

TECHNICAL MANUAL

SPARTA

GT-12 TURNTABLE

## INSTRUCTIONS FOR OPERATION 2 SPEED TRANSCRIPTION TURNTABLES

SPARTA Turntables are shipped completely assembled. Shipping materials such as blocks, cardboard, etc., should be removed and the table thoroughly checked for possible damage incurred in transit.

Connect 115V 60 cycle AC (unless otherwise ordered or specified) only to terminals marked in red.

**INSTALLATION:** The table should be solidly mounted to operating table or desk. **DO NOT USE SPONGE RUBBER OR OTHER RESILIENT MATERIAL BETWEEN TURNTABLE CHASSIS AND MOUNTING SURFACE!** This is especially important where reproducer arm is of such length that it cannot be mounted directly on the turntable chassis.

**OPERATION AND ADJUSTMENTS:** Turntable speed is controlled by 3 factors: (1) speed of motor in RPM, (2) diameter of motor pulley (capstan) (3) diameter of inside rim of turntable. Diameter of idler has no effect on table speed, hence no speed change occurs as idler wears. Speed change is made by placing speed change arm in one of the two slots, top for 33-1/3, and bottom for 45 RPM. A "Neutral" position is provided between the slots, and when not in use the shift arm should be left in neutral position to prevent "flats" on the idler.

Both of the slots have an adjustable stop which limits the travel of the arm. While a slight change can be made in table speed by adjusting these stops, their purpose is to limit the pressure between motor pulley-idler and table rim. **INITIAL ADJUSTMENT IS AS FOLLOWS:** Screw in (clockwise) (45 RPM) screw until motor ceases to drive table, then back out screw slowly until just enough pressure is applied to give satisfactory acceleration. Best results will be realized by using the least possible pressure consistent with adequate driving power. Too much pressure will cause undue wear on the idler, cause incorrect speed and induce vibration.

**LUBRICATION: MAIN TURNTABLE SHAFT:** Main turntable shaft should be wiped clean with clean lintless cloth and bearing well should be cleaned with cloth wrapped around wooden dowl to remove gummy deposits of dirt and oil. Relubricate by applying lubriplate #3 Special Product Oil. If not available use S.A.E. 30 automotive oil. A small dab of Lubriplate should be applied to the ball on the end of turntable shaft. This lubrication procedure should be followed every two weeks -- every week if table is used in a 24 hour operation.

**IDLER BEARING LUBRICATION:** The idler bearing is made of oilite; a material consisting of small bronze particles pressed together with microscopic passages between them. These passages are impregnated with oil. This bearing material contains enough oil for several years of bearing life. Should the idler tend to become stiff on the shaft and not rotate freely, this would indicate that the bearing no longer has sufficient oil for lubrication. At this time the idler should be removed, the shaft and bearing wiped thoroughly with a clean lintless cloth and the bearing relubricated with a light oil such as 3 in 1 oil.

BODINE SYNCHRONOUS MOTOR: This motor is equipped with oil cups located on the side of top and bottom bearing. The bearings on these are of the solid bronze sleeve type, equipped with a felt wick to carry oil to the shaft. Ordinary lubrication at two month intervals with a couple of drops of oil per bearing is sufficient. Grade #10 non-detergent oil is recommended.

UNIVERSAL ELECTRIC FOUR POLE MOTOR: This motor comes equipped with oilite bearings and ordinarily needs no lubrication attention during its life. If the turntable is located in an unusually hot location it is possible for the oil in these bearings to change viscosity to the point where the motor shafts will be so stiff that the motor will have trouble starting. Under these conditions, the motor should be removed from the turntable, disassembled, and the bearing and shaft cleaned. The bearing then should be thoroughly saturated with a light oil such as 3 in 1. The motor then can be reassembled, reinstalled on table and table restored to further usage.

IDLER ADJUSTMENTS: Note that the motor is attached to its hanger with screws or bolts through elongated holes. If, due to wear, (reduction of diameter) of the idler, it becomes impossible to secure adequate driving power with the shift arm at the extreme left hand end of the speed selector slot, moving the motor toward the rim of the table will give correct driving pressure more toward the center of the speed change slot. If a new idler makes it impossible to obtain a "neutral", the motor is simply moved away from the table rim until a suitable arm position in the slot is obtained.

IDLER DRIVING SURFACE: It is extremely important that the driving surface of the idler and the inside rim of the turntable be kept clean of oil or other contaminating substances. During the first few weeks of operation, the idler driving surface and the inside rim of the table should be cleaned with methyl alcohol at weekly intervals. No further attention should be needed unless these areas are subject to oil overflow from the idler due to over-lubrication. If the idler or table rim becomes contaminated with oil, the only satisfactory solution is to clean the table and idler thoroughly with hot water and detergent.

NOISE, HUM, RUMBLE: Many pickups are subject to hum caused by the magnetic field of a motor. Before installing pickup arm on table, it is wise to move the pickup head to various locations on the platter, with the motor operating but with the idler in "neutral". This should help in locating the mounting position of the arm which will cause the least hum. Noise is divided into two classes, mechanical and electrical.

Noise that can be heard without amplifier or pickup in operation, can usually be traced to its source by comparing the noise with the speed of the motor, idler or table itself. If noise is constant at all speeds it probably originates in the motor. If it increases with table speed, but its frequency is greater than table speed, it can usually be traced to the idler. If the noise varies with table speed and has the same frequency, look for something on the table rim, such as oil, dirt or possibly a crack in the table casting. In the case of noise traced to the idler, look for dirt on idler driving surface, pits, or foreign material imbedded in idler driving surface. Check felt thrust bearing under idler to be sure idler is not riding directly on metal boss at bottom of idler shaft. Too much idler tension can cause idler to rise on its shaft and noise is heard as the idler contacts the idler retaining ring.

Rumble more or less constant at all table speeds can usually be traced to the capstan. Again, too much idler tension will aggravate rumble caused by an out of round or wobbly condition in the capstan, (motor pulley). Noise caused by "flats" in the idler will run out in a few minutes because of the "self-healing" nature of the neoprene used in the idlers. Put table in 45 RPM position and let run for a few minutes.

SPARTA ELECTRONIC CORPORATION will be glad to assist in any problems in connection with operation or maintenance of the tables. To insure a minimum of delay, please give as much information as possible in connection with the problem, such as serial number of table, date purchased, whether problem is new or of long standing, type of pickup and arm used, whether problem is different at different table speeds, whether it is only in evidence when idler is driving table, etc. The more information supplied, the easier it will be to provide suggestions to eliminate the difficulty.

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TURNTABLE  
PARTS LIST (Replacement)

PART NO.	DESCRIPTION
890-2010	Platter
2015	Platter bearing assembly
2020	Shift knob and set screw
2025	Shift lever and nut
2035	Shift mechanism vertical compression spring and hardware
2040	Shift mechanism return spring
2045	Paddle switch assembly
2050	Paddle assembly microswitch
2055	Indicator lamp
2060	Capstan and set screws
2065	Idler wheel
2070	Idler wheel arm assembly
2075	Idler wheel adjusting screws
2080	Motor (sync.) and mounting hardware
2085	Sync motor end play adjustor
2090	Sync motor capacitor
2095	Motor capacitor mounting bracket
2100	Motor (4 pole) and mounting hardware
2105	Motor mounting plate
2110	Shock mounts (motor) and hardware
2115	Switch capacitor
2120	Terminal strip
2125	Grounding strap
012-0590	Microswitch