REPLACING PAGE ADDENDUM
Filing Instructions:

1. REMOVE FROM THE SECTION THE PAGES NUMBERED THE SAME AS THOSE ATTACHED TO THIS PINK SHEET.
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ADDENDUM 034-355-701
Issue 1, April 1971
AT&TCo Standard

RECORD-REPRODUCE MECHANISM

KS-19124 L2

REQUIREMENTS AND ADJUSTING PROCEDURES

1. GENERAL

1.001 This addendum supplements Section 034-355-701, Issue 3. The attached pages must be inserted in the section in accordance with the filing instructions above.

1.002 This addendum is issued to revise 3.001 and 3.01(a). This addendum does not affect Equipment Test List.

Attached:

Page 7 dated April 1971, reissued
Page 8 dated April 1971, revised
Page 9 dated April 1971, revised
Page 10 dated April 1971, reissued

3. ADJUSTING PROCEDURES

The following changes apply to Part 3 of the section:

(a) 3.001—revised

(b) 3.01(a)—revised

RECORD-REPRODUCE MECHANISM

KS-19124 L2

REQUIREMENTS AND ADJUSTING PROCEDURES

1. GENERAL

1.01 This section contains operating requirements and adjusting procedures for the KS-19124 L2 record-reproduce mechanism which is used initially for recording and monitoring in automatic operator training at the 100A traffic service position.

1.02 This section is reissued to change title and to include additional and changed maintenance information for the KS-19124 L2 record-reproduce mechanism. Since this reissue covers a general revision, arrows ordinarily used to indicate changes have been omitted.

1.03 The KS-19124 L2 record-reproduce mechanism has facilities for reproducing audio-frequency signals and is designed to operate from a 115-volt 60-cps ac power source. The record-reproduce mechanism requires 1/4-inch magnetic recording tape and can be operated in tape speeds of 3-3/4 or 7-1/2 inches per second (ips). Standard 5-inch or 7-inch diameter tape reels shall be used with this mechanism.

1.04 The KS-19124 L2 record-reproduce mechanism (Fig. 1) is cabinet mounted and is associated with the 100A traffic service desk.

1.05 Section 020-010-711 covers general requirements and definitions for additional information necessary for proper application of requirements described in Part 2.

1.06 *Asterisk (*):* Requirements are marked with an asterisk when checking them would necessitate dismantling or dismounting apparatus or would affect adjustments. Ordinarily these checks need not be made unless the apparatus or part is made accessible for other reasons or unless its performance indicates that such a check is advisable.

1.07 One drop of oil, as referred to in this section, is the amount of oil discharged from the nozzle of a 486A oil can or of a KS-14796 oil can when the sides are depressed once or when the pump is operated until a drop is released from the nozzle.

1.08 Before any adjustment, lubrication, or cleaning operation is performed, the record-reproduce mechanism power switch (Fig. 2) must be operated to OFF or the mechanism must be placed in manual condition if power is required to perform checking and adjustment operations. Any recording tape on the mechanism must be removed, identified, and placed in its container.

1.09 The protective screen (Fig. 3) covering drive motor and capstan assemblies must be in place at all times except when removal is necessary for the performance of maintenance operations. Make sure, upon completion of maintenance operations, that the screen is reinstalled before record-reproduce mechanism is put into operation.

2. REQUIREMENTS

2.01 *Cleaning*

(a) The record-reproduce mechanism should be given a general cleaning once weekly. The equipment, front and rear, shall be free of oil, grease, and dust. Oil or grease should always be removed from painted surfaces as soon as practical to prevent discoloration of the finish.

(b) Capstan idler (Fig. 2) should be cleaned weekly to remove tape oxide deposits.

(c) Capstan and tape guide (Fig. 2) and tape guides (Fig. 4) should be cleaned daily to free them from tape oxide, dust, and all other foreign material.

(d) Head assembly (Fig. 4) should be cleaned at least once during each eight hours of actual operation. Clean in accordance with specific procedures as described in 3.01(d).

(e) Pulley surfaces on drive motor flywheel and capstan flywheel (Fig. 5) should be cleaned after 500 hours running time to remove oil and grease film.

(f) Clean brake drums (Fig. 6) after 500 hours running time to remove brake lining residue and grease film.

2.02 ***Lubrication***

(a) Unless otherwise specified, the record-reproduce mechanism should be lubricated after 2000 hours of use or once a year, whichever occurs first.

(b) A record shall be kept of the date of lubrication of the record-reproduce mechanism.

(c) The following parts shall be lubricated with KS-16326 oil:

(1) Drive motor bearings (two) — Five drops to each bearing after 6000 hours of use or once a year, whichever comes first

(2) Capstan bearings (two) — Five drops

(3) Capstan idler (Fig. 2) — One drop

*(4) Clutch belt separator pulley (Fig. 5) — One drop

(5) Belt idler pulley (Fig. 5) — One drop.

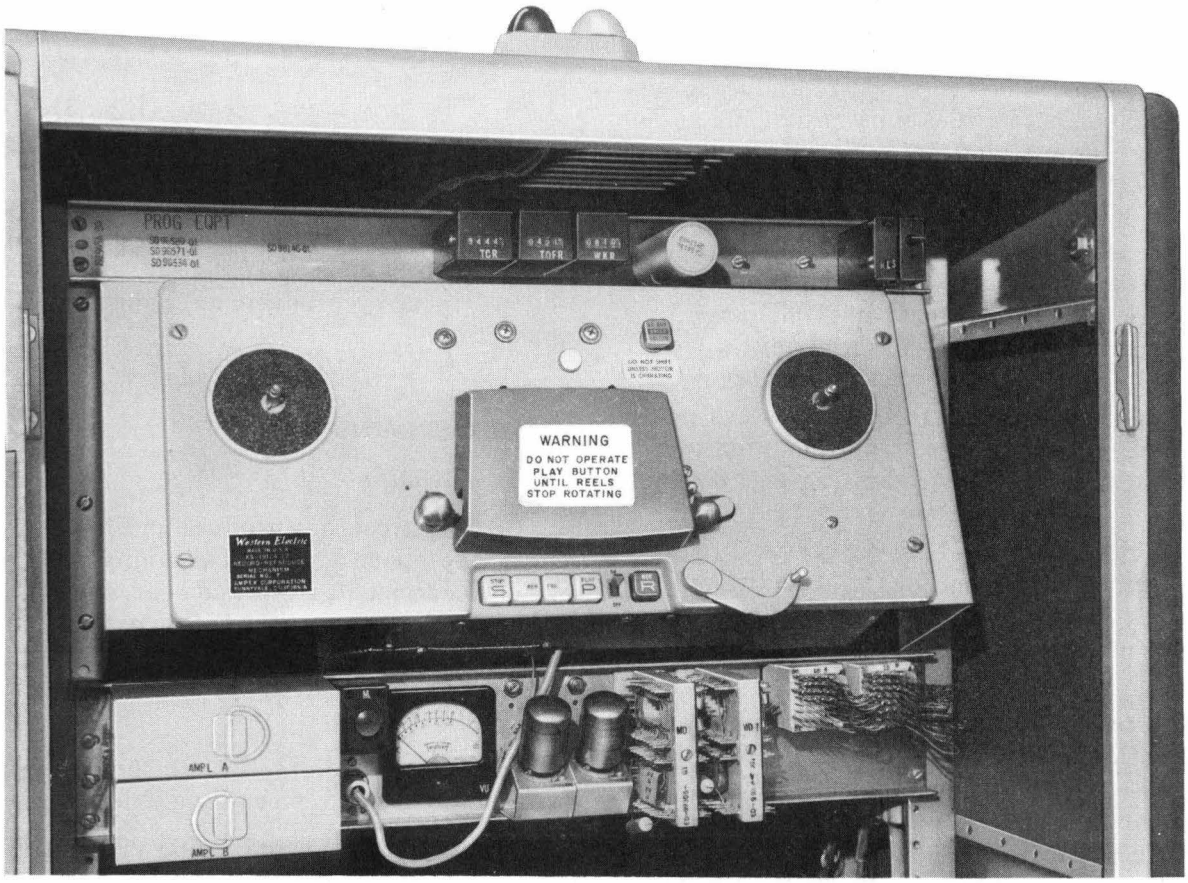

Fig. 1 — KS-19124 Record-Reproduce Mechanism — Cabinet Mounted

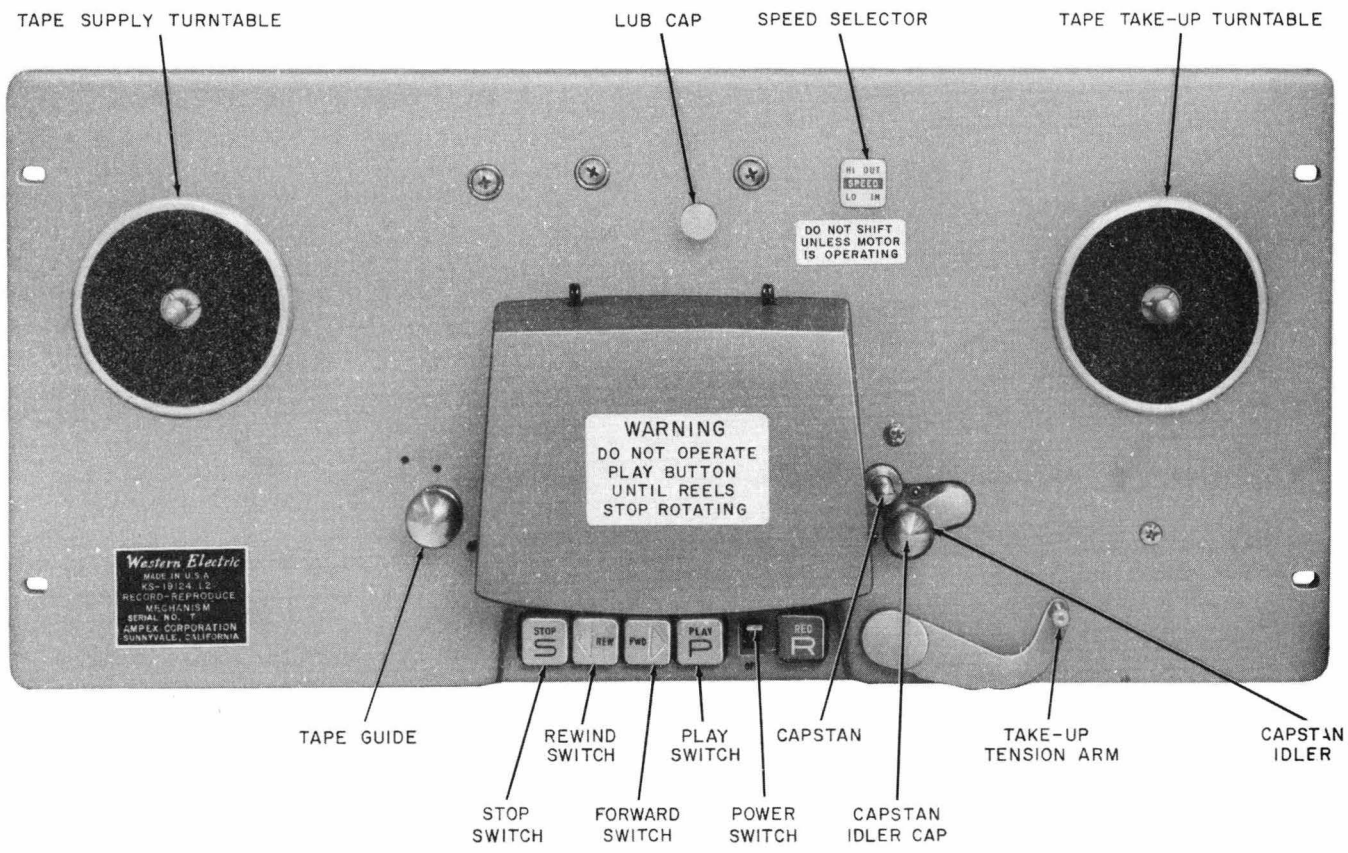

Fig. 2 — KS-19124 L2 Record-Reproduce Mechanism

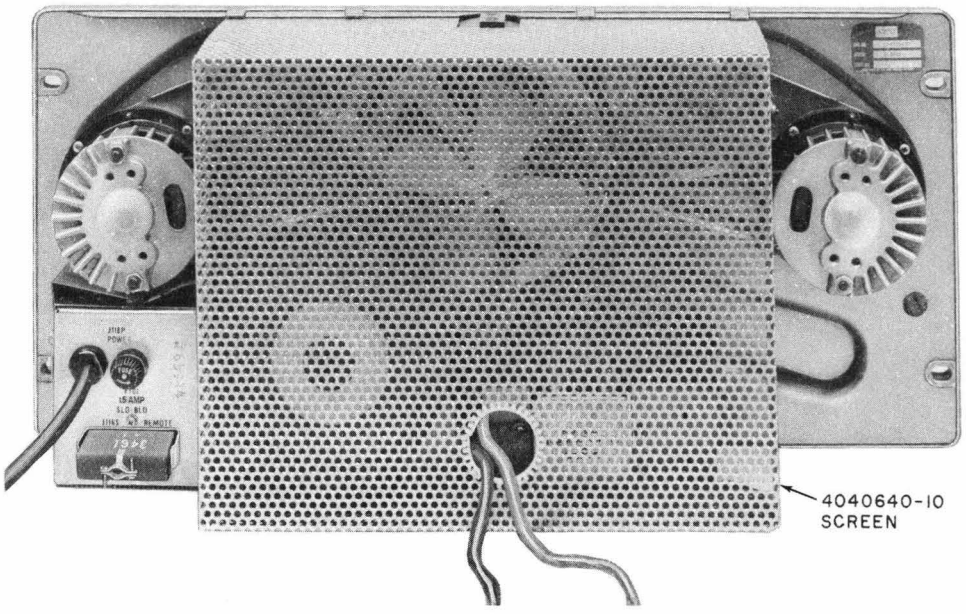

Fig. 3 — KS-19124 L2 Record-Reproduce Mechanism — Rear View

(d) The following parts shall be lubricated with KS-16729 oil:

*(1) Left clutch assembly — One drop to front bearing

*(2) Right clutch assembly — One drop to front bearing.

(e) Speed change assembly (Fig. 5) requires lubrication only if the shaft appears to bind. Lubricate each end of the shaft with KS-19094 L1 antiseize compound.

RECORD-REPRODUCE MECHANISM

2.03 *Tape Supply (Rewind) and Take-Up Clutch Tensions*

(a) The tape supply clutch tension (torque) shall be as follows:

Min 4 ounces
Max 5 ounces

To check this requirement, perform the following.

(1) Place an empty 7-inch reel with 2-1/4 inch hub on tape supply turntable (Fig. 2).

(2) Operate power switch to ON.

(3) Hold take-up tension arm up so that safety switch is activated. (A piece of masking tape will hold arm in position as though tape was threaded on record-reproduce mechanism.)

(4) Make a small loop at one end of a 30-inch piece of 12-ply twine.

(5) Attach loop to the TP110444 spring scale (0- to 32-ounce), and tape other end of twine to supply reel hub.

(6) Depress PLAY switch and allow clockwise rotation of supply reel to wind several turns of twine onto reel hub.

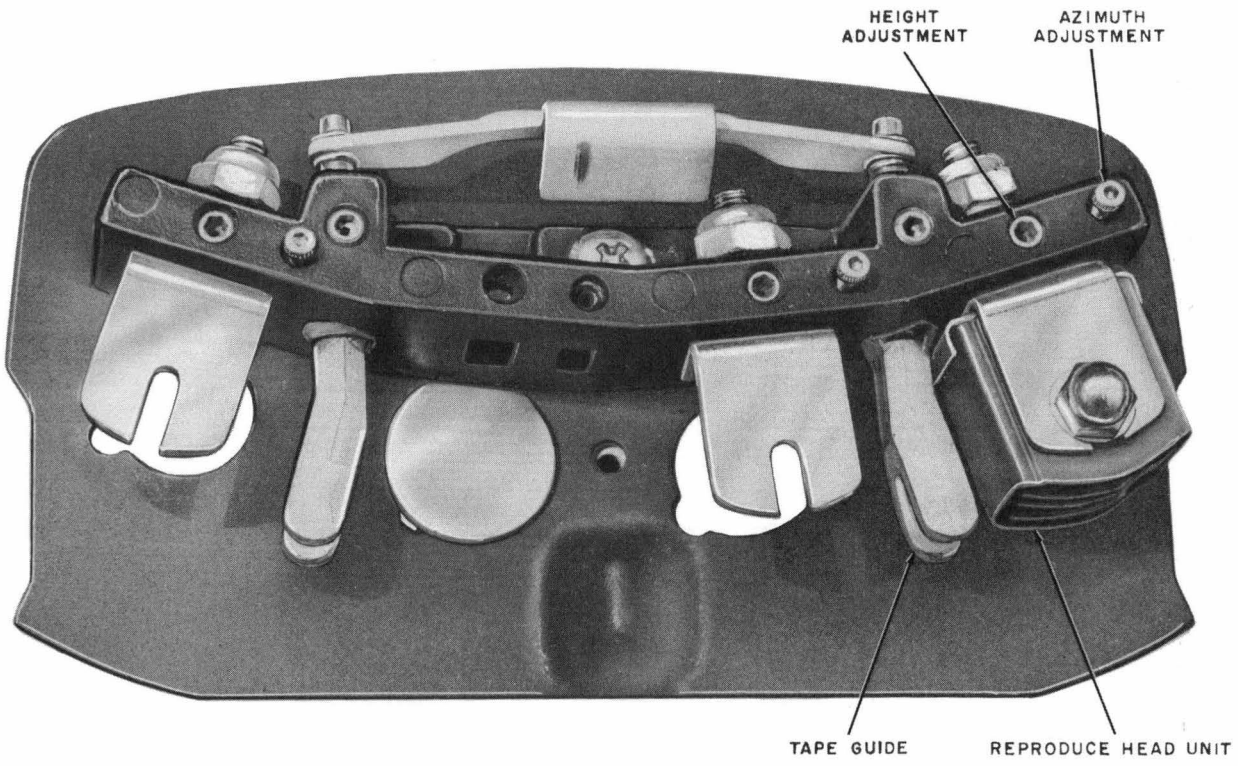

Fig. 4 — Typical Head Assembly

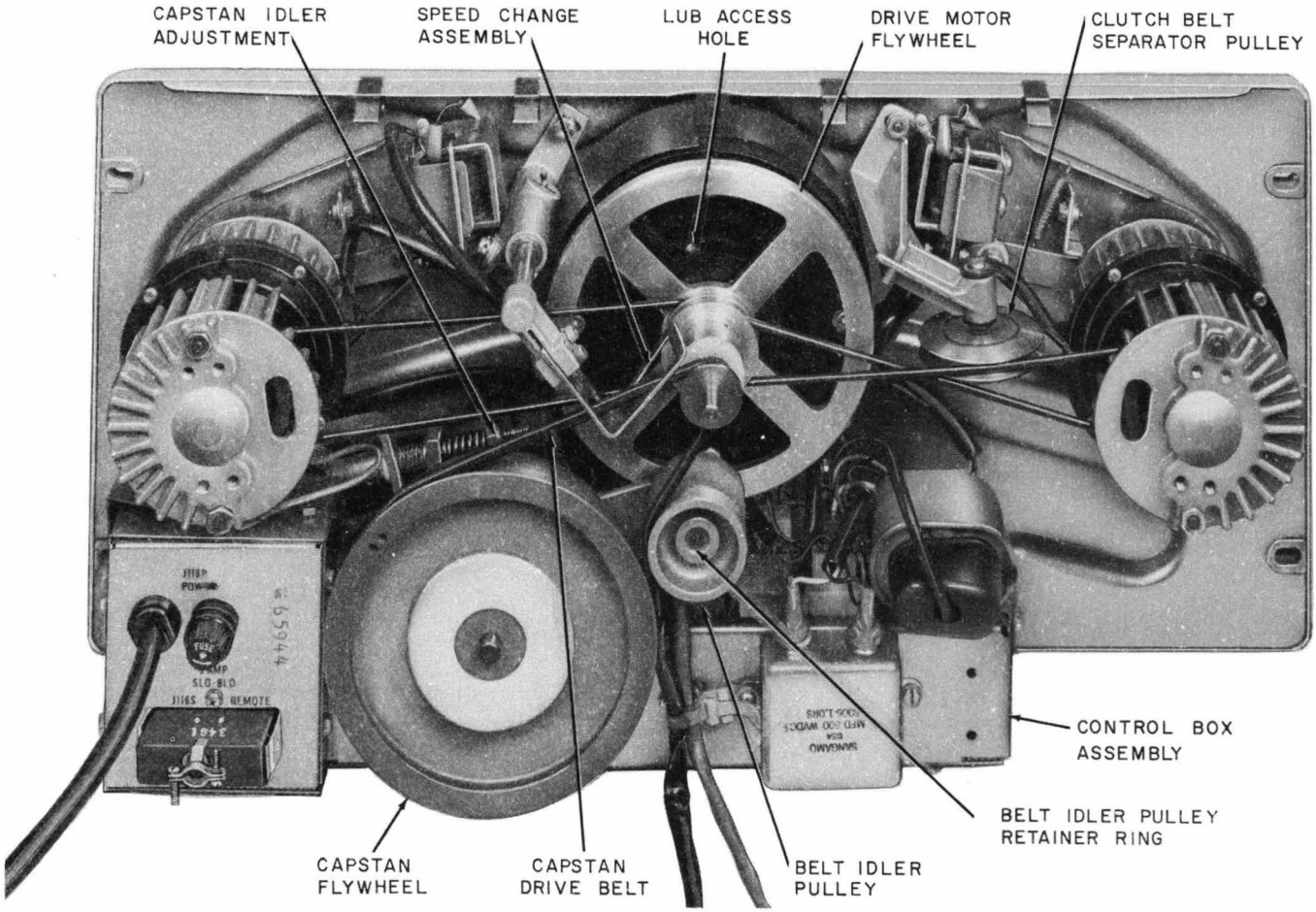

Fig. 5 — KS-19124 L2 Record-Reproduce Mechanism — Rear View — Screen and Fan Removed

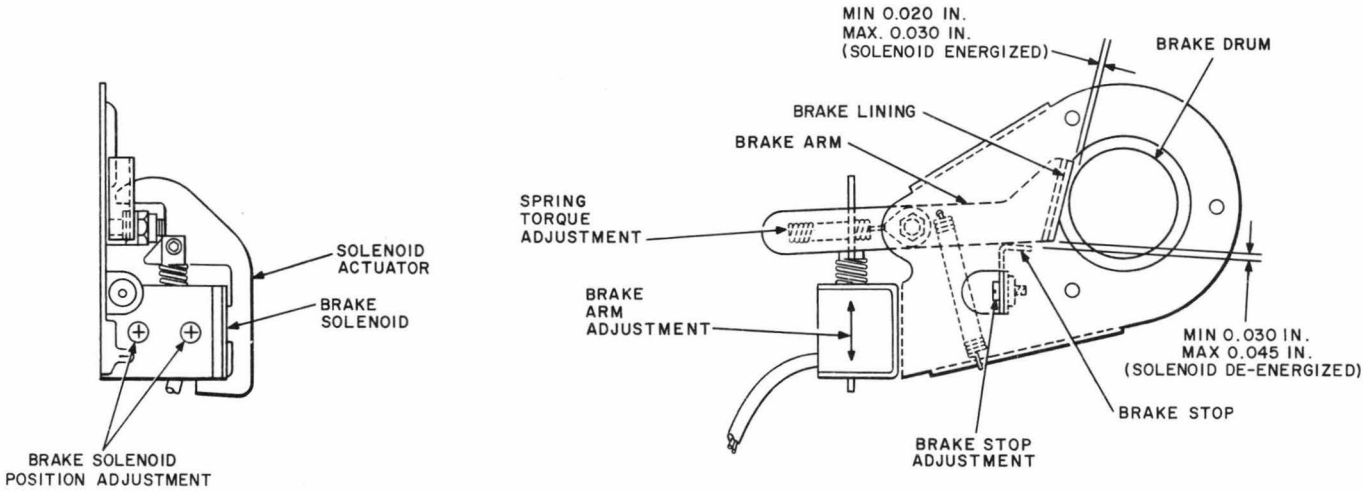

Fig. 6 — Brake Assembly

(7) Ensure that twine is parallel to plane of record-reproduce mechanism top and that twine is centered and not touching either reel flange.

(8) Let supply clutch slowly pull twine onto reel hub by following the clutch force with the spring scale.

(9) Using the technique described in (8), observe scale readings until a constant reading is obtained.

(b) The tape take-up clutch tension (torque) shall be as follows:

Min 4 ounces
Max 6 ounces

To check this requirement, perform the following.

(1) Place an empty 7-inch reel with 2-1/4 inch hub on tape take-up turntable (Fig. 2).

(2) Perform (a) (2) through (9) for take-up reel except that in (6) take-up reel will rotate counterclockwise.

2.04 ***Supply and Take-Up Brake Assemblies***

(a) Clearance between brake lining and brake drum (Fig. 6) shall be as follows:

Min 0.020 inch
Max 0.030 inch

To check this requirement, perform the following.

(1) Energize brake solenoid by placing record-reproduce mechanism in the PLAY mode with take-up tension arm (Fig. 2) held up so that the safety switch is activated.

(2) Use the 92-type gauges to check clearance between brake lining and brake drum (Fig. 6).

(3) De-energize brake solenoid by depressing STOP switch (Fig. 2).

(b) Clearance between brake arm and brake stop shall be as follows:

Min 0.030 inch
Max 0.045 inch

To check this requirement, ensure that brake solenoid is de-energized by depressing STOP switch and using the proper 92-type gauges to measure clearance between brake arm and brake stop (Fig. 6).

(c) Clearance between brake solenoid and solenoid actuator (Fig. 6) shall be such that actuator is not binding against brake solenoid, allowing smooth operation free of interference. Gauge by eye.

2.05 ***Turntable High Torque (Brake) Spring Tension***

(a) The supply turntable or the take-up turntable high torque spring tension shall be as follows:

Min 8 ounces
Max 10 ounces

To check requirement on supply turntable, perform the following.

(1) De-energize brake solenoid by depressing STOP switch (Fig. 2).

(2) Place an empty 7-inch reel with 2-1/4 inch hub on tape supply turntable.

(3) Make a small loop at one end of a 30-inch piece of 12-ply twine.

(4) Attach loop to a TP110444 spring scale (0- to 32-ounce), and tape other end of twine to supply reel hub.

(5) Manually rotate supply reel clockwise to wind several turns of twine onto reel hub.

(6) Pull the scale, making certain that twine does not touch either flange of reel. The turntable will rotate counterclockwise. Take a scale reading only when the turntable is in a steady motion because

the force required to overcome the static friction will produce a false and excessively high initial reading.

(b) To check requirement on take-up turntable, perform the following.

(1) Ascertain that brake solenoid is de-energized.

(2) Place an empty 7-inch reel with 2-1/4 inch hub on tape take-up turntable (Fig. 2).

(3) Perform (a)(3) through (6) for take-up turntable except that in (5) rotate reel counterclockwise so that turntable will rotate clockwise in (6).

2.06 ***Clearance Between Capstan Idler and Capstan:*** With power switch turned to OFF, clearance between capstan idler (Fig. 2) and capstan shall be as follows:

Min 7/64 inch
Max 9/64 inch

Gauge the clearance by using a 6-inch scale.

2.07 ***Capstan Idler Pressure:*** The pressure of capstan idler (Fig. 2) being applied against the capstan shall be necessary to cause the tape between capstan and capstan idler to slip at 26 ±4 ounces. To check this requirement, perform the following.

(1) With power switch turned to OFF, remove capstan drive belt (Fig. 5) from motor so that capstan will not rotate when power is applied.

(2) Thread a strip of 1-1/2 mil tape, two feet long (acetate or mylar), between capstan (Fig. 2) and capstan idler with oxide side of tape next to capstan.

(3) Operate power switch to ON, and depress PLAY switch.

(4) Attach the TP110444 spring scale (0- to 32-ounce) to take-up end of tape.

(5) Pull tape with scale in path of normal tape travel. The tape should start to slip when scale reads 26 ± 4 ounces.

(6) The capstan solenoid shall bottom at normal operating voltage (105 to 125 volts 60 cycles ac). To check this requirement, ensure that power is on and that equipment is in PLAY mode. Gently attempt to push capstan idler downward and away from capstan. If the attempt is successful, the capstan solenoid is not bottomed as required and an adjustment is necessary.

(7) Operate power switch to OFF, and replace capstan drive belt removed in (1).

2.08 ***Speed Change Assembly***

Caution: Do not operate speed selector (Fig. 2) unless capstan is rotating.

The speed change assembly (Fig. 5) shall operate smoothly as it mechanically positions capstan drive belt so that record-reproduce mechanism operates at high speed when speed selector is pulled to OUT and at low speed when speed selector is pushed to IN. Gauge by eye.

2.09 ***Demagnetization of Head Assembly:*** Head unit and tape guides shall be demagnetized when noise level increases or distortion occurs in the recorded signal. Gauge by ear.

2.10 ***Tape Guides:*** The azimuth adjustment of the tape guides (Fig. 4) shall be such that the tape does not ride diagonally across opposite corners of the lips of either tape guide. The tape shall travel well centered within each guide. To check this requirement, perform the following.

(1) Thread reel of test tape on tape transport.

(2) Operate power switch to ON; depress PLAY switch; and operate speed selector to HI SPEED (Fig. 2).

(3) Visually check tape movement through both tape guides (Fig. 4) to ensure that tape guides are properly guiding tape past the head unit.

2.11 *Reproduce Head Alignment*

(a) The height adjustment of head unit shall be such that the head laminations are centered between the top and bottom edges of the tape as the tape rides over the head with speed selector in HI SPEED. Gauge by eye.

(b) The azimuth adjustment of head unit shall be such that the record-reproduce mechanism will record and reproduce inputs free from distortion and extraneous sounds. Gauge by ear.

3. ADJUSTING PROCEDURES

3.001 *List of Tools, Gauges, Materials and Test Apparatus*

CODE OR SPEC. NO.	DESCRIPTION
TOOLS	
245	3/8-Inch Open Double-End Wrench
418A	5/16-Inch Open Double-End Wrench
486A	Oil Can
KS-6320	Orange Stick
◗ KS-14377 L5 ◖	Vacuum Cleaner
◗ KS-14377 L30	Nozzle (for use with vacuum cleaner) ◖
KS-14796	Oil Can
R-2670	3/32-Inch Allen Wrench
R-2671	1/8-Inch Allen Wrench
R-2958	5/64-Inch Allen Wrench
R-2959	1/16-Inch Allen Wrench
R-2975	Snap-Ring Pliers
GAUGES	
92A	0.010-Inch Gauge
92G	0.020-Inch Gauge
92J	0.030-Inch Gauge
92K	0.035-Inch Gauge
92M	0.045-Inch Gauge
92T	0.005-Inch Gauge
R-8550	6-Inch Steel Scale
TP110444	0- to 32-Ounce Spring Scale
—	P Long-Nose Pliers
—	4-Inch B Screwdriver
—	3-Inch D Screwdriver
MATERIALS	
KS-2423	Twill Cloth
KS-16326	Oil
KS-16729	Oil
KS-19094 L1	Antiseize Compound
—	Xylene and 0.1 Per Cent Aerosol, Ampex No. 823
—	7-Inch Empty Tape Reel with 2-1/4 Inch Hub
—	30-Inch Piece of 12-Ply Twine
—	2-Foot Strip of 1-1/2 Mil Tape (acetate or mylar)
—	Cotton Swab
—	Isopropyl Alcohol
—	Masking Tape
TEST APPARATUS	
—	Head Demagnetizer, Ampex No. 820 or equivalent
—	◗ Test Tape, Ampex No. 01-31321-01 ◖
—	Headphones
—	Voltmeter, ac, Ballentine 310A or equivalent

3.01 *Cleaning*

(a) ***General Cleaning:*** Use the ▶KS-14377 L5◀ vacuum cleaner with the ▶KS-14377 L30◀ small flexible rubber nozzle to remove any loose dust from face of record-reproduce mechanism and from surrounding equipment frame members. Remove any remaining residue by wiping with a clean KS-2423 twill cloth moistened with isopropyl alcohol, and then follow by wiping with a clean dry twill cloth.

(b) ***Capstan Idler***

Caution: Use only isopropyl alcohol when cleaning capstan idler (Fig. 2). Avoid touching rubber surface with fingers.

Use a KS-2423 twill cloth moistened with isopropyl alcohol to clean capstan idler. Thoroughly clean the rubber surface by removing all tape oxide and foreign residue.

(c) ***Capstan and Tape Guide (Fig. 2) and Tape Guides (Fig. 4):*** Clean capstan and tape guides with a KS-2423 twill cloth moistened with isopropyl alcohol.

(d) ***Head Assembly***

Caution: Do not use alcohol or solvent to clean head assembly because some cleaning solution will damage the material which binds the head laminations.

Clean head assembly (Fig. 4) with a cotton swab moistened with Xylene cleaning solution, Ampex No. 823. Use a KS-6320 orange stick as a swab handle to avoid scratching the head. Carefully remove all tape oxide and dust.

(e) ***Pulley Surfaces:*** Clean pulley surfaces on drive motor and capstan flywheels (Fig. 5) with a KS-2423 twill cloth moistened with isopropyl alcohol.

(f) ***Brake Drums:*** Clean brake drums (Fig. 6) with a KS-2423 twill cloth moistened with isopropyl alcohol. Do not touch after cleaning.

3.02 ***Lubrication:*** Apply the proper amount of oil, using the 486A or KS-14796 oil can. ***Do not overlubricate.*** If oil should spill on rubber surface of capstan idler (Fig. 2) or a belt (Fig. 5), clean it immediately using a KS-2423 twill cloth moistened with isopropyl alcohol. If oil should spill on the brake lining, the brake arm assembly must be replaced. Lubrication of those parts marked with an asterisk requires disassembly. Refer to Section 034-355-801 for disassembly and reassembly instructions.

(a) The following parts shall be lubricated with KS-16326 oil after specified intervals as described in 2.02.

(1) Drive motor bearings shall be lubricated with five drops of oil applied to each of two bearings. For access to rear motor bearing, rotate drive motor flywheel (Fig. 5) until lubrication access hole is visible through open section of flywheel. For access to front motor bearing, remove lub cap (Fig. 2) from front plate assembly, thus exposing lubrication access hole in drive motor housing.

(2) Lubricate both capstan bearings by depressing spring-loaded ball at the right of capstan (Fig. 2) and applying five drops of oil through opening.

(3) The capstan idler shall be lubricated with one drop of oil applied to idler bearing. Cover jaws of the P long-nose pliers with two thicknesses of KS-2423 twill cloth. Carefully grasp capstan idler cap (Fig. 2) with the cloth-covered pliers and turn it counterclockwise to remove cap, idler assembly, and associated shim washers. Lubricate the idler bearing as required. Remount idler assembly and cap in reverse order of removal being sure to reinstall the shim washers in the same positions from which they were removed.

*(4) Clutch belt separator pulley (Fig. 5) — One drop.

(5) The belt idler pulley shall be lubricated KS-16326 oil applied to the belt idler shaft. Use the snap-ring pliers to remove retainer ring (Fig. 5). Remove one retainer washer, one idler thrust washer, and the

belt idler pulley. Apply one drop of oil to the belt idler shaft. Reassemble belt idler pulley and associated parts in reverse order of removal.

(b) The following parts shall be lubricated with KS-16729 oil after specified intervals as described in 2.02:

*(1) Left clutch assembly — One drop to front bearing

*(2) Right clutch assembly — One drop to front bearing.

(c) Speed change assembly (Fig. 5) shall be lubricated by applying a small amount of KS-19094 L1 antiseize compound on each end of the shaft (speed change arm) and by pulling the shaft back and forth five or six times to work the compound into the bearings. Wipe off any excess compound using a KS-2423 twill cloth.

RECORD-REPRODUCE MECHANISM

3.03 ***Tape Supply (Rewind) and Take-Up Clutch Tensions***

(a) To adjust tape supply clutch tension, use the 3-inch D screwdriver to loosen screw holding slider of supply tension R106 (Fig. 7) located in control box assembly (Fig. 5). Adjust the slider on R106 until a scale reading indicates that requirement 2.03(a) is met, and then tighten screw holding slider.

(b) To adjust tape take-up clutch tension, use the 3-inch D screwdriver to loosen screw holding slider of take-up tension R107 (Fig. 7) located in control box assembly (Fig. 5). Adjust the slider on R107 until a scale reading indicates that requirement 2.03(b) is met, and then tighten screw holding slider.

3.04 ***Supply and Take-Up Brake Assemblies:*** Clearance requirements and adjustments are identical for the supply and take-up brake assemblies.

(a) To meet requirement of clearance between brake lining and brake drum, adjust brake as follows.

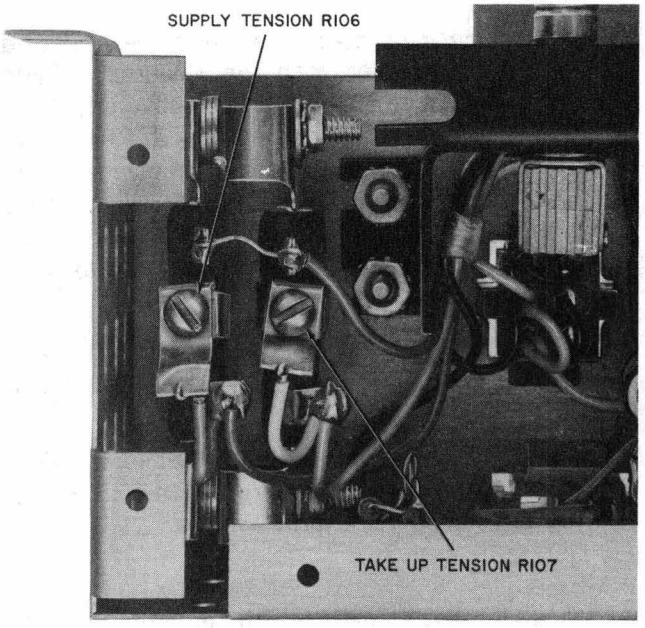

Fig. 7 — Tape Tension Adjustment

(1) With record-reproduce mechanism in PLAY mode as described in 2.04(a), use the 4-inch B screwdriver to loosen the two screws holding brake solenoid (Fig. 6).

(2) Adjust position of brake solenoid until the proper clearance is measured between brake lining and brake drum. Use the proper 92-type gauges to measure clearance requirement. Gauge by eye to ensure that solenoid actuator does not interfere with or bind against brake solenoid.

(3) Tighten the two screws to secure brake solenoid.

(4) De-energize brake solenoid by depressing STOP switch.

(b) To meet requirement of clearance between brake arm and brake stop, adjust brake stop as follows.

(1) Ensure that requirement 2.04(a) is met.

(2) With power switch turned to OFF, use the 5/16-inch open double-end wrench to loosen screw holding brake stop (Fig. 6).

(3) Adjust position of brake stop until proper clearance is measured between brake arm and brake stop, using the proper 92-type gauges.

(4) Tighten screw to secure brake stop, and recheck clearance.

(c) To meet requirement of clearance between brake solenoid and solenoid actuator, adjust brake solenoid as follows.

(1) With power switch turned to OFF, use the 4-inch B screwdriver to loosen two screws holding brake solenoid (Fig. 6).

(2) Gauge by eye to adjust position of brake solenoid so that no interference exists between brake solenoid and solenoid actuator.

(3) Tighten the two screws to secure solenoid.

(4) Recheck requirement 2.04(a).

3.05 ***Turntable High Torque (Brake) Spring Tension***

(a) To achieve tension requirement for supply turntable, use the P long-nose pliers to grasp the end of high torque spring (Fig. 6) and insert the spring hook into the appropriate clearance hole in the end of brake arm.

(b) To meet requirement for tape take-up turntable, repeat (a) above except that checking tension requirement shall be in accordance with 2.05(b).

3.06 ***Clearance Between Capstan Idler and Capstan:*** Use the 4-inch B screwdriver to loosen two screws securing capstan solenoid stop on top of capstan solenoid. Adjust position of solenoid stop until the clearance between capstan idler and capstan is within the requirement. Tighten screws and recheck clearance.

3.07 ***Capstan Idler Pressure***

Note: The minimum line voltage to bottom capstan solenoid when it is hot (after 1/2-hour operation) will be greater than that required when it is cold. Therefore it is advisable to allow equipment to operate in the reproduce mode for 1/2-hour before making any necessary solenoid adjustments.

(1) With power switch turned to OFF, verify that clearance requirement 2.06 is met.

(2) Perform requirement check as described in 2.07(1) through (6).

(3) Use the 3/8-inch open double-end wrench to adjust self-locking nut (Fig. 5) until solenoid bottoms and capstan idler pressure meet requirement 2.07.

Note: Tightening nut increases pressure and loosening nut reduces pressure. Care must be taken in tightening, since too much tightening may prevent solenoid from bottoming.

(4) Operate power switch to OFF and replace capstan drive belt.

3.08 ***Speed Change Assembly***

Caution: Do not operate speed selector (Fig. 2) unless capstan is rotating.

If speed change assembly (Fig. 5) is operating intermittently or not at all, perform one or more of the following corrective actions as necessary to meet requirement.

(a) Reverse capstan drive belt (Fig. 5) so that the face formerly on belt idler pulley surface is now away from pulley. Check operation of speed change assembly. If operation is still intermittent, install new capstan drive belt so that correct belt curvature (Fig. 8) is in contact with idler pulley. Check operation of speed change assembly.

(b) If there is still insufficient tension on capstan drive belt, proceed as follows.

(1) Remove belt and rotate idler arm clockwise around capstan housing until arm touches control box assembly (Fig. 5), and then release idler arm. The arm should swing counterclockwise until the arm hits the shift fork (Fig. 9).

(2) If the action appears slow or the idler arm binds, it indicates insufficient clearance between the arm and the step on cap-

stan housing. To correct insufficient clearance, use the 1/8-inch Allen wrench to loosen screw (Fig. 10) holding idler arm retaining collar, and pull retaining collar down toward flywheel.

(3) There should be 0.005- to 0.010-inch endplay between idler arm and step on capstan housing. Use the proper 92-type gauges to check clearance. If necessary, adjust idler arm positioning until endplay clearance is achieved.

(4) Tighten screw to secure retaining collar and install capstan drive belt.

(5) Check operation of speed change assembly.

(c) If capstan drive belt does not track in center of capstan flywheel and drive motor pulley, use the 1/16-inch Allen wrench to loosen two socket head setscrews in motor pulley. Adjust pulley on motor shaft until belt tracks correctly and tighten setscrews. Check operation of speed change assembly.

(d) Check clearance between capstan flywheel and end of capstan housing.

Caution: There must be 0.005- to 0.010-inch endplay between flywheel and end of capstan housing. This is a manufacturer's requirement. If the clearance requirement is not met, refer condition to the supervisor.

(e) The clearance between the shift fork and the motor pulley shall be in accordance with clearance requirements shown in Fig. 9. Too much clearance will cause belt to shift sluggishly. Gauge by using 6-inch steel gauge.

3.09 ***Demagnetization of Head Assembly (Fig. 4):***

(1) Lift head cover.

(2) Operate power switch to OFF.

(3) Connect head demagnetizer to a power source of 110- to 120-volts alternating current.

(4) Bring tips of the demagnetizer in close proximity to, but not in contact with, head unit so that tips straddle the gap in the center of the head. Run tips up and down head several times; then slowly withdraw demagnetizer. Slow withdrawal is essential to proper demagnetization.

(5) Repeat (4) at tape guides.

(6) Disconnect the demagnetizer.

(7) Return head cover to its operating position.

3.10 ***Tape Guides:*** Use the 5/64-inch Allen wrench to loosen 2-56 hex socket head cap screw holding tape guide (Fig. 4). Rotate tape guide so that tape no longer rides on the corners and tighten screw to secure tape guide in proper azimuth position.

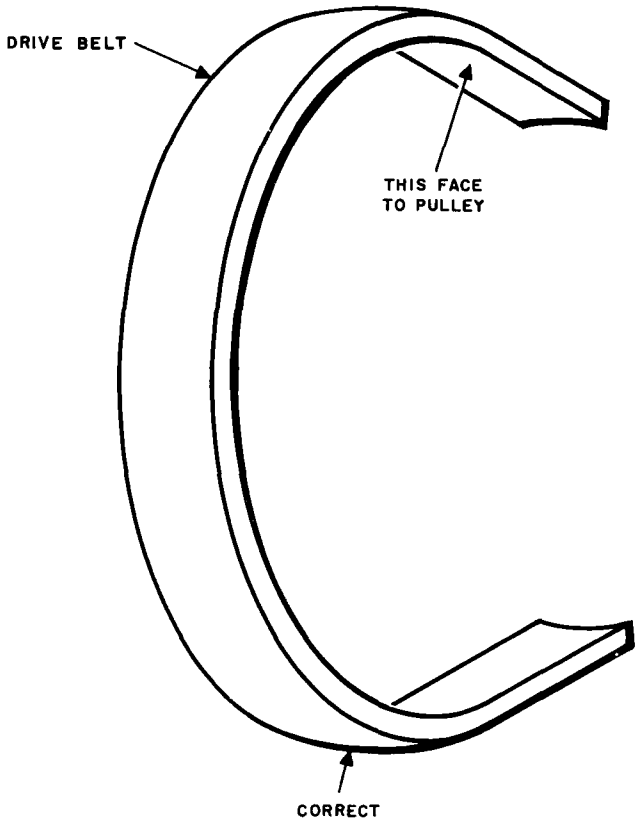

Fig. 8 — Belt Curvature

3.11 *Reproduce Head Alignment*

(1) Thread reel of 7-1/2 ips test tape, Ampex No. 01-31321-01, on record-reproduce mechanism; operate power switch to ON; depress PLAY switch; and operate speed selector to HI SPEED (Fig. 2).

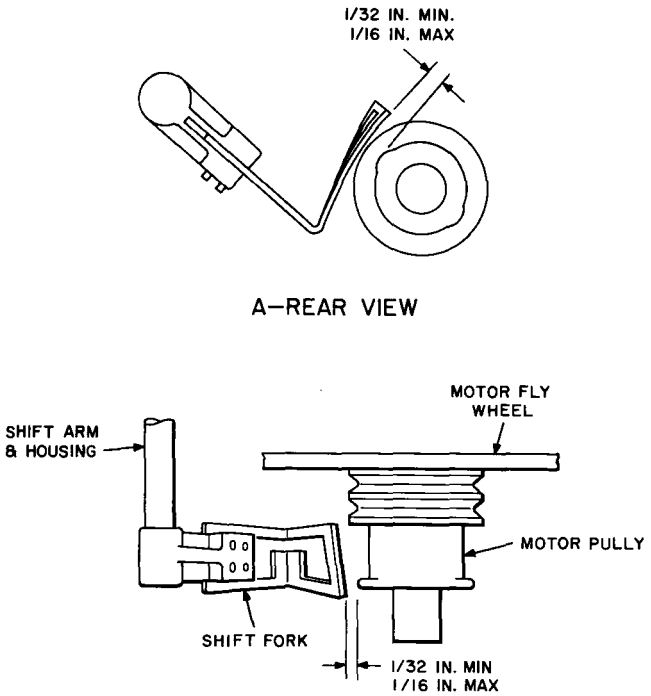

Fig. 9 — 3-3/4 or 7-1/2 Inches Per Second Shift Fork Adjustment

(2) Use the 3/32-inch Allen wrench to adjust the height adjustment setscrew on top of head assembly (Fig. 4) until height adjustment is approximately correct. Use the 5/64-inch Allen wrench to adjust the azimuth adjustment cap screw on top of head assembly until azimuth adjustment is, by visual inspection, approximately correct.

(3) Use the 3/32-inch Allen wrench to adjust the height adjustment setscrew so that the head laminations are just visible below the bottom edge of the tape.

(4) Carefully noting how many turns of the setscrew are required, adjust the height adjustment setscrew so that the head laminations are just visible above the top edge of the tape.

(5) Adjust the height adjustment setscrew half the number of turns noted in (4) so that the head laminations are centered between the top and bottom edges of the tape.

(6) Stop test tape.

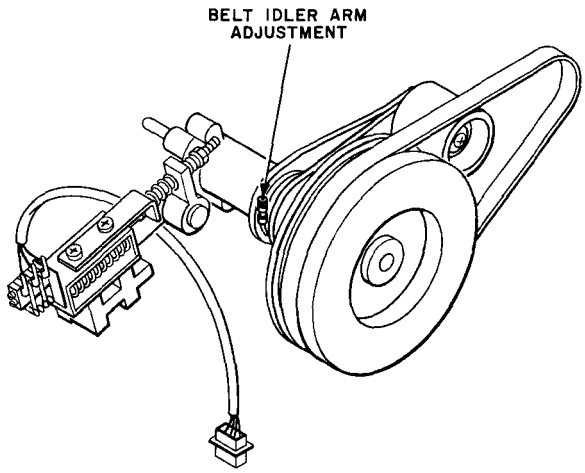

Fig. 10 — Capstan Assembly

(7) Rewind test tape to the beginning of the recording and operate power switch to OFF.

(8) Connect the ac voltmeter to head leads of channel A between pins 1 and 2 of the head cable plug.

(9) Operate power switch to ON; depress PLAY switch; and operate speed selector (Fig. 3) to HI SPEED. The first tone is a 700-cps reference tone. Adjust voltmeter scale factor for a convenient meter reading to check alignment and response.

(10) The next tone will be 15,000 cps. Use the 5/64-inch Allen wrench to adjust azimuth screw (Fig. 4) on head assembly for maximum voltmeter reading.

(11) Stop test tape, and then rewind. Connect the voltmeter between pins 4 and 5 of the head cable plug, and repeat (9) and (10) for channel B.

(12) Adjust for average between the two channels.

(13) Stop, rewind, and remove test tape.