3MD CHANGER

KMD-D401

SERVICE MANUAL

KENWOOD

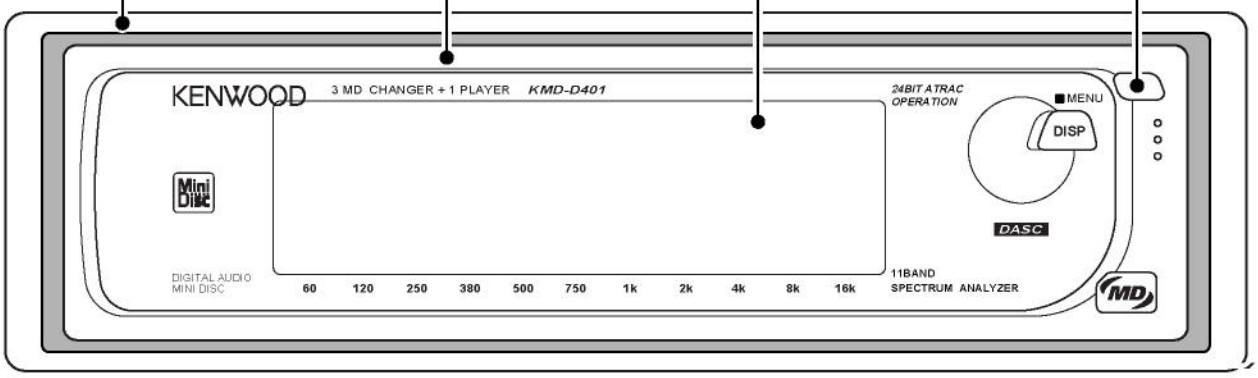
B51-7767-00(S) 1932

ESCUTCHEON
(B07-2188-02)

PANEL ASSY
(A64-2364-02)

FRONT GLASS
(B10-4053-02)

KNOB
(K24-1923-14)



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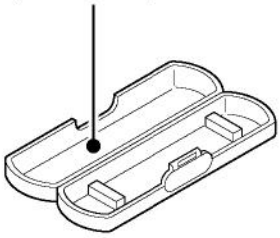

MOUNTING HARDWARE ASSY
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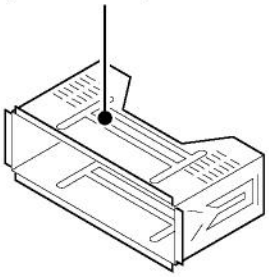

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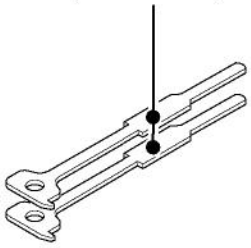

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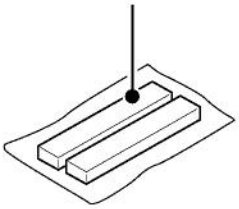

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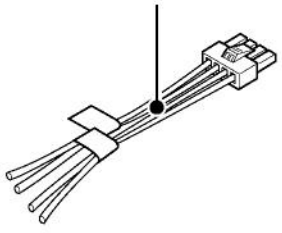

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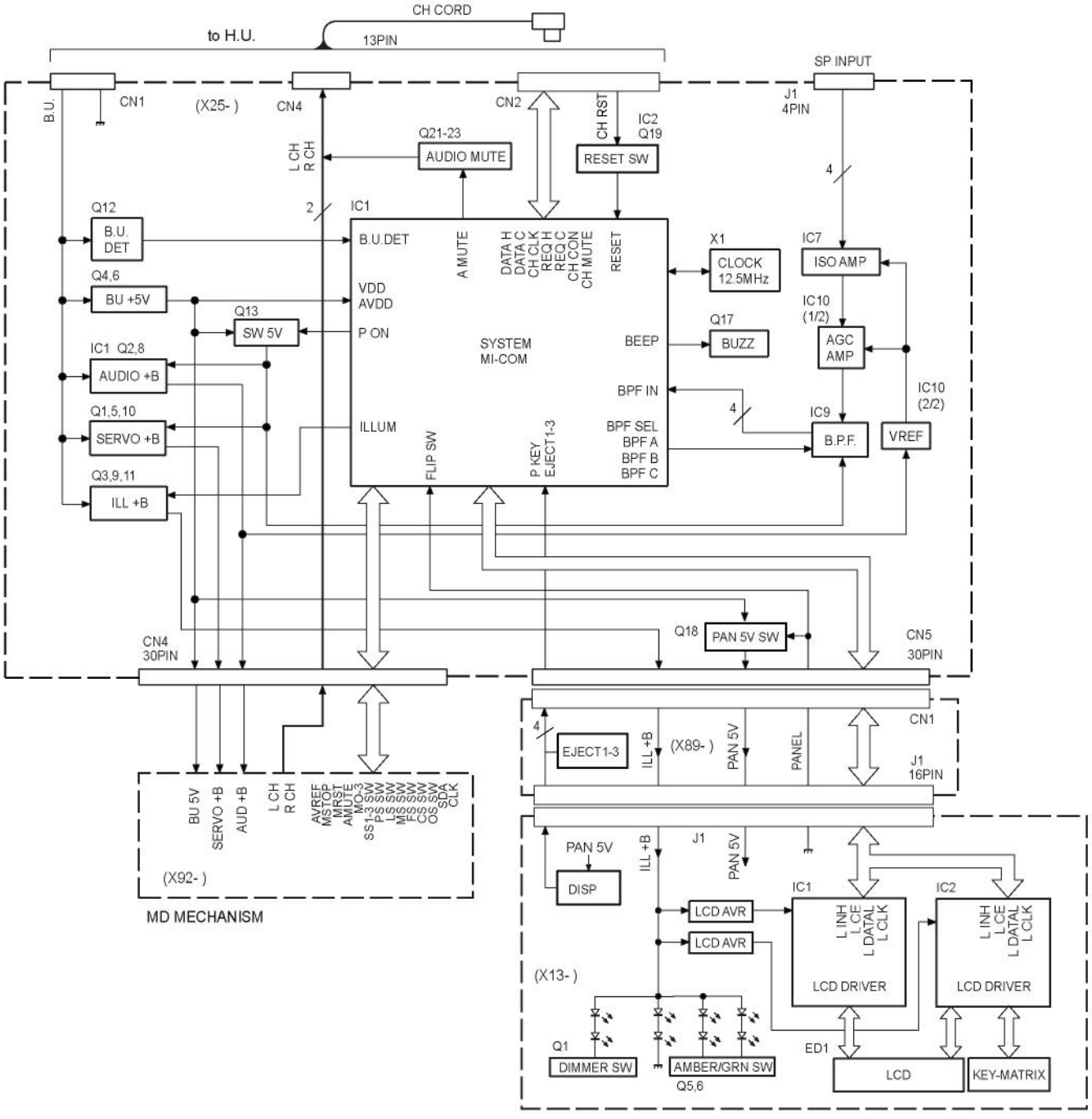
KMD-D401

CONTENTS

BLOCK DIAGRAM



COMPONENT DESCRIPTION

● SWITCH UNIT(X16-1100-01)

Ref.No.	Component Name	Application/Function	Operation/Condition/Compatibility
IC1	LC75823W	LCD driver	
IC2	LC75817W	LCD driver	
Q1	2SC4081	Dimmer SW	When Q1's base goes "Hi", Dimmer LEDs are turned on.
Q4	DTA124EUA or UN5112	Key-matrix permission SW	When Q4's base goes "Lo", Key-matrix is permitted.
Q5	DTC114EUA or UN5211	DISP key amber illumination SW	When Q5's base goes "Hi", Amber LED is lighting-up.
Q6	DTC114EUA or UN5211	DISP key green illumination SW	When Q6's base goes "Hi", Green LED is lighting-up.

● ELECTRIC UNIT(X25-8912-71)

Ref.No.	Component Name	Application/Function	Operation/Condition/Compatibility
IC1	M5237ML	AVR IC	IC is combined with Q8, and it works as the error detection, the driver.
IC2	PST9130NR	Reset IC	When BU 5V voltage is less than 3.0V, IC outputs "Lo".
IC3	784214YGC-031	System MI-COM.	
IC7	NJM4565M-TE2	Isolation amp.	
IC9	BA3834F	BPF IC	
IC10	NJM4565M-TE2	1/2 VCC & A.G.C.amp.	
Q1	UMC2N	Servo AVR SW	When a base goes "Hi", Servo AVR is working.
Q2	UMC2N	Audio 8V AVR SW	When a base goes "Hi", Audio 8V AVR is working.
Q3	UMC2N	Illumination AVR SW	When a base goes "Hi", Illumination AVR is working.
Q4	2SC4081	BU 5V AVR	While BACKUP is applied, AVR outputs +5V. Q4 and Q6 are inverted Darlington connection.
Q6	2SB1548(P) or 2SB1565(E,F)		
Q5	2SC4081	Servo AVR	While Q5's base goes "Hi", AVR outputs +6.5V.
Q10	2SB1548(P) or 2SB1565(E,F)		
Q8	2SB1548(P) or 2SB1565(E,F)	Audio 8V AVR	
Q9	2SC4081	Illumination AVR	While Q9's base goes "Hi", AVR outputs +10.5V.
Q11	2SB1184 or 2SB1202		
Q12	DTC124EUA or UN5212	BU detection SW	While BACKUP is applied, a base goes "Hi", and Q12 is turned on. When momentary power down has detected, a base goes "Lo", and Q12 is turned off.
Q13	2SA1576A	SW 5V	While a base goes "Lo", SW 5V is supplied to the microprocessor peripheral circuits.
Q14	2SC4081	Guide illumination Green SW	When a base goes "Hi", Guide illumination green LED is lighting-up.
Q15	DTC124EUA or UN5212	Changer control SW	When CHANGER CONTROL from H/U goes "Hi", Q15 is turned on.
Q16	2SC4081	Guide illumination Amber SW	When a base goes "Hi", Guide illumination amber LED is lighting-up.
Q17	DTC144EUA or UN5213	Buzzer SW	When a base goes "Hi", Buzzer is turned on.
Q18	2SA1576A	Panel 5V SW	When a base goes "Lo" during panel closed, Q18 is turned on.
Q19	DTC144EUA or UN5213	Changer reset SW	When CHANGER RESET from H/U is worked, a base goes "Hi" and Q19 is turned on.
Q20	DTA143EUA	Changer mute SW	When CHANGER MUTE REQUEST to H/U is worked, a base goes "Lo" and Q20 is turned on.
Q21	2SD2114K	Audio mute SW(L Ch)	When a base goes "Hi", Audio mute is activated.
Q22	UMC2N	Audio mute driver	When a base goes "Hi", Audio mute driver outputs "Hi".
Q23	2SD2114K	Audio mute SW(R Ch)	When a base goes "Hi", Audio mute is activated.
Q24	DTA114EUA or UN5111	LPSCO SW	When a base goes "Lo", Q24 is supplied to the LPS sensor and microprocessor's A/D converter reference voltage.
Q25	2SD2114K	AGC	Level control

COMPONENT DESCRIPTION

● MD UNIT(X33-3110-00)

Ref.No.	Component Name	Application/Function	Operation/Condition/Compatibility
IC1	CXA2523AR	RF MATRIX AMP.	RF amplifier(pit and groove switching, AGC, EQ), gain switching I-V amplifier, amplification of the light signal output, peak hold output, bottom hold output, FE output, TE output, SE output, ADIP binary output, VREF output, APC PD, FZC formation comparator.
IC2	S-817A25ANB	2.5V AVR	AVR for DSP outputs 2.5V.
IC3	CXD2667R	Digital Signal Processor(DSP)	EFM decoding, EFM digital PLL, ACIRC decoding, auto link processing, ADIP decoding, Digital servos(focusing, tracking, sled, spindle CLV), ATRAC/ ATRAC3 decoding, 20bit D/A, Analogue post-filtering, memory control, memory 4M(1Mx4)DRAM for ATRAC decode.
IC5	LP2982-3.3	3.3V AVR	AVR for D/A converter outputs 3.3V.
IC6	NJM4565MD	Op. Amp.	Low pass filter
IC7	L88M33T	3.3V AVR	AVR for RF & DSP circuit outputs 3.3V.
IC8	TC74HCT7007AF	BUFFER	Level shifting from 3.3V to 5V
IC9	780076YGK-R01	MD MECHA. MI-COM.	Servo control, memory control, system control and interfacing
IC10	W05-0858-00	EEPROM(2k)	Backup memory for servo constants & servo adjusting data
IC11	S-24C01AFJA	EEPROM(1k)	Backup memory for LPS data
IC12	BA5983FM	4ch BTL driver	Focus actuator coil & Tracking actuator coil driver, Spindle motor & Sled motor driver
IC13	LB1930M	Motor driver	Elevator motor drive
IC14	LB1930M	Motor driver	Mode switching motor driver
IC15	LB1930M	Motor driver	Lord and eject motor driver
Q1	2SB1295	LD APC	Laser power control
Q2	DTA114EUA	LD SW	While a laser is OFF, Q2's base goes "Lo" .
Q3	2SC4116(Y)	Disc reflection optical quantity detection	When the focusing point is passed during upward search, Q3 is turned on.
Q4	DTA114EUA	Sled drive mute	When Q4's base goes "Lo", Q5 is turned on, and Sled mute is activated.
Q5	FMG3A		
Q6	2SA1576A	P ON SW	Q6 is turned on while a base goes "Lo", and start Microprocessor peripheral power supplies.
Q7	DTC143EUA	5V AVR	AVR for pick-up servo outputs 5V. While Q7's base goes "Hi", AVR is working. Q7 and Q8 are ON/OFF SW of AVR. Q9 and Q10 are inverted Darlington connection.
Q8	DTA114EUA		
Q9	2SC4081		
Q10	2SB1202		
Q11	2SA1576A	A.8V SW	Audio AVR ON/OFF SW While Q12's base goes "Hi", Q11 is turned on, and A8V power supply is supplied.
Q12	DTC143EUA		

MICROCOMPUTER'S DESCRIPTION

IC3 (ELECTRIC UNIT: X25-8912-71)

● Terminal Description

Pin No.	Pin Name	I/O	Description	Processing Operation
1	M0	O	M1,M2,M3 common control output	All Stop : (M0,M1,M2,M3)=("Lo","Lo","Lo","Lo") Load : (M0,M1,M2,M3)=("Lo","Hi","Lo","Lo") Eject : (M0,M1,M2,M3)=("Hi","Lo","Hi","Hi") Pressure: (M0,M1,M2,M3)=("Lo","Lo","Hi","Lo") Leaving : (M0,M1,M2,M3)=("Hi","Hi","Lo","Hi") Rise : (M0,M1,M2,M3)=("Lo","Lo","Lo","Hi") Descent : (M0,M1,M2,M3)=("Hi","Hi","Hi","Lo") Brake : (M0,M1,M2,M3)=("Hi","Hi","Hi","Hi")
2	M3	O	MD mechanism elevator control output	
3	M2	O	MD mechanism roller control output	
4	M1	O	MD mechanism Load/Eject control output	
5	$\overline{\text{SS3 SW}}$	I	Storage shelf 3(Bottom) disc detection input	"Lo": MD detect
6	$\overline{\text{SS2 SW}}$	I	Storage shelf 2(Middle) disc detection input	"Lo": MD detect
7	$\overline{\text{SS1 SW}}$	I	Storage shelf 1(Top) disc detection input	"Lo": MD detect
8	$\overline{\text{LPSCO}}$	O	A/D converter reference power supply control	
9	VDD	-	Positive power supply connection terminal	Connected to BU 5V lines.
10	X2	-	Main clock resonator connection terminal	
11	X1	I	Main clock resonator connection terminal	
12	VSS	-	Ground connection terminal	Connected to ground lines.
13	XT2	-	Sub clock resonator connection terminal	Not used(N.C.)
14	XT1	I	Sub clock resonator connection terminal	Not used(connected to ground lines)
15	$\overline{\text{RESET}}$	I	Reset input terminal	"Lo": Reset
16	$\overline{\text{EJECT}}$	I	Eject SW input	"Lo": Eject SW pressed
17	$\overline{\text{MS SW}}$	I	Disc eject completion detection input	"Hi": Disc eject completed
18	$\overline{\text{COMM SW}}$	I	5-line communication previous/new switch input	"Hi": New type, "Lo": Previous type
19	FLIP SW	I	Panel tilting detection input	"Hi": Panel tilted or detached, "Lo": Panel closed
20	$\overline{\text{FS SW}}$	I	Disc-in detection switch input	"Lo": MD detect
21	$\overline{\text{OS SW}}$	I	Disc insertion orientation switch input	"Lo": Normally insertion
22	$\overline{\text{CHCON}}$	I	Changer control input from H/U	"Lo": Operation mode
23	AVDD	-	A/D converter analogue power supply connection terminal	Connected to BU 5V lines.
24	AVREF0	-	A/D converter reference voltage input terminal	Connected to SW 5V lines.
25		I		Not used(connected to ground lines)
26	BPF IN	I	Level detection input from BPF IC out	
27	MLPS	I	MD mechanism LPS input	Reference voltage 0.25V at SS1, 1.43V at SS2, 2.59V at SS3 4.61V at play position 3.73V at play position under limit
28		I		Not used(connected to ground lines)
29	PS SW	I	Pack-in completion detection switch input	"Lo": Pack-in completed
30	$\overline{\text{LS SW}}$	I	Loading completion detection switch input	"Lo": Loading completed
31	$\overline{\text{CS SW}}$	I	Change lever position detection switch input	"Lo": Roller leaving
32		I		Not used(connected to ground lines)
33	AVSS	-	A/D, D/A converter ground connection terminal	Connected to ground lines.
34	A MUTE	O	Audio mute control output	"Hi": Audio mute
35	$\overline{\text{CH MUTE}}$	O	Audio mute request output to H/U	"Lo": Audio mute request
36	AVREF1	-	D/A converter reference voltage input terminal	Connected to BU 5V lines.
37	P KEY	I	Key data input from LCD driver IC	
38	L DATA	O	Data output to LCD driver IC	
39	L CLK	O	Clock output to LCD driver IC	
40	DATAH	I	Data input from H/U	
41	DATAC	O	Data output to H/U	
42	HCLK	I/O	Clock input/output with H/U	New type: Input, Previous type: Output
43	REQC	O	Communication request to H/U	"Lo": Communication request
44	$\overline{\text{PON}}$	O	P ON control output	"Lo": Peripheral circuits are working.
45	M SDA	I/O	I2C-Bus data input/output terminal	
46	NC	O		Not used(N.C.)
47	M SCL	O	I2C-BUS clock output	

MICROCOMPUTER'S DESCRIPTION

Pin No.	Pin Name	I/O	Description	Processing Operation
48	BPF A	O	BPF IC band control output A	(SEL,A,B,C)=("Hi","Lo","Lo","Lo") .. GND (SEL,A,B,C)=("Hi","Lo","Lo","Hi") .. 68Hz (SEL,A,B,C)=("Hi","Lo","Hi","Lo") .. 170Hz (SEL,A,B,C)=("Hi","Lo","Hi","Hi") ... 420Hz (SEL,A,B,C)=("Hi","Hi","Lo","Lo") .. 1kHz (SEL,A,B,C)=("Hi","Hi","Lo","Hi") ... 2.4kHz (SEL,A,B,C)=("Hi","Hi","Hi","Lo") ... 5.9kHz (SEL,A,B,C)=("Hi","Hi","Hi","Hi") ... 14.4kHz (SEL,A,B,C)=("Lo","X","X","X") ..... GND
49	BPF B	O	BPF IC band control output B	
50	BPF C	O	BPF IC band control output C	
51	BPF SEL	O	BPF IC control output	
52-60	NC	O		Not used(N.C.)
61	SEL SW3	I	Destination selection input (panel key illumination colour select)	"Hi": Amber, "Lo": Green
62	NC	O		Not used(N.C.)
63	SEL SW1	I	Destination selection input(destination type)	"Hi": J type, "Lo": E type
64	SEL SW2	I	Destination selection input(model type)	"Hi": KMD-D401, "Lo": KMD-C30/FM
65-69	NC	O		Not used(N.C.)
70	$\overline{\text{BU DET}}$	I	Momentary power down detection input	"Hi" : When momentary power down detected or BU OFF "Lo" : BU ON
71	ILLUM	O	Illumination power supply on/off control output	"Hi": Illumination AVR is working.
72	VSS	-	Ground connection terminal	Connected to ground lines.
73	NC	O		Not used(N.C.)
74	GILL A	O	Guide illumination Amber lighting-up control output	"Hi": Amber lighting-up
75	GILL G	O	Guide illumination Green lighting-up control output	"Hi": Green lighting-up
76	NC	O		Not used(N.C.)
77	L INH	O	Reset output to LCD driver IC	"Lo": Reset
78	L CE	O	CE output to LCD driver IC	"Hi": Data communication
79	NC	O		Not used(N.C.)
80	DIMMER	O	Dimmer control output	"Lo": Dimmer mode
81	VDD	-	Positive power supply connection terminal	Connected to BU 5V lines.
82	BEEP	O	Beep output	
83	REQH	I	Communication request from H/U	"Lo": Communication request
84,85	NC	O		Not used(N.C.)
86	$\overline{\text{EJECT3}}$	I	Eject 3 key input	"Lo": Eject 3 key pressed
87	$\overline{\text{EJECT2}}$	I	Eject 2 key input	"Lo": Eject 2 key pressed
88	$\overline{\text{EJECT1}}$	I	Eject 1 key input	"Lo": Eject 1 key pressed
89,90	NC	O		Not used(N.C.)
91	M STOP	O	Wake up output to MD mechanism MI-COM.	"Hi": Operation mode
92	M RST	O	Reset output to MD mechanism MI-COM.	"Lo": Reset
93	M MUTE	I	Mute input from MD mechanism MI-COM.	"Lo": Audio mute request
94	TEST	-	Test terminal	Not used(connected to ground lines)
95	$\overline{\text{LED EJ2G}}$	O	Eject 2 key illumination Green output	"Lo": Green lighting-up
96	$\overline{\text{LED EJ1A}}$	O	Eject 1 key illumination Amber output	"Lo": Amber lighting-up
97	$\overline{\text{LED EJ1G}}$	O	Eject 1 key illumination Green output	"Lo": Green lighting-up
98	$\overline{\text{LED EJ2A}}$	O	Eject 2 key illumination Amber output	"Lo": Amber lighting-up
99	$\overline{\text{LED EJ3G}}$	O	Eject 3 key illumination Green output	"Lo": Green lighting-up
100	$\overline{\text{LED EJ3A}}$	O	Eject 3 key illumination Amber output	"Lo": Amber lighting-up

IC9 (MD UNIT: X33-3110-00)

● Terminal Description

Pin No.	Pin Name	I/O	Description	Processing Operation
1	DEEM	O	De-emphasis output	Not used(N.C.)
2	CSN	O	External DAC latch line	Not used(N.C.)
3	CCLK	O	External DAC clock line	Not used(N.C.)
4	CDTI	O	External DAC data line	Not used(N.C.)
5,6	NC	O		Not used(N.C.)
7	ESDA	I/O	EEPROM serial data line	

MICROCOMPUTER'S DESCRIPTION

Pin No.	Pin Name	I/O	Description	Processing Operation
8	ESCL	I/O	EEPROM serial clock line	
9	VSS0	-	Ground connection terminal	Connected to ground lines.
10	VDD0	-	Positive power supply connection terminal	Connected to BU 5V lines.
11	$\overline{\text{P-ON}}$	O	P ON control output	"Lo": Peripheral circuits are workin g.
12	LDON	O	Laser APC on/off control	"Hi": LD ON
13	MSDA	I/O	Serial data line with system MI-COM.	(I2C-BUS)
14	MSCL	I/O	Serial clock line with system MI-COM.	(I2C-BUS)
15	$\overline{\text{AMUTE}}$	O	Audio mute request to system MI-COM.	"Lo": Audio mute request
16	$\overline{\text{XRST}}$	O	Reset output to IC3 and servo driver IC	"Lo": Reset
17	XLAT	O	Latch output to IC3	"Hi" → "Lo": Data latch
18	SRDT	I	Serial data input from IC3	
19	SWDT	O	Serial data output to IC3	
20	SCLK	O	Shift clock output to IC3	
21	FLRXD	O		Not used(N.C.)
22	FLTXD	O		Not used(N.C.)
23	LOE/LIM SW	I	Pickup most inner position detection , Loading completion detection	"Hi": Lording completion, "Hi" → "Lo": Pickup most inner position
24	VDD1	-	Positive power supply connection terminal	Connected to BU 5V lines.
25	AVSS	-	A/D, D/A converter ground connection terminal	Connected to ground lines.
26	MECHA SEL	I	Mechanism destination select terminal	Not used(pull up to BU 5V lines)
27-31	NC	I		Not used(connected to ground lines)
32	AUX1	I	Jitters input(at line alignment)	Not used(connected to ground lines)
33	HOT	I	Temperature detection input	VthON: 3.87V, VthOFF: 3.74V, VthLo: 0.43V
34	AVREF	-	A/D converter reference voltage input terminal	Connected to AVCON terminal
35	AVCON	O	AVREF on/off control terminal	"Hi": AVREF reference voltage input
36	$\overline{\text{MRST}}$	I	Reset input from system MI-COM.	"Lo": Reset
37	XT2	-	Sub clock resonator connection terminal	Not used(N.C.)
38	XT1	I	Sub clock resonator connection terminal	Not used(connected to ground lines)
39	VPP	-		Not used(connected to ground lines)
40	X2	-	Main clock resonator connection terminal	
41	X1	I	Main clock resonator connection terminal	
42	VSS1	-	Ground connection terminal	Connected to ground lines.
43	$\overline{\text{MSTOP}}$	I	Stop request from system MI-COM.	"Hi": Operation mode, "Lo": Standby mode
44	FZC	I	FZC interrupt request	Media is distinguished at the rise up pulse edge, only effective the disc detection.
45	XINT	I	Interrupt request from IC3	"Lo": Interrupt request
46	SQSY	I	Sub-code Q sync or ADIP sync input	
47	FG	I	FG pulse input	Not used(connected to ground lines)
48	NC	O		Not used(N.C.)
49	LOEJ IN	I		Not used(pull down to ground lines)
50	LADJ1	I		Not used(pull down to ground lines)
51	TEST3	I	Test mode input 3	Not used(pull down to ground lines)
52	IVRTBAL PASS	I	Alignment mode selection terminal	Not used(pull down to ground lines)
53	AGC PASS	I	Alignment mode selection terminal	Not used(pull down to ground lines)
54	SE MNT	I	SE display mode select terminal	Not used(pull down to ground lines)
55	4M/16M	I	DRAM size selection terminal	Not used(pull down to ground lines)
56	$\overline{\text{SDMUTE}}$	O	Sled driver mute output	"Lo": Mute
57	AUDIO INV	I	DAC output polarity selection terminal	Lo: Polarity non-inversion, Hi: Polarity inversion
58	M REM	O	Test mode memory remains output	Not used(N.C.)
59	TYPE1	I	Destination selection terminal 1	Not used(pull down to ground lines)
60	TYPE2	I	Destination selection terminal 2	Not used(pull up to BU 5V lines)
61	C1 COUNT	I	C1 error count display mode selection terminal	Not used(pull down to ground lines)
62	SENS	I	Internal status input from IC3	
63	TEST0	I	Test mode input 0	Not used(pull down to ground lines)
64	TESTE	I	EEPROM test mode external data input)	Not used(pull down to ground lines)

TEST MODE

Preparation

Prepare the H/U (5L type) and connect the power cord and changer cord to it.

How to enter the mechanism test mode

(1) While holding the changer's "Eject 1" key depressed, press Reset on the H/U.
(2) Release Reset on the H/U but keep holding the "Eject 1" key depressed for about 3 more seconds.
(3) The color of the indicator below the MD insertion slot will change from green to amber.
(4) Select the changer as the source to the H/U.

How to exit from the mechanism test mode

Press Reset on the H/U.

Items

1. Setting the mechanism to the transport position

Before forwarding the product after servicing and inspection of the mechanism, be sure to set it to the mechanism transport position as described below.

(1) Remove all discs from the product.
(2) Enter the mechanism test mode.
(3) Tap the "Preset 3" key on the H/U.
The mechanism will move to the transport position. After the movement completes, the buzzer generates two beeps to indicate it.
(4) Turn the BU and ACC power simultaneously off.

2. Adjusting the standard position of the linear positioning sensor (LPS)

This adjustment corrects the variance in voltage at the standard position of the LPS of each individual mechanism.

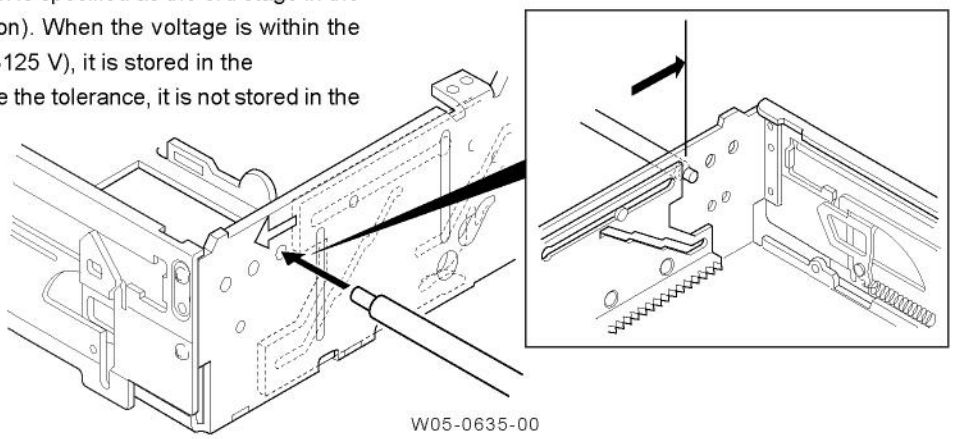
The LPS voltage is read when the mechanism is in the standard position (which is specified as the 3rd stage in the accommodation position). When the voltage is within the tolerance (2.55 V ± 0.3125 V), it is stored in the EEPROM. If it is outside the tolerance, it is not stored in the EEPROM.

Method A

(1) Remove all discs from the product.
(2) Enter the mechanism test mode.
(3) Tap the "Preset 6" key on the H/U for 3 times or more.
(4) Press and hold the "DISC DOWN" key on the H/U.
(5) To set the standard position of the mechanism, inset the test pin (W05-0635-00) into the 3rd stage. (See figure 1 below.)
(6) With the test pin left inserted, press and hold the "DISC UP" key on the H/U.
(7) With the test pin left inserted, tap the "Preset 4" key on the H/U.
(8) When the operation is executed correctly, the buzzer generates a beep and the mechanism moves to the transport position. The buzzer generates 2 beeps after completion of the movement.
(9) If the operation is not executed correctly, it stops and the buzzer generates 3 beeps.

Method B

(1) Remove all discs from the product.
(2) Enter the mechanism test mode.
(3) Tap the "Preset 6" key on the H/U for 3 times or more.
(4) Tap the "Preset 2" key on the H/U once.
(5) To set the standard position of the mechanism, inset the test pin (W05-0635-00) into the 3rd stage. (See figure 1 below.)
(6) With the test pin left inserted, tap the "Preset 2" key on the H/U once.
(7) When the operation is executed correctly, the buzzer generates a beep and the mechanism moves to the transport position. The buzzer generates 2 beeps after completion of the movement.
(8) If the operation is not executed correctly, it stops and the buzzer generates 3 beeps.



W05-0635-00

Fig. 1 LPS Adjustment

TEST MODE / ADJUSTMENT

3. Description of key operations

The following operations are available in the mechanism test mode.

(Note) With certain kinds (destination types) of H/U, Holding a control key depressed may not cause continuous operation. In this case, perform operation by tapping the control key repeatedly.

(1) "Preset 5" key on the H/U
While this key is held depressed, the LOAD/EJECT motor (MM3) rotates in the disc loading direction.

(2) "Preset 6" key on the H/U
While this key is held depressed, the LOAD/EJECT motor (MM3) rotates in the disc ejection direction.

(3) "DISC UP" key on the H/U
While this key is held depressed, the ELEVATOR motor (MM5) rotates in the elevator up direction.

(4) "DISC DOWN" key on the H/U
While this key is held depressed, the ELEVATOR motor (MM5) rotates in the elevator down direction.

(5) "Preset 3" key on the H/U
When this key is held depressed, the mechanism moves to the transport position.
The buzzer generates 2 beeps after completion of the movement.
However, if any of the switches inside the mechanism is ON or a disc is left in the mechanism, no operation occurs and the buzzer generates 3 beeps.

(6) "Preset 4" key on the H/U
Every time this key is pressed, the current LPS position is read as the standard position of the mechanism.
When the LPS voltage is within the tolerance (2.55 V ± 0.3125 V), it is stored in the EEPROM. If it is outside the tolerance, it is not stored in the EEPROM.
When the readout is performed successfully, the buzzer generates a beep and the mechanism moves to the transport position.
The buzzer generates 2 beeps after completion of the movement.
If the readout is not performed successfully, no operation occurs and the buzzer generates 3 beeps.
However, if any of the switches inside the mechanism is ON or a disc is left in the mechanism, no operation occurs and the buzzer generates 3 beeps.

(7) "PLAY/PAUSE" key on the H/U
Every time this key is pressed, the standard position value stored in the EEPROM will be loaded.
When the loaded value is normal, the buzzer generates a beep and the mechanism moves to the transport position.
The buzzer generates 2 beeps after completion of the movement.
If the loaded value is abnormal, no operation occurs and the buzzer generates 3 beeps.
The above operation is available even when one of the switches inside the mechanism is ON or a disc is left in the mechanism.

ADJUSTMENT

After replacing the pickup, perform the focusing bias adjustment and write the adjustment value in the EEPROM.

Preparation

Prepare the H/U (5L type) and connect the power cord and changer cord to it.

Adjustment procedure

(When performing this during setting, be sure to turn the set OFF in advance.)

1. Pull up pin 50 (LADJ1 (Check land L1)) of IC9 on the X33 unit to BU 5 V (Check land BU5).
2. Lead wires from check lands ARF and SAG (Servo GND) on the X33 unit so that they can be monitored with an oscilloscope.
3. Turn ON the set and reset the H/U.

∗ Perform a total of three adjustments, i.e. with the low-reflection pit and groove of the recordable disc and the high-reflection pit of the pre-mastered disc.

4. Load a disc to enter the adjustment mode.

<With a recordable disc>

5. The low-reflection pit play mode starts when "TNo.1" is displayed.
The time-code display shows "50".
6. While monitoring ARF on an oscilloscope, vary the focusing bias with the Track Up/Track Down keys.
7. To calculate the optimum value, vary each of the Up and Down keys to find the value at which the ARF waveform is troubled or at which the 3T waveform level drops, and read the center value between them.
For example, when the value on the Up side is 58 and that on the Down side is 46, the center value that is 52 is the optimum value.
8. When the optimum value is calculated, display that value and press the Manual Up or Down key to save the value. (With an ordinary set, press and hold the Track Up/Down key.)
9. After the low-reflection pit adjustment in step 8 completes, the pickup automatically jumps to the Groove area.
10. The groove play mode starts when "TNo.2" is displayed.
11. The subsequent operations are identical to those described in steps 6, 7 and 8 above.
12. When the groove area adjustment completes, the playback stops so all you have to do for completing the adjustment is eject the disc.

∗ The low-reflection pit contains only the TOC area and the total playtime is around 40 seconds. As the retry operation starts when the pit area is exceeded, the adjustment is invalid in this period.

ADJUSTMENT

<With a pre-mastered disc>

13. When the high-reflection pit play mode starts, perform the operations in step 5, 6, 7 and 8 above.
14. When adjustment completes, the playback stops so all you have to do for completing the adjustment is eject the disc.

∗ The EF balance coarse adjustment is performed during this test mode. However, as it is an automatic adjustment, no external control is required to perform it.

Display of service test modes

(Display on the set)

Pit adjustment mode started	[01- __: __]
Pit adjustment permitted	[01- __: 50]
Pit adjustment executing	[01- __: **]
(** = Adjustment data)	
Pit adjustment saved	[02- __: __]
(Groove adjustment mode started)	
Groove adjustment permitted	
Groove adjustment executing	[02- __: **]
(** = Adjustment data)	
Groove adjustment saved	[02- __: __]
(Normal completion)	

Display of errors

(** = Error status) [**- __ : __]

** = 03 : Error during EF balance adjustment of low-reflection pit
** = 04 : Error during focusing bias adjustment of low-reflection pit
** = 05 : Error during EEPROM writing of low-reflection pit adjustment result
** = 19 : Error during EF balance adjustment of groove
** = 20 : Error during focusing bias adjustment of groove
** = 21 : Error during EEPROM writing of groove adjustment result
** = 35 : Error during EF balance adjustment of high-reflection pit
** = 36 : Error during focusing bias adjustment of high-reflection pit
** = 37 : Error during EEPROM writing of high-reflection pit adjustment result

Adjustment parameters

Adjustment condition	: After setting the LADJ1 pin to Hi, reset-start the set.
Adjustment keys	: Track Up/Down keys
Data save keys	: Manual Up/Down keys (Holding of the adjustment key with certain sets)

Caution

1. Be sure to save the value at the end of adjustment of each medium.
If you eject the medium without setting the adjustment value and start the adjustment of another medium, the adjustment result of the former medium will not be saved.
2. To prevent deterioration of focusing, do not set an extreme focusing bias value on either Up or Down side.
The value may be reset by retrying adjustment, error or invalidation of keys may also occur. In this case, restart the adjustment by reset-starting the set.
(This is also applicable to the case in which you saved data calculated based on extreme values.)
3. Note on E-99
Although E-99 originally indicates a mechanism error, E-99 is also displayed when the EEPROM data is destroyed.
As the EEPROM data may be destroyed if a wire is attached or detached while the power of the set (BU) is ON, be sure to shut down the power (BU) before proceeding to such an operation.
This is also applicable to the connection or disconnection of a card cable (flexible cable) used in connection of the mechanism.
(Normal operation cannot be obtained by turning the TO terminal Hi like with the MDS-1000.)
4. Note on IC10 (EEPROM)
Be sure to use the W05-0858-00 when replacing the EEPROM.
IC10 stores various initial data of the MD DSP. The adjustment data is saved by rewriting some of the above data at the end of each adjustment. Therefore, if the EEPROM does not store initial data, error will occur at the moment adjustment data is saved.
Note that the capacity of the EEPROM has been changed from 1k to 2k following the provision of MDLP compatibility for the MD mechanism. As this has also resulted in change in the internal cables, care is required on the fact that the cables used in the MDC-1000 and MDC-1100 series are no longer usable.

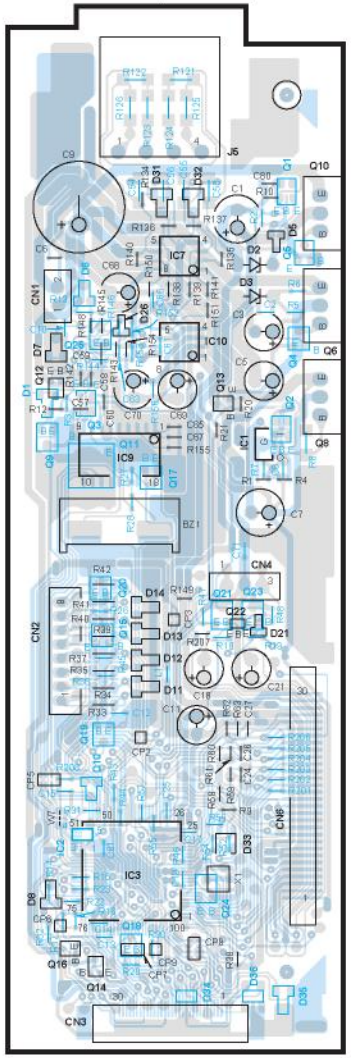
PC BOARD (Component Side View)

ELECTRIC UNIT
(X25-8912-71)

Ref. No. IC	Ref. No. Q	Address
1		3B
2		5B
3		5B
7		3B
9		4B
10		3B
	1	2C
	2	3C
	3	3B
	4	3C
	5	3C
	6	3C
	8	3C
	9	4B
	10	2C
	11	4B
	12	3A
	13	3B
	14	6B
	15	4B
	16	6B
	17	4B
	18	6B
	19	5B
	20	4B
	21	4B
	22	4B
	23	4B
	24	6B
	25	3B

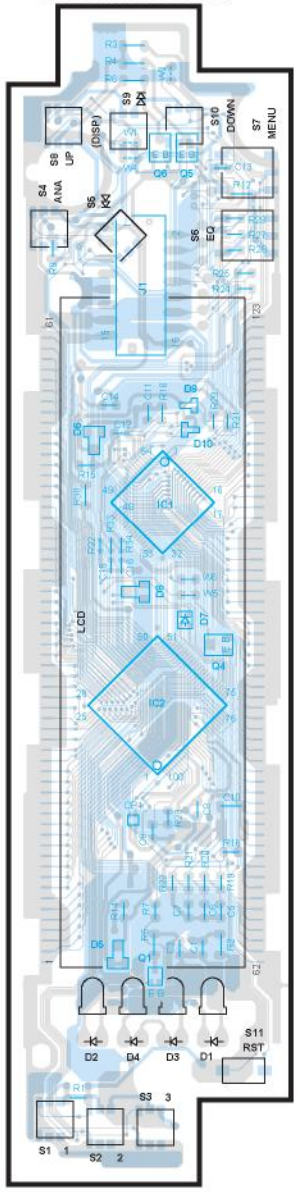
ELECTRIC UNIT

X25-8912-71 (J74-1261-22)



SWITCH UNIT

X16-1100-01 (J74-1260-12)

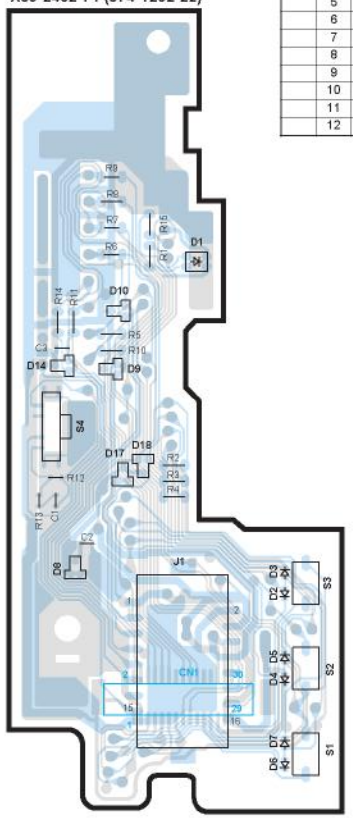


SWITCH UNIT
(X16-1100-01)

Ref. No. IC	Ref. No. Q	Address
1		4D
2		5D
	1	6D
	4	4D
	5	2D
	6	2D

DAUGTER UNIT

X89-2452-71 (J74-1262-22)

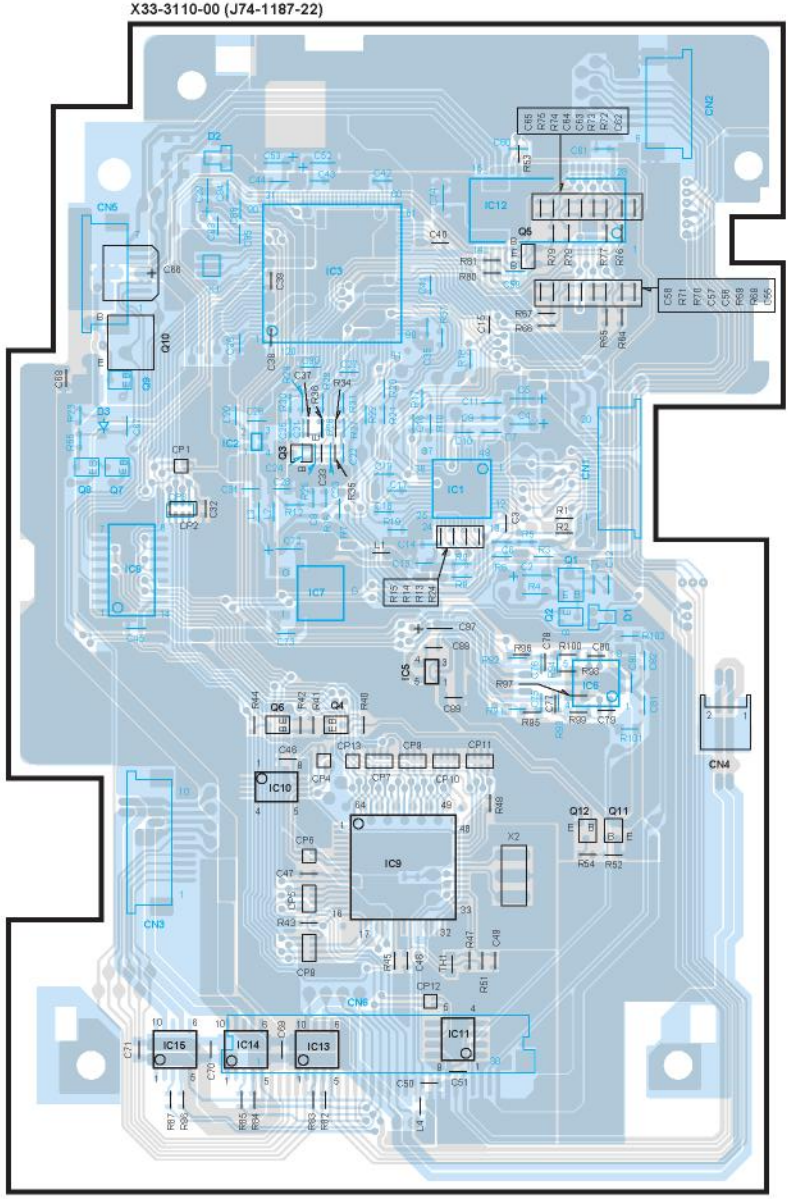


MD UNIT
(X33-3110-00)

Ref. No. IC	Ref. No. Q	Address
1		4H
2		3G
3		3H
5		4H
6		5I
7		4H
8		4G
9		5H
10		5H
11		6H
12		2I
13		6H
14		6G
15		6G
	1	4I
	2	4I
	3	3H
	4	5H
	5	2I
	6	5H
	7	4G
	8	4G
	9	3G
	10	3G
	11	5I
	12	5I

MD UNIT

X33-3110-00 (J74-1187-22)

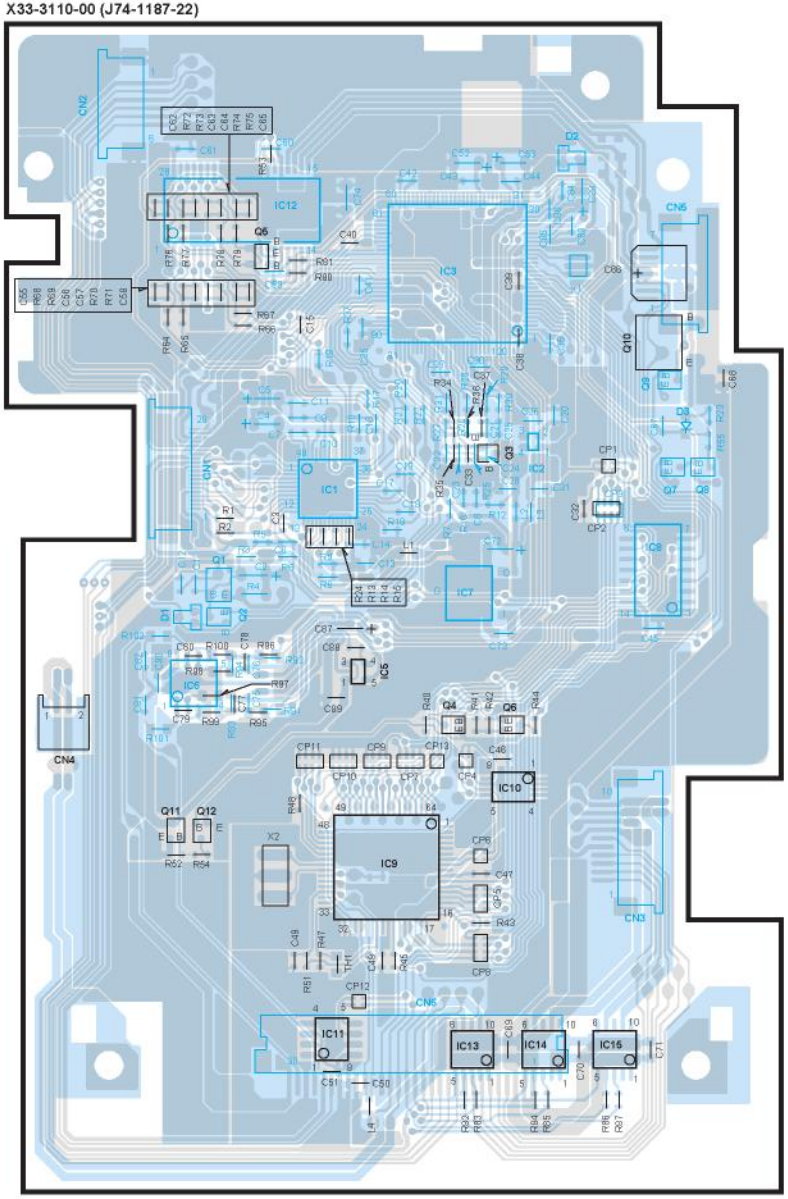


Refer to the schematic diagram for the values of resistors and capacitors.

PC BOARD (Foil Side View)

MD UNIT

X33-3110-00 (J74-1187-22)

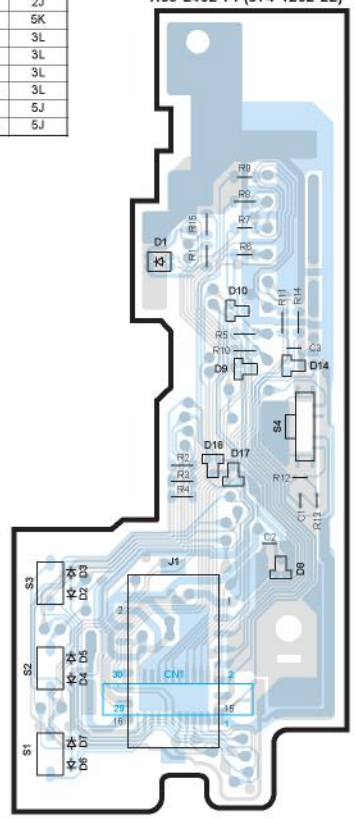


MD UNIT
(X33-3110-00)

Ref. No. IC	Ref. No. Q	Address
1		4K
2		4L
3		3K
5		4K
6		5J
7		4K
8		4L
9		5K
10		5K
11		6K
12		2J
13		6K
14		6L
15		6L
	1	4J
	2	4J
	3	3K
	4	5K
	5	2J
	6	5K
	7	3L
	8	3L
	9	3L
	10	3L
	11	5J
	12	5J

DAUGTER UNIT

X89-2452-71 (J74-1262-22)

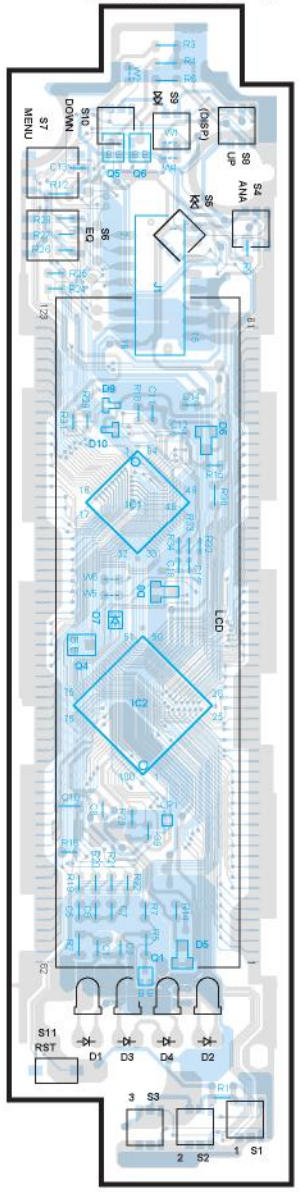


SWITCH UNIT
(X16-1100-01)

Ref. No. IC	Ref. No. Q	Address
1		4O
2		5O
	1	6O
	4	4O
	5	2O
	6	2O

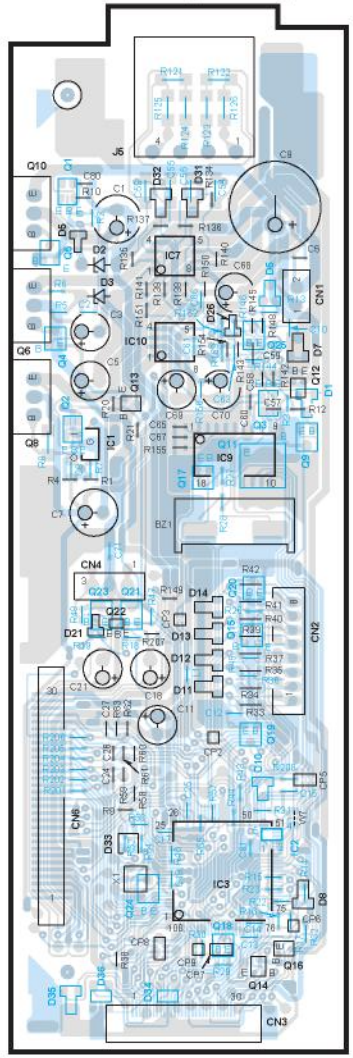
SWITCH UNIT

X16-1100-01 (J74-1260-12)



ELECTRIC UNIT

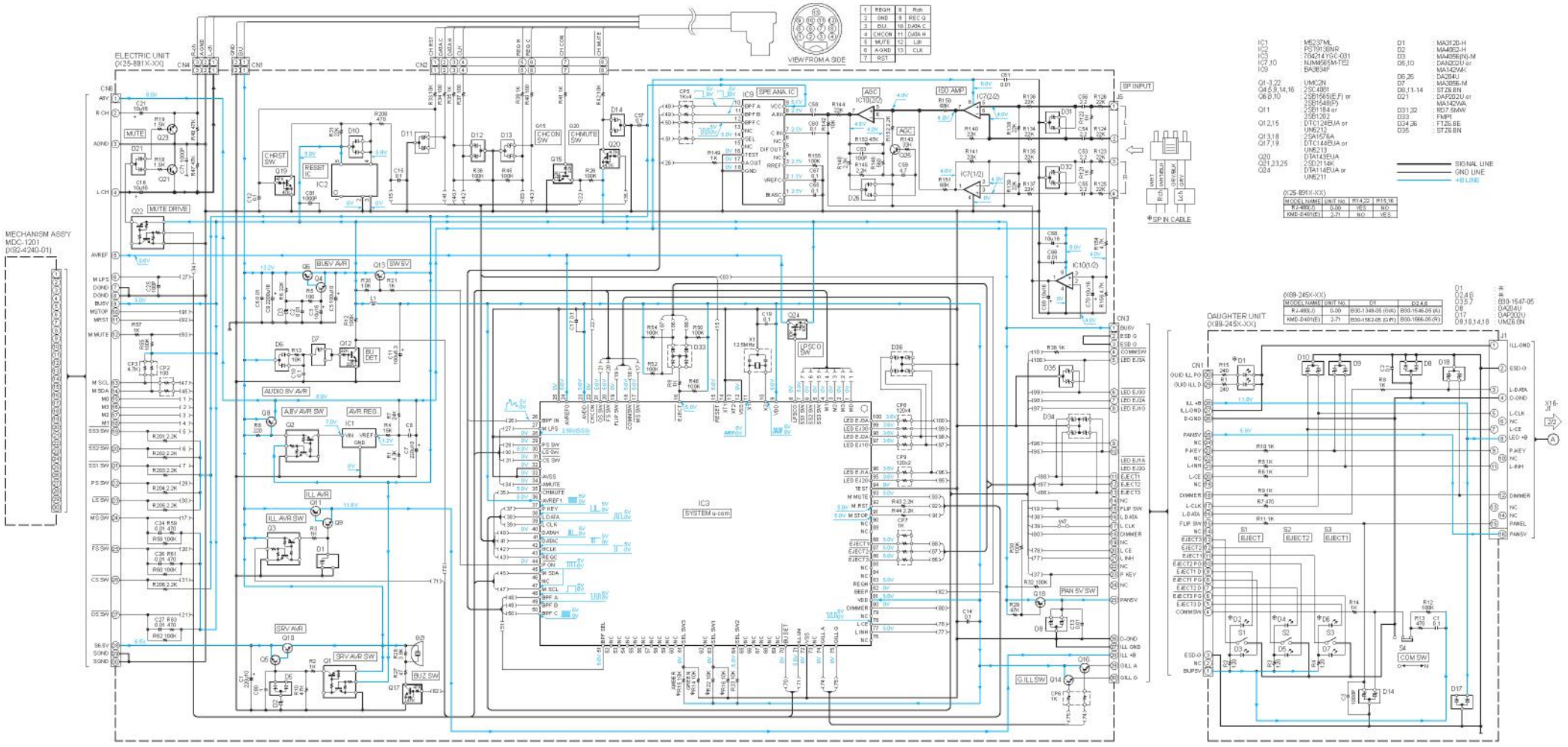
X25-8912-71 (J74-1261-22)



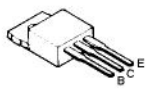
ELECTRIC UNIT
(X25-8912-71)

Ref. No. IC	Ref. No. Q	Address
1		3O
2		5Q
3		5Q
7		3O
9		4O
10		3O
	1	2P
	2	3P
	3	3O
	4	3P
	5	3P
	6	3P
	8	3P
	9	4O
	10	2P
	11	4O
	12	3R
	13	3O
	14	6O
	15	4O
	16	6O
	17	4O
	18	6O
	19	5O
	20	4O
	21	4O
	22	4O
	23	4O
	24	6O
	25	3O

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



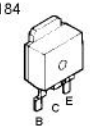
2SB1565



UN5111
UN5211
UN5213
2SA1576A
2SB1295
2SC4116
2SD2114K

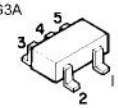
2SB1202

2SB1184

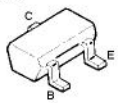


2SB1548

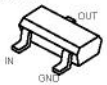
FMG3A



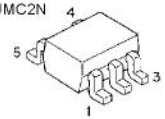
2SC4081



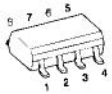
DTA114EUA
DTA124EUA
DTA143EUA
DTC114EUA
DTC124EUA
DTC143EUA
DTC144EUA



UMC2N



NJM4565M-TE2
NJM4565MD
S-24C01AFJA

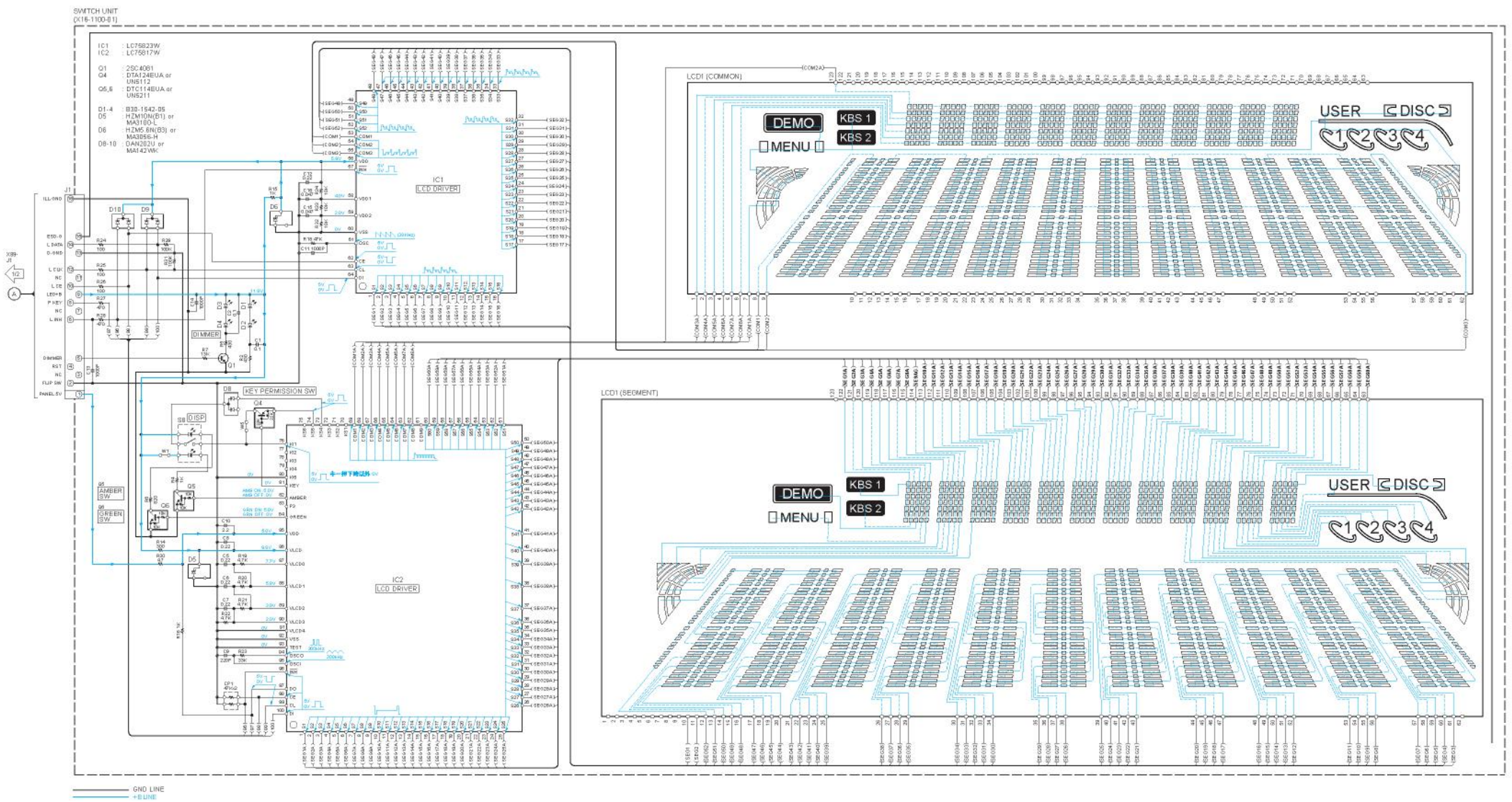


DAN202U

DAP202U
DA204U

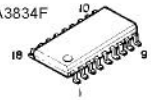
KMD-D401

KENWOOD

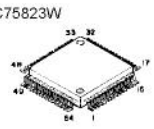


MA142WA
MA142WK
UN5212

BA3834F

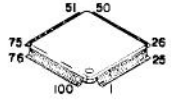


LC75823W



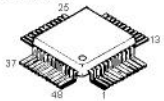
BA5983FM

LC75817W



TC74HCT7007AF

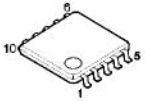
CXA2523AR



PST9130NR

M5237ML

LB1930M

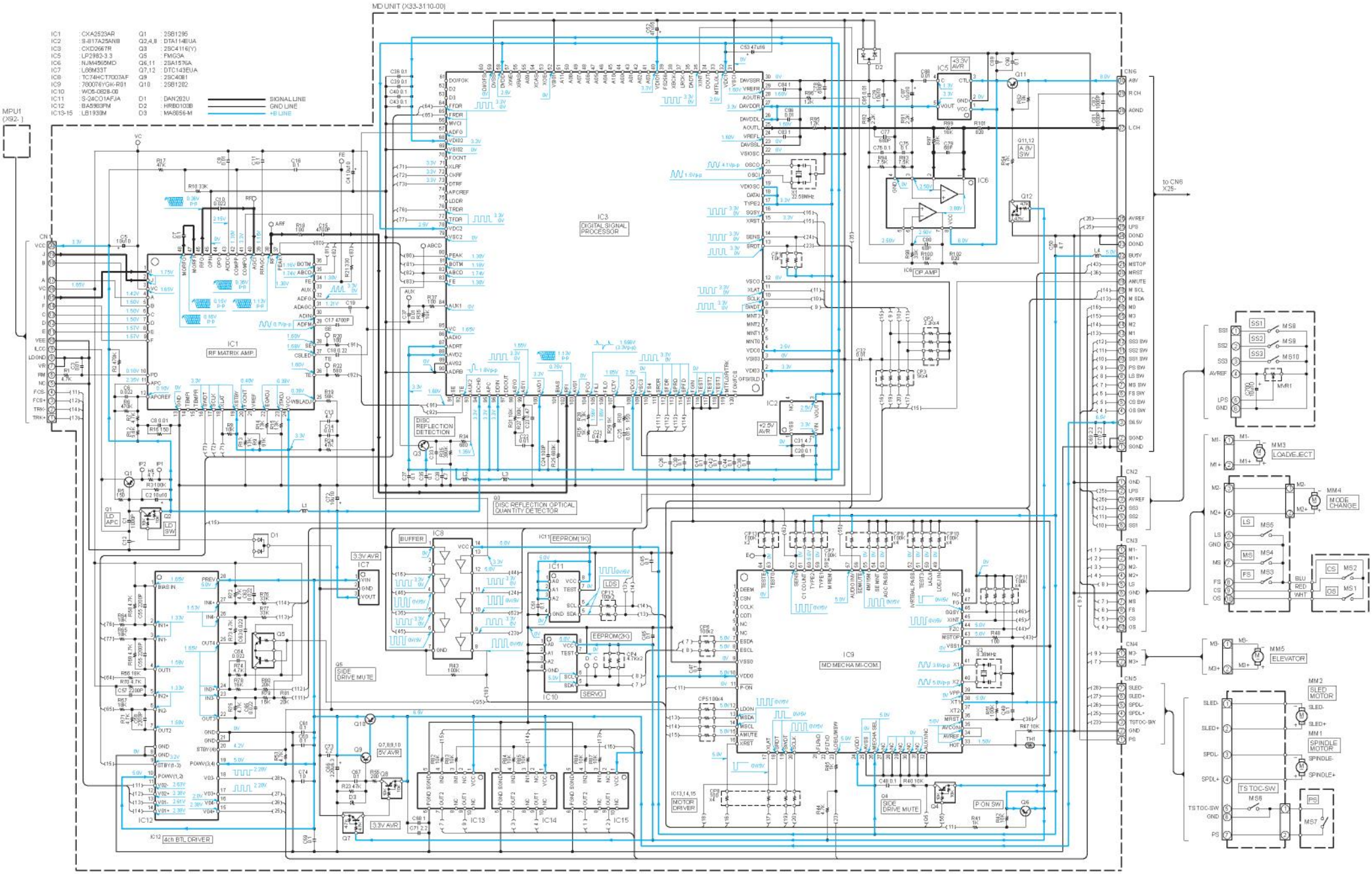


CAUTION: For continued safety, replace safety critical components only with manufacturer's recommended parts (refer to, parts list). ⚠ Indicates safety critical components. To reduce the risk of electric shock, leakage-current or resistance measurements shall be carried out (exposed parts are acceptably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

KMD-D401

KENWOOD



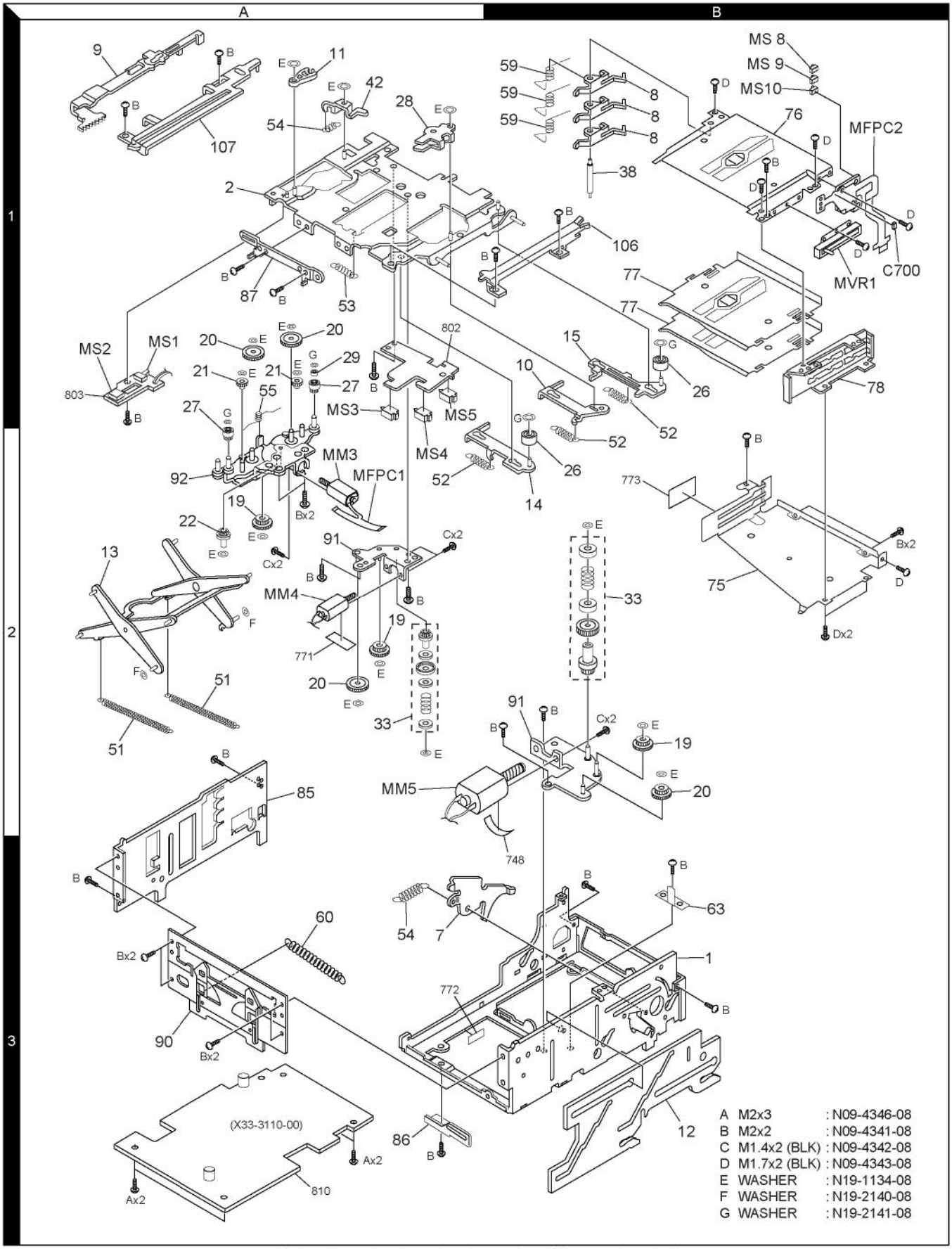
CAUTION: For continued safety, replace safety critical components only with manufacturer's recommended parts (refer to, parts list). ⚠ Indicates safety critical components. To reduce the risk of electric shock, leakage-current or resistance measurements shall be carried out (exposed parts are acceptably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

KMD-D401

KENWOOD

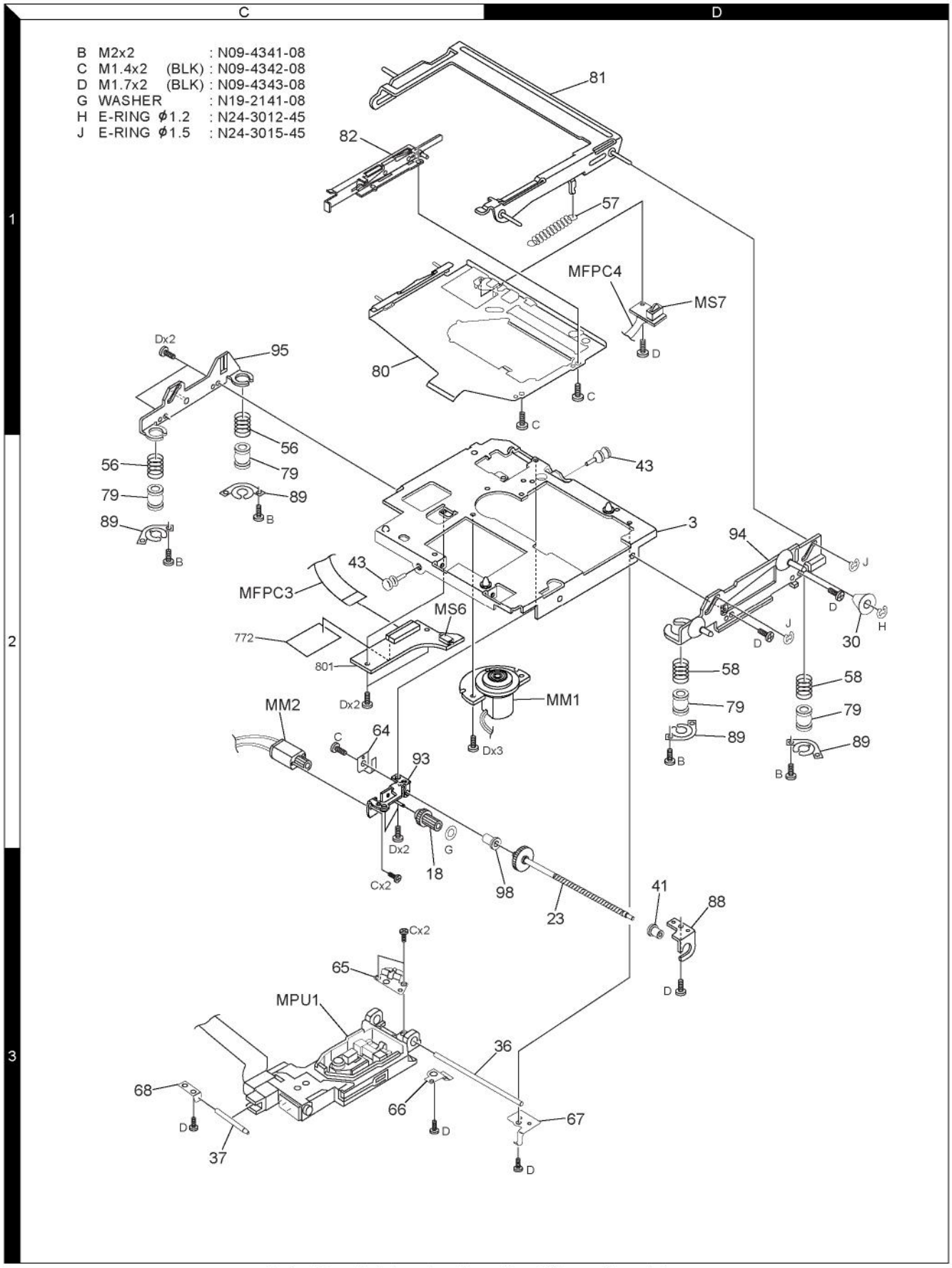
EXPLODED VIEW (MD MECHANISM)



Parts with exploded numbers larger than 700 are not suppied.

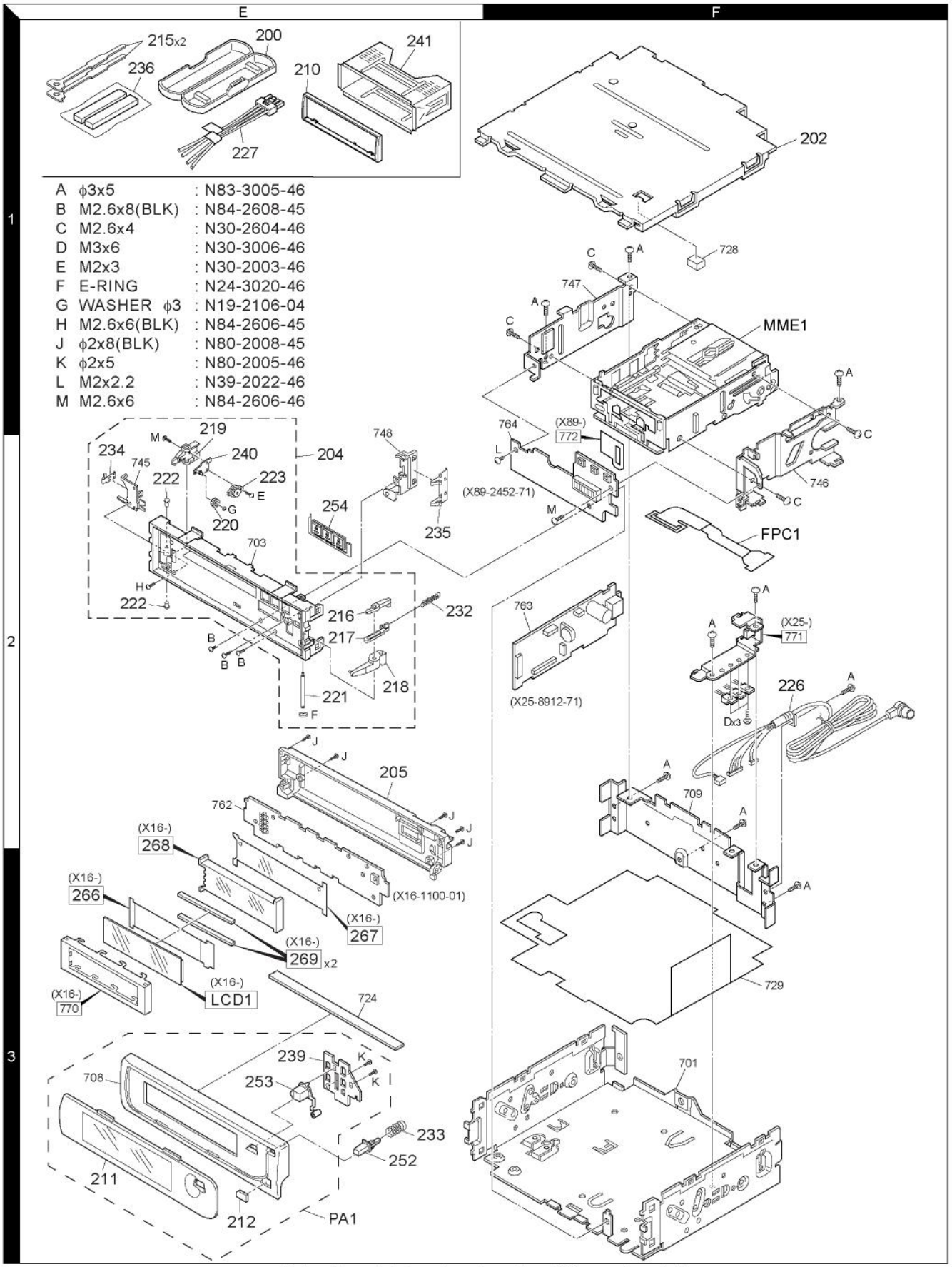
KMD-D401

EXPLODED VIEW (MD MECHANISM)



Parts with exploded numbers larger than 700 are not suppied.

EXPLODED VIEW (UNIT)



A	φ3x5	: N83-3005-46
B	M2.6x8(BLK)	: N84-2608-45
C	M2.6x4	: N30-2604-46
D	M3x6	: N30-3006-46
E	M2x3	: N30-2003-46
F	E-RING	: N24-3020-46
G	WASHER φ3	: N19-2106-04
H	M2.6x6(BLK)	: N84-2606-45
J	φ2x8(BLK)	: N80-2008-45
K	φ2x5	: N80-2005-46
L	M2x2.2	: N39-2022-46
M	M2.6x6	: N84-2606-46

Parts with exploded numbers larger than 700 are not suppied.

KMD-D401

PARTS LIST

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

Ref.No.	Add	New	Parts No.	Description	Destination
KMD-D401					
200	1E		A02-1486-13	PLASTIC CABINET ASSY	
202	1F	*	A52-0792-02	TOP PLATE	
204	2E		A22-2322-12	SUB PANEL ASSY	
205	2E	*	A46-1729-01	REAR COVER	
PA1	3E	*	A64-2364-02	PANEL ASSY	
210	1E		B07-2188-02	ESCUTCHEON	
211	3E	*	B10-4053-02	FRONT GLASS	
212	3E		B43-1242-24	BADGE	
-			B46-0100-50	WARRANTY CARD	
-			B46-0182-14	ID CARD	
-			B58-1342-04	CAUTION CARD	
-		*	B64-1955-00	INST. MANUAL (ENG,FRE,GER,DUT)	
-		*	B64-1955-00	INST. MANUAL (ITA,SPA,POR)	
215	1E		D10-3031-04	LEVER	
216	2E		D10-4141-04	LEVER	
217	2E		D10-4142-44	LEVER	
218	2E		D10-4143-14	LEVER	
219	2E		D10-4144-23	LEVER	
220	2E		D13-1352-04	GEAR	
221	2E		D21-2272-04	SHAFT	
222	2E		D21-2273-04	SHAFT	
223	2E		D39-0237-05	DAMPER	
226	2F	*	E30-4729-15	CORD WITH DIN CONNECTOR	
227	1E		E30-4730-05	DC CORD	
232	2E		G01-2856-24	EXTENSION SPRING	
233	3E		G01-2921-04	COMPRESSION SPRING	
234	2E		G02-1257-14	FLAT SPRING	
235	2E		G02-1259-14	FLAT SPRING	
236	1E		G11-1860-05	CUSHION	
-		*	H10-4775-02	POLYSTYRENE FOAMED FIXTURE	
-			H25-0337-04	PROTECTION BAG (180X300X0.03)	
-			H25-1111-04	PROTECTION BAG (280X450X0.03)	
-		*	H54-2102-03	ITEM CARTON CASE	
239	3E		J19-4938-04	HOLDER	
240	2E		J21-7817-24	MOUNTING HARDWARE ASSY	
241	1E	*	J21-9491-13	MOUNTING HARDWARE ASSY	
FPC1	2F		J84-0092-03	FLEXIBLE PRINTED WIRING BOARD	
252	3E		K24-1923-14	KNOB (REL)	
253	3E		K25-1026-04	KNOB (DISP)	
254	2E	*	K25-1311-03	KNOB (EJECT)	
A	1F		N83-3005-46	PAN HEAD TAPTITE SCREW	
B	2E		N84-2608-45	PAN HEAD TAPTITE SCREW	
C	1F		N30-2604-46	PAN HEAD MACHINE SCREW	
E	2E		N30-2003-46	PAN HEAD MACHINE SCREW	
F	2E		N24-3020-46	E TYPE RETAINING RING(2Φ)	
G	2E		N19-2106-04	FLAT WASHER (1.4X3X0.25)	
H	2E		N84-2606-45	PAN HEAD TAPTITE SCREW	
J	2E		N80-2008-45	PAN HEAD TAPTITE SCREW	
K	3E		N80-2005-46	PAN HEAD TAPTITE SCREW	
L	2F		N39-2022-46	PAN HEAD MACHIN SCREW	
M	2E		N84-2606-46	PAN HEAD TAPTITE SCREW	

Ref.No.	Add	New	Parts No.	Description	Destination
MME1	1F	*	X92-4240-01	MECHANISM ASSY (MDC-1201)	
SWITCH UNIT (X16-1100-01)					
266	3E		B11-0976-24	OPTICAL DIFFUSER	
267	3E		B11-0977-04	REFLECTION SHEET	
268	3E	*	B19-2092-03	LIGHTING BOARD	
D1-4			B30-1542-05	LED (WHT)	
LCD1	3E		B38-1014-05	LIQUID CRYSTAL	
C1,2			CK73GB1C104K	CHIP C 0.10UF K	
C5-8			CK73FB1C224K	CHIP C 0.22UF K	
C9			CC73GCH1H221J	CHIP C 220PF J	
C10			CK73EB1C225K	CHIP C 2.2UF K	
C11			CK73GB1H102K	CHIP C 1000PF K	
C12			CK73FB1C224K	CHIP C 0.22UF K	
C13,14			CK73GB1H102K	CHIP C 1000PF K	
C15,16			CK73GB1C473K	CHIP C 0.047UF K	
269	3E		E29-1584-04	CONDUCTIVE RUBBER	
J1			E59-0829-05	RECTANGULAR PLUG (16P)	
CP1			R90-0723-05	MULTI-COMP 47K X2	
R2			RK73EB2B431J	CHIP R 430 J 1/8W	
R4			RK73EB2B102J	CHIP R 1.0K J 1/8W	
R5			RK73EB2B431J	CHIP R 430 J 1/8W	
R6			RK73EB2B821J	CHIP R 820 J 1/8W	
R7			RK73GB1J133J	CHIP R 13K J 1/16W	
R14			RK73FB2A301J	CHIP R 300 J 1/10W	
R15,16			RK73FB2A102J	CHIP R 1.0K J 1/10W	
R18			RK73GB1J473J	CHIP R 47K J 1/16W	
R19-22			RK73GB1J472J	CHIP R 4.7K J 1/16W	
R23			RK73GB1J333J	CHIP R 33K J 1/16W	
R24-26			RK73FB2A101J	CHIP R 100 J 1/10W	
R27,28			RK73FB2A471J	CHIP R 470 J 1/10W	
R29			RK73GB1J104J	CHIP R 100K J 1/16W	
R30			RK73EB2B4R7J	CHIP R 4.7 J 1/8W	
R31			RK73GB1J104J	CHIP R 100K J 1/16W	
R32-34			RK73GB1J103J	CHIP R 10K J 1/16W	
W1			R92-2052-05	CHIP R 0 J 1/10W	
W5			R92-2052-05	CHIP R 0 J 1/10W	
S8			S70-0860-05	TACT SWITCH	
D5			HZM10N(B1)	ZENER DIODE	
D5			MA3100-L	ZENER DIODE	
D6			HZM5.6N(B3)	ZENER DIODE	
D6		*	MA3056-H	ZENER DIODE	
D8-10			DAN202U	DIODE	
D8-10			MA142WK	DIODE	
IC1			LC75823W	MOS-IC	
IC2			LC75817W	MOS-IC	
Q1			2SC4081	TRANSISTOR	
Q4			DTA124EUA	DIGITAL TRANSISTOR	
Q4			UN5112	DIGITAL TRANSISTOR	
Q5,6			DTC114EUA	DIGITAL TRANSISTOR	
Q5,6			UN5211	DIGITAL TRANSISTOR	
ELECTRIC UNIT (X25-8912-71)					
C1			C90-2673-05	ELECTRO 220UF 10WV	

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PARTS LIST

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ELECTRIC UNIT (X25-8912-71)

Ref.No.	Add	New	Parts No.	Description			Destination
C2			CK73GB1H103K	CHIP C	0.010UF	K	
C3			C90-2759-05	ELECTRO	10UF	16WV	
C5			C90-2672-05	ELECTRO	100UF	10WV	
C6			CK73GB1H103K	CHIP C	0.010UF	K	
C7			C90-2673-05	ELECTRO	220UF	10WV	
C8			CK73FB1C105K	CHIP C	1.0UF	K	
C9			C90-2688-05	ELECTRO	2200UF	16WV	
C10			CK73GB1C104K	CHIP C	0.10UF	K	
C11			CE04DW0J101M	ELECTRO	100UF	6.3WV	
C12			CK73GB1C104K	CHIP C	0.10UF	K	
C13			CK73GB1H103K	CHIP C	0.010UF	K	
C14,15			CK73GB1C104K	CHIP C	0.10UF	K	
C17			CK73GB1C104K	CHIP C	0.10UF	K	
C18			CE04DW1C100M	ELECTRO	10UF	16WV	
C19			CK73GB1C104K	CHIP C	0.10UF	K	
C21			CE04DW1C100M	ELECTRO	10UF	16WV	
C24			CK73GB1H103K	CHIP C	0.010UF	K	
C25			CC73GCH1H101J	CHIP C	100PF	J	
C26,27			CK73GB1H103K	CHIP C	0.010UF	K	
C53-56			CK73EB1C225K	CHIP C	2.2UF	K	
C57,58			CK73GB1C104K	CHIP C	0.10UF	K	
C59			CK73EB1A475K	CHIP C	4.7UF	K	
C60			CK73GB1C104K	CHIP C	0.10UF	K	
C61			CK73GB1H103K	CHIP C	0.010UF	K	
C63			CC73GCH1H101J	CHIP C	100PF	J	
C65			CK73GB1C104K	CHIP C	0.10UF	K	
C66			CK73GB1H103K	CHIP C	0.010UF	K	
C67			CK73GB1C104K	CHIP C	0.10UF	K	
C68-70			CE04DW1C100M	ELECTRO	10UF	16WV	
C71			CK73GB1H102K	CHIP C	1000PF	K	
C80			CK73FB1C105K	CHIP C	1.0UF	K	
C81			CK73GB1H102K	CHIP C	1000PF	K	
CN1			E40-3237-05	PIN ASSY (2P)			
CN2			E40-3252-05	PIN ASSY (8P)			
CN3			E40-9695-05	SOCKET FOR PIN ASSY (30P)			
CN4			E40-3238-05	PIN ASSY (3P)			
CN6			E40-9689-05	FLAT CABLE CONNECTOR (30P)			
J5			E58-0882-05	RECTANGULAR RECEPTACLE (4P)			
L1			L92-0329-05	CHIP FERRITE			
X1			L78-0568-05	RESONATOR (12.5MHz)			
D	2F		N30-3006-46	PAN HEAD MACHINE SCREW			
CP2			R90-1019-05	MULTI-COMP	100	X2	
CP3			R90-0719-05	MULTI-COMP	4.7K	X2	
CP5			R90-0724-05	MULTI-COMP	1K	X4	
CP6			R90-0725-05	MULTI-COMP	1K	X2	
CP7			R90-0724-05	MULTI-COMP	1K	X4	
CP8			R90-0727-05	MULTI-COMP	120	X4	
CP9			R90-0729-05	MULTI-COMP	120	X2	
R1			RK73GB1J432J	CHIP R	4.3K	J 1/16W	
R2,3			RK73GB1J102J	CHIP R	1.0K	J 1/16W	
R4			RK73GB1J153J	CHIP R	15K	J 1/16W	
R5			RK73GB1J101J	CHIP R	100	J 1/16W	

Ref.No.	Add	New	Parts No.	Description			Destination
R6			RK73GB1J223J	CHIP R	22K	J 1/16W	
R7			RK73GB1J243J	CHIP R	24K	J 1/16W	
R8			RK73EB2B221J	CHIP R	220	J 1/8W	
R9			RK73GB1J102J	CHIP R	1.0K	J 1/16W	
R10			RK73GB1J473J	CHIP R	47K	J 1/16W	
R12			RK73GB1J104J	CHIP R	100K	J 1/16W	
R13			RK73GB1J183J	CHIP R	18K	J 1/16W	
R15,16			RK73GB1J103J	CHIP R	10K	J 1/16W	
R18,19			RK73GB1J152J	CHIP R	1.5K	J 1/16W	
R20			RK73GB1J103J	CHIP R	10K	J 1/16W	
R21			RK73GB1J102J	CHIP R	1.0K	J 1/16W	
R23			RK73GB1J103J	CHIP R	10K	J 1/16W	
R26			RK73GB1J104J	CHIP R	100K	J 1/16W	
R27			RK73GB1J470J	CHIP R	47	J 1/16W	
R28			RK73GB1J392J	CHIP R	3.9K	J 1/16W	
R29			RK73GB1J473J	CHIP R	47K	J 1/16W	
R30			RK73GB1J104J	CHIP R	100K	J 1/16W	
R31			RK73GB1J223J	CHIP R	22K	J 1/16W	
R32			RK73GB1J104J	CHIP R	100K	J 1/16W	
R33			RK73EB2B103J	CHIP R	10K	J 1/8W	
R34			RK73EB2B101J	CHIP R	100	J 1/8W	
R35			RK73EB2B102J	CHIP R	1.0K	J 1/8W	
R36			RK73GB1J104J	CHIP R	100K	J 1/16W	
R37			RK73EB2B101J	CHIP R	100	J 1/8W	
R38			RK73GB1J102J	CHIP R	1.0K	J 1/16W	
R39			RK73EB2B102J	CHIP R	1.0K	J 1/8W	
R40			RK73EB2B101J	CHIP R	100	J 1/8W	
R41			RK73EB2B102J	CHIP R	1.0K	J 1/8W	
R42			RK73EB2B103J	CHIP R	10K	J 1/8W	
R43,44			RK73GB1J222J	CHIP R	2.2K	J 1/16W	
R45,46			RK73GB1J104J	CHIP R	100K	J 1/16W	
R47,48			RK73GB1J473J	CHIP R	47K	J 1/16W	
R50			RK73GB1J104J	CHIP R	100K	J 1/16W	
R52			RK73GB1J104J	CHIP R	100K	J 1/16W	
R54,55			RK73GB1J104J	CHIP R	100K	J 1/16W	
R57			RK73GB1J102J	CHIP R	1.0K	J 1/16W	
R58			RK73GB1J104J	CHIP R	100K	J 1/16W	
R59			RK73GB1J471J	CHIP R	470	J 1/16W	
R60			RK73GB1J104J	CHIP R	100K	J 1/16W	
R61			RK73GB1J471J	CHIP R	470	J 1/16W	
R62			RK73GB1J104J	CHIP R	100K	J 1/16W	
R63			RK73GB1J471J	CHIP R	470	J 1/16W	
R121,122			RK73EB2B102J	CHIP R	1.0K	J 1/8W	
R123-126			RK73EB2B223J	CHIP R	22K	J 1/8W	
R134-141			RK73GB1J223J	CHIP R	22K	J 1/16W	
R142			RK73GB1J103J	CHIP R	10K	J 1/16W	
R143			RK73GB1J333J	CHIP R	33K	J 1/16W	
R144			RK73GB1J223J	CHIP R	22K	J 1/16W	
R145			RK73GB1J222J	CHIP R	2.2K	J 1/16W	
R146			RK73GB1J561J	CHIP R	560	J 1/16W	
R148			RK73GB1J222J	CHIP R	2.2K	J 1/16W	
R149			RK73GB1J102J	CHIP R	1.0K	J 1/16W	
R150,151			RK73GB1J683J	CHIP R	68K	J 1/16W	
R152			RK73GB1J222J	CHIP R	2.2K	J 1/16W	
R153			RK73GB1J473J	CHIP R	47K	J 1/16W	

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KMD-D401

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ELECTRIC UNIT (X25-8912-71)

Ref.No.	Add	New	Parts No.	Description	Destination
R154			RK73GB1J472J	CHIP R 4.7K J 1/16W	
R155			RK73GB1J104J	CHIP R 100K J 1/16W	
R156			RK73GB1J472J	CHIP R 4.7K J 1/16W	
R201-206			RK73GB1J222J	CHIP R 2.2K J 1/16W	
R208			RK73GB1J471J	CHIP R 470 J 1/16W	
W7			R92-2052-05	CHIP R 0 J 1/10W	
BZ1			T95-0205-05	PIEZOELECTRIC VIBRATOR	
D1			MA3120-H	ZENER DIODE	
D2			MA4062-H	ZENER DIODE	
D3			MA4056(N)-M	ZENER DIODE	
D5			DAN202U	DIODE	
D5			MA142WK	DIODE	
D6			DA204U	DIODE	
D7			MA3056-M	ZENER DIODE	
D8			STZ6.8N	ZENER DIODE	
D10			DAN202U	DIODE	
D10			MA142WK	DIODE	
D11-14			STZ6.8N	ZENER DIODE	
D21			DAP202U	DIODE	
D21			MA142WA	DIODE	
D26			DA204U	DIODE	
D31,32			RD7.5MW	ZENER DIODE	
D33			FMP1	DIODE	
D34			FTZ6.8E	ZENER DIODE	
D35			STZ6.8N	ZENER DIODE	
D36			FTZ6.8E	ZENER DIODE	
IC1			M5237ML	IC(VOLTAGE REGULATOR)	
IC2			PST9130NR	ANALOGUE IC	
IC3			784214YGC-031	MI-COM IC	
IC7			NJM4565M-TE2	ANALOGUE IC	
IC9			BA3834F	MOS-IC	
IC10			NJM4565M-TE2	ANALOGUE IC	
Q1-3			UMC2N	TRANSISTOR	
Q4,5			2SC4081	TRANSISTOR	
Q6			2SB1548(P)	TRANSISTOR	
Q6			2SB1565(E,F)	TRANSISTOR	
Q8			2SB1548(P)	TRANSISTOR	
Q8			2SB1565(E,F)	TRANSISTOR	
Q9			2SC4081	TRANSISTOR	
Q10			2SB1548(P)	TRANSISTOR	
Q10			2SB1565(E,F)	TRANSISTOR	
Q11			2SB1184	TRANSISTOR	
Q11			2SB1202	TRANSISTOR	
Q12			DTC124EUA	DIGITAL TRANSISTOR	
Q12			UN5212	DIGITAL TRANSISTOR	
Q13			2SA1576A	TRANSISTOR	
Q14			2SC4081	TRANSISTOR	
Q15			DTC124EUA	DIGITAL TRANSISTOR	
Q15			UN5212	DIGITAL TRANSISTOR	
Q16			2SC4081	TRANSISTOR	
Q17			DTC144EUA	DIGITAL TRANSISTOR	
Q17			UN5213	DIGITAL TRANSISTOR	
Q18			2SA1576A	TRANSISTOR	
Q19			DTC144EUA	DIGITAL TRANSISTOR	
Q19			UN5213	DIGITAL TRANSISTOR	
Q20			DTA143EUA	DIGITAL TRANSISTOR	
Q21			2SD2114K	TRANSISTOR	
Q22			UMC2N	TRANSISTOR	
Q23			2SD2114K	TRANSISTOR	
Q24			DTA114EUA	DIGITAL TRANSISTOR	
Q24			UN5111	DIGITAL TRANSISTOR	
Q25			2SD2114K	TRANSISTOR	

MD UNIT (X33-3110-00)

Ref.No.	Add	New	Parts No.	Description	Destination
C1			CC73GCH1E102J	CHIP C 1000PF J	
C2			C92-0628-05	CHIP-TAN 10UF 10WV	
C3			CK73GB1H103K	CHIP C 0.010UF K	
C4,5			C92-0628-05	CHIP-TAN 10UF 10WV	
C6			CK73GB1E223K	CHIP C 0.022UF K	
C7			CK73GB1C104K	CHIP C 0.10UF K	
C8,9			CK73GB1H103K	CHIP C 0.010UF K	
C10			CK73GB1E223K	CHIP C 0.022UF K	
C11			CK73GB1C104K	CHIP C 0.10UF K	
C12			CK73GB0J105K	CHIP C 1.0UF K	
C13			CK73FB0J475K	CHIP C 4.7UF K	
C14			CK73GB1H103K	CHIP C 0.010UF K	
C15			CK73GB1H472K	CHIP C 4700PF K	
C16			CK73GB1C104K	CHIP C 0.10UF K	
C17			CK73GB1H472K	CHIP C 4700PF K	
C18			CK73GB1A224K	CHIP C 0.22UF K	
C19			CK73GB0J105K	CHIP C 1.0UF K	
C20			CK73GB1C104K	CHIP C 0.10UF K	
C21			CK73GB1A474K	CHIP C 0.47UF K	
C22			CK73GB1H103K	CHIP C 0.010UF K	
C23			CK73GB1A474K	CHIP C 0.47UF K	
C24			CC73GCH1H101J	CHIP C 100PF J	
C25			CK73GB1H153K	CHIP C 0.015UF K	
C26			CK73GB0J105K	CHIP C 1.0UF K	
C27			CK73GB1C104K	CHIP C 0.10UF K	
C28			CK73FB0J475K	CHIP C 4.7UF K	
C29			C92-0628-05	CHIP-TAN 10UF 10WV	
C30			CK73GB1C104K	CHIP C 0.10UF K	
C31			CK73FB0J475K	CHIP C 4.7UF K	
C32			CK73GB1H103K	CHIP C 0.010UF K	
C33			CK73GB0J105K	CHIP C 1.0UF K	
C35,36			CK73GB1C104K	CHIP C 0.10UF K	
C37			CK73GB1H103K	CHIP C 0.010UF K	
C38-49			CK73GB1C104K	CHIP C 0.10UF K	
C50			CK73FB0J475K	CHIP C 4.7UF K	
C51			CK73GB1C104K	CHIP C 0.10UF K	
C52,53			C92-1324-05	CHIP-TAN 4.7UF 16WV	
C55-58			CK73GB1H222K	CHIP C 2200PF K	
C59-61			CK73GB1C104K	CHIP C 0.10UF K	
C62-65			CK73GB1E223K	CHIP C 0.022UF K	
C66			C92-1429-05	ELECTRO 220UF 6.3WV	
C67			CK73GB1C104K	CHIP C 0.10UF K	
C68			CK73FB1C105K	CHIP C 1.0UF K	
C69-71			CK73FB1A225K	CHIP C 2.2UF K	
C72			C92-0628-05	CHIP-TAN 10UF 10WV	

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MD UNIT (X33-3110-00)

Ref.No.	Add	New	Parts No.	Description	Destination
C73			CK73FB1A225K	CHIP C 2.2UF K	
C74			CK73EB0J106K	CHIP C 10UF K	
C75,76			CK73GB1C104K	CHIP C 0.10UF K	
C77,78			CC73GCH1H681J	CHIP C 680PF J	
C79,80			CC73GCH1H680J	CHIP C 68PF J	
C81,82			CC73GCH1E102J	CHIP C 1000PF J	
C83,84			CK73GB0J105K	CHIP C 1.0UF K	
C85,86			CK73GB1H103K	CHIP C 0.010UF K	
C87			C92-0628-05	CHIP-TAN 10UF 10WV	
C88			CK73GB1H103K	CHIP C 0.010UF K	
C89			CK73FB1C105K	CHIP C 1.0UF K	
C90			CK73GB1C104K	CHIP C 0.10UF K	
CN1			E40-9693-05	FLAT CABLE CONNECTOR (20P)	
CN2			E40-9713-05	FLAT CABLE CONNECTOR (6P)	
CN3			E40-9661-05	FLAT CABLE CONNECTOR (10P)	
CN4			E40-8078-05	PIN ASSY (2P)	
CN5			E40-9714-05	FLAT CABLE CONNECTOR (7P)	
CN6			E40-9373-05	FLAT CABLE CONNECTOR (30P)	
L1			L92-0322-05	CHIP FERRITE	
L2-4			L92-0329-05	CHIP FERRITE	
X1			L78-0839-05	RESONATOR (22.579MHz)	
X2			L78-0571-05	RESONATOR (8.388MHz)	
CP1			R90-0726-05	MULTI-COMP 10K X2	
CP2			R90-0722-05	MULTI-COMP 2.2K X4	
CP3			R90-0724-05	MULTI-COMP 1K X4	
CP4			R90-0719-05	MULTI-COMP 4.7K X2	
CP5			R90-1014-05	MULTI-COMP 100 X4	
CP6			R90-1019-05	MULTI-COMP 100 X2	
CP7			R90-0720-05	MULTI-COMP 100K X4	
CP8			R90-1014-05	MULTI-COMP 100 X4	
CP9-11			R90-0720-05	MULTI-COMP 100K X4	
CP12			R90-1019-05	MULTI-COMP 100 X2	
CP13			R90-0737-05	MULTI-COMP 100K X2	
R1			RK73GB1J472J	CHIP R 4.7K J 1/16W	
R2			RK73GB1J474J	CHIP R 470K J 1/16W	
R3			RK73GB1J104J	CHIP R 100K J 1/16W	
R4			RK73EB2B4R7J	CHIP R 4.7 J 1/8W	
R5			RK73GB1J151J	CHIP R 150 J 1/16W	
R6			RK73GB1J474J	CHIP R 470K J 1/16W	
R7			RK73GB1J472J	CHIP R 4.7K J 1/16W	
R8			RK73GB1J103J	CHIP R 10K J 1/16W	
R9			RK73GB1J913J	CHIP R 91K J 1/16W	
R10			RK73GB1J333J	CHIP R 33K J 1/16W	
R12			RK73GB1J562J	CHIP R 5.6K J 1/16W	
R13-15			RK73GB1J133J	CHIP R 13K J 1/16W	
R16			RK73GB1J151J	CHIP R 150 J 1/16W	
R17			RK73GB1J473J	CHIP R 47K J 1/16W	
R18			RK73GB1J101J	CHIP R 100 J 1/16W	
R19			RK73GB1J563J	CHIP R 56K J 1/16W	
R20			RK73GB1J101J	CHIP R 100 J 1/16W	
R21			RK73GB1J331J	CHIP R 330 J 1/16W	
R22			RK73GB1J681J	CHIP R 680 J 1/16W	
R23,24			RK73GB1J473J	CHIP R 47K J 1/16W	

Ref.No.	Add	New	Parts No.	Description	Destination
R25			RK73GB1J684J	CHIP R 680K J 1/16W	
R26			RK73GB1J102J	CHIP R 1.0K J 1/16W	
R27			RK73GB1J104J	CHIP R 100K J 1/16W	
R28			RK73GB1J332J	CHIP R 3.3K J 1/16W	
R29			RK73GB1J102J	CHIP R 1.0K J 1/16W	
R30			RK73GB1J151J	CHIP R 150 J 1/16W	
R31			RK73GB1J103J	CHIP R 10K J 1/16W	
R34			RK73GB1J681J	CHIP R 680 J 1/16W	
R35			RK73GB1J394J	CHIP R 390K J 1/16W	
R36			RK73GB1J103J	CHIP R 10K J 1/16W	
R37			RK73GB1J101J	CHIP R 100 J 1/16W	
R40			RK73GB1J103J	CHIP R 10K J 1/16W	
R41			RK73GB1J102J	CHIP R 1.0K J 1/16W	
R42			RK73GB1J103J	CHIP R 10K J 1/16W	
R43			RK73GB1J104J	CHIP R 100K J 1/16W	
R44			RK73GB1J472J	CHIP R 4.7K J 1/16W	
R45			RK73GB1J102J	CHIP R 1.0K J 1/16W	
R47			RK73GB1J103J	CHIP R 10K J 1/16W	
R48			RK73GB1J101J	CHIP R 100 J 1/16W	
R51			RK73GB1J104J	CHIP R 100K J 1/16W	
R52			RK73GB1J103J	CHIP R 10K J 1/16W	
R53,54			RK73GB1J472J	CHIP R 4.7K J 1/16W	
R55			RK73GB1J201J	CHIP R 200 J 1/16W	
R64-67			RK73GB1J183J	CHIP R 18K J 1/16W	
R68-75			RK73GB1J472J	CHIP R 4.7K J 1/16W	
R76,77			RK73GB1J333J	CHIP R 33K J 1/16W	
R78,79			RK73GB1J163J	CHIP R 16K J 1/16W	
R80,81			RK73GB1J203J	CHIP R 20K J 1/16W	
R82-87			RK73GB1J103J	CHIP R 10K J 1/16W	
R91,92			RK73FB2A222J	CHIP R 2.2K J 1/10W	
R93,94			RK73FB2A752J	CHIP R 7.5K J 1/10W	
R95,96			RK73FB2A123J	CHIP R 12K J 1/10W	
R97,98			RK73FB2A333J	CHIP R 33K J 1/10W	
R99,100			RK73FB2A163J	CHIP R 16K J 1/10W	
R101,102			RK73FB2A821J	CHIP R 820 J 1/10W	
D1			DAN202U	DIODE	
D2			HRB0103B	DIODE	
D3			MA8056-M	ZENER DIODE	
IC1			CXA2523AR	ANALOGUE IC	
IC2			S-817A25ANB	MOS-IC	
IC3			CXD2667R	MOS-IC	
IC5			LP2982-3.3	ANALOGUE IC	
IC6			NJM4565MD	IC(OP AMP X2)	
IC7			L88M33T	ANALOGUE IC	
IC8			TC74HCT7007AF	MOS-IC	
IC9			780076YGK-R01	MI-COM IC	
IC10		*	W05-0858-00	MEMORY IC	
IC11			S-24C01AFJA	MEMORY IC	
IC12			BA5983FM	ANALOGUE IC	
IC13-15			LB1930M	ANALOGUE IC	
Q1			2SB1295	TRANSISTOR	
Q2			DTA114EUA	DIGITAL TRANSISTOR	
Q3			2SC4116(Y)	TRANSISTOR	
Q4			DTA114EUA	DIGITAL TRANSISTOR	
Q5			FMG3A	DIGITAL TRANSISTOR	

⚠ indicates safety critical components.

KMD-D401

PARTS LIST

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Ref.No.	Add	New	Parts No.	Description	Destination
Q6			2SA1576A	TRANSISTOR	
Q7			DTC143EUA	DIGITAL TRANSISTOR	
Q8			DTA114EUA	DIGITAL TRANSISTOR	
Q9			2SC4081	TRANSISTOR	
Q10			2SB1202	TRANSISTOR	
Q11			2SA1576A	TRANSISTOR	
Q12			DTC143EUA	DIGITAL TRANSISTOR	
TH1			TN20-3T333JT	THERMISTOR	
DAUGTER UNIT (X89-2452-71)					
D1			B30-1562-05	LED	
D2			B30-1566-05	LED(1608,RED)	
D3			B30-1547-05	LED	
D4			B30-1566-05	LED(1608,RED)	
D5			B30-1547-05	LED	
D6			B30-1566-05	LED(1608,RED)	
D7			B30-1547-05	LED	
C1,2			CK73GB1C104K	CHIP C 0.10UF K	
C3			CK73GB1H102K	CHIP C 1000PF K	
CN1			E40-9697-05	SOCKET FOR PIN ASSY (30P)	
J1			E58-0865-05	RECTANGULAR RECEPTACLE (16P)	
R1			RK73EB2B241J	CHIP R 240 J 1/8W	
R2-4			RK73EB2B121J	CHIP R 120 J 1/8W	
R5,6			RK73EB2B102J	CHIP R 1.0K J 1/8W	
R7			RK73EB2B471J	CHIP R 470 J 1/8W	
R8-11			RK73EB2B102J	CHIP R 1.0K J 1/8W	
R12			RK73GB1J104J	CHIP R 100K J 1/16W	
R13			RK73GB1J471J	CHIP R 470 J 1/16W	
R14			RK73EB2B102J	CHIP R 1.0K J 1/8W	
R15			RK73EB2B241J	CHIP R 240 J 1/8W	
S1-3			S70-0863-05	TACT SWITCH	
S4			S62-0863-05	SLIDE SWITCH	
D8			DA204U	DIODE	
D9,10			UMZ6.8N	ZENER DIODE	
D14			UMZ6.8N	ZENER DIODE	
D17			DAP202U	DIODE	
D17			MA142WA	DIODE	
D18			UMZ6.8N	ZENER DIODE	
MECHANISM ASSY (X92-4240-01)					
1	3B		A10-4638-18	CHASSIS CALKING ASSY (MAIN)	
2	1A		A10-4639-18	CHASSIS CALKING ASSY (BASE)	
3	2D		A10-4640-18	CHASSIS CALKING ASSY (PU)	
C700	1B		C92-0628-05	CHIP-TAN 10UF 10WV	
7	3A		D10-4340-18	LEVER (LOCK PLATE)	
8	1B		D10-4344-18	LEVER (PUCHASSISLOCK)	
9	1A		D10-4347-08	SLIDER (MODE CHANGE)	
10	1B		D10-4348-18	SLIDER (SENSE PLATE M)	
11	1A		D10-4353-08	ARM (GUIDE ARM)	
12	3B		D10-4404-08	SLIDER	
13	2A		D10-4405-08	ARM ASSY (LINK ARM)	
14	2B		D10-4406-18	SLIDER ASSY (SENSE PLATE F)	
15	1B		D10-4407-18	SLIDER ASSY (SENSE PLATE S)	

MD UNIT (X33-3110-00)

Ref.No.	Add	New	Parts No.	Description	Destination
18	3C		D13-1465-08	GEAR (F DRIVE GEAR)	
19	2A		D13-1469-08	GEAR (GEAR 1)	
20	1A		D13-1470-08	GEAR (GEAR 2)	
21	1A		D13-1471-08	GEAR (GEAR 3)	
22	2A		D13-1473-08	GEAR (WORM)	
23	3D		D13-2034-08	GEAR ASSY (LEAD SCREW)	
26	1B		D14-0720-18	ROLLER (SENSE)	
27	1A		D14-0721-08	ROLLER (LOAD/EJECT)	
28	1A		D14-0729-18	ROLLER ASSY (PROTECT)	
29	1A		D14-0730-08	ROLLER (MODE CHANGE)	
30	2D		D14-0731-08	ROLLER (S GUIDE C)	
33	2A		D19-0634-18	CLUTCH ASSY	
36	3D		D21-2324-08	SHAFT (PU MAIN)	
37	3C		D21-2325-08	SHAFT (PU SUB)	
38	1B		D21-2326-08	SHAFT (CASE PIN)	
41	3D		D23-0944-08	RETAINER (LEAD SCREW)	
42	1A		D32-0630-18	STOPPER (INNER STOPPER)	
43	2C		D39-0234-14	DAMPER	
51	2A		G01-2974-08	EXTENSION SPRING (LINK ARM)	
52	2A		G01-2975-08	EXTENSION SPRING (SENSE)	
53	1A		G01-2976-08	EXTENSION SPRING	
54	1A		G01-2973-08	EXTENSION SPRING	
55	1A		G01-2978-08	TORSION COIL SPRING	
56	2C		G01-2979-08	COMPRESSION SPRING (LEFT SIDE)	
57	1D		G01-2980-08	EXTENSION SPRING	
58	2D		G01-2981-08	COMPRESSION SPRING(RIGHT SIDE)	
59	1B		G01-2982-08	TORSION COIL SPRING	
60	3A		G01-2983-08	EXTENSION SPRING	
63	3B		G02-1320-18	FLAT SPRING (THRUST A)	
64	2C		G02-1321-08	FLAT SPRING (F THRUST)	
65	3C		G02-1322-08	FLAT SPRING (F LEAD)	
66	3C		G02-1323-08	FLAT SPRING (PU SHAFT A)	
67	3D		G02-1324-08	FLAT SPRING (PU SHAFT B)	
68	3C		G02-1325-08	FLAT SPRING (SUB SLIDER)	
75	2B		J19-4924-08	HOLDER (CASE A)	
76	1B		J19-4925-08	HOLDER (CASE B)	
77	1B		J19-4926-18	HOLDER (CASE C)	
78	1B		J19-4927-08	HOLDER (CASE D)	
79	2C		J19-4932-08	DAMPER	
80	1C		J19-4967-18	HOLDER ASSY (CONTAINER L)	
81	1D		J19-4968-08	HOLDER ASSY	
82	1C		J19-4969-08	HOLDER ASSY (CONTAINER R)	
85	2A		J21-9402-08	MOUTING HARDWARE (SIDE PLATE)	
86	3A		J21-9403-08	MOUTING HARDWARE (RINK A)	
87	1A		J21-9404-08	MOUTING HARDWARE (RINK B)	
88	3D		J21-9407-18	MOUTING HARDWARE (F SCREW)	
89	2C		J21-9410-08	MOUTING HARDWARE (CUSHION)	
90	3A		J21-9476-08	MOUTING HARDWARE ASSY(SHUTTER)	
91	2A		J21-9477-08	MOUTING HARDWARE (GEAR PLATE)	
92	2A		J21-9478-08	MOUTING HARDWARE ASSY(G PLA B)	
93	2C		J21-9479-08	MOUTING HARDWARE ASSY(G PLA F)	
94	2D		J21-9480-08	MOUTING HARDWARE ASSY(PU S R)	
95	1C		J21-9481-08	MOUTING HARDWARE ASSY(PU S L)	
98	3D		J31-1043-08	COLLAR	

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MECHANISM ASSY (X92-4240-01)

Ref.No.	Add	New	Parts No.	Description	Destination
106	1B		J90-0931-08	GUIDE (GUIDE RAIL R)	
107	1A		J90-0960-18	RAIL ASSY (GUIDE RAIL L)	
MFPC1	2A		J84-0095-08	FLEXIBLE PRINTED WIRING BOARD	
MFPC2	1B		J84-0096-18	FLEXIBLE PRINTED WIRING BOARD	
MFPC3	2C		J84-0097-08	FLEXIBLE PRINTED WIRING BOARD	
MFPC4	1D		J84-0098-08	FLEXIBLE PRINTED WIRING BOARD	
A	3A		N09-4346-08	MACHINE SCREW (M2X3)	
B	1A		N09-4341-08	MACHINE SCREW (M2X2)	
C	2A		N09-4342-08	MACHINE SCREW (M1.4X2 BLK)	
D	1B		N09-4343-08	MACHINE SCREW (M1.7X2 BLK)	
E	1A		N19-1134-08	FLAT WASHER	
F	2A		N19-2140-08	FLAT WASHER	
G	1A		N19-2141-08	FLAT WASHER	
H	2D		N24-3012-45	E-RING	
J	2D		N24-3015-45	E-RING	
MVR1	1B		R33-0203-08	VARIABLE RESISTOR (LPS)	
MS1	1A		S68-0849-08	PUSH SWITCH (OS)	
MS2-6	1A		S68-0844-08	PUSH SWITCH (CS,FS,MS,LS,TS)	
MS7	1D		S68-0848-08	PUSH SWITCH (PS)	
MS8-10	1B		S68-0845-08	PUSH SWITCH (SS1-3)	
MM1	2D		T42-1010-08	MOTOR ASSY (SPINDLE MOTOR)	
MM2	2C		T42-1009-08	MOTOR ASSY (SLED MOTOR)	
MM3,4	2A		T42-1008-08	MOTOR ASSY (LO/EJ, MODE MOTOR)	
MM5	2A		T42-1007-08	MOTOR ASSY (ELEVATOR MOTOR)	
MPU1	3C		T25-0219-05	OPTICAL PICKUP HEAD	

Ref.No.	Add	New	Parts No.	Description	Destination

⚠ indicates safety critical components.

KMD-D401

SPECIFICATIONS

MD section

Laser diode ..... GaAlAs(λ=780nm)
Digital filter(D/A) ..... 8 Times Over Sampling
D/A converter ..... 1 Bit
Spindle speed ..... 900rpm~400rpm(CLV)
Wow & Flutter ..... Below measurable limit
Frequency response ..... 5Hz~20kHz(±1dB)
Total Harmonic Distortion ..... 0.03%(1kHz)
S/N Ratio 90dB
Dynamic range 87dB
Channel separation 80dB

General

Operating voltage(11V~16V allowable)
..... 14.4V
Current consumption 0.8A
Installation size(Width x Height x Depth)
..... 180x50x154(mm)
7-1/16x1-15/16x6-1/16(inch)
Weight 1.3kg
2.9lbs

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

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