

SERVICE MANUAL



STEREO TURNTABLE

TP20
(EUROPE)



SPECIFICATIONS

Motor	DC motor	Stylus pressure	1.5 – 2.5 g.
Drive system	Belt drive	Frequency response	20 – 20,000 Hz
Speeds	33-1/3 and 45 rpm	Overhang	15 mm
Wow & flutter	0.05% WRMS	Channel separation	Better than 25 dB
Signal to noise ratio	Better than 60 dB	Power source	AC: 220V, 50Hz
Turntable platter	11-1/2" (29.2 cm)	Power consumption	6W
Tone arm	Static-balance type	Dimensions	Approx. 17-1/2"(W) x 5-5/8"(H) x 14-1/4"(D) (440 x 140 x 360 mm)
Tracking error	±1.5°	Weight	Approx. 9 lbs. 1 oz. (4.1 kg)
Cartridge	Magnetic stereo cartridge: (MG-10J)		
Stylus	0.5 mil diamond stylus: (ST-10J)		

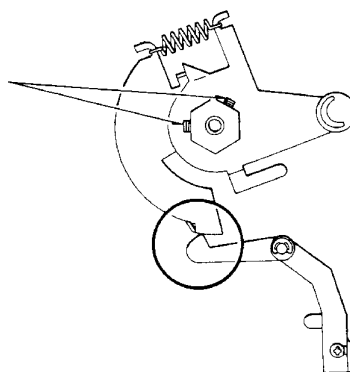
* Specifications and design are subject to change without notice.

ADJUSTMENT

ADJUSTMENT OF TONEARM LEVER

Set the turntable unit upside down after putting the tonearm on the arm rest and securing it.

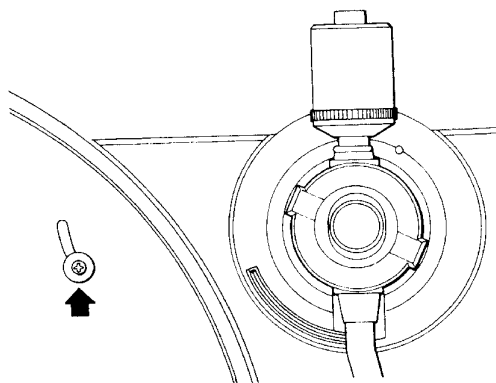
Then, loosen the set screw (w/hex hole) and position the lever (M18) in such a way that the protrusion of the micro-switch contacts the foremost end of the lever.



ADJUSTMENT OF MICRO-SWITCH

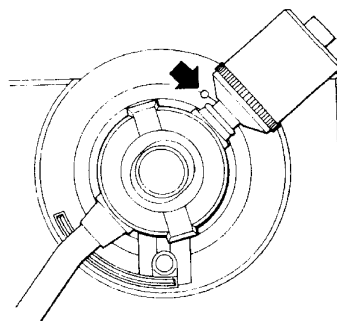
Set the turntable unit back in its normal position (the turntable platter at the top). Loosen the round head screw (Y7) (see illustration) with a screwdriver and adjust the microswitch position so that the micro-switch will be turned on when the tonearm has moved a little toward the turntable center.

The micro-switch should be correctly positioned at a place where it provides a rotational start for the turntable when the tonearm head centers an area 35 through 38cm away from the center.



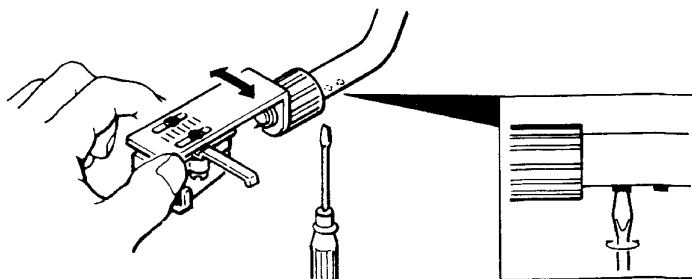
ADJUSTMENT OF AUTO-RETURN

There is a shaft which is accessible with a long shaft screwdriver through the hole below the tonearm. (See illustration at right.) When the stylus has reached a point approximately 55mm from the turntable center turn the shaft clockwise or counter-clockwise and select a position where it actuates the auto-return.



ADJUSTMENT OF HEADSHELL

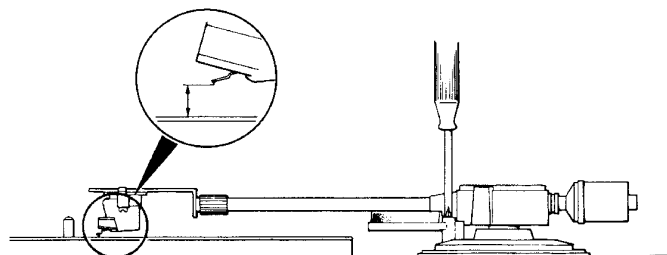
The headshell attached to the tonearm should not be inclined either to the right or to the left. If necessary, loosen the two screws on the bottom of the tubular arm and adjust the headshell. Be sure that the stylus is normal to the record surface.



ADJUSTMENT

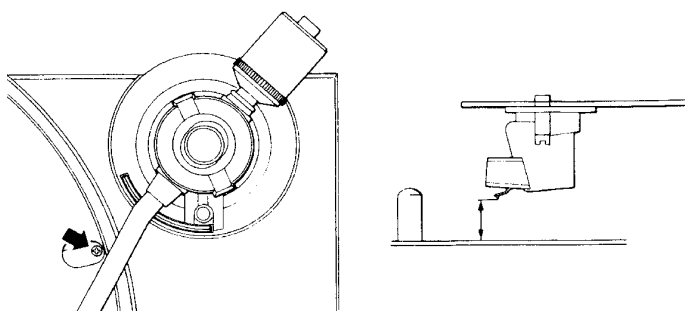
ADJUSTMENT OF TONEARM LIFTER

Set the cueing lever to UP and the distance between the stylus and the record to about 9mm by adjusting the arm lifter screw.



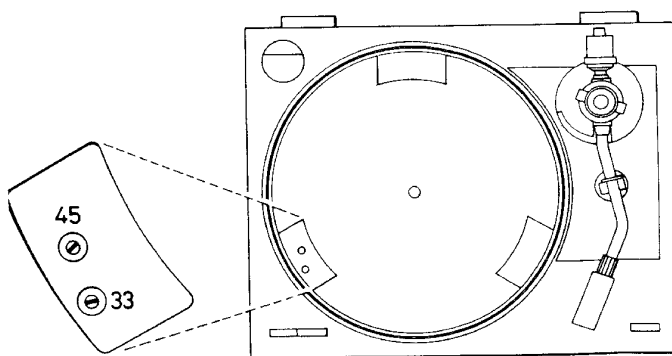
ADJUSTMENT OF LIFT-UP LEVER SPRING

Switch off power when the auto-return has worked and adjust spring tension to provide a clearance of 11mm between the stylus and the record.

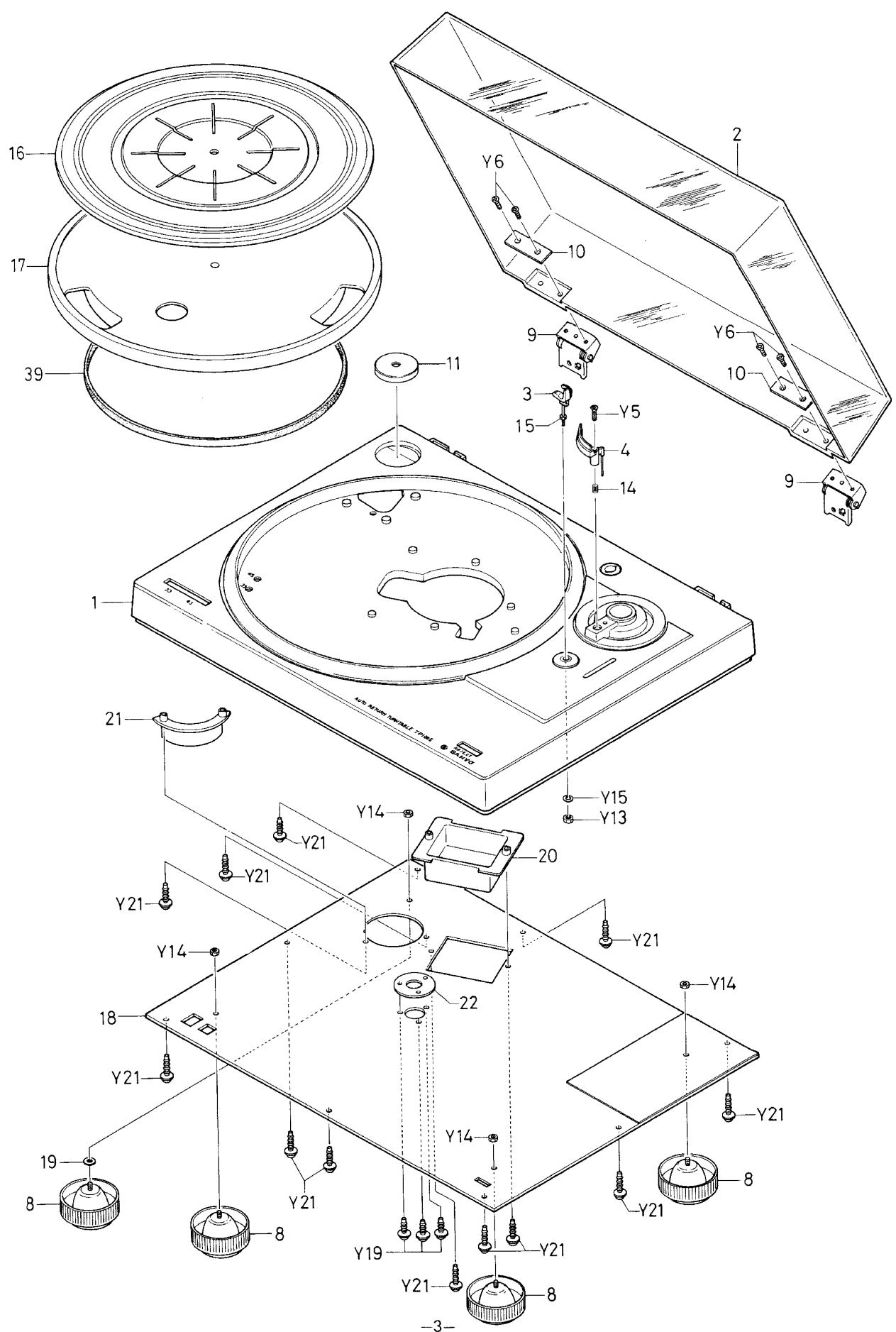


ADJUSTMENT OF TURNTABLE SPEED

Set the fine speed control dials to their center positions (each has three protrusions, of which only one can be set to the center). Make adjustment by inserting a screwdriver into the holes. When properly adjusted, the zebra stroboscope marks on the turntable platter seem to be stationary at the selected speed.



CABINET EXPLODED VIEW



PARTS LIST

Ref. No.	Part No.	Description	Q'ty
PACKING			
	141-6-132T-97210	Individual Carton	1
	141-6-144T-49600	Styrol Filler, Set	2
	141-6-316T-79800	Pad, Top	1
	141-2-337T-10400	Ribbon, Arm Fixer	1
	141-6-410T-22201	Instruction Manual	1
	141-6-231T-60700	Inner Polyethylene Bag, Set	1
	141-6-231T-35400	Inner Polyethylene Bag, Sheet	1
	141-6-231T-25300	Inner Polyethylene Bag, Inst. Manual	1
	141-6-231T-10200	Inner Polyethylene Bag, Cord	2
	141-6-231T-10100	Inner Polyethylene Bag, Accessories	2
	141-6-316T-80100	Pad, Side Set	2
	141-6-317T-07500	Pad, Turn Table	1
	141-6-317T-06700	Pad, Sheet	1
	141-6-317T-07700	Pad, Dust Cover	1
	141-6-316T-88500	Pad, Dust Cover	1
	123-6-453R-00100	Inspection sheet	2
CABINET			
1	141-0-121T-14606	Deck Panel Assembly	1
2	141-0-194T-00700	Dust Cover Assembly	1
3	141-0-873T-00204	Rest Assembly	1
4	141-0-872T-00201	Lifter Assembly	1
5	141-0-365T-38402	Bracket Switch Assembly, Reject	1
6	141-0-365T-42102	Bracket Switch Assembly, Speed	1
7	141-0-367T-30601	Bracket Socket, Cord Out	1
8	141-0-174T-06600	Stand Assembly	4
9	141-2-251T-06102	Hinge, Dust Cover Mtg.	2
10	141-2-351T-47500	Bracket Mounting, Hinge Mtg.	2
11	141-2-352T-19900	Spacer, 45 Adaptor	1
12	141-2-464T-11800	Fixer, AC Cord	1
13	141-2-445T-16000	Rubber Cushion, Output Cord Mtg.	1
14	141-2-855T-14200	Coil Spring, Lifter Mtg.	1
15	141-2-683T-32401	Ring, Stand Mtg.	1
16	141-2-246T-23000	Sheet, Turn Table	1
17	141-2-118T-00600	Turn Table	1
18	141-2-126T-27900	Back Lid	1
19	141-2-352T-25300	Spacer, Adjust height or leg	1
20	141-2-135T-48501	Cover, PT	1
21	141-2-135T-53500	Cover, Motor	1
22	141-2-683T-33800	Ring, Turn Table Shaft	1
23	141-2-742T-07300	Lever, Reject	1
24	141-2-683T-28900	Ring, Reject	1
25	141-2-851T-73300	Coil Spring, Reject	1
26	141-2-852T-45600	Wire Spring, Reject	1
27	141-2-447T-45700	Cushion, Wire Spring (26)	1
28	123-2-472R-00401	Lug, Wire Spring (26)	1
29	141-2-852T-45700	Wire Spring, Earth	1
30	141-2-461T-30800	Pipe, Cushion	3
31	141-2-472T-06800	Lug, Arm Shaft Mtg.	1
32	141-2-464T-30000	Fixer, Output Cord	1
33	141-2-352T-24800	Spacer, Micro Switch Mtg.	1
34	141-2-322T-48900	Shield Plate, Output P.C.B	1
35	141-2-445T-05000	Rubber Cushion, Bracket Switch	2
36	141-2-461T-30800	Pipe, Bracket Switch	2
37	141-2-853T-63000	Plate Spring	2
38	141-2-855T-14700	Coil Spring, pull the Mechanism Slide	1
39	141-2-561T-04200	Flat Belt, Turn Table Drive	1
40	141-2-351T-47201	Bracket Mounting, Switch	1
42	141-2-472T-01201	Lug, Lead Retainer	4
43	141-2-340T-00200	Rope 0.5φ x 50mm	1
45	141-0-742T-07200	Lever Assembly, Lift up lever	1
46	141-2-853T-59900	Plate Spring	1
47	141-2-742T-26300	Lever	1
48	141-2-753T-54900	Shaft	1
49	141-2-241T-21300	Veil	1
50	141-2-852T-52500	Spring Wire	1

Ref. No.	Part No.	Description	Q'ty
ELECTRICAL PARTS & ARM (JPU1005UM)			
51	141-4-230T-84800	Printed Circuit Board Assembly, POWER	1
	141-2-464T-08700	-Fixer	1
	4-237T-00100	-Terminal, Wrapper Pin	9
SVR1	4-222T-39577	-Semi Fixed Resistor 50kB	1
SVR2	4-222T-39576	-Semi Fixed Resistor 20kB	1
D1		-Diode DS18	1
D2		-Diode DS17	1
C2		-Electrolytic 1000μF +100 -10% 16WV	1
52	141-0-230T-44200	Printed Circuit Board Assembly, AC Relay	1
53	4-230T-19400	Printed Circuit Board, Output Relay	1
54	4-251T-92000	Power Transformer, 110/220V 50Hz	1
55	4-243T-77172	Power Supply Cord	1
56	4-243T-15171	Lead Cord, Output Cord DIN type	1
58	4-231T-61900	Switch, Micro	1
59	141-2-464T-08700	Fixer, Mylar (61) Mtg.	1
60	123-2-472R-00600	Lug, Earth	1
61(C1)		Mylar Capacitor 0.047μF ±20% 50WV	1
62	123-2-472R-00400	Lug, Earth	1
ARM (JPU1005UM)			
101	141-0-743T-05906	Arm Assembly	1
a	141-2-853T-53901	-Plate Spring	1
b	141-0-687T-01400	-Weight Assembly	1
c		-Tapping Screw 2 x 4mm, Plate Spring Mtg.	1
102	141-0-286T-01000	Head Shell Assembly	1
103	141-2-445T-20300	Rubber Cushion	1
104	4-243T-15800	Lead Cord, LH	1
105	4-243T-15871	Lead Cord, LE	1
106	4-243T-15872	Lead Cord, RH	1
107	4-243T-15873	Lead Cord, RE	1
108	141-2-421T-23700	Special Screw	2
109	141-2-417T-18100	Stud Nut	2
110	141-2-453T-32200	Washer, Nylon	2
113	4-157T-00801	-Cartridge Assembly	1
	4-156T-00500	-Stylus	1
111	141-2-742T-13100	Lever, Head Shell Fingure	1
112	141-2-687T-01600	Weight, Sub Weight	1