

## Service Information



NAKAMICHI

Model Nakamichi 630 (FM Tuner Preampfier)  
Serial No. from 4203553  
Subject Modification on Usable Sensitivity  
of Tuner Section

No. NR-0013 (1/5)  
Date 1 September, 1977

### I. General:

#### A. Purpose:

The purpose of the modification is to improve the usable sensitivity of tuner section from 3.0 $\mu$ V to 2.5 $\mu$ V.

This alteration led to improvement of limiter characteristics (from 3 stages to 6 stages). As a result the AGC line was eliminated due to needlessness of AGC resulting from quick limiter activation.

Further, the higher signal-to-noise ratio in FM tuner section was improved.

Modification has been made on the mute timing circuit as well.

#### B. Modification:

I.F. Block Ass'y (Part No.:JA03167A) has been replaced with I.F. Block Ass'y B (JA03178A) and Indicator P.C.B. Ass'y (BA03832A) with indicator Ass'y B (BA03861A).

In RF Unit, Capacitor C22 0.01 $\mu$ F has been removed.

In MPX P.C.B. Ass'y, Resistor R421 has been changed from 6.8K to 22K.

FE Chassis Ass'y (including above assemblies) has been changed from JA03161A to JA03161B.

#### C. Compatibility (of new parts with the current model):

Only FE Chassis Ass'y is interchangeable.

Note: Change from the current model to new one can be effected either by the following:

1. Replacement of the current FE Chassis Ass'y with the new FE Chassis Ass'y.
2. Modification in conformity with Section V, "Modification Procedure".

### II. Adjustment Procedures for New Models:

Adjustment procedures in 630 are shown in Service Information No. OOD-SI-3024 "630 Provisional Service Manual", the modified portions of which are detailed below.

## A. Usable Sensitivity Measurement (item 2.12)

Make sure that the level is 2.5 $\mu$ V instead of 3.0 $\mu$ V.

## B. Mute Timing (item 2.3)

In the current type, mute was released approximately 0.3 sec. after the Tuning Indicator Lamp illuminates, while in the modified model, mute is released approximately 0.15 sec. after Tuning Indicator Lamp and Signal Indicator Lamp illuminated. Signal Indicator Lamp illuminates around at a level of 25 $\mu$ V (33 dBf).

(While Tuning Indicator Lamp may occasionally illuminate with no signal in detuning, the mute stays unreleased.)

## III. Parts List:

Part No. JA03178A I.F. Block Ass'y B ..... 1 pce.

BA03861A Indicator P.C.B. Ass'y .... 1 pce.

<u>Part No.</u>	<u>Description</u>	<u>Q'ty</u>
JA03178A	I.F. Block Ass'y B	1
BA03862A	I.F. P.C.B. Ass'y B	1
JA03177A	Shield Case Ass'y	1
OM03749A	I.F. Block Seal	1
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BA03862A	I.F. P.C.B. Ass'y B	1
OB00030A	Germanium Diode 1N60 (P)	2
OB01290A	Ceramic Capacitor 0.01 $\mu$ F 50V	26
OB01681A	Carbon Resistor 3.3K ERD-25T J	3
OB01781A	Carbon Resistor 1K ERD-25V J	3
OB01789A	Carbon Resistor 330 ERD-25V J	2
OB01792A	Carbon Resistor 470 ERD-25V J	1
OB01856A	Carbon Resistor 8.2K ERD-25T J	2
OB01857A	Carbon Resistor 1K ERD-25T J	1
OB05538A	Carbon Resistor 27K ERD-25V J	1
OB05575A	Carbon Resistor 560 ERD-25T J	1
OB05650A	Carbon Resistor 12K ERD-25V J	1
OB05890A	Carbon Resistor 56 ERD-25T J	4
OB06113A	IC MPC 555	3
OB06114A	IC MPC 577	2
OB06115A	Transistor 2SC1675	1
OB06561A	Inductor 68 $\mu$ H	2
OB08291A	LC - B.P.F. Block	2
OB08293A	Detector Block DB-1	1
OB08332A	4P-H Connector Ass'y	1
OB08341A	Ceramic Filter	1
OB05567A	Carbon Resistor 33 ERD-25V J	1
OB05576A	Carbon Resistor 470 ERD-25T J	1
OB05631A	Carbon Resistor 82 ERD-25T J	1
OB05936A	Carbon Resistor 10 ERD-25T J	1
OB07714D	I.F. P.C.B.	1

<u>Part No.</u>	<u>Description</u>	<u>Q'ty</u>
BA03861A	Indicator P.C.B. Ass'y B	1
OB01412A	Electrolytic Capacitor 10 $\mu$ F 16V	1
OB01788A	Carbon Resistor 68 ERD-25V J	1
OB01793A	Carbon Resistor 3.3K ERD-25V J	1
OB01795A	Carbon Resistor 4.7K ERD-25V J	1
OB01833A	Carbon Resistor 10K ERD-25V J	3
OB01862A	Electrolytic Capacitor 22 $\mu$ F 16V	1
OB01872A	Transistor 2SC945	4
OB01909A	Silicon Diode 1S1555	4
OB01920A	Carbon Resistor 100K ERD-25V J	7
OB05561A	Carbon Resistor 18K ERD-25V J	2
OB05562A	Carbon Resistor 47K ERD-25V J	2
OB05563A	Carbon Resistor 56K ERD-25V J	1
OB05564A	Carbon Resistor 1M ERD-25V J	1
OB05566A	Carbon Resistor 2.2K ERD-25V J	3
OB05568A	Carbon Resistor 120K ERD-25V J	2
OB05586A	Mylar Capacitor 0.068 $\mu$ F 50V K	1
OB05596A	Carbon Resistor 220K ERD-25V J	3
OB05606A	Carbon Resistor 22 ERD-25V J	2
OB05650A	Carbon Resistor 12K ERD-25V J	1
OB05651A	Carbon Resistor 270 ERD-25V J	3
OB05665A	Carbon Resistor 560K ERD-25V J	1
OB05700A	Carbon Resistor 470K ERD-25V J	3
OB06013A	Transistor 2SA733	7
OB06062A	Transistor 2SC1222	5
OB07159A	Semi-fixed Volume 500 $\Omega$	1
OB08302A	7P-T Post	1
OB08333A	8P-H Connector Ass'y	1
OB05661A	Carbon Resistor 22K ERD-25V J	1
OB05820A	Electrolytic Capacitor 22 $\mu$ F 16V	1
OB07712C	Indicator P.C.B.	1

#### IV. Mounting Diagrams and Schematic Diagram:

Refer to Figs. 1, 2 and 3.

#### V. Modification Procedures for the Current Models:

Following shows the way how to modify the Usable Sensitivity of the current Models from 3.0 $\mu$ V to 2.5 $\mu$ V.

##### A. Parts to be required:

Part No. JA03178A	I.F. Block Ass'y B	.....	1 pce.
BA03861A	Indicator P.C.B. Ass'y	.....	1 pce.
OB05661A	Carbon Resistor 22K $\frac{1}{2}$ W	.....	1 pce.

B. Parts to be removed:

Part No. JA03167A I.F. Block Ass'y .... 1 pce.  
BA03832A Indicator P.C.B. Ass'y .... 1 pce.  
Capacitor C22 0.01 $\mu$ F on RF unit  
Resistor R421 6.8K on MPX P.C.B. Ass'y

C. Modification Procedures:

Refer to Figs. 1, 2 and 3, and 630 Provisional Service Manual (No. OOD-SI-3024).

1. Disassemble the Cabinet by removing five screws.
2. Disassemble the Front Panel by removing four screws, VR knobs and one connector.
3. Disassemble the Tuner Mechanism Ass'y by removing four screws and four connectors.
4. Remove the spring and the spring stopper from the FE pulley.
5. Disassemble the Dial Pulley Chassis Ass'y by removing four screws.
6. Remove the I.F. Block Ass'y and the Indicator P.C.B. Ass'y, then disconnect signal wires among the RF unit, MPX P.C.B. Ass'y, I.F. Block Ass'y and the Indicator P.C.B. Ass'y.
7. Assemble the new I.F. Block Ass'y B and the new Indicator P.C.B. Ass'y B, then reconnect these signal wires in the same manner as for the current connection. (Connect BRN (SIGNAL) and ORN (+10V) wires of Indicator P.C.B. Ass'y B and ORN (+10V) wire and coaxial cable (I.F. INPUT) of RF unit to I.F. Block Ass'y B.)
8. Remove R421 6.8K $\Omega$  on the MPX P.C.B. Ass'y and replace with 22K $\Omega$ .
9. Assemble the Dial Pulley Chassis Ass'y.
10. Assemble the dial thread.
11. Assemble the Tuner Mechanism Ass'y.
12. Adjust and check the tuner section referring to 630 Provisional Service Manual.
13. Assemble the Front Panel.
14. Check the Dial Scale by receiving the station with its frequency already known. Calibrate the Dial Scale if required referring to 630 Provisional Service Manual.
15. Assemble the Cabinet.

I.F. P.C.B. Ass'y Mounting Diagram

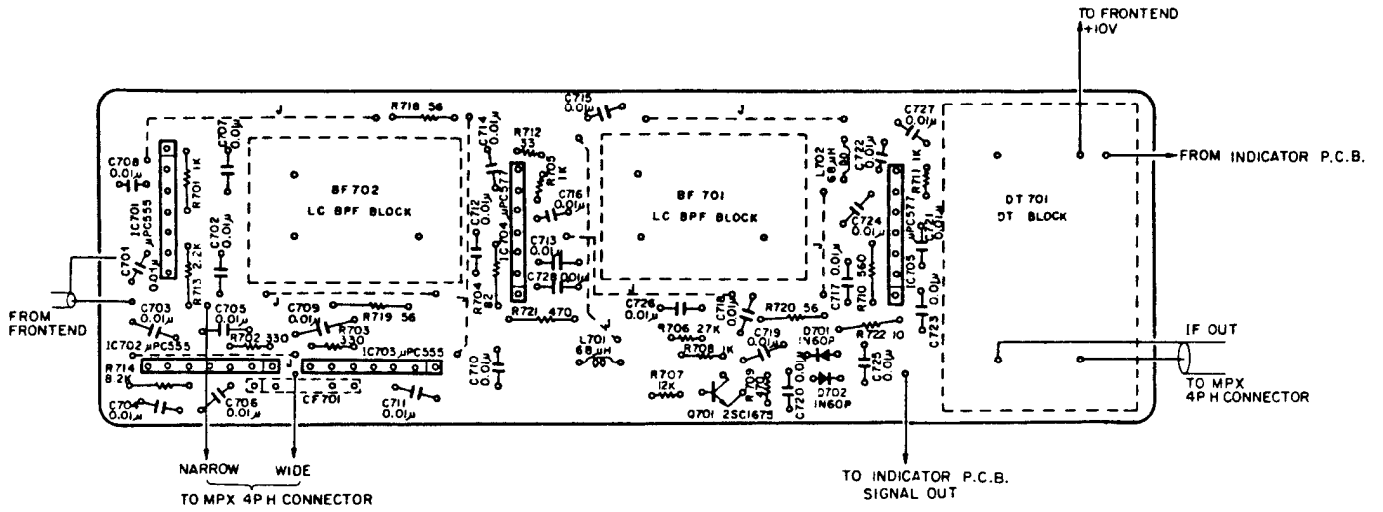


Fig. 1

Indicator P.C.B. Ass'y B Mounting Diagram

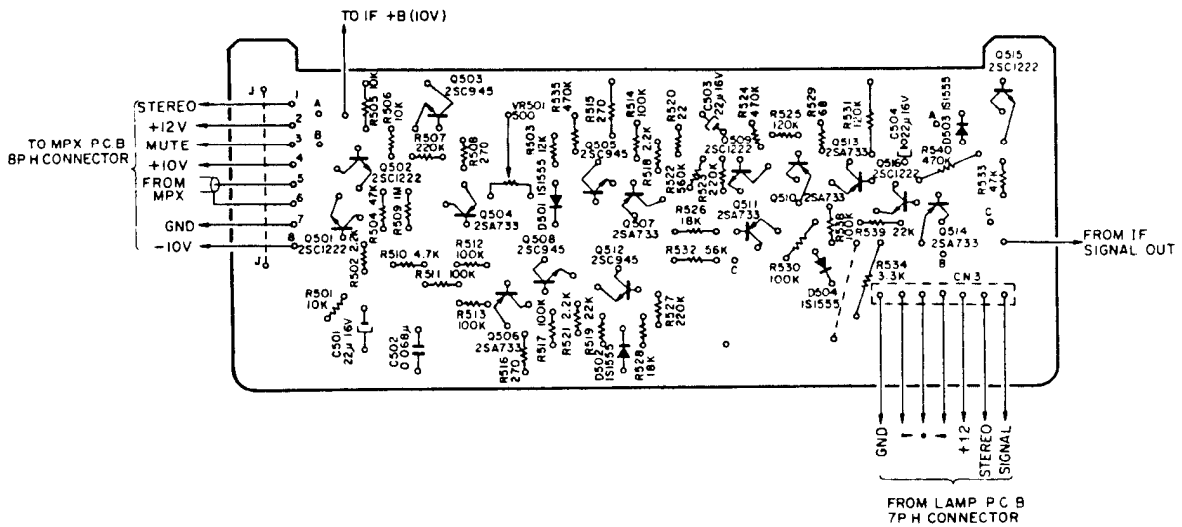


Fig. 2