly.

Before starting the work prepare yourself an small and medium size Phillips screwdrivers, pincers or scissors, pliers, soldering iron (with soft iron and soldering paste), electric or manual drill with the 5 mm caliber driller, knife and an universal glue.

Attention ! Due to the risk of electric shock remove the power cable form the electric plug before installation !

The manufacturer does not bear any responsibility for eventual mechanical or electric damage of the TR-808 caused either by not observing the beyond described installation procedure or not careful manipulation during the installation of the MIDI interface !

2. MIDI INTERFACE INSTALLATION PROCEDURE

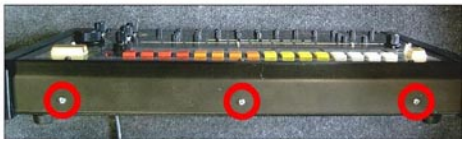
2.1. TR-808 COVER PANEL DISASSEMBLY

a) Unscrew four screws on the main panel of the TR-808 (pic. 1-1), three screws on the rear panel (pic. 1-2) and three screws on the front panel (pic. 1-3). Do not lose the screws. They will be used again after the MIDI kit installation.

Pic. 1-1

Pic. 1-2

Pic. 1-3



b) Carefully lift up the rear side of the TR-808 cover panel, move the entire panel approx. 2 cm towards yourself and lift up the front side and turn over the entire cover panel of the TR-808 backwards. We recommend to place it on the soft textile pad, to prevent the panel from the damage.

2.2. ELECTRIC AND MECHANIC GROUND ADJUSTMENT

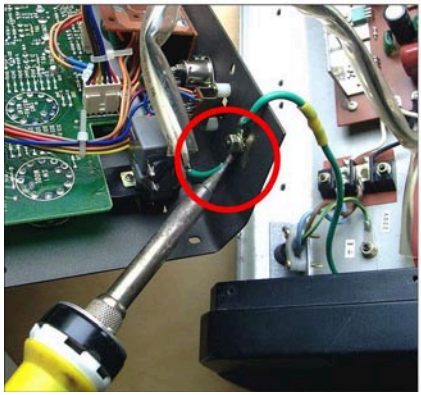
Mechanic and electric grounds are directly interconnected on the TR-808. This galvanic interconnection can make problems when connecting the TR-808 in the loudspeaker systems. Strong hum can occur in such a case. It is necessary to isolate both grounds by replacing the ground cable to eliminate these problems.

This adjustment is not required for correct MIDI interface functionality. If you do not need to isolate the electric and mechanic grounds leave this chapter out.

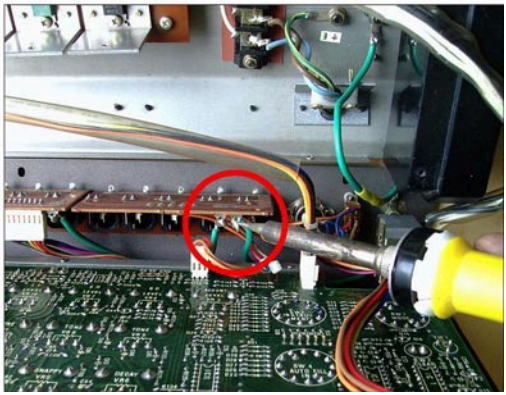
a) Unsolder the green ground cable, going out of the output connectors board in the front cover, form the soldering hole screwed to rear panel (pic. 2-1).
b) Unsolder the second end of the cable form the soldering pad on the output connectors board (pic. 2-2). Be very careful here, the soldering pad is badly accessible. There is a risk of the damage of the surrounding parts.

c) Unsoldered ground cable replace with the cable supplied with the MIDI kit package (part [4] of the delivery). Solder any side of the cable back to the soldering pad and the other end to the soldering hole screwed to rear. Be very careful when soldering on the outputs board.

Pic. 2-1



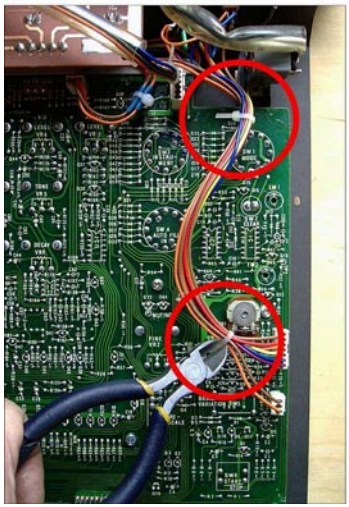
Pic. 2-2



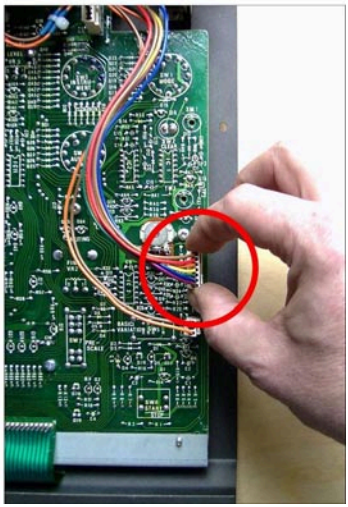
2.3. "SYNC" CONNECTOR AND SWITCH REPLACEMENT

a) Use pincers or scissors to cut the plastic stripes on the cable bunch going from 7-pin and 3-pin connectors on the board in the front cover of TR-808 to the SYNC connector and switch and to the output board on the rear panel of the TR-808 front cover (pic. 3-1).
b) Vertically pull the flat 7-pin connector to disconnect it from the TR-808 board (pic. 3-2).

Pic. 3-1

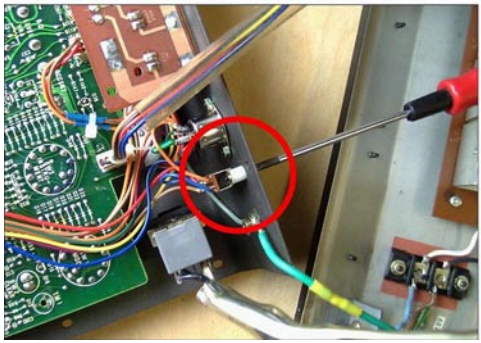


Pic. 3-2

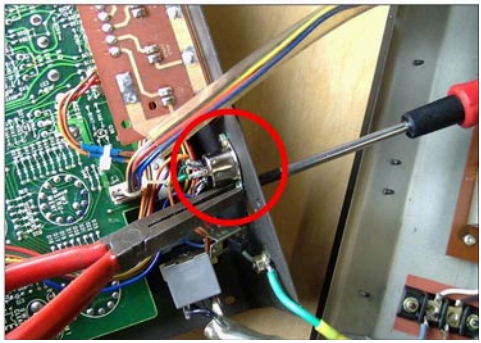


c) Unscrew two screws holding the SYNC switch on the rear panel and remove it. (pic. 3-3). Attention! Do not lose two supports from between the panel and switch.
d) Unscrew two screws holding the SYNC connector on the rear panel and remove it. (pic. 3-4). Use the pliers to hold the nuts.

Pic. 3-3

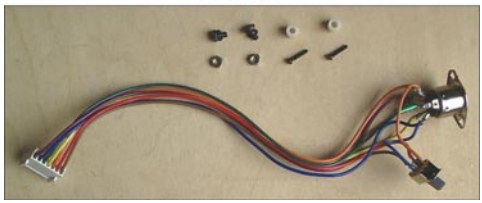


Pic. 3-4



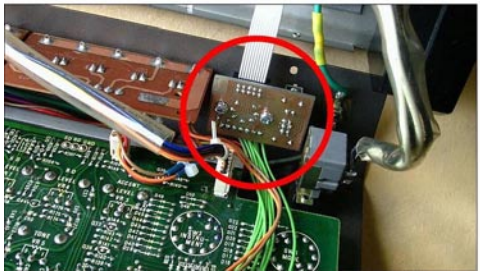
e) Save the original cable bunch with the DIN connector, switch, screws, nuts and washers for eventual future removal of the kit and restoring the original TR-808. (pic. 3-5).

Pic. 3-5

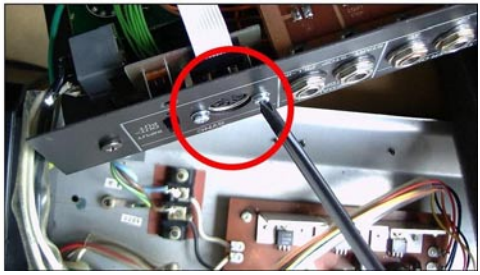


f) Place the new interface "SYNC IN / OUT" board (part [2] of the delivery, pic. 3-6) to fit the rectangular slot for the switch in the rear panel. Screw the board to the TR-8080 panel. Use two screws (part of the "SYNC IN / OUT" board, pic. 3-7). Do not forget to use washers under the screw heads to prevent the TR-808 panel from damage and scratches.

Pic. 3-6

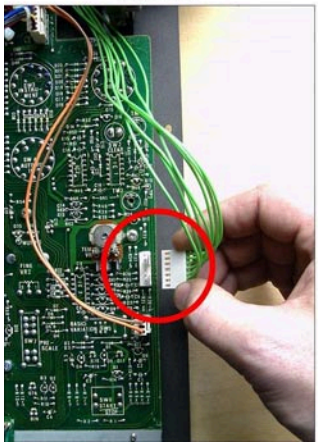


Pic. 3-7

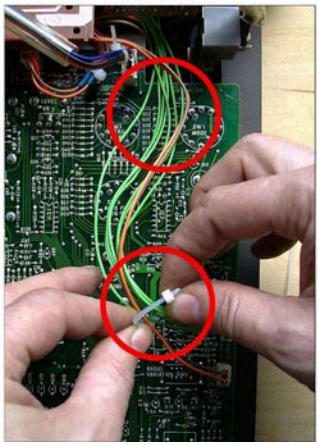


g) Push the flat 7-pin connector on the cable bunch of the "SYNC IN/OUT" board in unoccupied plug on the TR-808´s main board (pic. 3-8). The connector has the lock to prevent to plug it the other way around.
h) Use the plastic strips (part of "SYNC IN/OUT" board delivery) to tie the cable bunches of 7-pin and 3-pin connectors on the TR-808 board. (pic. 3-9). Remove the ends of the stripes with pincers or scissors. (pic. 3-10).

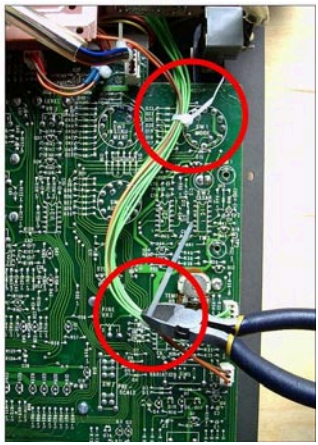
Pic. 3-8



Pic. 3-9



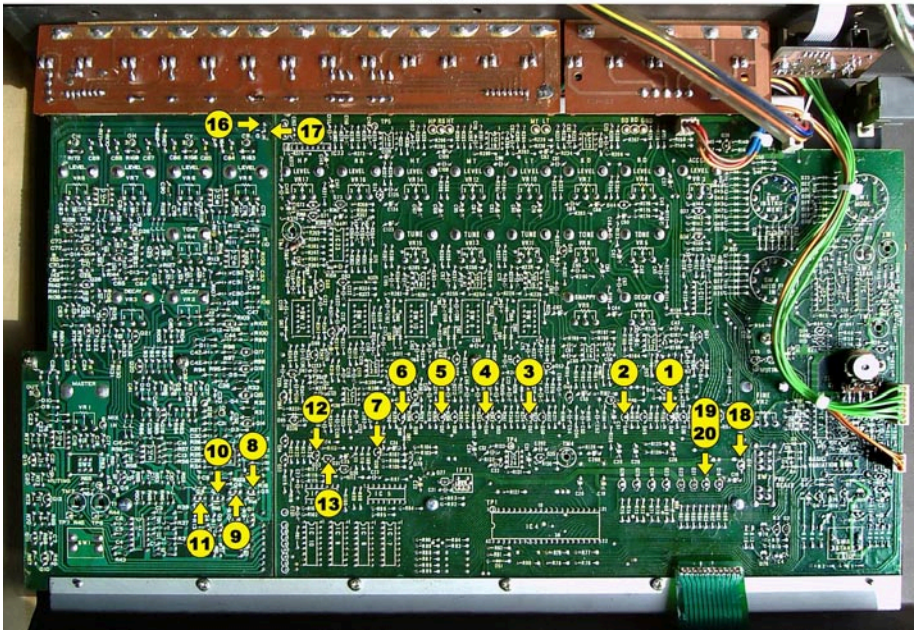
Pic. 3-10



2.4. CONNECTING THE INTERFACE CABLE TO THE TR-808 MAIN BOARD

Individual cables of the unpopulated end of the 20-core flat multi-cable (part [3] of the delivery) must be soldered to the particular pads of the TR-808´s main board. Use the micro soldering iron with

Pic. 4-2



sharper head. It is necessary to work carefully to not damage surrounding points on the board. Since the TR-808 is an old machine the oxidation of the soldering pads is presumable. Use the soldering paste is highly recommended for quality soldering.

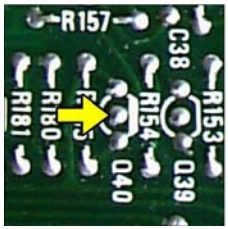
All soldering pads are accessible very well. Transistors whose leads are used are clearly marked on the board by graphical symbols. Transistors have always three leads, the middle one is always collector (C) with emitor (E) and basis (B) on its sides (pic. 4-1).

Pic. 4-1

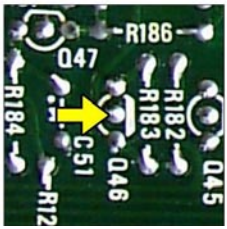
Individual cores of the flat multi-core cable are numbered from 1 to 20. Cable number 1 has different color. Soldering pads for individual cables on the TR-808´s main board are described on the picture 4-2 and following table. Numbers on the picture correspond to the numbers to the cables. Pictures 4-3 to 4-19 depict soldering pads in detail, pic. 4-20 is showing the finished connection of the cables.

Table of solder pads				
Wire No.	**Signal name**	**Solder pad**	**Figure No.**	**Notye**
1 (colored)	Bass Drum Trig	collector of Q40	4-3	
2	Snare Drum Trig	collector of Q46	4-4	
3	Low Tom / Low Conga Trig	collector of Q51	4-5	
4	Mid Tom / Mid Conga Trig	collector of Q54	4-6	
5	High Tom / High Conga Trig	collector of Q57	4-7	
6	Rim Shot / Claves Trig	collector of Q60	4-8	
7	Hand Clap / Maracas Trig	collector of Q29	4-9	
8	Cow Bell Trig	collector of Q5	4-10	
9	Cymbal Trig	collector of Q6	4-11	
10	Open Hi-Hat Trig	collector of Q7	4-12	
11	Closed Hi-Hat Trig	collector of 8Q	4-13	
12	Trig Lock	emitter of Q32	4-14	
13	Trig Off	collector of Q31	4-15	
14	LED – anode	none	-	see section 2.5.
15	LED – cathode	none	-	see section 2.5.
16	+15V	“+” pad	4-16	
17	-15V	“-” pad	4-17	
18	+5V	emitter of Q18	4-18	
19	GND	emitter of Q20	4-19	both wires 19 and 20 will be soldered to the same pad
20	GND			

Pic. 4-3

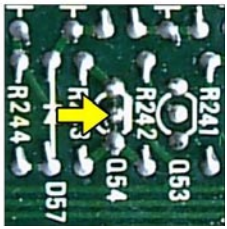


Pic. 4-4

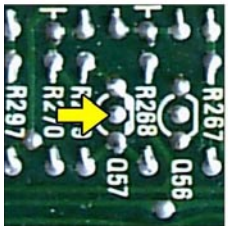


Pic. 4-5

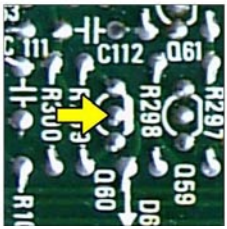
Pic. 4-6



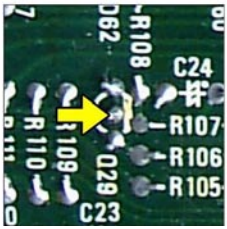
Pic. 4-7



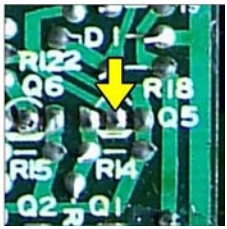
Pic. 4-8



Pic. 4-9

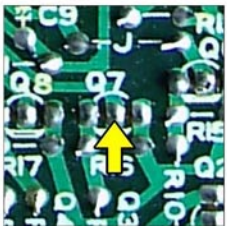


Pic. 4-10

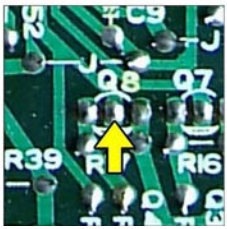


Pic. 4-11

Pic. 4-12



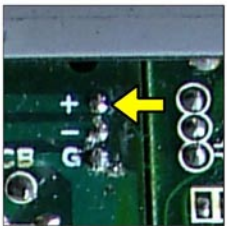
Pic. 4-13



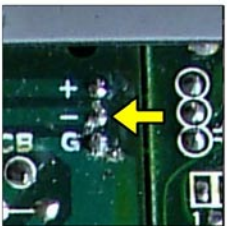
Pic. 4-14

Pic. 4-15

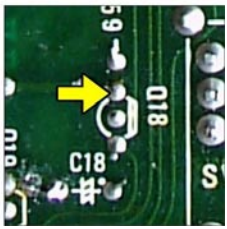
Pic. 4-16



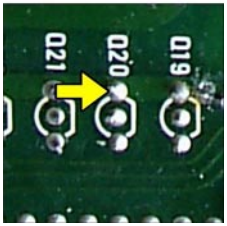
Pic. 4-17



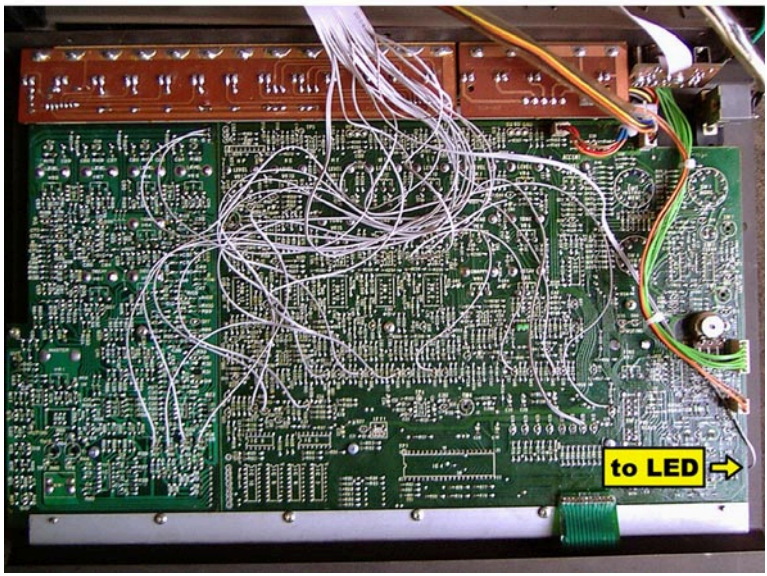
Pic. 4-18



Pic. 4-19



Pic. 4-20

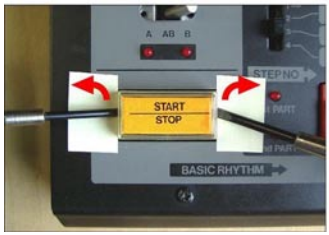


2.5. INDICATOR LED MONTAGE INTO THE "START / STOP" BUTTON

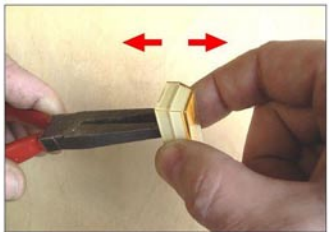
a) Turn over the front cover and pull out the "START / STOP" button cap. Use two screwdrivers if necessary. Put the carton paper or textile under the screwdrivers to prevent the damage of the TR-808 front panel (pic. 5-1).

b) The "START / STOP" button cap consists of three parts. Take off the transparent cover from the carrier part, holding the carrier part with the pliers as shown on picture 5-2. There is a paper label with the "START / STOP" legend between these two plastic parts. (pic. 5-3).

Pic. 5-1



Pic. 5-2

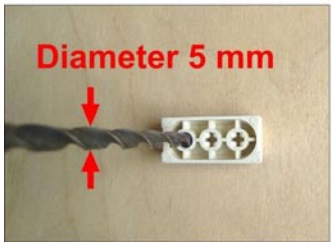


Pic. 5-3

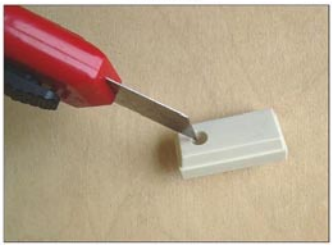
c) There are three holes underneath the carrier part. Two cross-shaped and one circular. The circular hole must be redrilled to 5 mm caliber right through (pic. 5-4). After the drilling is finished clean the hole with the knife (pic. 5-5).

d) Assemble all three parts together having the hole for LED on the left (pic. 5-6).

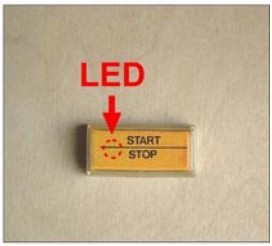
Pic. 5-4



Pic. 5-5

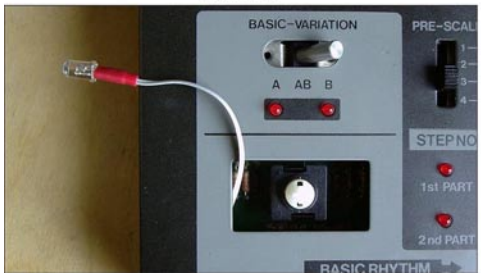


Pic. 5-6

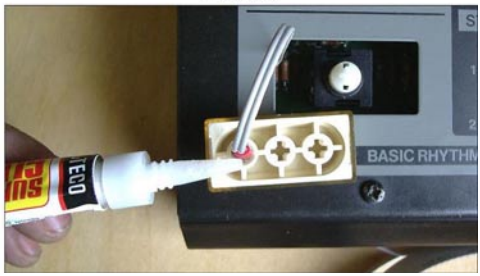


e) Pull the LED connected to the flat cable through the "START / STOP" button hole in the front cover (pic. 5-7) and insert it in the prepared hole in the "START / STOP" button. Fix the LED with the drop of the glue (pic. 5-8).

Pic. 5-7



Pic. 5-8

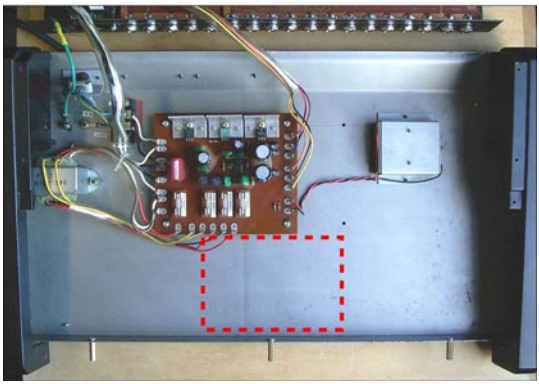


f) Put the button cap with the LED back on the "START / STOP" button, having the LED on the left side.

2.6. MIDI INTERFACE MAIN BOARD INSTALLATION

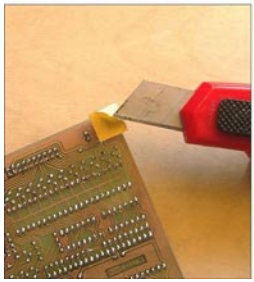
a) Cleanse (degrease) the lower part of the TR-808 bottom to place there the interface main board "MAIN" (part [1] of the delivery, pic. 6-1).

Pic. 6-1



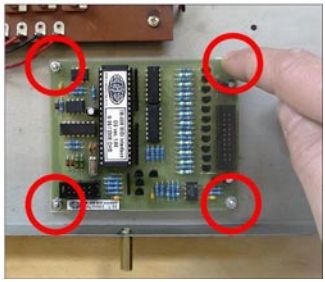
b) Remove the protective foil form the self-adhesive supports of the "MAIN" board (pic. 6-2).
c) Apply the interface "MAIN" board to the lower part of the TR-808 bottom (pic. 6-3) than fix the self-adhesive supports by pressing down (pic. 6-4).

Pic. 6-2



Pic. 6-3

Pic. 6-4

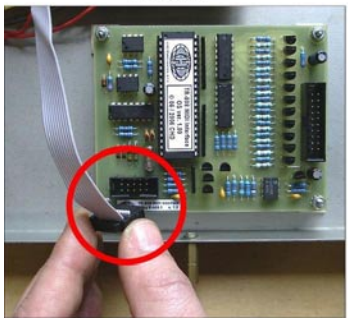


2.7. TR-808 ASSEMBLY

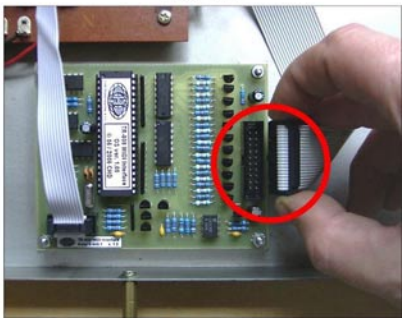
The TR-808 retrofit is now installed. TR-808 assembly is the last step of the installation procedure.

a) Plug the 10-pin connector going from the "SYNC IN/OUT" board in the interface "MAIN" board. The orientation of the connector is given by the connector lock (pic. 7-1).
b) Plug the 20-pin connector of the multi-core cable soldered to the TR-808 board in interface "MAIN" board. The orientation of the connector is given by the connector lock (pic. 7-2).

Pic. 7-1



Pic. 7-2



c) Turn the front cover of the TR-808 over the bottom part and move the edge of the front cover over the supports on the front side of the bottom part.
d) Move the front cover backwards and place its rear side to fit the plastic sides of the TR-808.
e) Screw back the three screws on the front panel TR-808 (pic. 7-3), three screws on the rear panel (pic. 7-4) and four screws on the front panel (pic. 7-5).

Pic. 7-3

Pic. 7-4

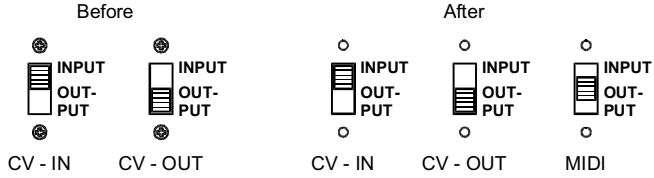
Pic. 7-5

The installation of the MIDI kit is now complete and TR-808 is ready to communicate over the MIDI. Please read carefully the user manual first.

3. NEW FUNCTIONS OF TR-808

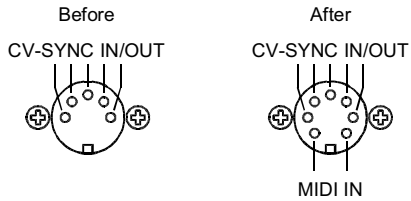
3.1. "SYNC" SWITCH

"SYNC" switch on the rear panel has now 3 positions. In the upper or lower positions, all TR-808 functions remain the same as before installation of the MIDI retrofit (DIN-SYNC OUT, DIN-SYNC IN). The middle position switches on the MIDI input.



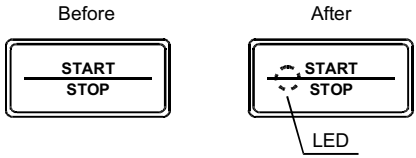
3.2. "SYNC" CONNECTOR

The 5-pin "DIN SYNC" connector on the TR-808 rear panel is replaced with 7-pin one. Pins Nr.1 to 5 have the original functionality, new pins Nr. 6 and 7 are used for MIDI input. For the normal DIN-SYNC operation use standard 5 pin cable, same as before MIDI kit installation. For the MIDI communication (Sync switch in the middle position) please use special 7-pin MIDI cable/reduction supplied with in the TR-808 MIDI kit package.

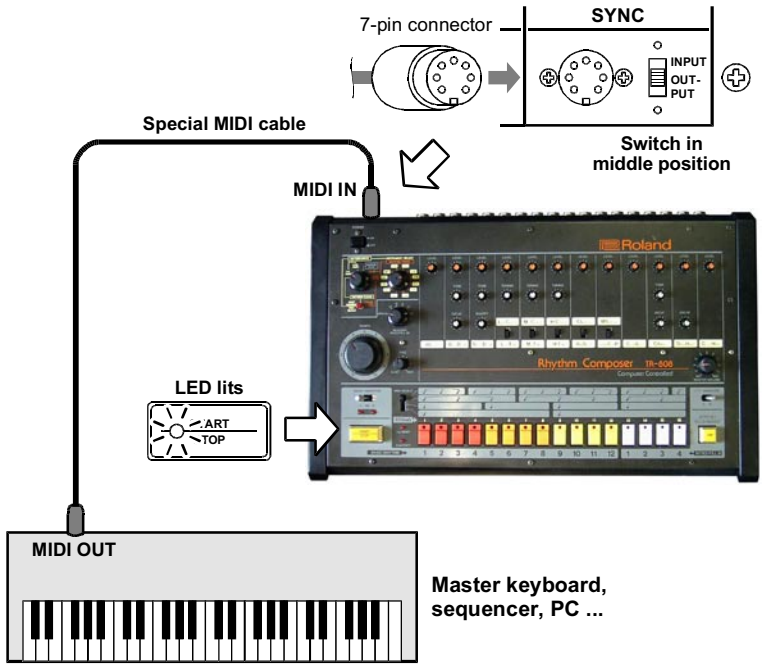


3.3. "START / STOP" BUTTON

The "START / STOP" button on the TR-808 panel has the same function as on original non-retrofitted instrument. LED under the button indicates the MIDI mode ("SYNC" switch in the middle position).



APPENDIX A : CONNECTION TO MIDI



TR-808 MIDI INTERFACE

Model 8-448 ver. 2.0

INSTALLATION MANUAL

www.chd-el.cz