



Series Z Turntables

Owner's Manual

Model 20Z | Made in U.S.A.

Important: Read this manual completely before attempting to operate.

Unpacking The Unit:

1. Remove the top cardboard pad.
2. Grasp the dust cover and lift straight up.

3. To remove the unit, grasp the front and rear and lift up. As you do this the styrofoam fillers will come out.

4. Packed in the styrofoam filler are the following:

- Tonearm Counterbalance Wgt.
- Manual 45 RPM Adaptor
- Cartridge Mounting Hardware and Extra Shell Retaining Screw.

- Screwdriver
- Dust Cover Hinge Pins (2)*
- Automatic Spindle
- Manual Spindle

Remove all accessories and put aside. If possible, the packing should be retained in the event reshipment is necessary. If you must discard the packing, make sure all the accessories are accounted for.

5. Remove all plastic film and DISCARD. THIS MATERIAL CAN BE HAZARDOUS TO CHILDREN.

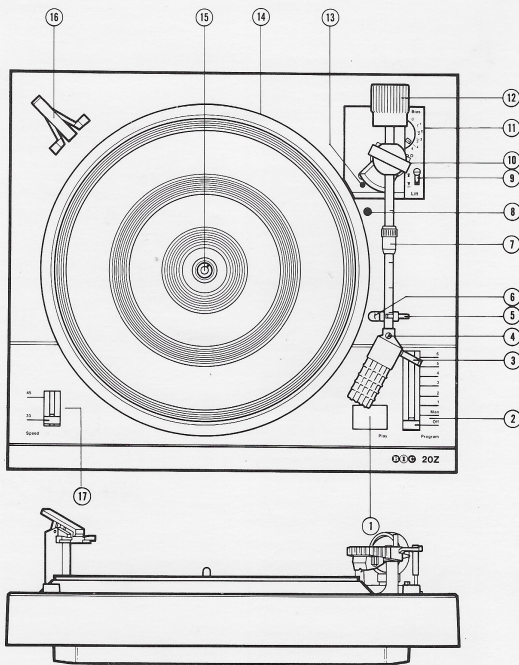
* May be factory installed.

WARNING:

To prevent fire or shock hazard, do not expose this appliance to rain or moisture.

Features of B·I·C Model 20Z Changer Turntable

1. Play button — activates all turntable functions.
2. Program — selects manual or automatic operation, shut-off and number of plays.
3. Tonearm finger lift — designed for positive, secure manual handling of tonearm.
4. Cartridge shell retaining screw — locks shell firmly in place.
5. Tonearm lock — prevents damage during transport or accidental jarring.
6. Tonearm rest — for stylus and cartridge protection.
7. Tracking force indicator — sets desired tracking force.
8. Tonearm set-down adjustment — adjusts set-down position of stylus at edge of record.
9. Cueing lever — initiates safe, damped lowering or raising of tonearm. . . can be used as pause control.
10. Precision gimbal bearings — for minimal horizontal and vertical pivotal friction.
11. Bias force adjustment knob — sets corresponding Bias force.
12. Tonearm counterweight permits dynamic zero balancing of entire tonearm, while insuring maximum damping.
13. Pickup height adjustment screw — user adjustable for optimum tonearm lift.
14. Machined aluminum platter.
15. Removable manual spindle.
16. Record support — platform stabilizes records placed on spindle for safe two-point support during multiple play.
17. Speed selector — shifts drive belt to 33 1/3 rpm or 45 rpm play.
18. Suspension mounts — correlated to the mass of the turntable assembly for maximum isolation from external shock in all planes. (Not shown)



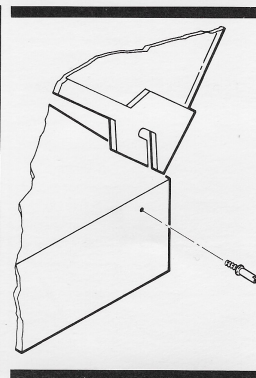
Dust Cover Installation

If not factory installed, thread the hinge pin into the pilot hole located on each side, DO NOT OVER TIGHTEN. (See Diagram)

Place the dust cover over the unit so that the cutouts in the cover line up with the two pins. The dust cover will properly seat and align itself with the base.

To Hinge Dust Cover

With the cover correctly positioned, grasp the front edge of the dust cover and raise, allowing the rear to pivot on the base. As you tilt the dust cover, the back of the dust cover will contact the base and remain in the UP position. If you wish to lower the dust cover, simply reverse the above procedure.

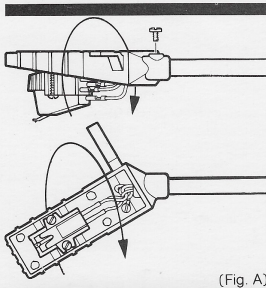


Cartridge Installation

Note: If your unit came equipped with a cartridge, please proceed directly to Counterweight Installation.

Rotation of the Cartridge Head

The B1-C 20Z employs a rotating pickup head which is rigidly locked in place by a shell retaining screw located on the top of the tonearm. (Fig. A). Remove the screw and rotate the pickup head counter clockwise. BE SURE NOT TO LOSE OR MISPLACE THE SCREW. IN THE EVENT THIS OCCURS, AN EXTRA SCREW HAS BEEN SUPPLIED. THE CARTRIDGE HEAD IS NOT REMOVABLE AND DAMAGE CAN OCCUR IF IT IS PULLED FORWARD.

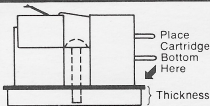


(Fig. A)

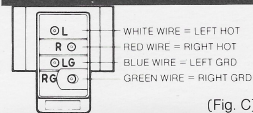
Mounting Cartridge in Head

The B1-C 20Z is supplied with several sets of varied length nylon cartridge mounting screws. It is important that the mounting screws used are the correct length. Packed with the screws is a special insulator. The insulator must be installed between the cartridge and the headshell. Both the nylon screws and insulator are non-conductive. If this insulator is not used, hum can exist.

From the sets of screws supplied, select those that appear to be the proper length to pass through the cartridge mounting bracket. Place one screw through the bracket. To make certain it is not too long, place the bottom of the cartridge as shown in (Fig. B) and not whether the screw projects below the simulated pickup head mounting bracket. If too long, use the next shorter screw. When the correct length has been established, use the small screwdriver to secure both screws to the pickup head. (Fig. B)



(Fig. B)



(Fig. C)

CAUTION — Never solder directly to the cartridge. DAMAGE WILL OCCUR

Wiring Cartridge

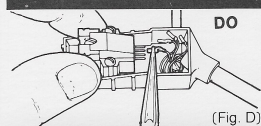
The chart (Fig. C) illustrates the markings at the rear of a typical cartridge. MAKE CERTAIN that the cartridge is wired as per the code.

IMPORTANT WARNING

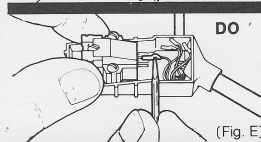
To insure maximum tracking capability, the tonearm wiring harness containing the cartridge connectors is made of special light gauge low friction wire. Although the connections are carefully made, special care must be taken to avoid breaking the press-on cartridge connectors while installing the cartridge.

Installing

Grasp the connector in the center with a pair of tweezers or needle nosed pliers. Carefully press the connector on to the pin in the cartridge. If you have difficulty sliding it on all the way, place a small screwdriver at the point shown in the diagram and gently push the connector in place. (Fig. D and E)



(Fig. D)

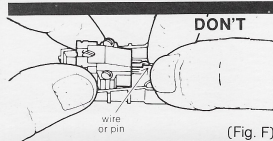


(Fig. E)

Do not attempt to install the connector with your fingers. Tweezers or long nosed pliers must be used. The wire or the place where the wire joins the connector *must not* be touched. (Fig. F)

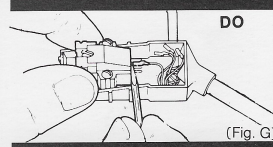
Removing

Place a screwdriver between the cartridge connector and the rear of the cartridge. Slide the press-on connector off the cartridge pin. Do not use tweezers or long nosed pliers to remove the cartridge connector. If you attempt this, the removal tool may slip from the connector and fracture one of the wires. (Fig. G)



(Fig. F)

WE STRESS THAT IF THE INSTRUCTIONS ARE NOT CAREFULLY FOLLOWED AND THE CARTRIDGE CONNECTORS ARE BROKEN, THE REPAIR OF THE UNIT WILL NOT BE COVERED UNDER WARRANTY.



(Fig. G)

Re-positioning Pickup Head

After the cartridge has been correctly installed in the head, rotate the shell clockwise so that the hole which receives the screw becomes visible. Replace the set screw and tighten firmly.

Set-Up Procedures

Note: If you are installing the cartridge, refer to the detailed instructions under "Installing."

Counterweight Installation

The counterweight should be installed on the tonearm in the following manner. Place the counterweight at the end of the tonearm, and (narrow portion facing forward) push the weight forward on the tube. Although the counterweight *does not* thread on the arm, balance can be trimmed by turning and pushing.

In transit the unit may go into cycle. Before balancing the arm, clear the mechanism by rotating the platter in a clockwise direction approximately 5

turns. Also, make certain that the cueing lever is in the play position (Δ).

With the tonearm released from its locked position, set the bias knob and the VTF* sliding weight to 0 (zero). Move the counterweight until the tonearm is perfectly balanced (parallel to the turntable).

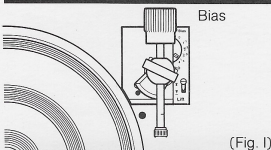
Setting VTF = Vertical Tracking Force (Stylus Pressure)

Set the VTF to the force recommended by the cartridge manufacturer. The VTF scale on the tonearm tube is calibrated from 0 to 4 grams with ½ gram increments. Slide the VTF weight forward until the front edge of the weight is aligned with the mark corresponding to the recommended VTF. (Fig. H)



Setting Bias Force (Anti-Skate)

We provide a calibrated scale for two type of styl (elliptical ∅ /conical ∅). Determine the type of stylus you are using and set the bias force knob to the number of grams recommended by the manufacturer of your cartridge (Fig. I). In most cases the bias force is calibrated to the same setting as the VTF. Always refer, however, to the cartridge manufacturer's specifications.



Connecting Your B-1-C Model 20Z Turntable to an Audio Amplifier

Audio Cables

The plugs on the audio cable are color coded to identify the right and the left channel. Red is the right channel. Insert the right channel plug into the jack marked "R" on the rear of your amplifier.

Amplifier Connections

If you are using a magnetic phono cartridge, insert the phono plugs into the space provided at the rear of the amplifier marked "phono low level" or "phono MAG."

If you are using a ceramic cartridge, insert the audio cable plugs into the

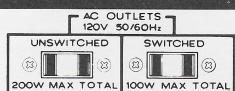
high level input of the amplifier or "phono CER."

The ground wire supplied with the turntable should be connected to a suitable "ground" point on the metal chassis of your amplifier. Most amplifiers provide a convenient terminal on the rear panel for this purpose. Failure to ground this wire will result in an inordinately high hum level when attempting to play records.

Power Cord Connection

Your Model 20Z is designed to operate from a supply voltage of 105 to 130 VAC 60 Hz (50 Hz adapter available). Connection of the power cord to a higher source of voltage or to a DC power source will cause immediate damage to the unit and is not covered by the warranty. If you use this product in areas powered by 220 or 240 volts, consult your dealer for proper instructions regarding adaptation of the unit for such use.

With the programming lever set to the OFF position, plug the power cord into a suitable outlet. Many amplifiers provide convenient receptacles on their rear panels, to which the turntable power cord may be connected. Often, these receptacles (Fig. J) are labeled "SWITCHED" and "UNSWITCHED". An unswitched outlet is powered at all times. A switched outlet is powered only when the amplifier is "ON".



(Fig. J)

Operating Procedures

Before attempting to play records, make certain that the tonearm retaining lock on the tonearm rest is loosened by moving it to the right with forefinger. Most cartridges are fitted with a stylus guard or protective cover. Make certain this cover is removed or pivoted so as to expose the stylus tip.

Set the speed selector lever for the type of record you wish to play. The Model 20Z plays 12" 33 rpm records when the speed selector lever is set for 33; 7" 45 rpm records when set to 45. When playing a 45 rpm record, install the manual 45 rpm adaptor over the manual spindle, which should be placed in the center hole of the turn-

table. An optional multiple play 45 rpm adaptor is available. Place this adaptor over the automatic spindle to play up to six records.

Manual Play

Insert the manual spindle and move the program control knob to the manual position. The turntable will begin to rotate at the selected speed. Carefully lift the tonearm by the cueing lever, and place it on the record. After the record has been played, the tonearm will return to the tonearm rest and the unit will shut off. If you wish to discontinue playing in the middle of a record, press the play button. The tonearm will return to its rest, and the unit will shut off. Alternatively, you may lift the tonearm from the record and manually return it to the rest. The turntable should then be turned off by moving the programming lever to the OFF position. **DO NOT MOVE THE PROGRAMMER WITH THE TONEARM ON A RECORD.**

Repeat Play of a Single Record

If you would like to hear one twelve-inch record played three times, simply advance the programmer to the number 3. With the tonearm on the pickup rest, press the play button and the unit will play the record three times and shut off.

Automatic Play of a Single Record

To play a single record automatically, advance the programmer to the number 1 setting and press the play button. This initiates totally automatic operation. The arm rises, comes to the edge of the record, and is gently lowered.

At the end of record, the tonearm returns to the rest and the machine automatically shuts off. If you move the programmer to the number 1 setting and place the tonearm on the record, the unit will not shut off at the end of the record, but will continue to play the record one more time.

Automatic Record Play

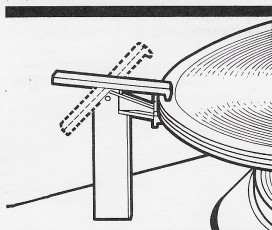
To play up to six records in sequence, remove the short manual spindle from the turntable.

Place the multiple play spindle in the center of the turntable. Rotate until it lines itself up with the keyway in the center of the turntable. Press the spindle firmly down until a distinct "click" is heard.

Count the number of records you are putting on the multiple play spindle and open the record hold-down clip on the platform to the up position prior to installing records. When the records are sitting on the shelf of the spindle and the edge of the record platform... lower

the hold-down clip to stabilize the records. (Fig. K)

Move the program selector control knob to the number corresponding to the records you have placed on the spindle. Press the play button and the tonearm will play all of the records automatically. When the last record has played, the unit will shut off.



(Fig. K)

Multiple Play Plus Repeat

If you wish to play less than six records and would like the last record to be repeated one or more times, simply move the program selector knob to the number of records plus the number of additional plays desired. For example, if three records are on the spindle and you wish the last record to play once and repeat three times, simply set the program control to the number six.

Removing Automatic Spindle

All records must be removed. To remove the records, tilt the records down and away from the record platform and lift up. The automatic spindle can then be removed by grasping and lifting straight up.

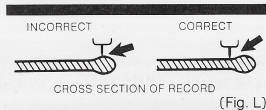
Cueing Lever (Lift)

The cueing lever is used to raise or lower the tonearm during automatic or manual play. Moving the control forward raises the tonearm, pushing it back lowers the tonearm.

Stylus Set-Down Adjustment and Tonearm Height

Your Model 20Z was carefully assembled and all necessary adjustments were made at the factory. There are, however, two minor adjustments that may have to be made to suit your particular cartridge. One adjustment controls the point at which the stylus lands upon the record's surface. All records contain a groove guard. Ideally, the stylus should land inside the groove guard just before the recorded portion

of the record. The tonearm setdown adjusting screw controls the exact point of set-down. To reposition the tonearm to land inside the groove guard, turn the adjusting screw until the tonearm is at the correct position.

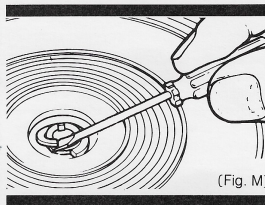


In rare instances, when very deep or very shallow cartridges are used, adjustment may have to be made to the pickup height. This adjustment controls the amount of lift to the tonearm in both automatic play and manual cueing. The stylus should lift high enough to clear six records and the tonearm rest extension. If adjusted too high, the top of the shell will touch the bottom record on the stack. Turning the adjusting screw counterclockwise will raise the tonearm; clockwise rotation will lower the tonearm.

Maintenance and Record Care

Turntable Removal

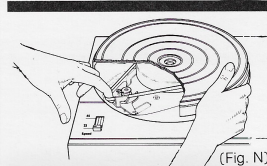
It is not necessary to remove the turntable mat in order to remove the turntable. The turntable assembly is held in place by a nylon retaining clip located in the center. Remove the spindle and lift one edge of the retaining clip with a screwdriver until the edge of the clip has lifted free. (Fig. M) Once this has been done proceed in the same manner with the other edge of the clip, remove, retain, and lift off the turntable. (Fig. M)



(Fig. M)

Belt Installation

As the turntable is removed, the drive belt will come off the rim of the turntable. To re-install the belt, place the belt around the drive rim of the platter. Grasp the belt with your left hand and gently pull towards the outside edge of the platter. Do not twist the belt! While holding the belt, locate the center hub of the platter over the platter shaft. Make certain the speed control is set at the 33 position. Lower the platter onto the shaft as you pull the belt around the pulley. Release the belt as it engages the pulley while continuing to lower the platter.



(Fig. N)

Rotate the platter clockwise several turns. If the belt is installed properly the platter will revolve when the unit is turned on. If the platter does not revolve, turn the unit off and repeat the above procedure. (Fig. N)

Re-install the Turntable Retaining "C" Clip

The turntable "C" clip has a projection on both the top and bottom. THIS PROJECTION MUST FIT FULLY INTO THE SLOT PROVIDED IN THE TURN-TABLE SPINDLE SHAFT.

Lubrication

All pivot points and bearing surfaces have been lubricated at the factory and will seldom, if ever, require further attention.

Record Care

Keep the cartridge and stylus clean. Periodically have the stylus inspected by your dealer and replace if worn.

Return all records to their protective sleeves and jackets. Do not leave re-

cords on the turntable for long periods if not in use.

Store vertically rather than horizontally or flat. If possible, store records at average room temperatures. Do not permit them near or in contact with heat producing devices, such as radiators, electronic equipment, amplifiers, etc. Excessive temperatures tend to cause warpage of records. Avoid handling the groove surfaces as this will deposit a film of oil. Hold records by their outer edges when mounting or removing from turntable to keep records clean.

Accessories

A-2 45 rpm automatic adaptor (optional)

Part Number and Description

10-326-01 Automatic spindle
37-130-03 Conductive belt
37-143-01 T/T retaining clip
37-539-01 45 rpm manual adaptor
10-181-01 Tonearm assembly
10-436-03 Turntable, mat & insert assembly
10-198-02 Counterbalance weight
10-195-04 60 cycle pulley
10-195-05 50 cycle pulley
39-468-01 Manual spindle

Spare Parts

To insure positive identification of your unit when ordering spare parts, please quote all the information printed on the serial label no. (under the base and on the outside of the packing carton). Also quote the part number if listed, the color, the voltage and the power supply frequency.

Please address inquiries for spares and service to your dealer.

In case of difficulty, send your inquiry to:

B I C Turntables
Westbury, New York 11590

Trouble Shooting Hints

Disconnect the power cord and protect the stylus before making investigations.

SYMPTOM	CAUSE	REMEDY
Unit fails to start or does not turn.	Packing pieces not removed. No power supply to motor. Belt not attached properly.	Remove all packing pieces. Check that power supply is in order. Check lead connections. If necessary clean and re-align connections. Make certain leads are secure. See Page 5 for proper installation.
Speed consistently fast or slow.	Incorrect motor pulley.	Replace with the correct motor pulley for the frequency in your area.
Speed variation—(Wow or flutter)	Warped record when playing a stack. Grease or oil on driving surfaces, belt, etc.	Play singly. Wipe with a clean cloth dampened in alcohol.
No Sound.	Incorrect or defective cabling. Defective pickup cartridge.	Check cabling instructions Page 4. Have dealer check cartridge.
Low humming sound.	Ground lead disconnected.	Check cabling and ground lead connection. See Page 4.
Distorted sound.	Worn, damaged or incorrect stylus. Dust on records or stylus affected by fluff.	Replace stylus if necessary. Check stylus force. Handle and clean records as recommended by the manufacturers. Carefully remove any dust or fluff build-up from around stylus.
Tonearm lowers to incorrect position.	Pickup stylus out of position. Lowering mechanism out of adjustment.	Reset or replace stylus. Adjust lowering position in accordance with instructions, Page 5.
Tonearm lifts too high.	Tonearm lifting height adjustment incorrectly set.	Adjust height in accordance with instructions, Page 5.
Tonearm will not lower to record at any time, or will not track properly.	Stylus force too low.	Adjust settings of counterbalance weight and pickup stylus force in accordance with instructions, page 3.
Tonearm will not lower for automatic use after manual play.	Cue control is in "up" position.	Move control back to "down" position.
Tonearm will not rise from its rest.	Arm locked to its rest.	Move locking lever to free tonearm.
Records do not drop.	Auto spindle not properly in place.	Check Page 4 for correct installation.