nord STAGE

SERVICE MANUAL

Clavia

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The Nord Stage Service manual is arranged to help our service centers in the best way possible. However the Nord Stage user manual is a very useful guide, use it as a reference in addition to this service manual. If you have access to internet you'll find the user manual available for download and also a lot of useful information on our website www.clavia.se

⚠The information in this service manual is intended for service centers that repair Clavia products. It may **not** be copied, reposted, modified, served from other web pages, made into derivative works or distributed to other sources such as end users or retailers that do not repair Clavia products.

⚠In this manual the Nord Stage 88/76/Compact will be referred to as **Nord Stage**

⚠Important safety information

Dangerous voltage levels are present within the unit.

- Unit should be opened exclusively by qualified service personnel.
- Always disconnect the power supply cord before opening to avoid electrical shock.
- Components and complete circuitboards may only be put into service when they are securely fixed in the instrument casing.

Take necessary precautions against ESD before opening the unit.

Revision history

rev. 1.0 - First release

rev. 1.1 -Important updates in the "Replacing the keybed" section
-Appendix 1 added

Overview

Product line

There are three different Nord Stage Models:
- 88 note keyboard version
- 76 note keyboard version
- 73 note keyboard version (Compact)

The 88 and 76 both feature weighted hammer-action keyboards while the compact is equipped with a semi-weighted organ (waterfall profile) keyboard.

Internal memory
The internal sound memory of Nord Stage consists of 21 banks holding 6 programs each for a total of 126 programs. In addition there are two live buffer memories.

Fuse ratings

Voltage	115 V	230 V
Fuse	300 mA	125 mA

Physical Dimensions

Stage 88
W: 1297 mm / 51"
D: 334 mm / 13"
H: 121 mm / 4.5"
Weight: 18,5Kg / 41 lbs

Stage 76
W: 1132 mm / 45"
D: 334 mm / 13"
H: 121 mm / 4.5"
Weight: 16,5kg / 36 lbs

Stage Compact
W: 1111 mm / 44"
D: 297 mm / 12"
H: 102 mm / 4"
Weight: 9,7Kg / 21 lbs

Test program

Running the test program

The Nord Stage test program is stored both in Flash and in the BootPROM position **U6**. Test program version is shown on the Stage display when the test program is initiated.

In order to trace a hardware error easier, each Nord synthesizer has a test program. This program is primarily used in production in order to test all functions.
The functions provided by the test program allow a quick and easy search for possible errors on the hardware. On the Nord Stage, the display guides the user through the test program.

⚠**WARNING:** Improper use of the test program or powering off the synth during a test can result in malfunction of the synth. The test program may only be used by qualified service personnel and is not intended for end users.

In order to execute the different tests on a Nord Stage, press and hold buttons **[Shift + Store + Ctrlped]** at power up. When test mode is entered, a DRAM test is performed. After the DRAM test has finished successfully, the test program will start. The DRAM test progress is indicated by the LED´s on the piano section encoder on the front panel. The LED´s are divided into three groups, where each group of LED´s represents a part of the DRAM test procedure. During the DRAM test, the LED groups will light up, one by one. If errors are detected, one of the three groups will flash:

- If the first LED group is flashing, errors have been detected on **U9**.
- If the second LED group is flashing, errors have been detected on **U8**.
- If the third LED group is flashing an address bus error has been detected.

Navigating through the test program
- Press the designated program buttons **[1]** or **[2]** to enter a test group (MNB, PNL). (ADJ and SYS are only used in production.)
- Press program button **[4]** When a test has finished, to exit test.
- Press **[Page+]** or **[Page-]** to toggle between available tests.
- Press **[Shift + Page+]** or **[Shift + Page-]** to skip a section in a test.
- Press **[Page+]** or **[Page -]** within a test to jump between sections.
- Press **[KBzones 2]** to reset a test.

MNB: Main board

1.	Mainb	Performs tests 3,12,4,6 and 7.
2.	Final	Only used in production.
3.	EEPROM	Tests the EEPROM.
4.	DSP	Tests the five DSP´s, including external memory and communication between DSP´s.
5.	DAC	Tests the two D/A converters. Output a sine wave on the 4 outputs CH1 Out: 220Hz | CH2 Out: 440Hz | CH3 Out: 880Hz | CH4 Out: 1760Hz Toggle between outputs with **[Page+]** or **[Page-]**
6.	Audio	Outputs a 1KHz sine -100dB or noise -70dB on the 4 outputs. Toggle between sine or noise with **[Page+]** or **[Page-]**
7.	USB	Shows the USB chip ID. This test can not detect if the USB communication with a computer is functional. To test USB communication, simply connect the Stage to a computer running the Stage manager.
8.	MIDI	Test MIDI communication. Connect a cable from MIDI in to MIDI out
9.	Keyboard	Press one key at a time. The test shows which key is pressed and counts the number of keys pressed.
10.	Pedal	Tests all the pedal input jacks and the function of the sustain and rotor pedal. Requires that each pedal is pushed two times.
11.	Verify	Only used in Production.
12.	Flash test	Performs a quick test of the Flash circuits. The entire memory area is not tested. Flash data is not altered.
13.	Flash test thorough	Tests the entire Flash memory area. The test takes approximately 18 minutes to complete. Flash data is not altered.

PNL: Panel board

1.	Full	Only used in production.
2.	Panel 1	Performs tests 4,5,6,7,8,9,10 on panel 1.
3.	Panel 2	Performs tests 4,6,10 on panel 2.
4.	Buttons & LED	Tests first the LED´s followed by a button test. Step to next section with **[Page+]**.
5.	LCD	Tests the LCD panel.
6.	Encoders	Tests all of the encoders. Requires that each encoder is turned two turns.
7.	Pitch stick cal. range	Shows the Pitch stick calibration range. (36-40)
8.	Pitch stick base value	Shows the Pitch stick base value. (52-74)
9.	Pitch stick	Tests the pitch stick function. Left = 0 Right = 64
10.	ADC	Tests the function of the A/D converter on the panelboard

ADJ: Only used in production. **SYS:** Contains system operations.

Error Codes

EEPROM ERRORS:
"ERR: check U24"
-check U24, U10 (pin 39,40), R52 and R53

DSP TEST ERRORS:
"ERR: Uxx boot" (DSP not starting)
-check Uxx

"ERR: Uxx SRAM" (Ext DSP memory error)
-LCD shows: "Err U18 SRAM" check U18 and U11
-"err U19 SRAM" check U19 and U12
-"err U20 SRAM" check U20, U14 and U15

"ERR: SDOx Uxx" (Serial bus error)
-LCD shows "err SDOx U16", check U16 and U17
-LCD shows "err SDOx U17", check U17 and U18
-LCD shows "err SDOx U18", check U18 and U19
-LCD shows "err SDOx U19", check U19 and U20
-LCD shows "err SDOx U20", check U20 and U16

SDO**x** = SDO**1**-SDO**3** U**xx** = U**16**-U**20**

FLASH TEST ERRORS:
"ERR: Check U27 - U34"
-check U27-U34, U16, U4 and U5

Hardware

Hardware structure

The hardware structure is common for all three Nord Stage products:
One power supply unit, one main board and two panel boards.

Power supply
The Nord Stage is supplied with several different voltages from the power board. These are +3.3V, +5V and ±12V. For more information on where to measure these voltages, see the schematic for the power supply. There are also two voltages supplied from the main board. **U46** *(23340)* supplies the Host and DSP´s with +1.8V, **U43** *(21540)* supplies the audio D/A with +5V. The Power supply is connected to the main board with a 10 pole connector **P2** *(22480).*

Main Board
The main board is equipped with five DSP´s **U16-U20** *(23280)*, which is controlled by a host processor **U10** *(23180)* with two DRAM circuits **U8** and **U9** *(23170)* (1M*16 bits). Boot code for the host processor is stored in the BootPROM **U6** *(23891)* (512k*8 bits). OS and piano samples are stored in a Flash memory **U27-U30 U31-U34** *(24000)* (16M*16 bits). Various other information, e.g. user settings is stored in an EEPROM **U24** *(24147)* (2k*8 bits).
Audio D/A conversion is performed by **U44** and **U45** *(23430)*.
A/D conversion of the control pedal takes place on the panel board 1 **U14** *(23370)*.
All input and output jacks are filtered from radio signals with an EMI-filter *(23110)* (component designator prefix F). External connectors are two 26 pole connector for the panel boards **P3-P4** *(22520)*, a 10 pole connector for the power supply unit **P6** *(22480)*, two keyboard connectors **P1-P2** *(22680)*, one four pole connector for the after touch strip **P5** *(23790)* and one six pole Picoflex connector for memory card **P9** *(24152)*.

Panel Board 1
On this panel board you will find all control functions for the master level/rotor effect, organ, piano and program section. This panel also holds the LCD *(24020)*, main program encoder *(23720),* pitch stick *(10295)* and mod. wheel connector **P8** *(22710).* The panel board is connected to the main board with a 26 pole connector **P1** *(22520).*

Panel Board 2
On panel board 2 you will find all control functions of the synth, extern and effects section. The panel board is connected to the main board with a 26 pole connector **P1** *(22520).*

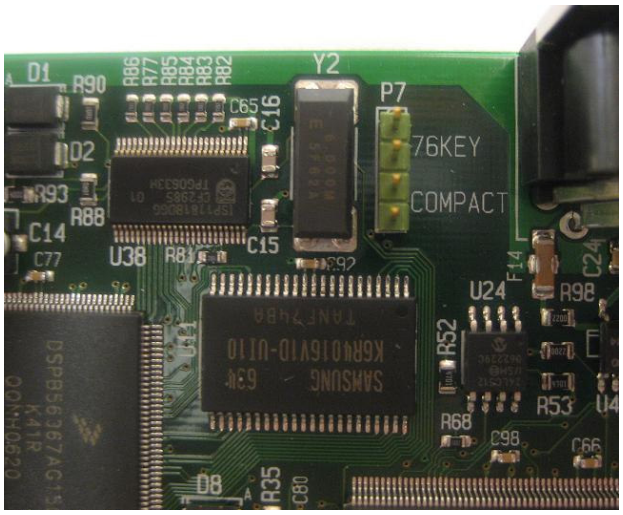
Hardware configuration

The Stage model (88, 76, compact) is decided by a jumper on pin header **P7** found beside the MIDI connectors.
Hardware version is shown on the Stage display when the unit is started.
If the jumper is not properly configured, you get problems like:
- Low trigging sections on the keyboard.
-Wrong scaling on the keyboard.

Jumper configured as Stage76

Jumper configured as Stage compact

To set main board as Stage 88 no jumper is connected



Hardware versions

Main board	BootPROM	Notes
ver. 1.0	v0.52	
ver. 1.1	v0.52	
ver. 1.2	v1.2 -xx	Memory card connector added.
ver. 1.3	v1.3 -xx	Memory card connector integrated on main board
ver. 1.4	v1.4 -xx	USB communication LED is added.

Hw version is shown in the LCD when you turn on the unit. (ver. 1.2-xx and newer)

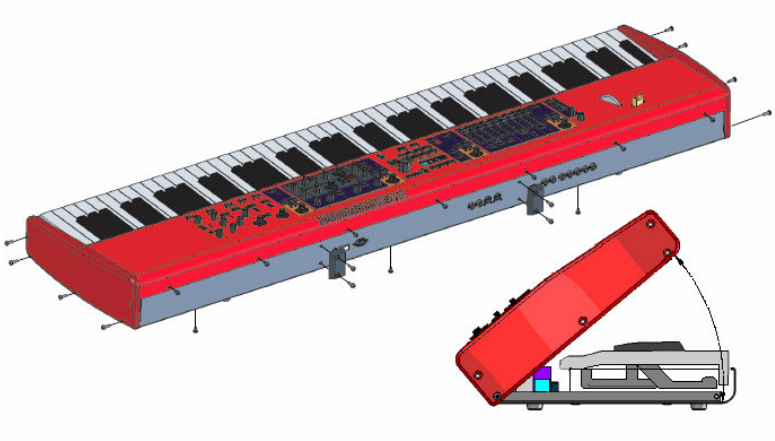
⚠Important note
-Never mount an old BootPROM (prior to 1.2-xx) on a new main board (v1.2 or newer).
-Never mount a new BootPROM (1.2-xx or newer) on an old main board (prior to v1.2).
-The latest available OS version (and piano samples) will work on all officially released main board versions, however old OS versions might NOT work on newer main boards Always use the latest OS version!

Opening the synth

WARNING: Take necessary precautions against ESD before opening the synth.

Stage 88/76
Loosen the screws as shown in the figure *(8x40038 + 10x40018).*
Remove the bumpers *(2x50288)*
The two screws on the sides work as hinges. Lift in the front to open the top

Stage compact
Opens up similar to the Electro 73 *(2x40038 + 6x40018)*
The two screws on the sides work as hinges.
Lift in the front to open the top.
(note that the compact due to it's compact mechanics does not have the same hinge possibilities as the 88/76)



Picture shows Nord Stage 88

Removing the Power Supply Unit
Loosen the six screws *(40262)* holding the PSU to the chassis. Loosen the two screws *(40013)* on the back panel next to the AC socket. Finally remove the 10 pole ribbon cable *(23880)* and lift out the PSU.

Removing the Panel Boards
Pull off the knobs on the panel you want to remove (not the buttons). Remove the ribbon cable from the connector on the panel board. Unscrew the last two screws *(40038)* holding the top to the chassis
Panel board 1: Loosen the 12 screws *(40262)* holding panel board 1 to the upper lid, also remove the mod.wheel cable and pitch stick.
You can now lift out the panel board.
Panel board 2: Loosen the 11 screws *(40262)* holding panel board 2 to the upper lid.
You can now lift out the panel board.

Removing the Main Board
⚠ Before replacing the main board make sure to read **Appendix 1** on page 15.
Loosen the three screws *(40262)* holding the main board to the chassis. Loosen the nuts and remove the washers around the ¼" jacks on the back panel. Also loosen the four screws *(40010)* holding the MIDI jacks to the chassis. Remove the 26 pole ribbon cables *(PNL1-22410, PNL2-23830)* to the panel boards, 10 pole ribbon cable *(23880)* to the PSU, 4 pole cable *(24146)* to the after touch, 6 pole Picoflex cable *(24151)* to the memory card and the two ribbon cables to the keybed *(P1-24145, P2-24144).*
You can now lift out the main board.

Replacing the keybed (88/76)

⚠ Before replacing the keybed make sure to read **Appendix 1** on page 15.
In order to get the correct replacement parts, always state the units Serial No. and also the main board Version No. that is printed on the barcode label.

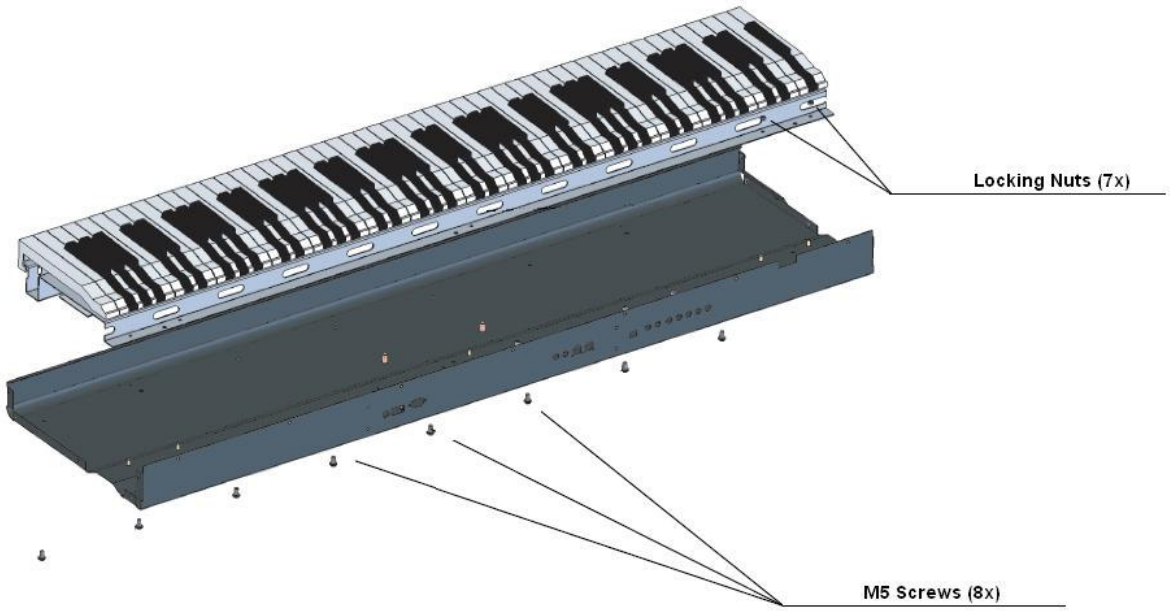
Disassembly
Remove the top as described in section ”opening the synth”.
To be able to replace the keybed the main board has to be removed.
for information see section ”removing the mainboard”.

Removing the keybed (Pic.0)

1. Unscrew the M5 screws *(8x40241)* with the keys facing down on a smooth surface.
2. Remove the locking nuts *(7x40057)*.

Now the keybed can be removed.

pic.0

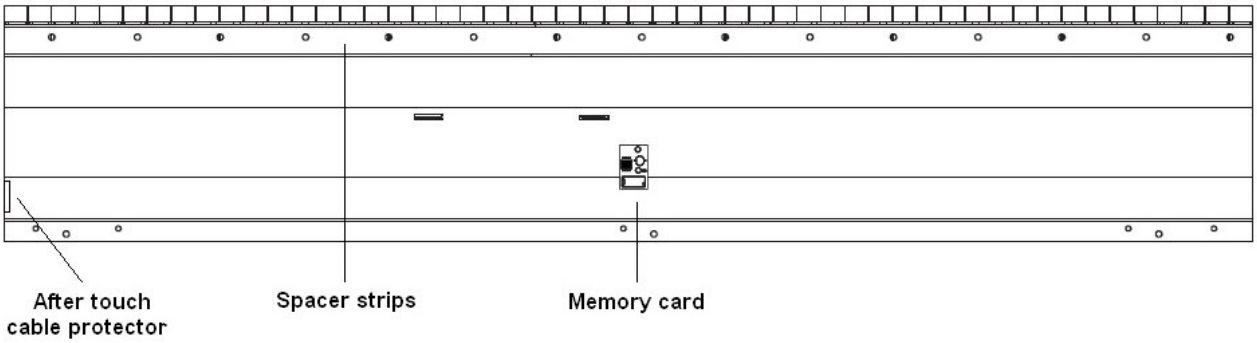


Assembly (Pic.1)
Before assembling the keybed make sure that the keybed is equipped with the following parts:

1. Memory card. *(61052)*
2. Spacer strips. *(2x50290)*
3. After touch cable protector. *(22460)*

⚠Important note
The small memory cards that are attached to the keybeds belongs to the keybed itself, and may under any circumstances NEVER be switched or removed from the keybed.

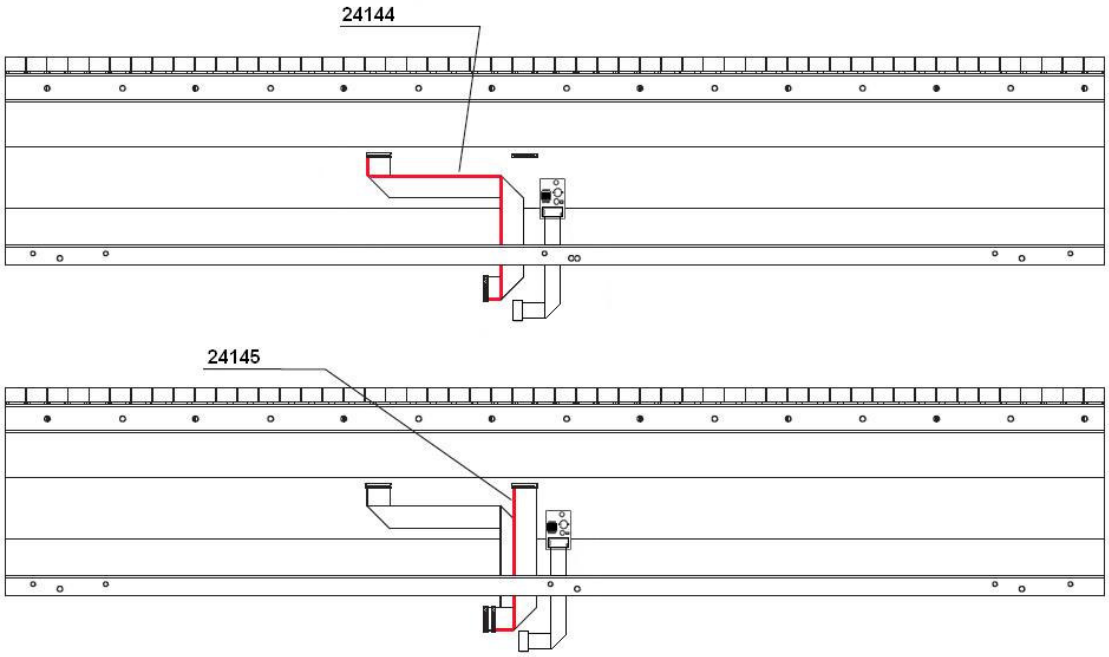
pic.1



Assemble the keyboard cables (Pic.2)

1. Connect the long keyboard cable *(24144)*. (**P2** on the main board)
2. Connect the short keyboard cable *(24145)*. (**P1** on the main board)

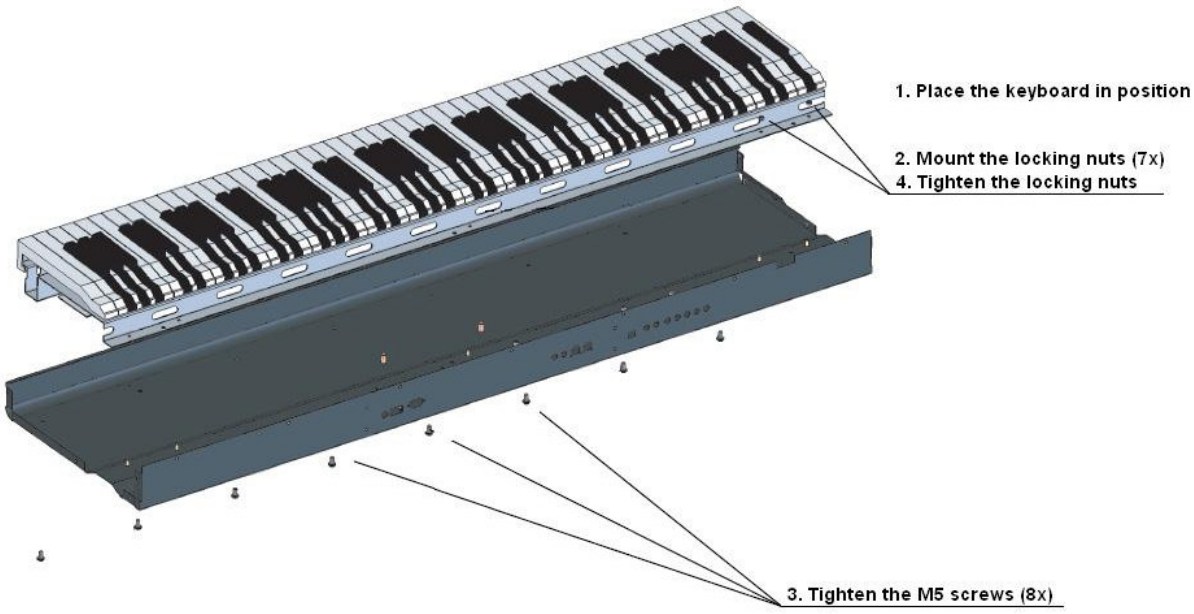
pic.2



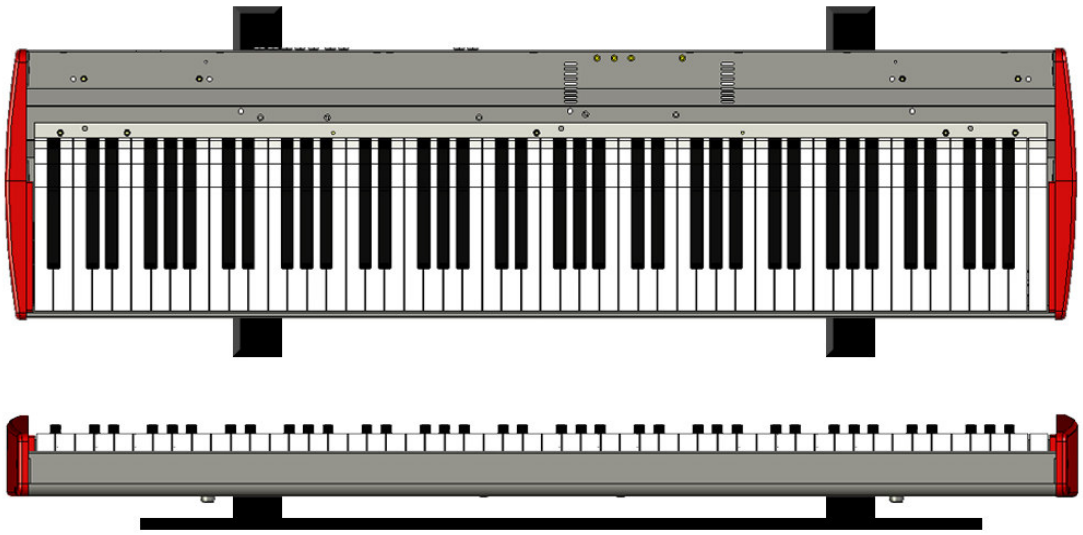
Assemble the keybed (pic. 3)

⚠To guarantee that the lower lid doesn't get warped, it's important that the lid is placed on two identical spacers on a complete plane surface. Make sure that the spacers are not interfering with any screws or rubber feets (see pic 3-1).
A warped assembly may cause velocity deviations.

pic.3



pic.3-1

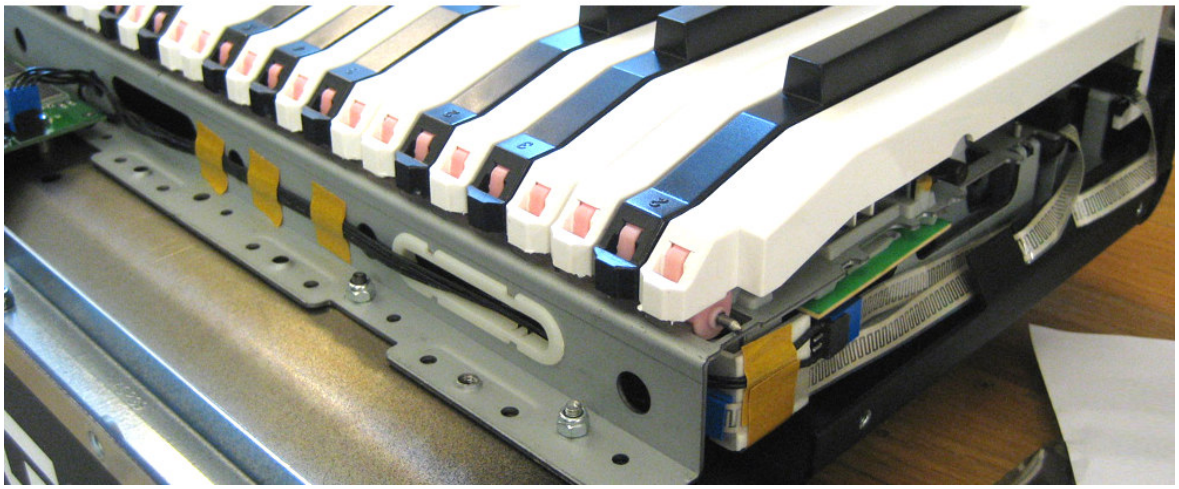


1. Place the keybed in position.
2. Mount the locking nuts *(7x40057)*. Do not tighten.
3. Tighten the M5 screws *(8x40241)* with the keys facing down on a smooth surface.
4. Place the unit as illustrated on pic X and tighten the 7 locking nuts *(40057)* accurately.

Assemble the aftertouch cable (Pic.4)

1. Place the cables in position.
2. Connect the 2 cables from the keybed to the 4 pole aftertouch cable *(24146)*.
3. Affix the cable with adhesive tape.

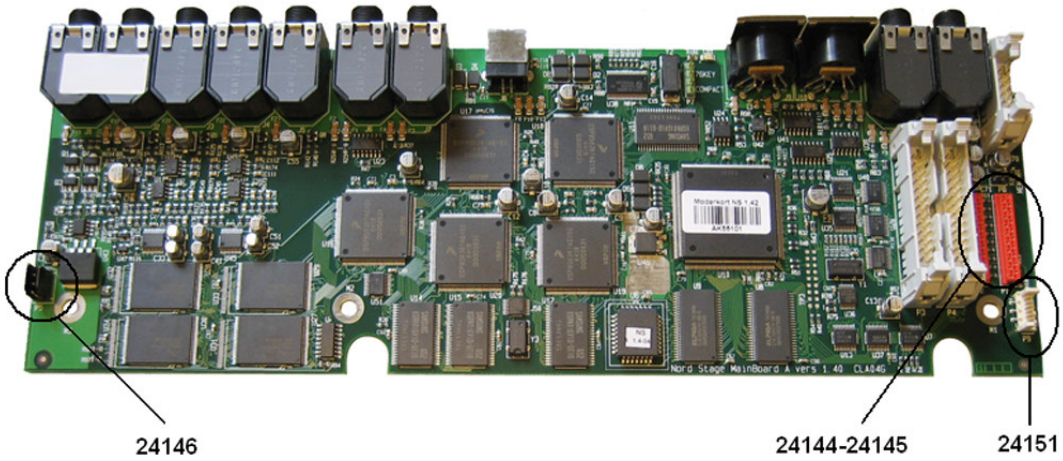
pic.4



Connect the Keybed (Pic.5)

1. Mount the main board. (see section “removing the main board”)
2. Connect the 4 pole after touch cable *(24146)* to **P5**.
3. Connect the two keyboard cables to **P1**-24145, **P2**-24144.
4. Connect the 6 pole picoflex cable *(24151)* from the memory card *(61052)* to **P9**.

pic.5



⚠Important note

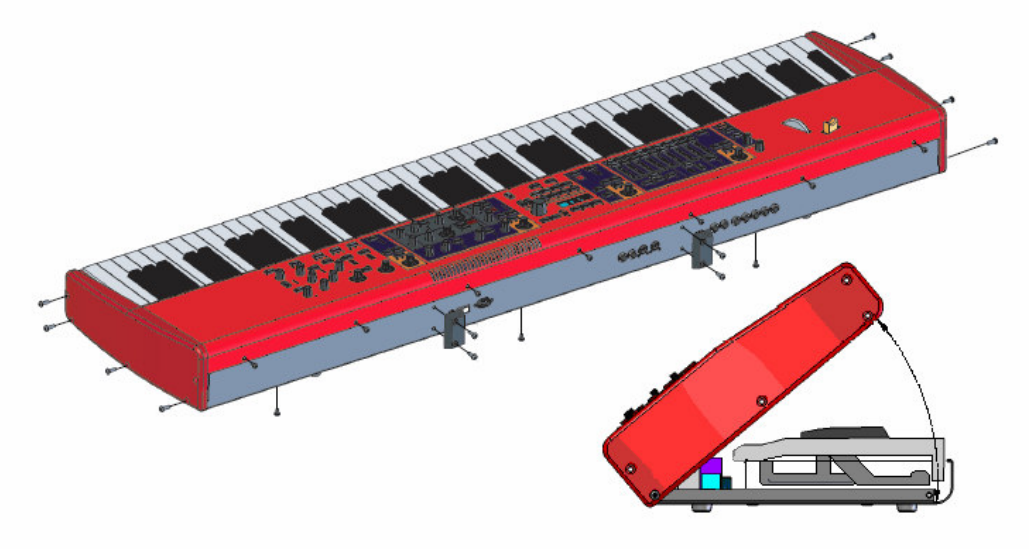
- Mainboards prior to ver 1.2 does not feature the Picoflex connector **P9**
- Mainboards ver 1.2 has the connector **P9** mounted on an adaptor card position **TP3**

Final assembly (pic.6)
When the Keybed is mounted according to the instructions in this document assemble the unit again according to picture.

For information see section “opening the synth”

1. Place the upper lid including the wooden panels in position.
2. Attach the 2 rear “hinge” screws *(40038).*
3. connect the ribbon cables from the 2 panel boards.
4. Tighten the 10 screws *(40038)* in the wooden panels.
5. Tighten the 7 screws (*40018)* in the rear.
6. Tighten the 3 screws (*40018)* underneath the stage.
7. Mount the 2 bumpers.

pic.6



Appendix 1

⚠ Important Information!
Here is a brief background story.
Since the start of the Nord Stage line, Clavia has accurately picked and tested out the best units from Fatar's semi weighted keybed production.
In order to increase the quality level on the velocity sensibility some hardware changes were made to the main board and a calibration memory card was added to the keybed.

Due to this change, precaution has to be measured when replacing keybeds or main boards at service.

Pls. see below for scenarios that may occur and how to handle the service matters.

Uncalibrated Units

Nord Stage 88 Serial No from SA10004 to SA11522
Nord Stage 76 Serial No from SB10001 to SB10182
Nord Stage Compact - There are no uncalibrated units

Scenario 1: Main board up to V1.2 needs to be replaced.
Action: Replace with main board (V1.2 or higher) AND a calibrated keybed (with attached memory card).

Scenario 2: Keybed needs to be replaced.
Action: An approved but uncalibrated keybed must be used as replacement.

Calibrated Units

Nord Stage 88 Serial No from SA11523 and higher
Nord Stage 76 Serial No from SA10183 and higher
Nord Stage Compact Serial No from SA10001 and higher

Scenario 1: Main board must be replaced (V1.2 or higher)
Action: Replace with main board (V1.2 or higher)

Scenario 2: Keybed must be replaced.
Action: A calibrated keybed with memory card must be used as replacement.

In order to get the correct replacement parts, always state the units Serial No and also the main board Version No that is printed on the barcode label.

NOTE! The small memory card attached to a calibrated keybed must be handled as a unit and must during any circumstances NEVER be switched or removed from the keybed. If a keybed must be scrapped, this card must go along with it.

Software

Uploading OS and sounds
The operating system and samples are stored in Flash circuits on the main board.
OS and sounds are uploaded via USB.
For more information on how to update the OS and uploading sounds Visit www.clavia.se there you can find the latest Software packages.

Current OS version is shown in the Stage display when you power on the unit.

⚠ Important Update Note
Updating from OS v1.x to v2.16 will make it necessary to update all the piano samples to Piano Sample Library v2.1. Users of OS v2.00 do not need to update the piano samples as Piano Sample Library v2.1 is fully compatible with OS v2.16.

Factory presets
The factory programs are available as a MIDI Sysex file for download at www.clavia.se
Please refer to the Nord Stage user manual for information on how to restore the factory presets.

Spare Parts

Mechanics:

Pos	Part no.	Item	qty
	40272	Angle bracket, NSC	
	40237	Angle bracket, support NS	
	40240	Angle bracket, swan	
	50288	Bumper, Nord Stage	
	24146	Cable 4pol After touch	
	24080	Cable AfterTouch	
	22460	Cable clip, adhesive	
	40080	Display window, red NE/NS	
	50284	Display window, red NS	
	24150	Jumper 2.54, red	
	40266	Keyboard 6 Oct. NS Compact	
	40236	Keyboard 6 Oct. NS76	
	40171	Keyboard 7 Oct. NS88	
	24144	Keyboard cable 20pol, long	
	24145	Keyboard cable 20pol, short	
	22900	Knob D-form with grey line	
	20850	LED lens shield 6, N3/NE	
	40261	Lower lid Stage 76	
	40211	Lower lid Stage 88	
	40271	Lower lid Stage Compact	
	40008	Modulation wheel	
	40056	Nut M3	
	40057	Nut M4	
	40068	Pop rivet 3,2x8	
	23041	Pot. mod wheel NS, long	
	23880	Ribbon cable 10pol*140	
	22410	Ribbon cable 26 pol	
	23830	Ribbon cable 26pol*	
	40070	Rubber foot 19mm	
	40262	Screw M4x6	
	40010	Screw, midi	
	40013	Screw, AC input	
	40039	Screw, keyboard E61/E73	
	40040	Screw, keyboard	
	40241	Screw, keyboard NS	
	40026	Screw, pitch stick/upper lid	
	40018	Screw, upper/lower lid	
	40038	Screw, wood side (out side)	
	40267	Screw, woodside E61,73 outside	
	40242	spacer screw M4x10	

Mechanics:

Pos	Part no.	Item	qty
	50290	Spacer strip	
	40239	U-channel	
	40210	Upper lid Stage 88	
	40260	Upper lid Stage 76	
	40270	Upper lid Stage Compact	
	40215	Wood panel NS76/88, left	
	40216	Wood panel NS76/88, right	
	40233	Wood side Electro73, Left	
	40234	Wood side Electro73, Right	

Pos	Part no.	Item	qty
	61052	Memorycard NS	
	20940	1uF/35V 4,0x5,5 Ellyt SMD	
	24152	Contact 6pol Picoflex, SMD	
	23401	EEprom, memorycard NS	
	24151	Cable 6pol Flat Picoflex	

Panelboard 1:

Pos	Part no.	Item	qty
	69188	Panelboard1 NS	
	20960	10uF/35V 5,0x6,0 Ellyt SMD	
	20700	Diod Bav70 Sot23	
	20720	Diod Bav70 Sot23	
	21950	Transistor BCX53 Sot89 PNP	
	23310	74HCT374 TSSOP	
	25608	74LCX245 TSSOP	
	25606	74LCX138 TSSOP	
	21930	74HC245 TSSOP	
	25600	74LCX00 TSSOP	
	25605	74LCX32 TSSOP	
	21480	LF353D So 8	
	23370	MAX1039AEEE	
	21460	LF412CD SO8	
	20660	Pot.Cermettrim 10kohm SMD	
	24140	Encoder compl	
	24010	Encoder N3/NMG2 (Bourns)	
	20820	LED lens 15, N3/NM2	
	20830	LED lens shield 15, N3/NM2	
	22950	Knob neutral for N3/NMG2	
	22890	Rotary encoder	
	22880	Knob 21mm black N3/NM2	
	22940	Cover for 21mm knob	
	20870	LED lens straight, NE	
	20860	LED lens single, N2X/N3/NE/NM2	
	20840	LED lens 6, N3/NE	
	24020	Display LCD NS incl cable	
	40235	Plastic rivet 2,5x4,6	
	20780	LED Eight	
	22520	Connector 26 pole	
	24136	Contact 20pol LCD, SMD	
	22710	Connector 3 pole, 90 deg.	
	20060	350ohm 0,1% 5ppm MK2	
	22030	Button black Nord/ddrum	
	22050	Button grey NE	
	22040	Button red Nord	
	10295	Pitch stick complete, long cable	
	20640	Pot.10kA Lin. Nord	

Panelboard 2:

Pos	Part no.	Item	qty
	69034	Panelboard2 NS	
	20960	10uF/35V 5,0x6,0 Ellyt SMD	
	20700	Diod Bav70 Sot23	
	20720	Diod Bav 56 sot23	
	20780	LED Eight	
	21950	Transistor BCX53 Sot89 PNP	
	23310	74HCT374 TSSOP	
	23370	MAX1039AEEE	
	25608	74LCX245 TSSOP	
	25606	74LCX138 TSSOP	
	21930	74HC245 TSSOP	
	25600	74LCX00 TSSOP	
	25605	74LCX32 TSSOP	
	24140	Encoder compl	
	24010	Encoder N3/NMG2 (Bourns)	
	20820	LED lens 15, N3/NM2	
	20830	LED lens shield 15, N3/NM2	
	22950	Knob neutral for N3/NMG2	
	20840	LED lens 6, N3/NE	
	20860	LED lens single	
	22520	Connector 26 pole	
	22030	Button black Nord/ddrum	
	22050	Button grey NE	
	20640	Pot.10kA Lin. Nord	

Mainboard:

Pos	Part no.	Item	qty
	69040	Mainboard NS	
	20980	100uF/16V 6,3x6,0 Ellyt SMD	
	20960	10uF/35V 5,0x6,0 Ellyt SMD	
	20940	1uF/35V 4,0x5,5 Ellyt SMD	
	20970	47uF/35V 6,3x6,0 Ellyt SMD	
	23360	Diod S1GB-13	
	20700	Diod Bav70 Sot23	
	23110	EMI-Filter 2,2nF,+50/-20% 100V	
	23100	EMI-Filter 470pF,+50/-20% 100V	
	21960	Transistor BCX54 Sot89 NPN	
	21970	Transistor BC847B Sot23 NPN	
	21950	Transistor BCX53 Sot89 PNP	
	21980	Transistor BC857B Sot23 PNP	
	21520	Op amp LM833M	
	21480	LF353D So 8	
	24142	74LCX138 SOIC	
	23891	BootPROM NS, programmed	
	23730	Socket, otp	
	25608	74LCX245 TSSOP	
	23170	Dram 16Mbit	
	23180	Host NMG2/NS	
	23160	Sram NMG2/NS 4MB	
	23280	DSP NMG2/NS	
	21940	74HC374 TSSOP	
	21810	74HC32 So14	
	24147	EEprom NS	
	24123	74HC4052 So16	
	24000	Flash NS	
	25604	74LCX14 TSSOP	
	21930	74HC245 TSSOP	
	23190	USB circuit NMG2/NS	
	21570	PC 400TSo	
	21540	Regulator 5,0	
	23430	Dac N2X/NMG2/NS	
	23340	Regulatorv1,8v yt	
	23200	Resetcircuit NMG2/NS	
	25608	74LCX245 TSSOP	
	23270	Crystal oscillator 56,620363 Mhz	
	23060	crystal 6 Mhz SMD	
	25351	Crystal oscillator 16,6666 MHz	

Mainboard:

Pos	Part no.	Item	qty
	22600	Connector 1/4" Stereo	
	22590	Connector 1/4" Mono	
	22690	USB connector Type B	
	22640	Connector din 5pol Midi	
	22610	Connector 1/4" Stereo/switch	
	22680	Connector 20 pole, micromatch	
	22520	Connector 26 pole	
	23790	Connector 4 pole, after touch	
	22480	Connector 10pol	
	24149	Pin header 1x4pol vertic	
	24153	Pin header 1x2pol vertic	
	24152	Contact 6pol Picoflex, SMD	

Powerboard:

Pos	Part no.	Item	qty
	69183	Power board NMG2	
	20960	10uF/35V 5,0x6,0 Ellyt SMD	
	23590	Diod ES3AD SMC	
	23900	Diod SS34 Schottky	
	23600	Effect drossel	
	23610	Regulator +5,0 Yt	
	23620	Regulator +3,3 Yt	
	23630	Regulator +12 Yt	
	23640	Regulator -12V Yt	
	20910	Capacitor 4700pF X2	
	23560	1000u/35V Nichicon	
	23800	470u/50V	
	22840	Fuse house nord/dd4/mod	
	23120	Drossel RN112-0,8/02	
	22620	Socket AC N3/NE	
	22480	Connector 10pol	
	22000	Powerswitch On/off	
	22020	Button grey power on/off	
	22630	AC-Switch	
	22770	Trafo NMG2/NS	
	40017	Screw, keyboardNL2/transformer	
	40176	Plastic isolator	
	23960	220uF/25V Ellyt axiell	
	40180	Spacer 2mm Nylon	