BSR

SERVICE MANUAL

C-166

$1.00

BSR (USA) LIMITED
ROUTE 303, BLAUVELT, NEW YORK 10913

ASSEMBLY/SET UP INFORMATION

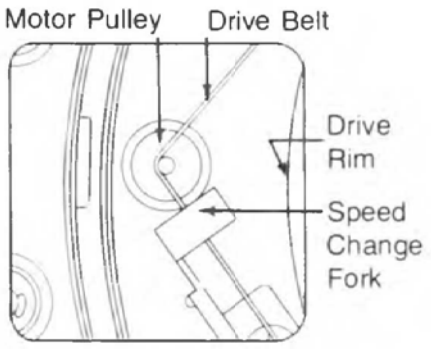
NOTE: The following should be performed before connecting the turntable to an A.C. supply.

FLOATING THE TURNTABLE

Turn the transit screws (111) clockwise until they are fully down against the mainplate (91). The turntable should float freely on its mounting springs (83).

TURNTABLE REMOVAL/DRIVE BELT INSTALLATION (SEE FIG. 1)

Fig. 1



To install the platter, move the speed selector knob (101) to the 33 position. Install the drive belt (127) on the drive rim of the turntable (141). Clean the drive belt (127), the motor pulley (77) and the drive rim of the turntable (141), with a clean cloth and alcohol. Fingerprints or foreign matter must not be allowed to collect on these surfaces. Gently lower the turntable (141), rotating it slightly counterclockwise onto the center post. Rotate the turntable platter five full turns in a clockwise direction to ensure that it is free and the mechanism is in the neutral position. Rotate the platter to position one of the two rectangular holes above the motor pulley (77) situated midway along the left side of the baseplate (91). Lift the drive belt (127), using tweezers so as not to get fingerprints on the belt, away from the turntable drive rim (141), pass it between the horizontal arms of the speed change fork (125) and over the smaller diameter step of the motor pulley (77). Reinstall the turntable mat (140) and the center disc (139).

PICK-UP ARM BALANCE (SEE FIG. 2)

Fit the weight assembly (149) to the pick-up tube (162A) close to the hinge ring assembly (162G). The weight should hang on the grooved shaft. The recessed portion of the weight should face towards the rear of the turntable. Move the "PLAY" knob (101) to the "PLAY" position. Rotate the stylus pressure dial (162P) until "0" coincides with the marker pin on the hinge ring assembly (162G). Move the weight assembly (149) by gently lifting and sliding it along the adjuster bar (163) of the pick-up tube (162A) to the appropriate notch on the bar, where the pick-up tube will just leave the arm rest (148).

Fine adjustment should now be made by rotating the knob of the screw assembly (162F) until the pick-up tube floats in the arm rest.

Rotating the knob clockwise reduces the head weight, counterclockwise increases the headweight. NOTE: DO NOT force the fine adjustment, if necessary, the weight should be moved one notch; in the appropriate direction.

STYLUS PRESSURE (SEE FIG. 2)

The stylus pressure should always be set as recommended by the cartridge manufaeturer. Rotate the stylus pressure dial (162P) until the figure for the approximate stylus pressure, in grams, coincides with the marker pin on the hinge ring assembly (162G).

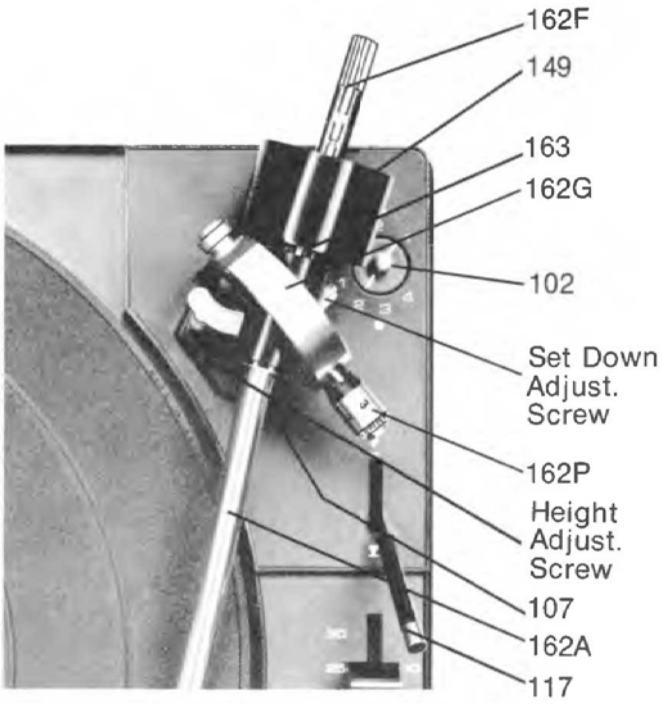


Fig. 2

SKATE COMPENSATION (SEE FIG. 2)

Due to the tracking angle of the pick-up head, a force is exerted which tends to cause the pick-up head to "skate" toward the center spindle. This force, which is present in all record players regardless of type, varies depending on the tracking angle and the amount of stylus pressure used. The BSR C-166 turntable is equipped with an anti-skate system designed to compensate for this force. The anti-skate knob (102) should be turned to the figure corresponding to the stylus pressure setting recommended by the cartridge manufacturer. This control is continuously adjustable so that settings between the figures indicated are possible. Separate scales are provided for use with elliptical (⊂) and conical (O) stylus. The knob (102) should be set using the appropriate scale. Lack of skate compensation in extreme cases, may cause excessive record wear and distortion.

Fig. 3

The anti-skate setting described above is that required under ideal conditions. Slight variations from the optimum may be necessary depending on the condition of the stylus, record, etc. If after making the adjustment, the stylus tends to skate out, lower the setting, if it skates in, raise the setting.

This turntable has been accurately pre-adjusted for correct stylus set down and tone arm height at the factory. If due to shipping further adjustments are necessary they should be made using a 12″ record. The adjustments will then be correct for all record sizes.

STYLUS SET DOWN (SEE FIG. 2)

The stylus set down is correct when the stylus sets down ⅛″ in from the edge of the record of the size selected. If adjustment is necessary, place a 12″ record on the platter (141), move the "PLAY" knob (101) to the "CYCLE" position and gently release. Rotate the platter by hand, clockwise until the stylus sets down on the record. If the stylus lands too far in, turn the adjustment screw counterclockwise. Then, recheck. Adjustment should be made in ½–1 turn steps.

PICK-UP ARM HEIGHT (SEE FIG. 2)

The pick-up arm height is correctly adjusted when the underside of the pick-up tube (162A) clears the top of the pick-up rest (148) by ¼″ as the pick-up arm is returning to the rest as the turntable cycles. Should adjustment be necessary proceed as follows: Place a 12″ record on the turntable platter (141), move the "PLAY" knob to the "CYCLE" position and gently release. Rotate the platter, clockwise by hand, until the stylus sets down on the record. Lift the pick-up arm and place it so that the stylus is in the finishing grooves at the end of the record. Rotate the platter clockwise by hand, the pick-up arm will now lift and return towards the pick-up rest (148). If the pick-up height is too high it may be adjusted by turning the height adjustment screw clockwise. If it is too low turn the adjustment screw counterclockwise.

CUEING (SEE FIG. 2)

This device permits the raising and lowering of the pick-up arm at any time without the danger of scratching or otherwise damaging the record. To raise the pick-up arm move the cueing lever (117) to its maximum up position as indicated by the symbol (▼). Lower the pick-up arm by returning the cueing lever (117) to its maximum down position as indicated by the symbol (▼). With the cueing knob in the raised position the pick-up arm may be positioned at any point over the record or pick-up arm rest and then may be lowered into position at the selected point by lowering the cueing knob. To interrupt a record at any time during play, raise the cueing knob to raise the pick-up arm. When the cueing knob is lowered, the pick-up arm will descend placing the stylus on the record and resume playing in the same groove. Should the cueing height require adjustment, with the pick-up arm over the turntable mat, move the "PLAY" knob to the "PLAY" position. Raise the cueing lever to the up position (▼), and adjust the cueing height adjustment screw (107). Clockwise rotation of the screw (107) will raise the cueing height and counterclockwise rotation will lower it. The cueing height may be adjusted to cue a maximum of 3 records. During automatic cycling the cueing arm should be in the down (▼) position.

CUEING SPEED

The speed at which the pick-up arm descends, when the cueing lever (117) is moved from the raised (▼) to the lowered (▼) position is regulated by the silicone fluid in the cueing cylinder (108).

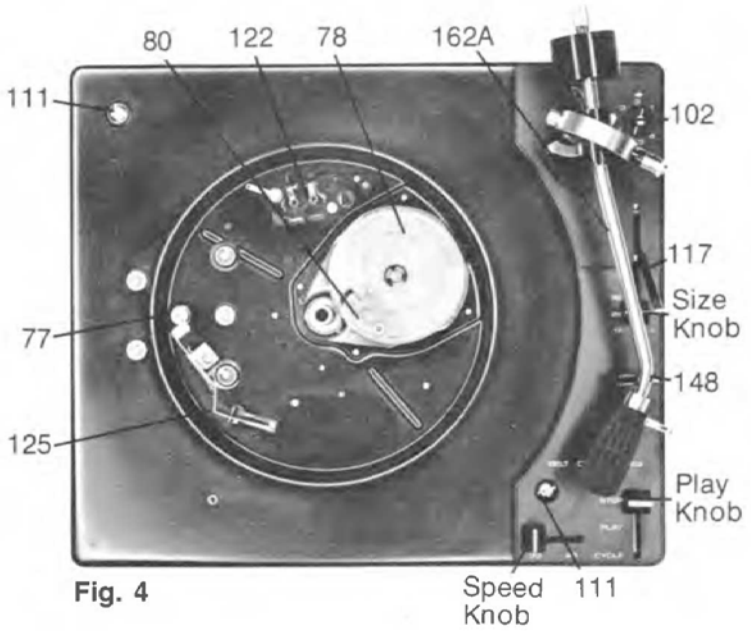


Fig. 4

To adjust the rate of descent of the pick-up arm, remove the screw (120) from the side of the escutcheon (112), move the cueing lever to the raised position (▼) and remove the cueing cylinder (108).

The rate of descent may be increased by removing a small amount of the silicone fluid from the cylinder or decreased by adding fluid to the cylinder.

NOTE: Only Dow Corning MS200 Silicone Fluid should be used. MS200 in small vials is available directly from BSR.

PICK-UP ARM ASSEMBLY

To remove the complete pick-up assembly, first unsolder the cable leads (142) at the phono socket (122) and release the cable from all fastenings. Remove the counterweight assembly (149). Using a small screwdriver lift the end of the spring (156) with the larger loop, away from the pick-up body assembly (157). The complete pick-up arm assembly may now be removed from the quadrant (34) spindle. To replace the pick-up arm reverse the above procedure, ensuring the end of the spring (156) with the smaller loop is placed behind the tab of the over load plate (152).

OPERATING INSTRUCTIONS

AUTOMATIC OPERATION (SEE FIG. 3)

Insert the automatic umbrella spindle (164) with a downward motion, gently turning to the right until the spindle locks in place. Place a maximum of five records, all the same size and speed, on the spindle (164). Move the size selector knob to the 12, 10, or 7 position for 12" (30cm), 10" (25cm), or 7" (17cm) records respectively. Move the speed selector knob to the 33 or 45 position for 33⅓ or 45 rpm records. (If 45 rpm records, with large center holes, are to be played automatically, center hole adaptor inserts must be used).

Move the "PLAY" knob to the "CYCLE" position and allow it to return gently to the "PLAY" position. DO NOT hold the "PLAY" knob in the "CYCLE" position. The pick-up arm will lift and the first record will drop to the turntable, the pick-up arm will move to the record, lower and place the stylus in the starting groove of the first record. At the end of the record the pick-up arm will return to its position over the pick-up rest and the next record in the stack will be dropped. The stylus will be placed in the starting groove of that record. At the end of the last record the pick-up arm will return to the pick-up rest and the unit will shut off.

When operating your turntable in the automatic mode, the records drop by force of gravity. You may, therefore, encounter trouble with extra light records, such as RCA Dynaflex, not dropping every time. This is usually caused by a combination of their light weight and a tight center hole (in the record). The latter is very often due to the paper label overlapping the hole or being off-center. The problem can generally be cured by enlarging the hole with a round object such as a pencil. Do not make the hole larger than necessary or it will cause Wow (speed variation).

SEMI-AUTOMATIC OPERATION

Insert the repeat stub spindle (166). Place the desired record on the turntable and select the correct speed and size for the record to be played.

If 45 rpm records with large center holes are to be played, place the 45 adaptor spindle over the stub spindle.

Move the "PLAY" knob to the "CYCLE" position and allow it to return gently to the "PLAY" position. The pick-up arm will automatically place the stylus in the starting groove of the record. Due to the length of the repeat stub spindle (166), the travel of the spindle lift link is restricted preventing automatic shut off. At the end of the record the pick-up arm will return to the beginning of the record and will repeat playing of the record until manually shut off. NOTE: Records that do not have "starting" or "fast finishing" grooves must be played manually.

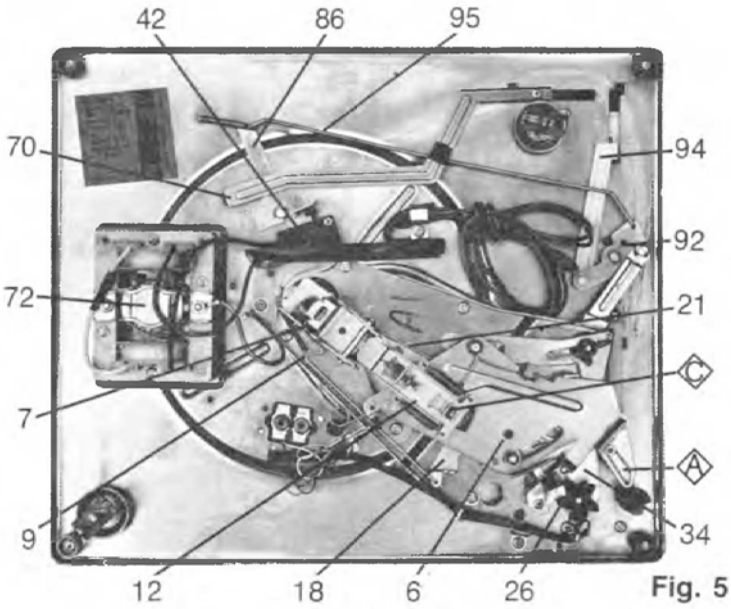


Fig. 5

MANUAL OPERATION

Insert the manual stub spindle (165). Place the desired record on the turntable and select the correct speed for the record to be played.

Move the "PLAY" knob to the "PLAY" position and raise the cueing lever (▼). Move the pick-up arm above the selected point on the record and lower to the groove by returning the cueing lever to the lowered position (▼). At the end of the record the pick-up arm will return to the rest and the turntable will shut off automatically.

REJECTING

To reject a record at any time while the changer is in operation, move the "PLAY" knob to the "CYCLE" position and allow it to return gently to the "PLAY" position. If the record being played was not the last record on the spindle (164) the next record will be dropped and played. If the record being played was the last record the pick-up arm will return to the starting groove of the record and play the record again.

STOPPING

The turntable can be stopped at any time by moving the "PLAY" knob to the "STOP" position. If the turntable is stopped during the "automatic cycle" it must be allowed to complete the cycle (by manual rotation of the turntable if necessary) before moving the pick-up arm and removing the records.

CUEING/PAUSING
(For use with a maximum of 3 records)

Raising or lowering the cueing lever raises or lowers the pick-up arm from any point on or off the record. Lift the cueing lever and the pick-up arm is lifted into position where it can be moved manually to any position over the record and then lowered gently to the selected groove by lowering the cueing lever.

To pause while playing, raise the cueing lever to lift the stylus from the record for the desired length of time and then lower the cueing lever to return the stylus to the same record groove. The cueing lever must be in the lowered position during automatic operation of the turntable.

GENERAL INFORMATION (SEE FIGS. 4 AND 5)

The change cycle is started by moving the "PLAY" knob to the "CYCLE" position, then releasing it. The pick-up arm lifts and a record is dropped to the turntable. The pick-up arm moves toward the spindle, stops at the point determined by the setting of the 12, 10, 7 knob where it is lowered to the lead-in groove of the record.

When the needle reaches the end of the recorded grooves and enters the fast-finish groove at the end of the record, the pick-up arm movement toward the spindle accelerates rapidly to actuate the velocity trip mechanism. The pick-up arm is lifted and returned to a position over the pick-up arm rest and the bottom record on the spindle drops into playing position on the turntable. The pick-up arm returns to the starting point of the record and is lowered to the lead-in groove.

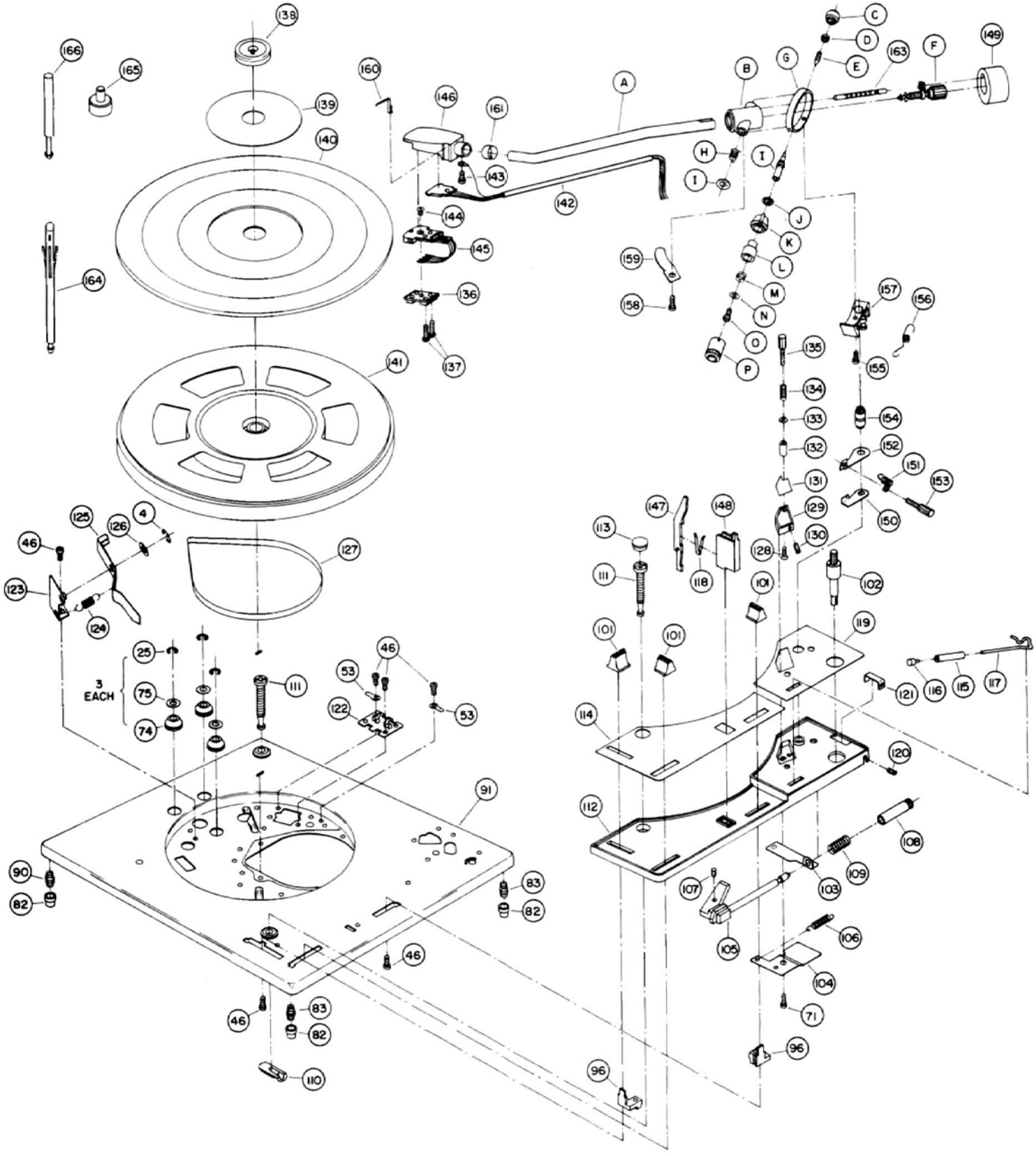
The previously described action takes place each time the end of a record is reached until the last record has played. At this time, the velocity trip mechanism starts another change cycle and the arm is returned to its position over the pick-up arm rest. The arm is then lowered to the arm rest and automatic shut off occurs.

NOTE: The following is a description of the functions that the various parts perform during a change cycle. Observe the change cycle operation while slowly rotating the turntable by hand. The following description can then be readily followed and the function of each part more easily understood.

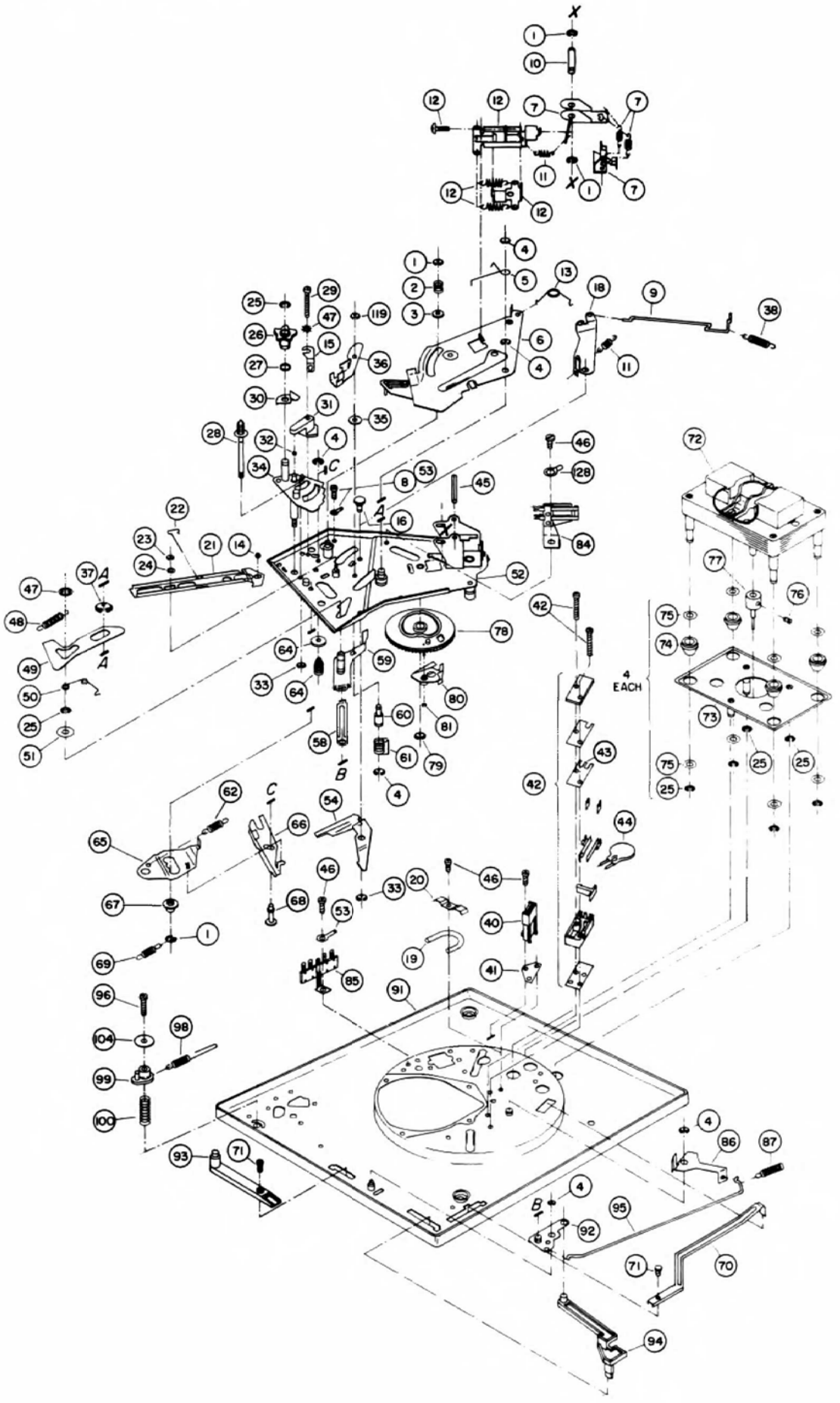
SPEED CHANGE MECHANISM

The Model C166 is driven by a four pole syncronous motor (72) through a two step motor pulley (77). Power is transmitted to the turntable platter (141) by a drive belt (127) which engages the motor pulley (77) and the drive rim of the turntable platter. When the speed selector

Exploded View of Parts Above Baseplate.



Exploded View of Parts Below Baseplate.



knob (101) is moved to the 33 position, the speed change slide (70) rides up the inclined portion of the speed change fork (125) allowing the spring (124) to position the speed change fork (125) so that the drive belt (127) guided by the speed change fork engages the smaller diameter step of the motor pulley (77). When the 45 position is selected the above is reversed, causing the speed change fork to position the drive belt (127) where it will engage the large diameter step of the motor pulley (77).

STARTING THE AUTOMATIC CYCLE

When the "PLAY" knob (101) is pushed toward the "CYCLE" position, the reject slide (94) moves the reject plate assembly (92) causing the switch link (95) to activate the switch lever (86). The switch lever (86) depresses the switch plunger of the on–off switch assembly (42) impressing the necessary voltage on the mechanism drive motor (72). This starts the turntable platter rotating in a clockwise direction.

When the "PLAY" knob (101) is moved from the "STOP" position toward the "CYCLE" position the reject slide (94) moves the reject plate assembly (92) which being connected to the reject link (58) causes the reject link (58) to move the reject lever assembly (59). The angled tip of the reject lever assembly (59) contacts the actuating slide spring (22) causing the actuating slide (21) to move toward the turntable shaft. The actuating slide (21) contacts and pivots the actuating pawl assembly (80) into the path of the projection on the turntable (141) boss and gear.

Since the turntable platter is rotating clockwise, the projection on the turntable boss and gear strikes the actuating pawl (80). This moves the cam gear (78) far enough to mesh with the teeth on the turntable gear. This action starts the cam gear (78) rotating in a counterclockwise direction, to initiate the automatic cycle.

TONE ARM ACTION AND RECORD DROP

The stud and roller on the operating plate (6) follows the eccentric groove in the bottom of the cam gear (78). The resulting pivoting action of the operating plate (6) controls the vertical and horizontal movements of the tone arm.

As the operating plate (6) pivots the tone arm raising spindle (28) rides up the inclined portion of the operating plate (6) to lift the tone arm from the tone arm rest (148). As the operating plate (6) continues to pivot the tab Ⓒ on the operating plate (6) contacts the feed lever link assembly (12) and pushes it towards the spindle (164).

Being attached to the transfer lever assembly (7), the feed lever link assembly causes the transfer lever to pivot. This pivoting action causes the transfer lever to raise the spindle lift link. The spindle lift link in turn withdraws the spindle (164) draw bar, retracting the three lower blades of the spindle allowing the record to drop to the platter, the three upper blades extend preventing a multiple record drop. As the upper blades of the spindle (164) are prevented from fully extending by the records on the stack, the spindle draw bar cannot be fully withdrawn. This restricts the travel of the spindle lift link, preventing automatic shut off.

The pick-up arm (162) set down point is determined by the position of the size selector knob. When the size selector knob is moved to the desired position the selector slide (93) moves the detent plate (65) which will hold the cut off slide (66) in position to stop the selector lever (36) at the correct position to fit into the appropriate notch of the quadrant (34).

As the operating plate (6) continues to pivot during the automatic cycle the spring Ⓐ fitted to the operating plate (6) engages with the toggle wheel (26) causing the quadrant (34) to move in the opposite direction the operating plate (6) is pivoting. The movement of the quadrant is stopped by the selector lever (36) at the point selected by the size selector knob. Since the pick-up body assembly (157) is mounted on the spindle of the quadrant (34) the pick-up arm is now positioned at the set down point for the record size selected. After the set down point is reached, the toggle wheel (26) slips off spring Ⓐ on the operating plate (6). The operating plate (6) continues to pivot, reversing direction, allowing the pick-up raising spindle (28) to ride down the inclined portion of the operating plate (6) lowering the pick-up arm to the record surface. After the pick-up arm is in place on the record, the operating plate (6) continues to move pushing the selector lever (36) clear of the quadrant (34). This allows the quadrant (34) and the pick-up arm to move freely as the stylus follows the record grooves. The operating plate (6) now stops since the cam gear (78) which drives it, has made a complete revolution and being no longer meshed with the turntable gear, has stopped.

VELOCITY TRIP

After a record has been played, a velocity type trip mechanism initiates a new change cycle. This is due to the accelerated inward movement of the tone arm as the stylus enters the lead out groove at the end of the record.

While the record is playing the pick-up arm moves slowly towards the spindle at the center of the turntable. The actuating slide (21) is moved by the pin on the quadrant assembly (34) to make contact with the actuating pawl (80).

As the record continues to play the actuating slide (21) moves the actuating pawl (80) toward the turntable (141) boss and gear. On each revolution of the turntable (141) the projection on the turntable boss and gear pushes the actuating pawls (80) out of the way to prevent premature cycling. This is possible because of the slow movement of the pick-up arm while the record is playing. When the stylus enters the record lead out groove, the pick-up arm accelerates rapidly and the actuating pawls (80) are moved far enough to engage the projection on the turntable (141) boss and gear. The projection on the boss and gear gives the necessary push to cause the teeth of the cam gear (78) to mesh with the teeth of the turntable boss and gear and initiate the cycle.

AUTOMATIC SHUT OFF

When the last record drops to the turntable (141) the upper blades of the spindle (164) are allowed to fully extend. This permits full travel of the spindle lift link. As the spindle lift link fully withdraws the spindle (164) draw bar, the link wire is lifted from the notch in the transfer lever housing by the lift link. The link wire (9) is drawn towards the center spindle by the spring (11). The link wire being attached to the reset link (18) causes the reset link (18) to pivot. The reset link contacts and pivots the reset lever (54) which pivots the cut-off slide (66) down and away from the selector lever (36) during the next cycle. At the end of the record the turntable cycles and the pick-up arm is lifted from the record and moved to its position over the pick-up arm rest (148). As the operating plate moves and the pick-up arm reaches its position over the arm rest (148), since the selector drive spring (5) pushes the selector lever (36) into position where, as the operating plate (6) changes direction, it blocks the quadrant (34) and holds the pick-up arm in the rest position during the remainder of the cycle. The operating plate (6) continues to move in this direction until the cam gear (78) is unmeshed from the turntable (141) boss and gear assembly. Before it stops, the moving operating plate allows the raising spindle (28) to lower the pick-up arm to the pick-up arm rest and the released selector lever (36) is pushed against the cut-off lever. The cut-off lever (49) moves the reject lever (59) and the reject link (58) to turn the reject plate (92). When the reject plate turns, the switch link (95) pushes on the switch lever (86) to open the on–off switch assembly (42). The reject plate (92) being connected to the "PLAY" knob (101) by means of the reject slide (94) moves the "PLAY" knob to the "STOP" position.

VISCOUS CUEING

When the cueing lever (117) is moved to the raised (▼) position the raising slide assembly (105) is moved against the ramp of the raising pad (129), forcing the raising pad to rise lifting the pick-up arm.

When the cueing lever (117) is moved to the lower position (▼) the raising slide is moved back by the spring (109), allowing the raising pad (129) to ride downward on the raising slide assembly (105). The movement of the raising slide assembly is damped by the plunger of the raising slide assembly through the silicone fluid in the cueing cylinder (108).

LUBRICATION

The mechanism has been thoroughly lubricated at the factory and under normal use should not require additional lubrication for at least one year. After prolonged use it may be necessary to lubricate parts as specified below:

Use a medium grade grease only on these parts:

1. Speed change slide (70)
2. Bearing surfaces of the Operating Plate (6)
3. Gear Teeth, bearing and cam track of the cam gear (78)

Use a light machine oil on these parts:

1. Pick-up raising spindle (28)
2. Center bearing of turntable (141)
3. Upper and lower bearings of motor (72)

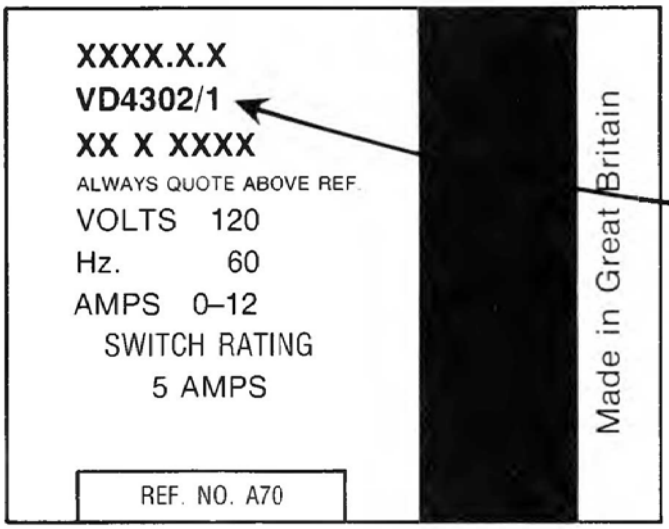
NOTE: Oil or grease must never be applied or allowed to collect on the drive belt (127), the motor pulley (77) or the drive rim of the turntable (141).

TROUBLE CHART

SYMPTOM	CAUSE	REMEDY
The record does not drop.	1. The record center hole is too small.	1. Trim any "flash" or excess paper from the center hole.
	2. The center spindle is not fully inserted or locked.	2. Ensure that the center spindle is locked in place (See Operating Instructions).
Records wobble on the stack or 2 records drop at the same time.	1. If double drop occurs, the records may be too thin.	1. Place the records in a different sequence on the stack.
	2. If the record wobbles on the stack:	2. Records which have not been properly balanced during manufacture may wobble due to poor weight distribution.

TROUBLE CHART (Cont'd.)

SYMPTOM	CAUSE	REMEDY
The turntable (141) does not revolve when the "PLAY" knob is moved to the "CYCLE" position	1. No current to the Motor (72).	1. Make sure that current is reaching the A.C. leads. Check the switch (42) and the connector (40) and replace them if necessary.
	2. Defective motor (72).	2. Remove the turntable and check the motor. Repair or replace the motor (72).
	3. Drive belt (127) not driving.	3. Clean the drive belt (127) the motor pulley (77) and the driving rim of the turntable (141) with a clean cloth and alcohol.
	4. Drive belt (127) off.	4. Reposition the drive belt (127).
The turntable (141) revolves when the "PLAY" knob is moved to the "CYCLE" position, but the arm does not leave the arm rest.	1. The pick-up arm height is incorrectly adjusted.	1. Adjust the screw (135) as described under "pick up arm height" in the set up instructions.
	2. The actuating slide spring (22) is bent or missing.	2. Adjust or replace the actuating slide spring (22).
	3. The actuating slide bearing (14) is missing.	3. Replace the actuating slide bearing (14).
The turntable speed is too slow.	1. The drive belt (127) slips.	1. Clean the drive belt (127), the motor pulley (77) and the drive rim of the turntable (141) with a clean cloth and alcohol.
	2. The drive belt (127) is defective.	2. Replace the drive belt (127).
	3. Tight motor (72) bearings.	3. Lightly tap side of motor (72) laminations to free self-aligning bearings. Lubricate bearings.
	4. Binding turntable bearing (141).	4. If turntable (141) does not turn freely when drive belt (127) is disengaged, lubricate bearings with light machine oil.
	5. AC line voltage too low.	5. Line voltage should not be less than 100V.
	6. Operating temperature too low.	6. Prolonged exposure to temperature below 45°F will cause slow initial speed.
The pick-up arm does not locate correctly on the record.	1. The stylus set down is incorrectly adjusted.	1. Adjust the screw (153) as described under "Stylus Set Down" in the Set Up Instructions.
The pick-up arm will not cycle at the end of the record.	1. The tripping pawl assembly (80) is binding.	1. Check the tripping pawls (80) for friction and free movement.
	2. The actuating slide bearing (14) is missing.	2. Replace the bearing (14).
The pick-up arm does not track correctly across the record.	1. The stylus may be clogged with accumulation of dust or the stylus may be chipped or worn.	1. Clean any foreign material from around the stylus. Replace the stylus if it is badly worn or broken.
	2. The pick-up leads are too tight.	2. Gently release the pick-up leads at the rear of the pick-up arm to give enough slack to allow the pick-up arm to move freely across the record.
	3. The turntable is not level.	3. Ensure the turntable is on a level surface before operation.
	4. Insufficient stylus pressure.	4. Adjust the stylus pressure as described under "Pick-Up Arm Balance" and "Stylus Pressure" in the Set Up Instructions.
	5. Record with worn or damaged grooves.	5. Replace the damaged record.
	6. Excessive anti-skate compensation.	6. Reduce the setting of the anti-skate control (102).
Intermittent or no audio output. Excessive hum.	1. Defective or loose audio cables.	1. Reconnect or replace the audio cables.
	2. Loose cartridge connections.	2. Check that the lead terminals are firmly connected to the cartridge terminals. Tighten the lead terminals if necessary.
	3. Corroded slide terminals or slide terminals making poor contact.	3. Polish the terminals in the slide (145) and in the pick-up head (146). Gently increase the tension on the terminals in the slide (145) and in the pick-up head (146).
	4. (HUM) Ground Lead not properly connected.	4. Ensure the turntable mainplate is grounded to the amplifier ground. Not the A.C. supply.
	5. Defective phono cartridge.	5. Replace the phono cartridge.



When in doubt of the changer model, please quote the number on the label which is located under the mainplate of *your* changer.

PARTS LIST

Item	Part No.	Description
1.	A100785	Circlip
2.	A108077	Spring
3.	A103290	Washer
4.	A102109	Circlip
5.	A108078	Selector Drive Spring
6.	B109689	Operating Plate Assembly
7.	A112309	Transfer Lever Assembly
8.	A110609	Screw Type No. 8 × ½" Hi-Lo Rec. Pan. Hd.
9.	A111989	Link Wire
10.	A112304	Pivot Pin
11.	A112329	Spring
12.	A112310	Feed Lever Link Assembly
13.	A106980	Operating Plate Spring
14.	A107419	9/64" Dia. Ball Bearing
15.	A112328	Stabilizer
16.	A111910	Reset Lever Pivot
17.	A105263	Screw Type BT 6-20 × 3/8" Rec. Pan. Hd.
18.	B112135	Reset Link
19.	A102718	Cable Clamp
20.	A111736	170mm–5mm P.V.C. Sleeving
21.	B111924	Actuating Slide
22.	A105901	Actuating Slide Spring
23.	A104077	Circlip
24.	A106966	Washer
25.	A100762	Circlip
26.	B108073	Toggle Wheel
27.	A108654	Spring Clip
28.	A109690	P.U. Raising Spindle Assembly
29.	A106512	Screw Type BT 4-24 × 5/8" Rec. Pan Hd.
30.	A107004	Support Spring
31.	A106965	Support Bracket
32.	A107154	3/32" Dia. Ball Bearing
33.	A108334	Circlip
34.	B111842	Quadrant Assembly
35.	A108893	Washer
36.	B108036	Selector Lever
37.	A101526	Circlip
38.	A200510	Spring
39	A108401	178mm–3mm P.V.C. Sleeving
40.	A111516	Molex Connector
41.	A104865	Insulating Strip

Item	Part No.	Description
42.	B108285	ON–OFF Switch Assembly
43.	A108184	Switch Cover (used w/pop filter)
44.	A106970	Pop Filter
45.	A112305	Bissel Pin
46.	A106510	Screw Type B No. 6 × ¼" Rec. Pan Hd.
47.	A102251	Retainer
48.	A102623	Cut-Off Lever Spring
49.	B105592	Cut-Off Lever
50.	A106627	Detent Spring
51.	A105660	Control Washer
52.	C111995	Main Sub-Plate Rivoting Assembly
53.	A102126	Solder Tag
54.	B108641	Reset Lever
55.	A102058	Damping Rubber
56.	A101506	Thrust Washer
57.	A101649	Ball Race
58.	A106134	Reject Link
59.	A108676	Reject Lever Assembly
60.	A108894	Selector Pivot
61.	A108891	Selector Pivot Spring
62.	A112329	Spring
63.	A106804	Screw Escutcheon
64.	A112023	Cut-Off Slide Spring
65.	A108033	Detent Plate
66.	A108034	Cut-Off Slide
67.	A108461	Roller
68.	A108064	Slide Pin
69.	A108075	Detent Plate Spring
70.	B111445	Speed Change Slide
71.	A105267	Screw Type BT 4-24 × 5/16" Rec. Pan Hd.
72.	FP 50	Motor Assembly
73.	A111483	Motor Sub Plate Rivoting Assembly
74.	A102181	Rubber Mounting
75.	A101646	Washer
76.	A111735	Grub Screw 1 so M2 × 3 Cup End
77.	A112519	50 Hz Motor Pulley
	A112229	60 Hz Motor Pulley
78.	B112306	Cam Gear Rivoting Assembly
79.	A102110	Circlip
80.	A111999	Actuating Pawl Assembly
81.	A111913	Circlip

PARTS LIST (Cont'd.)

Item	Part No.	Description
82.	A106089	Spring Cup
83.	A111459	Unit Mounting Spring
84.	A112253	Muting Switch Assembly
85.	A103536	Tag Mounting Strip
86.	B111443	Switch Lever
87.	A111316	Spring
88.	A108337	Screw Type B No. 6 × 5/16" Rec. Pan Hd.
89.	A109309	Strap
90.	A112073	Unit Mounting Spring
91.	B111487	Mainplate Sub Assembly
92.	A106193	Reject Plate Assembly
93.	B106143	Selector Slide
94.	A111825	Reject Slide
95.	B106405	Switch Link
96.	A111790	Knob Adaptor
97.	A106507	Screw Type BT 6-20 × 3/4" Rec. Pan Hd.
98.	A111932	Anti-Skate Spring
99.	B111797	Spring Anchor
100.	A106813	Anti-Skate Control Spring
101.	A111937	Knob Assembly
102.	A111957	Anti-Skate Knob Assembly
103.	A112083	Raising Shoe
104.	A111789	Retaining Plate
105.	A111860	Raising Slide Assembly
106.	A108382	Spring
107.	A106509	Grub Screw 4 B.A. × 3/16"
108.	A108408	Cylinder
109.	A108415	Spring
110.	A102166	Retaining Clip
111.	A104189	Transit Screw
112.	D111810	Escutcheon
113.	A108642	Screw Cover
114.	B112137	Control Trim
115.	A110381	Knob
116.	A110407	Cap
117.	A112021	Raising Arm
118.	A106173	Pick-Up Rest Spring
119.	B111934	Escutcheon Trim
120.	A102958	Screw
121.	A110042	Bracket
122.	A102616	Phono Socket Assembly
123.	A111484	Speed Change Bracket Rivoting Assembly
124.	A111495	Spring
125.	B111442	Speed Change Fork
126.	A102595	Washer
127.	A110684	Drive Belt
128.	A105258	Screw 6 B.A. × 1/4" c'sunk Hd.
129.	B111791	Raising Pad
130.	A108826	Grub Screws 6 B.A. × 5/16" Radiused
131.	A111926	Raising Pad Trim

Item	Part No.	Description
132.	A111805	Adjusting Pillar
133.	A110235	Thrust Washer
134.	A100807	Spring
135.	A106156	Height Adjusting Screw
136.	A106775	Adaptor Plate
137.	A108828	Screw Type 3-48 × 1/8" Rec. Round Hd.
138.	A101371	Manual 45 RPM Adaptor
139.	A111966	T.T. Center Disc
140.	C112022	Turntable Mat
141.	C112139	Turntable Assembly
142.	A112199	P.U. Lead Tag Assembly
143.	A109551	Screw Type A No. 4 × 1/4" Rec. Pan Hd.
144.	A106573	Screw 6 B.A. × 3/16" Rec. c'sunk Hd.
145.	A112016	Mounting Slide Assembly
146.	C111942	Pick-Up Head
147.	A111917	Pick-Up Clip
148.	B111916	Pick-Up Rest
149.	A111855	Weight Assembly
150.	A111763	P.U. Adjuster
151.	A106395	Spring
152.	A111762	Overload Plate
153.	A111806	Adjusting Screw
154.	A111786	P.U. Spindle Nut
155.	A112070	Screw 1 SO M3 × 5 Sltd. Ch. Hd. Stl. N.P.
156.	A111815	Spring
157.	A111858	P.U. Body Assembly
158.	A112260	Screw Type A No. 4 × 5/16" Rec. Pan Hd.
159.	A111765	Raising Plate
160.	A111939	Finger Lift
161.	A111936	P.U. Trim
162.	A	P.U. Tube
	B	P.U. Tube Holder Assembly
	C	Screw Cap
	D	Lock Nut
	E	Adjustment Screw
	F	Screw Assembly
	G	Hinge Ring Assembly
	H	Pressure Spring
	I	Stop Plate Assembly
	J	O-Ring
	K	Knob Stop
	L	Knob
	M	Friction Spring
	N	Washer
	O	Screw 1 SO M 2.5 × 5 Sltd. Ch. Hd. Stl. N.P.
	P	Knob Trim
163.	A111770	Adjuster Bar
164.	B112107	Center Spindle
165.	A112257	Stub Spindle (single play)
166.	A112140	Stub Spindle (repeat play)

These parts are available only as pick-up arm assembly C112017

BSR (USA) LIMITED ROUTE 303, BLAUVELT, NEW YORK 10913 (914) 358-6060 — TELEX 137441

Midwest Office: **BSR (USA) LTD. 780 Lively Blvd., Elk Grove Village, Illinois 60007 (312) 439-8880**

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