DVD NAVIGATION SYSTEM

KNA-DV3100
KNA-DV3200

SERVICE MANUAL

KENWOOD

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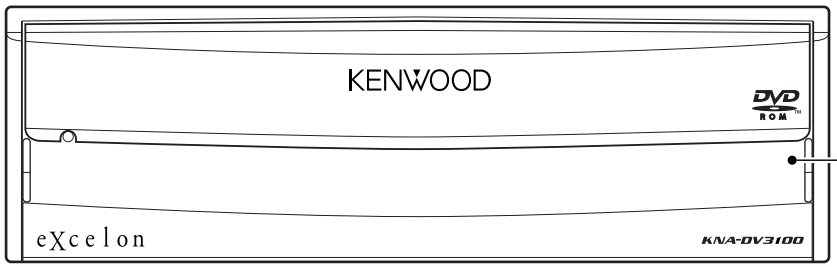
B53-0050-00 (N) 3100

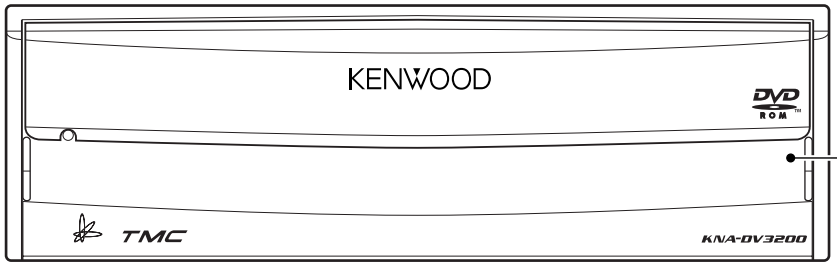
The DVD mechanism infomation is not in this sarvice manual.
Please, refer to sarvice manual X92-4740-00 (B53-0052-00).

KNA-DV3100



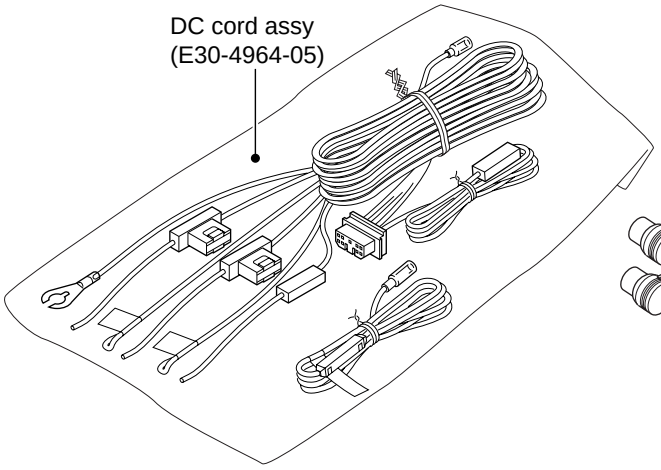
Panel assy
(A64-3105-03)

KNA-DV3200

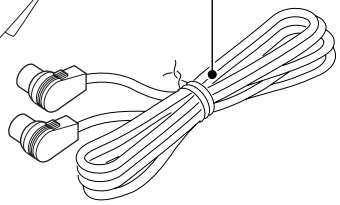


Panel assy
(A64-3106-03)

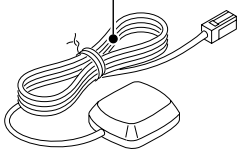
DC cord assy
(E30-4964-05)



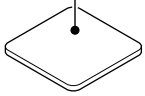
Connecting cord assy
(E30-6199-05)



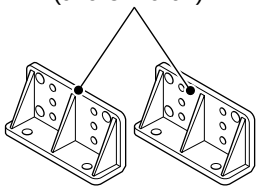
Electric circuit module (GPS ANT)
(W02-3261-05)



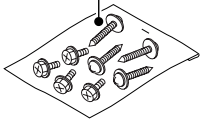
Mounting hardware
(J21-9867-04)



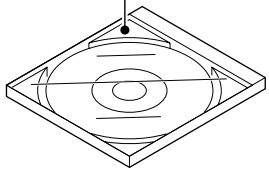
Bracket
(J19-5246-04)



Screw set
(N99-1713-05)



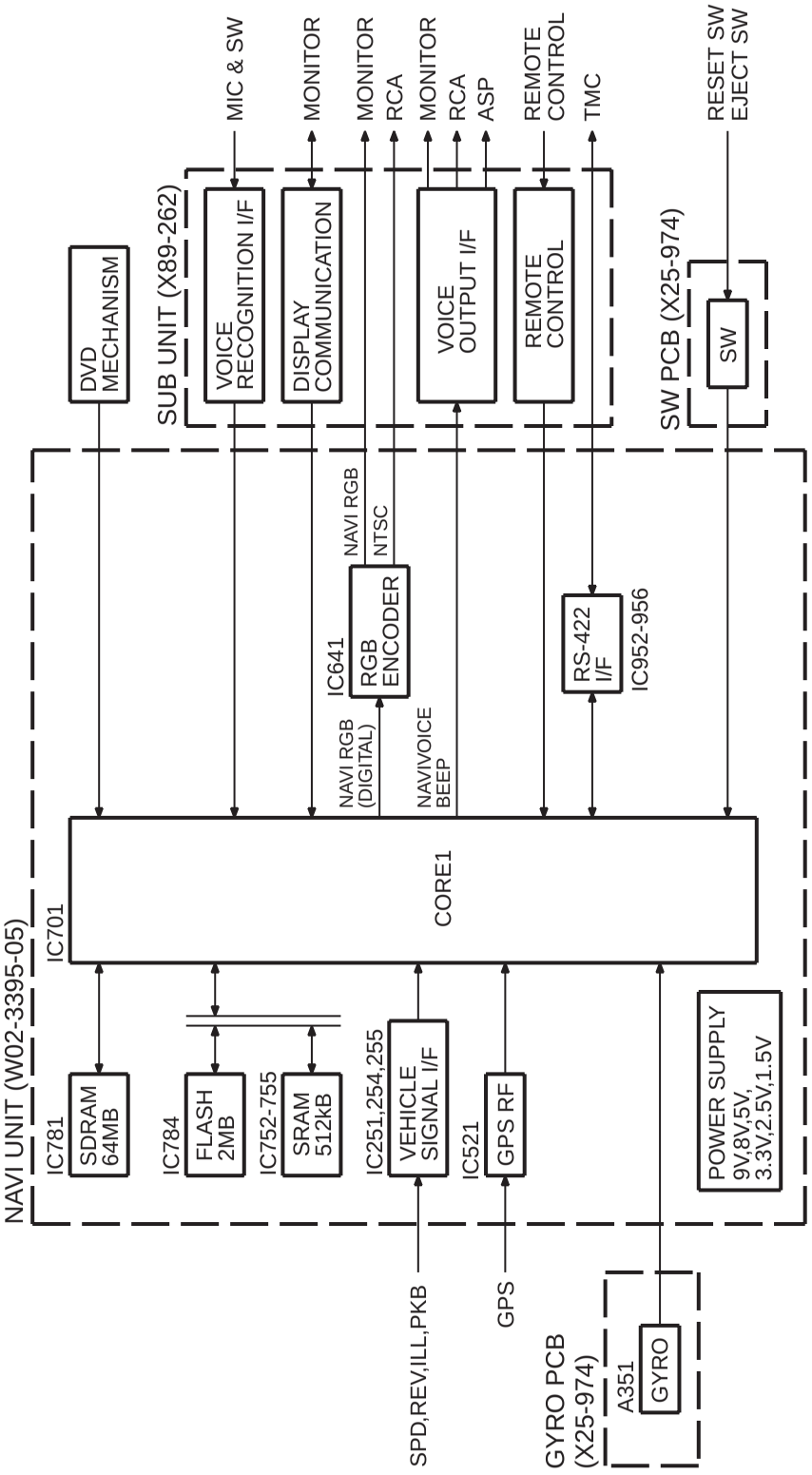
DVD
(W01-1618-05) : KNA-DV3100
(W01-1619-05) : KNA-DV3200



CAUTION (Repair of NAVI board)
You can not repair IC521 (GPS Receiver) and IC701 (CORE1).
If you can repair those parts please change to NAVI board assy(W02-3395-15).

40%

BLOCK DIAGRAM



COMPONENTS DESCRIPTION

● NAVI BOARD (W02-3395-15)

Ref. No.	Application/Function	Operation/Condition/Compatibility
IC101	Comparator	Voltage detected
IC102	IC	Voltage detected
IC103	SW regulator	8.3V power supply, 5V power source control
IC104	SW regulator	3.3V power supply, 1.5V power source control
IC105	3 terminal regulator	Backup 3.3V power supply
IC106	Microcomputer	Power supply, reset control
IC107	3 terminal regulator	9V power supply
IC108	3 terminal regulator	5V power supply
IC109	General purpose logic	For voltage conversion from 3.3V to 5V
IC111	General purpose logic	For mute signal generation
IC212	Point regulator	3V power supply
IC251	Non-inverter driver	Vehicle-related signal generation
IC254	General purpose logic	For SPD signal generation
IC255	Analog multiplexer	For switching vehicle speed signal
IC256	General purpose logic	For voltage conversion from 3.3V to 5V
IC301	Ope-amp	For synthesizing voice signal
IC306	Ope-amp	For voice signal for navigation system generation
IC309	General purpose logic	For voltage conversion from 3.3V to 5V
IC310	Ope-amp	For synthesizing voice signal
IC502	General purpose logic	For voltage conversion from 3.3V to 5V
IC521	RF-IC	GPS signal
IC522	Crystal oscillator	For GPS signal
IC523	Comparator	For GPS antenna detection
IC524~526	General purpose logic	For GPS signal
IC551	General purpose logic	For HDD/DVD control signal generation
IC561	General purpose logic	For EJECT signal generation
IC641	D/A converter	For video signal generation
IC642	General purpose logic	For dot clock generation
IC684	Ope-amp	For gyro sensor signal generation
IC701	Microcomputer	CORE1
IC731	3 terminal regulator	Backup 1.5V power supply
IC732,733	Point regulator	2.5V power supply
IC734	3 terminal regulator	1.5V power supply
IC751	Analog switch	For CKE signal generation
IC752~755	128M-SDRAM	16MB
IC781	4M-SRAM	512MB
IC782,783	General purpose logic	For generating CS signal
IC784	16M-FLASH	2MB
IC951	Line transceiver	RS422/TMC transceiver

COMPONENTS DESCRIPTION

Ref. No.	Application/Function	Operation/Condition/Compatibility
IC952	General purpose logic	For generation of TMC control signal
IC954~956	General purpose logic	For generation of TMC control signal
IC957	General purpose logic	For mute signal generation
T101	Transistor	Power ON/OFF control
T102	Power MOS FET	Power ON/OFF control
T103,104	Transistor with resistor	For T101&T102 control
T105,106	Transistor	DC/DC switching
T107,108	Power MOS FET	Power ON/OFF control
T109	Transistor with resistor	For delayed ACC control
T110,111	Transistor	DC/DC switching
T112,113	Transistor	For backup 3.3V power supply control
T305	Transistor array	For control navigation system voice mute
T306	Transistor array	For control LMUTE
T307	Transistor with resistor	For control beep volume
T309	Transistor with resistor	For control beep volume
T319	Transistor with resistor	For control T305

● DAUGHTER UNIT (X89-2622-71)

Ref. No.	Application/Function	Operation/Condition/Compatibility
IC1	Power supply IC	5V power supply for ACTIVE SP
IC2	AND gate	Buffer for TV communicatioin (TX/RX) signal
IC3	MIC amplifier	Isolation amplifier for external microphone
IC4	NAND gate	For switching remote control signal (TV/Remoto control sensor)
Q1,2	Driver	Mute driver
Q3	Buffer	TV SYNC signal buffer
Q4	Buffer	ACTIVE SP signal buffer
Q5	Mute switch	RCA (Voice) Rch mute switch
Q6	Mute switch	ASP (Voice) mute switch
Q7	Mute switch	RCA (Voice) Lch mute switch
Q8	Mute switch	TV (Voice) Lch mute switch
Q9	Mute switch	TV (Voice) Rch mute switch

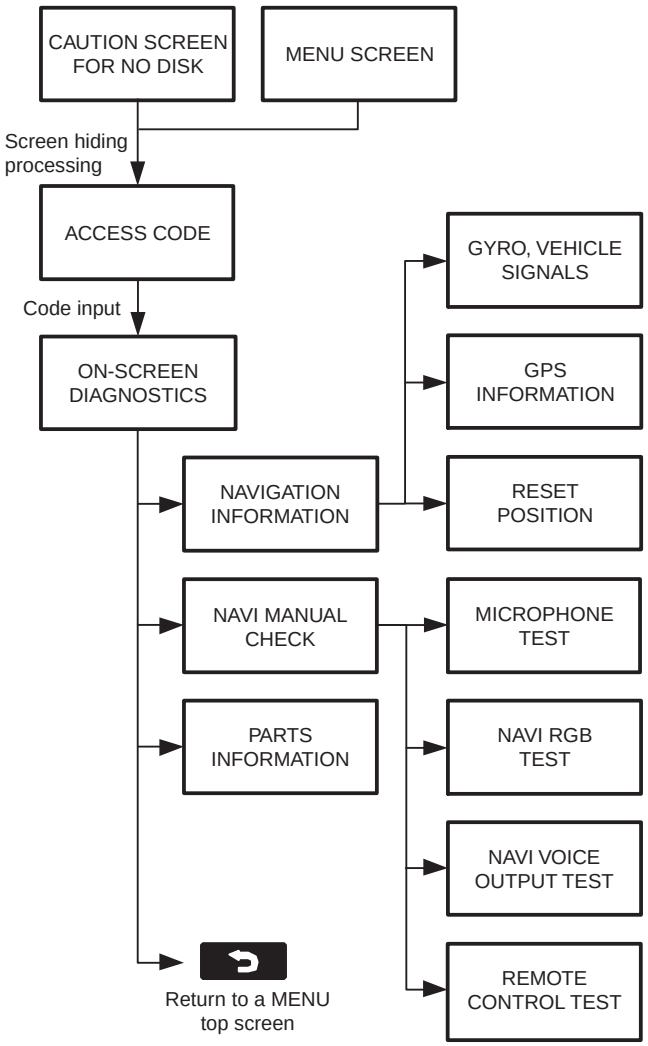
MICROCOMPUTER'S TERMINAL DESCRIPTION

● MICROCOMPUTER : MB89935B (NAVI BOARD : IC106)

Pin No.	Pin Name	I/O	Function	Processing Operation Description
1	P04	O	FRES output	Lo : Flash ROM and CORE1 reset
2	P05	O	RES output	Lo : System reset
3	P06	O	NMI output	Interrupt output to CORE1
4	P07	I		Not used (Pull down to GND line)
5	MODE0	I	Mode input 0	Lo Fixed (Connect to GND Line)
6	MODE1	I	Mode input 1	Lo Fixed (Connect to GND Line)
7	RST#	I	Reset input	Lo : At the time when system is down and when panel reset SW is pressed
8	X0	-	Clock oscillator terminal	
9	X1	-	Clock oscillator terminal	
10	VSS	-	GND connection terminal	Connect to GND line
11	P37	O	P ON terminal	Hi : Turning power ON for SW's system power circuit
12	P36	I	WDP input	Detection of watchdog pulse from CORE1 Normal operation : Logic is reversed within 300ms
13	P35	I	ACC detection input	Hi : ACC ON
14	P34	I	BU detection input	Hi : BU ON
15	P33	I	SDRAM clock enable input	Lo : Self-refresh of SDRAM, Hi : Normal operation of SDRAM
16	C	-	C connection terminal	(0.1μF)
17	P32	I		Not used (Pull down to GND line)
18	P31	I	Delayed ACC input	Hi : CORE1 in operation and panel mechanism in operation when ACC is OFF
19	P30	O	ACC detection output	Hi : Power ON, Lo : Power OFF (Output to CORE1 and system computer)
20	P50	O	Backup operation complete notice	Hi : SDRAM CKE core in control, Lo : Backup processing complete
21	AVSS	-	GND connection terminal	Connect to GND line
22	P40	O	V33D switching output	Lo : Normal (ACC ON)
23	P41	O	V33D switching output	Lo : At the time of backup
24	P42	O	Mute output	Lo : Mute
25	P43	I	V33 monitor input	Lo : No Output
26	P00	I	VMAIN monitor input	Lo : No Output
27	P01	I	BU monitor input	Lo : No BU
28	P02	I	V50 output monitor input	Lo : No Output
29	P03	I	V80 output monitor input	Lo : No Output
30	VCC	-	Positive power supply terminal	Connect to 3.3V line backup

TEST MODE

Diagnostics (DIAG) Screen Flow Chart



Moving to the Diagnostics (Diag) Screen

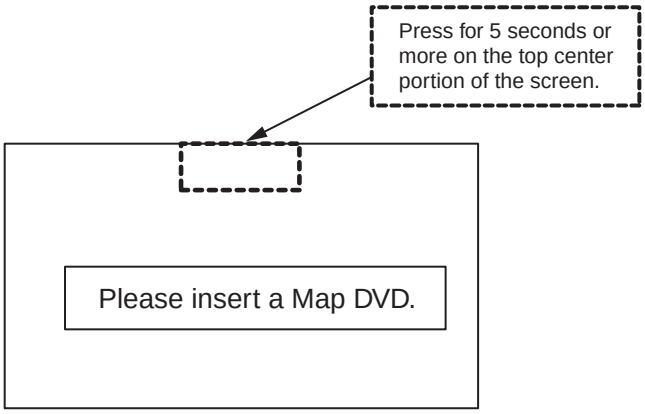
There are two ways to move to the input screen for the access code in order to move to the Diag screen. In other words, the access code input screen can be displayed from two different screens.

■ How to move to the Diag screen 1

Press the portion of the screen indicated below for 3 seconds or more when the Caution Screen for “No Map Disk” is displayed.

- **How to move to the access code input screen using the remote controller**

  Press the right screen selection button for 5 seconds or more. (No.12 button on the remote control test screen specification)



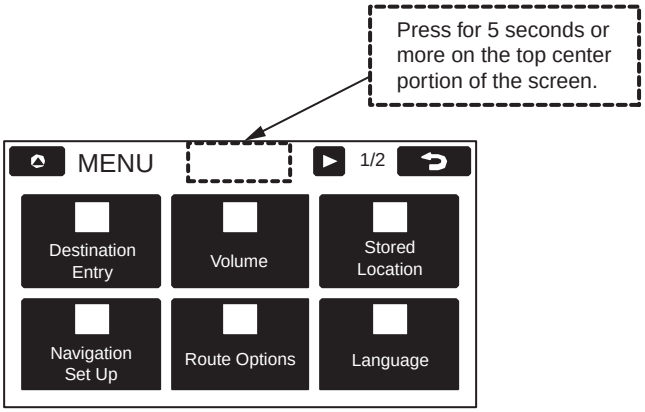
The screen contents are to follow the HMI specifications.

■ How to move to the Diag screen 2

Press for 5 seconds or more the position indicated below while the MENU screen is displayed.

- **How to move to the access code input screen using the remote controller (Overseas Market Version)**

  Press the right screen selection button for 5 seconds or more. (No.12 button on the remote control test screen specification)



The screen contents are to follow the HMI specifications.

Recovery from the Diag Screen

Recovery from the Diag screen can be made using the Back swich.

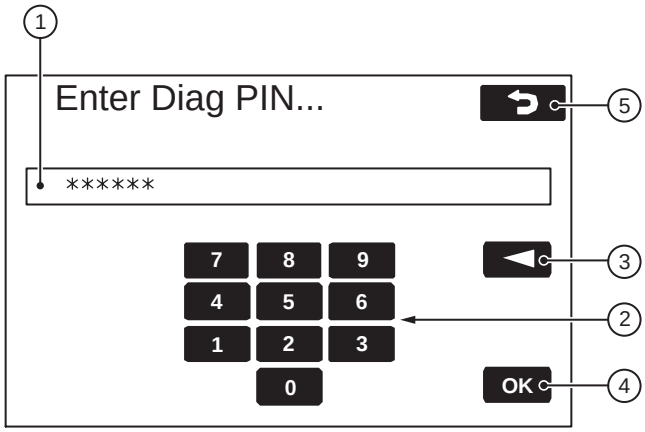
TEST MODE

Screen Name : Access Code input screen

■ Functions outline

- This screen is displayed after Diag operation is conducted.
- Diag screen can be accessed by inputting the Diag PIN code in this screen.

■ Screen appearance



■ Display details

① Displays numbers input

- The number of maximum input characters is 6.
- The numbers input from the numeric pad is displayed by [*].

② Numeric key pad

- When the maximum input characters are input, the numbers on the numeric key pad are tone-down displayed.

③ Back space key

- When no input is made, the back space key is tone-down displayed.

④ OK button

- When no input is made, the OK key is tone-down displayed.
- The On-screen diagnostics screen is accessed when the appropriate code in the access level table is input.
- If the code input is not appropriate, the previous screen to the On-screen diagnostics screen is displayed.

⑤ The screen returns to the previous screen to the On-screen diagnostics screen.

The Diag PIN code is defined as follows:

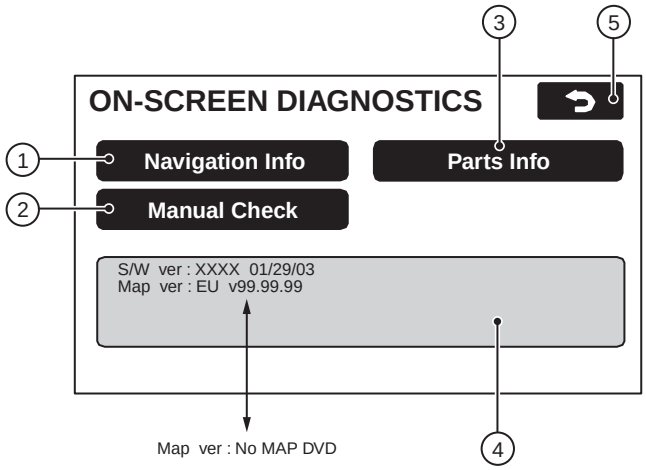
Diag PIN : 014220

Screen Name : On-screen diagnostics menu screen

■ Functions outline

- On-screen diagnostics screen : This is the screen to be displayed by Diag operation.
- Data is updated when the information to be displayed changes.

■ Screen appearance



■ Display details

① The Navigation Information screen is accessed next.

② Then, the Manual Check screen is accessed.

③ The Parts Information screen is accessed.

④ Display of detailed information

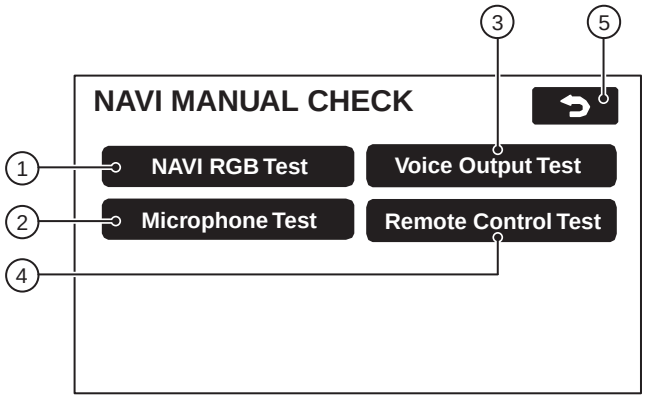
- The version and the release date of the navigation software are displayed.
  The version of navigation software : Displayed in 4 digits.
  The release date of the navigation software : Displayed in MM/DD/YY.
- The area of the map disk and version are displayed.
  The area of the map disk : The area of the maps on the disk is displayed.
  The version of the map : Management Frame for all data, Data Volume, and Media Version are displayed. When it is considered that the map disk is not inserted, the following characters will be displayed. “No MAP DVD” (There will be no Area/Version display.)

⑤ On-screen diag is ended and the screen returns to normal operation screen. (The screen before accessing Diag screen is to be displayed.)

TEST MODE

Screen Name : NAVI Manual check screen

■ Screen appearance



■ Display details

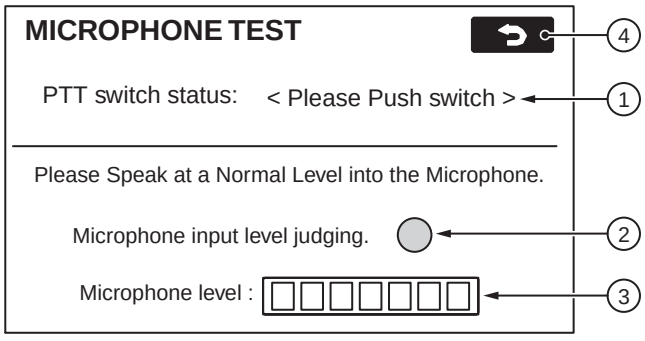
① The button is used to access the Navi RGB test screen.
② The button is used to access the Microphone test screen.
③ The button is used to access the Navi Voice output test screen.
④ The button is used to access the Remote Control test screen.
⑤ The button is used to return to the On-screen diagnostics screen.

Screen Name : Microphone inspection screen

■ Functions outline

- PTT connection conformation of the voice recognition microphone and microphone check.

■ Screen appearance



■ Display details

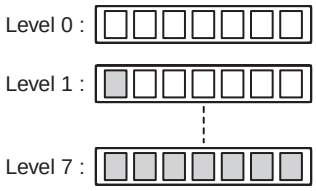
① The PTT connection check is conducted.

- The appropriate character set is displayed under the following condition :
  <OK> : When the PTT switch is pressed.
  <Please Push switch> : Other than the above.
- When <OK> is displayed, the condition is maintained. When a different screen is accessed, the condition is released.

② Test result indicator

- Once this screen is accessed, the Navi system samples voice at all times and sampling results are reflected on the indicator.
- After sampling a voice in A/D, the system compares it with the threshold value with the maximum of 500ms delay. Then, the system makes the following displays
  : Makes displays in blue if the value is greater than the threshold value.
  : Makes displays in grey if the value is smaller than the threshold value.

③ The input level of the microphone is sampled every 200ms and the results are displayed on 8 levels. The display update timing for the input level is 400ms.



④ When terminated, the screen goes back to the NAVI Manual check screen.

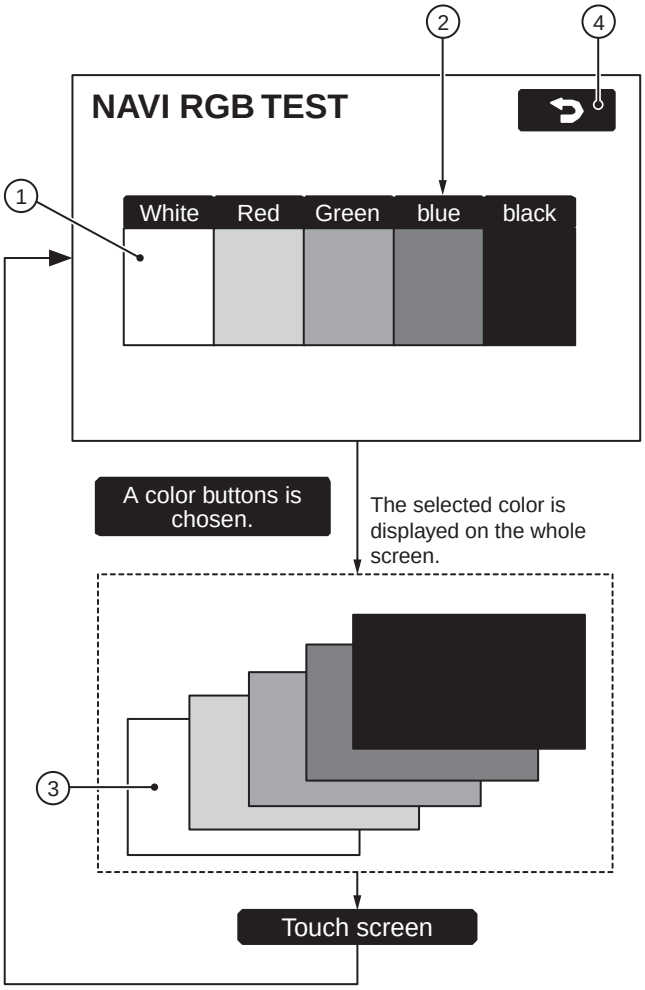
TEST MODE

Screen Name : NAVI RGB test screen

■ Functions outline

- This is the screen for testing the NAVI color display.

■ Screen appearance



■ Display details

① Color bar

- Bar display for the following colors : white, red, green, blue and black.

② Selection button

- When a button corresponding to a color is pressed, the selected color is displayed on the whole screen.

③ Whole screen display

- The selected color is displayed on the whole screen.
- When other parts of the screen is pressed, the screen goes back to the RGB test screen.

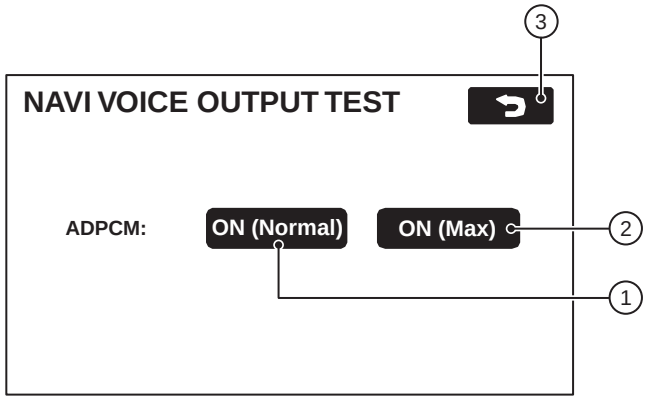
④ When terminated, the screen goes back to the NAVI Manual check screen.

Screen Name : NAVI Voice Output test screen

■ Functions outline

- In this screen, the ADPCM output is tested.

■ Screen appearance



■ Display details

① and ② are ADPCM voice test buttons.

- The following ADPCM voices (sine wave of 1kHz/maximum since wave of 1kHz) are output for five seconds.
  NORMAL (①) Voice ID : 00020015
  MAX (②) Voice ID : 00020014
  However, if no map disk is not inserted, the ADPCM voices are not output.

③ When terminated, the screen goes back to the NAVI Manual check screen.

- In this screen, the beep is not sounded when q and w buttons are pressed.

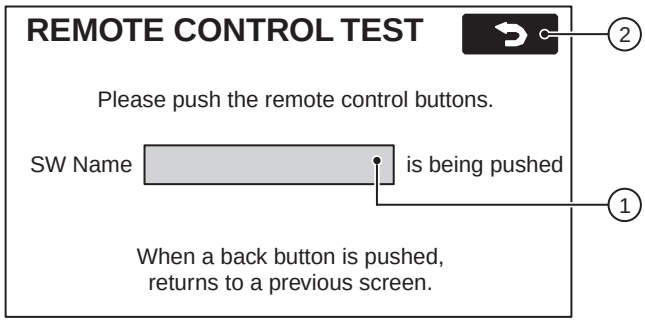
TEST MODE

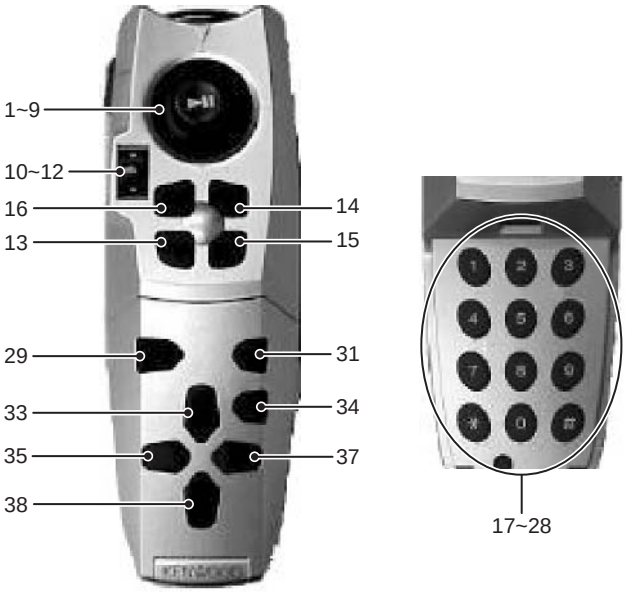
Screen Name : Remote control test screen

■ Functions outline

- In this screen, remote control buttons are tested.

■ Screen appearance





■ Display details

① Names of button switches

- When a remote control button switch is pressed, the name of the button is displayed within the frame. (Please refer to the definition for the button names in the table right.)
- When this screen is first accessed, the display frame will be blank. When the button is pressed and while it is de-pressed, the corresponding button name will be displayed. When the button is released, the display disappears. (Blank)
- When the cancel button is pressed, the switch name will not be displayed and the screen goes back to the NAVI Manual Check screen.
- When a remote control button is pressed, a beep sounds.

② The screen goes back to the NAVI Manual Check screen.

■ Definitions of the Button Names

The table below is the correspondence table between the remote control silk names and displayed names on the diag screen. For detail, refer to the Car Navigation System Remote Control Software specifications.

No.	ID	Function	Display Name
1	4A	0° (Up)	UP
2	4B	45° (Upper right)	UPPER RIGHT
3	4C	90° (Right)	RIGHT
4	4D	135° (Lower right)	LOWER RIGHT
5	4E	180° (Down)	DOWN
6	4F	225° (Lower lift)	LOWER LEFT
7	50	270° (Left)	LEFT
8	51	315° (Upper left)	UPPER LEFT
9	5A	ENT	ENT
10	82	Λ	ZOOM OUT
11	83	V	ZOOM IN
12	16	Right screen select	RIGHT SELECT
13	84	Position	POSITION
14	5D	Menu	MENU
15	80	Route	ROUTE
16	D6	Cancel	CANCEL
17	41	1	1
18	42	2 (ABC)	2
19	43	3 (DEF)	3
20	44	4 (GHI)	4
21	45	5 (JKL)	5
22	46	6 (MNO)	6
23	47	7 (PQRS)	7
24	48	8 (TUV)	8
25	49	9 (WXYZ)	9
26	40	0 (Space)	0
27	10	* (+)	*
28	CB	# (BS)	#
29	17	Voice	VOICE
31	C1	Short cut 1	SHORT CUT 1
33	D9	↑ List	UP LIST
34	C2	Shot cut 2	SHORT CUT 2
35	DA	← Text	LEFT TEXT
37	DC	→ Text	RIGHT TEXT
38	DD	↓ List	DOWN LIST

No. 1~16 : Not related to whether the cover is open or closed.

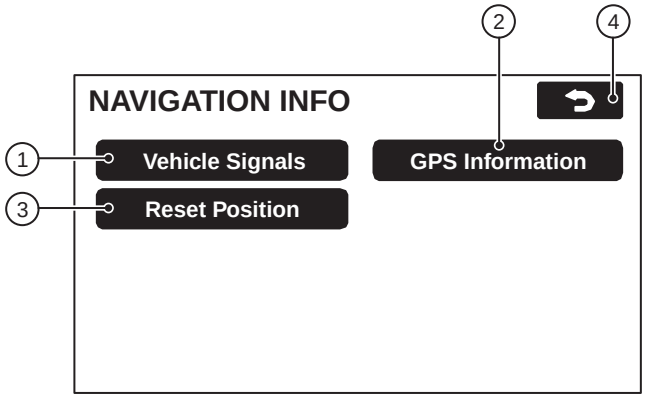
No. 17~28 : Cover open

No. 29~40 : Cover closed

TEST MODE

Screen Name : Navigation information screen

■ Screen appearance



■ Display details

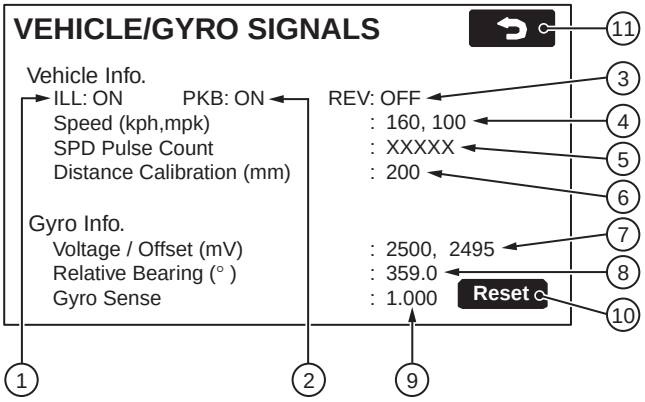
① VEHICLE/GYRO/SIGNALS screen is accessed.
② GPS information screen is accessed.
③ Reset Position screen is accessed.
④ The screen returns to the On-screen diagnostics screen.

Screen Name : Vehicle signals screen

■ Functions outline

- In this screen, the vehicle signals input to the Navi ECU are checked.
- The data is updated when the information changes.

■ Screen appearance



■ Display details

① When ILL signal is displayed :
- The condition of the PARK LAMP is displayed as : ON/OFF.

② When PKB signal is displayed :
- The condition of the parking brake signal is displayed as : ON/OFF

③ When REV signal is displayed :
- The condition of the REV signal is displayed as : ON/OFF.

④ Vehicle speed condition
- The vehicle speed is displayed in kph/mph.
  The speed is displayed in maximum of 3 digits in LSB 1.

⑤ The count value of the SPD pulses is displayed. (The time of access to the screen is set to 0. The count is displayed in maximum of 5 digits in LSB 1 with the maximum of 65535 and when this is exceeded, the value is counted again from 0.)

⑥ Distance adjustment information
- The obtained value is displayed.
  The value is displayed in maximum of 3 digits in LSB 1.

⑦, ⑧, ⑨ Gyro signal display
- Gyro output voltage value is displayed in mV.
  The value is displayed in maximum of 4 digits in LSB with 1mV as the unit.
- Gyro output voltage value (left) and adjusted reference voltage (right) are displayed in mV.
  The value is displayed in maximum of 4 digits in LSB with 1mV as the unit.
- The relative direction is displayed. (The time when the Navi system is activated is set to 0.)
  The value is displayed in maximum of 4 digits in LSB with 0.1 degree as the unit.
- The obtained value for the gyro sensitivity is displayed.
  The value is displayed in maximum of 4 digits in LSB with 0.011 as the unit.

⑩ Reset button for the gyro sensitivity obtained value
- This button is for resetting the gyro sensitivity obtained value.

⑪ The screen returns to the Navigation Information screen.

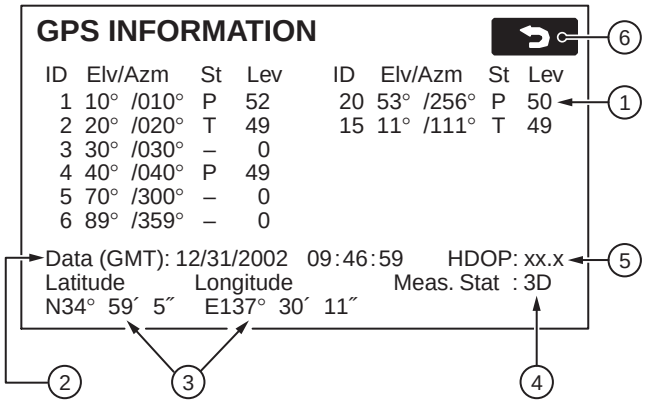
TEST MODE

Screen Name : GPS information screen

■ Functions outline

- This screen displays GPS-related information.
- The data is updated when the information displayed changes.

■ Screen appearance



■ Display details

① Satellite information

- The following information on the satellite as the search object is displayed : satellite number (ID); an angle of elevation (Elv); azimuth reading (Azm); signal level (Lev) and reception state (St).
- The display areas are secured for the maximum of 8 satellites.
- For the reception state, the appropriate letter is displayed depending on the state.
  [P] : When the satellite in question is used for positioning.
  [T] : When the satellite in question is spotted but not used for positioning.
  [–] : When the satellite in question is spotted yet.

② Date and time information

- The date and time information obtained from the GPS receiver is displayed in : month; day; year; hour; minute; and second.

③ Position information

- The current latitude and longitude are displayed in : sign, degree, minute, and second.
  As for the sign, appropriate letter is displayed according to the conditions that apply.
  [N] : When the latitude is judged to be north latitude.
  [S] : When the latitude is judged to be south latitude.
  [W] : When the longitude is judged to be west longitude.
  [E] : When the longitude is judged to be east longitude.

④ Positioning condition information

- Positioning conditions are described in the following five conditions :
  [2D] : When positioning is made on two dimensions.
  [3D] : When positioning is made on three dimensions.
  [NG] : When positioning is not possible..
  [error] : When reception error takes place.
  [–] : When conditions other than the above occur.

⑤ HDOP

- The HDOP value at the time of positioning (accuracy value in the horizontal direction) is displayed in numbers.
  LSB 01 display areas: 0.0~99.9
  When exceeding 99.9 and when positioning is not conducted, [–] is displayed.

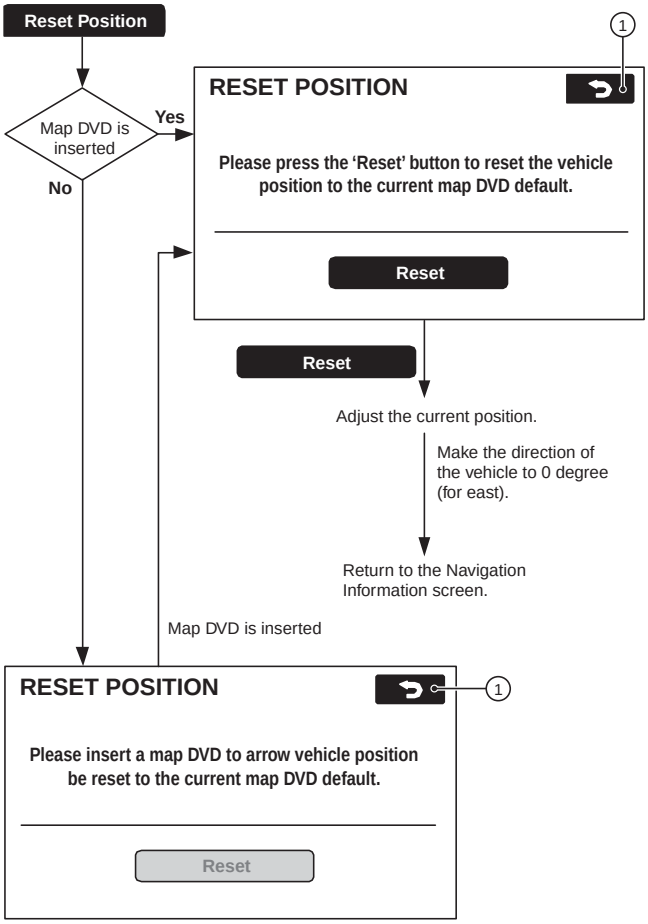
⑥ The screen returns to the Navigation Information screen.

Screen Name : Adjust position screen

■ Functions outline

- This is the function for adjusting the position to the default coordinate that is registered on the map disk.

■ Screen appearance



■ Display details

① The screen returns to the Navigation Information screen.

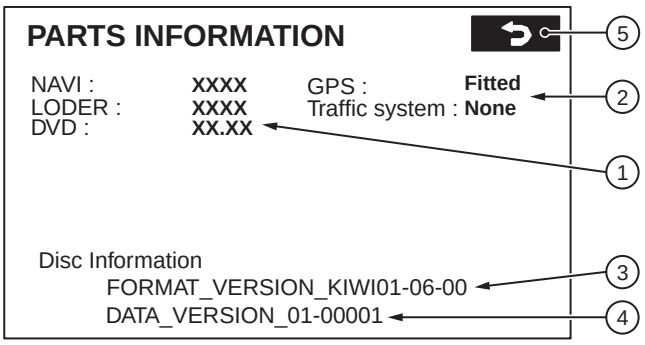
TEST MODE

Screen Name : Parts information screen

■ Functions outline

- Displays the conditions of the parts comprising the navigation system.
- Displays the map software version of the navigation system.
- The data updates are conducted when the information changes.

■ Screen appearance



■ Display details

① Displays the map software version of the software that comprise navigation system.

- NAVI : Displays the software version of the software that comprise navigation system.
- LODER : Displays the kanji ROM version.
- DVD : Displays the revision level of the DVD player.

② Displays the conditions of the devices that comprise the navigation system.

- GPS: The connection condition of the GPS system is displayed by appropriate character sets that corresponds to the condition :
  [Fitted] : GPS antenna is connected.
  [None] : Conditions other than the above.
- The type of traffic congestion information service is displayed by appropriate character sets that corresponds to the condition :
  [TMC] : When a TMC tuner is connected.
  [None] : Conditions other than the above.

③ Format version number

- Displays the data stored in the “Format Version Number” item in the “Control Frame Data Volume for all data” on the disk.

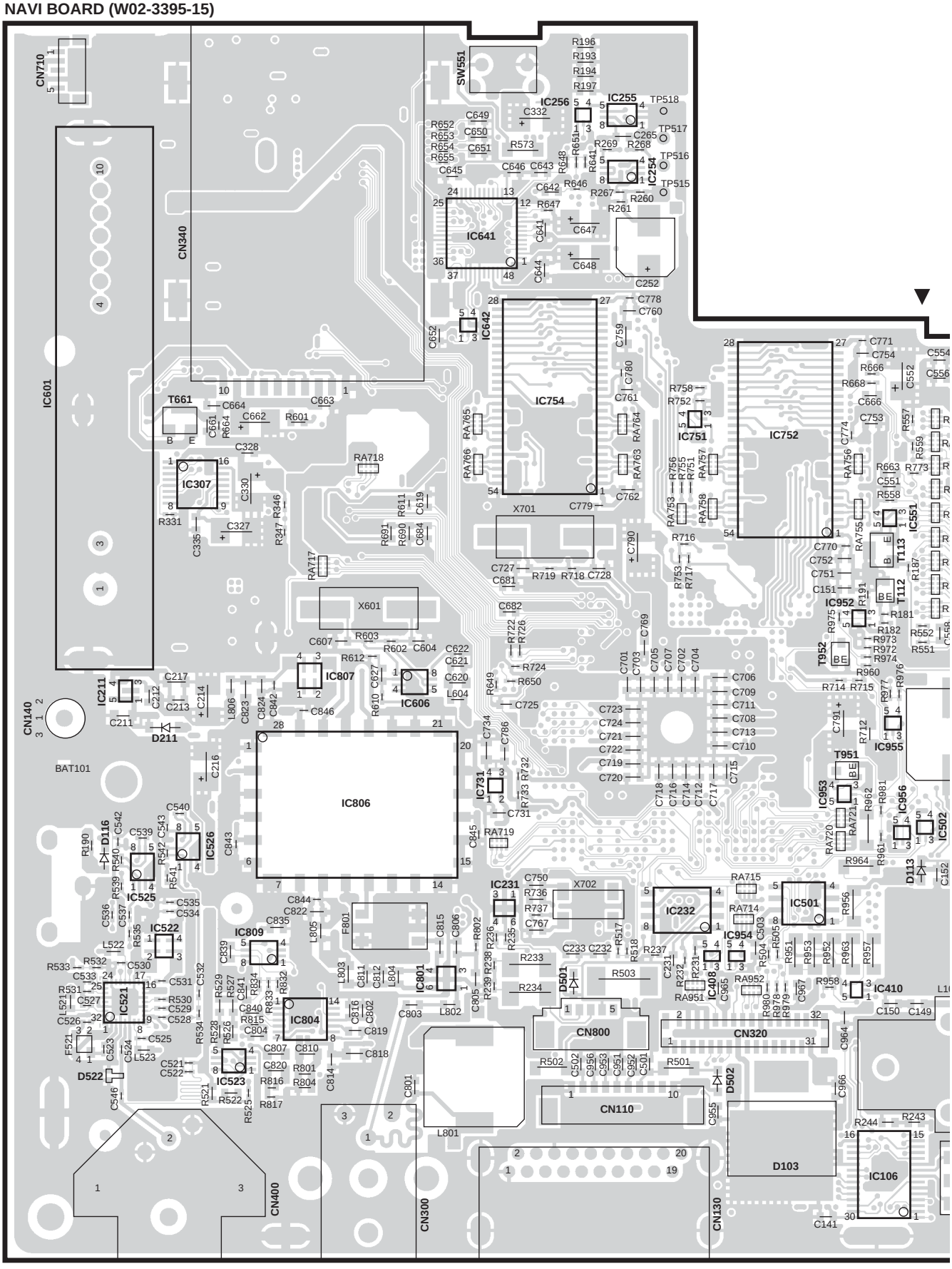
④ Data Version Number

- Displays the data stored in the “Data Version Number” item in the “Control Frame Data Volume for all data” on the disk.

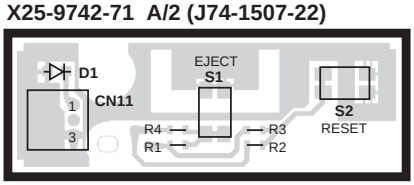
⑤ The screen returns to the On-screen diagnostics screen.

PC BOARD (COMPONENT SIDE VIEW)

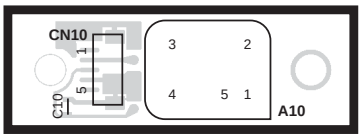
NAVI BOARD (W02-3395-15)

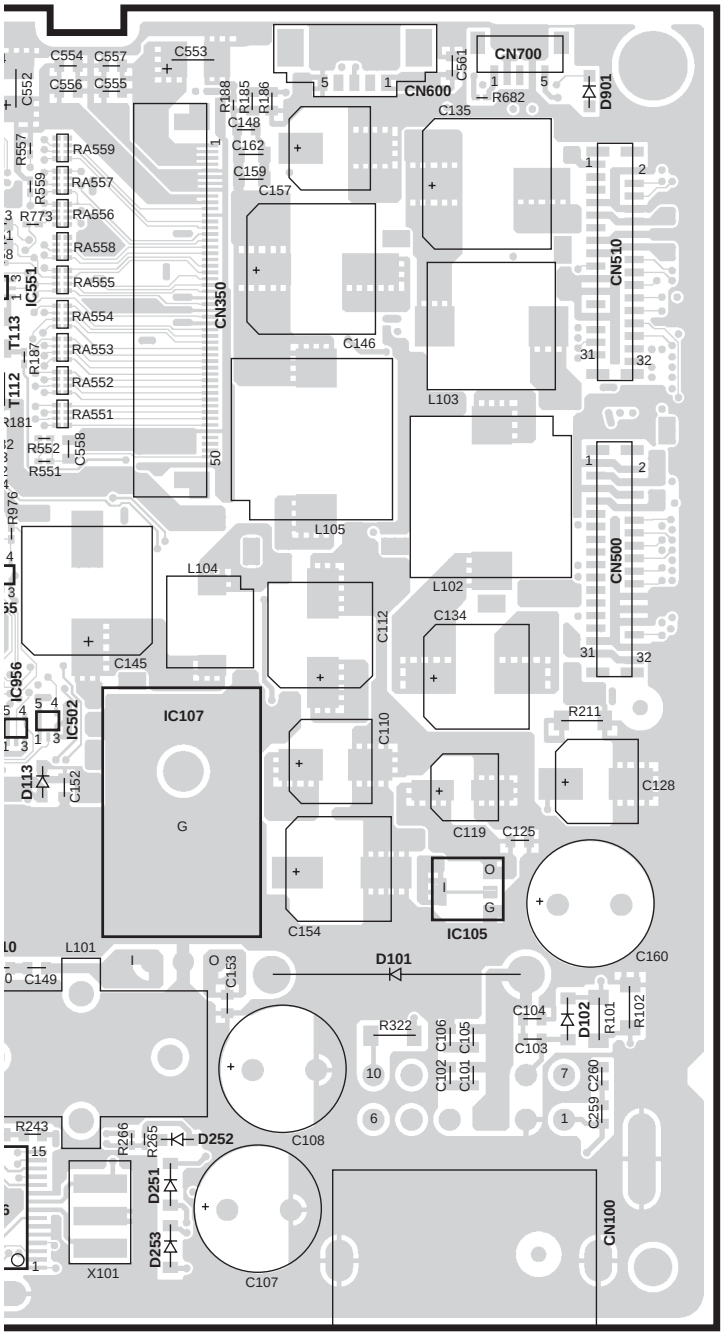


SWITCH UNIT
X25-9742-71 A/2 (J74-1507-22)



X25 B/2





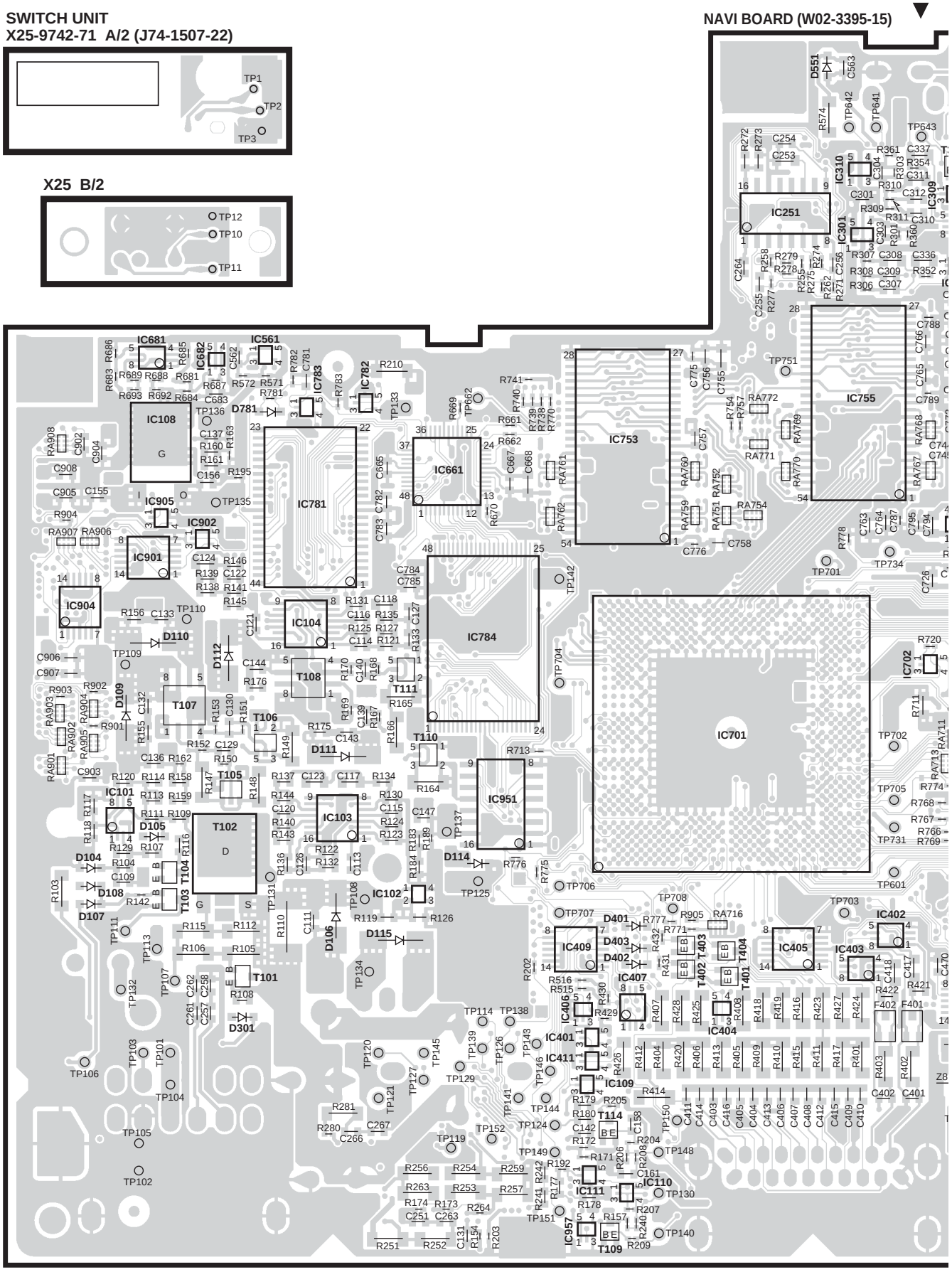
NAVI BOARD

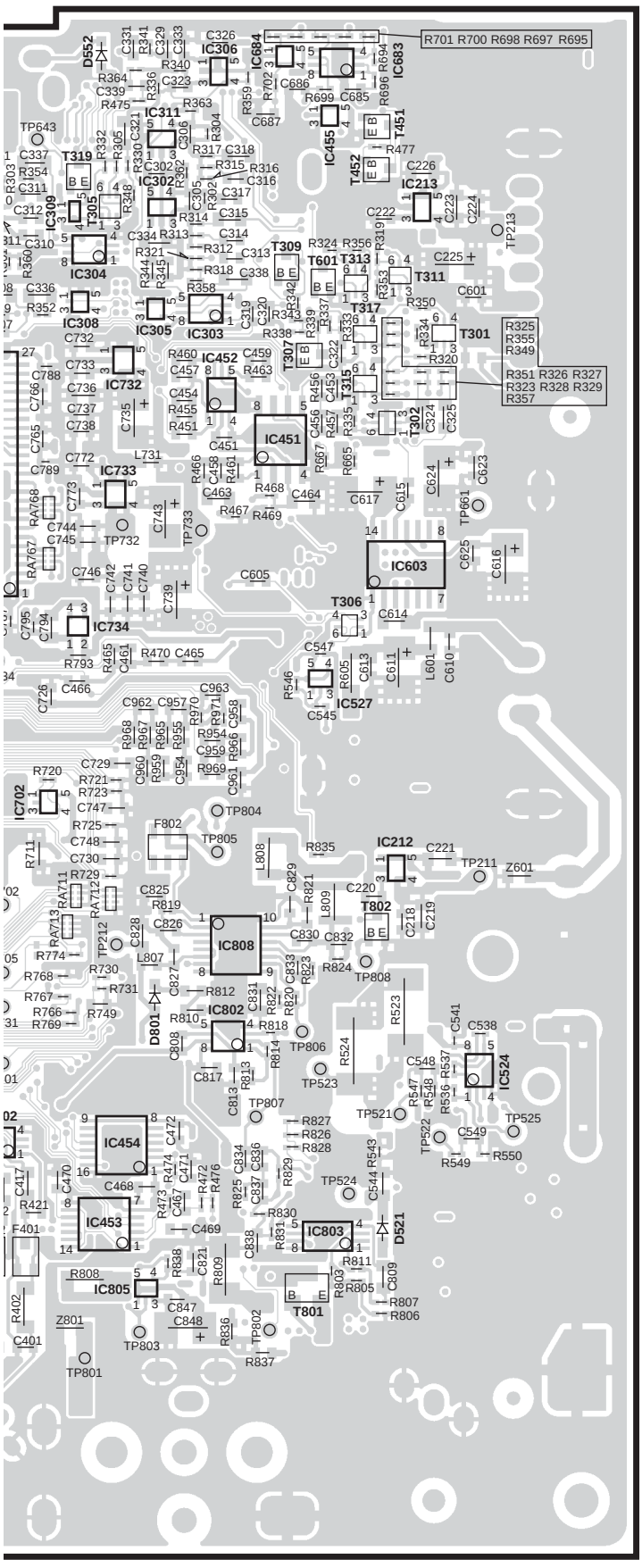
IC	T	Address
105		6G
106		7E
107		5F
254		2D
255		2D
256		2D
502		5F
521		6B
522		6B
523		6B
525		5B
526		5B
551		4E
641		2C
642		3C
731		5C
751		3D
752		3E
754		3D
952		4E
954		6E
955		5E
956		5E
	112	4E
	113	4E

Refer to the schematic diagram for the values of resistors and capacitors.

KNA-DV3100/DV3200

PC BOARD (FOIL SIDE VIEW)





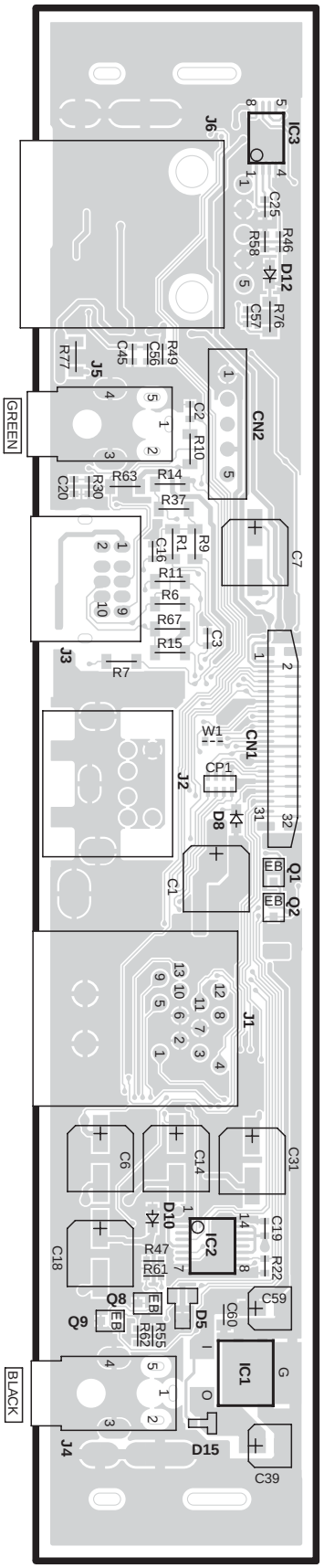
NAVI BOARD

IC	T	Address
101		5L
102		5M
103		5M
104		4L
108		3L
109		6N
111		7N
212		4Q
251		2O
301		2O
306		2P
309		2P
310		2O
524		5Q
561		3L
684		2P
701		5N
732		3P
733		3P
734		4P
753		3N
755		3O
781		4L
782		3M
783		3L
784		4M
951		5M
957		7N
	101	6L
	102	5L
	103	5L
	104	5L
	105	5L
	106	5L
	107	5L
	108	4L
	109	7N
	110	5M
	111	4M
	305	2P
	306	4Q
	307	3Q
	309	2Q
	319	2P

Refer to the schematic diagram for the values of resistors and capacitors.

PC BOARD (COMPONENT SIDE VIEW)

DAUGHTER UNIT
X89-2622-71 (J74-1508-22)

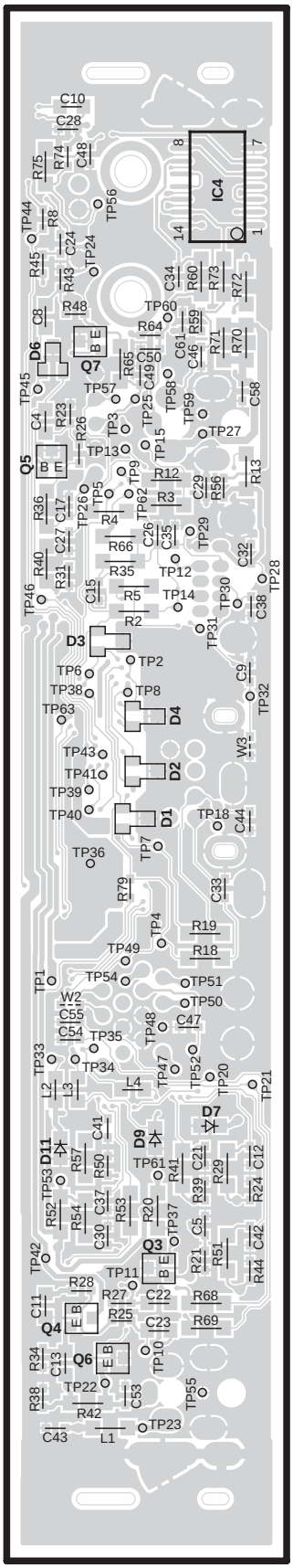


X89-2622-71

IC	Q	Address
1		6V
2		6V
3		2V
	1	5V
	2	5V
	8	6U

(FOIL SIDE VIEW)

DAUGHTER UNIT
X89-2622-71 (J74-1508-22)



X89-2622-71

IC	Q	Address
4		2X
	3	6X
	4	6X
	6	6X
	7	3X

Refer to the schematic diagram for the values of resistors and capacitors.

NAVI BOARD UNIT (W02-3395-15)

IC103,104 SWITCHING REGULATOR CONTROLLER

IC103 IC104

5V DD CHOPPER DRIVER

8.3V DD CHOPPER DRIVER

1.5V DD CHOPPER DRIVER

3.3V DD CHOPPER DRIVER

9V AVR

5V AVR

3.3V AVR

BU DETECTER

IC101 ACC/BU DET COMPARATOR

IC251 WAVEFORM SHAPING

MICROPROCESSOR

IC106

SW

IC109,111 LEVEL SHIFT 3.3V→5V

3V AVR

1.5V AVR

2.5V AVR

GPS ANT DET

CN100

PIN No.	PIN NAME
1	REVERSE
2	GND
3	BU14V
4	ILLUMI
5	PARKING
6	S.SENS
7	(NC)
8	ACC
9	(NC)
10	LMUTE#

KNA-DV3100/DV3200

CN600
8V
HDDP-SW
EJECT-SW
RESET-SW
GND

SWITCH UNIT (X25-9742-71)
CN11
GND
RESET
EJECT
RESET
EJECT
D1 : RD5.6S

IC561
IC751
IC753
IC752
IC755
IC754
128M SDRAM

IC781 4M SDRAM
IC784 16M FLASH MEMORY
IC782
IC783

IC521 RF AMP
IC522 XTAL OSC 16.368MHz
IC524-527 WAVEFORM SHAPING
IC525 (1/3)
IC525 (2/3)
IC524 (1/3)
IC524 (2/3)
IC526 (1/3)
IC526 (2/3)
IC524 (3/3)
IC525 (3/3)
IC526 (3/3)

IC701 (1/

KNA-DV3100/DV3200

IC701 (1/4) CORE1

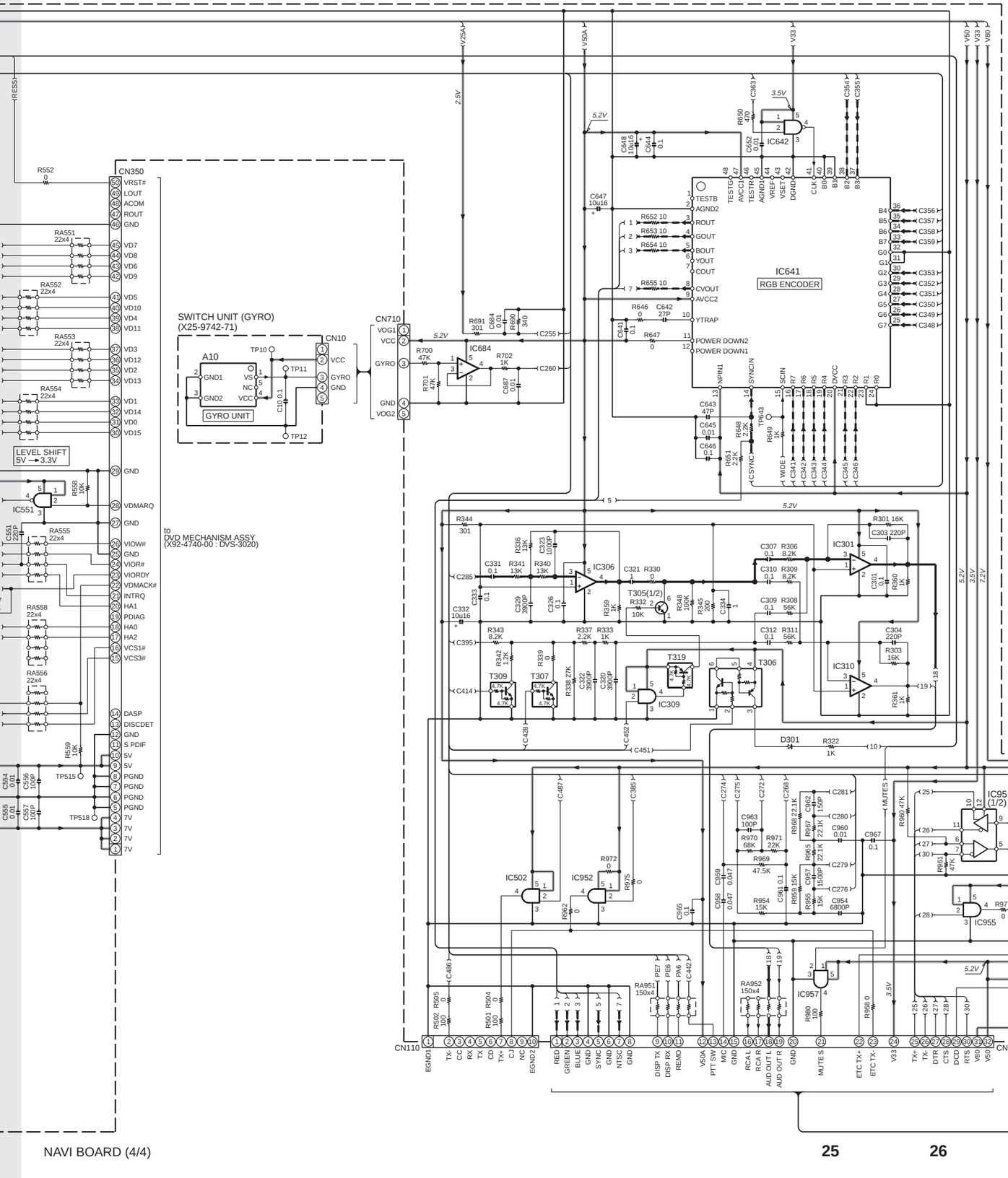
IC701 (2/4) CORE1

IC701 (3/4) CORE1

IC701 (4/4) CORE1

NAVI BOARD (3/4)

KNA-DV3100/DV3200

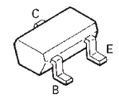


IC101	: TC75W56FU
IC102	: S-80818ANNP
IC103,104	: BA9743AFV
IC105	: S-81233SGUP
IC106	: MB89935B
IC107	: UPC2409AHF
IC108	: UPC2905T
IC109,256,309,502,952 955,956	: TC7SET08FU
IC111,406,551,642, 782,783	: TC7SH00FU
IC212	: TAR5S30-TE85L
IC251	: TD62604F
IC254,524-526	: TC7WU04FU
IC255	: TC7W53FU
IC301,306,310	: TA75S01F
IC521	: MB15H205
IC522	: L78-0885-08
IC523	: TA75W393FU
IC561	: TC7SH08FU
IC641	: CXA2106R
IC684	: TC75S51FU
IC701	: TS8ET7B
IC731,734	: S-817A15ANB
IC732,733	: TAR5S25
IC751	: TC7SB66FU
IC752-755	: HY57V281620HC
IC781	: M5M5V416BTP70H
IC784	: MBM29LV160BE90
IC951	: SN65C1168NS
IC954,957	: TC7SET00FU
D101	: 30D4
D102,211,251	: EP05DA40
D103	: U5ZA27C(TE24L)
D104,105	: RD16S
D106	: RD16FM
D107,252,301,521,781	: 1SS352
D108,113,114,116	: 1SS357
D109-112,115	: EC20QS06
D522	: 1SS362
T101,112	: 2SA1576
T102	: 2SJ327Z
T103,104	: DTC144EUA
T105,106,110,111	: FMY6
T107,108	: HAT1038RJ
T109,307,309	: DTC143EUA
T113	: 2SB1690K
T305	: UMX18N
T306	: UMD3N
T319	: DTA143EU

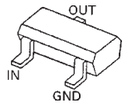
VIDEO LINE
AUDIO LINE
GND LINE
+B LINE

DTA143EU
DTC143TUA
2SA1576
2SA1576A

2SC4081

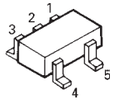


DTA114EUA
DTC143EUA
DTC144EUA

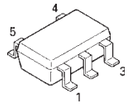


DAN202U

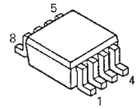
TC7SH08FU



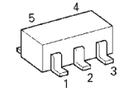
TC7SET08FU



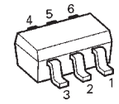
TC7WU04FU
TC7W53FU



TA75S01F



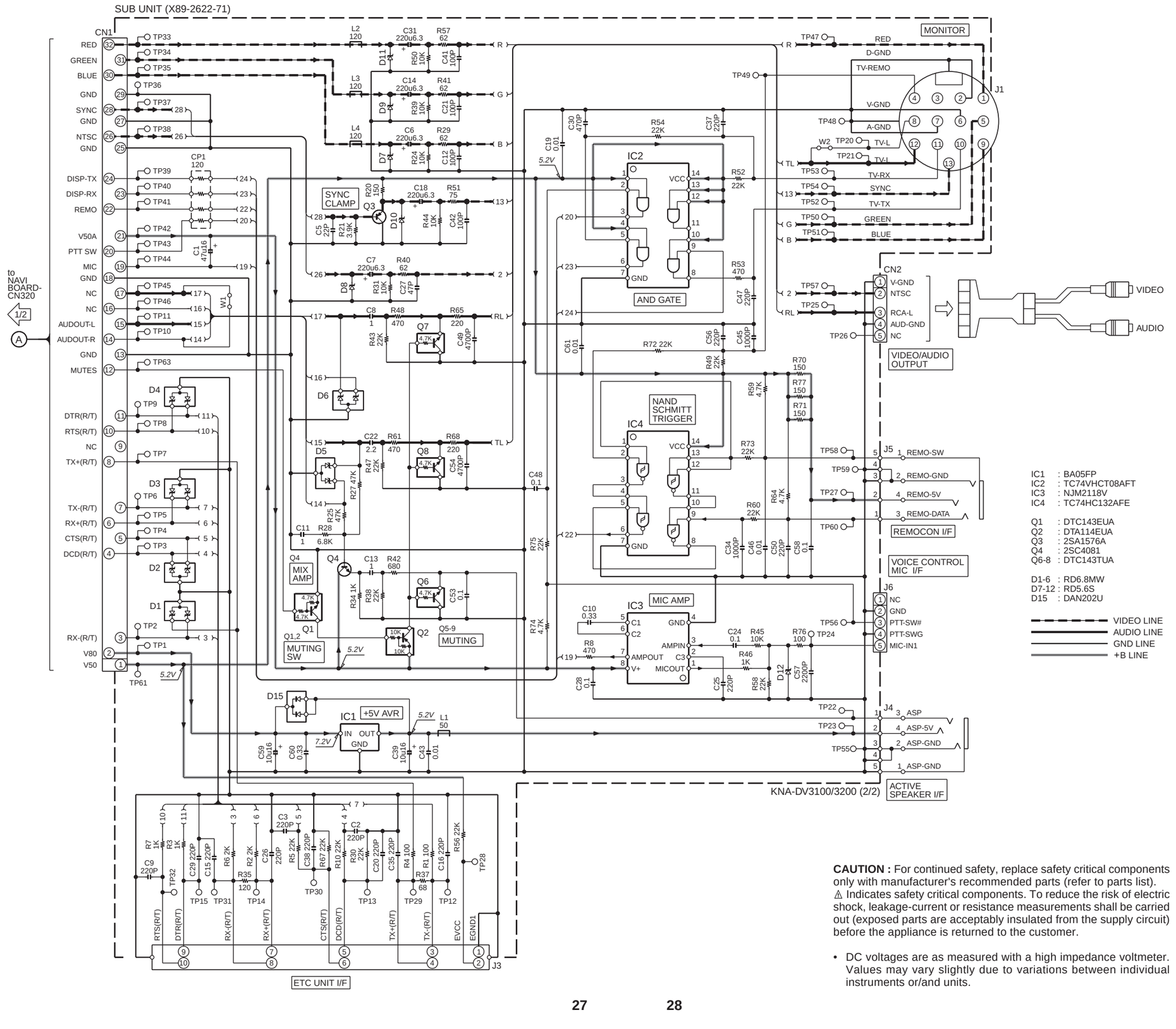
UMD3N



CAUTION : For continued safety, replace safety critical components only with manufacturer's recommended parts (refer to parts list).
⚠ Indicates safety critical components. To reduce the risk of electric shock, leakage-current or resistance measurements shall be carried out (exposed parts are acceptably insulated from the supply circuit) before the appliance is returned to the customer.

- DC voltages are as measured with a high impedance voltmeter. Values may vary slightly due to variations between individual instruments or/and units.

KNA-DV3100/DV3200



IC1 : BA05FP
IC2 : TC74VHCT08AFT
IC3 : NJM2118V
IC4 : TC74HC132AFE

Q1 : DTC143EUA
Q2 : DTA114EUA
Q3 : 2SA1576A
Q4 : 2SC4081
Q6-8 : DTC143TUA

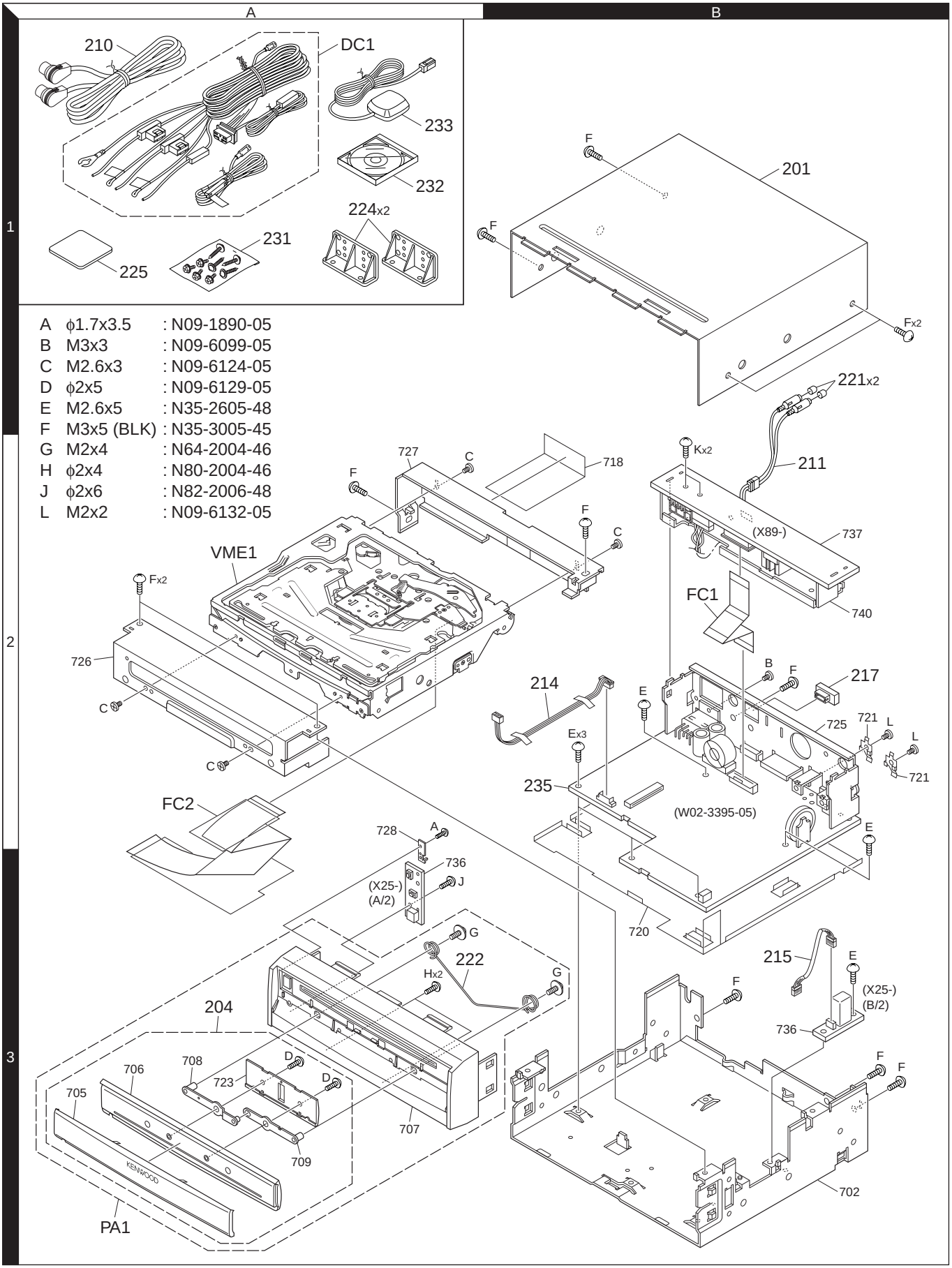
D1-6 : RD6.8MW
D7-12 : RD5.6S
D15 : DAN202U

VIDEO LINE
AUDIO LINE
GND LINE
+B LINE

CAUTION : For continued safety, replace safety critical components only with manufacturer's recommended parts (refer to parts list). ⚠ Indicates safety critical components. To reduce the risk of electric shock, leakage-current or resistance measurements shall be carried out (exposed parts are acceptably insulated from the supply circuit) before the appliance is returned to the customer.

- DC voltages are as measured with a high impedance voltmeter. Values may vary slightly due to variations between individual instruments or/and units.

EXPLODED VIEW (UNIT)



A φ1.7x3.5 : N09-1890-05
B M3x3 : N09-6099-05
C M2.6x3 : N09-6124-05
D φ2x5 : N09-6129-05
E M2.6x5 : N35-2605-48
F M3x5 (BLK) : N35-3005-45
G M2x4 : N64-2004-46
H φ2x4 : N80-2004-46
J φ2x6 : N82-2006-48
L M2x2 : N09-6132-05

Parts with the exploded numbers larger than 700 are not supplied.

PARTS LIST

✻ New parts
Parts without **Parts No.** are not supplied.
Les articles non mentionnes dans le **Parts No.** ne sont pas fournis.
Teile ohne **Parts No.** werden nicht geliefert.

Ref. No.	Add	New	Parts No.	Description	Destination
KNA-DV3100/DV3200					
201	1B	✻	A01-2816-02	METALLIC CABINET	K
201	1B	✻	A01-2821-02	METALLIC CABINET	E1
204	3A	✻	A21-4296-03	DRESSING PANEL ASSY	
PA1	3A	✻	A64-3105-03	PANEL ASSY	K
PA1	3A	✻	A64-3106-03	PANEL ASSY	E1
-			B46-0100-50	WARRANTY CARD	
-		✻	B46-0648-13	USER CARD	K
-		✻	B54-4407-00	INSTALLATION MANUAL (ENG.FRE.)	K
-		✻	B54-4408-00	INSTALLATION MANU (ENG.FRE.GER.)	E1
-		✻	B54-4408-00	INSTALLATION MANU (DUT.ITA.SPA.)	E1
-		✻	B64-2615-00	INSTRUCTION MANUAL (ENG.FRE.)	K
-		✻	B64-2616-00	INSTRUCTION MANUAL (ENG.FRE.)	E1
-		✻	B64-2617-00	INSTRUCTION MANUAL (GER.DUT.)	E1
-		✻	B64-2618-00	INSTRUCTION MANUAL (ITA.SPA.)	E1
210	1A		E30-6199-05	CONNECTING CORD ASSY	
211	2B	✻	E30-6252-05	AUDIO CORD	
214	2A	✻	E39-0552-05	WIRING HARNESS 3PIN	
215	3B	✻	E39-0553-15	WIRING HARNESS 5PIN	
⚠ DC1	1A		E30-4964-05	DC CORD ASSY	
FC1	2B		E39-0513-05	FLAT CABLE	
FC2	2A	✻	E39-0551-15	FLAT CABLE 50PIN	
217	2B		F09-1234-05	CAP	
221	1B		F29-0049-05	INSULATING COVER	
F1	1A	✻	F52-0003-05	FUSE (3A)	
F2	1A		F52-0004-05	FUSE (5A)	
222	3A	✻	G09-2055-04	FORMED WIRE	
-			H02-0829-13	INNER CARTON CASE	
-		✻	H10-4879-02	POLYSTYRENE FOAMED FIXTURE	
-		✻	H13-2045-04	CARTON BOARD	
-			H25-0338-04	PROTECTION BAG 250X350X0.03	
-			H25-1110-04	PROTECTION BAG 300X450X0.5	K
-			H25-1115-04	PROTECTION BAG	E1
-		✻	H54-2918-13	ITEM CARTON CASE	K
-		✻	H54-2919-03	ITEM CARTON CASE	E1
224	1A	✻	J19-5246-04	BRACKET	
225	1A		J21-9867-04	MOUNTING HARDWARE	
231	1A		N99-1713-05	SCREW SET	
A	3A		N09-1890-05	TAPTITE SCREW 1.7X3.5	
B	2B		N09-6099-05	MACHINE SCREW M3X3	
C	2A	✻	N09-6124-05	MACHINE SCREW M2.6X 3	
D	3A	✻	N09-6129-05	TAPTITE SCREW	
E	2B	✻	N35-2605-48	BINDING HEAD MACHINE SCREW	
F	1B		N35-3005-45	BINDING HEAD MACHINE SCREW	
G	3A		N64-2004-46	PAN HEAD SEMS SCREW	
H	3A		N80-2004-46	PAN HEAD TAPTITE SCREW	
J	3A		N82-2006-48	BINDING HEAD TAPTITE SCREW	
L	2B	✻	N09-6132-05	MACHINE SCREW M3X3	
232	1A	✻	W01-1618-05	DVD	K
232	1A	✻	W01-1619-05	DVD	E1
233	1A		W02-3261-05	ELECTRIC CIRCUIT MODULE (G-ANT)	
235	2B	✻	W02-3395-15	ELECTRIC CIRCUIT MODULE (NAVI-B)	
VME1	2A	✻	X92-4740-00	DVD MECHANISM ASSY DVS-3020	
SWITCH UNIT (X25-9742-71)					
C10			CK73GB1C104K	CHIP C 0.10UF K	
CN10			E41-0362-05	PIN ASSY 5P	
CN11			E40-5168-05	PIN ASSY 3P	
R3,4			RK73GB2A102J	CHIP R 1.0K J 1/10W	
S1,2			S70-0884-05	TACT SWITCH	
D1			RD5.6S	ZENER DIODE	
A10			W02-3382-05	ELECTRIC CIRCUIT MODULE (GYRO)	
DAUGHTER UNIT (X89-2622-71)					
C1			C92-0040-05	CHIP-ELE 47UF 16WV	
C2,3			CC73GCH1H221J	CHIP C 220PF J	
C5			CC73GCH1H220J	CHIP C 22PF J	
C6,7			C92-1791-05	ELECTRO 220UF 6.3WV	
C8			CK73FB1C105K	CHIP C 1.0UF K	
C9			CC73GCH1H221J	CHIP C 220PF J	
C10			CK73FB1C334K	CHIP C 0.33UF K	
C11			CK73FB1C105K	CHIP C 1.0UF K	
C12			CC73GCH1H101J	CHIP C 100PF J	
C13			CK73FB1C105K	CHIP C 1.0UF K	
C14			C92-1791-05	ELECTRO 220UF 6.3WV	
C15,16			CC73GCH1H221J	CHIP C 220PF J	
C18			C92-1791-05	ELECTRO 220UF 6.3WV	
C19			CK73GB1H103K	CHIP C 0.010UF K	
C20			CC73GCH1H221J	CHIP C 220PF J	
C21			CC73GCH1H101J	CHIP C 100PF J	
C22			CK73FB1A225K	CHIP C 2.2UF K	
C24			CK73GB1C104K	CHIP C 0.10UF K	
C25,26			CC73GCH1H221J	CHIP C 220PF J	
C27			CC73GCH1H470J	CHIP C 47PF J	
C28			CK73GB1C104K	CHIP C 0.10UF K	
C29			CC73GCH1H221J	CHIP C 220PF J	
C30			CC73GCH1H471J	CHIP C 470PF J	
C31			C92-1791-05	ELECTRO 220UF 6.3WV	
C34			CK73GB1H102K	CHIP C 1000PF K	
C35			CC73GCH1H221J	CHIP C 220PF J	
C37,38			CC73GCH1H221J	CHIP C 220PF J	
C39			C92-0671-05	ELECTRO 10UF 16WV	
C41,42			CC73GCH1H101J	CHIP C 100PF J	
C43			CK73GB1H103K	CHIP C 0.010UF K	
C45			CK73GB1H102K	CHIP C 1000PF K	
C46			CK73GB1H103K	CHIP C 0.010UF K	
C47			CC73GCH1H221J	CHIP C 220PF J	
C48			CK73GB1C104K	CHIP C 0.10UF K	
C49			CK73GB1H472K	CHIP C 4700PF K	
C50			CC73GCH1H221J	CHIP C 220PF J	
C53			CK73GB1C104K	CHIP C 0.10UF K	
C54			CK73GB1H472K	CHIP C 4700PF K	
C56			CC73GCH1H221J	CHIP C 220PF J	

K : KNA-DV3100 **E1** : KNA-DV3200
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Ref. No.	Add	New	Parts No.	Description	Destination
C57			CK73GB1H222K	CHIP C 2200PF K	
C58			CK73GB1C104K	CHIP C 0.10UF K	
C59			C92-0671-05	ELECTRO 10UF 16WV	
C60			CK73FB1C334K	CHIP C 0.33UF K	
C61			CK73GB1H103K	CHIP C 0.010UF K	
CN1			E41-0401-05	FLAT CABLE CONNECTOR 32PIN	
CN2			E40-3240-05	PIN ASSY 5P	
J1			E56-0843-05	CYLINDRICAL RECEPTACLE 13P	
J3			E58-0867-15	RECTANGULAR RECEPTACLE	
J4			E11-0635-05	MINIATURE PHONE JACK	
J5			E11-0634-05	MINIATURE PHONE JACK	
J6			E58-0906-05	RECTANGULAR RECEPTACLE	
L1			L92-0315-05	CHIP FERRITE	
L2-4			L92-0340-05	CHIP FERRITE	
K	2B		N83-3005-41	PAN HEAD TAPTITE SCREW	
CP1			R90-0727-05	MULTI-COMP 120 X4	
R1			RK73EB2E101J	CHIP R 100 J 1/4W	
R2		✻	RK73EB2E202J	CHIP R 2.0K J 1/4W	
R3			RK73EB2E102J	CHIP R 1.0K J 1/4W	
R4			RK73EB2E101J	CHIP R 100 J 1/4W	
R5			RK73EB2E223J	CHIP R 22K J 1/4W	
R6		✻	RK73EB2E202J	CHIP R 2.0K J 1/4W	
R7			RK73EB2E102J	CHIP R 1.0K J 1/4W	
R8			RK73GB2A471J	CHIP R 470 J 1/10W	
R10			RK73EB2E223J	CHIP R 22K J 1/4W	
R20			RK73EB2E151J	CHIP R 150 J 1/4W	
R21			RK73GB2A392J	CHIP R 3.9K J 1/10W	
R24			RK73GB2A103J	CHIP R 10K J 1/10W	
R25			RK73GB2A473J	CHIP R 47K J 1/10W	
R27			RK73GB2A473J	CHIP R 47K J 1/10W	
R28			RK73GB2A682J	CHIP R 6.8K J 1/10W	
R29			RK73EB2E620J	CHIP R 62 J 1/4W	
R30			RK73GB2A223J	CHIP R 22K J 1/10W	
R31			RK73GB2A103J	CHIP R 10K J 1/10W	
R34			RK73GB2A102J	CHIP R 1.0K J 1/10W	
R35			RK73EB2E121J	CHIP R 120 J 1/4W	
R38			RK73GB2A223J	CHIP R 22K J 1/10W	
R39			RK73GB2A103J	CHIP R 10K J 1/10W	
R40,41			RK73EB2E620J	CHIP R 62 J 1/4W	
R42			RK73EB2E681J	CHIP R 680 J 1/4W	
R43			RK73GB2A223J	CHIP R 22K J 1/10W	
R44,45			RK73GB2A103J	CHIP R 10K J 1/10W	
R46			RK73GB2A102J	CHIP R 1.0K J 1/10W	
R47			RK73GB2A223J	CHIP R 22K J 1/10W	
R48			RK73GB2A471J	CHIP R 470 J 1/10W	
R49			RK73GB2A223J	CHIP R 22K J 1/10W	
R50			RK73GB2A103J	CHIP R 10K J 1/10W	
R51			RK73EB2E750J	CHIP R 75 J 1/4W	
R52			RK73EB2E223J	CHIP R 22K J 1/4W	
R53			RK73EB2E471J	CHIP R 470 J 1/4W	
R54			RK73EB2E223J	CHIP R 22K J 1/4W	
R56			RK73GB2A223J	CHIP R 22K J 1/10W	
R57			RK73EB2E620J	CHIP R 62 J 1/4W	

DAUGHTER UNIT (X89-2622-71)

Ref. No.	Add	New	Parts No.	Description	Destination
R58			RK73GB2A223J	CHIP R 22K J 1/10W	
R59			RK73GB2A472J	CHIP R 4.7K J 1/10W	
R60			RK73EB2E223J	CHIP R 22K J 1/4W	
R61			RK73GB2A471J	CHIP R 470 J 1/10W	
R64			RK73GB2A472J	CHIP R 4.7K J 1/10W	
R65			RK73EB2E221J	CHIP R 220 J 1/4W	
R67			RK73EB2E223J	CHIP R 22K J 1/4W	
R68			RK73EB2E221J	CHIP R 220 J 1/4W	
R70,71			RK73EB2E151J	CHIP R 150 J 1/4W	
R72,73			RK73EB2E223J	CHIP R 22K J 1/4W	
R74			RK73GB2A472J	CHIP R 4.7K J 1/10W	
R75			RK73EB2E223J	CHIP R 22K J 1/4W	
R76			RK73EB2E101J	CHIP R 100 J 1/4W	
R77			RK73EB2E151J	CHIP R 150 J 1/4W	
W1,2			R92-1252-05	CHIP R 0 OHM J 1/16W	
D1-6			RD6.8MW	ZENER DIODE 6.8V	
D7-12			RD5.6S	ZENER DIODE 5.6V	
D15			DAN202U	DIODE	
IC1			BA05FP	ANALOGUE IC	
IC2			TC74VHCT08AFT	MOS-IC 14P	
IC3			NJM2118V	ANALOGUE IC	
IC4			TC74HC132AFE	MOS-IC	
Q1			DTC143EUA	DIGITAL TRANSISTOR	
Q2			DTA114EUA	DIGITAL TRANSISTOR	
Q3			2SA1576A	TRANSISTOR	
Q4			2SC4081	TRANSISTOR	
Q6-8			DTC143TUA	DIGITAL TRANSISTOR	

ELECTRIC CIRCUIT MODULE (NAVI UNIT W02-3395-15)

C101,102			CK73GB1H104K	CHIP C 0.10UF K	
C105,106			CK73GB1H104K	CHIP C 0.10UF K	
C107,108		✻	C90-5512-08	ELECTRO 1000UF 25WV	
C109			CK73GB1H103K	CHIP C 0.010UF K	
C110		✻	C92-1811-08	ELECTRO 47UF 35WV	
C111			CK73GB1H103K	CHIP C 0.010UF K	
C112		✻	C92-1807-08	ELECTRO 220UF 35WV	
C113,114			CC73GCH1H471J	CHIP C 470PF J	
C115,116			CK73GB1H104K	CHIP C 0.10UF K	
C117			CK73FB1C334K	CHIP C 0.33UF K	
C118		✻	C93-1325-08	CHIP C 1UF K	
C119		✻	C92-1810-08	ELECTRO 47UF 6.3WV	
C120-122			CK73GB1H104K	CHIP C 0.10UF K	
C123			CK73FB1C334K	CHIP C 0.33UF K	
C124		✻	C93-1325-08	CHIP C 1UF K	
C125-127			CK73GB1H104K	CHIP C 0.10UF K	
C128		✻	C92-1811-08	ELECTRO 47UF 35WV	
C129,130			CK73GB1H104K	CHIP C 0.10UF K	
C132,133			CC73GCH1H681J	CHIP C 680PF J	
C134			C92-1776-05	ELECTRO 470UF 16WV	
C135		✻	C92-1808-08	ELECTRO 1500UF 6.3WV	
C136,137			CK73GB1H104K	CHIP C 0.10UF K	
C139,140			CK73GB1H104K	CHIP C 0.10UF K	
C141			CK73GB1H103K	CHIP C 0.010UF K	
C142			CK73GB1H104K	CHIP C 0.10UF K	
C143,144			CC73GCH1H681J	CHIP C 680PF J	

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Ref. No.	Add	New	Parts No.	Description			Destination
C145		✻	C92-1808-08	ELECTRO	1500UF	6.3WV	
C146		✻	C92-1806-08	ELECTRO	1000UF	10WV	
C147-153			CK73GB1H104K	CHIP C	0.10UF	K	
C154			C92-1776-05	ELECTRO	470UF	16WV	
C155,156			CK73GB1H104K	CHIP C	0.10UF	K	
C157		✻	C92-1809-08	ELECTRO	100UF	16WV	
C159		✻	C93-1325-08	CHIP C	1UF	K	
C160		✻	C90-5511-08	ELECTRO	270UF	16WV	
C162		✻	C93-1325-08	CHIP C	1UF	K	
C216		✻	C93-1327-08	CHIP C	10UF	16WV	
C218			CK73GB1H103K	CHIP C	0.010UF	K	
C219		✻	C93-1325-08	CHIP C	1UF	K	
C220			CK73GB1H103K	CHIP C	0.010UF	K	
C221		✻	C93-1325-08	CHIP C	1UF	K	
C251			CK73GB1H472K	CHIP C	4700PF	K	
C252		✻	C92-1805-08	ELECTRO	22UF	16WV	
C253		✻	C93-1325-08	CHIP C	1UF	K	
C254,255			CK73GB1H102K	CHIP C	1000PF	K	
C256			CK73GB1H103K	CHIP C	0.010UF	K	
C263			CK73GB1H472K	CHIP C	4700PF	K	
C264,265			CK73GB1H104K	CHIP C	0.10UF	K	
C301			CK73GB1H104K	CHIP C	0.10UF	K	
C303,304			CC73GCH1H221J	CHIP C	220PF	J	
C307			CK73GB1H104K	CHIP C	0.10UF	K	
C309,310			CK73GB1H104K	CHIP C	0.10UF	K	
C312			CK73GB1H104K	CHIP C	0.10UF	K	
C320			CK73GB1H392K	CHIP C	3900PF	K	
C321		✻	C93-1325-08	CHIP C	1UF	K	
C322			CK73GB1H392K	CHIP C	3900PF	K	
C323			CK73GB1H102K	CHIP C	1000PF	K	
C326			CK73GB1H104K	CHIP C	0.10UF	K	
C329			CK73GB1H392K	CHIP C	3900PF	K	
C331			CK73GB1H104K	CHIP C	0.10UF	K	
C332		✻	C93-1327-08	CHIP C	10UF	16WV	
C333			CK73GB1H104K	CHIP C	0.10UF	K	
C334		✻	C93-1325-08	CHIP C	1UF	K	
C521			CK73HB1C103K	CHIP C	0.010UF	K	
C522-527			CC73HCH1H100D	CHIP C	10PF	D	
C528			CK73HB1C103K	CHIP C	0.010UF	K	
C529,530			CK73HB1A473K	CHIP C	0.047UF	K	
C531			CK73HB1H102K	CHIP C	1000PF	K	
C532			CK73HB1C103K	CHIP C	0.010UF	K	
C533			CK73HB1A473K	CHIP C	0.047UF	K	
C534			CK73HB1H102K	CHIP C	1000PF	K	
C535			CK73HB1A473K	CHIP C	0.047UF	K	
C536-543			CK73HB1C103K	CHIP C	0.010UF	K	
C544		✻	C93-1325-08	CHIP C	1UF	K	
C546			CC73HCH1H100D	CHIP C	10PF	D	
C548,549			CC73GCH1H470J	CHIP C	47PF	J	
C551			CC73GCH1H221J	CHIP C	220PF	J	
C552		✻	C93-1327-08	CHIP C	10UF	16WV	
C553		✻	C92-1825-08	TANTALUM C	4.7UF	25WV	
C554,555			CK73GB1H103K	CHIP C	0.010UF	K	
C556,557			CC73GCH1H101J	CHIP C	100PF	J	
C561			CK73GB1H104K	CHIP C	0.10UF	K	

ELECTRIC CIRCUIT MODULE (NAVI UNIT W02-3395-15)

Ref. No.	Add	New	Parts No.	Description			Destination
C562			CK73GB1H103K	CHIP C	0.010UF	K	
C641			CK73GB1H104K	CHIP C	0.10UF	K	
C642			CC73GCH1H270J	CHIP C	27PF	J	
C643			CC73GCH1H470J	CHIP C	47PF	J	
C644			CK73GB1H104K	CHIP C	0.10UF	K	
C645			CK73GB1H103K	CHIP C	0.010UF	K	
C646			CK73GB1H104K	CHIP C	0.10UF	K	
C647,648		✻	C93-1327-08	CHIP C	10UF	16WV	
C652			CK73GB1H103K	CHIP C	0.010UF	K	
C684			CK73GB1H103K	CHIP C	0.010UF	K	
C687			CK73GB1H103K	CHIP C	0.010UF	K	
C701			CC73GCH1H100D	CHIP C	10PF	D	
C702			CK73GB1H103K	CHIP C	0.010UF	K	
C703			CC73GCH1H470J	CHIP C	47PF	J	
C704			CK73GB1H472K	CHIP C	4700PF	K	
C705			CC73GCH1H100D	CHIP C	10PF	D	
C706			CK73GB1H472K	CHIP C	4700PF	K	
C707,708			CC73GCH1H471J	CHIP C	470PF	J	
C709,710			CK73GB1H472K	CHIP C	4700PF	K	
C711-713			CC73GCH1H100D	CHIP C	10PF	D	
C714			CC73GCH1H471J	CHIP C	470PF	J	
C715,716			CK73GB1H472K	CHIP C	4700PF	K	
C717			CC73GCH1H471J	CHIP C	470PF	J	
C718			CK73GB1H103K	CHIP C	0.010UF	K	
C719			CK73GB1H472K	CHIP C	4700PF	K	
C720			CC73GCH1H100D	CHIP C	10PF	D	
C721			CK73GB1H472K	CHIP C	4700PF	K	
C722			CC73GCH1H471J	CHIP C	470PF	J	
C723			CK73GB1H103K	CHIP C	0.010UF	K	
C724			CC73GCH1H100D	CHIP C	10PF	D	
C725,726			CK73GB1H104K	CHIP C	0.10UF	K	
C727,728			CC73GCH1H100D	CHIP C	10PF	D	
C730,731			CK73GB1H104K	CHIP C	0.10UF	K	
C732,733			CK73GB1H103K	CHIP C	0.010UF	K	
C734		✻	C93-1325-08	CHIP C	1UF	K	
C735		✻	C93-1327-08	CHIP C	10UF	16WV	
C736		✻	C93-1325-08	CHIP C	1UF	K	
C737			CC73GCH1H471J	CHIP C	470PF	J	
C738			CK73GB1H472K	CHIP C	4700PF	K	
C739		✻	C93-1327-08	CHIP C	10UF	16WV	
C740			CK73GB1H104K	CHIP C	0.10UF	K	
C741			CK73GB1H472K	CHIP C	4700PF	K	
C742			CC73GCH1H471J	CHIP C	470PF	J	
C743		✻	C93-1327-08	CHIP C	10UF	16WV	
C744			CK73GB1H104K	CHIP C	0.10UF	K	
C745			CK73GB1H472K	CHIP C	4700PF	K	
C746			CC73GCH1H471J	CHIP C	470PF	J	
C749			CK73GB1H102K	CHIP C	1000PF	K	
C750			CC73GCH1H100D	CHIP C	10PF	D	
C751		✻	C93-1325-08	CHIP C	1UF	K	
C752			CK73GB1H472K	CHIP C	4700PF	K	
C753			CC73GCH1H471J	CHIP C	470PF	J	
C754			CK73GB1H472K	CHIP C	4700PF	K	
C755		✻	C93-1325-08	CHIP C	1UF	K	
C756			CK73GB1H472K	CHIP C	4700PF	K	

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C757			CC73GCH1H471J	CHIP C 470PF J	
C758			CK73GB1H472K	CHIP C 4700PF K	
C759		✻	C93-1325-08	CHIP C 1UF K	
C760			CK73GB1H472K	CHIP C 4700PF K	
C761			CC73GCH1H471J	CHIP C 470PF J	
C762			CK73GB1H472K	CHIP C 4700PF K	
C763		✻	C93-1325-08	CHIP C 1UF K	
C764			CK73GB1H472K	CHIP C 4700PF K	
C765			CC73GCH1H471J	CHIP C 470PF J	
C766			CK73GB1H472K	CHIP C 4700PF K	
C767			CC73GCH1H100D	CHIP C 10PF D	
C770,771			CC73HCH1H100D	CHIP C 10PF D	
C772,773			CK73GB1H103K	CHIP C 0.010UF K	
C774-776			CC73HCH1H100D	CHIP C 10PF D	
C778-780			CC73HCH1H100D	CHIP C 10PF D	
C781			CK73GB1H102K	CHIP C 1000PF K	
C782			CK73GB1H103K	CHIP C 0.010UF K	
C783			CK73GB1H102K	CHIP C 1000PF K	
C784			CK73GB1H103K	CHIP C 0.010UF K	
C785			CK73GB1H102K	CHIP C 1000PF K	
C786			CK73GB1H472K	CHIP C 4700PF K	
C787-789			CC73HCH1H100D	CHIP C 10PF D	
C790,791		✻	C93-1327-08	CHIP C 10UF 16WV	
C793			CK73GB1H104K	CHIP C 0.10UF K	
C794		✻	C93-1325-08	CHIP C 1UF K	
C795			CK73HB1H102K	CHIP C 1000PF K	
C902			CK73GB1H103K	CHIP C 0.010UF K	
C954			CK73GB1H682K	CHIP C 6800PF K	
C957			CK73GB1H152K	CHIP C 1500PF K	
C958,959			CK73GB1H473K	CHIP C 0.047UF K	
C960			CK73GB1H103K	CHIP C 0.010UF K	
C961			CK73GB1H104K	CHIP C 0.10UF K	
C962			CC73GCH1H151J	CHIP C 150PF J	
C963			CC73GCH1H101J	CHIP C 100PF J	
C964-967			CK73GB1H104K	CHIP C 0.10UF K	
CN100		✻	E58-0976-08	RECTANGULAR RECEPTACLE	
CN110			E40-5751-05	PIN ASSY	
CN320		✻	E41-2006-08	FLAT CABLE CONNECTOR	
CN350		✻	E41-2003-08	FLAT CABLE CONNECTOR	
CN400			E58-0921-08	RECTANGULAR RECEPTACLE	
CN600		✻	E41-2004-08	PIN ASSY	
CN710		✻	E41-0362-05	PIN ASSY	
F521		✻	L78-0887-08	FILTER	
L101			L33-1171-08	CHOKE COIL	
L102,103		✻	L33-1855-05	CHOKE COIL 100UH	
L104		✻	L33-1955-08	CHOKE COIL	
L105		✻	L33-1855-05	CHOKE COIL 100UH	
L521		✻	L33-1951-08	CHOKE COIL 39nH	
L522		✻	L33-1952-08	CHOKE COIL 100nH	
L523		✻	L33-1951-08	CHOKE COIL 39nH	
L731			L92-0330-05	CHIP FERRITE	
X101			L78-0823-08	RESONATOR 4MHz	
X701		✻	L78-0884-08	RESONATOR 12.080964MHz	
X702		✻	L78-0886-08	RESONATOR 32.768kHz	

ELECTRIC CIRCUIT MODULE (NAVI UNIT W02-3395-15)

Ref. No.	Add	New	Parts No.	Description	Destination
R101,102			RK73EB2E392J	CHIP R 3.9K J 1/4W	
R103			R92-3207-05	CHIP R 17.8K J 1/4W	
R104		✻	R92-3437-08	CHIP R 34.8K J 1/10W	
R105			RK73EB2E103J	CHIP R 10K J 1/4W	
R106			RK73EB2E223J	CHIP R 22K J 1/4W	
R107		✻	R92-3446-08	CHIP R 8.06K J 1/10W	
R108		✻	R92-3424-08	CHIP R 10K J 1/10W	
R109		✻	R92-3443-08	CHIP R 49.9K J 1/10W	
R110		✻	R92-3452-08	CHIP R 180 J 1W	
R111		✻	R92-3429-08	CHIP R 150K J 1/10W	
R112			RK73EB2E223J	CHIP R 22K J 1/4W	
R113		✻	R92-3434-08	CHIP R 24.9K J 1/10W	
R114		✻	R92-3448-08	CHIP R 8.66K J 1/10W	
R115			RK73EB2E103J	CHIP R 10K J 1/4W	
R116		✻	R92-3424-08	CHIP R 10K J 1/10W	
R117		✻	R92-3425-08	CHIP R 100K J 1/10W	
R118		✻	R92-3441-08	CHIP R 46.4K J 1/10W	
R119		✻	R92-3425-08	CHIP R 100K J 1/10W	
R120		✻	R92-3429-08	CHIP R 150K J 1/10W	
R121,122		✻	R92-3434-08	CHIP R 24.9K J 1/10W	
R123		✻	R92-3433-08	CHIP R 22.6K J 1/10W	
R124			RK73GB2A104J	CHIP R 100K J 1/10W	
R125		✻	R92-3430-08	CHIP R 18.2K J 1/10W	
R126		✻	R92-3425-08	CHIP R 100K J 1/10W	
R127			RK73GB2A104J	CHIP R 100K J 1/10W	
R130			RK73GB2A104J	CHIP R 100K J 1/10W	
R131-133		✻	R92-3434-08	CHIP R 24.9K J 1/10W	
R134			RK73GB2A104J	CHIP R 100K J 1/10W	
R135		✻	R92-3428-08	CHIP R 15K J 1/10W	
R136		✻	R92-3434-08	CHIP R 24.9K J 1/10W	
R137			RK73GB2A104J	CHIP R 100K J 1/10W	
R138		✻	R92-3434-08	CHIP R 24.9K J 1/10W	
R139		✻	R92-3426-08	CHIP R 12.1K J 1/10W	
R140,141			RK73GB2A104J	CHIP R 100K J 1/10W	
R142		✻	RK73HB1J000J	CHIP R 0.0 J 1/16W	
R143		✻	R92-3434-08	CHIP R 24.9K J 1/10W	
R144			RK73GB2A104J	CHIP R 100K J 1/10W	
R145,146		✻	R92-3434-08	CHIP R 24.9K J 1/10W	
R147			RK73EB2E222J	CHIP R 2.2K J 1/4W	
R148			RK73EB2E102J	CHIP R 1.0K J 1/4W	
R149			RK73EB2E331J	CHIP R 330 J 1/4W	
R150,151			RK73HB1J470J	CHIP R 47 J 1/16W	
R152			RK73HB1J223J	CHIP R 22K J 1/16W	
R153			RK73HB1J103J	CHIP R 10K J 1/16W	
R154			RK73HB1J223J	CHIP R 22K J 1/16W	
R155,156		✻	R92-3451-08	CHIP R 3.3 J 1/10W	
R157			RK73HB1J222J	CHIP R 2.2K J 1/16W	
R158		✻	R92-3432-08	CHIP R 22.1K J 1/10W	
R159		✻	R92-3476-08	CHIP R 4.75K J 1/10W	
R160		✻	R92-3432-08	CHIP R 22.1K J 1/10W	
R161		✻	R92-3427-08	CHIP R 13K J 1/10W	
R162			RK73HB1J222J	CHIP R 2.2K J 1/16W	
R163			RK73HB1J102J	CHIP R 1.0K J 1/16W	
R164			RK73EB2E331J	CHIP R 330 J 1/4W	
R165			RK73EB2E222J	CHIP R 2.2K J 1/4W	

K : KNA-DV3100 **E1** : KNA-DV3200
(**K** : North America **E** : Europe)

⚠ Indicates safety critical components.

PARTS LIST

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Teile ohne **Parts No.** werden nicht geliefert.

Ref. No.	Add	New	Parts No.	Description			Destination
R166			RK73EB2E102J	CHIP R	1.0K	J 1/4W	
R167,168			RK73HB1J470J	CHIP R	47	J 1/16W	
R169			RK73HB1J103J	CHIP R	10K	J 1/16W	
R170			RK73HB1J223J	CHIP R	22K	J 1/16W	
R172			RK73HB1J473J	CHIP R	47K	J 1/16W	
R173			RK73HB1J104J	CHIP R	100K	J 1/16W	
R175,176		✻	R92-3451-08	CHIP R	3.3	J 1/10W	
R177-180		✻	R92-3423-08	CHIP R	1K	J 1/10W	
R181			RK73HB1J104J	CHIP R	100K	J 1/16W	
R182		✻	R92-3461-08	CHIP R	16K	J 1/16W	
R183		✻	R92-3445-08	CHIP R	5.90K	J 1/10W	
R184,185		✻	R92-3434-08	CHIP R	24.9K	J 1/10W	
R186		✻	R92-3447-08	CHIP R	8.25K	J 1/10W	
R187			RK73HB1J331J	CHIP R	330	J 1/16W	
R188,189			RK73HB1J102J	CHIP R	1.0K	J 1/16W	
R190			RK73HB1J472J	CHIP R	4.7K	J 1/16W	
R191,192			RK73HB1J104J	CHIP R	100K	J 1/16W	
R195			RK73HB1J102J	CHIP R	1.0K	J 1/16W	
R202			RK73HB1J223J	CHIP R	22K	J 1/16W	
R203			RK73HB1J104J	CHIP R	100K	J 1/16W	
R205			RK73HB1J222J	CHIP R	2.2K	J 1/16W	
R207		✻	RK73HB1J000J	CHIP R	0.0	J 1/16W	
R209			RK73HB1J471J	CHIP R	470	J 1/16W	
R238,239			RK73HB1J223J	CHIP R	22K	J 1/16W	
R240		✻	RK73HB1J000J	CHIP R	0.0	J 1/16W	
R241		✻	R92-3436-08	CHIP R	3.01K	J 1/10W	
R242-244		✻	R92-3423-08	CHIP R	1K	J 1/10W	
R251,252			RK73EB2E103J	CHIP R	10K	J 1/4W	
R253,254			RK73EB2E122J	CHIP R	1.2K	J 1/4W	
R256			RK73EB2E122J	CHIP R	1.2K	J 1/4W	
R257			RK73EB2E272J	CHIP R	2.7K	J 1/4W	
R258			RK73HB1J472J	CHIP R	4.7K	J 1/16W	
R259			RK73EB2E272J	CHIP R	2.7K	J 1/4W	
R260,261			RK73HB1J563J	CHIP R	56K	J 1/16W	
R263			RK73EB2E223J	CHIP R	22K	J 1/4W	
R264			RK73HB1J223J	CHIP R	22K	J 1/16W	
R265			RK73HB1J103J	CHIP R	10K	J 1/16W	
R266			RK73HB1J104J	CHIP R	100K	J 1/16W	
R267			RK73HB1J393J	CHIP R	39K	J 1/16W	
R268			RK73HB1J105J	CHIP R	1.0M	J 1/16W	
R269			RK73HB1J102J	CHIP R	1.0K	J 1/16W	
R271			RK73HB1J103J	CHIP R	10K	J 1/16W	
R272		✻	R92-3431-08	CHIP R	200	J 1/10W	
R273		✻	R92-3435-08	CHIP R	301	J 1/10W	
R274			RK73HB1J103J	CHIP R	10K	J 1/16W	
R275			RK73HB1J104J	CHIP R	100K	J 1/16W	
R277			RK73HB1J103J	CHIP R	10K	J 1/16W	
R278			RK73HB1J224J	CHIP R	220K	J 1/16W	
R279,280		✻	RK73HB1J000J	CHIP R	0.0	J 1/16W	
R301		✻	R92-3461-08	CHIP R	16K	J 1/16W	
R303		✻	R92-3461-08	CHIP R	16K	J 1/16W	
R306			RK73HB1J822J	CHIP R	8.2K	J 1/16W	
R308			RK73HB1J563J	CHIP R	56K	J 1/16W	
R309			RK73HB1J822J	CHIP R	8.2K	J 1/16W	
R311			RK73HB1J563J	CHIP R	56K	J 1/16W	

ELECTRIC CIRCUIT MODULE (NAVI UNIT W02-3395-15)

Ref. No.	Add	New	Parts No.	Description			Destination
R322			RK73EB2E102J	CHIP R	1.0K	J 1/4W	
R330		✻	RK73HB1J000J	CHIP R	0.0	J 1/16W	
R332			RK73HB1J103J	CHIP R	10K	J 1/16W	
R333			RK73HB1J102J	CHIP R	1.0K	J 1/16W	
R336		✻	R92-3460-08	CHIP R	13K	J 1/16W	
R337			RK73HB1J222J	CHIP R	2.2K	J 1/16W	
R338			RK73HB1J273J	CHIP R	27K	J 1/16W	
R339		✻	RK73HB1J000J	CHIP R	0.0	J 1/16W	
R340,341		✻	R92-3460-08	CHIP R	13K	J 1/16W	
R342			RK73HB1J122J	CHIP R	1.2K	J 1/16W	
R343			RK73HB1J822J	CHIP R	8.2K	J 1/16W	
R344		✻	R92-3435-08	CHIP R	301	J 1/10W	
R345		✻	R92-3431-08	CHIP R	200	J 1/10W	
R348			RK73HB1J104J	CHIP R	100K	J 1/16W	
R359-361			RK73HB1J102J	CHIP R	1.0K	J 1/16W	
R465		✻	R92-3442-08	CHIP R	47.5K	J 1/10W	
R501,502			RK73EB2E101J	CHIP R	100	J 1/4W	
R504,505		✻	RK73HB1J000J	CHIP R	0.0	J 1/16W	
R517			RK73HB1J223J	CHIP R	22K	J 1/16W	
R521		✻	R92-3424-08	CHIP R	10K	J 1/10W	
R522		✻	R92-3439-08	CHIP R	40.2K	J 1/10W	
R523,524			R92-3210-05	CHIP R	30	J 1W	
R525			RK73HB1J223J	CHIP R	22K	J 1/16W	
R526		✻	R92-3424-08	CHIP R	10K	J 1/10W	
R527		✻	R92-3438-08	CHIP R	37.4K	J 1/10W	
R528		✻	R92-3424-08	CHIP R	10K	J 1/10W	
R529		✻	R92-3427-08	CHIP R	13K	J 1/10W	
R530			RK73HB1J124J	CHIP R	120K	J 1/16W	
R531,532			RK73HB1J473J	CHIP R	47K	J 1/16W	
R534,535		✻	RK73HB1J000J	CHIP R	0.0	J 1/16W	
R536,537			RK73HB1J105J	CHIP R	1.0M	J 1/16W	
R539-542			RK73HB1J105J	CHIP R	1.0M	J 1/16W	
R547			RK73HB1J472J	CHIP R	4.7K	J 1/16W	
R548,549			RK73HB1J103J	CHIP R	10K	J 1/16W	
R550			RK73HB1J220J	CHIP R	22	J 1/16W	
R552		✻	RK73HB1J000J	CHIP R	0.0	J 1/16W	
R557			RK73HB1J472J	CHIP R	4.7K	J 1/16W	
R558,559			RK73HB1J103J	CHIP R	10K	J 1/16W	
R571			RK73HB1J472J	CHIP R	4.7K	J 1/16W	
R572			RK73HB1J223J	CHIP R	22K	J 1/16W	
R611			RK73HB1J102J	CHIP R	1.0K	J 1/16W	
R646,647		✻	RK73HB1J000J	CHIP R	0.0	J 1/16W	
R648			RK73HB1J222J	CHIP R	2.2K	J 1/16W	
R649,650			RK73HB1J100J	CHIP R	10	J 1/16W	
R651			RK73HB1J222J	CHIP R	2.2K	J 1/16W	
R652-655			RK73HB1J100J	CHIP R	10	J 1/16W	
R690		✻	R92-3479-08	CHIP R	340	J 1/10W	
R691		✻	R92-3435-08	CHIP R	301	J 1/10W	
R692,693		✻	RK73HB1J000J	CHIP R	0.0	J 1/16W	
R700,701			RK73HB1J473J	CHIP R	47K	J 1/16W	
R702			RK73HB1J102J	CHIP R	1.0K	J 1/16W	
R711,712			R92-2052-05	CHIP R	0 OHM	J 1/10W	
R713			RK73HB1J220J	CHIP R	22	J 1/16W	
R714			RK73HB1J223J	CHIP R	22K	J 1/16W	
R716			RK73HB1J220J	CHIP R	22	J 1/16W	

K : KNA-DV3100 **E1** : KNA-DV3200
(**K** : North America **E** : Europe)

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Ref. No.	Add	New	Parts No.	Description				Destination
R717		✻	RK73HB1J000J	CHIP R	0.0	J	1/16W	
R718			RK73HB1J105J	CHIP R	1.0M	J	1/16W	
R719			RK73HB1J331J	CHIP R	330	J	1/16W	
R720		✻	RK73HB1J000J	CHIP R	0.0	J	1/16W	
R729			RK73HB1J223J	CHIP R	22K	J	1/16W	
R730			RK73HB1J123J	CHIP R	12K	J	1/16W	
R731			RK73HB1J103J	CHIP R	10K	J	1/16W	
R733		✻	RK73HB1J000J	CHIP R	0.0	J	1/16W	
R736		✻	R92-3459-08	CHIP R	10M	J	1/10W	
R737			RK73HB1J472J	CHIP R	4.7K	J	1/16W	
R739-741			RK73HB1J102J	CHIP R	1.0K	J	1/16W	
R751		✻	RK73HB1J000J	CHIP R	0.0	J	1/16W	
R752			RK73HB1J222J	CHIP R	2.2K	J	1/16W	
R753		✻	RK73HB1J000J	CHIP R	0.0	J	1/16W	
R754-757			RK73HB1J820J	CHIP R	82	J	1/16W	
R758		✻	RK73HB1J000J	CHIP R	0.0	J	1/16W	
R766			RK73HB1J102J	CHIP R	1.0K	J	1/16W	
R767			RK73HB1J222J	CHIP R	2.2K	J	1/16W	
R768			RK73HB1J473J	CHIP R	47K	J	1/16W	
R769,770			RK73HB1J102J	CHIP R	1.0K	J	1/16W	
R771			RK73HB1J222J	CHIP R	2.2K	J	1/16W	
R773-777		✻	RK73HB1J000J	CHIP R	0.0	J	1/16W	
R778			RK73HB1J222J	CHIP R	2.2K	J	1/16W	
R781			RK73HB1J103J	CHIP R	10K	J	1/16W	
R782			RK73HB1J104J	CHIP R	100K	J	1/16W	
R783			RK73HB1J103J	CHIP R	10K	J	1/16W	
R835		✻	RK73HB1J000J	CHIP R	0.0	J	1/16W	
R954,955		✻	R92-3428-08	CHIP R	15K	J	1/10W	
R958		✻	RK73HB1J000J	CHIP R	0.0	J	1/16W	
R959		✻	R92-3428-08	CHIP R	15K	J	1/10W	
R960,961			RK73HB1J473J	CHIP R	47K	J	1/16W	
R962		✻	R92-3481-08	CHIP R	0	J	1/4W	
R965		✻	R92-3432-08	CHIP R	22.1K	J	1/10W	
R967,968		✻	R92-3432-08	CHIP R	22.1K	J	1/10W	
R969		✻	R92-3442-08	CHIP R	47.5K	J	1/10W	
R970			RK73HB1J683J	CHIP R	68K	J	1/16W	
R971			RK73HB1J223J	CHIP R	22K	J	1/16W	
R972		✻	RK73HB1J000J	CHIP R	0.0	J	1/16W	
R975		✻	RK73HB1J000J	CHIP R	0.0	J	1/16W	
R977		✻	RK73HB1J000J	CHIP R	0.0	J	1/16W	
R980			RK73HB1J101J	CHIP R	100	J	1/16W	
RA551-556		✻	R90-1536-08	CHIP R	22	J	1/32W	
RA558		✻	R90-1536-08	CHIP R	22	J	1/32W	
RA711		✻	R90-1540-08	CHIP R	22K	J	1/32W	
RA712		✻	R90-1539-08	CHIP R	2.2K	J	1/32W	
RA713		✻	R90-1540-08	CHIP R	22K	J	1/32W	
RA714		✻	R90-1539-08	CHIP R	2.2K	J	1/32W	
RA715		✻	R90-1540-08	CHIP R	22K	J	1/32W	
RA716		✻	R90-1539-08	CHIP R	2.2K	J	1/32W	
RA717-721		✻	R90-1540-08	CHIP R	22K	J	1/32W	
RA751-754		✻	R90-1537-08	CHIP R	82	J	1/32W	
RA755-770		✻	R90-1535-08	CHIP R	18	J	1/32W	
RA771,772		✻	R90-1538-08	CHIP R	150	J	1/32W	
RA908		✻	R90-1538-08	CHIP R	150	J	1/32W	
RA951,952		✻	R90-1538-08	CHIP R	150	J	1/32W	

ELECTRIC CIRCUIT MODULE (NAVI UNIT W02-3395-15)

Ref. No.	Add	New	Parts No.	Description	Destination
D101		✻	30D4	DIODE	
D102		✻	EP05DA40	DIODE	
D103			U5ZA27C(TE24L)	ZENER DIODE	
D104,105			RD16S	ZENER DIODE	
D106		✻	RD16FM	ZENER DIODE	
D107			1SS352	DIODE	
D108			1SS357	DIODE	
D109-112			EC20QS06	DIODE	
D113,114			1SS357	DIODE	
D115			EC20QS06	DIODE	
D116			1SS357	DIODE	
D211		✻	EP05DA40	DIODE	
D251		✻	EP05DA40	DIODE	
D252			1SS352	DIODE	
D301			1SS352	DIODE	
D521			1SS352	DIODE	
D522		✻	1SS362	DIODE	
D781			1SS352	DIODE	
IC101			TC75W56FU	IC	
IC102		✻	S-80818ANNP	IC	
IC103,104			BA9743AFV	IC	
IC105			S-81233SGUP	IC	
IC106		✻	MB89935B	IC	
IC107		✻	UPC2409AHF	IC	
IC108			UPC2905T	IC (5V VOLTAGE REGULATOR)	
IC109			TC7SET08FU	IC (IC)	
IC111		✻	TC7SH00FU	IC	
IC212		✻	TAR5S30-TE85L	IC	
IC251			TD62604F	IC	
IC254			TC7WU04FU	IC (INVERTOR)	
IC255			TC7W53FU	IC (2-CHANNEL MULTIPLEXER)	
IC256			TC7SET08FU	IC (IC)	
IC301			TA75S01F	IC (OP AMP)	
IC306			TA75S01F	IC (OP AMP)	
IC309			TC7SET08FU	IC (IC)	
IC310			TA75S01F	IC (OP AMP)	
IC502			TC7SET08FU	IC (IC)	
IC521			-	Exchange is impossible	
IC522		✻	L78-0885-08	IC	
IC523			TA75W393FU	IC	
IC524-526			TC7WU04FU	IC (INVERTOR)	
IC551		✻	TC7SH00FU	IC	
IC561			TC7SH08FU	IC (2ch AND GATE)	
IC641			CXA2106R	IC	
IC642		✻	TC7SH00FU	IC	
IC684		✻	TC75S51FU	IC	
IC701			-	Exchange is impossible	
IC731		✻	S-817A15ANB	IC	
IC732,733		✻	TAR5S25	IC	
IC734		✻	S-817A15ANB	IC	
IC751		✻	TC7SB66FU	IC	
IC752-755			HY57V281620HC	IC	
IC781		✻	M5M5V416BTP70H	IC	
IC782,783		✻	TC7SH00FU	IC	
IC784		✻	MBM29LV160BE90	IC	

K : KNA-DV3100 **E1** : KNA-DV3200
(**K** : North America **E** : Europe)

⚠ Indicates safety critical components.

PARTS LIST

✻ New parts
Parts without **Parts No.** are not supplied.
Les articles non mentionnes dans le **Parts No.** ne sont pas fournis.
Teile ohne **Parts No.** werden nicht geliefert.

Ref. No.	Add	New	Parts No.	Description	Destination
IC951			SN65C1168NS	IC	
IC952			TC7SET08FU	IC (IC)	
IC954			TC7SET00FU	IC	
IC955,956			TC7SET08FU	IC (IC)	
IC957			TC7SET00FU	IC	
T101			2SA1576	TRANSISTOR	
T102			2SJ327Z	FET	
T103,104			DTC144EUA	DIGITAL TRANSISTOR	
T105,106			FMY6	TRANSISTOR	
T107,108		✻	HAT1038RJ	FET	
T109			DTC143EUA	DIGITAL TRANSISTOR	
T110,111			FMY6	TRANSISTOR	
T112			2SA1576	TRANSISTOR	
T113		✻	2SB1690K	TRANSISTOR	
T305		✻	UMX18N	TRANSISTOR	
T306			UMD3N	TRANSISTOR	
T307			DTC143EUA	DIGITAL TRANSISTOR	
T309			DTC143EUA	DIGITAL TRANSISTOR	
T319			DTA143EU	DIGITAL TRANSISTOR	
BAT10			W09-0741-08	BATTERY	

ELECTRIC CIRCUIT MODULE (NAVI UNIT W02-3395-15)

Ref. No.	Add	New	Parts No.	Description	Destination

K : KNA-DV3100 **E1** : KNA-DV3200
(**K** : North America **E** : Europe)

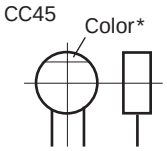
⚠ Indicates safety critical components.

PARTS LIST

CAPACITORS

C C | 4 5 | T H | 1 H | 2 2 0 | J
1 | 2 | 3 | 4 | 5 | 6

1 = Type ... ceramic, electrolytic, etc.
2 = Shape ... round, square, etc.
3 = Temp. coefficient
4 = Voltage rating
5 = Value
6 = Tolerance



• Capacitor value

010 = 1pF
100 = 10pF
101 = 100pF
102 = 1000pF = 0.001µF
103 = 0.01µF

2 2 0 = 22pF
Multiplier
2nd number
1st number

• Temperature coefficient

1st Word	C	L	P	R	S	T	U
Color*	Black	Red	Orange	Yellow	Green	Blue	Violet
ppm/°C	0	–80	–150	–220	–330	–470	–750

2nd Word	G	H	J	K	L
ppm/°C	±30	±60	±120	±250	±500

Example : CC45TH = –470±60ppm/°C

• Tolerance (More than 10pF)

Code	C	D	G	J	K	M	X	Z	P	No code
(%)	±0.25	±0.5	±2	±5	±10	±20	+40 –20	+80 –20	+100 –0	More than 10µF : –10~+50 Less than 4.7µF : –10~+75

(Less than 10pF)

Code	B	C	D	F	G
(pF)	±0.1	±0.25	±0.5	±1	±2

• Voltage rating

1st word \ 2nd word	A	B	C	D	E	F	G	H	J	K	V
0	1.0	1.25	1.6	2.0	2.5	3.15	4.0	5.0	6.3	8.0	–
1	10	12.5	16	20	25	31.5	40	50	63	80	35
2	100	125	160	200	250	315	400	500	630	800	–
3	1000	1250	1600	2000	2500	2150	4000	5000	6300	8000	–

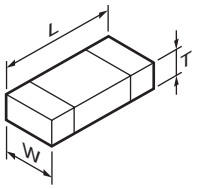
CHIP CAPACITORS

(EX) C C | 7 3 | F | S L | 1 H | 0 0 0 | J
1 | 2 | 3 | 4 | 5 | 6 | 7
(Chip) (CH, RH, UJ, SL)

(EX) C K | 7 3 | F | F | 1 H | 0 0 0 | Z
1 | 2 | 3 | 4 | 5 | 6 | 7
(Chip) (B, F)

Refer to the table above.
1 = Type
2 = Shape
3 = Dimension
4 = Temp. coefficient
5 = Voltage rating
6 = Value
7 = Tolerance

• Dimension



Chip capacitor

Code	L	W	T
Empty	5.6±0.5	5.0±0.5	Less than 2.0
A	4.5±0.5	3.2±0.4	Less than 2.0
B	4.5±0.5	2.0±0.3	Less than 2.0
C	4.5±0.5	1.25±0.2	Less than 1.25
D	3.2±0.4	2.5±0.3	Less than 1.5
E	3.2±0.2	1.6±0.2	Less than 1.25
F	2.0±0.3	1.25±0.2	Less than 1.25
G	1.6±0.2	0.8±0.2	Less than 1.0
H	1.0±0.05	0.5±0.05	0.5±0.05

Chip resistor

Code	L	W	T
E	3.2±0.2	1.6±0.2	1.0
F	2.0±0.3	1.25±0.2	1.0
G	1.6±0.2	0.8±0.2	0.5±0.1
H	1.0±0.05	0.5±0.05	0.35±0.05

RESISTORS

• Chip resistor (Carbon)

(EX) R D | 7 3 | E | B | 2 B | 0 0 0 | J
1 | 2 | 3 | 4 | 5 | 6 | 7
(Chip) (B, F)

• Carbon resistor (Normal type)

(EX) R D | 1 4 | B | B | 2 C | 0 0 0 | J
1 | 2 | 3 | 4 | 5 | 6 | 7
(Chip) (B, F)

1 = Type ... ceramic, electrolytic, etc.
2 = Shape ... round, square, etc.
3 = Dimension
4 = Temp. coefficient
5 = Voltage rating
6 = Value
7 = Tolerance

• Rating wattage

Code	Wattage	Code	Wattage	Code	Wattage
1J	1/16W	2C	1/6W	3A	1W
2A	1/10W	2E	1/4W	3D	2W
2B	1/8W	2H	1/2W		

KNA-DV3100/DV3200

SPECIFICATIONS

Navigation Section

Antenna ..... Micro-strip patched antenna
Receiver channel ..... Digital 8-channels parallel
Receiving frequency ..... 1575.42MHz (C/A code)
Receiving sensitivity ..... Less than -130dBm
Positioning method ..... Hybrid (GPS + Wheel Pulse + Gyro Sensor)

General

Operating voltage ..... 14.4V DC (11V to 16V)
Consumed current ..... Less than 2.5A
Operational temperature range ..... -10°C to +55°C
Storage temperature range ..... -30°C to +85°C
Video output level (75Ω) ..... 1Vp-p (Composite) / 0.7Vp-p (Analog RGB)
Audio output level (10kΩ) 1.2Vrms
Size
  Navigation unit ..... 164.5 (W) x 50 (H) x 176.0 (D) mm
  6-1/2 (W) x 1-15/16 (H) x 6-15/16 (D) in.
  Antenna unit ..... 34 (W) x 13.2 (H) x 38 (D) mm
  1-5/16 (W) x 1/2 (H) x 1-1/2 (D) in.
Mass
  Navigation unit ..... 1174g (2.59 LBS)
  Antenna unit ..... 25g (0.055 LBS)

KENWOOD follows a policy of continuous advancements in development.
For this reason specifications may be changed without notice.

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DVD MECHANISM ASSY

X92-4400-0x/4730-0x
X92-4740-0x/4750-0x

SERVICE MANUAL

KENWOOD

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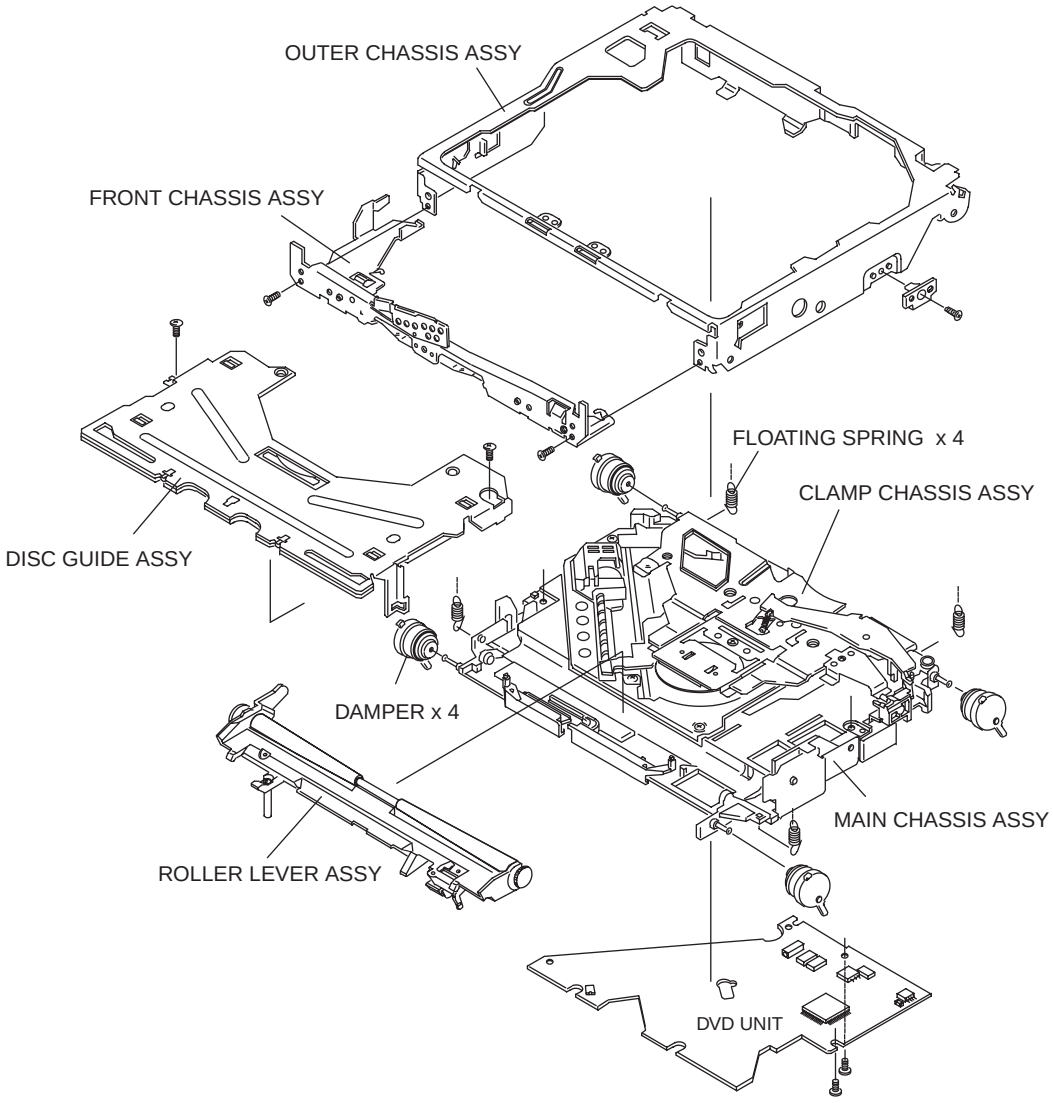
B53-0052-00 (N) 3365

DESCRIPTION MECHANISM

X92-4400-00 (DVS-3000) : X92-4740-00 (DVS-3020) : X92-4750-00 (DVS-3030)
X92-4400-01 (DVS-3001) : X92-4740-01 (DVS-3021) : X92-4750-01 (DVS-3031)
X92-4730-00 (DVS-3010) : X92-4740-02 (DVS-3022) : X92-4750-02 (DVS-3032)
X92-4730-01 (DVS-3011) : X92-4740-03 (DVS-3023) : X92-4750-03 (DVS-3033)

CONSTRUCTION OF MAJOR PARTS



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DVD MECHANISM TABLE

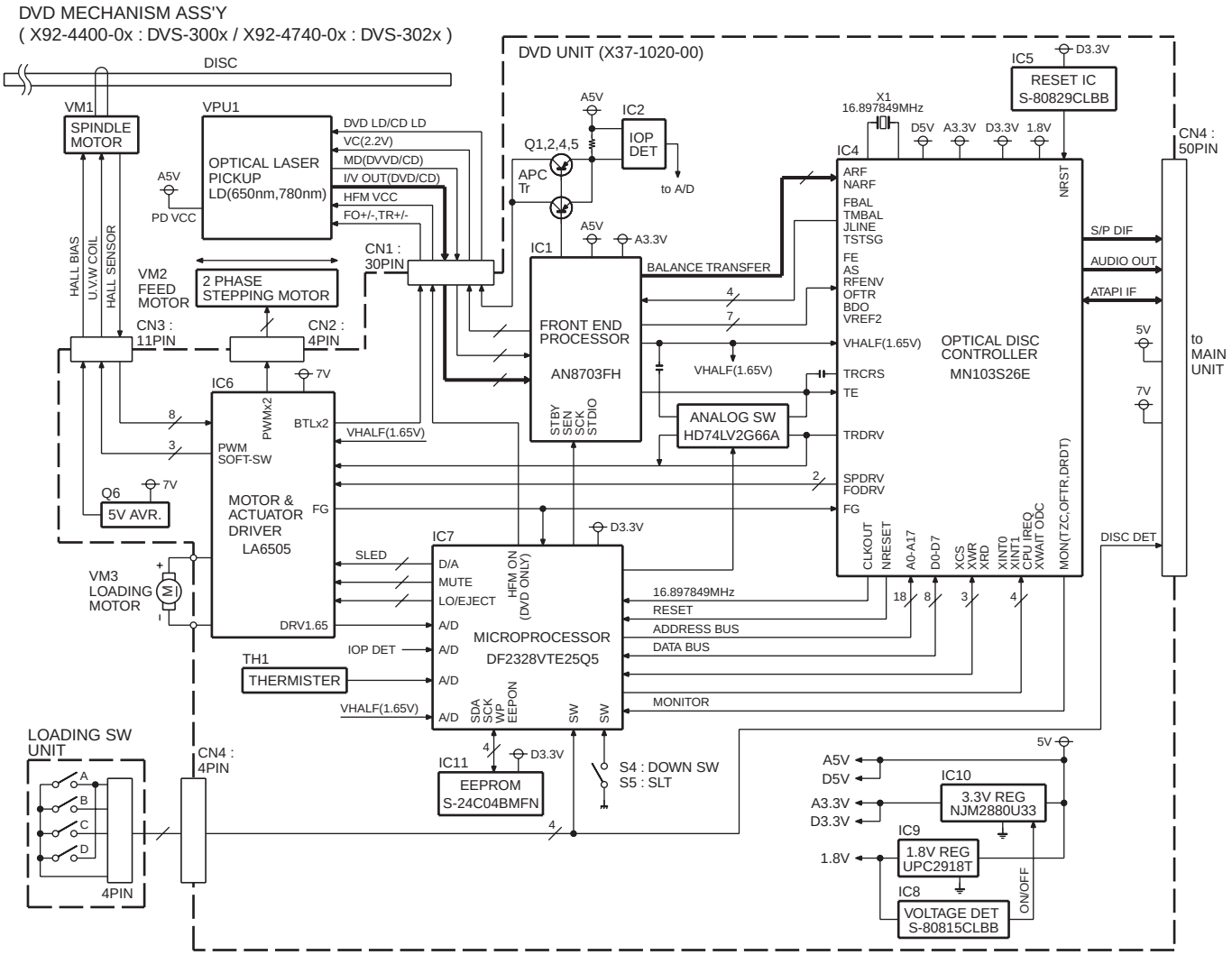
MODEL NAME	X92-4400-00	X92-4400-01	X92-4740-00	X92-4740-01	X92-4740-02	X92-4740-03
MECHANISM NAME	DVS-3000	DVS-3001	DVS-3020	DVS-3021	DVS-3022	DVS-3023
X37	X37-1020-00	X37-1020-00	X37-1020-00	X37-1020-00	X37-1020-00	X37-1020-00
PICKUP	T25-0222-05	T25-0222-05	T25-0222-05	T25-0222-05	T25-0222-05	T25-0222-05
DVD	○	○	○	○	○	○
CD	○	○	○	○	○	○
DISC PROTECTION MECHANISM	×	○	×	×	○	○
EXPORT PACKING SPECIFICATION	×	×	×	○	×	○
DESTINATION	A0	A1	A2	A3	A4	A5

MODEL NAME	X92-4730-00	X92-4730-01	X92-4750-00	X92-4750-01	X92-4750-02	X92-4750-03
MECHANISM NAME	DVS-3010	DVS-3011	DVS-3030	DVS-3031	DVS-3032	DVS-3033
X37	X37-1020-01	X37-1020-01	X37-1020-01	X37-1020-01	X37-1020-01	X37-1020-01
PICKUP	T25-0299-05	T25-0299-05	T25-0299-05	T25-0299-05	T25-0299-05	T25-0299-05
DVD	○	○	○	○	○	○
CD	×	×	×	×	×	×
DISC PROTECTION MECHANISM	×	○	×	×	○	○
EXPORT PACKING SPECIFICATION	×	×	×	○	×	○
DESTINATION	B0	B1	B2	B3	B4	B5

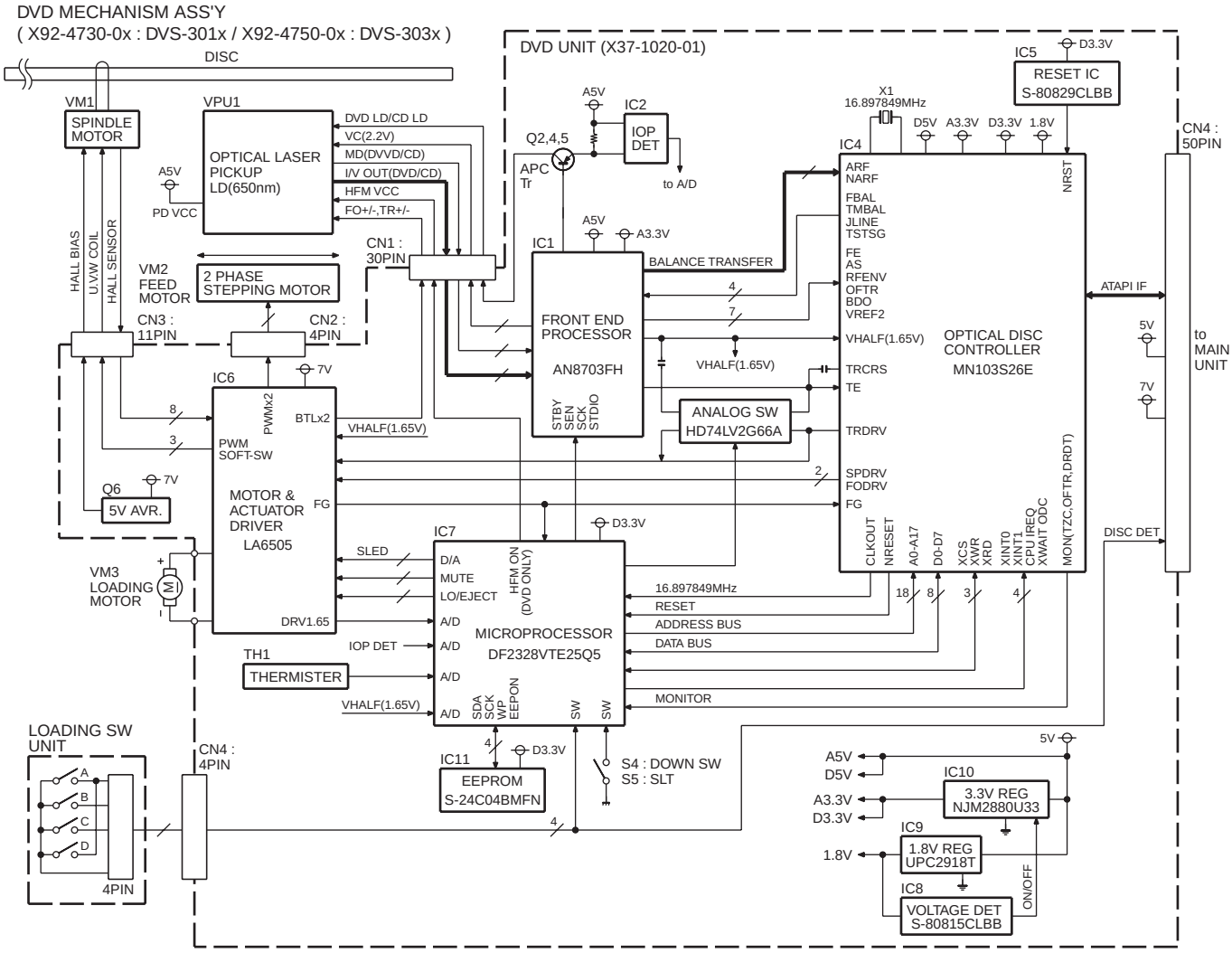
USE GREASE TABLE

Grease Name	Ref. No.	Description	Application position
CFD-703ZA (BLUE)	1	CHASSIS	MOLD GEAR CONTACT POINT
	2	CHASSIS	PICKUP CONTACT POINT
	15	SLIDER	GEAR CONTACT POINT
	30	CAM	ARM ASSY (21) CONTACT POINT
	33	GEAR	GEAR WHOLE
	34	GEAR	GEAR WHOLE
	35	GEAR	GEAR WHOLE
	36	GEAR	GEAR WHOLE
	37	GEAR	GEAR WHOLE
	38	GEAR	GEAR WHOLE
PFD-602Z	1	CHASSIS	SLIDER (17, 18) & LOCK ARM (25, 26) CONTACT POINT
KW-223	VM3	SLED MOTOR	GEAR WHOLE
HF-30	44	SHAFT	SHAFT WHOLE

BLOCK DIAGRAM



BLOCK DIAGRAM



COMPONENTS DESCRIPTION

● DVD UNIT (X37-1020-00/01)

Ref. No.	Component Name	Application/Function/Operation/Condition
IC1	AN8703FH	RF signal processor
IC2	NJU7042	IOP detector OP amp
IC4	MN103S26E	ATAPI interface, Servo/Spindle/Seek control, DVD ROM/CD ROM digital signal processor, 2M DRAM
IC5	S-80829CLBB	System reset IC
IC6	LA6505	Motor & pickup actuator driver
IC7	DF2328VTE254Q8	System microprocessor
IC8	S-80815CLBB	Voltage detector
IC9	UPC2918T	1.8V AVR
IC10	NJM2880U33	3.3V AVR
IC11	S-24C04BMFN	Backup memory (EPROM)
IC12	HD74LV2G66A	Servo filter on/off control
Q1	2SB0970	Laser diode power supply for CD (APC)
Q3	2SJ0536	Laser diode power supply for DVD (APC)
Q4	UN5114	DVD laser high frequency superposition circuit on-switch
Q5	UN5214	
Q6	2SD1819A	5V AVR
Q9	UN5114	Loading motor control (base L= ON)
Q10	UN5214	Loading motor control (base H= ON)
Q13	UN5114	EEPROM power control (base L = ON)
Q15	UN5114	FG signal inverter transistor

MICROCOMPUTER'S TERMINAL DESCRIPTION

● System microprocessor : DF2328VTE254Q8 (DVD unit IC7)

Pin No.	Pin Name	I/O	Purpose / Description / Processing / Operation
1	Vcc	-	Power supply input terminal
2~5	A0~A3	O	Address bus
6	Vss	-	GND
7~14	A4~A11	O	Address bus
15	Vss	-	GND
16~21	A12~A17	O	Address bus
22	M2	I	SODC monitor input terminal 2
23	(NC)	-	NC
24	Vss	-	GND
25	SW_AD	I	SW_A+D detect input terminal
26	SW_B	I	SW_B detect input terminal
27	SW_C	I	SW_C detect input terminal
28	M3	I	SODC monitor input terminal 3
29	(NC)	-	NC
30	NINT0	I	SODC interrupt signal 0 input terminal
31	NINT2	I	SODC interrupt signal 2 input terminal
32	NINT1	I	SODC interrupt signal 1 input terminal

MICROCOMPUTER'S TERMINAL DESCRIPTION

Pin No.	Pin Name	I/O	Purpose / Description / Processing / Operation
33	Vcc	-	Power supply input terminal
34~37	(NC)	-	NC (PULL UP)
38	Vss	-	GND
39~42	(NC)	-	NC (PULL UP)
43~46	CPUDT0~3	I/O	DATA bus
47	Vss	-	GND
48~51	CPUDT4~7	I/O	DATA bus
52	Vcc	-	Power supply input terminal
53	(NC)	-	NC
54	(NC)	I/O	Flash memory data output terminal
55	(NC)	-	NC
56	(NC)	I	Flash memory data input terminal
57	_LOADP	O	Loading control terminal (* Please see for Table of Loading/Eject Logic)
58	(NC)	-	NC
59	Vss	-	GND
60	SEL0	I	Destination select input terminal (* Please see for Table of Destination)
61	SEL1	I	Destination select input terminal (* Please see for Table of Destination)
62	LOADM	O	Loading control terminal (* Please see for Table of Loading/Eject Logic)
63	LO_MUTE	O	Loading driver muting control terminal (* Please see for Table of Loading/Eject Logic)
64	SL_MUTE	O	Sled driver muting control terminal
65	DRV_MUTE	O	Driver muting control terminal
66	FG	I	FG signal input terminal
67	M0	I	SODC monitor input terminal 0
68~70	(NC)	-	NC
71	FWC	I/O	Flash memory data writhing control terminal
72	FWE	I	Flash memory data writhing control terminal
73	_RES	I	Reset signal input terminal
74	(NC)	-	NC
75	_STBY	I	Standby signal input terminal
76	Vcc	-	Power supply input terminal
77	XTAL	I	System clock input terminal (16.897849MHz)
78	EXTAL	I	System clock input terminal (16.897849MHz)
79	Vss	-	GND
80	(NC)	-	NC
81	Vcc	-	Power supply input terminal
82	(NC)	-	NC
83	_RD	O	Read signal output terminal
84	_HWR	O	Write signal output terminal
85	(NC)	-	NC
86	_WAIT	I	Request for wait statement input terminal
87	EEPON	O	EEPROM power supply control terminal
88	WP	O	EEPROM WP control terminal
89	SCL	O	EEPROM clock output terminal
90	SDA	I/O	EEPROM data input/output terminal
91	HFM	O	DVD laser high frequency superposition circuit control terminal
92	(NC)	-	NC

MICROCOMPUTER'S TERMINAL DESCRIPTION

Pin No.	Pin Name	I/O	Purpose / Description / Processing / Operation
93	AVcc	-	A/D converter Power supply input terminal
94	Vref	-	A/D converter reference voltage input terminal
95	TEMP_DET	I	Temperature sensor input terminal
96	(NC)	-	NC
97	IOP	I	IOP monitor terminal
98	(NC)	-	NC
99	VHALF	I	Reference 1.65V input terminal
100	DRV_HALF	I	Drive 1.65V input terminal
101	STEP_A	O	Sled motor control terminal A
102	STEP_B	O	Sled motor control terminal b
103	AVss	-	A/D converter GND terminal
104	Vss	-	GND
105	STDI	O	FEP serial data output terminal
106	SCK	O	FEP serial clock output terminal
107	SEN	O	FEP tip enable output terminal
108	STBY	O	FEP standby output terminal
109	(NC)	-	NC
110	M1	I	SODC monitor input terminal 1
111	(NC)	-	NC
112	CEON	O	Servo output terminal
113	MD0	I	Mode setup of operation input terminal
114	MD1	I	Mode setup of operation input terminal
115	MD2	I	Mode setup of operation / Flash memory writhing input terminal
116	SW_F	I	SW_F detect input terminal
117	SW_E	I	SW_E detect input terminal
118	SW_AD	I	SW_A+D detect input terminal
119	NCS	O	SODC chip select
120	(NC)	-	NC

● Loading/Eject Logic Table

Pin No.	Pin Name	Hi-Z	Short-Brake	CW	CCW
57	_LOADP	H	H	L	H
62	LOADM	L	L	L	H
63	LO_MUTE	L	H	H	H

● Destination Table

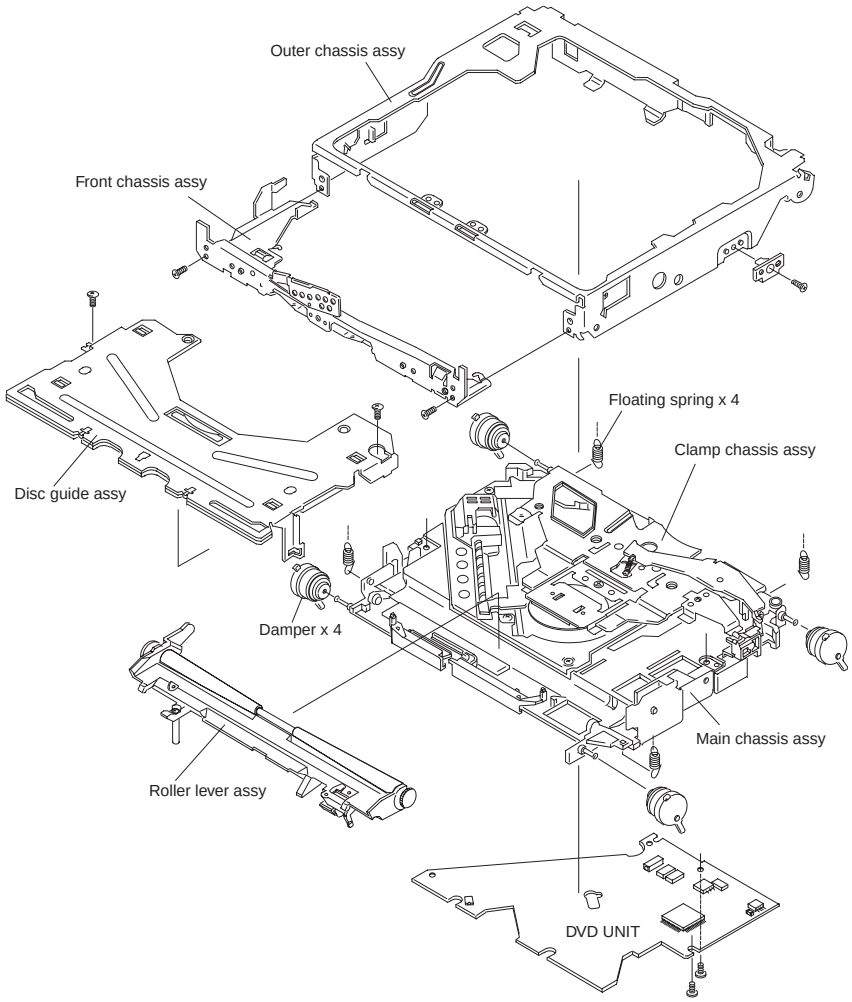
	DESTINATION	
Pin No.	DVD/CD	DVD only
60	H	L
61	H	H

MECHANISM OPERATION EXPLANATION

CONSTRUCTION OF MAJOR PARTS

This mechanism consists of five units.

1. Main chassis assy (Maintenance of a disc and reading of signal)
2. Roller lever assy (Disc loading)
3. Disc guides assy (Maintenance and positioning of a disc and the crack to disc is prevented)
4. Outer chassis assy (The damper unit which protects disc playback operation from external vibration)
5. DVD unit (Control for DVD mechanism)



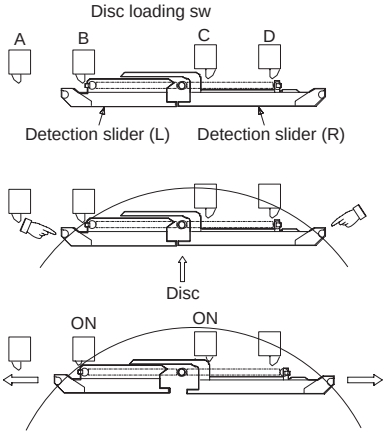
OPERATION EXPLANATION

■ Disc Loading

• Turning the loading switch ON

When a disc is inserted in the mechanism that the detection sliders will be open to the left and right side and the loading switch B or C is ON. The above starts the loading motor rotation.

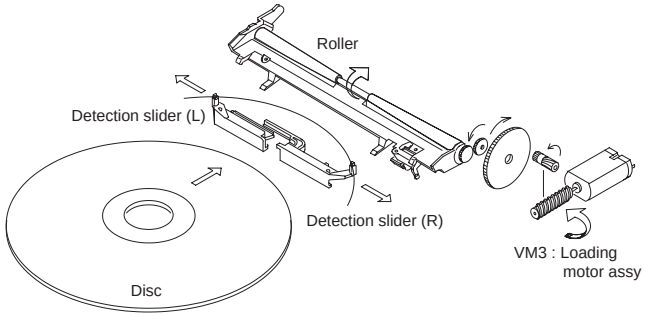
Note: In the case of 12cm disc, all switches (A, B, C, and D) turn on and 12cm disc distinction is carried



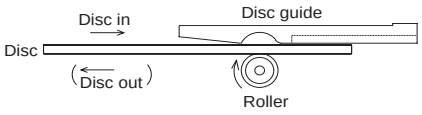
MECHANISM OPERATION EXPLANATION

■ Loading the disc

When the loading motor starts rotation, the worm gear also starts to turn as shown in the figure.
The rotation force is transmitted to the gear train.
When the force is transmitted to the final gear, the pull in the disc for the mechanism.

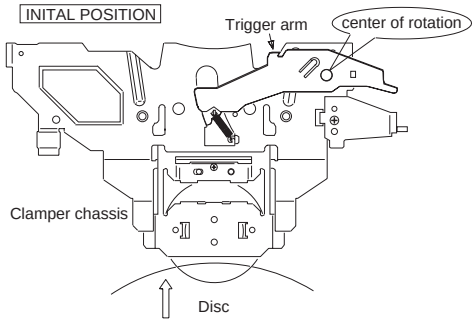


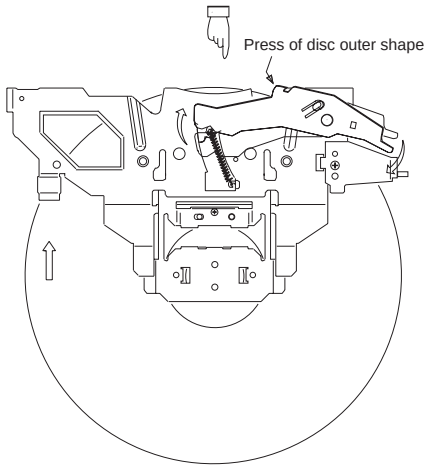
The disc is pulled in or out when the rollers are pushed against the disc guide.



■ Operation of Trigger arm

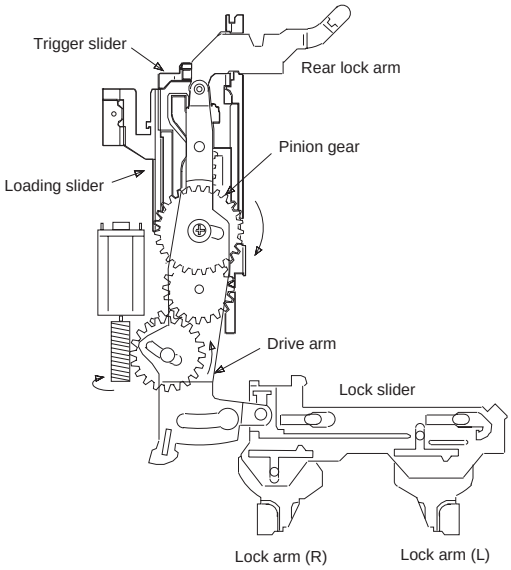
When the rollers pull in the disc, the disc edge (disc outer shape) pushes the trigger arm and rotates it.





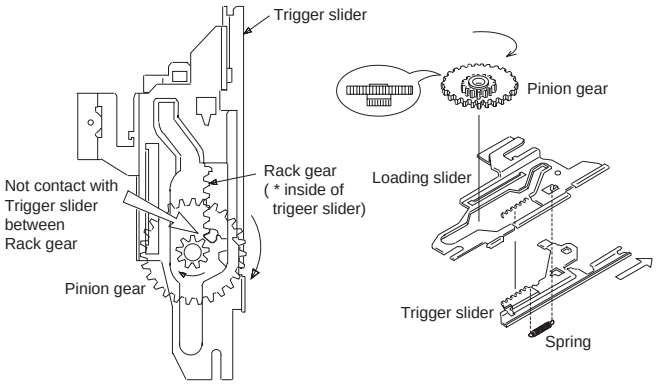
BASIC CONSTRUCTION

The following figure is looked at the mechanism for the reverse-side.
Even after the disc has been inserted, loading switch is ON and the loading motor and the gear train also rotated. Although the gear train is rotating but it has not contact yet in the loading mechanism part.
The trigger slider becomes starting point of operation.



■ Operation of the trigger slider and construction of the loading slider

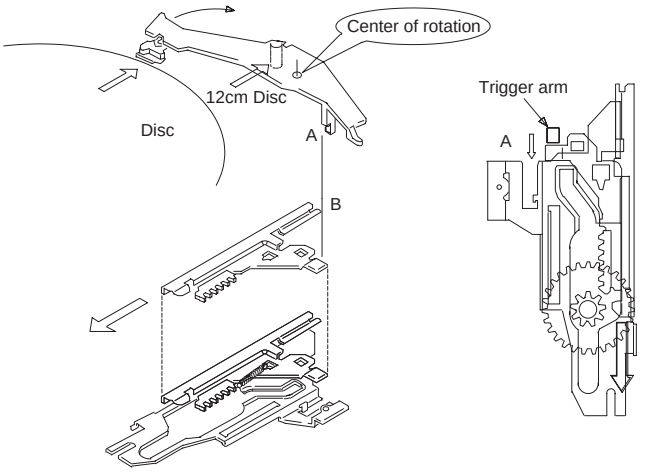
When the pinion gear is rotating but trigger slide has not contact to the rack gear.
The loading slider is assembled with the trigger slider and pushed in the direction of the arrow by force of the spring.



MECHANISM OPERATION EXPLANATION

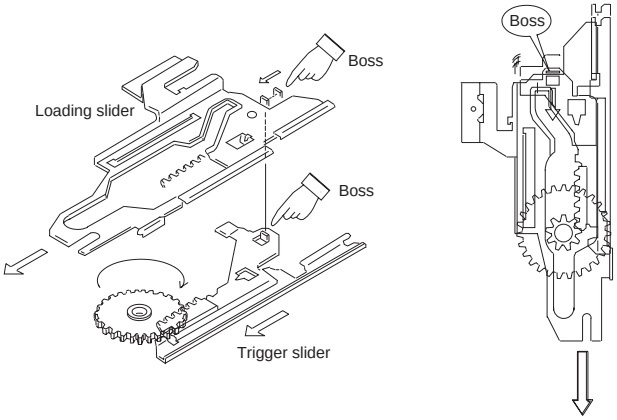
■ Initial operation of the trigger slider

When the pressure of the disc rotates the trigger arm, the trigger arm (part of A position) pushed the trigger slider (part of B position).



■ Operation of the loading slider

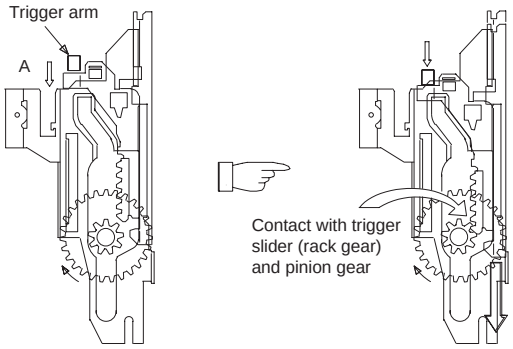
When the trigger slider begins to move out for arrow side, the boss part of the trigger slider will push the loading slider and will move the loading slider.



■ Operation of the trigger slider (contact with pinion gear)

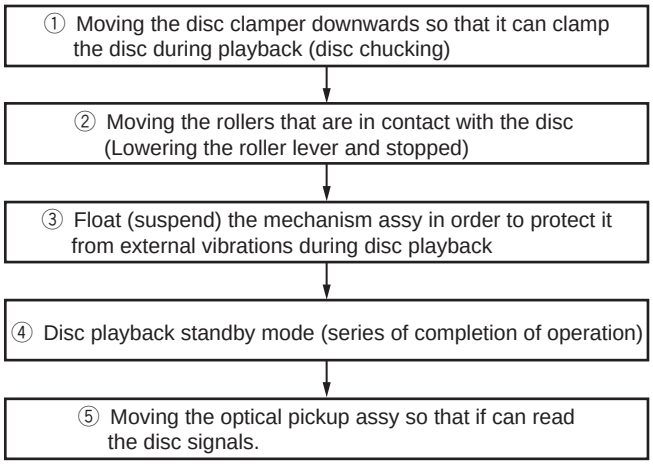
When the trigger arm pushes the trigger slider and goes, the rack gear of the trigger slider will be contact with pinion gear that has already rotated.

The trigger slider (lack gear) moved out synchronization of causes the pinion gear to rotate.



FLOW UNTIL DISC CHUCKING
(Playback standby condition)

Operation modes: To play back to DISC it is required to perform flow of operations as shown below.



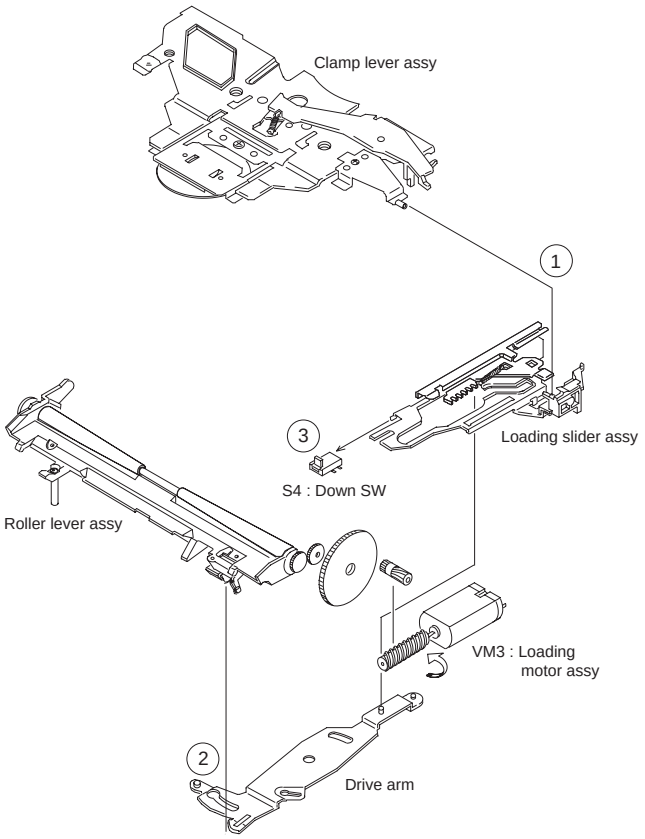
The movement of the loading slider activates these series of operations.

MECHANISM OPERATION EXPLANATION

■ Coupling condition

The parts used for performing the above functions are coupled with the loading slider as shown below.

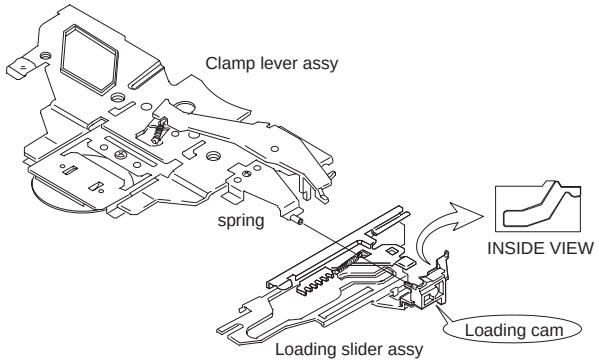
① Moving the clamp lever assy downward part
② Moving the roller lever assy downward part
③ The down switch (For controled loading motor drive)



■ Operation of the clamp lever assy (Disc chucking)

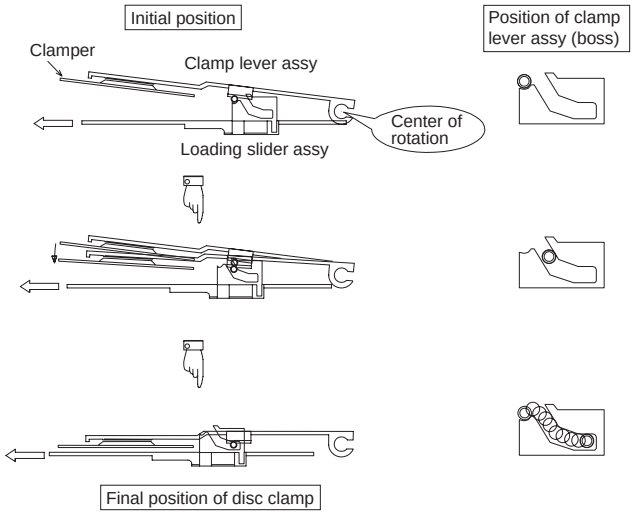
• Contact condition

The plate spring attached to the clamp lever assy is originally contacted with groove on loading cam. The loading cam and loading slider fixed on the screw.



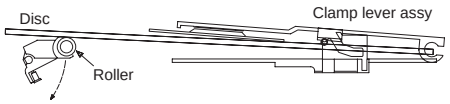
• Lowering the clamp lever assy (for disc chucking)

As loading slider moves for arrow side, the plate spring section contact with it moves along its groove and lowers the clamp lever assy.



■ Lowering the roller lever assy (disc chucking completion position)

1) When the disc in this position, the roller lever assy are located be low the contact with it. To rotate the disc for playback, it is required so separate the roller from the disc.

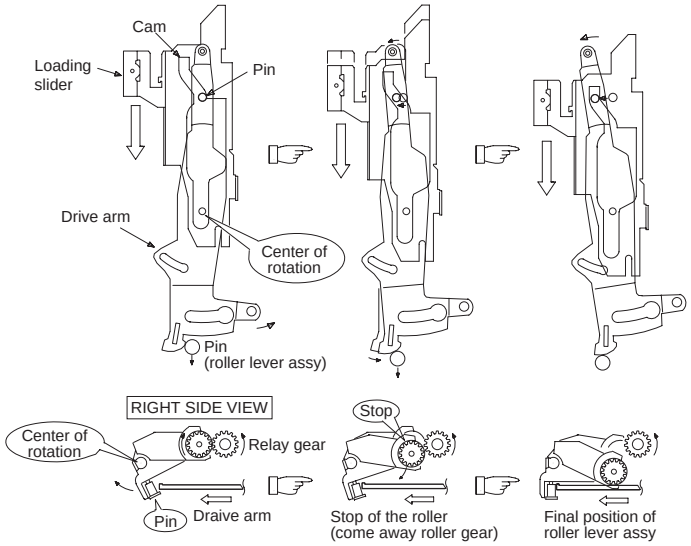


MECHANISM OPERATION EXPLANATION

2) Operation of drive arm

The pin to the drive arm is originally contacted with groove on loading slider cam.

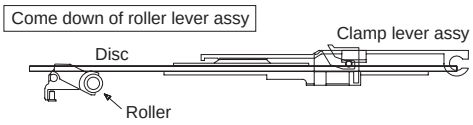
As the loading slider moves for arrow side, drive arm pin contact with groove on the loading slider moves along the groove.



3) Lowering the roller(disc playback position)

The pin of the roller lever ASSY is connected with the tip part of the drive arm, and it is pushed out front side for the drive arm.

As the roller lever assy rotation was stopped when it was separate to the middle gear.



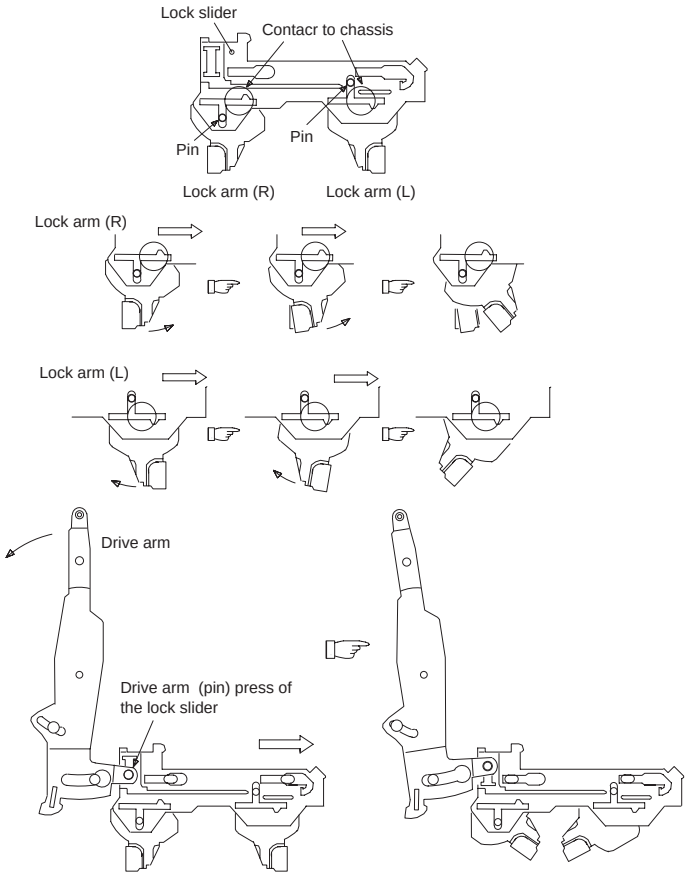
■ Floating position and lock position of the mechanism

The disc is loaded and ejected by rotation of the rollers that come in close contact with the disc. After the rollers have pilled the disc in, its position should be adjusted so that it can be placed precisely on the turntable of the traverse chassis. To make this possible, the traverse chassis and outer chassis should be in the locked condition.

Since the outer chassis is originally locked on the main unit, if the traverse chassis is also locked during play back, the disc would be subjected directly to vibrations of vehicle during driving and disc signal would be hindered, making the audio intermittent or impossible to be played. To prevent such a problem, the traverse chassis is suspended from the outer chassis using springs and rubber dampers during driving. The positioning protects the disc playback operations and referred to as the floating position.

• Operation of Lock arm (L), (R)

The lock arm (L) and (R) are contact to the boss of the main chassis, respectively, and are contact the pin into the slot of the lock slider. If the lock slider operates by operation of the drive arm, the pin which is contact the portion into which the lock arm (L) and (R) are contact the main chassis into the slot of the lock slider as a rotational center will operate. The lock arm (L) and (R) carry out rotation operation now, respectively.



MECHANISM OPERATION EXPLANATION

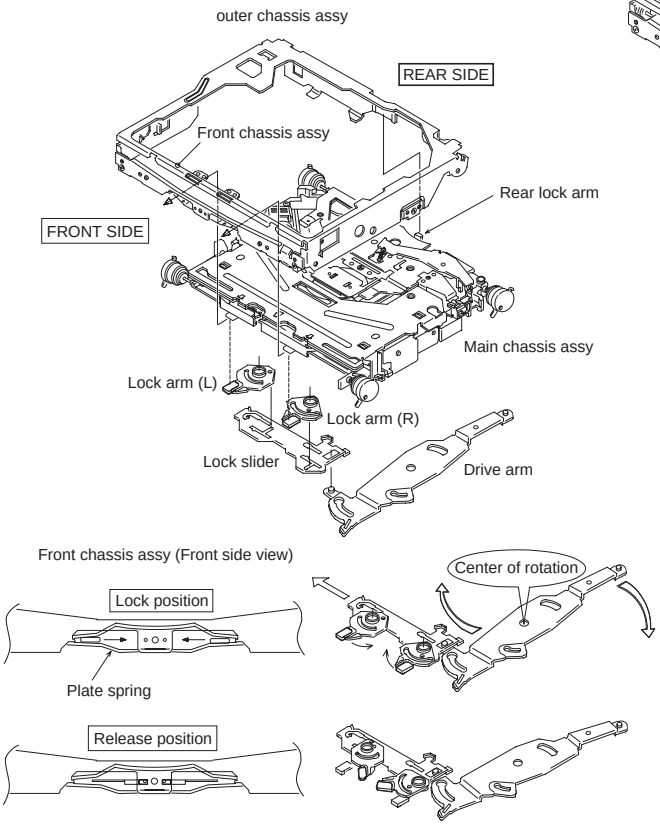
- **Floating position and mechanism lock position**

This mechanism has to two-lock system for front and rear part.

1) Lock arm for lock and release function

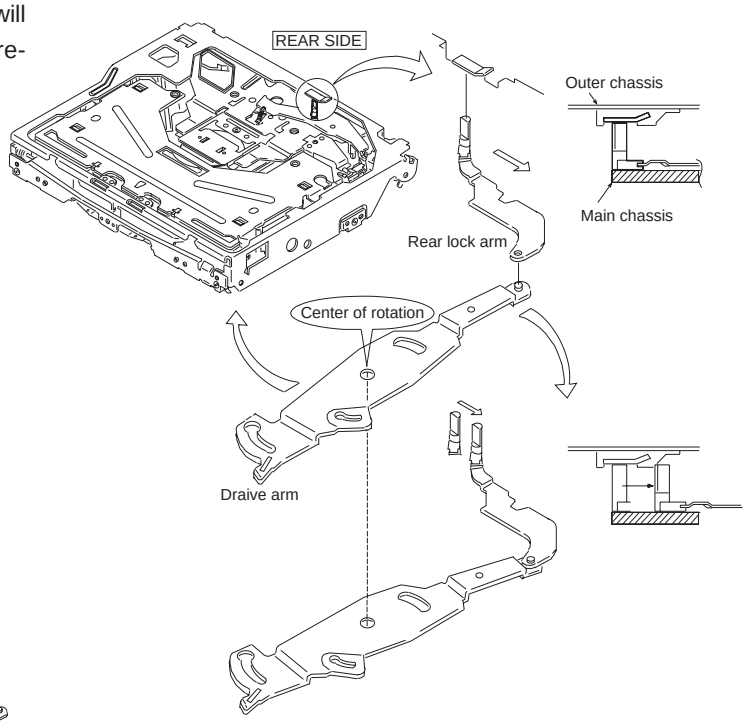
The lock arm (L) and (R) enter into the plate spring portion of the front chassis assy, and position regulation of the front part is carried out.

If the lock arm (L) and (R) carry out rotation operation by operation of the drive arm, and operation of the lock slider, it will separate from the plate spring portion and will become release position (floating position).



2) Rear lock arm for lock and release function

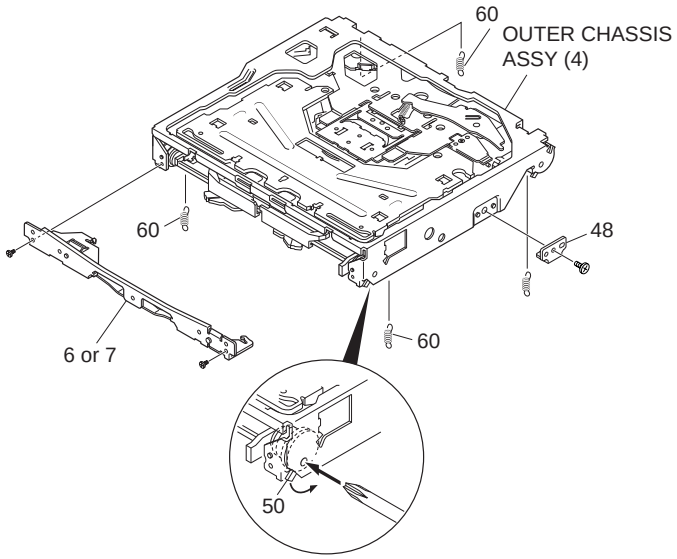
The rear lock arm is pinched between the outer chassis and the main chassis, and position regulation of the back part is carried out. It becomes a release position (floating position) by the rear lock arm operating by rotation operation of the drive arm, and separating from the outer chassis.



DISASSEMBLY AND ASSEMBLY OF MECHANISM

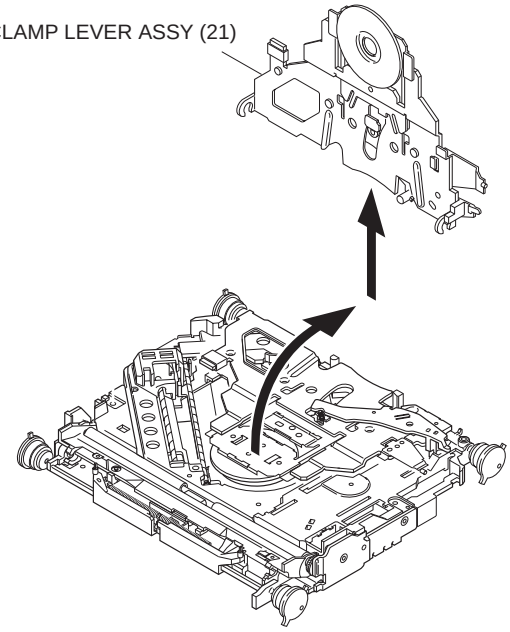
■ Removing the outer chassis assy (4)

1) Removing the front chassis assy (6 or 7: 2 screws).
2) Removing the stopper (48: 1 screw).
3) Removing the floating spring (60: 4 pcs).
4) Push up to fixed boss at the damper (50) used the tip of +driver and turns around remove the damper (50: 4 pcs).



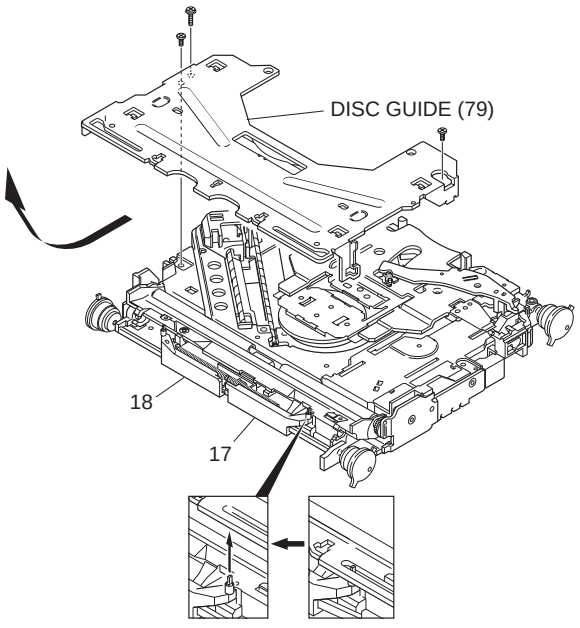
■ Removing the clamp lever assy (21)

1) The clamp lever assy (21) is stood and it shifts upward and removes.



■ Removing the disc guide assy (79)

1) Removing the 3 screws.
2) Take out the disc guide (79) it shifts to the front side and removes. It warns against damaging the guide of the slider (17 and 18).



DISASSEMBLY AND ASSEMBLY OF MECHANISM

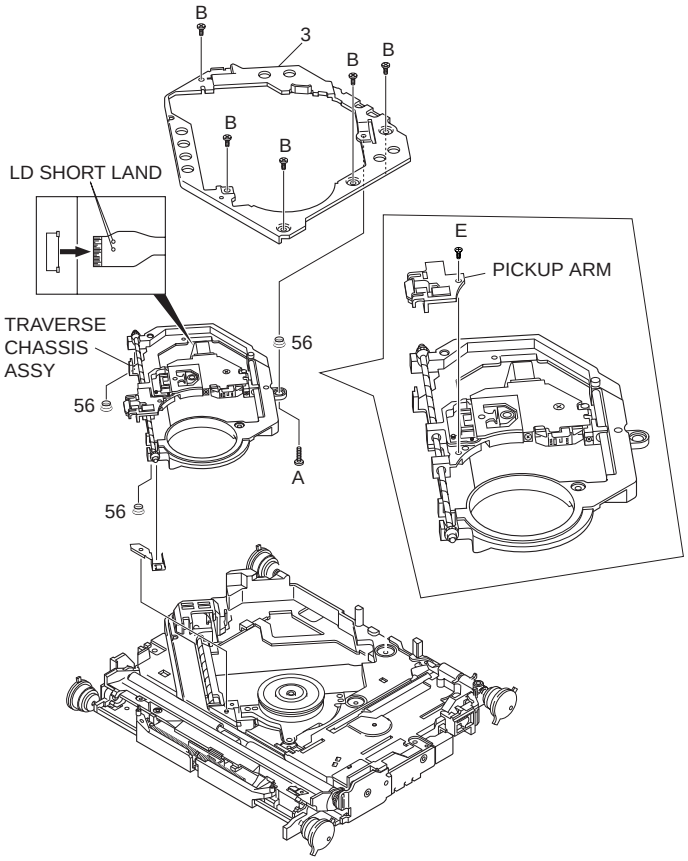
■ Repair for Optical Laser pickup (VPU1)

When you change the Optical Laser pickup (VPU1) you must be used adjustment jig and cam change jig are required. And please change the cam (29: 2 pcs) and the shaft (44) simultaneously.

• Disassembly

1) The lands for LD protection of the Optical Laser Pickup is short-circuited with solder (2 points) and the flexible code is removed from the connector.
2) The screw for adjustment (A) is removed (1 screw). Is careful not to lose the floating spring (56: 3 pcs).
3) Removing the chassis (3) (5 scews: B) and the traverse chassis ASSY
4) Removing the pickup arm (22) (1 screw: E).

Note: The screw for pickup arms (E) is not reusable. Please be sure to exchange.

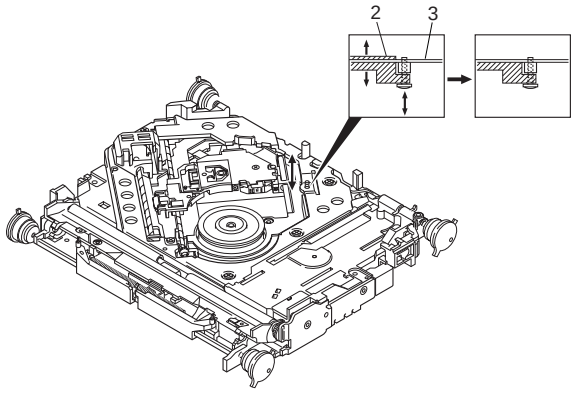


• Assembly

Preparation: The Optical Laser pickup (VPU1), cam (29: 2 pcs) and the shaft (44) are assembled with cam press fit jig. Grease (HF-30) is applied to the shaft.

1) The pickup arm (22) is fixed in the Laser pickup. The screw (E) carries out screw lock.
2) It assembles in a procedure contrary to disassembly. The adjustment screw is rough-adjust so that the upper surface of the traverse chassis (2) and the upper surface of chassis (3) may turn into the same position.

Note: Please read to mechanical adjustment along with the manual of adjustments jig.

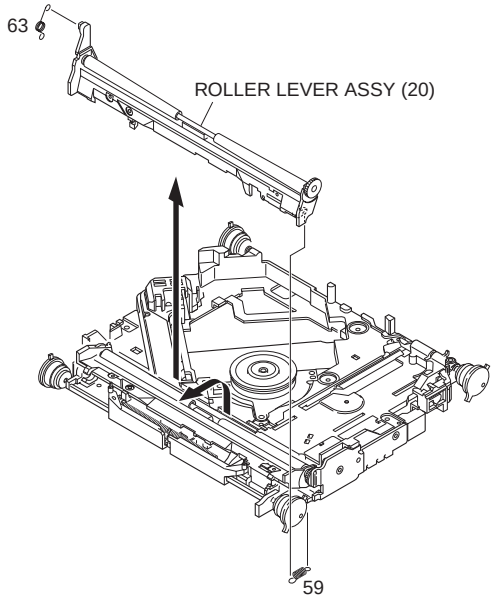


■ Removing the roller lever assy (20)

When removing the roller lever assy that it is removed beforehand for the rod (77) and screw (H) of disc protection mechanism.

1) Removing to the spring (59 and 63).
2) The roller lever ASSY (20) is stood and it removes upward.

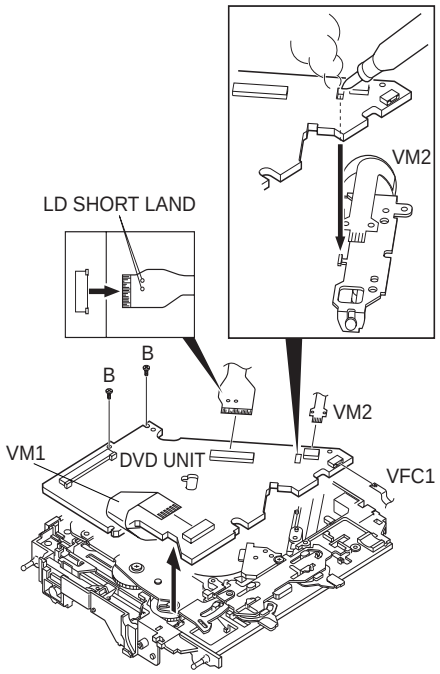
Note: The rod (77) and the screw (H) are not reusable. Please be sure to exchange.



DISASSEMBLY AND ASSEMBLY OF MECHANISM

■ Removing the DVD unit (PCB)

1) The lands (2 points) for LD protection of the Optical Laser pickup is short-circuited with solder.
2) The connector (4 places), the lead (2 places) grand land for loading motor, and the screw (2 pcs) are removed.



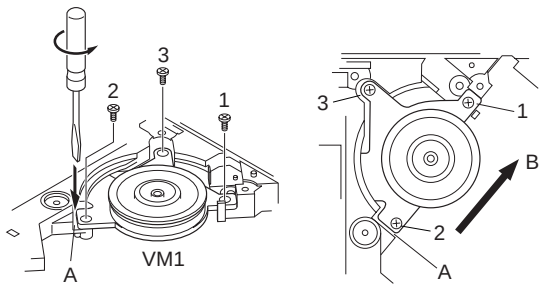
■ Repair for Spindle motor (VM1)

• Disassembly

1) Removing to 3 screws (B) and Spindle motor (VM1).

• Assembly

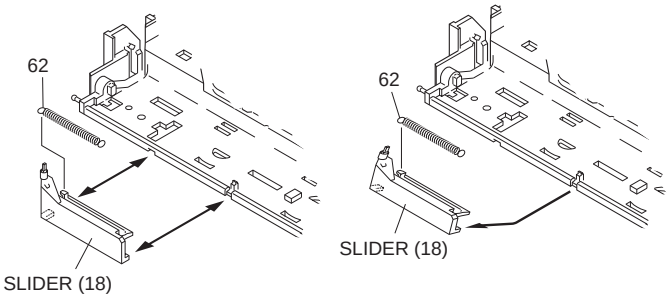
1) When the fixed position of the spindle motor (VM1) is imperfect, the CD disc play ability is poor for the unit. Please be sure to fixed spindle motor position.
2) The tip of the minus driver is put into the portion of A, the spindle motor press of direction of side B, and the screw is fixed in order of 1, 2, and 3. (Torque 3±10% kgf.cm)



■ Removing the slider (17 and 18)

1) Removing the spring (62).
2) Move the slider (18) in the center of main chassis (1).
It gets over the slider for the boss of the main chassis (1).

Note: Right side (17) same as disassembly for left side (18).



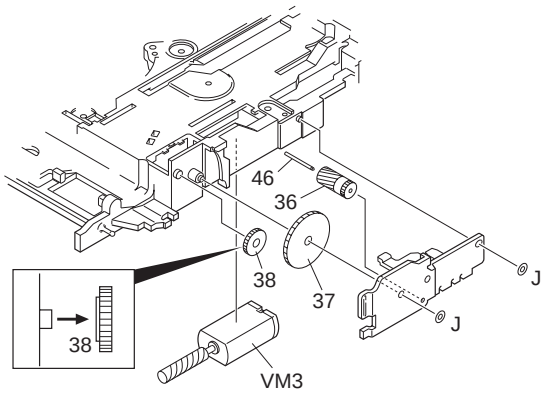
■ Removing the Loading Motor (VM3)

1) The lead (2 places) of the loading motor (VM3) is removed.
2) The washer (J: 2 pcs) and loading motor (VM3) is removed.

Note: Be careful of direction of the gear (36, 37, 38) and an axis at the time of assembly.

The washer (J) for bracket that has stopped the loading motor (VM3) is not reusable.

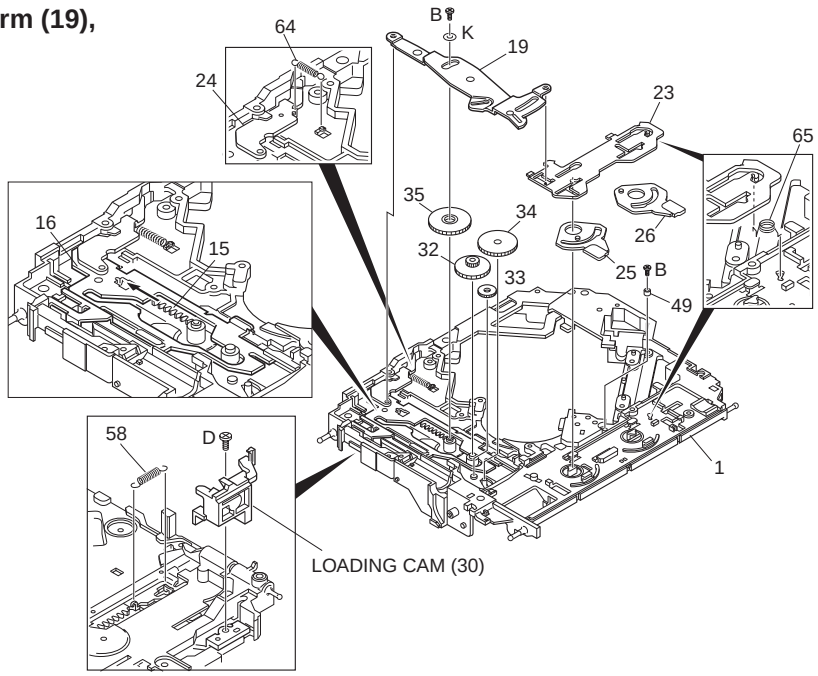
When you remove, please be sure to exchange.



DISASSEMBLY AND ASSEMBLY OF MECHANISM

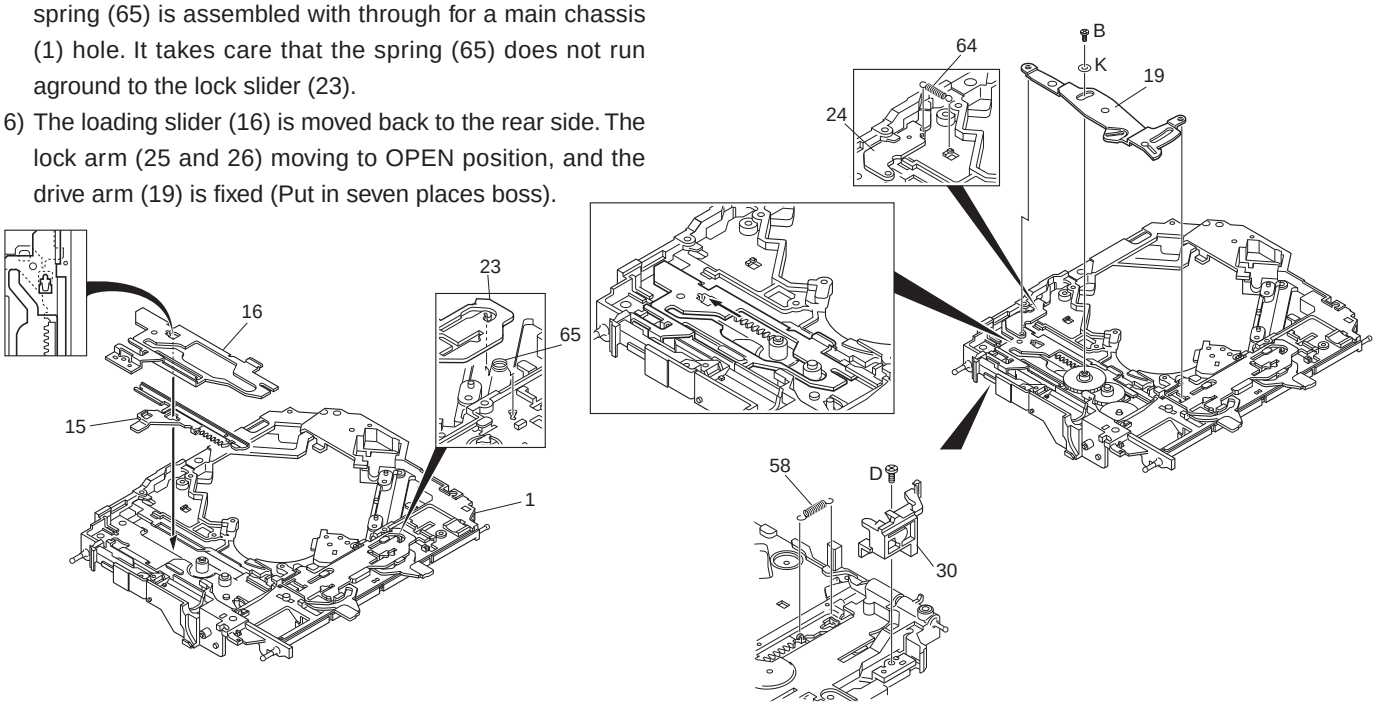
■ Disassembly for loading cam (30) drive arm (19), lock slider (23), and rear lock arm (24)

1) The screw (D) and the loading cam (30) are removed.
   Note: The screw for loading cam (D) is not reusable. Please be sure to exchange.
2) The spring (58) for trigger sliders is removed.
3) The stopper (49) is removed.
4) The spring (64) of the rear lock arm (24) is removed.
5) The screw (B) and washer (K) of the drive arm (19) are removed, and the drive arm (19) is moved back to rear side. The drive arm (19) is removed.
6) Lock arm (25 and 26), lock slider (23), rear lock arm (24) and each gear is removed.



■ Assembly for the loading cam (30) drive arm (19), lock slider (23), and rear lock arm (24)

1) The trigger slider (15) is fixed in the main chassis (1), and is moved back to rear side.
2) The loading slider (16) is fixed to the trigger slider (15).
   Note: At this time, it is cautious of the position of the hook of the loading slider (16).
3) The gear (4 pcs) is fixed in main chassis (1).
4) The lock arm (25 and 26) and the rear lock arm (24) are fixed.
5) The spring (65) is covered over the lock slider (23). The spring (65) is assembled with through for a main chassis (1) hole. It takes care that the spring (65) does not run aground to the lock slider (23).
6) The loading slider (16) is moved back to the rear side. The lock arm (25 and 26) moving to OPEN position, and the drive arm (19) is fixed (Put in seven places boss).
7) The loading slider (16) is fixed on the washer (K) and the screw (B). (Torque 3±10% kgf.cm)
8) The lock arm (25 and 26) is closed by hand and the lock slider (23) is moved for close position, and the stopper (49) is fixed on the screw (B). (Torque 3±10% kgf.cm)
9) The loading cam (30) is fixed on the screw (D). (Torque 1.5±10% kgf.cm)
10) The spring (58) is fixed to the trigger slider (15) and the loading slider (16).
11) The spring (64) is fixed to the rear lock arm (24).



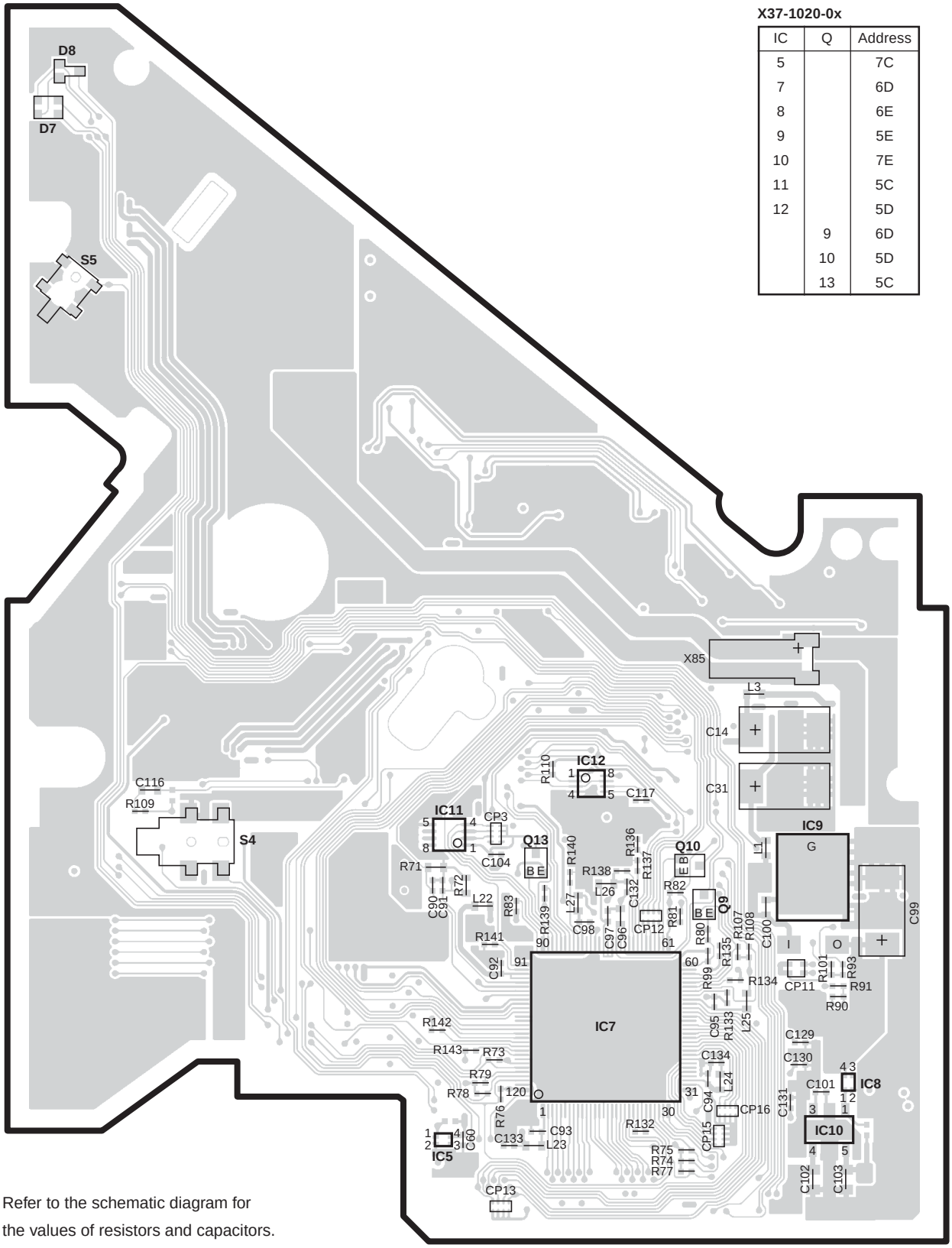
X92-4400-0x/4730-0x
X92-4740-0x/4750-0x

PC BOARD (COMPONENT SIDE VIEW)

DVD UNIT
X37-1020-0x
(J74-1352-22)

X37-1020-0x

IC	Q	Address
5		7C
7		6D
8		6E
9		5E
10		7E
11		5C
12		5D
	9	6D
	10	5D
	13	5C



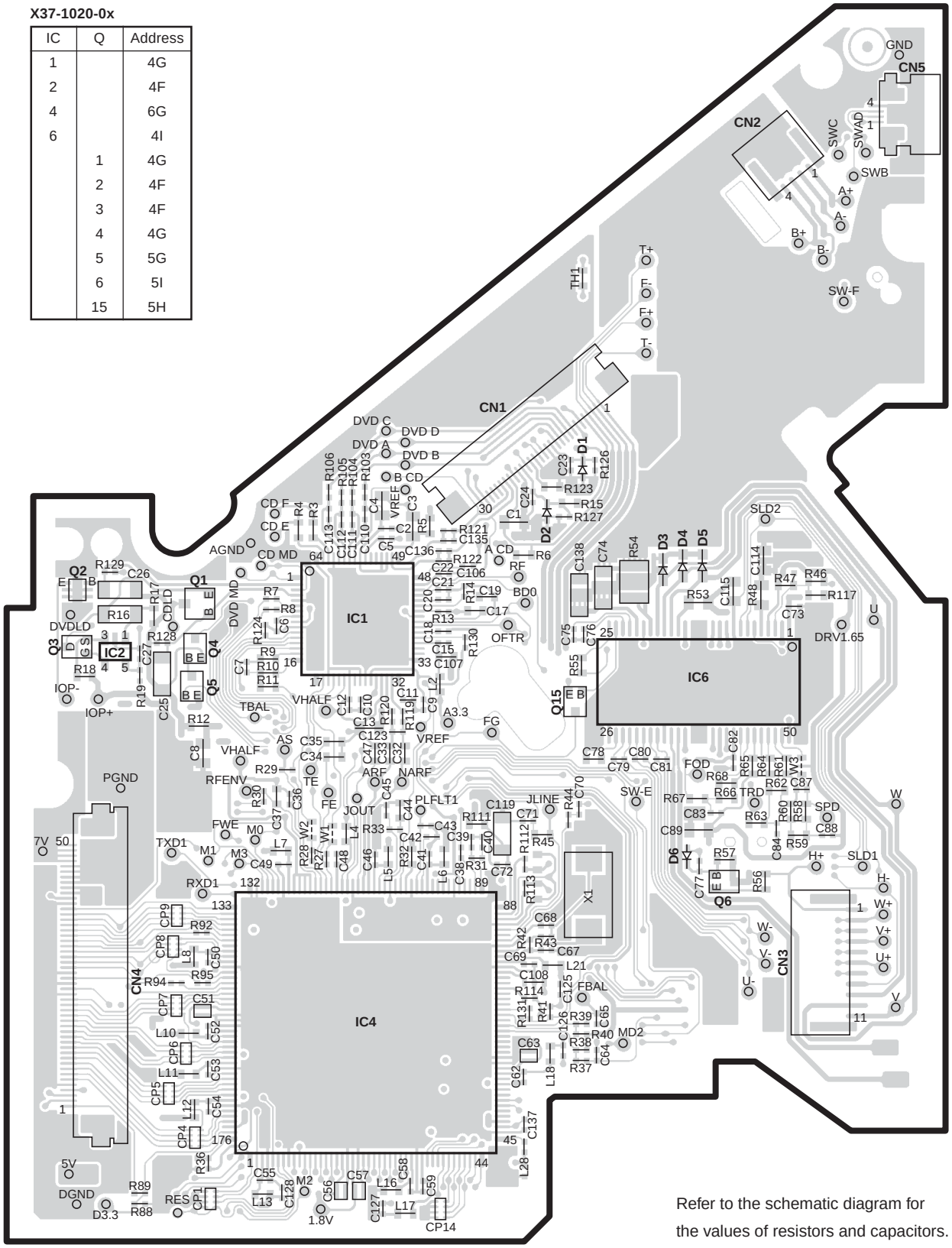
Refer to the schematic diagram for the values of resistors and capacitors.

PC BOARD (FOIL SIDE VIEW)

DVD UNIT
X37-1020-0x
(J74-1352-22)

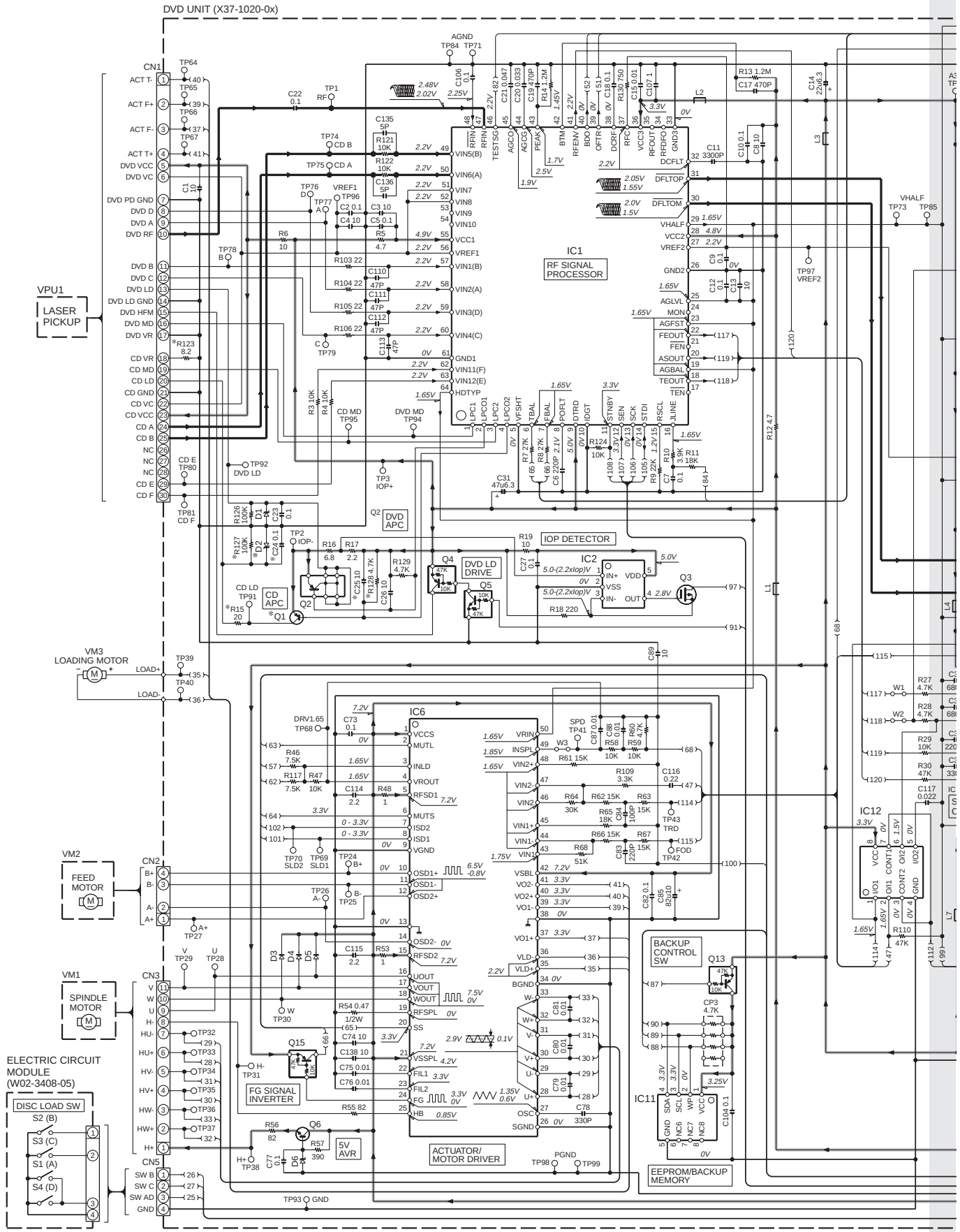
X37-1020-0x

IC	Q	Address
1		4G
2		4F
4		6G
6		4I
	1	4G
	2	4F
	3	4F
	4	4G
	5	5G
	6	5I
	15	5H

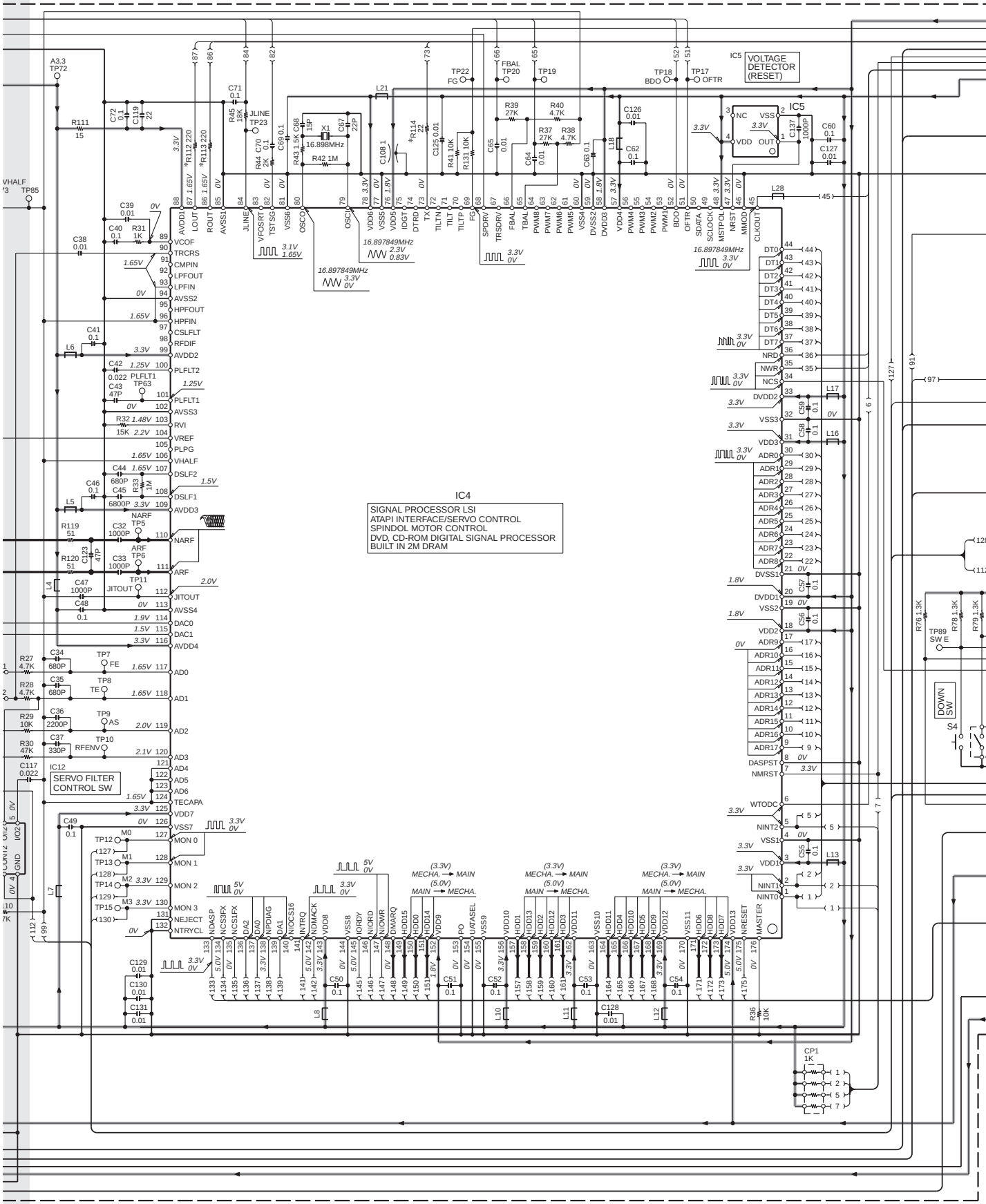


Refer to the schematic diagram for the values of resistors and capacitors.

X92-4400-0x/4730-0x
X92-4740-0x/4750-0x

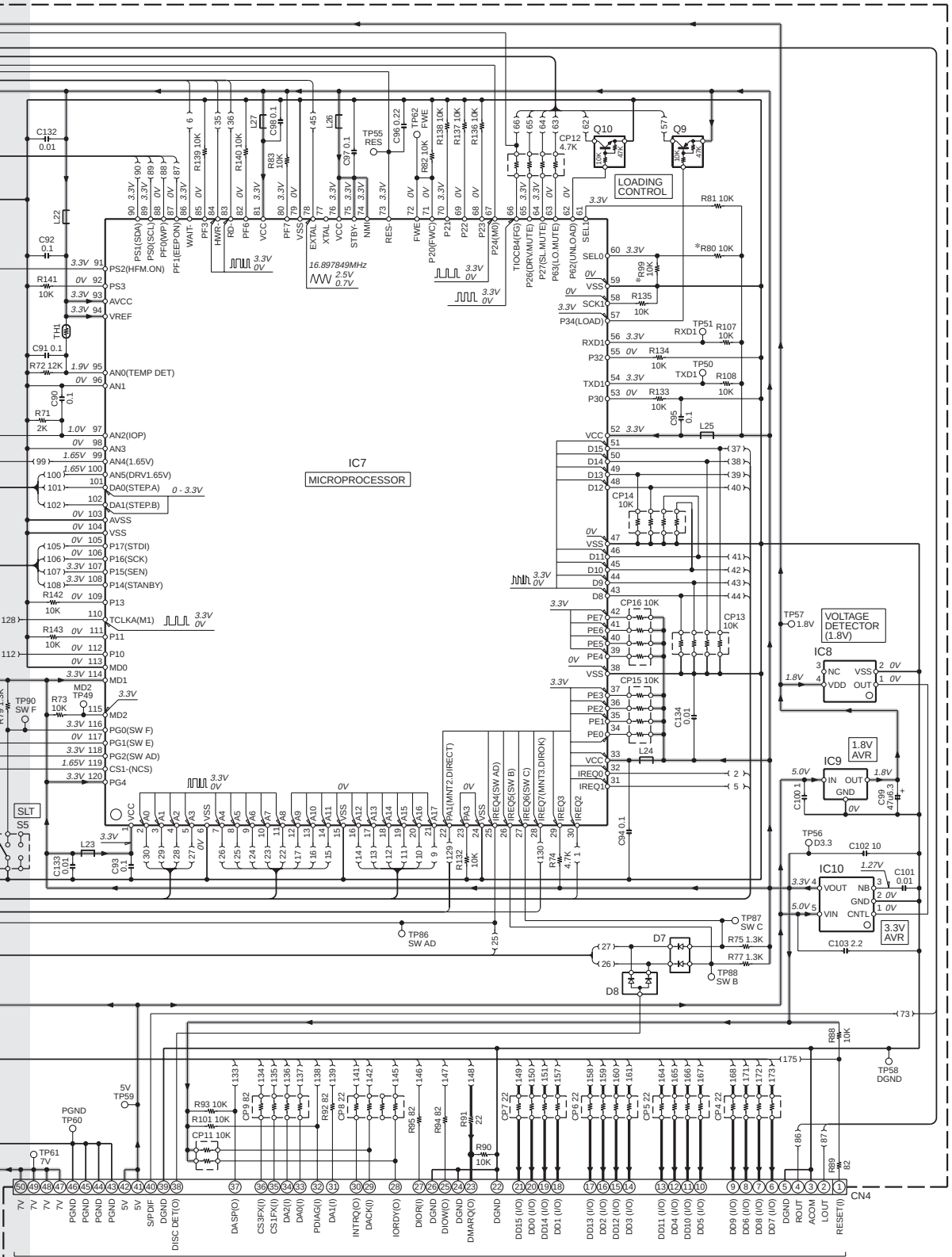


X92-4400-0x/4730-0x
X92-4740-0x/4750-0x



CAUTION : For continued safety, replace safety critical components only with manufacturer's recommended parts (refer to parts list).
⚠ Indicates safety critical components. To reduce the risk of electric shock, leakage-current or resistance measurements shall be carried out (exposed parts are acceptably insulated from the supply circuit) before the appliance is returned to the customer.
• DC voltages are as measured with a high impedance voltmeter.
Values may vary slightly due to variations between individual instruments or/and units.

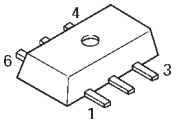
X92-4400-0x/4730-0x
X92-4740-0x/4750-0x



UN5114
UN5214
2SD1819A

MA142WA

MCH6101-E



IC1 : AN8703FH
IC2 : NJU7042
IC4 : MN103S26E
IC5 : S-80829CLBB
IC6 : LA6505
IC7 : DF2328VTE25Q5
IC8 : S-80815CLBB
IC9 : UPC2918T
IC10 : NJM2880U33
IC11 : S-24C04BMFN
IC12 : HD74LV2G66A

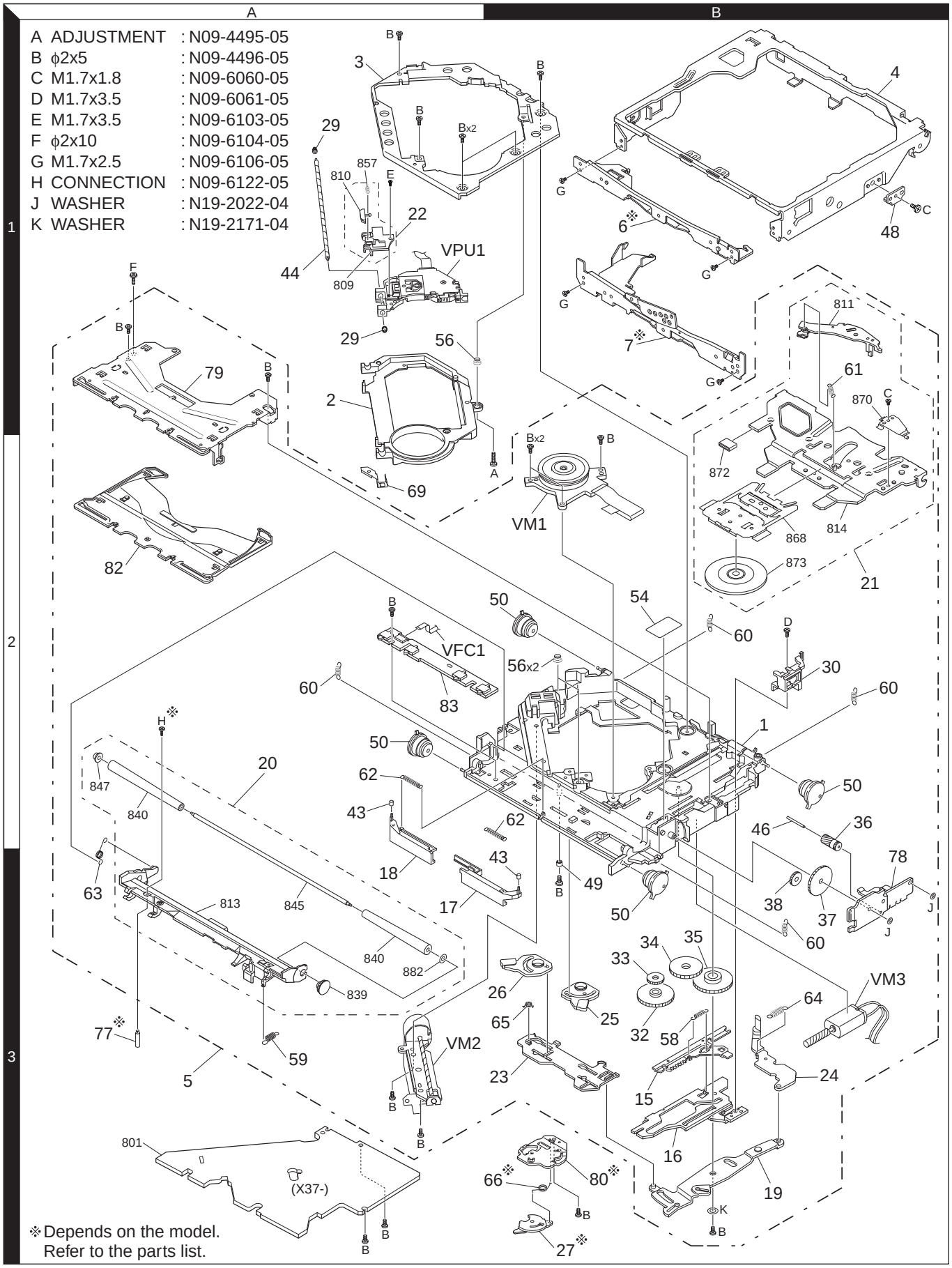
Q1 : 2SB0970
Q2 : MCH6101-E
Q3 : 2SJ0536
Q4,9,13,15 : UN5114
Q5,10 : UN5214
Q6 : 2SD1819A

D1,2 : MAZS0510M
D3-5 : MA2J729
D6 : MAZS0560M
D7 : MA4ZD03
D8 : MA142WA

MODEL NAME	UNIT No.	C24,25	D2	Q1	R15,80,112-114, 123,127,128	R99
X92-4400-0x	X37-1020-00	YES	YES	YES	YES	NO
X92-4740-0x						
X92-4730-0x	X37-1020-01	NO	NO	NO	NO	YES
X92-4750-0x						

SIGNAL LINE
GND LINE
+B LINE

EXPLODED VIEW



Parts with the exploded numbers larger than 700 are not supplied.

PARTS LIST

✻ New parts
Parts without **Parts No.** are not supplied.
Les articles non mentionnes dans le **Parts No.** ne sont pas fournis.
Teile ohne **Parts No.** werden nicht geliefert.

Ref. No.	Add	New	Parts No.	Description			Destination
DVD UNIT (X37-1020-00/01)							
C1		✻	CK73FB0J106M	CHIP C	10UF	M	
C2			CK73HB1A104K	CHIP C	0.10UF	K	
C3,4		✻	CK73FB0J106M	CHIP C	10UF	M	
C5			CK73HB1A104K	CHIP C	0.10UF	K	
C6			CC73HCH1E221J	CHIP C	220PF	J	
C7			CK73HB1A104K	CHIP C	0.10UF	K	
C8		✻	CK73FB0J106M	CHIP C	10UF	M	
C9,10			CK73HB1A104K	CHIP C	0.10UF	K	
C11			CK73HB1H332K	CHIP C	3300PF	K	
C12			CK73HB1A104K	CHIP C	0.10UF	K	
C13		✻	CK73FB0J106M	CHIP C	10UF	M	
C14		✻	C92-1792-05	CHIP C	22UF	M	
C15			CK73HB1C103K	CHIP C	0.010UF	K	
C17			CC73GCH1H471J	CHIP C	470PF	J	
C18			CK73HB1A104K	CHIP C	0.10UF	K	
C19			CC73GCH1H471J	CHIP C	470PF	J	
C20			CK73HB1A333K	CHIP C	0.033UF	K	
C21			CK73HB1A473K	CHIP C	0.047UF	K	
C22,23			CK73HB1A104K	CHIP C	0.10UF	K	
C24			CK73HB1A104K	CHIP C	0.10UF	K	A0A1A2
C24			CK73HB1A104K	CHIP C	0.10UF	K	A3A4A5
C25		✻	C93-1215-05	CHIP C	10UF	K	A0A1A2
C25		✻	C93-1215-05	CHIP C	10UF	K	A3A4A5
C26		✻	C93-1215-05	CHIP C	10UF	K	
C27			CK73HB1A104K	CHIP C	0.10UF	K	
C31		✻	C92-1685-05	CHIP C	47UF	M	
C32,33			CC73GCH1E102J	CHIP C	1000PF	J	
C34,35			CC73GCH1H681J	CHIP C	680PF	J	
C36			CK73HB1H222K	CHIP C	2200PF	K	
C37			CC73GCH1H331J	CHIP C	330PF	J	
C38,39			CK73HB1C103K	CHIP C	0.010UF	K	
C40,41			CK73HB1A104K	CHIP C	0.10UF	K	
C42			CK73HB1C223K	CHIP C	0.022UF	K	
C43			CC73HCH1H470J	CHIP C	47PF	J	
C44			CC73GCH1H681J	CHIP C	680PF	J	
C45			CK73HB1E682K	CHIP C	6800PF	K	
C46			CK73HB1A104K	CHIP C	0.10UF	K	
C47			CC73GCH1E102J	CHIP C	1000PF	J	
C48-50			CK73HB1A104K	CHIP C	0.10UF	K	
C51		✻	C93-1271-05	CHIP C	0.10UF	M	
C52-55			CK73HB1A104K	CHIP C	0.10UF	K	
C56,57		✻	C93-1271-05	CHIP C	0.10UF	M	
C58-60			CK73HB1A104K	CHIP C	0.10UF	K	
C62			CK73HB1A104K	CHIP C	0.10UF	K	
C63		✻	C93-1271-05	CHIP C	0.10UF	M	
C64,65			CK73HB1C103K	CHIP C	0.010UF	K	
C67			CC73HCH1H220J	CHIP C	22PF	J	
C68			CC73HCH1H150J	CHIP C	15PF	J	
C69-73			CK73HB1A104K	CHIP C	0.10UF	K	
C74			CK73EB1A106K	CHIP C	10UF	K	
C75,76			CK73HB1C103K	CHIP C	0.010UF	K	
C77			CK73HB1A104K	CHIP C	0.10UF	K	
C78			CC73GCH1H331J	CHIP C	330PF	J	

Ref. No.	Add	New	Parts No.	Description			Destination
C79-81			CK73HB1C103K	CHIP C	0.010UF	K	
C82			CK73HB1A104K	CHIP C	0.10UF	K	
C83			CC73HCH1E221J	CHIP C	220PF	J	
C84			CC73HCH1H101J	CHIP C	100PF	J	
C85		✻	C92-1684-05	CHIP C	82UF	M	
C87,88			CK73HB1C103K	CHIP C	0.010UF	K	
C89		✻	CK73FB0J106M	CHIP C	10UF	M	
C90-95			CK73HB1A104K	CHIP C	0.10UF	K	
C96			CK73GB1A224K	CHIP C	0.22UF	K	
C97,98			CK73HB1A104K	CHIP C	0.10UF	K	
C99		✻	C92-1685-05	CHIP C	47UF	M	
C100			CK73GB0J105K	CHIP C	1.0UF	K	
C101			CK73HB1C103K	CHIP C	0.010UF	K	
C102		✻	CK73FB0J106M	CHIP C	10UF	M	
C103			CK73FB1A225K	CHIP C	2.2UF	K	
C104			CK73HB1A104K	CHIP C	0.10UF	K	
C106			CK73HB1A104K	CHIP C	0.10UF	K	
C107			CK73GB0J105K	CHIP C	1.0UF	K	
C108		✻	C93-1228-05	CHIP C	1.0UF	M	
C110-113			CC73HCH1H470J	CHIP C	47PF	J	
C114,115			CK73FB1A225K	CHIP C	2.2UF	K	
C116			CK73GB1A224K	CHIP C	0.22UF	K	
C117			CK73HB1C223K	CHIP C	0.022UF	K	
C119		✻	CK73EB0J226K	CHIP C	22UF	K	
C123			CC73HCH1H470J	CHIP C	47PF	J	
C125-134			CK73HB1C103K	CHIP C	0.010UF	K	
C135,136			CC73HCH1H050C	CHIP C	5.0PF	C	
C137			CK73HB1H102K	CHIP C	1000PF	K	
C138			CK73EB1A106K	CHIP C	10UF	K	
CN1		✻	E41-0273-05	FLAT CABLE CONNECTOR (30PIN)			
CN2		✻	E41-0271-05	FLAT CABLE CONNECTOR (4PIN)			
CN3		✻	E41-0272-05	FLAT CABLE CONNECTOR (11PIN)			
CN4		✻	E41-0312-05	FLAT CABLE CONNECTOR (50PIN)			
CN5		✻	E41-0335-05	FLAT CABLE CONNECTOR (4PIN)			
L1		✻	L92-0365-05	CHIP FERRITE			
L2			L92-0329-05	CHIP FERRITE			
L3-8		✻	L92-0365-05	CHIP FERRITE			
L10-13		✻	L92-0365-05	CHIP FERRITE			
L16-18		✻	L92-0365-05	CHIP FERRITE			
L21-27		✻	L92-0365-05	CHIP FERRITE			
L28		✻	L92-0375-05	CHIP FERRITE			
X1			L77-2808-05	CRYSTAL RESONATOR (16.897849MHz)			
CP1		✻	RK74HB1J102J	CHIP-COM	1.0K	J 1/16W	
CP3		✻	RK74HB1J472J	CHIP-COM	4.7K	J 1/16W	
CP4-8		✻	RK74HB1J220J	CHIP-COM	22	J 1/16W	
CP9		✻	RK74HB1J820J	CHIP-COM	82	J 1/16W	
CP11			R90-0726-05	MULTI-COMP	10K X2		
CP12		✻	RK74HB1J472J	CHIP-COM	4.7K	J 1/16W	
CP13-16		✻	RK74HB1J103J	CHIP-COM	10K	J 1/16W	
R3,4			RK73GH1J103D	CHIP R	10K	D 1/16W	
R5			RK73GB2A4R7J	CHIP R	4.7	J 1/10W	
R6			RK73GB2A100J	CHIP R	10	J 1/10W	
R7,8			RK73HB1J273J	CHIP R	27K	J 1/16W	
R9			RK73GH1J223D	CHIP R	22K	D 1/16W	

A0 : X92-4400-00 (DVS-3000) **A1 :** X92-4400-01 (DVS-3001) **A2 :** X92-4740-00 (DVS-3020)
A3 : X92-4740-01 (DVS-3021) **A4 :** X92-4740-02 (DVS-3022) **A5 :** X92-4740-03 (DVS-3023)
B0 : X92-4730-00 (DVS-3010) **B1 :** X92-4730-01 (DVS-3011) **B2 :** X92-4750-00 (DVS-3030)
B3 : X92-4750-01 (DVS-3031) **B4 :** X92-4750-02 (DVS-3032) **B5 :** X92-4750-03 (DVS-3033)

⚠ Indicates safety critical components.

PARTS LIST

✻ New parts
Parts without **Parts No.** are not supplied.
Les articles non mentionnes dans le **Parts No.** ne sont pas fournis.
Teile ohne **Parts No.** werden nicht geliefert.

DVD UNIT (X37-1020-00/01)

Ref. No.	Add	New	Parts No.	Description	Destination
R10			RK73GH1J392D	CHIP R 3.9K D 1/16W	
R11		✻	RK73GH1J183D	CHIP R 18K D 1/16W	
R12			RK73GB2A4R7J	CHIP R 4.7 J 1/10W	
R13,14		✻	RK73HB1J125J	CHIP R 1.2M J 1/16W	
R15		✻	RK73GB2A200J	CHIP R 20 J 1/10W	A0A1A2
R15		✻	RK73GB2A200J	CHIP R 20 J 1/10W	A3A4A5
R16		✻	R92-3409-05	CHIP R 6.8 F 1/4W	
R17		✻	R92-3350-05	CHIP R 2.2 F 1/10W	
R18			RK73GH1J221D	CHIP R 220 D 1/16W	
R19			RK73HB1J100J	CHIP R 10 J 1/16W	
R27,28			RK73HB1J472J	CHIP R 4.7K J 1/16W	
R29			RK73HB1J103J	CHIP R 10K J 1/16W	
R30			RK73HB1J473J	CHIP R 47K J 1/16W	
R31			RK73HB1J102J	CHIP R 1.0K J 1/16W	
R32			RK73GH1J153D	CHIP R 15K D 1/16W	
R33			RK73HB1J105J	CHIP R 1.0M J 1/16W	
R36			RK73HB1J103J	CHIP R 10K J 1/16W	
R37			RK73HB1J273J	CHIP R 27K J 1/16W	
R38			RK73HB1J472J	CHIP R 4.7K J 1/16W	
R39			RK73HB1J273J	CHIP R 27K J 1/16W	
R40			RK73HB1J472J	CHIP R 4.7K J 1/16W	
R41			RK73HB1J103J	CHIP R 10K J 1/16W	
R42			RK73HB1J105J	CHIP R 1.0M J 1/16W	
R43			RK73HB1J152J	CHIP R 1.5K J 1/16W	
R44		✻	RK73HB1J202J	CHIP R 2.0K J 1/16W	
R45		✻	RK73GH1J183D	CHIP R 18K D 1/16W	
R46			RK73GB2A752J	CHIP R 7.5K J 1/10W	
R47			RK73GH1J103D	CHIP R 10K D 1/16W	
R48		✻	R92-3353-05	CHIP R 1.0K F 1/8W	
R53		✻	R92-3353-05	CHIP R 1.0K F 1/8W	
R54		✻	R92-3348-05	CHIP R 0.47K F 1/2W	
R55,56			RK73GB2A820J	CHIP R 82 J 1/10W	
R57			RK73GB2A391J	CHIP R 390 J 1/10W	
R58,59			RK73GB2A103J	CHIP R 10K J 1/10W	
R60			RK73GB2A472J	CHIP R 4.7K J 1/10W	
R61			RK73GB2A153J	CHIP R 15K J 1/10W	
R62,63			RK73GH1J153D	CHIP R 15K D 1/16W	
R64		✻	RK73GH1J303D	CHIP R 30K D 1/16W	
R65		✻	RK73GH1J183D	CHIP R 18K D 1/16W	
R66,67			RK73GH1J153D	CHIP R 15K D 1/16W	
R68		✻	RK73GH1J513D	CHIP R 51K D 1/16W	
R71			RK73GH1J202D	CHIP R 2K D 1/16W	
R72			RK73GH1J123D	CHIP R 12K D 1/16W	
R73			RK73HB1J103J	CHIP R 10K J 1/16W	
R74			RK73HB1J472J	CHIP R 4.7K J 1/16W	
R75-79		✻	RK73HB1J132J	CHIP R 1.3K J 1/16W	
R80			RK73HB1J103J	CHIP R 10K J 1/16W	A0A1A2
R80			RK73HB1J103J	CHIP R 10K J 1/16W	A3A4A5
R81-83			RK73HB1J103J	CHIP R 10K J 1/16W	
R88			RK73HB1J103J	CHIP R 10K J 1/16W	
R89			RK73HB1J820J	CHIP R 82 J 1/16W	
R90			RK73HB1J103J	CHIP R 10K J 1/16W	
R91			RK73HB1J220J	CHIP R 22 J 1/16W	
R92			RK73HB1J820J	CHIP R 82 J 1/16W	
R93			RK73HB1J103J	CHIP R 10K J 1/16W	
R94,95			RK73HB1J820J	CHIP R 82 J 1/16W	
R99			RK73HB1J103J	CHIP R 10K J 1/16W	B0B1B2
R99			RK73HB1J103J	CHIP R 10K J 1/16W	B3B4B5
R101			RK73HB1J103J	CHIP R 10K J 1/16W	
R103-106			RK73HB1J220J	CHIP R 22 J 1/16W	
R107,108			RK73HB1J103J	CHIP R 10K J 1/16W	
R109			RK73HB1J332J	CHIP R 3.3K J 1/16W	
R110			RK73HB1J473J	CHIP R 47K J 1/16W	
R111			RK73GB2A150J	CHIP R 15 J 1/10W	
R112,113			RK73HB1J221J	CHIP R 220 J 1/16W	A0A1A2
R112,113			RK73HB1J221J	CHIP R 220 J 1/16W	A3A4A5
R114			RK73HB1J220J	CHIP R 22 J 1/16W	A0A1A2
R114			RK73HB1J220J	CHIP R 22 J 1/16W	A3A4A5
R117			RK73GB2A752J	CHIP R 7.5K J 1/10W	
R119,120		✻	RK73HB1J510J	CHIP R 51 J 1/16W	
R121,122			RK73HB1J103J	CHIP R 10K J 1/16W	
R123		✻	R92-3385-05	CHIP R 8.2 F 1/10W	A0A1A2
R123		✻	R92-3385-05	CHIP R 8.2 F 1/10W	A3A4A5
R124			RK73HB1J103J	CHIP R 10K J 1/16W	
R126			RK73HB1J104J	CHIP R 100K J 1/16W	
R127			RK73HB1J104J	CHIP R 100K J 1/16W	A0A1A2
R127			RK73HB1J104J	CHIP R 100K J 1/16W	A3A4A5
R128			RK73HB1J472J	CHIP R 4.7K J 1/16W	A0A1A2
R128			RK73HB1J472J	CHIP R 4.7K J 1/16W	A3A4A5
R129			RK73HB1J472J	CHIP R 4.7K J 1/16W	
R130			RK73HB1J751J	CHIP R 750 J 1/16W	
R131-143			RK73HB1J103J	CHIP R 10K J 1/16W	
W1-3			R92-1252-05	CHIP R 0 OHM J 1/16W	
S4		✻	S68-0874-05	PUSH SWITCH (DOWN)	
S5		✻	S68-0866-05	PUSH SWITCH (SLT)	
D1		✻	MAZS0510M	ZENER DIODE	
D2		✻	MAZS0510M	ZENER DIODE	A0A1A2
D2		✻	MAZS0510M	ZENER DIODE	A3A4A5
D3-5		✻	MA2J729	DIODE	
D6		✻	MAZS0560M	ZENER DIODE	
D7		✻	MA4ZD03	DIODE	
D8			MA142WA	DIODE	
IC1			AN8703FH	ANALOGUE IC	
IC2			NJU7042	ANALOGUE IC	
IC4			MN103S26E	MOS-IC	
IC5		✻	S-80829CLBB	ANALOGUE IC	
IC6		✻	LA6505	ANALOGUE IC	
IC7		✻	DF2328VTE254Q8	MICROPROCESSOR IC	
IC8		✻	S-80815CLBB	ANALOGUE IC	
IC9		✻	UPC2918T	ANALOGUE IC	
IC10		✻	NJM2880U33	ANALOGUE IC	
IC11		✻	S-24C04BMFN	MEMORY IC	
IC12		✻	HD74LV2G66A	MOS-IC	
Q1		✻	2SB0970	TRANSISTOR	A0A1A2
Q1		✻	2SB0970	TRANSISTOR	A3A4A5
Q2		✻	MCH6101-E	TRANSISTOR	
Q3		✻	2SJ0536	FET	
Q4			UN5114	TRANSISTOR	
Q5			UN5214	TRANSISTOR	

A0 : X92-4400-00 (DVS-3000) **A1 :** X92-4400-01 (DVS-3001) **A2 :** X92-4740-00 (DVS-3020)
A3 : X92-4740-01 (DVS-3021) **A4 :** X92-4740-02 (DVS-3022) **A5 :** X92-4740-03 (DVS-3023)
B0 : X92-4730-00 (DVS-3010) **B1 :** X92-4730-01 (DVS-3011) **B2 :** X92-4750-00 (DVS-3030)
B3 : X92-4750-01 (DVS-3031) **B4 :** X92-4750-02 (DVS-3032) **B5 :** X92-4750-03 (DVS-3033)

⚠ Indicates safety critical components.

PARTS LIST

✻ New parts
Parts without **Parts No.** are not supplied.
Les articles non mentionnes dans le **Parts No.** ne sont pas fournis.
Teile ohne **Parts No.** werden nicht geliefert.

Ref. No.	Add	New	Parts No.	Description	Destination
Q6			2SD1819A	TRANSISTOR	
Q9			UN5114	TRANSISTOR	
Q10			UN5214	TRANSISTOR	
Q13			UN5114	TRANSISTOR	
Q15			UN5114	TRANSISTOR	
TH1		✻	TH11-3H103FT	THERMISTOR	
MECHANISM ASSY (X92-4400-0x/4730-0x/4740-0x/4750-0x)					
1	2B	✻	A10-4909-21	CHASSIS	
2	1A	✻	A10-4910-11	CHASSIS	
3	1A	✻	A10-4911-02	CHASSIS	
4	1B	✻	A10-4913-11	CHASSIS	
5	2B	✻	A10-4952-21	CHASSIS ASSY	
6	1B	✻	A10-4990-23	CHASSIS ASSY	A0A2A3
6	1B	✻	A10-4990-23	CHASSIS ASSY	B0B2B3
7	1B	✻	A10-5091-33	CHASSIS ASSY	A1A4A5
7	1B	✻	A10-5091-33	CHASSIS ASSY	B1B4B5
15	3B	✻	D10-4650-03	SLIDER	
16	3B	✻	D10-4651-02	SLIDER	
17	3B	✻	D10-4652-02	SLIDER	
18	2A	✻	D10-4653-02	SLIDER	
19	3B	✻	D10-4654-04	ARM ASSY	
20	3A	✻	D10-4658-23	ARM ASSY	
21	1B	✻	D10-4659-13	LEVER ASSY	
22	1A	✻	D10-4660-04	ARM ASSY	
23	3B	✻	D10-4686-03	SLIDER	
24	3B	✻	D10-4687-03	ARM	
25	3B	✻	D10-4689-03	ARM	
26	3B	✻	D10-4690-03	ARM	
27	3B	✻	D10-4781-03	ARM	A1A4A5
27	3B	✻	D10-4781-03	ARM	B1B4B5
29	1A	✻	D12-0635-03	CAM	
30	2B	✻	D12-0636-03	CAM	
32	3B	✻	D13-2221-04	GEAR	
33	3B	✻	D13-2222-04	GEAR	
34	3B	✻	D13-2223-04	GEAR	
35	3B	✻	D13-2224-04	GEAR	
36	2B	✻	D13-2225-04	GEAR	
37	2B	✻	D13-2226-04	GEAR	
38	3B	✻	D13-2227-04	GEAR	
43	2A	✻	D14-0785-04	ROLLER	
44	1A	✻	D21-2395-13	SHAFT	
46	2B	✻	D21-2414-04	SHAFT	
48	1B	✻	D32-0648-04	STOPPER	
49	2B	✻	D32-0654-04	STOPPER	
50	2A	✻	D39-0254-05	DAMPER	
VFC1	2A	✻	E39-0464-05	FLAT CABLE (4PIN)	
54	2B	✻	F09-1748-04	SHEET	
56	1A	✻	G01-3112-04	COMPRESSION SPRING	
58	3B	✻	G01-3114-14	EXTENSION SPRING	
59	3A	✻	G01-3116-14	EXTENSION SPRING	
60	2B	✻	G01-3117-04	EXTENSION SPRING	
61	1B	✻	G01-3118-04	EXTENSION SPRING	

DVD UNIT (X37-1020-00/01)

Ref. No.	Add	New	Parts No.	Description	Destination
62	2A	✻	G01-3119-04	EXTENSION SPRING	
63	3A	✻	G01-3121-14	TORSION COIL SPRING	
64	3B	✻	G01-3140-04	EXTENSION SPRING	
65	3B	✻	G01-3142-04	TORSION COIL SPRING	
66	3B	✻	G01-3196-04	TORSION COIL SPRING	A1A4A5
66	3B	✻	G01-3196-04	TORSION COIL SPRING	B1B4B5
69	2A	✻	G02-1421-03	FLAT SPRING	
77	3A	✻	J12-1238-04	PIN	A1A4A5
77	3A	✻	J12-1238-04	PIN	B1B4B5
78	3B	✻	J21-9792-03	MOUNTING HARDWARE	
79	1A	✻	J21-9793-12	MOUNTING HARDWARE	
80	3B	✻	J22-0061-03	MOUNTING HARDWARE	A1A4A5
80	3B	✻	J22-0061-03	MOUNTING HARDWARE	B1B4B5
82	2A	✻	J90-1031-21	GUIDE	
A	1A	✻	N09-4495-05	ADJUSTABLE SCREW (ADJUSTMENT SC)	
B	1A	✻	N09-4496-05	TAPTITE SCREW (02 2X5P-TITE)	
C	1B	✻	N09-6060-05	MACHINE SCREW (02M1.7X1.8 CR)	
D	2B	✻	N09-6061-05	MACHINE SCREW (02M1.7X3.5CUP)	
E	1A	✻	N09-6103-05	MACHINE SCREW (M1.7X3.5(NK G)	
F	1A	✻	N09-6104-05	MACHINE SCREW (2X10 S-TITE)	
G	1B	✻	N09-6106-05	MACHINE SCREW (M1.7X2.5)	
H	2A	✻	N09-6122-05	MACHINE SCREW (CONNECTION SC)	A1A4A5
H	2A	✻	N09-6122-05	MACHINE SCREW (CONNECTION SC)	B1B4B5
J	3B		N19-2022-04	FLAT WASHER	
K	3B	✻	N19-2171-04	FLAT WASHER	
VM1	2B	✻	T42-1058-15	MOTOR ASSY (SPINDLE)	
VM2	3A	✻	T49-0101-05	MOTOR ASSY (SLED)	
VM3	3B	✻	T42-1061-04	MOTOR ASSY (LOADING)	
VPU1	1A	✻	T25-0222-05	OPTICAL PICKUP HEAD	A0A1A2
VPU1	1A	✻	T25-0222-05	OPTICAL PICKUP HEAD	A3A4A5
VPU1	1A	✻	T25-0229-05	OPTICAL PICKUP HEAD	B0B1B2
VPU1	1A	✻	T25-0229-05	OPTICAL PICKUP HEAD	B3B4B5
83	2A	✻	W02-3408-05	ELECTRIC CIRCUIT MODULE	

A0 : X92-4400-00 (DVS-3000) **A1 :** X92-4400-01 (DVS-3001) **A2 :** X92-4740-00 (DVS-3020)
A3 : X92-4740-01 (DVS-3021) **A4 :** X92-4740-02 (DVS-3022) **A5 :** X92-4740-03 (DVS-3023)
B0 : X92-4730-00 (DVS-3010) **B1 :** X92-4730-01 (DVS-3011) **B2 :** X92-4750-00 (DVS-3030)
B3 : X92-4750-01 (DVS-3031) **B4 :** X92-4750-02 (DVS-3032) **B5 :** X92-4750-03 (DVS-3033)

⚠ Indicates safety critical components.

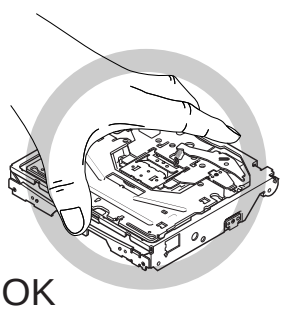
SPECIFICATIONS

ITEM	DVD	CD
Correspondence for physical media	DVD-ROM (SINGLE/DUAL) DVD-R * Ver1.0 Ver2.0 for General Ver2.0 for Authoring DVD-RW * Ver1.0 Ver1.1 DVD+R * DVD+RW *	CD-ROM (XA) CD-DA CD-R * CD-RW *
	* Record media may be unreproducible with the performance of disc and disc writer. CD-R and CD-RW correspond to multi-session and packet-writing. DVD-R/RW corresponds to the multi-border. Reproduction of the multi-session of DVD+R is unidentified.	
Correspondence for application	DVD-ROM DVD-VIDEO (decoder is required) DVD-AUDIO (decoder is required) Protection of copyrights CSS, CPPM correspondence CPRM un-correspondence	CD-DA CD-ROM CD-TEXT VIDEO-CD (decoder is required) SVCD (decoder is required) SACD (CD layer only) CCCD (un-correspondence)
Size	145.5 (W) x 128 (D) x 23 (D) mm	
Weight	360g	

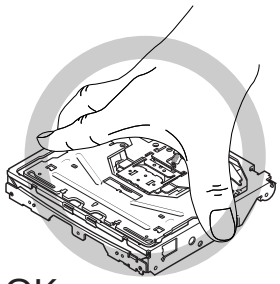
KENWOOD follows a policy of continuous advancements in development. For this reason specifications may be changed without notice.

X92-4400-0x/4730-0x
X92-4740-0x/4750-0x

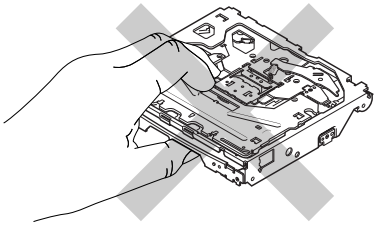
HANDLING FOR MECHANISM ASSY



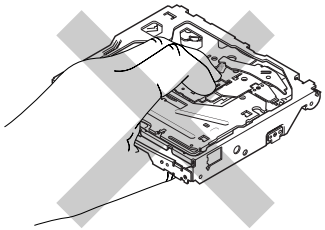
OK



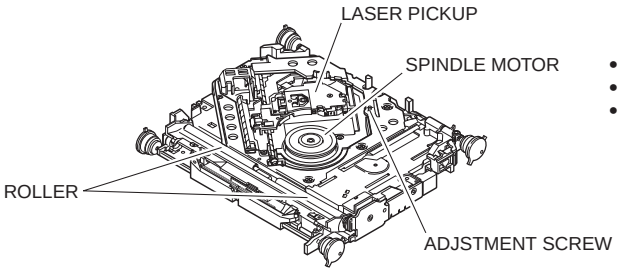
OK



NG Don't have the center of entrance because the disc insertion mouth is transformed.



NG Don't have the clamp lever assy because it is transformed.



- Don't applied grease to ROLLER.
- Don't touched LASER PICKUP and SPINDLE MOTOR.
- Don't touched ADJUSTMENT SCREW.

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