

Quality Uncompromised

ROTEL[®]

Technical Manual

DVD PLAYER **RDV-995**

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Specifications

General

Readable Discs:	DVD VIDEO, Audio CD, Video CD
Video Format:	PAL or NTSC selectable

Video Output

Pin Jack	1.0 Vp-p (75 ohms)
Component (pin jack):	
Y Output:	1.0 Vp-p (75 ohms)
Pb/P R Output:	0.7 Vp-p (75 ohms)
S-VIDEO OUT (S jack):	
Y Output:	1.0 Vp-p (75 ohms)
C Output:	286 mVp-p (75 ohms)

Horizontal Resolution:	500 Lines
Signal to Noise Ratio:	65 dB

Audio Output

ANALOG OUT (pin jack):	2.0 Vrms (150 ohms)
DIGITAL OUT	
Optical:	Ɖ 21 to Ɖ15 dBm (peak)
Coaxial:	0.5Vp-p (75 ohm terminatio)

Audio Characteristics

Frequency Response:	
CD: (sampling frequency 44.1 kHz):	2 Hz to 20 kHz
DVD (sampling frequency 48 kHz):	2 Hz to 22 kHz
DVD (sampling frequency 96 kHz):	2 Hz to 44 kHz
Dynamic Range:	
16 bit:	More than 98 dB
20 bit:	More than 106 dB
24 bit:	More than 106 dB
Wow and Flutter:	Unmeasurable (less than ±0.002%)
Total Harmonic Distortion:	Less than 0.002%

Physical

Power Requirements:	
USA Version:	AC 115V, 60Hz
European Version:	AC 230V, 50Hz
Power Consumption:	20 W (POWER ON), 3 W (STANDBYmode)
Weight:	5.8 kg (12.8 lbs)
Dimensions (W x H x D):	440 x 92 x 314 mm 17 ¹⁵ / ₁₆ x 3 ⁵ / ₈ x 12 ³ / ₈ inch

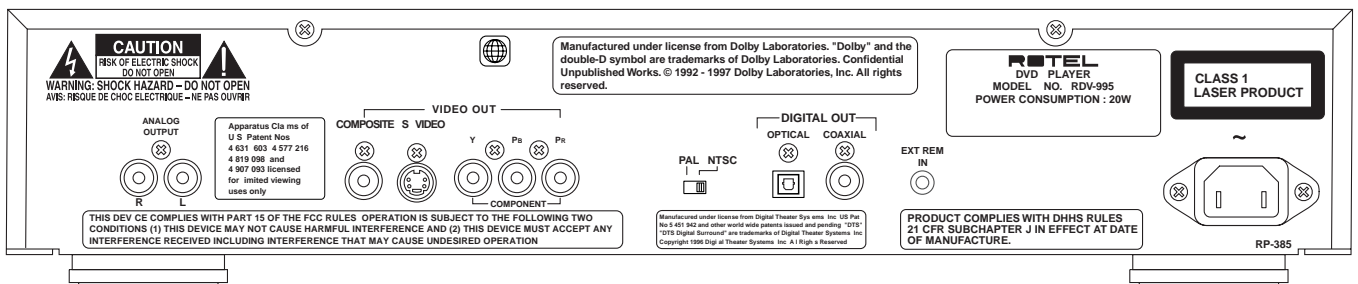
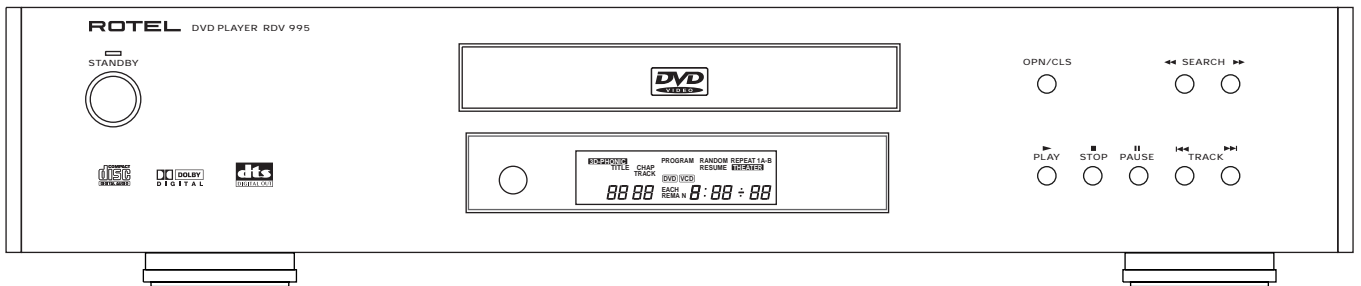
THE ROTEL CO., LTD.

SHINSEN-BLD. 4F 10-10 SHINSEN-CHO, SHIBUYA-KU,
TOKYO 150-0045, JAPAN

Serial. NO.
Beginning

Y-352A-0107/W

Appearance



Preventing static electricity

Electrostatic discharge (ESD), which occurs when static electricity stored in the body, fabric, etc. is discharged, can destroy the laser diode in the traverse unit (optical pickup). Take care to prevent this when performing repairs.

1.1. Grounding to prevent damage by static electricity

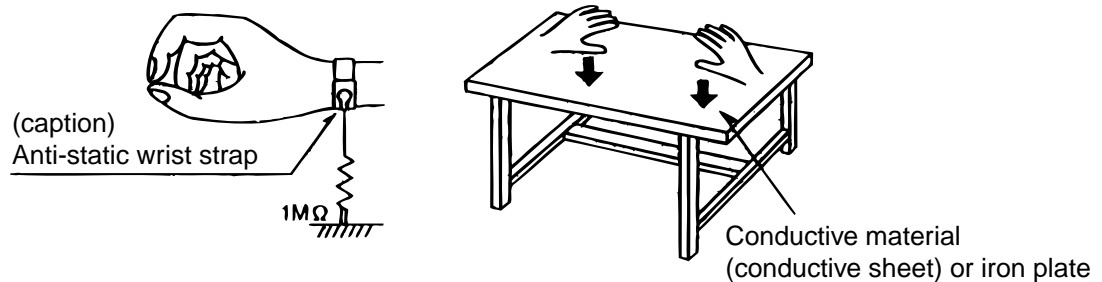
Static electricity in the work area can destroy the optical pickup (laser diode) in devices such as DVD players. Be careful to use proper grounding in the area where repairs are being performed.

1.1.1. Ground the workbench

1. Ground the workbench by laying conductive material (such as a conductive sheet) or an iron plate over it before placing the traverse unit (optical pickup) on it.

1.1.2. Ground yourself

1. Use an anti-static wrist strap to release any static electricity built up in your body.



1.1.3. Handling the optical pickup

1. In order to maintain quality during transport and before installation, both sides of the laser diode on the replacement optical pickup are shorted. After replacement, return the shorted parts to their original condition. (Refer to the text.)
2. Do not use a tester to check the condition of the laser diode in the optical pickup. The tester's internal power source can easily destroy the laser diode.

1.2. Handling the traverse unit (optical pickup)

1. Do not subject the traverse unit (optical pickup) to strong shocks, as it is a sensitive, complex unit.
2. Cut off the shorted part of the flexible cable using nippers, etc. after replacing the optical pickup. For specific details, refer to the replacement procedure in the text. Remove the anti-static pin when replacing the traverse unit. Be careful not to take too long a time when attaching it to the connector.
3. Handle the flexible cable carefully as it may break when subjected to strong force.
4. It is not possible to adjust the semi-fixed resistor that adjusts the laser power. Do not turn it

Parts List 1/7

SYMBOL	PARTS NO	DESCRIPTION
X-1301-01 PCB ASSEMBLY		
C401	041 UTES1C101-FB	CAPACITOR ELEC.16V100UF
C402	041 UTES1H010-FB	CAPACITOR ELEC.50V1UF
C403	043 TC50V101	CAPACITOR CERA.50V100PF
C404.405	043 TC50V473	CAPACITOR CERA.50V0.047UF
C406	041 UTES1C101-FB	CAPACITOR ELEC.16V100UF
C407	043 TC50V473	CAPACITOR CERA.50V0.047UF
C408	041 TVX1C221	CAPACITOR ELEC.16V220UF
C409-411	043 TC50V473	CAPACITOR CERA.50V0.047UF
C412	041 TVX1C221	CAPACITOR ELEC.16V220UF
C413	041 UTES1C101-FB	CAPACITOR ELEC.16V100UF
C414	041 UTES1E330-FB	CAPACITOR ELEC.25V33UF
C701.702	044 TCQM2A152J	CAPACITOR FILM 100V1500PF
C703.704	044 TCQM2A333J	CAPACITOR FILM 100V0.033UF
C705.706	044 TCQM2A181J	CAPACITOR FILM 100V180PF
C707.708	044 TCQM2A152J	CAPACITOR FILM 100V1500PF
C709.710	044 TCQM2A331J	CAPACITOR FILM 100V330PF
C711.712	044 TCQM2A103J	CAPACITOR FILM 100V0.01UF
C713.714	044 TCQM2A152J	CAPACITOR FILM 100V1500PF
C715-718	044 KP10-2C104M	CAPACITOR FILM 160V0.1UF
C719.720	044 TCQM2A104J	CAPACITOR FILM 100V0.1UF
C721.722	041 UKZ1E101MB	CAPACITOR ELEC.25V100UF
C723.724	044 TCQM2A103J	CAPACITOR FILM 100V0.01UF
C725	044 TBF074D0474J	CAPACITOR FILM 63V0.47UF
C726	044 TCQM2A103J	CAPACITOR FILM 100V0.01UF
C727	044 KP10-2C104M	CAPACITOR FILM 160V0.1UF
C728	041 UFG1A102MHJ	CAPACITOR ELEC.10V1000UF
C729	044 KP10-2C104M	CAPACITOR FILM 160V0.1UF
C730	041 UFG1A102MHJ	CAPACITOR ELEC.10V1000UF
C731	044 TCQM2A102J	CAPACITOR FILM 100V1000PF
C732	044 KP10-2C104M	CAPACITOR FILM 160V0.1UF
C733.734	041 UFG1A102MHJ	CAPACITOR ELEC.10V1000UF
C735	044 KP10-2C104M	CAPACITOR FILM 160V0.1UF
C736	044 TCQM2A102J	CAPACITOR FILM 100V1000PF
C737	044 TCQM2A473J	CAPACITOR FILM 100V0.047UF
C738	041 25BGF100M	CAPACITOR ELEC.25V100UF
C801	041 VX1C222	CAPACITOR ELEC.16V2200UF
C803.804	041 TVX1C220	CAPACITOR ELEC.16V22UF
C805	044 TBF014D0473J	CAPACITOR FILM 63V0.047UF
C806.807	044 TBF074D0155J	CAPACITOR FILM 63V1.5UF
C808	041 TVX1C101	CAPACITOR ELEC.16V100UF
C809	043 TC50V473	CAPACITOR CERA.50V0.047UF
C810	041 TVX1C101	CAPACITOR ELEC.16V100UF
C811	043 TC50V473	CAPACITOR CERA.50V0.047UF
C812	041 TVX1C101	CAPACITOR ELEC.16V100UF
C813	043 TC50V473	CAPACITOR CERA.50V0.047UF
C814-817	041 TVX1C102	CAPACITOR ELEC.16V1000UF
C818	044 TBF014D0104J	CAPACITOR FILM 63V0.1UF
C819	044 TBF074D0155J	CAPACITOR FILM 63V1.5UF
C820	041 TVX1C102	CAPACITOR ELEC.16V1000UF
C821-825	041 TVX1C221	CAPACITOR ELEC.16V220UF
C826	041 TVX1C102	CAPACITOR ELEC.16V1000UF
C902-919	043 TC500V103	CAPACITOR CERA.500V0.01UF
C920	041 UTES1C102	CAPACITOR ELEC.16V1000UF
C921	041 TUTES1H101-T	CAPACITOR ELEC.50V100UF
C922.923	041 VX1E222	CAPACITOR ELEC.25V2200UF

SYMBOL	PARTS NO	DESCRIPTION
C924	041 VX1C472	CAPACITOR ELEC.16V4700UF
C925.926	041 GS1V472	CAPACITOR ELEC.35V4700UF
C927-929	043 TC50V473	CAPACITOR CERA.50V0.047UF
C930.931	044 KP10-2C104M	CAPACITOR FILM 160V0.1UF
C932.933	041 UTES1V100-FB	CAPACITOR ELEC.35V100UF
C934	041 UTES1C101-FB	CAPACITOR ELEC.16V100UF
C935.936	041 TVX1C101	CAPACITOR ELEC.16V100UF
C937	041 UTES1H100-FB	CAPACITOR ELEC.50V10UF
C938.939	041 25BGF100M	CAPACITOR ELEC.25V100UF
C940-942	043 TC50V473	CAPACITOR ELEC.50V0.047UF
C943.944	044 KP10-2C104M	CAPACITOR ELEC.160V0.1UF
C945.946	041 25BGF100M	CAPACITOR ELEC.25V100UF
C947	041 UTES1C101-FB	CAPACITOR ELEC.16V100UF
C948	043 TC50V473	CAPACITOR CERA.50V0.047UF
C949	041 25BGF100M	CAPACITOR ELEC.25V100UF
C950	044 KP10-2C104M	CAPACITOR FILM 160V0.1UF
C951	041 25BGF100M	CAPACITOR ELEC.25V100UF
C953	043 TC50V473	CAPACITOR CERA.50V0.047UF
C954	041 TVX1C101	CAPACITOR ELEC.16V100UF
C955	041 UTES1E101-FB	CAPACITOR ELEC.25V100UF
C956-961	043 TC500V103	CAPACITOR CERA.500V0.01UF
C962	041 UTES1C101-FB	CAPACITOR ELEC.16V100UF
C963-967	043 TC50V473	CAPACITOR CERA.50V0.047UF
D401.402	034 T1N4003-TB	DIODE
D403.404	034 T1N4148-86	DIODE
D701.702	034 KV1555NT	VARIABLE CAPACITANCE DIODE
D703	034 TRD5.1JST1	ZENER DIODE
D704.705	034 T1N4148-86	DIODE
D801-805	034 T1N4148-86	DIODE
D903-920	034 T1N4003-TB	DIODE
D921	034 TRD24JST1	ZENER DIODE
D922-925	034 T1N4148-86	DIODE
D926	034 TRD2.0EST1	ZENER DIODE
D927.928	034 TRD15JST1	ZENER DIODE
D929.930	034 T1N4148-86	DIODE
D931	034 TRD5.6JST1	ZENER DIODE
D932	034 T1N4148-86	DIODE
D933-938	034 T1N4003-TB	DIODE
F901	036 5ST1	MINI FUSE 250VT1A for STD
	036 5ST500	M NI FUSE 250VT500mA for CEE, UK, AUSTRALIA
K402	068 23FMN-BTRK	FFC 23P CONNECTOR
K405	065 YKB21-5103A	MINI JACK
K406	066 C-4733A01	1P PINJACK(BLK)
K408	066 GP1F32T	OPTICAL TERMINAL
K701	066 C-4725A00	2P PINJACK
K801	068 09FMN-BTRK	FFC 9P CONNECTOR
K802	066 C-4466A00	4P DIN SOCKET
K803	066 C-4733A02	1P PINJACK(YEL)
K804	066 C-4726A00	3P PINJACK
L401	021 TRL-395	MICRO INDUCTOR 4.7UH
L402	021 TC1027-04	DIGITAL OUTPUT COIL
L403-405	021 TRL-395	MICRO INDUCTOR 4.7UH
L701.702	021 TRL-395	MICRO INDUCTOR 4.7UH
L703	021 LF151A00	MICRO INDUCTOR 1.2UH
L801.802	021 LF148A00	VIDEO FILTER

Parts List 2/7

SYMBOL	PARTS NO	DESCRIPTION
L803	021 LF149A00	VIDEO FILTER
L804	021 LF150A00	VIDEO FILTER
L901	021 TRL-356	LINE CHOKE COIL
R402.403	053 CR14-102J-A	RESISTOR CARBON 1K
R404	053 CR14-105J-A	RESISTOR CARBON 1M
R405	053 CR14-102J-A	RESISTOR CARBON 1K
R406	053 CR14-472J-A	RESISTOR CARBON 4.7K
R407	053 CR14-103J-A	RESISTOR CARBON 10K
R408.409	053 CR14-472J-A	RESISTOR CARBON 4.7K
R410	053 CR14-102J-A	RESISTOR CARBON 1K
R411-413	053 CR14-222J-A	RESISTOR CARBON 2.2K
R414.415	053 CR14-102J-A	RESISTOR CARBON 1K
R416	053 CR14-103J-A	RESISTOR CARBON 10K
R417-420	053 CR14-222J-A	RESISTOR CARBON 2.2K
R421.422	053 CR14-102J-A	RESISTOR CARBON 1K
R423	053 CR14-331J-A	RESISTOR CARBON 330R
R424	053 CR14-472J-A	RESISTOR CARBON 4.7K
R425	053 CR14-103J-A	RESISTOR CARBON 10K
R426.427	053 CR14-102J-A	RESISTOR CARBON 1K
R428.429	053 CR14-103J-A	RESISTOR CARBON 10K
R430	053 CR14-101J-A	RESISTOR CARBON 100R
R431	054 TMFR4075R	RESISTOR METAL 1% 75R
R701-704	054 TMFR4024K	RESISTOR METAL 1% 24K
R705-708	054 TMFR4016K	RESISTOR METAL 1% 16K
R709.710	054 TMFR406K8	RESISTOR METAL 1% 6.8K
R711.712	054 TMFR4820R	RESISTOR METAL 1% 820R
R713.714	054 TMFR403K6	RESISTOR METAL 1% 3.6K
R715.716	054 TMFR4018K	RESISTOR METAL 1% 18K
R717-720	054 TMFR4560R	RESISTOR METAL 1% 560R
R721.722	054 TMFR4001M	RESISTOR METAL 1% 1M
R723.724	054 TMFR4560K	RESISTOR METAL 1% 560K
R725-728	054 TMFR4082R	RESISTOR METAL 1% 82R
R729	054 TMFR4033K	RESISTOR METAL 1% 33K
R730	054 TMFR4001K	RESISTOR METAL 1% 1K
R731.732	054 TMFR4470R	RESISTOR METAL 1% 470R
R733	054 TMFR4510R	RESISTOR METAL 1% 510R
R734	054 TMFR4470R	RESISTOR METAL 1% 470R
R735	054 TMFR4033K	RESISTOR METAL 1% 33K
R736.737	054 TMFR4470R	RESISTOR METAL 1% 470R
R738	054 TMFR4100R	RESISTOR METAL 1% 100R
R739.740	054 TMFR4470R	RESISTOR METAL 1% 470R
R741	054 TMFR4001K	RESISTOR METAL 1% 1K
R742	054 TMFR4056R	RESISTOR METAL 1% 56R
R743	054 TMFR4100K	RESISTOR METAL 1% 100K
R744	054 TMFR4056R	RESISTOR METAL 1% 56R
R745.746	054 TMFR401K5	RESISTOR METAL 1% 1.5K
R747.748	054 TMFR4056R	RESISTOR METAL 1% 56R
R749	054 TMFR4033K	RESISTOR METAL 1% 33K
R750	054 TMFR4100K	RESISTOR METAL 1% 100K
R751	054 TMFR4180R	RESISTOR METAL 1% 180R
R752	054 TMFR4015K	RESISTOR METAL 1% 15K
R753	054 TMFR4100K	RESISTOR METAL 1% 100K
R754	054 TMFR401K5	RESISTOR METAL 1% 1.5K
R755-757	054 TMFR4022K	RESISTOR METAL 1% 22K
R758	054 TMFR4039R	RESISTOR METAL 1% 39R

SYMBOL	PARTS NO	DESCRIPTION
R759	053 CR14-391J-A	RESISTOR CARBON 390R
R760	054 TMFR4068K	RESISTOR METAL 1% 68K
R761	054 TMFR402K2	RESISTOR METAL 1% 2.2K
R801.802	054 TMFR402K2	RESISTOR METAL 1% 2.2K
R805.806	054 TMFR4001K	RESISTOR METAL 1% 1K
R807.808	054 TMFR4180R	RESISTOR METAL 1% 180R
R809-814	054 TMFR4001K	RESISTOR METAL 1% 1K
R815.816	054 TMFR4220R	RESISTOR METAL 1% 220R
R817.818	054 TMFR402K2	RESISTOR METAL 1% 2.2K
R819.820	054 TMFR4001K	RESISTOR METAL 1% 1K
R821	054 TMFR4220R	RESISTOR METAL 1% 220R
R822	054 TMFR4001K	RESISTOR METAL 1% 1K
R823	054 TMFR4220R	RESISTOR METAL 1% 220R
R824-826	054 TMFR4075R	RESISTOR METAL 1% 75R
R827	054 TMFR402K2	RESISTOR METAL 1% 2.2K
R828.829	054 TMFR4001K	RESISTOR METAL 1% 1K
R830	054 TMFR4220R	RESISTOR METAL 1% 220R
R831	054 TMFR402K2	RESISTOR METAL 1% 2.2K
R832-834	054 TMFR4075R	RESISTOR METAL 1% 75R
R835-839	054 ERD2FCJ4R7P	FUSIBLE RESISTOR 4.7R
R840	054 ERQ14AJ2R2P	FUSIBLE RESISTOR 2.2R
R841	054 TMFR4220R	RESISTOR METAL 1% 220R
R842	054 TMFR4001K	RESISTOR METAL 1% 1K
R843.844	054 TMFR4180R	RESISTOR METAL 1% 180R
R901	053 CR14-103J-A	RESISTOR CARBON 10K
R902.903	054 TMFR4047K	RESISTOR METAL 1% 47K
R904	053 CR14-103J-A	RESISTOR CARBON 10K
R905	053 CR14-223J-A	RESISTOR CARBON 22K
R906.907	054 TMFR4022K	RESISTOR METAL 1% 22K
R908.909	053 CR14-103J-A	RESISTOR CARBON 10K
R910	054 TMFR4560R	RESISTOR METAL 1% 560R
R911.912	054 TMFR4120R	RESISTOR METAL 1% 120R
R913.914	054 TMFR4100R	RESISTOR METAL 1% 100R
R915.916	054 TMFR4047K	RESISTOR METAL 1% 47K
R917	054 TMFR4022K	RESISTOR METAL 1% 22K
R918	054 TMFR4560R	RESISTOR METAL 1% 560R
R919	054 TMFR4120R	RESISTOR METAL 1% 120R
R920	054 TMFR4100R	RESISTOR METAL 1% 100R
R922	053 CR14-223J-A	RESISTOR CARBON 22K
R923	053 CR14-103J-A	RESISTOR CARBON 10K
R924	054 TMFR401K5	RESISTOR METAL 1% 1.5K
R925	054 TMFR404K7	RESISTOR METAL 1% 4.7K
R926	053 CR14-103J-A	RESISTOR CARBON 10K
R927	054 TMFR4620R	RESISTOR METAL 1% 620R
R928	053 CR14-150J-A	RESISTOR CARBON 15R
R929	053 CR14-393J-A	RESISTOR CARBON 39K
R930	053 CR14-154J-A	RESISTOR CARBON 150K
R931	053 CR14-103J-A	RESISTOR CARBON 10K
R932	053 CR14-222J-A	RESISTOR CARBON 2.2K
R933.934	053 CR14-153J-A	RESISTOR CARBON 15K
S401	064 4TR-2341	SLIDE SWITCH(PAL/NTSC)
S701.702	063 EA2-24	RELAY
T401	032 TC536-FG	TRANSISTOR(2SC536K-FG)
T703	032 TC536-FG	TRANSISTOR(2SC536K-FG)
T704.705	032 TA1450-ST	TRANSISTOR(2SA1450-ST)

Parts List 3/7

SYMBOL	PARTS NO	DESCRIPTION
T801-810	032 TA1015-YO	TRANSISTOR(2SA1015-YO)
T901	032 D600-EF	TRANSISTOR(2SD600K-EF)
T902	032 TA608-FG	TRANSISTOR(2SA608K-FG)
T903	032 TC2362-FG	TRANSISTOR(2SC2362K-FG)
T904	032 TA608-FG	TRANSISTOR(2SA608K-FG)
T905.906	032 TA1016-FG	TRANSISTOR(2SA1016K-FG)
T907.908	032 TC2362-FG	TRANSISTOR(2SC2362K-FG)
T909	032 TA1016-FG	TRANSISTOR(2SA1016K-FG)
T910	033 B1274-RS	TRANSISTOR(2SB1274-RS)
T911	033 D1913-RS	TRANSISTOR(2SD1913-RS)
T912	032 TC2362-FG	TRANSISTOR(2SC2362K-FG)
T913.914	032 TA1016-FG	TRANSISTOR(2SA1016K-FG)
T915	032 TC2362-FG	TRANSISTOR(2SC2362K-FG)
T916	033 B1274-RS	TRANSISTOR(2SB1274-RS)
T917	032 TC3708-ST	TRANSISTOR(2SC3708-ST)
T918	032 TC2362-FG	TRANSISTOR(2SC2362K-FG)
T919	032 TC3708-ST	TRANSISTOR(2SC3708-ST)
T920	033 B1274-RS	TRANSISTOR(2SB1274-RS)
T921	032 TC536-FG	TRANSISTOR(2SC536K-FG)
T922	032 TA608-FG	TRANSISTOR(2SA608K-FG)
U401	031 BA6208	IC(MOTOR DRIVE)
U402	031 PST9140-T	IC(RESET)
U403	031 MN101C12GHA	IC(MICOM)
U404	031 AK93C45AF-E1	IC(EPROM)
U405	031 TC74HCU04AP	IC(HEX INVERTER)
U412	031 PC817B	PHOTO COUPLER
U701.702	031 OPA2604AP	IC(OPE DUAL)
U703	031 MN35503M-X	IC(CONVERTER)
U704	031 PC817B	PHOTO COUPLER
U801	031 NJM7805FA	IC(REGULATOR +5VDC)
U802.803	031 NJM2267D	IC(VIDEO AMP)
U804	031 NJM2268D	IC(VIDEO AMP)
U901	031 SI3090J	IC(REGULATOR +9VDC)
U902	031 SI3120J	IC(REGULATOR +12VDC)
U903	031 SI3050J	IC(REGULATOR +5VDC)
U904	031 NJM7805FA	IC(REGULATOR +5VDC)
X401	023 CST10.0MTW	CERAMIC RESONATOR
	019 TO-126	INSULATION SHEET(S)
	019 TO-220	INSULATION SHEET(L)
	069 C-3417A	FUSE CLIP
X-1301-02 PCB ASSEMBLY		
C101	043 TC50V220	CAPACITOR CERA.50V22PF
C102	043 TC50V473	CAPACITOR CERA.50V0.047UF
C103	041 UTES1C470	CAPACITOR ELEC.16V47UF
C104	043 TC50V473	CAPACITOR CERA.50V0.047UF
C105	041 UTES1C470	CAPACITOR ELEC.16V47UF
C106	043 TC50V473	CAPACITOR CERA.50V0.047UF
C107	041 UTES1C470	CAPACITOR ELEC.16V47UF
C108	043 TC50V473	CAPACITOR CERA.50V0.047UF
O101	035 7MT235GNK	FL TUBE
R101-105	053 CR14-222J-A	RESISTOR CARBON 2.2K
R106-110	053 CR14-102J-A	RESISTOR CARBON 1K
R111	053 CR14-431J-A	RESISTOR CARBON 430R
R112	053 CR14-681J-A	RESISTOR CARBON 680R
R113	053 CR14-112J-A	RESISTOR CARBON 1.1K

SYMBOL	PARTS NO	DESCRIPTION
R114	053 CR14-222J-A	RESISTOR CARBON 2.2K
R115	053 CR14-431J-A	RESISTOR CARBON 430R
R116	053 CR14-222J-A	RESISTOR CARBON 2.2K
S102-109	061 C-4679A03	TACT SWITCH
U101	031 M35500AFP	IC(FL DRIVE)
U102	031 SBX3010-52B	IC(REMOTE EYE)
X-1301-03 PCB ASSEMBLY		
S101	061 C-4679A03	TACT SWITCH
OTHERS		
	011 FP-534B	FRONT PANEL ASSY
	014 4TR-2797#2	ORNAMENT SIDE MOULDING
	014 C-4550A07	UPPER COVER
	014 FP-535	PLASTIC DOOR
	015 RP-385B	PRINTED REAR CHASSIS
	019 4TSH-19#2	PLASTIC FOOT 50F
	022 T-1079T01/02	POWER TRANSFORMER
	069 C-4629A01	AC INLET
	072 C-4620A01	AC CORD SET for STD
	072 C-4622A01	AC CORD SET for AUSTRALIA
	072 C-4623A01	AC CORD SET for U.K
	072 C-4624A01	AC CORD SET for CEE
	072 C-4735A01	3P AV PIN CORD
	072 C-4736A01	75Ω COAXIAL CORD
	073 C-4737A01	S VIDEO CORD
	081 TL3-15A00	INSIDE CARTON
	081 TZ-165	STYROL SIDE MOULDING
	092 RDV995MECHA	ASSY LOADER MECHA ASSY (NOT AVAILABLE)
	092 LVA10168-02A	SERVO PCB ASSY
	192 RR-DV92	REMOTE UNIT

Parts List 4/7

SYMBOL	PARTS NO	DESCRIPTION	SYMBOL	PARTS NO	DESCRIPTION
LAV10168-02A PCB ASSEMBLY					
C1	NCB31CK-104X	CERAMIC CAP	C207	NCB31HK-471X	CERAMIC CAP
C2	NEA70JM-226X	E/C CAP	C208	NCB31CK-104X	CERAMIC CAP
C3	NEA70JM-226X	E/C CAP	C209	NCB31HK-102X	CERAMIC CAP
C4	MCB31CK-104X	CERAMIC CAP	C210	NCB31HK-102X	CERAMIC CAP
C5	NEX40JM-156X	E/C CAP	C222	NCB31HK-562X	CERAMIC CAP
C6	NCB31CK-104X	CERAMIC CAP	C223	NCB31HK-102X	CERAMIC CAP
C11	NEA70JM-107X	E/C CAP	C224	NCB31CK-104X	CERAMIC CAP
C12	NCB31CK-104X	CERAMIC CAP	C225	NBE91CM-105X	E/C CAP
C15	NCB31CK-104X	CERAMIC CAP	C227	NCB31HK-102X	CERAMIC CAP
C16	NBE20JM-106X	TS E CAP SVB20J	C228	NCB31HK-102X	CERAMIC CAP
C17	NCB31CK-104X	CERAMIC CAP	C237	NCB31CK-104X	CERAMIC CAP
C101	NCB31HK-561X	CERAMIC CAP	C238	NCB31CK-104X	CERAMIC CAP
C102	NCB31CK-104X	CERAMIC CAP	C239	NCB31CK-183X	CERAMIC CAP
C103	NCB31CK-104X	CERAMIC CAP	C240	NCS31HJ-470X	CERAMIC CAP
C104	NCB31CK-104X	CERAMIC CAP	C241	NCB31CK-103X	CERAMIC CAP
C105	NCB31CK-104X	CERAMIC CAP	C242	NCB11CK-105X	CERAMIC CAP
C109	NEA70JM-476X	CERAMIC CAP	C244	NCB31CK-104X	CERAMIC CAP
C112	NEA70JM-476X	E/C CAP	C245	NCB31CK-103X	CERAMIC CAP
C118	NCB21CK-154X	E/C CAP	C246	NCB31CK-104X	CERAMIC CAP
C119	NCS31HJ-221X	CERAMIC CAP	C247	NCB31CK-104X	CERAMIC CAP
C120	NCS31HJ-820X	CERAMIC CAP	C248	NCB21CK-154X	C.CAPA. C.M
C121	NCS31HJ-220X	CERAMIC CAP	C249	NCB31CK-104X	CERAMIC CAP
C122	NCB31HK-271X	CERAMIC CAP	C250	NCB31CK-104X	CERAMIC CAP
C123	NCB31CK-104X	CERAMIC CAP	C251	NCB31CK-104X	CERAMIC CAP
C124	NCB31CK-104X	CERAMIC CAP	C252	NCB31CK-104X	CERAMIC CAP
C125	NCB31CK-104X	CERAMIC CAP	C253	NCB31CK-104X	CERAMIC CAP
C126	NEX40JM-566X	E/C CAP	C254	NEA70GM-336X	E/C CAP
C127	NCB31HK-102X	CERAMIC CAP	C255	NCB31CK-104X	CERAMIC CAP
C128	NCB31CK-104X	CERAMIC CAP	C256	NEA70GM-107X	E/C CAP
C130	NCB31CK-104X	CERAMIC CAP	C257	NCB11CK-105X	CERAMIC CAP
C131	NCS31HJ-120X	CERAMIC CAP	C258	NEA70GM-107X	E/C CAP
C132	NCB31CK-104X	CERAMIC CAP	C259	NCB11CK-105X	CERAMIC CAP
C133	NCB31HK-561X	CERAMIC CAP	C260	NCB31HK-561X	CERAMIC CAP
C134	NCB31HK-561X	CERAMIC CAP	C261	NCB31CK-104X	CERAMIC CAP
C135	NCB 31CK-273X	CERAMIC CAP	C262	NCB31CK-104X	CERAMIC CAP
C136	NCB31CK-473X	CERAMIC CAP	C263	NCB31CK-104X	CERAMIC CAP
C138	NCB31CK-104X	CERAMIC CAP	C264	NCB21CK-474X	CERAMIC CAP
C139	NCB31CK-104X	CERAMIC CAP	C271	NCB31EK-332X	CERAMIC CAP
C140	NEA70JM-226X	E/C CAP	C272	NCB31HK-331X	CERAMIC CAP
C141	NCB31CK-104X	CERAMIC CAP	C276	NCB31CK-104X	CERAMIC CAP
C143	NCB31CK-104X	CERAMIC CAP	C277	NCB31CK-104X	CERAMIC CAP
C144	NCB31CK-104X	CERAMIC CAP	C278	NCB31HK-102X	CERAMIC CAP
C145	NCB31CK-103X	CERAMIC CAP	C279	NCB31HK-272X	CERAMIC CAP
C151	NEX40JM-156X	E/C CAP	C281	NCB31CK-103X	CERAMIC CAP
C152	NEX40JM-156X	E/C CAP	C283	NCB31CK-223X	CERAMIC CAP
C153	NCB31CK-104X	CERAMIC CAP	C284	NCB31CK-473X	CERAMIC CAP
C159	NCB31CK-104X	CERAMIC CAP	C288	NCB31CK-223X	CERAMIC CAP
C160	NCB31CK-104X	CERAMIC CAP	C289	NCB31CK-104X	CERAMIC CAP
C161	NEA70GM-336X	E/C CAP	C291	NCB31CK-104X	CERAMIC CAP
C202	NCB31HK-561K	CERAMIC CAP	C292	NEA70JM-226X	E/C CAP
C203	NCB31HK-561K	CERAMIC CAP	C293	NEA71CM-226X	E/C CAP
C204	NCB31HK-331K	CERAMIC CAP	C301	NCB31CK-104X	CERAMIC CAP
C205	NCS31HJ-121X	CERAMIC CAP	C302	NCB31CK-104X	CERAMIC CAP
C206	NCS31HJ-271X	CERAMIC CAP	C303	NCB31CK-104X	CERAMIC CAP

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SYMBOL	PARTS NO	DESCRIPTION
C304	NCB31CK-104X	CERAMIC CAP
C305	NCB31CK-104X	CERAMIC CAP
C306	NCB31CK-104X	CERAMIC CAP
C307	NCB31CK-104X	CERAMIC CAP
C309	NCB31CK-104X	CERAMIC CAP
C310	NCB31CK-104X	CERAMIC CAP
C311	NCB31CK-104X	CERAMIC CAP
C312	NCS31HJ-180X	CERAMIC CAP
C313	NCS31HJ-180X	CERAMIC CAP
C314	NCB31CK-104X	CERAMIC CAP
C315	NCB31CK-104X	CERAMIC CAP
C316	NEA70GM-107X	E/C CAP
C317	NCB31CK-105X	CERAMIC CAP
C318	NCB31CK-104X	CERAMIC CAP
C319	NCB31CK-104X	CERAMIC CAP
C320	NCB31CK-104X	CERAMIC CAP
C321	NCB31CK-104X	CERAMIC CAP
C324	NCB31CK-104X	CERAMIC CAP
C326	NCB31CK-104X	CERAMIC CAP
C327	NEA70GM-107X	E/C CAP
C341	NCB31CK-104X	CERAMIC CAP
C342	NCB31CK-104X	CERAMIC CAP
C343	NCB31CK-104X	CERAMIC CAP
C344	NCB31CK-104X	CERAMIC CAP
C345	NEA70JM-107X	E/C CAP
C346	NCB11CK-105X	CERAMIC CAP
C373	NCB31CK-104X	CERAMIC CAP
C401	NCB31CK-104X	CERAMIC CAP
C402	NCB31CK-104X	CERAMIC CAP
C405	NCB31CK-104X	CERAMIC CAP
C406	NCB31CK-104X	CERAMIC CAP
C407	NCB31CK-104X	CERAMIC CAP
C408	NEA70JM-226X	E/C CAP
C409	NCB31CK-104X	CERAMIC CAP
C411	NCB31CK-104X	CERAMIC CAP
C412	NCB31CK-104X	CERAMIC CAP
C501	NCB31CK-104X	CERAMIC CAP
C502	NCB31CK-104X	CERAMIC CAP
C503	NCB31CK-104X	CERAMIC CAP
C504	NCB31CK-104X	CERAMIC CAP
C505	NCB31CK-104X	CERAMIC CAP
C506	NCB31CK-104X	CERAMIC CAP
C507	NCB31CK-104X	CERAMIC CAP
C508	NCB31CK-104X	CERAMIC CAP
C509	NCB31CK-104X	CERAMIC CAP
C510	NCB31CK-104X	CERAMIC CAP
C511	NCB31CK-104X	CERAMIC CAP
C512	NCB31CK-104X	CERAMIC CAP
C513	NCB31CK-104X	CERAMIC CAP
C514	NCB31CK-104X	CERAMIC CAP
C515	NCB31CK-104X	CERAMIC CAP
C516	NCB31CK-104X	CERAMIC CAP
C517	NCB31CK-104X	CERAMIC CAP
C518	NCB31CK-104X	CERAMIC CAP

SYMBOL	PARTS NO	DESCRIPTION
C519	NCB31CK-104X	CERAMIC CAP
C520	NCB31CK-104X	CERAMIC CAP
C521	NCB31CK-104X	CERAMIC CAP
C522	NCB31CK-104X	CERAMIC CAP
C523	NCB31CK-104X	CERAMIC CAP
C524	NCB31CK-104X	CERAMIC CAP
C525	NCB31CK-104X	CERAMIC CAP
C526	NCB31CK-104X	CERAMIC CAP
C527	NCB31CK-104X	CERAMIC CAP
C528	NCB31CK-104X	CERAMIC CAP
C529	NCB31CK-104X	CERAMIC CAP
C530	NEA70JM-107X	E/C CAP
C531	NCB31CK-104X	CERAMIC CAP
C532	NCB31CK-104X	CERAMIC CAP
C533	NCB31CK-104X	CERAMIC CAP
C534	NEA70JM-107X	E/C CAP
C535	NCB31CK-104X	CERAMIC CAP
C536	NCB31CK-103X	CERAMIC CAP
C537	NEA70JM-226X	E/C CAP
C538	NCB31CK-104X	CERAMIC CAP
C539	NCB31CK-104X	CERAMIC CAP
C540	NEA70JM-226X	E/C CAP
C541	NCB31CK-104X	CERAMIC CAP
C542	NEA70JM-226X	E/C CAP
C543	NCB31CK-104X	CERAMIC CAP
C556	NEA70JM-107X	E/C CAP
C557	NCB31CK-104X	CERAMIC CAP
C561	NCB31CK-104X	CERAMIC CAP
C562	NEA70JM-226X	E/C CAP
C563	NCB31CK-104X	CERAMIC CAP
C564	NCB31CK-104X	CERAMIC CAP
C565	NCB31CK-104X	CERAMIC CAP
C566	NCB31CK-104X	CERAMIC CAP
C567	NEA70JM-226X	E/C CAP
C568	NCB31CK-104X	CERAMIC CAP
C569	NEA70JM-226X	E/C CAP
C570	NCB31CK-104X	CERAMIC CAP
CN101	QGF0501F3-40X	FFC/FPC CONNE
CN501	QGB2027L1-10X	W TO B CONNE
CN502	QGB2027L1-22X	CONNECTOR
CN503	QGB2027L1-10X	W TO B CONNE
D501	1SR154-400-X	DIODE
D551	1SS355-X	DIODE
D552	1SS355-X	DIODE
IC 1	RN5RZ33BA-X	IC
IC101	AN8702FH	IC
IC102	RN5RZ33BA-X	IC
IC201	MN67706ZY	IC
IC202	TC7WT125FU-X	IC (DIGITAL)
IC271	M56788FP-W	IC
IC301	MN103S13BDA	IC
IC311	TC7SH08FU-X	IC
IC312	TC7SH32FU-X	IC
IC321	TC7WH74FU-X	IC

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SYMBOL	PARTS NO	DESCRIPTION
IC322	TC7VHC00FT-X	IC
IC401	MN102L25GDZ3	IC C.M
IC402	MSM531622F84G-X	IC (u-h)
IC403	AK93C65AF-X	IC
IC501	ZIVA3-PEO	IC
IC502	NAX0393-001X	CXO C.M
IC503	TC74VHC00FT-X	IC
IC504	HY57V161610DTC8	IC
IC505	HY57V161610DTC8	IC
IC554	MC44724AVFU	IC
K 102	NQR0007-002X	IC
K 103	NQR0007-002X	FERRITE BEADS
K 201	NQR0007-002X	FERRITE BEADS
K 202	NQR0007-002X	FERRITE BEADS
K 203	NQR0007-002X	FERRITE BEADS
K 301	NQR0007-002X	FERRITE BEADS
K 302	NQR0007-002X	FERRITE BEADS
K 303	NQR0007-002X	FERRITE BEADS
K 401	NQR0007-002X	FERRITE BEADS
K 402	NQR0007-002X	FERRITE BEADS
K 501	NQR0007-002X	FERRITE BEADS
K 502	NQR0007-002X	FERRITE BEADS
K 503	NQR0007-002X	FERRITE BEADS
K 504	NQR0201-001X	FERRITE BEADS
K 505	NQR0269-001X	FERRITE BEADS
K 506	NQR0007-002X	FERRITE BEADS
K 507	NQR0007-002X	FERRITE BEADS
K 550	NQR0007-002X	FERRITE BEADS
K 551	NQR0007-002X	FERRITE BEADS
K 553	NQR0007-002X	FERRITE BEADS
K 554	NQR0007-002X	FERRITE BEADS
K 555	NQR0007-002X	FERRITE BEADS
K 556	NQR0007-002X	FERRITE BEADS
K 557	NQR0007-002X	FERRITE BEADS
K 558	NQR0007-002X	FERRITE BEADS
K 559	NQR0007-002X	FERRITE BEADS
R 301	NRSA63J-473X	MG RESISTOR
R 302	NRSA63J-473X	MG RESISTOR
R 303	NRSA63J-473X	MG RESISTOR
R 304	NRSA63J-473X	MG RESISTOR
R 305	NRSA63J-473X	MG RESISTOR
R 306	NRSA63J-473X	MG RESISTOR
R 307	NRSA63J-473X	MG RESISTOR
R 308	NRSA63J-473X	MG RESISTOR
R 309	NRSA63J-103X	MG RESISTOR
R 310	NRSA63J-102X	MG RESISTOR
R 311	NRSA63J-102X	MG RESISTOR
R 312	NRSA63J-102X	MG RESISTOR
R 316	NRSA63J-105X	MG RESISTOR
R 317	NRSA63J-0R0X	MG RESISTOR
R 318	NRSA63J-0R0X	MG RESISTOR
R 322	NRSA63J-473X	MG RESISTOR
R 324	NRSA63J-473X	MG RESISTOR
R 328	NRSA63J-473X	MG RESISTOR

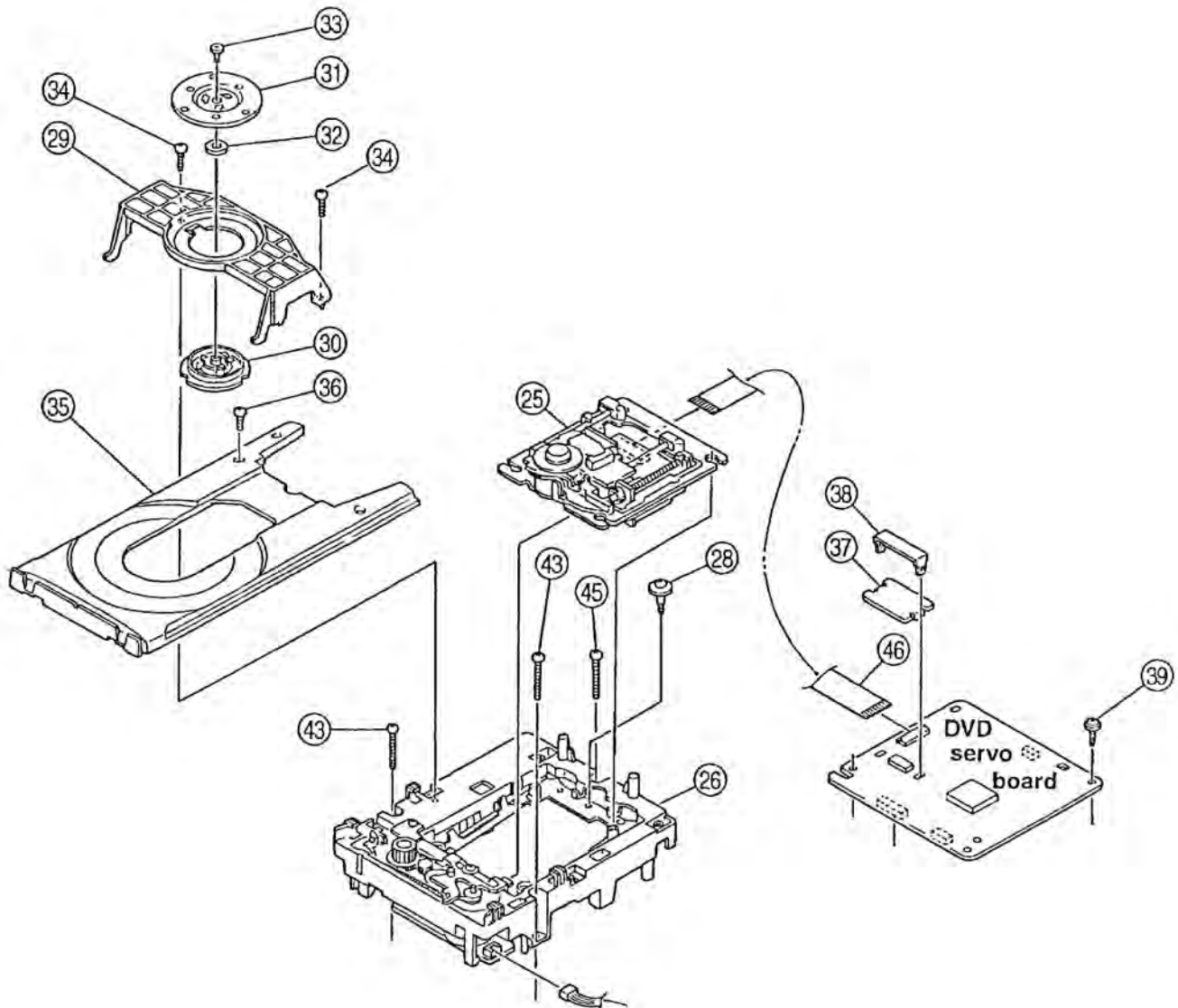
SYMBOL	PARTS NO	DESCRIPTION
R 342	NRSA63J-0R0X	MG RESISTOR
R 343	NRSA63J-102X	MG RESISTOR
R 345	NRSA63J-562X	MG RESISTOR
R 346	NRSA63J-472X	MG RESISTOR
R 347	NRSA63J-102X	MG RESISTOR
R 348	NRSA63J-102X	MG RESISTOR
R 349	NRSA63J-102X	MG RESISTOR
R 350	NRSA63J-102X	MG RESISTOR
R 364	NRSA63J-0R0X	MG RESISTOR
R 403	NRSA63J-472X	MG RESISTOR
R 405	NRSA63J-472X	MG RESISTOR
R 408	NRSA63J-472X	MG RESISTOR
R 410	NRSA63J-0R0X	MG RESISTOR
R 411	NRSA63J-472X	MG RESISTOR
R 412	NRSA63J-103X	MG RESISTOR
R 413	NRSA63J-472X	MG RESISTOR
R 414	NRSA63J-472X	MG RESISTOR
R 415	NRSA63J-472X	MG RESISTOR
R 416	NRSA63J-472X	MG RESISTOR
R 417	NRSA63J-472X	MG RESISTOR
R 418	NRSA63J-472X	MG RESISTOR
R423	NRSA63J-0R0X	MG RESISTOR
R424	NRSA63J-0R0X	MG RESISTOR
R431	NRSA63J-472X	MG RESISTOR
R432	NRSA63J-472X	MG RESISTOR
R501	NRSA63J-102X	MG RESISTOR
R502	NRSA63J-222X	MG RESISTOR
R504	NRSA63J-330X	MG RESISTOR
R505	NRSA63J-330X	MG RESISTOR
R506	NRSA63J-330X	MG RESISTOR
R507	NRSA63J-330X	MG RESISTOR
R508	NRSA63J-330X	MG RESISTOR
R509	NRSA63J-330X	MG RESISTOR
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R512	NRSA63J-330X	MG RESISTOR
R513	NRSA63J-330X	MG RESISTOR
R514	NRSA63J-330X	MG RESISTOR
R515	NRSA63J-330X	MG RESISTOR
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R521	NRSA63J-330X	MG RESISTOR
R522	NRSA63J-330X	MG RESISTOR
R523	NRSA63J-181X	MG RESISTOR
R524	NRSA63J-181X	MG RESISTOR
R525	NRSA63J-181X	MG RESISTOR
R526	NRSA63J-181X	MG RESISTOR
R527	NRSA63J-181X	MG RESISTOR
R528	NRSA63J-181X	MG RESISTOR
R529	NRSA63J-181X	MG RESISTOR
R530	NRSA63J-181X	MG RESISTOR

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SYMBOL	PARTS NO	DESCRIPTION
R531	NRSA63J-330X	MG RESISTOR
R532	NRSA63J-0R0X	MG RESISTOR
R533	NRSA63J-330X	MG RESISTOR
R534	NRSA63J-330X	MG RESISTOR
R535	NRSA63J-330X	MG RESISTOR
R536	NRSA63J-330X	MG RESISTOR
R537	NRSA63J-330X	MG RESISTOR
R538	NRSA63J-330X	MG RESISTOR
R539	NRSA63J-330X	MG RESISTOR
R540	NRSA63J-330X	MG RESISTOR
R541	NRSA63J-0R0X	MG RESISTOR
R542	NRSA63J-0R0X	MG RESISTOR
R543	NRSA63J-0R0X	MG RESISTOR
R544	NRSA63J-0R0X	MG RESISTOR
R545	NRSA63J-472X	MG RESISTOR
R547	NRSA63J-222X	MG RESISTOR
R548	NRSA63J-332X	MG RESISTOR
R550	NRSA63J-0R0X	MG RESISTOR
R564	NRSA63D-152X	MG RESISTOR
R565	NRSA63D-332X	MG RESISTOR
R 571	NRSA63J-100X	MG RESISTOR
R 572	NRSA63J-181X	MG RESISTOR
R 573	NRSA63J-181X	MG RESISTOR
R 574	NRSA63J-181X	MG RESISTOR
R 575	NRSA63J-181X	MG RESISTOR
R 576	NRSA63J-181X	MG RESISTOR
R 577	NRSA63J-181X	MG RESISTOR
R 578	NRSA63J-181X	MG RESISTOR
R 579	NRSA63J-181X	MG RESISTOR
R 580	NRSA63J-181X	MG RESISTOR
R 581	NRSA63J-101X	MG RESISTOR
R 582	NRSA63J-181X	MG RESISTOR
R 586	NRSA63D-122X	MG RESISTOR
R 587	NRSA63D-122X	MG RESISTOR
R 588	NRSA63D-102X	CMF RESISTOR
R 589	NRSA63D-102X	CMF RESISTOR
X301	NAX0375-001X	CRYSTAL
X401	NAX0331-001X	RESONATOR

SYMBOL	PARTS NO	DESCRIPTION
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Loader Assembly



Parts List (Loader Assembly)

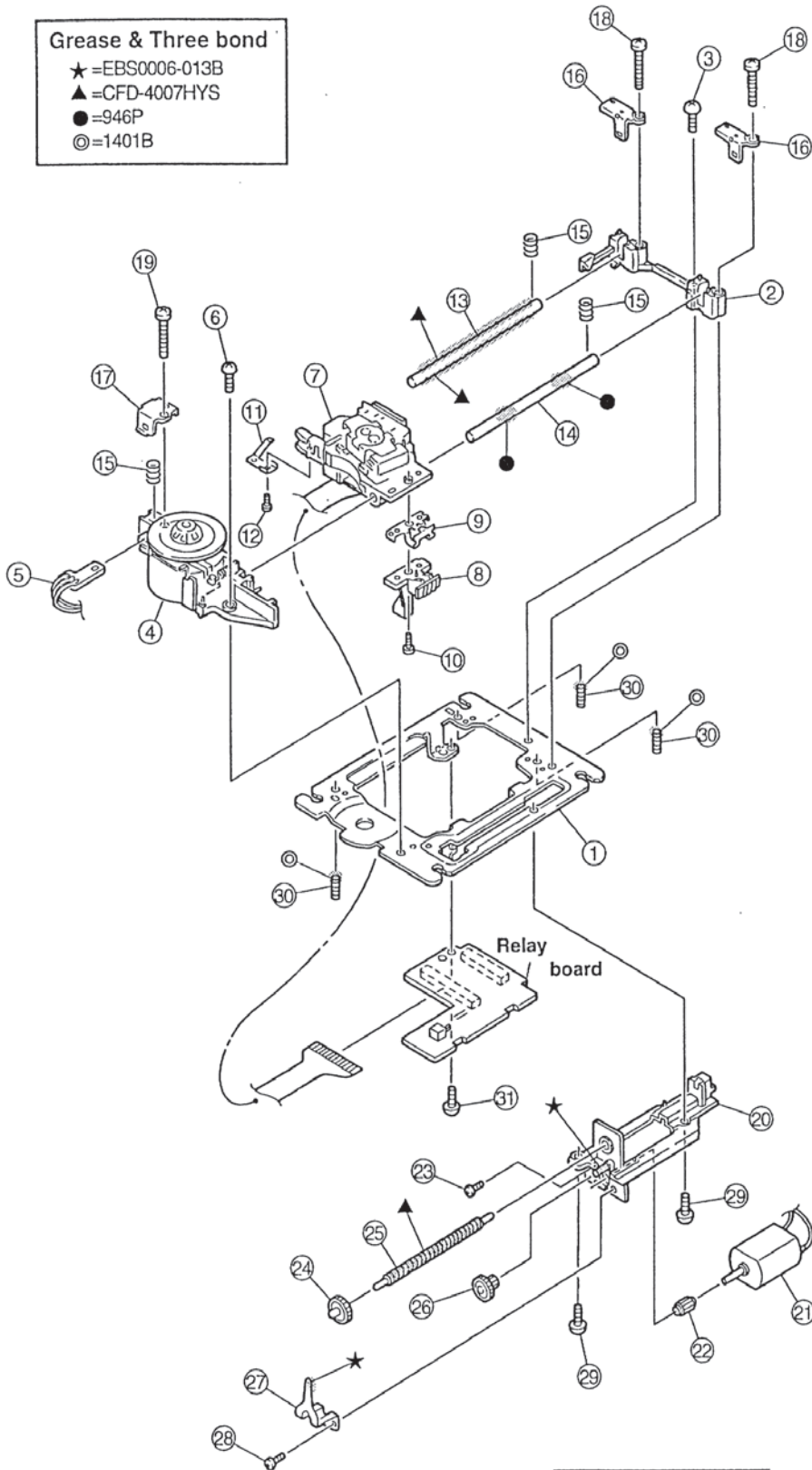
ITEM	PARTS NO	DESCRIPTION
25		DVD TRVERSE MECHA
26		DVD LOADING BASE
28	E406293-001	SPECIAL SCREW
29	E26756-222SS	CD CLAMPER BASE
30	LV31675-002A	CLAMPER
31	LV31676-001A	YOKE
32	LV41118-001A	MAGNET
33	LV41741-001A	SPECIAL SCREW
34	QYSBSF3008M	SCREW
35	LV10324-001A	TRAY
36	QYSBSF3008M	SCREW
37	LV41362-201A	HEAT SINK
38	LV41363-202A	HOLDER
39	QYSBSGG3006Z	SCREW
43	QYSBST3020Z	T. SCREW
45	QYSBST3020Z	T. SCREW
46	QUQ605-4015AJ	FFC WIRE

Pick-Up Mechanism Assembly

FXL-V6-1C

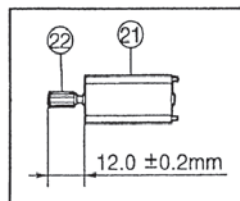
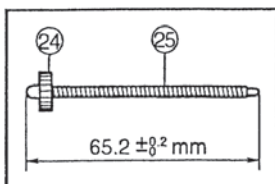
Grease & Three bond

- ★ =EBS0006-013B
- ▲ =CFD-4007HYS
- =946P
- ◎ =1401B



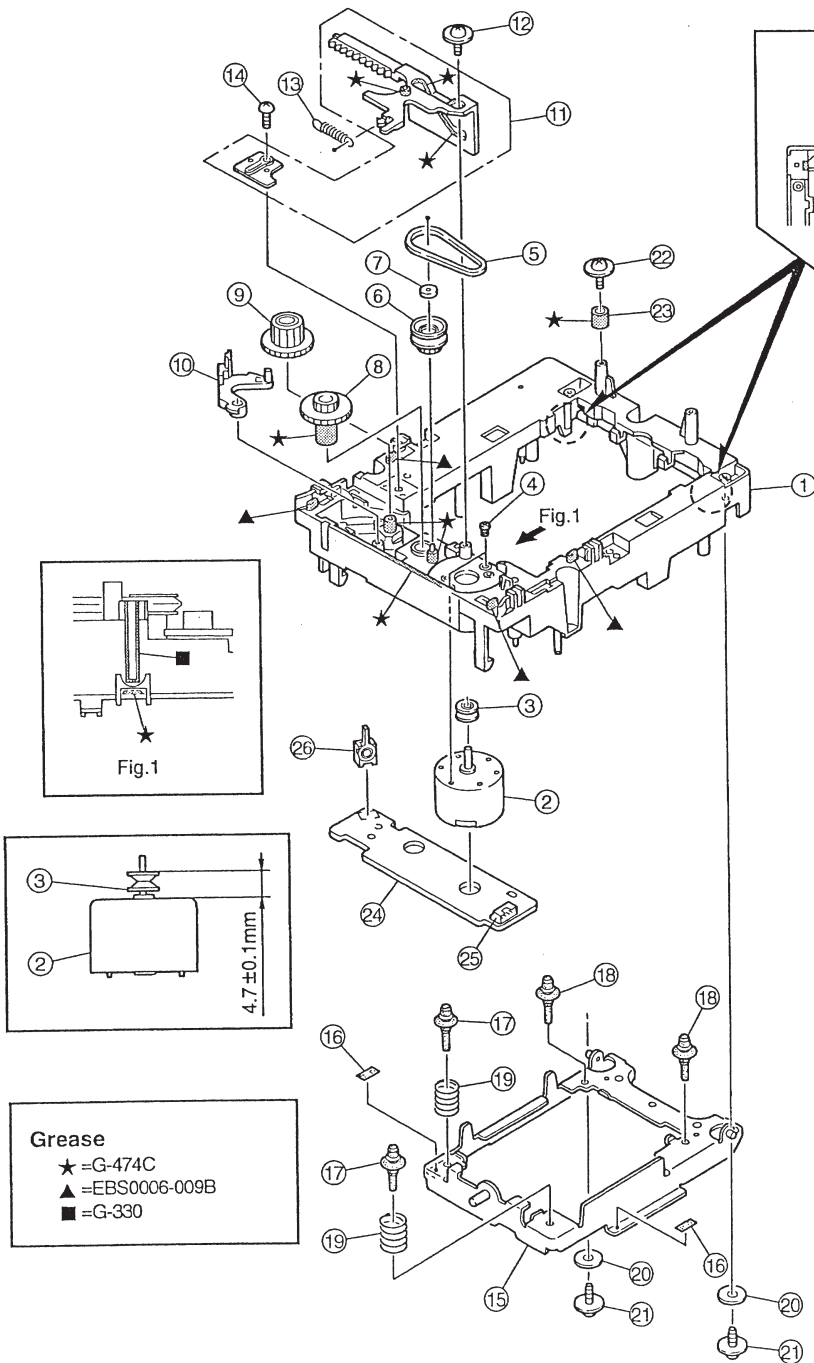
Parts List (DVD Mechanism)

ITEM	PARTS NO	DESCRIPTION
1	LV20638 001A	MECHA BASE
2	LV20635 001A	SHAFT HOLDER
3	QYSBST2606M	T.SCREW
4	VDG1099001TSVME	SP. MOTOR ASS'Y
5	QUM193 08B2B2	PARA RIBON WIRE
6	QYSBST2606M	T.SCREW
7	OPTIMA 2010A1	DVD PICKUP
8	LV31670 001A	SWITCH ACTUATOR
9	LV31666 002A	LEAD SPRING
10	QYSPSGT2040M	SCREW
11	LV31743 002A	P.U.SPRING
12	QYSPSGT1416M	MINI SCREW
13	LV41121 002A	SHAFT
14	LV41121 002A	SHAFT
15	LV41732 001A	SKREW SPRING
16	LV31669 001A	SHAFT STOPPER R
17	LV31668 001A	SHAFT STOPPER F
18	QYSBST2614M	SCREW
19	QYSBST2614M	SCREW
20	LV31746 003A	FEED HOLDER ASY
21	QAR0127 001	FEED MOTOR
22	LV41510 001A	FEED GEAR T
23	QYSPSPU2040M	SCREW
24	LV41512 001A	FEED GEAR E
25	LV41517 001A	LEAD SCREW
26	LV41511 002A	FEED GEAR M
27	LV31667 001A	THRUST SPRING
28	QYSPSPU2040M	SCREW
29	QYSBST2606M	T.SCREW
30	QYYASPF2608N	HEX SCREW
31	QYSBST2606M	T. SCREW



Loader Base Assembly

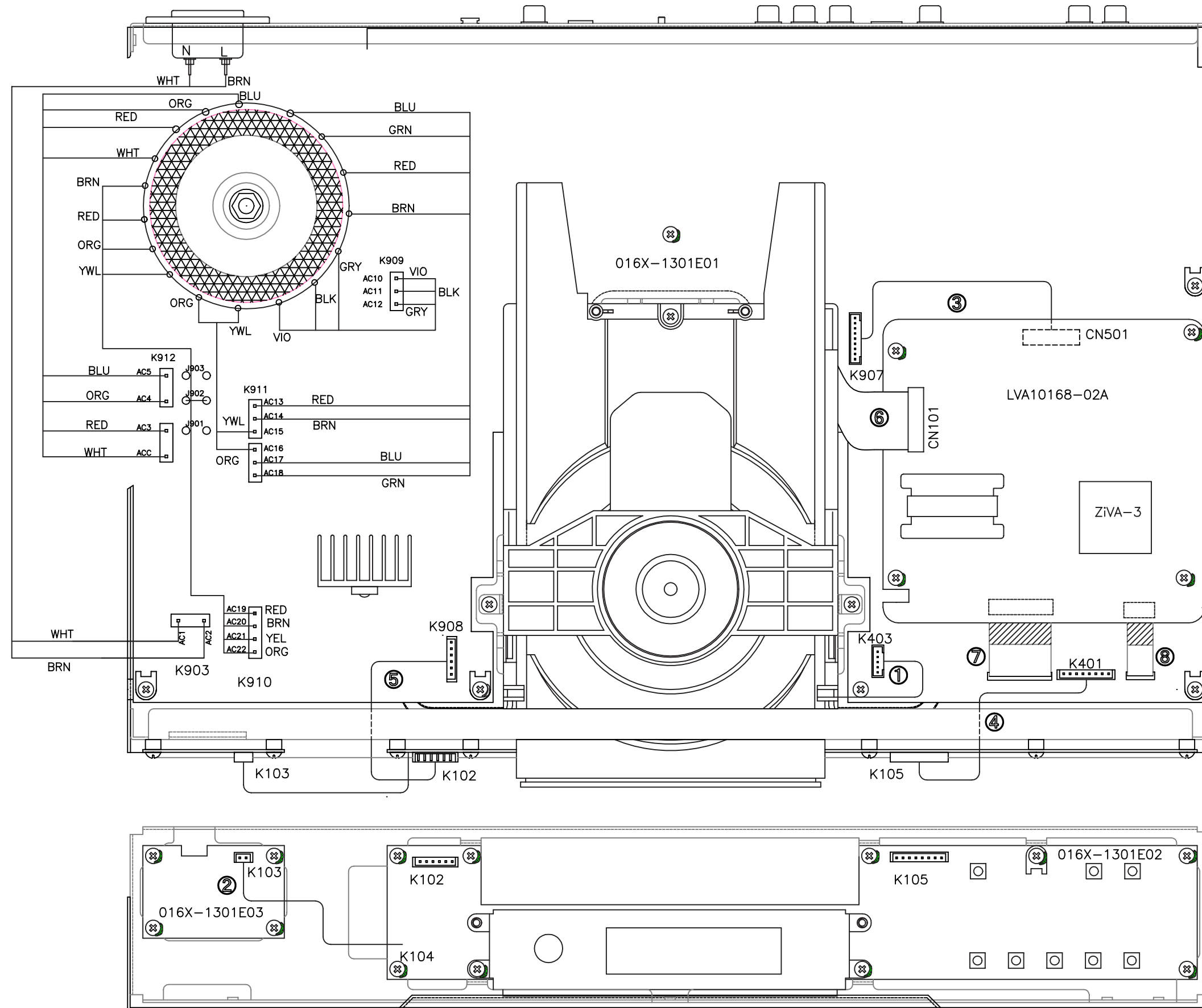
FLM-121-1C



Parts List (DVD Loading Base)

ITEM	PARTS NO	DESCRIPTION
1	E102357-441	LOADING BASE
2	MMN-6F1LB8K	MOTOR
3	E75984-001SC	MOTOR PULLEY
4	QYSPST2640Z	MINI SCREW
5	E75950-002	BELT
6	E75985-222SS	GEAR(1)
7	E60912-005SS	SPEED NUT
8	E75986-221SS	GEAR(2)
9	E75987-221SS	GEAR(3)
10	E307162-331	LEVER
11	E307252-331	CAM PLATE
12	E65923-003	TAPPING SCREW
13	E75989-001	SPRING
14	QYSBSF3008Z	SCREW
15	E307179-332	E. BASE ASS'Y
16	LV30225-089A	SPACER
17	LV41527-001A	INSULATOR
18	LV41527-002A	INSULATOR
19	E406871-001	SPRING
20	LV30226-019A	SPACER
21	E65923-003	TAPPING SCREW
22	QYSBSF3008Z	T. SCREW
23	LV41961-001A	TRAY TUBE
24	EMW10095-003	P.C. BOARD
25	QGA2001F1-05	5P PLUG ASSY
26	QSW0472-001	SWITCH

Wiring Diagram

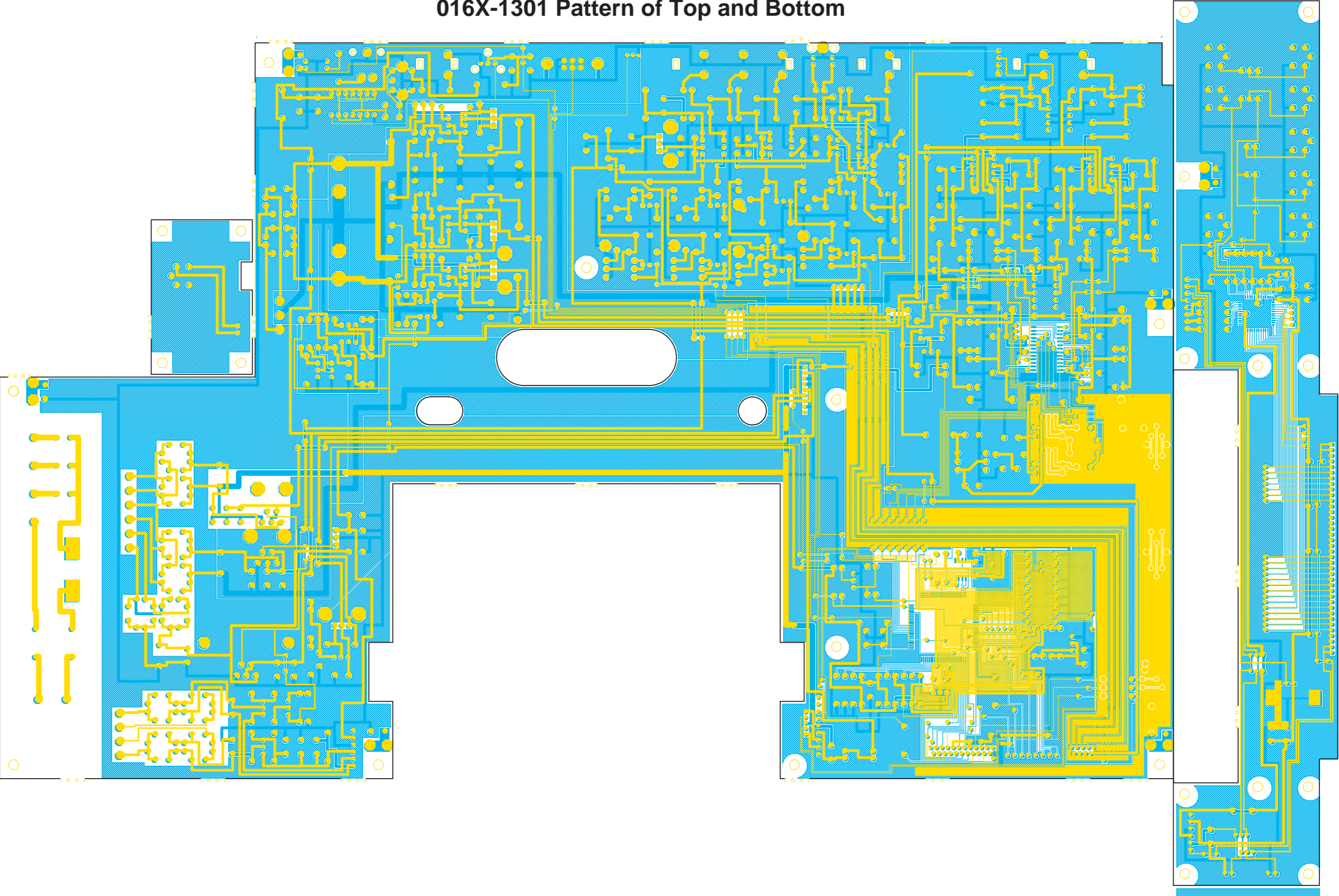


Wire Parts

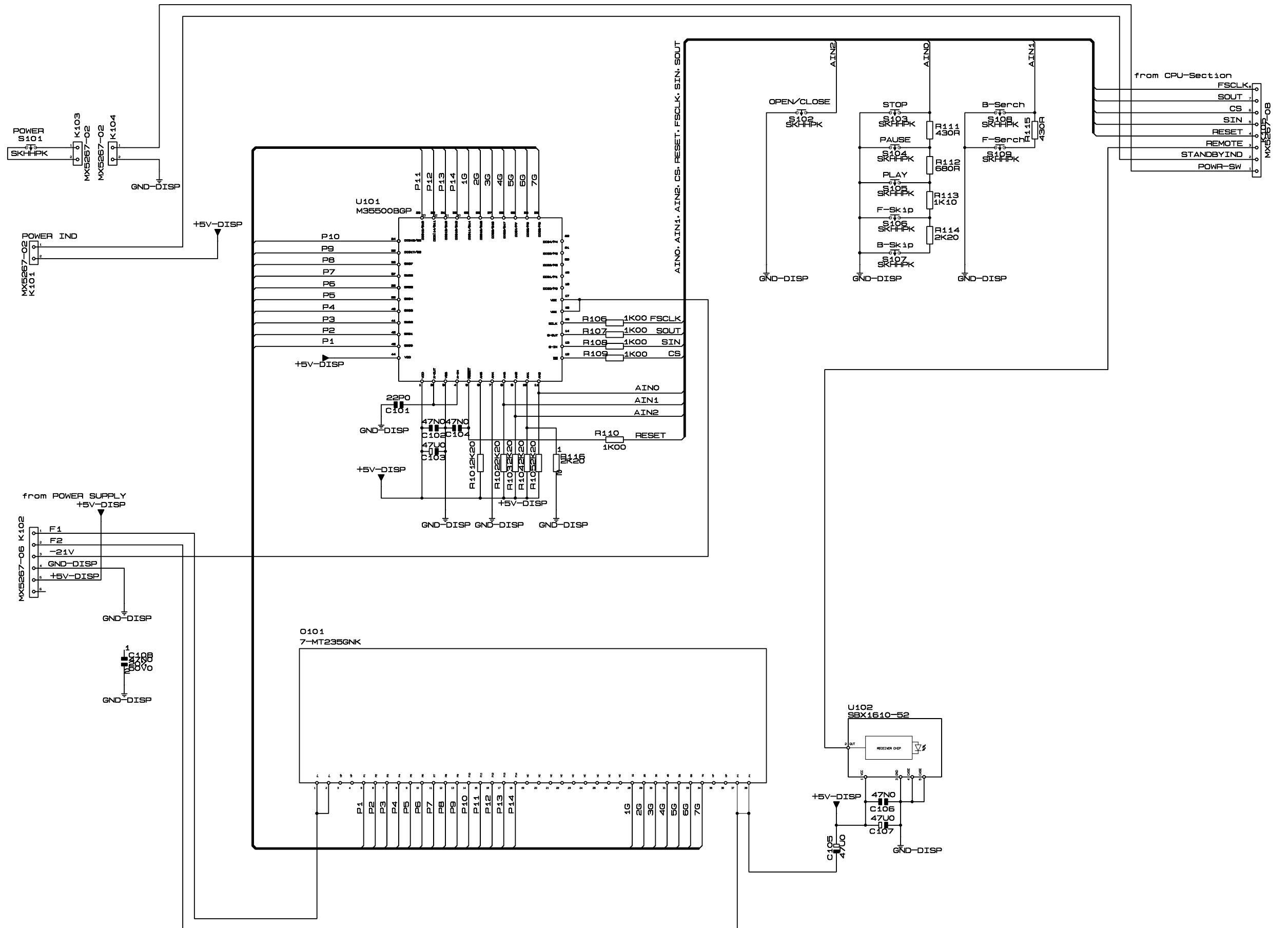
No.	Part Number	Description
①	068 C-4595A03	MECH to K403
②	068 C-4588A44	K104 to K103
③	068 C-4595A04	CN501 to K907
④	068 C-4618A09	K105 to K401
⑤	068 C-4618A08	K102 to K908
⑥	072 C-4729B00	MECH to CN101
⑦	072 C-4728A00	CN502 to K402
⑧	072 C-4727A00	CN503 to K801

PCB Assembly

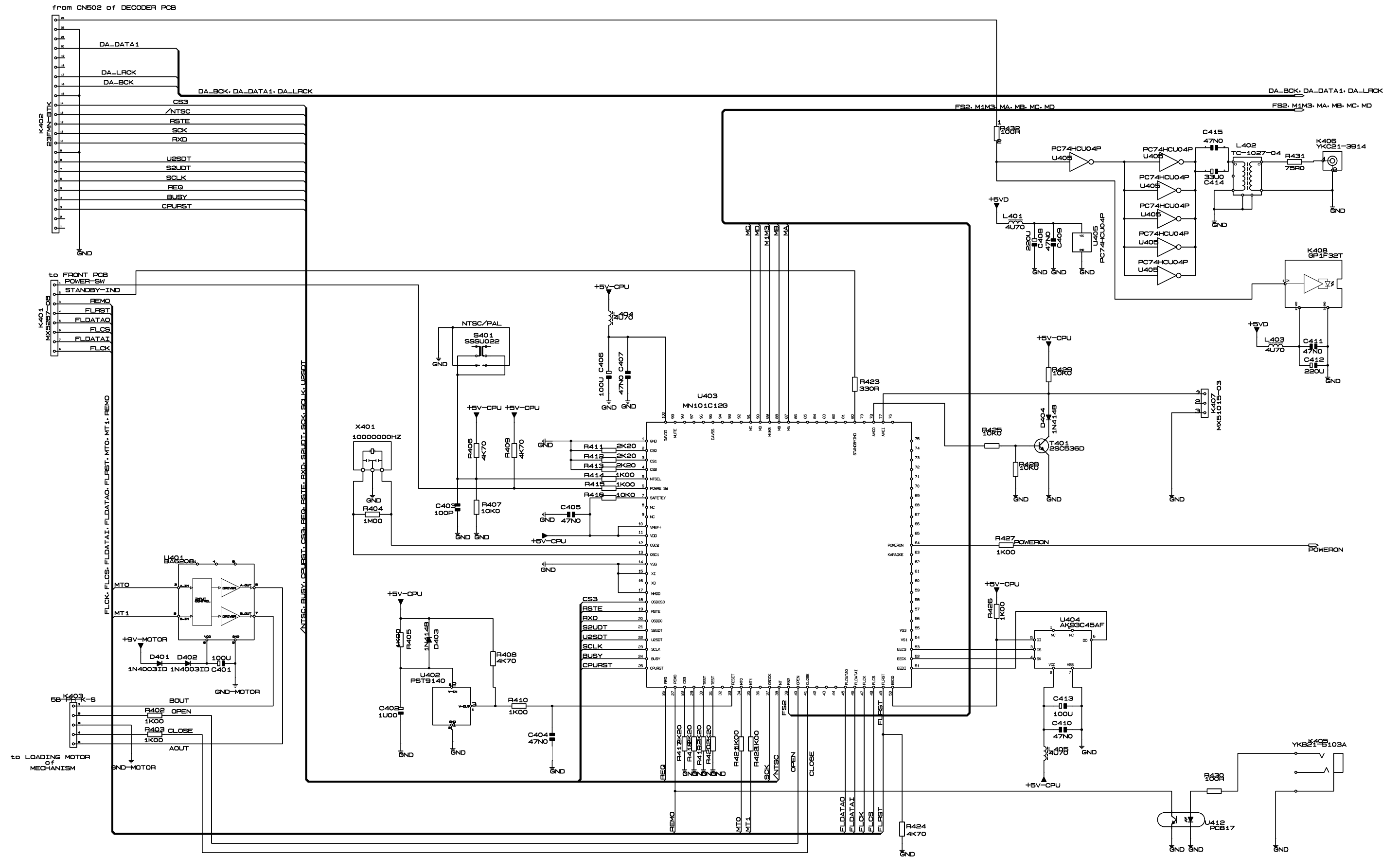
016X-1301 Pattern of Top and Bottom



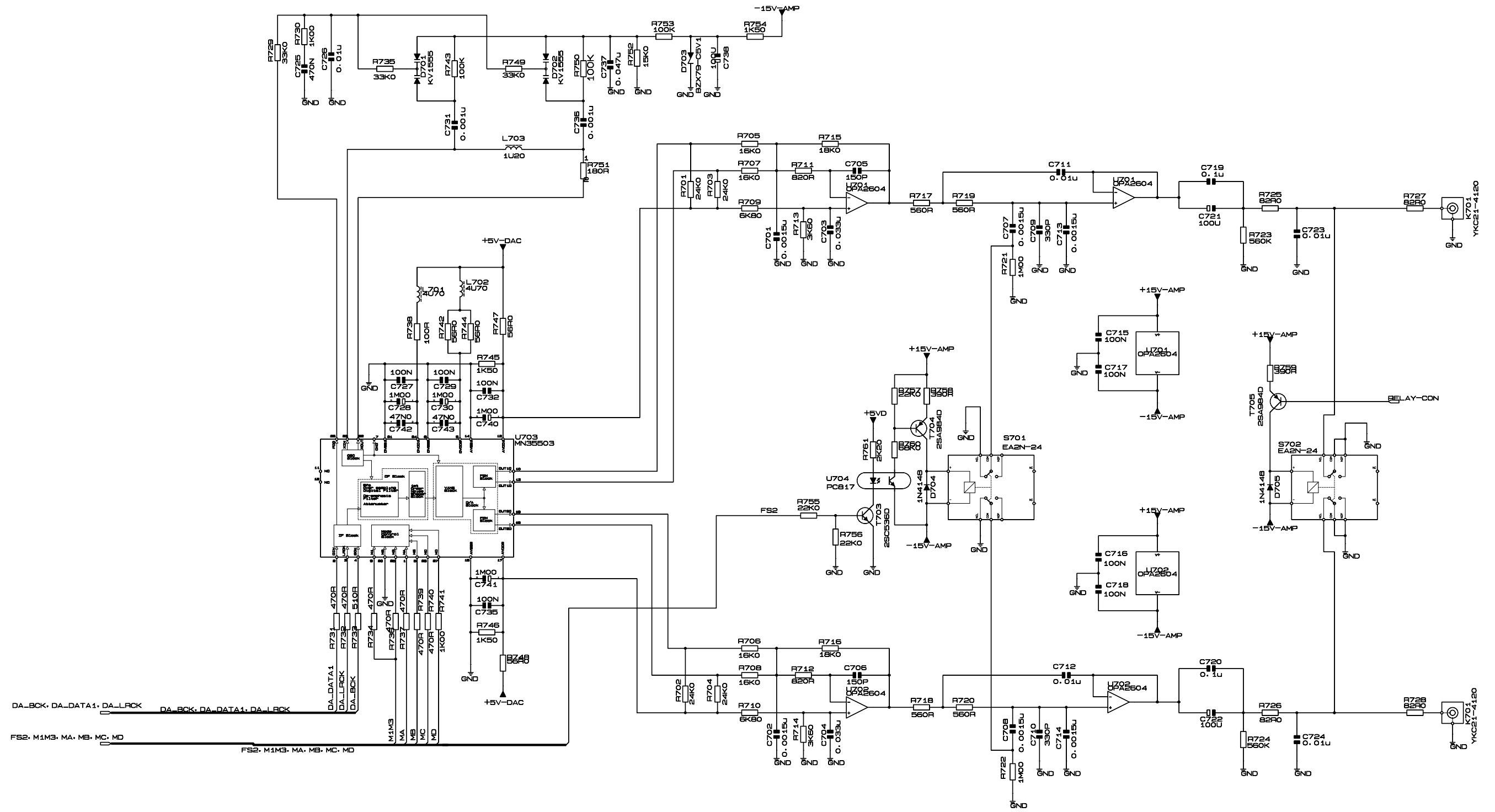
Schematic Diagram - Display



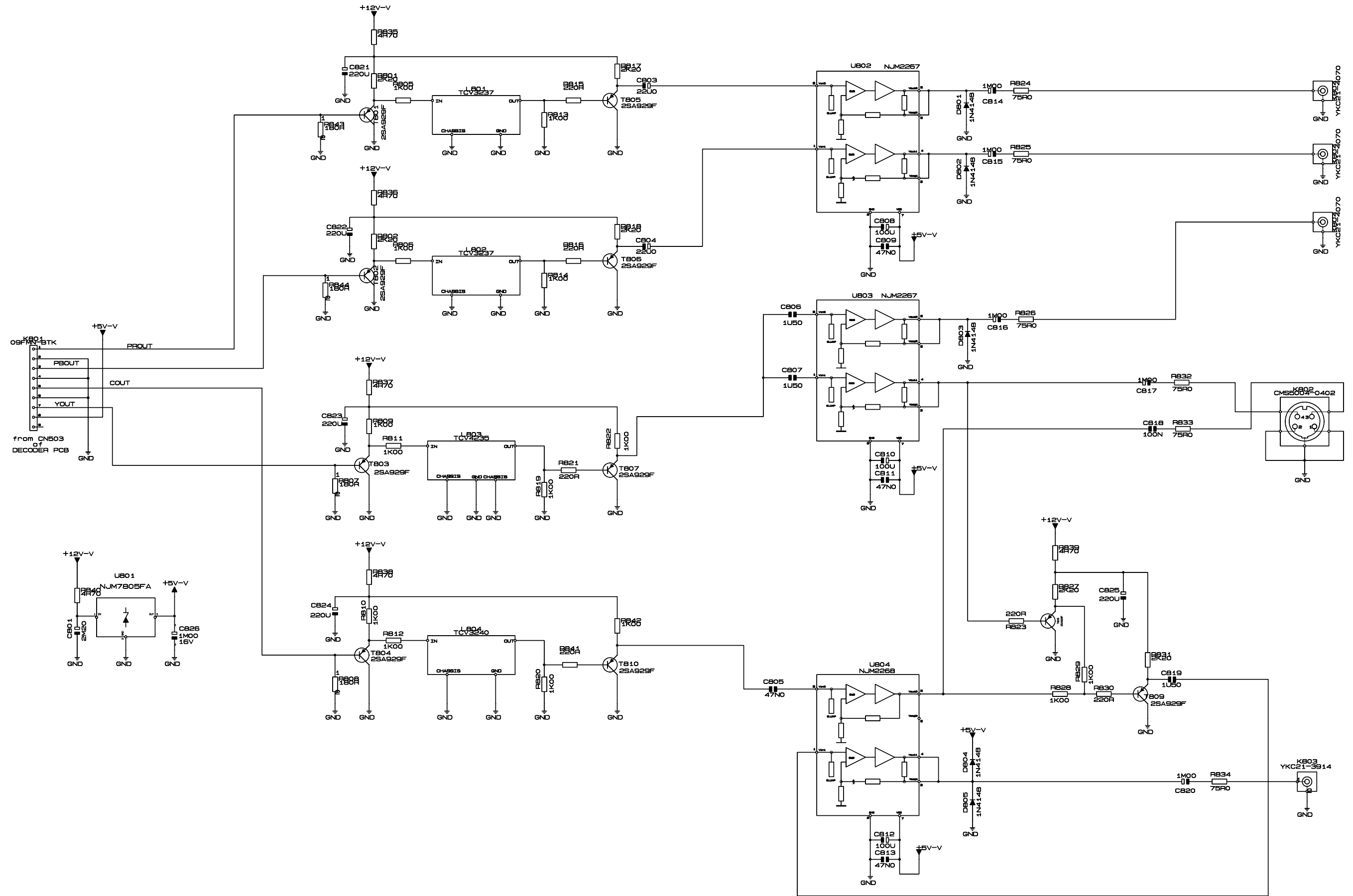
Schematic Diagram - Control



Schematic Diagram - DAC and Buffer



Schematic Diagram - Video Output





Technical Manual

DVD PLAYER
RDV-995

Additional Sheets

1. Disassembly Mechanism
2. Main Adjustment
3. Trouble shooting
4. Checkpoints

THE ROTEL CO., LTD.

SHINSEN-BLD. 4F 10-10 SHINSEN-CHO, SHIBUYA-KU,
TOKYO 150-0045, JAPAN

Serial. NO. Beginning

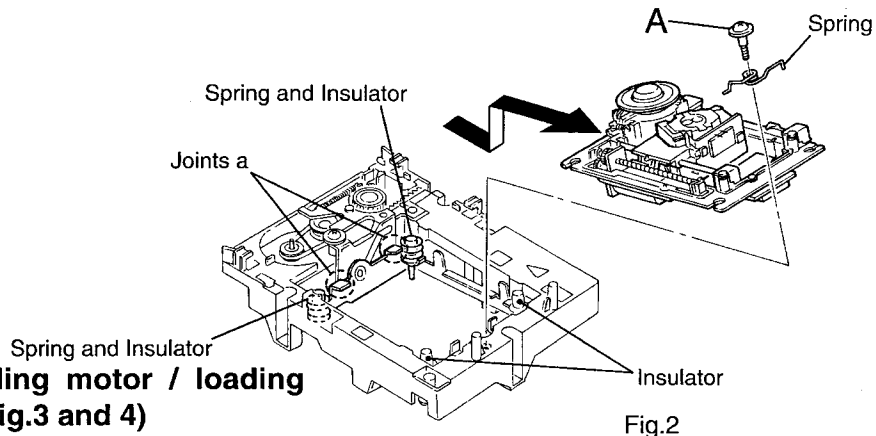
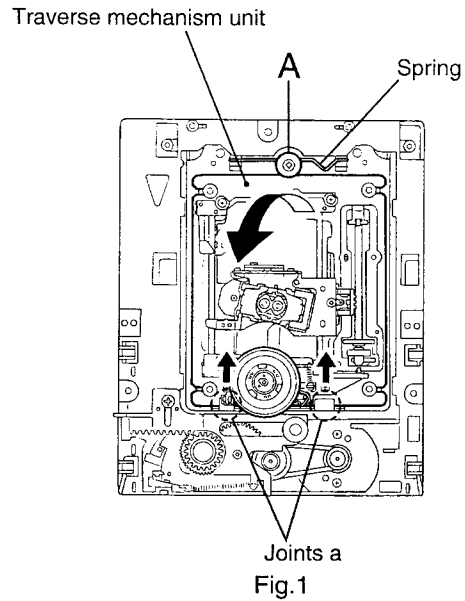
Y-352A-0107/W

<DVD mechanism>

■ Removing the traverse mechanism unit
(See Fig.1 and 2)

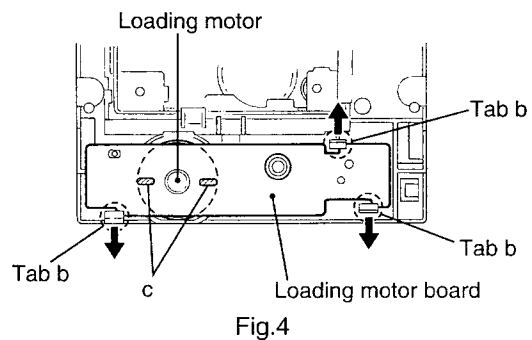
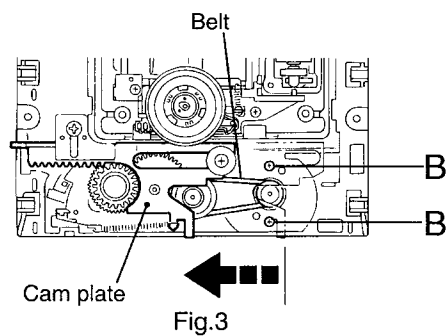
1. Remove the screw A and the spring on the upper side of the loading base assembly.
2. Move the rear part of the traverse mechanism unit upward and pull backward to release the two joints a with the base chassis.

ATTENTION: When reattaching, engage the two joints a and make sure the front springs and the four insulators of the traverse mechanism unit are correctly attached.



■ Removing the loading motor / loading motor board (See Fig.3 and 4)

1. Move the cam plate on the upper side of the loading base assembly in the direction of the arrow.
2. Remove the belt from the motor pulley.
3. Remove the two screws B attaching the loading motor.
4. Turn over the loading base assembly and release the loading motor board from the three tabs b while spreading them outward. The loading motor board will be detached with the loading motor.
5. Unsolder soldering c on the loading motor board and remove the loading motor.



Ref.: To remove the loading motor board only, unsolder soldering c on the loading motor and release the three tabs b.

■ Removing the pickup (See Fig.5 to 9)

※It is not necessary to remove the traverse mechanism unit.

1. Solder soldering d on the flexible board next to the pickup unit.
2. From the bottom of the traverse mechanism unit, disconnect the flexible wire from CN10 on the pickup board.

ATTENTION: Disconnecting the flexible wire without soldering may cause damage to the pickup.

3. Remove the screw C attaching the shaft stopper (R) on the upper side of the traverse mechanism unit. Pull the side of the shaft stopper (R) outward to release the joint e and remove it upward. Remove the skew spring at the same time.
4. Move the shaft in the direction of the arrow to release it from the part f.
5. Release the joint g with the shaft and remove the pickup with the shaft.
6. Pull out the shaft.
7. Remove the screw D attaching the switch actuator.

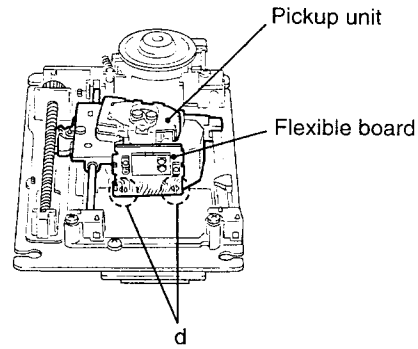


Fig.5

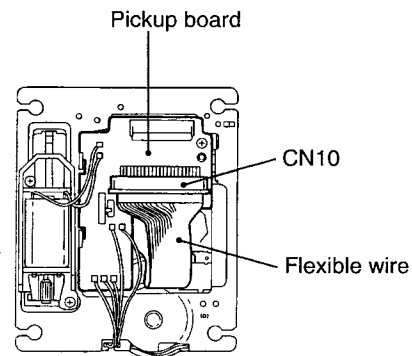


Fig.6

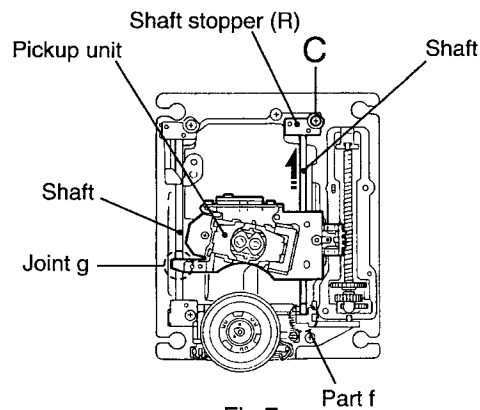


Fig.7

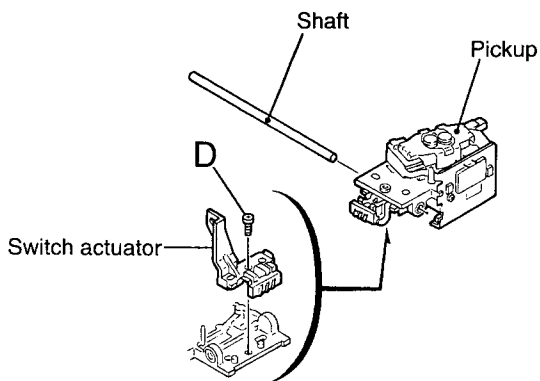


Fig.9

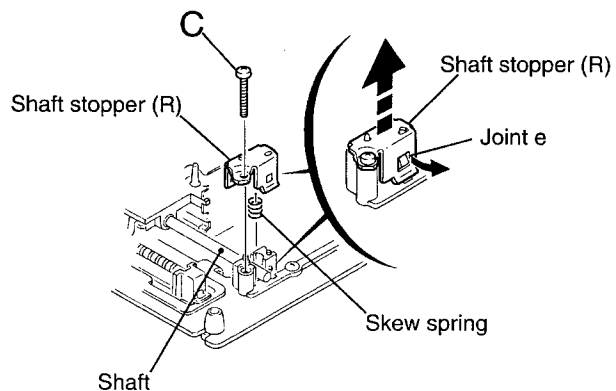


Fig.8

■ Removing the pickup board

(See Fig.5 and 10)

※It is not necessary to remove the traverse mechanism unit.

1. Solder soldering d on the flexible board next to the pickup unit.
2. From the bottom of the traverse mechanism unit, disconnect the flexible wire from CN10 on the pickup board.

ATTENTION: Disconnecting the flexible wire without soldering may cause damage to the pickup.

3. Unsolder soldering h, i and j of each harness on the pickup board.
4. Remove the screw E attaching the pickup board and release the two joints k.

■ Removing the feed motor assembly

(See Fig.5, 10 and 11)

• Prior to performing the following procedure, remove the traverse mechanism unit.

1. Solder soldering d on the flexible board next to the pickup unit.
2. From the bottom of the traverse mechanism unit, disconnect the flexible wire from CN10 on the pickup board.

ATTENTION: Disconnecting the flexible wire without soldering may cause damage to the pickup.

3. Unsolder soldering h of the motor harness on the pickup board.
4. Remove the two screws F attaching the feed motor assembly and remove the thrust spring. Move the feed motor assembly in the direction of the arrow to pull it out from the feed holder.

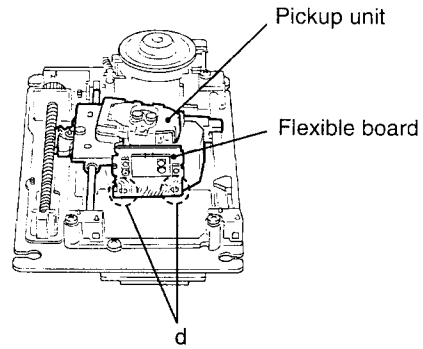


Fig.5

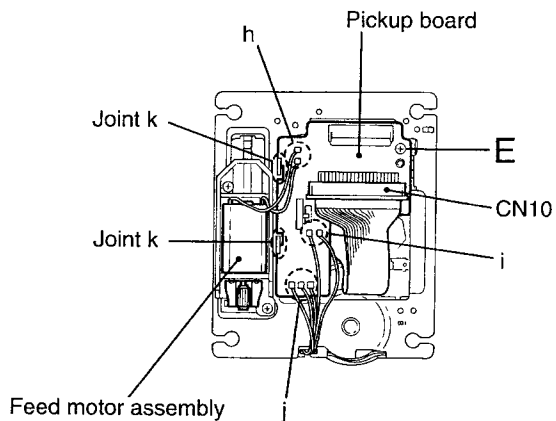


Fig.10

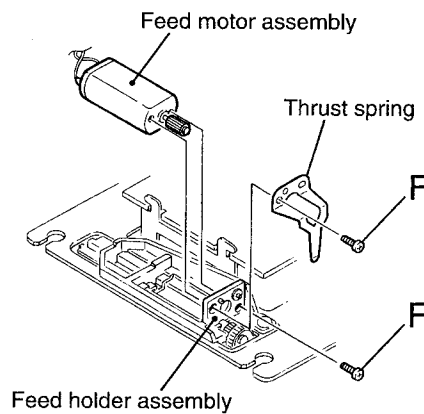


Fig.11

■ Removing the turn table assembly
(See Fig.5, 10, 12 and 13)

• Prior to performing the following procedure, remove the traverse mechanism unit.

1. Solder soldering d on the flexible board next to the pickup unit.
2. From the bottom of the traverse mechanism unit, disconnect the flexible wire from CN10 on the pickup board.

ATTENTION: Disconnecting the flexible wire without soldering may cause damage to the pickup.

3. Unsolder soldering i and j of the harness extending from the turning table assembly to the pickup board.
4. Remove the screw G attaching the shaft stopper (F) on the upper side of the traverse mechanism unit. Pull the side of the shaft stopper (F) outward to release the joint l and remove it upward.
5. Remove the screw H attaching the turn table assembly.
6. Move the turn table assembly outward and pull out from the shaft. Then remove it from the base chassis.

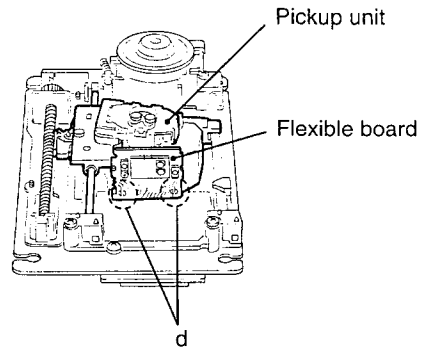


Fig.5

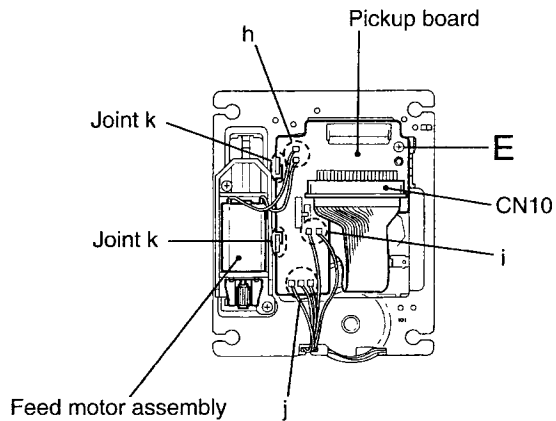


Fig.10

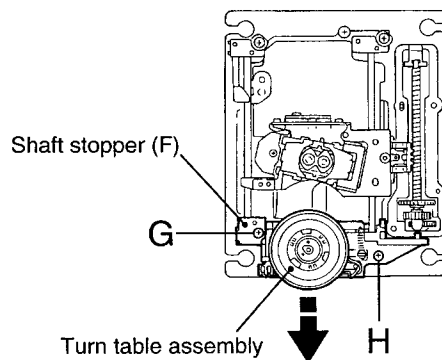


Fig.12

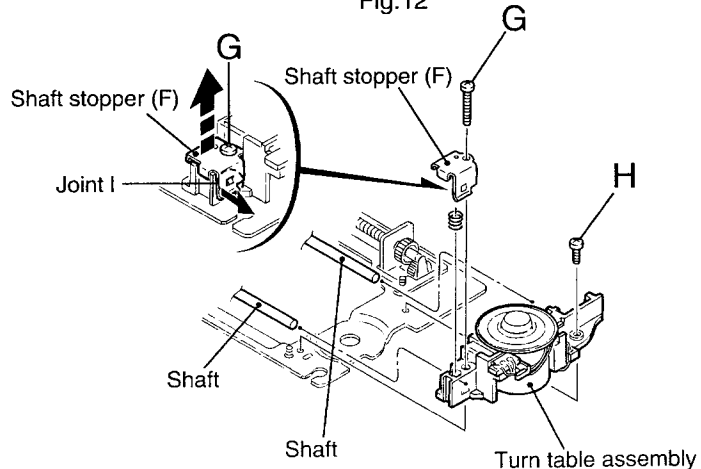


Fig.13

Main adjustment

Adjustment and confirmation matter

(1) Auto adjustment method

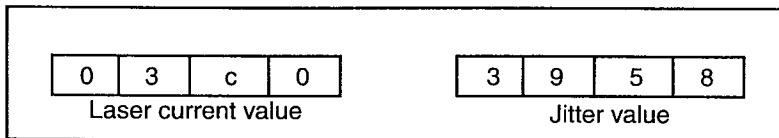
If microprocessor (IC401, IC402, IC791, IC403) or Pick-up is replaced, initialize the DVD player in the following matter:

1. Initialize the DVD player in the following matter:

- 1) Make sure that no disc is on the tray.
- 2) Insert the power pulag to the outlet while pressing "PLAY" and "OPEN/CLOSE" button at the same time.
FL Display indicate "TEST * * ¥ " (* * ;Version. ¥ ;Region code)
- 3) Press 3D-PHONIC button. And EEPROM initialize start.
- 4) When indicate "V.REPLACE" on the display , initialize finished.
* The test mode is cancelled when the power is turned off.

(2) Flap adjustment of the Pick-up guide shaft

- 1) Make sure that no disc is on the tray.
- 2) Insert the power pulag to the outlet while pressing "PLAY" and "OPEN/CLOSE" button at the same time.
FL Display indicate "TEST * * ¥ " (* * ;Version. ¥ ;Region code)
- 3) Press the "OPEN/CLOSE" button to move the tray outward.
Put the Test Disc (VT-501) on the tray and press "OPEN/CLOSE" button.
The tray should move inward (Note: Don't push to close the tray directly by hand etc.)
- 4) Press the "PLAY" button.
- 5) The laser current and the jitter value is displayed on the FL indicator as follows.



FL indicator

6) Set the Jitter value of FL indicator to minimum by adjusting the pick-up guide shaft flap.

- * The test mode is cancelled when the power is turned off.

Table for FL conversion value

1. Electric current

FL display	Electric Current (mA)	Result	FL display	Electric Current/Result
000c,000b	25	OK	03cA	59 OK
000A	26	OK	03c9,03c8	60 OK
0009,0008	27	OK	03c7,03c6	61 OK
0007,0006	28	OK	03c5,03c4	62 OK
0005,0004	29	OK	03c3,03c2	63 OK
0003,0002	30	OK	03c1,03c0	64 OK
0001,0000	31	OK	03bF,03bE	65 NG
03FF,03FE	32	OK	03bd,03bc	66 NG
03Fd,03Fc	33	OK	03bb,03bA	67 NG
03Fb,03FA	34	OK	03b9,03b8	68 NG
03F9,03F8	35	OK	03b7,03b6	69 NG
03F7,03F6	36	OK	03b5,03b4	70 NG
03F5,03F4	37	OK	03b3,03b2	71 NG
03F3,03F2	38	OK	03b1,03b0	72 NG
03F1,03F0	39	OK	03AF,03AE	73 NG
03EF,03EE	40	OK	03Ad,03Ac	74 NG
03Ed,03Ec	41	OK	03Ab,03AA	75 NG
03Eb,03EA	42	OK	03A9	76 NG
03E9	43	OK	03A8,03A7	77 NG
03E8,03E7	44	OK	03A6,03A5	78 NG
03E6,03E5	45	OK	03A4,03A3	79 NG
03E4,03E3	46	OK	03A2,03A1	80 NG
03E2,03E1	47	OK	03A0,039F	81 NG
03E0,03dF	48	OK	039E,039d	82 NG
03dE,03dd	49	OK	039c,039b	83 NG
03dc,03db	50	OK	039A,0399	84 NG
03dA,03d9	51	OK	0398,0397	85 NG
03d8,03d7	52	OK	0396,0395	86 NG
03d6,03d5	53	OK	0394,0393	87 NG
03d4,03d3	54	OK	0392,0391	88 NG
03d2,03d1	55	OK	0390,038F	89 NG
03d0,03cF	56	OK	038E,038d	90 NG
03cE,03cd	57	OK	038c,038b	91 NG
03cc,03cb	58	OK		

2. Jitter value

FL display	Conversion value (%)	FL display	Conversion value (%)
3818	4.7	3b18	10.5
3828	4.8	3b28	10.6
3838	4.9	3b38	10.7
3848	5.1	3b48	10.8
3858	5.2	3b58	10.9
3868	5.3	3b68	11.1
3878	5.4	3b78	11.2
3888	5.5	3b88	11.3
3898	5.7	3b98	11.4
38A8	5.8	3bA8	11.5
38b8	5.9	3bb8	11.7
38c8	6.0	3bc8	11.8
38d8	6.1	3bd8	11.9
38E8	6.3	3bE8	12.0
38F8	6.4	3bF8	12.1
3918	6.6	3c18	12.4
3928	6.7	3c28	12.5
3938	6.9	3c38	12.7
3948	7.0	3c48	12.7
3958	7.1	3c58	12.9
3968	7.2	3c68	13.0
3978	7.3	3c78	13.1
3988	7.5	3c88	13.2
3998	7.6	3c98	13.3
39A8	7.7	3cA8	13.5
39b8	7.8	3cb8	13.6
39c8	7.9	3cc8	13.7
39d8	8.1	3cd8	13.8
39E8	8.2	3cE8	13.9
39F8	8.3	3cF8	14.1
3A18	8.5	3d18	14.3
3A28	8.7	3d28	14.4
3A38	8.8	3d38	14.5
3A48	8.9	3d48	14.7
3A58	9.0	3d58	14.8
3A68	9.1	3d68	14.9
3A78	9.3	3d78	15.0
3A88	9.4	3d88	15.1
3A98	9.5	3d98	15.3
3AA8	9.6	3dA8	15.4
3Ab8	9.7	3db8	15.5
3Ac8	9.9	3dc8	15.6
3Ad8	10.0	3dd8	15.7
3AE8	10.1	3dE8	15.9
3AF8	10.2	3dF8	16.0

Flap adjustment method

Measurement	Adjustment point	Mode	Disc
FL Display	Refer to Fig.2	Reproduction part	VT-501
Measurement machine	connections	Extension cord No.	
No need	Refer to Fig.1	QUQ605-4040AJ	
General tool : Hex-head wrench(1.27mm)			

"Flap adjustment" of the Pick-up guide shaft adjusts "Tangential adjustment machine screw" A and "Tilt adjustment machine screw" B from the DVD Mechanism A'ssy bottom.

1. The part at the center on the DVD test disc is reproduced.
2. The flap adjustment screws is turned alternately and set the jitter value of FL indicator to its minimum.

Note

1. The tangential adjustment is done finish and, then, tilt is adjusted.
2. The repeat the adjustment 2-3 times, for best result.
3. The final adjustment should be tilt adjustment.

Confirmation after adjustment.

Confirm to reproduce video CD and CD after the DVD test disc is adjusted and to find abnormality.

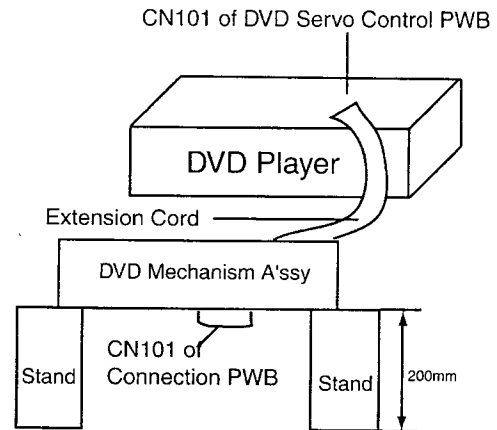


Fig.1

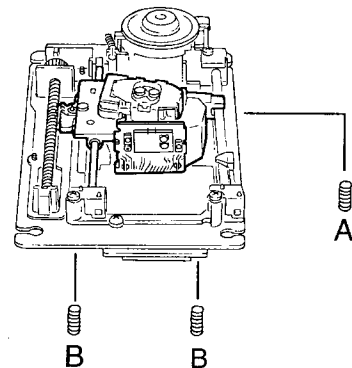


Fig.2

(3) About keeping the disc

As for the DVD test disc, plane accuracy is demanded. Please note the keeping place on the disc.

1. Please do not put the disc directly on the work desk etc. after uses .
2. To keep the planarity of the disc, politely handle ,and please put in a special case and keep the disc vertically after uses .
Please keep keeping the disc in a cool place where direct sunshine and the air-conditioning wind do not drive.
3. When the disc curves, an accurate adjustment cannot be done.
Please exchange for a new test disc and adjust optics.
4. Other discs might not be able to be reproduced when adjusting on a curved disc.

Point of adjustment

- * Please execute the static electricity protection measures before starting the adjustment.
- * When the following parts are exchanged, optical adjustment "Adjust the flap of Pick-up guide shaft" is necessary.
 1. The disc motor was exchanged.
 2. The laser pick up was exchanged.
 3. The traverse motor unit was exchanged.

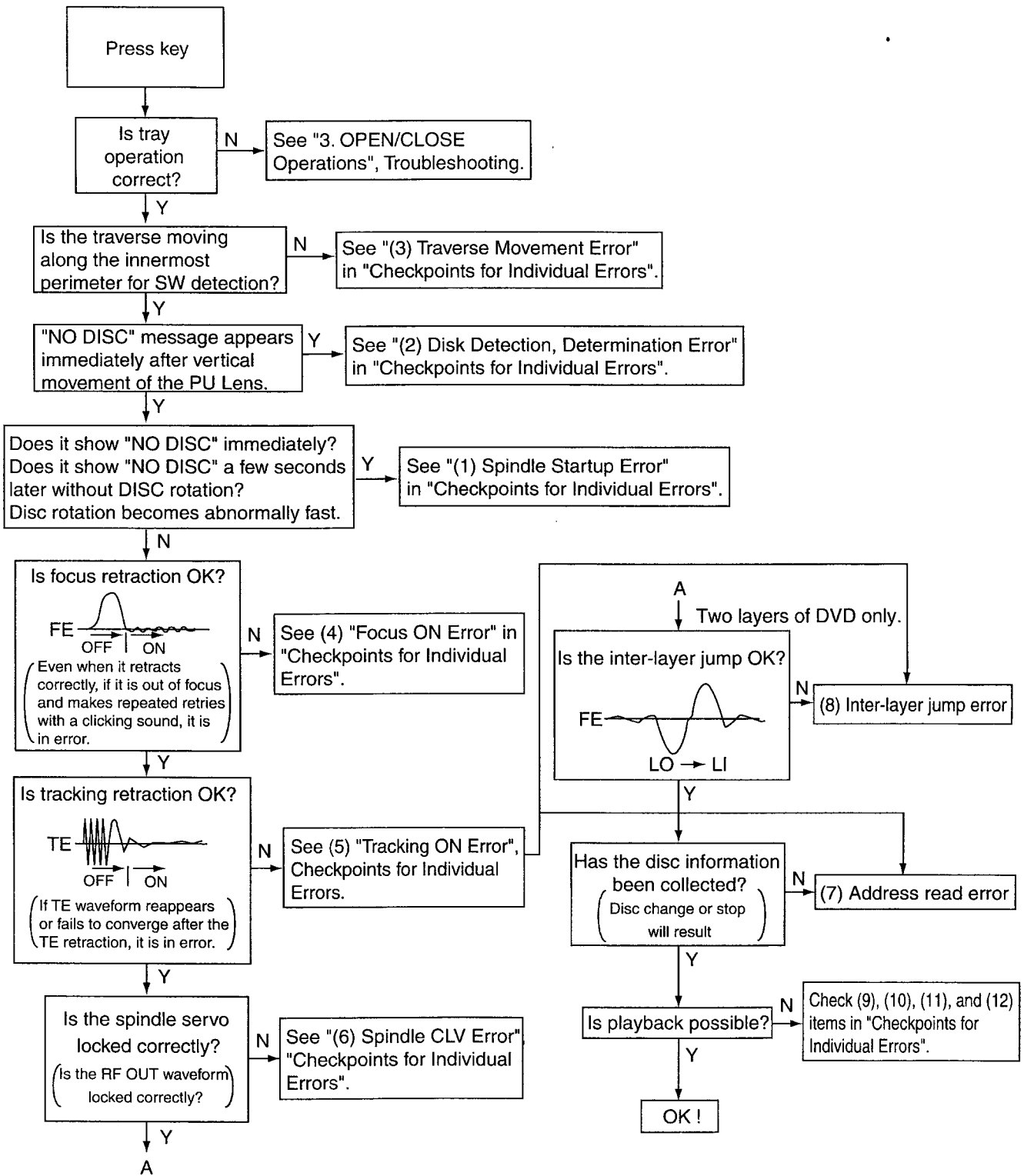
Note

Additionally, please adjust the flap of the disc motor when the picture quality deterioration is seen .The basic adjustment though, is unnecessary for part exchange in the traverse. An optical adjustment in the laser pick up cannot be done. Please adjust the flap of the disc motor after exchanging the laser pick up.

- * When the traverse unit is exchanged, the adjustment is basically unnecessary.

Troubleshooting

Servo volum



Checkpoints for individual errors

(1) Spindle startup error

1. Defective spindle motor
 - * Is the resistance between CN101 "34-35" and "36-37" about 10 to 6 ohms? (Measure it with the power OFF.)
 - * Is the voltage waveform for the hall element CN101"40" square-wave? (During rotation)
2. Defective spindle driver (IC271)
 - * Is DC voltage applied to IC271"14-15"?
 - * Is IC271"25" set to "H" (SPMUTE)?
3. Servo IC
 - Is control available at the motor driver?
 - * IC201"52" → R290 50% duty during stop. Variable during rotation (Fluctuates especially during startup.)
If no control available: pattern servo IC, IC201.
4. Is FG input in the servo IC?
 - * IC271"42" → IC271"41" → 0275 → IC201"53" (FG) FG waveform observation
 - If no FG input: pattern IC271, IC201.

(2) Disk detection, distinction error (no discs, no REFNV)

1. Defective laser
2. Defective front-end processor (IC101)
3. Defective APC circuit → Q101, Q102
4. Defective pattern
 - A pattern between all CN101 PIC related patterns and the IC101
5. Defective servo IC (IC201)
6. IC101
 - Are IC101"20"(AS), IC101"41"(RFENV), and IC101"22"(FE) included in the signal to IC201?

(3) Traverse movement error

1. Defective traverse motor
 - * Is voltage applied between CN101 "38" and "39"?
2. Defective BTL driver
 - * Is voltage applied on IC271 "9" and "10"?
 - * Is MUTE1 terminal "26" of IC271 set to "H"?
 - * Is drive voltage applied to servo IC201"51"?
- Defective servo IC or defective pattern

(4) Focus ON error

1. Is FE produced? → Pattern, IC101
2. Is FODRV signal produced? (R280) → Pattern, IC201
3. Is drive voltage available?
 - If not available: pattern, driver, or mechanism. (Turn the power OFF then measure the resistance between CN101 "30" and "31".)
4. Defective mechanism

(5) Tracking ON error

1. When tracking loop is not retracted, TE waveform does not converge.
2. Defective mechanism
 - The possible cause for unavailability of correct retraction is that automatic adjustment cannot be made successfully.
3. Driver and its related parts (IC271)
 - Constant and IC defects (When it was passed during the adjustment below without going into an abnormal condition)
4. Servo IC (IC201)
 - When automatic adjustment was unsuccessful due to defective ICs.

(6) Spindle CLV error

1. When the spindle servo is not locked successfully, RF eye-pattern cannot be locked successfully.
2. IC101"35" (RF OUT), IC101"30" (RF-), IC101"31"(RF+)
3. Is the driver spindle signal input not clipped by the output signal?
4. Is the transistor ON?
5. Defective spindle motor or driver.
6. Other errors may be caused by defective mechanism (jitter) etc. in IC 101 and IC201.

(7) Address Read Failure

The failure may be caused by many possible factors and it is difficult to pick one out. However, the following are among the possible causes.

1. Defective mechanism (significant jitter)
2. IC (IC201, IC301, IC401)
3. Contaminated or damaged discs.

(8) Inter-layer Jump error

1. Defective mechanism.
2. Defective constant or IC of the Driver IC (IC271).
3. Defective servo IC (IC201).

[During Normal Playback of DVD]

(9) No image or sound

1. Search is not possible.
 - a) Can the transistor be switched ON?
If not, see "(5) Tracking ON Error" in "Checkpoints for Individual Errors".
 - b) Is the feed operation normal?
In case of an error, check "(3) Traverse Movement Error" in "Checkpoints for Individual Errors" or check if there is any point where the feed mechanism is caught.

(10) Picture disturbance or unusual sound once every few seconds.

Check if the feed operation during playback is smooth.



If not, perhaps the mechanism is caught.

(11) Others (Example of special cases that occurred in the past)

1. Occasionally, the picture becomes a block or stops.
2. The condition along the innermost perimeter is OK.
However, at the outermost corner, the picture becomes a block or stops frequently.
Inaccurate tilting may also be the cause.
So, perform readjustment of mechanism tilting.

With these symptoms, it is probably a bad jitter value that is causing the problem.

[During normal CD playback]

(12) Is TOC read possible? $\xrightarrow{\text{NO}}$ Refer to the Servo flow.

CD-DA shows the total time.
V-CD changes to double-speed.

↓ YES

- Can it play? $\xrightarrow{\text{NO}}$
1. The OSD screen shows "NO READING" message.
(9) As in the case of "Search is not possible", check the feed and tracking.
 2. Time display is available, but there is no sound.
Check DAC, etc. except the Servo.
 3. Time flow unstable. Picture abnormal (V-CD).
Measure the jitter.
 4. Check whether the discs is contaminated or damaged.

Precautions for service

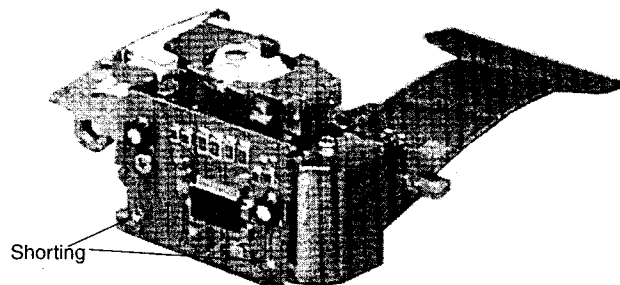
Handling of Traverse Unit and Laser Pickup

1. Do not touch any peripheral element of the pickup or the actuator.
2. The traverse unit and the pickup are precision devices and therefore must not be subjected to strong shock.
3. Do not use a tester to examine the laser diode. (The diode can easily be destroyed by the internal power supply of the tester.)
4. To replace the traverse unit, pull out the metal short pin for protection from charging.
5. When replacing the pickup, after mounting a new pickup, remove the solder on the short land which is provided at the center of the flexible wire to open the circuit.
6. Half-fixed resistors for laser power adjustment are adjusted in pairs at shipment to match the characteristics of the optical block.
Do not change the setting of these half-fixed resistors for laser power adjustment.

Destruction of Traverse Unit and Laser Pickup by Static Electricity

Laser diodes are easily destroyed by static electricity charged on clothing or the human body. Before repairing peripheral elements of the traverse unit or pickup, be sure to take the following electrostatic protection:

1. Wear an antistatic wrist wrap.
2. With a conductive sheet or a steel plate on the workbench on which the traverse unit or the pick up is to be repaired, ground the sheet or the plate.
3. After removing the flexible wire from the connector (CN101), short-circuit the flexible wire by the metal clip.
4. Short-circuit the laser diode by soldering the land which is provided at the center of the flexible wire for the pickup.
After completing the repair, remove the solder to open the circuit.



When replacing the Mechanism Unit, turn ON the laser switch that is located at the lower of the pick up after replacement.