Service Information

Model Nakamichi TX-1000 (Computing Turntable)
Serial No. from V10101171 – 1082.
Subject Addition of Controls, and Modification of Sensor Arm Descending Position Adjustment and Circuits

Nakamichi

No. OOD-M-0202 (1/12)
Date 1 September 1982

1. General

1.1. Purpose

(1) Sensor Arm Position Screwdriver Controls have been mounted on the Display Panel on the left side of the TX-1000. Refer to Fig. 1.1.
Customer can calibrate the descending position (touch-down position) of the Sensor Arm Stylus with these controls. However, these controls are normally set to their center click positions.

(2) The permitted limit of descending position of the Sensor Arm Stylus has been changed, and as a result Stylus Positioning Gauge has been changed (grooves showing the permitted limit on the Gauge changed).
Permitted Limit:
From "within ±1.0 mm on the 30/25 or 17 cm line" to "within 0 to −1.0 mm on the 30/25 or 17 cm line"
Stylus Positioning Gauge:
From 0D04092A to 0D09022A
Refer to 2-(4) "Sensor Arm Descending Position Adjustment".

1.2. Modification

(1) According to the modification stated in 1.1-(1), following have been changed.
Display House Ass'y:
From HA08048A to HA08064A
Lamp House P.C.B. Ass'y:
From BA04704A to BA04850A
Amp. P.C.B. Ass'y:
From BA04702A to BA04849A

(2) Circuit of the Control P.C.B. Ass'y (BA04672A) has been modified.

(3) Patterns of the CPU P.C.B. Ass'y (BA04748A) have been changed (circuit stays the same).

1.3. Compatibility (of new P.C.B. assemblies with current ones)

Not possible. However, if the Lamp House P.C.B. Ass'y and Amp. P.C.B. Ass'y are changed simultaneously, interchangeability is retained.

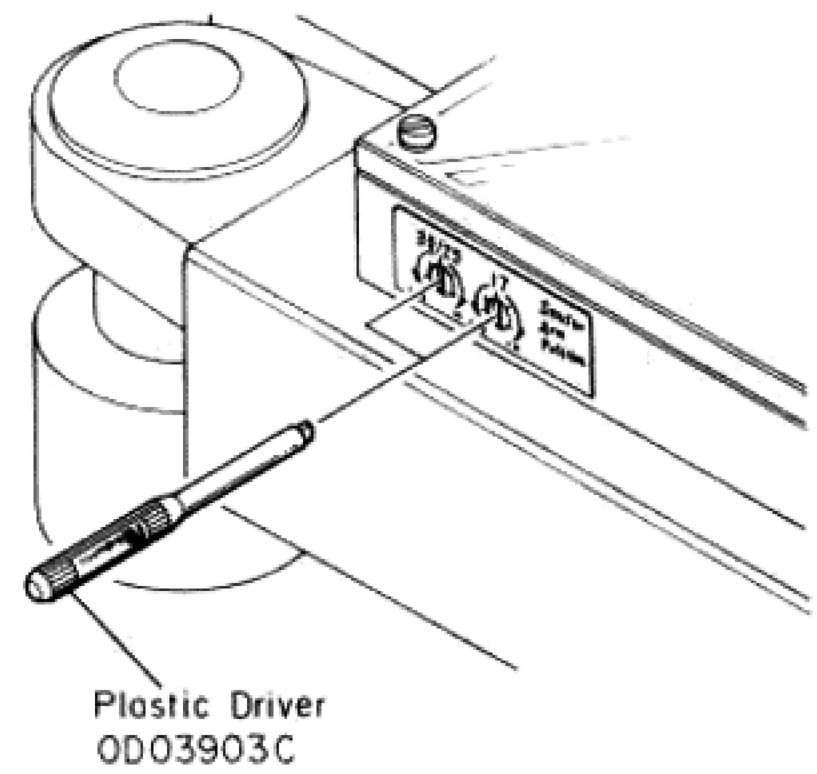

Fig. 1.1

2. Sensor Arm Adjustment

Note: Before adjustment, set the Sensor Arm Position Screwdriver Controls (VR901 and VR902) located alongside the Display Panel to their center click positions.

(1) Removal of Display House Ass'y

(a) Take off the four Display Screws.
(b) Remove Display Cover.
(c) Peel off Display Name Plate which is stuck to Display House Ass'y with adhesive tape.
(d) Take out five screws to remove Display House Ass'y.

(2) Temperature-compensating Circuit Adjustment

Refer to Fig. 2.1.

(a) Connect a digital voltmeter to the test point LED CURRENT.

(b) One minute or more after turning on the power, adjust VR602 to obtain 0 V ±40 mV on the voltmeter.
Note: During the adjustment the reading will slowly fluctuate. It is adjusted sufficiently if the reading is at least once within the above rating.

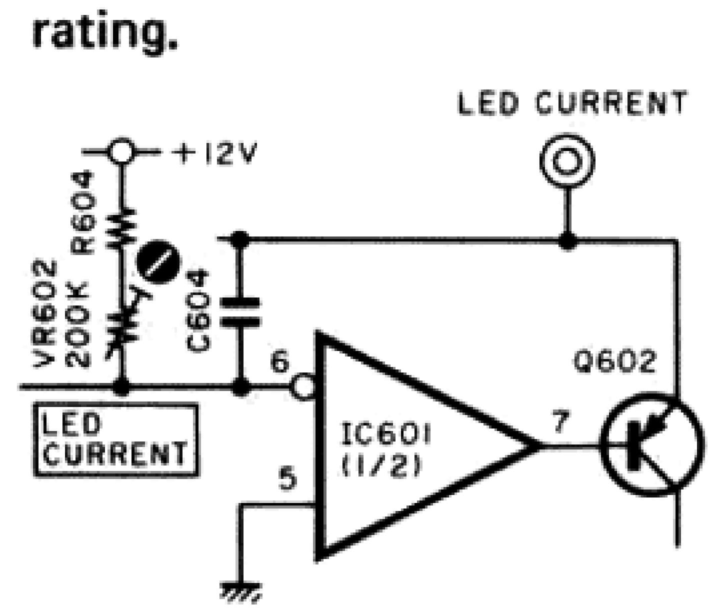

Fig. 2.1

7. New Schematic Diagrams

IC Chart (Cpu P.C.B.)	
Schematic Ref. No.	Description
IC201	μPD8049C-231
IC202	μPD8243C
IC203	μPD7001C
IC204, 205, 206 207, 208, 213	μPD4001BC
IC209, 214, 218	μPD4011BC
IC210	TC40H000P
IC211, 212	TC40H074P
IC219	μPD4024BC

IC Chart (Amp. P.C.B.)	
Schematic Ref. No.	Description
IC101	μPD4555C
IC102, 107, 601, 602	TA75558P-R
IC104	μPD4011BC
IC105	μPD4001BC
IC106	TL082CP
IC603	TC4066BP

(3) Sensor Arm Gain and Arm Rest Position Adjustment
Refer to Figs. 2.2 and 2.3.

(a) Connect a digital voltmeter to the test point GAIN.
(b) Place the Stylus Positioning Gauge (0D09022A) on the Center Search Platter.
(c) Press the Disc Size Selector switch 17.
(d) Press the Center Search switch, then Stop switch and Disc Size Selector switch 30/25 in quick succession. Pull the Sensor Arm back manually towards the center of Platter until it comes to the stopper. When in this position, adjust VR601 to obtain −2.7 V ±0.01 V on the voltmeter.
(e) Press the Stop switch to release the Center Search mode.
(f) While repeatedly pressing the Sensor Stylus switch, adjust the mechanical pressure of the Sensor Arm using VR106 when the Sensor Arm comes to rest on the Arm Rest.
Adjustment shall be made so that the Sensor Arm cannot bump against the Arm Rest.
(g) After completing the above adjustments, connect the digital voltmeter to TP8 to make sure that its reading is within a range of 0 to −2.5 V.

(4) Sensor Arm Descending Position Adjustment
Refer to Figs. 2.3 – 2.5.

(a) Place the Stylus Positioning Gauge (0D09022A) on the Center Search Platter.
(b) Connect TP3 to GND.
(c) Press the Disc Size Selector switch to 17.
Press the Center Search switch, then the Stop switch and Disc Size Selector switch 30/25 in quick succession.
The Motor will stop and the Sensor Arm Stylus will descend onto the Stylus Positioning Gauge.
(d) Connect a digital voltmeter to the test point GAIN.
(e) Place the Sensor Arm Stylus manually onto the A/D FS line on the Stylus Positioning Gauge, and make sure that the voltmeter reads between 0 and −2.7 V.
(f) Connect the digital voltmeter to the test point OFFSET.
Adjust VR109 to obtain 2.45 V ±0.01 V on the voltmeter.
(g) Place the Sensor Arm Stylus manually onto the A/D 0 line on the Stylus Positioning Gauge, and make sure that the voltmeter reads 0.2 V or more.
(h) Press the Disc Size Selector switch 30/25. Adjust VR105 so that descending position of Sensor Arm Stylus is within 0 to −1.0 mm on the 30/25 cm line. While pressing the Disc Size Selector 17 and 30/25 switches alternately, repeat the descending operation several times to make sure that the Stylus descending position is within the above range.
(i) Press the Disc Size Selector switch 17. Adjust VR104 so that the descending position of the Sensor Arm Stylus is within 0 to −1.0 mm on the 17 cm line. While pressing the Disc Size Selector 30/25 and 17 switches alternately, repeat the descending operation several times to make sure that the Stylus descending position is within the above range.
(j) Press the Stop switch to release the Center Search operation.
(k) Disconnect TP3 from GND.

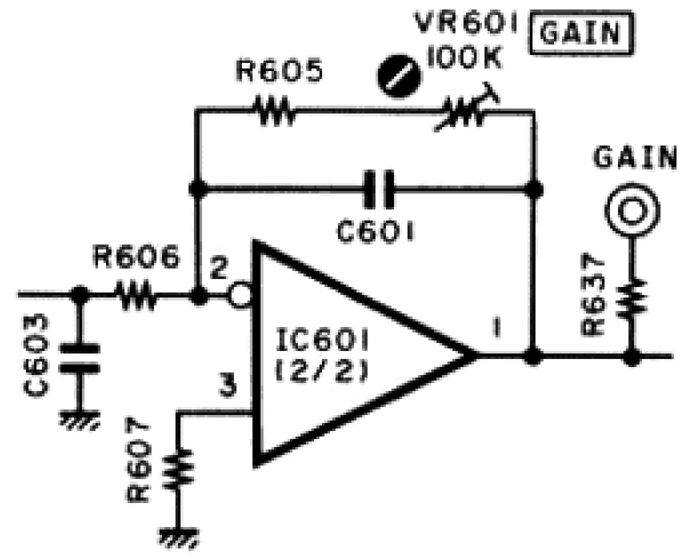

Fig. 2.2

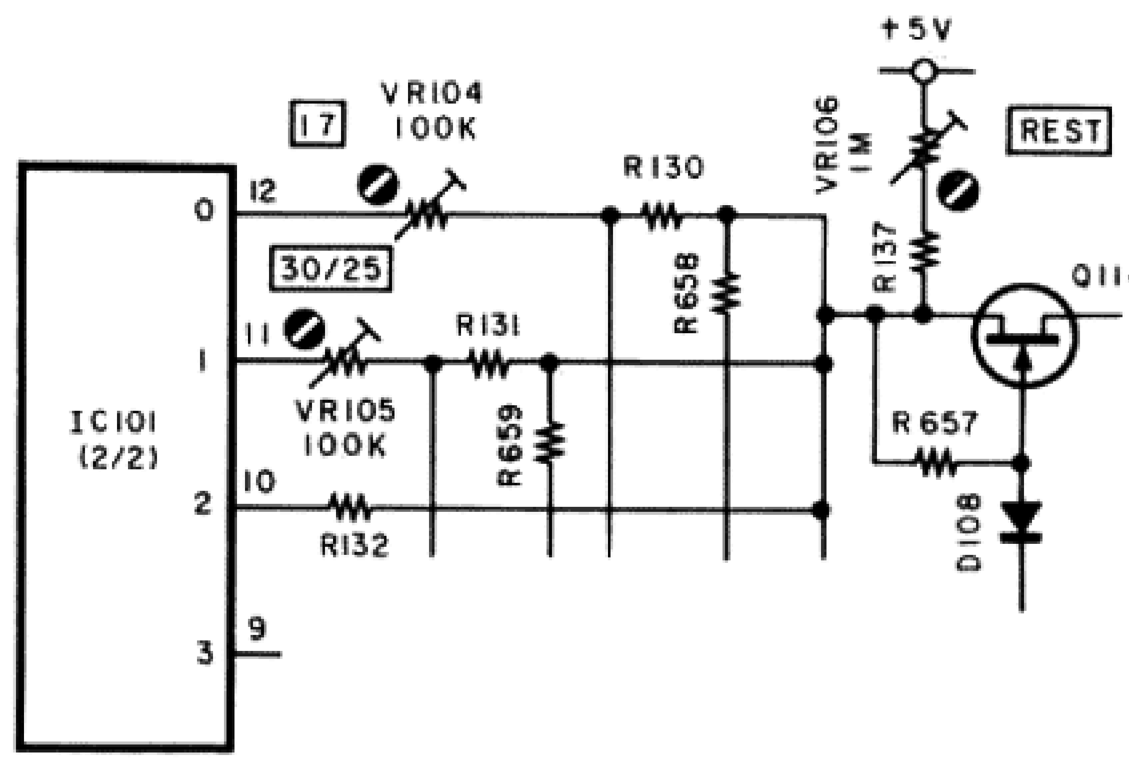

Fig. 2.3

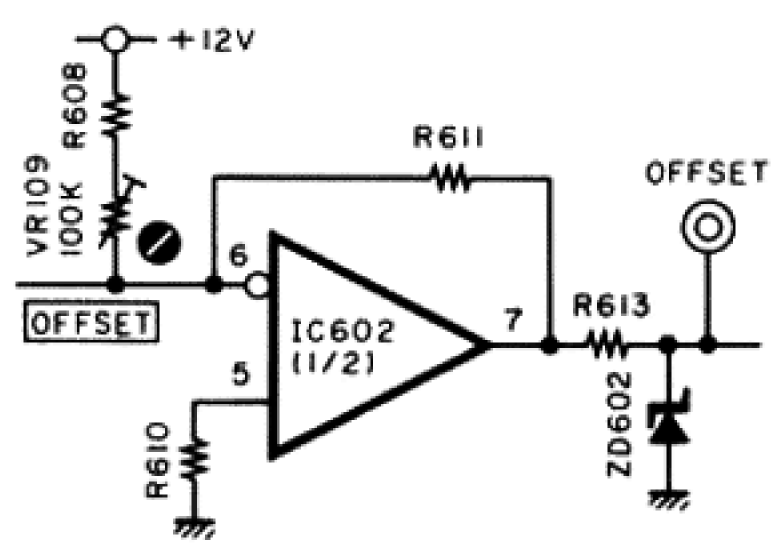

Fig. 2.4

Schematic Ref. No.	Part No.	Description
	BA04748A	CPU P.C.B. Ass'y
		Serial No.:
		V10101171 -
	0B02531D	CPU P.C.B.
IC201	0B06346A	IC μPD8049C-231
IC202	0B06347A	IC μPD8243C
IC203	0B06348A	IC μPD7001C
IC204,205	0B06143A	IC μPD4001BC
206,207		
208,213		
IC209,214	0B06178A	IC μPD4011BC
218		
IC210	0B06349A	IC TC40H000P
IC211,212	0B06350A	IC TC40H074P
IC219	0B06364A	IC μPD4024BC
Q201,202	0B01872A	TR 2SC945 (L)
203,207		
Q204,206	0B06013A	TR 2SA733
D201	0B01909A	SiD 1S1555 (27)
203-208		
210-229		
R200,208	0B09359A	RM 8.2M 1/4W J
210,298		
R201-204	0B05627A	RK 330K 1/4W J
217-222		(18)
233,234		
247-251		
804		
R207	0B05509A	RK 33K 1/4W J
R209,211	0B09785A	RK 4.7M 1/4W J
R212,213	0B01889A	RK 100K 1/4W J
223,224		
225,226		
227,228		
230,231		
232,284		
294,802		
803,806		
815,816		
817,818		
819		
R215,235	0B01888A	RK 10K 1/4W J
236,237		
255,256		
257,258		
292,808		
809,810		
811,812		
R238,239	0B01857A	RK 1K 1/4W J
242,243		
244,246		
813		
R240	0B05577A	RK 330 1/4W J
R241,245	0B01846A	RK 4.7K 1/4W J
259,260		
261,262		
R252,288	0B05776A	RK 1M 1/4W J
801		
R253,293	0B09491A	RM 1K 1/4W F
R254	0B05743A	RK 27K 1/4W J
R287	0B01682A	RK 6.8K 1/4W J
R290	0B01681A	RK 3.3K 1/4W J
R805	0B05675A	RK 3.9K 1/4W J
R814	0B01365A	RK 330 1/2W J
VC201	0B09782A	C Variable 20P
C201	0B01502A	CE 330μ 16V
C202,203	0B05682A	CM 0.068μ 50V J
C204,225	0B01412A	CE 10μ 16V
C205	0B09792A	CC 33P 50V J
C206	0B09779A	CC 39P 50V J
C207,208	0B05557A	CM 0.015μ 50V J
C209	0B00091A	CM 1000P 50V
C210	0B09223A	CE 1μ 50V (LN)
C216,222	0B01405A	CE 1μ 50V
C221,227	0B05582A	CM 0.022μ 50V J
C223	0B09372A	CE 2.2μ 50V
C224	0B05653A	CM 1500P 50V J
M201	0B08969A	Ni-CD Battery 3.6V
M202	0B08984A	Crystal 4.9152MHz
CN4	0B02215C	2P-H Connector
CN7	0B02216B	8P-H Connector
CN15	0B08990B	7P-H Connector
CN21	0B08655A	11P-T Post
CN22	0B08994B	12P-H Connector
CN23	0B08724A	5P-T Post
CN24	0B08646A	10P-T Post
CN25	0B08644A	8P-T Post
CN26	0B08681A	12P-T Post
CN30	0B08998A	6P-H Connector
CN35	0B02204B	9P-H Connector
CN37	0B02206B	9P-H Connector
	0M04222A	Label CN-15 (1)
	0M04232A	Label CN-21 (1)
	0M04236A	Label CN-24 (1)
	0M04237A	Label CN-25 (1)
	0M04238A	Label CN-26 (1)
	0M04251A	Label CN-35 (1)
	0M04252A	Label CN-37 (1)
	0M04331A	Label CN-22 (1)
	0M04332A	Label CN-23 (1)
	0M04335A	Label CN-7 (1)
	0M04342A	Battery Seal (1)

Pin No.	Wire Color
1	BLU
2	GRN
3	ORN
4	RED
5	Light-BLU
6	BLU – WHT
7	GRN – WHT
8	RED – WHT
9	PINK
10	VIO
11	GRY
12	BRN
13	YEL
14	BLK
15	WHT
16	BLK – WHT

Fig. 6

Notes: 1. Table of wire colors

BLK	Black	BLU	Blue
ORN	Orange	GRY	Gray
GRN	Green	RED	Red
BRN	Brown	YEL	Yellow
WHT	White	VIO	Violet

2. Component side view of the P.C.B. is illustrated unless otherwise specified.

IC Chart (Control P.C.B.)	
Schematic Ref. No.	Description
IC501-505	TA75558P-R
IC507	μPD4013C
IC508	TC9142P
IC509,510	TC4011BP
IC511,512	TC4066BP

Fig. 7.3

Notes: 1. Diode is 1SS53, 1S953, or 1S1555 unless otherwise specified.
2. Resistor and capacitor marked with * show typical value.