

INSTRUCTIONS FOR INSTALLING AND ADJUSTING THE
161868, 161869, OR 164108 MODIFICATION KITS TO REDUCE
THE NOISE LEVEL OF ASR SETS INCORPORATING THE
MODEL 28 TRANSMITTER DISTRIBUTOR LBXD, LXD, OR
LCXD

The following chart pertains to Bell System only:

Unit	Teletype Code	Bell System Code
Transmitter Distributor	LBXD	28F, 28G
Transmitter Distributor	LXD	28E, 28H
Transmitter Distributor	LCXD	28B
Base	LCXB	28E, 28E-1, 28E-2, 28F, 28G
Cabinet	LAAC	28G, 28F
Keyboard	LAK	28A, 28B, 28D, 28E, 28F, 28G

1. GENERAL

This modification is intended primarily for use in ASR Sets whose location is such that it is desirable to reduce their noise level.

a. The kits consist of parts for field installation, designed to reduce the noise level of ASR Sets by damping, absorbing and reducing the generation and transmission of sounds within the cabinet.

(1) The 161868 Modification Kit is intended for use on ASR Sets having the LBXD Fixed Head, multi-contact transmitter distributor.

(2) The 161869 Modification Kit is intended for use on ASR Sets utilizing the LXD Fixed Head, single contact transmitter distributor.

(3) The 164108 Modification Kit is intended for use on ASR Sets utilizing the LCXD pivoted and fixed heads, multi-contact transmitter distributor.

b. Contents of Kits:

*Indicates change.

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Qty.	Part No.	Description	161868	164580	164581	164579	164582	161869	164108
1	72522	Felt Wicks	X				X		X
2	90436	Felt Wicks	X				X		X
1	111767	Washer	X				X		X
1	151631	Screw			X			X	
4	151722	Screw	X				X		X
4	154335	Screw	X				X		X
1	159287	Isolator	X	X					X
2	161301	Post	X	X					X
1	161853	Set of Felt Pads for LAAC Cabinet (listed in par. 1. c.)	X					X	X
1	161854	Set of Felt Pads for LXD Trans. Dist. (listed in par. 1. d.)						X	
1	161856	Set of Felt Pads for LBXD Trans. Dist. (listed in par. 1. e.)	X						
1	161857	Set of Felt Pads for LCXD Trans. Dist. (listed in par. 1. f.)							X
1	161858	Set of Felt Pads for LAK Keyboard Base (listed in par. 1. g.)	X			X		X	X
1	161866	Set of Parts for Keyboard Isolation (listed in par. 1. h.)	X			X		X	X
1	161867	LCXB Trans. Dist. Base Isolation S. O. P. (listed in par. 1. i.)	X	X					
1	161962	Print Drawing	X					X	X
1	163003	Gear with Insert, Helical 20T, Nylon			X			X	
1	163011	Gear, Helical - 23T, Nylon	X				X		X
2	163012	Gear, Helical - 46T, Nylon	X				X		X
1	163013	Gear, Helical - 24T, Nylon	X	X					X
1	163014	Gear, Helical - 48T, Nylon	X				X		X
1	163363	Idler Gear Bearing Stud	X				X		X
1	163584	Adhesive - 1 pint	X					X	X
1	164100	LCXB Trans. Dist. Base Isolation S. O. P. (listed in par. 1. i.)			X			X	
1	193565	Coupling with Set Screws	X					X	X
1	70401RM	Brush - 1 inch	X					X	X

c. 161853 Set of Pads for LAAC Cabinet

<u>Qty.</u>	<u>Part No.</u>	<u>Description</u>	<u>Qty.</u>	<u>Part No.</u>	<u>Description</u>
4	3598	Nut	1	160990	Pad, Right Side, Dome
4	76099	Washer, Flat	1	160991	Pad, Top Right, Door
1	160985	Pad, Left Side	1	160993	Pad, Back, Left Rear
1	160986	Pad, Right Side	1	160994	Pad, Top Middle, Door
1	160988	Pad, Base	1	160995	Pad, Top Left
1	160989	Pad, Left Side, Dome	1	161755	Pad, Right Front

d. 161854 Set of Pads for LXD

<u>Qty.</u>	<u>Part No.</u>	<u>Description</u>	<u>Qty.</u>	<u>Part No.</u>	<u>Description</u>
1	162016	Pad, Cross Bar	1	162019	Pad, Plate
1	162017	Pad, Housing			

e. 161856 Set of Pads for LBXD

<u>Qty.</u>	<u>Part No.</u>	<u>Description</u>	<u>Qty.</u>	<u>Part No.</u>	<u>Description</u>
1	161756	Pad, Cross Bar	1	162018	Pad, Plate
1	161765	Pad, Housing			

f. 161857 Set of Pads for LCXD

<u>Qty.</u>	<u>Part No.</u>	<u>Description</u>	<u>Qty.</u>	<u>Part No.</u>	<u>Description</u>
1	161764	Pad	1	162021	Pad
1	162020	Pad			

g. 161858 Set of Pads for LAK

<u>Qty.</u>	<u>Part No.</u>	<u>Description</u>
2	160987	Pad, Tape Container

h. 161866 Set of Parts for Keyboard Isolation

<u>Qty.</u>	<u>Part No.</u>	<u>Description</u>	<u>Qty.</u>	<u>Part No.</u>	<u>Description</u>
2	1274	Screw	1	163511	Plate
8	2191	Washer, Lock	1	163512	Bracket
4	151630	Screw	1	163585	Bracket Assem., Right
5	151722	Screw	1	163586	Bracket Assem., Left

i. 161867 and 164100 Sets of Parts for LCXB Base Isolation

<u>Qty.</u>	<u>Part No.</u>	<u>Description</u>	<u>161867</u>	<u>164100</u>
3	2669	Washer, Lock		X
4	2669	Washer, Lock	X	
3	74807	Nut	X	X
3	103305	Washer, Flat	X	X
4	105029	Washer, Flat	X	X
1	117366	Strap, Ground	X	X
1	151723	Screw	X	
3	163515	Stud, Shoulder	X	
6	163517	Bushing, Rubber	X	X
3	164101	Stud, Shoulder		X

j. One of the following sets of nylon speed change gears is required and must be ordered as a separate item for the desired speed of operation.

161293 Gear Set for 60 WPM operation
 161294 Gear Set for 75 WPM operation
 161295 Gear Set for 100 WPM operation

Contents of Gear Sets

<u>Qty.</u>	<u>Part No.</u>	<u>Description</u>	<u>161293</u>	<u>161294</u>	<u>161295</u>
1	159278	Gear, Helical, Driving - 14T	X		
1	159281	Gear, Helical, Driving - 17T		X	
1	159282	Gear with Disk, Driven - 93T		X	
1	159284	Gear, Helical, Driving - 20T			X
1	159285	Gear with Disk, Driven - 84T			X
1	159287	Isolator	X	X	X
1	159279	Gear with Disk, Driven - 96T	X		
2	161301	Post	X	X	X

k. Adjustments:

Any adjustment that may become disturbed as a result of this installation should be checked and remade, if necessary, according to the applicable adjustment bulletin.

l. Lubrication should be according to standard procedure. In general, a light film of grease should be applied to the teeth of the newly installed gears.

m. Reference will be made to the following bulletins for location of parts, assembly information and adjustments: (For Bell System only - see

standard Bell adjustments).

<u>Bulletin</u>	<u>Description</u>
250B	Adjustments and Lubrication - LAK, LPE, LAAC
243B	Adjustments and Lubrication - LBXD
1165B	Parts - LBXD
1169B	Parts - ASR Set
217B	Adjustments and Lubrication - LP
235B	Adjustments and Lubrication - LXD
254B	Adjustments and Lubrication - LCXD
1171B	Parts - LCXD

2. INSTALLATION

a. General

(1) The ASR Set to be modified should be moved to an area offering uncramped working conditions and adequate ventilation.

As components are removed from the LAAC Cabinet, they should be set aside safe from accidental damage or unnecessary handling. Hardware and parts that are to be retained and used again should be properly identified.

Provide ample ventilation while using the adhesive to mount the pads in order to dissipate the objectionable fumes and to hasten the evaporation of its flammable solvent.

(2) Following installation of the kit parts, reverse the disassembly procedure used in removing the part in order to reassemble it, unless instructed otherwise by the text.

b. Installation Procedure

(1) ASR Set Disassembly

(a) K-KT-T Designation Plate: Pull out the 154445 Control Knob and 154442 Control Switch Shaft. Remove the hardware under the knob that mounts the 158695 Designation Plate. Remove designation plate. Refer to Bulletin 1169B.

(b) Front Panel: Remove the two 111017 Screws from the left end of the 154496 Front Panel and loosen the 151526 Thumb Screw from the inside right end. Remove the panel. Do not lose the 151512 Noise Seal from the right end of panel. See Bulletin 1169B.

(c) Remove the typing unit in accordance with standard practice.

(d) LCXB Coupling Shaft, loosen the set screws and slide back the right 158020 Rubber Coupling on the 159843, 158013, or 159846 LCXB Coupling Shaft. (Bulletin 1169B)

(e) Keyboard Base: Remove the four 151549 Mounting Studs, unplug all connectors, and remove the LAK Keyboard Base. (Bulletin 1169B)

(f) LBXD or LCXD Housing (on sets so equipped):

1. For LBXD, remove the 160293 Front Cover from the LBXD by pulling it forward. (Bulletin 1169B)

2. For LCXD

a. Remove the 158684 Back Cover by removing the 111017 Screw, 2191 Lock Washer, and 7002 Washer. (See Bulletin 1169B)

b. Remove the two 111017 Screws, 2191 Lock Washers, and 7002 Washers which mount the 158685 Housing. Remove the housing after loosening the screw at the bottom, rear.

c. To remove the 158686 Plate with studs, remove the two 151693 Screws, 2191 Lock Washers, and 7002 Washers.

3. To remove the 160286 Cross Bar, remove the 82730 Shoulder Screw and the 151723 Screw with the 2669 Lock Washer and 117535 Flat Washer from the right end of the cross bar. Loosen the two 151631 Screws securing the left end of the cross bar. Remove the cross bar. See Bulletin 1169B.

(g) LBXD Transmitter Distributor (on sets so equipped): Remove the cover plate, front panel, top plate and transmitter distributor assembly.

(h) LXD Transmitter Distributor (on sets so equipped):

1. Remove the front panel in accordance with standard practice.

2. Remove the three 151632 Screws, 2191 Lock Washers and 125015 Flat Washers which mount the LXD. Unplug the connectors and remove the LXD. (Bulletin 1169B)

(i) LCXD Transmitter Distributor

1. Remove the four 1169 Screws with 110743 Lock Washers which secure the connectors. Disassemble the connectors and remove.

2. Remove the three 86850 Screws, 2669 Lock Washers, and 3438 Washers which mount the LCXD. Unplug connectors and remove LCXD. (Bulletin 1169B)

(j) LCXB Transmitter Distributor Base

1. On sets equipped with the LBXD: Remove and discard the 76279 Screws, 2449 Lock Washers and 71858 Flat Washers which mount the LCXB Base. Remove base. (Bulletin 1169B)

2. On sets equipped with the LXD: Remove and discard the 76279 Screws, 2449 Lock Washers and 71858 Flat Washers which mount the LCXB Base. Remove the base. (Bulletin 1169B). See paragraph 2. b. (2)(b)3. for LCXB Modification.

(k) Power Control Switch Shaft -- Remove the two 151152 Screws, 110743 Lock Washers and 104807 Flat Washers which attach the 154443 Shaft Arm to the 154444 Fork. Center the 154443 Shaft in the pivot hole in the LESU Electrical Service Unit and pull toward the front to clear the shaft from the pivot hole. The free end must then be moved to the right out from under the 154418 Flat Retaining Spring that is located under the 158678 Rear Base Rail in line with the pivot hole. The shaft can be removed from the cabinet following removal of the cradle assembly base rails. (Bulletin 1169B)

(l) Line Test Key Switch Shaft (if present). This switch shaft is disassembled the same as the Power Control Switch Shaft in (k) above. Refer to Bulletin 1169B for part numbers.

(m) Cradle Assembly Base Rails -- Remove the four 79890 Mounting Screws with 2449 Lock Washers and 71858 Flat Washers from the right and left mounting slots of the 158678 and 158679 Rear and Front Base Rails of the cradle assembly. Do not disturb the setting of the 158260 Right and Left Eccentrics located on the 158195 and 158196 Left and Right Base Rails. Remove the front and rear base rail assembly. It is not necessary to remove the left and right base rails. See Bulletin 1169B.

(n) Switch shafts discussed in paragraphs (k) and (l) may now be removed. Loosen the 107170 Set Screws and take the 158696 Knobs from the shafts. Move the rear end of the power control switch shaft to the right and the rear of the line test key switch shaft (if present) to the left to clear the LESU Chassis and slide the shafts towards the rear to clear the front bearing surface. Remove the shafts.

(o) Base Pad -- Remove and discard the 154454 Spun Glass Base Pad. Due to the irritating property of spun glass avoid inhaling the dust

particles and protect the hands with gloves when discarding the pad. (Bulletin 1169B)

(2) LCXB Base Workover

(a) On sets equipped with LBXD or LCXD

1. Remove and discard the 151632 Screw and 2191 Lock Washer that mount the 159836 Driving Gear. Remove and discard the gear. (Bulletin 1169B)

2. Some earlier LCXB Bases have .312 inch diameter mounting holes. In this event follow instructions of paragraph 2. b. (2)(b)2., 3. and 4. below.

3. Install Nylon LBXD Driving Gear -- Install the 159287 Isolator over the hub of the 163013 Nylon Gear (24 teeth) pressing the extensions down into the holes in the gear hub. Apply a light film of KS7471 Grease to the LBXD Shaft from the front bearing to the front end of the shaft. Slip the gear and isolator assembly over the greased shaft with the gear teeth toward the ball bearing and the hub with isolator away from the bearing. Secure the gear by inserting the two 161301 Posts into the holes in the isolator and screw them down into the tapped holes in the 159838 Shaft. Tighten the posts and apply a light film of KS7471 Grease to the gear teeth. See attached Figure 1.

(b) On Sets equipped with LXD

1. Remove and retain the 151631 Screw and 2191 Lock Washer that mount the 156544 Gear. Discard the gear. (Bulletin 1169B)

2. Remove the pinion and gear (power take-off gears) at the rear of the LCXB and set them aside. See attached Figure 1. Cover all the bearings (4) on the base with a cloth to keep metal filings or chips out.

3. Enlarge the three mounting holes in the LCXB Base from their present .312 inch diameter to .375 inch diameter in order to accommodate the rubber bushings in the LCXB Base isolation set of parts.

CAUTION

Perform this work where there is no danger of the metal filings entering the moving parts of any of the components of the set.

4. Brush away the metal chips and carefully remove the cloth from the bearings. Replace the pinion and gear removed in step 2. above.

5. Install the 163003 Nylon LXD Driving Gear so that the gear teeth are away from the ball bearing and the hub portion of the gear toward the ball bearing. Use the hardware retained in Step 1. above. The 151631 Screw must not be over 5/16 inch in length to prevent bottoming in the gear hub. Use the 151631 Screw included with the Kit, if necessary.

(3) LAK Workover (Keyboard Isolation Set of Parts 161866), remove the plastic windows and labels, hood, seal, and seal plate in accordance with standard practice (Bulletin 250B). Discard the 154203 Hood Mounting Brackets with four 151442 Screws and 2191 Lock Washers, 154058 Keyboard Upper Seal Plate, 154057 Lower Seal Plate, and 151632 Screws.

(a) Frame mounting bracket replacement:

NOTE

The right and left frame mounting brackets should be replaced one at a time to avoid dropping the ball lock bar mechanism out of the keyboard (Bulletin 1169B).

1. Left or Right Mounting Bracket. See Figure 2 and Bulletin 1169B.

a. Remove the two 151630 Screws and 2191 Lock Washers that fasten the 154212 Keyboard Front Frame to the 154210 (Left) or 154211 (Right) Frame Mounting Bracket. Remove the 151631 Screw, 2191 Lock Washer and 7002 Flat Washer from the upper left or right corner of the 154111 Keytop Guide Plate. Remove the 151722 Screw and 2191 Lock Washer that mount the left or right frame mounting bracket to the 154055 Front Bracket. Remove the 151631 Screw, 2191 Lock Washer and 125011 Flat Washer holding the 154175 Lock Ball Channel to the left or right frame mounting bracket. Remove the two 151632 Screws, 2191 Lock Washers and 7002 Flat Washers that mount the left or right frame mounting bracket to the 158000 Base. Remove the 154210 (Left) or 154211 (Right) Frame Mounting Bracket.

b. Remove the 153538 Screw and 154127 or 3598 Lock Nut from the 154210 (Left) or 154211 (Right) Frame Mounting Bracket. Discard the 153538 Screws and 154210 and 154211 Brackets. The 153538 Screw is not used in earlier models.

c. The 163586 (Left) or 163585 (Right) Frame Mounting Bracket Assembly is installed reversing the disassembly procedure in paragraph a. above.

d. Install the 1274 Screw in place of the discarded 153538 Screw and install the 154127 Lock Nut on the right or left side of the 163586 (Left) or 163585 (Right) Frame Mounting Bracket Assembly. If a 3598 Nut is used, mount the 3598 Nut on the 1274 Screw at the left or right side of the inside bracket of the 163586 (Left) or 163585 (Right) Frame Mounting Bracket Assembly.

2. Remake the lock ball channel, lock ball end play, ball wedgelock and ball track clearance adjustments according to Bulletin 250B.

(b) Upper Seal Plate -- Screw the 163511 Upper Seal Plate to the upper edge of the keyboard front frame using the hardware previously removed. See attached Figure 2.

(c) Lower Seal Plate, 163512 is fastened by the two 151722 Screws and 2191 Lock Washers through its right and left mounting extension into the tapped hole in the right and left frame mounting brackets. See attached Figure 2, "A".

(d) Rubber Seal, Hood, and Labels. The 154020 Rubber Keyboard Front Seal is installed by slipping it over the keyboard and seating it over first the upper seal plate and then over the lower seal plate. Refer to disassembly procedure in paragraphs 2.b.(3) for replacement of seal, hood and label sets.

(e) Installation of speed change gear set. See attached Figure 3.

NOTE

Speed change gear sets must be ordered as separate items. See paragraph 1.j. for set part numbers.

1. Gear Guard -- To gain access to the motor pinion and intermediate driven gear remove the 152045 Gear Guard by taking out the 151678 Screw on the rear side of the guard. (Bulletin 1169B)

2. Pinion and driven gear disassembly.

a. Loosen the set screws in the 158020 Rubber Coupling on the 158079 Shaft and slide the coupling back. Loosen the set screw in the coupling attached to the motor pinion and remove the 158079 Shaft. Take out the motor pinion mounting screw and remove and discard the pinion and its mounting screw. (Bulletin 1169B).

b. Remove the two 151631 Screws and 2191 Lock Washers mounting the bakelite driven gear to the 154663 Intermediate Gear Driving Shaft. Discard the driven gear.

3. Pinion and driven gear replacement.

*a. Install the 159287 Isolator in position over the hub of the nylon pinion (see NOTE above). Press the extensions of the isolator down into the holes in the gear hub. Grind or file a flat on the motor shaft to provide a better holding surface for the set screw in the coupling. Follow precautions listed above. With the teeth toward the motor, slide the assembled gear and isolator over the lightly greased motor shaft. Insert the two 161301 Posts

into the holes in the isolator, align with the tapped hole in the motor shaft, and screw them down tight. Place the furnished 193565 Rubber Coupling (with external hub toward motor) on the 158079 Shaft. Reinstall the shaft, position the rubber couplings and tighten the set screws. Maintain some to .020" clearance between the coupling and the motor pinion to decrease transmission of sound.

NOTE

The reperformer power take-off Bearing Bracket Assembly should be checked and repositioned, if necessary, for best alignment of its associated shafts.. See Bulletin 1169B for parts.

b. Place the nylon driven gear (see NOTE under (3)(j) on the intermediate gear driving shaft plate, mesh the teeth with the pinion gear, align the mounting holes and insert and tighten the two 151631 Screws with 2191 Lock Washers retained from paragraph 2. b. above.

c. Apply a light film of grease to the gears.

4. Replace the 152045 Gear Guard with the 151678 Screw.

5. LAK Clutch Adjustment. See Bulletin 250B. Check the clutch adjustment and refine, if necessary, to remove drag. Dragging of the clutch shoes against the inside of the clutch drums produces noise. For minimum noise all shafts should turn freely in both directions with the clutches latched, if possible.

(4) LBXD Workover -- For Sets so equipped.

(a) Disassembly (Bulletin 243B)

1. Driven Gear -- Remove the 151658 Screw and 2191 Lock Washer in the 156226 Hub of the driven gear on the distributor shaft. Remove and discard the gear with its hub. Remove and retain the 151638 Spring Washer. (Bulletin 1165B).

2. Oil Reservoir -- Remove in accordance with standard practice.

3. Idler Gear -- Remove the 119653 Retaining Ring from the 158751 Clutch Trip Shaft (Bulletin 1165B) and slide the clutch latch and trip levers towards the front in order to give more clearance for removal of the idler gear. Pull out the 158789 Idler Gear Oil Retainer Plug, with 85318 Leather Washer, remove the 3595 Nut, 104451 Lock Washer and 55064A Flat Washer. Discard washer. Remove and discard the 158792 Idler Gear Spacer, 158790 Idler Gear Bearing Stud and the 158791 Idler Gear.

4. Sensing and Distributor Shafts (Bulletin 1165B)

a. Remove the four 151722 Screws and 2191 Lock Washers from the two 158847 Bearing Clamps on the rear plate. Take off the two bearing clamps. In some LBXD Units the four 151722 Screws just removed may be too long for use with the new idler gear. If the length of these screws is greater than 3/16 inch discard them.

b. Remove the four 151631 Screws, the two 151722 Screws and six 2191 Lock Washers that fasten the 158788 Bearing Clamp and 158795 Bearing Mounting Plate to the front plate. The sensing and distributor shaft assemblies can now be lifted out.

5. Clutch Driving Gears (Bulletin 1165B). Take off the 151633 Ball Bearing Assembly from the distributor sensing shaft. Remove the four 153537 Screws and 2191 Lock Washers that hold the two 158796 Clutch Driving Gears. Remove and discard the gears. Keep the two 152634 Spacers used between the gears and clutch drums, if present, but discard the four 153537 Screws.

(b) LBXD Reassembly -- See attached Figure 1.

1. Clutch Driving Gears -- Install the two nylon 163012 Gears on the sensing and distributor shafts using the four 154335 Screws, and the retained lock washers and spacers from (a)5. above. Reinstall the 151633 Ball Bearings.

2. Sensing and Distributor Shafts -- Replace the shafts aligning the cam followers. Reverse the disassembly procedure in (a)4. above. Replace the rear bearing clamp screws, if necessary (see (a)4.a.), using the four 151722 Screws supplied. Check and remake the following adjustments: Cam Shaft Bearing Retainer and Distributor Cam Follower Guide as shown in Bulletin 243B.

3. Driven Gear -- Install the 151638 Spring Washer on the distributor shaft followed by the nylon 163014 Gear. Insert the 151658 Screw with 2191 Lock Washer into the gear hub and tighten.

4. Idler Gear -- Saturate the 72522 Felt Wick and the two 90436 Felt (Cross Oiler) Wicks in oil and insert them into the 163363 Idler Gear Bearing Stud (Bulletin 1165B). Install the 163363 Idler Gear Bearing and 163011 Idler Gear with the hub toward the rear plate. Replace the idler gear mounting parts using the 111767 Flat Washer in place of the 55064A Washer and reverse the disassembly procedure of paragraph (a)3. Realign the clutch latch and trip levers and replace the tru arc retaining ring. Apply a light film of grease to the new gears and oil to the idler stud. Check and remake the following adjustments per Bulletin 243B: Idler Gear Assembly and Trip Assembly Mounting Plate.

5. Oil Reservoir is replaced by reversing the disassembly procedure in paragraph 2. b. (4)(a)2. Remake the oil reservoir adjustment according to Bulletin 243B.

6. Check any adjustments that may have been disturbed, according to Bulletin 243B, especially the following:

* a. Clutch Shoe Lever Adjustment. Refine the adjustment to remove all drag, if possible. This is important to further reduce the noise level. (See paragraph 2. b. (3)(e)5.).

NOTE

Replace top plate while checking the following adjustments.

b. Sensing Pin

c. Feed Pawl

d. Cover Plate. Push down on the cover plate until it rests on the side frame. When released, it shall detent to some to .030" clearance between the LBXD or LCXD cover plate and the points on the front and rear plates just above the detenting nuts.

Loosen the detenting nuts on the front and rear plates to friction tight and position the cover until the required clearance is met. Tighten the nuts. Meet all requirements for Cover and Panel Assembly in Bulletin 243B (LBXD) or 254B (LCXD).

(5) LCXD Workover

(a) Disassembly (Bulletin 1171B)

1. Cover Plates. Remove the 159166 Cover Plate from the fixed reader of the LCXD. Remove the 159851 Cover from the pivoted reader of the LCXD by loosening the two 151630 Screws and the 159808 Captive Screw.

2. Front Plate. Remove the two 151693 Screws, 2191 Lock Washers, and 7002 Washers which mount the 158686 Plate to the front of the LCXD. Remove plate. (Bulletin 1169B)

3. Driven Gear. Remove and discard the three 151631 Screws and 2191 Lock Washers which mount the 159837 Gear and remove and discard the gear.

4. Oil Reservoir, follow procedure in paragraph 2. b. (4)(a)2.

5. Idler Gear, follow procedure in paragraph 2. b. (4)(a)3.

6. Sensing and Sensing-and-Distributor Shafts, follow procedure in paragraph 2. b. (4)(a)4.

7. Clutch Driving Gears. Remove the 151658 Screw and 2191 Lock Washer mounting the 156226 Hub on the sensing-and-distributor shaft. Remove the hub and the 151638 Spring Washer. Discard the hub. Follow procedure in paragraph 2. b. (4)(a)5.

(b) LCXD Assembly

1. Clutch Driving Gears, follow procedure in paragraph 2. b. (4)(b)1.

2. Sensing and Sensing-and-Distributor Shafts, follow procedure in paragraph 2. b. (4)(b)2. See Bulletin 254B for adjustments.

3. Driven Gear, follow procedure in paragraph 2. b. (4)(b)3.

4. Idler Gear, follow procedure in paragraph 2. b. (4)(b)4. Refer to Bulletin 254B for the Idler Gear Assembly adjustment.

5. Check the following adjustments in Bulletin 243B.

a. Sensing Pin

b. Feed Pawl

6. Clutch Adjustment. Latch the LCXD clutches. Refine the clutch shoe lever adjustment, if necessary, until the shafts turn freely in both directions.

NOTE

For 100 WPM operation, the clutches should be checked and, if necessary, readjusted within their requirements. For 60 and 75 WPM operation, clutches should be checked and adjusted only if definitely noisy.

7. Oil Reservoir, replace the oil reservoir, reversing the disassembly procedure. Remake the oil reservoir adjustment (Bulletin 254B).

8. Cover Plate Adjustment, replace the 159166 Cover Plate. Follow procedure in paragraph 2. b. (4)(b)6. d.

(6) Felt Pad Application - Installation of the pads should be as shown in 161962 Drawing.

NOTE

The felt pad set of parts is intended for use in the LAAC Cabinet. Due to the different combinations of components that may be used in this cabinet, and also minor variations in cabinets of earlier manufacture, some difficulty may be encountered in obtaining correct operating or assembly clearances. In this event it is necessary only to cut a relief notch in the felt pad at the point of interference. Do not pull the pad from its mounted surface--score the area with a sharp knife or razor blade and pull out the interfering area only. Where the installation calls for the use of screws in mounting a pad and the cabinet being modified has no screws (or studs) at this point, attach the pad by means of the adhesive supplied. If the set has terminal blocks at a pad location, omit the pad.

CAUTION

The adhesive used is flammable.

(a) The 160988 Base Pad is placed in the cabinet between the right and left base cradle rails and under the power control switch shaft and line test key switch shaft, if present. This pad should not be cemented in place.

* (b) Fasten the 160985 and 160986 Left and Right Side Pads in place with four 76099 Flat Washers and 3598 Nuts. Where the 161868 Modification Kit is used, discard the 160985 Left Side Pad and two 76099 Flat Washers and 3598 Nuts. This pad is not required in sets with the LBXD since the space is occupied by a terminal block.

(c) The remaining felt pads are applied by use of the adhesive and mounted. Using the 70401RM Brush furnished apply the adhesive freely to the pads and press them into position in the cabinet.

(7) ASR Set Reassembly

(a) Replace the switch shafts and cradle assembly base rails reversing the procedure used in disassembly (see paragraphs (1)(m), (1)(l), (1)(k) and (1)(j)). Seat the switch shafts properly between the 154418 Flat Springs and the rear base rail, then slide them forward, so that the groove in the end of the shaft engages in the pivot hole of the LESU Chassis. The shafts should not pull out. Replace the shaft forks.

(b) Cradle Height Adjustment (Bulletin 250B). Adjust cradle height to 1-29/32 inches without load.

(c) LCXB Transmitter Distributor Base Reinstallation.

1. Isolation set of parts 161867, on sets equipped with

LBXD only. See attached Figure 1.

a. Insert and tighten the three 163515 Shoulder Studs in the mounting holes marked "A" (See Bulletin 1169B) formerly occupied by the three 76279 LCXB Mounting Screws in the front and rear base rails.

b. Install one 163517 Rubber Bushing over each stud turning the smaller diameter or shoulder upward.

c. Remove the rear 151723 Screw and 2669 Lock Washer which mount the 160366, 159840 or 158018 Plug Mounting Bracket to the right side of the LCXB Base (Bulletin 1169B). Insert the screw with lock washer into the terminal on one end of the 117366 Ground Strap and replace the screw into the base. On bases not having a plug mounting bracket (as LCXB6), the strap should be mounted to the rear 10-32 tapped hole on the right side of the base using the 151723 Screw and 2669 Lock Washer provided. Tighten the screw with the terminal extending forward and downward at about 45 degrees. See attached Figure 4.

d. Position the LCXB Base over the three studs so that the smaller diameter of the bushings extend into the mounting holes of the base, and the base rests on the shoulders of the bushings. Route the ground strap forward and under the base, then to the rear under the rear cradle rail.

e. The remaining three 163517 Rubber Bushings are placed on three studs that now extend up through the mounting holes of the base. Install these three bushings so that the smaller diameter of each extends downward into the base mounting holes.

f. Place a 103305 Flat Washer, 2669 Lock Washer and 74807 Nut on each stud and tighten in place. The remaining terminal of the 117366 Ground Strap connects to the right rear shoulder stud above the 103305 Flat Washer, then add the 2669 Lock Washer and 74807 Nut. In order to prevent transmission of vibration, the terminal or wire should not touch the LCXB Casting, and the wire should be slack. If necessary, bend the terminal upward for clearance. See Figure 4.

NOTE

The 105029 Flat Washers will be used in mounting the LAK Keyboard Base, and serve to raise the keyboard base as much as the LCXB Base was raised by the 163517 Rubber Isolation Bushings. The increase in vertical height of the LCXB Base and keyboard is offset by a reduction in the cradle height (see 2. b. (7)(b)1. above) to maintain correct clearance in the cabinet.

2. Isolation set of parts 164100, on sets equipped with LXD only. See Figure 1.

a. Insert and tighten the three 164101 Shoulder Studs in the mounting holes (Bulletin 1169B) formerly occupied by the three 76279 LCXB Mounting Screws in the front and rear base rails.

b. Install the rubber bushings and ground strap, position and secure the base as directed in paragraphs 1.b., 1.c., 1.d., 1.e., and 1.f. above. Observe NOTE under 1.f. above.

(d) LBXD or LCXD and Housing -- On sets so equipped. Remount the LBXD and its housing by reversing the disassembly procedure covered in paragraphs (1)(g) and (1)(f). Check alignment of cover plate and top plate. (Bulletin 243B) Housing parts should be replaced on the same cabinet from which they were removed. Refer to specification 5873S for housing adjustments.

(e) LXD and Housing -- On sets so equipped.

*1. LXD Clutch Adjustment (Bulletin 235B). Refine the adjustment to remove all drag, if possible. This is important to further reduce the noise level. (See paragraph 2.b.(3)(e)5.).

2. Remount the LXD and its housing, on the base, reversing the disassembly procedure used in paragraph (1)(h). Adjust the lateral position of the LXD on the LCXB so that the gears align properly with no backlash between the gear teeth. Refer to specification 5873S for housing clearances.

(f) LAK Keyboard Base and LCXB Coupling Shaft -- On sets equipped with either the LBXD or LXD.

NOTE

Before returning the keyboard base to the cabinet, remove and discard the 158205 Auxiliary Switch Housing Cover and the two 158206 Knurled Thumb Screws. (Bulletin 1169B). The cover is accessible after removing the four 151632 Screws in the base of the Tape Container Assembly and taking the assembly off. (Bulletin 1169B). After discarding the cover, remount the tape container assembly using the same hardware previously removed.

1. Place the 105029 Flat Washers over the mounting holes in the cradle rails for the LAK Keyboard Base.

CAUTION

The 105029 Flat Washers are used as spacers to raise the LAK Keyboard an

equal amount with the modified LCXB Base. Failure to install these washers will result in serious misalignment in the LCXB Shafting, leading to early fatigue of the 173645 Flexible Coupling at this point. Conversely, the same condition will result if a "shimmed up" LAK is used with an LCXB which has not been raised by the isolation bushing.

2. Install the LAK Keyboard Base and LCXB Coupling Shaft, reversing the disassembly procedure of paragraph 2. b. (1)(e) and (d). Make certain that the mounting studs have secured the 105029 Washers.

*(g) Installation of Page Printer -- Before returning the page printer to the ASR Cabinet, make any adjustments that may be necessary especially the clutch shoe lever adjustments (Bulletin 217B). Place an armature clip on the printer selector and latch all clutches. Refine the clutch shoe adjustment to eliminate drag. (See paragraph 2. b. (3)(e)5.). Remount the printer in the cabinet reversing the disassembly procedure of paragraph (1)(c).

(h) Cabinet parts are replaced reversing the procedures of paragraphs (1)(b) and (1)(a) above.

(i) Typing Unit and Motor Pinion Intermediate Gear Assembly Adjustment (Bulletin 250B). Refine this adjustment for minimum gear noise.

(j) LXD, LBXD or LCXD Housing Clearance -- For sets so equipped. Refine the cradle height adjustment (see paragraph (7)(b), if necessary, to provide a minimum of 1/32 inch clearance between the Cover Plate, tape guide plate and 154487, 160290, or 158686 Plate, and the top of the 154485, 160293, or 158685 Cover. Refer to Bulletin 1169B and Bulletin 243B.

Also refine the cradle front rail position adjustment (Bulletin 250B), if necessary, to provide a minimum clearance of 1/32 inch between the Cover and the Plate (Bulletin 1169B).

NOTE

These clearances are important for both the LBXD and LXD. The units must not touch the cabinet at any point to prevent the transmission of vibrations to the cabinet.

* * *

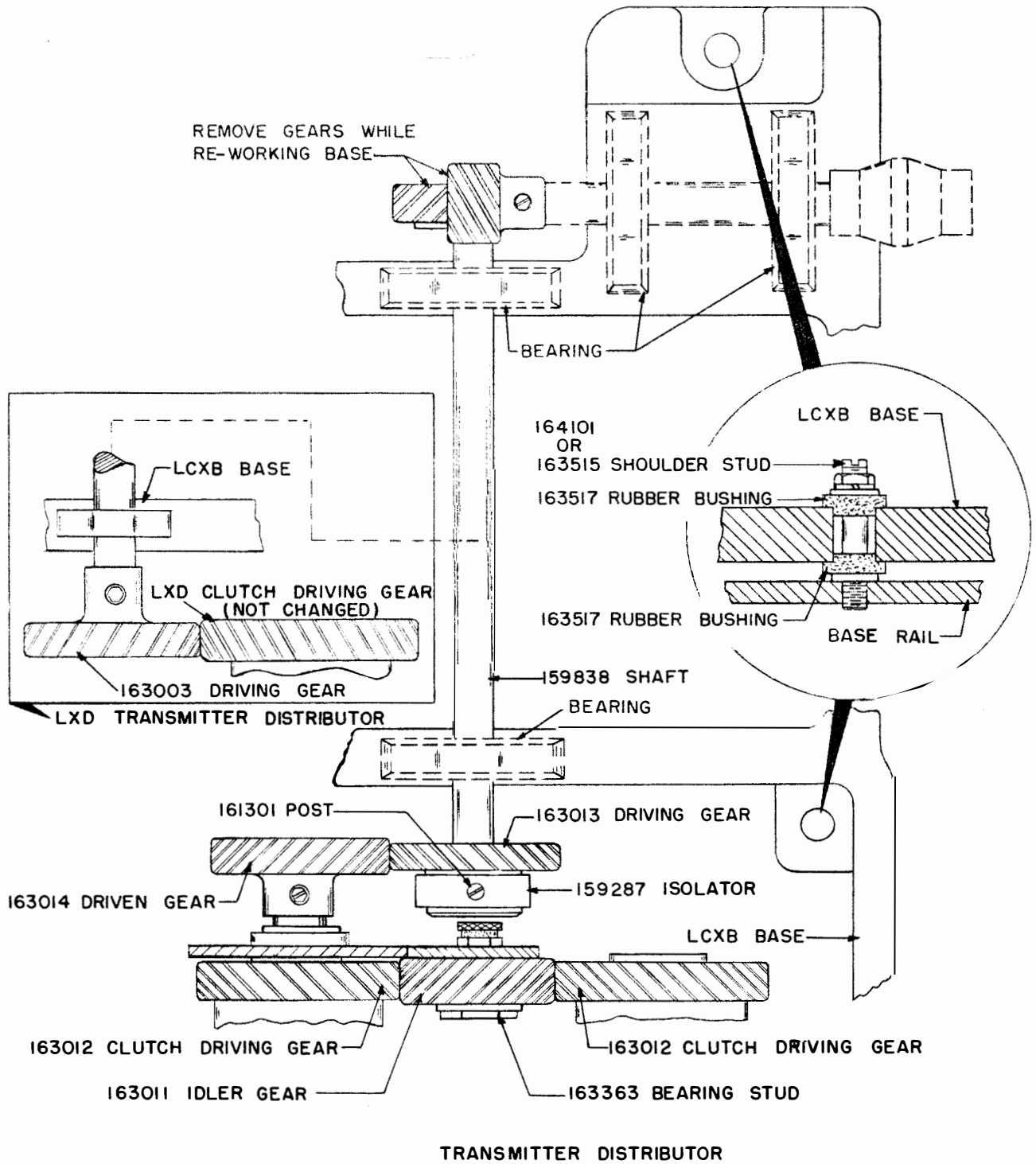


FIGURE 1

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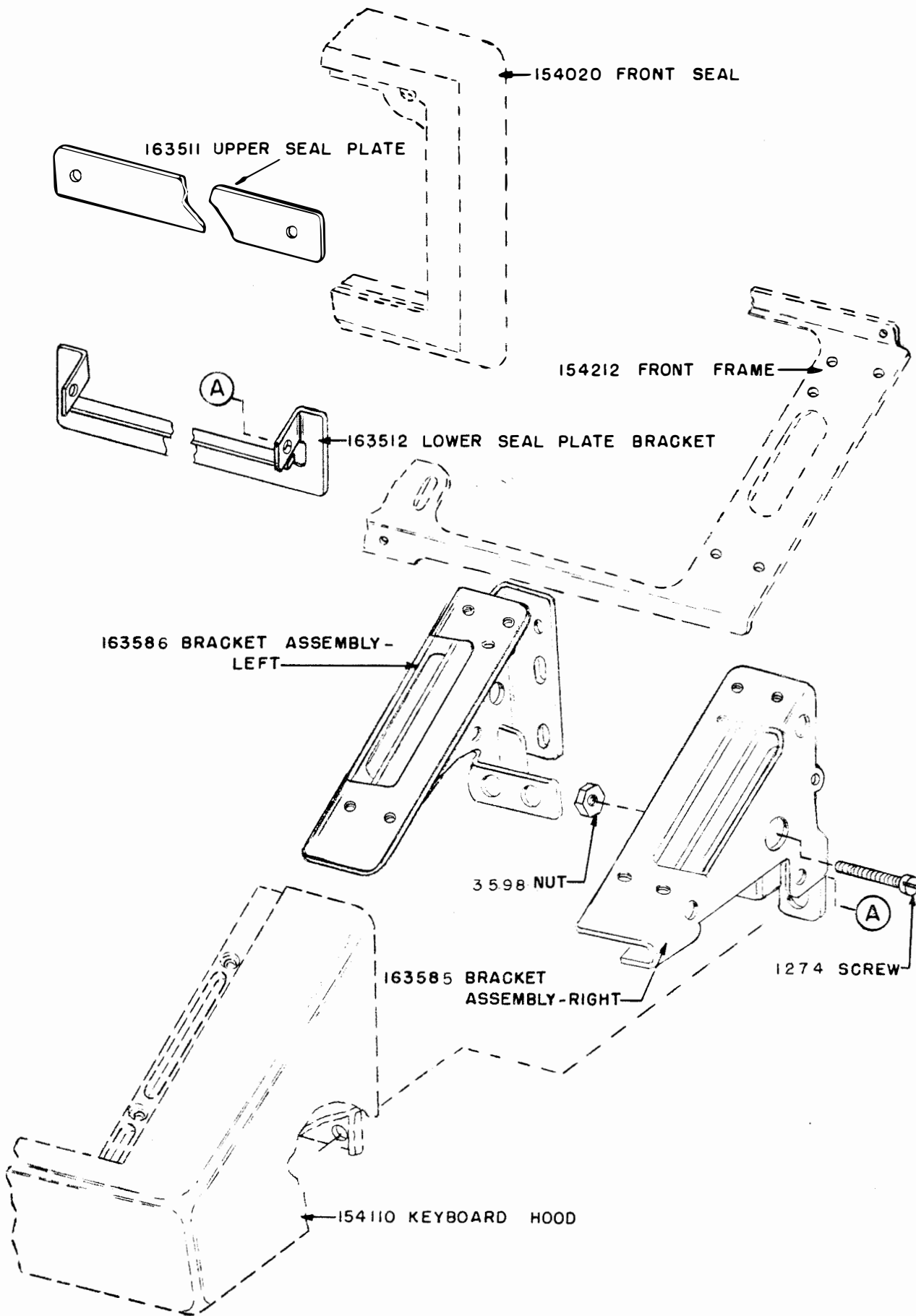


FIGURE 2

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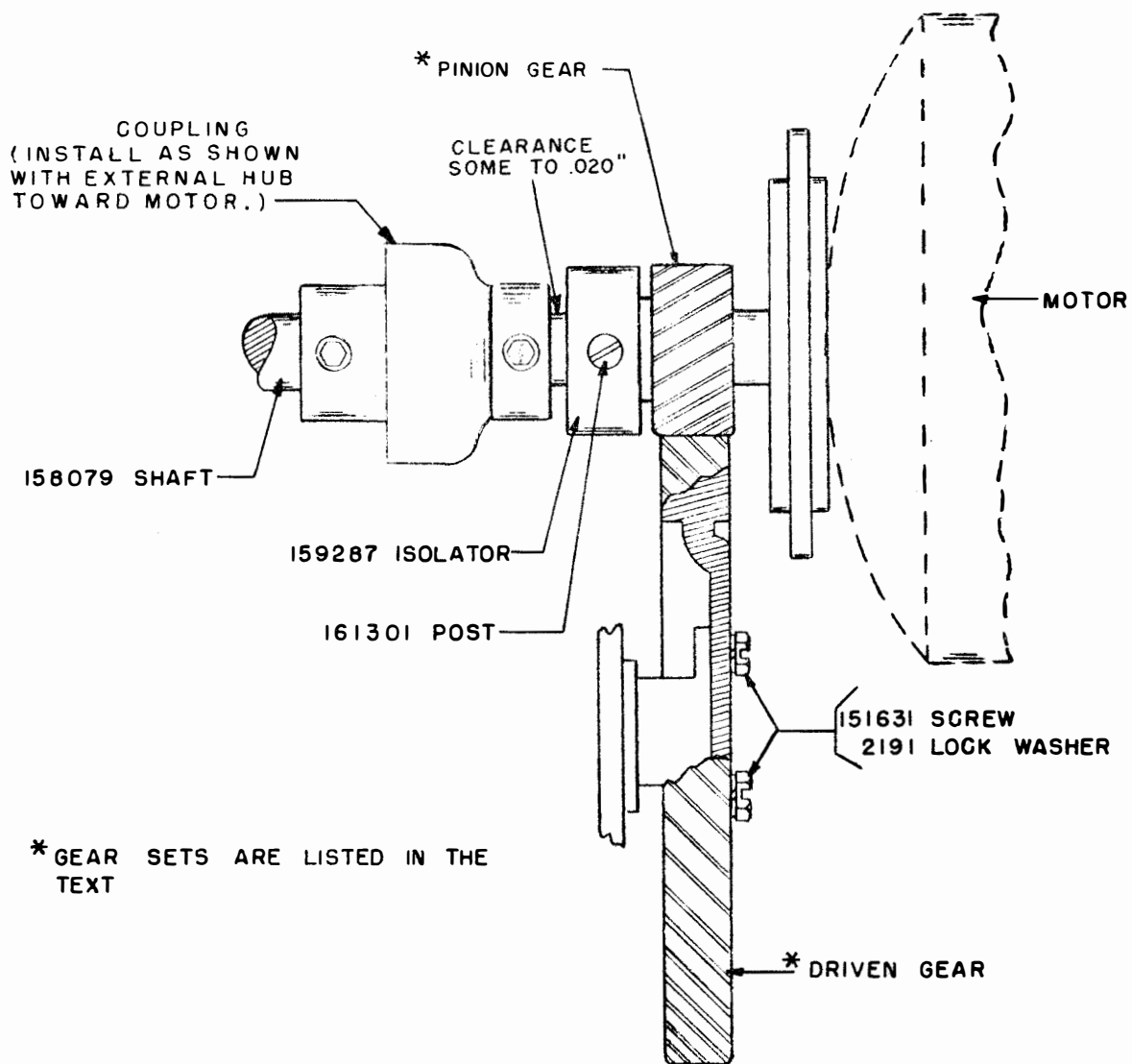


FIGURE 3

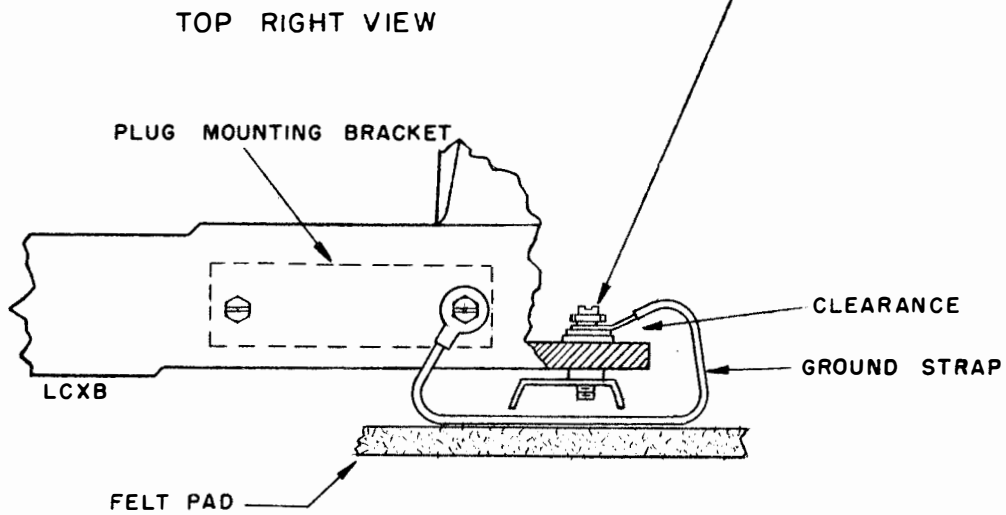
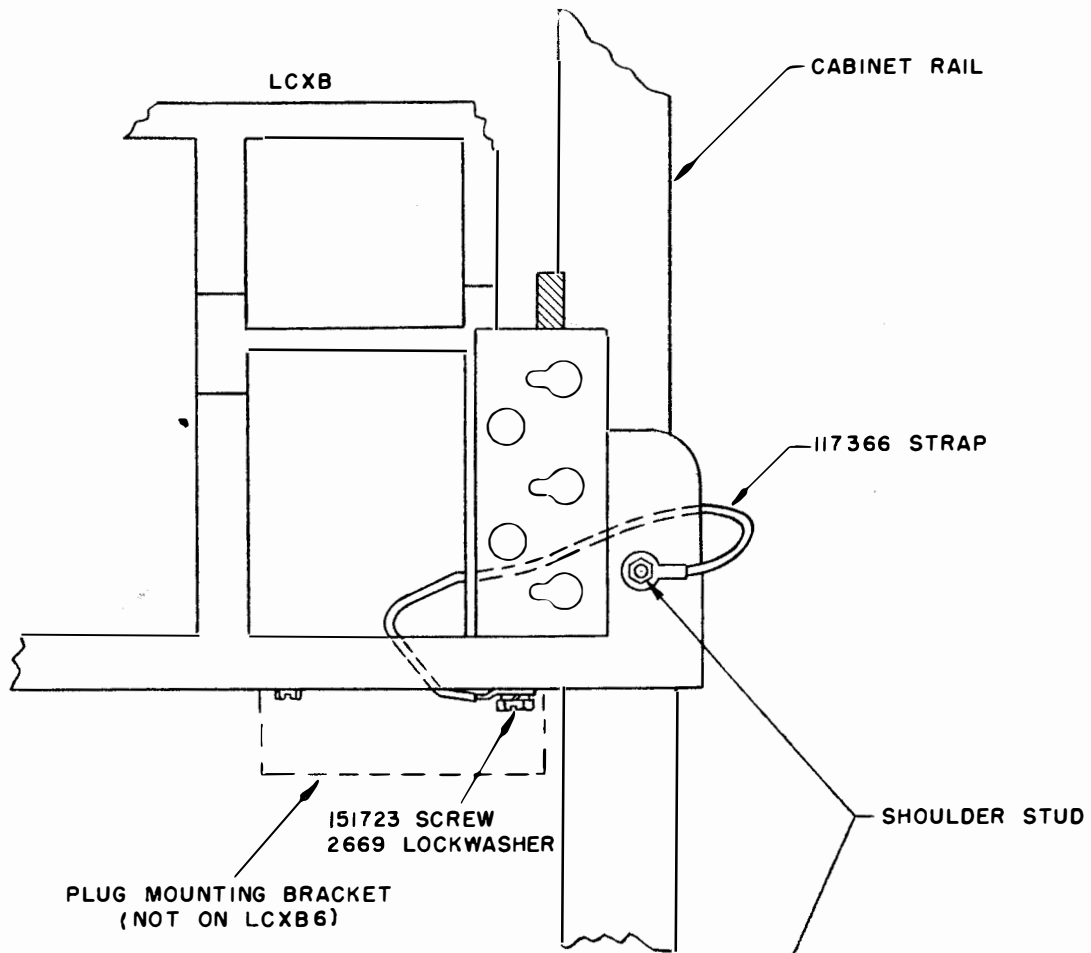


FIGURE 4