

INSTRUCTION BOOK

Models CB-77 and CB-500 Turntable Chassis

No. IB-888 0557 001

1. INTRODUCTION

The CB-77 and CB-500 chassis are essentially identical in design other than the size of the turntable platter. Both models are accurately designed with a very high degree of machining tolerance. Because of a new platter design, new hysteresis synchronous motor, use of oilite bearings throughout and Monoball self-aligning bearings, a new performance standard in low rumble and flutter is obtained. Important is a new silent operating rocker type starting switch, suggested to replace the older slip cueing operating methods.

2. INSTALLATION

- (a) Lift platter from turntable prior to removal of turntable from container. Then remove chassis.
- (b) Remove metal bar that holds control mechanism in neutral position.
- (c) Add teaspoon of oil (supplied) to large center bearing housing that holds platter spindle. Now insert platter.
- (d) Cut rectangular hole in desk (19-1/2" wide and 19-1/4" deep for CB-500) or (14-3/4" square for CB-77). The control lever and switch should be to the front left.
- (e) The rubber stripping on the bottom of the turntable main casting should fully insulate the chassis from the cabinet or table. The weight of the turntable and gripping action of the rubber stripping should eliminate the need to bolt the chassis to the desk.
- (f) Using a spirit level, make sure the turntable is level. Gates cabinets have leveling screws for this purpose. If you are mounting on your own cabinet or table, shimming may be necessary. Improper leveling will cause record groove skipping and unnecessary record wear.

3. OPERATION

- (a) Speeds may be selected by moving the control lever to the desired index.
- (b) Motor switch is at "ON" position when illuminated. Note the silent smooth operation to replace need for slip cueing.

4. MAINTENANCE

- (a) Clean and oil monthly as follows: Refer to Figures 1 and 5. Place a drop of oil at each point marked "O". Do not over-oil as the oil will be thrown to the idler wheel and platter, causing slippage. Never use oil with a paraffin base. Gulfoil Electric Motor Oil may be used as a substitute.
- (b) Keep oil off of idler wheel surface and inner platter hub surface. Wipe off thoroughly with lighter fluid or similar solvent on a lint-free cloth.
- (c) Instruct operators to always leave speed shift lever disengaged (Neutral) when turntable is not in use. --- If left engaged by error, a thump will be heard, caused by a flat spot on the rubber idler wheel. This will usually run out by allowing the turntable to revolve a few minutes at the speed which the lever was accidentally left engaged. We suggest purchasing a spare idler wheel A-10857-101.

5. OPERATING SPECIFICATIONS

Line voltage: 105-125 volts, 60 cycles.*

Speeds: 33-1/3 --- 45 --- 78.28 RPM.

* 50 cycle model available on special order.

HELPFUL HINTS FOR GOOD OPERATIONS

- DO NOT leave speed change lever engaged when turntable is not in use.
- DO NOT remove drive pulley from motor. This is carefully aligned at the factory to assure positive drive and wow-free operation.
- Remember the CB-500 turntable is designed for very low rumble and flutter. Because of this, the power transfer between motor and platter is entirely new. It will be possible to stop the platter by moderately pressing the finger on the record. This can be understood when it is explained that heavy drive pressures create rumble. Thus, the CB-500 is a floating positive drive but pressure is regulated in the design. We urge switch starting in place of slip cueing.
- Today's pickups are very low in level. Good shielding of pickup wires and grounding of shielding and turntable casting is imperative.

---- The choice of transcription pickup and arm is very important. A poor arm may induce resonance that will actually multiply the rumble content in a turntable --- no matter how low.

IMPORTANT

--- In case of damage in transportation, notify the delivering carrier at once. After he has approved the damage report, which indicates he will accept your billing for the damage -- order new part/s from Gates. Our billing for these parts, plus transportation expense, will be your claim to the transportation company.

PARTS LIST

PARTS LIST COMMON TO
CB-77 AND CB-500 TURNTABLES

Item	Part No.	Description
5	926 7605 001	Motor plate & shockmount assembly
6	910 2400 002	Center bearing housing assembly
7	911 0857 001	Idler wheel assembly
8	913 1606 002	Speed change arm assembly
10	911 0869 001	Idler arm assembly
11	811 0837 001	Change arm support
12	811 0836 001	Speed change shaft
13	811 0845 001	Speed change stud
14	811 0829 002	Stop collar
15	456 0056 000	Spring for ball detent
16	811 0863 001	Idler arm shaft
18	811 0833 001	Spacer for ball joints
22	811 0843 001	Control arm pivot block
23	811 0841 001	Control arm bearing
24	811 0842 002	Speed control link
25	813 1591 001	Speed change lever pivot pin
26	911 0868 002	Speed control link assembly
28	914 2978 001	Speed change arm bearings
29	450 0003 000	Ball joint (female)
31	813 1592 001	Idler spring stud
33	913 5785 001	Motor assembly
34	250 0026 000	A.C. line cord
36	406 0009 000	Socket
37	396 0111 000	Lamp, double contact bay. 130V. 6W.
38	650 0033 000	Knob, 1" dia.
40	604 0135 000	Mercury switch
42	926 5797 001	Switch assembly
43	813 1595 001	Switch stop
44	813 1611 001	Switch shaft support
49	450 0007 000	1/2" dia. ball bearing, steel
57	646 0478 000	60 cycle Stroboscope
65	450 0006 000	5/32" dia. ball bearing, steel
68	358 0413 000	Retaining ring, 7/16"
69	357 0004 000	W27 Nylon washer, 1/32" thick
70	913 1648 001	Filter assembly
72	358 0411 000	Retaining ring, 1/4"
76	450 0004 000	Ball joint (male)
77	510 0366 000	Motor capacitor, 2.0 uf
86	424 0062 000	Handle stop
20	456 0051 000	Idler Tension Spring

PARTS FOR CB-500 CHASSIS ONLY

Item	Part No.	Description
2	842 2404 001	Turntable base
3	913 1605 001	Turntable platter assembly
4	842 2403 001	Motor plate
9	646 0447 000	Control plate
19	813 1590 001	Idler control rod
27	813 1594 001	Control arm
32	723 0248 000	Turntable felt
47	041 1310 020	Sponge rubber stripping, 1/2 x 9/16 x 85" lg.

PARTS FOR CB-77 CHASSIS ONLY

Item	Part No.	Description
2	842 2591 002	Turntable base
3	913 1605 003	Turntable platter assembly
4	837 8456 002	Motor plate
9	646 0449 000	Control plate
19	813 2284 001	Idler control rod
27	813 2282 001	Control lever
32	723 0247 000	Turntable felt
47	041 1310 020	Sponge rubber stripping, 1/2 x 9/16 x 66" lg.

1. IDLER WHEEL HANGS UP ON MOTOR PULLEY

The rubber idler wheel is factory adjusted to have 1/64" clearance between each step on the motor pulley and bottom of the drive surface of the wheel when at 33-1/3 or 45 RPM positions. (See Fig. 3). When control lever (Fig. 2) is at neutral, a 1/64" clearance should prevail between driving surface of idler and motor pulley. To check clearance, place control lever at neutral, slide idler wheel all the way back on the idler arm (Fig. 5). If insufficient clearance at these two points, the idler will hang up on the motor pulley.

To adjust, lengthen or shorten rod which engages idler (Fig. 1) by backing off locknut on the ball joint, and removing fillister head screw at bottom of idler assembly (Fig. 5). Turn ball joint in or out a half turn at a time until proper clearance is obtained. Excessive clearance will prohibit idler to seek location when "floating" from one speed change to another. Be sure to replace lock washer and tighten locknut (Fig. 5).

The idler may hang up on the motor pulley if the control lever is not properly adjusted in relation to the three index slots on the speed shift plate. --- In this case, remove platter, place idler in 45 RPM position. The control lever should be perfectly centered at 45 RPM. If lever is not centered, remove one of the screws on the ball joint transfer mechanism (Fig. 1) just below the control lever. Turn ball joint in or out about a half turn until lever is centered in slot.

2. IDLER WHEEL WILL NOT FLOAT PROPERLY

The CB-500 is equipped with a floating idler wheel. This allows the idler to seek the proper position between the motor pulley and the drive surface of the platter (Fig. 5). If the two shafts (on which the idler floats) should become dirty, the idler will not move back and forth when changing from one speed to another. This will result in the loss of speed and torque, or possibly the platter may start with a jerk.

To correct, remove the idler from the two shafts and wipe the shafts with a clean cloth. Place a drop of oil on each shaft and replace the idler. Move the idler back and forth by hand until it slides freely. Repeat the operation, if necessary, to clean the holes in the block.

The idler will not float if the clearance between the idler and pulley is not correct. See preceding Section #1 for treatment of this condition.

3. CONTROL LEVER SHIFTS HARD: TOO MUCH PLAY

Keep all the moving joints and pivot points clean and well oiled. This will help to keep the control lever moving freely.

If the control lever has considerable play and does not move easily, it is possible that some of the hardware has become loose in shipment or usage. There may be too much clearance between the pivot blocks or some of the pivot pins are loose. (See Fig. 4). Loosen the screws that mount the pivot blocks to the motor plate. Also loosen the set screws which hold the pivot shafts in place. Squeeze the pivot blocks together and tighten the mounting screws and set screws. Move the parts back and forth while tightening the screws so they will not bind.

4. TORQUE

Torque is affected greatly by the idler hanging up or not floating properly. These two problems can be corrected by following instruction #1. The set screws, located in front of the index plate are not torque adjustments. They are for the purpose of preventing the idler wheel from pulling in too far when the platter is being accelerated.

They are properly adjusted when there is about 1/64" gap between the shift lever arm and the rubber tip on the set screw, observed while the turntable is running and engaged in one of the three speeds. Check each of the three speeds to see if the set screws are in the proper position. If the arm is allowed to ride on the rubber tips during operation, the rumble level will be increased. Turning the set screws in too far will result in loss of torque.

Torque is also affected by dirt or oil on the idler wheel, motor pulley or platter. Oil on the driving surfaces will cause the platter to slip. Clean these surfaces as indicated in the MAINTENANCE section.

5. TURNTABLE WILL NOT START SMOOTHLY

If the idler wheel hangs up on the motor pulley, the platter will start with a sudden jerk. This is also caused by failure of the idler to float freely as you change from one speed position to another. Correct these faults as outlined in instruction #1.

6. PLATTER WOBBLE

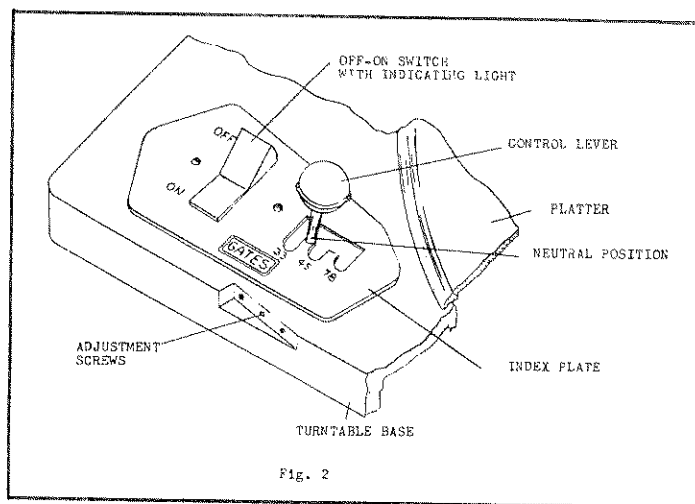
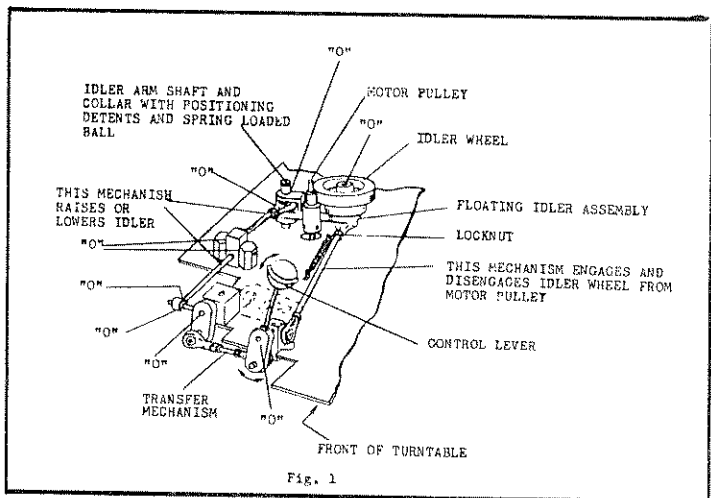
The CB-500 is equipped with a hardened, ground center spindle and runs in a porous type bronze bearing which retains the oil for a long period of time.

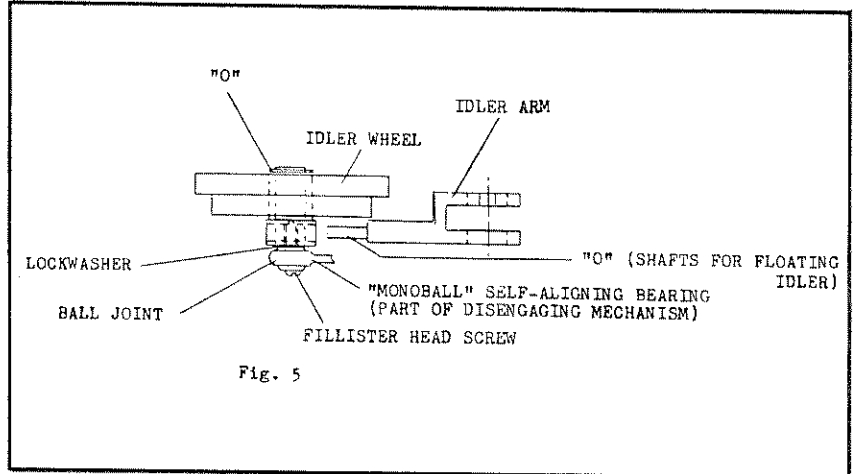
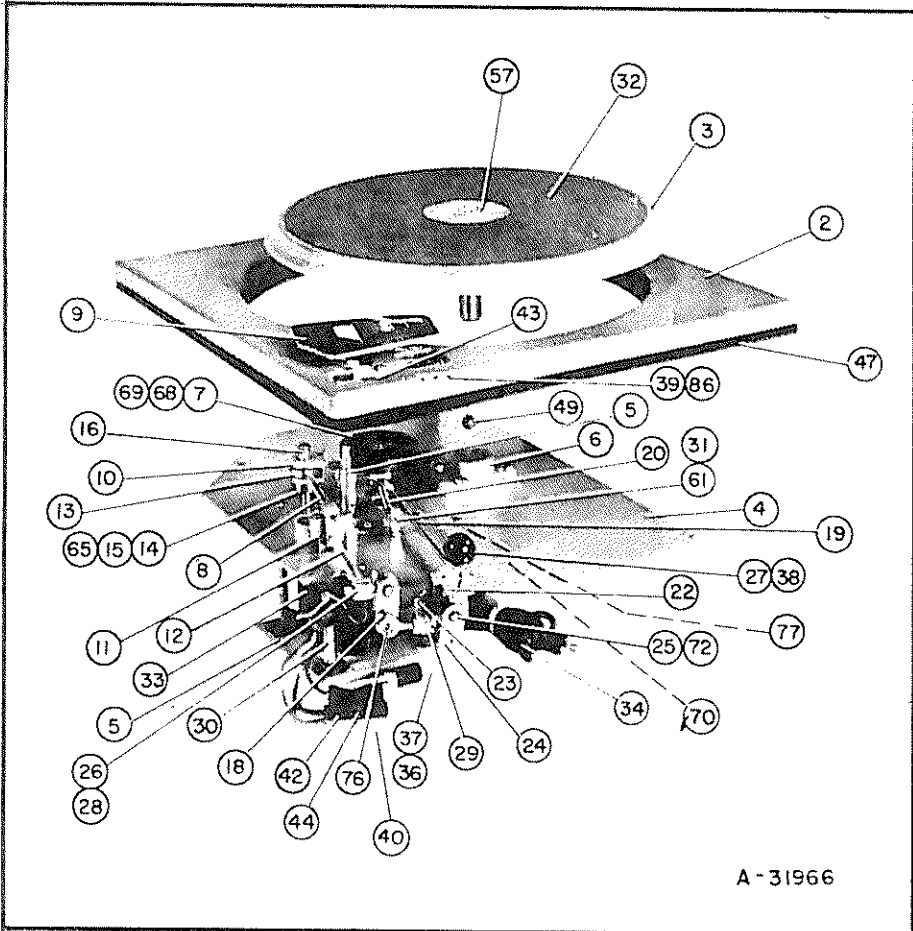
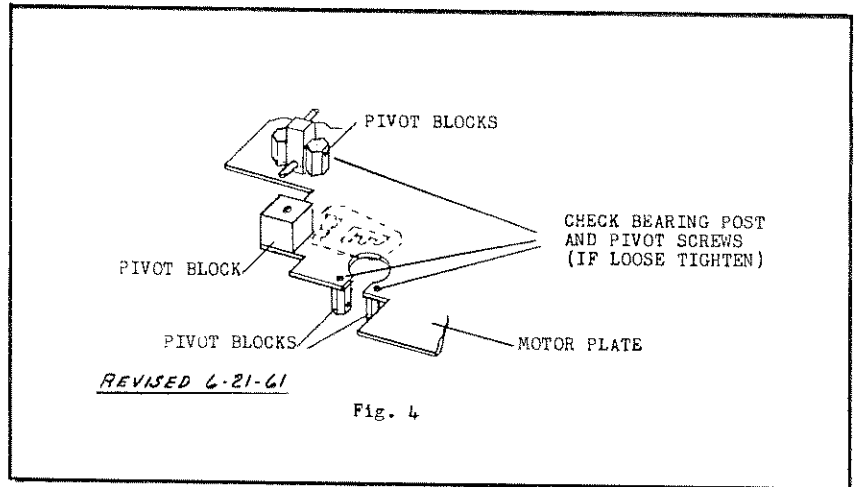
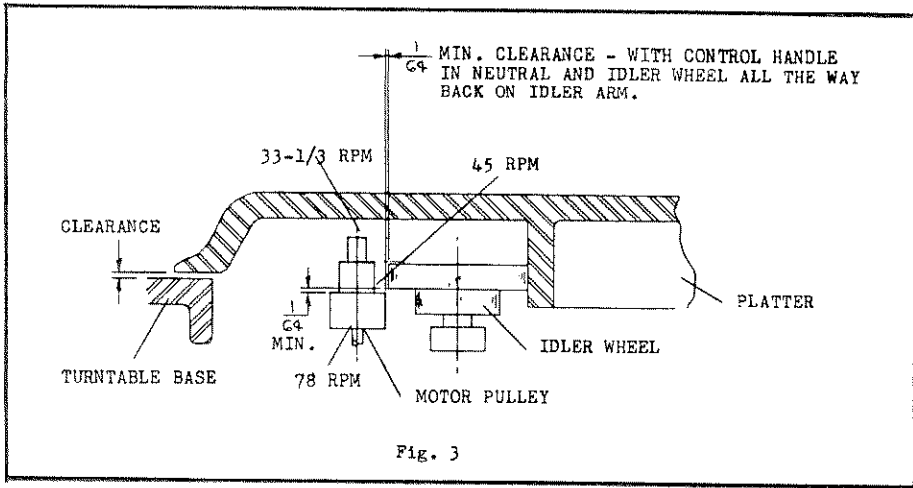
If the oil supply in the center bearing housing should get low, and the platter seems to wobble slightly when you press on the outer rim, simply replenish the oil and the wobble will disappear.

Very little wear will occur on the center spindle or bearing even after long periods of operation.

7. WOW

This could be caused by low torque, idler wheel hang up or failure of idler to float properly. The adjustments are covered under instructions #1, #2 and #4.





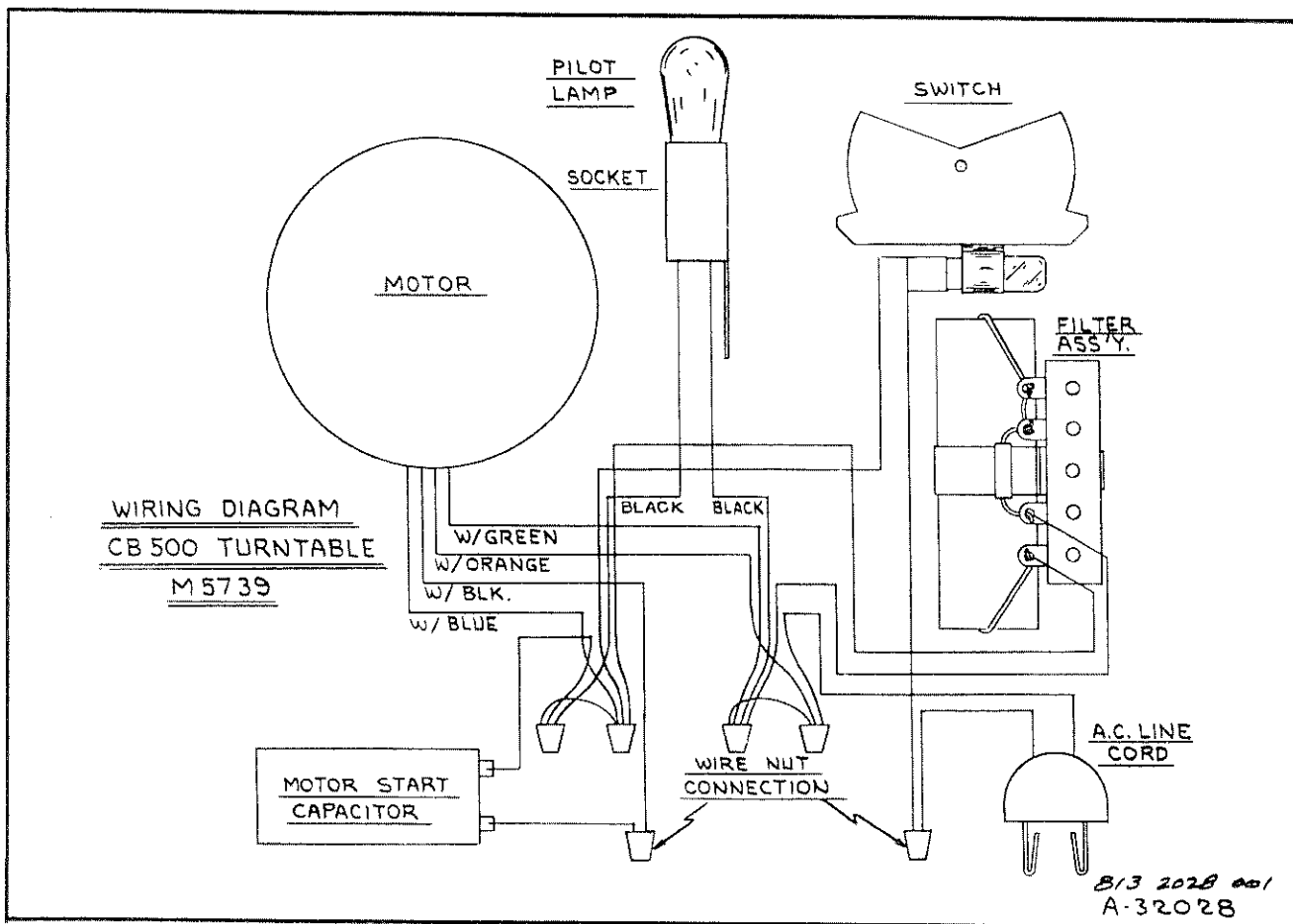
SERVICE PARTS

Service parts for Gates transcription turntables may be obtained from either of the following addresses:

Gates Radio Company - 2700 Polk Ave. - Houston 3, Texas

Gates Radio Company - 123 Hampshire St. - Quincy, Illinois

Always order parts by catalog number to save time.



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