TECHNICAL MANUAL

OPERATOR'S AVIATION UNIT, AND INTERMEDIATE MAINTENANCE MANUAL (INCLUDING REPAIR PARTS AND SPECIAL TOOL LIST)

TESTER, GYRO INDICATOR, PITCH AND ROLL
PART NO. 223650-1
NSN 4920-01-039-5199

HEADQUARTERS, DEPARTMENT OF THE ARMY

13 JANUARY 1981

For artificial respiration and other first aid data, refer to FM 21-11.

WARNING PAGE

Connect tester kit instrument base to an adequate ground to protect operating personnel from the possibility of electrical shock due to insulation breakdown in drive motor, electrical power transfer components or instrument under test.

TECHNICAL MANUAL

No. 55-4920-425-13&P

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REPORTING OF ERRORS

You can help improve this manual. If you find any mistakes or if you know of a way to improve the procedures, please let us know. Mail your letter, DA Form 2028 (Recommend Changes to Publications and Blank Forms), or DA Form 2028-2 located in the back of this manual direct to Commander, US Army Troop Support and Aviation Materiel Readiness Command, ATTN: DRSTS-MTT, 4300 Goodfellow Blvd., St. Louis, MO 63120. A reply will be furnished to you.

TABLE OF CONTENTS

TABLE OF CONTENTS (CONT)

LIST OF ILLUSTRATIONS

CHAPTER 1
INTRODUCTION

Section I. GENERAL INFORMATION

1-1. Scope. This manual covers operation and service instructions necessary for maintenance of the Tester, Gyro Indicator, Pitch and Roll (refer to fig. 1-1). The unit is designed for testing aircraft gyro instrument indicators and is capable of simulating rates of loop and turn, attitudes of dive and climb, and loops in pitch and roll. Types of instruments that can be tested are directional heading indicators, directional gyro transmitters, attitude horizontal indicators, and any other type gyro indicators or transmitters having a diameter not exceeding 6 inches.

1-2. Forms and Records. Maintenance forms, records, and reports which are to be used by maintenance personnel at all maintenance levels are listed in and prescribed by TM 38-750.

1-3. Destruction of Army Material to Prevent Enemy Use. Procedures for destroying Army material to prevent enemy use are listed in TM 750-244-1-4.

Section II. DESCRIPTION AND LEADING PARTICULARS

1-4. Description. The Tester, Gyro Indicator, Pitch and Roll consists of a motor-driven table which mounts a gimbal ring and instrument gyro mounting plate. The table and its mechanical drive system is mounted in a cradle which is mounted on a cast aluminum base with four leveling screws. The 12 inch diameter table is cast aluminum with a precision ground surface and machined rim which is divided from 0 to 360 degrees in one degree increments. An index mounted on the cradle provides for proper orientation. Provision is made to connect power to an instrument mounted on the gimbal through a series of connectors on the table rim which are connected to matching connectors on the rear panel of the cradle through slip rings. The pneumatic power transfer system conducts reference pressure or vaccum applied to a pipe fitting through the rear panel of the cradle and the main drive shaft to an outlet on the rim of the table adjacent to the electrical outlets. The cradle and/or gimbal may be rotated to 90 degrees from normal. A locating and locking pin is provided to lock either in the 90 degrees position. Two circular levels, one mounted on the gimbal ring and the other on the gimbal support plate, allow for proper leveling of the unit. A vibrator motor, mounted in the cradle section, provides fixed vibration frequency to the instrument mounting. This is con trolled by a switch on the front panel. A clutch incorporated in the drive system with front panel control allows for leveling and positioning of the test instrument.

1-5. Leading Particulars.

Power Source:	117V, 60 HZ
Power Consumption:	75 Watts
Type Motor:	Permanent magnet DC
Type Rotation:	CW, CCW switch controlled
Speeds:	10,15,20 degrees per second
Rotation Tolerance:	Plus or minus 2 percent
Vibrator Frequency:	1550 cycles per minute
Vibrator Amplitude:	.002 to .005 inches
Weight-Net:	100 lbs.
Dimensions:	Height: 29-5/16 inches Max.
	Width: 19-3/8 inches Max.
	Depth: 17-3/8 inches Max.

Section III. TEST EQUIPMENT, SPECIAL TOOLS AND MATERIALS.

1-6. Special Tools And Equipment. No special 'tools or equipment are used for maintenance of the instrument.

1-7. Consumable Materials. Consumable materials used for maintenance of the instrument are listed in Table 1-1.

Table 1-1. Consumable Materials

Item Number	Nomenclature	Military Specification
1	Aircraft and Instrument Grease	MIL-G-23827
2	Dry Cleaning Solvent	P-D-680
3	Grease, High Vacuum, Silicone	
4	Solder	QQ-S-571

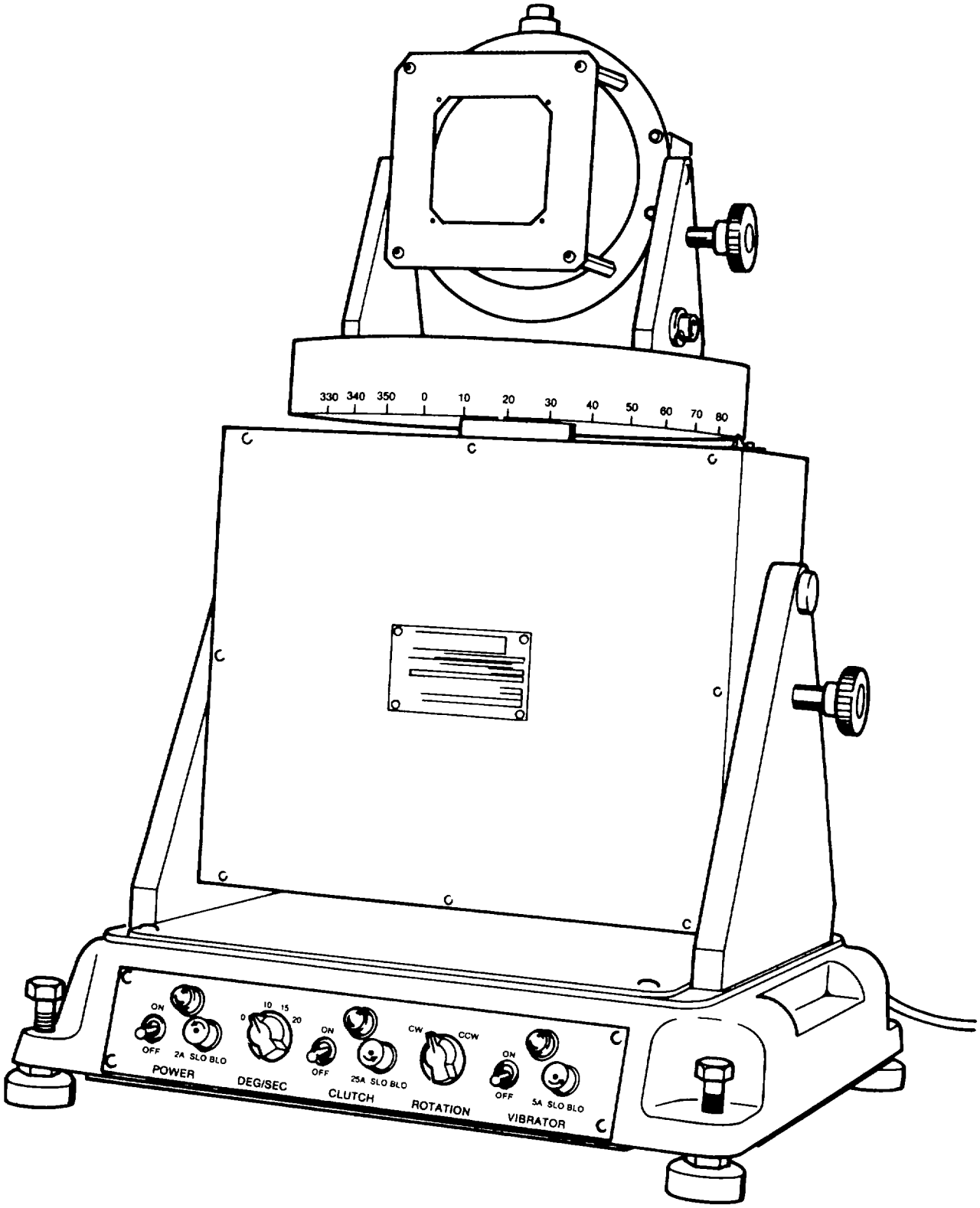

Figure 1-1. Tester, Gyro Indicator, Pitch and Roll

CHAPTER 2
OPERATING INSTRUCTIONS

2-1. Controls And Indicators. All controls and indicators are located on the front of the unit (refer to figure 2-1). They consist of the POWER ON/OFF switch and indicator, which controls power to all systems. The DEG/SEC switch which turns off the drive motor in the OFF position and selects speeds of 10, 15, and 20 degrees per second. The clutch switch, when in the ON position, energizes the drive clutch in the on position. An indicator is provided to tell when power is applied to the clutch. Rotation direction (CW or CCW) is controlled by the ROTATION switch. A center off position on the ROTATION switch allows the drive motor to stop before reversing direction to prevent heating. The VIBRATOR switch controls the vibrator motor only. An indicator is provided to tell when power is applied to the vibrator.

2-2. Connectors. Connectors are located on the rear of the base, the rear panel of the cradle, and on the rim of the table (refer to fig 2-2). They consists of the power cord on the right rear of the base and the motor power and control cable connector on the left rear of the base, as viewed from the front. Near the lower left hand corner of the rear cradle panel is the termination connector for the motor and control cable. At the lower center of this panel is the pneumatic input connector for instrument pressure. This is a 3/8 NPT size pipe fitting. Near left center of the rear cradle panel is a series of four connectors to provide input power for test instruments. On the table rim is the termination of the pneumatic supply, which is 3/8 NPT pipe size, as well as four electrical connectors, which are connected through slip rings to the corresponding connectors on the cradle rear panel.

2-3. Operating Instructions.

a. With the table sitting on a firm and relatively flat surface, lock cradle and gimbal ring in the vertical position.

b. By means of the four leveling screws in the cast base, adjust table to a level condition as indicated by the circular bubble level mounted on the top of the gimbal ring.

c. To check horizontal level, pull the cradle lock pin out and move cradle to the horizontal position and relock (refer to fig 2-3). With table turned so that zero position is in alignment with index pointer, bubble level on gimbal support plate next to locking knob should show approximate zero. No adjustment is required in this position, unless a refining adjustment between vertical and horizontal is desired.

d. Move cradle back to vertical and lock.

e. Plug power cord into a grounded 117V, 60 Hz power outlet.

f. With cradle and gimbal ring set in desired position, set DEG/SEC switch to desired speed.

g. Select direction of rotation with the ROTATION selector switch to either CW or CCW.

h. Turn on vibrator motor if desired for test being performed.

i. Turn ON POWER switch and table will commence operating in modes previously selected. NOTE: Speeds, clutch, direction of rotation and vibrator motor may all be changed while table is in operation if desired.

j. There are four "MS", "AN" connectors on back of the cradle carriage with matching connectors on table rim. Supply power for any particular type instrument may be fed through the connectors on back cradle, through an internal precision slip ring assembly to the matching "MS", "AN" connectors on the rim of the table. Short feed cable may then be connected from the table connectors to the instrument under test, so that continuous rotation in either direction may be obtained. There is also a 3/8 inch pipe fitting located at the bottom center of the cradle through which vacum or pressure may be transmitted to the rim of the table, through the hollow shaft, to allow hook-up of any type of gyro which is air driven.

WARNING

Turn main power switch off when setting either the cradle or gimbal ring from one 90° position to the other. When equipment is operating and the clutch is turned "OFF", table may or may not drift due to frictional forces through gears, clutch, and drive belts. This is normal and table may be moved freely as no power is applied to drive.

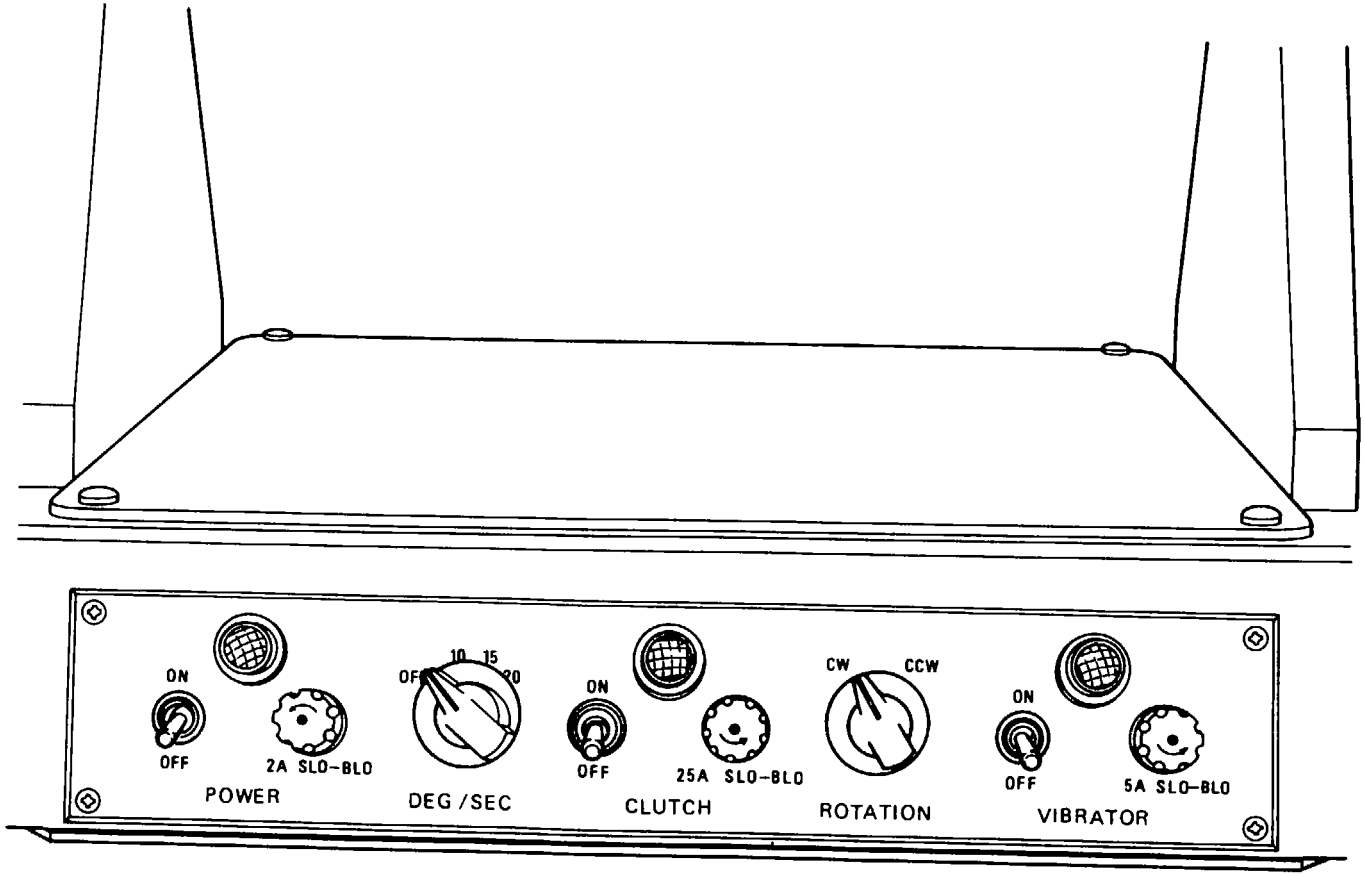

Figure 2-1. Controls and Connections

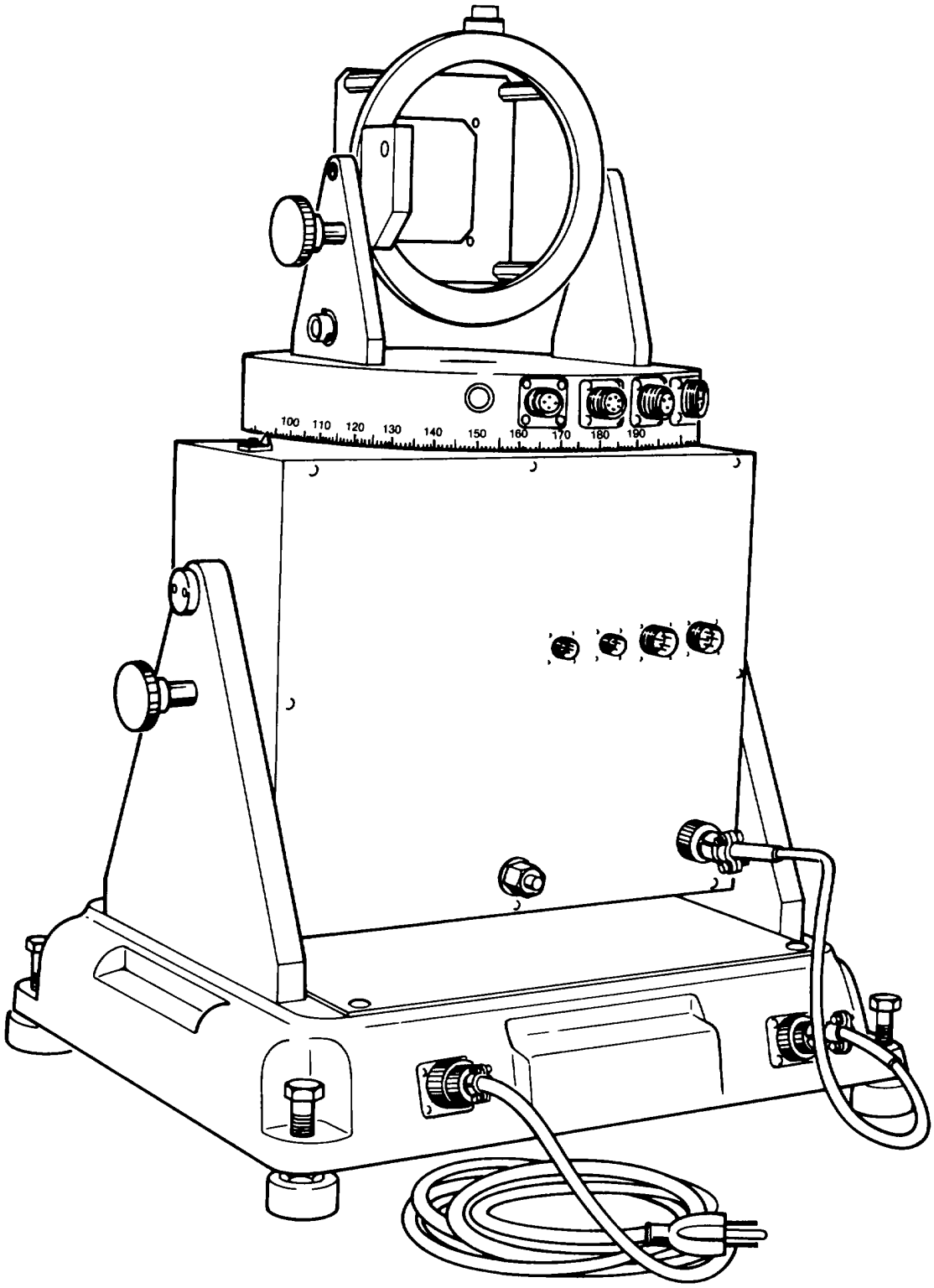

Figure 2-2. Rear View

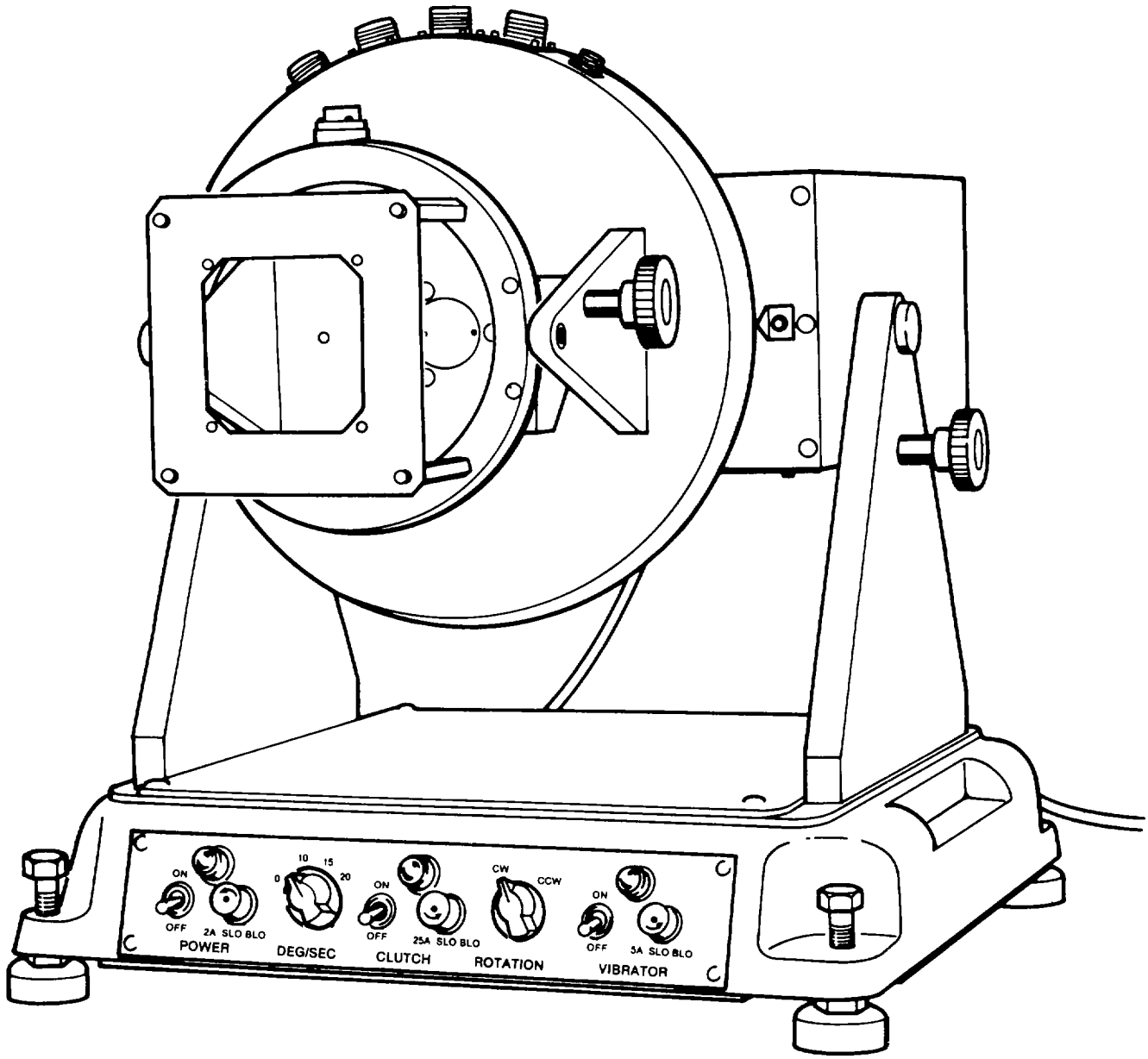

Figure 2-3. Alternate Position

CHAPTER 3
MAINTENANCE INSTRUCTION

Section I. PREPARATION FOR INSTALLATION, STORAGE AND SHIPMENT

3-1. Preinstallation Inspection. On receipt, inspect instrument for any mechanical damage that may have occurred during shipment and test the electrical performance The rate of turn should be checked as well as operation of the clutch and vibrator motor (refer to para 3-8).

3-2. Installation. The instrument should be placed on a rigid bench and carefully leveled with the four leveling screws When lifting instrument always be sure the cradle is in its upright locked position and lift by the base.

3-3. Storage And Reshipment. Use the original shipping cartons and packaging materials for reshipment. If they are not available, repackage the instrument in accordance with the preservation, packaging, packing and marking requirements outlined in Figure 3-1.

Section II. INSPECTIONS AND SERVICING

3-4. Inspections.

NOTE

This should be a thorough and searching inspection conducted after every 120 hours of operation.

a. Remove and/or disconnect any electrical connectors attached to the "MS" type electrical receptacles in the rear cradle panel.
b. Remove and/or disconnect any electrical connectors attached to the "MS" type electrical receptacles in the rim of the table (rotating plate).
c. Remove any pneumatic connection: hose, tubing lines, etc., attached to the stationary pneumatic connector in the rear cradle panel.
d. Remove any pneumatic connection attached to the nipple in the rim of the table.
e. Using a soft cloth, paint brush, etc., remove excess dust, lint, foreign materials, etc., from the table assembly.
f. Visually inspect for loose, damaged and/or missing parts, obvious shipping damage, damaged power cord, blow or missing fuse, etc.
g. If required, connect the power cord to the proper electrical source (117V, 60 Hz single phase current) and operate the table in directions and rates of turn. Note failure to operate, blown fuse, undue noise, etc.
h. Turn switches to OFF, DEG/SEC knob to OFF, and disconnect power cord from electrical power source.
i. Remove screws and front cradle panel.
j. Inspect timing belts for excessive wear and for proper belt tension. Note that the center (table) shaft is fixed and belt tension adjustments must be made at the clutch first and the motor second.
k. Inspect electrical wiring for loose connections, broken wires, frayed, burned, or otherwise damaged insulation, and/or broken solder joints.
l. Tilt the cradle to its 90 degree position making sure the locking pin is engaged to hold it. Remove appropriate screws and base cover.
m. Inspect electrical wiring for loose connections, broken wires, frayed, burned, or otherwise damaged insulation, and/or broken solder joints.

3-5. Servicing. Organizational service consists of cleaning, painting and lubrication. For painting instruction refer to TM 43-0139 Refer to paragraph 3-6 for lubrication instructions. Refer to paragraph 3-7 for cleaning instructions

Section III. PREVENTIVE MAINTENANCE

3-6. Lubrication. All rotating bearings are either sealed aircraft type, ball and race or oil impregnated bronze none of which require further lubrication. The motor gear reducer unit operates in grease (Item 1, Table 1-1) and the motor bearings are sealed and no lubrication is required.

CONTINUATION SHEET
(TSARCOM Reg 746-1 (J))

REF NO OF DOCUMENT BEING CONTINUED: TM 55-4920-425-13&P | PAGE | OF

NAME OF OFFEROR OR CONTRACTOR

SECTION G - PRESERVATION/PACKAGING/PACKING
PREPARATION FOR DELIVERY *(OVERHAUL)*

All specifications and standards applicable to the requirements herein shall be the issue in effect on date of invitations for bids

NOMENCLATURE	STOCK NUMBER
Tester, Gyro Indicator Pitch & Roll	4920-01-039-5199
	PART NUMBER: 22 3650-1

NET WEIGHT	SHIPPING DIMENSIONS	GROSS WEIGHT	CUBIC FEET
	21" x 20" x 29"	202 Lbs	7.55

1. PRESERVATION AND PACKAGING [X] LEVEL A [ ] LEVEL B

[X] PACKAGING SHALL BE IN ACCORDANCE WITH SPECIFICATION MIL-P-116 THE FOLLOWING DETAILED REQUIREMENTS SHALL APPLY

UNIT PKG QTY	METHOD	PRESERVATIVE	WRAP	DUNNAGE	CONTAINER
1	II a	NONE	MIL-B-121 GR A	Wood blocking & bracing	See Packing

[ ] a. ITEMS SHALL BE PRESERVED AND PACKAGED IN ACCORDANCE WITH MIL-STD-1188

[ ] b. OTHER

2. PACKING [X] LEVEL A [ ] LEVEL B

[ ] a. ITEMS, PRESERVED AND PACKAGED AS ABOVE, SHALL BE PACKED IN SNUG-FITTING FIBERBOARD CONTAINERS CONFORMING TO WEATHER-RESISTANT CLASS OF PPP-B-636

[X] b ITEMS, PRESERVED AND PACKAGED AS ABOVE, SHALL BE PACKED IN SNUG-FITTING CONTAINERS CONFORMING TO PPP-B-601, STYLE I, OVERSEAS TYPE.

[ ] c. ITEMS, PRESERVED AND PACKAGED AS ABOVE, SHALL BE PACKED IN ACCORDANCE WITH MIL-STD-1188

[ ] d. NO PACKING REQUIRED (THE UNIT CONTAINER IS THE SHIPPING CONTAINER)

[ ] e OTHER

3. MARKING

[X] a. MARKING OF SHIPMENTS
THE CONTRACTOR SHALL MARK ALL SHIPMENTS UNDER THIS CONTRACT IN ACCORDANCE WITH THE EDITION OF MIL-STD-129, "MARKING FOR SHIPMENT AND STORAGE," IN EFFECT AS OF THE DATE OF THE SOLICITATION

[ ] b. MARKING SHALL CONFORM TO REQUIREMENTS OF MIL-STD-1188

[X] c. MATERIEL CONDITION MARKING SHALL BE APPLIED IN ACCORDANCE WITH MIL-STD-129. A MATERIEL CONDITION TAG OF THE APPLICABLE TYPE WILL BE SECURELY ATTACHED DIRECTLY TO ALL UNINSTALLED OR STORED AERONAUTICAL OR AIR DELIVERY ITEMS. WHEN SUCH ITEMS ARE PLACED OR STORED IN CARTONS, PACKAGES, CRATES OR METAL SHIPPING CONTAINERS, A DUPLICATE MATERIEL CONDITION TAG OR LABEL WILL BE SECURELY ATTACHED TO THE EXTERIOR OF THE PACKAGE OR CONTAINER IN SUCH A MANNER THAT WILL AFFORD MAXIMUM PROTECTION FROM HANDLING AND WEATHER TAGS WILL BE COMPLETED EITHER BY TYPEWRITTEN OR PRINTED BLACK LEAD PENCIL ENTRIES. ITEMS OF A COMMON OR NONTECHNICAL NATURE *(i.e., common hardware, bulk materials, etc.)* THE SERVICEABILITY OF WHICH IS OBVIOUS, AND THE IDENTITY AND INSPECTION REQUIREMENTS ADEQUATELY INDICATED BY COMMERCIAL TAGS, LABELS OR MARKINGS, MAY BE RECEIVED, STORED, ISSUED OR SHIPPED WITHOUT MATERIEL CONDITION TAGS

[ ] d EXTERIOR SHIPPING CONTAINERS OF SIMS *(Selected Item Management System)* MATERIEL SHALL BE MARKED WITH SIM PROJECT CODE DISC LABELS IN ACCORDANCE WITH MIL-STD-129. THE CONTRACTING OFFICER WILL PROVIDE SIM PROJECT CODE LABELS ON REQUEST. THEY ARE AVAILABLE IN TWO SIZES, 3 X 3 AND 9 X 9. SPECIFY ON YOUR ORDER THE SIZE AND QUANTITY REQUIRED

APPROVED BY	ORGANIZATION	DATE
NATHAN SILVERMAN Packaging Specialist Nathan Silverman	DRSTS-SDP	1 May 80

Figure 3-1. Preservation, Packaging, Packing, ad Marking Requirement.

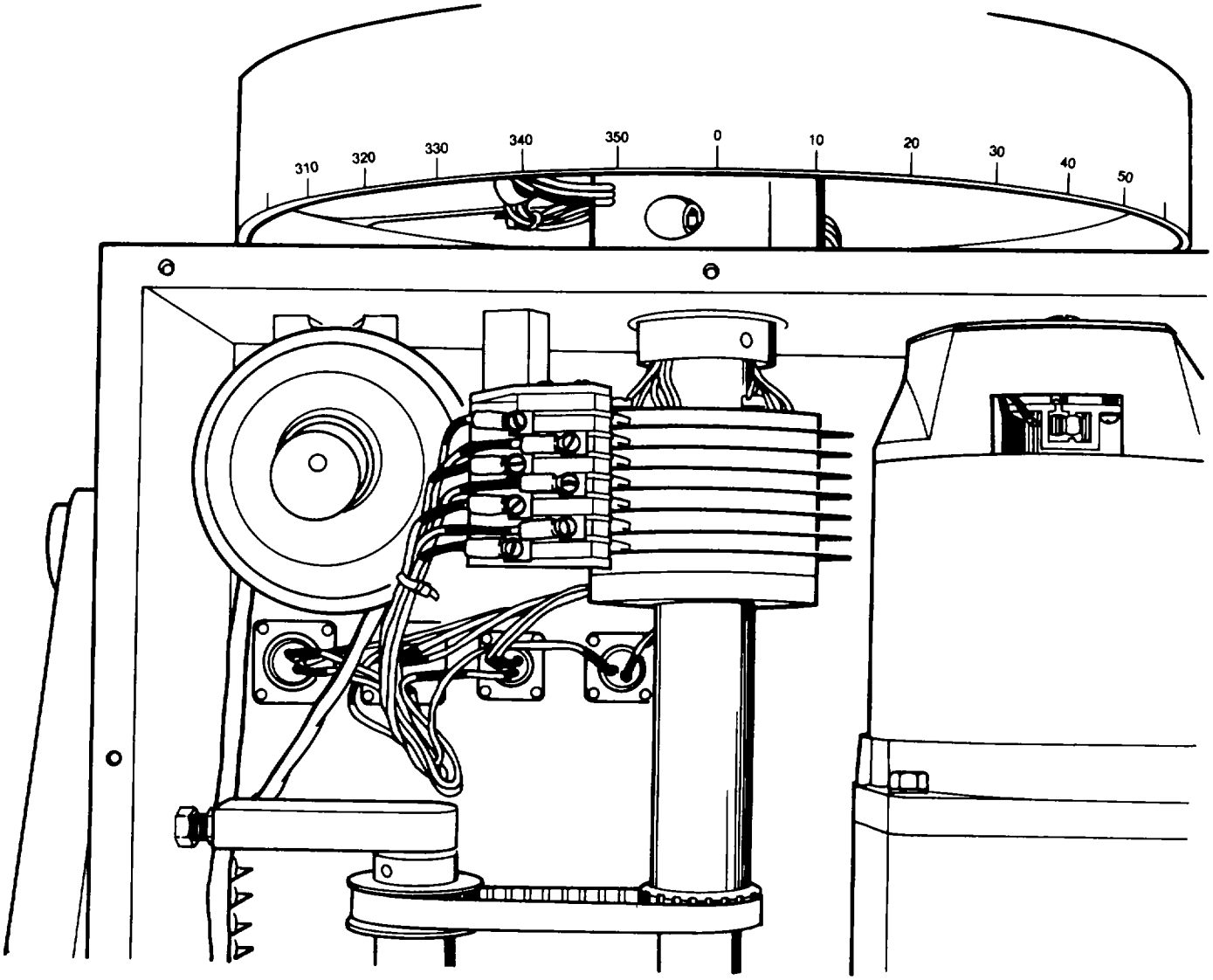

Figure 3-2. Slip Ring Assembly

3-7. Cleaning. The only internal cleaning required is cleaning of the slip rings (refer to fig 3-2). The slip rings should be thoroughly cleaned with cleaning solvent (Item 2, Table 1-1) and wiped dry with clean cloths. Remove dirt from exterior surfaces with mild detergent and hot water solution. Rinse thoroughly until all traces of detergent are removed Dry with compressed air or a clean cloth.

Section IV. OPERATIONAL CHECKOUT

3-8. Performance Checks.

a. Rotation Direction. Check to see that the table rotates in the clockwise direction when the rotation switch indicates CW. Check also to see that the table rotates in the counter-clockwise direction when the switch indicates CCW.

b. Vibrator Operation. Turn VIBRATOR switch to the ON position and check to see that the vibrator motor is running. Vibration may be felt on any part of the table or cradle.

c. Rate of Turn. Check rate of turn for each setting of the DEG/SEG switch with the aid of a stop watch while observing the table scale at the table index.

d. Electrical Transfer Circuit. With an ohm meter or continuity tester, check for continuity between corresponding pin numbers of connectors on the rim of the table and matching connectors on the rear plate of the cradle (refer to fig. 3-3). Each of the fourteen circuits should be checked. With the CLUTCH switch in the OFF position, the table may be rotated to check continuity around each section of the slip ring. If discontinuity occurs, refer to Table 3-1.

e. Rate Of Turn. Should the rate of turn (in any one of the selected speeds) not meet specifications, it may be adjusted in the following manner. Tilt the cradle to its 90 degree position and remove the base cover as in paragraph 3-4. With a 7/16 open end or box wrench, loosen the hex locking nut on the proper potentiometer (refer to fig 3-4) and adjust the speed with a screwdriver until it is correct. Make sure the speed control on the front panel is set to the speed to be adjusted and the table is running in either direction. At a speed of 20 degrees per second the table should make exactly one revolution in 18 seconds. At a speed of 15 degrees per second the table should make one revolution 24 seconds and at a speed of 10 degrees per second the table should make one revolution in 36 seconds. After the speed is set properly, lock the position by tightening the potentiometer lock nut while holding the shaft with the screwdriver. Recheck the speed after tightening the lock nut to make sure it has not shifted during the tightening operation.

f. Low Voltage Relays. The low voltage relay (refer to fig 3-4) provides an automatic power cutoff to the instrument if the line voltage drops below 108 volts. This protects the instrument as well as any other unit connected to the same power source through the instrument. The two knobs at one end of the relay adjust the cut-off voltage and the differential between off and on. They are properly set at the factory and need no further adjustment.

3-9. Troubleshooting. Most troubles or failures may be tracked to a defective part or to an improper adjustment. Refer to Table 3-1 and Figure 3-5 for other troubles.

Section V. REPAIR AND REPLACEMENT OF AUTHORIZED PARTS

3-10. Disassembly. The instrument may be easily disassembled by standard methods and without the use of special tools. Refer to Figures 3-7, 3-8, and 3-9. Inspection of components may be done with disassembly. Figures 3-4 and 3-6 shows the interior views of the instrument.

3-11. Cradle Assembly. (Fig 3-7).

a. Remove line cord from power source and from rear connector on the base. Remove motor cable from the connector on rear of cradle and from the connector on the rear of the base.

b. With the cradle in its upright position (table horizontal), remove eight screws and cradle front cover (39)

c. Using a 5/64 hex key wrench remove screws (46, 49, 52, 55, 58) and lock washer (47, 50, 53, 56, 59) from the five connectors (57, 54, 51, 48, 45) on the cradle rear cover. Do not stretch, break, or damage attached electrical wiring.

d. Remove eight screws (61) and cradle rear cover (60).

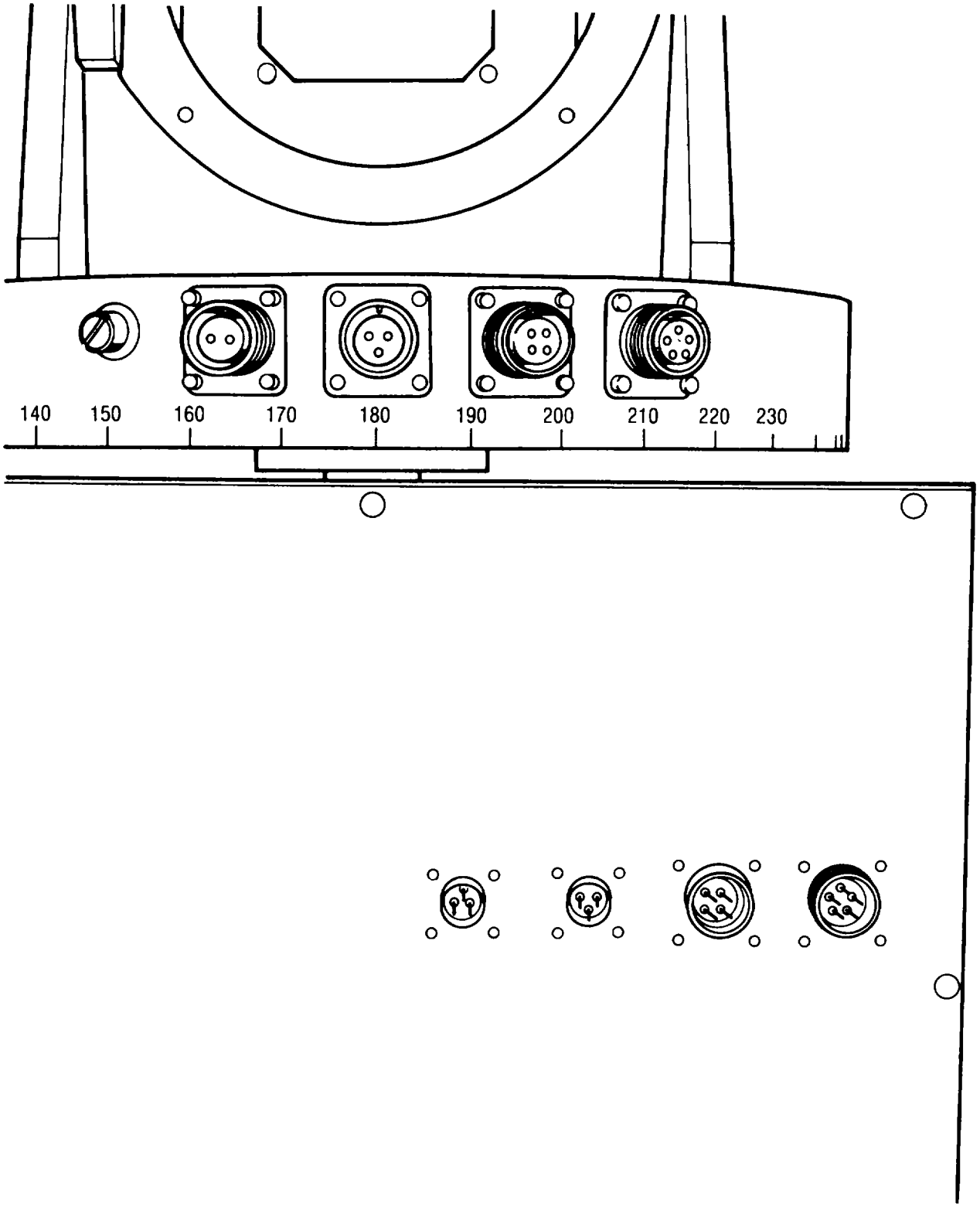

Figure 3-3. Gyro Power Connectors

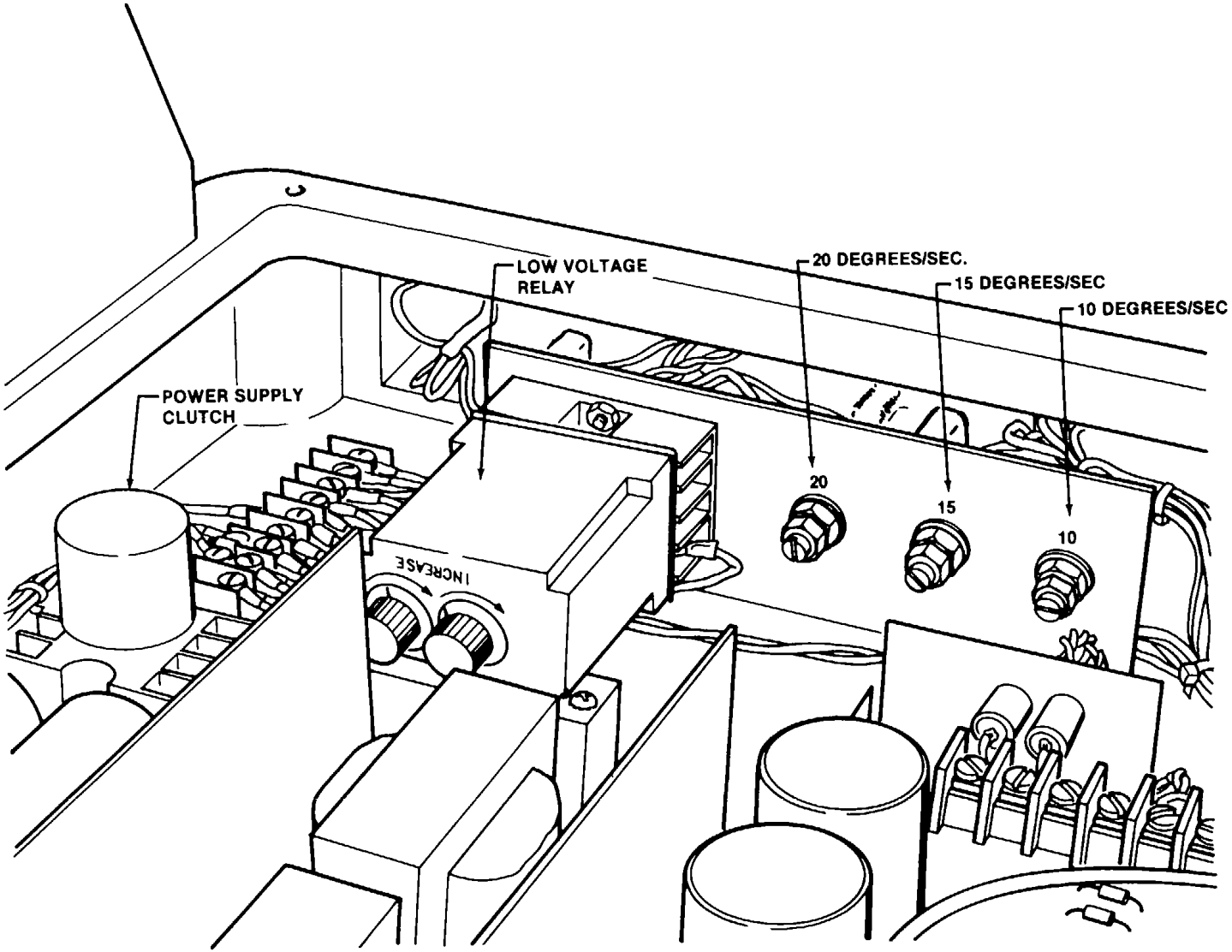

Figure 3-4. Base Interior

Table 3-1. Troubleshooting Chart.

TROUBLE	PROBABLE CAUSE	REMEDY
1. Table will not turn with ROTATION switch in either position.	a. Fuse blow. Defective switch. Loose wiring.	a. Replace fuse. Replace switch. Tighten or re-solder connections.
	b. Lack of input power. Input voltage low and low voltage relay deenergized.	b. Check power outlet and line cord. Check input voltage. Refer to paragraph 3-8f.
2. Rate of turn more or less than specified.	Misadjustment of speed controls.	Readjust speed controls. Refer to Figure 3-4 and paragraph 3-8e.
3. Electrical transfer. Circuit open.	a. Loose wiring.	a. Tighten or re-solder connections.
	b. Dirty slip rings or pick-up contacts.	b. Clean slip rings and contacts. Refer to paragraph 3-7.
4. Vacuum transfer circuit leaking.	Worn or dry table seal. Worn of dry manifold seal.	Lubricate or replace table or manifold seal. Refer to paragraph 3-13 and 3-14 and Table 1-1, Item 3.
5. Clutch will not operate.	a Fuse blown. Loose wiring.	a. Replace fuse. Tighten or re-solder connections.
	b. Defective switch	b. Replace switch.
6. Vibrator motor will not operate.	a. Fuse Blown. Loose wiring.	a Replace fuse. Tighten or resolder connections.
	b. Defective switch.	b. Replace switch.

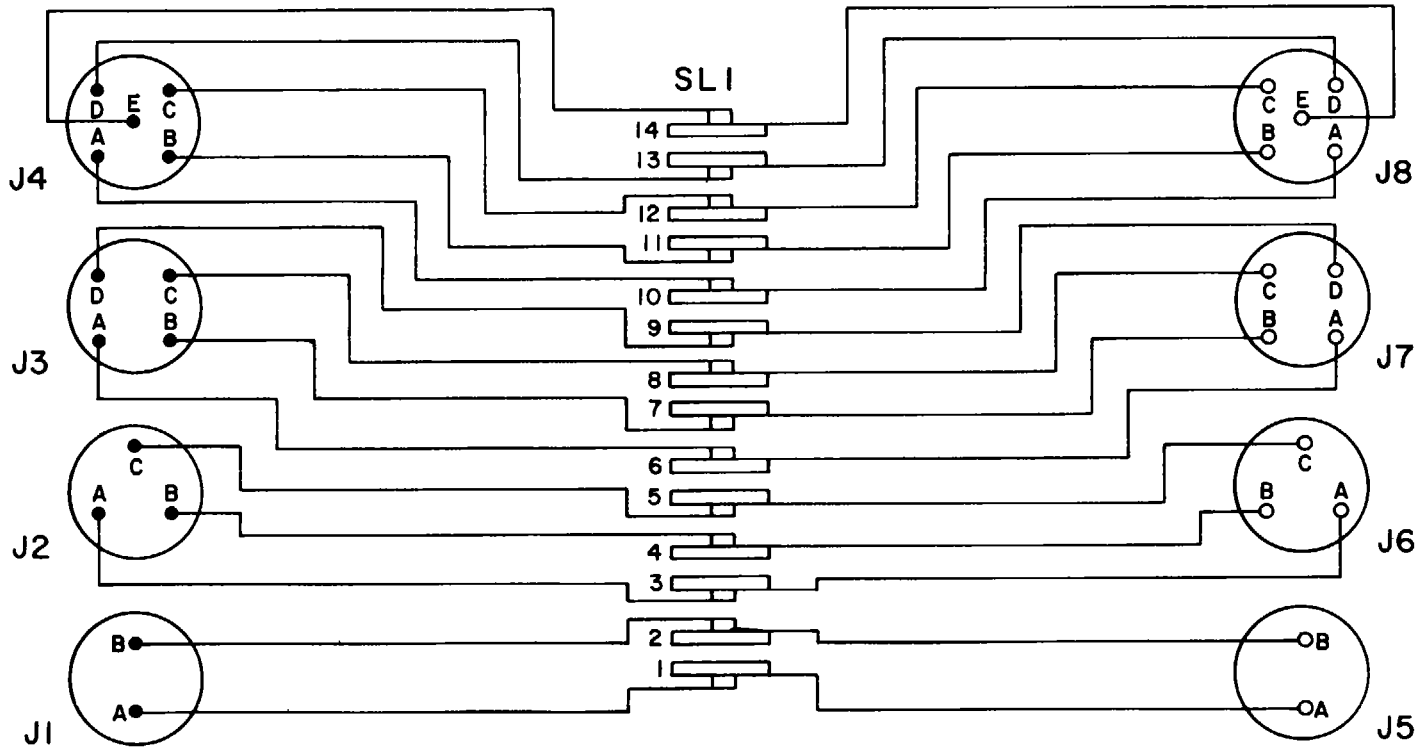

Figure 3-5. Wiring Diagram and Schematic (Sheet 1 of 2)

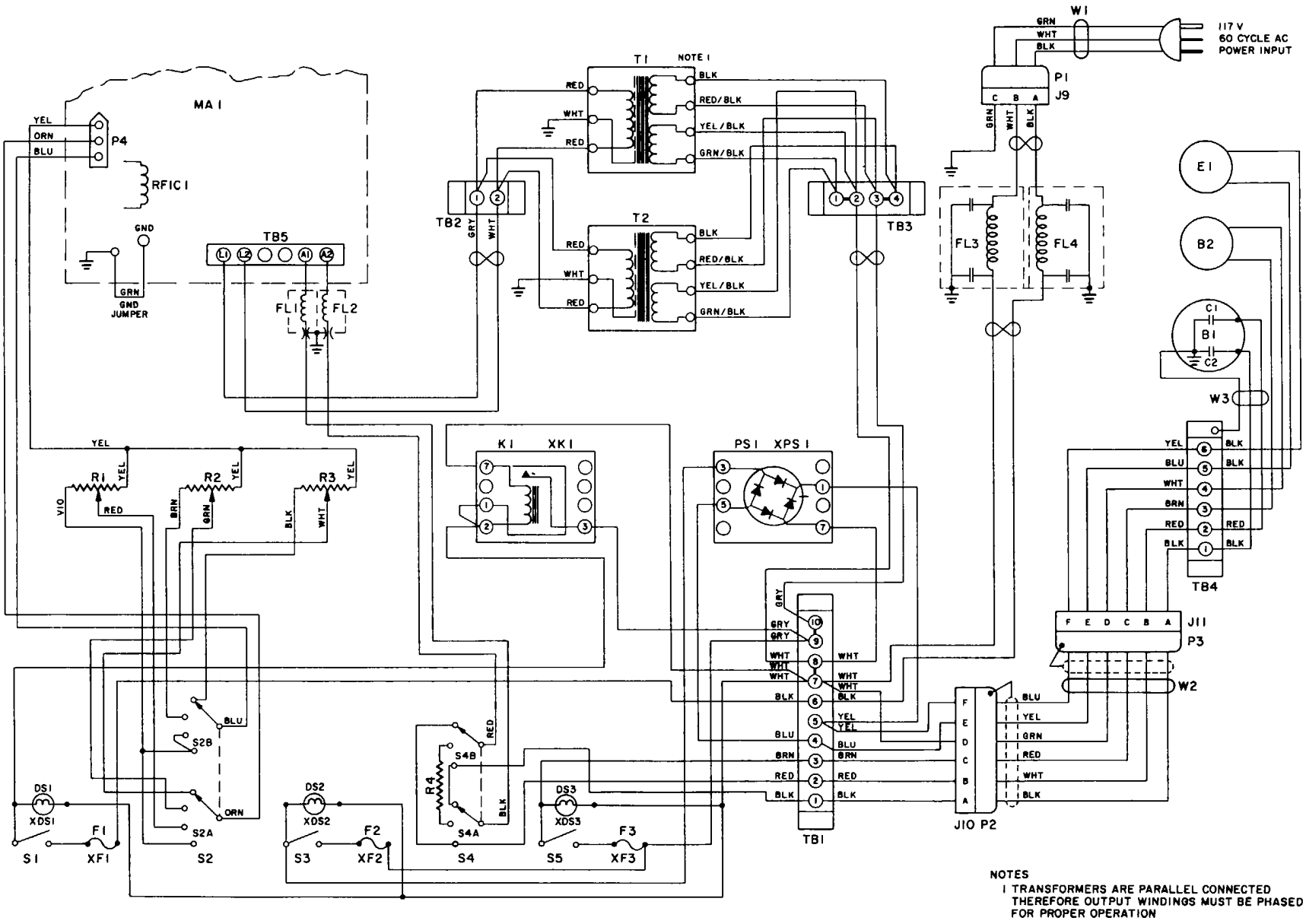

Figure 3-5. Wiring Diagram and Schematic (Sheet 2 of 2)

Legend for Figure 3-5.

SYMBOL	PART NUMBER	DESCRIPTION	MANUFACTURER	MFR. CODE
B1	42D3BEPM-E4	MOTOR, DRIVE, GEAR HEAD	BODINE ELECTRIC CO.	07829
B2	5KSP51-AL611N	MOTOR, VIBRATOR, 1550 RPM	GENERAL ELECTRIC	12532
C1	192P22492	CAPACITOR,.22UF.200WVDC	SPRAGUE	80183
C2	192P22492	CAPACITOR,.22UF200WVDC	SPRAGUE	80183
DS1	32072-0	LAMP, INDICATOR, TYPE 120 PSB	SYLVANIA	28107
DS2	32072-0	LAMP, INDICATOR, TYPE 120 PSB	SYLVANIA	28107
DS3	32072-0	LAMP, INDICATOR, TYPE 120 PSB	SYLVANIA	28107
E1	FL25-10-10-8-010	CLUTCH ASSEMBLY	GENERAL TIME	58208
F1	313002	FUSE, SLO-BLO, 2AMP	LITTLEFUSE	75915
F2	313.250	FUSE, SLO-BLO.25 AMP 313 3AG	LITTLEFUSE	75915
F3	313.6500	FUSE SLOW BLO.50 AMP	LITTLEFUSE	75915
FL1	9000-100-0019	FILTER, EM1 SUPPRESSION	ERIE TECHNOLOGICAL PROD.	72982
FL2	9000-100-0019	FILTER, EM1 SUPPRESSION	ERIE TECHNOLOGICAL PROD.	72982
FL3	RF754	FILTER, P1 CIRCUIT, RF1	RF INTERONICS, INC.	13G19
FL4	RF754	FILTER, P1 CIRCUIT, RF1	RF INTERONICS, INC.	13G19
J1	MS3120A10SL-4P	CONNECTOR		96906
J2	MS3102A10S1-3P	CONNECTOR		96906
J3	MS3102A14S-2P	CONNECTOR		96906
J4	MS3102A14S-5P	CONNECTOR		96906
J5	MS3102A14S-9S	CONNECTOR		96906
J6	MS3102A14S-7S	CONNECTOR		96906
J7	MS3102A14S-2S	CONNECTOR		96906
J8	MS3102A14S-6S	CONNECTOR		96906
J9	MS3102A14S-7P	CONNECTOR		96906
J10	MS3102A14S-6S	CONNECTOR		96906
J11	MS3102A14S-6P	CONNECTOR		96906
K1	CSJ38-70010	RELAY, VOLTAGE SENSOR	POTTER & BRUMFIELD	77342
MA1	DPM613OC	SPEED CONTROL, MOTOR, MODEL 939	BODINE ELECTRIC CO.	07829
P1	MS3106A14S-7S	CONNECTOR		96906
P2	MS3106A14S-6P	CONNECTOR		96906
P3	MS3106A14S-6S	CONNECTOR		96906
P4	43300127	WIRE & PLUG ASSEMBLY	BODINE ELECTRIC CO.	07829
PS1	FC12	FULL WAVE SILICON RECTIFIER	GENERAL TIME	58208
R1	43300001	POTENTIOMETER, SPEED CONTROL	BODINE ELECTRIC CO	07829
R2	43300001	POTENTIOMETER, SPEED CONTROL	BODINE ELECTRIC CO.	07829
R3	43300001	POTENTIOMETER, SPEED CONTROL	BODINE ELECTRIC CO.	07829
R4	995-10A	RESISTOR, WIRE WOUND, 500HM	OHMITE MFG. CO.	44655
RFIC1	43300085	FR1 CHOKE	BODINE ELECTRIC CO.	07829
S1	2FA53-73-TABS	SWITCH, TOGGLE	CARLING ELECTRIC INC.	73559
S2	T202	SWITCK, ROTARY SELECTOR	CTS CORP.	71450
S3	2FA53-73-TABS	SWITCH, TOGGLE	CARLING ELECTRIC INC.	73559
S4	T207	SWITCH, ROTARY SELECTOR	CTS CORP.	71450
S5	2FA53-73-TABS	SWITCH, TOGGLE	CARLING ELECTRIC INC.	73559
SL1	WSD-1750-14	SLIP-RING ASSEMBLY	WENDON	04155
T1	N-68X	TRANSFOREMR, ISOLATION	TRIAD TRANSFORMER CORP	81095
T2	N-68X	TRANSFORMER, ISOLATION	TRIAD TRANSFORMER CORP.	81095

Legend for Figure 3-5.

SYMBOL	PART NUMBER	DESCRIPTION	MANUFACTURER	MFR. CODE
TB1	10-140	STRIP, TERMINAL	CINCH MFG. CO	71785
TB2	2-140	STRIP, TERMINAL	CINCH MFG. CO	71785
TB3	4-140	STRIP, TERMINAL	CINCH MFG. CO.	71785
TB4	6-140	STRIP, TERMINAL	CONCH MFG. CO.	71785
TB5	P/O MODEL 939	STRIP, TERMINAL	BODINE ELECTRIC CO.	07829
W1	223665-1	CABLE ASSY.,POWER INPUT		30120
W2	223666-1	CABLE ASSY., BASE TO CRADLE		30120
W3	1898	CABLE, 3 COND. NO 18AWG.	ALPHA WIRE CORP.	92194
XDS1	30099-0	LAMP HOLDER	SYLVANIA	28107

3-12. Gimbal Assembly. (Fig 3-7).

a. Pull the knob (118) on the right cradle support to release the cradle and move it to its 90 degree position. Release the knob making sure the locking pin is engaged in its indent at this position.

b. Turn the table until the index is on the 180 degrees line. With a 3/16 hex key wrench, remove two cap screws (16) (under the table) and one gimbal support plate (15) with the gimbal ring assembly.

3-13. Table Seal (Fig 3-7).

a. If it becomes necessary to lubricate or replace O-ring seal (27) under table, turn table until the index is on the 120 degree line.

b. Remove three flat head machine screws (26) near the center of the table using a 1/8 hex key wrench. Lift and tilt the table just enough to obtain access to the O-ring seal, being very careful not to stretch or damage the wires to the connectors on the table rim. Lubricate with grease (Item 3, Table 1-1) and replace table on the shaft at the 120 degree index. Install three screws (26) and tighten uniformly.

3-14. Manifold Seal. (Fig 3-7).

a. To lubricate or replace manifold seal (110), perform paragraph 3-11 above.

b. With a 3/16 hex key wrench remove six cap screws (93) from the cradle top plate (92), three on each end.

c. Very carefully lift the entire plate with its assembled parts straight up until the lower end of the shaft (111) is disengaged from manifold bearing (107). Slip the drive belt (113) off the shaft pulley during the above procedure.

d. Inspect and lubricate (refer to Table 1-1, item 3) or replace and lubricate the O-ring seal (110) on the lower end of the shaft.

e. Reinstall shaft and top plate assembly in exact reverse order as disassembly above. Be sure drive belt is in its proper place on the shaft drive pulley during reassembly. Tighten top plate screws (93) uniformly.

3-15. Drive Belts (Fig 3-7).

a. If it is necessary to change drive belts, motor to clutch (113), or clutch to shaft (112), follow instructions in paragraph 3-11 entirely and 3-14b and c.

b. Remove cap screw (78) in the top of the clutch shaft (84) with a 3/16 hex key wrench and remove clutch bearing arm (77), by loosening the two 1/4-28 nuts (76) at the frame end of the arm with a 7/16 open end wrench. With a 3/16 hex key wrench, back out cap screw (75) from the end of the clutch arm until the arm is free.

c. With a 1/8 hex key wrench, loosen four cap screws (85) at the clutch base and with a 3/16 hex key wrench loosen the four cap screws (65) holding the motor to the base. The belts may now be removed and replaced.

d. In reassembly first install top plate assembly as instructed in paragraph 3-14c.

e. Tension clutch to shaft belt, Figure 3-6, by moving clutch away from shaft and tighten the four cap screws (85) at the base of the clutch. Reassemble the clutch bearing arm, the reverse of 3-15 b. Hold the clutch arm with a 1/2 open end wrench while tightening. Pressure at the center of the belt span should deflect the belt approximately 1/16 inch when the belt is properly tensioned.

f. Tension motor to clutch belt by moving the motor away from the clutch and tighten the four screws (65) holding the motor to the cradle. Pressure at the center of the belt span should deflect the belt approximately 1/16 inch when belt is properly tensioned.

3-16. Drive Motor Assembly (Fig 3-7).

a. To remove the motor assembly (64), proceed as in paragraphs 3-lla and b and 3-12a. Loosen and remove the three motor wires from terminal strip (114) on the cradle rear plate.

b. With a 3/16 hex keywrench remove four cap screws (65) and four washers (66) holding the motor assembly to the cradle base.

c. Lift the assembly out of cradle.

3-17. Vibrator Motor (Fig 3-7).

a. Remove six cap screws (40) from front cover (39) and remove cover.

b. Remove four cap screws (72) holding motor to frame. Carefully lift motor (71) out of unit.

3-18. Electrical Connectors (Fig 3-7).

a. All lower connectors are mounted on the rear cover (60). Refer to paragraph 3-11 for removal of these connectors.

b. All upper connectors (28, 30, 32, 34) are secured to the table (25) with standard screws (29, 31, 33, 35). Remove all soldered wire leads using a soldering iron and match/mark tag all leads for proper identification and installation during reassembly.

3-19. Drive Assembly (Fig 3-7).

a. Perform steps in paragraph 3-11 and steps b and c in paragraph 3-14.

b. Remove one screw (89); and four screws and washers (98, 99); and washers (100) that attach slip ring assembly (97) to finger mounting posts (88, 90). Remove posts (88, 90).

c. Remove collar (95) by loosing setscrew (96) and remove slip ring assembly (97).

d. Remove bushing sleeve (101) by loosing setscrew (102).

e. Remove three screws (104) holding lower bushing housing (103) to bottom plate and remove bushing housing (103). Remove bearing (107).

f. Remove pulley (108) from shaft (111) by loosing set-screw (109). Remove 0-ring (110).

3-20. Clutch Assembly (Fig 3-7).

a. Loosen screw (75) and nuts (76) and free arm (77). Remove arm (77) from clutch assembly (84) by removing screw (78).

b. Remove bearing (79). Remove pulley (80) by loosing setscrew (81).

c. Remove pulley (82) by loosing setscrew (83).

d. Remove clutch assembly (84) from base by removing four screws (85), washers (86), and washers (87).

3-21. Reassembly. Refer to figures 3-7, 3-8, and 3-9 for identification and location of items

3-22. Clutch Assembly (Fig 3-7).

a. Position clutch assembly (84) on base (127) and secure with four screws (85), washers (86) and washers (87).

b. Place pulley (82) on clutch assembly shaft and secure with setscrew (83).

c. Place pulley (80) on clutch assembly shaft and secure with setscrew (81).

d. Press bearing (79) on to shaft; then place arm (77) on shaft and secure on shaft with screw 78.

e. Replace screw (75) and nuts (76). Refer to paragraph 3-15 for drive belt and clutch arm adjustment.

3-23. Drive Assembly (Fig 3-7).

a. Secure bushing housing (103) to bottom plate with three screws (104).

b. Place pulley (108) on shaft (111) and tighten setscrew (109). Replace bearing (107) and 0-ring (110) on shaft and place shaft into housing (103).

c. Replace bushing sleeve (101) and tighten setscrew (102). Place slip ring assembly (97) on shaft (111). Replace collar (95) and tighten setscrew (96).

d. Attach slip ring assembly to finger mounting posts (88, 90) with screws (98), washers (99), and washers (100).

e. Mount finger mounting post to top panel with screws (89, 99).

3-24. Drive Motor Assembly (Figure 3-7).

a. Place motor on bottom plate and secure with four screws (65) and eight washers (66).

b. Connect the three wire leads to the terminal strip (114) on the cradle rear plate.

c. Adjust the tension on the clutch belt as in paragraph 3-15f.

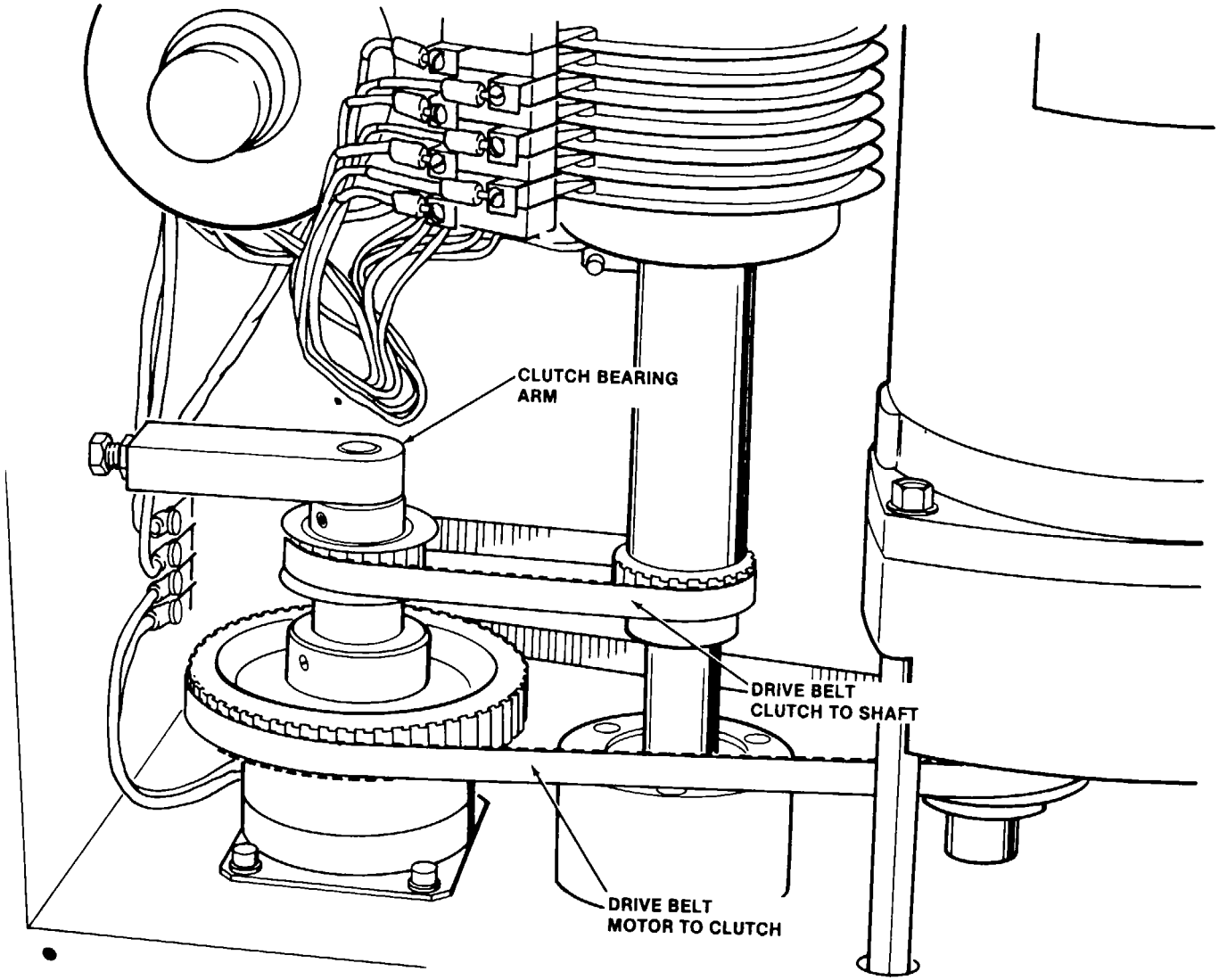

Figure 3-6. Interior View

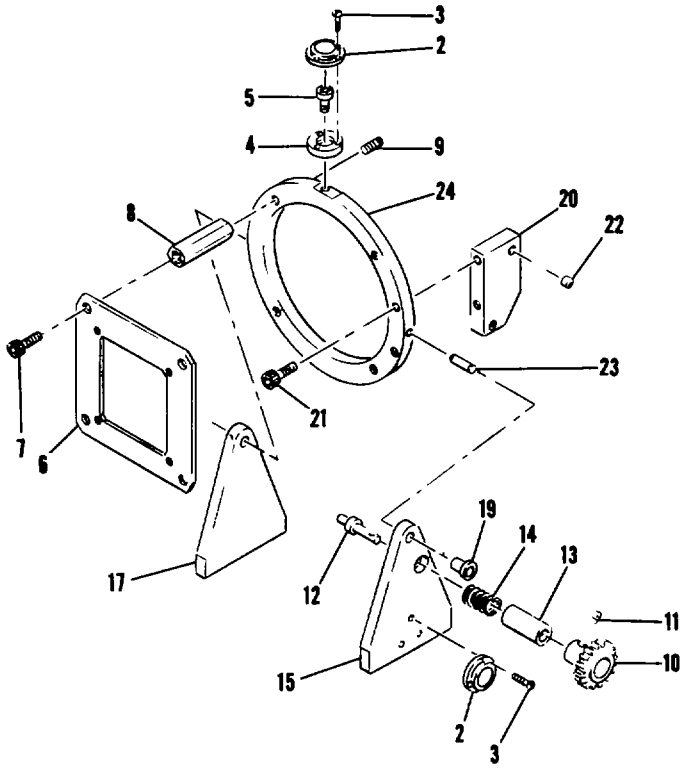

Figure 3-7. Gyro Tester, Indicator Assembly (Sheet 1 of 3)

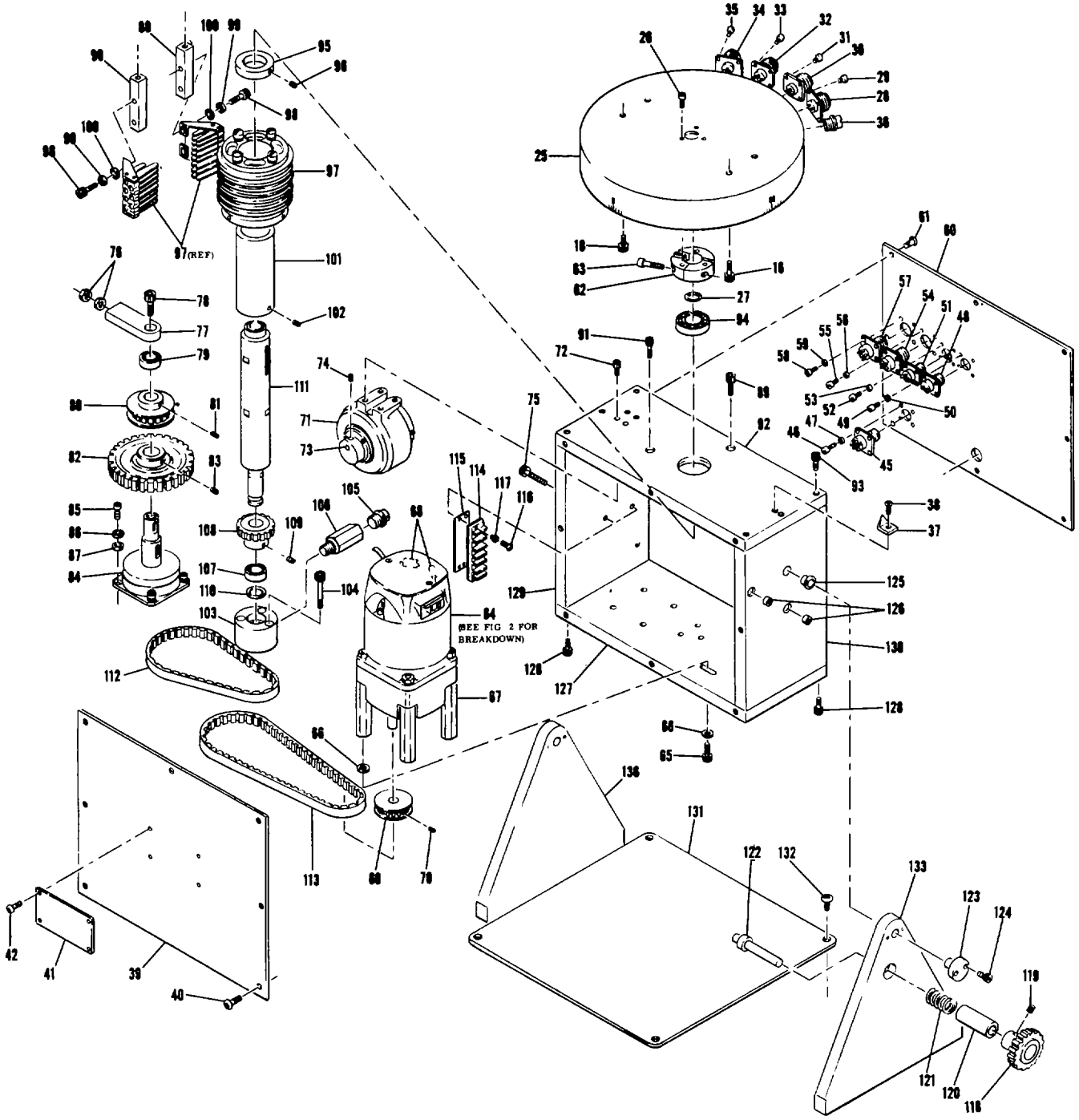

Figure 3-7. Gyro Tester, Indicator Assembly (Sheet 2 of 3)

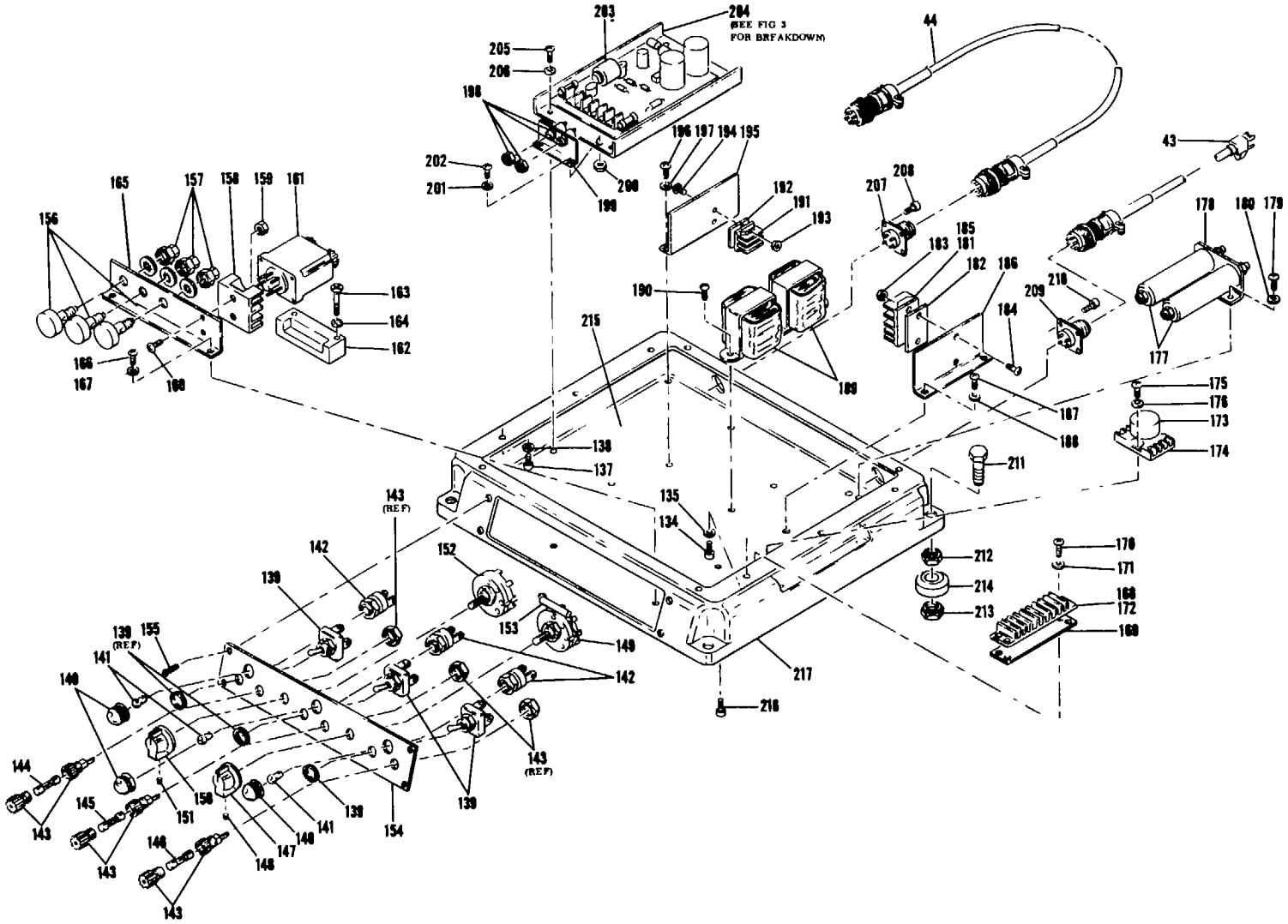

Figure 3-7. Gyro Tester, Indicator Assembly (Sheet 3 of 3)

Fig.& INDEX NO.	PART NUMBER	DESCRIPTION	MFR'S CODE	QTY
3-7				
1	223650-1	TESTER, GYRO IND	30120	1
2	2-10026	LEVEL, CIRCULAR	82084	2
3	AN500-2R5	SCREW, MACHINE	88044	3
4	223671	PLATE, LEVEL MTG.	30120	1
5	NAS608C832-6	SCREW, MACHINE	80205	1
6	223675	PLATE, INST. MTG	30120	1
7	NAS608C832-6	SCREW, MACHINE	80205	4
8	223673-1	SPACER	30120	4
9	AN565DC1032-12	SETSCREW	88044	4
10	S68-3	KNOB	75376	1
11	AN565A8H3	SETSCREW	88044	1
12	223639-2	PIN, LATCH	30120	1
13	223638-2	SLEEVE, LATCH PIN	30120	1
14	LC040E7	SPRING COMPRESSION	84830	1
15	223649-2	PLATE, SUPPORT, RH	30120	1
16	NAS608C4-10	SCREW, MACHINE	80205	2
17	223649-1	PLATE SUPPORT, LH	30120	1
18	NAS608C4-10	SCREW, MACHINE	80205	2
19	223664	BEARING	30120	2
20	223672-13	PLATE, SIDE	30120	1
21	NAS608C3-12	SCREW, MACHINE	80205	2
22	P26-4-1/4	BUSHING	99105	2
23	223672-12	PIN	30120	2
24	223672-11	RING	30120	1
25	223642	TABLE, TESTER	30120	1
26	MS24668-7	SCREW, MACHINE	96906	3
27	MS29513-113	SEAL, O-RING	96906	1

Fig.& INDEX NO.	PART NUMBER	DESCRIPTION	MFR'S CODE	QTY
3-7				
28	MS3102A14S9S	CONN, RECP, ELEC	96906	1
29	NAS608C440-4	SCREW, MACHINE	80205	4
30	MS3102A14S7S	CONN, RECP, ELEC	96906	1
31	NAS608C440-4	SCREW, MACHINE	80205	4
32	MS3102A14S2S	CONN, RECP, ELEC	96906	1
33	NAS608C440-4	SCREW MACHINE	80205	4
34	MS3102A14S5S	CONN, RECP, ELEC	96906	1
35	NAS608C440-4	SCREW, MACHINE	80205	4
36	1604-42	PLUG, PIPE THREAD	97945	1
37	223663	INDEX, TABLE	30120	1
38	NAS608C632-6	SCREW, MACHINE	80205	1
39	223676	PLATE, COVER, FRONT	30120	1
40	AN526-632R6	SCREW, MACHINE	88044	8
41	223633	PLATE, IDENTIFICATION	30120	1
42	MS24649-1	SCREW, MACHINE	96906	4
43	223665-1	CABLE ASSY, POWER	30120	1
44	223666-1	CABLE ASSY,BASE-CRD	30120	1
45	MS3102A14S6P	CONN, RECP, ELEC	96906	1
46	NAS608C440-4	SCREW, MACHINE	80205	4
47	AN935-4	WASHER, LOCK	88044	4
48	MS3102A10OSL4P	CONN, RECP, ELEC	96906	1
49	NAS608C440-4	SCREW, MACHINE	80205	4
50	AN935-4	WASHER, LOCK	88044	1
51	MS3102A1OSL3P	CONN, RECP, ELEC	96906	4
52	NAS608C440-4	SCREW, MACHINE	80205	4
53	AN934-5	WASHER, LOCK	88044	1
54	MS3102A14S2P	CONN, RECP, ELEC	96906	4

Fig.& INDEX NO.	PART NUMBER	DESCRIPTION	MFR'S CODE	QTY
3-7				
55	NAS608C440-4	SCREW, MACHINE	80205	4
56	AN935-4	WASHER, LOCK	88044	4
57	MS3102A14S5P	CONN, RECP, ELEC	96906	1
58	NAS608C440-4	SCREW, MACHINE	80205	4
59	AN935-4	WASHER, LOCK	88044	4
60	223675	PLATE, COVER, REAR	30120	1
61	AN526-63R6	SCREW, MACHINE	88044	8
62	223656	HUB, TABLE	30120	1
63	NAS608-516-20	SCREW, MACHINE	88044	1
64	42D3BEPME4	MOTOR, DRIVE	07829	1
65	NAS608C4-10	SCREW, MACHINE	80205	4
66	AN960-416	WASHER, FLAT	88044	8
67	223658-1	SPACER	30120	4
8	192P22492	CAP, FIXED, PLSTC DIE	80183	2
69	223669	PULLEY	30120	1
70	AN565A10H3	SETSCREW	88044	2
71	5KSP51-AL511N	MOTOR, VIBRATOR	12532	1
72	NAS608C832-10	SCREW, MACHINE	80205	4
73	223660	WEIGHT, ECCENTRIC	30120	1
74	AN565A10H3	SETSCREW	88044	1
75	NAS608C4-16	SCREW, MACHINE	80205	1
76	AN345-516	NUT, HEX	88044	2
77	223651	ARM, BEARING	30120	1
78	NAS608C4-10	SCREW, MACHINE	80205	1
79	KP4A	BEARING, BALL	21335	1
80	223667	PULLEY	30120	1

Fig.& INDEX NO.	PART NUMBER	DESCRIPTION	MFR'S CODE	QTY
3-7				
81	AN565A10H3	SETSCREW	88044	2
82	223670	PULLEY	30120	1
83	AN565A1OH3	SETSCREW	88044	2
84	223635-1	CLUTCH AND SHAFT ASSY	30120	1
85	NAS608C832-6	SCREW, MACHINE	80205	4
86	AN960-8	WASHER, FLAT	88044	4
87	AN936A8	WASHER, LOCK	88044	4
88	223662	POST, FINGR MTG, REAR	30120	1
89	NAS608C4-10	SCREW, MACHINE	80205	1
90	223661	POST, FNGR MTG, FRONT	30120	1
91	NAS608C4-10	SCREW, MACHINE	80205	1
92	223648-14	PLATE, FRAME, TOP	30120	1
93	NAS608C4-12	SCREW, MACHINE	80205	6
94	R20FF	BEARING, BALL	21760	1
95	223657	COLLAR	30120	1
96	AN565A1OH3	SETSCREW	88044	2
97	WSD1750-14	SLIP RING ASSY	04155	1
98	NAS608C3-6	SCREW, MACHINE	80205	4
99	AN960-10	WASHER, FLAT	88044	4
100	AN936A10	WASHER, LOCK	88044	4
101	223653	SLEEVE, BUSHING	30120	1
102	AN565A8H3	SETSCREW	88044	2
103	223655	HOUSING, BEARING, LWR	30120	1
104	NAS608-3-28P	SCREW, MACHINE	80205	3
105	1604-42	PLUG, PIPE THREAD	97945	1
106	223659	EXTENDER, PIPE THREAD	30120	1

Fig.& INDEX NO.	PART NUMBER	DESCRIPTION	MFR'S CODE	QTY
3-7				
107	KP12A	BEARING, BALL	21335	1
108	223668	PULLEY	30120	1
109	AN565A1OH3	SETSCREW	88044	2
110	MS29513-016	SEAL, P-RING	96906	1
111	223654	SHAFT, TABLE DRIVE	30120	1
112	120XL037	BELT, TIMING	71176	1
113	230XL037	BELT, TIMING	71176	1
114	6-140	TERMINAL STRIP	71785	1
115	223140-6	INSULATOR	30120	1
116	AN526-632R8	SCREW, MACHINE	88044	2
117	AN936A6	WASHER, LOCK	88044	2
118	S68-3	KNOB	75376	1
119	AN565A8H3	SETSCREW	88044	1
120	223638-1	SLEEVE, LATCH PIN	30120	1
121	LC040-14	SPRING, COMPRESSION	84830	1
122	223639-1	PIN, LATCH	30120	1
123	223657	SHAFT, CRDL TRUNION	30120	2
124	NAS608C632-8	SCREW, MACHINE	80205	2
125	FB10-5	BEARING	71041	2
126	P26-4-1/4	BUSHING	99105	2
127	223648-13	PLATE, FRAME, BASE	30120	1
128	NAS608C4-12	SCREW, MACHINE	80205	6
129	223648-11	PLATE, FRAME, L-S	30120	1
130	223648-12	PLATE, FRAME, R-S	30120	1
131	223685	COVER, BASE	30120	1
132	AN526-428R6	SCREW, MACHINE	88044	4

Fig.& INDEX NO.	PART NUMBER	DESCRIPTION	MFR'S CODE	QTY
3-7				
133	223636-2	PLATE, RS	30120	1
134	NAS608-4-20P	SCREW, MACHINE	80205	3
135	AN960-416	WASHER, FLAT	88044	4
136	223636-1	PLATE, L-S	30120	1
137	NAS608-4-20P	SCREW, MACHINE	80205	3
138	AN960-416	WASHER, FLAT	88044	3
139	2FA53-73TABS	SWITCH, TOGGLE	73559	3
140	300102-0	LENS, LAMPHOLDER	28107	3
141	32072-0	LAMP	28107	3
142	30099-0	LAMPHOLDER	28107	3
143	342028	FUSEHOLDER	75915	3
144	313002	FUSE	75915	1
145	313.500	FUSE	75915	1
146	313.250	FUSE	75915	1
147	1919C	KNOB	72512	1
148	AN565A8H3	SETSCREW	88044	1
149	T207	SWITCH, ROTARY	71450	1
150	1919C	KNOB	72512	1
151	AN565A8H3	SETSCREW	88044	1
152	T202	SWITCH, ROTARY	71450	1
153	995-10A	RES, FXD, WW	44655	1
154	223684	PANEL, CONTROL	30120	1
155	AN526-632R6	SCREW, MACHINE	88044	4
156	43300001	RES, VAR, WW	07829	3
157	181	LOCK, VAR. RES.	83330	3
158	27E122	SOCKET, OCTAL	77342	1
159	AN526-632R8	SCREW, MACHINE	88044	2

Fig.& INDEX NO.	PART NUMBER	DESCRIPTION	MFR'S CODE	QTY
3-7				
160	AN3406	NUT, HEX	88044	2
161	CSJ38-70010	RELAY, VOLT SENSOR	77342	1
162	223680	BLOCK, RELAYSUPPORT	30120	1
163	AN515-6R20	SCREW, MACHINE	88044	2
164	AN936A6	WASHER, LOCK	88044	2
165	223679	BRACKET, MTG	30120	1
166	AN526-632R6	SCREW, MACHINE	88044	2
167	AN936A6	WASHER, LOCK	88044	2
168	10-140	TERMINAL STRIP	71785	1
169	223140-10	INSULATOR	30120	1
170	AN526-632R6	SCREW, MACHINE	88044	2
171	AN936A6	WASHER, LOCK	88044	2
172	140J1	JUMPER, TERM STRIP	71785	2
173	FC12	RECTIFIER, SILCON	58208	1
174	27E122	SOCKET, OCTAL	77342	1
175	AN526-632R8	SCREW, MACHINE	88044	2
176	AN936A6	WASHER, LOCK	88044	2
177	FR745	FILTER	13619	2
178	223678	BRACKET, MTG	30120	1
179	AN526-632R6	SCREW, MACHINE	88044	2
180	AN936A6	WASHER, LOCK	88044	2
181	4-140	TERMINAL STRIP	71785	1
182	223140-4	INSULATOR	30120	1
183	AN526-632R8	SCREW, MACHINE	88044	2
184	AN340-6	NUT, HEX	88044	2
185	140J1	JUMPER, TERM STRIP	71785	2
186	223682	SHIELD, TRANSFORMER	30120	1

Fig.& INDEX NO.	PART NUMBER	DESCRIPTION	MFR'S CODE	QTY
3-7				
187	AN526-632R4	SCREW, MACHINE	88044	2
188	AN936A6	WASHER, LOCK	88044	2Y2
189	N68X	TRANSFORMER, ISOLATION	81095	2
190	AN526-832R4	SCREW, MACHINE	88044	3
191	2-140	TERMINAL STRIP	71786	1
192	223140-2	INSULATOR	30120	1
193	AN526-632R8	SCREW, MACHINE	88044	2
194	AN340-6	NUT, HEX	88044	2
195	223681	SHIELD, TRANSFORMER	30120	1
196	AN5260632R4	SCREW, MACHINE	88044	2
197	AN936A6	WASHER, LOCK	88044	2
198	9000-100-0019	FILTER	72982	2
199	223683	SHIELD, FILTER MTG	30120	1
200	AN5260632R4	SCREW, MACHINE	88044	2
201	AN936A6	WASHER, LOCK	88044	2
202	AN340-6	NUT, HEX	88044	2
203	43300085	COKE, RFI	07829	1
204	DPM5130C	SPEED CONTROL ASSY	07829	1
205	AN526-632R4	SCREW, MACHINE	88044	4
206	AN936A6	WASHER, LOCK	88044	4
207	MS3102A14S6S	CONN, RECP, ELEC	96906	1
208	NAS608C440-6	SCREW, MACHINE	80205	4
209	MS3102A14S7P	CONN, RECP, ELEC	96906	1
210	NAS608C440-6	SCREW MACHINE	80205	4
211	215477	SCREW, LEVELING	30120	4
212	AN316-8	NUT, CHECK	88044	4
213	215397	NUT, SLEEVE	30120	4

Fig.& INDEX NO.	PART NUMBER	DESCRIPTION	MFR'S CODE	QTY
3-7				
214	215396	FOOT, LEVELING	30120	4
215	223677	PLATE, CHASSIS, BASE	30120	1
216	NAS608C3-6	SCREW, MACHINE	80205	8
217	223632	BASE, TESTER	30120	1

Section VI. PARTS LIST

3-25. General. The parts list is arranged in disassembly order and along with Figures 3-7, 3-8, and 3-9 describes and illustrates the items necessary for support of the instrument. The parts list is intended for use by maintenance personnel for identifying and ordering parts.

3-26. Vendor Parts Numbers. The vendor part number appears in the part number column. The vendor's identifying code, if assigned, is listed in the MFR code column following the description column. If a code is not assigned, the vendor's name will appear in the manufacturer's code column. vendor codes used in this manual are shown below with the vendor's name and address. All code symbols are in accordance with the Federal Code for Manufacturer Handbook H4-1 and H4-2.

04155 Wendon Company, Inc.
Stamford, CT. 06902

07829 Bodine Electric Co.
2500 West Bradley Place
Chicago, IL 60618

12532 General Electric Co.
Small AC Motor and
Generator Dept.
1 River Road
Schenectady, NY 12305

13619 RF Interonics, Inc.
100 Pine Aire Dr.
Bay Shore, L.I., NY 11706

21335 Fafnir Bearing Co.
37 Booth Street
New Britain, CT 06050

21760 The Federal Bearing Co., Inc.
Poughkeepsie, NY

28107 G.T.E. Sylvania, Inc.
West Main Street
Hillsboro, NH 03244

44655 Ohmite Mfg. Co.
3601 West Howard Street
Skokie, IL 60076

58208 General Time
Industrial Controls Div.
Thomaston, CT 06787

71041 Boston Gear Works
14 Hayward Street
Quincy, MA 02171

71176 Browing Mfg. Div.
Emerson Electric Co.
Main and Chester Streets
Maysville KY 41056

71450 CTS Corp.
1142 West Beardsley Ave.
Elkhart, IN 46514

71785 Cinch Mfg. Co.
1026 South Homan Ave.
Chicago, II 60639

72512 Harry Davies Molding Co.
Chicago, IL 60639

72982 Erie Technological Products Ave.
644 West 12th Street
Erie, PA 16512

73559 Carling Electric, Inc.
505 New Park Avenue
West Hartford, CT 06110

75376 Kurz-Kasch, Inc.
Knob Division
711 Hunter Drive
Wilmington, OH 45177

75915 Littlefuse, Inc.
800 E. Northwest Hwy.
Des Plaines, IL 60016

77342 American Machine and Foundry Co.
Potter and Brumfield Div.
Road 64 E.
Princeton, IN 47671

80183 Sprague Products Co.
99 Marshal Street
North Adams, MA 01247

80205 National Aerospace Standards
Committee Aerospace Ind.
Association of America Inc.
1725 De Sales NW
Washington, DC 20036

81095 Triad Transformer Corp.
4055 Redwood Ave.
Venice, CA 90291

81349 Military Specifications
Promulgated by Standardization Div.
Directorate of Logistics Services
DSA

81996 US Army Troop Support and Aviation
Materiel Readiness Command
4300 Goodfellow Boulevard
St. Louis, MO 63120

82084 Geier and Bluhm, Inc.
594 River Street
Troy, NY 12180

83330 Herman H. Smith, Inc.
812 Snediker Ave.
Brooklyn, NY 11207

84830 Lee Spring Co.
30 Main Street
Brooklyn, NY 11201

88044 Aeronautical Standards Group
Dept. of Navy and AirForce

92194 Alpha Wire Corp.
711 Lidgerwood Ave.
Elizabeth, NJ 07207

96906 Military Standards
Promulgated by Standardization Div.
Director of Logistic Services
DSA

97945 S. S. White Co. Plastics Div.
220 W. 42nd Street
New York, NY 10036

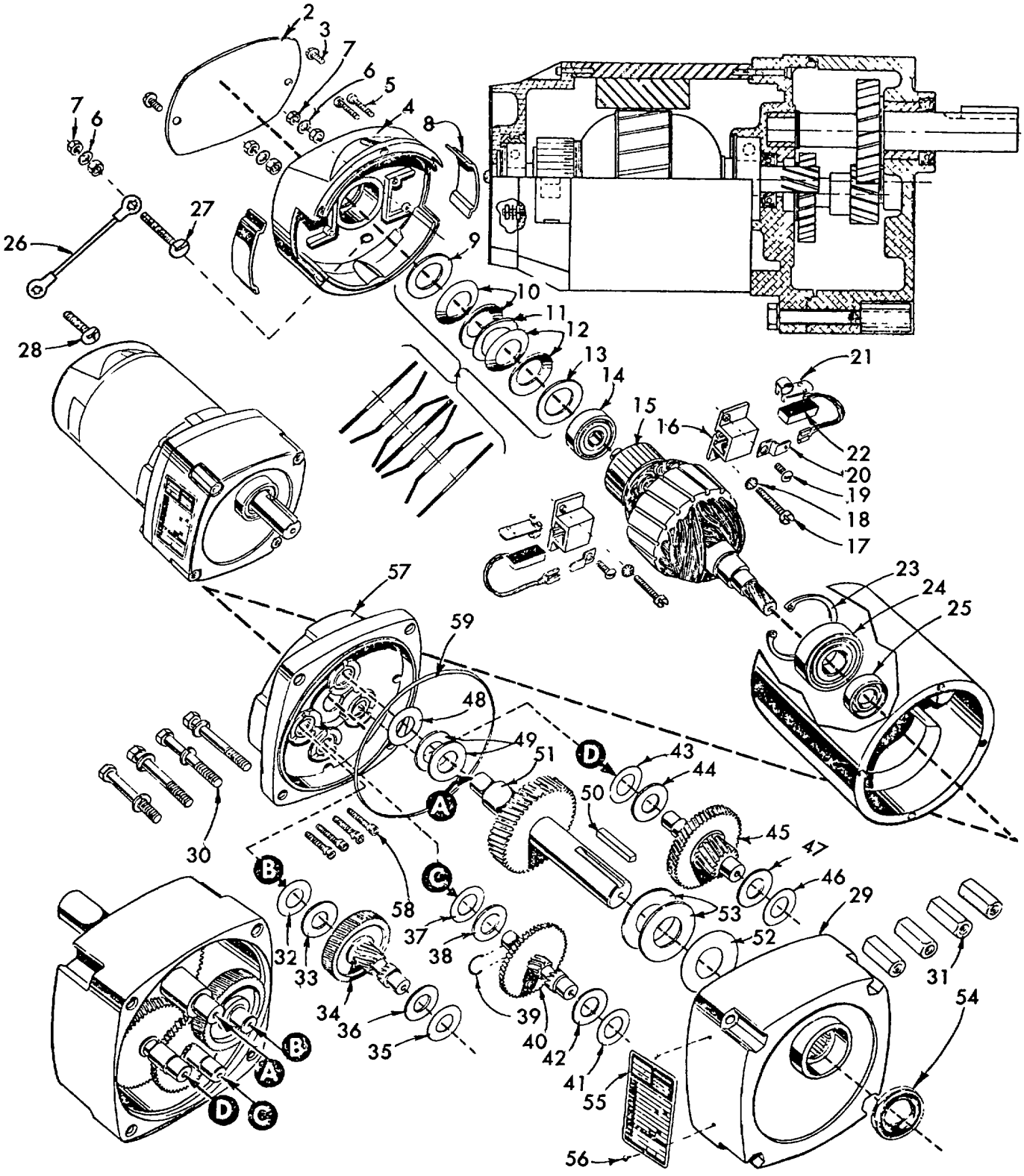

Figure 3-8. Motor Assembly

FIG. & INDEX NO.	PART NUMBER	DESCRIPTION	MFR'S CODE	QTY
3-8				
1	42D3BEPME-4	DRIVE MOTOR	07829	1
2	57100004	COVER, FRONT SHIELD	07829	1
3	54100040	SCREW, MACHINE	07829	2
4	32800088	SHIELD, FRONT	07829	1
5	54123255	SCREW, MACHINE	07829	2
6	55100008	WASHER, FLAT	07829	2
7	54200006	NUT, HEX	07829	4
8	41700006	CAP, BRUSH	07829	2
9	55105681	WASHER, SPACER	07829	1
10	55320289	WASHER, BELLEVILLE	07829	2
11	55105681	WASHER, SPACER	07829	1
12	55320289	WASHER, BELLEVILLE	07829	2
13	55105681	WASHER, SPACER	07829	1
14	53100007	BEARING, BALL	07829	1
15		ARMATURE	07829	1
16	4900003	BOX, BRUSH	07829	2
17	55100048	SCREW, MACHINE	07829	1
18	5518728	WASHER, LOCK	07829	1
19	54100040	SCREW, MACHINE	07829	1
20	49500011	TAB, CONNECTOR	07829	2
21	57400001	SPRING, BRUSH	07829	2
22	49200010	BRUSH	07829	2
23	54500001	RING, RETAINING	07829	1
24	53100003	BEARING, BALL	07829	1
25	41500001	SEAL, OIL	07829	1
26	57700005	CONNECTOR, GROUND	07829	1
27	54123265	SCREW, GROUNDING	07829	1
28	5412363	SCREW, GROUNDING	07829	1

FIG. & INDEX NO.	PART NUMBER	DESCRIPTION	MFR'S CODE	QTY
3-8				
29	33800005	ENDSHIELD	07829	1
30	54100004	SCREW, GEAR HOUSING	07829	4
31	223658-1	NUT, GEAR HOUSING	30120	REF
32	55200004	WASHER, NYLON	07829	AR
33	55100005	WASHER, STEEL	07829	AR
34	26800026	GEAR AND PINION	07829	1
35	55200004	WASHER, NYLON	07829	AR
36	55100004	WASHER, STEEL	07829	AR
37	55200004	WASHER, NYLON	07829	AR
38	55100004	WASHER, STEEL	07829	AR
39	54500007	RING RETAINING	07829	1
40	26800018	GEAR AND PINION	07829	1
41	55200004	WASHER, NYLON	07829	AR
42	55100004	WASHER, STEEL	07829	AR
43	55200004	WASHER, NYLON	07829	AR
44	55100004	WASHER, STEEL	07829	AR
45	26800009	GEAR, AND PINION	07829	1
46	55200005	WASHER, NYLON	07829	1
47	55100005	WASHER, STEEL	07829	1
48	55200005	WASHER, NYLON	07829	1
49	55100010	WASHER, STEEL	07829	1
50	54506510	KEY	07829	1
51	23800006	GEAR AND DRIVE SHAFT	07829	1
52	55200002	WASHER, NYLON	07829	1
53	55100002	WASHER, STEEL	07289	2
54	51400002	SEAL	07829	1
55	57600041	NAMEPLATE	07829	1
56	54304558	PINS	07829	2
57	34700010	ADAPTER, GEAR HOUSING	07829	1
58	54100029	SCREW, MACHINE	07829	4
59	59300001	O-RING	07829	1

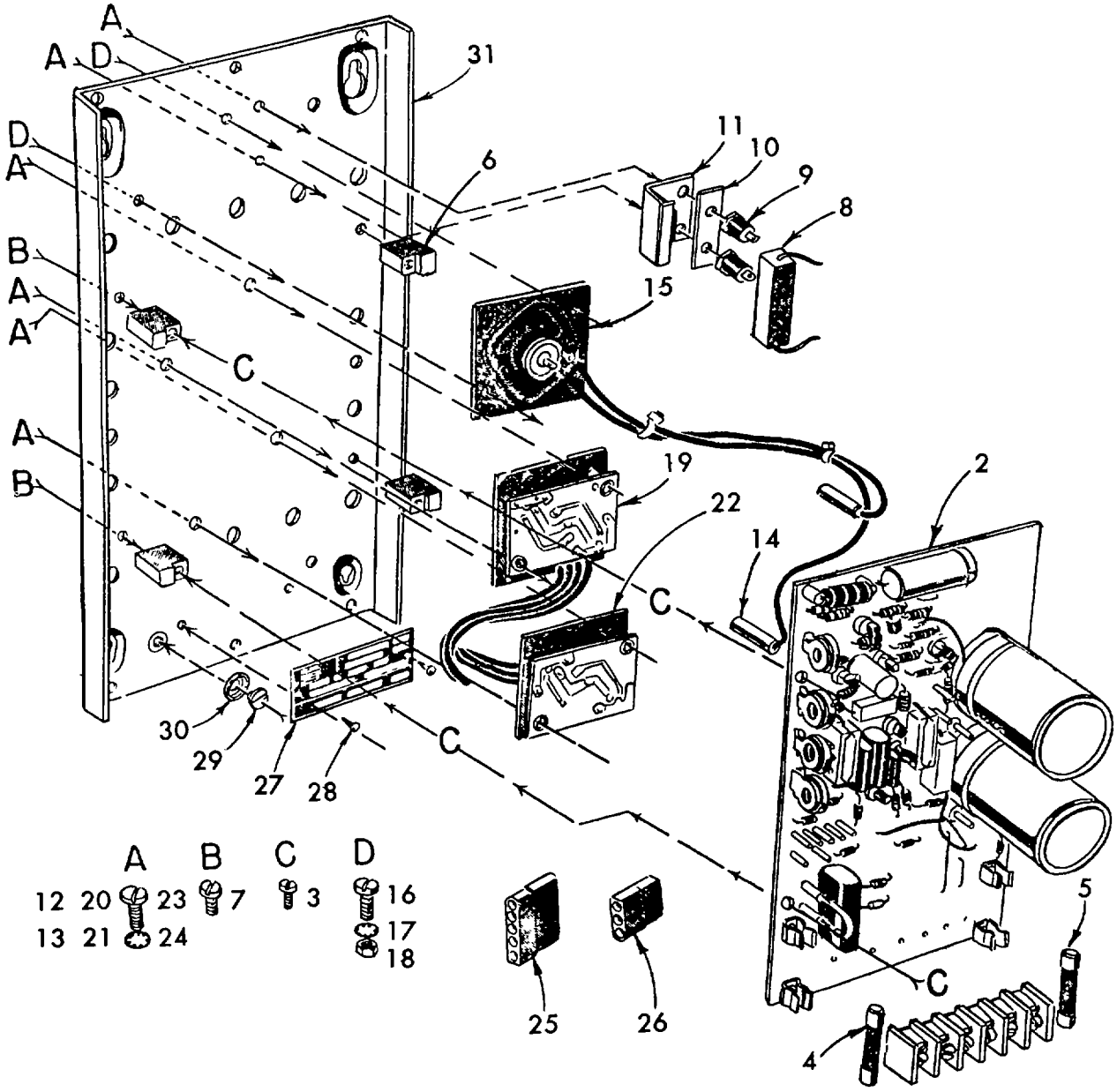

Figure 3-9. Speed Control Assembly

FIG. & INDEX NO.	PART NUMBER	DESCRIPTION	MFR'S CODE	QTY
3-9				
1	DPM5130C	SPEED CONTROL ASSY	07829	1
2	43100105	CIRCUIT BOARD ASSY	07829	1
3	MS24638-1	SCREW, MACHINE	969606	4
4	43300024	FUSE ABC 6	07829	1
5	43300126	FUSE MDA 1 1/4	07829	1
6	45600016	SPACER	07829	4
7	MS24638-10F	SCREW, MACHINE	96906	4
8	43300145	RESISTOR, FIXED	07829	1
9	54200003	POST, TERMINAL	07829	2
10	43400066	PLATE, RES. MOUNT	07829	1
11	43400064	BRACKET, RES. MOUNT	07829	1
12	MS35276-60	SCREW, MACHINE	96906	2
13	MS35333-71	WASHER, LOCK	96906	2
14	43300050	RECEPTACLE SHELL	07829	3
15	43300129	DIODE ASSEMBLY	07829	1
16	MS35276-60	SCREW, MACHINE	96906	2
17	MS35333-71	WASHER, LOCK	96906	2
18	MS35649-264	NUT, HEX	96906	2
19	43300132	RECTIFIER	96906	2
20	MS35276-60	SCREW, MACHINE	96906	2
21	MS35333-71	WASHER, LOCK	96906	2
22	43300128	RECTIFIER ASSEMBLY	07829	1
23	MS35276-60	SCREW, MACHINE	96906	2
24	MS35333-71	WASHER, WASHER,	96906	2
25	43300156	RECEPTACLE SHELL	07829	1
26	4330052	RECEPTACLE SHELL	07829	2
27	57600067	NAMEPLATE	07829	1
28	54405434	PIN	07829	2
29	54100039	SCREW, MACHINE	07829	1
30	45500035	WASHER, SLOT CUP	07829	1
31	43400056	BASE	07829	1

APPENDIX A

REFERENCES

A.1. Dictionaries of Terms and Abbreviations.

AR 310-25 .....Dictionary of United States Army Terms
AR 310-50 .....Authorized Abbreviations and Brevity Codes

A-2. Publication Indexes.

DA PAM 310-1 .....Index of Administration Publications
DA PAM 310-2 .....Index of Blank Forms
DA PAM 310-4 .....Index of Technical Manuals, Technical Bulletins, Supply Manuals (types 7, 8, and 9), Supply Bulletins, and Lubrication Orders

A-3. Logistics and Storage.

TM 740-90-1 .....Administrative Storage of Equipment
TM 743-200-1 .....Storage and Materials Handling

A-4. Maintenance of Supplies and Equipment.

AR 750-1 .....Army Material Maintenance Concepts and Policies
TM 38-750 .....The Army Maintenance Management System (TAMMS)
TM 43-0139 .....Painting Operations Instructions for Field Use

A-5. Other Publications.

AR 55-38 .....Reporting of Transportation Discrepancies In Shipments
AR 420-90 .....Fire Prevention and Protection
AR 700-58 .....Packaging Improvement Report
DA PAM 310-13 .....Military Publications Posting and Filing
FM-21-11 .....First Aid for Soldiers
TB 43-180 .....Calibration Requirements for the Maintenance of Army Materiel
TM 750-244-1-4 .....Procedures for the Destruction of Aviation Ground Support Equipment (FSC 4920) to Prevent Enemy Use

APPENDIX B

MAINTENANCE ALLOCATION CHART

Section I. INTRODUCTION

B-1. Maintenance Allocation Chart.

a. This Maintenance Allocation Chart (MAC) assigns maintenance functions in accordance with the Three Levels of Maintenance concept for army aircraft. These maintenance levels: Aviation Unit Maintenance (AVUM), Aviation Intermediate Maintenance (AVIM) and Depot Maintenance are depicted on the MAC as:

AVUM which corresponds to the O code in the Repair Parts and Special Tools List (RPSTL).
AVIM which corresponds to the F code in the Repair Parts and Special Tools List (RPSTL).
Depot which corresponds to the D code in the Repair Parts and Special Tools List (RPSTL).

b. The maintenance to be performed below depot and in the field is described as follows:

(1) Aviation Unit Maintenance (AVUM). AVUM activities will be staffed and equipped to perform high frequency "On-Equipment" maintenance tasks required to retain or return equipment to a serviceable condition. The maintenance capability of the AVUM will be governed by the MAC and limited by the amount and complexity of support equipment, facilities required, and number of spaces and critical skills available. The range and quantity of authorized spare modules/components will be consistent with the mobility requirements dictated by the air mobility concept. (Assignment of maintenance tasks to divisional company size aviation units will consider the overall maintenance capability of the division, the requirement to conserve personnel and equipment resources and air mobility requirements).

(a) Company Size Aviation Units. Perform those tasks which consist primarily of preventive maintenance and maintenance repair and replacement functions associated with sustaining a high level of equipment operational readiness. Perform maintenance inspections and servicing to include daily, intermediate, periodic and special inspections as authorized by the MAC or higher headquarters. Identify the cause of equipment/system malfunctions using applicable technical manual troubleshooting instructions, Built-In-Test Equipment (BITE), installed instruments, or easy to use Test Measurement and Diagnostic Equipment (TMDE). Replace worn or damaged modules/components which do not require complex adjustments or system alignment and which can be removed/installed with available skills, tools and equipment. Perform operational and continuity checks and make minor repairs. Perform servicing, functional adjustments, and minor repair/replacement. Evacuate unserviceable modules/components and end items beyond the repair capability of AVUM to the supporting AVIM.

(b) Less than Company Size Aviation Units. Aviation elements organic to brigade, group, battalion headquarters and detachment size units are normally small and have less than ten aircraft assigned. Maintenance tasks performed by the aircraft crew chief or assigned aircraft repairman will normally be limited to preventive maintenance inspections, servicing, spot painting, spot drilling, minor adjustments, module/component fault diagnosis and replacement of selected modules/components. Repair functions will normally be accomplished by the supporting AVIM unit.

(2) Aviation Intermediate Maintenance (AVIM). AVIM provides mobile, responsive "One Stop" maintenance support. (Maintenance functions which are not conducive to sustaining air mobility will be assigned to depot maintenance.) Performs all maintenance functions authorized to be done at AVUM. Repair of equipment for return to user will emphasize support or operational readiness requirements. Authorized maintenance includes replacement and repair of modules/components and end items which can be accomplished efficiently with available skills, tools, and equipment. Establishes the Direct Exchange (DX) program for AVUM units by repairing selected items for return to stock when such repairs cannot be accomplished at the AVUM level. Inspects, troubleshoots, tests, diagnoses, repairs, adjusts,

calibrates, and aligns system modules/components. Module/component disassembly and repair will support the DX program and will normally be limited to tasks requiring cleaning and the replacement of seals, fittings and items of common hardware. Unserviceable reparable modules/components and end items which are beyond the capability of AVIM to repair will be evacuated to Depot Maintenance. This level will perform special inspections which exceed AVUM capability. Provides quick response maintenance support, on-the-job-training, and technical assistance through the use of mobile maintenance contact teams. Maintains authorized operational readiness float. Provides collections and classification services for serviceable/unserviceable material. Operates a cannibalization activity in accordance with AR 750-50. (The aircraft maintenance company within the maintenance battalion of a division will perform AVIM functions consistent with air mobility requirements and conservation of personnel and equipment resources. Additional intermediate maintenance support will be provided by the supporting non-divisional AVIM unit.)

B-2. Use of the Maintenance Allocation Chart.

a. The MAC assigns maintenance functions to the lowest level of maintenance based on past experience and the following considerations:

(1) Skills available.

(2) Time required.

(3) Tools and test equipment required and/or available.

b. Only the lowest level of maintenance authorized to perform a maintenance function is indicated. If the lowest level of maintenance cannot perform all tasks of any single maintenance function (e.g., test, repair), then the higher maintenance level(s) that can accomplish additional tasks will also be indicated.

c. A maintenance function assigned to a maintenance level will automatically be authorized to be performed at any higher maintenance level.

d. A maintenance function that cannot be performed at the assigned level of maintenance for any reason may be evacuated to the next higher maintenance organization. Higher maintenance levels will perform the maintenance functions of lower maintenance levels when required or directed by the appropriate commander.

e. The assignment of a maintenance function will not be construed as authorization to carry the associated repair parts in stock. Authority to requisition, stock, or otherwise secure necessary repair parts will be as specified in the repair parts and special tools list appendix.

f. Normally there will be no deviation from the assigned level of maintenance. In cases of operational necessity, maintenance functions assigned to a maintenance level may, on a one-time basis and at the request of the lower maintenance level, be specifically authorized by the maintenance officer to the level of maintenance to which the function is assigned. The special tools, equipment, etc. required by the lower level of maintenance to perform this function will be furnished by the maintenance level to which the function is assigned. This transfer of a maintenance function to a lower maintenance level does not relieve the higher maintenance level of the responsibility of the function. The higher level of maintenance will provide technical supervision and inspection of the function being performed at the lower level.

g. Organizational through depot maintenance of the US Army Electronics Command equipment will be performed by designated US Army Electronics Command personnel.

h. Changes to the MAC will be based on continuing evaluation and analysis by responsible technical personnel and on reports received from field activities.

B-3. Definitions.

a. Inspect. To determine serviceability of an item by comparing its physical, mechanical and electrical characteristics with established standards.

b. Test. To verify serviceability and detect incipient failure by measuring the mechanical or electrical characteristics of an item and comparing those characteristics with prescribed standards.

c. Service. To clean, to preserve, to charge, and to add fuel, lubricants, cooling agents and air.

d. Adjust. To rectify to the extent necessary to bring into proper operating range.

e. Align. To adjust specified variable elements of an item to bring to optimum performance.

i. Calibrate. To determine the corrections to be made in the readings of instruments or test equipment used in precise measurement. Consists of the comparison of two instruments, one of which is a certified standard of known

accuracy, to detect and adjust any discrepancy in the accuracy of the instrument or test equipment being compared with the certified standard.

g. Install. To set up for use in an operational environment such as an emplacement, site or vehicle.

h. Replace. To replace unserviceable items with serviceable assemblies, subassemblies or parts.

i. Repair. To restore an item to serviceable condition through correction of a specific failure or unserviceable condition. This includes, but is not limited to, inspection, cleaning, preserving, adjusting, replacing, welding, riveting, and strengthening.

j. Overhaul. To restore an item to a completely serviceable condition as prescribed by maintenance serviceability standards prepared and published for the specific item to be overhauled.

k. Rebuild. To restore an item to a standard as nearly as possible to the original or new condition in appearance, performance, and life expectancy. This is accomplished through the maintenance technique of complete disassembly of the item, inspection 'of all parts or components, repair or replacement of worn or unserviceable elements (items) using original manufacturing tolerances and specifications, and subsequent reassembly of the item.

B-4. Functional Groups. Standard functional groupings are not considered feasible for aviation ground support equipment due to variation and complexity. Therefore, variations to functional groupings may occur.

B-5. Maintenance Categories and Work Times. The maintenance categories (levels) AVUM, AVIM, and DEPOT are listed on the Maintenance Allocation Chart with individual columns that indicate the work times for maintenance functions at each maintenance level. Work time presentations such as 0 1 indicate the average time it requires a maintenance level to perform a specified maintenance function. If a work time has not been established, the columnar presentation shall indicate "---". Maintenance levels higher than the level of maintenance indicated are authorized to perform the indicated function.

B-6. Tools and Test Equipment (Section III). Common tool sets (not individual tools), special tools, test and support equipment required to perform maintenance functions are listed alphabetically with a reference number to permit cross-referencing to column 5 in the MAC. In addition, the maintenance category authorized to use the device is listed along with the item National Stock Number (NSN) and, if applicable, the tool number to aid in identifying the tool/device.

Section II. MAINTENANCE ALLOCATION CHART

NOMENCLATURE OF END ITEMS							
TESTER GYRO LOOP & ROLL P/N 223650-1, NSN 4920-01-039-5199							
(1)	(2)	(3)	(4) MAINTENANCE CATEGORY			(5)	(6)
GROUP NUMBER	COMPONENT/ASSEMBLY	MAINTENANCE FUNCTION	AVUM	AVIM	DEPOT	TOOLS AND EQUIPMENT	REMARKS
00	Tester, Gyro Loop and Roll						
0001	Gimbal & Fork Assy	Inspect	.2				
		Service	.3				
		Replace		.8		106	
0002	Vibrator Motor	Inspect	.2				
		Service	.3				
		Replace		1.0		106	
		Repair		.8	1.5		
0003	Drive Motor	Inspect	.2				
		Service	.3				
		Replace		.8		106	
		Repair		.8	1.5		
0004	Switches	Inspect	.2				
		Service	.3				
		Replace		.5		106	
		Repair		.5		106	

SECTION III TOOL AND TEST EQUIPMENT REQUIREMENTS

TOOL OR TEST EQUIPMENT REF CODE	MAINTENANCE CATEGORY	NOMENCLATURE	NATIONAL/NATO STOCK NUMBER	TOOL NO.
100	0	Tool Set, AVUM, Set No.1	4920-00-1 59-8 727	
101	0	Tool Set, AVUM, Set No.2	4920-00-5 67-0 476	
102	0	Tool Kit, Aircraft Mechanics, General	5180-00-323-4692	
	0	Tool Kit, Airframe Repairmans	5180-00-323-4876	
104	0	Tool Kit, Hydraulic Repairmans	5180-00-323-4891	
105	0	Tool Kit, Prop and Rotor Repairmans	5180-00-323-4909	
106	0	Tool Kit, Instrument Repairmans	5180-00-323-4913	
107	0	Tool Kit, Electrical Repairmans	5180-00-323-4915	
108	0	Tool Kit, Eng Repairmans		
109	0	Tool Kit, Power Train Repairmans	5180-00-003-5267	
110	F	Shop Set, AVIM, Electrical-Instrument	4920-00-165-1453	
111	F	Shop Set, AVIM, Hydraulic		
112	F	Shop Set, AVIM, Machine Shop	4920-00-405-9279	
113	F	Shop Set, AVIM, Powertrain		
114	F	Shop Set, AVIM, Propeller Suppl	4920-00-224-3681	
115	F	Shop Set, AVIM, Recip Eng, Suppl	4920-00-464-0222	
116	F	Shop Set, AVIM, Rotor Shop	4920-00-405-9270	
117	F	Shop Set, AVIM, Sheet Metal	4920-00-166-5505	
118	F	Shop Set, AVIM, Tool Crib	4920-00-224-3684	
119	F	Shop Set, AVIM, Turbine Engine	4920-00-224-3684	
120	F	Shop Set, AVIM, Welding	4920-00-163-5093	

APPENDIX C

REPAIR PARTS AND SPECIAL TOOLS LIST

(INCLUDING DEPOT MAINTENANCE)

(Current as of 4 December 1980)

Section I. INTRODUCTION

C-1. Scope. This appendix lists spares and repair parts required for performance of Aviation Unit Maintenance (AVUM) and Aviation Intermediate Maintenance (AVIM) and Depot Maintenance of the Tester, Gyro Indicator, Pitch and Roll, Part No. 223650-1.It authorizes the requisitioning and issue of spares and repair parts as indicated by the source and maintenance codes.

C-2. General. This Repair Parts and Special Tools List is divided into the following sections:

a. Section II. Repair Parts List. A list of spares and repair parts authorized for use in the performance of maintenance. The list also includes parts which must be removed for replacement of the authorized parts. Parts list are composed of functional groups in numeric sequence, with the parts in each group listed in figure and item number sequence.

b. Section III. Special Tools List. Not applicable.

c. Section IV. National Stock Number and Part Number Index. A list, in National Item Identification Number (NIIN) sequence of all National Stock Numbers (NSN) appearing in the listings, followed by a list, in alphameric sequence, of all part numbers appearing in the listings. National stock numbers and part numbers are cross-referenced to each illustration figure and item number appearance.

C-3. Explanation of Columns.

a. Illustration. This column is divided as follows:

(1) Figure Number. Indicates the figure number of the illustration on which the item is shown.

(2) Item Number. The number used to identify each item called out in the illustration.

b. Source, Maintenance and Recoverability Codes (SMR).

(*1) Source Code.* Source codes indicate the manner of acquiring support items for maintenance, repair or overhaul of end items. Source codes are entered in the first and second positions of the Uniform SMR Code format as follows:

Code	Definition
PA	Item procured and stocked for anticipated or known usage
PB	Item procured and stocked for insurance purpose because essentiality dictates that a minimum quantity be available in the supply systems.
PC	Item procured and stocked and which otherwise would be coded PA except that it is deteriorative in nature.
PD	Support item, excluding support equipment, procured for initial issue or outfitting and stocked only for subsequent or additional initial issues or outfittings. Not subject to automatic replenishment.
PE	Support equipment procured and stocked for initial issue or outfitting to specified maintenance repair activities.
PF	Support equipment which will not be stocked but which will be centrally procured on demand.
PG	Item procured and stocked to provide for sustained support for the life of the equipment. It is applied to an item peculiar to the equipment which, because of probable discontinuance or shutdown of production facilities, would prove uneconomical to reproduce at a later time.
KD	An item of a depot overhaul/repair kit and not purchased separately. Depot kit defined as a kit that provides items required at the time of overhaul or repair.

Code	Definition
KF	An item of a maintenance kit and not purchased separately. Maintenance kit defined as a kit that provides an item that can be replaced at Aviation Unit or Aviation Intermediate levels of maintenance.
KB	Item included in both a depot overhaul/repair kit and a maintenance kit procured on demand.
MO	Item to be manufactured or fabricated at the Aviation Unit Maintenance level.
MF	Item to be manufactured or fabricated at the Aviation Intermediate maintenance level.
MD	Item to be manufactured or fabricated at the depot maintenance level.
AO	Item to be assembled at the Aviation Unit Maintenance level.
AF	Item to be assembled at the Aviation Intermediate Maintenance level.
AD	Item to be assembled at depot maintenance level.
XA	Item is not procured or stocked because the requirements for the item will result in the replacement of the next higher assembly.
XB	Item is not procured or stocked. If not available through salvage, requisition.
XD	A support item that is not stocked. When required, item will be procured through normal supply channels.
XC	Installation drawing, diagram, instruction sheet, field service drawing, that is identified by manufacturer's part number.

NOTE

Cannibalization or salvage may be used as a source of supply for any items source coded above except those coded XA and aircraft support items as restricted by AR 700-42.

(2) Maintenance Code. Maintenance codes are assigned to indicate the levels of maintenance authorized to USE and REPAIR support items. The maintenance codes are entered in the third and fourth positions of the Uniform SMR Code format as follows:

(a) The maintenance code entered in the third position will indicate the lowest maintenance C-2 level authorized to remove, replace and use the support item. The maintenance code entered in the third position will indicate one of the following levels of maintenance:

Code	Application/Explanation
O	Support item is removed, replaced, used at the Aviation Unit Maintenance level.
F	Support item is removed, replaced, used at the Aviation Intermediate Maintenance level.
D	Support items that are removed, replaced, used at depot, mobile depot, specialized repair activity only.

(b) The maintenance code entered in the fourth position indicates whether the item is to be repaired and identifies the lowest maintenance level with the capability to perform complete repair (i.e., all authorized maintenance functions). This position will contain one of the following maintenance codes:

Code	Application/Explanation
O	The lowest maintenance level capable of complete repair of the support item is the Aviation Unit Maintenance level.
F	The lowest maintenance level capable of complete repair of the support item is the Aviation Intermediate Maintenance level.
D	The lowest maintenance level capable of complete repair of the support item is the depot level.
L	Repair restricted to designated specialized repair activity.
Z	Nonreparable. No repair is authorized.
B	No repair is authorized. The item may be reconditioned by adjusting, lubricating, etc., at the user level. No parts or special tools are procured for the maintenance of this item.

(3) Recoverability Code. Recoverability codes are assigned to support items to indicate the disposition action on unserviceable items. The recoverability code is entered in the fifth position of the Uniform SMR Code format as follows:

Code	Application/Explanation
Z	Nonreparable item. When unserviceable, condemn and dispose at the level indicated in position 3.

Code	Application/Explanation
O	Reparable item. When economically reparable, condemn and dispose at Aviation Unit Maintenance level.
F	Reparable item. When uneconomically reparable, condemn and dispose at the Aviation Intermediate Maintenance level.
D	Reparable item. When beyond lower level repair capability, return to depot. Condemnation and disposal not authorized below depot level.
L	Reparable item. Repair, condemnation and disposal not authorized below depot/specialized repair activity level.
A	Item requires special handling or condemnation procedures because of specific reasons (i.e., precious metal content, high dollar value, critical material or hazardous material). Refer to appropriate manuals/directives for specific instructions.

c. National Stock Number. Indicates the National stock number assigned to the item and which will be used for requisitioning purposes.

d. Part Number. Indicates the primary number used by the manufacturer (individual, company, firm, corporation, or Government activity), which controls the design and characteristics of the item by means of its engineering drawings, specifications standards and inspection requirements, to identify an item or range of items.

NOTE

When a stock numbered item is requisitioned, the item received may have a different part number than the part being replaced.

e. Federal Supply Code for Manufacturer (FSCM). The FSCM is a 5-digit numeric code listed in SB 708-42 which is used to identify the manufacturer, distributor, or Government agency, etc.

f. Description. Indicates the Federal item name and, if required, a minimum description to identify the item. Items that are included in kits and sets are listed below the name of the kit or set with the quantity of each item in the kit or set indicated in the quantity incorporated in unit column. In the Special Tools List, the initial basis of issue (BOI) appears as the last line in the entry for each special TM 55-4920-425-13&P tool, special TMDE, and other special support equipment. When density of equipments supported exceeds density spread indicated in the basis of issue, the total authorization is increased accordingly.

g. Unit of Measure (U/M). Indicates the standard of the basic quantity of the listed item as used in performing the actual maintenance function. This measure is expressed by a two-character alphabetical abbreviation (e.g., ea, in., pr, etc.). When the unit of measure differs from the unit of issue, the lowest unit of issue that will satisfy the required units of measure will be requisitioned.

h. Quantity Incorporated in Unit. Indicates the quantity of the item used in the breakout shown on the illustration figure, which is prepared for a functional group, subfunctional group, or an assembly. A "V" appearing in this column in lieu of a quantity indicates that no specific quantity is applicable (e.g., shims, spacers, etc.).

C-4. Special Information. Not Applicable.

C-5. How to Locate Repair Parts.

a. When National Stock Number or Part Number is Unknown.

(1) First. Find the illustration covering the assembly to which the item belongs

(2) Second. Identify the item on the illustration and note the illustration figure and item number of the item.

(3) Third. Using the Repair Parts Listing, find the figure and item number noted on the illustration.

b. When National Stock Number or Part Number is Known.

(1) First. Using the Index of National Stock Numbers and Part Numbers, find the pertinent National stock number or part number. This index is in ascending NIIN sequence followed by a list of part numbers in alphameric sequence, cross-referenced to the illustration figure number and item number

(2) Second. After finding the figure and item number, locate the figure and item number in the repair parts list.

C-6. Abbreviations. Not applicable.

SECTION II

(1) ILLUSTRATION (a) FIG NO	(1) ILLUSTRATION (b) ITEM NO	(2) SMR CODE	(3) FEDERAL STOCK NUMBER	(4) PART NUMBER	(5) FSCM	(6) DESCRIPTION / USABLE ON CODE	(7) U/M	(8) QTY INC IN UNIT
						GROUP 01 TESTER GYRO LOOP AND ROLL INDICATOR ASSY		
3-7	2	PBFZZ	5210-00-880-7851	2-10026	82J84	LEVEL,CYLINDRICAL,C	EA	2
3-7	3	PBFZZ	5305-00-948-4042	MS35275-204	96906	SCREW,MACHINE	EA	3
3-7	4	XDFZZ		223671	30120	PLATE,LEVEL MOUNTIN	EA	1
3-7	5	XDFZZ		NAS1351-8-6	80205	SCREW,MACHINE	EA	4
3-7	6	XDFZZ		223674	30120	PLATE,INSTRUMENT MO	EA	1
3-7	7	XDFZZ		NAS1351-8-6	80205	SCREW,MACHINE	EA	1
3-7	8	XDFZZ		223673-1	30120	SPACER,INSTRUMENT M	EA	4
3-7	9	XDFZZ		AN565DC1032-12	88044	SETSCREW	EA	4
3-7	10	PBFZZ	5355-01-083-5463	S68-3	75376	KNOB	EA	1
3-7	11	PBFZZ	5305-00-719-5342	MS51963-34	96906	SETSCREW	EA	1
3-7	12	XDFZZ		223639-2	30120	PIN,LATCH	EA	1
3-7	13	XAFZZ		223638-2	30120	SLEEVE,LATCH PIN	EA	1
3-7	14	XAFZZ		LC04GE7	84830	SPRING,COMPRESSION	EA	1
3-7	15	XDFZZ		223649-2	30120	PLATE,SUPPORT,RH	EA	1
3-7	16	PBFZZ	5305-00-900-4403	NAS1351-4-10	80205	SCREW,CAP,SOCKET HE	EA	2
3-7	17	XDFZZ		223649-1	30120	PLATE,SUPPORT,LH	EA	1
3-7	18	PBFZZ	5305-00-900-4403	NAS1351-4-10	80205	SCREW,CAP,SOCKET HE	EA	2
3-7	19	PBFZZ		223664	30120	BEARING,SLEEVE	EA	2
3-7	20	XAFZZ		223672-13	30120	PLATE,SIDE	EA	1
3-7	21	XAFZZ		NAS1351-3-12	80205	SCREW,MACHINE	EA	2
3-7	22	XAFZZ		F26-4-1/4	99105	BUSHING	EA	2
3-7	23	XAFZZ		223672-12	30120	PIN,GIMBAL,PIVOT	EA	2
3-7	24	XDFZZ		223672-1	30120	RING ASSEMBLY GIMBAL	EA	1
3-7	25	XDFZZ		223652	30120	TABLE	EA	1
3-7	26	PBFZZ	5305-00-879-1750	MS24672-7	96906	SCREW,CAP,SOCKET HE	EA	3
3-7	27	PBFZZ	5330-00-248-3844	MS29513-113	96906	PACKING,PREFORMED	EA	1
3-7	28	PBFZZ	5935-00-788-8131	MS3102R14S9S	96906	CONNECTOR,RECEPTACL	EA	1
3-7	29	PBFZZ	5305-00-059-8515	NAS1351-04-4	80205	SCREW,CAP,SOCKET HE	EA	4
3-7	30	PBFZZ	5935-00-643-7098	MS3102A14S7S	96906	CONNECTOR,RECEPTACL	EA	1
3-7	31	PBFZZ	5305-00-059-8515	NAS1351-04-4	80205	SCREW,CAP,SOCKET HE	EA	4
3-7	32	PBFZZ	5935-00-800-2824	MS3102R14S2S	96906	CONNECTOR,RECEPTACL	EA	1
3-7	33	PBFZZ	5305-00-059-8515	NAS1351-04-4	80205	SCREW,CAP,SOCKET HE	EA	4
3-7	34	PBFZZ	5935-00-807-9308	MS3102R14S5S	96906	CONNECTOR,RECEPTACL	EA	1
3-7	35	PBFZZ	5305-00-059-8515	NAS1351-04-4	80205	SCREW,CAP,SOCKET HE	EA	4
3-7	36	PBFZZ	5340-00-233-8637	1604-42	97945	PLUG,PROTECTIVE	EA	1
3-7	37	XDFZZ		223663	30120	INDEX,TABLE	EA	1
3-7	38	XDFZZ		NAS1351-6-6	80205	SCREW,MACHINE	EA	1
3-7	39	XDFZZ		223676	30120	COVER,PLATE,FRONT	EA	1

SECTION II

(1) ILLUSTRATION (a) FIG NO	(1) ILLUSTRATION (b) ITEM NO	(2) SMR CODE	(3) FEDERAL STOCK NUMBER	(4) PART NUMBER	(5) FSCM	(6) DESCRIPTION / USABLE ON CODE	(7) U/M	(8) QTY INC IN UNIT
3-7	40	PBFZZ	5305-00-057-0524	MS51958-28	96906	SCREW,MACHINE.....	EA	8
3-7	41	XDFZZ		223633	30120	PLATE, IDENTIFICATION.....	EA	1
3-7	42	PBFZZ	5305-00-052-6507	MS24629-2	96906	SCREW,TAPPING,THREA.....	EA	4
3-7	43	PBFZZ		223665-1	30120	CABLE ASSEMBLY, POWER.....	EA	1
3-7	44	PBFZZ		223666-1	30120	CABLE ASSEMBLY, BASE TO CRADLE.....	EA	1
3-7	45	PBFZZ	5935-00-821-0345	MS3102R14S6P	96906	CONNECTOR,RECEPTACL.....	EA	1
3-7	46	PBFZZ	5305-00-059-8515	NAS1351-04-4	80205	SCREW,CAP,SOCKET HE.....	EA	4
3-7	47	PBFZZ	5310-00-933-8118	MS35338-135	96906	WASHER,LOCK.....	EA	4
3-7	48	PBFZZ	5935-00-283-2916	MS3102A10SL4P	96906	CONNECTOR,RECEPTACL.....	EA	1
3-7	49	PBFZZ	5305-00-059-8515	NAS1351-04-4	80205	SCREW,CAP,SOCKET HE.....	EA	4
3-7	50	PBFZZ	5310-00-933-8118	MS35338-135	96906	WASHER,LOCK.....	EA	4
3-7	51	PBFZZ	5935-00-726-0708	MS3102 10SL3P	96906	CONNECTOR,RECEPTACL.....	EA	1
3-7	52	PBFZZ	5305-00-059-8515	NAS1351-04-4	80205	SCREW,CAP,SOCKET HE.....	EA	4
3-7	53	PBFZZ	5310-00-933-8118	MS35338-135	96906	WASHER,LOCK.....	EA	4
3-7	54	PBFZZ	5935-00-814-4120	MS3102R14S2P	96906	CONNECTOR,RECEPTACL.....	EA	1
3-7	55	PBFZZ	5305-00-059-8515	NAS1351-04-4	80205	SCREW,CAP,SOCKET HE.....	EA	4
3-7	56	PBFZZ	5310-00-933-8118	MS35338-135	96906	WASHER,LOCK.....	EA	4
3-7	57	PBFZZ	5935-00-813-4722	MS3102R14S5P	96906	CONNECTOR,RECEPTACL.....	EA	1
3-7	58	PBFZZ	5305-00-059-8515	NAS1351-04-4	80205	SCREW,CAP,SOCKET HE.....	EA	4
3-7	59	PBFZZ	5310-00-933-8118	MS35338-135	96906	WASHER,LOCK.....	EA	4
3-7	60	XDFZZ		223675	30120	COVER,PLATE,REAR.....	EA	1
3-7	61	PBFZZ	5305-00-057-0524	MS51958-28	96906	SCREW,MACHINE.....	EA	8
3-7	62	XDFZZ		223656	30120	HUB,TABLE.....	EA	1
3-7	63	PBFZZ		NAS1351-5-20	80205	SCREW,MACHINE.....	EA	1
3-7	64	PBFDD		42D38EEPME4	07929	MOTOR,DRIVE (SEE FIGURE 3-8 FOR BREAKDOWN).....	EA	1
3-7	65	PBFZZ	5305-00-900-4403	NAS1351-4-10	80205	SCREW,CAP,SOCKET HE.....	EA	4
3-7	66	PBFZZ	5310-00-141-1795	AN960-416	88044	WASHER,FLAT.....	EA	8
3-7	67	XDFZZ		223658-1	30120	SPACER,SLEEVE.....	EA	4
3-7	68	XDFZZ		152F22492	80183	CAPACITOR.....	EA	2
3-7	69	XDFZZ		223669	30120	PULLEY.....	EA	1
3-7	70	PBFZZ		AN565A10H3	88044	.SETSCREW.....	EA	2
3-7	71	XDFZZ		5KSF51-AL511A	12532	MOTOR,VIBRATOR.....	EA	1
3-7	72	PBFZZ		NAS1351-8-10	80205	SCREW,MACHINE.....	EA	4
3-7	73	XDFZZ		223660	30120	WEIGHT,ECCENTRIC.....	EA	1
3-7	74	PBFZZ		AN565A10H3	88044	.SETSCREW.....	EA	1
3-7	75	PBFZZ	5305-00-477-2714	NAS1351-4-16	80205	SCREW,CAP,SOCKET HE.....	EA	1
3-7	76	PBFZZ	5310-00-400-5503	MS35650-3254	96906	NUT,PLAIN,HEXAGON.....	EA	2
3-7	77	XDFZZ		223651	30120	ARM,BEARING.....	EA	1
3-7	78	PBFZZ	5305-00-900-4403	NAS1351-4-10	80205	SCREW,CAP,SOCKET HE.....	EA	1
3-7	79	PBFZZ	3110-00-446-2952	KF4A	21335	BEARING,BALL,AIRFRA.....	EA	1

SECTION II

(1) ILLUSTRATION (a) FIG NO	(1) ILLUSTRATION (b) ITEM NO	(2) SMR CODE	(3) FEDERAL STOCK NUMBER	(4) PART NUMBER	(5) FSCM	(6) DESCRIPTION USABLE ON CODE	(7) U/M	(8) QTY INC IN UNIT
3-7	80	XDFZZ		223667	30120	PULLEY	EA	1
3-7	81	PBFZZ		AN565A10H3	88044	.SETSCREW	EA	2
3-7	82	XDFZZ		223670	30120	PULLEY	EA	1
3-7	83	PBFZZ		AN565A10H3	88044	.SETSCREW	EA	2
3-7	84	XDFZZ		223635-1	30120	CLUTCH AND SHAFT ASSEMBLY	EA	1
3-7	85	XDFZZ		NAS1351-8-6	80205	SCREW,MACHINE	EA	4
3-7	86	PBFZZ	5310-00-515-8058	AN960-8	88044	WASHER,FLAT	EA	4
3-7	87	PBFZZ	5310-00-559-0070	MS35333-38	96906	WASHER,LOCK	EA	4
3-7	88	XDFZZ		223662	30120	POST, FINGER MOUNTING,REAR	EA	1
3-7	89	PBFZZ	5305-00-900-4403	NAS1351-4-10	80205	SCREW,CAP,SOCKET HE	EA	1
3-7	90	XDFZZ		223661	30120	POST, FINGER MOUNTING,FRONT	EA	1
3-7	91	PBFZZ	5305-00-900-4403	NAS1351-4-10	80205	SCREW,CAP,SOCKET HE	EA	1
3-7	92	XBFZZ		223648-14	30120	PLATE,FRAME,TOP	EA	1
3-7	93	XBFZZ		NAS608C4-12	80205	SCREW,MACHINE	EA	6
3-7	94	PBFZZ		R2CFF	21760	BEARING,BALL,ANNULA	EA	1
3-7	95	XDFZZ		223657	30120	COLLAR	EA	1
3-7	96	PBFZZ		AN565A10H3	88044	.SETSCREW	EA	2
3-7	97	XDFZZ		WSD175J-14	04155	SLIP RING ASSEMBLY	EA	1
3-7	98	PBFZZ	5305-00-477-4671	NAS1351-3-6	80205	SCREW,CAP,SOCKET HE	EA	4
3-7	99	PBFZZ	5310-00-167-0818	AN960-10	88044	WASHER,FLAT	EA	4
3-7	100	PBFZZ	5310-00-576-8752	MS35333-39	96906	WASHER,LOCK	EA	4
3-7	101	XDFZZ		223653	30120	BUSHING,SLEEVE	EA	1
3-7	102	PBFZZ	5305-00-719-5342	MS51963-34	96906	SETSCREW	EA	2
3-7	103	XDFZZ		223655	30120	HOUSING,BEARING LOWER	EA	1
3-7	104	PBFZZ	5306-00-593-2705	NAS1351-3-28	80205	BOLT,INTERNAL WRENC	EA	3
3-7	105	PBFZZ	5340-00-200-8637	1604-42	97945	PLUG,PROTECTIVE	EA	1
3-7	106	XDFZZ		223659	30120	EXTENDER,PIPE THREAD	EA	1
3-7	107	PBFZZ	3110-00-142-4493	KF12A	21335	BEARING,BALL,ANFRA	EA	1
3-7	108			223668	30120	PULLEY	EA	1
3-7	109	PBFZZ		AN565A10H3	88044	.SETSCREW	EA	2
3-7	110	PBFZZ	5330-00-248-3845	MS29513-016	96906	PACKING,PREFORMED	EA	1
3-7	111	XDFZZ		223654	30120	SHAFT,TABLE DRIVE	EA	1
3-7	112	XDFZZ		120XL037	71176	BELT,TIMING	EA	1
3-7	113	PBFZZ		230XL037	71176	BELT,TIMING	EA	1
3-7	114	PBFDD	5940-00-204-8236	6-140	71785	TERMINAL BOARD	EA	1
3-7	115	PBDZZ		223140-6	30120	INSULATOR,PLATE	EA	1
3-7	116	PBFZZ	5305-00-057-0526	MS51958-30	96906	SCREW,MACHINE	EA	2
3-7	117	PBFZZ	5310-00-579-0079	MS35333-37	96906	WASHER,LOCK	EA	2
3-7	118	PBFZZ	5355-01-083-5493	S68-3	75376	KNOB	EA	1
3-7	119	PBFZZ	5305-00-719-5342	MS51963-34	96906	SETSCREW	EA	1

SECTION II

(1) ILLUSTRATION (a) FIG NO	(1) ILLUSTRATION (b) ITEM NO	(2) SMR CODE	(3) FEDERAL STOCK NUMBER	(4) PART NUMBER	(5) FSCM	(6) DESCRIPTION / USABLE ON CODE	(7) U/M	(8) QTY INC IN UNIT
3-7	120	XAFZZ		223638-1	30120	SLEEVE,LATCH PIN	EA	1
3-7	121	XAFZZ		LC040E14	84830	SPRING,COMPRESSION	EA	1
3-7	122	XDFZZ		223639-1	30120	PIN,LATCH	EA	1
3-7	123	XDFZZ		223647	30120	SHAFT,CRADLE TRUNION	EA	2
3-7	124	PBFZZ		NAS1351-6-8	80205	SCREW,MACHINE	EA	2
3-7		XDFZZ		223648-1	30120	FRAME ASSEMBLY	EA	1
3-7	125	XDFZZ		FB10-5	71041	.BEARING	EA	2
3-7	126	XDFZZ		P26-4-1-4	99105	.BUSHING	EA	1
3-7	127	XAFZZ		223648-13	30120	.PLATE,FRAME,BASE	EA	1
3-7	128	XAFZZ		NAS1351-4-12	80205	.SCREW,CAP,SOCKET HE	EA	6
3-7	129	XAFZZ		223648-11	30120	.PLATE,FRAME,L-S	EA	1
3-7	130	XAFZZ		223648-12	30120	.PLATE,FRAME,R-S	EA	1
3-7	131	XDFZZ		223685	30120	COVER,BASE	EA	1
3-7	132	PBFZZ	5305-00-059-3673	MS51958-77	96906	SCREW,MACHINE	EA	4
3-7	133	XDFZZ		223636-2	30120	PLATE	EA	1
3-7	134	XDFZZ		NAS1351-4-20	80205	SCREW,CAP,SOCKET HE	EA	3
3-7	135	PBFZZ	5310-00-141-1795	AN960-416	88044	WASHER,FLAT	EA	3
3-7	136	XDFZZ		223636-1	30120	PLATE	EA	1
3-7	137	XDFZZ		NAS1351-4-20	80205	SCREW,MACHINE	EA	3
3-7	138	PBFZZ	5310-00-141-1795	AN960-416	88044	WASHER,FLAT	EA	3
3-7	139	PBFZZ		2FA53-73TAPS	73559	SWITCH,TOGGLE	EA	3
3-7	140	PBFZZ		3C102-0	28107	LENS,LAMPHOLDER	EA	3
3-7	141	PBFZZ		32C72-0	28107	LAMP,PILOT	EA	3
3-7	142	PBFZZ		3CC99-0	28107	LAMPHOLDER	EA	3
3-7	143	PBFZZ	5920-00-458-5666	342C28	75915	FUSEHOLDER,EXTRACTO	EA	3
3-7	144	PBFZZ	5920-00-404-1078	313C02	75915	FUSE,CARTRIDGE	EA	1
3-7	145	PBFZZ	5920-00-199-5498	313.500	75915	FUSE,CARTRIDGE	EA	1
3-7	146	PBFZZ	5920-00-504-8634	313.250	75915	FUSE,CARTRIDGE	EA	1
3-7	147	XDFZZ		1919C	72512	KNOB	EA	1
3-7	148	PBFZZ	5305-00-719-5342	MS51963-34	96906	SETSCREW	EA	1
3-7	149	PBFZZ	5930-00-738-5215	T207	71450	SWITCH,ROTARY	EA	1
3-7	150	XDFZZ		1919C	72512	KNOB	EA	1
3-7	151	PBFZZ	5305-00-719-5342	MS51963-34	96906	SETSCREW	EA	1
3-7	152	PBFZZ	5930-01-314-6820	T202	71450	SWITCH SECTION,ROTA	EA	1
3-7	153	PBFZZ		995-10A	44655	RESISTOR,FIXED,WIRE	EA	1
3-7	154	XDFZZ		223684	30120	PLATE,CONTROL PANEL	EA	1
3-7	155	PBFZZ	5305-00-057-0524	MS51958-28	96906	SCREW,MACHINE	EA	4
3-7	156	PBFZZ		433C0001	07829	RESISTOR,VARIABLE,W	EA	3
3-7	157	PBFZZ	5355-00-154-6559	181	83330	SHAFT LOCK,ELECTRON	EA	3
3-7	158	PBFZZ	5935-00-763-8699	27E122	77342	SOCKET,PLUG-IN ELEC	EA	1

SECTION II

(1) ILLUSTRATION (a) FIG NO.	(1) ILLUSTRATION (b) ITEM NO.	(2) SMR CODE	(3) FEDERAL STOCK NUMBER	(4) PART NUMBER	(5) FSCM	(6) DESCRIPTION / USABLE ON CODE	(7) U/M	(8) QTY INC IN UNIT
3-7	159	PBFZZ	5305-00-057-0526	MS51958-30	96906	SCREW,MACHINE	EA	2
3-7	160	PBFZZ	5310-00-934-5747	MS35649-262	96906	NUT,PLAIN,HEXACON	EA	2
3-7	161	PBFZZ	5945-00-201-0273	CSU38-70010	77342	RELAY,SOLID STATE	EA	1
3-7	162	XDFZZ		223680	30120	BLOCK,SUPPORT,RELAY	EA	1
3-7	163	PBFZZ	5305-00-054-6659	MS51957-35	96906	SCREW,MACHINE	EA	2
3-7	164	PBFZZ	5310-00-579-0079	MS35333-37	96906	WASHER,LOCK	EA	2
3-7	165	XDFZZ		223679	30120	BRACKET,MOUNTING	EA	1
3-7	166	PBFZZ	5305-00-057-0524	MS51958-28	96906	SCREW,MACHINE	EA	2
3-7	167	PBFZZ	5310-00-579-0079	MS35333-37	96906	WASHER,LOCK	EA	2
3-7	168	PBFZZ	5940-00-983-6051	MILT55164	81349	TERMINAL BOARD	EA	1
3-7	169	XDFZZ		223140-10	30120	INSULATOR	EA	1
3-7	170	PBFZZ	5305-00-057-0524	MS51958-28	96906	SCREW,MACHINE	EA	2
3-7	171	PBFZZ	5310-00-579-0079	MS35333-37	96906	WASHER,LOCK	EA	2
3-7	172	XDFZZ		140J1	71785	JUMPER, TERMINAL STRIP	EA	2
3-7	173	PBFZZ		FC12	58208	RECTIFIER,SEMICONDU	EA	1
3-7	174	PBFZZ	5935-00-763-6659	27E122	77342	SOCKET,PLUG-IN ELEC	EA	1
3-7	175	PBFZZ	5305-00-057-0526	MS51958-30	96906	SCREW,MACHINE	EA	2
3-7	176	PBFZZ	5310-00-579-0079	MS35333-37	96906	WASHER,LOCK	EA	2
3-7	177	PBFZZ	5915-00-233-6346	RF754	13619	FILTER,RADIO FREQUE	EA	2
3-7	178	XDFZZ		223678	30120	BRACKET,MOUNTING	EA	1
3-7	179	PBFZZ	5305-00-057-0522	MS51958-26	96906	SCREW,MACHINE	EA	2
3-7	180	PBFZZ	5310-00-579-0079	MS35333-37	96906	WASHER,LOCK	EA	2
3-7	181	PBFZZ	5940-00-983-6045	37TB4	81349	TERMINAL BOARD	EA	1
3-7	182	XDFZZ		223140-4	30120	INSULATOR	EA	1
3-7	183	PBFZZ	5305-00-057-0526	MS51958-30	96906	SCREW,MACHINE	EA	2
3-7	184	PBFZZ	5310-00-934-5747	MS35649-262	96906	NUT,PLAIN,HEXACON	EA	2
3-7	185	XDFZZ		140J1	71785	JUMPER, TERMINAL STRIP	EA	2
3-7	186	XDFZZ		223682	30120	SHIELD,TRANSFORMER	EA	1
3-7	187	PBFZZ	5305-00-057-0522	MS51958-26	96906	SCREW,MACHINE	EA	2
3-7	188	PBFZZ	5310-00-579-0079	MS35333-37	96906	WASHER,LOCK	EA	2
3-7	189	PBFZZ	5950-00-782-0377	4688	26667	TRANSFORMER,POWER	EA	2
3-7	190	PBFZZ	5305-00-701-5057	MS51958-41	96906	SCREW,MACHINE	EA	3
3-7	191	PBFZZ	5940-00-983-6043	37TB2	81349	TERMINAL BOARD	EA	1
3-7	192	XDFZZ		223140-2	30120	INSULATOR	EA	1
3-7	193	PBFZZ	5305-00-057-0526	MS51958-30	96906	SCREW,MACHINE	EA	2
3-7	194	PBFZZ	5310-00-934-5747	MS35649-262	96906	NUT,PLAIN,HEXACON	EA	2
3-7	195	XDFZZ		223681	30120	SHIELD,TRANSFORMER	EA	1
3-7	196	PBFZZ	5305-00-057-0522	MS51958-26	96906	SCREW,MACHINE	EA	2
3-7	197	PBFZZ	5310-00-579-0079	MS35333-37	96906	WASHER,LOCK	EA	2
3-7	198	PBFZZ	5915-00-197-4628	9C00-100-0019	72982	FILTER,RADIO FREQUE	EA	2

SECTION II

(1) ILLUSTRATION (a) FIG NO	(b) ITEM NO	(2) SMR CODE	(3) FEDERAL STOCK NUMBER	(4) PART NUMBER	(5) FSCM	(6) DESCRIPTION USABLE ON CODE	(7) U/M	(8) QTY INC IN UNIT
3-7	199	XDFZZ		223683	30120	SHIELD, FILTER MOUNTING	EA	1
3-7	200	PBFZZ	5305-00-057-0522	MS51958-26	96906	SCREW,MACHINE	EA	2
3-7	201	PBFZZ	5310-00-579-0079	MS35333-37	96906	WASHER,LOCK	EA	2
3-7	202	PBFZZ	5310-00-934-5747	MS35649-262	96906	NUT,PLAIN,HEXAGON	EA	2
3-7	203	PBFZZ		433CC085	07829	CHOKE,RFI	EA	1
3-7	204	PBFZZ		CFM5130C	07829	SPEED CONTROL ASSEM (SEE FIGURE 3-9 FOR BREAKDOWN)	EA	1
3-7	205	PBFZZ	5305-00-057-0522	MS51958-26	96906	SCREW,MACHINE	EA	4
3-7	206	PBFZZ	5310-00-579-0079	MS35333-37	96906	WASHER,LOCK	EA	4
3-7	207	PBFZZ	5935-00-801-6620	MS3102R14S6S	96906	CONNECTOR,RECEPTACL	EA	1
3-7	208	PBFZZ	5306-01-029-0714	NAS1351-04-6	80205	BOLT,INTERNAL WRENC	EA	4
3-7	209	PBFZZ	5935-00-149-3419	MS3102A14S7P	96906	CONNECTOR,RECEPTACL	EA	1
3-7	210	PBFZZ	5306-01-029-0714	NAS1351-04-6	80205	BOLT,INTERNAL WRENC	EA	4
3-7	211	XDFZZ		215477	30120	SCREW,LEVELING	EA	4
3-7	212	XDFZZ	5310-00-257-8901	AN316-8R	88044	NUT,CHECK	EA	4
3-7	213	XDFZZ		215397	30120	NUT,SLEEVE	EA	4
3-7	214	XDFZZ		215396	30120	FOOT LEVELING	EA	4
3-7	215	XDFZZ		223677	30120	PLATE,CHASIS,BASE	EA	1
3-7	216	PBFZZ	5305-00-477-4671	NAS1351-3-6	80205	SCREW,CAP,SOCKET HE	EA	8
3-7	217	XDFZZ		223632	30120	BASE,TESTER	EA	1
						MOTOR ASSEMBLY		
3-8	1	PBFCO		42C38EPME4	07829	ACTUATOR,ELECTRO-ME (SEE FIG.3-7 FOR NEXT HIGHER ASSEMBLY	EA	1
3-8	2	XDFZZ		571CC004	07829	.COVER,SHIELD,FRONT	EA	1
3-8	3	XDFZZ		541CC04C	07829	.SCREW,MACHINE	EA	2
3-8	4	XDFZZ		328CC088	07829	.SHIELD,FRONT	EA	1
3-8	5	XDFZZ		54123255	07829	.SCREW,MACHINE	EA	2
3-8	6	XDFZZ		551CC008	07829	.WASHER,FLAT	EA	2
3-8	7	XDFZZ		542CC006	07829	.NUT,PLAIN,HEXAGON	EA	4
3-8	8	XDFZZ		417CC006	07829	.CAP,ELECTRICAL	EA	2
3-8	9	XDFZZ		551C5681	07829	.WASHER,SPACER	EA	1
3-8	10	XDFZZ		55320289	07829	.WASHER,BEVEL	EA	2
3-8	11	XDFZZ		551C5681	07829	.WASHER,SPACER	EA	1
3-8	12	XDFZZ		55320289	07829	.WASHER,BEVEL	EA	2
3-8	13	XDFZZ		551C5681	07829	.WASHER,SPACER	EA	1
3-8	14	PBDZZ		531CC0C7	07829	.BEARING,BALL,ANNULA	EA	1
3-8	15	XDDZZ			07829	.ARMATURE	EA	1
3-8	16	XDDZZ		49300003	07829	.BOX,BRUSH	EA	2
3-8	17	XDFZZ		541C0048	07829	.SCREW,MACHINE	EA	1
3-8	18	XDFZZ		55518728	07829	.WASHER,LOCK	EA	1
3-8	19	XDFZZ		541CC040	07829	.SCREW,MACHINE	EA	1
3-8	20	XDFZZ		4950C011	07829	.TAB,CONNECTOR	EA	2

SECTION II

(1) ILLUSTRATION (a) FIG NO.	(1) ILLUSTRATION (b) ITEM NO.	(2) SMR CODE	(3) FEDERAL STOCK NUMBER	(4) PART NUMBER	(5) FSCM	(6) DESCRIPTION / USABLE ON CODE	(7) U/M	(8) QTY INC IN UNIT
3-8	21	PBFZZ		574C0001	07829	.SPRING,HELICAL,COMP	EA	2
3-8	22	PBFZZ		492CC010	07829	.BRUSH,ELECTRICAL,CO	EA	2
3-8	23	XDDZZ		545CC001	07829	.RING,RETAININC	EA	1
3-8	24	PBDZZ		53100003	07829	.BEARING,BALL	EA	2
3-8	25	XDDZZ		51400001	07829	.SEAL,OIL	EA	1
3-8	26	XDDZZ		57700005	07829	.CONNECTOR,GROUND	EA	1
3-8	27	XDDZZ		54123265	07829	.SCREW,GROUND	EA	1
3-8	28	XDDZZ		54123263	07829	.SCREW,GROUND	EA	1
3-8	29	XDDZZ		33800005	07829	.ENDSHIELD	EA	1
3-8	30	XDDZZ		54100004	07892	.SCREW,GEAR HOLSING	EA	4
3-8	31	XDDZZ		223658-1	30120	.NUT,GEAR HOUSING	EA	4
3-8	32	XDDZZ		55200004	07829	.WASHER,NYLON	EA	V
3-8	33	XDDZZ		551CC004	07829	.WASHER,STEEL	EA	V
3-8	34	XDDZZ		26800026	07829	.GEAR AND PINICN	EA	1
3-8	35	XDDZZ		55200004	07829	.WASHER,NYLON	EA	REF
3-8	36	XDDZZ		551C0004	07829	.WASHER,STEEL	EA	REF
3-8	37	XDDZZ		55200004	07829	.WASHER,NYLON	EA	REF
3-8	38	XDDZZ		551C0004	07829	.WASHER,STEEL	EA	REF
3-8	39	XDDZZ		545C0007	07829	.RING,RETAININC	EA	1
3-8	40	XDDZZ		26800018	07829	.GEAR AND PINICN	EA	1
3-8	41	XDDZZ		552CC004	07829	.WASHER,NYLON	EA	REF
3-8	42	XDDZZ		55100004	07829	.WASHER,STEEL	EA	REF
3-8	43	XDDZZ		552C0004	07829	.WASHER,NYLON	EA	REF
3-8	44	XDDZZ		551C0004	07829	.WASHER,STEEL	EA	REF
3-8	45	XDDZZ		268CC009	07829	.GEAR AND PINICN	EA	1
3-8	46	XDDZZ		55200005	07829	.WASHER,NYLON	EA	1
3-8	47	XDDZZ		55100005	07829	.WASHER,STEEL	EA	1
3-8	48	XDDZZ		55200005	07289	.WASHER,STEEL	EA	REF
3-8	49	XDDZZ		551C0010	07829	.WASHER,STEEL	EA	1
3-8	50	XDDZZ		546C6510	07829	.KEY	EA	1
3-8	51	XDDZZ		238C0006	07929	.GEAR I DRIVE SHAFT	EA	1
3-8	52	XDDZZ		552CC002	07829	.WASHER,NYLON	EA	1
3-8	53	XDDZZ		55100002	07829	.WASHER,STEEL	EA	2
3-8	54	XDDZZ		51400002	07829	.SEAL	EA	1
3-8	55	XDDZZ		576CC041	07829	.NAMEPLATE	EA	1
3-8	56	XDDZZ		543C4558	07829	.PINS	EA	2
3-8	57	XDDZZ		34700010	07929	.ADAPTER, GEAR HOUSING	EA	1
3-8	58	XDDZZ		54100029	07829	.SCREW,MACHINE	EA	4
3-8	59	XDDZZ		59300001	07829	.O RING	EA	1

SECTION II

(1) ILLUSTRATION (a) FIG NO.	(1) ILLUSTRATION (b) ITEM NO.	(2) SMR CODE	(3) FEDERAL STOCK NUMBER	(4) PART NUMBER	(5) FSCM	(6) DESCRIPTION / USABLE ON CODE	(7) U/M	(8) QTY INC IN UNIT
						SPEED CONTROL ASSY		
3-9	1	PBFZZ		DFM5130C	07829	SPEED CONTROL ASSEM (SEE FIG.3-7 FOR NEXT HIGHER ASSEMBLY)..	EA	1
3-9	2	XDFZZ		43100106	07829	.CIRCUIT BOARD ASSEMBLY.....	EA	1
3-9	3	XDFZZ		MS51861-12C	96906	.SCREW,TAPPING,THREA.....	EA	4
3-9	4	PBFZZ		43300024	07829	.FUSE,CARTRIDGE.....	EA	1
3-9	5	PBFZZ		43300126	07829	.FUSE,CARTRIDGE.....	EA	1
3-9	6	XDFZZ		45600016	07829	.SPACER.....	EA	4
3-9	7	PBFZZ	5305-00-151-5701	MS51861-22C	96906	.SCREW,TAPPING,THREA.....	EA	4
3-9	8	XDFZZ		43300145	07829	.RESISTOR FIXED.....	EA	1
3-9	9	XDFZZ		45200003	07829	.POST TERMINAL.....	EA	2
3-9	10	XDFZZ		43400066	07829	.PLATE,MOUNTING RESISTOR.....	EA	1
3-9	11	XDFZZ		43400065	07829	.BRACKET,MOUNTING RESISTOR.....	EA	1
3-9	12	XDFZZ		MS35276-60	96906	.SCREW,MACHINE.....	EA	2
3-9	13	PBFZZ	5310-00-616-3555	MS35333-71	96906	.WASHER,LOCK.....	EA	2
3-9	14	XDFZZ		43300050	07829	.SHELL,RECEPTACLE.....	EA	3
3-9	15	XDFZZ		43300129	07829	.DIODE ASSEMBLY.....	EA	1
3-9	16	XDFZZ		MS35276-60	96906	.SCREW,MACHINE.....	EA	2
3-9	17	PBFZZ	5310-00-616-3555	MS35333-71	96906	.WASHER,LOCK.....	EA	2
3-9	18	PBFZZ	5310-00-934-5761	MS35649-264	96906	.NUT,HEXAGON.....	EA	2
3-9	19	XDFZZ		43300132	07829	.RECTIFIER ASSEMBLY.....	EA	1
3-9	20	XDFZZ		MS35276-60	96906	.SCREW,MACHINE.....	EA	2
3-9	21	PBFZZ	5310-00-616-3555	MS35333-71	96906	.WASHER,LOCK.....	EA	2
3-9	22	XDFZZ		43300128	07829	.RECTIFIER ASSEMBLY.....	EA	1
3-9	23	XDFZZ		MS35276-60	96906	.SCREW,MACHINE.....	EA	2
3-9	24	PBFZZ	5310-00-616-3555	MS35333-71	96906	.WASHER,LOCK.....	EA	2
3-9	25	XDFZZ		43300156	07829	.SHELL,RECEPTACLE.....	EA	1
3-9	26	XDFZZ		43300052	07829	.SHELL,RECEPTACLE.....	EA	2
3-9	27	XDFZZ		57600067	07829	.NAMEPLATE.....	EA	1
3-9	28	XDFZZ		54405434	07829	.PIN.....	EA	2
3-9	29	XDFZZ		54100039	07829	.SCREW,MACHINE.....	EA	1
3-9	30	XDFZZ		45500035	07829	.WASHER,SLOT CLP.....	EA	1
3-9	31	XDFZZ		43400056	07829	.BASE.....	EA	1

NATIONAL STOCK NUMBER AND PART NUMBER INDEX

STOCK NUMBER	FIGURE NO.	ITEM NO.
5305-00-052-6907	3-7	42
5305-00-054-6659	3-7	163
5305-00-057-0522	3-7	179
5305-00-057-0522	3-7	187
5305-00-057-0522	3-7	196
5305-00-057-0522	3-7	200
5305-00-057-0522	3-7	205
5305-00-057-0524	3-7	40
5305-00-057-0524	3-7	61
5305-00-057-0524	3-7	155
5305-00-057-0524	3-7	166
5305-00-057-0524	3-7	170
5305-00-057-0526	3-7	116
5305-00-057-0526	3-7	159
5305-00-057-0526	3-7	175
5305-00-057-0526	3-7	183
5305-00-057-0526	3-7	193
5305-00-059-3673	3-7	132
5305-00-059-8515	3-7	29
5305-00-059-8515	3-7	31
5305-00-059-8515	3-7	33
5305-00-059-8515	3-7	35
5305-00-059-8515	3-7	46
5305-00-059-8515	3-7	49
5305-00-059-8515	3-7	52
5305-00-059-8515	3-7	55
5305-00-059-8515	3-7	58
5305-00-079-1750	3-7	26
5935-00-088-8131	3-7	28
5310-00-141-1795	3-7	66
5310-00-141-1795	3-7	135
5310-00-141-1795	3-7	138
3110-00-142-4493	3-7	107
5935-00-149-3419	3-7	209
5305-00-151-5701	3-9	7
5355-00-156-6559	3-7	157
5310-00-167-0818	3-7	99
5915-00-197-4628	3-7	198
5920-00-199-9498	3-7	145
5340-00-200-8637	3-7	36
5340-00-200-8637	3-7	105
5945-00-201-0273	3-7	161
5940-00-204-8236	3-7	114
5915-00-233-6346	3-7	177
5330-00-248-3844	3-7	27
5330-00-248-3845	3-7	110
5935-00-283-2916	3-7	48
5310-00-297-8901	3-7	212
5310-00-400-5503	3-7	76
5920-00-404-1078	3-7	144
3110-00-446-2952	3-7	79
5920-00-458-9666	3-7	143
5305-00-477-2714	3-7	75
5305-00-477-4671	3-7	98
5305-00-477-4671	3-7	216
5920-00-504-8634	3-7	146
5310-00-515-8058	3-7	86
5310-00-559-0070	3-7	87
5310-00-576-5752	3-7	100
5310-00-579-0079	3-7	117
5310-00-579-0079	3-7	164
5310-00-579-0079	3-7	167
5310-00-579-0079	3-7	171
5310-00-579-0079	3-7	176
5310-00-579-0079	3-7	180
5310-00-579-0079	3-7	188
5310-00-579-0079	3-7	197
5310-00-579-0079	3-7	201
5310-00-579-0079	3-7	206
5306-00-593-2705	3-7	104
5310-00-616-3555	3-9	13
5310-00-616-3555	3-9	17
5310-00-616-3555	3-9	21
5310-00-616-3555	3-9	24
5935-00-643-7098	3-7	30
5305-00-701-5057	3-7	190
5305-00-719-5342	3-7	11
5305-00-719-5342	3-7	102
5305-00-719-5342	3-7	119
5305-00-719-5342	3-7	148
5305-00-719-5342	3-7	151
5935-00-726-0708	3-7	51
5930-00-738-5215	3-7	149
5935-00-763-8699	3-7	158
5935-00-763-8699	3-7	174
5950-00-782-0377	3-7	189
5935-00-800-2824	3-7	32
5935-00-801-6620	3-7	207
5935-00-807-9308	3-7	34
5935-00-813-4722	3-7	57
5935-00-814-4120	3-7	54
5935-00-821-0345	3-7	45
5210-00-880-7891	3-7	2
5305-00-900-4403	3-7	16
5305-00-900-4403	3-7	18
5305-00-900-4403	3-7	65
5305-00-900-4403	3-7	78
5305-00-900-4403	3-7	89
5305-00-900-4403	3-7	91
5310-00-933-8118	3-7	47
5310-00-933-8118	3-7	50
5310-00-933-8118	3-7	53
5310-00-933-8118	3-7	56
5310-00-933-8118	3-7	59
5310-00-934-9747	3-7	160
5310-00-934-9747	3-7	184
5310-00-934-9747	3-7	194
5310-00-934-9747	3-7	202
5310-00-934-9761	3-9	18
5305-00-948-4042	3-7	3
5940-00-983-6043	3-7	191
5940-00-983-6045	3-7	181
5940-00-983-6051	3-7	168
5930-01-014-6820	3-7	152
5306-01-029-0714	3-7	208
5306-01-029-0714	3-7	210
5355-01-083-5493	3-7	10
5355-01-083-5493	3-7	118

PART NUMBER	FSCM	FIG. NO.	ITEM NO.
AN316-8R	88044	3-7	212
AN565A1OH3	88044	3-7	70
AN565A1OH3	88044	3-7	74
AN565A1OH3	88044	3-7	81
AN565A1OH3	88044	3-7	83
AN565A1OH3	88044	3-7	96
AN565A1OH3	88044	3-7	109
AN565D01032-12	88044	3-7	9
AN960-10	88044	3-7	99
AN960-416	88044	3-7	66
AN960-416	88044	3-7	135
AN960-416	88044	3-7	138
AN960-8	88044	3-7	86
CSJ38-70010	77342	3-7	161
DPM5130C	07829	3-7	204
DPM5130C	07829	3-9	1
FB10-5	71041	3-7	12S
FC12	58208	3-7	173
KP12A	21335	3-7	107
KP4A	21335S	3-7	79
LC040E14	84830	3-7	121
LC040E7	84830	3-7	14
MILT55164	813S49	3-7	168
MS24629-2	96906	3-7	42
MS24672-7	96906	3-7	26
MS29523-016	96906	3-7	110
MS29513-113	96906	3-7	27
MS3102 105L3P	96906	3-7	51
MS3102AlOSL4P	96906	3-7	48
MS3102A14S7P	96906	3-7	209
MS3102A14S7S	96906	3-7	30
MS3102R14S2P	96906	3-7	54
MS3102R14S2S	96906	3-7	32

NATIONAL STOCK NUMBER AND PART NUMBER INDEX

PART NUMBER	FSCM	FIG. NO.	ITEM NO.
MS3102R14SSP	96906	3-7	57
MS3102R14SSS	96906	3-7	34
MS3102R14S6P	96906	3-7	4S
MS3102R14S6S	96906	3-7	207
MS3102R14S9S	96906	3-7	28
MS35275-204	96906	3-7	3
MS35276-60	96906	3-9	12
MS35276-60	96906	3-9	16
MS35276-60	96906	3-9	20
MS35276-60	96906	3-9	23
MS35333-37	96906	3-7	117
MS35333-37	96906	3-7	164
MS35333-37	96906	3-7	167
MS35333-37	96906	3-7	171
MS35333-37	96906	3-7	
MS35333-37	96906	3-7	176
MS35333-37	96906	3-7	180
MS35333-37	96906	3-7	
MS35333-37	96906	3-7	188
MS35333-37	96906	3-7	197
MS35333-38	96906	3-7	201
MS35333-39	96906	3-7	206
MS35333-71	96906	3-9	87
MS35333-71	96906	3-9	100
MS35333-71	96906	3-9	13
MS35333-71	96906	3-9	17
MS35338-135	96906	3-7	21
MS35338-135	96906	3-7	24
HS35338-135	96906	3-7	47
MS35338-135	96906	3-7	so50
MS35338-135	96906	3-7	53
MS35649-262	96906	3-7	56
MS35649-262	96906	3-7	59
HS35649-262	96906	3-7	160
HS35649-262	96906	3-7	184
MS35649-264	96906	3-9	194
MS35650-3254	96906	3-7	202
MS51861-120	96906	3-9	18
MS51861-220	96906	3-9	76
MS51957-35	96906	3-7	3
MS51958-26	96906	3-7	7
MS51958-26	96906	3-7	163
MS51958-26	96906	3-7	179
MS51958-26	96906	3-7	187
MS51958-26	96906	3-7	196
MS51958-28	96906	3-7	200
MS51958-28	96906	3-7	205
HS51958-28	96906	3-7	40
MS51958-28	96906	3-7	61
MS51958-28	96906	3-7	155
MS51958-30	96906	3-7	166
MS51958-30	96906	3-7	170
MS51958-30	96906	3-7	116
MS51958-30	96906	3-7	159
MS51958-30	96906	3-7	175
MS51958-41	96906	3-7	183
MS51958-77	96906	3-7	193
MS51963-34	96906	3-7	190
MS51963-34	96906	3-7	132
MS51963-34	96906	3-7	11
MS51963-34	96906	3-7	102
MS51963-34	96906	3-7	119
NAS1351-04-4	80205	3-7	148
NAS1351-04-4	80205	3-7	151
NAS1351-04-4	8020s	3-7	29
NAS1351-04-4	80205	3-7	31
NAS1351-04-4	80205	3-7	33
NAS1351-04-4	80205	3-7	35
NAS1351-04-4	80205	3-7	46
NAS13S1-04-4	80205	3-7	49
NAS1351-04-4	80205	3-7	52
NAS1351-04-6	80205	3-7	55
NAS1351-04-6	80205	3-7	58
NAS1351-3-12	80205	3-7	208
NAS1351-3-28	80205	3-7	210
NAS1351-3-6	80205	3-7	21
NAS13S1-3-6	80205	3-7	104
NAS1351-4-10	80205	3-7	98
NAS1351-4-10	80205	3-7	216
NAS13S1-4-10	80205	3-7	16
			18
			65
NAS1351-4-10	80205	3-7	78
NAS1351-4-10	80205	3-7	89
NAS1351-4-10	80205	3-7	91
NAS1351-4-12	8020S	3-7	128
NAS13S1-4-16	80205	3-7	75
NAS1351-4-20	80205	3-7	134
NAS1351-4-20	80205	3-7	137
NAS1351-5-20	80205	3-7	63
NAS1351-6-6	80205	3-7	38
NAS1351-6-8	80205	3-7	124
NAS1351-8-10	80205	3-7	72
NAS1351-8-6	80205	3-7	5
NAS1351-8-6	80205	3-7	7
NAS1351-8-6	80205	3-7	85
NAS608C412	80205	3-7	93
N68X	26667	3-7	189
P26-4-1/4	99105	3-7	22
P26-4-1-4	99105	3-7	126
RF754	13619	3-7	177
R20FF	21760	3-7	94
S68-3	75376	3-7	10
S68-3	75376	3-7	118
T202	71450	3-7	152
T207	71450	3-7	149
WSD1750-14	04155	3-7	97
120XL037	71176	3-7	112
140J1	71785	3-7	172
140J1	71785	3-7	185
1604-42	97945	3-7	36
1604-42	97945	3-7	10S
181	83330	3-7	157
1919C	72512	3-7	147
1919C	72512	3-7	150
192P22492	80183	3-7	68
2-10026	82084	3-7	2
2FA53-73TABS	73559	3-7	139
215396	30120	3-7	214
21S397	30120	3-7	213
215477	30120	3-7	211
223140-10	30120	3-7	169
223140-2	30120	3-7	192
223140-4	30120	3-7	182
223140-6	30120	3-7	15
223632	30120	3-7	217
223633	30120	3-7	41
223635-1	30120	3-7	84
223636-1	30120	3-7	136
223636-2	30120	3-7	133
223638-1	30120	3-7	120
223638-2	30120	3-7	13
223639-1	30120	3-7	122
223639-2	30120	3-7	12
223647	30120	3-7	123
223648-1	30120	3-7	
223648-11	30120	3-7	129
223648-12	30120	3-7	130
223648-13	30120	3-7	127
223649-1	30120	3-7	17
223649-2	30120	3-7	15
223651	30120	3-7	77
223652	30120	3-7	25
2236S3	30120	3-7	101
223654	30120	3-7	111
223655	30120	3-7	103
223656	30120	3-7	62
223657	30120	3-7	95
2236S8-1	30120	3-7	67
223658-1	30120	3-8	31
223659	30120	3-7	106
223660	30120	3-7	73
223661	30120	3-7	90
223662	30120	3-7	88
223663	30120	3-7	37
223664	30120	3-7	19
223665-1	30120	3-7	43
223666-1	30120	3-7	44
223667	30120	3-7	80
223669	30120	3-7	69
223670	30120	3-7	82
223671	30120	3-7	4
223672-1	30120	3-7	24
223672-12	30120	3-7	23

NATIONAL STOCK NUMBER AND PART NUMBER INDEX

PART NUMBER	FSCM	FIG. NO.	ITEM NO.
223648-14	30120	3-7	92
223668	30120	3-7	108
223672-13	30120	3-7	20
223673-1	30120	3-7	8
223674	30120	3-7	6
223675	30120	3-7	60
223676	30120	3-7	39
223677	30120	3-7	215
223678	30120	3-7	178
223679	30120	3-7	165
223680	30120	3-7	162
223681	30120	3-7	195
223682	30120	3-7	186
223683	30120	3-7	199
223684	30120	3-7	154
223685	30120	3-7	131
230XL037	71176	3-7	113
23800006	07829	3-8	51
26800009	07828	3-8	45
26800018	07829	3-8	40
26800026	07829	3-8	34
27E122	77342	3-7	158
27E122	77342	3-7	174
30099-0	28107	3-7	142
30102-0	28107	3-7	140
313.250	75915	3-7	146
313.500	75915	3-7	145
313002	75915	3-7	144
32072-0	28107	3-7	141
32800088	07829	3-8	4
33800005	07829	3-8	29
342028	75915	3-7	143
34700010	07829	3-8	57
37TB2	81349	3-7	191
37TB4	81349	3-7	181
41700006	07829	3-8	8
42D3BEPME4	07829	3-7	64
42D3BEPME4	07829	3-8	1
43100106	07829	3-9	2
43300001	07829	3-7	156
43300024	07829	3-9	4
43300050	07829	3-9	14
43300052	07829	3-9	26
43300085	07829	3-7	203
43300126	07829	3-9	S
43300128	07829	3-9	22
43300129	07829	3-9	15
43300132	07829	3-9	19
43300145	07829	3-9	8
43300156	07829	3-9	25
43400056	07829	3-9	31
43400065	07829	3-9	11
43400066	07829	3-9	10
45200003	07829	3-9	9
45500035	07829	3-9	30
45600016	07829	3-9	6
49200010	07829	3-8	22
49300003	07829	3-8	16
49500011	07829	3-8	20
SKSPS1-ALS11N	12532	3-7	71
51400001	07829	3-8	25
51400002	07829	3-8	54
53100003	07829	3-8	24
53100007	07829	3-8	14
54100004	07892	3-8	30
54100029	07829	3-8	58
54100039	07829	3-9	29
54100040	07829	3-8	3
54100040	07829	3-8	19
54100048	07829	3-8	17
54123255	07829	3-8	5
54123263	07829	3-8	28
54123265	07829	3-8	27
54200006	07829	3-8	7
54304558	07829	3-8	56
54405434	07829	3-9	28
54500001	07829	3-8	23
54500007	07829	3-8	39
54606510	07829	3-8	50
55100002	07829	3-8	53
55100004	07829	3-8	33
55100004	07829	3-8	36
55100004	07829	3-8	38
55100004	07829	3-8	42
55100004	07829	3-8	44
55100005	07829	3-8	47
55100008	07829	3-8	6
55100010	07829	3-8	49
55105681	07829	3-8	9
55105681	07829	3-8	11
55105681	07829	3-8	13
55200002	07829	3-8	52
55200004	07829	3-8	32
55200004	07829	3-8	35
55200004	07829	3-8	37
55200004	07829	3-8	41
55200004	07829	3-8	43
55200005	07829	3-8	48
55200005	07829	3-8	46
55320289	07829	3-8	10
55320289	07829	3-8	12
55518728	07829	3-8	18
57100004	07829	3-8	2
57400001	07829	3-8	21
57600041	07829	3-8	55
57600067	07829	3-9	27
57700005	07829	3-8	26
59300001	07829	3-8	59
6-140	71785	3-7	114
9000-100-0019	72982	3-7	198
995-10A	44655	3-7	153

By Order of the Secretary of the Army:

E. C. MEYER
General United States Army
Chief of Staff

Official:

J. C. PENNINGTON
Major General, United States Army
The Adjutant General

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The Metric System and Equivalents

Linear Measure

1 centimeter = 10 millimeters = .39 inch
1 decimeter = 10 centimeters = 3.94 inches
1 meter = 10 decimeters = 39.37 inches
1 dekameter = 10 meters = 32.8 feet
1 hectometer = 10 dekameters = 328.08 feet
1 kilometer = 10 hectometers = 3,280.8 feet

Weights

1 centigram = 10 milligrams = .15 grain
1 decigram = 10 centigrams = 1.54 grains
1 gram = 10 decigram = .035 ounce
1 dekagram = 10 grams = .35 ounce
1 hectogram = 10 dekagrams = 3.52 ounces
1 kilogram = 10 hectograms = 2.2 pounds
1 quintal = 100 kilograms = 220.46 pounds
1 metric ton = 10 quintals = 1.1 short tons

Liquid Measure

1 centiliter = 10 milliliters = .34 fl. ounce
1 deciliter = 10 centiliters = 3.38 fl. ounces
1 liter = 10 deciliters = 33.81 fl. ounces
1 dekaliter = 10 liters = 2.64 gallons
1 hectoliter = 10 dekaliters = 26.42 gallons
1 kiloliter = 10 hectoliters = 264.18 gallons

Square Measure

1 sq. centimeter = 100 sq. millimeters = .155 sq. inch
1 sq. decimeter = 100 sq. centimeters = 15.5 sq. inches
1 sq. meter (centare) = 100 sq. decimeters = 10.76 sq. feet
1 sq. dekameter (are) = 100 sq. meters = 1,076.4 sq. feet
1 sq. hectometer (hectare) = 100 sq. dekameters = 2.47 acres
1 sq. kilometer = 100 sq. hectometers = .386 sq. mile

Cubic Measure

1 cu. centimeter = 1000 cu. millimeters = .06 cu. inch
1 cu. decimeter = 1000 cu. centimeters = 61.02 cu. inches
1 cu. meter = 1000 cu. decimeters = 35.31 cu. feet

Approximate Conversion Factors

To change	*To*	*Multiply by*	*To change*	*To*	*Multiply by*
inches	centimeters	2.540	ounce-inches	newton-meters	.007062
feet	meters	.305	centimeters	inches	.394
yards	meters	.914	meters	feet	3.280
miles	kilometers	1.609	meters	yards	1.094
square inches	square centimeters	6.451	kilometers	miles	.621
square feet	square meters	.093	square centimeters	square inches	.155
square yards	square meters	.836	square meters	square feet	10.764
square miles	square kilometers	2.590	square meters	square yards	1.196
acres	square hectometers	.405	square kilometers	square miles	.386
cubic feet	cubic meters	.028	square hectometers	acres	2.471
cubic yards	cubic meters	.765	cubic meters	cubic feet	35.315
fluid ounces	milliliters	29,573	cubic meters	cubic yards	1.308
pints	liters	.473	milliliters	fluid ounces	.034
quarts	liters	.946	liters	pints	2.113
gallons	liters	3.785	liters	quarts	1.057
ounces	grams	28.349	liters	gallons	.264
pounds	kilograms	.454	grams	ounces	.035
short tons	metric tons	.907	kilograms	pounds	2.205
pound-feet	newton-meters	1.356	metric tons	short tons	1.102
pound-inches	newton-meters	.11296			

Temperature (Exact)

°F	Fahrenheit temperature	5/9 (after subtracting 32)	Celsius temperature	°C

PIN: 21603