

SERVICE MANUAL

CD-R/RW MECHANISM

BASIC CD MECHANISM:3ZG-2 E3

KSM-2131FAM

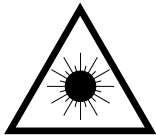
TYPE	BASIC CD MECHANISM
YKZD3RDF	3ZG-2 E3
ZD3RNDM	
ZD3RDM	
YZD3RNDM	
YZD3RDM	
ZD3RN1DM	
YZD3RNMDM	
YZD3RMMDM	
ZD3RMMDM	
ZD3RMDJM	
YZD3RNDCM	
YZD3RDCM	
ZD4RDC	

PROTECTION OF EYES FROM LASER BEAM DURING SERVICING

This set employs laser. Therefore, be sure to follow carefully the instructions below when servicing.

WARNING!

WHEN SERVICING, DO NOT APPROACH THE LASER EXIT WITH THE EYE TOO CLOSELY. IN CASE IT IS NECESSARY TO CONFIRM LASER BEAM EMISSION. BE SURE TO OBSERVE FROM A DISTANCE OF MORE THAN 30cm FROM THE SURFACE OF THE OBJECTIVE LENS ON THE OPTICAL PICK-UP BLOCK.



- Caution: Invisible laser radiation when open and interlocks defeated avoid exposure to beam.
- Advarsel: Usynlig laserstråling ved åbning, når sikkerhedsafbrydere er ude af funktion. Undgå udsættelse for stråling.

VAROITUS!

Laiteen Käyttäminen muulla kuin tässä käyttöohjeessa mainitulla tavalla saattaa altistaa käyttäjän turvallisuusluokan 1 ylittävälle näkymättömälle lasersäteilylle.

WARNING!

Om apparaten används på annat sätt än vad som specificeras i denna bruksanvisning, kan användaren utsättas för osynlig laserstråling, som överskrider gränsen för laserklass 1.

CAUTION

Use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.

ATTENTION

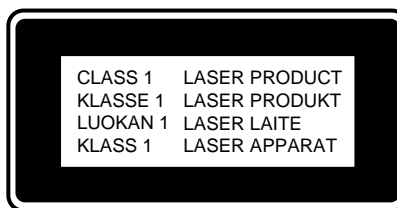
L'utilisation de commandes, réglages ou procédures autres que ceux spécifiés peut entraîner une dangereuse exposition aux radiations.

ADVARSEL!

Usynlig laserstråling ved åbning, når sikkerhedsafbrydere er ude af funktion. Undgå udsættelse for stråling.

This Compact Disc player is classified as a CLASS 1 LASER product.

The CLASS 1 LASER PRODUCT label is located on the rear exterior.

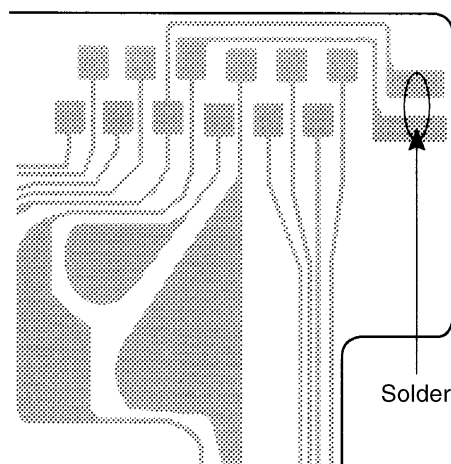


Precaution to replace Optical block (KSS-213F)

Body or clothes electrostatic potential could ruin laser diode in the optical block. Be sure ground body and workbench, and use care the clothes do not touch the diode.

- 1) After the connection, remove solder shown in the right figure.

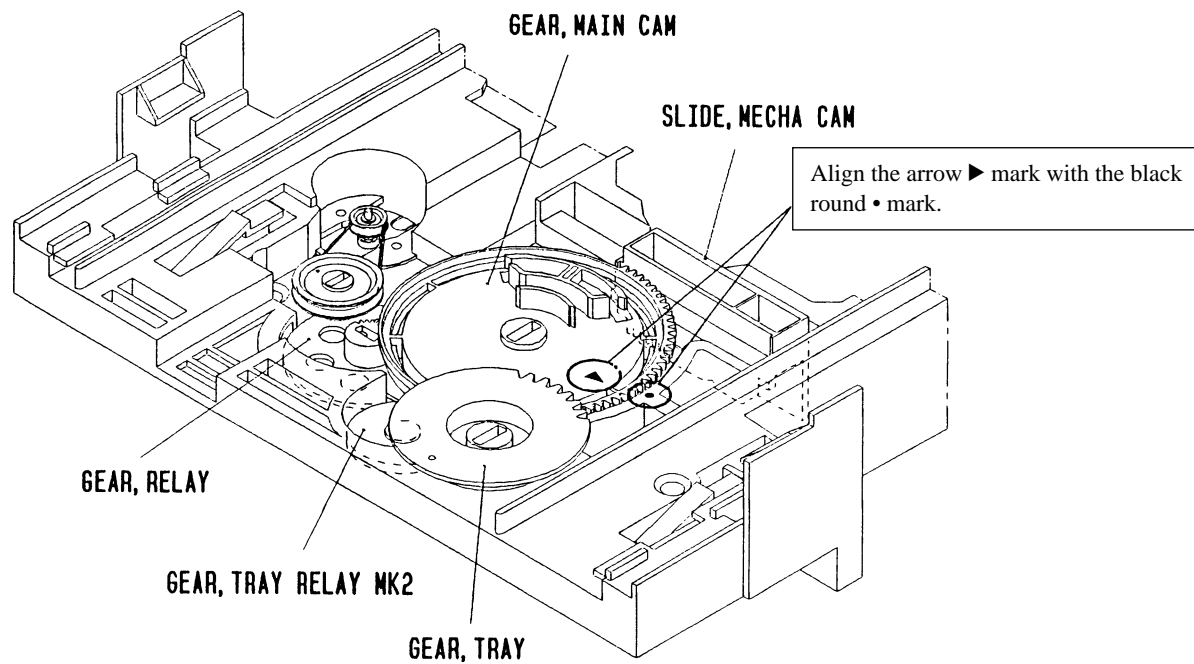
PICK-UP Assy P.C.B



How to Adjust the Rotating Phase of the Gear, Main Cam

- 1) Push down the hooking catch of the CHAS. MECH, and remove the TRAY.
- 2) Align the arrow mark of the Gear, Main Cam with the black round mark of the CHAS, MECHA as shown below.
- 3) Confirm that the Slide, Mech Cam is located in the right position, then insert the TRAY gently.

Caution: If the rotating phase of the Gear, Main Cam is incorrectly adjusted, the chucking operation and tray movement will have malfunction.



ELECTRICAL MAIN PARTS LIST

DESCRIPTIONで判断できない物は "REFERENCE NAME LIST" を参照してください。
If can't understand for Description please kindly refer to "REFERENCE NAME LIST".

REF. NO	PART NO.	KANRI NO.	DESCRIPTION	REF. NO	PART NO.	KANRI NO.	DESCRIPTION
IC				C109	87-010-992-080		C-CAP,S 0.047-25 B
	87-A21-381-040	C-IC,LA9235M		C110	87-010-322-080		C-CAP,S 100P-50 CH
	87-A21-591-010	C-IC,LC78641NE-D					<YZD3RNDM,YZD3RDCM,YKZD3RDF,ZD4RDC>
	87-A21-414-010	IC,BA5927S		C110	87-010-322-020		C-CAP,S 100P-50 CH
							<EXCEPT YZD3RNDM,YZD3RDCM,YKZD3RDF,ZD4RDC>
				C111	87-010-260-080		CAP, ELECT 47-25V
				C112	87-010-197-020		C-CAP,S 0.01-25 B
							<EXCEPT YZD3RNDM,YZD3RDCM,YKZD3RDF,ZD4RDC>
TRANSISTOR				C112	87-010-197-080		CAP, CHIP 0.01 DM
	87-026-609-080	TR,KTA1266GR					<YZD3RNDM,YZD3RDCM,YKZD3RDF,ZD4RDC>
	87-A30-076-080	C-TR,2SC3052F		C114	87-010-260-080		CAP, ELECT 47-25V
	87-026-214-080	TR,DTA114YS (0.3W)		C115	87-010-197-020		C-CAP,S 0.01-25 B
	87-A30-515-080	TR,2SA1979 O/Y					<EXCEPT YZD3RNDM,YZD3RDCM,YKZD3RDF,ZD4RDC>
	87-A30-087-080	C-FET,2SK2158		C115	87-010-197-080		CAP, CHIP 0.01 DM
							<YZD3RNDM,YZD3RDCM,YKZD3RDF,ZD4RDC>
	87-026-237-080	CHIP-TR,DTC124XK		C116	87-010-260-080		CAP, ELECT 47-25V
	<EXCEPT ZD3RNDM,YZD3RNDM,YZD3RNDM,YZD3RNDM>						
	87-A30-075-080	C-TR,2SA1235F		C117	87-010-197-020		C-CAP,S 0.01-25 B
							<EXCEPT YZD3RNDM,YZD3RDCM,YKZD3RDF,ZD4RDC>
DIODE				C117	87-010-197-080		CAP, CHIP 0.01 DM
							<YZD3RNDM,YZD3RDCM,YKZD3RDF,ZD4RDC>
	87-A40-270-080	C-DIODE,MC2838		C118	87-010-263-080		CAP, ELECT 100-10V
	87-070-136-080	ZENER,MTZJ5.1B		C119	87-015-819-080		CAPACITOR,0.01
	87-A40-003-080	ZENER,MTZJ4.3A		C120	87-010-312-080		C-CAP,S 15P-50 CH
	87-A40-337-080	ZENER,MTZJ 6.8B					<YZD3RNDM,YZD3RDCM,YKZD3RDF,ZD4RDC>
	87-A40-313-080	C-DIODE,MC 2840		C120	87-010-312-020		C-CAP,S 15P-50 J CH
							<EXCEPT YZD3RNDM,YZD3RDCM,YKZD3RDF,ZD4RDC>
3CD C.B				C121	87-010-312-080		C-CAP,S 15P-50 CH
							<YZD3RNDM,YZD3RDCM,YKZD3RDF,ZD4RDC>
C1	87-010-374-080	CAP, ELECT 47-10V		C121	87-010-312-020		C-CAP,S 15P-50 J CH
C2	87-010-196-020	C-CAP,S 0.1-25 Z F GRM					<EXCEPT YZD3RNDM,YZD3RDCM,YKZD3RDF,ZD4RDC>
		<EXCEPT YZD3RNDM,YZD3RDCM,YKZD3RDF,ZD4RDC>		C122	87-010-404-080		CAP, ELECT 4.7-50V
C2	87-010-196-080	CHIP CAPACITOR,0.1-25		C123	87-010-197-020		C-CAP,S 0.01-25 B
		<YZD3RNDM,YZD3RDCM,YKZD3RDF,ZD4RDC>					<EXCEPT YZD3RNDM,YZD3RDCM,YKZD3RDF,ZD4RDC>
C3	87-010-260-080	CAP, ELECT 47-25V		C123	87-010-197-080		CAP, CHIP 0.01 DM
C4	87-010-260-080	CAP, ELECT 47-25V					<YZD3RNDM,YZD3RDCM,YKZD3RDF,ZD4RDC>
C5	87-010-197-020	C-CAP,S 0.01-25 B		C124	87-010-401-080		CAP, ELECT 1-50V
		<EXCEPT YZD3RNDM,YZD3RDCM,YKZD3RDF,ZD4RDC>		C126	87-010-196-020		C-CAP,S 0.1-25 Z F GRM
C5	87-010-197-080	CAP, CHIP 0.01 DM					<EXCEPT YZD3RNDM,YZD3RDCM,YKZD3RDF,ZD4RDC>
		<YZD3RNDM,YZD3RDCM,YKZD3RDF,ZD4RDC>		C126	87-010-196-080		CHIP CAPACITOR,0.1-25
C6	87-010-405-080	CAP, ELECT 10-50V					<YZD3RNDM,YZD3RDCM,YKZD3RDF,ZD4RDC>
C7	87-010-263-080	CAP, ELECT 100-10V		C128	87-010-196-020		C-CAP,S 0.1-25 Z F GRM
C8	87-012-349-080	C-CAP,S 1000P-50 CH					<EXCEPT YZD3RNDM,YZD3RDCM,YKZD3RDF,ZD4RDC>
C10	87-010-546-080	CAP, ELECT 0.33-50V		C128	87-010-196-080		CHIP CAPACITOR,0.1-25
C11	87-010-401-080	CAP, ELECT 1-50V					<YZD3RNDM,YZD3RDCM,YKZD3RDF,ZD4RDC>
C13	87-010-321-020	C-CAP,S 82P-50 CH		C130	87-010-196-020		C-CAP,S 0.1-25 Z F GRM
		<EXCEPT YZD3RNDM,YZD3RDCM,YKZD3RDF,ZD4RDC>					<EXCEPT YZD3RNDM,YZD3RDCM,YKZD3RDF,ZD4RDC>
C13	87-010-321-080	CHIP CAPACITOR,82P(J)		C130	87-010-196-080		CHIP CAPACITOR,0.1-25
		<YZD3RNDM,YZD3RDCM,YKZD3RDF,ZD4RDC>					<YZD3RNDM,YZD3RDCM,YKZD3RDF,ZD4RDC>
C15	87-010-197-020	C-CAP,S 0.01-25 B		C132	87-010-405-080		CAP, ELECT 10-50V
		<EXCEPT YZD3RNDM,YZD3RDCM,YKZD3RDF,ZD4RDC>		C133	87-010-314-020		C-CAP,S 22P-50 CH
							<EXCEPT YZD3RNDM,YZD3RDCM,YKZD3RDF,ZD4RDC>
C15	87-010-197-080	CAP, CHIP 0.01 DM		C133	87-010-314-080		C-CAP,S 22P-50V
		<YZD3RNDM,YZD3RDCM,YKZD3RDF,ZD4RDC>					<YZD3RNDM,YZD3RDCM,YKZD3RDF,ZD4RDC>
C16	87-010-260-080	CAP, ELECT 47-25V		C135	87-A11-088-080		CAP,TC U 100P-50 J CH
C101	87-010-992-080	C-CAP,S 0.047-25 B		C151	87-010-405-080		CAP, ELECT 10-50V
C102	87-010-401-080	CAP, ELECT 1-50V		C152	87-010-405-080		CAP, ELECT 10-50V
C103	87-010-196-020	C-CAP,S 0.1-25 Z F GRM		C192	87-012-349-080		C-CAP,S 1000P-50 CH
		<EXCEPT YZD3RNDM,YZD3RDCM,YKZD3RDF,ZD4RDC>					
C103	87-010-196-080	CHIP CAPACITOR,0.1-25		C193	87-010-196-020		C-CAP,S 0.1-25 Z F GRM
		<YZD3RNDM,YZD3RDCM,YKZD3RDF,ZD4RDC>					<EXCEPT YZD3RNDM,YZD3RDCM,YKZD3RDF,ZD4RDC>
C104	87-010-196-020	C-CAP,S 0.1-25 Z F GRM		C193	87-010-196-080		CHIP CAPACITOR,0.1-25
		<EXCEPT YZD3RNDM,YZD3RDCM,YKZD3RDF,ZD4RDC>					<YZD3RNDM,YZD3RDCM,YKZD3RDF,ZD4RDC>
C104	87-010-196-080	CHIP CAPACITOR,0.1-25		C201	87-A10-730-080		CAP,E 1000-16 SMG
		<YZD3RNDM,YZD3RDCM,YKZD3RDF,ZD4RDC>		C202	87-010-196-020		C-CAP,S 0.1-25 Z F GRM
C105	87-010-260-080	CAP, ELECT 47-25V					<EXCEPT YZD3RNDM,YZD3RDCM,YKZD3RDF,ZD4RDC>
C106	87-010-322-080	C-CAP,S 100P-50 CH		C202	87-010-196-080		CHIP CAPACITOR,0.1-25
		<YZD3RNDM,YZD3RDCM,YKZD3RDF,ZD4RDC>					<YZD3RNDM,YZD3RDCM,YKZD3RDF,ZD4RDC>
C106	87-010-322-020	C-CAP,S 100P-50 CH		C204	87-010-196-020		C-CAP,S 0.1-25 Z F GRM
		<EXCEPT YZD3RNDM,YZD3RDCM,YKZD3RDF,ZD4RDC>					<EXCEPT YZD3RNDM,YZD3RDCM,YKZD3RDF,ZD4RDC>
C107	87-010-196-020	C-CAP,S 0.1-25 Z F GRM		C204	87-010-196-080		CHIP CAPACITOR,0.1-25
		<EXCEPT YZD3RNDM,YZD3RDCM,YKZD3RDF,ZD4RDC>					<YZD3RNDM,YZD3RDCM,YKZD3RDF,ZD4RDC>
C107	87-010-196-080	CHIP CAPACITOR,0.1-25		C205	87-010-405-080		CAP, ELECT 10-50V
		<YZD3RNDM,YZD3RDCM,YKZD3RDF,ZD4RDC>		C206	87-010-405-080		CAP, ELECT 10-50V
C108	87-010-186-020	C-CAP,S 4700P-50 B		C207	87-010-196-020		C-CAP,S 0.1-25 Z F GRM
		<EXCEPT YZD3RNDM,YZD3RDCM,YKZD3RDF,ZD4RDC>					<EXCEPT YZD3RNDM,YZD3RDCM,YKZD3RDF,ZD4RDC>
C108	87-010-186-080	CAP,CHIP 4700P					
		<YZD3RNDM,YZD3RDCM,YKZD3RDF,ZD4RDC>					

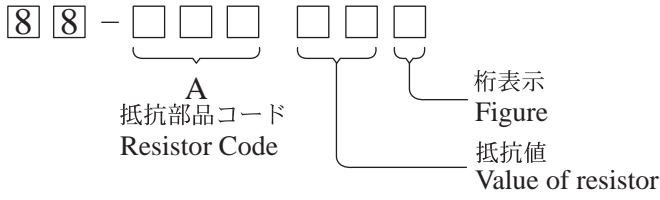
REF. NO	PART NO.	KANRI NO.	DESCRIPTION	REF. NO	PART NO.	KANRI NO.	DESCRIPTION
C207	87-010-196-080		CHIP CAPACITOR,0.1-25 <YZD3RND3CM, YZD3RDCM, YKZD3RDF, ZD4RDC>	FB601	87-008-372-080		FILTER, EMI BL OIRNI <YZD3RMDM, YZD3RNMDM, ZD3RMDM, ZD3RMDJM>
C301	87-010-382-080		CAP, ELECT 22-25V	FB602	87-008-372-080		FILTER, EMI BL OIRNI
C302	87-010-196-020		C-CAP,S 0.1-25 Z F GRM <EXCEPT YZD3RND3CM, YZD3RDCM, YKZD3RDF, ZD4RDC>	LED601	87-A40-558-010		LED,SLZ-8128A-01-A
C302	87-010-196-080		CHIP CAPACITOR,0.1-25 <YZD3RND3CM, YZD3RDCM, YKZD3RDF, ZD4RDC>	M201	87-045-305-010		MOTOR, RF-500TB DC-5V (2MA) <EXCEPT ZD4RDC>
C303	87-010-260-080		CAP, ELECT 47-25V	M201	87-045-383-010		MOT,M9I50T28-2<ZD4RDC>
C401	87-010-322-020		C-CAP,S 100P-50 CH <EXCEPT YZD3RND3CM, YZD3RDCM, YKZD3RDF, ZD4RDC>	SW201	87-036-109-010		PUSH SWITCH
C401	87-010-322-080		C-CAP,S 100P-50 CH <YZD3RND3CM, YZD3RDCM, YKZD3RDF, ZD4RDC>	SW202	87-036-109-010		PUSH SWITCH
C402	87-010-322-020		C-CAP,S 100P-50 CH <EXCEPT YZD3RND3CM, YZD3RDCM, YKZD3RDF, ZD4RDC>	X101	87-A70-046-010		VIB,XTAL 16.934MHZ
C402	87-010-322-080		C-CAP,S 100P-50 CH <YZD3RND3CM, YZD3RDCM, YKZD3RDF, ZD4RDC>	LED C.B <YZD3RDCM, YZD3RMDM, ZD3RMDM, ZD3RMDJM, ZD3RDM, YZD3RDM, YKZD3RDF>			
C403	87-010-322-020		C-CAP,S 100P-50 CH <EXCEPT YZD3RND3CM, YZD3RDCM, YKZD3RDF, ZD4RDC>	LED501	87-A40-263-080		LED,SLH-56PCT31 GRN <YZD3RDCM, YZD3RMDM, ZD3RMDM, ZD3RMDJM, ZD3RDM, YZD3RDM, YKZD3RDF>
C403	87-010-322-080		C-CAP,S 100P-50 CH <YZD3RND3CM, YZD3RDCM, YKZD3RDF, ZD4RDC>	LED502	87-A40-263-080		LED,SLH-56PCT31 GRN <YZD3RDCM, YZD3RMDM, ZD3RMDM, ZD3RMDJM, ZD3RDM, YZD3RDM, YKZD3RDF>
C404	87-010-322-080		C-CAP,S 100P-50 CH <YZD3RND3CM, YZD3RDCM, YKZD3RDF, ZD4RDC>	LED503	87-A40-263-080		LED,SLH-56PCT31 GRN<ZD4RDC>
C404	87-010-322-020		C-CAP,S 100P-50 CH <EXCEPT YZD3RND3CM, YZD3RDCM, YKZD3RDF, ZD4RDC>	LED504	87-A40-268-080		LED,SLH-56DCT31 ORN <EXCEPT ZD3RN1DM, YZD3RND3CM, ZD3RNDM, YZD3RNDM>
C405	87-010-322-020		C-CAP,S 100P-50 CH <EXCEPT YZD3RND3CM, YZD3RDCM, YKZD3RDF, ZD4RDC>	T-T C.B			
C405	87-010-322-080		C-CAP,S 100P-50 CH <YZD3RND3CM, YZD3RDCM, YKZD3RDF, ZD4RDC>	C401	87-A11-148-080		CAP,TC U 0.1-50 Z F
C406	87-010-322-020		C-CAP,S 100P-50 CH <EXCEPT YZD3RND3CM, YZD3RDCM, YKZD3RDF, ZD4RDC>	CON401	86-NFZ-675-010		CONN,5P H 6216-11H
C406	87-010-322-080		C-CAP,S 100P-50 CH <YZD3RND3CM, YZD3RDCM, YKZD3RDF, ZD4RDC>	M401	87-045-364-010		MOTOR(BCH3B14)
C407	87-010-405-080		CAP, ELECT 10-50V	PS401	87-026-573-010		SNSR,PHOTO GP1S53V
C454	87-010-196-020		C-CAP,S 0.1-25 Z F GRM <EXCEPT YZD3RND3CM, YZD3RDCM, YKZD3RDF, ZD4RDC>	DRIVE C.B<EXCEPT ZD4RDC>			
C454	87-010-196-080		CHIP CAPACITOR,0.1-25 <YZD3RND3CM, YZD3RDCM, YKZD3RDF, ZD4RDC>	M1	87-045-358-010		MOT,RF-310TA 43<EXCEPT ZD4RDC>
C601	87-010-260-080		CAP, ELECT 47-25V	M2	87-045-356-010		MOT,RF-310TA 30<EXCEPT ZD4RDC>
C602	87-010-196-020		C-CAP,S 0.1-25 Z F GRM <EXCEPT YZD3RND3CM, YZD3RDCM, YKZD3RDF, ZD4RDC>	PIN3	87-A60-086-010		CONN,6P H6216-11<EXCEPT ZD4RDC>
C602	87-010-196-080		CHIP CAPACITOR,0.1-25 <YZD3RND3CM, YZD3RDCM, YKZD3RDF, ZD4RDC>	SW1	87-A90-042-010		SW,LEAF MSW-17310MVP0 <EXCEPT ZD4RDC>
CN1	87-A60-429-010		CONN,16P H TOC-A	MOTOR C.B<ZD4RDC>			
CN201	84-ZG1-648-010		CONN ASSY,6P<ZD4RDC>	M2	9X-262-513-210		SLED MOTOR<ZD4RDC>
CN201	87-099-199-010		CONN,6P 6216 H<EXCEPT ZD4RDC>	PIN3	91-564-722-110		CONNECTOR 6P<ZD4RDC>
CN202	87-A60-130-010		CONN,5P V FE	SW1	91-572-085-110		LEAF SW<ZD4RDC>
CN301	87-A60-154-010		CONN,6P H FE				
CN601	87-009-345-010		CONN,2P PH H <YZD3RMDM, YZD3RNMDM, ZD3RMDM, ZD3RMDJM>				
CON401	87-099-030-010		CONN,13P 6216H				

- Regarding connectors, they are not stocked as they are not the initial order items.
The connectors are available after they are supplied from connector manufacturers upon the order is received.

○チップ抵抗部品コード／CHIP RESISTOR PART CODE

チップ抵抗部品コードの成り立ち

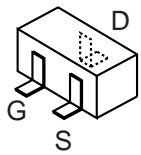
Chip Resistor Part Coding



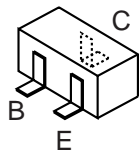
チップ抵抗
Chip resistor

容量 Wattage	種類 Type	許容誤差 Tolerance	記号 Symbol	寸法/Dimensions (mm)			抵抗コード : A Resistor Code : A	
				外形/Form	L	W		t
1/16W	1005	± 5%	CJ		1.0	0.5	0.35	104
1/16W	1608	± 5%	CJ		1.6	0.8	0.45	108
1/10W	2125	± 5%	CJ		2	1.25	0.45	118
1/8W	3216	± 5%	CJ		3.2	1.6	0.55	128

TRANSISTOR ILLUSTRATION



2SK2158



2SA1235F
2SC3052F

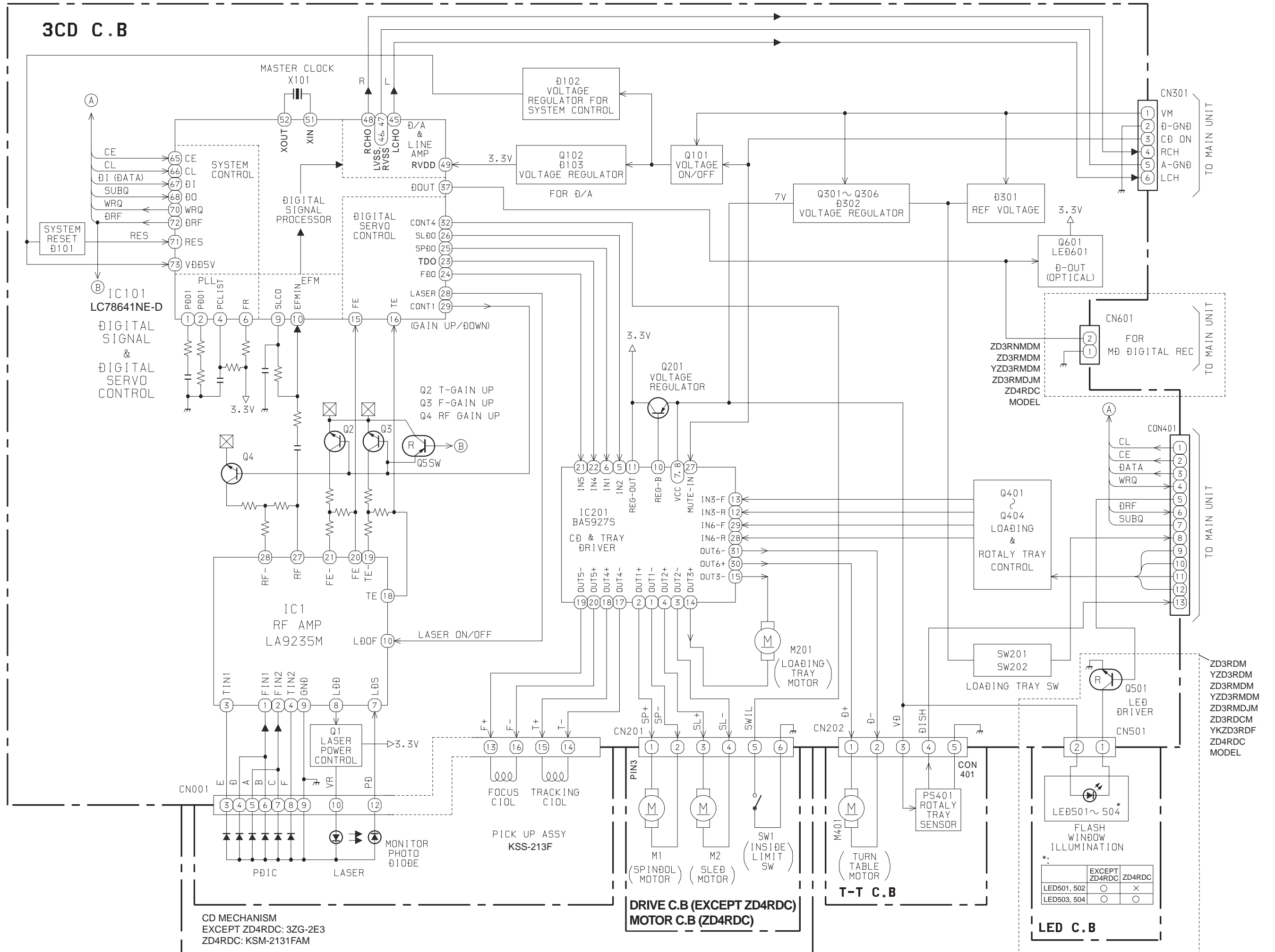


DTA114YS



2SA19790/Y
KTA1266GR

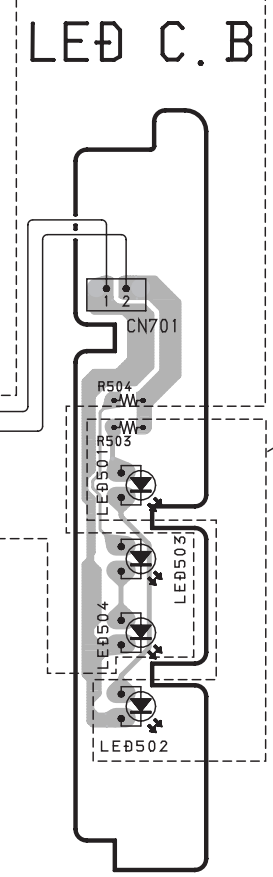
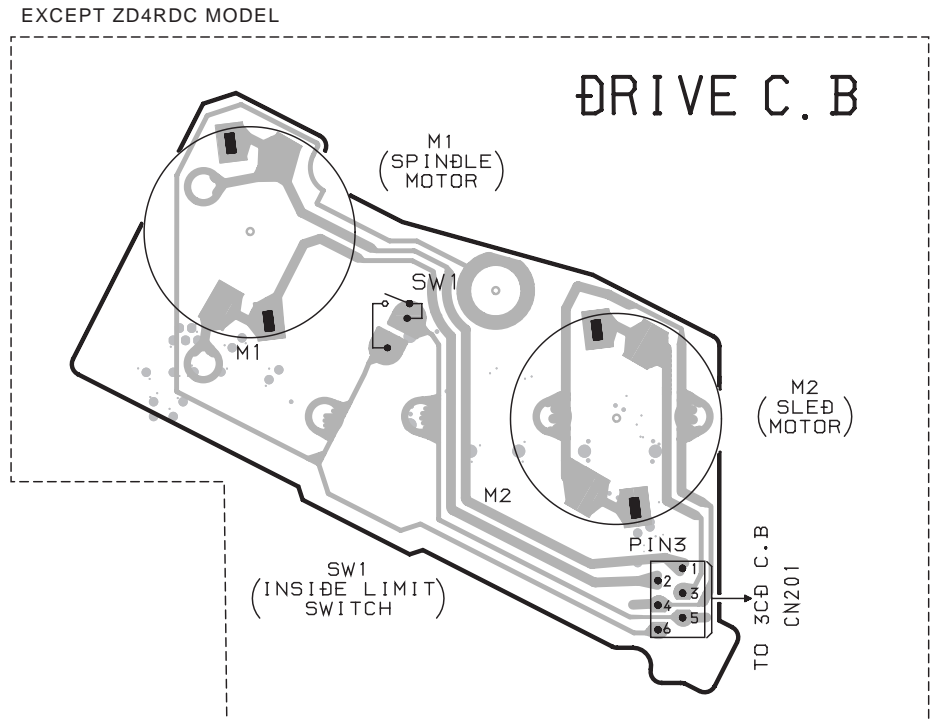
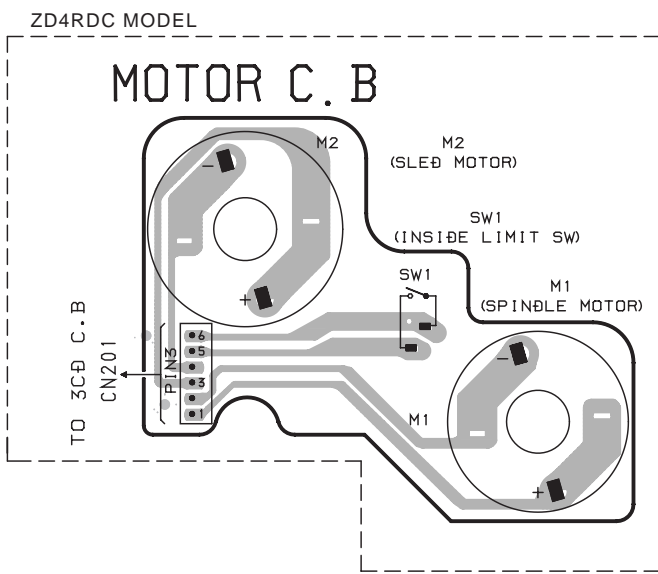
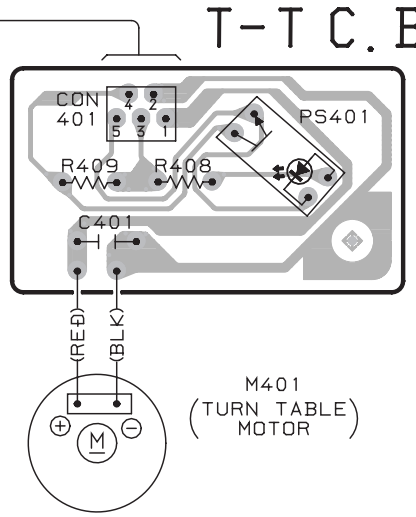
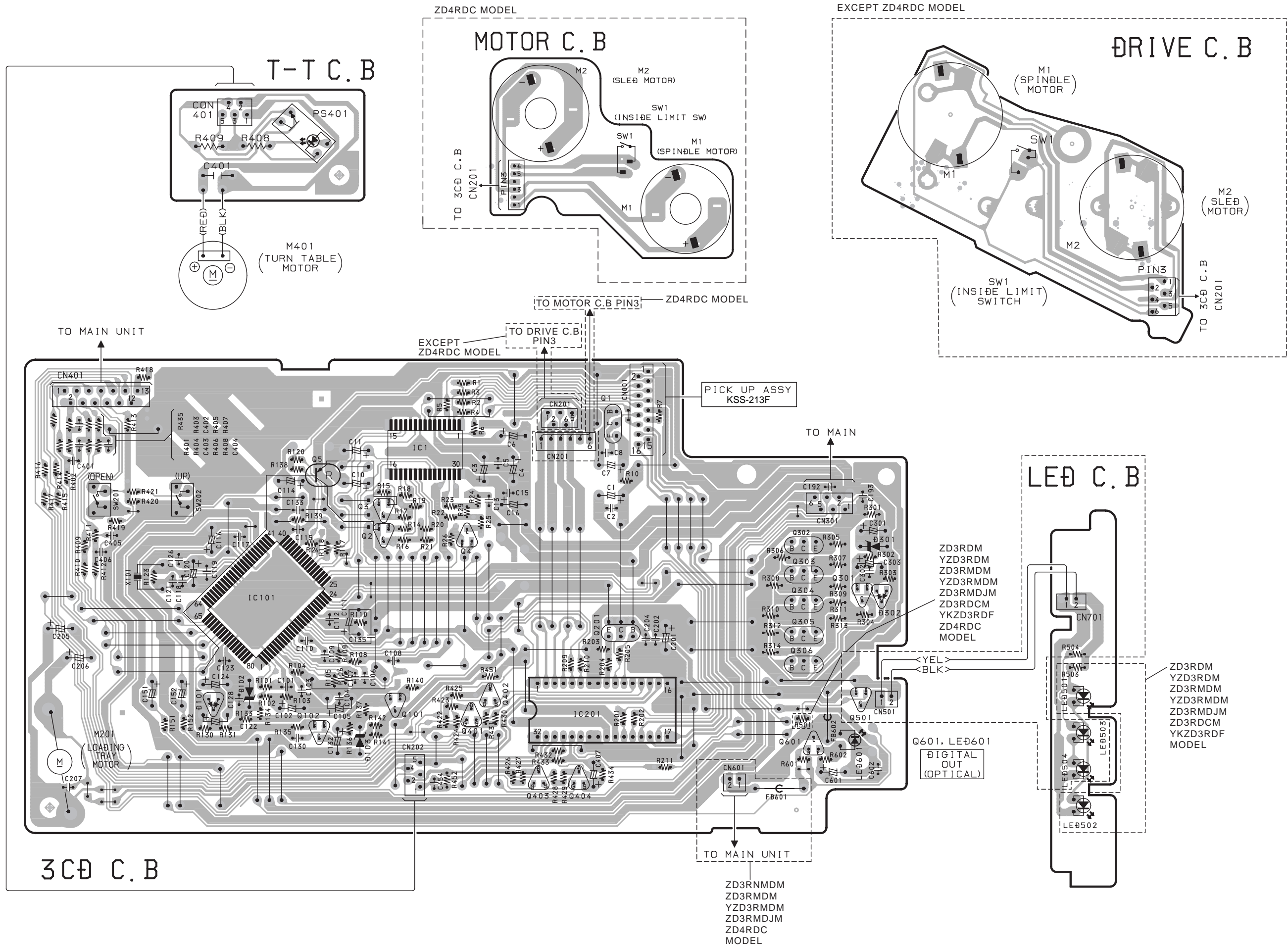
BLOCK DIAGRAM



WIRING

1 2 3 4 5 6 7 8 9 10 11 12 13 14

A
B
C
D
E
F
G
H
I
J
K



ZD3RDM
YZD3RDM
ZD3RMDM
YZD3RMDM
ZD3RMDJM
ZD3RDCM
YKZD3RDF
ZD4RDC
MODEL

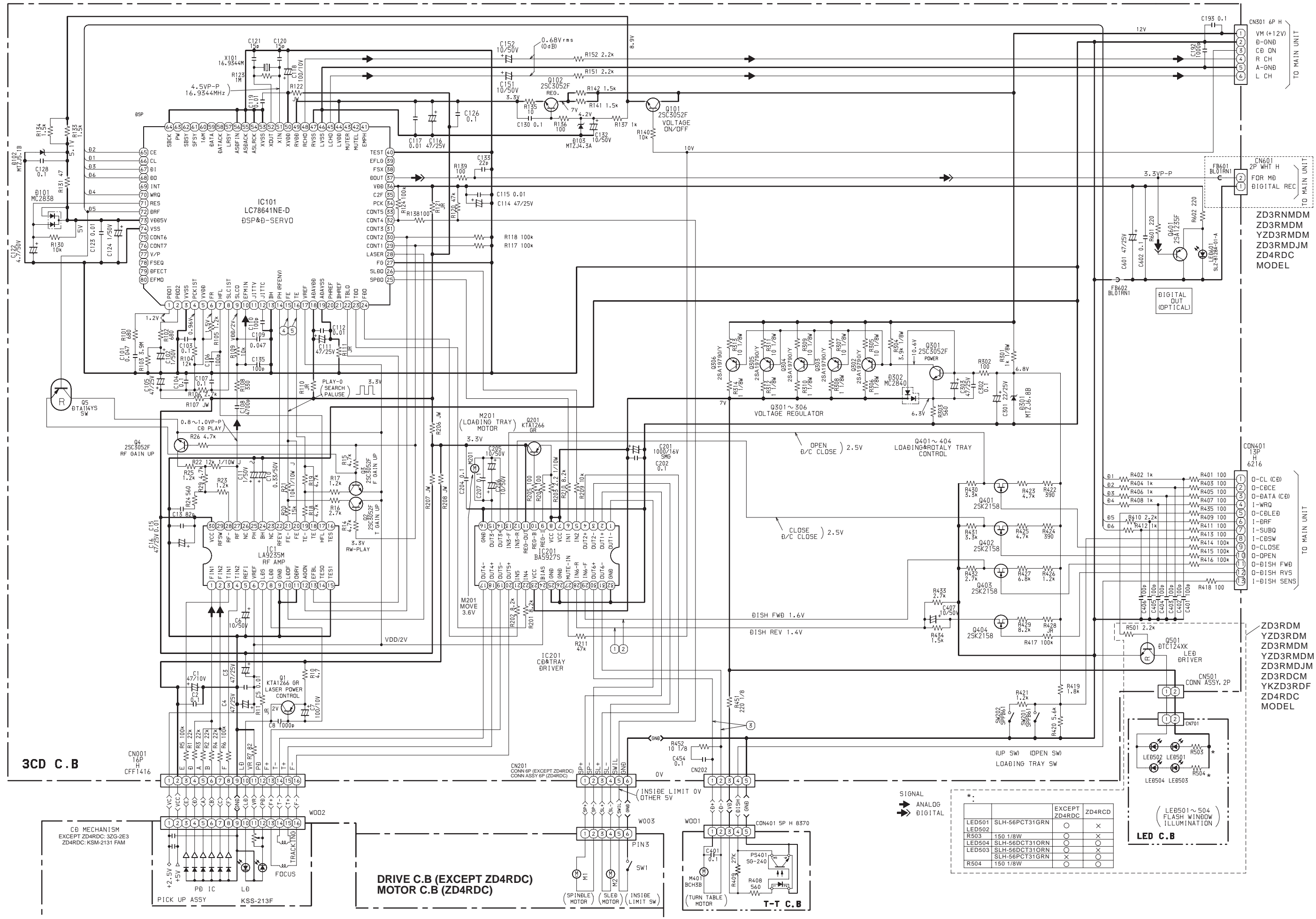
<YEL>
<BLK>

Q601, LE9601
DIGITAL OUT (OPTICAL)

ZD3RDM
YZD3RDM
ZD3RMDM
YZD3RMDM
ZD3RMDJM
ZD3RDCM
YKZD3RDF
MODEL

ZD3RNMDM
ZD3RMDM
YZD3RMDM
ZD3RMDJM
ZD4RDC
MODEL

SCHEMATIC DIAGRAM



		EXCEPT ZD4RDC	ZD4RDC
LED501	SLH-56PCT31GRN	○	×
LED502	150 1/8W	○	○
LED504	SLH-56DCT31ORN	○	○
LED503	SLH-56DCT31ORN	○	○
R504	150 1/8W	○	○

LED C.B.
(LE501~504 FLASH WINDOW ILLUMINATION)

TEST MODE

1. How to Start the CD Test Mode

While pressing the CD function key, connect the AC power plug to wall outlet.
The test mode starts up and “CD TEST” appears on the display.

2. How to Exit the CD Test Mode

Press the POWER button or disconnect the AC power plug from wall outlet.

* When any function key other than PLAY is pressed during playback, the test mode is canceled.

3. Function and Use of the CD Test Mode

NO	MODE	How to enter the mode	Display	Operation	Check item
1	Start mode		All indicators turn on	• All FL all indicators turn on	• FL check • Microprocessor check
2	Search mode	STOP button	CD	• LD turns on all the time • Focus search continuous operation *1 • Spindle motor continuous kick	• APC circuit check • Laser current measurement • Focus search waveform check • Focus error waveform check (Ignores DRF during search mode)
3	Play mode	PLAY button	Normal	• Normal playback • Focus search is continued if failed in TOC READ.	• Each servo circuit is checked • DRF check
4	Traverse mode	PAUSE button	Normal	• Tracking servo OFF/ON Repeats OFF/ON every time the PAUSE button is pressed	• Tracking balance check
5	Sled mode	FF button	CD TEST	• Moves PU to inner circumference *2 Kicks the lens to inner circumference at the same time	• Sled circuit check • Tracking circuit check • Mechanism operation check • PU check
		RWD button	CD TEST	• Moves PU to outer circumference *2 Kicks the lens to outer circumference at the same time	
6	Spindle mode	TAPE REC button	All indicators turn on	• Pressing the button once rotates the spindle motor in the normal direction (rough speed). Pressing the button again rotates it in the reverse direction. Pressing it again stops the motor	• Spindle circuit check • Spindle motor check
7	RF AGC mode	TUNER button	AGC ON/OFF	• Repeats ON/OFF every time the TUNER button is pressed	• PU good or defective check • RF AMP circuit check

*1 When the focus search keeps running for 10 minutes or longer continuously, the driver IC heats up, and the protective circuit works so that the machine may stop operating.

In this case, turn off the main power, wait for a while and restart the machine.

*2 Do not keep pressing the FF or RWD button while the pickup is located at the innermost or outermost circumference because the gear can be damaged as the sled motor keeps rotating.

4. Automatic Adjustment Result Display

The automatic adjustment values of the focus and the tracking can be displayed.

4-1. Automatic Adjustment Result Display of Focus Offset Cancel/Gain

- 1) Enter the start mode (all indicators turn on).
- 2) Press the TAPE button to display “F**” and set each of the adjustment item to either ON or OFF. (Refer to the following table.)
- 3) Press the PLAY button to play back the CD.
- 4) Press the CD button.
- 5) The automatic adjustment value “F** **” is displayed. (Refer to the following table.)
- 6) Upon completion of check, press the CD button twice to return to the play mode.

Adjustment item (ON = 1, OFF = 0)			Automatic adjustment value display (Asterisk * means hexadecimal display.)			
F	OFFSET	GAIN	F	OFFSET	—	GAIN
F	0	0	F	Not displayed	Not displayed	Not displayed
F	1	1	F	**	Not displayed	**
F	1	0	F	**	Not displayed	Not displayed
F	0	1	F	Not displayed	Not displayed	**

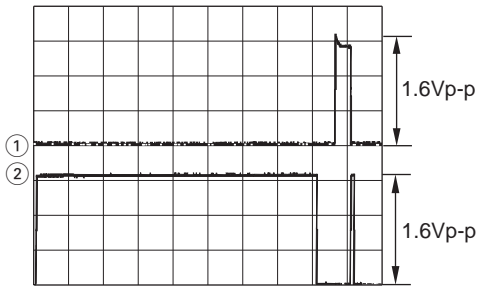
4-2. Automatic Adjustment Result Display of Tracking Offset Cancel/Balance/Gain

- 1) Enter the start mode (all indicators turn on).
- 2) Press the AUX button to display “T****” and set each adjustment item to either ON or OFF. (Refer to the following table.)
- 3) Press the PLAY button to play back the CD.
- 4) Press the CD button twice.
- 5) The automatic adjustment value “F*****” is displayed. (Refer to the following table.)
- 6) Upon completion of check, press the CD button to return to the play mode.

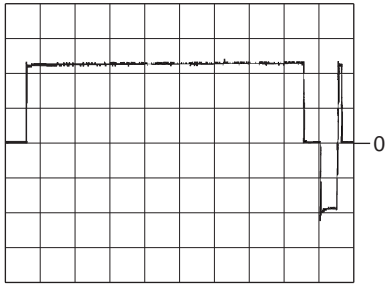
Adjustment item (ON = 1, OFF = 0)				Automatic adjustment value display (Asterisk * means hexadecimal display.)			
T	OFFSET	BALANCE	GAIN	T	OFFSET	BALANCE	GAIN
T	0	0	0	T	Not displayed	Not displayed	Not displayed
T	1	1	1	T	**	**	**
T	1	1	0	T	**	**	Not displayed
T	1	0	1	T	**	Not displayed	**
T	1	0	0	T	**	Not displayed	Not displayed
T	0	1	1	T	Not displayed	**	**
T	0	1	0	T	Not displayed	**	Not displayed
T	0	0	1	T	Not displayed	Not displayed	**

WAVE FORM

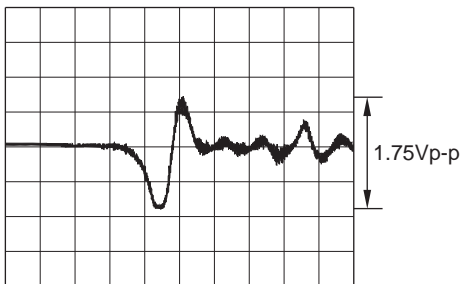
- ① IC201 ⑳ (IN6-R) VOLT/DIV: 500mV
② IC201 ㉑ (IN6-F) TIME/DIV: 200mS



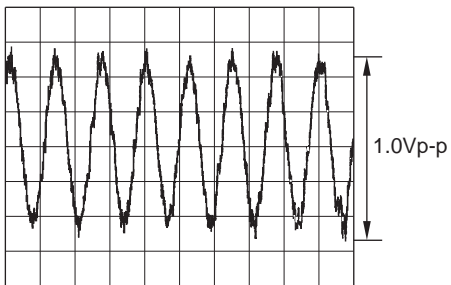
- ③ Between CN202 ① and ②
 ② Pin: 0 Level VOLT/DIV: 1V
 TIME/DIV: 200mS



- ④ IC101 ⑮ (FE) VOLT/DIV: 500mV
 TIME/DIV: 2mS

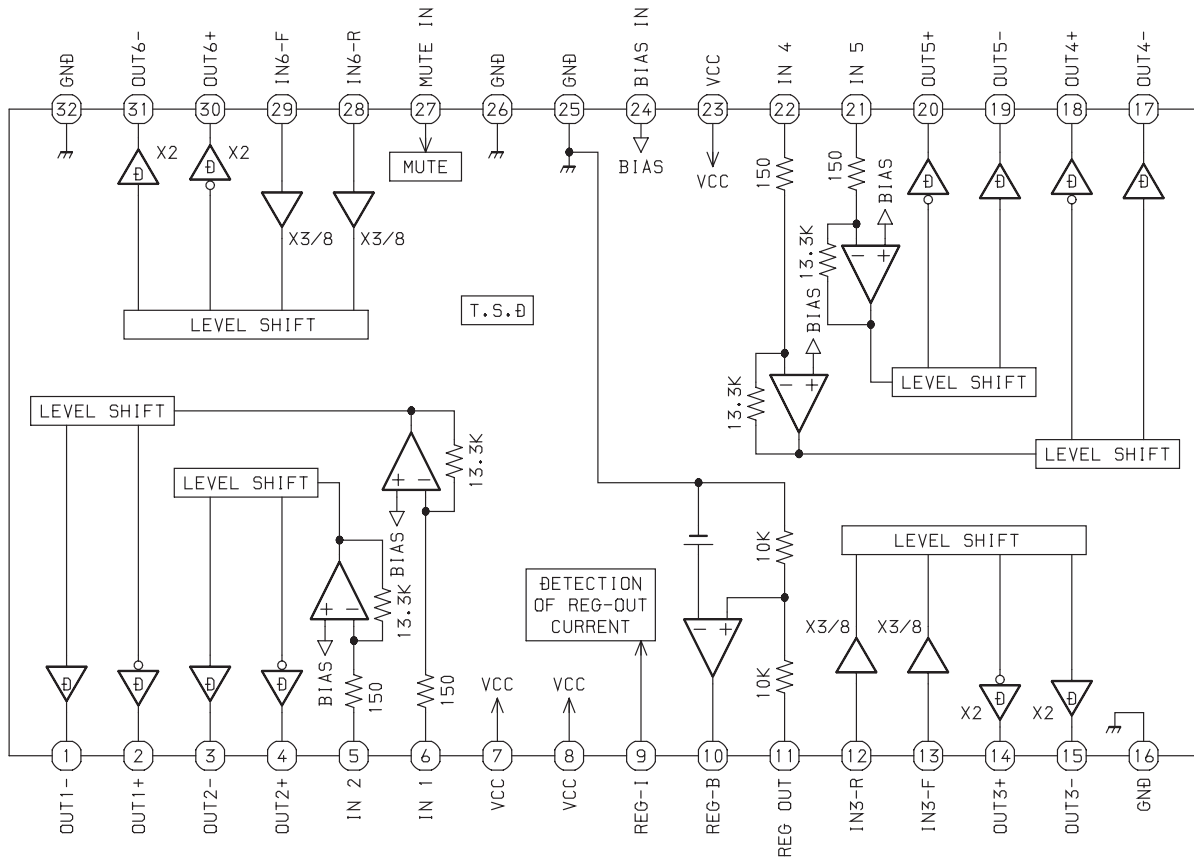


- ⑤ IC101 ⑯ (TE) VOLT/DIV: 200mV
 TIME/DIV: 200μS

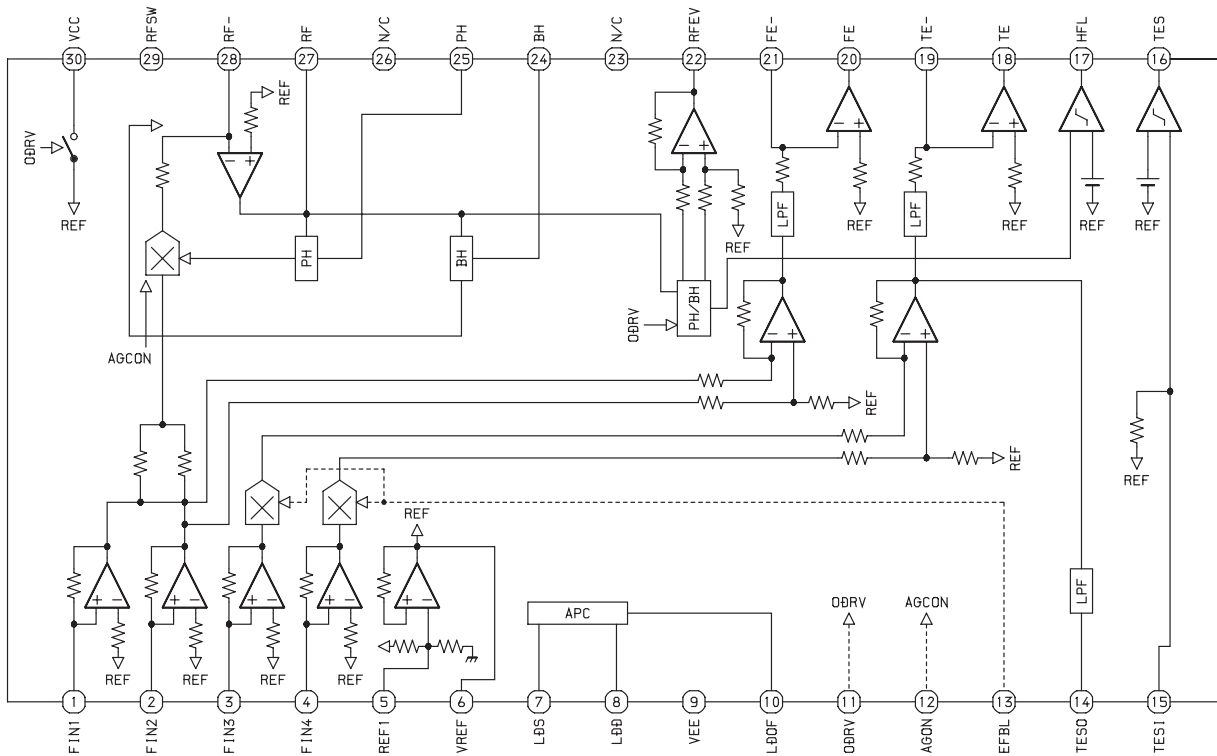


IC BLOCK DIAGRAM

IC, BA5927S



IC, LA9235M



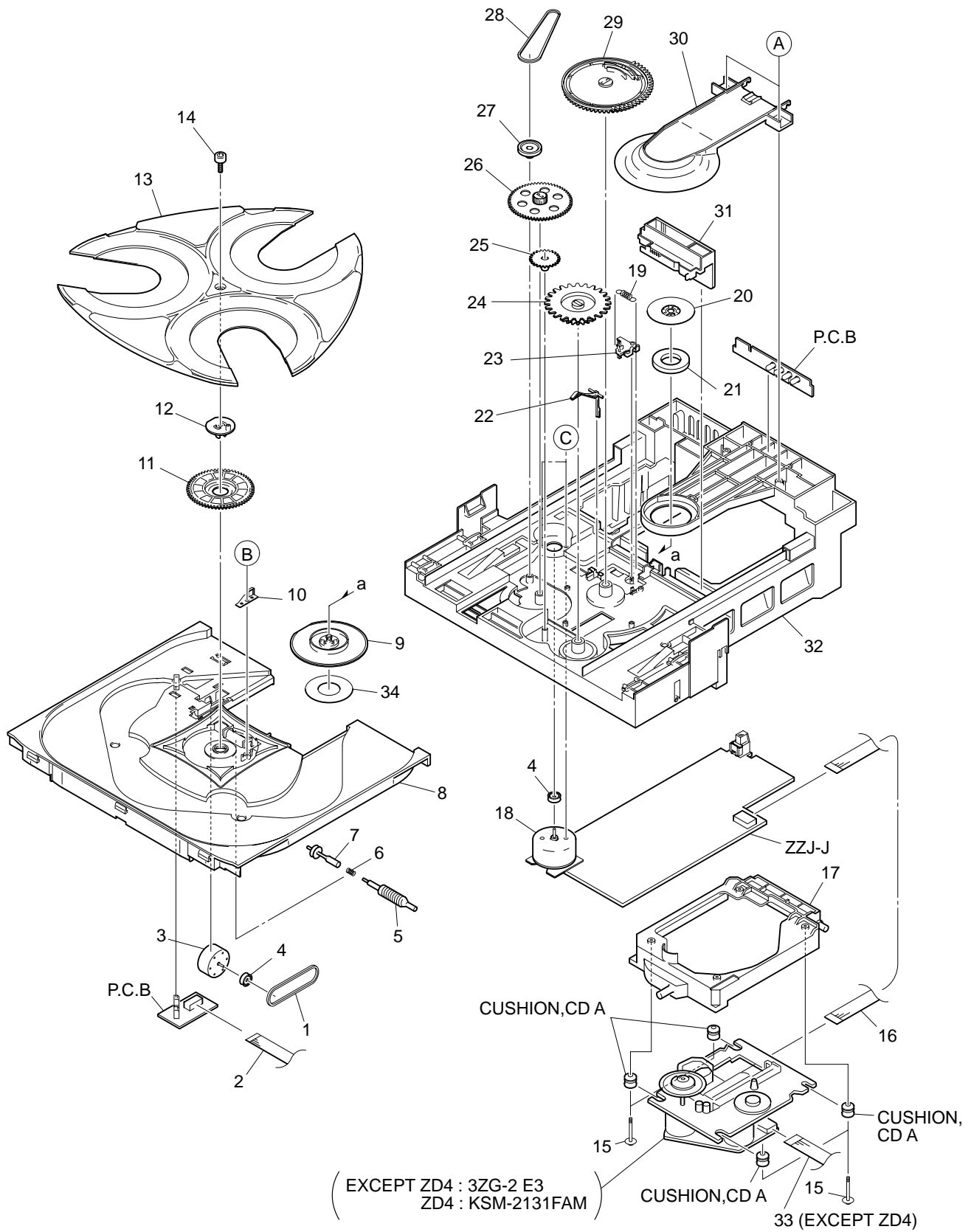
IC DESCRIPTION
IC, LC78641NE-D

Pin No.	Pin Name	I/O	Description
1	PDO1	O	Internal VCO control phase comparator output pin. (Pull down)
2	PDO2	O	Internal VCO control phase comparator output pin. OFF for rough servo, ON for phase servo. (Pull down)
3	VVSS	—	Internal VCO ground pin.
4	PCKIST	—	PDO output current adjustment resistor connection pin.
5	VVDD	—	Internal VCO power supply pin.
6	FR	—	VCO frequency range adjustment resistor connection pin. (Pull up)
7	HFL	I	Mirror detection signal input pin.
8	SLCIST	—	SLCO output current adjustment resistor connection pin.
9	SLCO	O	Control output.
10	EFMIN	I	EFM signal input pin.
11	JITTV	O	Jitter detection monitor pin.
12	JITTC	O	Jitter detection adjustment pin. (Pull down)
13	BH	I	BH signal input pin. (Connected to GND)
14	PH (RFENV)	I	PH signal or RFENV signal input pin.
15	FE	I	FE signal input pin.
16	TE	I	TE signal input pin.
17	VREF	I	VREF input pin.
18	ADAVDD	—	Servo A/D, D/A power supply pin.
19	ADAVSS	—	Servo A/D, D/A ground pin.
20	PHREF	O	PH reference output pin. (Not connected)
21	BHREF	O	BH reference output pin. (Not connected)
22	TBLO	O	Tracking balance output pin.
23	TDO	O	Tracking control output pin.
24	FDO	O	Focus control output pin.
25	SPDO	O	Spindle control output pin.
26	SLDO	O	Thread control output pin.
27	DVREF/FG	I/O	Output driver VREF output pin. FG signal input pin. (Connected to GND)
28	LASER	O	Laser ON/OFF control pin.
29	CONT1	I/O	General-purpose input/output pin 1. (Connected to GND)
30	CONT2	I/O	General-purpose input/output pin 2. (Connected to GND)
31	CONT3	I/O	General-purpose input/output pin 3. (Connected to GND) (Not connected)
32	CONT4	I/O	General-purpose input/output pin 4.
33	CONT5	I/O	General-purpose input/output pin 5. (Not connected)
34	PCK	O	EFM data playback clock monitor pin. Average 4.3218MHz when the phase is locked. (Not connected)
35	C2F	O	C2 flag output pin. (Not connected)
36	VDD	—	Digital power supply pin.
37	DOUT	O	Digital out output pin. (EIAJ format)
38	FSX	O	Output pin for the 7.35kHz synchronization signal divided from the crystal oscillator. (Not connected)

Pin No.	Pin Name	I/O	Description
39	EFLG	O	C1, C2 error correction monitor pin. (Not connected)
40	TEST	I	Test input pin. (Connected to GND)
41	EMPH	I/O	Emphasis pin. Which becomes an input pin after reset and can be controlled externally. This becomes an emphasis monitor pin under control by command. (Not connected)
42	MUTEL	O	L channel mute output pin. (Not connected)
43	MUTER	O	R channel mute output pin. (Not connected)
44	LVDD	—	L channel power supply pin.
45	LCHO	O	L channel output pin.
46	LVSS	—	L channel ground pin.
47	RVSS	—	R channel ground pin.
48	RCHO	O	R channel output pin.
49	RVDD	—	R channel power supply pin.
50	XVDD	—	Crystal oscillator power supply pin.
51	XIN	I	Connections for a 16.9344MHz crystal oscillator pin.
52	XOUT	O	
53	XVSS	—	Crystal oscillator ground pin.
54	ASLRCK	I	L/R clock input pin. (Connected to GND)
55	ASDACK	I	Bit clock input pin. (Connected to GND)
56	ASDFIN	I	L/R channel data input pin. (Connected to GND)
57	LRSY	O	L/R clock output pin. (Not connected)
58	DATAACK	O	Bit clock output pin. (Not connected)
59	DATA	O	L/R channel data output pin. (Not connected)
60	16M	O	16.9344MHz output pin. (Not connected)
61	SFSY	O	Subcode frame synchronization signal output pin. This signal falls when the subcode is in the standby state. (Not connected)
62	SBSY	O	Subcode clock synchronization signal output pin. (Not connected)
63	PW	O	Subcode P, Q, R, S, T, U and W output pin. (Not connected)
64	SBCK	I	Subcode readout clock input pin. (Connected to GND)
65	CE	I	Chip enable signal input pin.
66	CL	I	Data transfer clock input pin.
67	DI	I	Data input pin.
68	DO	O	Data output pin.
69	INT	O	Interruption signal output pin. (Not connected)
70	WRQ	O	Interruption signal output pin.
71	RES	I	Reset input pin. This pin must be set low briefly after power is first applied.
72	DRF	O	Focus ON detect pin.
73	VDD5V	—	Microprocessor interface power supply.
74	VSS	—	Digital ground pin.
75	CONT6	I/O	General-purpose input/output pin 6.
76	CONT7	I/O	General-purpose input/output pin 7.
77	V/P	O	Rough servo/phase control automatic switching monitor output pin. "H" for rough servo and "L" for phase servo. (Not connected)

Pin No.	Pin Name	I/O	Description
78	FSEQ	O	Synchronization signal detection output pin. Outputs a high level when the synchronization signal detected from the EFM signal and the internally generated synchronization signal agree. (Not connected)
79	DEFECT	I/O	Defect pin. Which becomes an input pin after reset and can be controlled externally. This becomes the defect monitor pin under control by command. (Not connected)
80	EFMO	O	EFM signal output pin. (Not connected)

MECHANICAL EXPLODED VIEW 1/1



MECHANICAL PARTS LIST 1/1

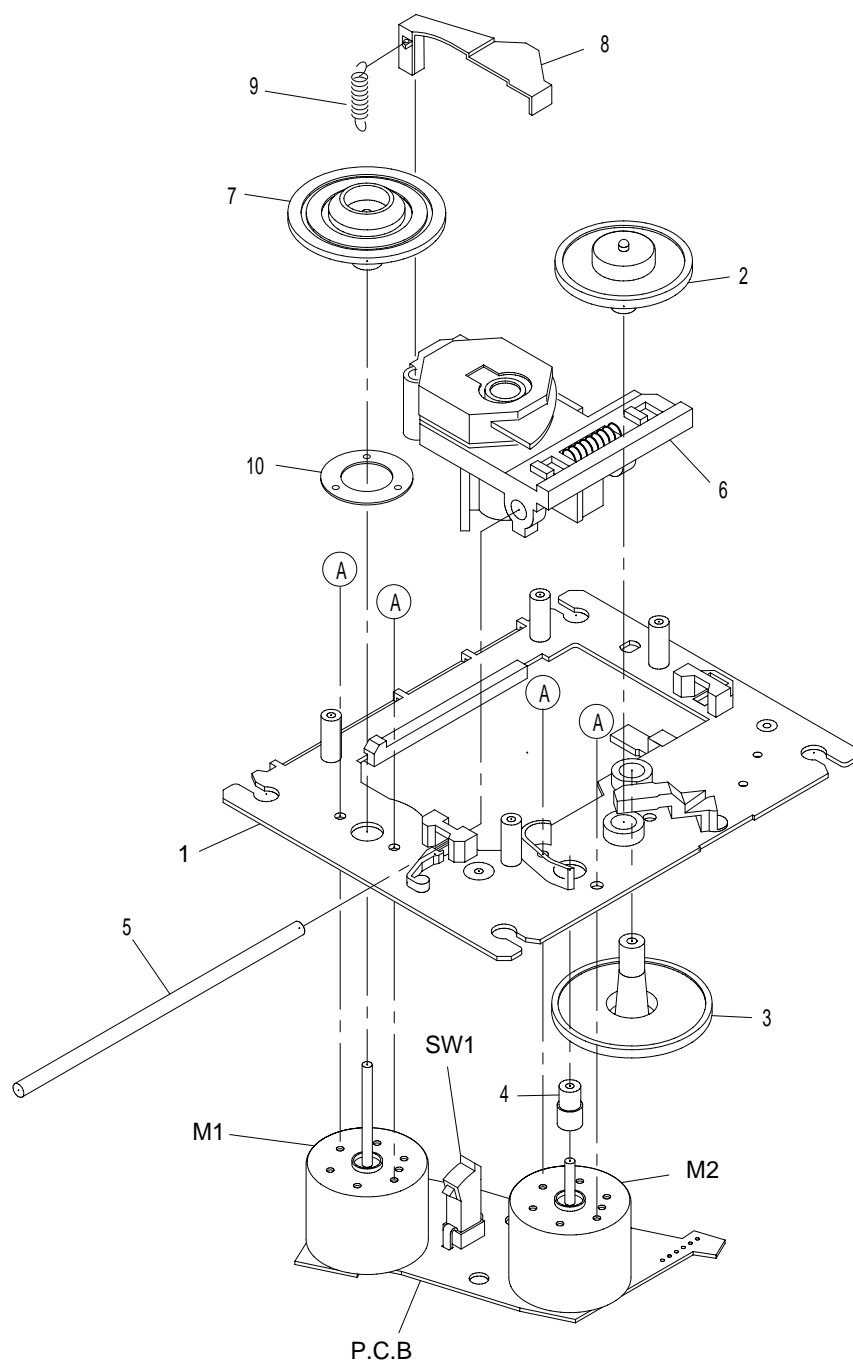
DESCRIPTIONで判断できない物は "REFERENCE NAME LIST" を参照してください。
 If can't understand for Description please kindly refer to "REFERENCE NAME LIST".

REF. NO	PART NO.	KANRI NO.	DESCRIPTION	REF. NO	PART NO.	KANRI NO.	DESCRIPTION
1	84-ZG1-225-010		BELT, SQ1.0-63.3	21	83-ZG3-604-010		RING, MAG 2
2	84-ZG1-673-010		F-CABLE, 5P 1.25 210MM BLACK N	22	83-ZG3-213-010		LVR, SW
2	84-ZG1-672-010		<EXCEPT YZD3RNMDM, ZD3RNDM, YZD3RNDM, ZD4RDC> F-CABLE, 5P 1.25 210MM WHITE N	23	84-ZG1-208-210		LEVER, CAM<YKZD3RDF, ZD4RDC>
3	87-045-364-010		MOTOR(BCH3B14)	23	84-ZG1-266-010		LEVER, CAN 8
4	84-ZG1-267-010		PULLEY, LOAD MO 8<EXCEPT YKZD3RDF>				<EXCEPT YKZD3RDF, ZD4RDC>
4	81-ZG1-212-010		PULLY, LOAD MO<YKZD3RDF>	24	84-ZG1-205-210		GEAR, TRAY (*)
5	84-ZG1-238-010		GEAR, WORM N	25	81-ZG1-291-110		GEAR, TRAY RELAY NO3
6	84-ZG1-248-010		SPR-C, WORM				<EXCEPT ZD4RDC>
7	84-ZG1-239-210		PULLY, WORM N<EXCEPT ZD4RDC>	25	81-ZG1-250-110		GEAR, TRAY RELAY MK2*<ZD4RDC>
7	84-ZG1-273-010		PULLEY, WORM 4<ZD4RDC>	26	84-ZG1-206-110		GEAR, RELAY<YKZD3RDF, ZD4RDC>
8	8A-ZG1-001-010		TRAY, NO3 BLU	26	84-ZG1-274-010		GEAR, RELAY 8
9	84-ZG1-291-110		HLDR, MAGNET 4 NAT				<EXCEPT YKZD3RDF, ZD4RDC>
9	84-ZG1-272-110		HLDR, MAGNET N4<YKZD3RDF, ZD4RDC>	27	84-ZG1-271-010		PULLEY, RELAY 8<ZD4RDC>
10	84-ZG1-259-010		SPR-P, WORM	28	84-ZG1-209-010		BELT, SQ1.8-117.7
11	84-ZG1-221-010		GEAR, MAIN TT<YKZD3RDF>	29	84-ZG1-203-410		GEAR, MAIN CAM
11	84-ZG1-269-010		GEAR, MAIN TT 4<EXCEPT YKZD3RDF>				<YZD3RNDM, YZD3RNMDM, ZD3RNDM, YZD3RNDM>
12	84-ZG1-224-010		LEVER, TT	29	84-ZG1-215-410		GEAR, MAIN CAM BLU
12	84-ZG1-288-010		<EXCEPT YZD3RNDM, YZD3RNMDM, ZD3RNDM, YZD3RNDM> LEVER, TT NAT				<EXCEPT YZD3RNDM, YZD3RNMDM, ZD3RNDM, YZD3RNDM>
13	8A-ZG1-002-010		TURN TABLE, NO1 BLU	30	84-ZG1-011-010		REFLECTOR, CD
14	81-ZG1-239-010		S-SCREW, TT				<EXCEPT ZD3RN1DM, YZD3RNDM, YZD3RNMDM, ZD3RNDM, YZD3RNDM>
15	81-ZG1-271-010		S-SCREW MECH REAR	31	84-ZG1-216-310		SLIDE, MECHA CAM YEL
16	85-NFT-611-110		FF-CABLE 16P-1.0				<EXCEPT YZD3RNDM, YZD3RNMDM, ZD3RNDM, YZD3RNDM>
16	85-NFT-611-110		<YZD3RNDM, YZD3RDCM, ZD4RDC> FF-CABLE 16P-1.0	31	84-ZG1-204-310		SLIDER, MECHA CAM
17	84-ZG1-287-010		<EXCEPT YZD3RNDM, YZD3RDCM, ZD4RDC> HLDR, MECHA NAT				<YZD3RNDM, YZD3RNMDM, ZD3RNDM, YZD3RNDM>
17	84-ZG1-212-210		<YZD3RNDM, YZD3RNMDM, ZD3RNDM, YZD3RNDM> HLDR, MECHA NO2	32	84-ZG1-201-410		CHAS, MECHA
18	87-045-305-010		<EXCEPT YZD3RNDM, YZD3RNMDM, ZD3RNDM, YZD3RNDM> MOTOR, RF-500TB DC-5V (2MA)				<EXCEPT YZD3RNDM, YZD3RNMDM, ZD3RNDM, YZD3RNDM, ZD4RDC>
18	87-045-383-010		<EXCEPT ZD4RDC> MOT, M9I50T28-2<ZD4RDC>	32	84-ZG1-286-010		CHAS, MECHA NAT
19	84-ZG1-211-010		SPR-E CAM S				<YZD3RNDM, YZD3RNMDM, ZD3RNDM, YZD3RNDM>
20	84-ZG1-285-010		PLATE, MAGNET BLK<ZD3RN1DM>	32	84-ZG1-232-210		CHAS, MECHA N<ZD4RDC>
20	81-ZG1-255-110		PLATE, MAGNET MK2<EXCEPT ZD3RN1DM>	33	84-ZG1-630-010		CABLE FFC 6P-1.25
							<YZD3RNDM, YZD3RDCM>
				33	84-ZG1-630-010		CABLE FFC 6P-1.25
							<EXCEPT YZD3RNDM, YZD3RDCM, ZD4RDC>
				34	8A-ZG1-208-010		SH, 18-26-0.5 W/ADH BLK
				A	87-067-703-010		TAPPING SCREW, BVT2+3-10
							<EXCEPT ZD3RN1DM, YZD3RNDM, YZD3RNMDM, ZD3RNDM, YZD3RNDM>
				B	87-067-981-010		BVT2+3-6 BLK
				C	87-251-070-410		U+2.6-3<ZD4RDC>

COLOR NAME TABLE

Basic color symbol	Color	Basic color symbol	Color	Basic color symbol	Color
B	Black	C	Cream	D	Orange
G	Green	H	Gray	L	Blue
LT	Transparent Blue	N	Gold	P	Pink
R	Red	S	Silver	ST	Titan Silver
T	Brown	V	Violet	W	White
WT	Transparent White	Y	Yellow	YT	Transparent Yellow
LM	Metallic Blue	LL	Light Blue	GT	Transparent Green
LD	Dark Blue	DT	Transparent Orange		

CD MECHANISM EXPLODED VIEW 1/1 (3ZG-2 E3)

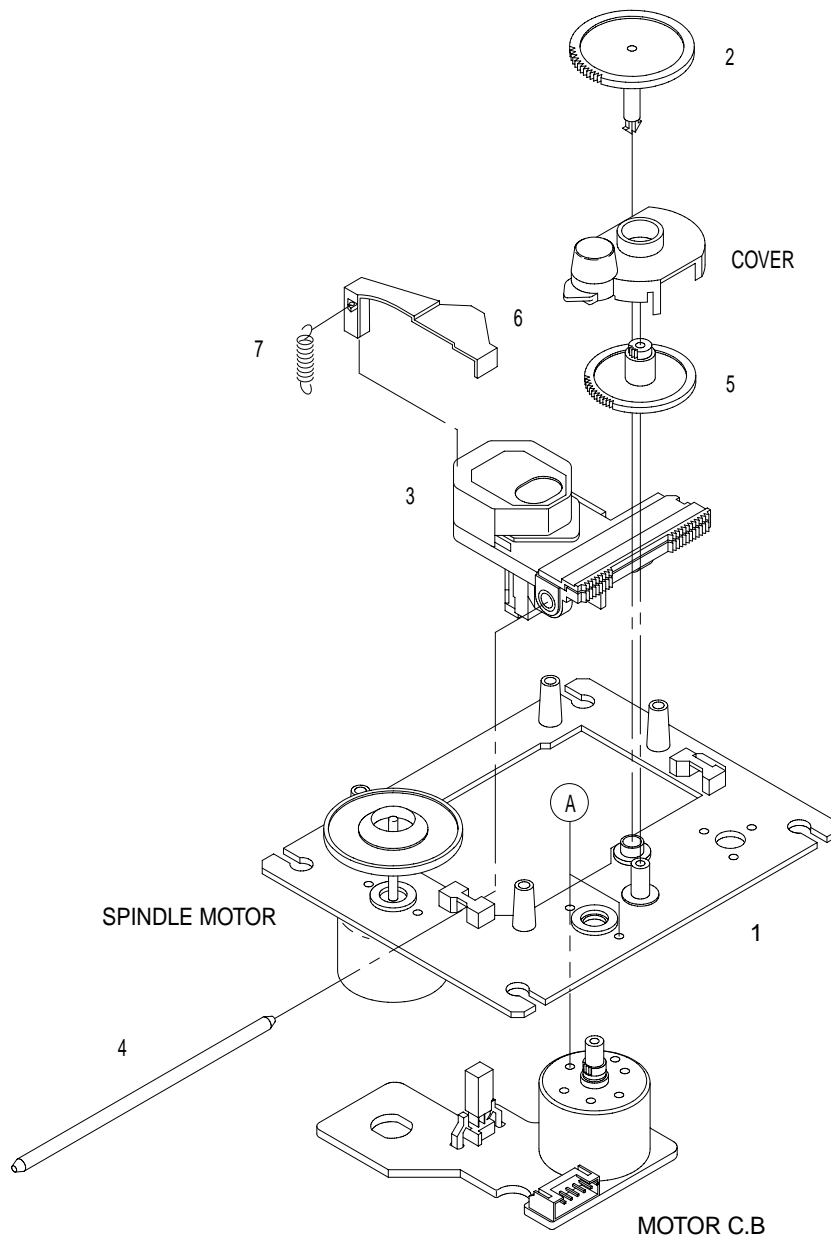


CD MECHANISM PARTS LIST 1/1 (3ZG-2 E3)

DESCRIPTIONで判断できない物は "REFERENCE NAME LIST" を参照してください。
 If can't understand for Description please kindly refer to "REFERENCE NAME LIST".

REF. NO	PART NO.	KANRI NO.	DESCRIPTION
1	83-ZG2-243-310		CHAS ASSY, SHT
2	83-ZG2-235-010		GEAR, A3
3	83-ZG2-205-210		GEAR, B
4	83-ZG2-236-010		GEAR, MOTOR 3
5	83-ZG2-253-110		SHAFT, SLIDE 5
6	87-A90-836-010		PICKUP, KSS-213F
7	83-ZG2-227-310		TURN TABLE, C1
8	83-ZG2-245-510		LEVER, SHUTTER (*)
9	83-ZG2-250-110		SPR-E, SHT 2
10	83-ZG2-241-110		PLATE, C2
A	87-261-032-210		V+2-3

CD MECHANISM EXPLODED VIEW 1/1 (KSM-2131 FAM)



CD MECHANISM PARTS LIST 1/1 (KSM-2131 FAM)

DESCRIPTIONで判断できない物は "REFERENCE NAME LIST" を参照してください。
 If can't understand for Description please kindly refer to "REFERENCE NAME LIST".

REF. NO	PART NO.	KANRI NO.	DESCRIPTION
1	9X-264-629-220		MOTOR CHASSIS ASSY(MB)(FR)
2	92-626-907-010		GEAR(A)(S)
3	87-A90-836-010		OPTICAL PICK UP KSS-213F
4	92-626-908-020		SHAFT SLED
5	92-627-003-010		GEAR(B)
6	92-646-697-020		LENS SHUTTER(F)
7	92-646-702-010		SPRIG EXTENSION
A	97-621-255-150		SCREW+P2-3

アイワ株式会社 〒110-8710 東京都台東区池之端1-2-11 ☎03(3827)3111 (代表)
AIWA CO.,LTD. 2-11, IKENOHATA 1-CHOME, TAITO-KU, TOKYO 110-8710, JAPAN TEL:03 (3827) 3111