ATTENTION: The VA-5 is different from VA-7 only in some details such as, Top cabinet, Keyboard assy........... . In this manual we have only listed the differences between the two instruments. It is really necessary to refer to the VA-7 Service Notes for a deep knowledge of this instrument.

Specifications

Keyboard: 61 keys, synthesizer action, velocity-sensitive
Controllers: Tempo/Data dial, D Beam Controller, Bender/Modulation Lever, Master Volume knob, Keyboard/Accomp Balance knob, M-FX knob (Multi-effect control)

Tone generation:

Digital effects: Reverb (8 types), Chorus (8 types), Delay (10 types), Parametric EQ, M-FX (DSP, 89 types)

Arranger (automatic accompaniment): 128 Music Styles in ROM, 64 Disk Link Styles from floppy disk, Disk User style (instant access to one Style on floppy disk), 16 Acoustic Styles, Style Orchestration & Morphing, 8-track User Styles Composer, 5MF-to-Style Converter
Memories: 128 User Programs, 4 programmable One Touch memories for each Style, 5 Super Tones memories for Instant Tone access (with programmable User level)

Display: Backlit VQA Touch Screen (LCD), new graphic user interface with animated icons

Navigation: Virtual bank (interactive Easy Routing), automatic and/or via button

Sequence: Realtime SMF Player (with Minus-One function), Easy 2-track recorder, 16-track sequencer with extensive editing function, Song Header Post Edit, Lyrics display

Data storage: Floppy disk drive (2DD/2HD), realtime load, File types managed: Styles, Song SMF, User Program, MIDI sets

Amplification: 25 x 25W output power, 2-way Bass Reflex System

Connections: Output (L/mono, Right), Input (L/mono, Right), Sustain, Foot pedal (expression), Foot switch, Foot Controller (FC-7), 2 x Phoraz

Power Supply: 100V~240 (universal)

Dimension: 1190(W) x 197 (H) x 406 (D) mm

Weight: 15, 5 Kg

Accessories: See details on Parts List

KEYBOARD PARTS LIST
61 KEY TP9 KEYBOARD ASSY
code 7626223001

<table>
<thead>
<tr>
<th>No.</th>
<th>PARTS NAME</th>
<th>CODE</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>KEY SPRING</td>
<td>22178233</td>
</tr>
<tr>
<td>2</td>
<td>KEY SPRING C5</td>
<td>22578179</td>
</tr>
<tr>
<td>3</td>
<td>KEY SPRING C6</td>
<td>22578328</td>
</tr>
<tr>
<td>4</td>
<td>KEY SPRING E7</td>
<td>22578329</td>
</tr>
<tr>
<td>5</td>
<td>KEY SPRING F1</td>
<td>22578330</td>
</tr>
<tr>
<td>6</td>
<td>KEY SPRING G2</td>
<td>22578331</td>
</tr>
<tr>
<td>7</td>
<td>KEY SPRING A3</td>
<td>22578332</td>
</tr>
<tr>
<td>8</td>
<td>KEY SPRING B4</td>
<td>22578333</td>
</tr>
<tr>
<td>9</td>
<td>KEY SPRING C8</td>
<td>22578337</td>
</tr>
<tr>
<td>10</td>
<td>SUPPORT F/KEYBOARD</td>
<td>22587305</td>
</tr>
</tbody>
</table>

CAUTION:

When you replace the keyboard on VA-5, please remember to modify it as shown in pictures 1 and 2, using the items below, that you have to order together with the keyboard itself (see Parts List VA-5/Keyboard Assy).

Pict. 1: Remove the copper strip placed on the back of the keyboard you have received as replacement part. Mount the SUPPORT F/GROUND (K2158108) at its place, using the SELF TAP SCREW 2.9x6 TC (J2289101).

Pict. 2: Mount the SUPPORT F/KEYBOARD POSITIONING (K2138113) on the left side of the keyboard, using the SELF TAP SCREW 2.9x10 TC PR TROP (J2289125).

PARTS LIST VA-5 (100V/117V/230V/230VE/240VA)

PRECAUTIONS:

SAFETY PRECAUTIONS:

- The parts marked *A* are non-essential components that can be replaced by the user if necessary.
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CONSIDERATION ON PARTS ORDERING:

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NOTE:

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CASING:

Q.ty

- 7770307000 VARN. COVER FILOD VA-5 1
- 7770308000 VARN.+SILK.CONDUCTIVE BOTTOM CBNT VA-5 1
- 7770309000 VARN.+SILK.TOP CBNT VA-5 1
- 7770310000 VARN.+S. RIGHT TEMPLATE F/TOP CBNT VA-5 1
- 7770311000 VARN.+S. LEFT TEMPLATE F/TOP CBNT VA-5 1

KEYBOARD ASSY:

- 7626223001 61-KEY TP9 KEYBOARD ASSY 1

Note: If you have to use this keyboard on VA-5, you have to order the following parts together with the keyboard itself:

- K2158108 SUPPORT F/GROUND 1
- K2138113 SUPPORT F/KEYBOARD POSITIONING 1
- J2289125 SELF TAP SCREW 2.9x10 TC PR TROP 2
- J2289101 SELF TAP SCREW 2.9x6 TC 1

PCB ASSY:

- 7770301000 MAIN PCB ASSY VA-5 1
- 7770302000 AUDIO PCB ASSY VA-5 1
- 7770303000 CONTROL SUPER TONES PCB ASSY VA-5 1

WIRING, CABLE:

- 7770304000 WIRING ASSY (W-3 CBL ASSY) VA-5 1
- 7770305000 WIRING ASSY (W-3 CABLE ASSY) VA-5 1
- 7770306000 SP CABLE (Ø) -2C P.2 D.R VA-5 1

PACKING:

- K2618236 OUTER PACKING VA-5 1

MISCELLANEOUS:

- K2268167 VIBR. DUMPER F/TONES CONTROL BOARD VA-5 1

ACCESSORIES:

- K2378118 USER PROGRAM/STYLES DISK VA-5 1
- K2378119 DEMO/STYLES DISK VA-5 1
**HOW TO SAVE - HOW TO VERSION UP**

Since VA-5 has a flash memory for the System program registration, you can update:
- the System program or the test program by floppy disks

**Item Required**

VA-5 System Program up disk  (code: 7770313000)
VA-7/5 Test program disk  (code: 7770134000)

**ATTENTION:**

The Test program was not installed in this instrument (otherwise it would have occupied too much memory space). If you want to install it, you have to load the Test Program from the “VA-5 Test program disk” you've been provided with.

**WARNING:**

Loading the Test Program causes the System Program of your VA-5 to be lost. Therefore every time you want to carry out some checks in your VA-5 and consequently have to install the related Test Program, we strongly recommend you to make a back-up copy of your VA-5 current System program, according to the procedure described in the << How to save the System Version or the Test Program onto Floppy disk >> paragraph.

Of course, once you've completed your checks, you'll have to reload the System Program (that had been erased when installing the Test Program), as described in the << How to update the System Program or the Test Program by floppy disk >> paragraph.

**How to visualize the “System Program” version**

Turn the instrument on while keeping the [PIANO + ONE TOUCH + INTRO] buttons pressed, the display shows:

```
***SYSTEM MENU***
BANK1: SYSTEM VERSION
BANK2: SYSTEM LOAD
BANK3: SYSTEM SAVE
```

You can check the instrument software version, pressing the [BANK/1] button. After a few seconds the display shows:

```
VA-5 Virtual Arranger
Ver. XX, XX
Day Month Day no. Time Year
CPU Bias Version: Ver. XX, XX
Flash : xxxxxxxx Size : xxxxxxx byte
```

To exit from this screen display, turn the instrument off.

**How to save the “System program” or the “Test Program” onto Floppy Disk.**

Insert a formatted Floppy Disk in which you'll save either the “System Program” or the “Test Program”

Turn the instrument on while keeping the [PIANO] + [ONE TOUCH] + [INTRO] buttons pressed. The display shows:

```
***SYSTEM MENU***
BANK1: SYSTEM VERSION
BANK2: SYSTEM LOAD
BANK3: SYSTEM SAVE
```

Choose in the menu the option “SYSTEM SAVE” pressing [BANK/3] button
The display shows:

```
***SYSTEM SAVE***
NUMBER1: CONTINUE
NUMBER2: EXIT
```

Choose in the menu the option “CONTINUE” pressing [NUMBER/1] button
The display shows:

```
***SYSTEM SAVE***
System size [ BYTE ] XXXXXX
Checksum Calculation ...... DONE
System saving ...... XXXXXX
ATTENTION !! Do not turn instrument off
```

Then after a few seconds the display will show:

```
***SYSTEM SAVE***
System size [ BYTE ] XXXXXX
Checksum Calculation ...... DONE
System saving ...... COMPLETED

<< TURN THE INSTRUMENT AGAIN >>
```

When the program saving operation has been completed it will be confirmed by the “System saving COMPLE-TED” message appearing on the display.

To go back to the initial program, after a few seconds you have to turn the instrument off and then on again.

---

VA-5
Sept, 2000

6
How to update the System program or the Test program by Floppy disk

Insert the floppy disk containing either the System program (VA-5 System program up disk code 7770313000) or the Test program (VA-7/5 Test program disk code 7770134000) into the FDD.

Turn the instrument on while keeping the [PIANO] + [ONE TOUCH] + [INTRO] buttons pressed.

The display shows:

***SYSTEM MENU***

BANK1: SYSTEM VERSION
BANK2: SYSTEM LOAD
BANK3: SYSTEM SAVE

Choose in the menu the option "SYSTEM LOAD" pressing [BANK2] button.

The display shows:

***SYSTEM LOAD***

NUMBER1: CONTINUE
NUMBER2: EXIT

Choose in the menu the option “CONTINUE” pressing [NUMBER1] button.

After a few seconds, the display shows:

***SYSTEM LOAD***

Program loading  .....
Program checking  .....
Flash updating  .....

<< TURN INSTRUMENT ON AGAIN >>

If the loading operation of the Flash has been completed, you’ll have the confirmation if the message "COMPLETED" is displayed.

After a few seconds, you have to turn the instrument off and then on again.

TEST MODE

After loading the Test program, turn the instrument on while keeping the [BANK/5] button pressed.
When the display shows: MODEL SELECTION, press [BANK2] button.

The Test Menu will be displayed, which is divided into two major groups: BANK and NUMBER.

<table>
<thead>
<tr>
<th>VA-7/5 test Ver. xx.x xx</th>
<th>NUMBER-</th>
</tr>
</thead>
<tbody>
<tr>
<td>-BANK-</td>
<td>1 Flash</td>
</tr>
<tr>
<td>1 Switch</td>
<td>2 Rom Style</td>
</tr>
<tr>
<td>2 Encoder</td>
<td>3 Ram</td>
</tr>
<tr>
<td>3 Ade</td>
<td>4 Free</td>
</tr>
<tr>
<td>4 Led</td>
<td>5 FDD</td>
</tr>
<tr>
<td>5 Led</td>
<td>6 Midi</td>
</tr>
<tr>
<td>6 Keyscan</td>
<td>7 Audio Test</td>
</tr>
<tr>
<td>7 Touch screen</td>
<td></td>
</tr>
</tbody>
</table>

DATE: (day) (month) xx xx:xx:xx (year)

First group of test => BANK

1. SWITCH test

Press the [BANK/1] button, the display shows:

VA-5 SWITCH TEST

Name XXXX
O N /OFF
**********************************************
**********************************************
**********************************************
Next. XXXX

Press Bank 8 and Bank5 to exit

Action: every button, when pressed, will generate a sound. The LCD will consequently show the button name on the top of the left side as well as its ON/OFF status. On the bottom of the left side the name of the following button to be pressed will be shown. Every time a button has been checked, the asterisks disappear from the display.
Once all buttons of the control panel and of the FC7 pedalboard have been subsequently pressed, you will automatically exit the Switch Test and get back to the Test Menu.

If the Switch test has been already carried out previously and you want to exit it, you can do it by pressing the Bank 8 button first and then the Bank 5 one.

2. ENCODER check

Press the [BANK/2] button, the display shows:

VA-5 TEST ENCODER

ENCODER → XXX

Press Bank 5 to exit

Action: A value (here represented by XXX) will be visualized in the upper right corner of the LCD. Moving the encoder rightwards, this value will increase up to +255. Moving the encoder leftwards, it will decrease until 0.

To exit, press [BANK/5].

3. ADC Check

Press the [BANK/3] button, the display shows:

VA-5 ADC TEST

Bender (0 +/- 127) D.Beam C. (0 - 127) **
Modulation (0 - 127) Sust Foot switch (On/Off)
Ribbon (0 - 127) Balance (0 +/- 127) Foot switch (On/Off)
M - FX (0 + 127) Express (0 - 127)

Press Bank 5 to exit

Action: The LCD visualizes the values of the functions you are testing. These values vary from 0 to +127 or to -127.

To exit, press [BANK 5].
4. **LCD Check**
Press the [BANK/4] button, the display shows:

### VA-5 LCD TEST
- Press BANK 1: blue Test
- Press BANK 2: white Test
- Press BANK 3: gray Test
- Press BANK 4: normal Test
- Press BANK 6: image Test

Press BANK5 to exit

**Action:**
- If you press the [BANK/1] button, the display will be blue.
- If you press the [BANK/2] button, the display will be white.
- If you press the [BANK/3] button, the display will be gray.
- If you press the [BANK/4] button, the display will show some numbers (normal).
- If you press the [BANK/6] button, the display will show an image.

To exit, press [BANK/5].

5. **LED Check**
Press the [BANK/5] button, the display shows:

### VA-5 LED TEST
- Press BANK 1: to orange colors
- Press BANK 2: to orange colors
- Press BANK 3: to orange colors
- Press BANK 4: All led ON
- Press BANK 6: Sequence ON

Press BANK5 to exit

**Action:**
- If you press the [BANK/1] button, all orange leds light.
- If you press the [BANK/2] button, all green leds light.
- If you press the [BANK/3] button, all red leds light.
- If you press the [BANK/4] button, all the leds light.
- If you press the [BANK/6] button, all the leds light in sequence.

Note: All the LEDs will light one after the other and, at the end of the sequence, they will all light.

To exit, press [BANK/5].

6. **KEYSCAN Check**
Press the [BANK/6] button, the display shows:

### VA-5 KEY SCAN TEST
- Key = C
- Velocity = 0/127
- Octave = 2
- After Touch = 0/127

Press BANK5 to exit

**Action:** a piano sound will be heard every time a key is pressed; you'll hear the aftertouch effect if you press a key till the end of its stroke. The LCD shows the key name, the velocity value, the number of the octave used and the After touch value.

To exit, press [BANK/5].

7. **TOUCH SCREEN Test**
Note: to carry out this test, a normal pen is required.
Press the [BANK/6] button, the display shows:

### VA-5 TOUCH SCREEN TEST
- BANK1 - calibrate
- BANK2 - touch X, Touch Y test

Press BANK5 to exit

**• BANK1 - calibrate**

**Action:** Pressing the [BANK/1] button, you enter the Calibration test.

### VA-5 TOUCH SCREEN TEST
- BANK1 - Calibrate
- BANK2 - Exit calibration

Press BANK5 to exit

**Action:** Pressing the [BANK/1] button, you exit the Calibration test.

Pressing the [BANK/2] button, you enter the LCD calibration test.

Note: Once you enter the Calibration test, you cannot exit unless you carry out the calibration operations.

The display shows:

Touch the left lower corner of each slit with the pen for a few seconds, according to the numbering shown in the following picture. When the VA-5 recognizes the touch, + will change into 0. This way, the writing "Touch me" will appear to show the correct order, so please follow this indication. During the calibration, do not touch any point except "Touch me". After touching the four points, the calibration ends and the display will show one of the following displays:

### Calibration OK

Press BANK5 to exit

Note: The calibration set will be memorized on the VA-5 internal flash, by turning it on while keeping the [Melody Intelligence] button pressed, after having loaded the System program.

When the calibration fails, the following display will appear.
**NG. Calibration**

You have to carry out the calibration again. Press the [BANK/5] button to go to the next test.

* BANK2 - Touch X, Touch Y test

**Action:** Pressing the [BANK/2] button, you enter the test to check the LCD "darkest" area, the display shows:

- Touch X - 1
- Touch Y - 1

Press BANK5 to exit

**Action:** Touch with a pen the upper left corner of the LCD in its darkest area. Pass the pen through the LCD, horizontally first (from the left to the right) and check that the X value is 320. Then repeat the operation from downwards to upwards and check that the Y value is 240. The acceptable variation from these values is +/- 5%.

To exit, press [BANK/5]

**Second group of test => NUMBER**

1. **FLASH test**

Press the [NUMBER/1] button, the display shows:

```
VA-5 FLASH TEST
  Writing 24
  Verifying 24
  Flash OK or Error
  Press BANK 5 to exit
```

**Action:** The display visualizes the 24 blocks written and then verified in the flash. OK will be visualized if everything works properly. ERROR will be visualized if there are any anomalies.

To exit, press [BANK/5]

**Note:** If there is an asterisk (*) beside the "Flash Test" item within the Main Menü, this means that this kind of check has already been carried out.

2. **ROM STYLE Test**

Press the [NUMBER/2] button the display shows:

```
ROM STYLE TEST
  OK or ERROR
  Press BANK 5 to exit
```

To exit, press [BANK/5]

3. **RAM Test**

Press the [NUMBER/3] button, the display shows:

```
RAM TEST
  OK or ERROR
  Press BANK 5 to exit
```

To exit, press [BANK/5]

4. **Free**

5. **FDD Test**

Press the [NUMBER/5] button the display shows:

```
VA-5 FDD TEST
  Writing...
  Reading...
  Verifying
  >>>> OK <<<<<
  Please eject disk
```

After a few seconds, the display will show:

```
VA-5 FDD TEST
  Writing...
  Reading...
  Verifying
  >>>> OK <<<<<
  Press BANK 5 to exit
```

**Action:** If the floppy disk has not been inserted in the drive, the following writing will be visualized on the bottom of the ICD: PLEASE INSERT DISK.

If the result isn’t OK, one of the following errors will appear on the display:
- Read Error
- Write Error
- Verify Error

**CAUTION:** To check the FDD, use only a formatted disk, either DD or HD type.

To exit, press [BANK/5]
6 MIDI & THRU test

Press the [NUMBER/6] button, the display shows:

VA-5 MIDI TEST
Connect Midi Out to <> Midi A In < OK or Error >
Press BANK5 to exit

Cable connections to check the MIDI outputs:

In Out Thru
Rear side of VA-5 bottom cabinet

In/OUT Connection
THRU/IN connection

While the “VA-5 MIDI TEST” screen display is shown, connect the Midi Cables between VA-5 and an external instrument as shown in the above diagram.
Make sure that either the “OK” or the “ERROR” message appear on the display.
Then keep the cable connection between the IN and OUT sockets of VA-5 and connect VA-5 with another external instrument by using its “Midi Thru” output and the second Midi Cable.
If the result of this Midi Test is “OK”, you’ll hear an intermittent sound coming from the second external instrument.
To exit, press the [BANK5].

7 Audio Test

Press the [NUMBER/7] button. You’ve entered the “Audio Test” mode and the display shows:

VA-5 Audio Test
BANK 1 Calibration
BANK 2 Left
BANK 3 Right
Press BANK 5 to exit

Pressing the [Bank/1] button “Calibration”, some sine wave sounds (frequency 415 Hz) will come out from the Right and Left speakers.
Before calibrating the amplifier, move the “volume” potentiometer to the “Max” position then adjust the trimmers of the amplifier channels (VR11: right Channel; VR12: left Channel) so that the oscilloscope will show a value of 20 Vpp across the speakers.
Note: The measurements on the R/L output have to be carried out with the jacks inserted in both outputs .
The sounds coming from the R/L Mono channels on the “OUT” output will be mixed and can be adjusted by the “Volume” slider potentiometer.
The sine wave sound on the right and left channels will have a 415 Hz frequency and a 3Vpp amplitude.
Pressing the [BANK2] - Left button, a sine wave sound will be heard from the left loudspeaker, with a frequency of 215 Hz.
Pressing the [BANK3] - Right button, a sine wave sound will be heard from the right loudspeaker, with a frequency of 215 Hz.
To exit, press [BANK/5].

CALIBRATION PROCEDURE TO REPLACE THE PITCH BENDER

Load the “System Program” into the instrument. Turn VA-5 on while keeping the [ORCHESTRATOR] button pressed.

After a few seconds, the display will show:

PITCH BENDER CALIBRATION
CENTER POSITION
Then Press M-FX on-off Key

Put the Bender lever in the middle while pressing the M-FX [ON/OFF] button at the same time.
The display shows:

PITCH BENDER CALIBRATION
ALL LEFT POSITION
Then Press M-FX on-off Key

Move the Bender lever completely towards left while pressing the M-FX [ON/OFF] button at the same time.
The display shows:

PITCH BENDER CALIBRATION
ALL RIGHT POSITION
Then Press M-FX on-off Key

Move the Bender lever completely towards right while pressing the M-FX [ON/OFF] button at the same time.
When the calibration has been completed, the instrument will automatically reset and go back to the initial screen display of the software program.

HOW TO ENTER THE TOUCH SCREEN CALIBRATION

Turn the instrument on while keeping the [SONG COMPOSER] button pressed.

Note: When entered the Calibration test, you cannot exit unless you carry out the calibration operation.
To perform this test, a normal pen is required.
Press the left lower corner of each silt with the pen for a few seconds, according to the numbering shown in the following picture.
When the VA-5 recognizes the touch, + will change into 0.
This way, the writing “Touch me” will appear to show the correct order, so please follow this indication. During the calibration, do not touch any point except “Touch me”. After touching the four points, the calibration ends and the display will show one of the following displays:

**Calibration OK**

If Calibration OK appears, the instruments will reset and get back to the normal working display. **Note:** The calibration set will be memorized on the VA-5 internal flash, by turning it on while keeping the [MELODY INTELL.] + [CONTROLLERS] + [EFFECTS] buttons pressed.

If the calibration fails, the following display appears.

**NG. Calibration**

You have to carry out the calibration again.

**HOW TO INITIALIZE THE FLASH AREA**

Turn the instrument on while keeping the [MELODY INTELL.] + [CONTROLLERS] + [EFFECTS] buttons pressed. After a few seconds, the display shows:

**FLASH PARAMETER LOAD**

**WAIT PLEASE**

When the saving operation has been completed, the instrument will exit and get back to the VA-5 initial display.

---

**HOW TO LOAD THE 6th LANGUAGE**

Turn the instrument on while keeping the [VIRTUAL BAND] button pressed. The display shows:

**USER LANGUAGE CUSTOMIZE**

Insert disk, please...

Insert the floppy disk containing the XXXXXXXX.ini file. After a few seconds, the display shows:

**USER LANGUAGE CUSTOMIZE**

Completed

<<Turn instrument on again>>

Turn the instrument off and on again.

**Caution:**

Loading the 6th language will cause the loss of the Netherlands language.

**Example:**
CIRCUIT DIAGRAM (MAIN PCB ASSY/ FDC & IDE Contr. Block)
AUDIO PCB ASSY  ASSY 7770302000

View from component side
SUPER TONES PCB ASSY & CIRCUIT DIAGRAM
ASSY  7770303000

View from component side

to CN15 on CONTROL BOARD