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R M Sallby

ROYAL CANADIAN AIR FORCE

REPAIR AND OVERHAUL INSTRUCTIONS

BANK AND TURN INDICATOR ASSEMBLIES TYPES C-5 AND C-6

(SCHWIEN)

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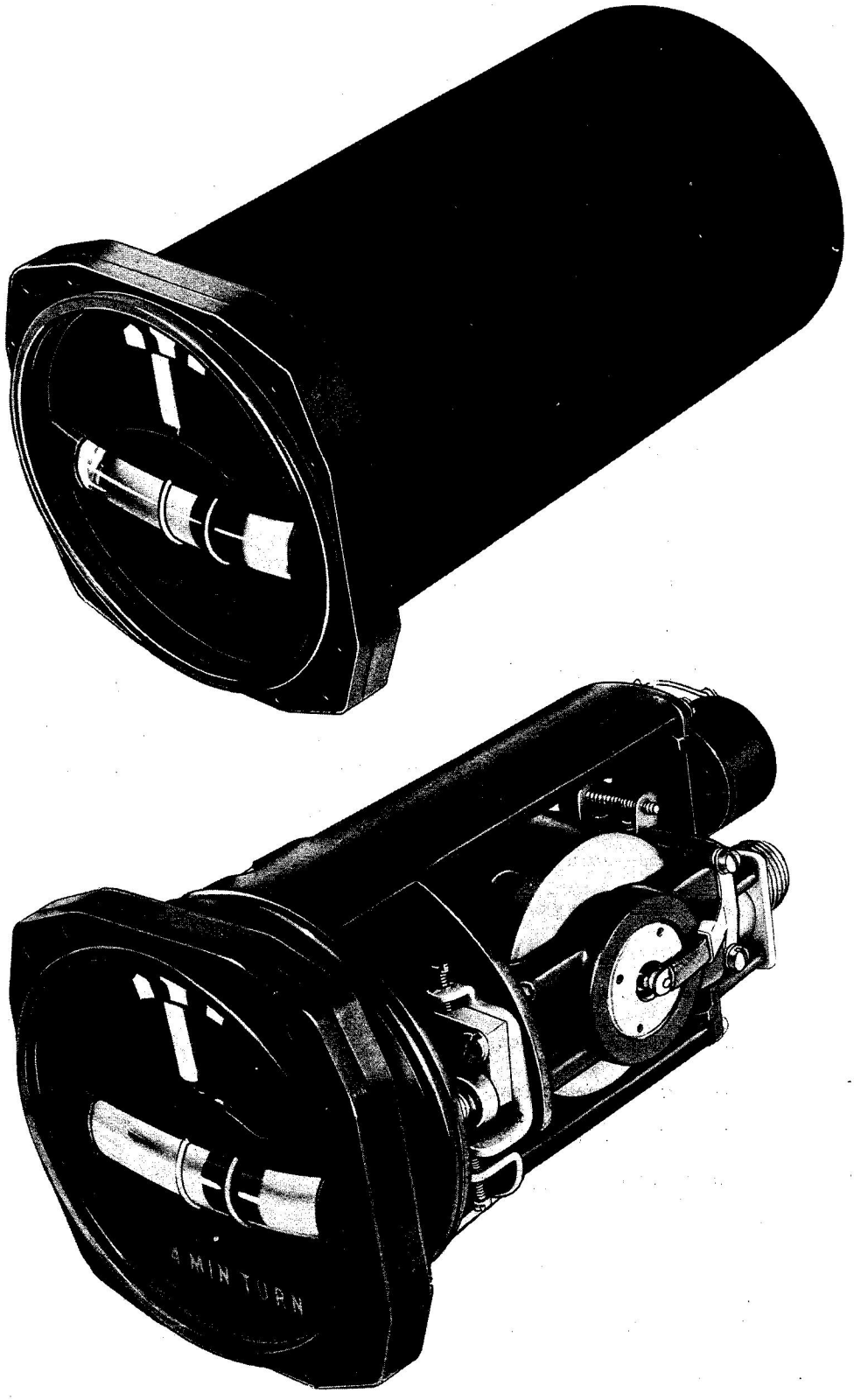

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Figure 1-1. Bank and Turn Indicator Assembly, Model B4

SECTION I
INTRODUCTION

1-1. This publication is issued as the basic overhaul instructions for Bank and Turn Indicator Assemblies manufactured by Schwien Engineering Company, Van Nuys, California.

1-2. Sections I, II, and III of this handbook contain overhaul and test instructions for Bank and Turn Indicator Assembly, Model B4, USAF Type C-5, Navy Stock No. R88-I-3223. Overhaul and test instructions for additional models are provided in Section IV by the use of Difference Data Sheets. The additional models included in Section IV are listed in Section IV. Overhaul and test procedures for models included in Section IV are the same as the procedures given in Sections II, and III, except for the specific differences noted by the applicable Difference Data Sheet.

1-3. GENERAL DESCRIPTION. (See figure 1-1.)

1-4. Model B4 is essentially two instruments in one, an inclinometer, and an electrical gyro turn indicator. The inclinometer, by movement of a black glass ball in relation to two painted wires, indicates the lateral attitude of the airplane. The turn indicator, by movement of a pointer from a zero position, indicates the proportional turn of the airplane. A turn rate of three degrees per second is indicated by a two pointer-widths deflection of the pointer. All the operating parts are enclosed in an air-tight, dust-proof case.

1-5. DETAILED DESCRIPTION. (See figure 1-2.)

1-6. BEZEL ASSEMBLY. Bezel (1), bezel glass (2), and gasket (23) seal the front end of the instrument. The bezel is attached to frame (3) by eight screws.

1-7. DAMPING UNIT. Damping unit (4) consists of a mated cylinder and piston. The cylinder assembly is mounted on the front side of the bulkhead of the frame, and the piston assembly is mounted on gimbal posts which extend through slots in the bulkhead. The damping unit serves to dampen out characteristic oscillations of the gyro system by absorbing the energy of the oscillations in the compression of air. The amount of damping is controlled by the adjustment of a screw which governs the rate of air leakage from the cylinder.

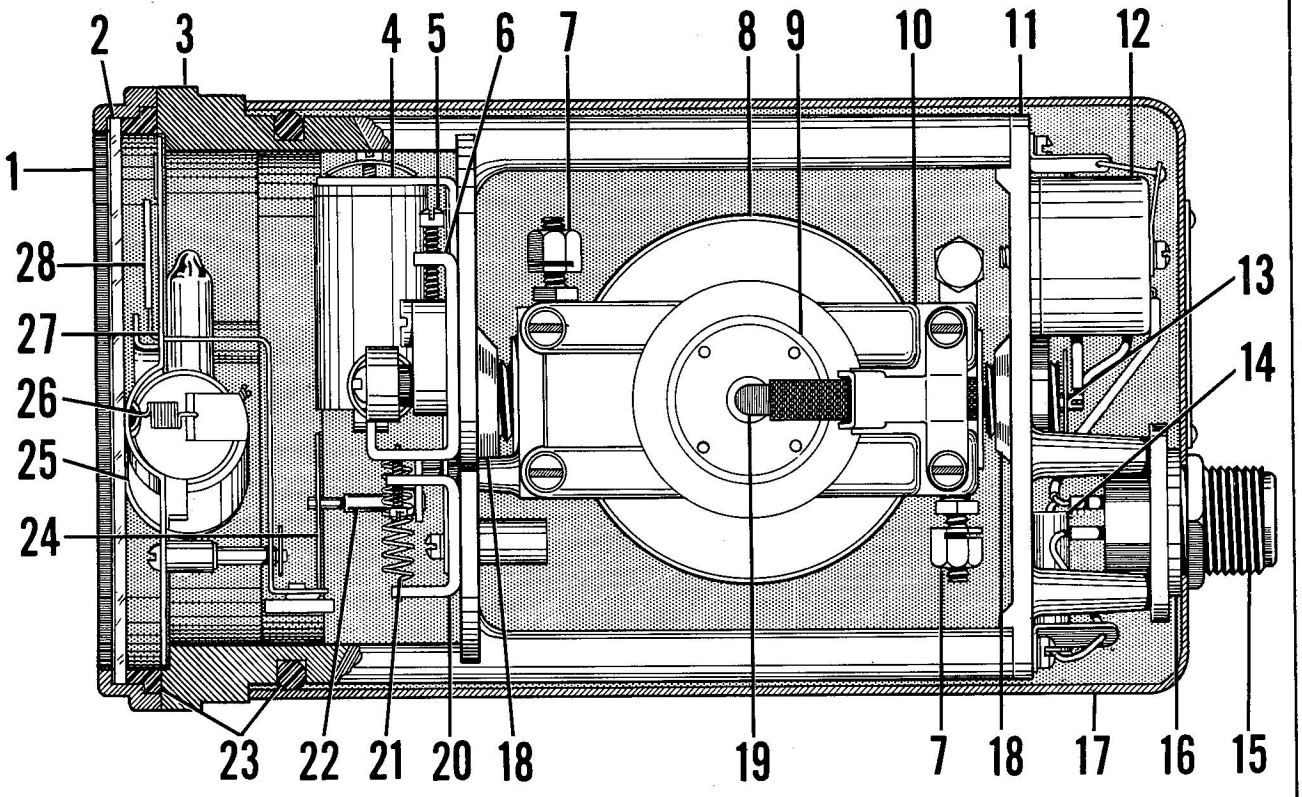
1-8. GYRO MOTOR ASSEMBLY. Motor assembly (8) is a 24-volt, dc, electric motor of the permanent magnet type. It operates at a governed speed of 5200 rpm. The motor is mounted in gimbal (10), which is pivoted on ball bearings to frame (3). The balance of the motor is adjustable with trimmer nuts (7). Electrical circuit to the motor is made through ground for the negative, and through contacts (13), and (19) for the positive.

LEADING PARTICULARS	
Model No.	B4
Type	USAF C-5
Navy Stock No.	R88-I-3223
Dial markings	Fluorescent, radio active
Deflection	Two widths of pointer indicates turn of three degrees per second
Motor	Gyroscopical, permanent magnet type
Volts	24 dc
Amperes	150 Milliamperes
Mounting	With flange onfront side of instrument panel; four 6-32 x 1 inch screws into fixed nut plates
Weight	1 pound, 12 ounces

1-9. RECEPTACLE. Receptacle (15) is a three-pin AN receptacle. Pin "A" is positive; pin "B" is negtive; and, pin "C" is idle. See figure 3-1 for wiring diagram.

1-10. REAR PLATE ASSEMBLY. Rear plate (11) provides the rear contact pivot for gimbal (10), and mounting area for choke coil (12), and condensers (14). The choke coil and condensers provide filtering for radio noise interference.

1-11. INDICATOR ASSEMBLY. Actuating pin (22), which is part of gimbal (10), engages pointer fork (24) to actuate pointer (28). Inclinometer (25) is attached to its retainer by two painted wires. The wires are fixed 15/32 inch apart and also serve as markers for the movement of the glass ball in the inclinometer tube. The retainer is attached to dial (27) by two springs (26). The dial is attached to the frame by two screws.



1 - Bezel
2 - Glass
3 - Frame
4 - Damping unit
5 - Screw
6 - Arm
7 - Nut
8 - Motor assy
9 - Nut
10 - Gimbal
11 - Plate
12 - Choke coil
13 - Contact
14 - Condenser
15 - Receptacle
16 - Gasket
17 - Cover
18 - Pivot
19 - Contact
20 - Anchorage
21 - Spring
22 - Pin
23 - Gasket
24 - Fork
25 - Inclinometer
26 - Spring
27 - Dial
28 - Pointer

Figure 1-2. Bank and Turn Indicator Assembly, Model B4

SECTION II
OVERHAUL INSTRUCTIONS

2-1. SPECIAL TOOLS.

2-2. Special tools and test equipment required to overhaul Type USAF C-6 Bank and Turn Indicator Assemblies are listed in Table A1.

TABLE A1

Item No.	Class Code	Part Number	Nomenclature	Org.	Field	50-100-200 Depot	Station
1	8042	SE1857	HOLDING FIXTURE, Motor balancing	0	0	1-1-2	1
2	7800	SE2040	HOLDING FIXTURE, Current and RPM voltage checking	0	0	1-1-2	1
3	8042	SE2373	PULLER, Type SS6-4B-6 gimbal bearing	0	0	1-2-4	1
4	8042	SE3205	ALIGNING FIXTURE, Type M5-133 gimbal adjusting	0	0	1-1-1	1
5	8042	SE3206	ALIGNING FIXTURE, Inclinometer and dial	0	0	1-1-1	1
6	8042	SE3216	WRENCH, Pivot locking nut	0	0	1-2-4	1
7	8042	SE3217	HOLDING FIXTURE, Type B4B-D final assy	0	0	4-8-12	4
8	8042	SE3218	WRENCH, Gyro motor rotor nut	0	0	1-2-4	1
9	8042	SE4071	ADAPTER, Magnet housing magnetizing	0	0	1-1-2	1
10	8042	SE4072	PULLER, Gimbal bearing	0	0	2-4-8	2 and 50 percent
11	8042	SE4073	FIXTURE, Motor brush separator	0	0	2-4-6	2
12	8042	SE4074	STRAIGHTENER, Inclinometer wire	0	0	2-2-4	2
13	7800	SE4075	TESTER, Inclinometer ball	0	0	1-1-1	1

2-3. DISASSEMBLY. (See figure 2-1.)

NOTE

Never disassemble any more of the instrument than is necessary to make required inspections and repairs. Inspect parts as they are disassembled as outlined in paragraph 2-9. Handle all parts with extreme care, and keep protected from dust and dirt.

a. Remove nut (2), and cover (3). The cover is a dust-tight fit on gasket (107) on the frame. Use a slight twisting motion to break the cover loose from the gasket.

b. Set the instrument in a holding fixture with the dial face up. Remove eight screws (7), and washers (8). Lift off bezel (9). Glass (11) is held in the bezel by the friction of gaskets (10), and (12). The glass may remain with the bezel or in the frame.

CAUTION

Remove bezel (9) and associated parts very carefully to avoid scratching dial (15) or bending pointer (21).

c. Remove two screws (14). Turn the instrument with the dial down, and remove the indicator assembly. (See figure 2-3 for illustration of complete assembly.) Remove one screw (13), and remove the pointer assembly. Remove clip (23), and separate pointer unit (21) from pointer pivot (22). The pointer unit and the pointer pivot are mated parts and must be kept together.

d. Remove two springs (16), and lift inclinometer (19) from dial (15). Untwist two wires (20), and remove retainer (17), and reflector card (18) from the inclinometer.

e. Remove gimbal restraining spring (25). (See figure 2-3 for illustration of complete assembly.) Remove one screw (29) from each anchor assembly, and lift out the anchor assembly. These assemblies consist of one anchor (26) and one ball bearing (27). Do not remove the ball bearing from the anchor unless it is necessary to replace either the ball bearing or the anchor.

f. Remove four screws (34), and washers (35). Lift out damping cylinder assembly (31), and piston assembly (32), and ground (33). The cylinder assembly and the piston assembly are mated parts, and must be kept together. Do not remove the piston from the cylinder except for purposes of inspection.

g. Remove four screws (39), and washers (40). Lift off the rear plate assembly. (See figure 2-4 for illustration of complete assembly.) Lift the assembly straight up to avoid binding contact pivot assembly (53) in ball bearing (56) in the gimbal. Parts of the rear plate assembly may be inspected and tested without disassembly. Remove only those parts requiring replacement.

h. Lift the gyro motor assembly out of frame (123). (See figure 2-5 for illustration of complete assembly.) Lift the motor assembly straight out to avoid binding ball bearing (56) on contact pivot assembly (120) in the frame. Remove two screws (64), and washers (65). Lift off clamp (63), and positive lead assembly (66). Remove two screws (70), and washers (71). Lift gimbal end (69) off the gimbal and the ball bearing of the rotor assembly. Remove one set screw (61), and plug (62). Remove motor adjustment nut (67), with "O" ring packing (68).

i. Carefully pull rotor assembly (72) from the stator. Remove ball bearings (75), and spacer (76) from the rotor shaft. Remove two screws (74), and lift out governor support assembly (73).

j. Remove trimmer screw (77), and support (78). Remove trimmer nuts (81), lead assembly (84), and trimmer studs (88). Remove positive lead assembly (57), and insulators (58). Remove set screw (61), and plug (62), and remove motor adjustment nut (67), with "O" ring packing (68). Lift magnet housing (90) from the gimbal. Remove negative and positive brush arm support assemblies (92), and (100). Remove brush arm assemblies (95), and (101) from their support assemblies. Do not attempt to remove magnet (89) from magnet housing (90). These parts become mated in original assembly. Pull ball bearings (56) from gimbal (106).

k. Remove restraining spring (108) from the frame assembly. (See figure 2-6 for illustration of complete assembly.) Remove two screws (110), and lift off clamp (109), and zeroing screw anchorage (112). Remove lock nut (114), and lift off pointer zeroing arm. Remove one screw (116), and remove pivot (115), and sensitive adjust arm (117) from the pointer zeroing arm.

l. Remove bumpers (121), and bumper stops (122). Remove gasket (107).

2-4. CLEANING.

2-5. BALL BEARINGS. Clean ball bearings thoroughly with chloroform, USP Grade, and dry with moisture-free compressed air at approximately 10 psi pressure. Immediately inspect and lubricate ball bearings after cleaning, then store in dust-proof container until used in reassembly.

CAUTION

Do not leave ball bearings exposed to air for more than five minutes after cleaning before lubricating.

2-6. DIAL AND MARKINGS. Clean fluorescent painted markings with soft eraser. Clean black painted parts with soft brush, or with chamois.

2-7. MOTOR ASSEMBLY. Blow out rotor, stator, and brush arm assemblies with moisture-free compressed air at approximately 10 psi pressure.

2-8. DAMPING UNIT. Clean cylinder and piston with benzine, Federal Specification VV-B-231, or other suitable solvent for oil gum. Inspect immediately and, if satisfactory, replace piston in cylinder without lubrication, tape together and store in clean, dry container.

2-9. POINTER UNIT. Immediately after inspection, clean with benzine, Federal Specification VV-B-231, and reassemble the pointer assembly, spacer, and pivot assembly, and store in clean, dry container.

2-10. INSPECTION. (See figure 2-1.)

NOTE

Inspect parts before or immediately after disassembly of the part.

2-11. BALL BEARINGS. Immediately after cleaning, spin ball bearings on a shaft, and check for any sign of wear or defects. Inspect ball bearings (27) before removing them from anchors (26). Inspect ball bearings (75) before pulling them from the shaft of rotor assembly (72). Remove the shields from ball bearings (56) for cleaning and inspection. Some ball bearings (56) are not equipped with removable shields. In these instances, always replace the ball bearing.

2-12. DAMPING UNIT. Inspect chrome surface of piston and cylinder walls. There must be no scratches, or dents. Check wear in linkage between piston and

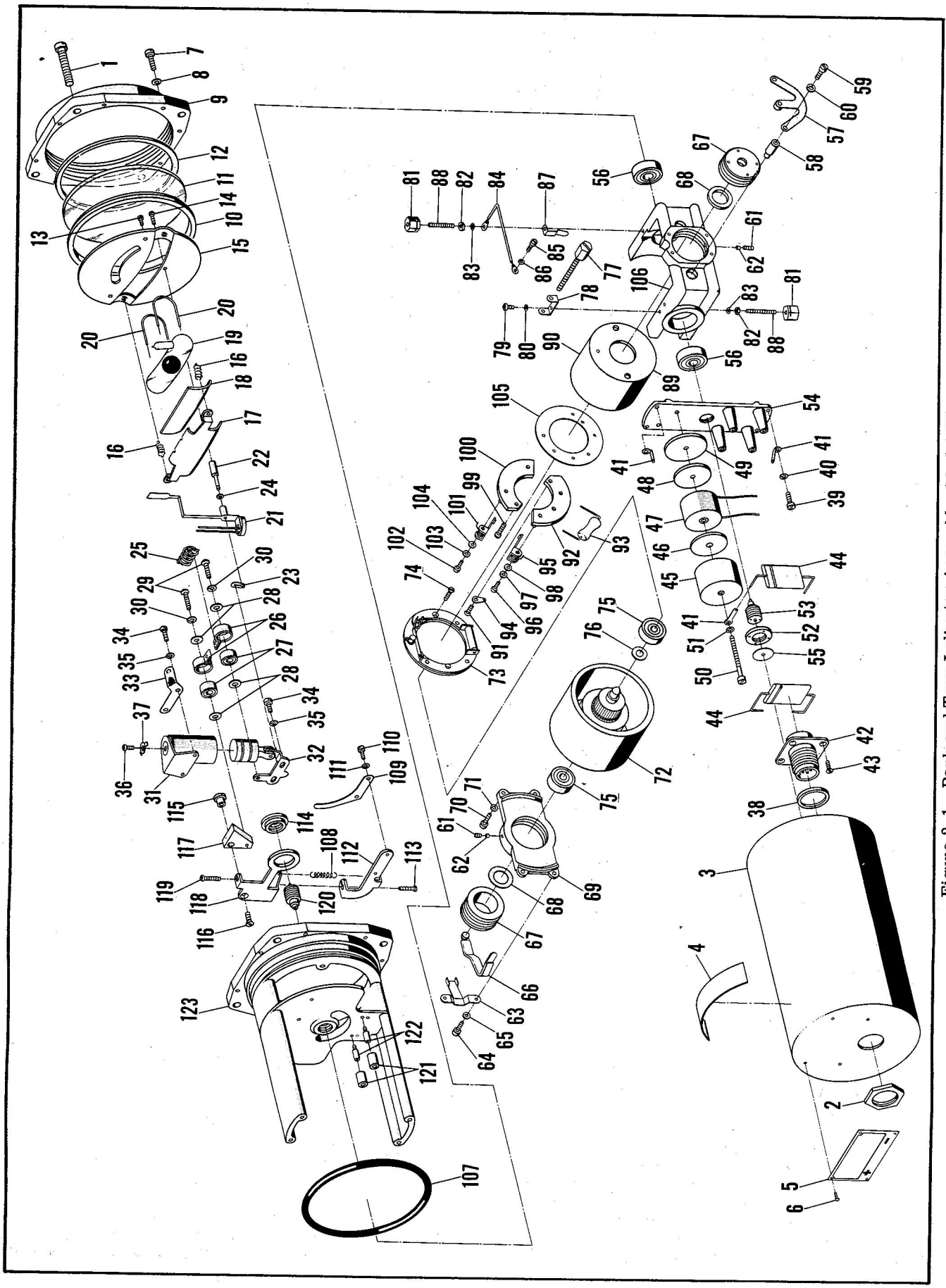


Figure 2-1. Bank and Turn Indicator Assembly, Model B4

1 - Screw
2 - Nut
3 - Cover
4 - Decal
5 - Nameplate
6 - Screw
7 - Screw
8 - Washer
9 - Bezel
10 - Gasket
11 - Glass
12 - Gasket
13 - Screw
14 - Screw
15 - Dial
16 - Spring
17 - Retainer
18 - Card
19 - Inclinometer
20 - Wire
21 - Pointer unit
22 - Pivot
23 - Clip
24 - Spacer
25 - Spring
26 - Anchor
27 - Bearing
28 - Washer
29 - Screw
30 - Washer
31 - Cylinder assy
32 - Piston assy
33 - Ground
34 - Screw
35 - Washer
36 - Screw
37 - Spring
38 - Gasket
39 - Screw
40 - Washer
41 - Lug
42 - Receptacle
43 - Screw
44 - Condenser
45 - Shield
46 - Insulation
47 - Coil assy
48 - Insulation
49 - Plate
50 - Screw
51 - Washer
52 - Nut
53 - Pivot assy
54 - Plate
55 - Washer
56 - Bearing
57 - Lead assy
58 - Insulation
59 - Screw
60 - Washer
61 - Screw
62 - Plug
63 - Clamp
64 - Screw
65 - Washer
66 - Lead assy
67 - Nut
68 - Packing
69 - End
70 - Screw
71 - Washer
72 - Rotor assy
73 - Support assy
74 - Screw
75 - Bearing
76 - Spacer
77 - Screw
78 - Support
79 - Screw
80 - Washer
81 - Nut
82 - Nut
83 - Washer
84 - Lead assy
85 - Screw
86 - Washer
87 - Contact
88 - Stud
89 - Magnet
90 - Housing
91 - Screw
92 - Support subassy
93 - Condenser
94 - Lug
95 - Arm assy
96 - Screw
97 - Washer
98 - Washer
99 - Screw
100 - Support subassy
101 - Arm assy
102 - Screw
103 - Washer
104 - Washer
105 - Insulation
106 - Gimbal
107 - Gasket
108 - Spring
109 - Clamp
110 - Screw
111 - Washer
112 - Anchorage
113 - Screw
114 - Nut
115 - Pivot
116 - Screw
117 - Arm
118 - Arm
119 - Screw
120 - Pivot
121 - Bumper
122 - Stop
123 - Frame

KEY FOR FIGURE 2-1.

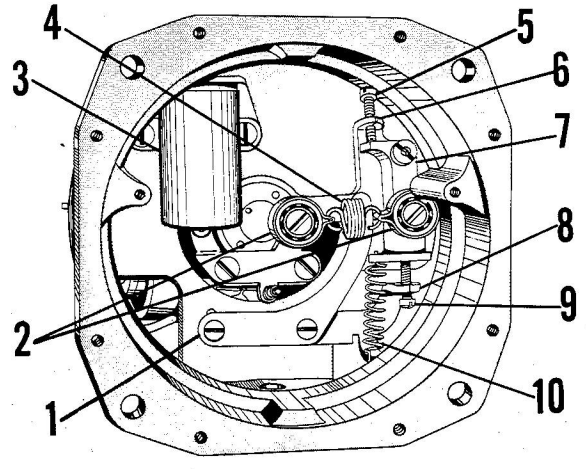
arm assembly. Wear must not be more than 0.002 inch.

2-13. POINTER UNIT. Check lateral play between pointer assembly (21) and pivot assembly (22). Clearance between parts must not be more than .0006 - .0010 inch by dial indicator measurement. If there is any discernible lateral play, replace both parts.

2-14. STATOR ASSEMBLY. Springs of brush arm assemblies must be in perfect condition and have sufficient tension to hold brushes firmly on the commutator. Arms must move freely on their pivots. Brushes must not be worn to less than 1/32 inch in length as measured at lowest point. Check resistance of condenser (93) with ohmmeter. If the resistance is anything less than infinite, replace the condenser.

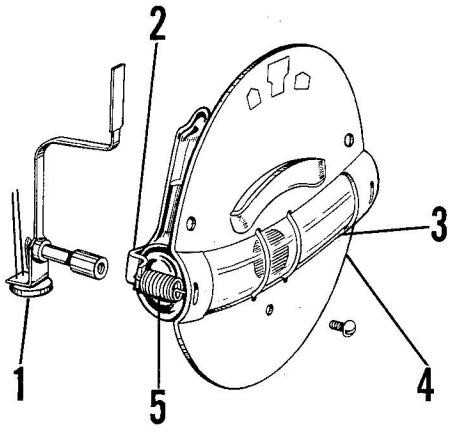
2-15. ROTOR ASSEMBLY. Commutator must not be worn more than 0.005 inch on a side. Check resistance between all adjacent segments of the commutator. Resistance must be 8 to 12 ohms. Check resistance between any point on the commutator and ground. If resistance is anything less than infinite, replace the rotor. Check balance on dynamic balancing machine.

2-16. GIMBAL CONTACT PIVOT ASSEMBLIES. Bearing surfaces must not be scored from ball bearings (56).



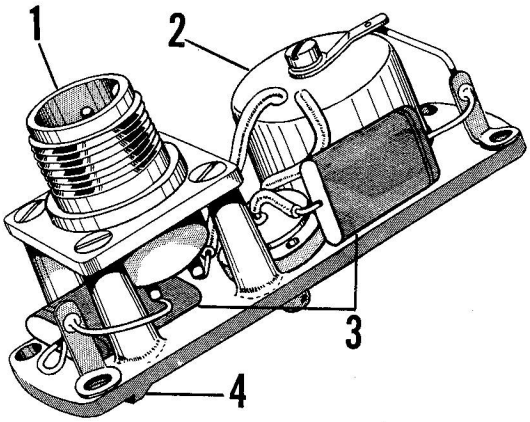
1 - Clamp
2 - Anchor assy
3 - Damper assy
4 - Spring
5 - Screw
6 - Arm
7 - Arm
8 - Anchorage
9 - Screw
10 - Spring

Figure 2-2. Front End Assembly



1 - Pointer assy
2 - Retainer
3 - Inclinometer
4 - Dial
5 - Spring

Figure 2-3. Indicator Assembly



1 - Receptacle
2 - Choke coil
3 - Condenser
4 - Rear plate

Figure 2-4. Rear Plate Assembly

2-17. CHOKE COIL AND CONDENSERS. Check resistance of each condenser (44). If resistance is anything less than infinite, replace the condenser. Check resistance of choke coil (47) windings. Resistance must be approximately 3.3 ohms, and there must be no shorts or open circuit indications.

2-18. GOVERNOR ASSEMBLY. Contact points must not be pitted. Check resistance of the resistor. If resistance is anything less than infinite, replace the resistor.

2-19. DIAL AND MARKINGS. Fluorescent, radio active markings must not be flaked or cracked. Repaint as necessary.

2-20. TESTING.

2-21. All required tests are made during inspection. Refer to paragraph 2-10.

2-22. REPAIR OR REPLACEMENT.

2-23. Replace any part which is damaged, worn, or fails to meet requirements in inspection as outlined in paragraph 2-10. Always replace gaskets, and "O" ring packings. If necessary, turn commutator of rotor assembly with light lathe cut, not more than 0.005 inch on a side, and dress with 8/0 sandpaper. Cut back segment insulator to at least 0.010 inch below surface of commutator. Dress contact points of governor assembly with tungsten file.

2-24. LUBRICATION.

2-25. Lubricate ball bearings immediately after cleaning and inspection, and store in dry, clean container until used in reassembly.

TABLE I

LUBRICATION CHART

Part	Lubrication Instructions
Ball bearings (27), and (56)	Use one drop of oil, Specification MIL-O-6085. Do not over-lubricate. Spin ball bearings on shaft, or between fingers, to thoroughly distribute oil over all surfaces of balls and races.
Ball bearings (75)	Remove shields. Pack with 50 milligrams, plus or minus 10 milligrams, of grease, Specification MIL-G-3278. If bearings do not have removable shield, replace bearings.

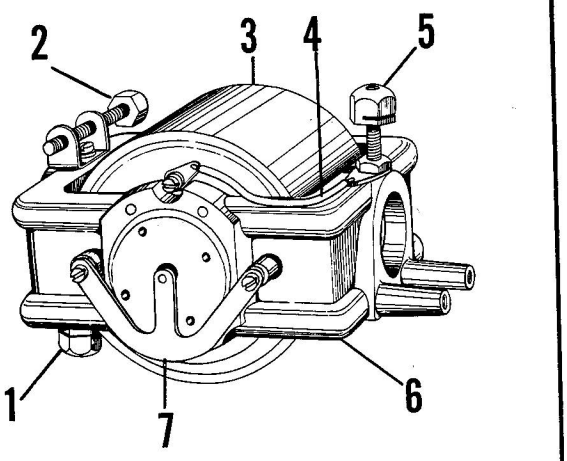
2-26. REASSEMBLY. (See figure 2-1.)

2-27. REASSEMBLY OF GYRO MOTOR ASSEMBLY. (See figure 2-5.for illustration of complete assembly.)

a. Install brush arm assembly (95) on its pivot on brush arm support subassembly (92). Solder the loose end of the brush arm spring to the solder lug beneath the pivot.

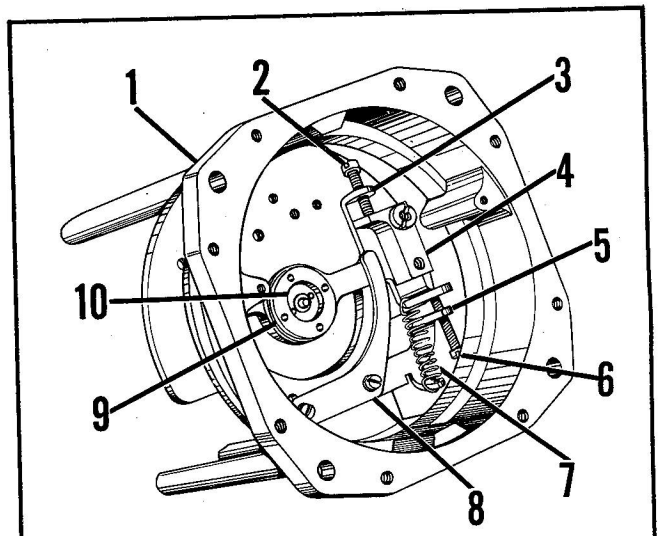
b. Install brush arm assembly (101) on its pivot on brush arm support subassembly (100). Solder the loose end of the brush arm spring, and one terminal of condenser (93) to the solder lug beneath the pivot. Solder the other terminal of the condenser to solder lug (94), and bend to fit under screw (91).

c. Press ball bearings (56) in gimbal (106). Set mag-



1 - Nut
2 - Screw
3 - Motor
4 - Negative lead assy
5 - Nut
6 - Gimbal
7 - Positive lead assy

Figure 2-5. Gyro Motor Assembly



1 - Frame
2 - Screw
3 - Arm
4 - Arm
5 - Anchorage
6 - Screw
7 - Spring
8 - Clamp
9 - Nut
10 - Pivot

Figure 2-6. Frame Assembly

net housing (90) on the gimbal with the three larger holes aligned with the notch in the gimbal and with the two holes in the gimbal. Set insulation washer (105) in place in the magnet housing. Install the negative brush support subassembly (100) in the magnet housing with its pivot aligned with the notch in the gimbal. Install positive brush arm support subassembly (92) in the magnet housing.

d. Attach end of lead assembly (84) to the negative brush arm pivot with one screw (85), and washer (86), through the screw hole in the magnet housing by the notch in the gimbal. Bend negative contact (87) for suitable contact with contact pivot assembly (120). Install trimmer stud (88), with contact (87) and the other end of lead assembly (84). Install the other trimmer stud (88), trimmer nuts (81), support (78), and trimmer screw (77).

e. Install governor support assembly (73) in rotor assembly (72). Press one spacer (76) and one ball bearing (75) on the commutator end of the rotor assembly. Press the other ball bearing (75) on the other end of the rotor assembly. Hold the brush arms of the stator in their operating position with a hollow cone, or similar tool, and install the rotor assembly in the stator. Install one "O" ring packing (68) in one motor adjustment nut (67). Install the adjustment nut in gimbal (106). Tighten to approximately flush with the gimbal surface.

f. Install gimbal end (69) on gimbal (106) with cutaway end over notch on gimbal. Secure with two screws (70), and washers (71). Install one "O" ring packing (68) in one motor adjustment nut (67). Install the adjustment nut in the gimbal end. Tighten the nut to approximately flush with the gimbal end surface.

g. Bend lead assembly (66) for suitable contact with pivot contact assembly (53) and with rotor shaft contact. Set the lead assembly in place, and secure with clamp (63), and two screws (64), and washers (65).

h. Tighten the two motor adjustment nuts (67) so that the rotor is approximately centered, and turns freely without any discernible end play.

i. Install positive brush lead assembly (57), with insulators (58), and secure with screws (59), and washers (60).

2-28. REASSEMBLY OF REAR PLATE ASSEMBLY. (See figure 2-4 for illustration of complete assembly.)

a. Insulate wire leads of condensers (44) and choke coil (47) with insulating tubing cut to fit. Install plate (49), insulation (48), choke coil assembly (47), insulation (46), and shield (45), and solder lug (41) on rear plate (54) with one screw (50), and washer (51).

b. Install gimbal contact pivot assembly (53) in rear plate (54) so that the bearing surface and one thread shows above boss on the motor side of the rear plate. Lock the pivot assembly in this position with lock nut (52). Lay insulating washer (55) over the contact pivot assembly and solder one lead of choke coil (47) and one lead of the upper condenser (44) to the contact pivot assembly. Solder the other lead of the condenser to the upper grounding solder lug (41), and then to solder lug (41) under screw (50).

c. Solder other lead from choke coil (47) and one lead from other condenser (44) to pin "A" of receptacle (42). Solder the other lead from the condenser to pin "B" of the receptacle and to the lower grounding lug (41). Install the receptacle on rear plate (54) with

the key toward the choke coil on the plate.

2-29. REASSEMBLY OF FRAME ASSEMBLY. (See figure 2-6 for illustration of complete assembly.)

a. Install gimbal stops (122), and bumpers (121).

b. Install sensitive adjust arm (117) on adjust arm pivot (115), and secure the pivot to pointer zeroing arm (118) with one screw (116). Thread contact pivot assembly (120) into bulkhead of the frame assembly so that the bearing surface and one thread shows on the rear side of the bulkhead. Install the pointer zeroing arm on the front side of the bulkhead and secure with lock nut (114). Final adjustment of the contact pivot assembly and the lock nut is made when the motor assembly is installed in the frame. Install adjusting screw (119) in the zeroing arm.

c. Install adjusting screw (113) in zeroing screw anchorage (112). Install the anchorage and clamp (109) on the bulkhead. Install restraining spring (108) between the anchorage and pointer zeroing arm.

2-30. REASSEMBLY OF INDICATOR ASSEMBLY. (See figure 2-3 for illustration of complete assembly.)

a. Insert reflector card (18) in retainer (17) with the painted side out. Set inclinometer (19) in the retainer and wire together with two wires (20). Twist the wires carefully. They must not be too tight, but must hold the inclinometer firmly against the retainer. The wires must be 15/32 inch apart on the front side of the inclinometer.

b. Attach the inclinometer assembly to dial (15) with two springs (16). Install pointer unit (21), spacer (24), and pointer pivot (22) on the dial with one screw (14). Cement the inclinometer to the dial with cement, Specification MIL-C-4003 (USAF).

2-31. REASSEMBLY OF SUBASSEMBLIES.

a. Set the frame assembly on a smooth surface with the front end down. Set the gyro motor assembly in frame (123) with the gimbal posts through the slots in the bulkhead, and ball bearing (56) on contact pivot assembly (120). The contact pivot must contact grounding contact (87).

b. Set the rear plate assembly in place on the frame assembly with contact pivot assembly (53) through ball bearing (56), and contacting end of lead assembly (66). Check that the rear plate rests firmly in place before installing attaching screws. If it does not, loosen contact pivot assembly (120) to allow the motor assembly to move toward the bulkhead until the rear plate rests firmly in place. Install screws (39), and washers (40), through the solder lugs and into the rear plate assembly.

c. Place the instrument in a holding fixture with the dial end up. Adjust contact pivot assembly (120) to reduce the end play of the gimbal in the frame to 0.001 — 0.004 inch. Lock the pivot assembly in position with lock nut (114).

d. Set the damping unit in place on the front side of the bulkhead of the frame assembly. Do not allow the piston to come out of the cylinder. Secure the cylinder assembly (31) and ground cover contact (33) to the bulkhead with two screws (34), and washers (35). Secure the piston assembly arm to the gimbal posts with two screws (34), and washers (35).

e. Install one ball bearing (27) in each spring anchor (26). Install one anchor assembly, with one plain washer (28) on each side, on sensitive adjust arm (117) with one screw (29), and washer (30). Install the other anchor assembly on arm of piston assembly, with one plain washer (28) on each side, with one screw (29), and washer (30). Connect gimbal restraining spring (25) between the two anchor assemblies.

f. Check the alignment of the arm of the piston assembly in its linkage to the piston. Alignment must be so as to permit freedom of movement. If necessary, bend the arm slightly to provide the proper alignment.

g. Carefully set the indicator assembly in place with the actuating pin of the damping unit engaging the fork of the pointer unit. Attach the indicator assembly loosely with two screws (14).

h. Set the instrument in a balancing and leveling fixture. Level the fixture. Then center the ball in the inclinometer by moving the indicator assembly, and then tighten screws (14).

i. Deflect the gimbal from stop to stop and check the amount of deflection of the pointer. The pointer deflections must be approximately equal each side of center. Adjust the deflections by loosening two screws (34) in the arm of the piston assembly, and changing the position of the arm on the gimbal posts.

j. Adjust the pointer to zero with zero adjusting screw (113). Rotate the instrument about its longitudinal axis 180 degrees. Adjust the pointer to zero by removing one half of the error with adjusting screw (113), and the other one half with trimmer screw (77). If the total error is more than can be adjusted in this manner, it will be necessary to shift the position of the rotor assembly by adjusting motor adjusting nuts (67). Make certain that the rotor turns freely after each adjustment. After final adjustment of the rotor, lock the adjusting nuts in place with plugs (62), and set screws (61).

k. Rotate the instrument about its longitudinal axis 90 degrees. Zero the pointer by adjusting trimmer nuts (81). There are three different weights of these nuts. Use the one best suited. Rotate the instrument about its longitudinal axis 180 degrees. The pointer must zero. If the pointer does not zero, check the balance in the zero and in the inverted position as outlined in paragraph 2-31 j.

l. Install damper adjusting screw (36), with lock spring (37) in cylinder assembly (31). Thread the screw in far enough to prevent the pointer from swinging past zero when the gimbal is deflected.

m. Set the instrument on a turntable with the dial

perpendicular with the plane of the table. Apply 24 volts, dc, for three minutes. Rotate the turntable at the rates shown in Table I, Section III. Note the deflections of the pointer in inches. The deflections must meet the tolerances listed in Table I, Section III. If the deflections are not within these tolerances adjust adjusting screw (119). Tightening the screw reduces the deflections; loosening the screw increases the deflections. If more than a slight adjustment of the screw is required, it will be necessary to again adjust the zeroing of the pointer with adjusting screw (113).

n. Install bezel (9) with glass (11) and gaskets (12) and (10). Install gasket (107) on the frame.

o. Conduct final tests as outlined in Section III. Then install cover (3).

SECTION III
TEST PROCEDURE

3-1. PREPARATION FOR TESTS.

3-2. Conduct tests with the cover removed from the instrument so that adjustments may be made as necessary. Mount the instrument on a balancing and leveling fixture which can be tilted to simulate roll of an airplane, and then returned to a true level flight position.

3-3. INCLINOMETER TESTS.

3-4. If the inclinometer fails to meet any of these tests, replace the inclinometer.

a. Tip the instrument about its longitudinal axis through 8 to 12 degrees to either side. The ball in the inclinometer must stop just short of the limits of its range at the end of the tube, and must not stick there when the instrument is centered.

b. With the instrument in the center position, zero degrees, tap the fixture gently. The ball must come to rest within 1/32 inch of the inclinometer zero mark.

c. With the instrument in the zero position, no part of the air bubble must be visible from a position directly in front of the dial face.

d. Slowly tip the instrument to either side of the vertical plane of the dial, and gently tap the fixture. The ball must roll smoothly from side to side.

e. Tip the instrument so that the ball is at rest at either end of the tube. Not less than one half of the ball must be visible when viewed from a position 12 inches directly in front of the dial face.

3-5. TURN INDICATOR TESTS.

3-6. These test steps are a continuation of the steps in paragraph 3-4. All index numbers in these steps refer to figure 2-1. Always gently tap the fixture before noting the position of the pointer during tests.

a. Return the instrument to the fixture zero position. Check the zeroing of the pointer. The pointer must

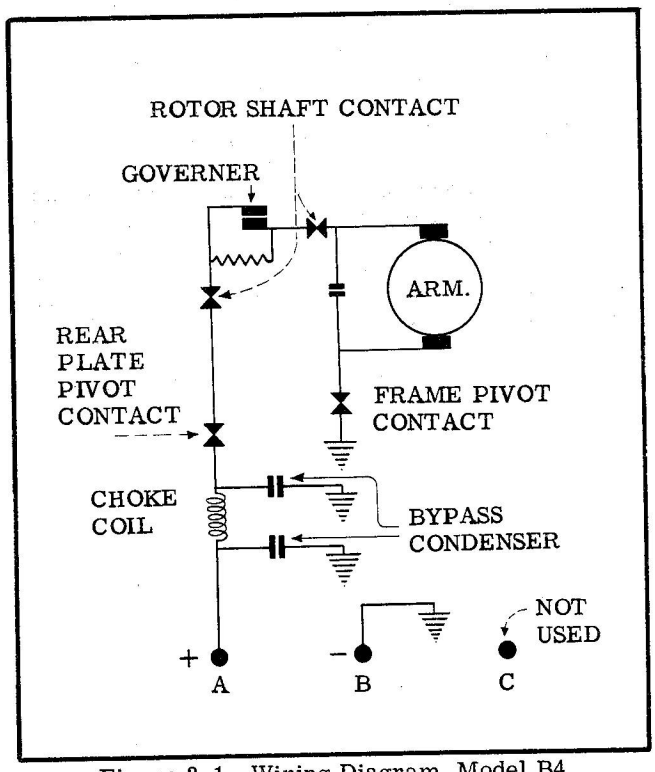


Figure 3-1. Wiring Diagram, Model B4

zero to within 0.010 inch. If it does not, adjust zeroing adjusting screw (113).

b. Deflect the gimbal from stop to stop. Check the deflections of the pointer. The deflections must be approximately equal each side of zero. If the deflections are not approximately equal, loosen screws (34) in the arm of piston assembly (32), and adjust the position of the arm on the gimbal posts.

c. Note the position of the pointer in relation to its zero. Rotate the instrument about its longitudinal axis 180 degrees, tap the fixture, and note the position of the pointer. If the pointer is off zero, adjust screw (119).

d. Rotate the instrument about its longitudinal axis 90 degrees right and left. If pointer does not zero properly, adjust screw (119). Tightening the screw reduces deflections; loosening the screw increases deflections. If more than a slight adjustment of the screw is required, it will be necessary to again adjust the zeroing with screw (113).

e. Rotate the instrument about its longitudinal axis 360 degrees, and continue to check zeroing of pointer. The pointer must always zero to within 0.030 inch for any position.

f. Apply 15 volts, dc, to the receptacle. See wiring diagram, figure 5-1. The rotor must begin to turn and continue to turn at this voltage. If it does not, it will indicate excessive friction in the rotor ball bearings, or interference between the rotor and the stator.

g. Connect a 0-to-0.5 ampere, dc, ammeter in series with the instrument. Apply 24 volts, dc, to the receptacle. The current drain must not exceed 150 milliamperes. If the current does exceed 150 milliamperes, check the rotor ball bearings for excessive friction. If the ball bearings are satisfactory, then the magnet in the stator is weak, and must be replaced.

h. Use a stroboscopic tachometer to check the speed of the motor. At 24 volts, dc, the speed must be 5200 rpm. Adjust the speed with the governor adjusting screw, which is accessible through a hole in rotor. Tightening the screw increases the speed; loosening the screw decreases the speed.

i. The pointer must not deviate from the zero position more than 0.010 inch for any stationary position while the motor is operating at 5200 rpm. If the deviation is excessive it will indicate that the rotor is out of balance. Re-balance the rotor on a dynamic balancing machine.

j. Set the instrument in its operating position on the turntable. Rotate the turntable at a rate of 3 rpm. Suddenly stop the turntable, and check the time required for the pointer to zero. The time must not be less than one second, nor more than three seconds.

k. With the instrument in the upright position, apply 24 volts, dc, for three minutes. Rotate the turntable at the rates listed in Table I, and check the deflections of the pointer tip in inches. The deflections must be within the tolerances listed in Table I. If they are not, adjust screw (119). Tightening the screw reduces deflections; loosening the screw increases deflections. The amount of adjustment is a matter of trial and test. It is suggested that the adjustments be first made for the 180-degree per minute rate, and then checked for the other rates.

TABLE I

Instrument Type	Rate of Turntable Rotation (degrees per minute)	Deflection of Pointer Tip (inches)
USAF C-5	36	1/16 ± 1/64
	180	5/16 ± 1/32
	360	5/8 ± 1/16

SECTION IV
DIFFERENCE DATA SHEETS

4-1. Overhaul and test procedures for the models included in this section are the same as the procedures for Model B4 except for the specific differences noted by the applicable Difference Data Sheet. Sections I through III contain complete overhaul and test information for Model B4.

LIST OF MODELS COVERED IN SECTION IV

BANK AND TURN INDICATOR ASSEMBLY — MODEL B4-A

THE INSTRUCTIONS CONTAINED IN THE PRECEDING SECTIONS OF THIS HANDBOOK APPLY EXCEPT FOR THE DIFFERENCES LISTED IN THIS DATA SHEET

LEADING PARTICULARS. Same as Model B4 except

Type	AN 5819-3
Navy Stock No.	R88-I-3221
Deflection	One width of pointer indicates turn of three degrees per second.
Mounting	With flange on back side of instrument panel.

SPECIAL TOOLS. Same as Model B4.

DISASSEMBLY. Same as Model B4.

CLEANING. Same as Model B4.

INSPECTION. Same as Model B4.

TESTING. Same as Model B4.

REPAIR OR REPLACEMENT. Same as Model B4.

LUBRICATION. Same as Model B4.

REASSEMBLY. Same as Model B4 except that pointer deflections must be within tolerances listed in Table I.

TEST PROCEDURE. Same as Model B4 except that pointer deflections must be within tolerances listed in Table I.

TABLE I

Instrument Type	Rate of Turntable Rotation (degrees per minute)	Deflection of Pointer Tip (inches)
AN 5819-3	36	1/32 ± 1/64
	180	5/32 ± 1/32
	360	5/16 ± 1/16

BANK AND TURN INDICATOR ASSEMBLY — MODEL B4-B

THE INSTRUCTIONS CONTAINED IN THE PRECEDING SECTIONS OF THIS HANDBOOK APPLY EXCEPT FOR THE DIFFERENCES LISTED IN THIS DATA SHEET

LEADING PARTICULARS. Same as Model B4 except

Type	AN 5819-4
Navy Stock No.	R88-I-3221-10
Dial markings	Fluorescent
Deflection	One width of pointer indicates turn of three degrees per second.
Mounting	With flange on back side of instrument panel.

SPECIAL TOOLS. Same as Model B4.

DISASSEMBLY. Same as Model B4.

CLEANING. Same as Model B4.

INSPECTION. Same as Model B4.

TESTING. Same as Model B4.

REPAIR OR REPLACEMENT. Same as Model B4.

LUBRICATION. Same as Model B4.

REASSEMBLY. Same as Model B4 except that pointer deflections must be within tolerances listed in Table II.

TEST PROCEDURE. Same as Model B4 except that pointer deflections must be within tolerances listed in Table II.

TABLE II

Instrument Type	Rate of Turntable Rotation (degrees per minute)	Deflection of Pointer Tip (inches)
AN 5819-4	36	$1/32 \pm 1/64$
	180	$5/32 \pm 1/32$
	360	$5/16 \pm 1/16$

BANK AND TURN INDICATOR ASSEMBLY

MODEL B4A

THE INSTRUCTIONS CONTAINED IN THE PRECEDING SECTIONS OF THIS HANDBOOK APPLY EXCEPT FOR THE DIFFERENCES LISTED IN THIS DATA SHEET

LEADING PARTICULARS. Same as Model B4 except

Weight	1 pound, 14 ounces.

SPECIAL TOOLS. Same as Model B4.

DISASSEMBLY. (See figure 4-1.) Same as Model B4 except that filter assembly (42) replaces individual radio noise filtering components used on Model B4 and insulation (46) is used between insulating washer (48) and the filter assembly. Remove and discard spring washer between contact pivot assembly (116) and ball bearing (51), if present.

CLEANING. Same as Model B4.

INSPECTION. Same as Model B4 except that radio noise filtering components are contained in filter assembly (42). Resistance between receptacle pin "A" and insulated terminal of the filter assembly must be approximately 0.5 ohm. Resistance between receptacle pin "A" and ground must not be less than infinite.

TESTING. Same as Model B4.

LUBRICATION. Same as Model B4.

REPAIR OR REPLACEMENT. Same as Model B4.

REASSEMBLY. Same as Model B4 except that filter assembly (42) replaces individual radio noise filtering components. Use insulation (46) between contact pivot assembly (50) and filter assembly (42). Ground shield of wire from filter assembly to contact pivot assembly to solder lug (41).

TEST PROCEDURE. Same as Model B4. See figure 4-2 for wiring diagram.

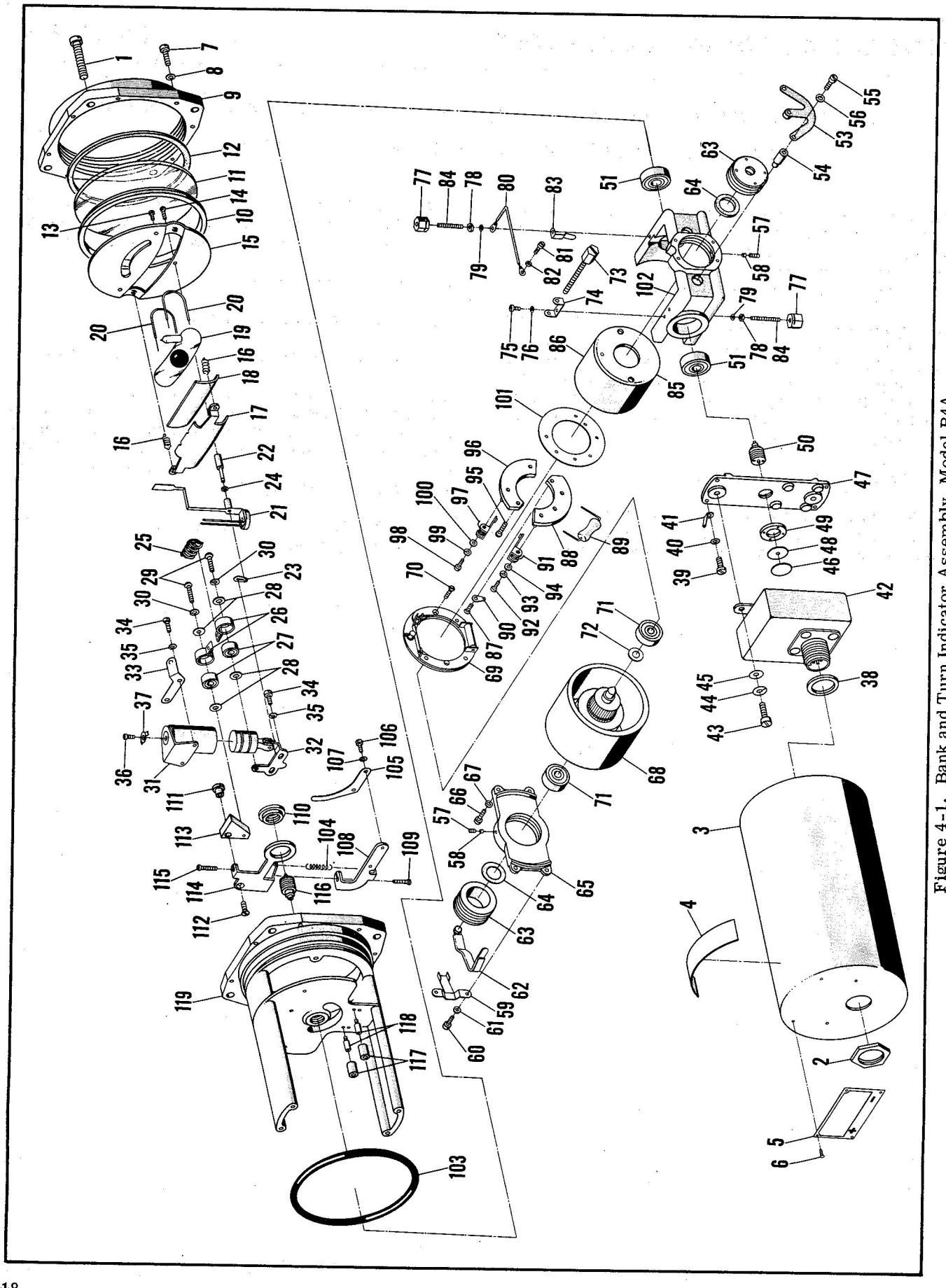


Figure 4-1. Bank and Turn Indicator Assembly, Model B4A

1 - Screw
2 - Nut
3 - Cover
4 - Decal
5 - Nameplate
6 - Screw
7 - Screw
8 - Washer
9 - Bezel
10 - Gasket
11 - Glass
12 - Gasket
13 - Screw
14 - Screw
15 - Dial
16 - Spring
17 - Retainer
18 - Card
19 - Inclinometer
20 - Wire
21 - Pointer unit
22 - Pivot
23 - Ring
24 - Spacer
25 - Spring
26 - Anchor
27 - Bearing
28 - Washer
29 - Screw
30 - Washer
31 - Cylinder assy
32 - Arm assy
33 - Ground
34 - Screw
35 - Washer
36 - Screw
37 - Spring
38 - Gasket
39 - Screw
40 - Washer
41 - Lug
42 - Filter assy
43 - Screw
44 - Washer
45 - Washer
46 - Insulation
47 - Plate
48 - Washer
49 - Nut
50 - Pivot assy
51 - Bearing
52 - (Deleted)
53 - Lead assy
54 - Insulation
55 - Screw
56 - Washer
57 - Screw
58 - Plug
59 - Clamp
60 - Screw
61 - Washer
62 - Lead assy
63 - Nut
64 - Packing
65 - End
66 - Screw
67 - Washer
68 - Rotor assy
69 - Support assy
70 - Screw
71 - Bearing
72 - Spacer
73 - Screw
74 - Support
75 - Screw
76 - Washer
77 - Nut
78 - Nut
79 - Washer
80 - Lead assy
81 - Screw
82 - Washer
83 - Contact
84 - Stud
85 - Magnet
86 - Housing
87 - Screw
88 - Support subassy
89 - Condenser
90 - Lug
91 - Arm assy
92 - Screw
93 - Washer
94 - Washer
95 - Screw
96 - Support subassy
97 - Arm assy
98 - Screw
99 - Washer
100 - Washer
101 - Insulation
102 - Gimbal
103 - Gasket
104 - Spring
105 - Clamp
106 - Screw
107 - Washer
108 - Anchorage
109 - Screw
110 - Nut
111 - Pivot
112 - Screw
113 - Arm
114 - Arm
115 - Screw
116 - Pivot
117 - Bumper
118 - Stop
119 - Frame

KEY FOR FIGURE 4-1

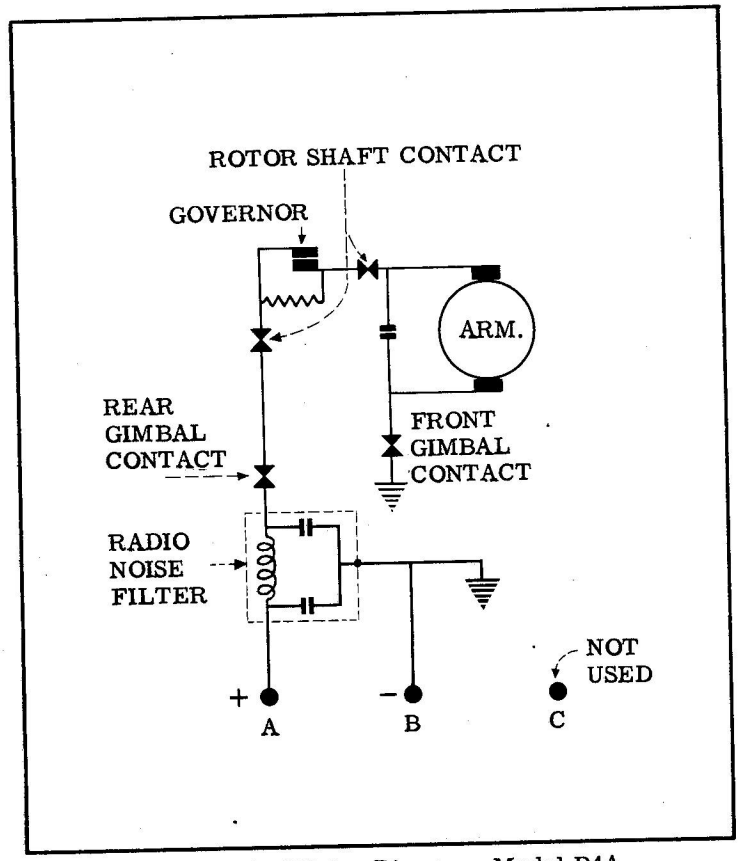


Figure 4-2. Wiring Diagram, Model B4A

BANK AND TURN INDICATOR ASSEMBLY — MODEL B4A-A

THE INSTRUCTIONS CONTAINED IN THE PRECEDING SECTIONS OF THIS HANDBOOK APPLY EXCEPT FOR THE DIFFERENCES LISTED IN THIS DATA SHEET

LEADING PARTICULARS. Same as Model B4 except

Type	AN 5819-3
Navy Stock No.	R88-I-3221
Deflection	One width of pointer indicates turn of three degrees per second.
Mounting	With flange on back side of instrument panel.
Weight	1 pound, 14 ounces.

SPECIAL TOOLS. Same as Model B4.

DISASSEMBLY. (See figure 4-3.) Same as Model B4 except that filter assembly (42) replaces individual radio noise filtering components used on Model B4 and insulation (46) is used between insulating washer (48) and the filter assembly. Remove and discard spring washer between contact pivot assembly (116) and ball bearing (51), if present.

CLEANING. Same as Model B4.

INSPECTION. Same as Model B4 except that radio noise filtering components are contained in filter assembly (42). Resistance between receptacle pin "A" and insulated terminal of the filter assembly must be approximately 0.5 ohm. Resistance between receptacle pin "A" and ground must not be less than infinite.

TESTING. Same as Model B4.

LUBRICATION. Same as Model B4.

REPAIR OR REPLACEMENT. Same as Model B4.

REASSEMBLY. Same as Model B4 except that filter assembly (42) replaces individual radio noise filtering components. Use insulation (46) between contact pivot assembly (50) and filter assembly (42). Ground shield of wire from filter assembly to contact pivot assembly to solder lug (41). Pointer deflections must be within tolerances listed in Table III.

TEST PROCEDURE. Same as Model B4 except that pointer deflections must be within tolerances listed in Table III. See figure 4-4 for wiring diagram.

TABLE III

Instrument Type	Rate of Turntable Rotation (degrees per minute)	Deflection of Pointer Tip (inches)
AN 5819-3	36	1/32 ± 1/64
	180	5/32 ± 1/32
	360	5/16 ± 1/16

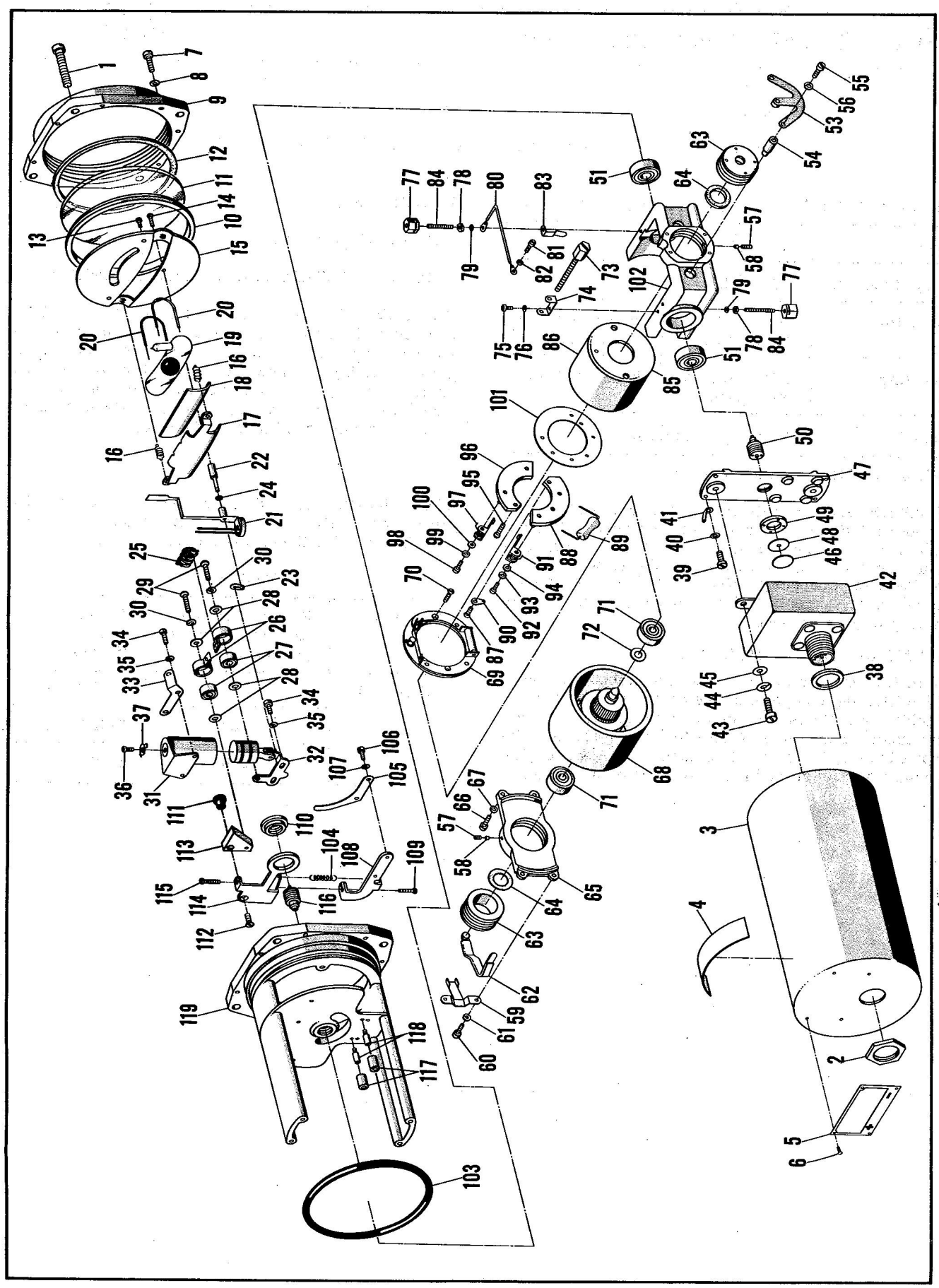


Figure 4-3. Bank and Turn Indicator Assembly, Model B4A-A

1 - Screw
2 - Nut
3 - Cover
4 - Decal
5 - Nameplate
6 - Screw
7 - Screw
8 - Washer
9 - Bezel
10 - Gasket
11 - Glass
12 - Gasket
13 - Screw
14 - Screw
15 - Dial
16 - Spring
17 - Retainer
18 - Card
19 - Inclinometer
20 - Wire
21 - Pointer unit
22 - Pivot
23 - Ring
24 - Spacer
25 - Spring
26 - Anchor
27 - Bearing
28 - Washer
29 - Screw
30 - Washer
31 - Cylinder assy
32 - Arm assy
33 - Ground
34 - Screw
35 - Washer
36 - Screw
37 - Spring
38 - Gasket
39 - Screw
40 - Washer
41 - Lug
42 - Filter assy
43 - Screw
44 - Washer
45 - Washer
46 - Insulation
47 - Plate
48 - Washer
49 - Nut
50 - Pivot assy
51 - Bearing
52 - (Deleted)
53 - Lead assy
54 - Insulation
55 - Screw
56 - Washer
57 - Screw
58 - Plug
59 - Clamp
60 - Screw
61 - Washer
62 - Lead assy
63 - Nut
64 - Packing
65 - End
66 - Screw
67 - Washer
68 - Rotor assy
69 - Support assy
70 - Screw
71 - Bearing
72 - Spacer
73 - Screw
74 - Support
75 - Screw
76 - Washer
77 - Nut
78 - Nut
79 - Washer
80 - Lead assy
81 - Screw
82 - Washer
83 - Contact
84 - Stud
85 - Magnet
86 - Housing
87 - Screw
88 - Support subassy
89 - Condenser
90 - Lug
91 - Arm assy
92 - Screw
93 - Washer
94 - Washer
95 - Screw
96 - Support subassy
97 - Arm assy
98 - Screw
99 - Washer
100 - Washer
101 - Insulation
102 - Gimbal
103 - Gasket
104 - Spring
105 - Clamp
106 - Screw
107 - Washer
108 - Anchorage
109 - Screw
110 - Nut
111 - Pivot
112 - Screw
113 - Arm
114 - Arm
115 - Screw
116 - Pivot
117 - Bumper
118 - Stop
119 - Frame

KEY FOR FIGURE 4-3

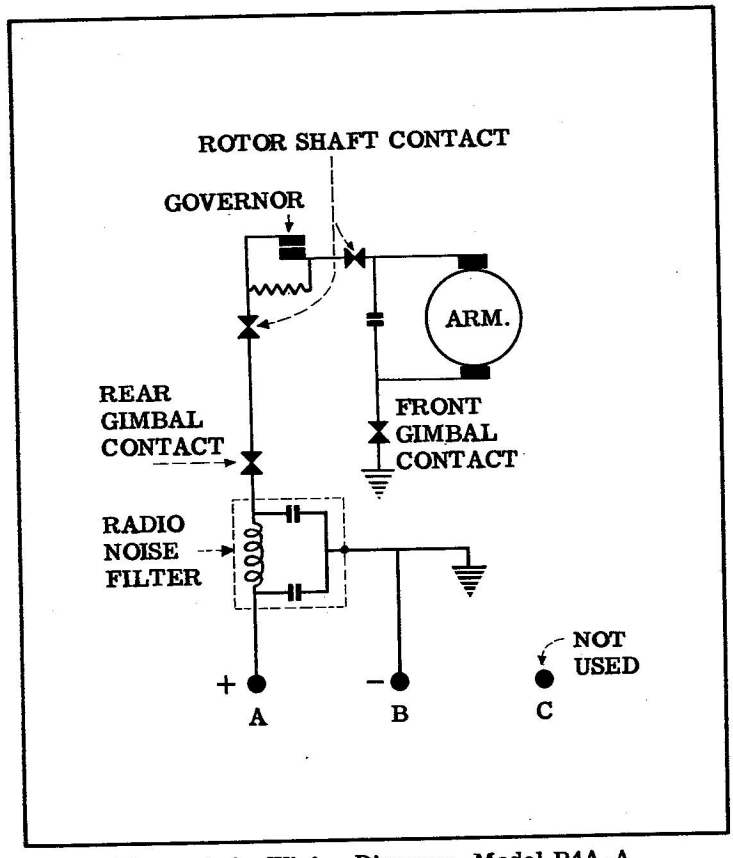


Figure 4-4. Wiring Diagram, Model B4A-A

BANK AND TURN INDICATOR ASSEMBLY

MODEL B4A-B

THE INSTRUCTIONS CONTAINED IN THE PRECEDING SECTIONS OF THIS HANDBOOK APPLY EXCEPT FOR THE DIFFERENCES LISTED IN THIS DATA SHEET

LEADING PARTICULARS. Same as Model B4 except

Type	AN 5819-4
Navy Stock No.	R88-I-3221-10
Dial markings	Fluorescent
Deflection	One width of pointer indicates turn of three degrees per second.
Mounting	With flange on back side of instrument panel.
Weight	1 pound, 14 ounces.

SPECIAL TOOLS. Same as Model B4.

DISASSEMBLY. (See figure 4-5.) Same as Model B4 except that filter assembly (42) replaces individual radio noise filtering components used on Model B4 and insulation (46) is used between insulating washer (48) and the filter assembly. Remove and discard spring washer between contact pivot assembly (116) and ball bearing (51), if present.

CLEANING. Same as Model B4.

INSPECTION. Same as Model B4 except that radio noise filtering components are contained in filter assembly (42). Resistance between receptacle pin "A" and insulated terminal of the filter assembly must be approximately 0.5 ohm. Resistance between receptacle pin "A" and ground must not be less than infinite.

TESTING. Same as Model B4.

LUBRICATION. Same as Model B4.

REPAIR OR REPLACEMENT. Same as Model B4.

REASSEMBLY. Same as Model B4 except that filter assembly (42) replaces individual radio noise filtering components. Use insulation (46) between contact pivot assembly (50) and filter assembly (42). Ground shield of wire from filter assembly to contact pivot assembly to solder lug (41). Pointer deflections must be within tolerances listed in Table IV.

TEST PROCEDURE. Same as Model B4 except that pointer deflections must be within tolerances listed in Table IV. See figure 4-6 for wiring diagram.

TABLE IV

Instrument Type	Rate of Turntable Rotation (degrees per minute)	Deflection of Pointer Tip (inches)
AN 5819-4	36	1/32 ± 1/64
	180	5/32 ± 1/32
	360	5/16 ± 1/16

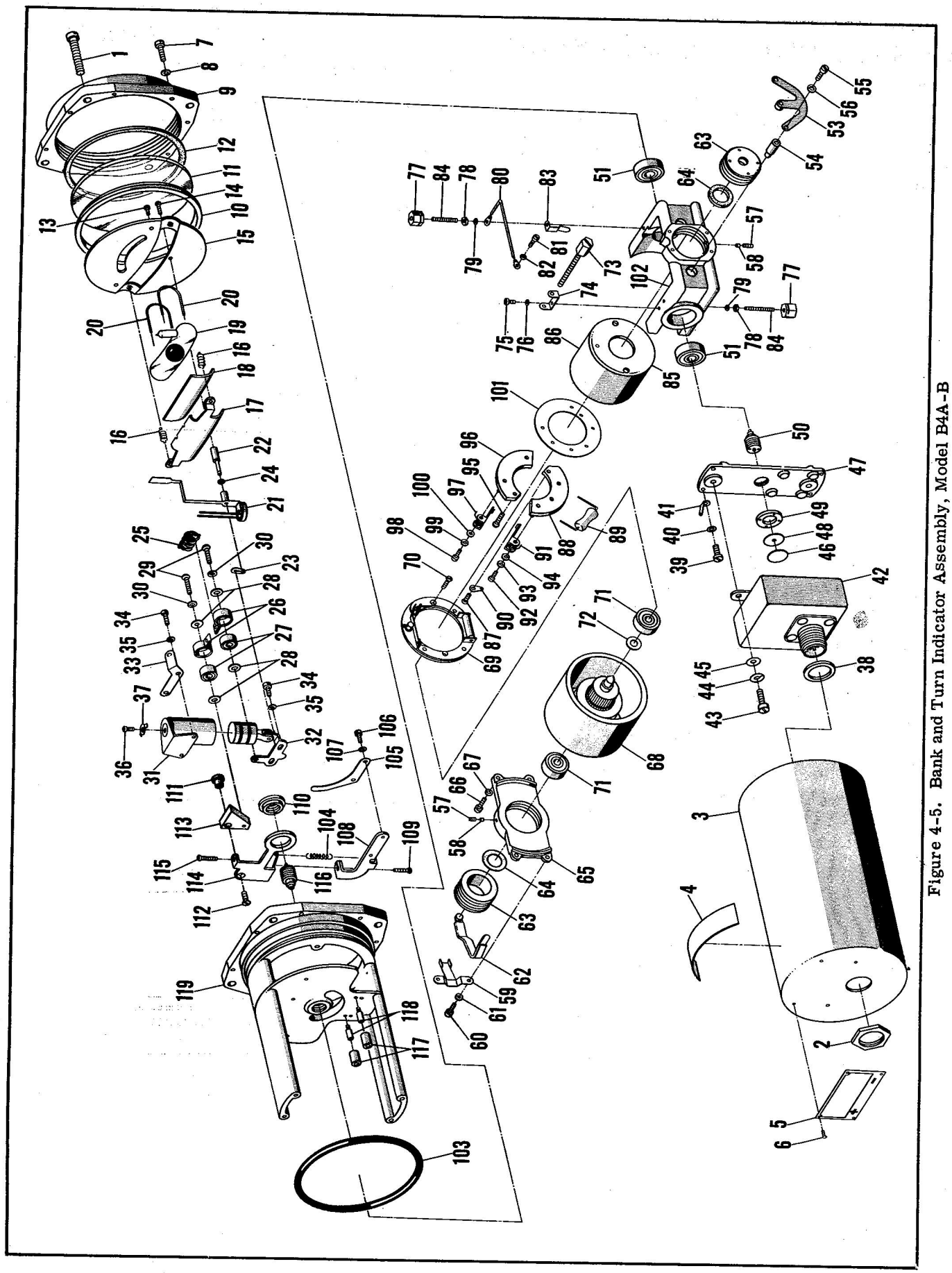


Figure 4-5. Bank and Turn Indicator Assembly, Model B4A-B

1 - Screw
2 - Nut
3 - Cover
4 - Decal
5 - Nameplate
6 - Screw
7 - Screw
8 - Washer
9 - Bezel
10 - Gasket
11 - Glass
12 - Gasket
13 - Screw
14 - Screw
15 - Dial
16 - Spring
17 - Retainer
18 - Card
19 - Inclinometer
20 - Wire
21 - Pointer unit
22 - Pivot
23 - Ring
24 - Spacer
25 - Spring
26 - Anchor
27 - Bearing
28 - Washer
29 - Screw
30 - Washer
31 - Cylinder assy
32 - Arm assy
33 - Ground
34 - Screw
35 - Washer
36 - Screw
37 - Spring
38 - Gasket
39 - Screw
40 - Washer
41 - Lug
42 - Filter assy
43 - Screw
44 - Washer
45 - Washer
46 - Insulation
47 - Plate
48 - Washer
49 - Nut
50 - Pivot assy
51 - Bearing
52 - (Deleted)
53 - Lead assy
54 - Insulation
55 - Screw
56 - Washer
57 - Screw
58 - Plug
59 - Clamp
60 - Screw
61 - Washer
62 - Lead assy
63 - Nut
64 - Packing
65 - End
66 - Screw
67 - Washer
68 - Rotor assy
69 - Support assy
70 - Screw
71 - Bearing
72 - Spacer
73 - Screw
74 - Support
75 - Screw
76 - Washer
77 - Nut
78 - Nut
79 - Washer
80 - Lead assy
81 - Screw
82 - Washer
83 - Contact
84 - Stud
85 - Magnet
86 - Housing
87 - Screw
88 - Support subassy
89 - Condenser
90 - Lug
91 - Arm assy
92 - Screw
93 - Washer
94 - Washer
95 - Screw
96 - Support subassy
97 - Arm assy
98 - Screw
99 - Washer
100 - Washer
101 - Insulation
102 - Gimbal
103 - Gasket
104 - Spring
105 - Clamp
106 - Screw
107 - Washer
108 - Anchorage
109 - Screw
110 - Nut
111 - Pivot
112 - Screw
113 - Arm
114 - Arm
115 - Screw
116 - Pivot
117 - Bumper
118 - Stop
119 - Frame

KEY FOR FIGURE 4-5

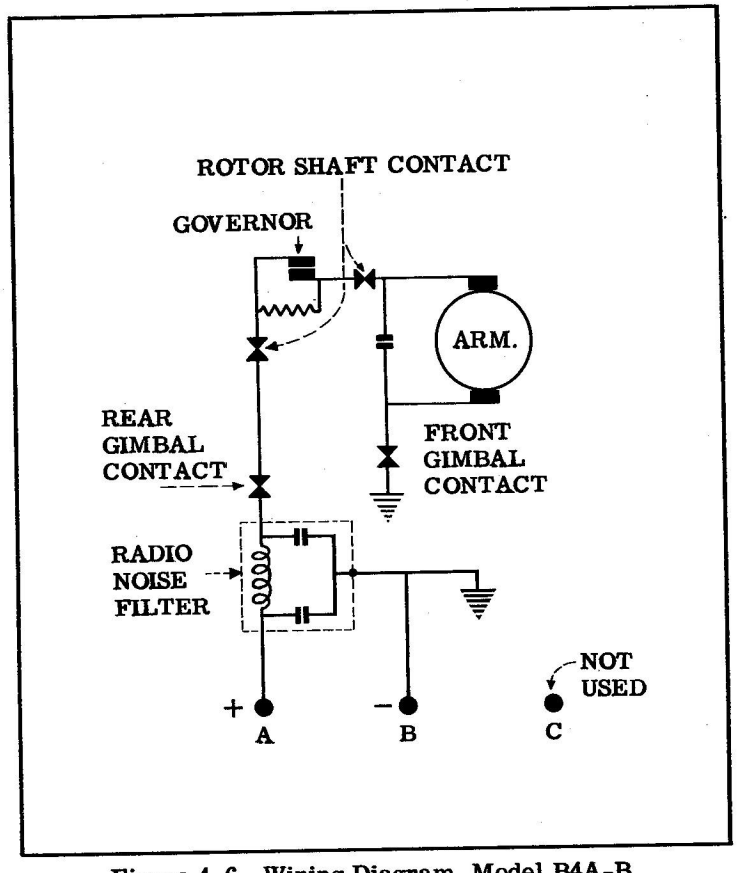


Figure 4-6. Wiring Diagram, Model B4A-B

BANK AND TURN INDICATOR ASSEMBLY

MODEL B4B

THE INSTRUCTIONS CONTAINED IN THE PRECEDING SECTIONS OF THIS HANDBOOK APPLY EXCEPT FOR THE DIFFERENCES LISTED IN THIS DATA SHEET

LEADING PARTICULARS. Same as Model B4 except

Dial markings	Florescent, radio active, on Serial Nos AF 49-4230 through AF 49-4479; Florescent indicated by green dot on dial on Serial Nos AF 50-4480 through AF 50-5211
Weight	1 pound, 14 ounces

SPECIAL TOOLS. Same as Model B4.

DISASSEMBLY. (See figure 4-7.) Same as Model B4 except that filter assembly (40) replaces individual radio noise filtering components used on Model B4, and insulation (44) is used between insulating washer (45) and the filter assembly. The negative side of the electrical circuit is insulated throughout with insulation (81), and (114), and pivots (90), and (100). Condenser (105) is used between negative brush arm assembly (101) and ground. See figure 4-8 for wiring diagram.

CLEANING. Same as Model B4.

INSPECTION. Same as Model B4 except that radio noise filtering components are contained in filter assembly (40). Resistance between receptacle pin "A" and negative terminal of the filter assembly must be approximately 0.5 ohm. Resistance between receptacle pin "A" and ground must not be less than infinite.

TESTING. Same as Model B4.

LUBRICATION. Same as Model B4.

REPAIR OR REPLACEMENT. Same as Model B4.

REASSEMBLY. Same as Model B4 except that filter assembly (40) replaces individual radio noise filtering components. Use insulation (44) between insulating washer (45) and the filter assembly. Negative side of electrical circuit is insulated throughout. Use insulating pivots (90), and (100) on brush arm assemblies. Use condenser (105) between negative brush arm assembly (101) and ground. Use insulation (81) on screw (82).

TEST PROCEDURE. Same as Model B4. See figure 4-8 for wiring diagram.

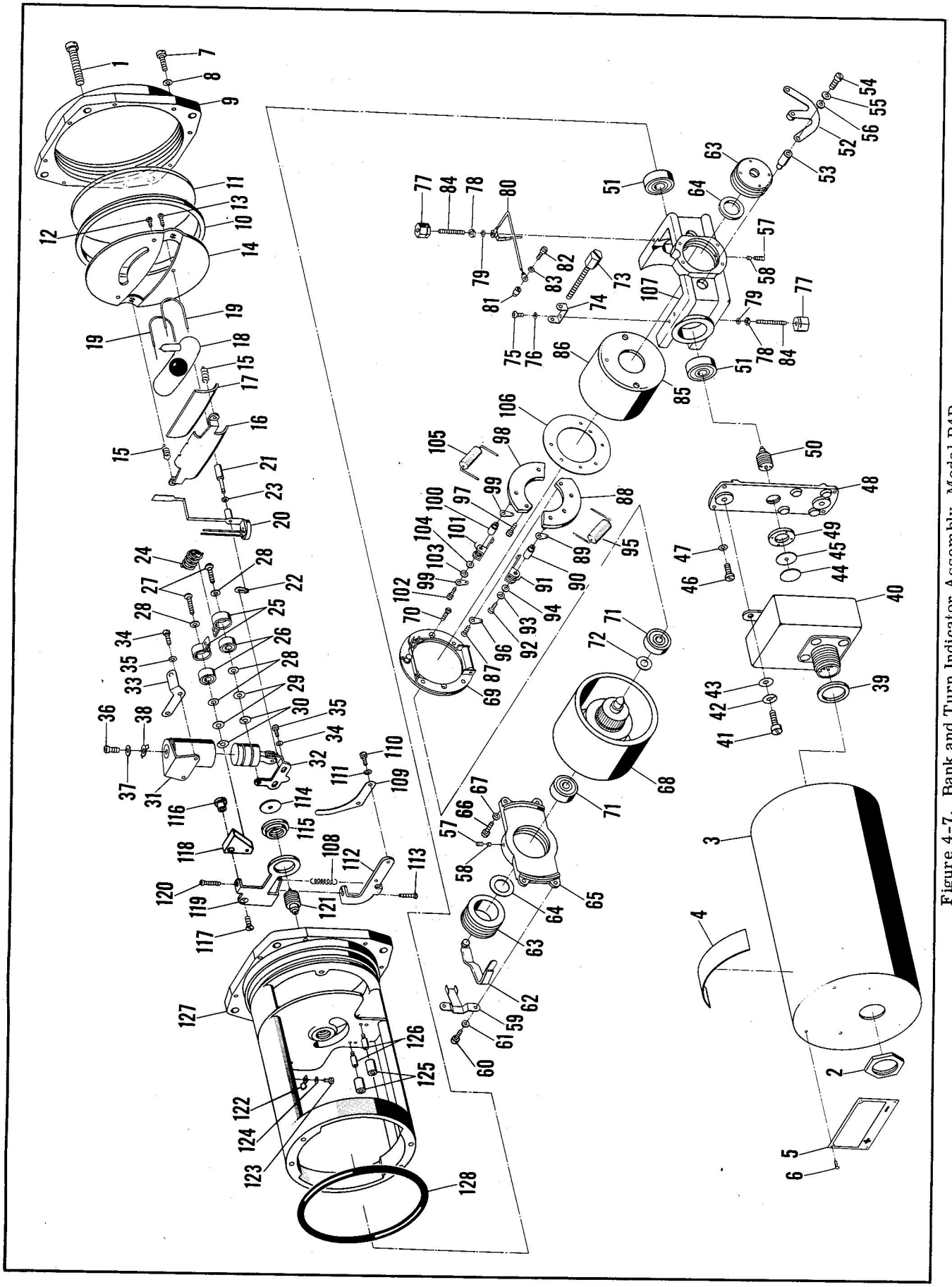


Figure 4-7. Bank and Turn Indicator Assembly, Model B4B

1 - Screw
2 - Nut
3 - Cover
4 - Decal
5 - Nameplate
6 - Rivet
7 - Screw
8 - Washer
9 - Bezel
10 - Gasket
11 - Glass
12 - Screw
13 - Screw
14 - Dial
15 - Spring
16 - Retainer
17 - Card
18 - Inclinometer
19 - Wire
20 - Pointer unit
21 - Pivot
22 - Ring
23 - Spacer
24 - Spring
25 - Anchor
26 - Bearing
27 - Screw
28 - Washer
29 - Washer
30 - Washer
31 - Cylinder assy
32 - Arm assy
33 - Ground
34 - Screw
35 - Washer
36 - Screw
37 - Washer
38 - Spring
39 - Gasket
40 - Filter assy
41 - Screw
42 - Washer
43 - Washer
44 - Insulation
45 - Washer
46 - Screw
47 - Washer
48 - Plate
49 - Nut
50 - Pivot assy
51 - Bearing
52 - Lead assy
53 - Insulation
54 - Screw
55 - Washer
56 - Washer
57 - Screw
58 - Plug
59 - Clamp
60 - Screw
61 - Washer
62 - Lead assy
63 - Nut
64 - "O" ring
65 - End
66 - Screw
67 - Washer
68 - Rotor assy
69 - Support assy
70 - Screw
71 - Bearing
72 - Spacer and slinger assy
73 - Screw
74 - Support
75 - Screw
76 - Washer
77 - Nut
78 - Nut
79 - Washer
80 - Positive contact assy
81 - Insulation
82 - Screw
83 - Washer
84 - Stud
85 - Housing
86 - Magnet
87 - Screw
88 - Support
89 - Lug
90 - Pivot
91 - Arm assy
92 - Screw
93 - Washer
94 - Washer
95 - Condenser
96 - Lug
97 - Screw
98 - Support
99 - Lug
100 - Pivot
101 - Arm assy
102 - Screw
103 - Washer
104 - Washer
105 - Condenser
106 - Insulation
107 - Gimbal
108 - Spring
109 - Clamp
110 - Screw
111 - Washer
112 - Anchorage
113 - Screw
114 - Washer
115 - Nut
116 - Pivot
117 - Screw
118 - Arm
119 - Arm
120 - Screw
121 - Pivot assy
122 - Clamp
123 - Screw
124 - Washer
125 - Bumper
126 - Stop
127 - Frame
128 - Gasket

KEY FOR FIGURE 4-7

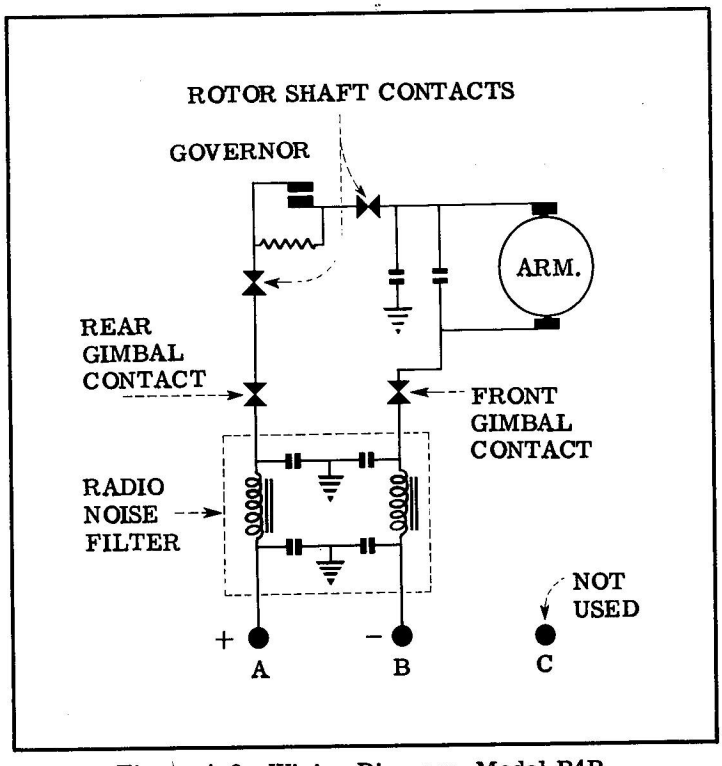


Figure 4-8. Wiring Diagram, Model B4B

BANK AND TURN INDICATOR ASSEMBLY — MODEL B4B-A

THE INSTRUCTIONS CONTAINED IN THE PRECEDING SECTIONS OF THIS HANDBOOK APPLY

EXCEPT FOR THE DIFFERENCES LISTED IN THIS DATA SHEET

LEADING PARTICULARS. Same as Model B4 except

Type	AN 5819-3
Navy Stock No.	R88-I-3221
Deflection	One width of pointer indicates turn of three degrees per second.
Mounting	With flange on back side of instrument panel.
Weight	1 pound, 14 ounces.

SPECIAL TOOLS. Same as Model B4.

DISASSEMBLY. (See figure 4-9.) Same as Model B4 except that filter assembly (40) replaces individual radio noise filtering components used on Model B4, and insulation (44) is used between insulating washer (45) and the filter assembly. The negative side of the electrical circuit is insulated throughout with insulation (81), and (114), and pivots (90), and (100). Condenser (105) is used between negative brush arm assembly (101) and ground. See figure 4-10 for wiring diagram.

CLEANING. Same as Model B4.

INSPECTION. Same as Model B4 except that radio noise filtering components are contained in filter assembly (40). Resistance between receptacle pin "A" and negative terminal of the filter assembly must be approximately 0.5 ohm. Resistance between receptacle pin "A" and filter case, and between pin "B" and filter case, must not be less than infinite.

TESTING. Same as Model B4.

LUBRICATION. Same as Model B4.

REPAIR OR REPLACEMENT. Same as Model B4.

REASSEMBLY. Same as Model B4 except that filter assembly (40) replaces individual radio noise filtering components. Use insulation (44) between insulating washer (45) and the filter assembly. Negative side of electrical circuit is insulated throughout. Use insulating pivots (90), and (100) on brush arm assemblies. Use condenser (105) between negative brush arm assembly (101) and ground. Use insulation (81) on screw (82). Pointer deflections must be within tolerances listed in Table V.

TEST PROCEDURE. Same as Model B4 except that pointer deflections must be within tolerances listed in Table V. See figure 4-10 for wiring diagram.

TABLE V

Instrument Type	Rate of Turntable Rotation (degrees per minute)	Deflection of Pointer Tip (inches)
AN 5819-3	36	$1/32 \pm 1/64$
	180	$5/32 \pm 1/32$
	360	$5/16 \pm 1/16$

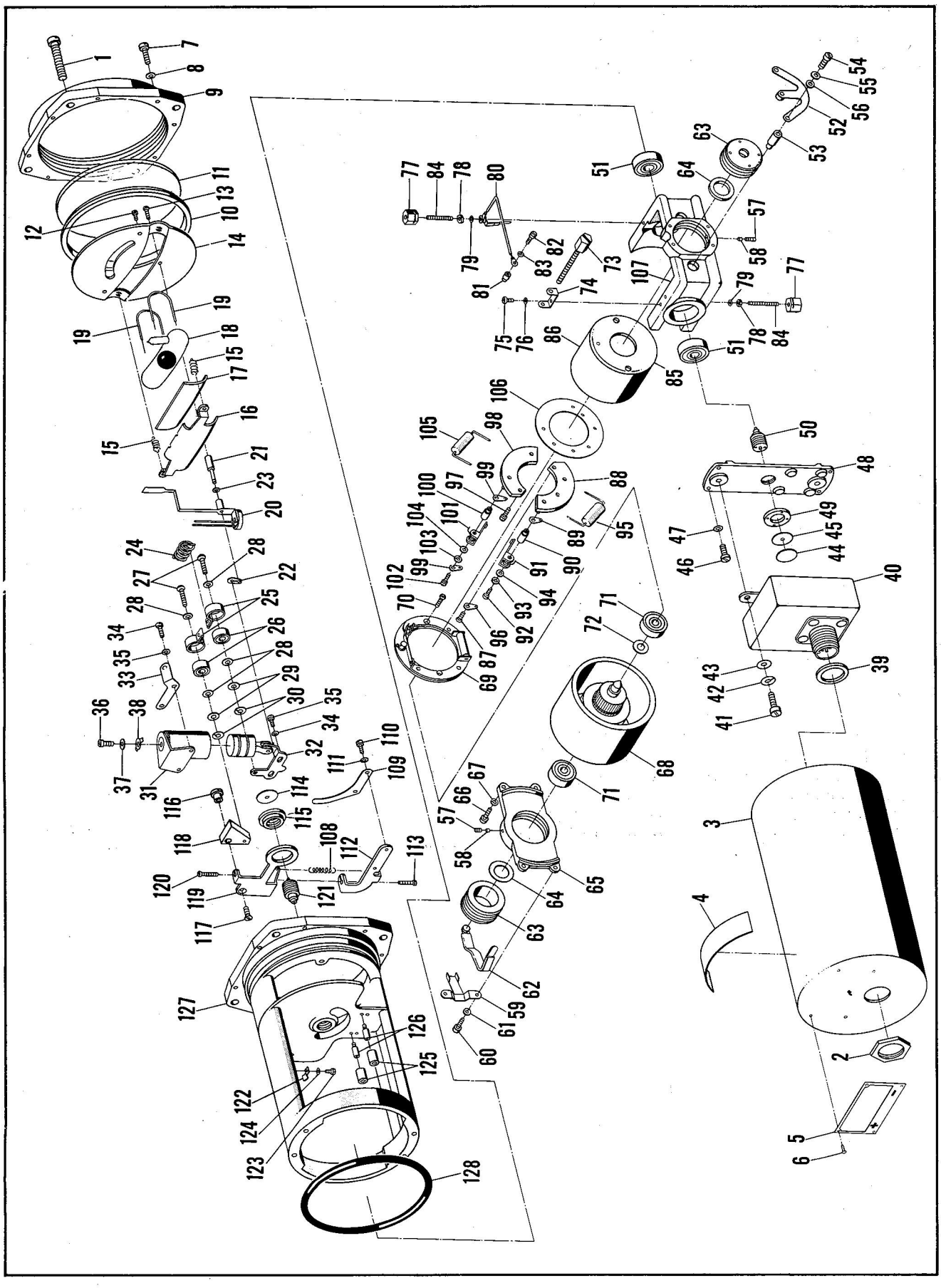


Figure 4-9. Bank and Turn Indicator Assembly, Model B4B-A

1 - Screw
2 - Nut
3 - Cover
4 - Decal
5 - Nameplate
6 - Rivet
7 - Screw
8 - Washer
9 - Bezel
10 - Gasket
11 - Glass
12 - Screw
13 - Screw
14 - Dial
15 - Spring
16 - Retainer
17 - Card
18 - Inclinometer
19 - Wire
20 - Pointer unit
21 - Pivot
22 - Ring
23 - Spacer
24 - Spring
25 - Anchor
26 - Bearing
27 - Screw
28 - Washer
29 - Washer
30 - Washer
31 - Cylinder assy
32 - Arm assy
33 - Ground
34 - Screw
35 - Washer
36 - Screw
37 - Washer
38 - Spring
39 - Gasket
40 - Filter assy
41 - Screw
42 - Washer
43 - Washer
44 - Insulation
45 - Washer
46 - Screw
47 - Washer
48 - Plate
49 - Nut
50 - Pivot assy
51 - Bearing
52 - Lead assy
53 - Insulation
54 - Screw
55 - Washer
56 - Washer
57 - Screw
58 - Plug
59 - Clamp
60 - Screw
61 - Washer
62 - Lead assy
63 - Nut
64 - "O" ring
65 - End
66 - Screw
67 - Washer
68 - Rotor assy
69 - Support assy
70 - Screw
71 - Bearing
72 - Spacer and slinger assy
73 - Screw
74 - Support
75 - Screw
76 - Washer
77 - Nut
78 - Nut
79 - Washer
80 - Positive contact assy
81 - Insulation
82 - Screw
83 - Washer
84 - Stud
85 - Housing
86 - Magnet
87 - Screw
88 - Support
89 - Lug
90 - Pivot
91 - Arm assy
92 - Screw
93 - Washer
94 - Washer
95 - Condenser
96 - Lug
97 - Screw
98 - Support
99 - Lug
100 - Pivot
101 - Arm assy
102 - Screw
103 - Washer
104 - Washer
105 - Condenser
106 - Insulation
107 - Gimbal
108 - Spring
109 - Clamp
110 - Screw
111 - Washer
112 - Anchorage
113 - Screw
114 - Washer
115 - Nut
116 - Pivot
117 - Screw
118 - Arm
119 - Arm
120 - Screw
121 - Pivot assy
122 - Clamp
123 - Screw
124 - Washer
125 - Bumper
126 - Stop
127 - Frame
128 - Gasket

KEY FOR FIGURE 4-9

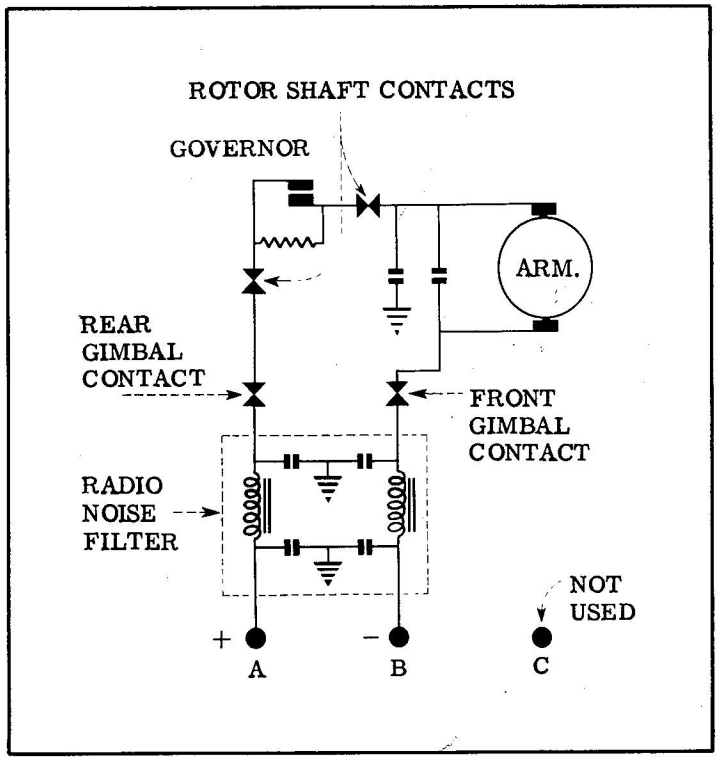


Figure 4-10. Wiring Diagram, Model B4B-A

BANK AND TURN INDICATOR ASSEMBLY

MODEL B4B-B

THE INSTRUCTIONS CONTAINED IN THE PRECEDING SECTIONS OF THIS HANDBOOK APPLY

EXCEPT FOR THE DIFFERENCES LISTED IN THIS DATA SHEET

LEADING PARTICULARS. Same as Model B4 except

Type	AN 5819-4
Navy Stock No.	R88-I-3221-10
Dial markings	Inclinometer marking fluorescent radio active; dial, pointer, and wires florescent.
Deflection	One width of pointer indicates turn of three degrees per second.
Mounting	With flange on back side of instrument panel.
Weight	1 pound, 14 ounces.

SPECIAL TOOLS. Same as Model B4.

DISASSEMBLY. (See figure 4-11.) Same as Model B4 except that filter assembly (40) replaces individual radio noise filtering components used on Model B4, and insulation (44) is used between insulating washer (45) and the filter assembly. The negative side of the electrical circuit is insulated throughout with insulation (81), and (114), and pivots (90), and (100). Condenser (105) is used between negative brush arm assembly (101) and ground. See figure 4-12 for wiring diagram.

CLEANING. Same as Model B4.

INSPECTION. Same as Model B4 except that radio noise filtering components are contained in filter assembly (40). Resistance between receptacle pin "A" and negative terminal of the filter assembly must be approximately 0.5 ohm. Resistance between receptacle pin "A" and filter case, and between pin "B" and filter case, must not be less than infinite.

TESTING. Same as Model B4.

LUBRICATION. Same as Model B4.

REPAIR OR REPLACEMENT. Same as Model B4.

REASSEMBLY. Same as Model B4 except that filter assembly (40) replaces individual radio noise filtering components. Use insulation (44) between insulating washer (45) and the filter assembly. Negative side of electrical circuit is insulated throughout. Use insulating pivots (90), and (100) on brush arm assemblies. Use condenser (105) between negative brush arm assembly (101) and ground. Use insulation (81) on screw (82). Pointer deflections must be within tolerances listed in Table VI.

TEST PROCEDURE. Same as Model B4 except that pointer deflections must be within tolerances listed in Table VI. See figure 4-12 for wiring diagram.

TABLE VI

Instrument Type	Rate of Turntable Rotation (degrees per minute)	Deflection of Pointer Tip (inches)
AN 5819-4	36	$1/32 \pm 1/64$
	180	$5/32 \pm 1/32$
	360	$5/16 \pm 1/16$

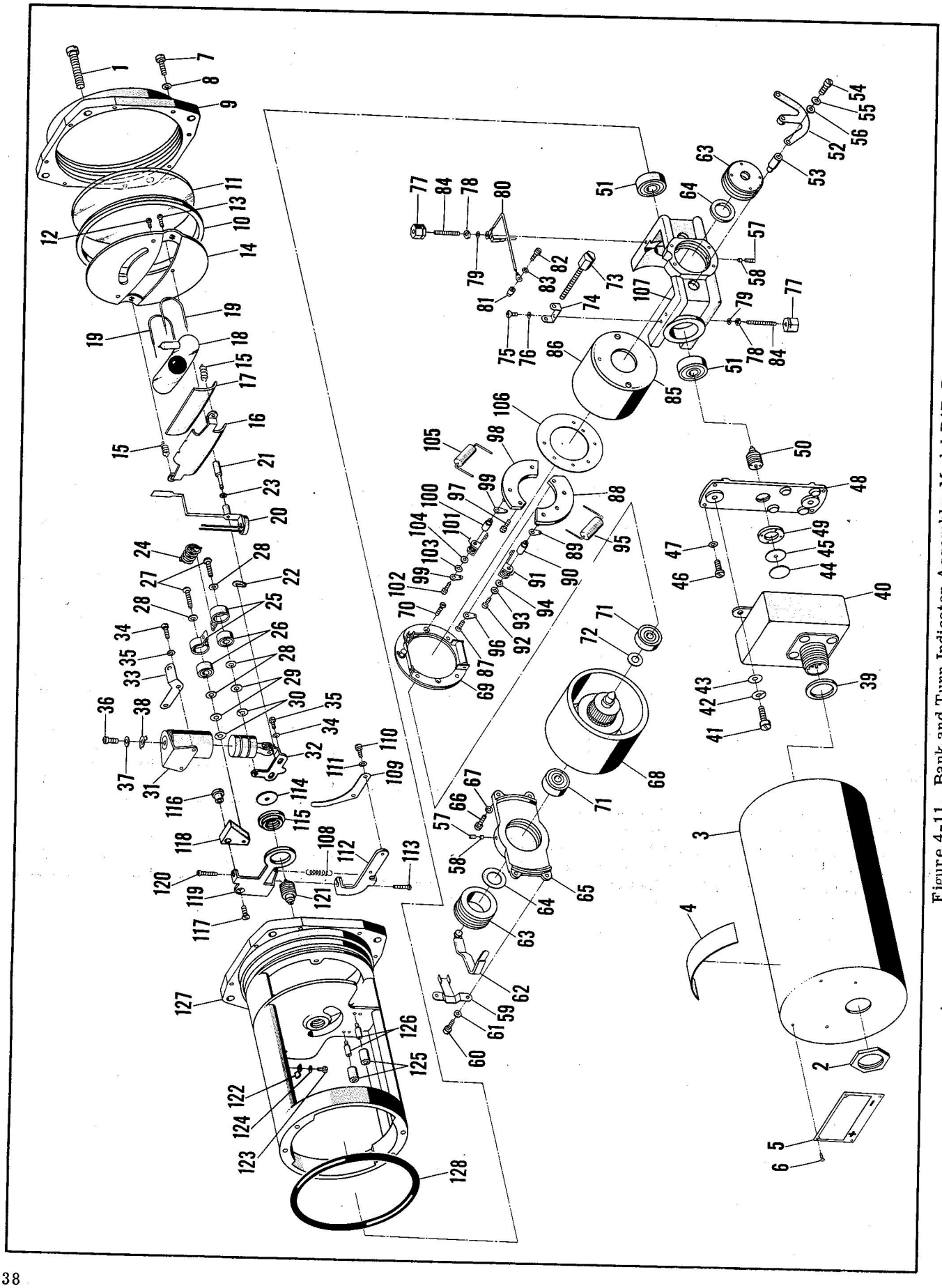


Figure 4-11. Bank and Turn Indicator Assembly, Model B4B-B

1 - Screw
2 - Nut
3 - Cover
4 - Decal
5 - Nameplate
6 - Rivet
7 - Screw
8 - Washer
9 - Bezel
10 - Gasket
11 - Glass
12 - Screw
13 - Screw
14 - Dial
15 - Spring
16 - Retainer
17 - Card
18 - Inclinometer
19 - Wire
20 - Pointer unit
21 - Pivot
22 - Ring
23 - Spacer
24 - Spring
25 - Anchor
26 - Bearing
27 - Screw
28 - Washer
29 - Washer
30 - Washer
31 - Cylinder assy
32 - Arm assy
33 - Ground
34 - Screw
35 - Washer
36 - Screw
37 - Washer
38 - Spring
39 - Gasket
40 - Filter assy
41 - Screw
42 - Washer
43 - Washer
44 - Insulation
45 - Washer
46 - Screw
47 - Washer
48 - Plate
49 - Nut
50 - Pivot assy
51 - Bearing
52 - Lead assy
53 - Insulation
54 - Screw
55 - Washer
56 - Washer
57 - Screw
58 - Plug
59 - Clamp
60 - Screw
61 - Washer
62 - Lead assy
63 - Nut
64 - "O" ring
65 - End
66 - Screw
67 - Washer
68 - Rotor assy
69 - Support assy
70 - Screw
71 - Bearing
72 - Spacer and slinger assy
73 - Screw
74 - Support
75 - Screw
76 - Washer
77 - Nut
78 - Nut
79 - Washer
80 - Positive contact assy
81 - Insulation
82 - Screw
83 - Washer
84 - Stud
85 - Housing
86 - Magnet
87 - Screw
88 - Support
89 - Lug
90 - Pivot
91 - Arm assy
92 - Screw
93 - Washer
94 - Washer
95 - Condenser
96 - Lug
97 - Screw
98 - Support
99 - Lug
100 - Pivot
101 - Arm assy
102 - Screw
103 - Washer
104 - Washer
105 - Condenser
106 - Insulation
107 - Gimbal
108 - Spring
109 - Clamp
110 - Screw
111 - Washer
112 - Anchorage
113 - Screw
114 - Washer
115 - Nut
116 - Pivot
117 - Screw
118 - Arm
119 - Arm
120 - Screw
121 - Pivot assy
122 - Clamp
123 - Screw
124 - Washer
125 - Bumper
126 - Stop
127 - Frame
128 - Gasket

KEY FOR FIGURE 4-11

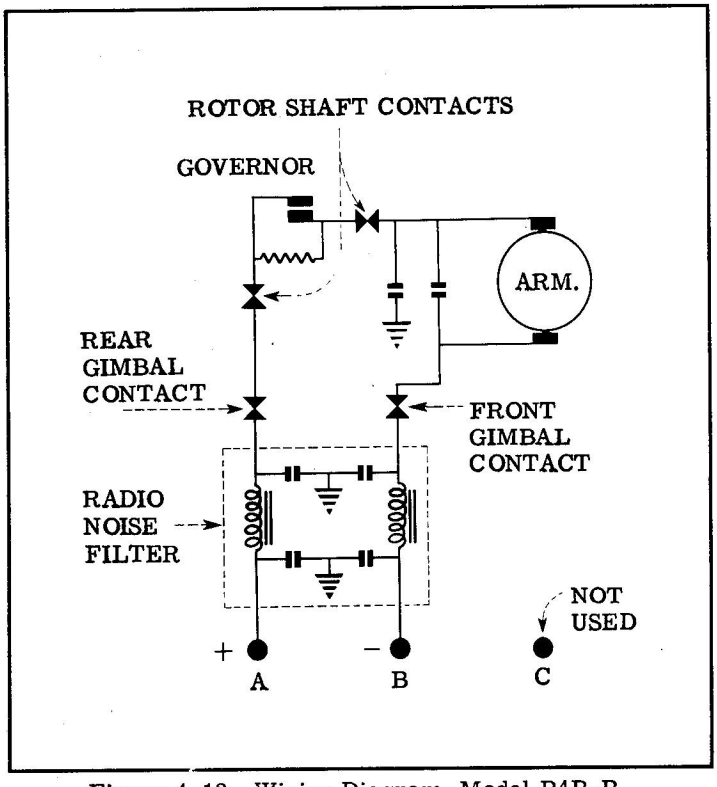


Figure 4-12. Wiring Diagram, Model B4B-B

BANK AND TURN INDICATOR ASSEMBLY

MODEL B4B-D

THE INSTRUCTIONS CONTAINED IN THE PRECEDING SECTIONS OF THIS HANDBOOK APPLY

EXCEPT FOR THE DIFFERENCES LISTED IN THIS DATA SHEET

LEADING PARTICULARS. Same as Model B4 except

Type	USAF C-6
Stock No.	Aerno 60-5701
Volts	28 dc
Weight	1 pound, 14 ounces
Dial markings	Fluorescent

SPECIAL TOOLS. Same as Model B4.

DISASSEMBLY. (See figure 4-13.) Same as Model B4 except that filter assembly (40) replaces individual radio noise filtering components used on Model B4, and insulation (44) is used between insulating washer (45) and the filter assembly. The negative side of the electrical circuit is insulated throughout with insulation (81), and (114), and pivots (90), and (100). Condenser (105) is used between negative brush arm assembly (101) and ground. See figure 4-14 for wiring diagram.

CLEANING. Same as Model B4.

INSPECTION. Same as Model B4 except that radio noise filtering components are contained in filter assembly (40). Resistance between receptacle pin "A" and negative terminal of the filter assembly must be approximately 0.5 ohm. Resistance between receptacle pin "A" and filter case, and between pin "B" and filter case, must not be less than infinite.

TESTING. Same as Model B4.

REPAIR OR REPLACEMENT. Same as Model B4.

REASSEMBLY. Same as Model B4 except that filter assembly (40) replaces individual radio noise filtering components. Use insulation (44) between insulating washer (45) and the filter assembly. Negative side of electrical circuit is insulated throughout. Use insulating pivots (90), and (100) on brush arm assemblies. Use condenser (105) between negative brush arm assembly (101) and ground. Use insulation (81) on screw (82).

TEST PROCEDURE. Same as Model B4 except that 28 volts, dc, is used instead of 24 volts, dc.

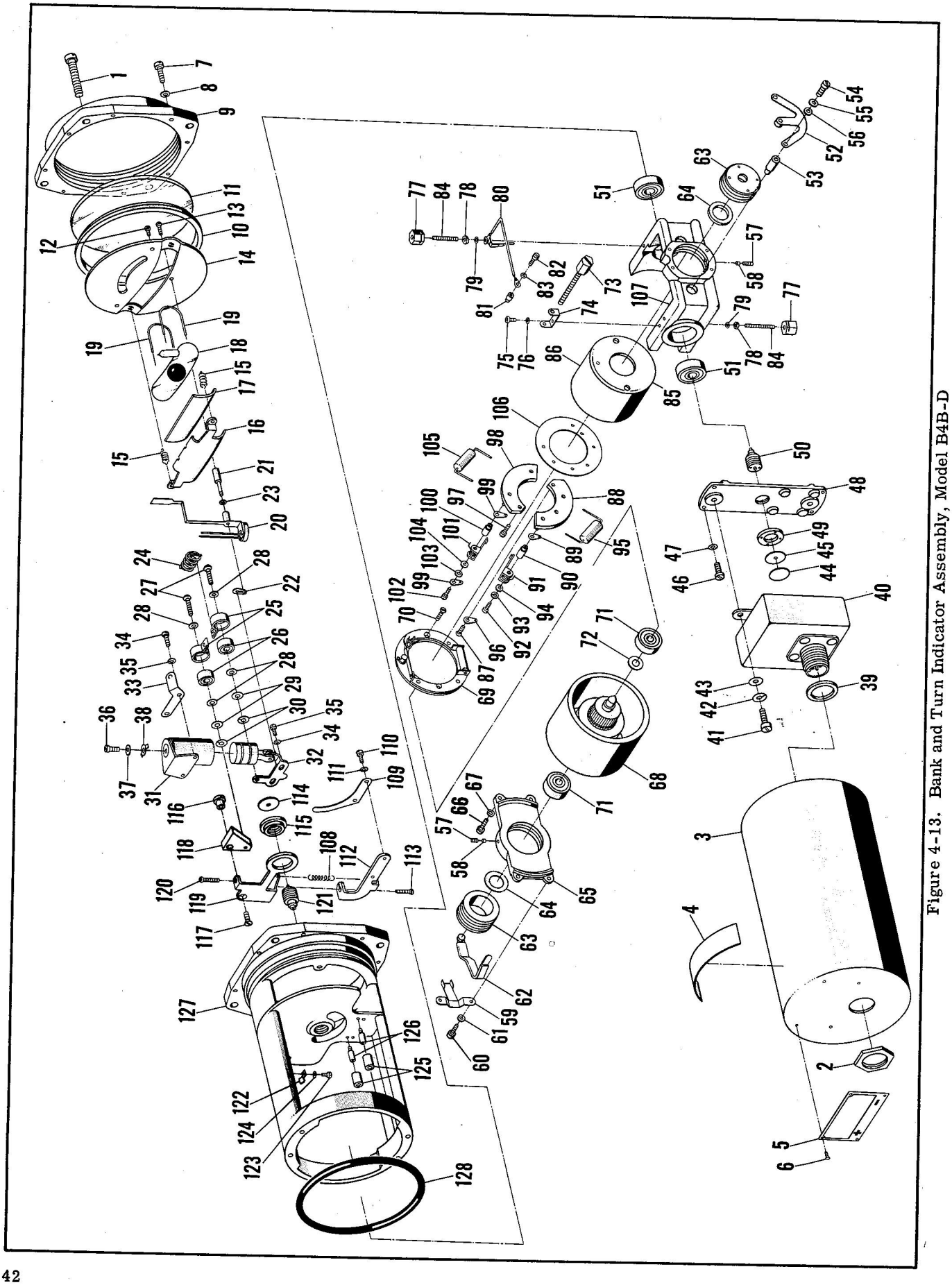


Figure 4-13. Bank and Turn Indicator Assembly, Model B4B-D

1 - Screw
2 - Nut
3 - Cover
4 - Decal
5 - Nameplate
6 - Rivet
7 - Screw
8 - Washer
9 - Bezel
10 - Gasket
11 - Glass
12 - Screw
13 - Screw
14 - Dial
15 - Spring
16 - Retainer
17 - Card
18 - Inclinometer
19 - Wire
20 - Pointer unit
21 - Pivot
22 - Ring
23 - Spacer
24 - Spring
25 - Anchor
26 - Bearing
27 - Screw
28 - Washer
29 - Washer
30 - Washer
31 - Cylinder assy
32 - Arm assy
33 - Ground
34 - Screw
35 - Washer
36 - Screw
37 - Washer
38 - Spring
39 - Gasket
40 - Filter assy
41 - Screw
42 - Washer
43 - Washer
44 - Insulation
45 - Washer
46 - Screw
47 - Washer
48 - Plate
49 - Nut
50 - Pivot assy
51 - Bearing
52 - Lead assy
53 - Insulation
54 - Screw
55 - Washer
56 - Washer
57 - Screw
58 - Plug
59 - Clamp
60 - Screw
61 - Washer
62 - Lead assy
63 - Nut
64 - "O" ring
65 - End
66 - Screw
67 - Washer
68 - Rotor assy
69 - Support assy
70 - Screw
71 - Bearing
72 - Spacer and slinger assy
73 - Screw
74 - Support
75 - Screw
76 - Washer
77 - Nut
78 - Nut
79 - Washer
80 - Positive contact assy
81 - Insulation
82 - Screw
83 - Washer
84 - Stud
85 - Housing
86 - Magnet
87 - Screw
88 - Support
89 - Lug
90 - Pivot
91 - Arm assy
92 - Screw
93 - Washer
94 - Washer
95 - Condenser
96 - Lug
97 - Screw
98 - Support
99 - Lug
100 - Pivot
101 - Arm assy
102 - Screw
103 - Washer
104 - Washer
105 - Condenser
106 - Insulation
107 - Gimbal
108 - Spring
109 - Clamp
110 - Screw
111 - Washer
112 - Anchorage
113 - Screw
114 - Washer
115 - Nut
116 - Pivot
117 - Screw
118 - Arm
119 - Arm
120 - Screw
121 - Pivot assy
122 - Clamp
123 - Screw
124 - Washer
125 - Bumper
126 - Stop
127 - Frame
128 - Gasket

KEY FOR FIGURE 4-13

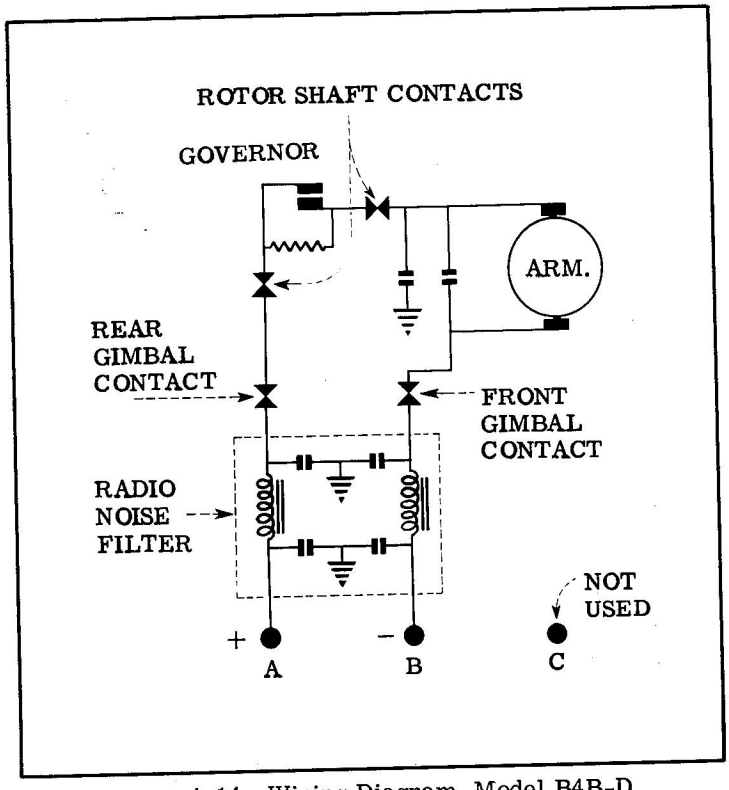


Figure 4-14. Wiring Diagram, Model B4B-D

BANK AND TURN INDICATOR ASSEMBLY

MODEL B4B-E

THE INSTRUCTIONS CONTAINED IN THE PRECEDING SECTIONS OF THIS HANDBOOK APPLY EXCEPT FOR THE DIFFERENCES LISTED IN THIS DATA SHEET

LEADING PARTICULARS. Same as Model B4 except

Type	AN 5819T4
Stock No.	Aerno 60-5500
Dial markings	Inclinometer markings fluorescent radio active; dial, pointer, and wires are florescent.
Mounting	With flange on back side of instrument panel.
Deflection	One width of pointer indicates turn of three degrees per second.
Weight	1 pound, 14 ounces.

SPECIAL TOOLS. Same as Model B4.

DISASSEMBLY. (See figure 4-15.) Same as Model B4 except that filter assembly (40) replaces individual radio noise filtering components used on Model B4, and insulation (44) is used between insulating washer (45) and the filter assembly. The negative side of the electrical circuit is insulated throughout with insulation (81), and (114), and pivots (90), and (100). Condenser (105) is used between negative brush arm assembly (101) and ground. See figure 4-16 for wiring diagram.

CLEANING. Same as Model B4.

INSPECTION. Same as Model B4 except that radio noise filtering components are contained in filter assembly (40). Resistance between receptacle pin "A" and negative terminal of the filter assembly must be approximately 0.5 ohm. Resistance between receptacle pin "A" and filter case, and between receptacle "B" and filter case, must not be less than infinite.

TESTING. Same as Model B4.

LUBRICATION. Same as Model B4.

REPAIR OR REPLACEMENT. Same as Model B4.

REASSEMBLY. Same as Model B4 except that filter assembly (40) replaces individual radio noise filtering components. Use insulation (44) between insulating washer (45) and the filter assembly. Negative side of electrical circuit is insulated throughout. Use insulating pivots (90), and (100) on brush arm assemblies. Use condenser (105) between negative brush arm assembly (101) and ground. Use insulation (81) on screw (82). Pointer deflections must be within tolerances listed in Table VII.

TEST PROCEDURE. Same as Model B4 except that pointer deflections must be within tolerances listed in Table VII. See figure 4-16 for wiring diagram.

TABLE VII

Instrument Type	Rate of Turntable Rotation (degrees per minute)	Deflection of Pointer Tip (inches)
AN 5819T4	36	1/32 ± 1/64
	180	5/32 ± 1/32
	360	5/16 ± 1/16

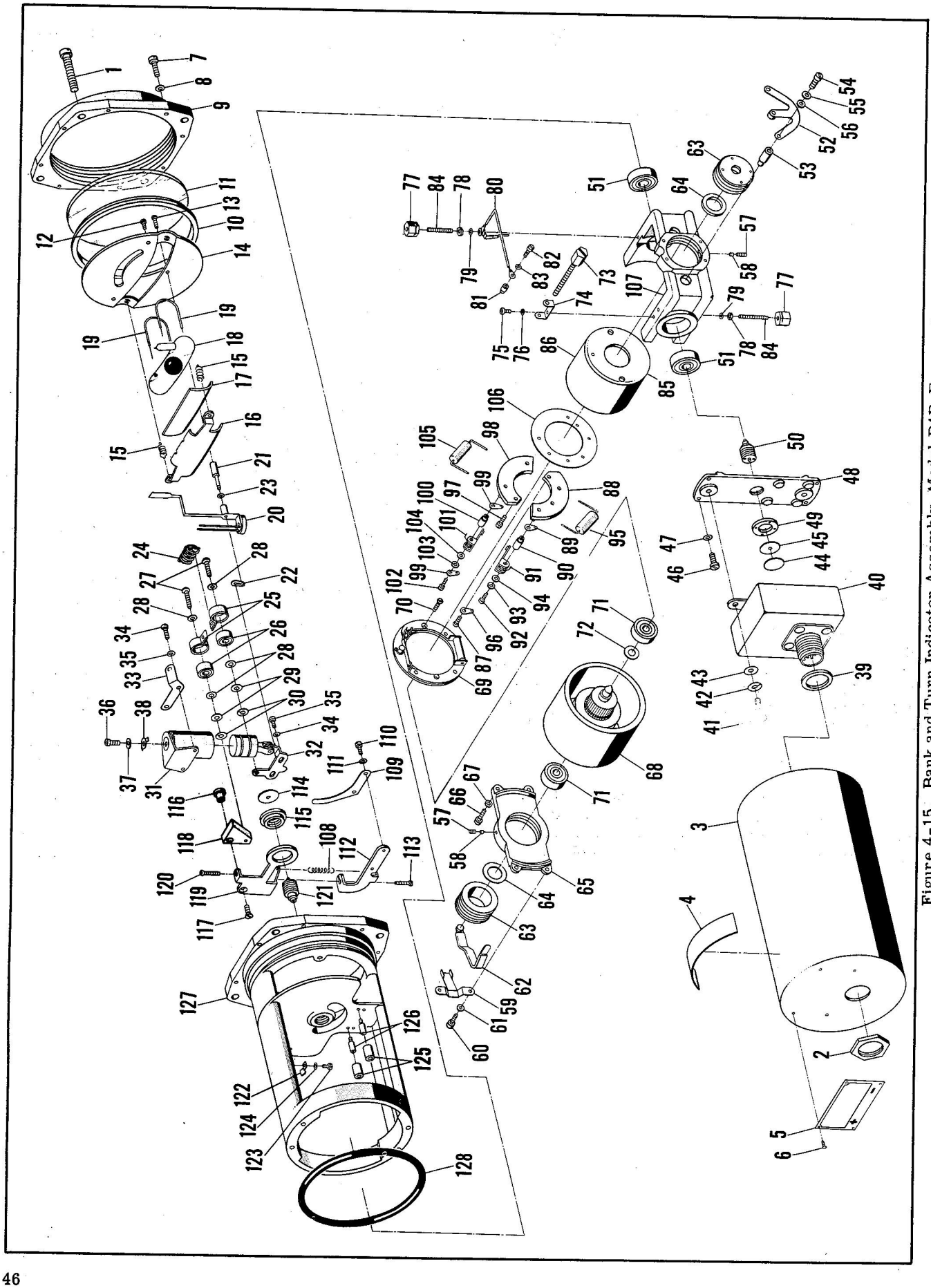


Figure 4-15. Bank and Turn Indicator Assembly, Model B4B-E

1 - Screw
2 - Nut
3 - Cover
4 - Decal
5 - Nameplate
6 - Rivet
7 - Screw
8 - Washer
9 - Bezel
10 - Gasket
11 - Glass
12 - Screw
13 - Screw
14 - Dial
15 - Spring
16 - Retainer
17 - Card
18 - Inclinometer
19 - Wire
20 - Pointer unit
21 - Pivot
22 - Ring
23 - Spacer
24 - Spring
25 - Anchor
26 - Bearing
27 - Screw
28 - Washer
29 - Washer
30 - Washer
31 - Cylinder assy
32 - Arm assy
33 - Ground
34 - Screw
35 - Washer
36 - Screw
37 - Washer
38 - Spring
39 - Gasket
40 - Filter assy
41 - Screw
42 - Washer
43 - Washer
44 - Insulation
45 - Washer
46 - Screw
47 - Washer
48 - Plate
49 - Nut
50 - Pivot assy
51 - Bearing
52 - Lead assy
53 - Insulation
54 - Screw
55 - Washer
56 - Washer
57 - Screw
58 - Plug
59 - Clamp
60 - Screw
61 - Washer
62 - Lead assy
63 - Nut
64 - "O" ring
65 - End
66 - Screw
67 - Washer
68 - Rotor assy
69 - Support assy
70 - Screw
71 - Bearing
72 - Spacer and slinger assy
73 - Screw
74 - Support
75 - Screw
76 - Washer
77 - Nut
78 - Nut
79 - Washer
80 - Positive contact assy
81 - Insulation
82 - Screw
83 - Washer
84 - Stud
85 - Housing
86 - Magnet
87 - Screw
88 - Support
89 - Lug
90 - Pivot
91 - Arm assy
92 - Screw
93 - Washer
94 - Washer
95 - Condenser
96 - Lug
97 - Screw
98 - Support
99 - Lug
100 - Pivot
101 - Arm assy
102 - Screw
103 - Washer
104 - Washer
105 - Condenser
106 - Insulation
107 - Gimbal
108 - Spring
109 - Clamp
110 - Screw
111 - Washer
112 - Anchorage
113 - Screw
114 - Washer
115 - Nut
116 - Pivot
117 - Screw
118 - Arm
119 - Arm
120 - Screw
121 - Pivot assy
122 - Clamp
123 - Screw
124 - Washer
125 - Bumper
126 - Stop
127 - Frame
128 - Gasket

KEY FOR FIGURE 4-15

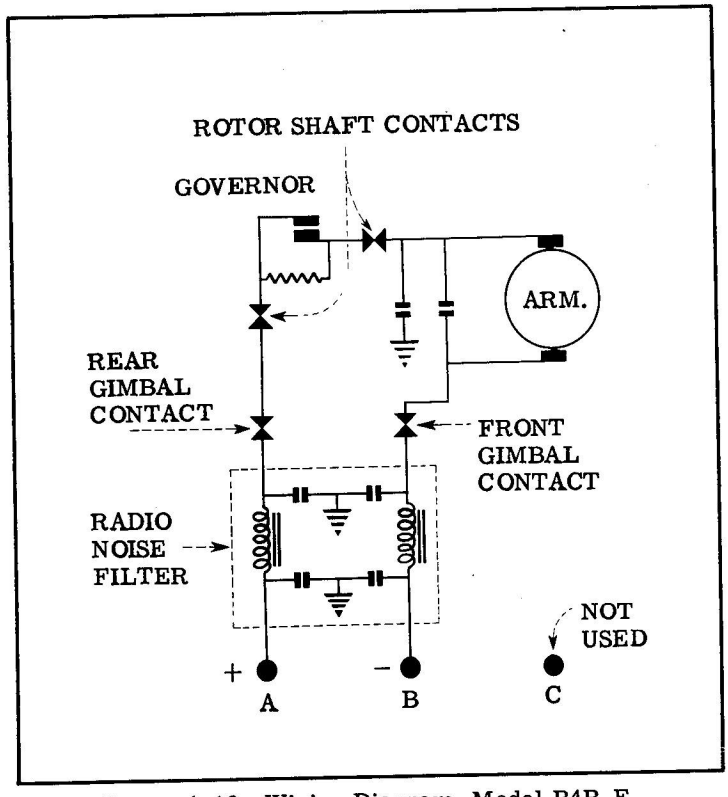


Figure 4-16. Wiring Diagram, Model B4B-E

BANK AND TURN INDICATOR ASSEMBLY

MODEL B4B-F

THE INSTRUCTIONS CONTAINED IN THE PRECEDING SECTIONS OF THIS HANDBOOK APPLY EXCEPT FOR THE DIFFERENCES LISTED IN THIS DATA SHEET

LEADING PARTICULARS. Same as Model B4 except

Type	AN 5819T3
Stock No.	None
Deflection	One width of pointer indicates turn of three degrees per second.
Mounting	With flange on back side of instrument panel.
Weight	1 pound, 14 ounces.

SPECIAL TOOLS. Same as Model B4.

DISASSEMBLY. (See figure 4-17.) Same as Model B4 except that filter assembly (40) replaces individual radio noise filtering components used on Model B4, and insulation (44) is used between insulating washer (45) and the filter assembly. The negative side of the electrical circuit is insulated throughout with insulation (81), and (114), and pivots (90), and (100). Condenser (105) is used between negative brush arm assembly (101) and ground. See figure 4-18 for wiring diagram.

CLEANING. Same as Model B4.

INSPECTION. Same as Model B4 except that radio noise filtering components are contained in filter assembly (40). Resistance between receptacle pin "A" and negative terminal of the filter assembly must be approximately 0.5 ohm. Resistance between receptacle pin "A" and filter case, and between pin "B" and filter case, must not be less than infinite.

TESTING. Same as Model B4.

LUBRICATION. Same as Model B4.

REPAIR OR REPLACEMENT. Same as Model B4.

REASSEMBLY. Same as Model B4 except that filter assembly (40) replaces individual radio noise filtering components. Use insulation (44) between insulating washer (45) and the filter assembly. Negative side of electrical circuit is insulated throughout. Use insulating pivots (90), and (100) on brush arm assemblies. Use condenser (105) between negative brush arm assembly (101) and ground. Use insulation (81) on screw (82). Pointer deflections must be within tolerances listed in Table VIII.

TEST PROCEDURE. Same as Model B4 except that pointer deflections must be within tolerances listed in Table VIII. See figure 4-18 for wiring diagram.

TABLE VIII

Instrument Type	Rate of Turntable Rotation (degrees per minute)	Deflection of Pointer Tip (inches)
AN 5819T3	36	1/32 ± 1/64
	180	5/32 ± 1/32
	360	5/16 ± 1/16

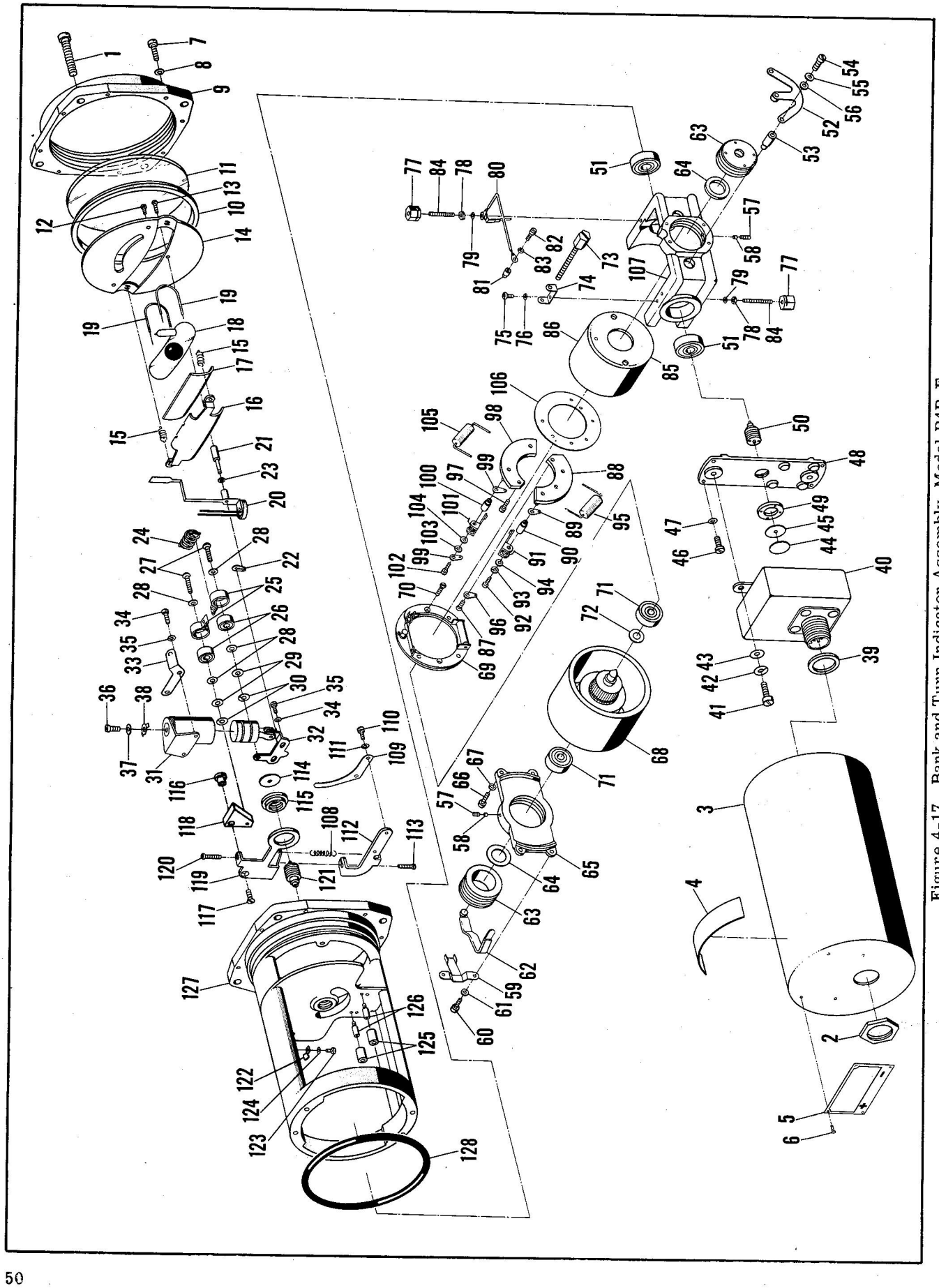


Figure 4-17. Bank and Turn Indicator Assembly, Model B4B-F

1 - Screw
2 - Nut
3 - Cover
4 - Decal
5 - Nameplate
6 - Rivet
7 - Screw
8 - Washer
9 - Bezel
10 - Gasket
11 - Glass
12 - Screw
13 - Screw
14 - Dial
15 - Spring
16 - Retainer
17 - Card
18 - Inclinometer
19 - Wire
20 - Pointer unit
21 - Pivot
22 - Ring
23 - Spacer
24 - Spring
25 - Anchor
26 - Bearing
27 - Screw
28 - Washer
29 - Washer
30 - Washer
31 - Cylinder assy
32 - Arm assy
33 - Ground
34 - Screw
35 - Washer
36 - Screw
37 - Washer
38 - Spring
39 - Gasket
40 - Filter assy
41 - Screw
42 - Washer
43 - Washer
44 - Insulation
45 - Washer
46 - Screw
47 - Washer
48 - Plate
49 - Nut
50 - Pivot assy
51 - Bearing
52 - Lead assy
53 - Insulation
54 - Screw
55 - Washer
56 - Washer
57 - Screw
58 - Plug
59 - Clamp
60 - Screw
61 - Washer
62 - Lead assy
63 - Nut
64 - "O" ring
65 - End
66 - Screw
67 - Washer
68 - Rotor assy
69 - Support assy
70 - Screw
71 - Bearing
72 - Spacer and slinger assy
73 - Screw
74 - Support
75 - Screw
76 - Washer
77 - Nut
78 - Nut
79 - Washer
80 - Positive contact assy
81 - Insulation
82 - Screw
83 - Washer
84 - Stud
85 - Housing
86 - Magnet
87 - Screw
88 - Support
89 - Lug
90 - Pivot
91 - Arm assy
92 - Screw
93 - Washer
94 - Washer
95 - Condenser
96 - Lug
97 - Screw
98 - Support
99 - Lug
100 - Pivot
101 - Arm assy
102 - Screw
103 - Washer
104 - Washer
105 - Condenser
106 - Insulation
107 - Gimbal
108 - Spring
109 - Clamp
110 - Screw
111 - Washer
112 - Anchorage
113 - Screw
114 - Washer
115 - Nut
116 - Pivot
117 - Screw
118 - Arm
119 - Arm
120 - Screw
121 - Pivot assy
122 - Clamp
123 - Screw
124 - Washer
125 - Bumper
126 - Stop
127 - Frame
128 - Gasket

KEY FOR FIGURE 4-17

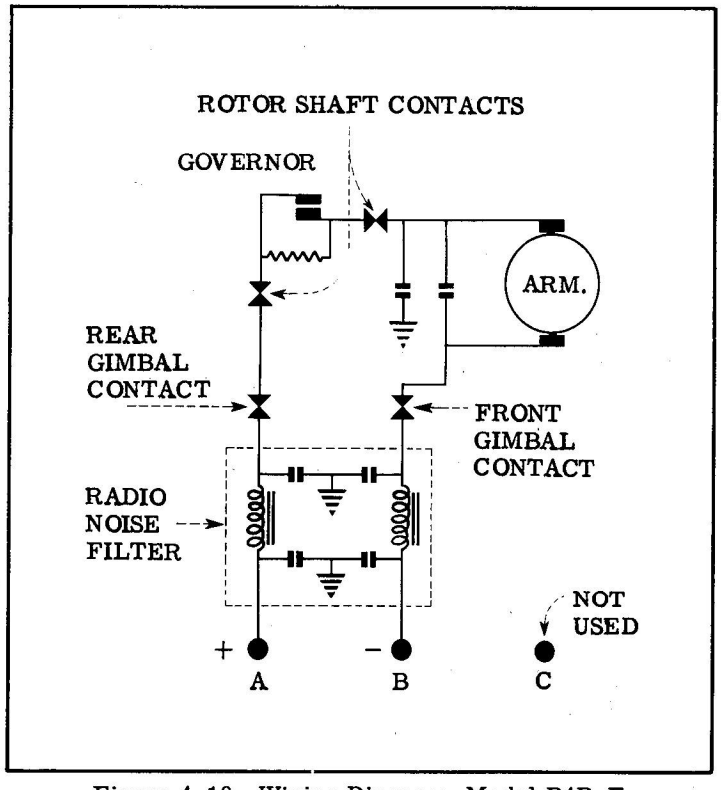


Figure 4-18. Wiring Diagram, Model B4B-F

BANK AND TURN INDICATOR ASSEMBLY

MODEL B4B-K

THE INSTRUCTIONS CONTAINED IN THE PRECEDING SECTIONS OF THIS HANDBOOK APPLY EXCEPT FOR THE DIFFERENCES LISTED IN THIS DATA SHEET

LEADING PARTICULARS. Same as Model B4 except

Type	MS 28024-1
Stock No.	None
Voltage	28 V dc
Weight	1 pound, 15-1/2 ounces
Dial markings	Fluorescent

SPECIAL TOOLS. Same as Model B4.

DISASSEMBLY. (See figure 4-19.) Same as Model B4 except that filter assembly (40) replaces individual radio noise filtering components used on Model B4, and insulation (44) is used between insulating washer (45) and the filter assembly. The negative side of the electrical circuit is insulated throughout with insulation (81), and (114), and pivots (90), and (100). Condenser (105) is used between negative brush arm assembly (101) and ground. See figure 4-20 for wiring diagram. Rear plate (48) is mated to frame (127). Gimbal end (65) is mated to gimbal (107).

CLEANING. Same as Model B4.

INSPECTION. Same as Model B4 except that radio noise filtering components are contained in filter assembly (40). Resistance between receptacle pin "A" and negative terminal of the filter assembly must be approximately 0.5 ohm. Resistance between receptacle pin "A" and filter case, and between pin "B" and filter case, must not be less than infinite.

TESTING. Same as Model B4.

LUBRICATION. Same as Model B4.

REPAIR OR REPLACEMENT. Same as Model B4.

REASSEMBLY. Same as Model B4 except that filter assembly (40) replaces individual radio noise filtering components. Use insulation (44) between insulating washer (45) and the filter assembly. Negative side of electrical circuit is insulated throughout. Use insulating pivots (90), and (100) on brush arm assemblies. Use condenser (105) between negative brush arm assembly (101) and ground. Use insulation (81) on screw (82). Rear plate (48) is mated with frame (127), and same parts must be reassembled. Gimbal end (65) is mated with gimbal (107), and same parts must be reassembled.

TEST PROCEDURE. Same as Model B4 except that 28 volts, dc, is used instead of 24 volts, dc. See figure 4-20 for wiring diagram.

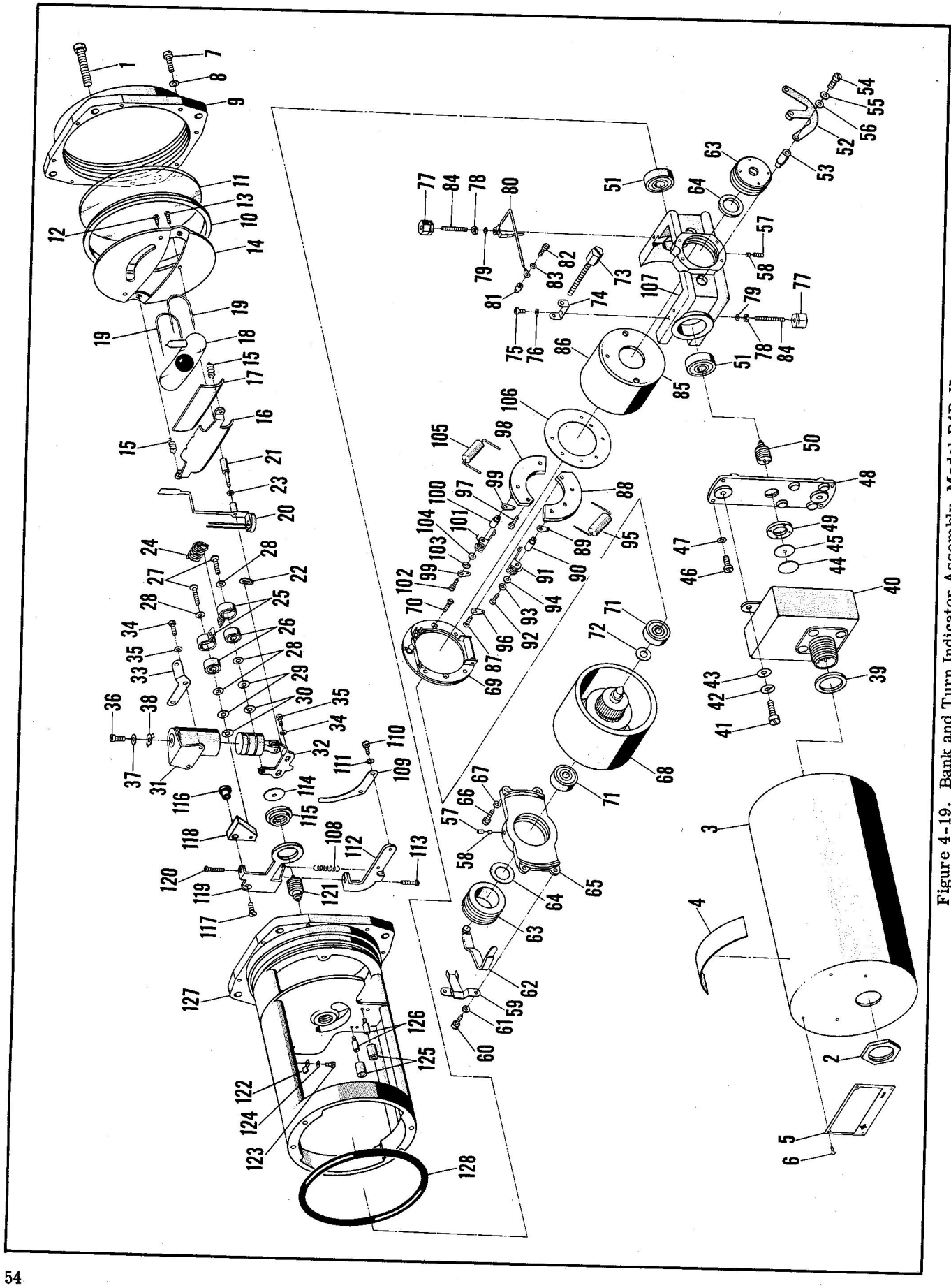


Figure 4-19. Bank and Turn Indicator Assembly, Model B4B-K

1 - Screw
2 - Nut
3 - Cover
4 - Decal
5 - Nameplate
6 - Rivet
7 - Screw
8 - Washer
9 - Bezel
10 - Gasket
11 - Glass
12 - Screw
13 - Screw
14 - Dial
15 - Spring
16 - Retainer
17 - Card
18 - Inclinometer
19 - Wire
20 - Pointer unit
21 - Pivot
22 - Ring
23 - Spacer
24 - Spring
25 - Anchor
26 - Bearing
27 - Screw
28 - Washer
29 - Washer
30 - Washer
31 - Cylinder assy
32 - Arm assy
33 - Ground
34 - Screw
35 - Washer
36 - Screw
37 - Washer
38 - Spring
39 - Gasket
40 - Filter assy
41 - Screw
42 - Washer
43 - Washer
44 - Insulation
45 - Washer
46 - Screw
47 - Washer
48 - Plate
49 - Nut
50 - Pivot assy
51 - Bearing
52 - Lead assy
53 - Insulation
54 - Screw
55 - Washer
56 - Washer
57 - Screw
58 - Plug
59 - Clamp
60 - Screw
61 - Washer
62 - Lead assy
63 - Nut
64 - "O" ring
65 - End
66 - Screw
67 - Washer
68 - Rotor assy
69 - Support assy
70 - Screw
71 - Bearing
72 - Spacer and slinger assy
73 - Screw
74 - Support
75 - Screw
76 - Washer
77 - Nut
78 - Nut
79 - Washer
80 - Positive contact assy
81 - Insulation
82 - Screw
83 - Washer
84 - Stud
85 - Housing
86 - Magnet
87 - Screw
88 - Support
89 - Lug
90 - Pivot
91 - Arm assy
92 - Screw
93 - Washer
94 - Washer
95 - Condenser
96 - Lug
97 - Screw
98 - Support
99 - Lug
100 - Pivot
101 - Arm assy
102 - Screw
103 - Washer
104 - Washer
105 - Condenser
106 - Insulation
107 - Gimbal
108 - Spring
109 - Clamp
110 - Screw
111 - Washer
112 - Anchorage
113 - Screw
114 - Washer
115 - Nut
116 - Pivot
117 - Screw
118 - Arm
119 - Arm
120 - Screw
121 - Pivot assy
122 - Clamp
123 - Screw
124 - Washer
125 - Bumper
126 - Stop
127 - Frame
128 - Gasket

KEY FOR FIGURE 4-19

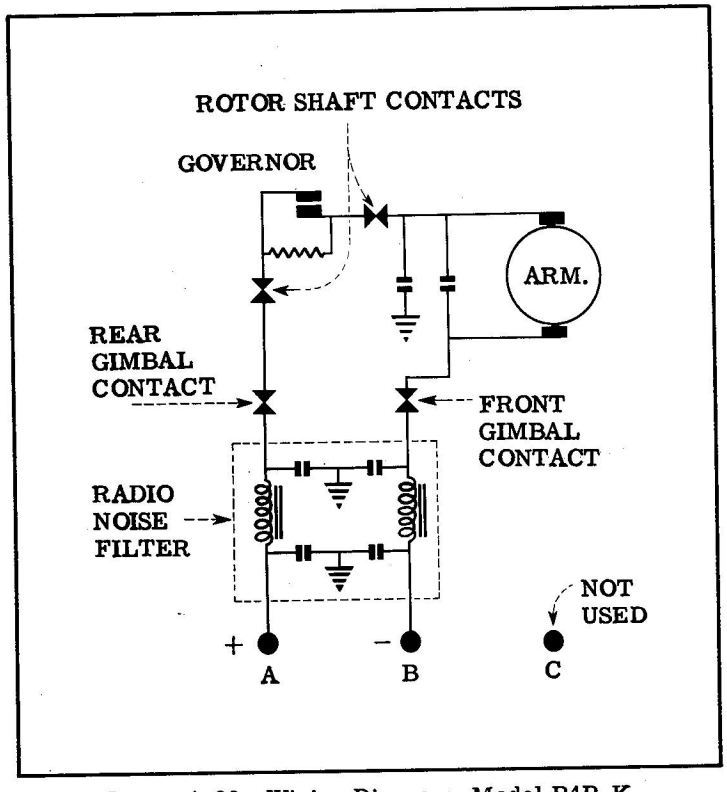


Figure 4-20. Wiring Diagram, Model B4B-K

BANK AND TURN INDICATOR ASSEMBLY — MODEL B4B-L

THE INSTRUCTIONS CONTAINED IN THE PRECEDING SECTIONS OF THIS HANDBOOK APPLY EXCEPT FOR THE DIFFERENCES LISTED IN THIS DATA SHEET

LEADING PARTICULARS. Same as Model B4 except

Type	AN 5819-3
Navy Stock No.	None
Voltage	24 V dc
Deflection	One width of pointer indicates turn of three degrees per second
Mounting	With flange on back side of instrument panel.
Weight	1 pound; 14 ounces.

SPECIAL TOOLS. Same as Model B4.

DISASSEMBLY. (See figure 4-21.) Same as Model B4 except that filter assembly (40) replaces individual radio noise filtering components used on Model B4, and insulation (44) is used between insulating washer (45) and the filter assembly. The negative side of the electrical circuit is insulated throughout with insulation (81), and (114), and pivots (90), and (100). Condenser (105) is used between negative brush arm assembly (101) and ground. See figure 4-22 for wiring diagram. Rear plate (48) is mated to frame (127). Gimbal end (65) is mated to gimbal (107).

CLEANING. Same as Model B4.

INSPECTION. Same as Model B4 except that radio noise filtering components are contained in filter assembly (40). Resistance between receptacle pin "A" and negative terminal of the filter assembly must be approximately 0.5 ohm. Resistance between receptacle pin "A" and filter case, and between pin "B" and filter case, must not be less than infinite.

TESTING. Same as Model B4.

LUBRICATION. Same as Model B4.

REPAIR OR REPLACEMENT. Same as Model B4.

REASSEMBLY. Same as Model B4 except that filter assembly (40) replaces individual radio noise filtering components. Use insulation (44) between insulating washer (45) and the filter assembly. Negative side of electrical circuit is insulated throughout. Use insulating pivots (90), and (100) on brush arm assemblies. Use condenser (105) between negative brush arm assembly (101) and ground. Use insulation (81) on screw (82). Rear plate (48) is mated with frame (127), and same parts must be reassembled. Gimbal end (65) is mated with gimbal (107), and same parts must be reassembled.

TEST PROCEDURE. Same as Model B4 except that pointer deflections must be within tolerances listed in Table IX. See figure 4-22 for wiring diagram.

TABLE IX

Instrument Type	Rate of Turntable Rotation (degrees per minute)	Deflection of Pointer Tip (inches)
AN 5819-3	36	1/32 ± 1/64
	180	5/32 ± 1/32
	360	5/16 ± 1/16

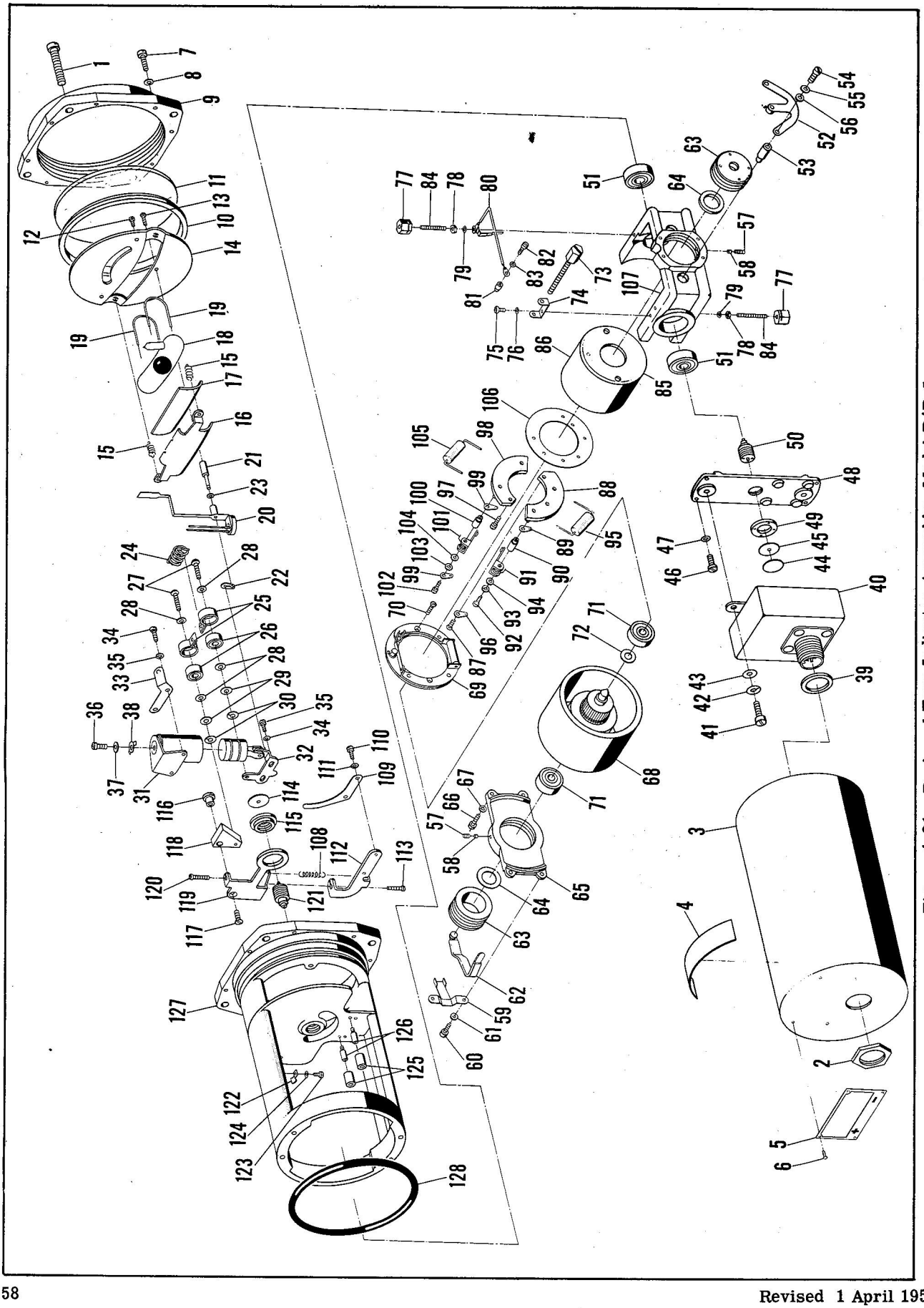


Figure 4-21. Bank and Turn Indicator Assembly, Model B4B-L

1 - Screw
2 - Nut
3 - Cover
4 - Decal
5 - Nameplate
6 - Rivet
7 - Screw
8 - Washer
9 - Bezel
10 - Gasket
11 - Glass
12 - Screw
13 - Screw
14 - Dial
15 - Spring
16 - Retainer
17 - Card
18 - Inclinometer
19 - Wire
20 - Pointer unit
21 - Pivot
22 - Ring
23 - Spacer
24 - Spring
25 - Anchor
26 - Bearing
27 - Screw
28 - Washer
29 - Washer
30 - Washer
31 - Cylinder assy
32 - Arm assy
33 - Ground
34 - Screw
35 - Washer
36 - Screw
37 - Washer
38 - Spring
39 - Gasket
40 - Filter assy
41 - Screw
42 - Washer
43 - Washer
44 - Insulation
45 - Washer
46 - Screw
47 - Washer
48 - Plate
49 - Nut
50 - Pivot assy
51 - Bearing
52 - Lead assy
53 - Insulation
54 - Screw
55 - Washer
56 - Washer
57 - Screw
58 - Plug
59 - Clamp
60 - Screw
61 - Washer
62 - Lead assy
63 - Nut
64 - "O" ring
65 - End
66 - Screw
67 - Washer
68 - Rotor assy
69 - Support assy
70 - Screw
71 - Bearing
72 - Spacer and slinger assy
73 - Screw
74 - Support
75 - Screw
76 - Washer
77 - Nut
78 - Nut
79 - Washer
80 - Positive contact assy
81 - Insulation
82 - Screw
83 - Washer
84 - Stud
85 - Housing
86 - Magnet
87 - Screw
88 - Support
89 - Lug
90 - Pivot
91 - Arm assy
92 - Screw
93 - Washer
94 - Washer
95 - Condenser
96 - Lug
97 - Screw
98 - Support
99 - Lug
100 - Pivot
101 - Arm assy
102 - Screw
103 - Washer
104 - Washer
105 - Condenser
106 - Insulation
107 - Gimbal
108 - Spring
109 - Clamp
110 - Screw
111 - Washer
112 - Anchorage
113 - Screw
114 - Washer
115 - Nut
116 - Pivot
117 - Screw
118 - Arm
119 - Arm
120 - Screw
121 - Pivot assy
122 - Clamp
123 - Screw
124 - Washer
125 - Bumper
126 - Stop
127 - Frame
128 - Gasket

KEY FOR FIGURE 4-21

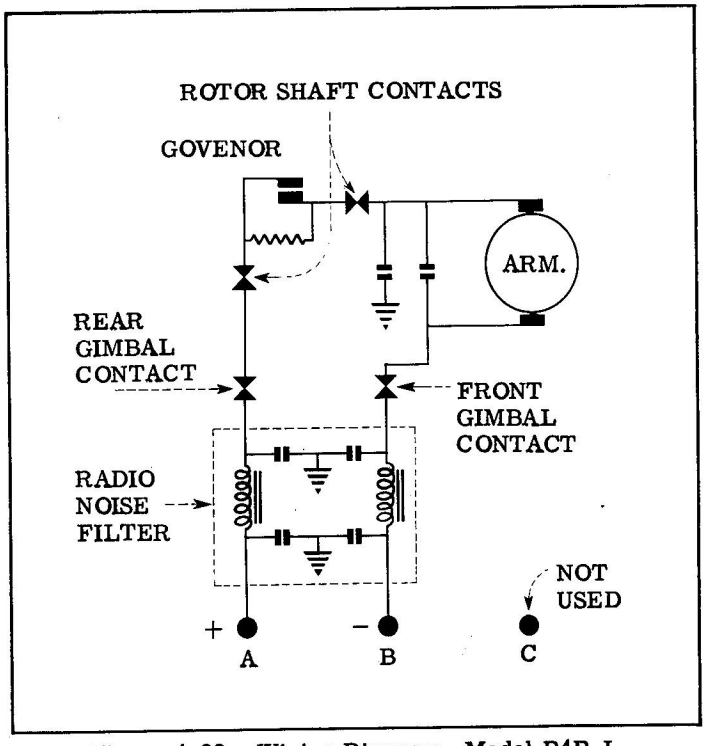


Figure 4-22. Wiring Diagram, Model B4B-L

BANK AND TURN INDICATOR ASSEMBLY — MODEL B4B-M

THE INSTRUCTIONS CONTAINED IN THE PRECEDING SECTIONS OF THIS HANDBOOK APPLY EXCEPT FOR THE DIFFERENCES LISTED IN THIS DATA SHEET

LEADING PARTICULARS. Same as Model B4 except

Type	AN 5819-4
Navy stock No.	None
Deflection	One width of pointer indicates turn of three degrees per second
Dial markings	Fluorescent; Inclinometer reflector card, radio active
Mounting	With flange on back side of instrument panel
Weight	1 pound; 14 ounces

SPECIAL TOOLS. Same as Model B4.

DISASSEMBLY. (See figure 4-23.) Same as Model B4 except that filter assembly (40) replaces individual radio noise filtering components used on Model B4, and insulation (44) is used between insulating washer (45) and the filter assembly. The negative side of the electrical circuit is insulated throughout with insulation (81), and (114), and pivots (90), and (100). Condenser (105) is used between negative brush arm assembly (101) and ground. See figure 4-24 for wiring diagram. Rear plate (48) is mated to frame (127). Gimbal end (65) is mated to gimbal (107).

CLEANING. Same as Model B4.

INSPECTION. Same as Model B4 except that radio noise filtering components are contained in filter assembly (40). Resistance between receptacle pin "A" and negative terminal of the filter assembly must be approximately 0.5 ohm. Resistance between receptacle pin "A" and filter case, and between pin "B" and filter case, must not be less than infinite.

TESTING. Same as Model B4.

LUBRICATION. Same as Model B4.

REPAIR OR REPLACEMENT. Same as Model B4.

REASSEMBLY. Same as Model B4 except that filter assembly (40) replaces individual radio noise filtering components. Use insulation (44) between insulating washer (45) and the filter assembly. Negative side of electrical circuit is insulated throughout. Use insulating pivots (90), and (100) on brush arm assemblies. Use condenser (105) between negative brush arm assembly (101) and ground. Use insulation (81) on screw (82). Rear plate (48) is mated with frame (127), and same parts must be reassembled. Gimbal end (65) is mated with gimbal (107), and same parts must be reassembled.

TEST PROCEDURE. Same as Model B4 except that pointer deflections must be within tolerances listed in Table X. See figure 4-24 for wiring diagram.

TABLE X

Instrument Type	Rate of Turntable Rotation (degrees per minute)	Deflection of Pointer Tip (inches)
AN 5819-4	36	1/32 ± 1/64
	180	5/32 ± 1/32
	360	5/16 ± 1/16

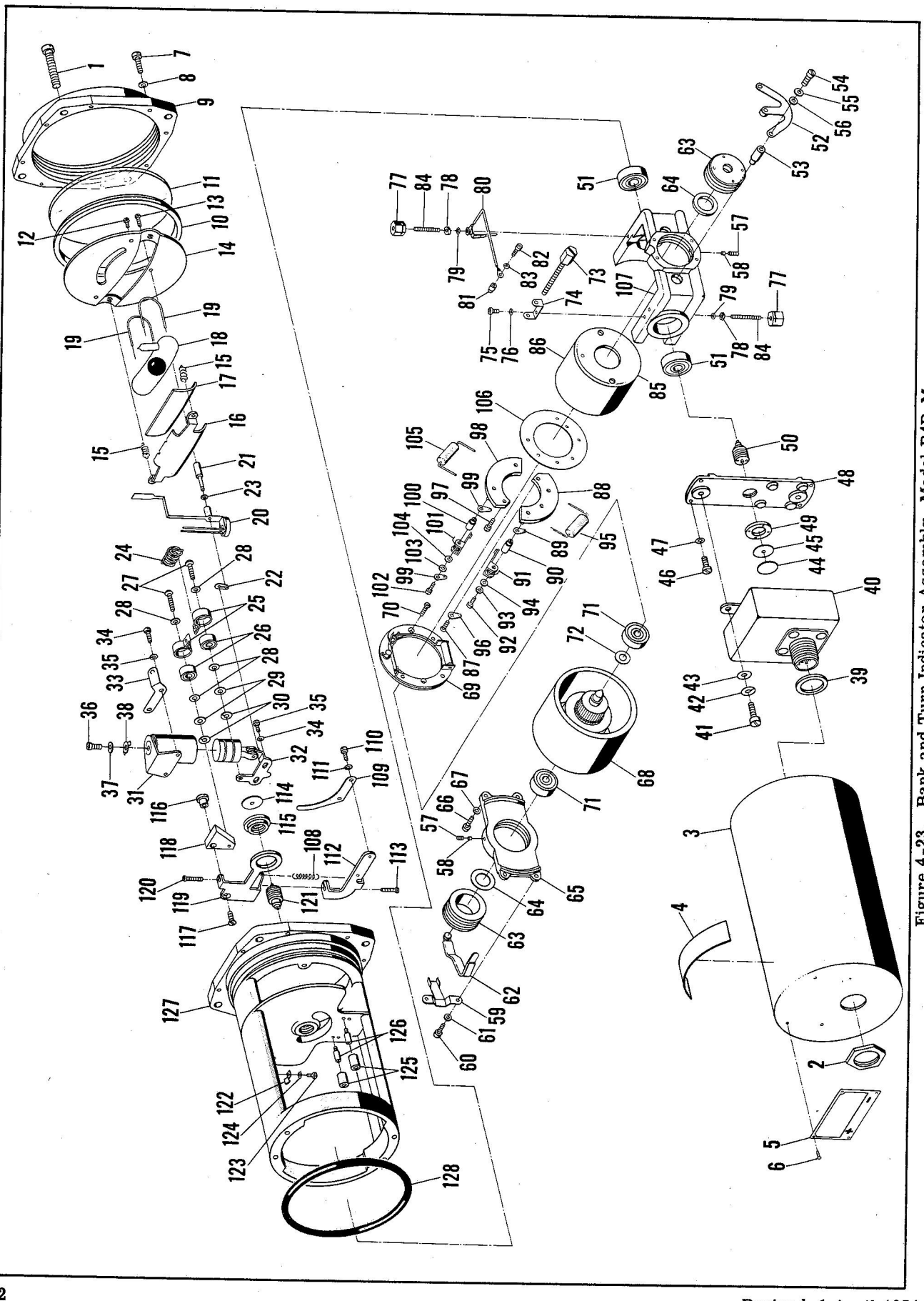


Figure 4-23. Bank and Turn Indicator Assembly, Model B4B-M

1 - Screw
2 - Nut
3 - Cover
4 - Decal
5 - Nameplate
6 - Rivet
7 - Screw
8 - Washer
9 - Bezel
10 - Gasket
11 - Glass
12 - Screw
13 - Screw
14 - Dial
15 - Spring
16 - Retainer
17 - Card
18 - Inclinometer
19 - Wire
20 - Pointer unit
21 - Pivot
22 - Ring
23 - Spacer
24 - Spring
25 - Anchor
26 - Bearing
27 - Screw
28 - Washer
29 - Washer
30 - Washer
31 - Cylinder assy
32 - Arm assy
33 - Ground
34 - Screw
35 - Washer
36 - Screw
37 - Washer
38 - Spring
39 - Gasket
40 - Filter assy
41 - Screw
42 - Washer
43 - Washer
44 - Insulation
45 - Washer
46 - Screw
47 - Washer
48 - Plate
49 - Nut
50 - Pivot assy
51 - Bearing
52 - Lead assy
53 - Insulation
54 - Screw
55 - Washer
56 - Washer
57 - Screw
58 - Plug
59 - Clamp
60 - Screw
61 - Washer
62 - Lead assy
63 - Nut
64 - "O" ring
65 - End
66 - Screw
67 - Washer
68 - Rotor assy
69 - Support assy
70 - Screw
71 - Bearing
72 - Spacer and slinger assy
73 - Screw
74 - Support
75 - Screw
76 - Washer
77 - Nut
78 - Nut
79 - Washer
80 - Positive contact assy
81 - Insulation
82 - Screw
83 - Washer
84 - Stud
85 - Housing
86 - Magnet
87 - Screw
88 - Support
89 - Lug
90 - Pivot
91 - Arm assy
92 - Screw
93 - Washer
94 - Washer
95 - Condenser
96 - Lug
97 - Screw
98 - Support
99 - Lug
100 - Pivot
101 - Arm assy
102 - Screw
103 - Washer
104 - Washer
105 - Condenser
106 - Insulation
107 - Gimbal
108 - Spring
109 - Clamp
110 - Screw
111 - Washer
112 - Anchorage
113 - Screw
114 - Washer
115 - Nut
116 - Pivot
117 - Screw
118 - Arm
119 - Arm
120 - Screw
121 - Pivot assy
122 - Clamp
123 - Screw
124 - Washer
125 - Bumper
126 - Stop
127 - Frame
128 - Gasket

KEY FOR FIGURE 4-23

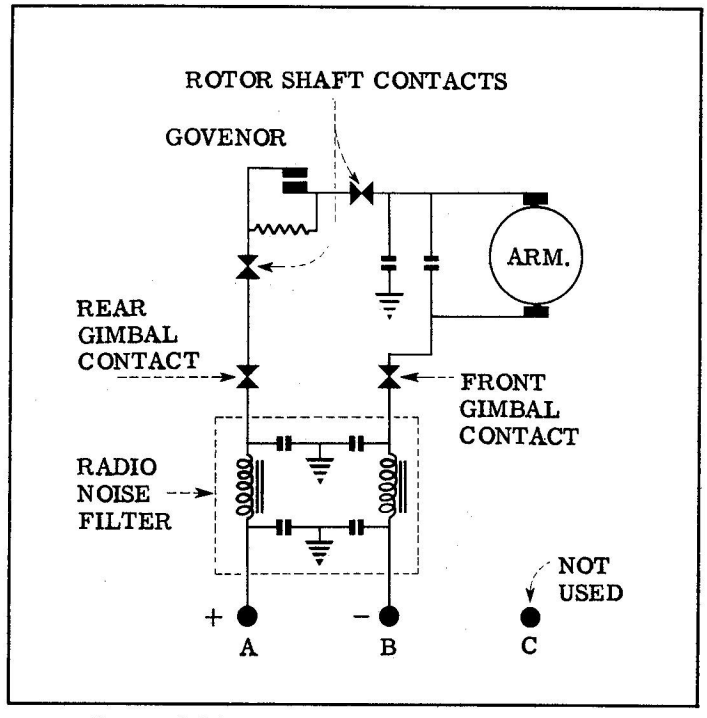


Figure 4-24. Wiring Diagram, Model B4B-M

BANK AND TURN INDICATOR ASSEMBLY — MODEL B4B-N

THE INSTRUCTIONS CONTAINED IN THE PRECEDING SECTIONS OF THIS HANDBOOK APPLY

EXCEPT FOR THE DIFFERENCES LISTED IN THIS DATA SHEET

LEADING PARTICULARS. Same as Model B4 except

Type	AN 5819T3
Navy Stock No.	None
Voltage	24 V dc
Deflection	One width of pointer indicates turn of three degrees per second
Mounting	With flange on back side of instrument panel
Weight	1 pound; 14 ounces

SPECIAL TOOLS. Same as Model B4.

DISASSEMBLY. (See figure 4-25.) Same as Model B4 except that filter assembly (40) replaces individual radio noise filtering components used on Model B4, and insulation (44) is used between insulating washer (45) and the filter assembly. The negative side of the electrical circuit is insulated throughout with insulation (81), and (114), and pivots (90), and (100). Condenser (105) is used between negative brush arm assembly (101) and ground. See figure 4-26 for wiring diagram. Rear plate (48) is mated to frame (127). Gimbal end (65) is mated to gimbal (107).

CLEANING. Same as Model B4.

INSPECTION. Same as Model B4 except that radio noise filtering components are contained in filter assembly (40). Resistance between receptacle pin "A" and negative terminal of the filter assembly must be approximately 0.5 ohm. Resistance between receptacle pin "A" and filter case, and between pin "B" and filter case, must not be less than infinite.

TESTING. Same as Model B4.

LUBRICATION. Same as Model B4.

REPAIR OR REPLACEMENT. Same as Model B4.

REASSEMBLY. Same as Model B4 except that filter assembly (40) replaces individual radio noise filtering components. Use insulation (44) between insulating washer (45) and the filter assembly. Negative side of electrical circuit is insulated throughout. Use insulating pivots (90), and (100) on brush arm assemblies. Use condenser (105) between negative brush arm assembly (101) and ground. Use insulation (81) on screw (82). Rear plate (48) is mated with frame (127), and same parts must be reassembled. Gimbal end (65) is mated with gimbal (107), and same parts must be reassembled.

TEST PROCEDURE. Same as Model B4 except that pointer deflections must be within tolerances listed in Table XI. See figure 4-26 for wiring diagram.

TABLE XI

Instrument Type	Rate of Turntable Rotation (degrees per minute)	Deflection of Pointer Tip (inches)
AN 5819T3	36	1/32 ± 1/64
	180	5/32 ± 1/32
	360	5/16 ± 1/16

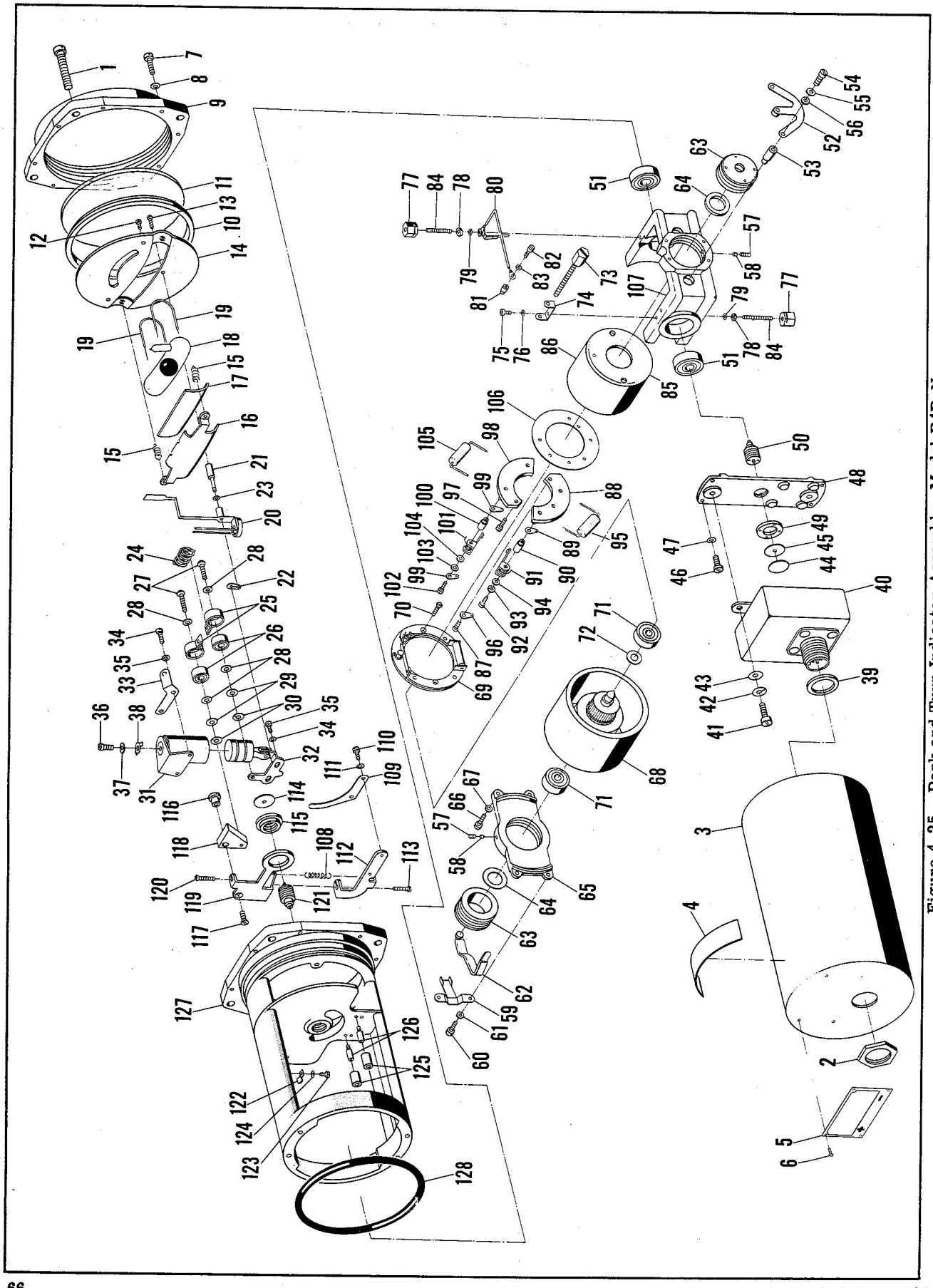


Figure 4-25. Bank and Turn Indicator Assembly, Model B4B-N

1 - Screw
2 - Nut
3 - Cover
4 - Decal
5 - Nameplate
6 - Rivet
7 - Screw
8 - Washer
9 - Bezel
10 - Gasket
11 - Glass
12 - Screw
13 - Screw
14 - Dial
15 - Spring
16 - Retainer
17 - Card
18 - Inclinometer
19 - Wire
20 - Pointer unit
21 - Pivot
22 - Ring
23 - Spacer
24 - Spring
25 - Anchor
26 - Bearing
27 - Screw
28 - Washer
29 - Washer
30 - Washer
31 - Cylinder assy
32 - Arm assy
33 - Ground
34 - Screw
35 - Washer
36 - Screw
37 - Washer
38 - Spring
39 - Gasket
40 - Filter assy
41 - Screw
42 - Washer
43 - Washer
44 - Insulation
45 - Washer
46 - Screw
47 - Washer
48 - Plate
49 - Nut
50 - Pivot assy
51 - Bearing
52 - Lead assy
53 - Insulation
54 - Screw
55 - Washer
56 - Washer
57 - Screw
58 - Plug
59 - Clamp
60 - Screw
61 - Washer
62 - Lead assy
63 - Nut
64 - "O" ring
65 - End
66 - Screw
67 - Washer
68 - Rotor assy
69 - Support assy
70 - Screw
71 - Bearing
72 - Spacer and slinger assy
73 - Screw
74 - Support
75 - Screw
76 - Washer
77 - Nut
78 - Nut
79 - Washer
80 - Positive contact assy
81 - Insulation
82 - Screw
83 - Washer
84 - Stud
85 - Housing
86 - Magnet
87 - Screw
88 - Support
89 - Lug
90 - Pivot
91 - Arm assy
92 - Screw
93 - Washer
94 - Washer
95 - Condenser
96 - Lug
97 - Screw
98 - Support
99 - Lug
100 - Pivot
101 - Arm assy
102 - Screw
103 - Washer
104 - Washer
105 - Condenser
106 - Insulation
107 - Gimbal
108 - Spring
109 - Clamp
110 - Screw
111 - Washer
112 - Anchorage
113 - Screw
114 - Washer
115 - Nut
116 - Pivot
117 - Screw
118 - Arm
119 - Arm
120 - Screw
121 - Pivot assy
122 - Clamp
123 - Screw
124 - Washer
125 - Bumper
126 - Stop
127 - Frame
128 - Gasket

KEY FOR FIGURE 4-25

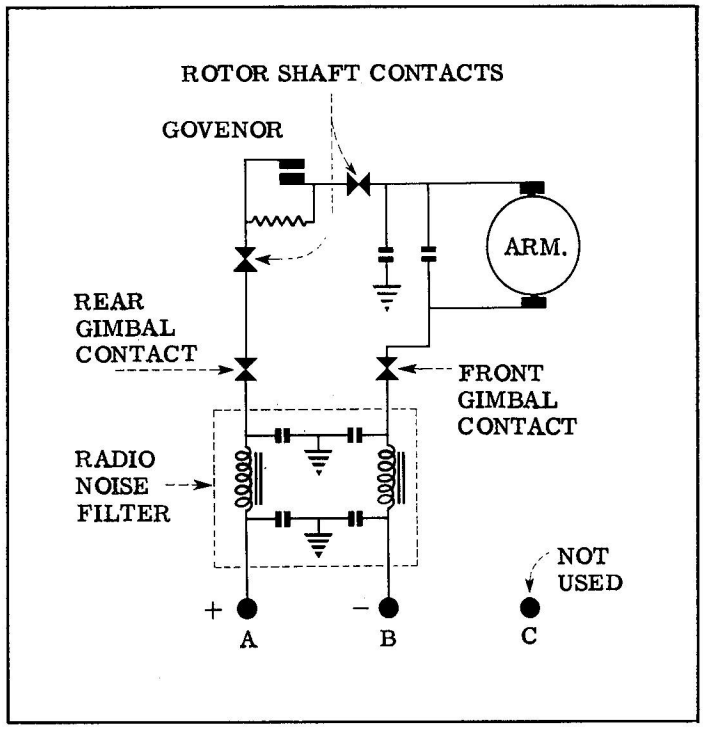


Figure 4-26. Wiring Diagram, Model B4B-N

BANK AND TURN INDICATOR ASSEMBLY

MODEL B4B-P

THE INSTRUCTIONS CONTAINED IN THE PRECEDING SECTIONS OF THIS HANDBOOK APPLY EXCEPT FOR THE DIFFERENCES LISTED IN THIS DATA SHEET

LEADING PARTICULARS. Same as Model B4 except

Type	AN 5819T4
Navy Stock No.	None
Deflection	One width of pointer indicates turn of three degrees per second
Dial markings	Fluorescent; Inclinometer reflector card, radio active
Mounting	With flange on back side of instrument panel
Weight	1 pound; 14 ounces

SPECIAL TOOLS. Same as Model B4.

DISASSEMBLY. (See figure 4-27.) Same as Model B4 except that filter assembly (40) replaces individual radio noise filtering components used on Model B4, and insulation (44) is used between insulating washer (45) and the filter assembly. The negative side of the electrical circuit is insulated throughout with insulation (81), and (114), and pivots (90), and (100). Condenser (105) is used between negative brush arm assembly (101) and ground. See figure 4-28 for wiring diagram. Rear plate (48) is mated to frame (127). Gimbal end (65) is mated to gimbal (107).

CLEANING. Same as Model B4.

INSPECTION. Same as Model B4 except that radio noise filtering components are contained in filter assembly (40). Resistance between receptacle pin "A" and negative terminal of the filter assembly must be approximately 0.5 ohm. Resistance between receptacle pin "A" and filter case, and between pin "B" and filter case, must not be less than infinite.

TESTING. Same as Model B4.

LUBRICATION. Same as Model B4.

REPAIR OR REPLACEMENT. Same as Model B4.

REASSEMBLY. Same as Model B4 except that filter assembly (40) replaces individual radio noise filtering components. Use insulation (44) between insulating washer (45) and the filter assembly. Negative side of electrical circuit is insulated throughout. Use insulating pivots (90), and (100) on brush arm assemblies. Use condenser (105) between negative brush arm assembly (101) and ground. Use insulation (81) on screw (82). Rear plate (48) is mated with frame (127), and same parts must be reassembled. Gimbal end (65) is mated with gimbal (107), and same parts must be reassembled.

TEST PROCEDURE. Same as Model B4 except that pointer deflections must be within tolerances listed in Table XII. See figure 4-28 for wiring diagram.

TABLE XII

Instrument Type	Rate of Turntable Rotation (degrees per minute)	Deflection of Pointer Tip (inches)
AN 5819T4	36	1/32 ± 1/64
	180	5/32 ± 1/32
	360	5/16 ± 1/16

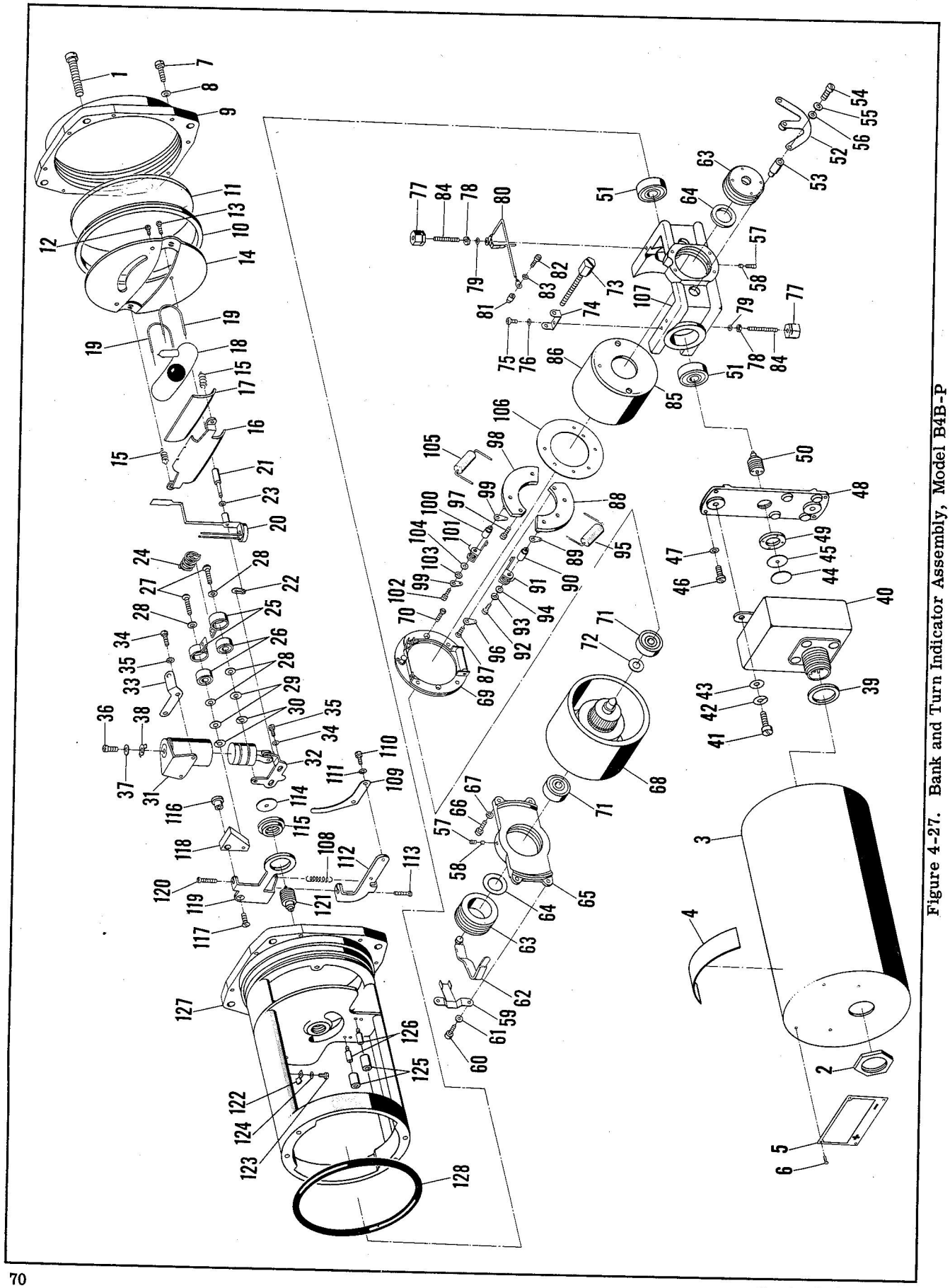


Figure 4-27. Bank and Turn Indicator Assembly, Model B4B-P

1 - Screw
2 - Nut
3 - Cover
4 - Decal
5 - Nameplate
6 - Rivet
7 - Screw
8 - Washer
9 - Bezel
10 - Gasket
11 - Glass
12 - Screw
13 - Screw
14 - Dial
15 - Spring
16 - Retainer
17 - Card
18 - Inclinometer
19 - Wire
20 - Pointer unit
21 - Pivot
22 - Ring
23 - Spacer
24 - Spring
25 - Anchor
26 - Bearing
27 - Screw
28 - Washer
29 - Washer
30 - Washer
31 - Cylinder assy
32 - Arm assy
33 - Ground
34 - Screw
35 - Washer
36 - Screw
37 - Washer
38 - Spring
39 - Gasket
40 - Filter assy
41 - Screw
42 - Washer
43 - Washer
44 - Insulation
45 - Washer
46 - Screw
47 - Washer
48 - Plate
49 - Nut
50 - Pivot assy
51 - Bearing
52 - Lead assy
53 - Insulation
54 - Screw
55 - Washer
56 - Washer
57 - Screw
58 - Plug
59 - Clamp
60 - Screw
61 - Washer
62 - Lead assy
63 - Nut
64 - "O" ring
65 - End
66 - Screw
67 - Washer
68 - Rotor assy
69 - Support assy
70 - Screw
71 - Bearing
72 - Spacer and slinger assy
73 - Screw
74 - Support
75 - Screw
76 - Washer
77 - Nut
78 - Nut
79 - Washer
80 - Positive contact assy
81 - Insulation
82 - Screw
83 - Washer
84 - Stud
85 - Housing
86 - Magnet
87 - Screw
88 - Support
89 - Lug
90 - Pivot
91 - Arm assy
92 - Screw
93 - Washer
94 - Washer
95 - Condenser
96 - Lug
97 - Screw
98 - Support
99 - Lug
100 - Pivot
101 - Arm assy
102 - Screw
103 - Washer
104 - Washer
105 - Condenser
106 - Insulation
107 - Gimbal
108 - Spring
109 - Clamp
110 - Screw
111 - Washer
112 - Anchorage
113 - Screw
114 - Washer
115 - Nut
116 - Pivot
117 - Screw
118 - Arm
119 - Arm
120 - Screw
121 - Pivot assy
122 - Clamp
123 - Screw
124 - Washer
125 - Bumper
126 - Stop
127 - Frame
128 - Gasket

KEY FOR FIGURE 4-27

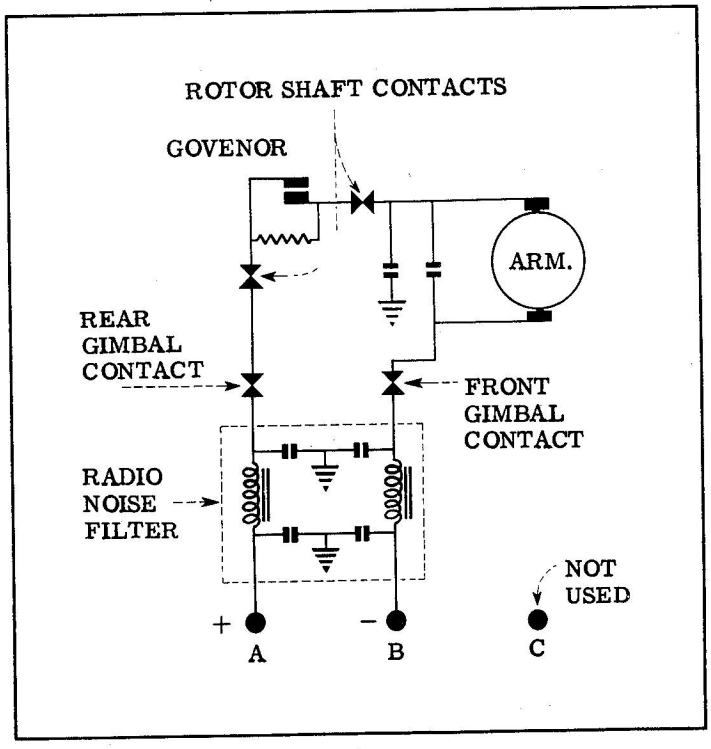


Figure 4-28. Wiring Diagram, Model B4B-P

BANK AND TURN INDICATOR ASSEMBLY — MODEL B4B-T

THE INSTRUCTIONS CONTAINED IN THE PRECEDING SECTIONS OF THIS HANDBOOK APPLY EXCEPT FOR THE DIFFERENCES LISTED IN THIS DATA SHEET

LEADING PARTICULARS. Same as Model B4 except

Type	AN 5819T4
Navy Stock No.	R88I3221-015-000
Deflection	One width of pointer indicates turn of three degrees per second
Dial markings	Radium (U. S. Radium Corp No. R-410 AB, 45 microns). Inclinometer ball, and wires are white; reflector card is black.
Mounting	Flange on back side of instrument panel. Mounting screw 6-32 x 1 inch into unfixed nut plates.
Weight	1 pound; 14 ounces

SPECIAL TOOLS. Same as Model B4.

DISASSEMBLY. (See figure 4-29.) Same as Model B4 except that filter assembly (40) replaces individual radio noise filtering components used on Model B4, and insulation (44) is used between insulating washer (45) and the filter assembly. The negative side of the electrical circuit is insulated throughout with insulation (81), and (114), and pivots (90), and (100). Condenser (105) is used between negative brush arm assembly (101) and ground. See figure 4-30 for wiring diagram. Rear plate (48) is mated to frame (127). Gimbal end (65) is mated to gimbal (107).

CLEANING. Same as Model B4.

INSPECTION. Same as Model B4 except that radio noise filtering components are contained in filter assembly (40). Resistance between receptacle pin "A" and negative terminal of the filter assembly must be approximately 0.5 ohm. Resistance between receptacle pin "A" and filter case, and between pin "B" and filter case, must not be less than infinite.

TESTING. Same as Model B4.

LUBRICATION. Same as Model B4.

REPAIR OR REPLACEMENT. Same as Model B4.

REASSEMBLY. Same as Model B4 except that filter assembly (40) replaces individual radio noise filtering components. Use insulation (44) between insulating washer (45) and the filter assembly. Negative side of electrical circuit is insulated throughout. Use insulating pivots (90), and (100) on brush arm assemblies. Use condenser (105) between negative brush arm assembly (101) and ground. Use insulation (81) on screw (82). Rear plate (48) is mated with frame (127), and same parts must be reassembled. Gimbal end (65) is mated with gimbal (107), and same parts must be reassembled.

TEST PROCEDURE. Same as Model B4 except that pointer deflections must be within tolerances listed in Table XIII. See figure 4-30 for wiring diagram.

TABLE XIII

Instrument Type	Rate of Turntable Rotation (degrees per minute)	Deflection of Pointer Tip (inches)
AN 5819T4	36	1/32 ± 1/64
	180	5/32 ± 1/32
	360	5/16 ± 1/16

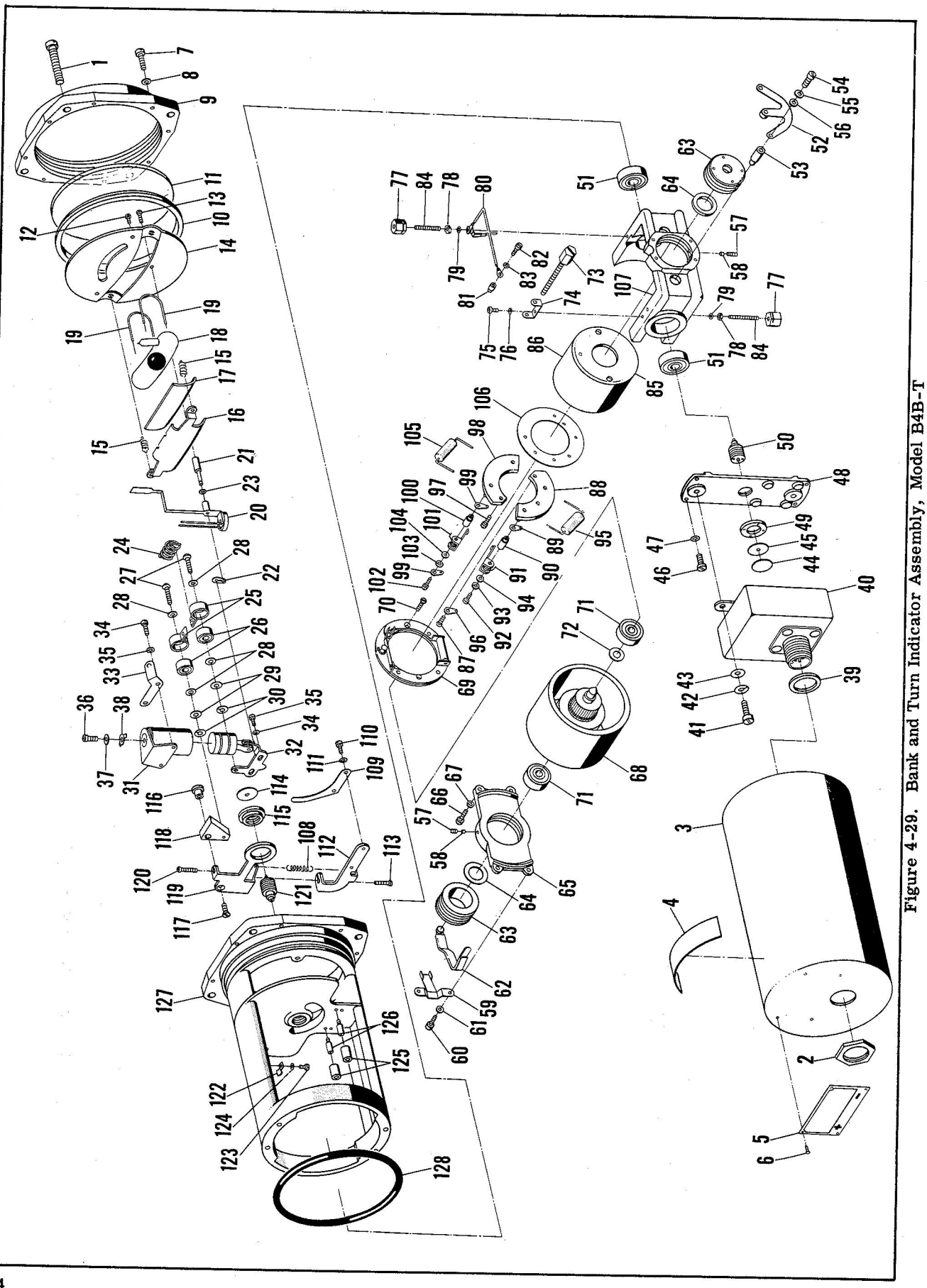


Figure 4-29. Bank and Turn Indicator Assembly, Model B4B-T

1 - Screw
2 - Nut
3 - Cover
4 - Decal
5 - Nameplate
6 - Rivet
7 - Screw
8 - Washer
9 - Bezel
10 - Gasket
11 - Glass
12 - Screw
13 - Screw
14 - Dial
15 - Spring
16 - Retainer
17 - Card
18 - Inclinometer
19 - Wire
20 - Pointer unit
21 - Pivot
22 - Ring
23 - Spacer
24 - Spring
25 - Anchor
26 - Bearing
27 - Screw
28 - Washer
29 - Washer
30 - Washer
31 - Cylinder assy
32 - Arm assy
33 - Ground
34 - Screw
35 - Washer
36 - Screw
37 - Washer
38 - Spring
39 - Gasket
40 - Filter assy
41 - Screw
42 - Washer
43 - Washer
44 - Insulation
45 - Washer
46 - Screw
47 - Washer
48 - Plate
49 - Nut
50 - Pivot assy
51 - Bearing
52 - Lead assy
53 - Insulation
54 - Screw
55 - Washer
56 - Washer
57 - Screw
58 - Plug
59 - Clamp
60 - Screw
61 - Washer
62 - Lead assy
63 - Nut
64 - "O" ring
65 - End
66 - Screw
67 - Washer
68 - Rotor assy
69 - Support assy
70 - Screw
71 - Bearing
72 - Spacer and slinger assy
73 - Screw
74 - Support
75 - Screw
76 - Washer
77 - Nut
78 - Nut
79 - Washer
80 - Positive contact assy
81 - Insulation
82 - Screw
83 - Washer
84 - Stud
85 - Housing
86 - Magnet
87 - Screw
88 - Support
89 - Lug
90 - Pivot
91 - Arm assy
92 - Screw
93 - Washer
94 - Washer
95 - Condenser
96 - Lug
97 - Screw
98 - Support
99 - Lug
100 - Pivot
101 - Arm assy
102 - Screw
103 - Washer
104 - Washer
105 - Condenser
106 - Insulation
107 - Gimbal
108 - Spring
109 - Clamp
110 - Screw
111 - Washer
112 - Anchorage
113 - Screw
114 - Washer
115 - Nut
116 - Pivot
117 - Screw
118 - Arm
119 - Arm
120 - Screw
121 - Pivot assy
122 - Clamp
123 - Screw
124 - Washer
125 - Bumper
126 - Stop
127 - Frame
128 - Gasket

KEY FOR FIGURE 4-29

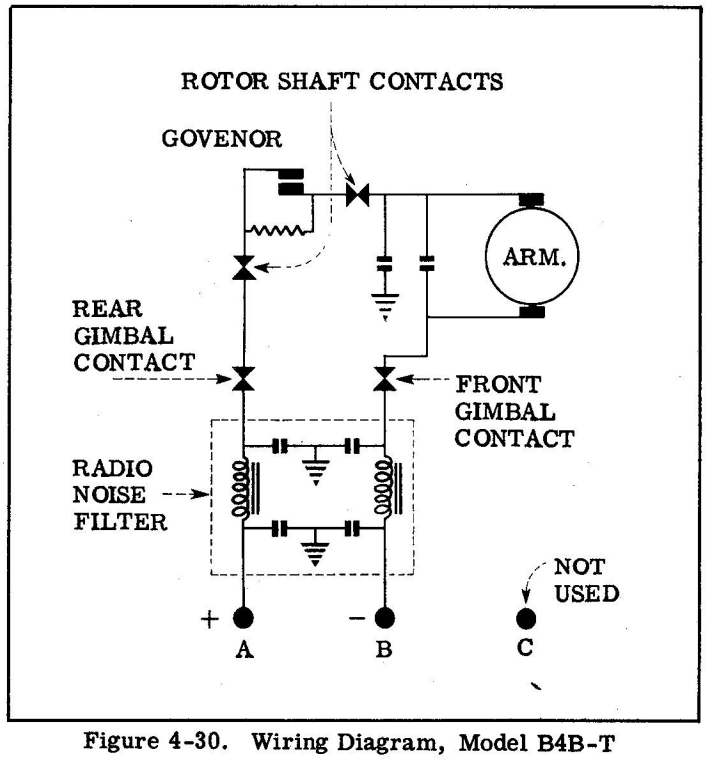


Figure 4-30. Wiring Diagram, Model B4B-T