AMA PERFORATORS
D-175914 AND D-176283
PIECE-PART DATA AND REPLACEMENT PROCEDURES

1. GENERAL

1.01 This section is reissued to revise the List of Tools, Gauges, Materials, and Test Apparatus. Detailed reasons for reissue will be found at the end of the section.

1.02 Part 2 of this section covers the part numbers and the corresponding names of the parts which it is practicable to replace in the field in the maintenance of the D-175914 and D-176283 perforators. No attempt should be made to replace parts not designated. Part 2 also contains explanatory figures showing the different parts. This information is called Piece-Part Data.

1.03 Part 3 of this section covers the approved procedures for the replacement of the piece-parts listed in Part 2. This information is called Replacement Procedures.

1.04 *One dip of KS-16832 L2 lubricant* for the purpose of this section is the amount of lubricant retained on the KS-14164 brush after being dipped into the lubricant to a depth of 3/8 inch and scraped lightly against the side of the container as the brush is removed.

1.05 *Preparation of KS-16832 L2 Lubricant:* This lubricant is provided in 2-ounce and 1-pint containers. A small wide-mouth container, such as the 2-ounce jar in which the lubricant is available, should be used as a receptacle from which to dispense the lubricant. If allowed to stand more than 1 day without agitation, the lubricant ingredients tend to separate; therefore, before each day's use, shake the container of lubricant for approximately 30 seconds to insure mixing of the ingredients. The proper method of shaking the lubricant consists of repeated, rapid turning of the container to an upside down position and back to the upright position. If the lubricant from a 1-pint container is to be used, the lubricant must be mixed as just described before it is poured into the smaller container. Under storage conditions, the cover should be tight on the container.

2. PIECE-PART DATA

2.01 Many of the parts which are incorporated in these perforators are not being continued in commercial production. Such parts as may require replacement and fall in this category have been supplied with these perforators as spare parts. These parts bear the designations BA, BL, and BO in the various figures. Other parts designated in the figures will be commercially available and may be ordered in the regular manner.

2.02 The figures included in this part show the various piece parts in their proper relation to other parts. The piece-part numbers of the various parts are given together with the names of the parts as listed by the Western Electric Company Merchandise Department. When these names differ from those in general use in the field, the latter names, in some cases, are shown in parentheses.

2.03 When ordering piece parts for replacement purposes, give both the number and name of the piece part, for example, P-174035 Coil. Do not refer to the BSP number or to any information shown in parentheses following the piece-part numbers.

2.04 *Asterisk* (*) indicates that the subassemblies or parts (not including standard or piece part screws, nuts, or washers) so marked on the figures may or may not be available as individual spare parts but are available as parts of other subassemblies. These may be removed from subassemblies, as required, instead of replacing the entire subassembly.

2.05 Information enclosed by parentheses is not ordering information. This information may be references to notes, parts referred to in other portions of the section and not considered replaceable, or part names in general use in the field if these names differ from those assigned by the manufacturer.

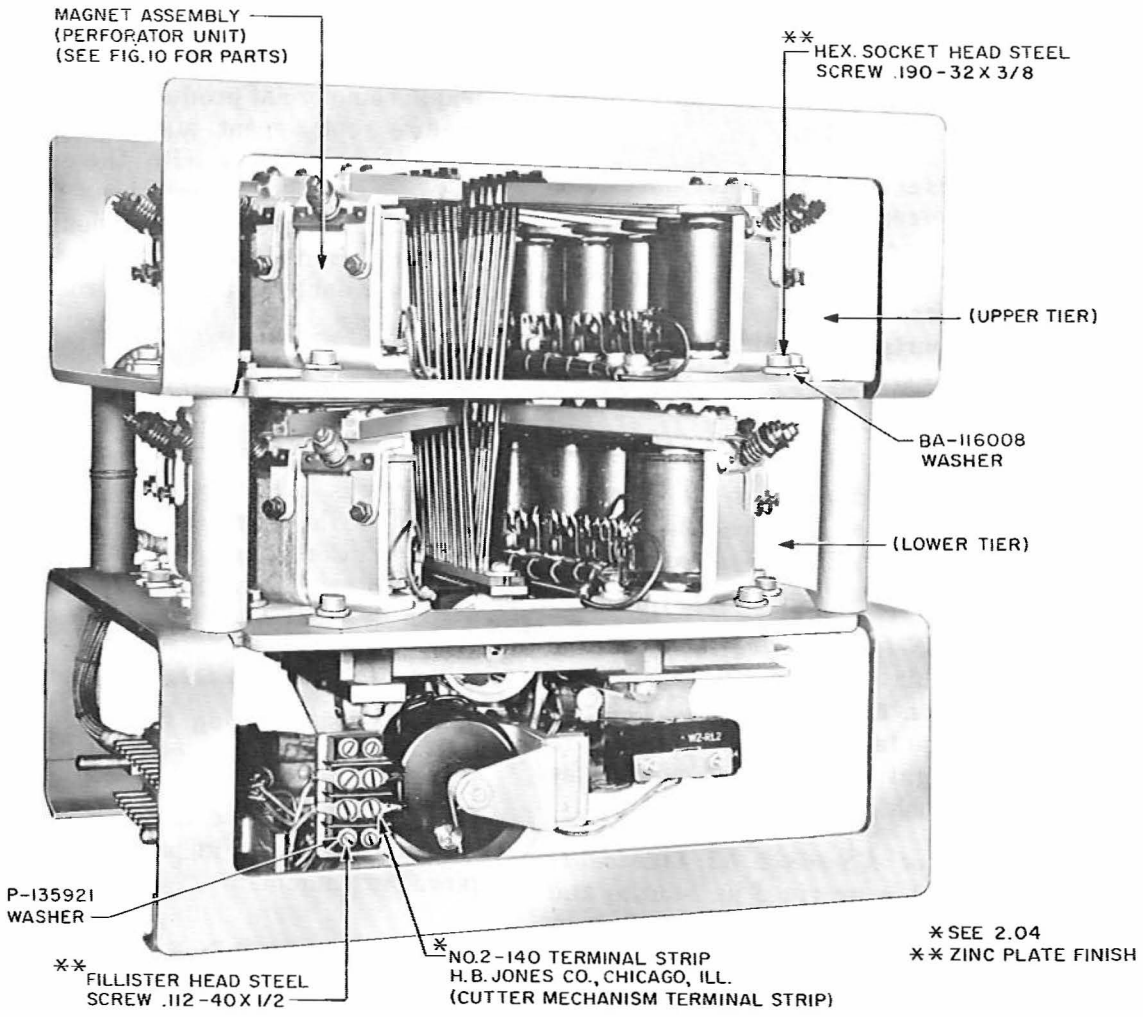
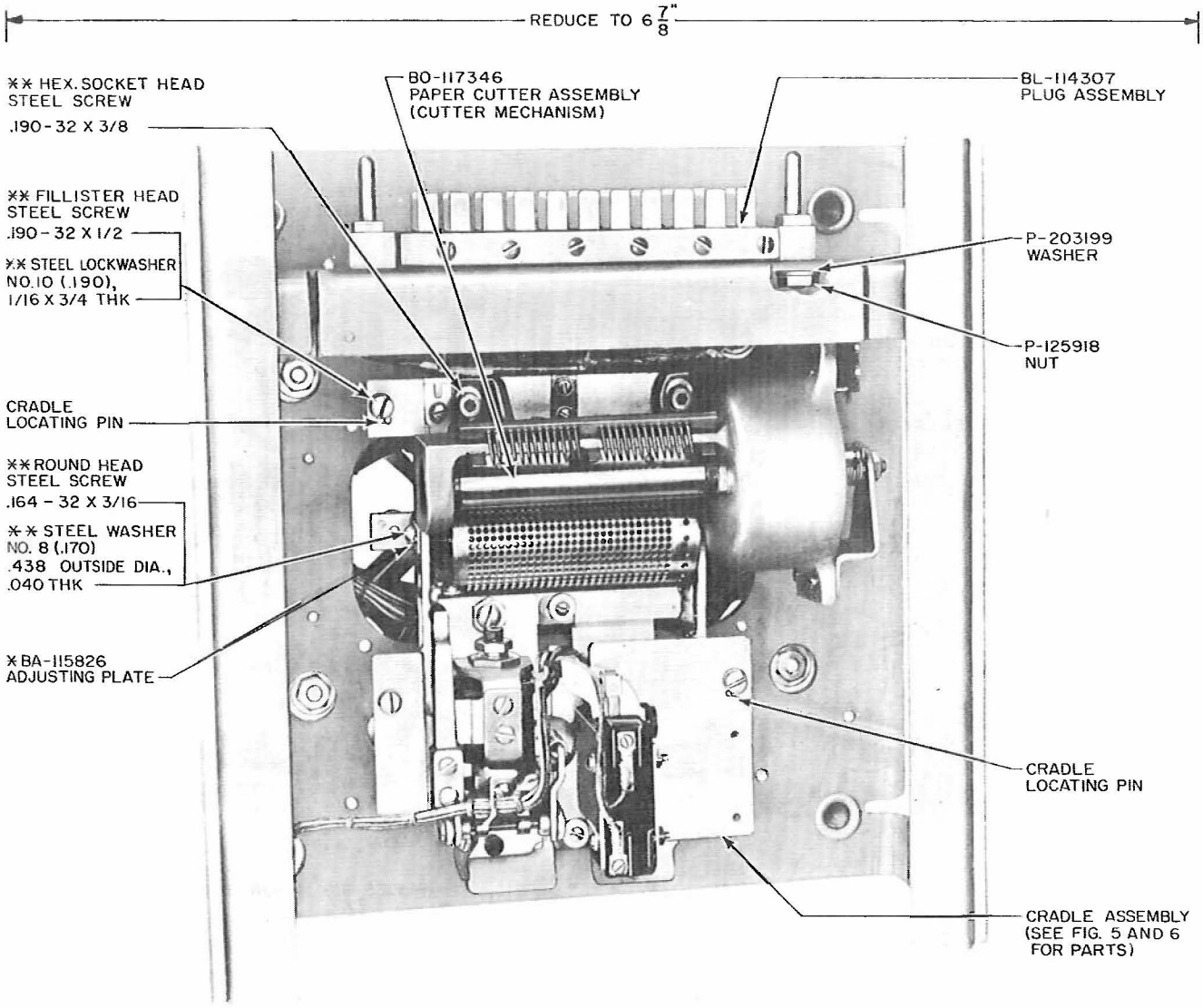


Fig. 1 – D-175914 Perforator — Side View



*SEE 2.04

**ZINC PLATE FINISH

Fig. 2 – D-175914 Perforator — Bottom View

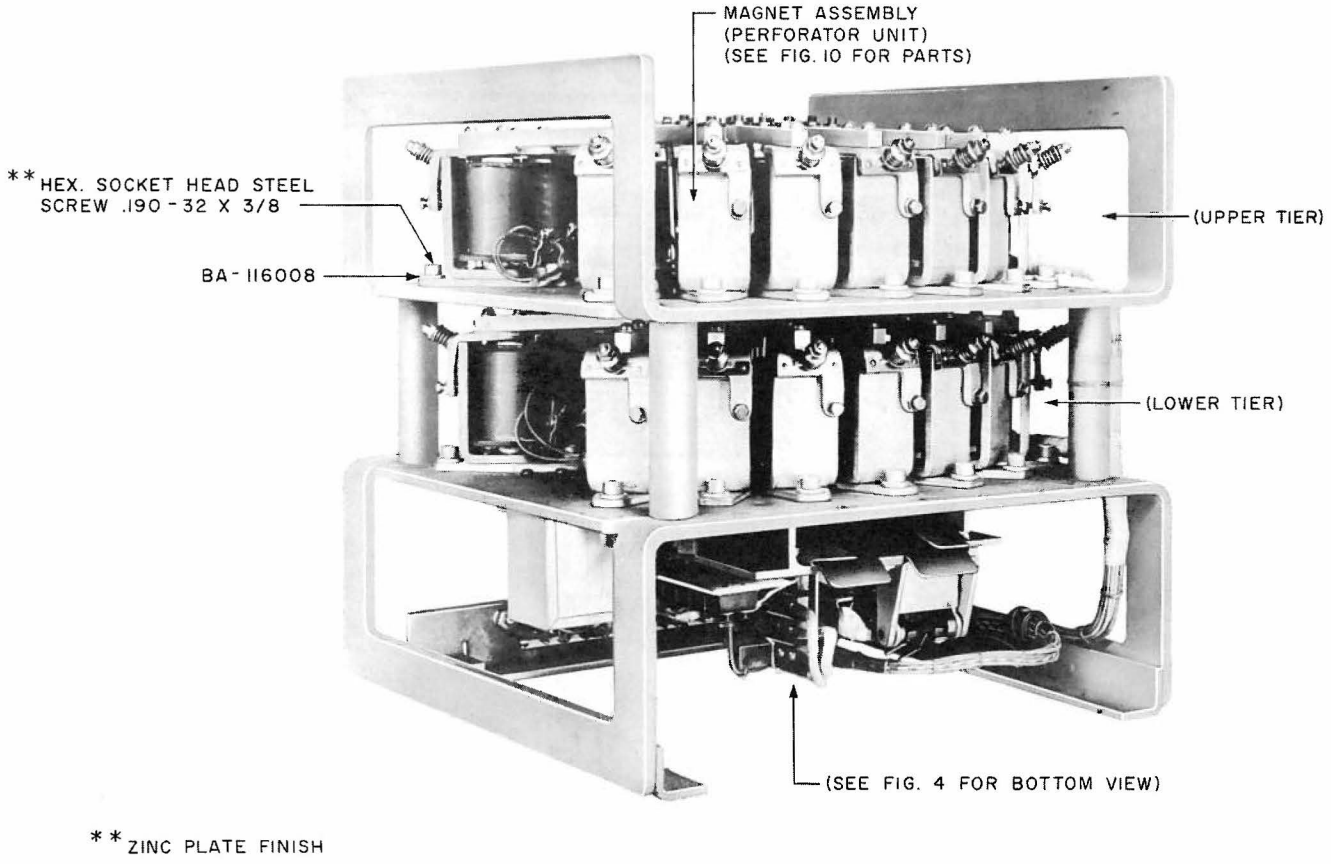


Fig. 3 – D-176283 Perforator — Front View

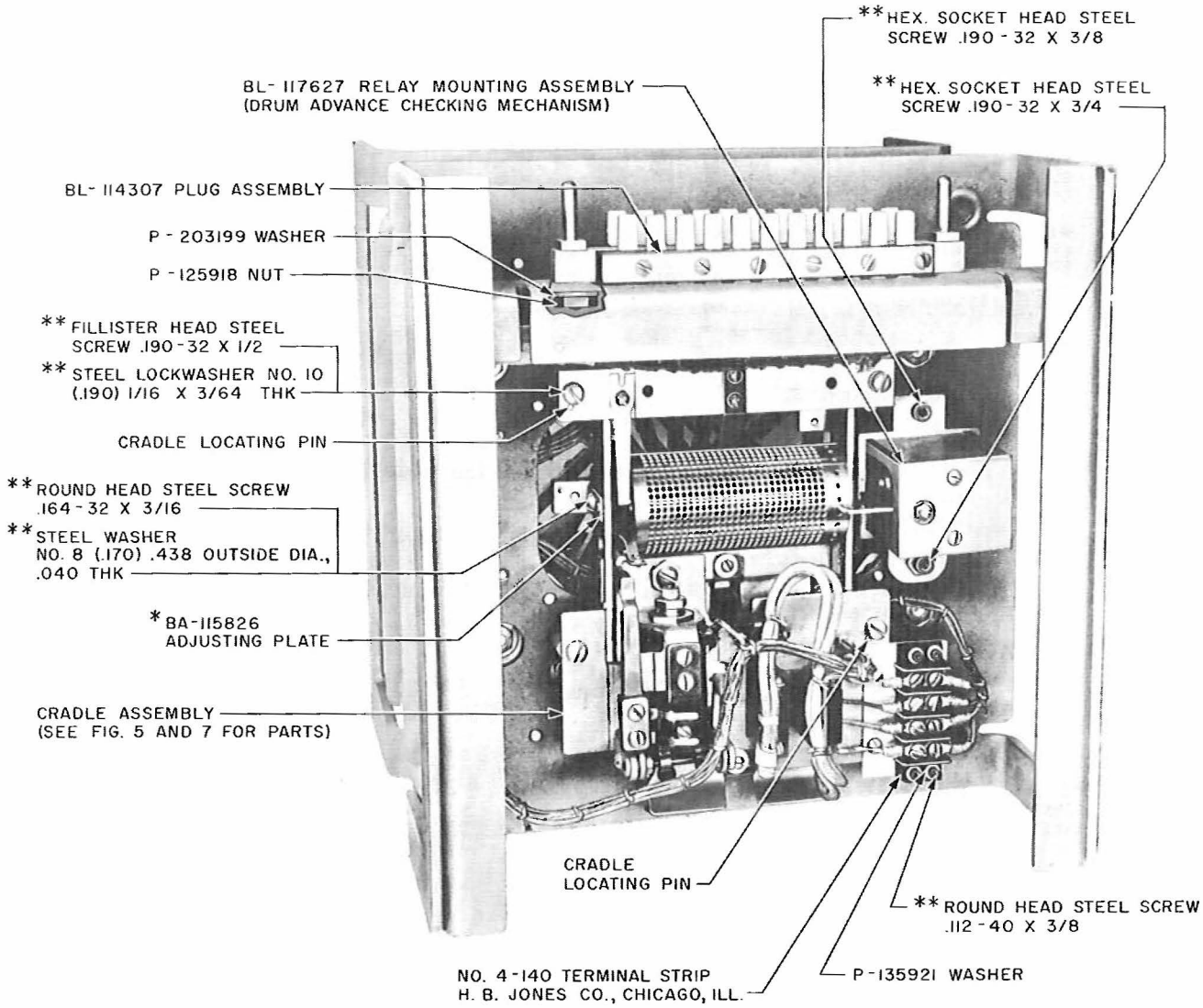
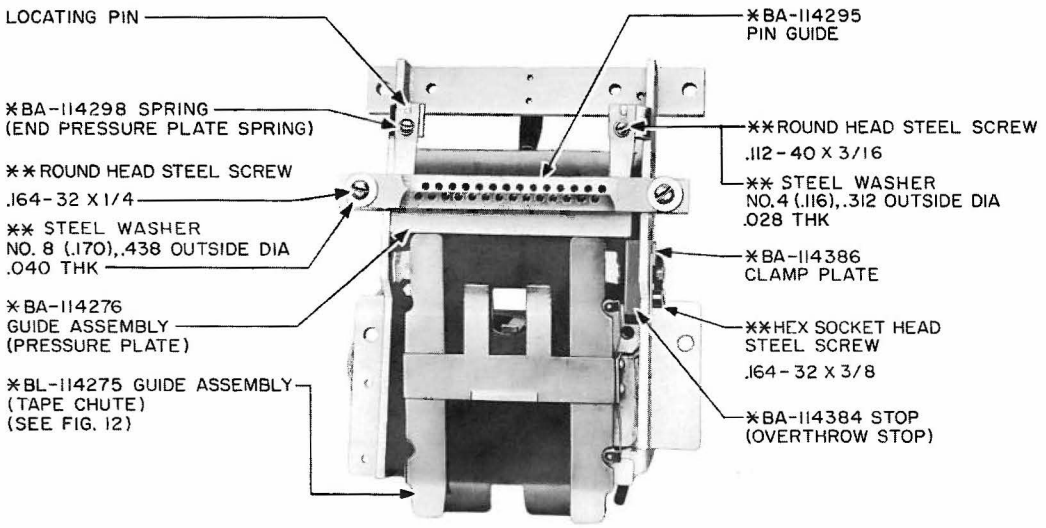


Fig. 4 – D-176283 Perforator — Bottom View



* SEE 2.04
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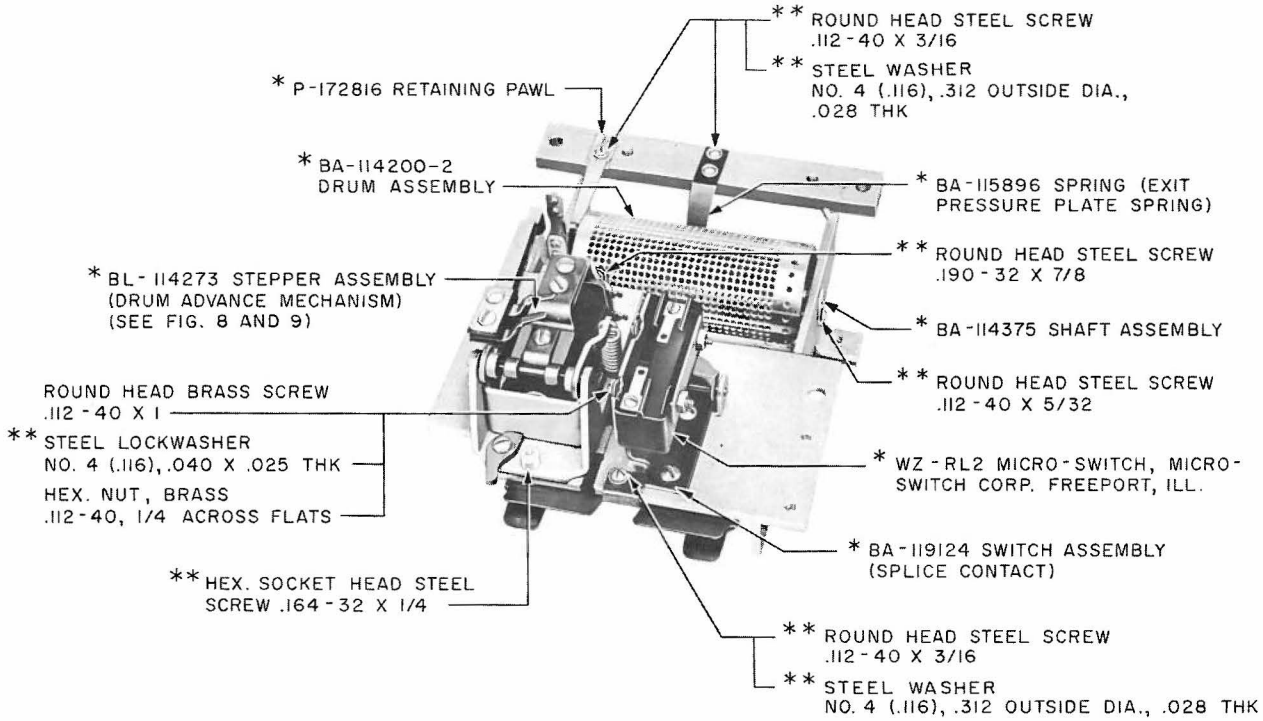
Fig. 5 – Cradle Assembly — Top View



* SEE 2.04

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Fig. 6 – Cradle Assembly — Bottom View — D-175914 Perforator

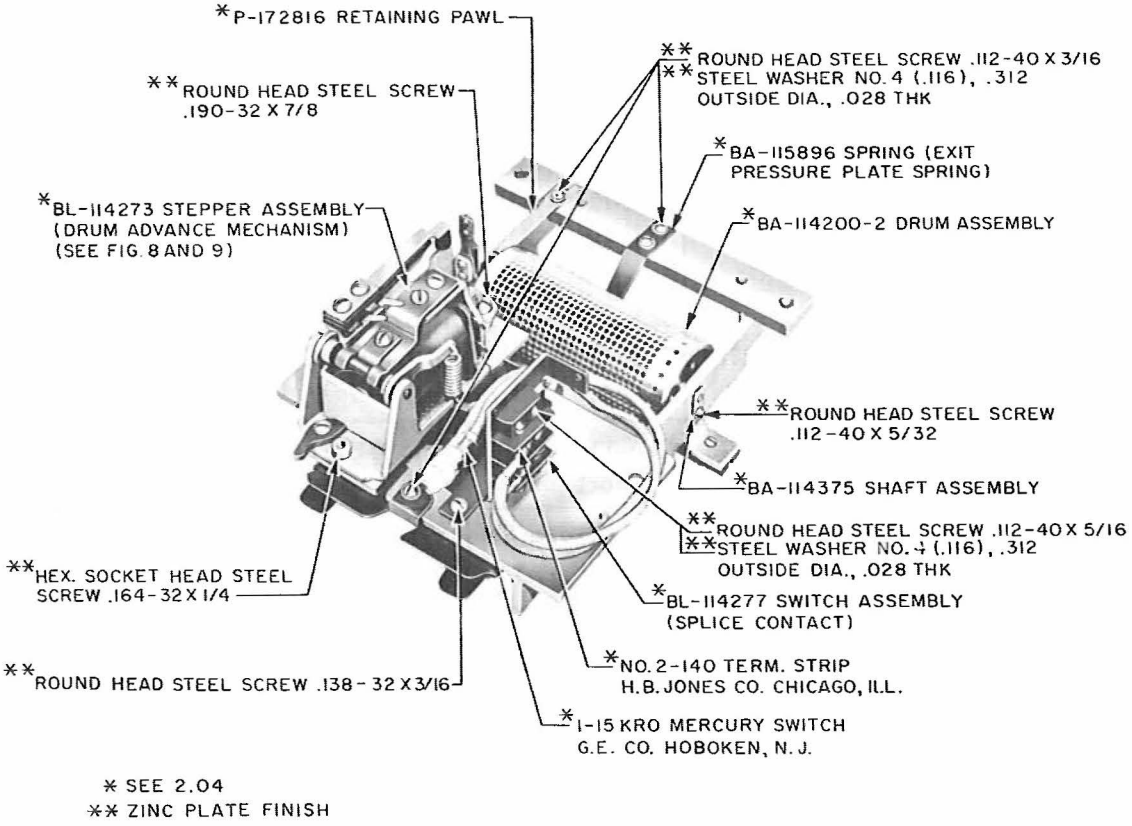

Fig. 7 – Cradle Assembly — Bottom View — D-176283 Perforator

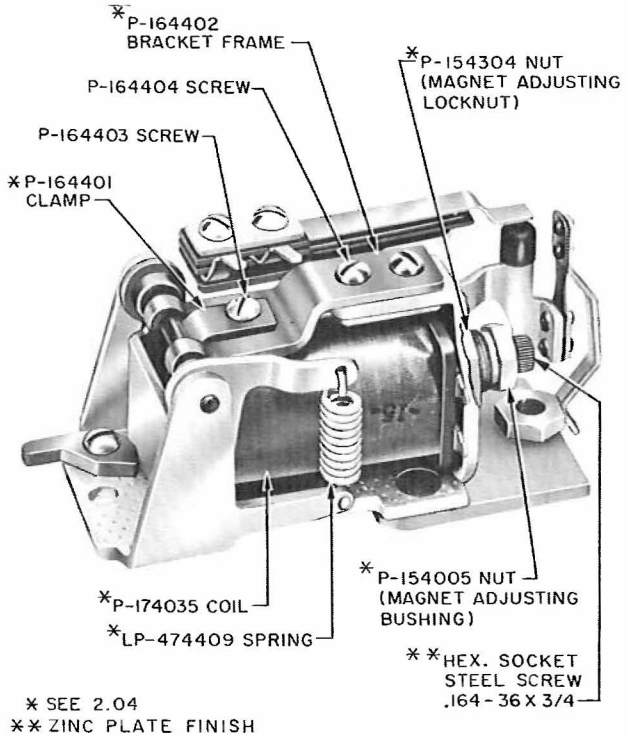

Fig. 8 – Drum Advance Mechanism — Driving Spring Side

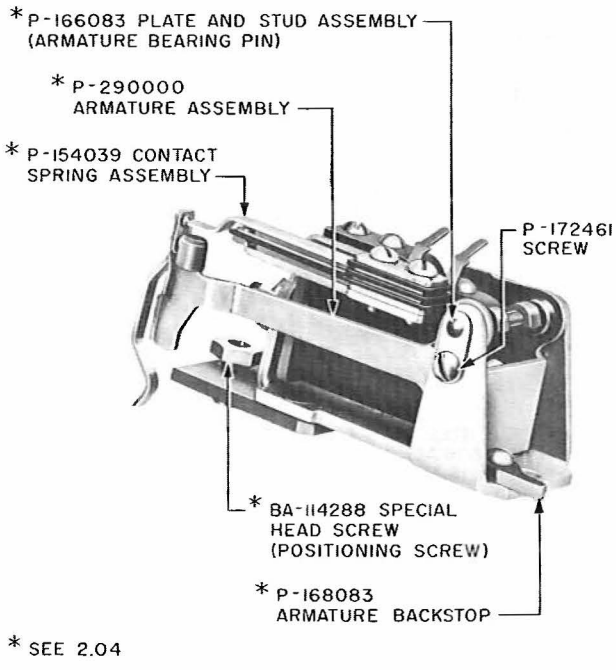

Fig. 9 – Drum Advance Mechanism — Driving Pawl Side

TABLE A — PERFORATOR UNITS AND ASSOCIATED PARTS (FIG. 10 AND 11)

MAGNET ASSEMBLY (PERFORATOR UNIT)	ARMATURE ASSEMBLY	CLAMP	PIN	USED ON D-175914 PERF. PERFORATOR UNITS	USED ON D-176283 PERF. PERFORATOR UNITS
BA-114241-1	BL-114242-1	BA-115270	BA-114249-1 (long pin)	A2, B0, B4, B7, C2, C4, D1, D2, E0, E1, E7, F0, F4, F7	A0, A1, B1, B2, C0, C1, C7, D0, D4, D7, E2, E4, F1, F2
BA-114241-2	BL-114242-2	BA-115270	BA-114249-2 (short pin)	A0, A1, C0, C1, C7, D0, D4, D7	C2, C4, D1, D2, E0, E1, F4, F7
BA-114241-3	BL-114242-3	BA-115270	BA-114249-2 (short pin)	B1, E4, F2	A2, B4, F0
BA-114241-4	BL-114242-4	BA-114267	BA-114249-2 (short pin)	B2, E2, F1	B0, B7, E7

Note: Only BA-114241-1 perforator unit is available as a spare part. However, any of the magnet assemblies may be made by assembling the proper armature assembly as listed above.

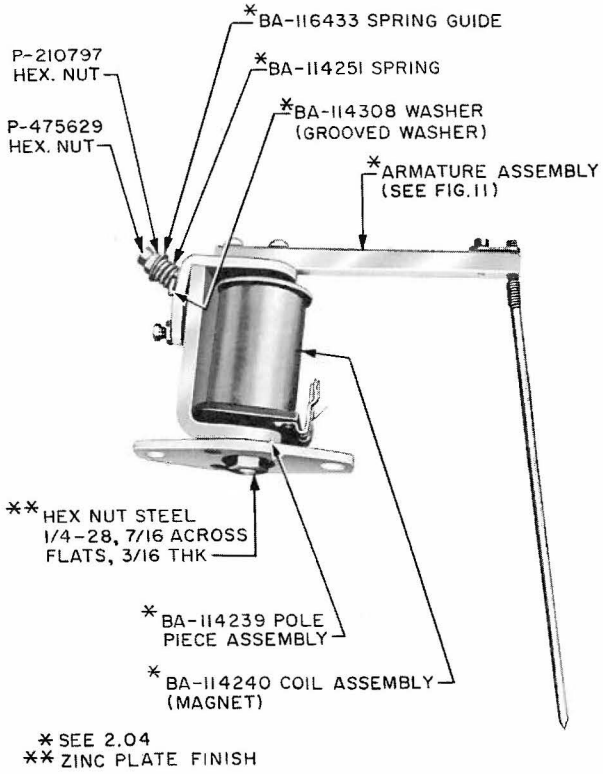

Fig. 10 – Perforator Unit

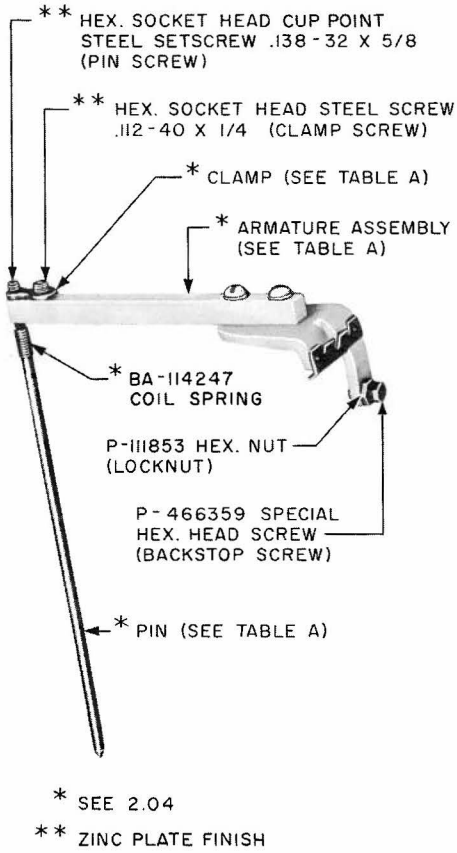

Fig. 11 – Armature Assembly

3. REPLACEMENT PROCEDURES

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

CODE OR SPEC NO.	DESCRIPTION
TOOLS	
245	3/8- and 7/16-Inch Open Double-End Flat Wrench
388A	3/16- and 1/4-Inch Open Double-End Offset Wrench
417A	1/4- and 3/8-Inch Open Double-End Flat Wrench
485A	Smooth-Jaw Pliers
643A (or the replaced D-176938)	0.062-Inch Socket Screw Wrench
643B (or the replaced D-176939)	0.078-Inch Socket Screw Wrench
644A (or the replaced D-176940)	5/32-Inch Socket Screw Ratchet Wrench
KS-6320	Orange Stick
KS-14164	Brush
KS-14457	Pin Extractor (or the replaced D-171614 perforator pin tool)
R-2485	5/32-Inch Allen Socket Screw Wrench
R-2670	3/32-Inch Allen Socket Screw Wrench
R-2671	1/8-Inch Allen Socket Screw Wrench
†R-2967	1/8-Inch Allen Straight Wrench
†R-2968	5/32-Inch Allen Straight Wrench
R-3415	7/64-Inch Allen Socket Screw Wrench
R-3416	9/64-Inch Allen Socket Screw Wrench
†R-3449	9/64-Inch Allen Straight Wrench
—	3-Inch C Screwdriver (or the replaced 3-inch cabinet screwdriver)
—	6-Inch C Screwdriver (or the replaced 6-inch cabinet screwdriver)
—	4-Inch E Screwdriver (or the replaced 4-inch regular screwdriver)
—	P-Long-Nose Pliers (or the replaced 6-1/2 inch P-long-nose pliers)
—	No. 607 Handle With 5-Inch Long 3/32-Inch Hex. Blade, Allen Manufacturing Company
GAUGES	
KS-6909 (or the replaced D-177190)	Thickness Gauge Nest
MATERIALS	
KS-2423 (or the replaced D-98063)	Cloth
KS-7860	Petroleum Spirits
KS-16832 L2	Lubricant
—	No. 6 Twine (or the replaced No. 20 Barbour's linen thread)
TEST APPARATUS	
—	SD-95434-01 Test Circuit

†The R-2967, R-2968, and R-3449 straight Allen wrenches with handles are intended to supplement the Allen socket screw wrenches specified herein when parts are inaccessible or when sufficient torque cannot be developed using the Allen socket screw wrenches.

3.02 Where reference is made in the procedures to the use of an Allen wrench, select the proper size Allen wrench from among those listed in 3.01.

3.03 Before making replacements of any parts, remove the perforator from its cabinet and place it in any convenient position where the parts to be replaced are most accessible.

3.04 No replacement procedure is specified for screws and other parts where the procedure consists of a simple operation.

3.05 At the time of making replacement of parts, clean and lubricate the perforator as covered in Section 034-300-701.

3.06 After making any replacement of parts of a perforator, the unit containing the part, for example, the perforator unit, shall meet the readjust requirements involved as covered in Section 034-300-701. Other parts, the adjustment of which may have been directly disturbed by the replacing operations, shall be checked to meet the readjust requirements and an overall operation check shall be made of the perforator before restoring it to service.

Plug Assembly

3.07 To replace the plug, remove the mounting nuts, lockwashers, and the two guide pins using the 245 wrench and pull the plug out as far as the slack in the cable will permit. Unsolder the wires from the plug terminals. Substitute the new plug and resolder wires according to wiring diagram Fig. 20 for the D-175914 and wiring diagram Fig. 21 for the D-176283 perforator. Reassemble the plug to the perforator and set up the nuts just tightly enough to hold the plug against the frame but not tight enough to prevent shifting the plug. Push the perforator on the track of the SD-95434-01 test table until the guide pins on the plug are fully inserted in the guide holes of the jack of the test table. Tighten the plug mounting nuts securely.

Cradle Assembly

3.08 When replacing some parts, it may be desirable to remove the cradle assembly from the perforator. Under no circumstances should the cradle assembly or the cradle frame be replaced by a new assembly or frame, or by an assembly or frame from another perforator, because the shaft bearings are very accurately located with the center line of the perforator by means of special gauges by the manufacturer and the cradle frame is pinned in place. ***The cradle assembly must always be replaced in the same position on its original perforator.*** However, individual parts or subassemblies on the cradle assembly may be replaced and such parts may be removed from the spare cradle assemblies as required.

3.09 ***D-175914 Perforator:*** To remove the cradle assembly from the D-175914 perforator, first remove the cutter as covered in 3.25. Then using a 4-inch E screwdriver, remove the four cradle mounting screws and lockwashers and lift the cradle assembly from its locating pins. Support the cradle carefully to avoid breaking the cable leads or, if necessary, disconnect the leads. After making the necessary replacements, reassemble the cradle assembly by positioning it on its locating pins but do not tighten the mounting screws. Guide the perforating pins into their respective holes in the pin guide using the KS-14457 pin extractor and tighten the cradle mounting screws securely. Remount the cutter and reconnect the leads.

3.10 ***D-176283 Perforator:*** To remove the cradle assembly from the D-176283 perforator, remove the drum advance checking mechanism as covered in 3.24. Remove the mounting and positioning screws using the proper size Allen wrench and lift the checking mechanism from the perforator frame. Remove and replace the cradle as covered in 3.09. Remount the drum advance checking mechanism and reconnect the leads.

Pin Guide

3.11 Raise each perforator unit armature assembly until the perforating pin is free of the holes and push the pin over the edge of the nearest side of the guide. Remove the guide by removing the two mounting screws and washers using a 4-inch E screwdriver and lift the guide from its locating pins. Remove and discard the locating pins. Substitute the new pin guide and reassemble the mounting screws and washers. Reset the perforating pins in their proper holes in the guide.

3.12 Operate all the perforating units so that the pins seat in their holes in the drum. Shift the pin guide until there is clearance between the perforating pins and sides of the pin guide holes on all pins, if possible, and tighten the mounting screws. If a few pins do not have clearance, shift the individual perforator unit as covered in Section 034-300-701.

3.13 Remove the splice contact as covered in 3.20 or 3.22. Using a 3-inch C screwdriver, remove the tape chute mounting screws and washers. Slide the chute from the cradle. Make sure that the positioning spring of the new chute is on the correct side for the D-175914 or D-176283 perforator as shown in Fig. 12. Install the new tape chute and reassemble the splice contact.

Note: The tape chute on the D-176283 perforator does not have the lip shown in Fig. 12, but this chute may be replaced with a chute having the lip.

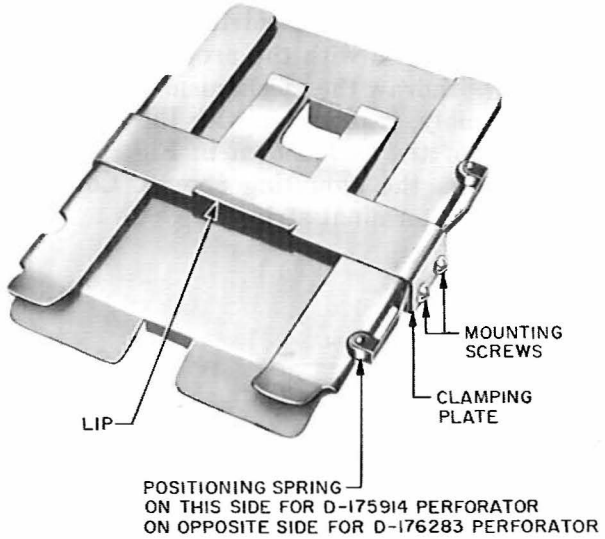

Fig. 12 – Tape Chute

3.14 ***Positioning Spring:*** To transfer the positioning spring from one side to the other for the D-175914 or D-176283 perforator, remove the two mounting screws on each side of the chute with a 3-inch C screwdriver and remove the clamping plate and the spring. Place the spring on the proper side as shown in Fig. 12. Reassemble the clamp plate and set up the screws tightly. Before remounting the tape chute in the perforator, check the positioning spring pressure and adjust as required in accordance with Section 034-300-701.

Pressure Plate (Fig. 13)

3.15 To obtain access to the pressure plate on the D-175914 perforator, remove the cutter as covered in 3.25. On the D-176283 perforator, the pressure plate is accessible without removal of any subassemblies.

3.16 Loosen the retaining pawl mounting screw with the 3-inch C screwdriver and shift the pawl to clear the ratchet. Lift the two end pressure plate springs up until the studs on the pressure plate are free of the holes in the springs. Slide the pressure plate around the drum toward the plug end and pull it out slowly from the bottom of the perforator, withdrawing the plate by hand or with the 485A pliers. Substitute the new pressure plate and reassemble by inserting the end with the upturned lip between the end of the exit side pressure plate spring and under the pin guide. Set the plate in position so that the studs engage the holes in the pressure plate springs. Reset the retaining pawl and tighten the mounting screw.

Pressure Plate Springs (Fig. 13)

3.17 To replace the end pressure plate springs, remove the mounting screw and washer from each of the two end pressure plate springs using the 6-inch C screwdriver. It may be necessary to push the cable back slightly to expose the screws. Lift the end of each spring under the pin guide until the hole is clear of the stud on the pressure plate. Withdraw each spring, using the 485A pliers, from its locating pin.

3.18 To replace the spring on the exit side of the drum, remove the two screws and washers and withdraw the spring.

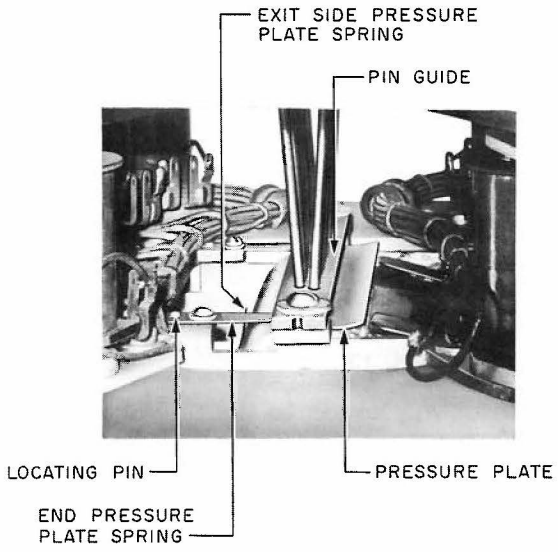

Fig. 13 – Pressure Plate and Adjacent Parts

3.19 Substitute the new springs and reassemble, taking care that the hole in each end spring engages the stud in the pressure plate and tighten the mounting screws.

Splice Contact Assembly (D-175914 perforator only)

3.20 Disconnect the leads from the switch using the 3-inch C screwdriver. Remove the mounting screws and lift out the assembly. Substitute the new assembly, tighten the mounting screws, and reconnect the leads.

Micro Switch (D-175914 perforator only)

3.21 Using the 3-inch C screwdriver and the 418A wrench, disconnect the leads from the Micro Switch and remove the two mounting screws, nuts, lockwashers, and plate from the switch. Pull out the switch. Substitute the new switch and reassemble the parts. Reconnect the cable leads.

Splice Contact Assembly (D-176283 perforator only)

3.22 Disconnect the leads from the terminal blocks using the 3-inch C screwdriver. Cut the cords that tie the perforator cable to the contact assembly frame. Remove the two mounting screws and lift out the assembly. Substitute the new assembly and set up the mounting screws securely. Reconnect the leads and retie the cable to the frame of the splice contact assembly with No. 6 twine as shown in Fig. 14.

Mercury Switch (D-176283 perforator only)

3.23 Cut the cords that tie the contact leads to the actuating arm and frame. Disconnect the leads from the terminal strip. Lift the contact from the clips. Substitute the new contact by snapping it in the clips. Tie the contact cord in the positions shown in Fig. 14 with No. 6 twine. Reconnect the leads to the terminal strip.

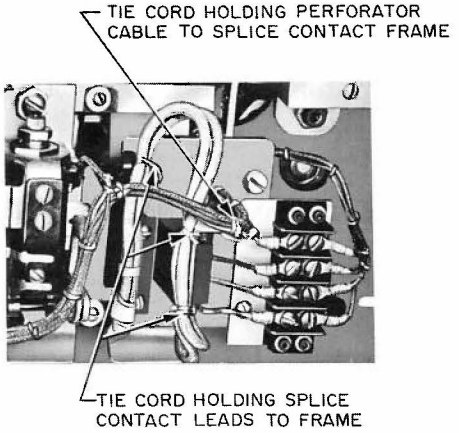

Fig. 14 – Splice Contact Assembly — D-176283 perforator

Drum Advance Checking Mechanism (D-176283 perforator only)

3.24 Disconnect the leads at the terminal strip with the 3-inch C screwdriver. Remove the two mounting screws with the proper size Allen wrench and withdraw the mechanism. Substitute the new assembly, reassemble with the finger in the end hole of the row shown in Fig. 15, and securely tighten the mounting screws. Connect the leads to the terminal strip.

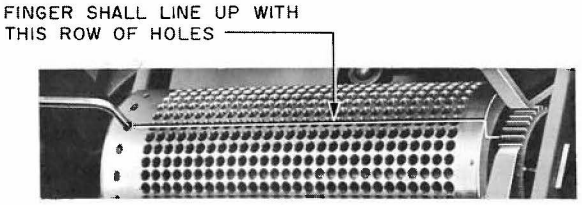

Fig. 15 – Checking Mechanism Line-Up

Cutter Mechanism (D-175914 perforator only)

3.25 Disconnect the leads at the cutter terminal block with the 3-inch C screwdriver. Remove the two mounting screws with the proper size Allen wrench and lift the cutter assembly from the cradle assembly. Substitute the new cutter, reassemble, and tighten the mounting screws. Reconnect the leads to the cutter terminal block.

Drum Advance Mechanism

3.26 Unsolder the leads to the coil terminals and mark the leads so that they can be resoldered to the proper terminals when the mechanism is replaced. Remove the mounting and locking screws with the proper size Allen wrench and 4-inch E screwdriver and lift the mechanism from the cradle, being careful not to damage the drum.

3.27 Before substituting the new assembly, insert the locking screw through the positioning screw. It may not be possible to do this without removing the magnet clamping screw. In these cases remove the magnet clamping screw with the proper size Allen wrench, insert the locking screw, and reassemble the magnet clamping screw. Line up the magnet as covered in 3.36. Mount and line up the new assembly as follows.

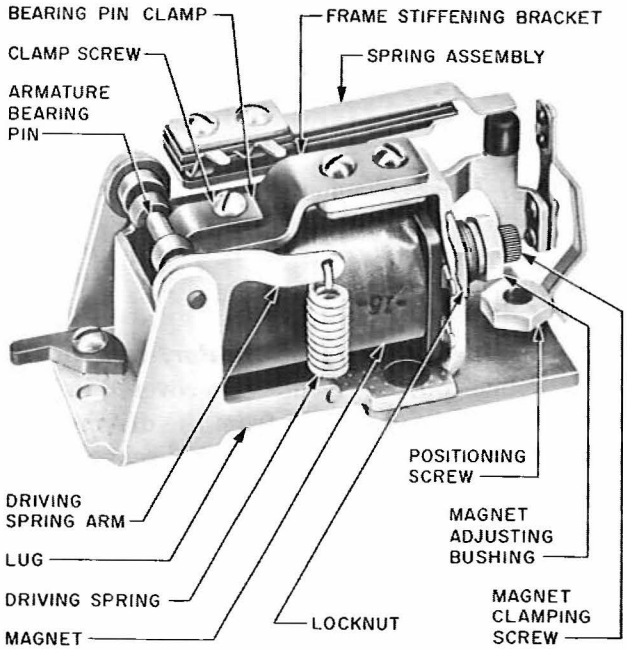

Fig. 16 – Drum Advance Mechanism

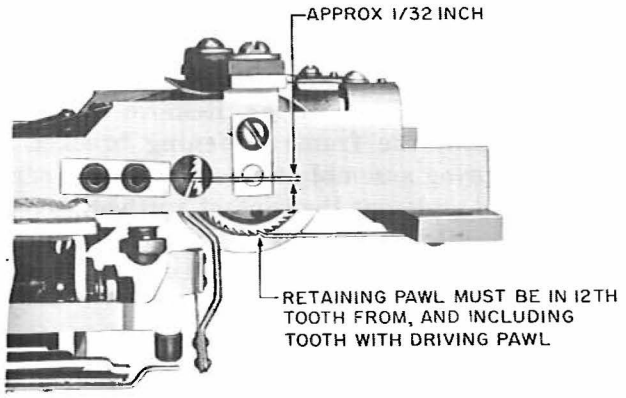

Fig. 17 – Positioning of Driving and Retaining Pawls

3.28 Loosen the drum advance mechanism locking screw and shift the assembly by turning the positioning screw with the 245 wrench to the position where, after the locking screw is set up securely, the end of the driving pawl is in the tooth as shown in Fig. 17 and the holes in the drum and pin guide are lined up in accordance with requirements in Section 034-300-701. If necessary, readjust the overthrow stop position as covered in 3.41.

3.29 ***Drum: On the D-175914 perforator,*** remove the cutter as covered in 3.25; ***on the D-176283 perforator,*** remove the drum advance checking mechanism as covered in 3.24. Using the 3-inch C screwdriver, loosen the retaining pawl sufficiently to permit moving the pawl away from the ratchet. Loosen the adjusting plate lockscrew at the ratchet wheel end and remove the shaft plate lockscrew at the opposite end. Withdraw the shaft from the drum and remove the drum, being careful not to damage the driving pawl.

3.30 Substitute the new drum by setting it in its approximate position in the cradle, being careful not to damage the driving pawl or drum. Push the drum against the pressure plate until the bearing holes line up and reinsert the shaft until the shaft plate is against the cradle. Reassemble and tighten the shaft plate lockscrew and tighten the adjusting plate screw at the other end. Reset the retaining pawl as covered in 3.40 and remount the cutter or drum advance checking mechanism. Make sure that the studs on the pressure plate are in the holes in the pressure plate springs.

3.31 ***Drumshaft:*** Remove the shaft and substitute the new shaft as covered in 3.29 and 3.30.

3.32 ***Frame Stiffening Bracket and Armature Bearing Pin Clamp:*** Remove the screws which mount the frame stiffening bracket and contact spring assembly with the 3-inch C screwdriver and slide out the contact spring assembly. Remove the armature bearing pin clamp mounting screw and the clamp. Substitute the required parts and reassemble.

3.33 ***Armature Bearing Pin:*** Disengage the driving spring from the driving spring arm with the P-long-nose pliers and loosen the armature bearing pin clamp screw with the 3-inch C screwdriver. Remove the bearing pin by removing the armature bearing pin clamping screw and withdrawing the bearing pin. Clean the new shaft and armature bearings of the mechanism and relubricate the bearings with a light coat of KS-16832 L2 lubricant applied with the KS-14164 brush and distributed over the two bearings before assembly. Make sure that the container of KS-16832 L2 lubricant has been shaken as covered in 1.05. Insert the new bearing pin, reassemble the parts, and securely tighten all screws.

3.34 ***Armature and Pawl Assembly:*** Remove the frame stiffening bracket and the armature bearing pin as covered in 3.32 and 3.33 and then withdraw the armature and pawl assembly being careful not to damage the drum. Clean the shaft and armature bearings as covered in 3.33. Substitute the new assembly and reassemble the parts being careful not to damage the pawl or drum. Check the position of the drum advance mechanism and readjust if necessary as covered in 3.27 and 3.28.

3.35 ***Magnet:*** Unsolder the leads from the terminals and mark the leads so that they can be connected to the corresponding terminals of the new magnet. Remove the armature and pawl assembly as covered in 3.34. Remove the magnet clamping screw with the proper size Allen wrench, being careful not to damage the drum and withdraw the magnet. Substitute the new magnet. Reassemble the parts and resolder the leads.

3.36 Position the magnet so that the armature strikes the core at the edge farthest from the armature bearing and the gap nearest the armature bearing is minimum 0.002 inch, maximum 0.004 inch as shown in Fig. 18. To position the magnet, loosen the magnet clamping screw and the magnet adjusting locknut and turn the magnet adjusting bushing with the R-5850 wrench as required until the correct position of the magnet is obtained. Check this requirement by operating the magnet electrically and inserting the KS-6909 gauge for a depth of approximately 1/16 inch between the armature and the edge of the core nearest the armature bearing. The requirement is met if the 0.002-inch gauge just enters and the 0.004-inch gauge does not enter in the gap. When the proper position is obtained, set up the magnet clamping screw and the magnet adjusting locknut tightly and recheck the gap.

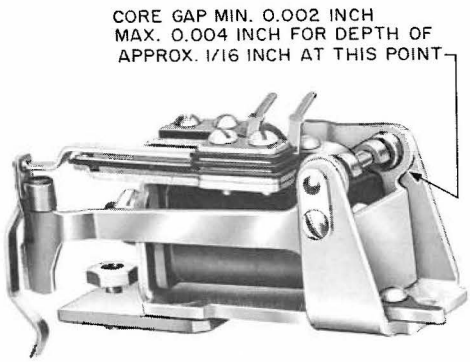

Fig. 18 – Positioning of Drum Advance Mechanism Magnet

Driving Spring

3.37 ***On the D-175914 perforator,*** remove the splice contact assembly as covered in 3.20. Remove the driving spring from the driving arm with the P-long-nose pliers and disengage the other end of the spring from the driving spring lug. Exercise care not to distort the driving spring arm or lug. Engage one end of the new driving spring in the eye of the driving spring lug and attach the other end of the spring to the driving spring arm. Remount the splice contact assembly.

3.38 *On the D-176283 perforator,* it will not be necessary to remove the splice contact assembly. Remove the old and substitute the new driving spring as covered in 3.37.

3.39 *Contact Spring Assembly:* To replace a contact spring assembly, remove the screws which mount the frame stiffening bracket and contact spring assembly using the 3-inch C screwdriver. Remove the old contact spring assembly and place the new one in position, holding the assembly so that the interrupter spring is aligned centrally with the driving arm stud. Reassemble and tighten the screws which mount the frame stiffening bracket and contact spring assembly.

3.40 *Retaining Pawl:* Using the 3-inch C screwdriver, remove the retaining pawl screw and washer. On the D-176283 perforator, lift the pawl out; on the D-175914 perforator, pull the pawl out from under the cutter. Substitute the new pawl in its groove on the cradle assembly and reassemble the screw and washer. Set the pawl in the twelfth tooth as shown in Fig. 17 and set up the screw tightly.

3.41 *Overthrow Stop:* Remove tape chute as covered in 3.13. Remove the two overthrow stop mounting screws and clamp plate with the proper size Allen wrench and withdraw the stop with the 485A pliers. Substitute the new stop, taking care that the beveled edge is adjacent to the pawl and reassemble its clamp plate and mounting screws.

3.42 Position the stop by loosening the clamp screws and shifting the stop so that there is no bind of the driving pawl between the stop and each ratchet wheel tooth when the drum is rotated backward far enough to absorb just the play between the retaining pawl and ratchet wheel tooth. The gap between the driving pawl and the overthrow stop at each tooth of the ratchet wheel shall not allow more than perceptible rotary motion of the drum.

Perforator Unit

3.43 Remove the two mounting screws and washers with the 644A wrench or proper size Allen wrench. Pull the unit out as far as the slack in the leads permits and unsolder the leads. Lift the unit upward from the upper tier. Lift, tilt, and withdraw the unit out from the lower tier. Check that the new unit is for the particular position as covered in Table A, that the terminals are centered as gauged by eye, and that the terminal spoolhead does not touch the pole piece. Check that the magnet mounting nut on the bottom of the mounting plate is securely set up. Tighten with the 245 wrench if necessary.

3.44 Before reassembling on the perforator, lubricate the parts as covered in 3.47.

3.45 Substitute the new perforator unit in its correct position and resolder the leads to the magnet in accordance with wiring diagram Fig. 20 for D-175914 and Fig. 21 for D-176283. Insert the pin in the proper hole in the pin guide and replace the mounting screws and washers. Check that the pins operate freely through the pin guide as covered in 3.12.

Armature Assembly — Upper Tier

3.46 To remove any armature assembly in the upper tier, remove the retractile spring and its associated nuts, washers, and spring guide using the 388A and 417A wrenches. Lift the assembly up slightly and back to clear the retractile spring stud, being careful not to bend or damage the stud, and remove the armature and its associated perforator pin as a unit.

3.47 Check that the new assembly is for the particular unit as covered in Table A and, before assembling the new armature assembly to the perforator unit, clean the knife edge of the pole piece and the retractile spring and its associated washer spring guide and nuts. Lubricate the knife-edge bearing surface of the new armature shown in Fig. 19 and the groove in the grooved washer with 1/4 dip of KS-16832 L2 lubricant applied to each part with the KS-14164 brush. Make sure that the container of KS-16832 L2 lubricant has been shaken as covered in 1.05.

3.48 Reassemble the new armature to the perforator unit, insert the perforating pin in the proper hole in the pin guide, and line up the pins as covered in 3.12.

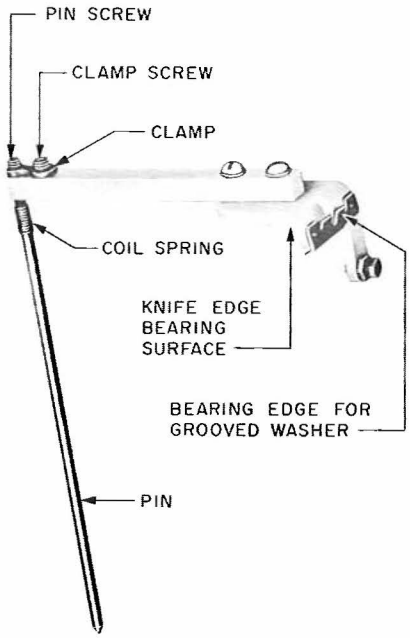

Fig. 19 – Armature Assembly

Armature Assembly — Lower Tier

3.49 To remove any armature assembly in the lower tier, remove the perforator unit mounting screws and washers with the 644A wrench or the proper size Allen Wrench and withdraw the unit as far as the slack in the cable leads permits. Remove the retractile spring and its associated parts as covered in 3.46. Lift the armature assembly up and out over the retractile spring and stud, being careful not to bend or damage the stud.

3.50 The armature assembly of some of the lower tier units may be removed without removing the mounting screws. On these units, remove the retractile spring and its associated nuts and washers. Lift the armature assembly up and out over the retractile spring stud, tilting the assembly slightly and being careful not to bend or damage the stud.

3.51 Check that the new armature assembly is for the particular perforator unit as covered in Table A and clean and relubricate the parts as covered in 3.47.

3.52 Reassemble the new armature to the perforator unit and insert the perforating pin in the proper hole in the pin guide. Reset the unit in its proper position on the perforator and line up the pins as covered in 3.12.

Pins

3.53 To replace any perforating pin assembly, remove the armature assembly as covered in 3.46, 3.49, or 3.50. Loosen the pin clamp →screw with the 643B wrench or the No. 607 →handle with the 5-inch long 3/32-inch Allen blade and turn the pin screw clockwise with the 643A wrench until the pin assembly can be removed.

3.54 Before substituting, check that the correct pin is used for the particular perforator unit as covered in Table A, the pin of the new assembly is held firmly in its bearing against the pin screw, and there is a clearance (approximately 0.003 inch) between the coils at about the center of the spring. If there is no clearance, hold the lower turns of the spring with the 485A pliers and turn the pin adjusting screw into the spring until the clearance is obtained. Reinsert the new pin assembly, threading the screw from the bottom of the armature arm. Reassemble the clamp plate and clamp screw. Clean, lubricate, and remount the armature assembly on the magnet in accordance with 3.47, 3.48, or 3.52.

Magnet

3.55 Remove the perforator unit as covered in 3.43. Remove the armature assembly as covered in 3.46, 3.49 or 3.50. Remove the mounting nut and withdraw the magnet. Substitute the new magnet. Make sure that the terminals are centered as gauged by eye and that the terminal spoolhead does not touch the pole piece. Set up the mounting nut securely. Clean, lubricate, and reassemble the perforator unit and place it in its proper position on the perforator as covered in 3.44 and 3.45.

Retractile Spring, Washer, or Spring Guide

3.56 To replace any of these parts, remove the parts as covered in 3.46 or 3.49. Before substituting the new parts, clean and relubricate the parts including the armature and pole piece as covered in 3.47 and reassemble the parts.

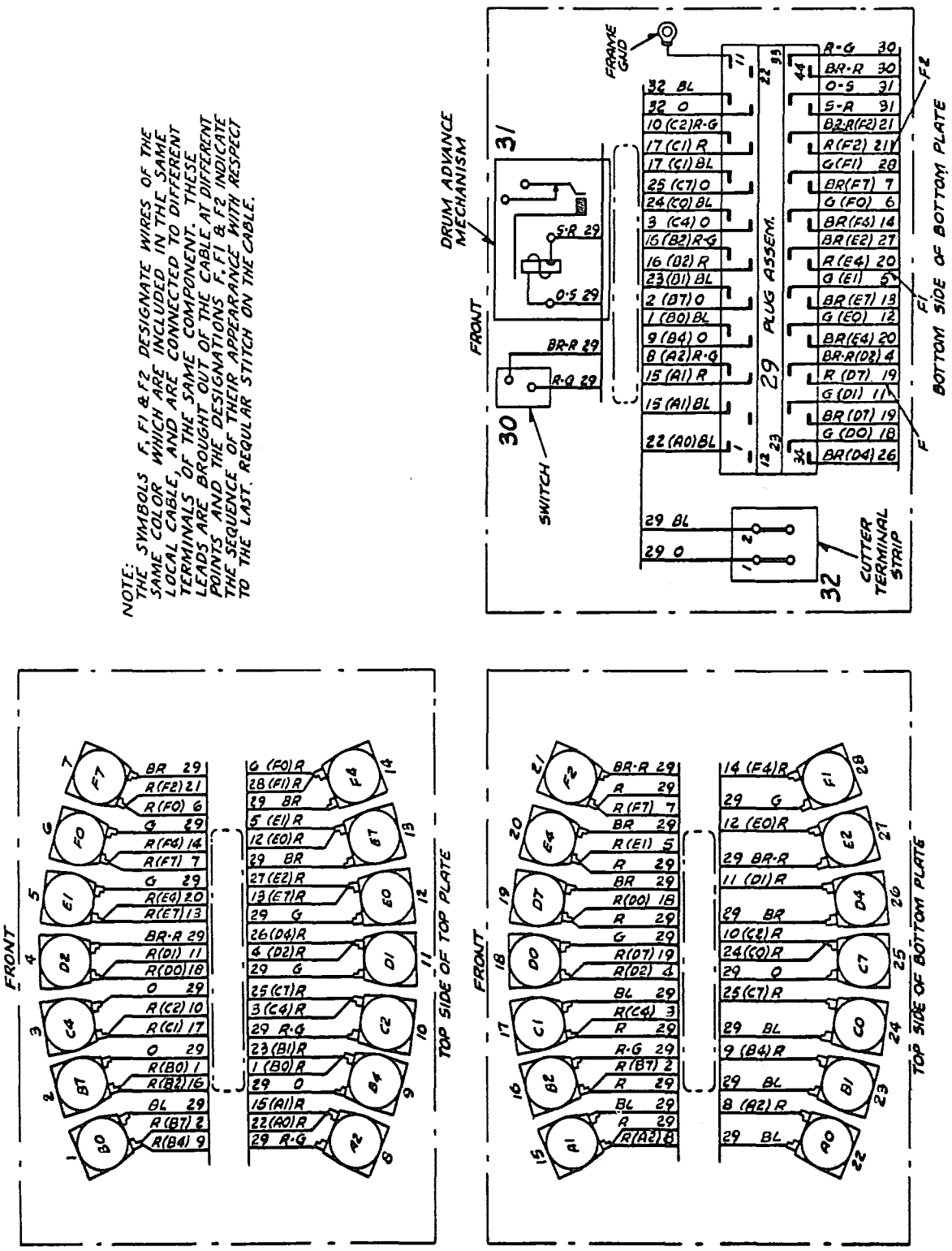

Fig. 20 – D-175914 Perforator — Wiring Diagram and Perforator Unit Designation

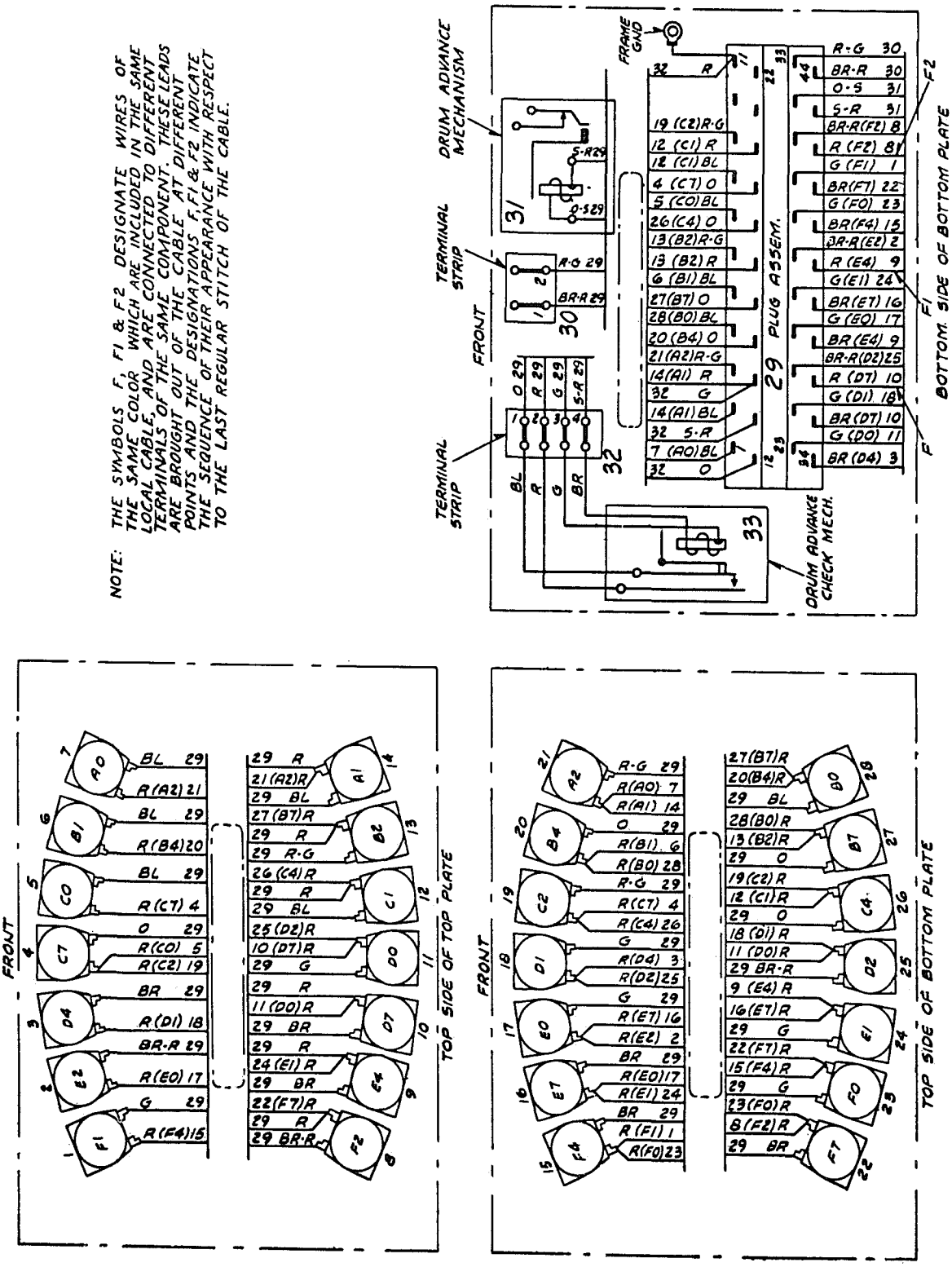

Fig. 21 – D-176283 Perforator — Wiring Diagram and Perforator Unit Designation

REASONS FOR REISSUE

1. To add information covering the definition of one dip of KS-16832 L2 lubricant (1.04)
2. To add information covering the preparation of KS-16832 L2 lubricant (1.05)
3. To add a paragraph defining the information enclosed in parentheses (2.05)
4. To omit piece-part data (2.05, 2.06 and Tables 1 through 4 of previous issue)
5. To add piece-part data (Fig. 1 through 11)
6. To revise the List of Tools, Gauges, Materials, and Test Apparatus (3.01) and to add an associated paragraph (3.02)
7. To revise the lubrication information (3.33 and 3.47)
8. To revise the procedures covering pins (3.53)