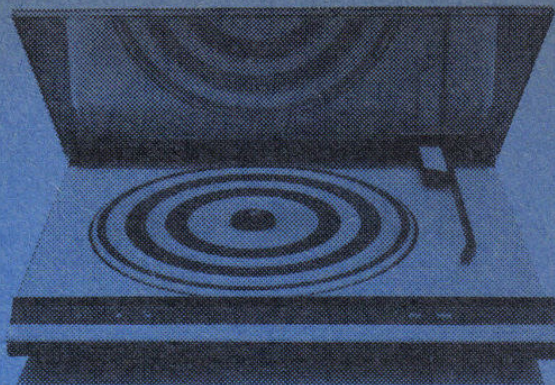


Bang & Olufsen



**- Beogram 2200**

Type 5721, 5723

**- Beogram 2400**

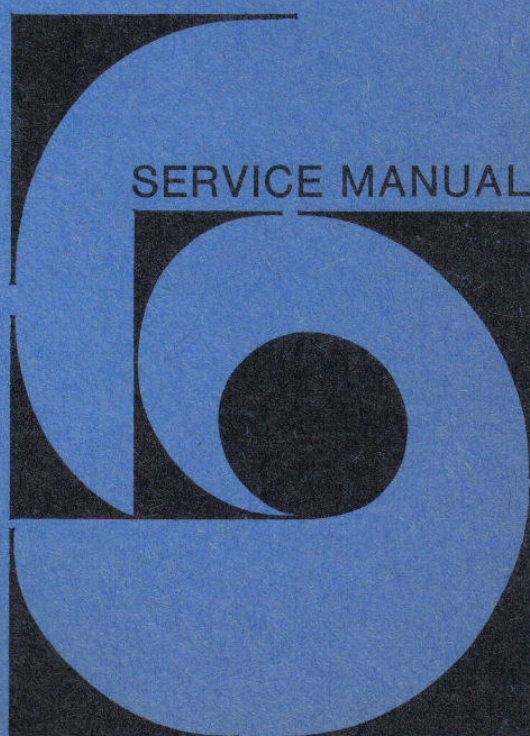
Type 5722

**- Beogram 3400**

Type 5726

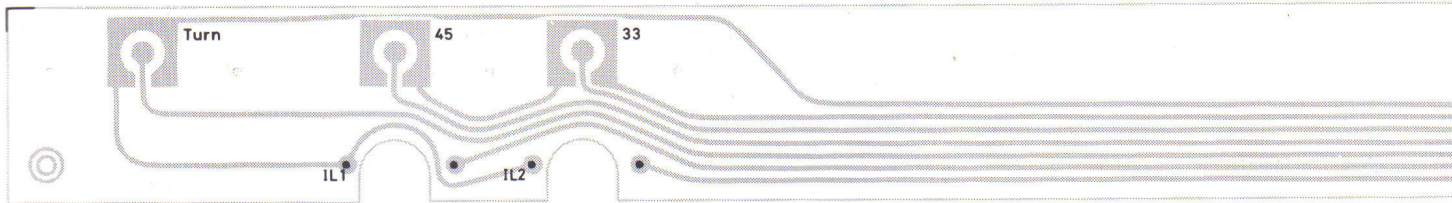
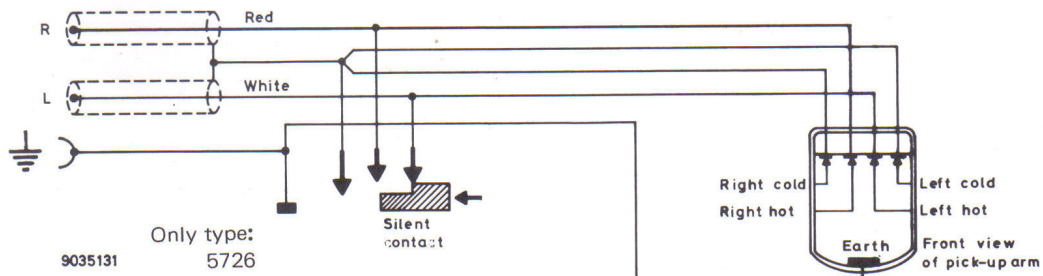
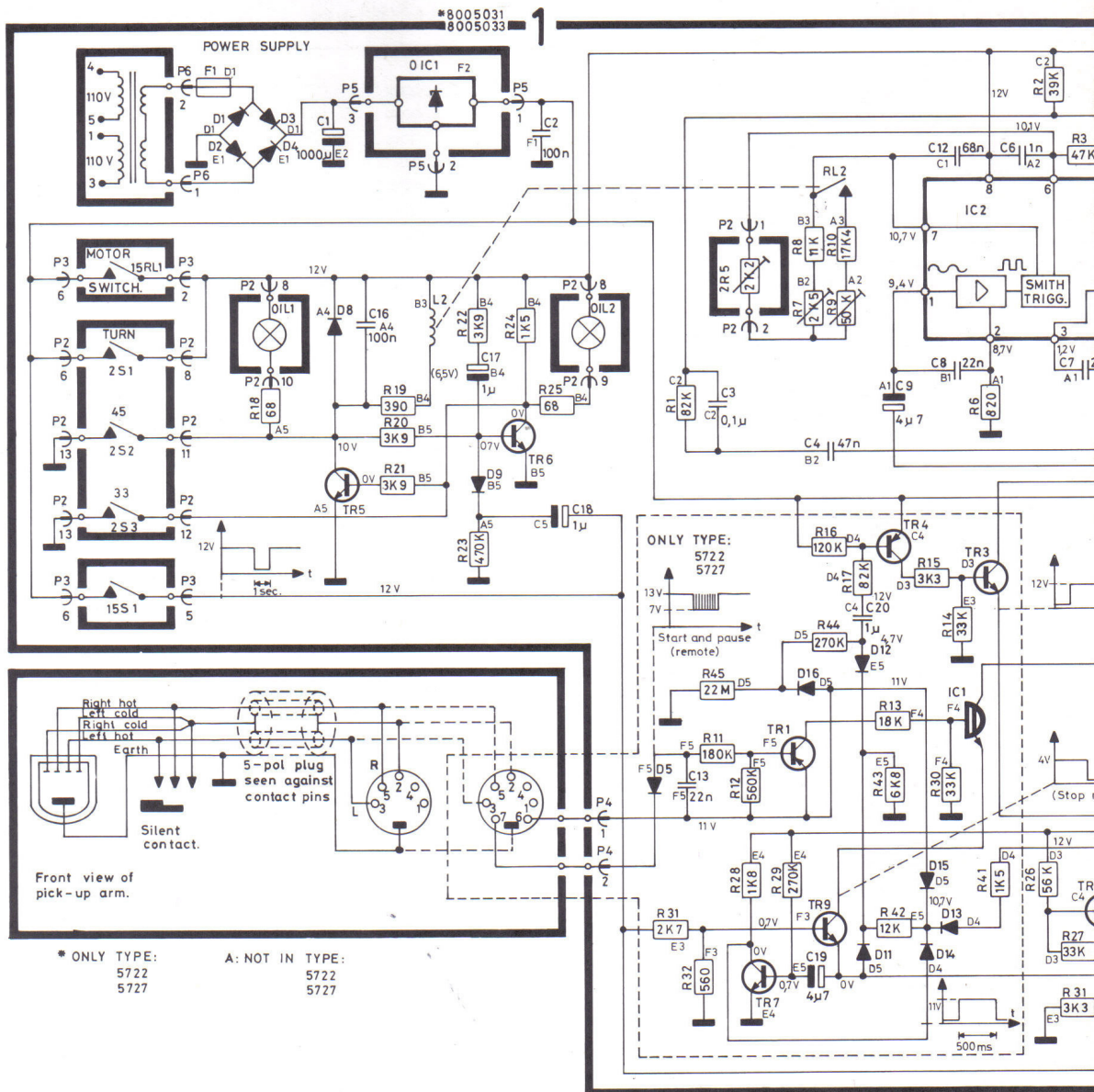
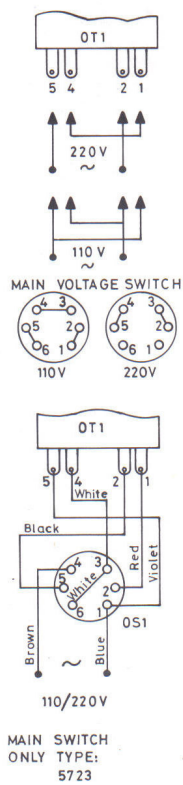
**- Beogram 3404**

Type 5727

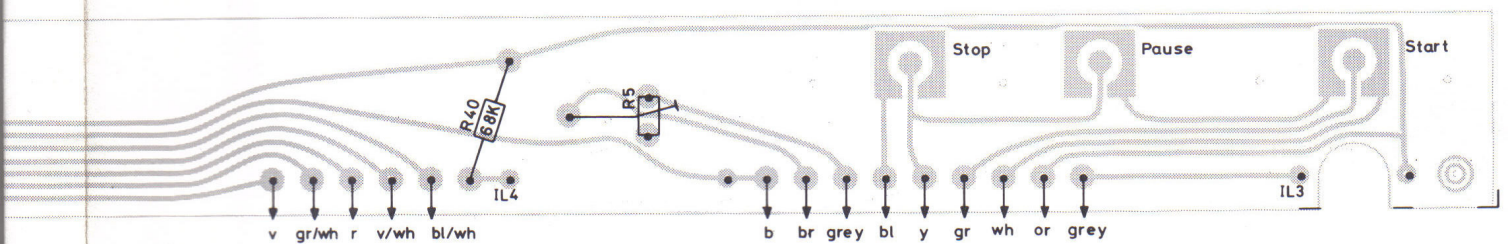
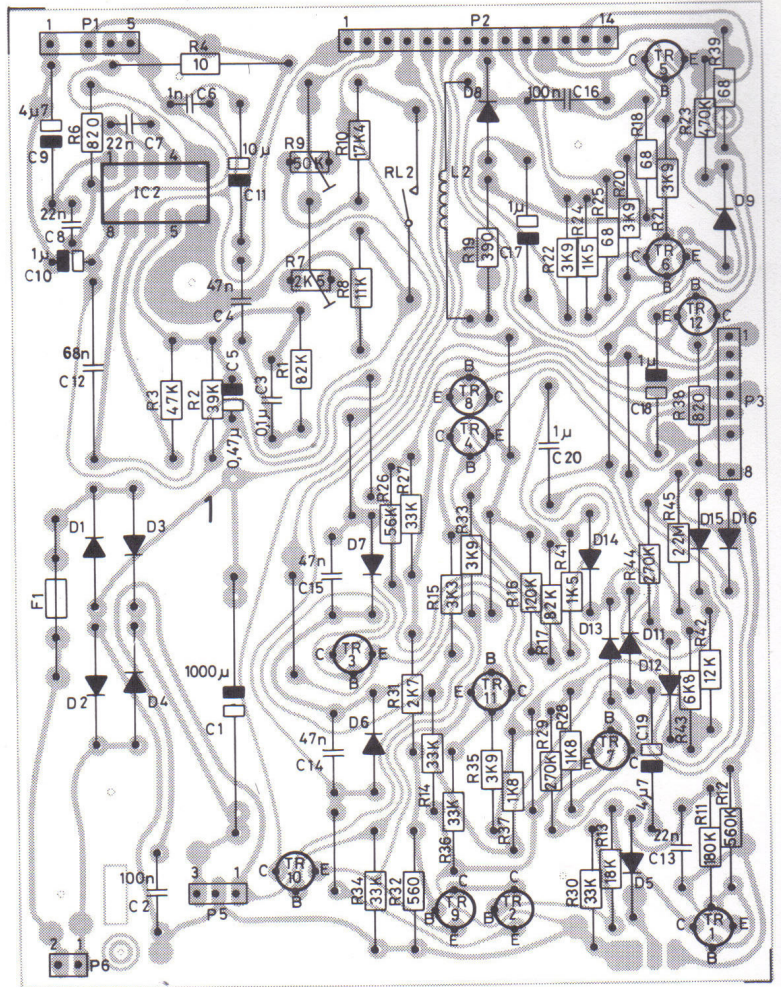
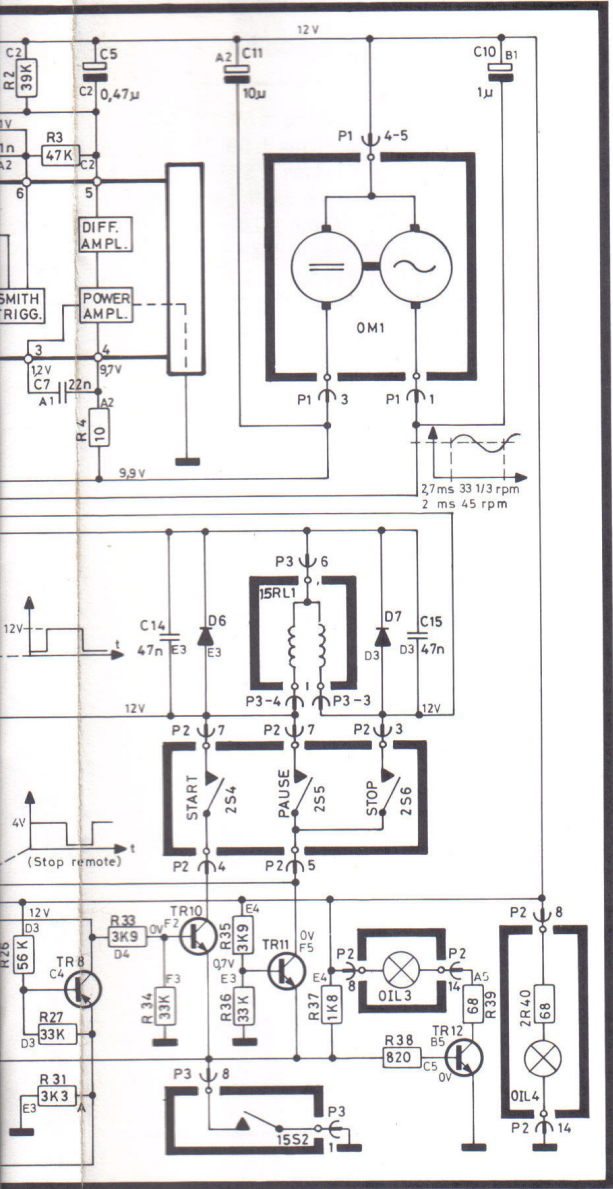




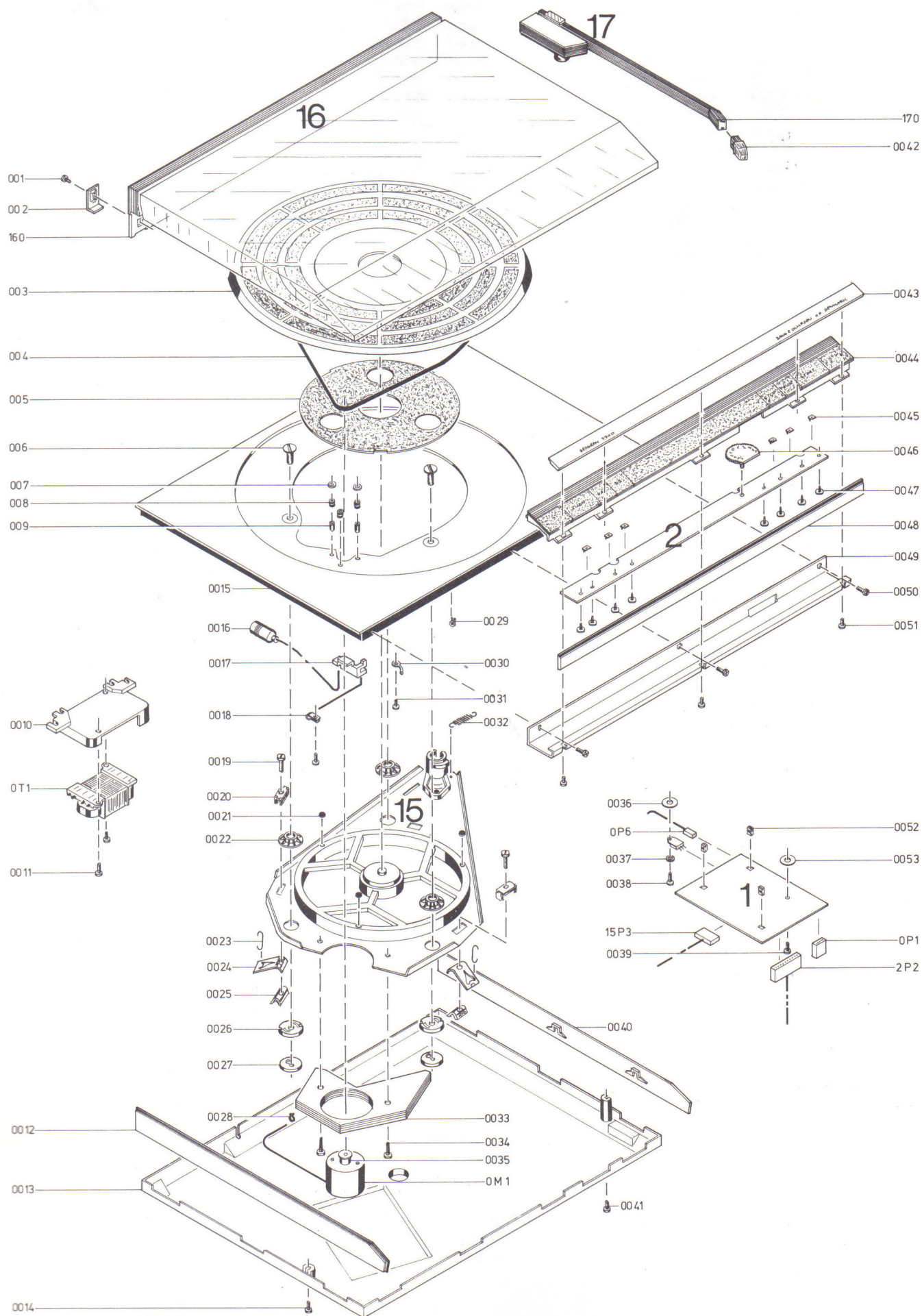
# Bang & Olufsen

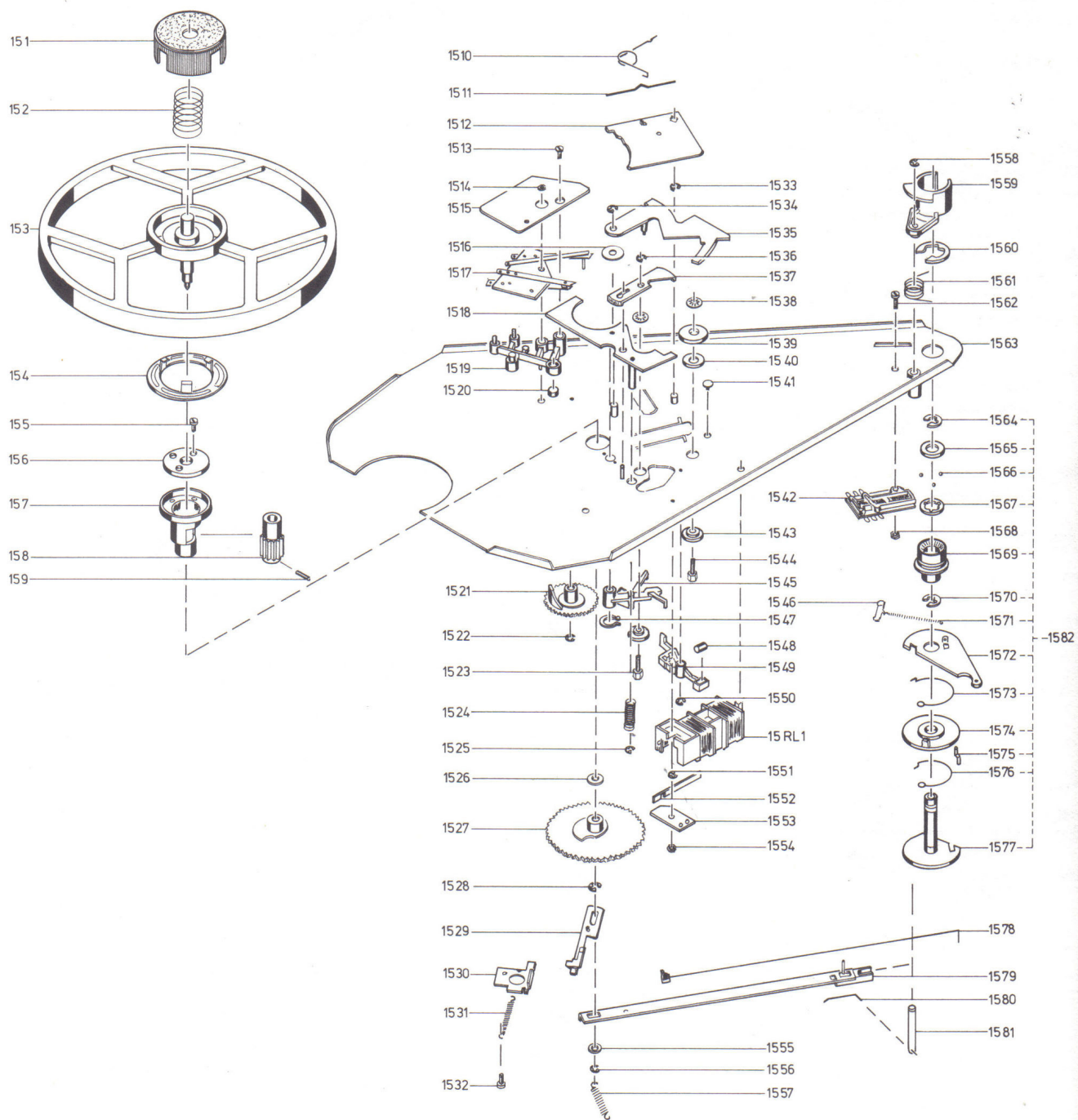






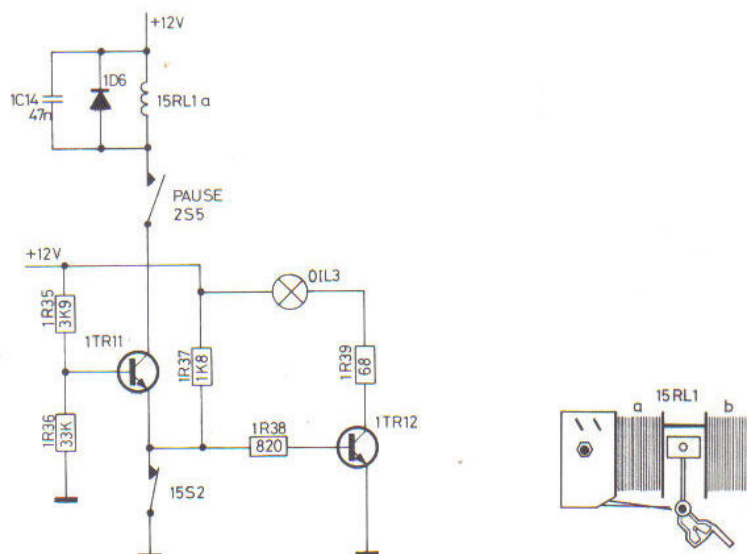






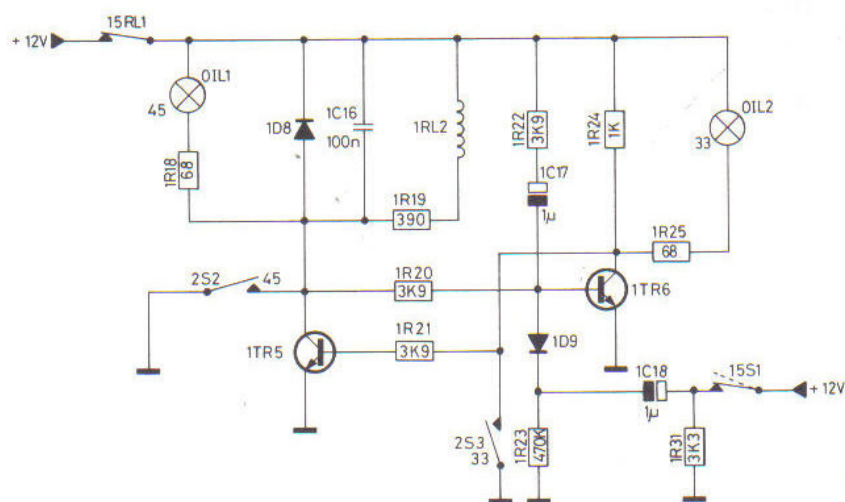


## Pause



With PAUSE (2S5) depressed, the a-section of 15RL1 is operated. The cam-lifting wheel goes into mesh such that the pickup arm rises but does not travel out. The cam-lifting wheel goes into the stop position, and voltage is removed from the motor servo circuit, speed-change selector circuit and control circuit (15RL1). When START is depressed, voltage is applied to the circuits just referred to; the turntable rotates; and the pickup arm is lowered.

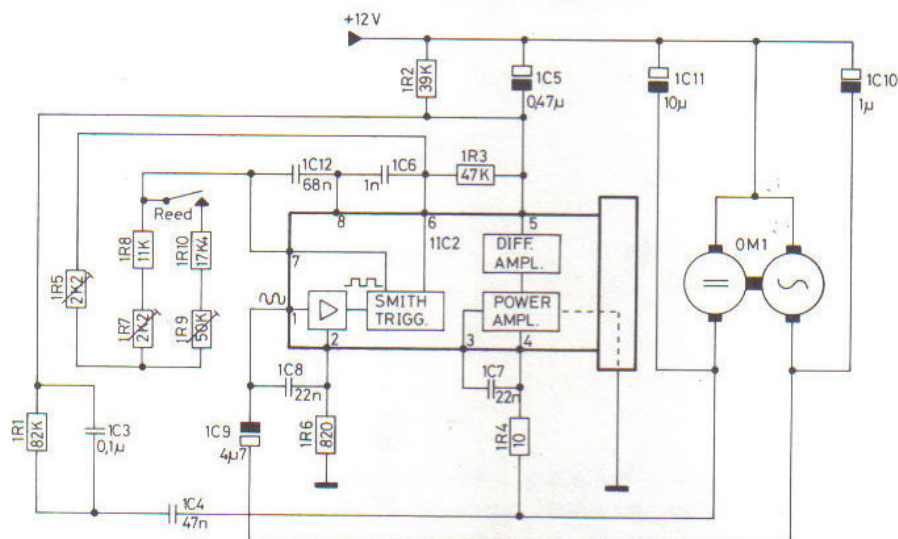
## Speed Changing



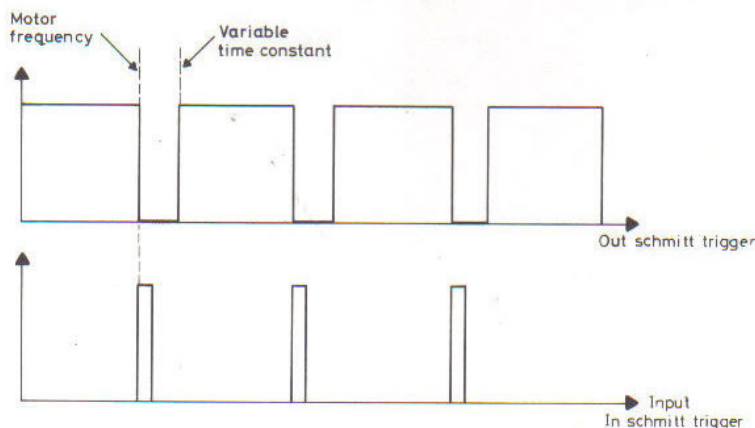
Speed changing is carried out by means of a flip-flop. When the mechanical relay (15RL1) is operated, voltage is applied to the circuit. 1C17 will charge through 1R22. The charging current in 1C17 will forward-bias 1TR6. The collector of 1TR6 goes low and 0IL2 lights; also, the base of 1TR5 is connected to chassis potential through 1R21 and 1TR6. The collector of 1TR5 goes high and keeps 1TR6 forward biased through 1R20. Since 1TR5 does not draw collector current, the reed relay 1RL2 is not operated, and the turntable rotates at 33 r.p.m.

At 33 r.p.m. 15S1 is operated and 1C18 carries a full charge. When the speed changes automatically to 45 r.p.m. 15S1 opens momentarily. When 15S1 opens, 1C18 discharges through 1R31. The cathode of 1D9 becomes negative, and 1TR6 is reverse biased through 1D9. The collector of 1TR6 goes high; this high level is transmitted via 1R21 to the base of 1TR5 as forward bias. The collector of 1TR5 goes low; 0IL1 lights; reed relay 1RL2 is operated; and the speed changes to 45 r.p.m. Manual speed changing is carried out by means of 2S2 and 2S3. 1C16 and 1D8 protect the electronics against induction peaks from the reed relay.

## Motor Servo Circuit

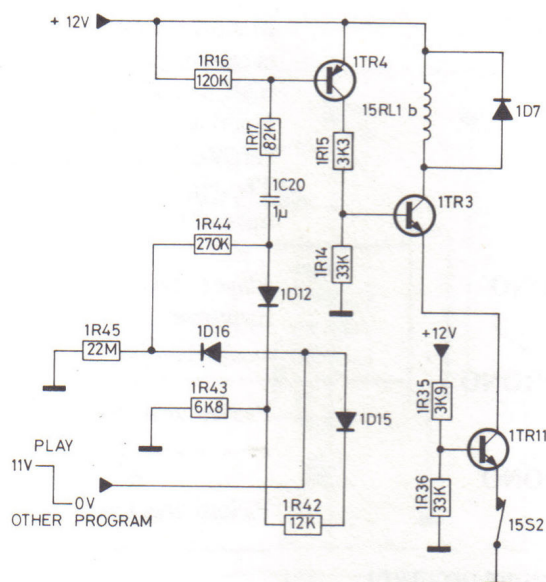


The record player's turntable is driven by a tacho-controlled DC motor. A generator in the motor delivers an AC voltage whose frequency is dependent on the motor speed. This AC voltage is fed via 1C9 to pin 1 of 11C2. The AC voltage is converted into a square-wave, which is fed on to a Schmitt trigger. The square-wave frequency, being dependent on the motor speed, controls one output level of the Schmitt trigger; the other output level is controlled from a variable time constant consisting of 1C12, 1R7, 1R8, 2R5 for 33 r.p.m. and 1C12, 1R7, 1R8, 1R9, 1R10, 2R5 for 45 r.p.m.

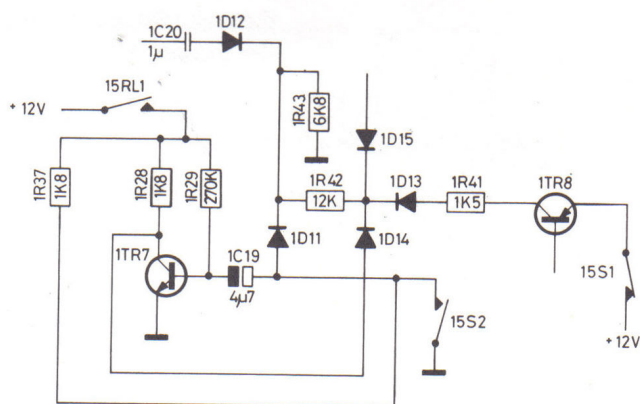


The Schmitt trigger output signal (pin 6) is integrated via 1R3 - 1C5 and fed to pin 5, which is a differential amplifier. The integrated signal at pin 5 will be a DC voltage which varies in proportion to the motor speed. This DC voltage is fed via the differential amplifier to a power amplifier. The power amplifier is placed like a variable resistor whose other end connects to chassis potential. 1R4 limits the motor current and hence the motor speed, thereby preventing the circuit from »taking hold« at a harmonic frequency from the motor's tacho generator.





During play, the anodes of 1D15 and 1D16 receive 11 V. The 13 V potential is routed through 1D15 and divided across 1R42 and 1R43 such that the cathode of 1D12 is at approx. 4 V. The 13 V potential is likewise routed through 1D16 and 1R44 to the anode of 1D12 and clamped by 1D12 to the 4 V potential at its cathode, and 1C20 charges to approx. 7.5 V. When another program – or stand by – is selected, the 11 V potential at the anode of 1D16 disappears, and 1C20 discharges through 1D12 and 1R43. This discharge current provides forward bias for 1TR4. The collector of 1TR4 goes positive. This positive voltage is applied to the base of 1TR3 as forward bias; the b-section of 15RL1 is activated; and the cam-lifting wheel engages for stop.



To avoid incorrect functioning such as may be caused by mechanical tolerances it is ensured that 1C20 is always charged (cathode of 1D12 at approx. 4 V) when the player is to go into stop.

With a record on the turntable and the player at stop, the cathode of 1D12 receives voltage through 15S1, 1TR8, 1R41 and 1D13. When PHONO is operated, the pickup arm begins to travel in; 1TR8 cuts off; and the cathode of 1D12 receives voltage through 1D15.

Simultaneously therewith 15S2 opens, and since 1TR7 is forward biased through 1R29, 1C19 will charge through 1R27. If another program is selected while the pickup arm is travelling in, the voltage at 1D15 disappears, and the cathode of 1D12 receives voltage through 1D11. When the pickup arm has travelled all the way in, 15S2 closes, and 1C19 discharges to bias 1TR7 in the reverse direction. The collector of 1TR7 goes high. This high level is applied to the cathode of 1D12 through 1D14 until 1C19 has discharged, whereupon the cathode of 1D12 goes low and 1C20 discharges. The time it takes for 1C19 to discharge secures that the mechanical relay will have time to be placed in a position that enables activation of the relay's stop section before 1C20 discharges.