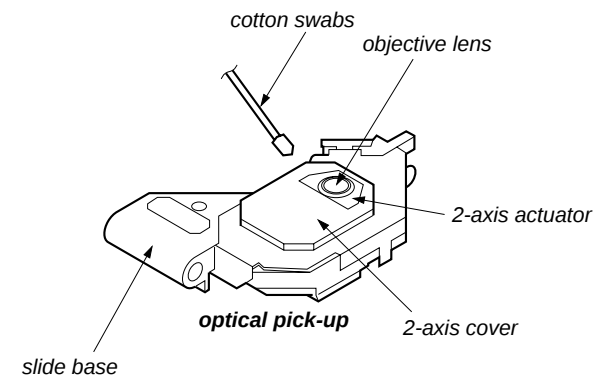


SCD-333A

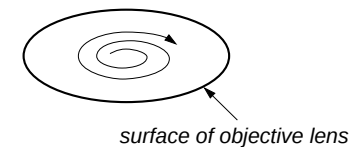
SERVICE MANUAL



NOTES ON CLEANING THE OBJECTIVE LENS



Apply CD lens cleaner B-4 (Part No.:J-2501-000-A) to cotton swabs (narrow type) (Part No.:J-2501-023-A) to be lightly wet. Use a force (about 5 g (0.18 oz)) to make the objective lens in contact with the bottom lightly, and clean the lens by spirals as following below. Replace the cotton swab and repeat this cleaning two or three times.



Notes:

Do not force to push the objective lens. Otherwise, the plate spring supporting the objective lens will be bent, causing a deteriorated RF waveform.

Never touch anything other than the objective lens. Otherwise, a significant deterioration occurs in the RF waveform.

SERVICE NOTE

NOTES ON HANDLING THE OPTICAL PICK-UP BLOCK OR BASE UNIT

The laser diode in the optical pick-up block may suffer electrostatic breakdown because of the potential difference generated by the charged electrostatic load, etc. on clothing and the human body. During repair, pay attention to electrostatic breakdown and also use the procedure in the printed matter which is included in the repair parts.

The flexible board is easily damaged and should be handled with care.

Laser Diode Properties

- Material: GaAlAs
 - Wavelength: 780 nm
 - Emission Duration: continuous
 - Laser Output Power: less than 44.6 μ W*
- * This output is the value measured at a distance of 200 mm from the objective lens surfase on the Optical Pick-up Block.

CAUTION

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

Flexible Circuit Board Repairing

- Keep the temperature of the soldering iron around 270 °C during repairing.
- Do not touch the soldering iron on the same conductor of the circuit board (within 3 times).
- Be careful not to apply force on the conductor when soldering or unsoldering

Notes on Chip Component Replacement

- Never reuse a disconnected chip component.
- Notice that the minus side of a tantalum capacitor may be damaged by heat.

SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY MARK $\triangle$ OR DOTTED LINE WITH MARK $\triangle$ ON THE SCHEMATIC DIAGRAMS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

COMPACT DISC MECHANISM

SONY®

SECTION 1
DIAGRAMS

THIS NOTE IS COMMON FOR PRINTED WIRING
BOARDS AND SCHEMATIC DIAGRAMS.

- for printed wiring boards:
- : parts extracted from the component side.
 - : parts extracted from the conductor side.
 - : Through hole.
 - ▨ : Pattern from the side which enables seeing.
(The other layer's patterns are not indicated.)

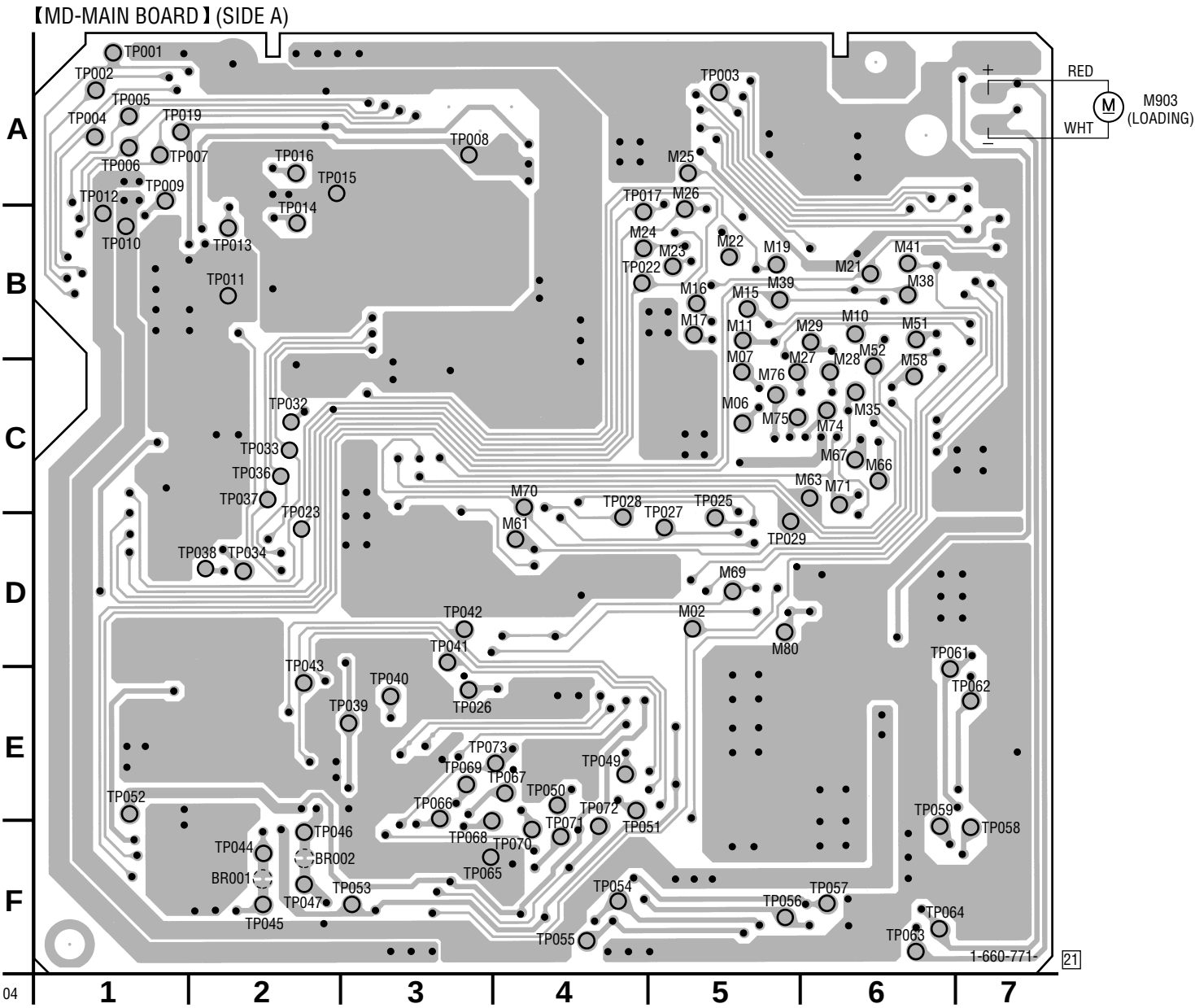
Caution:
Pattern face side: Parts on the pattern face side seen from the
(Side B) pattern face are indicated.
Parts face side: Parts on the parts face side seen from the
(Side A) parts face are indicated.

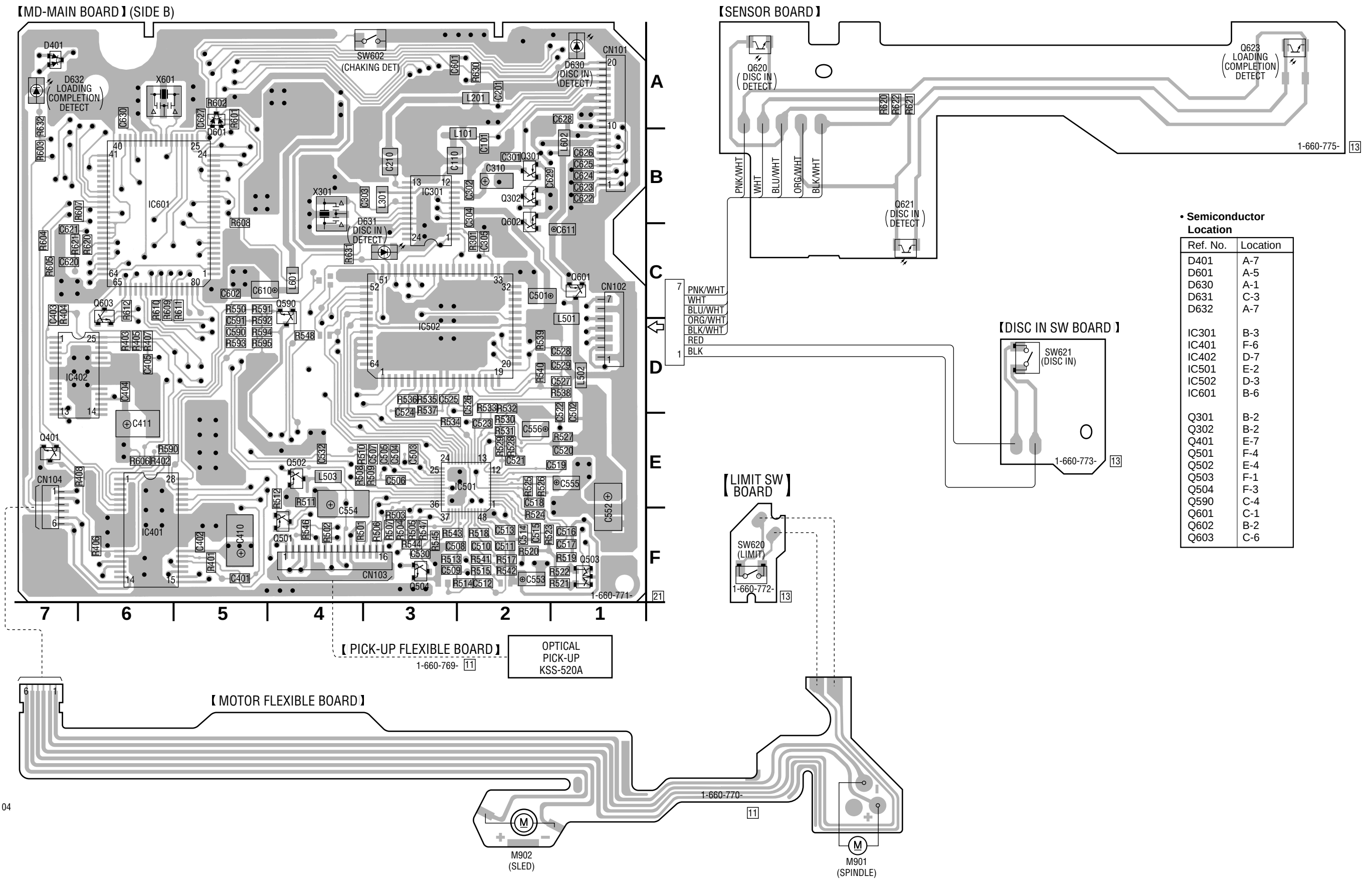
- for schematic diagram:
- All capacitors are in μF unless otherwise noted. pF: μF
50 WV or less are not indicated except for electrolytics
and tantalums.
 - All resistors are in Ω and $\frac{1}{4}\text{W}$ or less unless otherwise
specified.
 - % : indicates tolerance.
 - Δ : internal component.

Note: The components identified by mark Δ or dotted line
with mark Δ are critical for safety.
Replace only with part number specified.

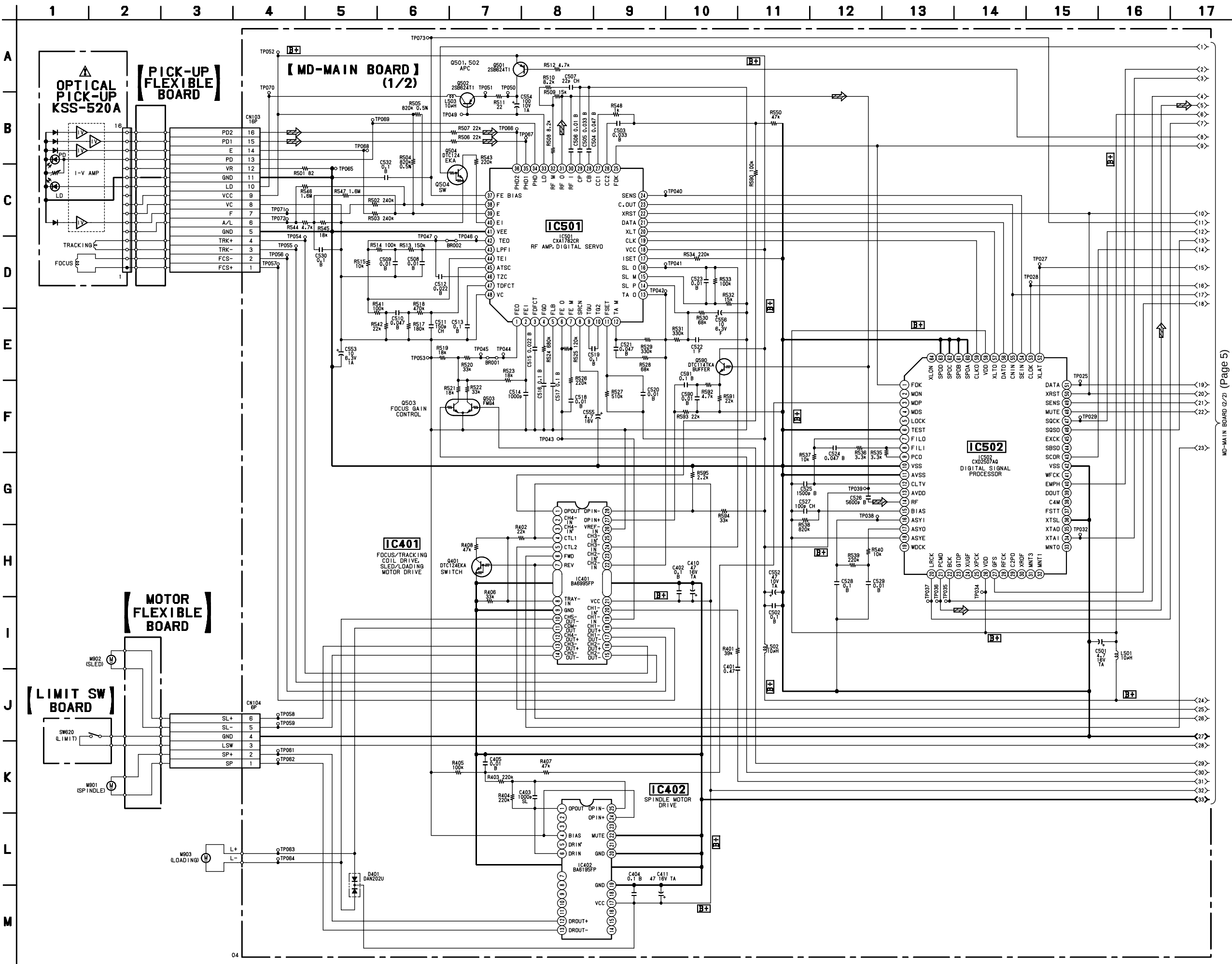
- $\boxed{\text{B}+}$: B+ Line.
- Signal path.
- CD

1-1. PRINTED WIRING BOARDS





1-2. SCHEMATIC DIAGRAM



SECTION 2

EXPLODED VIEWS

NOTE:

- The mechanical parts with no reference number in the exploded views are not supplied.
- Items marked “*” are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.

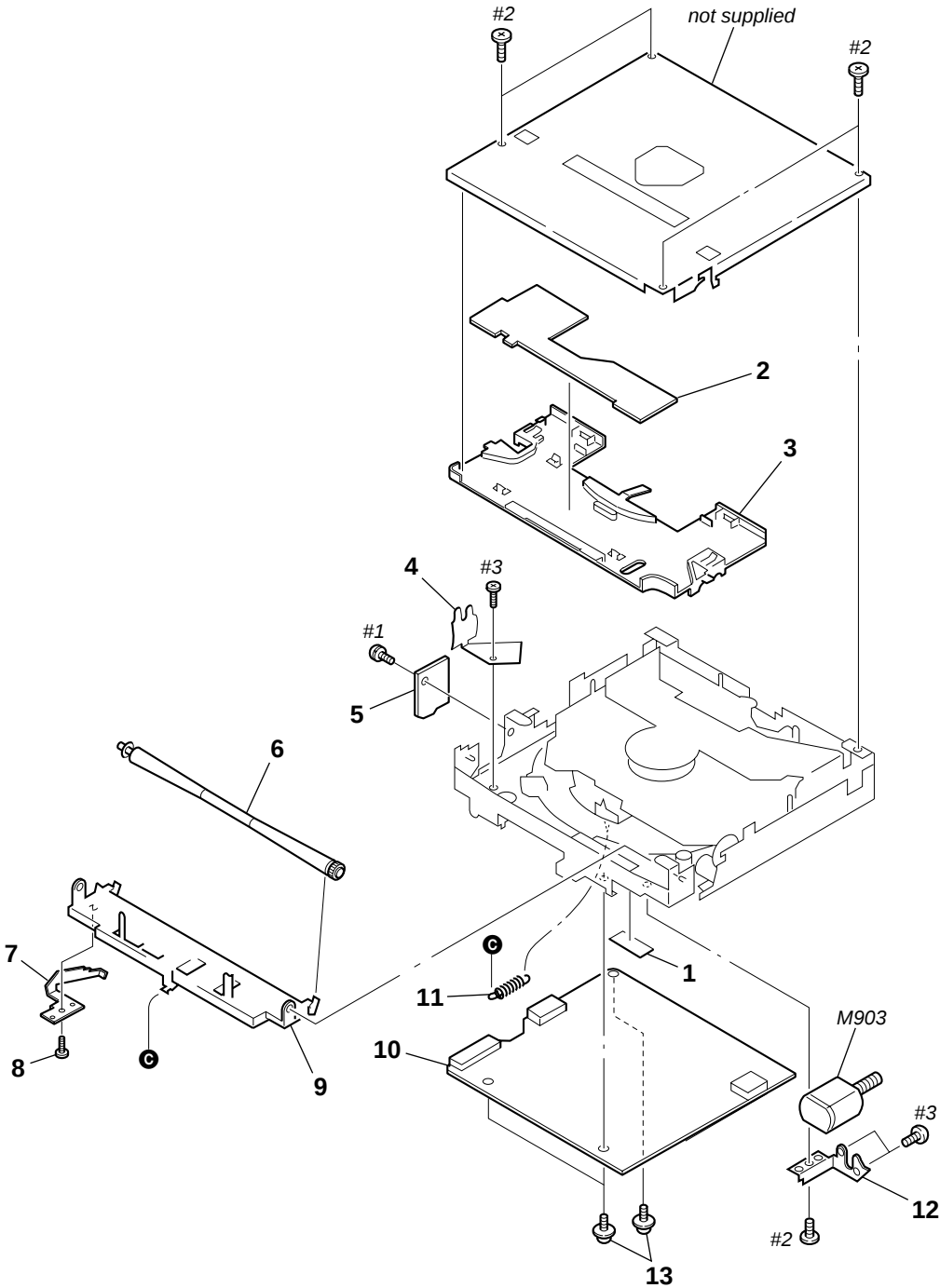
- Color Indication of Appearance Parts
Example :

KNOB, BALANCE (WHITE) ... (RED)

↑ ↑
 Parts Color Cabinet's Color
- Hardware (# mark) list are given in the last of this parts list.

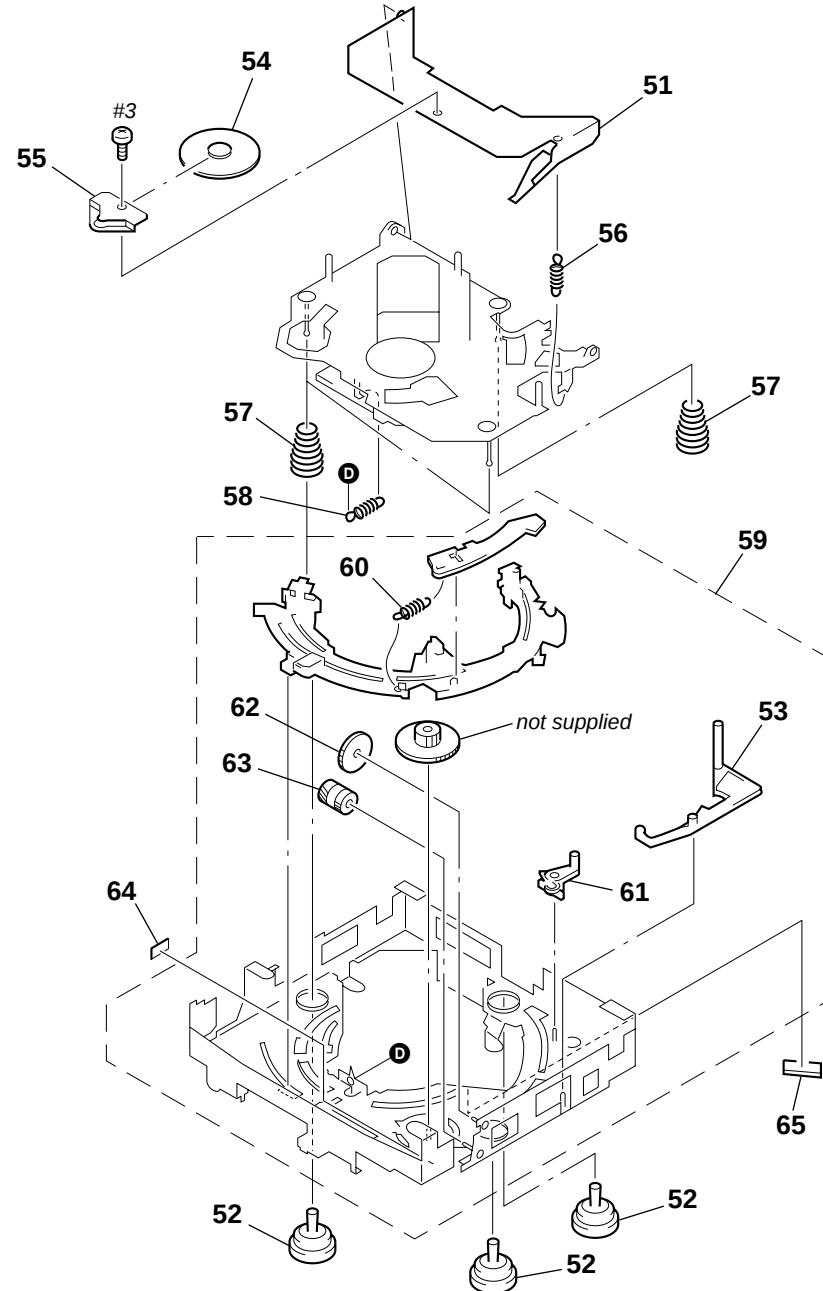
The components identified by mark  or dotted line with mark  are critical for safety. Replace only with part number specified.

2-1. MD-MAIN/SENSOR BOARD, ARM (ROLLER) ASSY SECTION



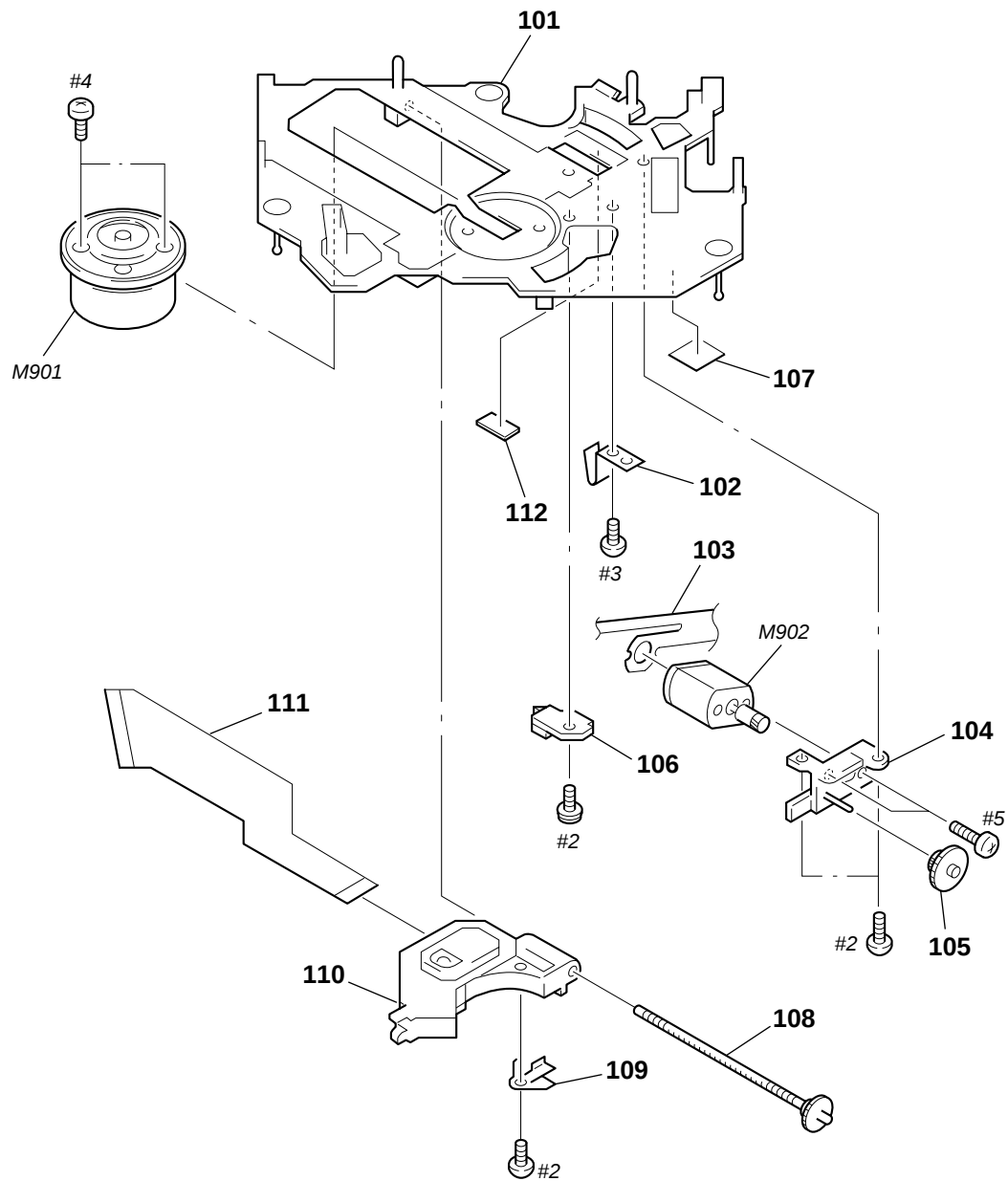
Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
1	3-007-151-11	SPACER		8	3-909-607-01	SCREW	
* 2	1-660-775-12	SENSOR BOARD		9	3-017-301-01	ARM (ROLLER)	
* 3	3-935-001-01	GUIDE (DISC)		* 10	A-3309-375-A	MD-MAIN BOARD, COMPLETE	
* 4	3-939-683-01	SPRING (ROLLER), LEAF		11	3-931-916-01	SPRING (RA), TENSION	
* 5	1-660-773-12	DISC IN SWITCH BOARD		* 12	3-007-530-01	BRACKET (MOTOR)	
* 6	A-3301-238-A	ROLLER ASSY		13	3-918-103-01	SCREW	
* 7	3-935-849-11	LEVER (IN SW)		M903	A-3291-676-A	MOTOR SUB ASSY, LO (LOADING)	

2-2. CHASSIS (MAIN) COMPLETE ASSY SECTION



<u>Ref. No.</u>	<u>Part No.</u>	<u>Description</u>	<u>Remark</u>	<u>Ref. No.</u>	<u>Part No.</u>	<u>Description</u>	<u>Remark</u>
51	3-931-893-01	ARM, CHUCKING		* 59	A-3277-453-G	CHASSIS (MAIN) COMPLETE ASSY	
52	3-931-897-01	DAMPER (T)		60	3-931-883-01	SPRING (TR), TENSION	
53	3-931-879-02	LEVER (D)		61	3-931-881-03	LEVER (LOCK)	
* 54	3-384-918-01	RETAINER (DISC)		62	3-931-882-02	GEAR (MDL)	
55	3-931-894-01	BRACKET (CP)		63	3-007-537-11	WHEEL (U), WORM	
56	3-931-895-01	SPRING (CH), TENSION		* 64	3-007-150-01	SHEET (ARM ROLLER)	
57	3-931-898-01	SPRING (FL), COMPRESSION		* 65	3-320-076-01	SHEET (A)	
58	3-931-914-01	SPRING (ANGLE), TENSION					

2-3. CHASSIS (OP) (O/S) ASSY SECTION



Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
* 101	X-3371-503-5	CHASSIS (OP) (O/S) ASSY		108	A-3291-669-A	SHAFT (FEED) ASSY	
102	3-931-829-01	SPRING (SL), PLATE		109	3-931-834-01	SPRING (FEED), PLATE	
* 103	1-660-770-11	MOTOR FLEXIBLE BOARD		Δ 110	8-848-402-02	PICK-UP, OPTICAL KSS-520A/K1NP	
104	X-3371-504-1	BASE (DRIVING) ASSY		* 111	1-660-769-11	OP FLEXIBLE BOARD	
105	3-931-832-01	GEAR (SL MIDWAY)		* 112	3-320-076-01	SHEET (A)	
* 106	1-660-772-12	LIMIT SW BOARD		M901	X-3371-664-2	MOTOR ASSY (SPINDLE)	
107	3-846-312-01	SPACER		M902	A-3291-674-A	MOTOR ASSY, SLED (SLED)	

DISC IN SWITCH

LIMIT SW

MD-MAIN

SECTION 3 ELECTRICAL PARTS LIST

NOTE:

- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- -XX and -X mean standardized parts, so they may have some difference from the original one.
- RESISTORS
All resistors are in ohms.
METAL: Metal-film resistor.
METAL OXIDE: Metal oxide-film resistor.
F: nonflammable

- Items marked “*” are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- SEMICONDUCTORS
In each case, u : μ , for example:
uA.. : μ A.. uPA.. : μ PA..
uPB.. : μ PB.. uPC.. : μ PC.. uPD.. : μ PD..
- CAPACITORS
uF : μ F
- COILS
uH : μ H

The components identified by mark Δ or dotted line with mark. Δ are critical for safety.
Replace only with part number specified.

When indicating parts by reference number, please include the board.

Ref. No.	Part No.	Description	Remark
*	1-660-773-12	DISC IN SWITCH BOARD *****	
		< SWITCH >	
SW621	1-572-688-11	SWITCH, PUSH (1 KEY) (DISC IN) *****	
*	1-660-772-12	LIMIT SW BOARD *****	
		< SWITCH >	
SW620	1-572-688-11	SWITCH, PUSH (1 KEY) (LIMIT) *****	
*	A-3309-375-A	MD-MAIN BOARD, COMPLETE *****	
		< CAPACITOR >	
C101	1-164-676-11	CERAMIC CHIP 2200PF 5% 16V	
C110	1-128-029-11	ELECT CHIP 4.7uF 20% 6.3V	
C201	1-164-676-11	CERAMIC CHIP 2200PF 5% 16V	
C210	1-128-029-11	ELECT CHIP 4.7uF 20% 6.3V	
C301	1-164-004-11	CERAMIC CHIP 0.1uF 10% 25V	
C302	1-164-004-11	CERAMIC CHIP 0.1uF 10% 25V	
C303	1-164-004-11	CERAMIC CHIP 0.1uF 10% 25V	
C304	1-164-004-11	CERAMIC CHIP 0.1uF 10% 25V	
C305	1-162-919-11	CERAMIC CHIP 22PF 5% 50V	
C310	1-110-449-11	ELECT CHIP 47uF 20% 6.3V	
C401	1-107-823-11	CERAMIC CHIP 0.47uF 10% 16V	
C402	1-164-004-11	CERAMIC CHIP 0.1uF 10% 25V	
C403	1-164-357-11	CERAMIC CHIP 1000PF 5% 50V	
C404	1-164-004-11	CERAMIC CHIP 0.1uF 10% 25V	
C405	1-163-021-11	CERAMIC CHIP 0.01uF 10% 50V	
C410	1-104-823-11	TANTAL. CHIP 47uF 20% 16V	
C411	1-104-823-11	TANTAL. CHIP 47uF 20% 16V	
C501	1-135-214-21	TANTAL. CHIP 4.7uF 20% 16V	
C502	1-164-004-11	CERAMIC CHIP 0.1uF 10% 25V	
C503	1-164-677-11	CERAMIC CHIP 0.033uF 10% 16V	
C504	1-165-176-11	CERAMIC CHIP 0.047uF 10% 16V	
C505	1-164-677-11	CERAMIC CHIP 0.033uF 10% 16V	
C506	1-163-021-11	CERAMIC CHIP 0.01uF 10% 50V	
C507	1-162-919-11	CERAMIC CHIP 22PF 5% 50V	
C508	1-163-021-11	CERAMIC CHIP 0.01uF 10% 50V	
C509	1-163-021-11	CERAMIC CHIP 0.01uF 10% 50V	
C510	1-163-809-11	CERAMIC CHIP 0.047uF 10% 25V	

Ref. No.	Part No.	Description	Remark
C511	1-163-255-11	CERAMIC CHIP 150PF 5% 50V	
C512	1-163-037-11	CERAMIC CHIP 0.022uF 10% 25V	
C513	1-164-004-11	CERAMIC CHIP 0.1uF 10% 25V	
C514	1-164-357-11	CERAMIC CHIP 1000PF 5% 50V	
C515	1-163-037-11	CERAMIC CHIP 0.022uF 10% 25V	
C516	1-164-004-11	CERAMIC CHIP 0.1uF 10% 25V	
C517	1-164-004-11	CERAMIC CHIP 0.1uF 10% 25V	
C518	1-163-021-11	CERAMIC CHIP 0.01uF 10% 50V	
C519	1-164-004-11	CERAMIC CHIP 0.1uF 10% 25V	
C520	1-163-021-11	CERAMIC CHIP 0.01uF 10% 50V	
C521	1-163-809-11	CERAMIC CHIP 0.047uF 10% 25V	
C522	1-164-346-11	CERAMIC CHIP 1uF 16V	
C523	1-163-021-11	CERAMIC CHIP 0.01uF 10% 50V	
C524	1-163-809-11	CERAMIC CHIP 0.047uF 10% 25V	
C525	1-162-965-11	CERAMIC CHIP 0.0015uF 10% 50V	
C526	1-163-018-00	CERAMIC CHIP 0.0056uF 5% 50V	
C527	1-162-927-11	CERAMIC CHIP 100PF 5% 50V	
C528	1-164-004-11	CERAMIC CHIP 0.1uF 10% 25V	
C529	1-163-021-11	CERAMIC CHIP 0.01uF 10% 50V	
C530	1-107-826-11	CERAMIC CHIP 0.1uF 10% 16V	
C532	1-164-004-11	CERAMIC CHIP 0.1uF 10% 25V	
C552	1-135-166-21	TANTALUM CHIP 47uF 10% 10V	
C553	1-135-157-21	TANTALUM CHIP 10uF 20% 6.3V	
C554	1-113-500-11	TANTAL. CHIP 100uF 20% 10V	
C555	1-110-453-11	ELECT CHIP 4.7uF 20% 16V	
C556	1-110-446-11	ELECT CHIP 10uF 20% 6.3V	
C590	1-162-970-11	CERAMIC CHIP 0.01uF 10% 25V	
C591	1-164-004-11	CERAMIC CHIP 0.1uF 10% 25V	
C601	1-164-004-11	CERAMIC CHIP 0.1uF 10% 25V	
C602	1-164-004-11	CERAMIC CHIP 0.1uF 10% 25V	
C610	1-110-446-11	ELECT CHIP 10uF 20% 6.3V	
C611	1-110-449-11	ELECT CHIP 47uF 20% 6.3V	
C620	1-164-489-11	CERAMIC CHIP 0.22uF 10% 16V	
C621	1-164-489-11	CERAMIC CHIP 0.22uF 10% 16V	
C622	1-164-816-11	CERAMIC CHIP 220PF 2% 50V	
C623	1-164-816-11	CERAMIC CHIP 220PF 2% 50V	
C624	1-164-816-11	CERAMIC CHIP 220PF 2% 50V	
C625	1-164-816-11	CERAMIC CHIP 220PF 2% 50V	
C626	1-164-816-11	CERAMIC CHIP 220PF 2% 50V	
C627	1-164-816-11	CERAMIC CHIP 220PF 2% 50V	
C628	1-162-970-11	CERAMIC CHIP 0.01uF 10% 25V	
C629	1-162-970-11	CERAMIC CHIP 0.01uF 10% 25V	
C630	1-164-004-11	CERAMIC CHIP 0.1uF 10% 25V	

Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
< CONNECTOR >				R406	1-216-839-11	METAL CHIP	33K 5% 1/16W
CN101	1-764-726-11	CONNECTOR, FPC 20P		R407	1-216-841-11	METAL CHIP	47K 5% 1/16W
* CN102	1-580-756-21	PIN, CONNECTOR (SMD) 7P		R408	1-216-841-11	METAL CHIP	47K 5% 1/16W
* CN103	1-695-930-21	CONNECTOR, FPC 16P		R501	1-216-808-11	METAL CHIP	82 5% 1/16W
CN104	1-778-490-21	CONNECTOR, FPC 6P		R502	1-218-749-11	RES-CHIP	240K 5% 1/16W
< DIODE >				R503	1-218-749-11	RES-CHIP	240K 5% 1/16W
D401	8-719-941-86	DIODE DAN202UT106		R504	1-218-917-11	METAL CHIP	820K 0.5% 1/16W
D601	8-719-941-86	DIODE DAN202UT106		R505	1-218-917-11	METAL CHIP	820K 0.5% 1/16W
D630	8-719-052-25	LED CL-200IR-X-TU-BC (DISC IN DET)		R506	1-216-837-11	METAL CHIP	22K 5% 1/16W
D631	8-719-052-25	LED CL-200IR-X-TU-BC (DISC IN DET)		R507	1-216-837-11	METAL CHIP	22K 5% 1/16W
D632	8-719-052-25	LED CL-200IR-X-TU-BC (LOADING COMPLETION DET)		R508	1-216-832-11	METAL CHIP	8.2K 5% 1/16W
< IC >				R509	1-216-835-11	METAL CHIP	15K 5% 1/16W
IC301	8-759-364-34	IC SM5877AM-E2		R510	1-216-832-11	METAL CHIP	8.2K 5% 1/16W
IC401	8-759-432-02	IC BA6995FP-E2		R511	1-216-009-11	RES-CHIP	22 5% 1/10W
IC402	8-759-335-52	IC BA6195FP-YT2		R512	1-216-829-11	METAL CHIP	4.7K 5% 1/16W
IC501	8-752-076-45	IC CXA1782CR		R513	1-216-847-11	METAL CHIP	150K 5% 1/16W
IC502	8-752-372-94	IC CXD2507AQ		R514	1-216-845-11	METAL CHIP	100K 5% 1/16W
IC601	8-752-880-03	IC CXP84416-006Q		R515	1-216-833-11	RES-CHIP	10K 5% 1/16W
< COIL >				R517	1-216-848-11	METAL CHIP	180K 5% 1/16W
L101	1-543-813-21	FERRITE BEAD INDUCTOR		R518	1-216-853-11	METAL CHIP	470K 5% 1/16W
L201	1-543-813-21	FERRITE BEAD INDUCTOR		R519	1-216-836-11	METAL CHIP	18K 5% 1/16W
L301	1-410-204-31	INDUCTOR CHIP 10uH		R520	1-216-839-11	METAL CHIP	33K 5% 1/16W
L501	1-410-204-31	INDUCTOR CHIP 10uH		R521	1-216-836-11	METAL CHIP	18K 5% 1/16W
L502	1-410-204-31	INDUCTOR CHIP 10uH		R522	1-216-839-11	METAL CHIP	33K 5% 1/16W
L503	1-410-204-31	INDUCTOR CHIP 10uH		R523	1-216-836-11	METAL CHIP	18K 5% 1/16W
L601	1-410-204-31	INDUCTOR CHIP 10uH		R524	1-216-855-11	METAL CHIP	680K 5% 1/16W
L602	1-410-204-31	INDUCTOR CHIP 10uH		R525	1-216-846-11	METAL CHIP	120K 5% 1/16W
< TRANSISTOR >				R526	1-216-849-11	METAL CHIP	220K 5% 1/16W
Q301	8-729-904-60	TRANSISTOR DTB113ZK-T-146		R527	1-218-273-11	RES-CHIP	510K 5% 1/16W
Q302	8-729-901-00	TRANSISTOR DTC124EKA-T146		R528	1-216-843-11	METAL CHIP	68K 5% 1/16W
Q401	8-729-901-00	TRANSISTOR DTC124EKA-T146		R529	1-216-851-11	METAL CHIP	330K 5% 1/16W
Q501	8-729-141-48	TRANSISTOR 2SB624T1-BV345		R530	1-216-843-11	METAL CHIP	68K 5% 1/16W
Q502	8-729-141-48	TRANSISTOR 2SB624T1-BV345		R531	1-216-851-11	METAL CHIP	330K 5% 1/16W
Q503	8-729-902-93	TRANSISTOR FMG4-T-148		R532	1-216-835-11	METAL CHIP	15K 5% 1/16W
Q504	8-729-901-00	TRANSISTOR DTC124EKA-T146		R533	1-216-845-11	METAL CHIP	100K 5% 1/16W
Q590	8-729-027-44	TRANSISTOR DTC114TKA-T146		R534	1-216-849-11	METAL CHIP	220K 5% 1/16W
Q601	8-729-904-60	TRANSISTOR DTB113ZK-T-146		R535	1-216-827-11	METAL CHIP	3.3K 5% 1/16W
Q602	8-729-901-00	TRANSISTOR DTC124EKA-T146		R536	1-216-827-11	METAL CHIP	3.3K 5% 1/16W
Q603	8-729-027-44	TRANSISTOR DTC114TKA-T146		R537	1-216-833-11	RES-CHIP	10K 5% 1/16W
< RESISTOR >				R538	1-218-917-11	RES-CHIP	820K 5% 1/16W
R301	1-216-809-11	METAL CHIP	100 5% 1/16W	R539	1-216-849-11	METAL CHIP	220K 5% 1/16W
R401	1-216-840-11	METAL CHIP	39K 5% 1/16W	R540	1-216-833-11	RES-CHIP	10K 5% 1/16W
R402	1-216-837-11	METAL CHIP	22K 5% 1/16W	R541	1-216-845-11	METAL CHIP	100K 5% 1/16W
R403	1-216-849-11	METAL CHIP	220K 5% 1/16W	R542	1-216-837-11	METAL CHIP	22K 5% 1/16W
R404	1-216-849-11	METAL CHIP	220K 5% 1/16W	R543	1-216-849-11	METAL CHIP	220K 5% 1/16W
R405	1-216-845-11	METAL CHIP	100K 5% 1/16W	R544	1-216-829-11	METAL CHIP	4.7K 5% 1/16W
				R545	1-216-836-11	METAL CHIP	18K 5% 1/16W
				R546	1-220-869-11	RES-CHIP	1.6M 5% 1/16W
				R547	1-220-869-11	RES-CHIP	1.6M 5% 1/16W
				R548	1-216-821-11	METAL CHIP	1K 5% 1/16W
				R550	1-216-841-11	METAL CHIP	47K 5% 1/16W
				R590	1-216-845-11	METAL CHIP	100K 5% 1/16W
				R591	1-216-837-11	METAL CHIP	22K 5% 1/16W

SENSOR

<u>Ref. No.</u>	<u>Part No.</u>	<u>Description</u>	<u>Remark</u>
MISCELLANEOUS			

* 103	1-660-770-11	MOTOR FLEXIBLE BOARD	
△ 110	8-848-402-02	PICK-UP, OPTICAL KSS-520A/K1NP	
* 111	1-660-769-11	OP FLEXIBLE BOARD	
M901	X-3371-664-2	MOTOR ASSY (SPINDLE)	
M902	A-3291-674-A	MOTOR ASSY, SLED (SLED)	
M903	A-3291-676-A	MOTOR SUB ASSY, LO (LOADING)	

HARDWARE LIST			

#1	7-628-253-00	SCREW +PS 2X4	
#2	7-627-553-37	SCREW, PRECISION +P 2X3 TYPE3	
#3	7-627-553-17	SCREW, PRECISION +P 2X2 TYPE3	
#4	7-627-000-00	SCREW, PRECISION +P 1.7X2.2 TYPE3	
#5	7-627-850-28	SCREW, PRECISION +P 1.4X3	

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