

Service Manual



Direct Drive Player System

SL-1300,1310,1350 SL-1500,1510

Supplying Individual Circuit Board Assembly Parts (SFDP130-01A)

Previously, circuit board repair was accomplished by replacing the circuit board assembly as a unit. To reduce repair cost, however, we have now decided to supply individual circuit board parts for repair work.

The listed below are the new repair parts that will be supplied.

A troubleshooting chart is also included to help you diagnose and correct problems.

Notes: When servicing model SL-1300, 1310, 1350, 1500, 1510, this service manual and original service manual should be used together.

■ REPLACEMENT PARTS LIST

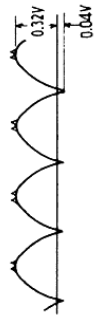
Ref. No.	Part No.	Part Name & Description	Per Set (Pcs.)	Remarks
TRANSISTORS				
TR1	2SD389A-Q	Transistor	1	
TR2	2SA720-R	Transistor	1	
TR3,12,13,15	2SC1328-T	Transistors	4	
TR4,5,6,10,11,14	2SA666AI-R	Transistors	6	
TR7,8,9	2SC1384A-R	Transistors	3	
DIODES				
D1,2	RVD10DC2	Diode	1	
D3,4	RVD10DC2R	Diode	1	
D5,6,7,8,9,11	SVD1S1555	Diodes	6	
D10	OA90	Diode	1	
ZD1	SVDRD18EC	18V, Zenner	1	
ZD2	SVDRD6.2E	6.2V, Zenner	1	
TRANSFORMER				
T1	ELM10S123	Oscillator	1	
RESISTORS				
R1	ERD12FJ752	Carbon, 7.5k Ω , 1/2W, $\pm 5\%$	1	
R2	ERD25TJ681	Carbon, 680 Ω , 1/4W, $\pm 5\%$	1	
R3,31	ERD25TJ123	Carbon, 12k Ω , 1/4W, $\pm 5\%$	2	
R4	ERD25TJ622	Carbon, 5.2k Ω , 1/4W, $\pm 5\%$	1	
R5,11,18	ERD25TJ392	Carbon, 3.9k Ω , 1/4W, $\pm 5\%$	3	
R6	ERD14FJ330	Carbon, 33 Ω , 1/4W, $\pm 5\%$	1	
R7	ERX12ANJR47	Metal, 0.47 Ω , 1/4W, $\pm 5\%$	1	
R8,26,35	ERD25TJ102	Carbon, 1k Ω , 1/4W, $\pm 5\%$	3	
R9,14,21	ERD25TJ332	Carbon, 3.3k Ω , 1/4W, $\pm 5\%$	3	

Ref. No.	Part No.	Part Name & Description	Per Set (Pcs.)	Remarks
R10	ERD25TJ183	Carbon, 18k Ω , 1/4W, $\pm 5\%$	1	
R12	ERD25TJ132	Carbon, 1.3k Ω , 1/4W, $\pm 5\%$	1	
R13	ERD25TJ911	Carbon, 910 Ω , 1/4W, $\pm 5\%$	1	
R15	ERO25CKF2002	Metal, 20k Ω , 1/4W, $\pm 1\%$	1	
R16	ERO25CKF1802	Metal, 18k Ω , 1/4W, $\pm 1\%$	1	
R17,19,22,24	ERD25TJ153	Carbon, 15k Ω , 1/4W, $\pm 5\%$	4	
R20,23,25	ERD25TJ512	Carbon, 5.1k Ω , 1/4W, $\pm 5\%$	3	
R27,28	ERO25CKF2402	Metal, 24k Ω , 1/4W, $\pm 1\%$	2	
R29	ERD25TJ182	Carbon, 1.8k Ω , 1/4W, $\pm 5\%$	1	
R30	ERD25TJ751	Carbon, 750 Ω , 1/4W, $\pm 5\%$	1	
R32	ERD25TJ105	Carbon, 1M Ω , 1/4W, $\pm 5\%$	1	
R33	ERD25TJ224	Carbon, 220k Ω , 1/4W, $\pm 5\%$	1	
R34	ERD14FJ101	Carbon, 100 Ω , 1/4W, $\pm 5\%$	1	
R36	ERD25TJ203	Carbon, 20k Ω , 1/4W, $\pm 5\%$	1	
R37,40	ERD25TJ433	Carbon, 43k Ω , 1/4W, $\pm 5\%$	2	
R38	ERD25TJ753	Carbon, 75k Ω , 1/4W, $\pm 5\%$	1	
R42	ERD12FJ302	Carbon, 3k Ω , 1/4W, $\pm 5\%$	1	
		VARIABLE RESISTORS		
VR1,2	EVLS3AA15B23	2k Ω , (B)	2	
VR3	EVLS0AA00B23	2k Ω , (B)	1	
VR4	EVLS0AA00B52	500 Ω , (B)	1	
		CAPACITORS		
C1	ECEB50V470	Electrolytic, 470 μ F, 50V	1	
C2	ECEA25V33V	Electrolytic, 33 μ F, 25V	1	
C3	ECQM1H153KZ	Polyester, 0.015 μ F, 50V, $\pm 10\%$	1	
C4,21	ECEA50Z1	Electrolytic, 1 μ F, 50V	2	
C5	ECQM1H392KZ	Polyester, 0.0039 μ F, 50V, $\pm 10\%$	1	
C6,7,8,17,18	ECQM1H103KZ	Polyester, 0.01 μ F, 50V, $\pm 10\%$	5	
C9,10,11	ECQM1H563KZ	Polyester, 0.056 μ F, 50V, $\pm 10\%$	3	
C12	ECEA10V100V	Electrolytic, 100 μ F, 10V	1	
C13	ECEA16Z22	Electrolytic, 22 μ F, 16V	1	
C14	ECEA16Z10	Electrolytic, 10 μ F, 16V	1	
C15	ECEA6V330V	Electrolytic, 330 μ F, 6V	1	
C19	ECQM1H224KZ	Polyester, 0.22 μ F, 50V, $\pm 10\%$	1	
C20	ECEA50Z4R7	Electrolytic, 4.7 μ F, 50V,	1	

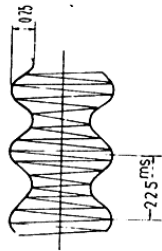
Schematic Diagram

Waveform

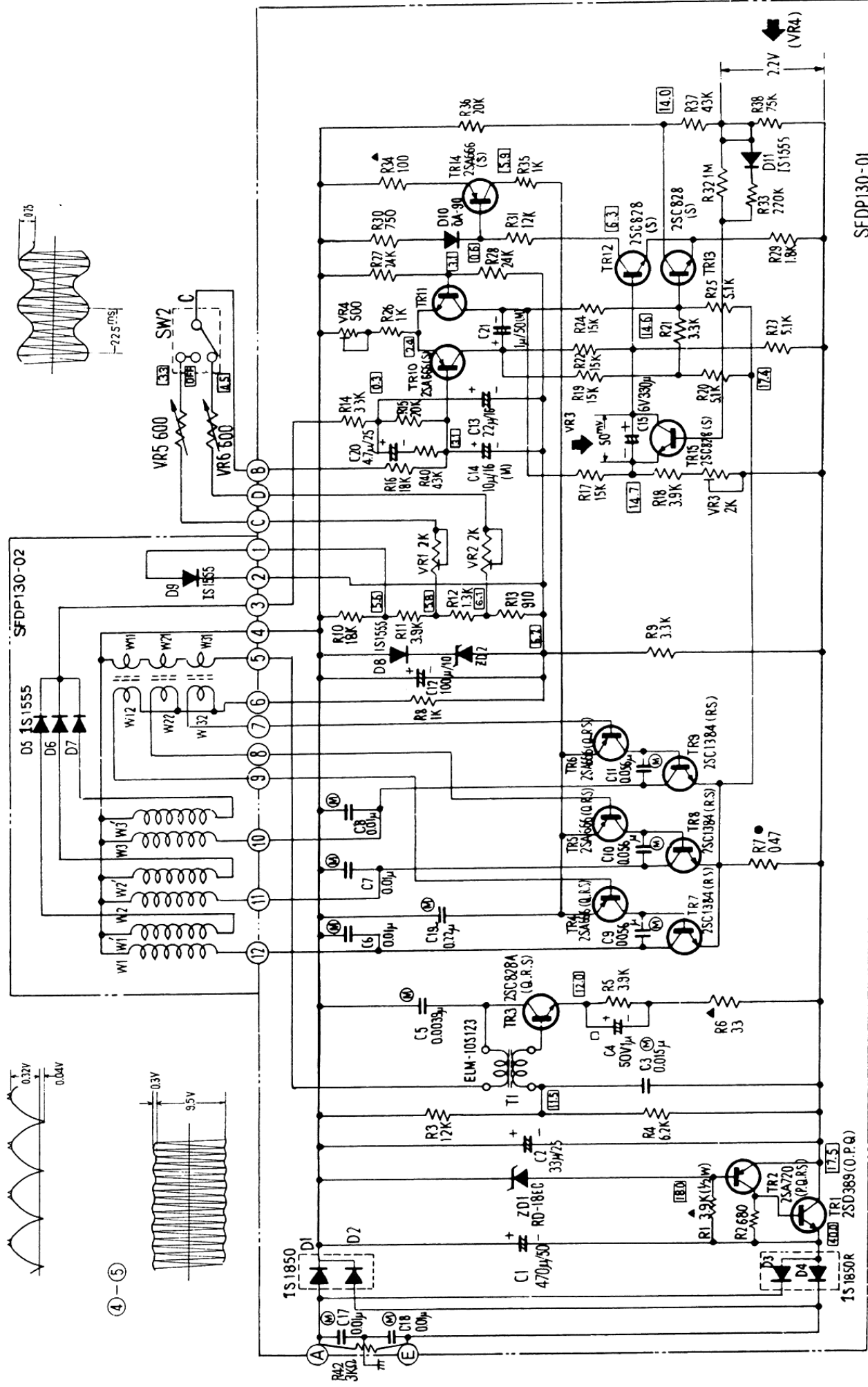
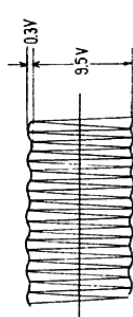
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⑥-⑦

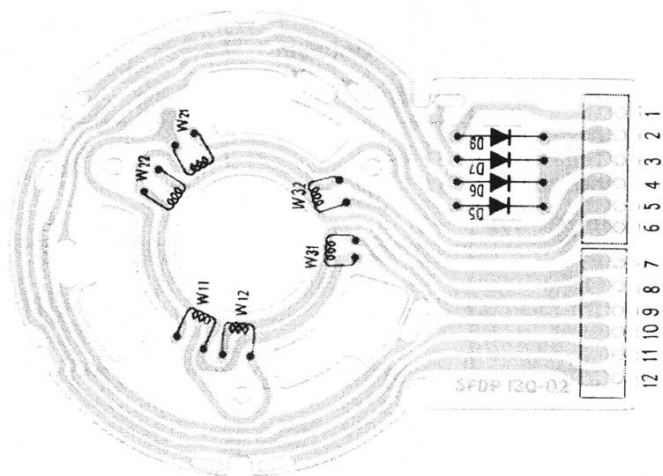
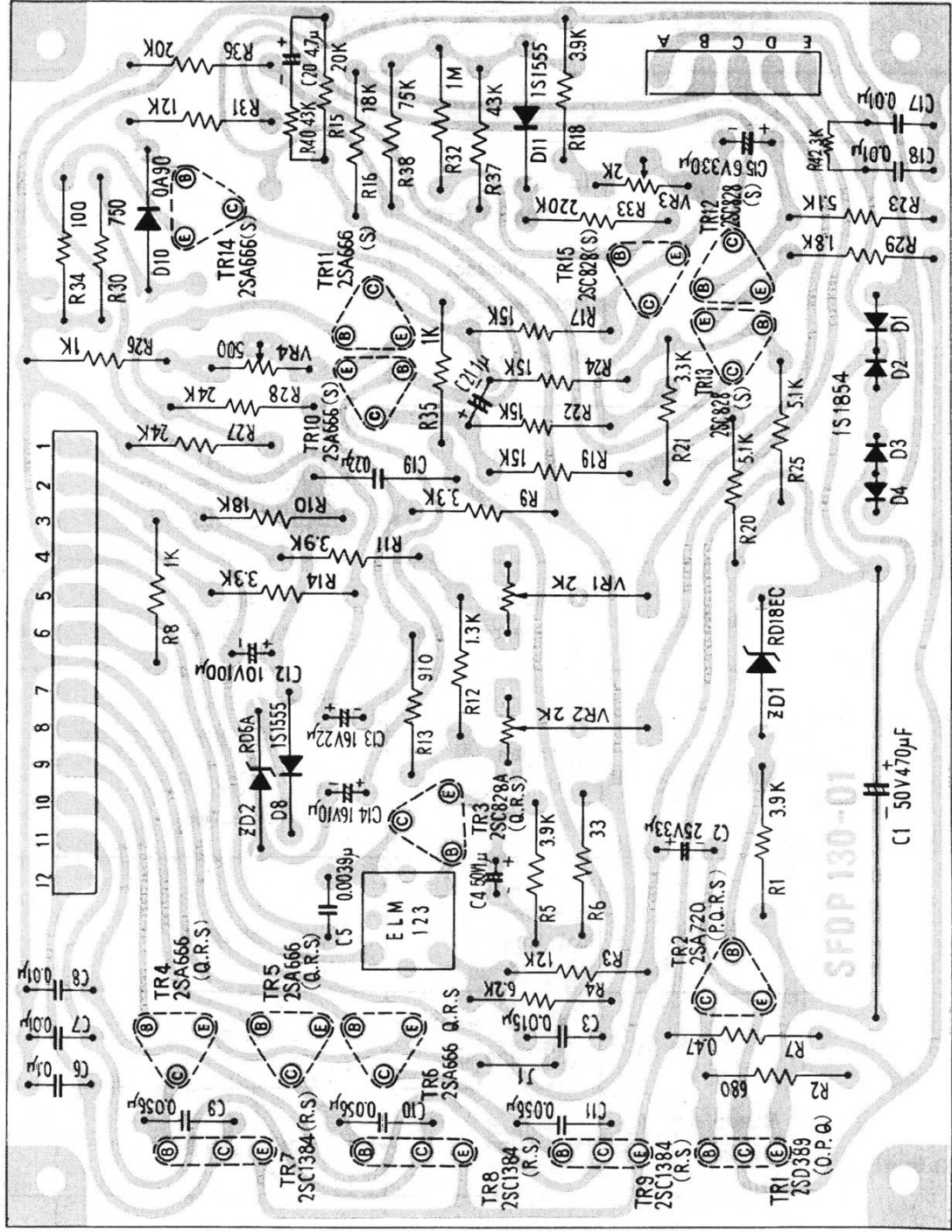


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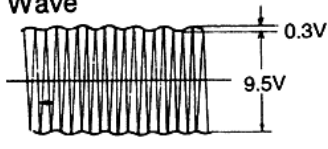
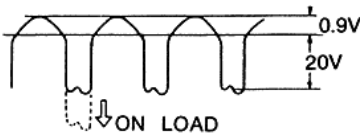
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Printed Circuit Board

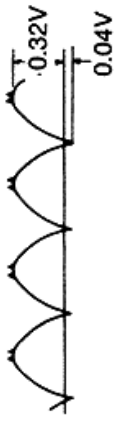
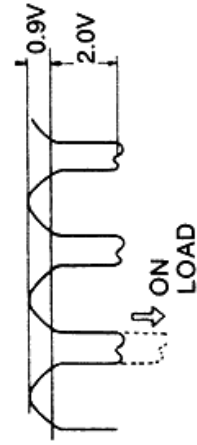
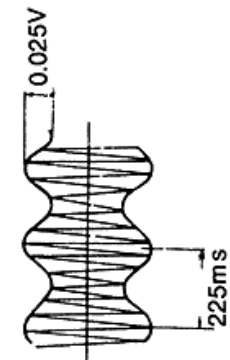


Motor

SERVICE CHECK POINTS

SYMPTOMS		INFERABLE CAUSE	CHECK POINT	PROPER VOLTAGE & WAVE FORM etc.	INFERABLE FAULT
TURN TABLE DOES NOT ROTATE	Not rotate (33, 45 rpm)	Power circuit	Emitter voltage of TR2	Voltage About 18V	TR1, TR2, ZD1 D1.2, D3. 4
		Speed selector SW2	SW2 Contact Between 33 and C Between 45 and C	Contact	SW2
		OSC circuit	Between ④ and ⑤	Wave 	T1, TR3
		Control circuit	Collector voltage of TR14	Voltage About 5.9V	TR14, TR10, 11, 12, 13
		Switching circuit	Between ④ and ⑩, ⑪, ⑫	Wave 	R7
		Motor	Primary of position detecting coil Between ④ and ⑤	Ohm About 28Ω	Motor
	Not rotate (33 rpm)	Speed selector SW and speed adjustment VR	SW2 Between 33 and C	Contact	SW2
			VR5	Ohm 500Ω	VR5
			VR1	Ohm 2kΩ	VR1
	Not rotate (45 rpm)	Speed selector SW and speed adjustment VR	SW2 Between 45 and C	Contact	SW2
			VR6	Ohm 500Ω	VR6
			VR2	Ohm 2kΩ	VR2

TURN TABLE ROTATES ABNORMALLY

SYMPTOMS	INFERABLE CAUSE	CHECK POINT	PROPER VOLTAGE & WAVE FORM etc.	INFERABLE FAULT
Abnormal speed (Too fast)	Reference voltage circuit	ZD2	Voltage About 6.2V	ZD2
	Speed detection voltage circuit	Between ③ and ④	Wave 	Motor
Abnormal speed (Little fast and slow)	Constant voltage circuit	Emitter voltage of TR2	Voltage About 17.5V	ZD1
	Control circuit	Base voltage of TR14	Voltage About 0.6V	D10
Rotate turn-table by hand but there is dead point of rotation	Switching circuit	Between ④ and ⑩ ④ and ⑪ ④ and ⑫	Wave 	TR4, TR5, TR6 TR7, TR8, TR9
	Motor	Between ⑥ and ⑦ ⑥ and ⑧ ⑥ and ⑨	Wave 	Motor