

TD 150

THORENS

TD-150 AB / TD-150 AB SERIES II

SERVICE MANUAL

THORENS

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NEW HYDE PARK, NEW YORK 11040

RUMBLE AND NOISE LEVEL:

Rumble is any low frequency disturbance in the reproduction of phonograph record due to the vibration of the motor or the turntable drive system. Rumble is most easily studied by playing a record with unmodulated grooves and observing the noise output. The noise level present in the records currently available is at least equivalent and in most cases less than the rumble level of the THORENS TD-150 model turntable.

The objective measurement of the rumble level of a turntable is not a simple matter. It requires elaborate instrumentation and extreme care. The results may also differ with the measurement method employed. The THORENS TD-150 model turntables are measured according to the DIN 45539 standards. As an approximate measure a subjective evaluation of the rumble level may be observed.

NORMALIZED AUDITION CONDITIONS

Every subjective evaluation of the rumble and noise level of a turntable requires that well defined, audition conditions be realized.

A record should be selected, for auditioning, that is widely accepted as an excellent orchestra recording and not one with an overall too low level and lacking bass. Then, playing a Fortissimo passage, the volume control should be adjusted to obtain complete musical pleasure, at a normal listening level without any disturbing element. The bass control on the preamplifier should be adjusted to obtain as natural a sound as possible. For well designed amplifiers, this should be attained very near to the theoretical equalization characteristics ("0" positions of the bass and treble controls).

These adjustments of volume and tone controls should not be modified for the rumble level evaluation which should be made, when a special test record is not available, on the very first unmodulated grooves of a good record, before the groove where the recording amplifier has been switched on, and then on a passage with the minimum recorded level.

Furthermore, the evaluation should be made from the place in the room where best musical results are obtained and not just near a loudspeaker.

If under these conditions, the rumble level of the turntable is judged disturbing, the following tests may help to trace the cause of the trouble. For analysis of the noise, first lift the pick-up off the record without changing the control setting; the remaining noise will be hum. Shut off the turntable, if the hum remains it may be concluded that the hum is due to an incomplete or incorrect installation of the pick-up cartridge, the improper wiring system is employed (3 wire or 5 wire) for the particular manufacture of cartridge or the amplifier is at fault.

The amplifier may be checked by short-circuiting the inputs and observing the hum level. If it is unchanged the amplifier should be checked further.

The wiring system (3 wire or 5 wire) as recommended by the pick-up cartridge manufacturer should be employed.

If when the turntable motor is shut off the hum ceases. The cause may be attributed to turntable and/or motor vibrations (rumble). Lubrication and service procedures should be followed as described.

ACOUSTIC FEEDBACK

The very low frequency sounds coming out of the loudspeakers may transmit appreciable vibrations to the turntable. The cabinet supporting this turntable, acting as a resonator, may amplify these vibrations. This will result in higher noise levels, and in some cases, in instability or feedback. The acoustic isolation of the THORENS model TD-150 turntable may be adjusted as described in the section "Chassis suspension". If the cabinet is acting as a resonator, it may become necessary to find another place for the turntable if complete stability is to be obtained.

SERVICE PROECDURES

RUBBER BELT-S 800-574

Examine the rubber belt by stretching it. If cracks appear in the rubber, the belt is dried out and should be replaced. Before replacing the belt, examine the surface of the motor pulley and outer skirt of the inner turntable for traces of rubber deposits. Clean these surfaces with a soft cloth saturated in denatured alcohol and replace the belt.

If the rubber belt makes a "slapping" noise, too much moisture in the belt may be the cause. Dust your fingers, lightly, with talcum powder and pass the belt through the powder to "dry" it or absorb the moisture.

MOTOR - S 804-550 (60HZ)
 S 800-550 (50HZ)

The motor bearings are of the oil retaining type with an oil reserve. Under normal use, the initial lubrication, made at the factory, should be sufficient for about 1,000 hours' run. When the need for a new lubrication becomes apparent, proceed as follows:

MOTOR UPPER BEARING

Place a few drops of ROB oil on top of the bearing, where the shaft comes out of the top motor shield.

MOTOR LOWER BEARINGS

Oil should be put on the lower part of the shaft where it extends from the motor housing.

MOTOR AZIMUTH

If the rubber belt (S 800-574) slips off the motor pulley or rides on the flange of the motor pulley, causing incorrect speeds (33 1/3 or 45 RPM) the azimuth of the motor in relation to the inner turntable platter may have to be corrected. This may be accomplished by adjusting the screw located between the motor pulley and inner turntable platter. Refer to diagram number 1.

The condition of the bearing well and turntable shaft, and their lubrication, may be checked over a period of time by periodically noting how many revolutions may be counted from the moment the turntable is at full running speed (33 1/3 rpm) until the turntable stops. The rubber belt should be removed for this test and the turntable rotated by hand to achieve operating speed as observed with a stroboscope. If the number of revolutions drops radically, the lubrication of both parts is indicated.

ON-OFF SWITCH - 181 E-37 (TD-150AB)
181 E-10 (TD-150/II)

If the on-off switch fails to operate, remove the unit from AC and check the contacts with the ohmmeter, operating the actuating lever by hand. The speed selector knob should be in one of the "on" (speed) positions. If the switch makes continuity but the actuating lever movement is insufficient to actuate the switch, adjust the lever or actuating cam.

The reverse procedure to the above should be followed if the unit fails to shut off. The 0.01 ufd condensor should also be tested for a short.

If a "popping" noise occurs in the speakers when the on-off switch is operated, the 0.01 ufd condensor may be open and should be replaced.

50/60 HZ - 110/220 VOLT OPERATION

Refer to wiring drawing number 2. 50/60 HZ conversion requires replacement of the complete motor assembly S 800-550 for 50 HZ and S 804-550 for 60 HZ.

220 Volt operation requires that a 5600 ohm, 5 watt resistor be connected in series with the motor. For 110 volt operation the resistor is omitted or shorted in the circuit.

CHASSIS SUSPENSION

The "floating chassis" supporting the turntable platters and tonearm board is set upon three conical springs (S 800-523). The firmness of the "floating chassis" may be adjusted for improved acoustical damping or against room vibrations and also to compensate for heavier tonearms that may be used. The hardboard bottom cover to the wood base should be removed. The nut securing the conical springs (S 800-523) may be tightened for a firmer or loosened for a softer suspension. Care should be taken that after adjustment, the "floating chassis" remains free and does not impinge upon the fixed chassis or wood base. Direct contact between the two will cause motor vibrations to be transmitted directly to the tonearm.

Figure 1

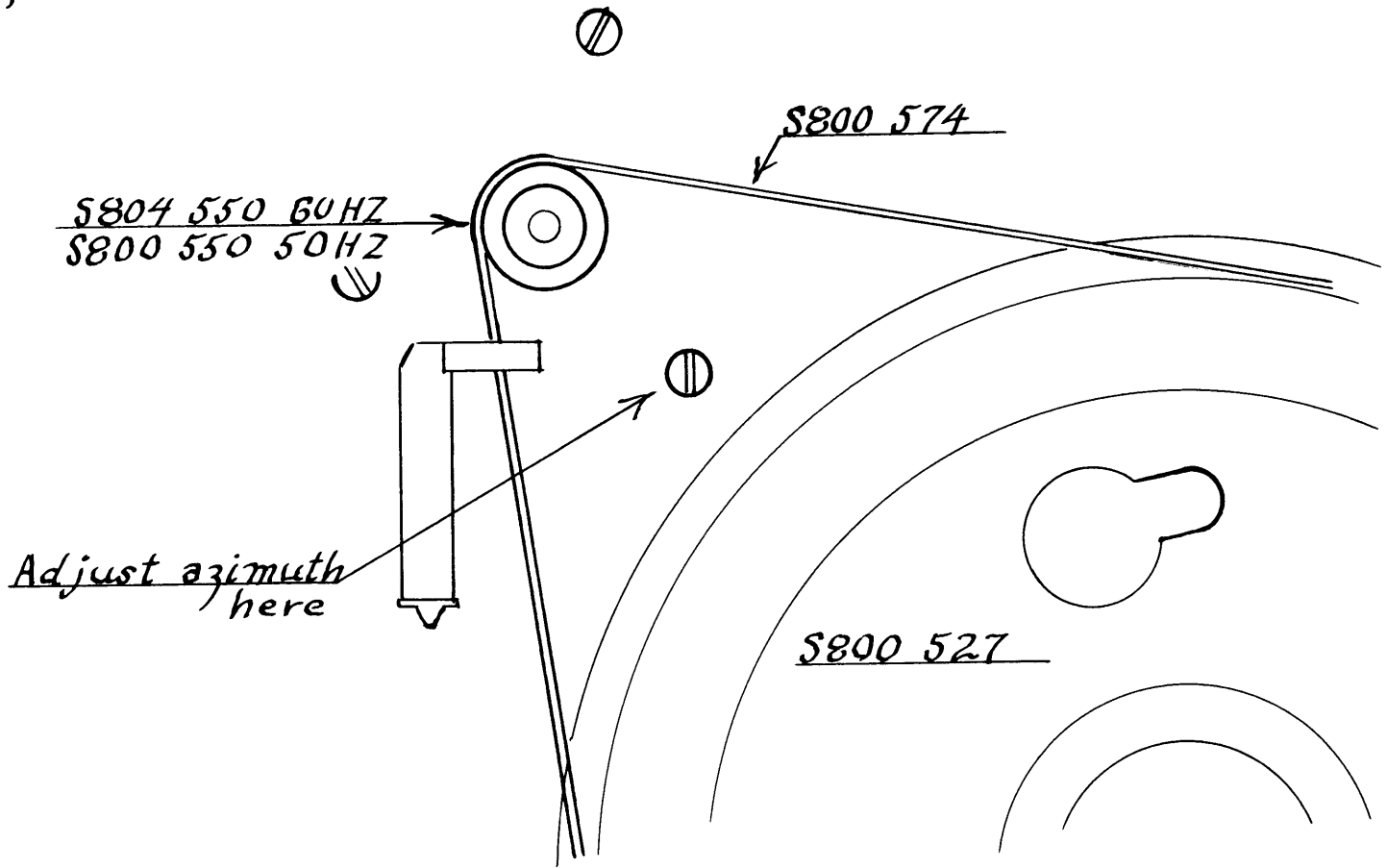
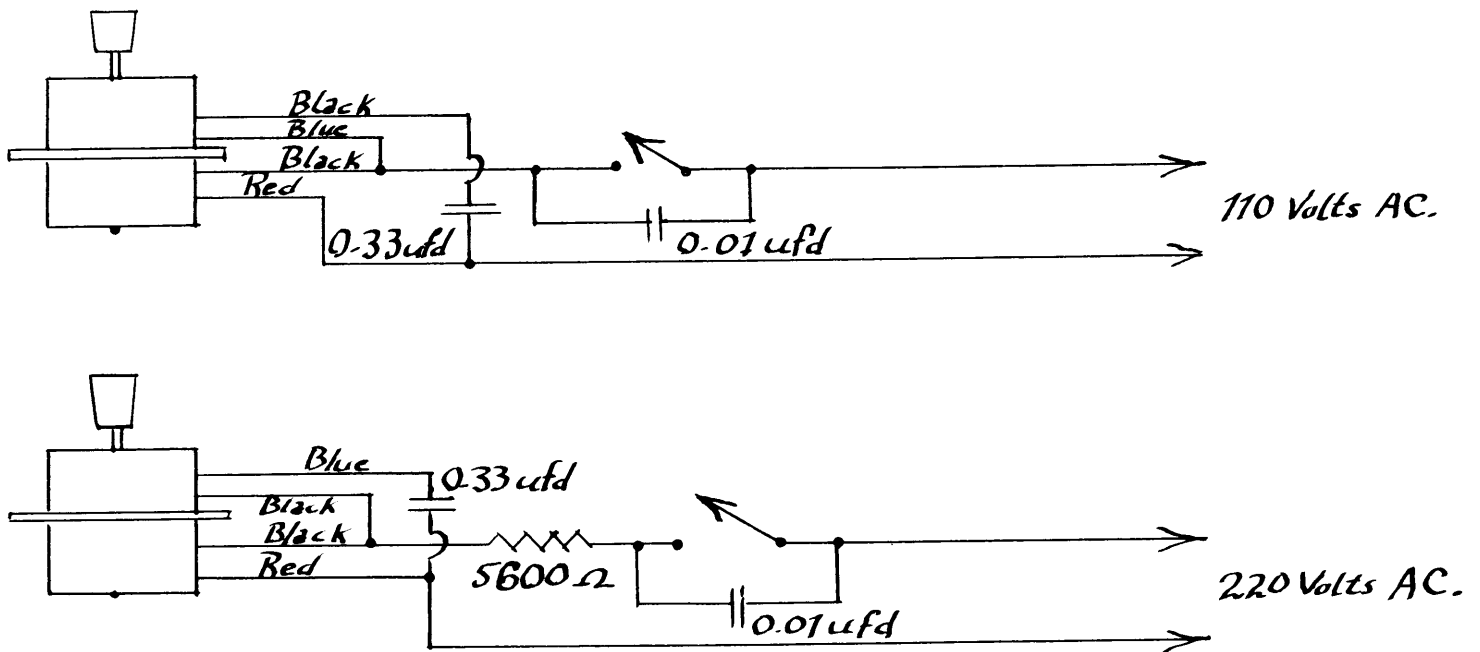
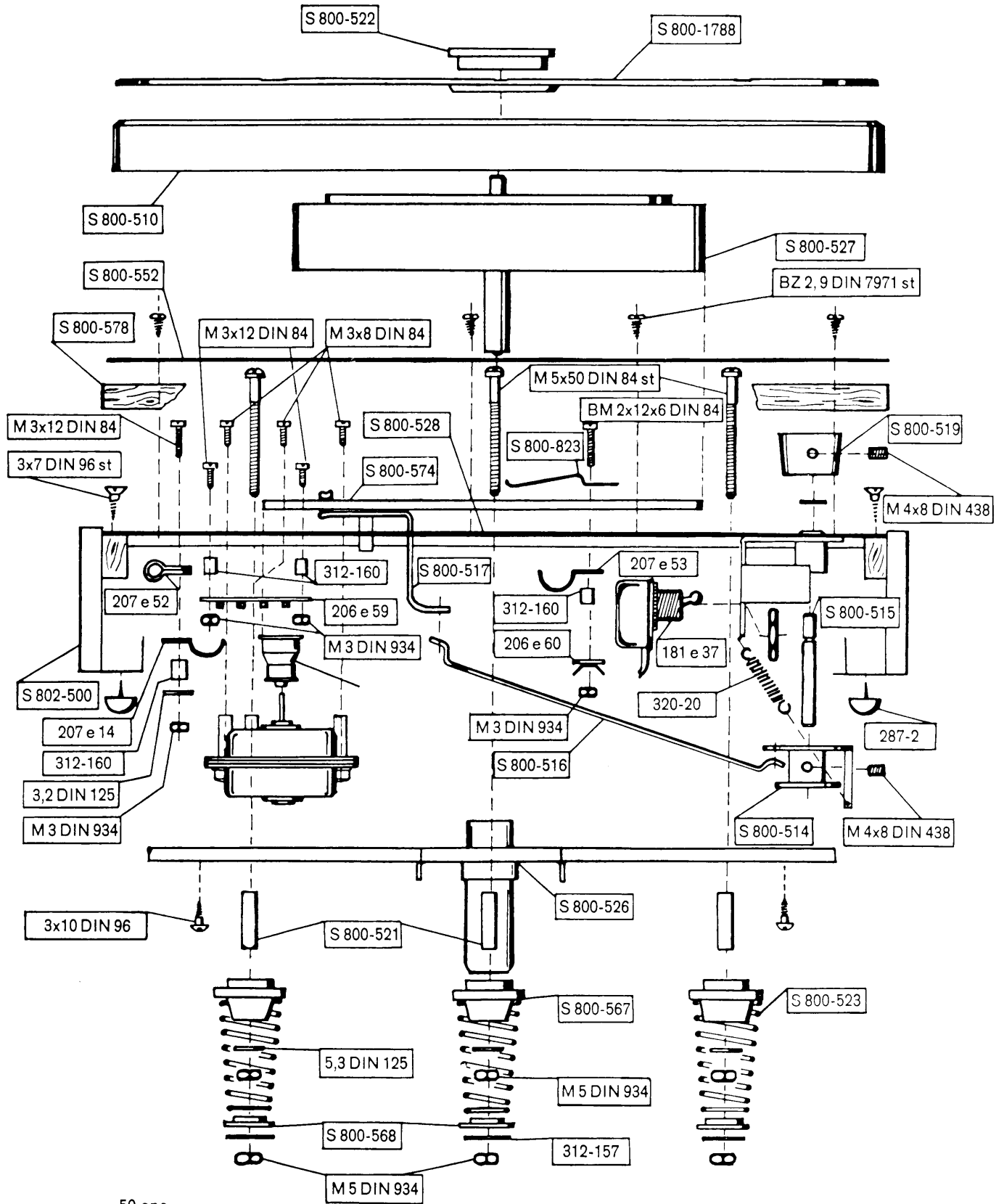
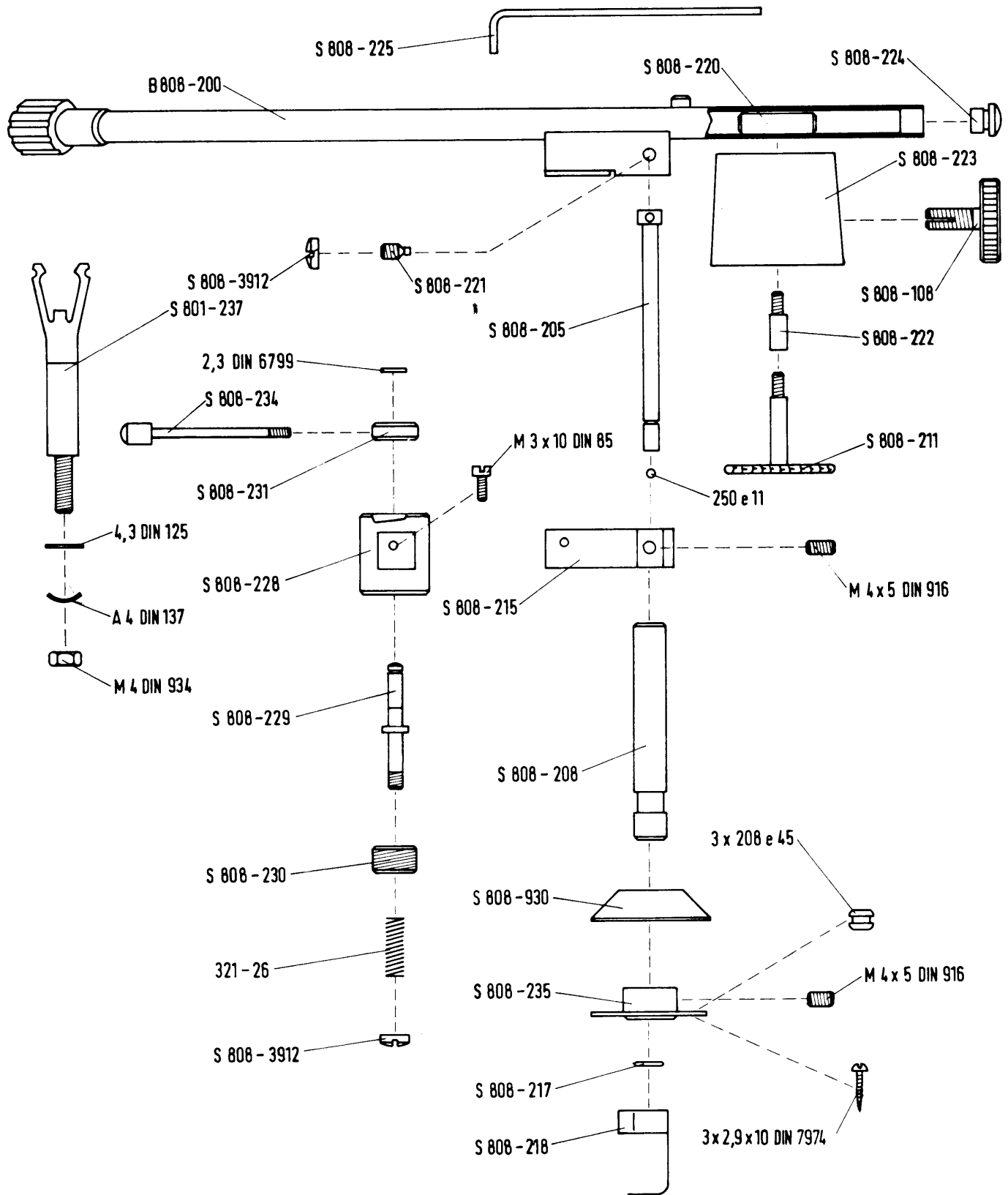


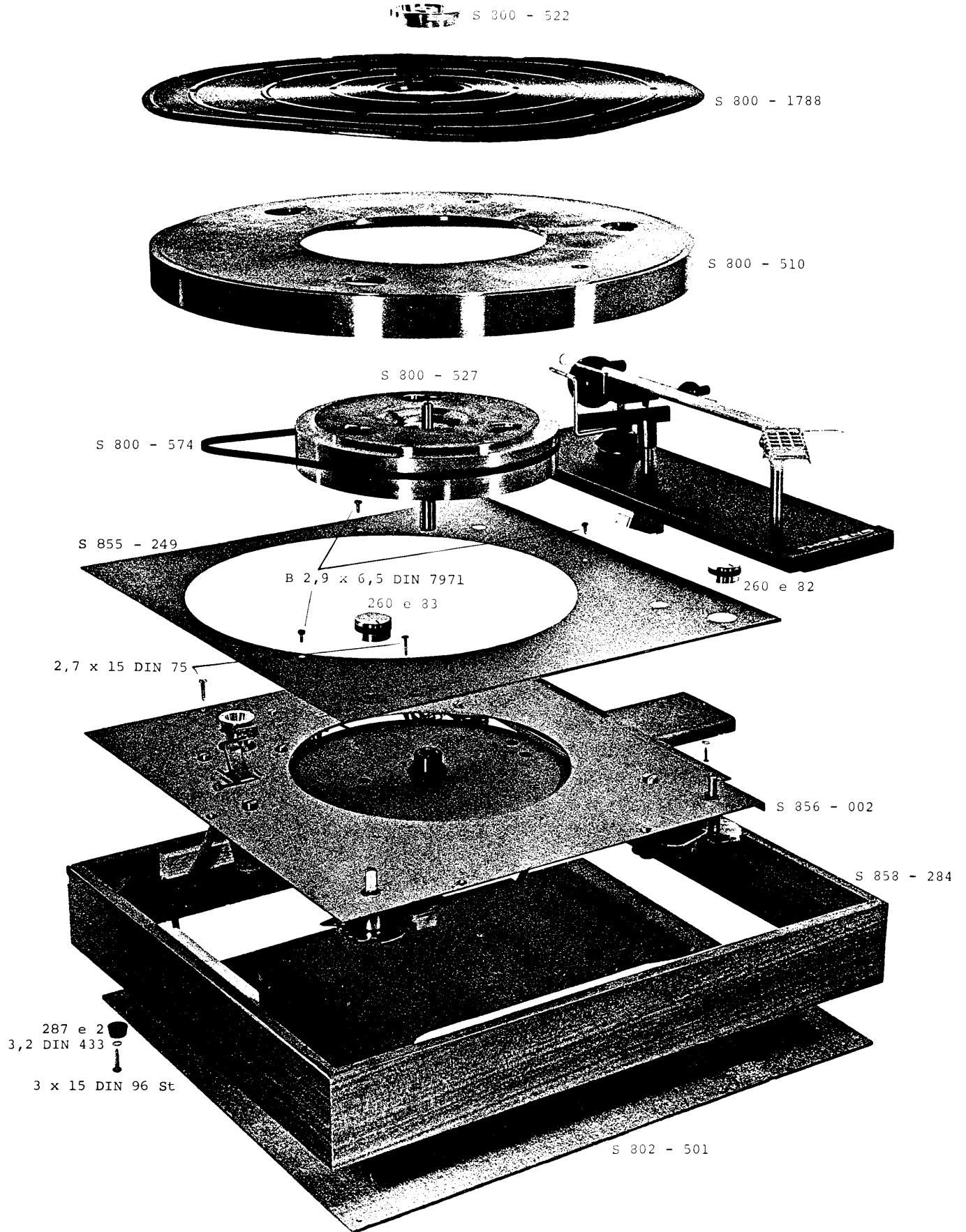
Figure 2

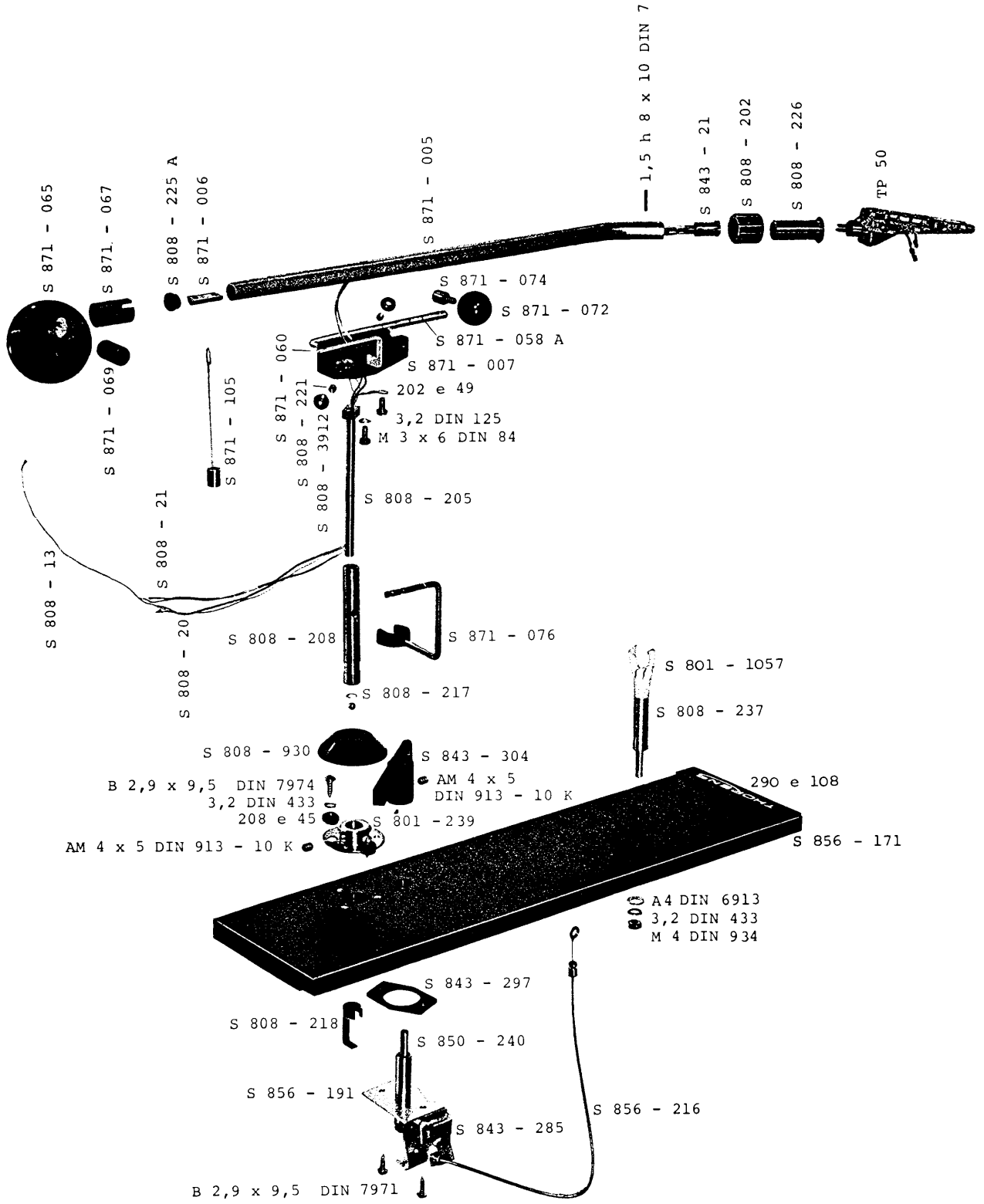


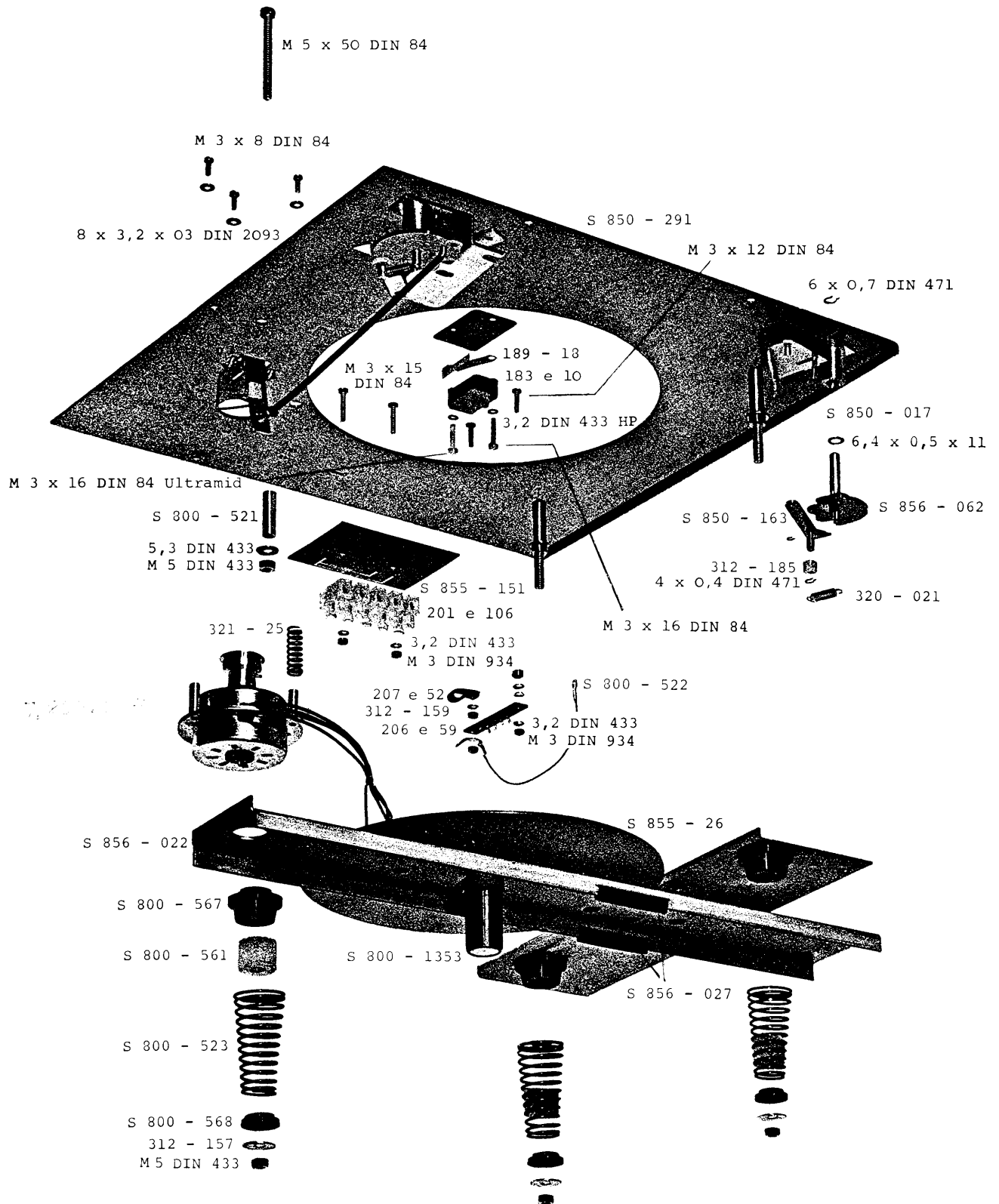


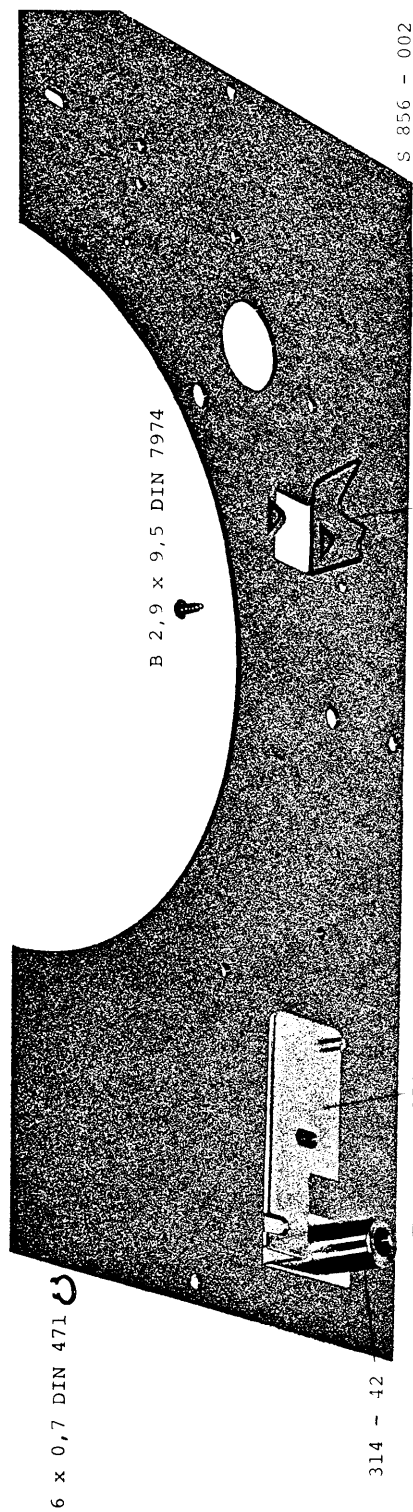
50 cps =
60 cps =











- S 855 - 069
- S 850 - 163
- 3 x 0,4 DIN 471
- 3 x 0,4 DIN 471
- 312 - 185
- 4 x 0,4 DIN 471
- 320 - 28
- 3 DIN 6799
- 3,2 DIN 433
- S 850 - 206
- 314 - 44
- S 850 - 210
- 3 x 0,4 DIN 471
- 3,2 DIN 433
- 312 - 187
- 3,2 DIN 433
- 3 x 0,4 DIN 4
- S 855 - 073

THORENS PARTS LIST
(TD-150, TD-150AB, TD-150AB/II)

A4 DIN 137	Lock Washer
A 4 DIN 6913	Washer
AM 4X5 DIN 913-10K	Screw
B2 9X9-5 DIN 7974	Screw
B3-2 DIN 933	Washer
BM 2X12X6 DIN 84	Screw
BZ 2-9 DIN 7971	Screw
M# DIN 934	Nut
M3X6 DIN 84	Screw
M3X8 DIN 84	Screw
M3X10 DIN 85q	Screw
M3X12 DIN 84	Screw
M3x15 DIN 84	Screw
M3X16 DIN 84	Screw
M4 DIN 934	Nut
M4X5 DIN 916	Grub Screws
M4X8 DIN 438	Grub Screws
M5 DIN 433	Nut
M5 DIN 934	Nut
M 5X50 DIN 84st.	Screw
S 800-510	Outer Turntable
S 800-514	Speed Change Drum (Series I)
S 800-515	Spindle for speed change drum (Series I)
S 800-516	Speed Change Lever (Series I)
S 800-517	Belt Lever (Series I)
S 800-519	Knob (Series I)
S 800-521	Spacer
S 800-522	45 RPM Adaptor
S 800-523	Conical Spring
S 800-526	Suspension Chassis-Complete (Series I)
S 800-527	Inner Turntable
S 800-528	Chassis Plate (Series I)
S 800-550	50 HZ Motor with Pulley
S 800-552	Brushed Aluminum Deck Plate (Series I)
S 800-561	Damper
S 800-567	Suspension grommets-upper
S 800-568	Suspension grommets-lower
S 800-574	Rubber Belts
S 800-578	Tonearm mounting board-blank
S 800-578D	Tonearm mounting board-drilled (Series I)
S 800-1353*	Bearing Well (Series II) S 856-022)
S 800-1788	Rubber Mat
S 801-237	Arm Rest (Series I)
S 801-239*	Base for Tonearm (S 871-005)
S 801-1057	Arm Lock (Series II)
S 802-500	Wood Base (Series I)
S 808-13*	Wiring harness ground (S 871-005)

S 800-517	Belt Lever (Series I)
S 800-519	Knob (Series I)
S 800-521	Spacer
S 800-522	45 RPM adaptor
S 800-523	Conical spring
S 800-526	Suspension chassis-Complete (Series I)
S 800-527	Inner Turntable
S 800-528	Chassis plate (Series I)
S 800-550	50 HZ motor with pulley
S 800-552	Brushed aluminum deck plate (Series I)
S 800-561	Damper
S 800-567	Suspension grommets-upper
S 800-568	Suspension grommets-lower
S 800-574	Rubber belt
S 800-478	Tonearm mounting board-bland
S 800-4780	Tonearm mounting board-drilled (Series I)
S 800-1353*	Bearing Well (Series II) (S 856-022)
S 800-1788	Rubber mat
S 801-237	Arm Rest (Series I)
S 801-239*	Base for tonearm (S 871-005)
S 801-1057	Arm Lock (Series II)
S 802-500	Wood Base (Series I)
S 802-501	Hardboard botton cover
S 804-550	60 HZ meter with pulley
S 808-13*	Wiring harness ground (S 871-005)
S 808-20*	Wiring harness lift (S 871-005)
S 808-21*	Wiring harness right (S 871-005)
S 808-108	Knurled screw
S 808-200	Tonearm tube (Series I)
S 808-202*	Screw collar (S 871-005)
S 808-205*	Tonearm shaft (808-200)
S 808-208*	Bearing bushing
S 808-211	Knurled screw (Series I)
S 808-215*	Holding arm (S 808-200)
S 808-218	Ball holder
S 808-220*	Clamp (S 808-200)
S 808-221	Bearing screw (Series I)
S 808-222	Threaded bushing (Series I)
S 808-223	Counter weight (Series I)
S 808-224	Tube and Cap (Series I)
S 808-225	Calibration plate (Series I)
S 808-225A*	plug (S 871-005)
S 808-226*	sleeve (S 871-005)
S 808-228	Lowering device (Series I)
S 808-229*	Shaft (S 808-228)
S 808-230*	screw plug (S 808-228)
S 808-231*	Plate (S 808-228)

S 808-234*	Lever (S 808-228)
S 808-235*	Bearing Block (S 808-200)
S 808-237	Post for Arm Lock (Series I)
S 808-930*	Cover Cap (S 808-200)
S 808-3912*	slotted nut (S 808-228)
S 843-21*	Plug (S 871-005)
S 843-285*	cueing lever (S 856-191)
S 843-297	Gasket (Series II)
S 843-304	cueing platform (Series II)
S 840-011*	Bracket (S 856-002)
S 850-017*	Mounting stud (S 840-291)
S 850-163	Lever (Series II)
S 850-206	Belt Guide (Series II)
S 850-210	Belt lever (Series II)
S 850-211A*	Tab (S 856-002)
S 850-240*	Cueing Shaft (S 856-191)
S 850-277A*	50 HZ Motor Pulley (S 855-098)
S 850-291	Chassis Plate-movable
S 851-277A	60 HZ Motor pulley (S 859-098)
S 855-26*	Magnetic Shield (S 856-002)
S 855-069	Speed selector cam (Series II)
S 855-073	Rod (Series II)
S 855-098	50 HZ Motor with pulley
S 855-151	Insulation plate (Series II)
S 855-249	Brushed aluminum deck plate (Series II)
S 856-002	Chassis plate-fixed (Series II)
S 856-027	Rubber cushions
S 856-062	Cueing cam (Series II)
S 856-171	Tonearm board-drilled (Series II)
S 856-191	Cueing mechanism (Series II)
S 856-216	Cable (Series II)
S 858-284	Wood Base (Series II)
S 859-098	60 HZ Motor with Pulley
S 871-005	Tonearm-complete (Series II)
S 871-006*	Screw plate (S 871-005)
S 871-007*	Console (S 871-005)
S 871-058A*	Sytlus Force Arm (S 87-005)
S 871-060*	Anti-skating arm movable (S 871-005)
S 871-065	Counterweight (Series II)
S 871-067*	Sleeve for counterweight (S 871-065)
S 871-069*	Knob for counterweight (S 87-065)
S 871-072	Stylus force weight (Series II)
S 871-074*	Knbo for stylus force weight (S 871-072)
S 871-076	Anti-skating arm-fixed (Series II)
S 871-105	Anti-skating weight (Series II)
1.5h 8X10 DIN 7	Pin
2.3 DIN 6799*	Lock washer (S 808-228)
2.7X15 DIN 75	Screw

2.9 X 10 DIN 8974	Wood Screw
3 DIN 6799	Clip
3.2 DIN 125	Washer
3.2 DIN 433	Washer
3.2 DIN 433 hp	Washer
3X0.4 DIN 471	Clip
3X7 DIN 96st	Wood screw
3X10 DIN 96	Wood screw
4X0.4 DIN 471	Clip
4.3 DIN 125	Washer
5.3 DIN 125	Washer
5.3 DIN 433	Washer
6X0.7 DIN 471	Clip
6.4X0.5X11	Washer
8X3.2X0.3 DIN 2093	Washer
181 E 37	Terminal Strip (Series I)
183 e 10	Switch (Series II)
189-18	gasket (Series II)
201 e 106	Terminal block (Series II)
202 e 49*	Ground hug (S 871-005)
206 E 59	Terminal Strip (Series II)
296 E 60	Terminal strip (Series I)
207 E 14	Cable Clamp
207 E 52	Cable Clamp
207 E 53	Cable Clamp
208 E 45	Rubber grommets
250 E 11	Balls (Series I)
260e 82	Cueing knob (Series II)
260e 83	on-off knob (Series II)
287-2	washer
290e108	escutocheon (Series II)
313-157	Washer
313-159	Washer
312-160	Spacer
312-185	Spacer
312-187	Sleeve
314-42*	Stud (S 856-002)
314-44	Shaft
320-# 20	Tension Spring
320-021	Spring
320-28	Spring
321-E 26*	Pressure Spring (S 808-228)
321-25	Spring