

“DATASPEED*” 40 PRINTER

TESTING AND TROUBLESHOOTING

	CONTENTS	PAGE
1.	GENERAL	1
2.	TESTING	2
3.	TROUBLESHOOTING	14
1.	GENERAL	

1.01 This section provides the testing and troubleshooting for the DATASPEED 40 printer — friction and tractor feed, 80- and 132-column (Fig. 1). DATASPEED 40 is hereafter referred to as 40-type.

1.02 This section is being reissued to incorporate the 40P203 and 40P204 (132-column printers), ac input and motor control assemblies (late design) for the 40P101 and 40P102 printers, and the 410019 circuit card assembly used on the 40P154, 40P253, 40P201, 40P202, 40P203 and 40P204 printers.

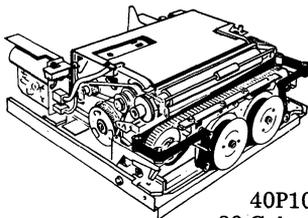
1.03 Printer off-line checkout is covered in Part 2, Table A; troubleshooting is covered in Part 3, Table B (80-column friction feed printer), Table C (80-column tractor feed printer) and Table D (132-column tractor feed printer).

1.04 Before troubleshooting the printer, the general information preceding Table B should be carefully reviewed.

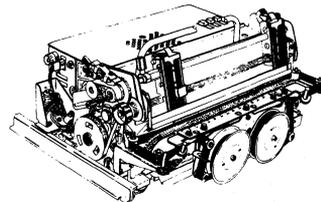
1.05 Associated Printer BSP Sections:

- 582-210-100 Description and Operation
- 582-210-200 Installation
- 582-210-400 Wiring
- 582-210-700 Adjustments and Lubrication
- 582-210-702 Disassembly/Reassembly and Parts
- 582-210-750 Routine Maintenance

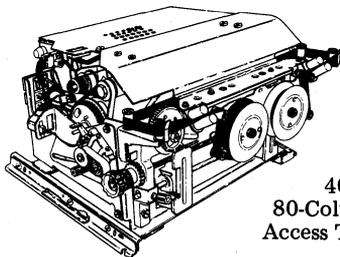
Note: When ordering replaceable components, unless otherwise specified, prefix each part number with the letters “TP” (ie, TP410055).



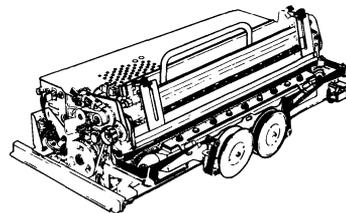
40P101 or 40P102
80-Column Friction Feed



40P151, 40P153 or 40P154
80-Column Tractor Feed



40P253
80-Column Forms
Access Tractor Feed



40P201, 40P202, 40P203 or 40P204
132-Column Tractor Feed

Fig. 1—DATASPEED 40 Printers

*Registered Trademark of AT&TCo.

2. TESTING

- 2.01 Table A checks the printer off-line operation. On-line testing should be performed with the Service Test Center.
- 2.02 Testing should be performed after installation or on trouble calls to make sure the trouble has been corrected and the printer is free of any other troubles.

TABLE A
OFF-LINE CHECKOUT

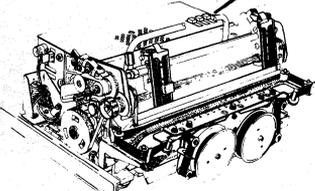
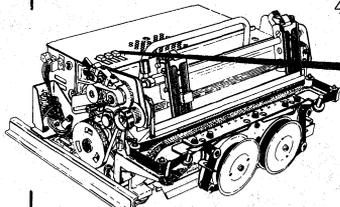
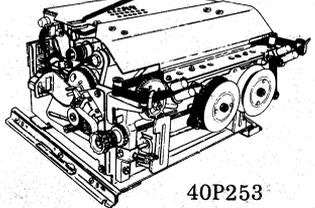
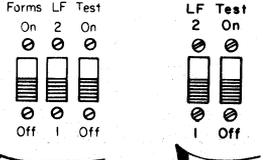
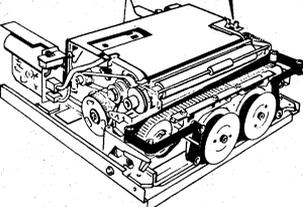
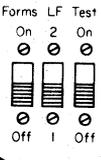
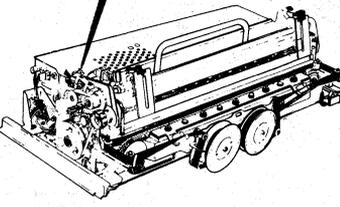
STEP	PROCEDURE	RESULTS
1	<p>Preliminary requirements:</p> <ul style="list-style-type: none"> (a) Ribbon and paper loaded. (b) Switches set as follows: LF --- 1 Test --- Off Forms --- Off (tractor feed only). (c) Cabinet cover closed. <p>80-Column Tractor Feed</p>  <p>40P151 or 40P153</p>  <p>40P154</p>  <p>40P253</p>	  <p>80-Column Friction Feed</p>   <p>40P201, 40P202, 40P203 or 40P204</p>

TABLE A (Cont)
OFF-LINE CHECKOUT

STEP	PROCEDURE	RESULTS
2	<p>Turn power on.</p> <p>ROP or KDP (Forms Access): Power switch on cabinet form chute.</p> <p>ROP: Power switch on pedestal and at rear of cabinet.</p> <p>KDP: Power switch on pedestal.</p>	<p>POWER ON indicator lights. Printer motor should not turn on. IN SERVICE indicator lights (ROP).</p> <p>IN SERVICE indicator lights. Tractor feed printers (80- and 132-column), cabinet fan turns on. Printer motor should not turn on.</p> <p>Controller fans turn on. Printer motor should not turn on.</p>
3	<p>Forms Access: Open cabinet front access doors and top lid and place the three Interlock switches in maintenance position (up or outward).</p> <p>Friction and Tractor Feed: Open cabinet cover and place Interlock switch in maintenance position (up).</p> <p>Operate Test switch to On for a few lines, then to Off.</p>	<p>Printer motor turns on. Font identification symbol ($\begin{smallmatrix} \text{A} \\ \text{A} \end{smallmatrix}$, $\begin{smallmatrix} \text{A} \\ \text{B} \end{smallmatrix}$, etc) prints in all columns on printer equipped with 410640 or 410729 circuit card. On printer equipped with 410071, 410072, or 410076 circuit card, font identification symbol prints within margins specified by Option 17.</p>
4	<p>Operate LF switch to position 2 and again operate Test switch to On for a few lines, then to Off.</p> <p>Operate LF switch to position 1.</p>	<p>The font identification symbol prints with double line spacing.</p> <p>$\begin{smallmatrix} \text{A} \\ \text{A} \end{smallmatrix}$ $\begin{smallmatrix} \text{A} \\ \text{A} \end{smallmatrix}$ $\begin{smallmatrix} \text{A} \\ \text{A} \end{smallmatrix}$ $\begin{smallmatrix} \text{A} \\ \text{A} \end{smallmatrix}$</p> <p>$\begin{smallmatrix} \text{A} \\ \text{A} \end{smallmatrix}$ $\begin{smallmatrix} \text{A} \\ \text{A} \end{smallmatrix}$ $\begin{smallmatrix} \text{A} \\ \text{A} \end{smallmatrix}$ $\begin{smallmatrix} \text{A} \\ \text{A} \end{smallmatrix}$</p> <p>$\begin{smallmatrix} \text{A} \\ \text{A} \end{smallmatrix}$ $\begin{smallmatrix} \text{A} \\ \text{A} \end{smallmatrix}$ $\begin{smallmatrix} \text{A} \\ \text{A} \end{smallmatrix}$ $\begin{smallmatrix} \text{A} \\ \text{A} \end{smallmatrix}$</p>

TABLE A (Cont)
OFF-LINE CHECKOUT

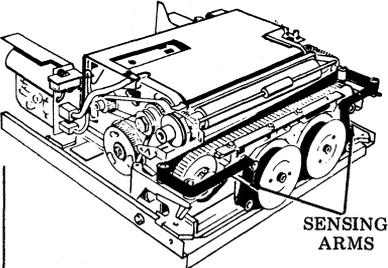
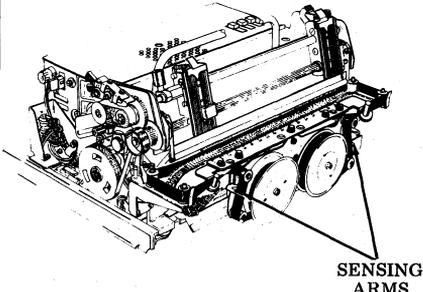
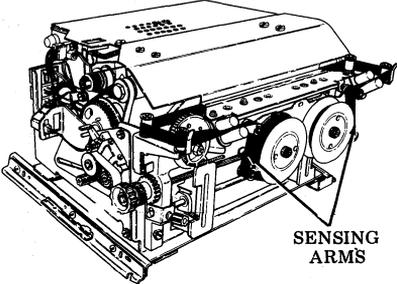
STEP	PROCEDURE	RESULTS
5	<p>Tilt printer (except forms access) into maintenance position.</p> <p>Operate Test switch to On.</p> <p>Alternately operate left and right ribbon reverse sensing arms several times.</p> <div style="display: flex; justify-content: space-around; align-items: center;"> <div style="text-align: center;">  <p>Friction Feed</p> </div> <div style="text-align: center;">  <p>Tractor Feed</p> </div> </div> <div style="text-align: center; margin-top: 20px;">  <p>Forms Access</p> </div>	<p>Ribbon feeding and reversing should be smooth and positive. Ribbon should not strain or curl during reversing operation.</p> <p>Printer motor turns off.</p>
6	<p>Friction Feed: Momentarily depress PAPER button (red) on printer cabinet cover.</p> <p>Tractor Feed: Depress PAPER button on printer cabinet cover.</p> <p>Depress FORM ADVANCE button on printer cabinet cover (Option 39b).</p> <p>Operate Forms switch to On (Option 39a).</p>	<p>Paper feeds out as long as button is depressed.</p> <p>Paper feeds out as long as button is depressed.</p> <p>Paper feeds out as long as button is depressed.</p>

TABLE A (Cont)
OFF-LINE CHECKOUT

STEP	PROCEDURE	RESULTS																																																																												
6 (Cont)	<p>Depress FORM ADVANCE button on printer cabinet cover.</p> <p>Forms Access: Momentarily depress FORM switch (on cabinet form chute or on underside of panel). (Forms switch on printer Off — Option 39b.)</p> <p>Operate Forms switch on printer to On (Option 39a).</p> <p>Momentarily depress FORM switch on cabinet.</p>	<p>Paper feeds out until first line of next form is reached, then stops.</p> <p><i>Note:</i> Form-out length will vary depending upon form selector setting and color of belt.</p> <p style="text-align: center;">FORM-OUT BELT SELECTION</p> <table border="1" data-bbox="753 437 1106 654"> <thead> <tr> <th colspan="4">Form Selector Setting</th> <th rowspan="2">Part No.</th> <th rowspan="2">Color of Belt</th> </tr> <tr> <th>4</th> <th>3</th> <th>2</th> <th>1</th> </tr> </thead> <tbody> <tr> <td colspan="6" style="text-align: center;">Length of Form, Inches</td> </tr> <tr> <td>3-1/3†</td> <td>2-1/2</td> <td>5</td> <td>10</td> <td>402571</td> <td>Amber</td> </tr> <tr> <td>3-2/3†</td> <td>2-3/4*</td> <td>5-1/2</td> <td>11</td> <td>402572</td> <td>Dk Blue</td> </tr> <tr> <td>4</td> <td>3</td> <td>6</td> <td>12</td> <td>402573</td> <td>Yellow</td> </tr> <tr> <td>4-1/3†</td> <td>3-1/4*</td> <td>6-1/2</td> <td>13</td> <td>402574</td> <td>Brown</td> </tr> <tr> <td>4-2/3†</td> <td>3-1/2</td> <td>7</td> <td>14</td> <td>402575</td> <td>Red</td> </tr> <tr> <td>5</td> <td>3-3/4*</td> <td>7-1/2</td> <td>15</td> <td>402576</td> <td>Pink</td> </tr> <tr> <td>5-1/3†</td> <td>4</td> <td>8</td> <td>16</td> <td>402577</td> <td>Lt Green</td> </tr> <tr> <td>5-2/3†</td> <td>4-1/4*</td> <td>8-1/2</td> <td>17</td> <td>402578</td> <td>Dk Green</td> </tr> <tr> <td>6</td> <td>4-1/2</td> <td>9</td> <td>18</td> <td>402579</td> <td>Lt Blue</td> </tr> <tr> <td>7-1/3†</td> <td>5-1/2</td> <td>11</td> <td>22</td> <td>402580</td> <td>White</td> </tr> </tbody> </table> <p>*These settings are not used on 6 line per inch printers.</p> <p>†These settings are not used on 8 line per inch printers.</p> <p><i>Note:</i> Dark blue belt is factory furnished.</p> <p>Paper feeds out a line at a time as long as switch is depressed.</p> <p>Paper feeds out until first line of next form is reached, then stops.</p> <p><i>Note:</i> Form-out length will vary depending upon form selector setting and color of belt.</p> <p>See Chart above.</p>	Form Selector Setting				Part No.	Color of Belt	4	3	2	1	Length of Form, Inches						3-1/3†	2-1/2	5	10	402571	Amber	3-2/3†	2-3/4*	5-1/2	11	402572	Dk Blue	4	3	6	12	402573	Yellow	4-1/3†	3-1/4*	6-1/2	13	402574	Brown	4-2/3†	3-1/2	7	14	402575	Red	5	3-3/4*	7-1/2	15	402576	Pink	5-1/3†	4	8	16	402577	Lt Green	5-2/3†	4-1/4*	8-1/2	17	402578	Dk Green	6	4-1/2	9	18	402579	Lt Blue	7-1/3†	5-1/2	11	22	402580	White
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4-2/3†	3-1/2	7	14	402575	Red																																																																									
5	3-3/4*	7-1/2	15	402576	Pink																																																																									
5-1/3†	4	8	16	402577	Lt Green																																																																									
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TABLE A (Cont)

OFF-LINE CHECKOUT

STEP	PROCEDURE	RESULTS
7	<p>ROP: Depress TEST or TRANS START key on opcon.</p>  <p>OR TRANS START</p> <p>Note: If TEST or TRANS START indicator is not present, remove blocking key at left of IN SERVICE key, depress key stem to start test message; depress again to stop test message.</p> <p>TEST MESSAGE IF ROP IS EQUIPPED WITH 40C103/AD OR 40C103/AE CONTROLLER</p> <p>Option 19a Enabled</p> <pre> ! " # \$ % & ' () * + , - . / 0 1 2 3 4 5 6 7 8 9 : ; < = > ? @ A B C D E F G H I J K L M N O P Q R S T U V W X Y Z [\] ^ _ ` ! " # \$ % & ' () * + , - . / 0 1 2 3 4 5 6 7 8 9 : ; < = > ? @ A B C D E F G H I J K L M N O P Q R S T U V W X Y Z [\] ^ _ ` ! " # \$ % & ' () * + , - . / 0 1 2 3 4 5 6 7 8 9 : ; < = > ? @ A B C D E F G H I J K L M N O P Q R S T U V W X Y Z [\] ^ _ ` ! " # \$ % & ' () * + , - . / 0 1 2 3 4 5 6 7 8 9 : ; < = > ? @ A B C D E F G H I J K L M N O P Q R S T U V W X Y Z [\] ^ _ ` </pre> <p>Option 19b Enabled</p> <pre> # % & ' () * + , - . / 0 1 2 3 4 5 6 7 8 9 : ; < = > ? @ A B C D E F G H I J K L M N O P Q R S T U V W X Y Z [\] ^ _ ` 1 2 3 4 5 6 7 8 9 : ; < = > ? @ A B C D E F G H I J K L M N O P Q R S T U V W X Y Z [\] ^ _ ` @ A B C D E F G H I J K L M N O P Q R S T U V W X Y Z [\] ^ _ ` 0 1 2 3 4 5 6 7 8 9 : ; < = > ? @ A B C D E F G H I J K L M N O P Q R S T U V W X Y Z [\] ^ _ ` </pre> <p>Option 19c Enabled</p> <pre> ! " # \$ % & ' () * + , - . / 0 1 2 3 4 5 6 7 8 9 : ; < = > ? @ A B C D E F G H I J K L M N O P Q R S T U V W X Y Z [\] ^ _ ` ! " # \$ % & ' () * + , - . / 0 1 2 3 4 5 6 7 8 9 : ; < = > ? @ A B C D E F G H I J K L M N O P Q R S T U V W X Y Z [\] ^ _ ` ! " # \$ % & ' () * + , - . / 0 1 2 3 4 5 6 7 8 9 : ; < = > ? @ A B C D E F G H I J K L M N O P Q R S T U V W X Y Z [\] ^ _ ` ! " # \$ % & ' () * + , - . / 0 1 2 3 4 5 6 7 8 9 : ; < = > ? @ A B C D E F G H I J K L M N O P Q R S T U V W X Y Z [\] ^ _ ` </pre> <p>Note 1: The test message will print as shown below if Option 19c is enabled and Option 38 (Data Stacking) is enabled in the 40C103/AE RO controller (410582 circuit card).</p> <pre> ! " # \$ % & ' () * + , - . / 0 1 2 3 4 5 6 7 8 9 : ; < = > ? @ A B C D E F G H I J K L M N O P Q R S T U V W X Y Z [\] ^ _ ` ; ; = ? @ A B C D E F G H I J K L M N O P Q R S T U V W X Y Z [\] ^ _ ` ! " # \$ % & ' () * + , - . / 0 1 2 3 4 5 6 7 8 9 : ; < = > ? @ A B C D E F G H I J K L M N O P Q R S T U V W X Y Z [\] ^ _ ` 9 ; ; = ? @ A B C D E F G H I J K L M N O P Q R S T U V W X Y Z [\] ^ _ ` ! " # \$ % & ' () * + , - . / 0 1 2 3 4 5 6 7 8 9 : ; < = > ? @ A B C D E F G H I J K L M N O P Q R S T U V W X Y Z [\] ^ _ ` O P Q R S T U V W X Y Z [\] ^ _ ` </pre> <p>Note 2: Type carrier in sample test is $\begin{smallmatrix} \text{A} \\ \text{---} \\ \text{A} \end{smallmatrix}$ (80-column) or $\begin{smallmatrix} \text{A} \\ \text{---} \\ \text{---} \\ \text{---} \\ \text{A} \end{smallmatrix}$ (132-column).</p>	<p>TEST or TRANS START indicator lights. Printer motor turns on. Test message is received by printer as shown. There should be no overembossing on paper, missing, or clipped characters. Print density should be uniform over surface of each character and from one character to another.</p>

TABLE A (Cont)

OFF-LINE CHECKOUT

STEP	PROCEDURE	RESULTS
7 (Cont)	<p>TEST MESSAGE IF ROP IS EQUIPPED WITH 40C303/AA 40C303/AD or 40C303/AC INTERGRATED CONTROLLER</p> <p><i>Note 1:</i> With 40C303/AA or 40C303/AD controller, Option 19c and Options 121a and 131a (on diode matrix circuit card) must be enabled to transmit test message.</p> <p><i>Note 2:</i> With 40C303/AC controller, Option 19a or Option 19c must be enabled to transmit test message.</p> <p><i>Note 3:</i> Type carrier in sample test is $\begin{matrix} \text{A} \\ \text{A} \end{matrix}$ (80-column) or $\begin{matrix} \text{A} \\ \text{A} \\ \text{A} \end{matrix}$ (132-column).</p> <pre>! "\$%&'()*+,-./0123456789:;<=>?@ABCDEFGHIJKLMN OPQRSTUVWXYZ [\] ^ _ ` ! "\$%&'()*+,-./0123456789:;<=>?@ABCDEFGHIJKLMN OPQRSTUVWXYZ [\] ^ _ ` ! "\$%&'()*+,-./0123456789:;<=>?@ABCDEFGHIJKLMN OPQRSTUVWXYZ [\] ^ _ ` ! "\$%&'()*+,-./0123456789:;<=>?@ABCDEFGHIJKLMN OPQRSTUVWXYZ [\] ^ _ `</pre> <p>KDP: Keyboard approximately five lines of FOX message or transmit miscellaneous text message to printer — include every character in font followed by GS.</p> <p>Home cursor and depress PRINT LOCAL key.</p> <p>THE QUICK BROWN FOX JUMPED OVER THE LAZY DOG'S BACK 1234567890 THE QUICK BROWN FOX JUMPED OVER THE LAZY DOG'S BACK 1234567890 THE QUICK BROWN FOX JUMPED OVER THE LAZY DOG'S BACK 1234567890 THE QUICK BROWN FOX JUMPED OVER THE LAZY DOG'S BACK 1234567890 THE QUICK BROWN FOX JUMPED OVER THE LAZY DOG'S BACK 1234567890</p>	<p>Printer receives FOX or text message. There should be no overembossing on paper, missing, or clipped characters. Print density should be uniform over surface of each character and from one character to another.</p> <p>When message ending character GS is received, printer stops printing.</p> <p>With Option 18a selected, no paper feeds out.</p> <p>Friction Feed: With Option 18b or 18c selected, paper feeds out 16 lines.</p> <p>Tractor Feed: With Option 18b or 18c selected,</p> <p>(a) Forms switch ON (Option 39a): Form advances to first line of next form.</p> <p>(b) Forms switch OFF (Option 39b): Form feeds out 16 lines or until form-out contact closes, whichever occurs first.</p> <p>With 410640 or 410729 logic card, motor turns off immediately.</p> <p>With 410071, 410072 or 410076 logic card motor turns off after 20 seconds.</p>

TABLE A (Cont)

OFF-LINE CHECKOUT

STEP	PROCEDURE	RESULTS
8	<p>ROP: Depress the TEST or TRANS START key on the opcon again.</p>	<p>TEST or TRANS START indicator on opcon extinguishes and printer stops printing.</p> <p>With Option 18a selected, no paper feeds out.</p> <p>Friction Feed: With Option 18b or 18c selected, paper feeds out 16 lines.</p> <p>Tractor Feed: With Option 18b or 18c selected:</p> <ul style="list-style-type: none"> (a) Forms switch ON (Option 39a): Form advances to first line of next form. (b) Forms switch OFF (Option 39b): Form feeds out 16 lines or until form-out contact closes, whichever occurs first. <p>With 410640 or 410729 logic card, motor turns off immediately.</p> <p>With 410071, 410072 or 410076 logic card, motor turns off after 20 seconds.</p>
9	<p>KDP: Transmit miscellaneous text message followed by FF and a message ending character.</p> <p>THE QUICK BROWN FOX JUMPED OVER THE LAZY DOG'S BACK 1234567890 THE QUICK BROWN FOX JUMPED OVER THE LAZY DOG'S BACK 1234567890 THE QUICK BROWN FOX JUMPED OVER THE LAZY DOG'S BACK 1234567890 THE QUICK BROWN FOX JUMPED OVER THE LAZY DOG'S BACK 1234567890 [FF]</p> <p><i>Note:</i> The FF character is not printed.</p>	<p>Printer motor turns on; text message is printed:</p> <p>Friction Feed: Printer line feeds at end of text message.</p> <p>Tractor Feed: With Forms switch ON (Option 39a), paper feeds out until first line of next form is reached, then stops.</p> <p>With Forms switch OFF (Option 39b), paper feeds out one line when FF character is received.</p> <p>When message ending character is received, printer stops printing.</p> <p>With Option 18a selected, no paper feeds out.</p> <p>Friction Feed: With Option 18b or 18c selected, paper feeds out 16 lines.</p> <p>Tractor Feed: With Option 18b or 18c selected:</p> <ul style="list-style-type: none"> (a) Forms switch ON (Option 39a): Form advances to first line of next form. (b) Forms switch OFF (Option 39b): Form feeds out 16 lines or until form-out contact closes, whichever occurs first. <p>With 410640 or 410729 logic card, motor turns off immediately.</p> <p>With 410071, 410072 or 410076 logic card, motor turns off after 20 seconds.</p>

TABLE A (Cont)

OFF-LINE CHECKOUT

STEP	PROCEDURE	RESULTS
11	<p>KDP Tractor Feed: Transmit miscellaneous text (or FOX) message followed by several FF characters and a message ending character.</p>	<p>Printer motor turns on; text message is printed properly. With Forms switch ON (Option 39a), printer forms out until first line of next form is reached, then stops. With Forms switch OFF (Option 39b), paper feeds out one line when FF characters are received.</p> <p>When message ending character is received, printer stops printing.</p> <p>With Option 18a selected, no paper feeds out.</p> <p>With Option 18b or 18c selected:</p> <p>(a) Forms switch ON (Option 39a): Form advances to first line of next form.</p> <p>(b) Forms switch OFF (Option 39b): Form feeds out 16 lines or until form-out contact closes, whichever occurs first.</p> <p>With 410640 or 410729 logic card, motor turns off immediately.</p> <p>With 410071, 410072 or 410076 logic card, motor turns off after 20 seconds.</p>
12	<p>Tractor Feed: Tear off forms at bottom of printer.</p> <p>ROP: Depress the TEST or TRANS START key on the opcon.</p> <p>KDP: Transmit miscellaneous text (enough to completely fill form) followed by several (NEW LINEs and a message ending character. (PRINT LOCAL).</p> <p>KDP and ROP: Allow last form to feed completely out of printer, or on forms access printer, past the paper-out switch.</p> <p><i>Note:</i> On the forms access printer the last form does not feed out of printer.</p> <p>ROP: Depress TEST or TRANS START key on opcon.</p>	<p>Printer motor turns on; printer receives text message correctly.</p> <p>Printer stops printing and motor turns off.</p> <p><i>Note:</i> On 132-column printer or on 80-column tractor feed printer equipped with 410071 or 410076 circuit card, with Option 48a, paper-out indication occurs when form is partly through printer; with Option 48b, paper-out indication does not occur until form is completely out of printer. Forms access printer requires Option 48a.</p> <p>TEST or TRANS START indicator on opcon extinguishes.</p>

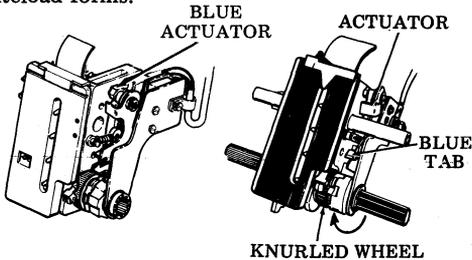
TABLE A (Cont)

OFF-LINE CHECKOUT

STEP	PROCEDURE	RESULTS
12 (Cont)	<p>Friction Feed: ROP: Depress TRANS START or TEST key on opcon.</p> <p>KDP: Transmit miscellaneous text followed by several NEW LINES and a message ending character. (PRINT LOCAL).</p> <p>ROP and KDP: Lift paper roll off cradle while printer is receiving message.</p> <p>ROP: Depress the TEST or TRANS START key on the opcon.</p>	<p>LOW PAPER indicator lights. Printer receives message. Printer motor remains on while message is being received.</p> <p>When TEST or TRANS START key is depressed (ROP) or the message ending character is received (KDP):</p> <p>With Option 18a selected, no paper feeds out.</p> <p>With Option 18b or 18c selected, paper feeds out 16 lines.</p> <p>With the 410640 logic card, motor turns off immediately. With 410076 logic card, motor turns off after 20 seconds.</p>
13	<p>ROP: Depress TEST or TRANS START key on opcon.</p> <p>KDP: Transmit miscellaneous text followed by a message ending character. (PRINT LOCAL).</p> <p>ROP: Depress TEST or TRANS START key on opcon again.</p> <p>Friction Feed: Lower paper roll to cradle.</p> <p>Tractor Feed Printer Without Paper Jam Alarm Mechanism: Reload forms.</p>	<p>Printer motor does not turn on.</p> <p>TEST or TRANS START indicator on opcon extinguishes.</p>

TABLE A (Cont)

OFF-LINE CHECKOUT

STEP	PROCEDURE	RESULTS
14	<p>Tractor Feed Printer With Paper Jam Alarm Mechanism Only:</p> <p>KDP: Depress the LOCAL key on the opcon.</p> <p>KDP and ROP: Remove paper from tractors and close tractor lids. Install a piece of paper in the paper chute and over the paper-out sensing mechanism.</p> <p>ROP: Depress the TRANS START key on the opcon.</p> <p>KDP: Transmit miscellaneous text followed by a message ending character. Depress the PRINT LOCAL key on the opcon.</p> <p>ROP: Depress TEST or TRANS START key on opcon.</p> <p>KDP and ROP: Reset the paper jam alarm. (To reset, rotate knurled wheel toward rear until it stops). Push on blue painted tab of actuator (old style), or the blue plastic actuator (new style) until it detents into reset condition.</p> <p>Reload forms.</p>  <p>New Style Jam Assembly Old Style Jam Assembly</p>	<p>Printer motor turns on. Printer starts to receive message. Motor turns off and PAPER button on cabinet lights.</p> <p>TEST or TRANS START indicator on opcon extinguishes.</p>
15	<p>Forms Access: Release (by momentarily depressing) the three cabinet Interlock switches from maintenance position.</p> <p>Friction and Tractor Feed: Release (by momentarily depressing) the cabinet Interlock switch from maintenance position.</p> <p>ROP: Depress TEST or TRANS START key on opcon.</p> <p>KDP: Transmit miscellaneous text message followed by a message ending character (PRINT LOCAL).</p>	<p>Printer motor should not turn on.</p>

3. TROUBLESHOOTING

3.01 The troubleshooting information consists of step-by-step procedures to determine which subcomponent, part, or adjustment is causing failure.

3.02 To use the troubleshooting information, always start with Analysis Question 1 to isolate the trouble. If replacement of the indicated defective component does not clear the trouble, replace the next higher order of component, if possible.

3.03 When installing a replacement component, make certain that all options (if present) in this component are implemented for proper set operation.

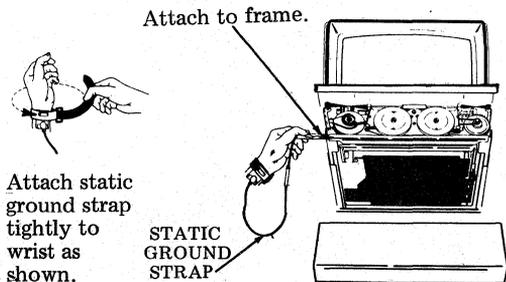
3.04 Where more than one component is specified for replacement, they should be substituted one at a time in the order specified. The original component should be replaced if the trouble is not corrected before making the next indicated substitution.

3.05 Once the trouble has been corrected, the terminal should be checked out to be sure that it is performing properly.

3.06 The following cautions must be observed when troubleshooting the printer.

Caution 1: Turn off all power or signal sources before removing or replacing any component.

Caution 2: To avoid possible internal damage to MOS circuitry whenever the 410071, 410072, 410076, 410640, or 410729 printer circuit card is removed, the 346392 static ground strap must be worn. The strap is not to be worn over clothing but must contact the skin tightly. The ground strap must be connected to ground (either "earth" ground or frame ground) via its associated clip.



3.07 The following test apparatus is required to troubleshoot the printer. If it is not available, the recommended corrective procedure is replacement of the complete printer for all troubles which are not clearly evident and easily rectified.

80-Column Printer

- *402617 Gauge
- 402779 Line Cord With Switch
- 402780 Interlock Strapping Plug (Friction Feed)
- 402781 AC Line Cord Adapter (Tractor Feed)
- 402782 Interlock Strapping Plug (Tractor Feed)
- *402868 Gauge
- *402878 Gauge
- 408646 Printer Test Assembly
- 408649 Test Cable
- 408650 Test Cable

132-Column Printer

- *402716 Left Gauge
- *402717 Right Gauge
- 402779 Line Cord With Switch
- 402781 AC Line Cord Adapter
- 402782 Interlock Strapping Plug
- *402868 Gauge
- *402878 Gauge
- 408646 Printer Test Assembly
- 408648 Test Cable

*These items used in adjustments of the printer.

3.08 When replacing the 410071, 410076, 410640 (80-column), 410072, or 410729 (132-column) printer circuit card, make sure the following procedures are followed:

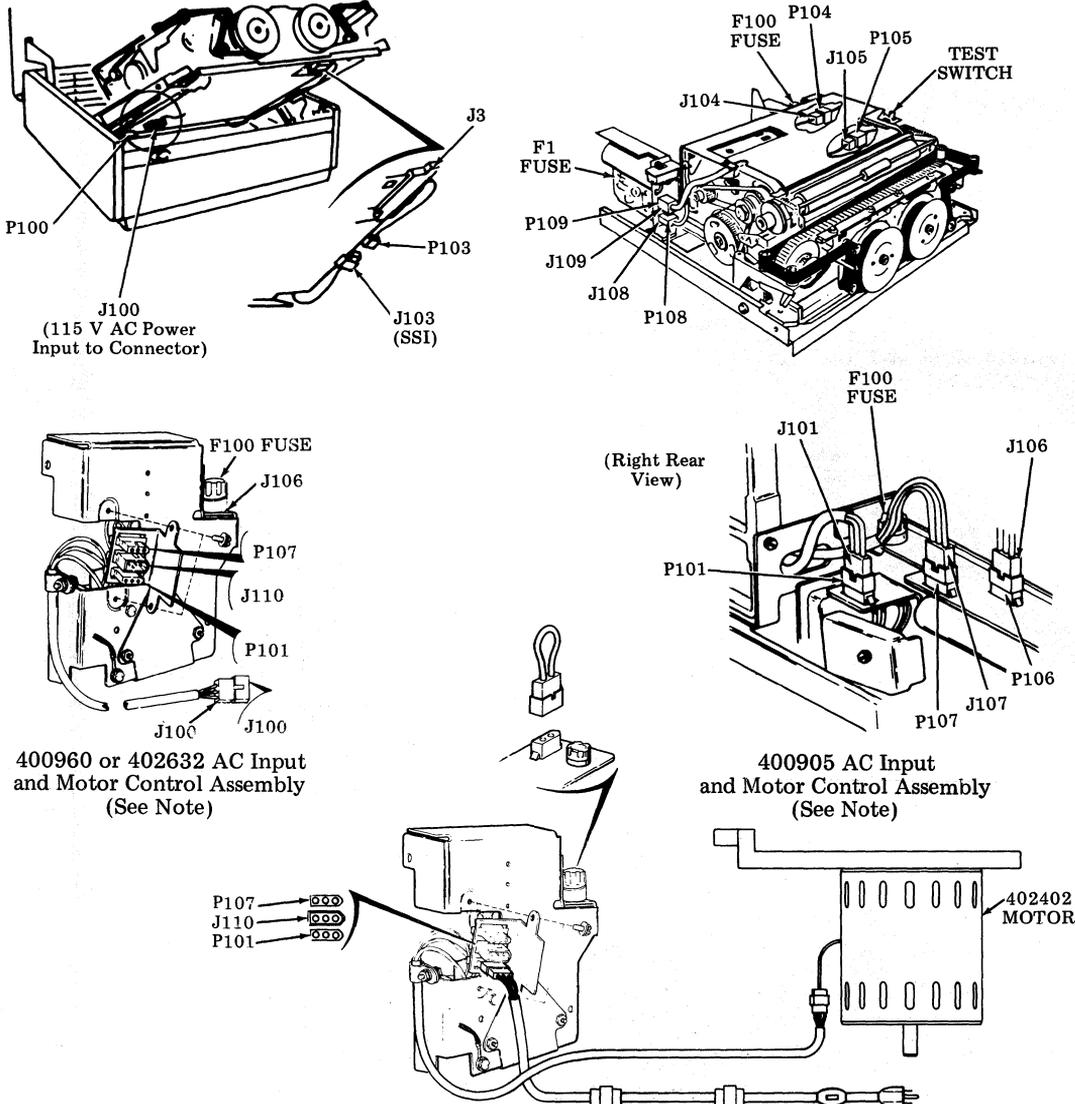
- (a) Duplicate all options on the new card present on the old card.

Note: If replacing an early design 410640 or 410729 card with a late design 410076 or 410072 card, additional options on the late design card must be selected.

- (b) Perform the Power Supply Voltage adjustment before installing the new card.
- (c) Perform the Impeller Shaft Sensor and Flag Sensor adjustments after installing the new card.
- (d) Observe the grounding procedures.

3.09 When the type carrier is replaced, it may be necessary to refine the Impeller Shaft to Carrier Phasing (Final) adjustment.

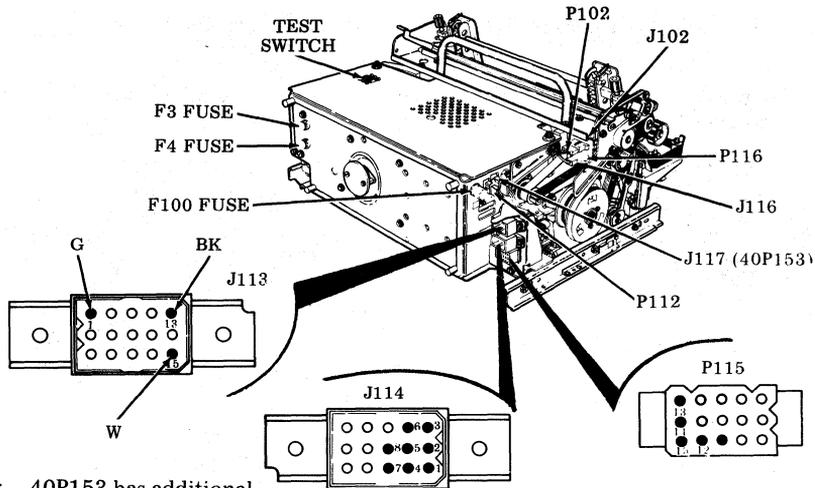
- 3.10 When replacing the 410681, 410150 or 410151 circuit card, perform the Power Supply Voltage adjustment.
- 3.11 Miscellaneous plugs and connectors are shown for the 80- and 132-column printers (Fig. 2, 3, 4, 5, and 6). Complete wiring information is available in Section 582-210-400.



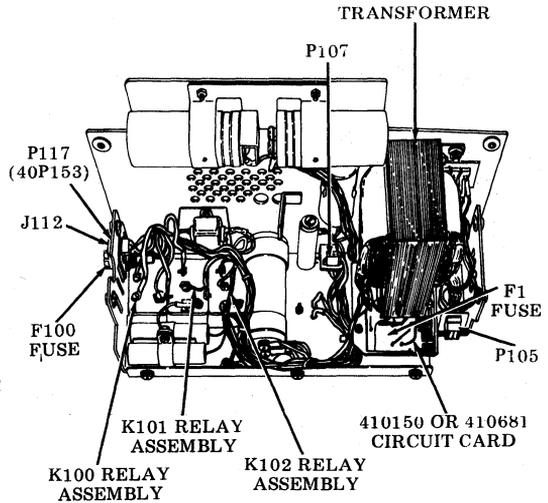
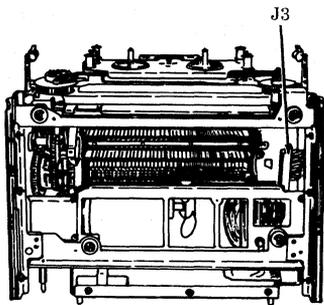
411040 AC Input And Motor Control Assembly With 402402 Motor. (See Note)

Note: All previous design ac input and motor control assemblies must be replaced with the solid state 411040 ac input and motor control assembly that can only be used with the 402402 motor.

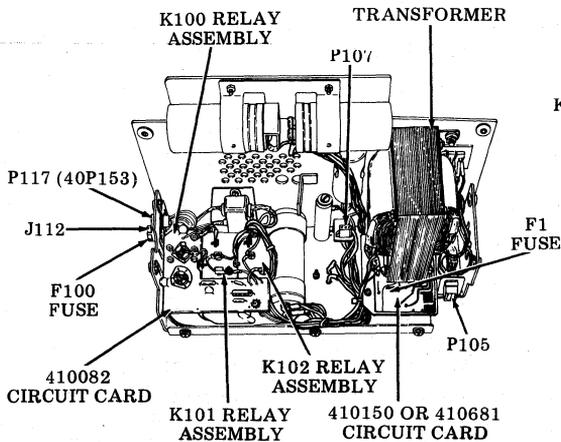
Fig. 2—80-Column Friction Feed



Note: 40P153 has additional wires at terminals 5, 6, 7, 8 and 9 of J113.

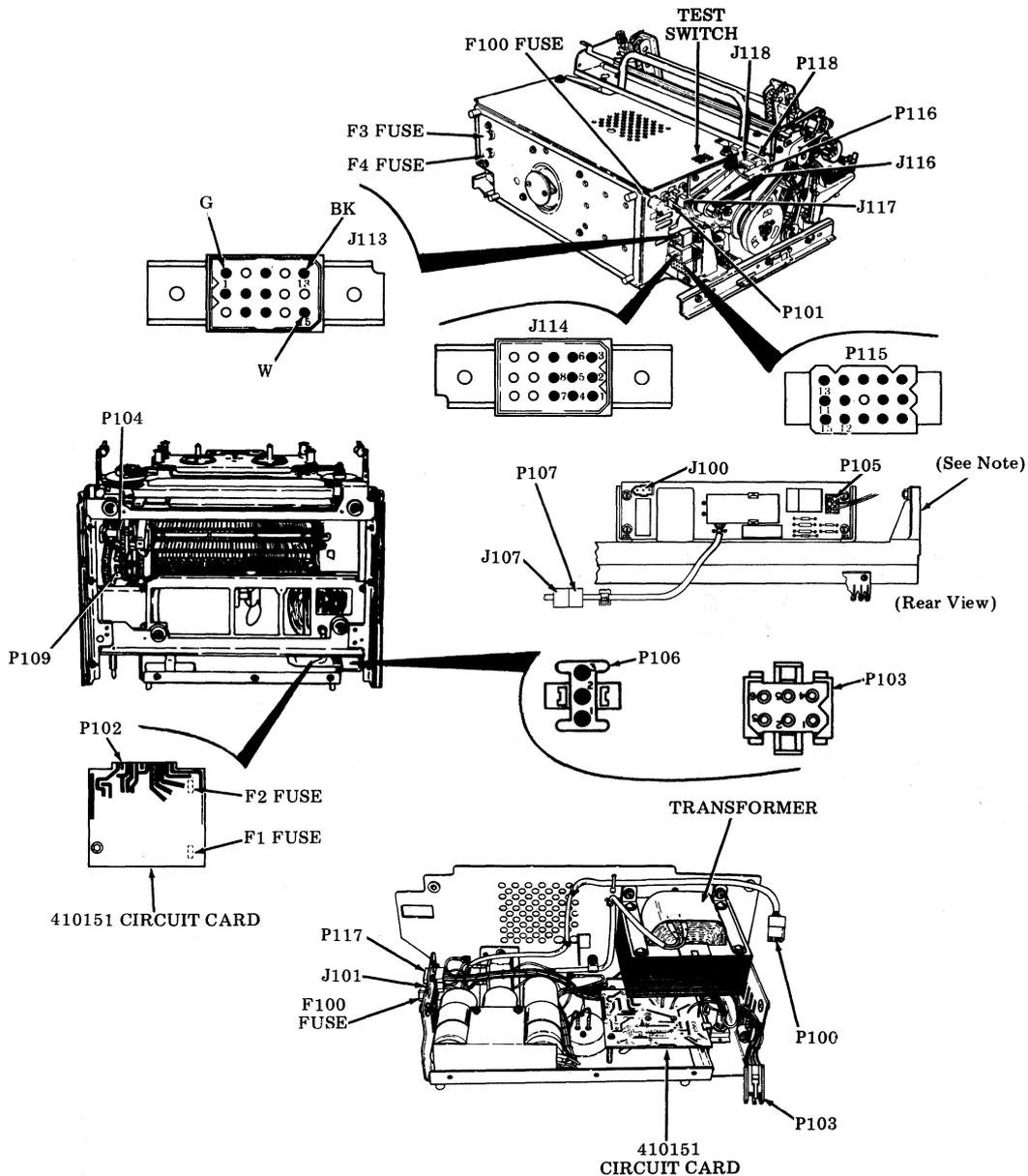


Early Design



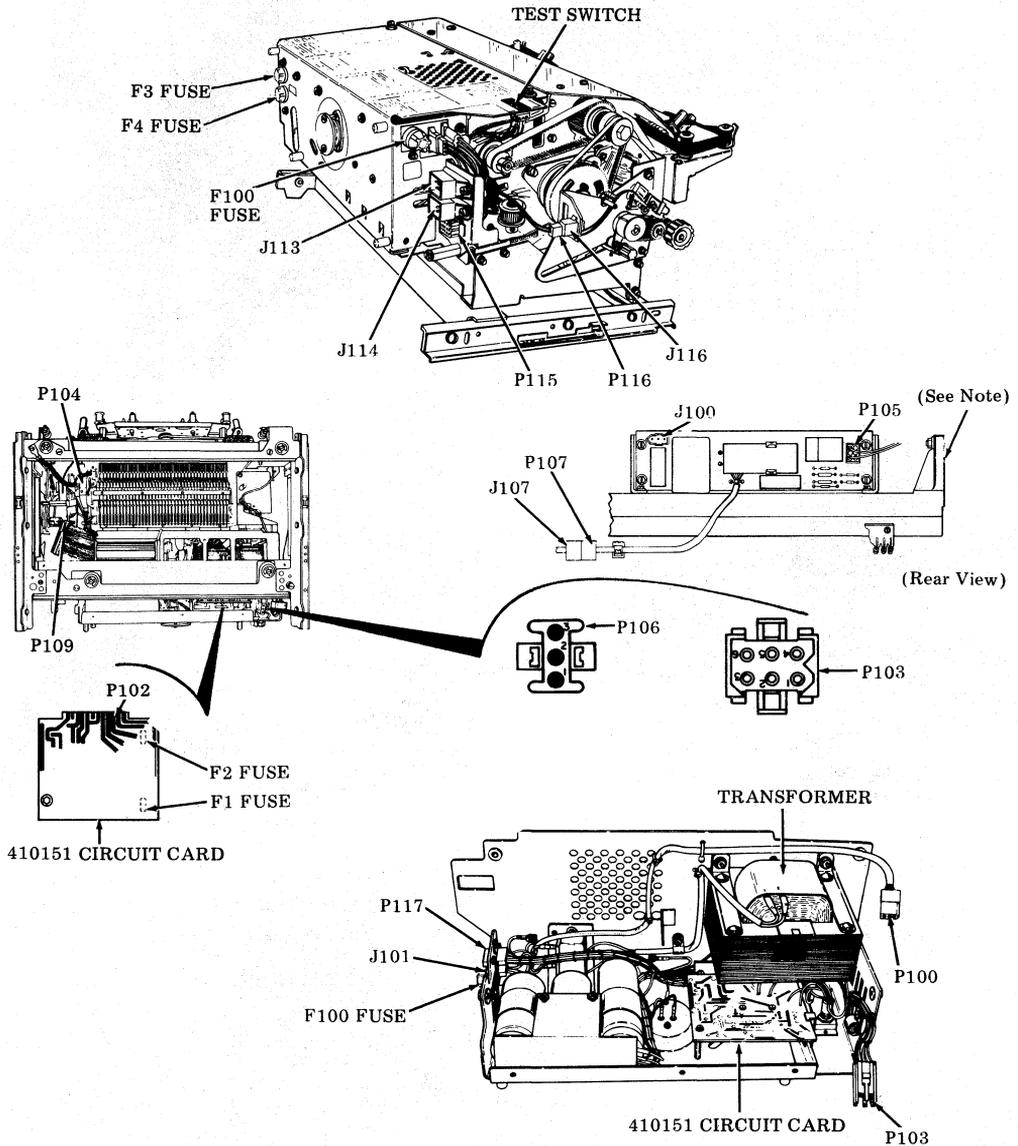
Late Design

Fig. 3 — 80-Column Tractor Feed (40P151 or 40P153)



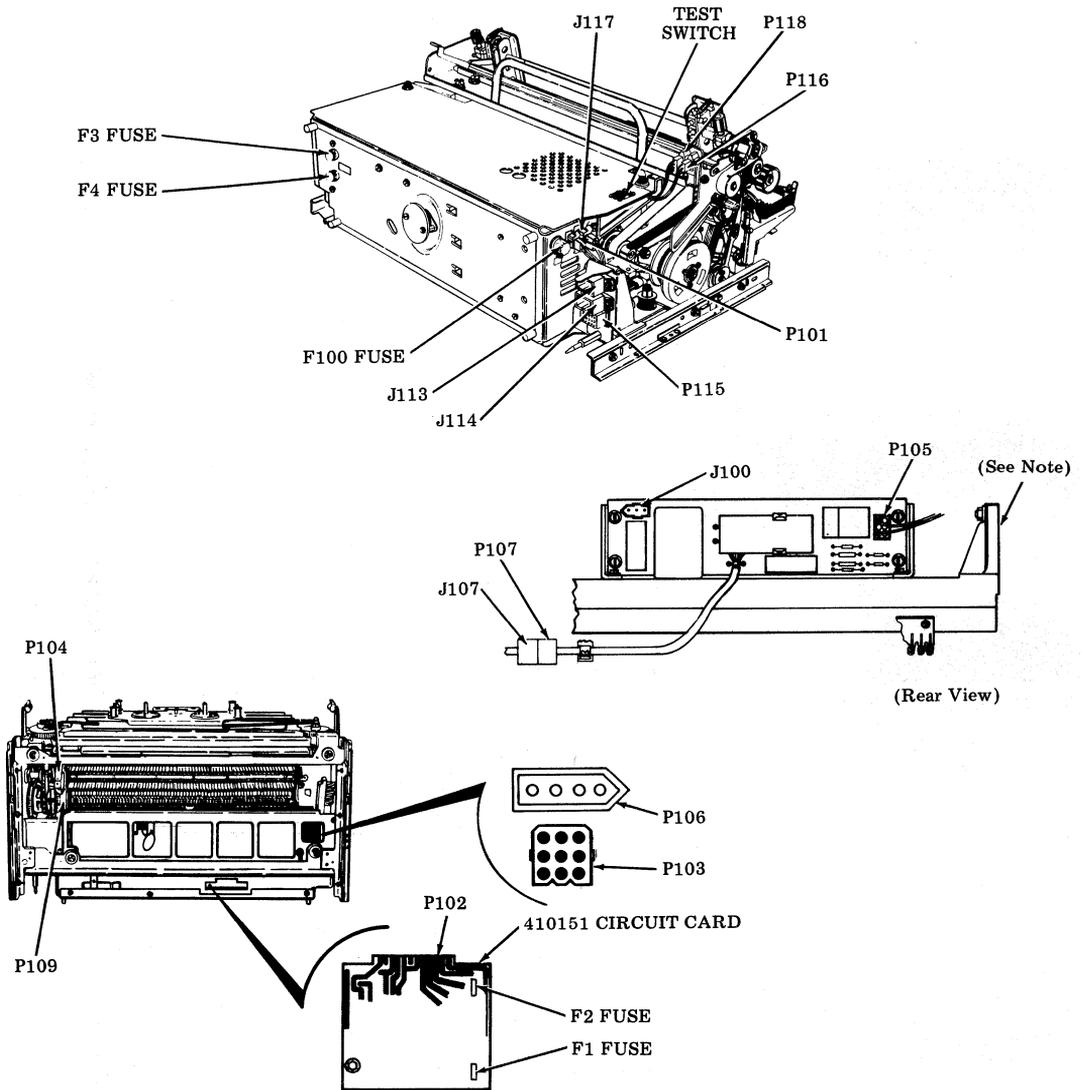
Note: The 410155 circuit card assembly has been replaced by the 410019 circuit card assembly (all connections are the same).

Fig. 4 — 80-Column Tractor Feed (40P154)



Note: The 410155 circuit card assembly has been replaced by the 410019 circuit card assembly (all connections are the same).

Fig. 5 — Forms Access 80-Column Tractor Feed (40P253)



Note: The 410155 circuit card assembly has been replaced by the 410019 circuit card assembly (all connections are the same).

Fig. 6 -- 132-Column Tractor Feed

TABLE B

80-COLUMN FRICTION FEED PRINTER TROUBLESHOOTING

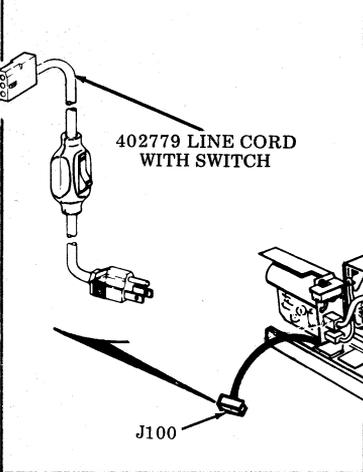
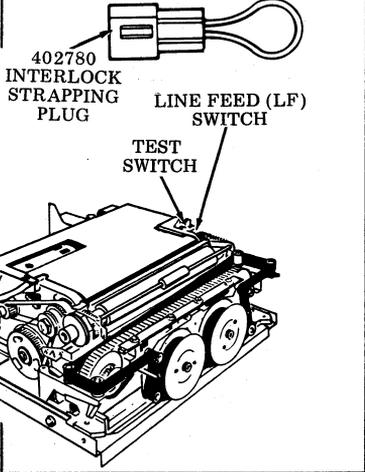
ANALYSIS QUESTION	"YES" RESPONSE DIRECTIVE	"NO" RESPONSE DIRECTIVE												
<p>1. Remove printer from cabinet.</p> <p>Connect 402779 line cord with switch to J100 connector on printer.</p> <p>Connect 402780 interlock strapping plug into P106 connector on printer.</p> <p>Set printer Test switch to Off.</p> <p>Set printer LF switch to position 1.</p> <p>Operate 402779 line cord with switch to On.</p> <p>Does printer motor run?</p>	<p>Go to 2.</p>  <p>402779 LINE CORD WITH SWITCH</p> <p>J100</p>	<p>Go to 3.</p>  <p>402780 INTERLOCK STRAPPING PLUG</p> <p>LINE FEED (LF) SWITCH</p> <p>TEST SWITCH</p>												
<p>2. Operate 402779 line cord with switch to Off.</p> <p>Remove 410076 (or 410640) circuit card from printer.</p> <p>Operate 402779 line cord with switch to On.</p> <p>Does printer motor run?</p>	<p>Replace 400960 or 402632 ac input and motor control assembly with 411040 ac input and motor control assembly.</p> <p><i>Note:</i> Several motors and ac input and motor control assemblies have been used in friction feed printers. The motors and ac input and motor control assemblies are <u>not interchangeable</u>. See chart below.</p> <table border="1" data-bbox="446 1038 795 1203"> <thead> <tr> <th></th> <th>AC INPUT AND MOTOR CONTROL ASSEMBLY</th> <th>MOTOR</th> </tr> </thead> <tbody> <tr> <td>Early Design *</td> <td>400905</td> <td>400270</td> </tr> <tr> <td>Intermediate Design *</td> <td>400960</td> <td>400270</td> </tr> <tr> <td>Late Design *</td> <td>402632</td> <td>402402</td> </tr> </tbody> </table> <p>* All previous design ac input and motor control assemblies have been replaced by the solid state 411040 ac input and motor control assembly which can only be used with the 402402 motor.</p>		AC INPUT AND MOTOR CONTROL ASSEMBLY	MOTOR	Early Design *	400905	400270	Intermediate Design *	400960	400270	Late Design *	402632	402402	<p>Replace 410076 (or 410640) circuit card.</p> <p>Before installing new 410076 (or 410640) circuit card, check voltages.</p> <p>Connect 408646 test assembly to J3 connector.</p> <p><i>Caution:</i> Observe caution label on 408649 cable when connecting plug to J3 connector.</p> <p>Connect voltmeter leads between TP1 and TP3 on 408646 test assembly and place 402779 line cord with switch to On. Note meter reading and adjust for $-24 \text{ V dc } \pm 1\%$ at R4 resistor on 410681 circuit card (early design) or R9 resistor on 410150 circuit card (late design).</p>
	AC INPUT AND MOTOR CONTROL ASSEMBLY	MOTOR												
Early Design *	400905	400270												
Intermediate Design *	400960	400270												
Late Design *	402632	402402												

TABLE B (Cont)

80-COLUMN FRICTION FEED PRINTER TROUBLESHOOTING

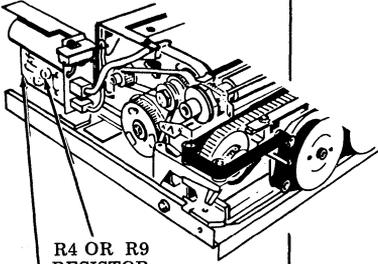
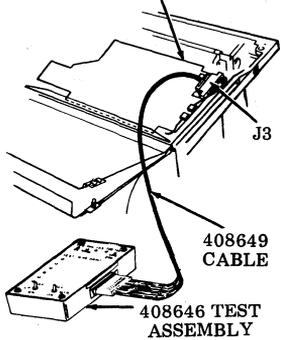
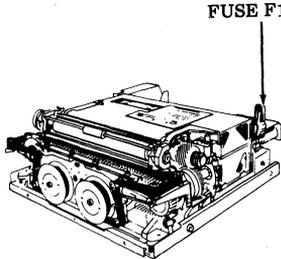
ANALYSIS QUESTION	"YES" RESPONSE DIRECTIVE	"NO" RESPONSE DIRECTIVE
<p>2. (Cont)</p>  <p>R4 OR R9 RESISTOR</p> <p>410681 OR 410150 CIRCUIT CARD</p>		<p>410076 CIRCUIT CARD (Replaces early design 410640 circuit card.)</p>  <p>J3</p> <p>408649 CABLE</p> <p>408646 TEST ASSEMBLY</p> <p>After installing new 410076 (or 410640) circuit card, check <u>Impeller Shaft Sensor (Final)</u> and <u>Flag Sensor (Final)</u> adjust- ments; remake if necessary.</p>
<p>3. Operate printer Test switch to On.</p> <p>Does printer motor run?</p>	<p>Go to 23.</p>	<p>Go to 4.</p>
<p>4. Operate 402779 line cord with switch to Off.</p> <p>Are motor gears and associ- ated drive mechanisms free to operate (no mechanical binds)?</p>	<p>Check F100 fuse. If blown, re- place with new F100 fuse (1 A SL-BL, MDL-1) (143306).</p> <p>If fuse blows again, go to 5.</p> <p>Check thermal overload protec- tor on motor; depress reset button on fan end of motor.</p> <p><i>Note:</i> The 400270 motor (early design) has overload protection which resets auto- matically upon cooling.</p> <p>Go to 10.</p>	<p>If mechanical bind is not clearly evident and easily rectified, in- stall new printer.</p>  <p>FUSE F100</p>

TABLE B (Cont)

80-COLUMN FRICTION FEED PRINTER TROUBLESHOOTING

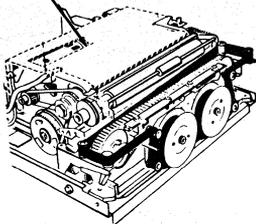
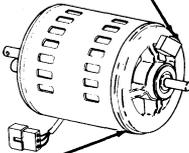
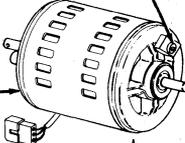
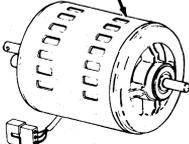
ANALYSIS QUESTION	"YES" RESPONSE DIRECTIVE	"NO" RESPONSE DIRECTIVE
<p>4. (Cont)</p> <p>Access to reset button.</p> 	<p>RESET BUTTON (At top — Robbins and Myers motor)</p>  <p>RESET BUTTON (On side — General Electric motor)</p>  <p>402402 MOTOR (Late Design)</p>	<p>400270 MOTOR (Early Design)</p> 
<p>5. Disconnect J101 connector.</p> <p>Replace F100 fuse.</p> <p>Operate 402779 line cord with switch to On.</p> <p>Does F100 fuse blow?</p>	<p>Operate 402779 line cord with switch to Off.</p> <p>Remove 400960 or 402632 ac input and motor control assem- bly from printer and replace with 411040 assembly.</p> <p>Reinstall 411040 assembly on printer.</p>	<p>Go to 6.</p>
<p>6. Reconnect J101 connector.</p> <p>Disconnect P108 connector.</p> <p>Replace F100 fuse.</p> <p>Operate 402779 line cord with switch to On.</p> <p>Does F100 fuse blow?</p>	<p>Operate 402779 line cord with switch to Off.</p> <p>Locate and clear short circuit in transformer cabling.</p> <p>Check if transformer is shorted to ground — if so, install new 400901 transformer.</p>	<p>Go to 7.</p>

TABLE B (Cont)

80-COLUMN FRICTION FEED PRINTER TROUBLESHOOTING

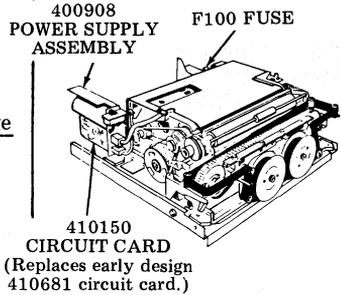
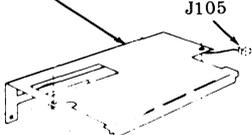
ANALYSIS QUESTION	"YES" RESPONSE DIRECTIVE	"NO" RESPONSE DIRECTIVE
<p>7. Reconnect P108 connector.</p> <p>Disconnect J109 connector.</p> <p>Replace F100 fuse.</p> <p>Operate 402779 line cord with switch to On.</p> <p>Does F100 fuse blow?</p>	<p>Operate 402779 line cord with switch to Off.</p> <p>Replace 410150 circuit card.</p> <p>When new 410150 circuit card is installed, check and refine (if necessary) <u>Power Supply Voltage</u> adjustment.</p> <p>If trouble is not corrected, replace 400908 power supply assembly.</p>	<p>Go to 8.</p>  <p>400908 POWER SUPPLY ASSEMBLY</p> <p>F100 FUSE</p> <p>410150 CIRCUIT CARD (Replaces early design 410681 circuit card.)</p>
<p>8. Reconnect J109 connector.</p> <p>Disconnect J105 connector.</p> <p>Replace F100 fuse.</p> <p>Operate 402779 line cord with switch to On.</p> <p>Does F100 fuse blow?</p>	<p>Operate 402779 line cord with switch to Off.</p> <p>Replace 400903 (40P101) or 407209 (40P102) top cover assembly.</p>  <p>J105</p>	<p>Go to 9.</p>
<p>9. Reconnect J105 connector.</p> <p>Replace F100 fuse.</p> <p>Remove 410076 (or 410640) circuit card.</p> <p>Operate 402779 line cord with switch to On.</p> <p>Does F100 fuse blow?</p>	<p>Replace entire printer.</p>	<p>Replace 410076 (or 410640) circuit card.</p> <p>Before installing new 410076 (or 410640) circuit card, check <u>Power Supply Voltage</u> adjustment.</p> <p>After installing new 410076 (or 410640) circuit card, check <u>Impeller Shaft Sensor (Final)</u> and <u>Flag Sensor (Final)</u> adjustments; remake if necessary.</p>

TABLE B (Cont)

80-COLUMN FRICTION FEED PRINTER TROUBLESHOOTING

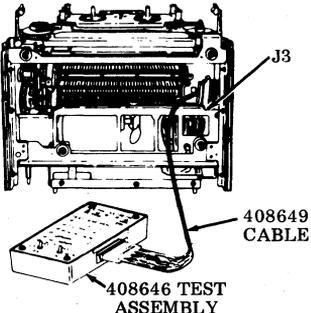
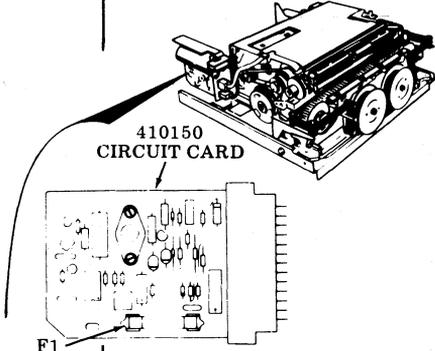
ANALYSIS QUESTION	"YES" RESPONSE DIRECTIVE	"NO" RESPONSE DIRECTIVE
<p>10. Remove 410076 (or 410640) circuit card.</p> <p>Connect 408646 test assembly to J3 connector on printer.</p> <p><i>Caution: Observe caution label on 408649 cable when connecting plug to J3 connector.</i></p> <p>Operate 402779 line cord with switch to On.</p> <p>Operate MTR switch on 408646 test assembly to On.</p> <p>Does printer motor run?</p>	<p>Operate 402779 line cord with switch to Off.</p> <p>Replace 410076 (or 410640) circuit card.</p> <p>Before installing new 410076 (or 410640) circuit card, check <u>Power Supply Voltage</u> adjustment.</p> <p>After installing 410076 (or 410640) circuit card, check <u>Impeller Shaft Sensor (Final)</u> and <u>Flag Sensor (Final)</u> adjustments; remake if necessary.</p>	<p>Go to 11.</p> 
<p>11. Check for -24 V dc $\pm 1\%$ at TP1 and TP3 on 408646 test assembly.</p> <p>Is -24 V dc present?</p>	<p>Go to 12. (40P101 only) Go to 13. (40P102)</p> 	<p>Check F1 fuse on 410150 circuit card.</p> <p><i>Note: The 410681 circuit card is the early design version of 410150 circuit card. The 410681 circuit card does not have a fuse.</i></p> <p>If fuse is blown, replace with new 321955 fuse (2-1/2 A F-B).</p> <p>If fuse is not blown, replace 410150 circuit card. Check and refine <u>Power Supply Voltage</u> adjustment (if necessary).</p> <p>Go to 13.</p>
<p>12. <u>40P101 Only</u> Measure -5 V dc at TP5 and TP3 on 408646 test assembly.</p> <p>Is -5 V dc present?</p> <p><i>Note: Step 12 does not apply to 40P102.</i></p>	<p>Go to 18.</p>	<p>Replace 410150 (late design) or 410681 (early design) circuit card. Check and refine <u>Power Supply Voltage</u> adjustment (if necessary).</p> <p>Replace 400903 cover assembly.</p> <p>Replace entire printer.</p>

TABLE B (Cont)

80-COLUMN FRICTION FEED PRINTER TROUBLESHOOTING

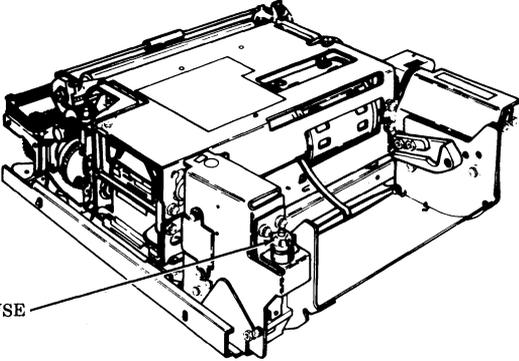
ANALYSIS QUESTION	"YES" RESPONSE DIRECTIVE	"NO" RESPONSE DIRECTIVE												
<p>13. Disconnect J101 connector on 400960, 402632 or 411040 ac input and motor control assembly.</p> <p>Measure 115 V ac \pm10% on P101 connector, terminal 1 to 3.</p> <p>Is 115 V ac present?</p> 	<p>Replace 400960 or 402632 ac input and motor control assembly with 411040 ac input and motor control assembly.</p> <p>Go to 14.</p>	<p>Replace 400960 or 402632 ac input and motor control assembly with 411040 ac input and motor control assembly.</p> <p><i>Note:</i> Several motors and ac input and motor control assemblies have been used in friction feed printers. The motors and ac input and motor control assemblies are <u>not interchangeable</u>. See chart below.</p> <table border="1" data-bbox="826 555 1160 711"> <thead> <tr> <th></th> <th>AC INPUT AND MOTOR CONTROL ASSEMBLY</th> <th>MOTOR</th> </tr> </thead> <tbody> <tr> <td>Early Design *</td> <td>400905</td> <td>400270</td> </tr> <tr> <td>Intermediate * Design</td> <td>400960</td> <td>400270</td> </tr> <tr> <td>Late Design *</td> <td>402632</td> <td>402402</td> </tr> </tbody> </table> <p>*All previous design ac input and motor control assemblies have been replaced by the solid state 411040 ac input and motor control assembly which can only be used with the 402402 motor.</p>		AC INPUT AND MOTOR CONTROL ASSEMBLY	MOTOR	Early Design *	400905	400270	Intermediate * Design	400960	400270	Late Design *	402632	402402
	AC INPUT AND MOTOR CONTROL ASSEMBLY	MOTOR												
Early Design *	400905	400270												
Intermediate * Design	400960	400270												
Late Design *	402632	402402												
<p>14. Disconnect P108 connector on 400908 power supply.</p> <p>Measure 28 V ac \pm3% on P108 connector, terminal 1 to 3.</p> <p>Is 28 V ac present?</p>	<p>Reconnect P108 connector.</p> <p>Go to 15.</p>	<p>Replace 400901 transformer.</p>												

TABLE B (Cont)

80-COLUMN FRICTION FEED PRINTER TROUBLESHOOTING

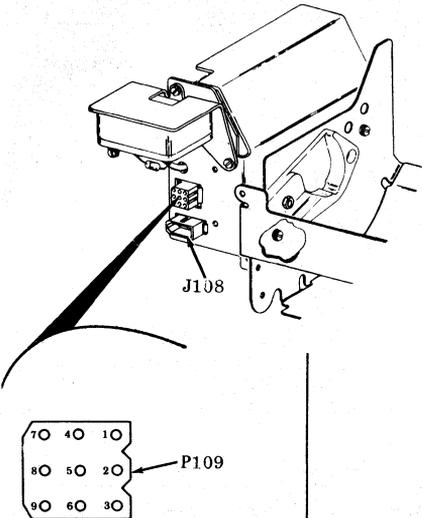
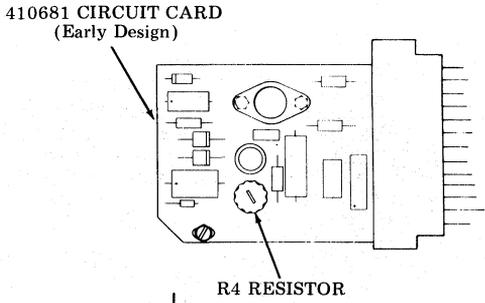
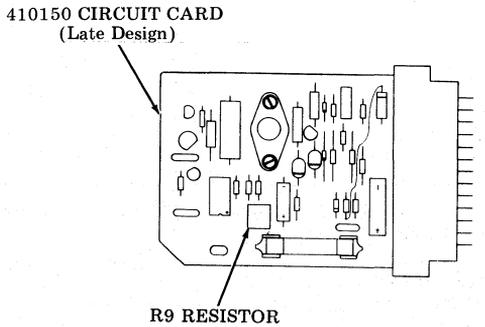
ANALYSIS QUESTION	"YES" RESPONSE DIRECTIVE	"NO" RESPONSE DIRECTIVE
<p>15. Disconnect J109 connector on 400908 power supply.</p> <p>Measure -24 V dc±1% (two places) on P109 connector, terminal 5 to 6 and terminal 4 to 5.</p> <p><i>Note:</i> Place (+) probe on terminal 5.</p> <p>Is -24 V dc present?</p> 	<p>Reconnect J109 connector.</p> <p>Go to 16.</p>	<p>If voltage is present but not -24 V dc±1%, refine adjustment — R4 resistor on 410681 circuit card (early design); R9 resistor on 410150 circuit card (late design).</p> <p>Replace 400908 power supply.</p>  

TABLE B (Cont)

80-COLUMN FRICTION FEED PRINTER TROUBLESHOOTING

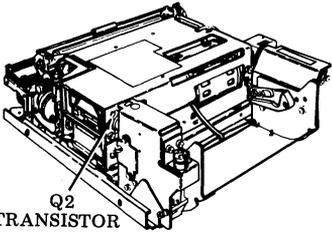
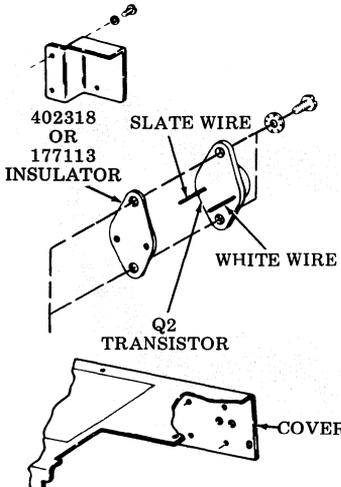
ANALYSIS QUESTION	"YES" RESPONSE DIRECTIVE	"NO" RESPONSE DIRECTIVE															
<p>16. Remove 400903 top cover assembly (40P101) or 407209 top cover assembly (40P102) mounting screws.</p> <p>Disconnect J105 connector on 400903 or 407209 top cover assembly.</p> <p>Measure -24 V dc $\pm 1\%$ (two places) on J105 connector, terminal 1 to 2 and terminal 2 to 3.</p> <p><i>Note:</i> Place (+) probe on terminal 2.</p> <p>Is -24 V dc present (two places)?</p>	 <p>Q2 TRANSISTOR</p> <p>Check continuity from P105 connector to J3 connector.</p> <table border="0" style="margin-left: 40px;"> <tr> <td>P105</td> <td></td> <td>J3</td> </tr> <tr> <td>4</td> <td>←</td> <td>L</td> </tr> <tr> <td>1</td> <td>←</td> <td>9</td> </tr> <tr> <td>2</td> <td>←</td> <td>N</td> </tr> <tr> <td>3</td> <td>←</td> <td>12</td> </tr> </table> <p>If no continuity repair broken cable.</p> <p>Reconnect J105 connector.</p> <p>Go to 17.</p>	P105		J3	4	←	L	1	←	9	2	←	N	3	←	12	<p>Replace Q2 transistor (318835) on 400903 or 407209 top cover assembly.</p> <p>Replace 400903 or 407209 top cover assembly.</p> <p><i>Note:</i> When replacing Q2 transistor, apply thermal joint compound to base of transistor and base of 177113 insulator. The 402318 insulator does not need thermal joint compound.</p> 
P105		J3															
4	←	L															
1	←	9															
2	←	N															
3	←	12															
<p>17. Disconnect interlock plug from P106 connector.</p> <p>Check for -24 V dc at terminals 1 and 2 on P106 connector.</p> <p>Is -24 V dc present?</p> <p><i>Note:</i> Place (+) probe on terminal 1.</p>	<p>Reconnect interlock plug.</p> <p>Go to 18.</p>	<p>Remove mounting screws and swing connector bracket outward to expose connector.</p> <p>Check continuity from P106 connector to J110 connector.</p> <table border="0" style="margin-left: 40px;"> <tr> <td>P106</td> <td></td> <td>J110</td> </tr> <tr> <td>1</td> <td>←</td> <td>3</td> </tr> <tr> <td>2</td> <td>←</td> <td>2</td> </tr> </table> <p>If no continuity repair broken cable.</p>	P106		J110	1	←	3	2	←	2						
P106		J110															
1	←	3															
2	←	2															

TABLE B (Cont)

80-COLUMN FRICTION FEED PRINTER TROUBLESHOOTING

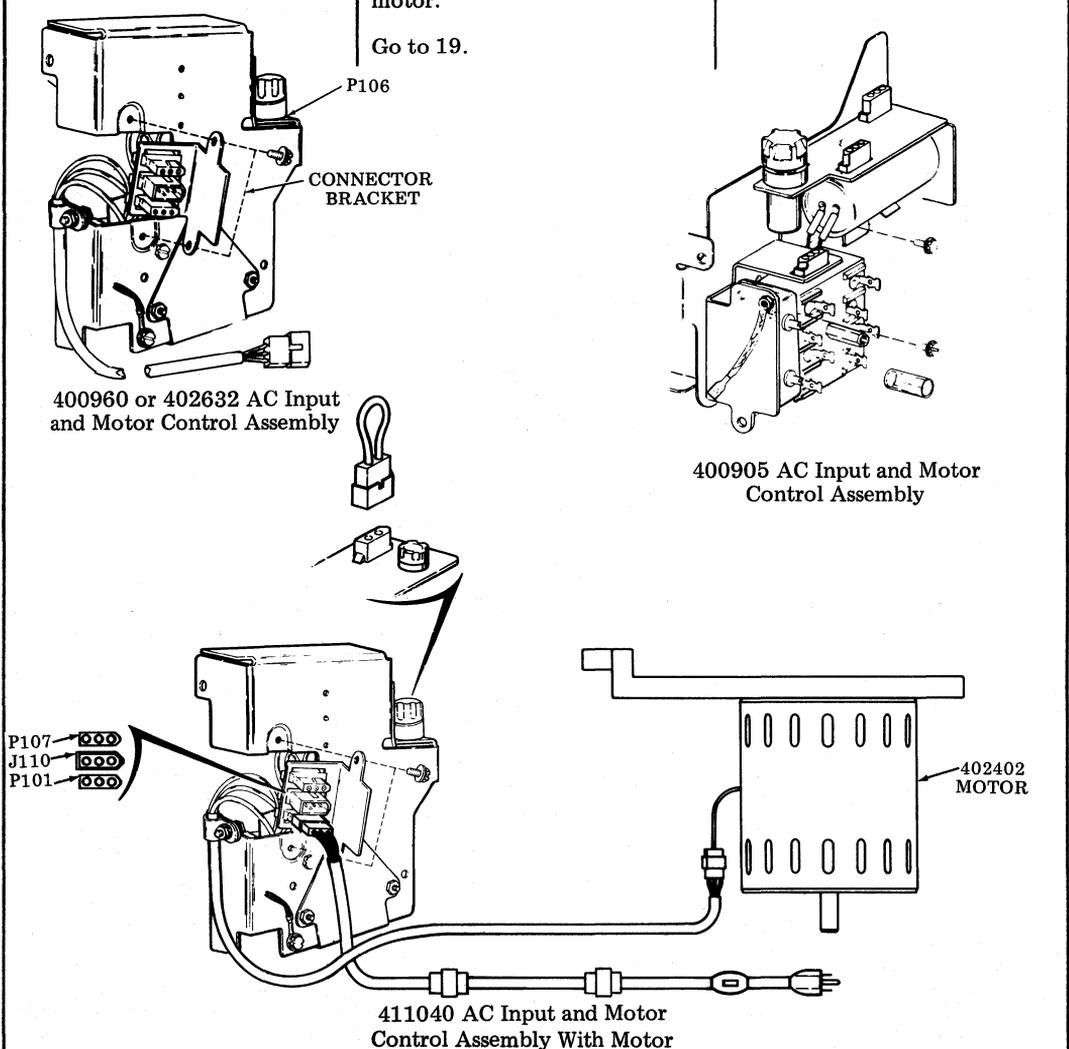
ANALYSIS QUESTION	"YES" RESPONSE DIRECTIVE	"NO" RESPONSE DIRECTIVE
<p>18. Operate 402779 line cord with switch on.</p> <p>Place printer Test switch to On.</p> <p>Does TEST lamp on 408646 test assembly light?</p> 	<p>If printer has a 402632 ac input and motor control assembly replace with a 411040 assembly.</p> <p>If printer has a 400905 or 400460 ac input and motor control assembly replace with a 411040 assembly and a 402402 motor.</p> <p>Go to 19.</p>	<p>Check wiring back to Test switch.</p> <p>Replace 402861 Test switch.</p>

TABLE B (Cont)

80-COLUMN FRICTION FEED PRINTER TROUBLESHOOTING

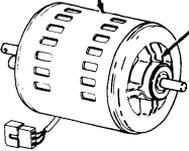
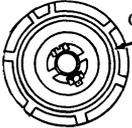
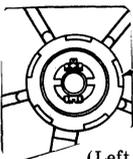
ANALYSIS QUESTION	"YES" RESPONSE DIRECTIVE	"NO" RESPONSE DIRECTIVE												
<p>19 Operate 402779 line cord with switch to Off.</p> <p>Disconnect J107 connector.</p> <p>Measure the following resistances between indicated terminals on J107 connector:</p> <p><u>400270 Motor (Early design)</u> or <u>402402 Motor (Late design)</u> <u>General Electric</u></p> <p>Terminal 1 to 2 - 33 ohms Terminal 1 to 3 - 45 ohms Terminal 2 to 3 - 12 ohms (All readings±10%)</p> <p><u>402402 Motor (Late design)</u> <u>Robbins & Myers</u></p> <p>Terminal 1 to 2 - 19 ohms Terminal 1 to 3 - 30 ohms Terminal 2 to 3 - 11 ohms (All readings±10%)</p> <p>Are measured resistances correct?</p>	<p>Replace entire printer.</p>  <p>NO RESET BUTTON AT FAR END</p>  <p>(Left Side View)</p>  <p>(Left Side View)</p>	<p>Replace 402402 motor.</p> <p><i>Note:</i> Several motors and ac input and motor control assemblies have been used in friction feed printers. The motors and ac input and motor control assemblies are <u>not interchangeable</u>. See chart below:</p> <table border="1" data-bbox="831 406 1178 566"> <thead> <tr> <th></th> <th>AC INPUT AND MOTOR CONTROL ASSEMBLY</th> <th>MOTOR</th> </tr> </thead> <tbody> <tr> <td>Early Design*</td> <td>400905</td> <td>400270</td> </tr> <tr> <td>Intermediate Design *</td> <td>400960</td> <td>400270</td> </tr> <tr> <td>Late Design*</td> <td>402632</td> <td>402402</td> </tr> </tbody> </table> <p>* All previous design ac input and motor control assemblies have been replaced by the solid state 411040 ac input and motor control assembly which can only be used with the 402402 motor.</p>		AC INPUT AND MOTOR CONTROL ASSEMBLY	MOTOR	Early Design*	400905	400270	Intermediate Design *	400960	400270	Late Design*	402632	402402
	AC INPUT AND MOTOR CONTROL ASSEMBLY	MOTOR												
Early Design*	400905	400270												
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Late Design*	402632	402402												

TABLE B (Cont)

80-COLUMN FRICTION FEED PRINTER TROUBLESHOOTING

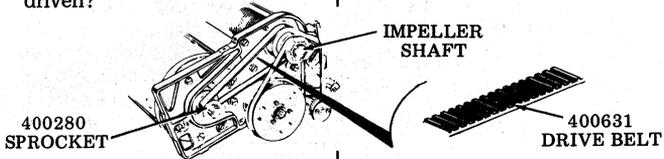
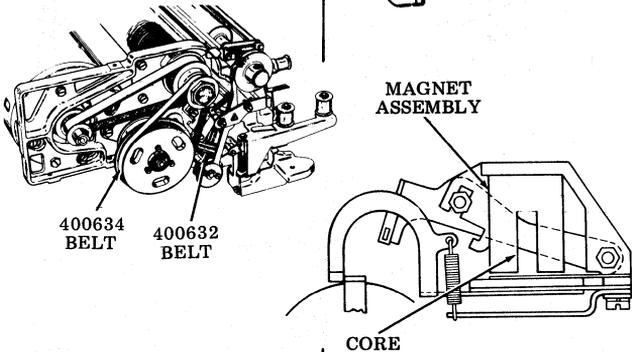
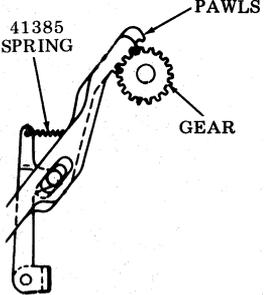
ANALYSIS QUESTION	"YES" RESPONSE DIRECTIVE	"NO" RESPONSE DIRECTIVE
<p>20. Is the impeller shaft being driven?</p>  <p>400280 SPROCKET</p> <p>IMPELLER SHAFT</p> <p>400631 DRIVE BELT</p>	<p>Go to 21.</p>	<p>Check the impeller shaft drive belt. Replace if worn or broken (400631).</p> <p>Check the motor shaft sprocket. Replace if worn or broken (400280).</p>
<p>21. Does printer line feed properly with printer Test switch On?</p> <p>Failure symptoms are: No line feed Intermittent line feed Continuous line feed.</p>  <p>400634 BELT</p> <p>400632 BELT</p> <p>MAGNET ASSEMBLY</p> <p>CORE</p>	<p>Go to 25.</p>  <p>41385 SPRING</p> <p>PAWLS</p> <p>GEAR</p>	<p>Check line feed belts. Replace if worn or broken (400634 or 400632).</p> <p>Check line feed pawls for engagement with gear.</p> <p>Check line feed bail spring. Replace if broken or worn.</p> <p>Check loose mounting of line feed magnet assembly on its core. Replace 400470 line feed assembly if magnet coil is loose.</p> <p>Go to 22.</p>

TABLE B (Cont)

80-COLUMN FRICTION FEED PRINTER TROUBLESHOOTING

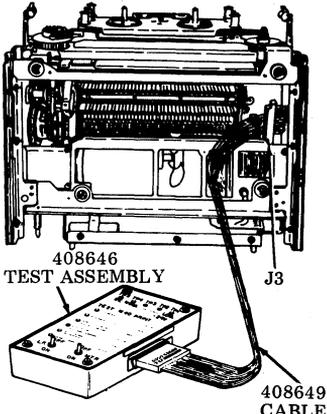
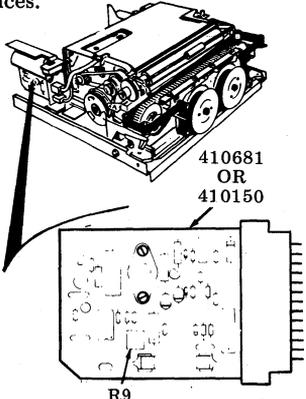
ANALYSIS QUESTION	"YES" RESPONSE DIRECTIVE	"NO" RESPONSE DIRECTIVE
<p>22. Remove 410076 (or 410640) circuit card.</p> <p>Connect 408646 test assembly to J3, as shown.</p> <p><i>Caution: Observe caution label on 408649 cable when connecting plug to J3.</i></p> <p>Operate 402779 line cord with switch to On.</p> <p>Operate MTR switch on 408646 test assembly to On.</p> <p>Operate LF switch on 408646 test assembly to On.</p> <p>Does the printer line feed?</p>	 <p>Operate 402779 line cord with switch Off.</p> <p>Replace 410076 (or 410640) circuit card.</p> <p>After the card is installed, check the <u>Impeller Shaft Sensor (Final)</u> and <u>Flag Sensor (Final)</u> adjustment; remake if necessary.</p>	<p>Go to 26.</p>
<p>23. Check for -24 V dc $\pm 1\%$ between TP2 and TP3 on 408646 test assembly.</p> <p>Is -24 V dc $\pm 1\%$ present?</p>	<p>Go to 24.</p>	<p>Refine -24 V dc adjustment if voltage reading is outside tolerances.</p>  <p>Replace 410150 circuit card. When circuit card is installed, check <u>Power Supply Voltage</u> adjustment; refine if necessary.</p>

TABLE B (Cont)

80-COLUMN FRICTION FEED PRINTER TROUBLESHOOTING

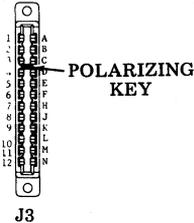
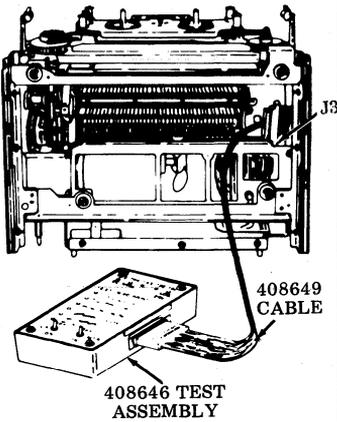
ANALYSIS QUESTION	"YES" RESPONSE DIRECTIVE	"NO" RESPONSE DIRECTIVE
<p>24. Operate the 402779 line cord with switch Off.</p> <p>Disconnect P-3 test cable from printer.</p> <p>Measure for 33 ohms resistance at J3 between terminals 1 and K.</p> <p>Is measured resistance correct?</p>	<p>Check the following adjustments:</p> <p><u>Clutch Shoe Release Arm</u> <u>Line Feed Armature Gap</u> <u>Line Feed Bar Eccentric and Drive Belt Tension</u> <u>Clutch Drive Belt Tension</u></p> <p>Replace front casting assembly: 40P101 — 400201 (early design) or 400377 (late design) 40P102 — 402970</p>	<p>Replace 400470 line feed magnet assembly.</p>  <p>J3</p>
<p>25. Place printer LF1 — LF2 switch to position LF2.</p> <p>Does the printer double line space properly?</p>	<p>Go to 27.</p>	<p>Go to 26.</p>
<p>26. Remove 410076 (or 410640) circuit card from printer.</p> <p>Connect 408646 test assembly to J3, as shown.</p> <p><i>Caution: Observe caution label on 408649 cable when connecting plug to J3 connector.</i></p> <p>Operate 402779 line cord with switch On.</p> <p>Does the line feed lamp on 408646 test assembly light?</p>	 <p>Replace 410076 (or 410640) circuit card.</p> <p>After the card is installed, check the <u>Impeller Shaft Sensor (Final)</u> and <u>Flag Sensor (Final)</u> adjustment; remake if necessary.</p>	<p>Replace 402861 switch.</p> 

TABLE B (Cont)

80-COLUMN FRICTION FEED PRINTER TROUBLESHOOTING

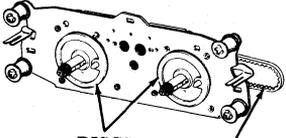
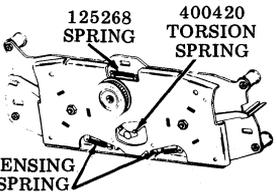
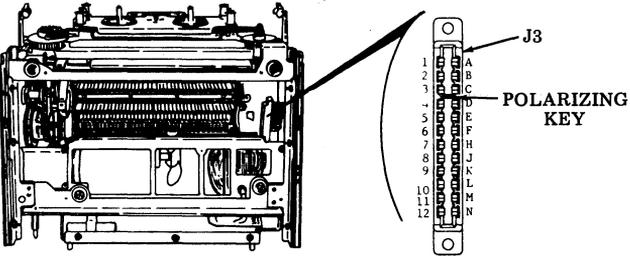
ANALYSIS QUESTION	"YES" RESPONSE DIRECTIVE	"NO" RESPONSE DIRECTIVE
<p>27. Is the ribbon feed mechanism operating properly?</p> <p>Ribbon spools rotating. Ribbon reverse working. No ribbon foldover.</p> <p><i>Note:</i> To check ribbon reversing, manually operate the reversing arms with printer operating (printer Test switch On).</p>	<p>Go to 28.</p>	<p>Check ribbon drive belt. Replace if worn or broken.</p>  <p>DISCS 400630 DRIVE BELT</p> <p>Remove ribbon mechanism and check the following springs. Replace if broken.</p>  <p>125268 SPRING 400420 TORSION SPRING 2836 SENSING ARM SPRING</p> <p>Replace ribbon mechanism 402420.</p>
<p>28. Are any characters being printed?</p>  <p>J3 POLARIZING KEY</p>	<p>Go to 29.</p>	<p>Check the following adjustments:</p> <p>(1) <u>Impeller Shaft Sensor Gap</u> (2) <u>Flag Sensor Gap</u></p> <p>Check impeller sensor for a maximum of 145 ohms at J3 between terminals H and J.</p> <p>Check flag sensor for a maximum of 145 ohms at J3 between terminals E and F.</p> <p>Replace sensor (400615) if open or resistance exceeds maximum requirement.</p> <p>Replace 410076 (or 410640) circuit card.</p> <p>After the card is installed, check the <u>Impeller Shaft Sensor (Final)</u> and <u>Flag Sensor (Final)</u> adjustment; remake if necessary.</p>

TABLE B (Cont)

80-COLUMN FRICTION FEED PRINTER TROUBLESHOOTING

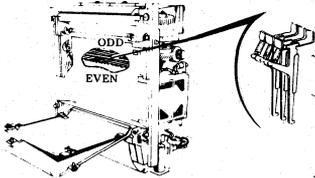
ANALYSIS QUESTION	"YES" RESPONSE DIRECTIVE	"NO" RESPONSE DIRECTIVE
<p>29. Is the carrier font symbol the symbol printed?</p> <p>Font symbols:</p> <p> Up-Low</p> <p> Monocase</p> <p>etc.</p>	<p>Go to 30.</p>	<p>If ! (exclamation) or ___ (underline) are printed check the following adjustments:</p> <ol style="list-style-type: none"> (1) <u>Flag Sensor Gap</u> (2) <u>Impeller Shaft Sensor Gap</u> (3) <u>Flag Sensor Final</u> <p>Replace the 410076 (or 410640) circuit card.</p> <p>After the card is installed, check the <u>Impeller Shaft Sensor (Final)</u> and <u>Flag Sensor (Final)</u> adjustment; remake if necessary.</p>
<p>30. Are any columns not printing?</p>	<p>Go to 31.</p>	<p>Go to 35.</p>
<p>31. Are any of the following groups of columns missing?</p> <p>1 – 12</p> <p>13 – 24</p> <p>25 – 36</p> <p>37 – 48</p> <p>49 – 60</p> <p>61 – 72</p> <p>73 – 80</p>	<p>Replace 410076 (or 410640) circuit card.</p> <p>After the card is installed, check the <u>Impeller Shaft Sensor (Final)</u> and <u>Flag Sensor (Final)</u> adjustment; remake if necessary.</p>	<p>Go to 32.</p>
<p>32. Of the columns that are missing, are they all odd-numbered (example: 1, 3, 19, 71) or are they all even-numbered (example: 2, 8, 42, 68)?</p>	<p>Check the position of the antifreeze strip.</p> <p>Check for oil on antifreeze strip. If present, spray with 337449 Degreaser (Freon TF).</p>  <p>If antifreeze strip is distorted or missing, replace entire printer.</p>	<p>Go to 33.</p>  <p>ANTIFREEZE STRIP (Clear Plastic Strip)</p>

TABLE B (Cont)

80-COLUMN FRICTION FEED PRINTER TROUBLESHOOTING

ANALYSIS QUESTION	"YES" RESPONSE DIRECTIVE	"NO" RESPONSE DIRECTIVE
33. Are one or more columns missing?	<p>Check the following adjustments:</p> <p>(1) <u>Impeller Shaft Sensor Gap</u> (2) <u>Flag Sensor Gap</u> (3) <u>Impeller Shaft Sensor (Final)</u></p> <p>Replace 410076 (or 410640) circuit card.</p> <p>After the card is installed, check the <u>Impeller Shaft Sensor (Final)</u> and <u>Flag Sensor (Final)</u> adjustment; remake if necessary.</p> <p>Replace entire printer.</p>	Go to 34.
34. Are any characters not printed?	<p>Check type carrier for missing pallets.</p> <p>Replace type carrier.</p> <p>Replace 410076 (or 410640) circuit card.</p> <p>After the card is installed, check the <u>Impeller Shaft Sensor (Final)</u> and <u>Flag Sensor (Final)</u> adjustment; remake if necessary.</p>	Place printer in service.
35. Is the font symbol clipped on the left or right?	<p>Check the <u>Impeller Shaft to Carrier Phasing — Final</u> adjustment.</p>	Go to 36.

TABLE B (Cont)

80-COLUMN FRICTION FEED PRINTER TROUBLESHOOTING

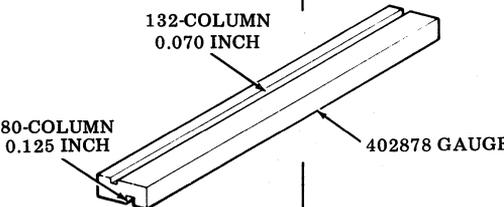
ANALYSIS QUESTION	"YES" RESPONSE DIRECTIVE	"NO" RESPONSE DIRECTIVE																						
<p>36. Are adjacent characters in the type carrier printed in place of the proper character (T instead of S, B instead of A, etc)?</p>	<p>Check the following adjustments:</p> <p>(1) <u>Flag Sensor Gap</u> (2) <u>Impeller Shaft Sensor Gap</u></p> <p>Check that pallets and flags are in proper position.</p> <table border="1" data-bbox="438 467 728 751"> <thead> <tr> <th>Type Carrier</th> <th>Flag Position</th> </tr> </thead> <tbody> <tr><td>400645AA</td><td>43, 107, 171</td></tr> <tr><td>400629AB</td><td>12, 108</td></tr> <tr><td>400774AC</td><td>44, 108, 172</td></tr> <tr><td>400775AD</td><td>108, 172</td></tr> <tr><td>400776AF</td><td>12, 108</td></tr> <tr><td>400778AH</td><td>44, 108, 172</td></tr> <tr><td>400779AP</td><td>12, 108</td></tr> <tr><td>400784AN</td><td>12, 108</td></tr> <tr><td>400785AQ</td><td>43, 107, 171</td></tr> <tr><td>408346AZ</td><td>12, 60, 108, 156</td></tr> </tbody> </table> <p><i>Note:</i> For flag positions in type carriers not listed above, refer to Section 582-210-702.</p> <p>Replace entire printer.</p>	Type Carrier	Flag Position	400645AA	43, 107, 171	400629AB	12, 108	400774AC	44, 108, 172	400775AD	108, 172	400776AF	12, 108	400778AH	44, 108, 172	400779AP	12, 108	400784AN	12, 108	400785AQ	43, 107, 171	408346AZ	12, 60, 108, 156	<p>Go to 37.</p>
Type Carrier	Flag Position																							
400645AA	43, 107, 171																							
400629AB	12, 108																							
400774AC	44, 108, 172																							
400775AD	108, 172																							
400776AF	12, 108																							
400778AH	44, 108, 172																							
400779AP	12, 108																							
400784AN	12, 108																							
400785AQ	43, 107, 171																							
408346AZ	12, 60, 108, 156																							
<p>37. Is copy free of horizontal ink smudges caused by the ribbon rubbing against the paper.</p>	<p>Go to 38.</p>	<p>Check the following adjustments:</p> <p>(1) <u>Ribbon Guide</u> (2) <u>Paper Positioner</u></p>																						
<p>38. Is copy free of double print or ghost images?</p> 	<p>Go to 39.</p>	<p>Check the following adjustments:</p> <p>(1) <u>Left Carrier Sprocket</u> (2) <u>Right Carrier Sprocket</u></p> <p>Check that type pallets are seated properly in carrier. Seat pallets with 402878 gauge. Replace type carrier.</p> <p>Replace entire printer.</p>																						

TABLE B (Cont)

80-COLUMN FRICTION FEED PRINTER TROUBLESHOOTING

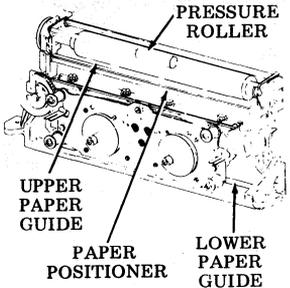
ANALYSIS QUESTION	"YES" RESPONSE DIRECTIVE	"NO" RESPONSE DIRECTIVE
<p>43. Are the bottoms of characters printed clearly (not light) at both ends of the line?</p>	Go to 44.	<p>Check the following adjustments:</p> <p>(1) <u>Left Carrier Sprocket</u></p> <p>(2) <u>Right Carrier Sprocket</u></p> <p>Replace printer.</p>
<p>44. Are all individual characters printed clearly when received?</p>	Go to 45.	<p>Check type carrier for missing, broken, distorted, or dirty type pallets.</p> <p>Replace type carrier.</p> <p>Replace printer.</p>
<p>45. Are there erratic line feeds or some characters printing too high?</p>  <p>The diagram shows a cross-section of the paper feed assembly. A horizontal pressure roller is at the top. Below it are the upper paper guide, the paper positioner (a central mechanism), and the lower paper guide.</p>	<p><u>Friction Feed</u>: Check for bind in paper roll and throughout paper routing path.</p> <p>Check tension of pressure roller.</p> <p>Check for damaged paper guides and paper positioner.</p> <p>Check for damaged spindle.</p> <p>Check that core of paper roll is not damaged, and is not protruding on either side.</p> <p>Replace front casting assembly: 40P101 – 400201 (early design) or 400377 (late design) 40P102 – 402970</p>	Go to 46.
<p>46. Does the paper feed out when the paper advance pushbutton is operated? (Printer in cabinet and SSI connected.)</p> <p><i>Note:</i> SSI connected (required for paper feed out with the 410640 circuit card) is not required for paper feed out with the 410076 circuit card.</p>	Go to 48.	Go to 47.

TABLE B (Cont)

80-COLUMN FRICTION FEED PRINTER TROUBLESHOOTING

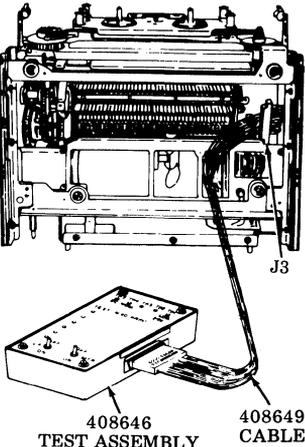
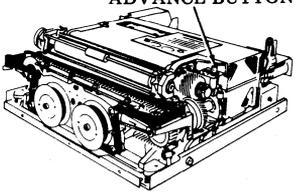
ANALYSIS QUESTION	"YES" RESPONSE DIRECTIVE	"NO" RESPONSE DIRECTIVE
<p>47. Operate 402779 line cord with switch to Off.</p> <p>Remove 410076 (or 410640) circuit card from printer.</p> <p>Connect 408646 test assembly as shown.</p> <p><i>Caution: Observe caution label on 408649 cable when connecting plug to J3 connector.</i></p> <p>Operate 402779 line cord with switch On.</p> <p>Depress paper advance push-button on printer.</p> <p>Does the paper advance lamp on the 408646 test assembly light?</p>	 <p>Replace 410076 (or 410640) circuit card.</p> <p>After the card is installed, check the <u>Impeller Shaft Sensor (Final)</u> and <u>Flag Sensor (Final)</u> adjustment; remake if necessary.</p>	<p>Replace 402631 switch.</p>
<p>48. Does the low paper indicator light when paper roll is momentarily lifted?</p>	<p>LOW PAPER INDICATOR AND PAPER ADVANCE BUTTON</p>  <p>Place printer in service.</p>	<p>Check the low paper switch adjustment.</p> <p>Go to 49.</p>

TABLE B (Cont)

80-COLUMN FRICTION FEED PRINTER TROUBLESHOOTING

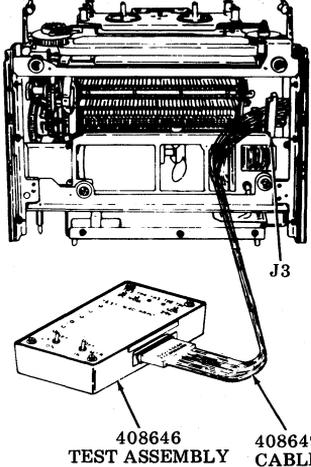
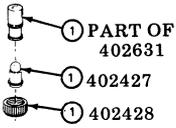
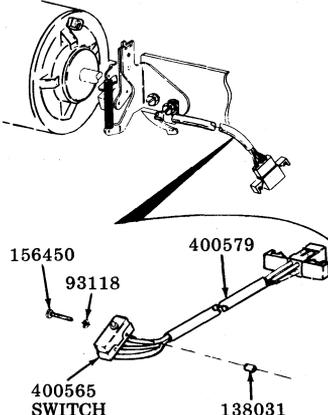
ANALYSIS QUESTION	"YES" RESPONSE DIRECTIVE	"NO" RESPONSE DIRECTIVE
<p>49. Operate 402779 line cord with switch Off.</p> <p>Remove 410076 (or 410640) circuit card from printer.</p> <p>Connect 408646 test assembly to J3, as shown.</p> <p><i>Caution: Observe caution label on 408649 cable when connecting plug to J3.</i></p> <p>Operate the 402779 line cord with switch On.</p> <p>With the paper in, does the NO LOW PAPER lamp on the 408646 test assembly light?</p> <p>Lift paper roll. Does the NO LOW PAPER lamp go out and the LOW PAPER indicator on the printer light?</p>	 <p>408646 TEST ASSEMBLY 408649 CABLE</p> <p>J3</p> <p>Replace 410076 (or 410640) circuit card.</p> <p>After the card is installed, check the Impeller Shaft Sensor (Final) and Flag Sensor (Final) adjustment; remake if necessary.</p>	<p>Replace 402427 bulb.</p>   <p>1 402631</p> <p>1 402500 SET OF PARTS</p> <p>Replace 400565 low paper switch.</p> 

TABLE C

80-COLUMN TRACTOR FEED PRINTER TROUBLESHOOTING

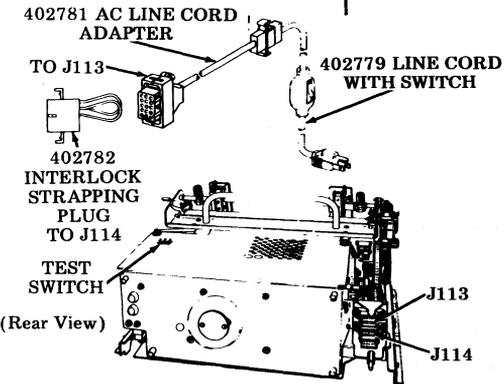
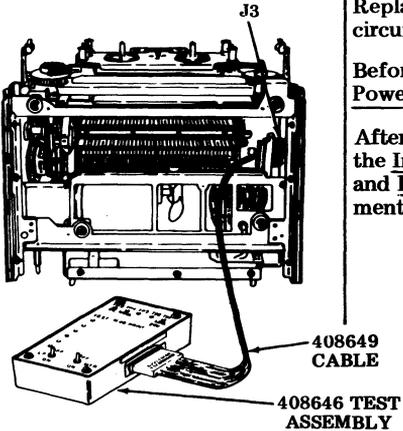
ANALYSIS QUESTION	"YES" RESPONSE DIRECTIVE	"NO" RESPONSE DIRECTIVE
<p>1. Is the 80-column tractor feed printer 40P151 or 40P153?</p> <p>Is the 80-column tractor feed printer 40P154 or 40P253?</p>	<p>Go to 2.</p> <p>Go to 20.</p>	
<p>2. Remove printer from cabinet.</p> <p>Connect 402781 ac line cord adapter and 402779 line cord with switch to J113 connector.</p> <p>Plug 402782 interlock strapping plug into J114.</p> <p>Operate printer Test switch to Off.</p> <p>Operate 402779 line cord with switch to On.</p> <p>Does printer motor run?</p>	 <p>40P151 or 40P153 Tractor Feed Printer.</p> <p>Go to 3.</p>	<p>Go to 5.</p>
<p>3. Operate 402779 line cord with switch to Off.</p> <p>Remove 410076 (or 410640) circuit card.</p> <p>Connect 408646 test assembly and 408649 cable as shown.</p> <p><i>Caution: Observe caution label on 408649 cable when connecting plug to J3 connector.</i></p> <p>Operate MTR switch on 408646 test assembly to Off.</p> <p>Operate 402779 line cord with switch to On.</p> <p>Does printer motor run?</p>	 <p>Go to 4.</p>	<p>Replace 410076 (or 410640) circuit card.</p> <p>Before installing card, check <u>Power Supply Voltage</u> adjustment.</p> <p>After the card is installed, check the <u>Impeller Shaft Sensor (Final)</u> and <u>Flag Sensor (Final)</u> adjustment; remake if necessary.</p>

TABLE C (Cont)

80-COLUMN TRACTOR FEED PRINTER TROUBLESHOOTING

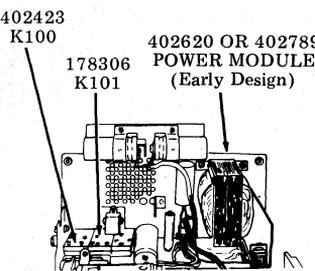
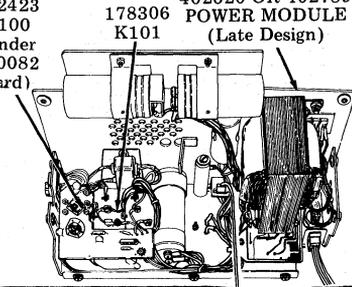
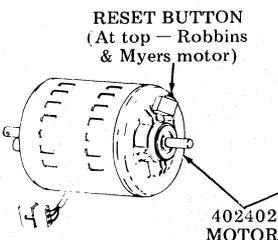
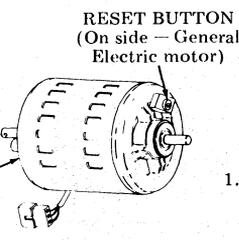
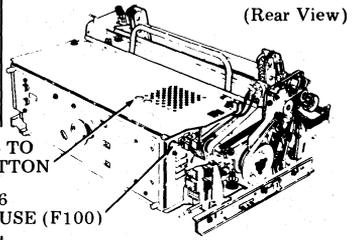
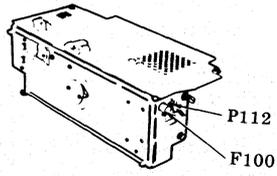
ANALYSIS QUESTION	"YES" RESPONSE DIRECTIVE	"NO" RESPONSE DIRECTIVE
<p>4. Separate 402620 or 402789 power module from printer, leaving all cabling connected.</p> <p>Operate 402779 line cord with switch to On.</p> <p>Measure 115 V ac +10% between TP3 on 408646 test assembly and terminal 2 on K101 relay.</p> <p>Is 115 V ac present?</p>	<p>Replace K101 relay (178306).</p> 	<p>Replace 402620 or 402789 power module.</p> 
<p>5. Operate printer Test switch to On.</p> <p>Does printer motor run?</p>	<p>Go to 41.</p>	<p>Go to 6.</p>
<p>6. Operate 402779 line cord with switch to Off.</p> <p>Are the motor gears and associated drive mechanisms free to operate (no mechanical binds)?</p> 	<p>Check F100 fuse. If blown, replace with 143306 fuse (1 A SL-BL MDL-1). If fuse blows again, go to 7.</p> <p>Check thermal overload protector — depress red button on fan end of motor. Go to 11.</p> 	<p>If mechanical bind is not clearly evident and easily rectified, replace printer.</p> 
<p>7. Disconnect P112 connector.</p> <p>Operate 402779 line cord with switch On.</p> <p>Does bench fuse blow?</p>	<p>Problem is test cable or printer cable (P112 to J113). Locate short. Replace F100 fuse (143306).</p>	<p>Operate 402779 line cord with switch Off.</p> <p>Go to 8.</p> 

TABLE C (Cont)

80-COLUMN TRACTOR FEED PRINTER TROUBLESHOOTING

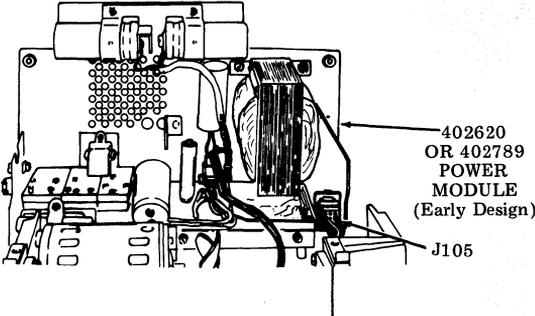
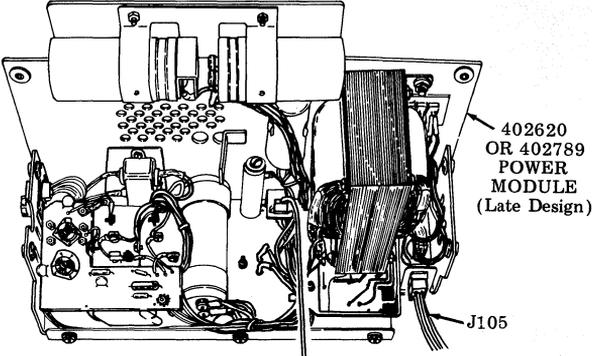
ANALYSIS QUESTION	"YES" RESPONSE DIRECTIVE	"NO" RESPONSE DIRECTIVE
<p>8. Reconnect P112 connector. Disconnect J105 connector on 402620 or 402789 power module.</p> <p>Operate 402779 line cord with switch to On.</p> <p>Does F100 fuse blow?</p>	<p>Operate 402779 line cord with switch Off.</p> <p>Go to 10.</p> 	<p>Operate 402779 line cord with switch Off.</p> <p>Go to 9.</p> 
<p>9. Reconnect J105 connector. Remove 410076 (or 410640) circuit card.</p> <p>Operate 402779 line cord with switch to On.</p> <p>Does F100 fuse blow?</p>	<p>Replace printer.</p>	<p>Replace 410076 (or 410640) circuit card. Before installing new card, check power supply voltage. After the card is installed, check the <u>Impeller Shaft Sensor (Final)</u> and <u>Flag Sensor (Final)</u> adjustment; remake if necessary.</p>

TABLE C (Cont)

80-COLUMN TRACTOR FEED PRINTER TROUBLESHOOTING

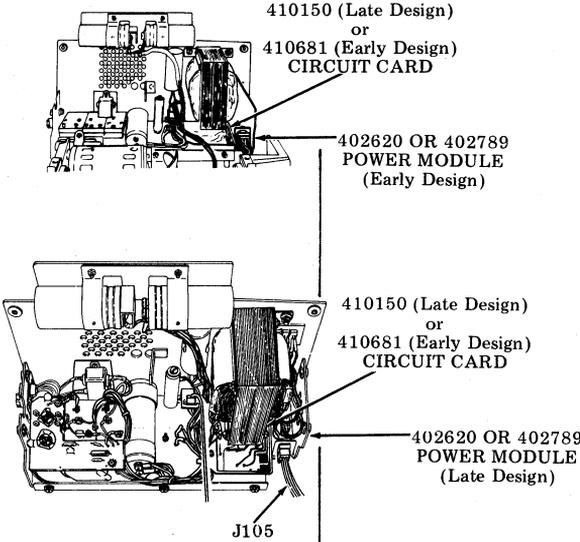
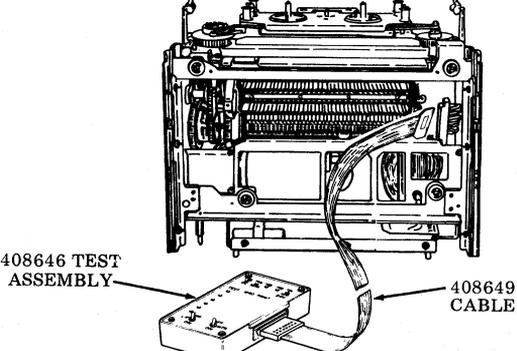
ANALYSIS QUESTION	"YES" RESPONSE DIRECTIVE	"NO" RESPONSE DIRECTIVE
<p>10. Reconnect J105 connector. Remove 410150 circuit card.</p> <p>Replace F100 fuse (143306).</p> <p>Operate 402779 line cord with switch to On.</p> <p>Does F100 fuse blow?</p>	<p>Check for short in 402620 or 402789 power module.</p> <p>Replace 402620 or 402789 power module.</p> 	<p>Replace 410150 circuit card.</p> <p>After circuit card is installed, check the <u>Power Supply Voltage</u> adjustment; active if necessary.</p>
<p>11. Remove 410076 (or 410640) circuit card.</p> <p>Connect 408646 test assembly to J3 connector as shown.</p> <p><i>Caution: Observe caution label on 408649 cable when connecting plug to J3 connector</i></p> <p>Operate 402779 line cord with switch to On.</p>	 <p>408646 TEST ASSEMBLY</p> <p>408649 CABLE</p>	

TABLE C (Cont)

80-COLUMN TRACTOR FEED PRINTER TROUBLESHOOTING

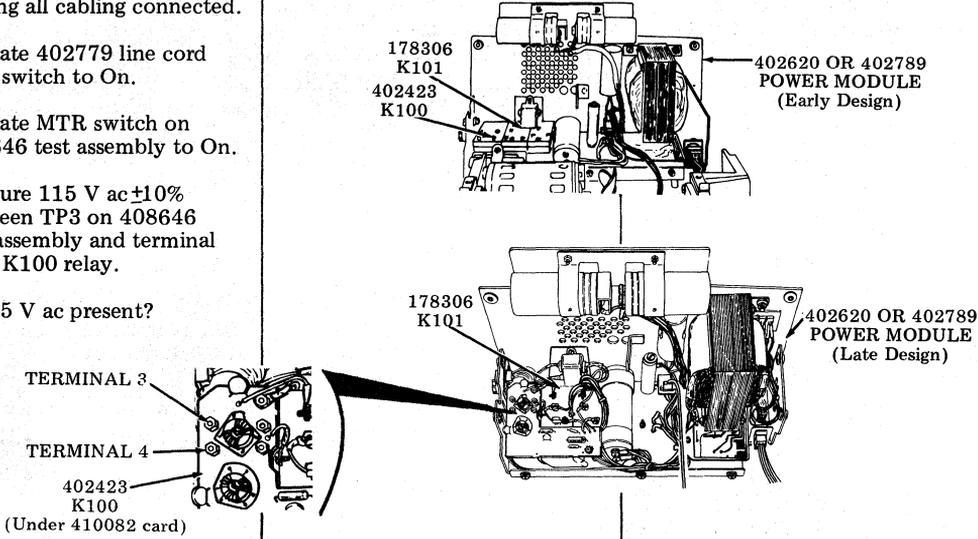
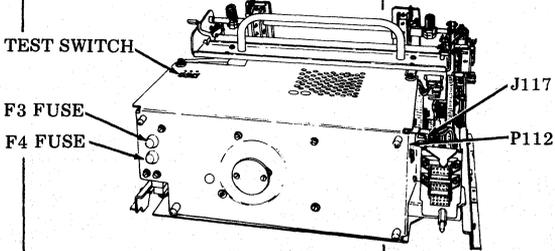
ANALYSIS QUESTION	"YES" RESPONSE DIRECTIVE	"NO" RESPONSE DIRECTIVE
<p>15. Separate 402620 or 402789 power module from printer leaving all cabling connected.</p> <p>Operate 402779 line cord with switch to On.</p> <p>Operate MTR switch on 408646 test assembly to On.</p> <p>Measure 115 V ac $\pm 10\%$ between TP3 on 408646 test assembly and terminal 4 on K100 relay.</p> <p>Is 115 V ac present?</p> 	<p>Go to 16.</p>	<p>Replace K101 relay 178306.</p>
<p>16. Measure 115 V ac $\pm 10\%$ between TP3 on 408646 test assembly and terminal 3 on K100 relay.</p> <p>Is 115 V ac present?</p>	<p>40P151 Go to 19. 40P153 – Go to 17.</p>	<p>Replace K100 relay (402423).</p>
<p>17. 40P153 Only Operate 402779 line cord with switch to Off.</p> <p>Disconnect J117 connector from power module.</p> <p>Operate 402779 line cord with switch to On.</p> <p>Measure 14 V ac between terminals 1 and 3 and between terminals 3 and 5 on P117 connector.</p> <p>Is 14 V ac present?</p>	<p>Go to 18.</p> 	<p>Check F3 and F4 fuses. If blown, replace with 129919 fuse, 4.0 A SL-BL.</p> <p>Go to 18.</p>

TABLE C (Cont)

80-COLUMN TRACTOR FEED PRINTER TROUBLESHOOTING

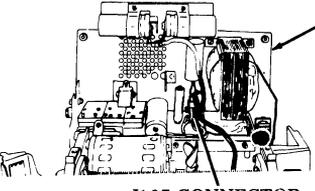
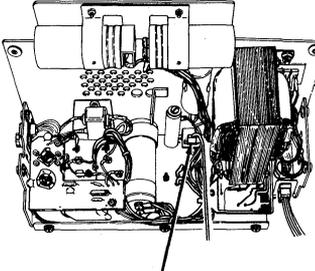
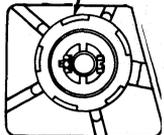
ANALYSIS QUESTION	"YES" RESPONSE DIRECTIVE	"NO" RESPONSE DIRECTIVE
<p>18. Measure 9.2 V ac between terminals 2 and 3 and between terminals 3 and 4 on P117 connector.</p> <p>Is 9.2 V ac present?</p>	<p>Reconnect J117. Go to 19.</p>	<p>Replace 402789 power module.</p>
<p>19. Operate 402779 line cord with switch to Off.</p> <p>Disconnect J107 connector on cable running to the motor.</p> <p>Measure the following resistances on J107 connector:</p> <p><u>402402 Motor — General Electric</u> Terminal 1 to 2 — 33 ohms</p> <p>Terminal 1 to 3 — 45 ohms</p> <p>Terminal 2 to 3 — 12 ohms</p> <p>(all readings $\pm 10\%$).</p> <p><u>402402 Motor — Robbins & Myers</u> Terminal 1 to 2 — 19 ohms</p> <p>Terminal 1 to 3 — 30 ohms</p> <p>Terminal 2 to 3 — 11 ohms</p> <p>(all readings $\pm 10\%$)</p> <p>Are resistances correct?</p>	<p></p> <p></p> <p></p> <p>(Left Side View)</p> <p></p> <p>(Left Side View)</p> <p>Replace entire printer.</p>	<p>Replace 402402 motor.</p>

TABLE C (Cont)

80-COLUMN TRACTOR FEED PRINTER TROUBLESHOOTING

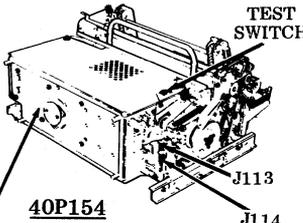
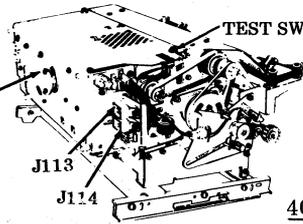
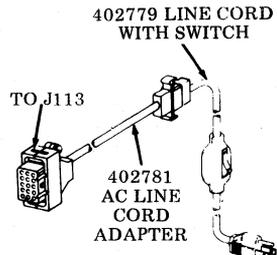
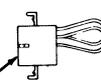
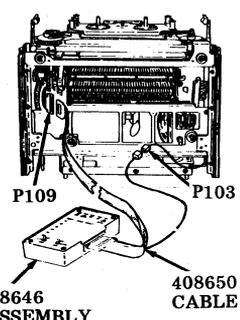
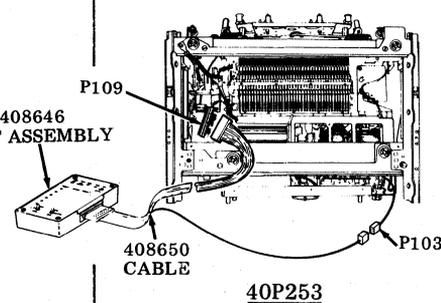
ANALYSIS QUESTION	"YES" RESPONSE DIRECTIVE	"NO" RESPONSE DIRECTIVE
<p>20. Remove printer from cabinet.</p> <p>Connect the 402781 ac line cord adapter and 402779 line cord with switch to J113 connector.</p> <p>Plug 402782 interlock plug into J114.</p> <p>Set Test switch to Off.</p> <p>Operate 402779 line cord with switch to On.</p> <p>Does printer motor run?</p>	<p>Go to 21.</p>  <p>TEST SWITCH</p> <p>J113</p> <p>J114</p> <p>40P154</p>  <p>TEST SWITCH</p> <p>J113</p> <p>J114</p> <p>40P253</p> <p>VOLTAGE ADJUSTMENT ACCESS HOLE</p>	<p>Go to 23.</p>  <p>402779 LINE CORD WITH SWITCH</p> <p>TO J113</p> <p>402781 AC LINE CORD ADAPTER</p>  <p>402782 INTERLOCK STRAPPING PLUG TO J114</p>
<p>21. Operate 402779 line cord with switch to Off.</p> <p>Remove 410071 circuit card.</p> <p>Connect the 408646 test assembly as shown.</p> <p><i>Caution: Observe caution label on 408650 when connecting plug to P109 connector.</i></p> <p>Operate MTR switch on 408646 test assembly to Off.</p> <p>Operate 402779 line cord with switch to On.</p> <p>Does printer motor run?</p>	<p>Go to 22.</p>  <p>P109</p> <p>P103</p> <p>408646 TEST ASSEMBLY</p> <p>408650 CABLE</p> <p>40P154</p>  <p>P109</p> <p>P103</p> <p>408646 TEST ASSEMBLY</p> <p>408650 CABLE</p> <p>40P253</p>	<p>Replace 410071 circuit card.</p> <p>After the card is installed, check the <u>Impeller Shaft Sensor (Final)</u> and <u>Flag Sensor (Final)</u> adjustment; remake if necessary.</p>

TABLE C (Cont)

80-COLUMN TRACTOR FEED PRINTER TROUBLESHOOTING

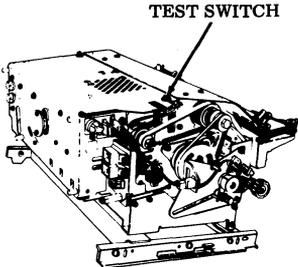
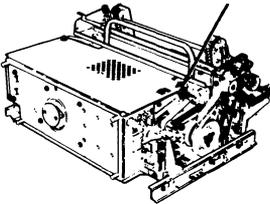
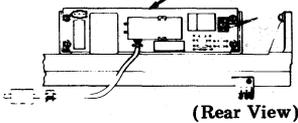
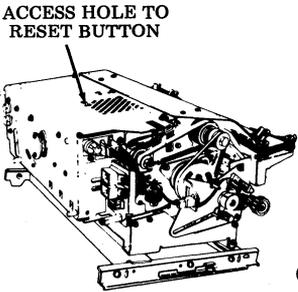
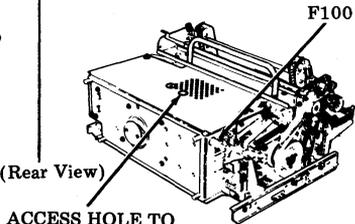
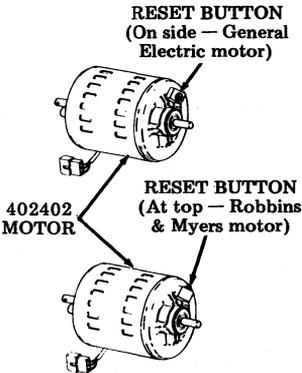
ANALYSIS QUESTION	"YES" RESPONSE DIRECTIVE	"NO" RESPONSE DIRECTIVE
<p>22. Does the test lamp on 408646 test assembly light?</p>  <p>TEST SWITCH</p> <p>40P253</p>	<p>Replace 402861 test switch.</p>  <p>TEST SWITCH</p> <p>40P154</p>	<p>Replace 410155 or 410019 circuit card assembly.</p>  <p>410155 or 410019 (Rear View)</p> <p>Replace printer.</p>
<p>23. Operate Test switch on printer to On.</p> <p>Does the printer motor run?</p>	<p>Go to 41.</p>	<p>Go to 24.</p>
<p>24. Is the motor gear and associated drive mechanisms free to operate (no mechanical bind)?</p>  <p>ACCESS HOLE TO RESET BUTTON</p> <p>40P253</p>	<p>Check F100 fuse. If blown, replace with 143306 fuse (1 amp SL-BL MDL-1). If fuse blows again, go to 25. Check thermal overload protector — depress RED reset button on fan end of motor.</p> <p>Go to 32.</p>  <p>(Rear View)</p> <p>ACCESS HOLE TO RESET BUTTON</p> <p>40P154</p>	<p>If mechanical bind is not clearly evident and easily rectified, replace entire printer.</p>  <p>RESET BUTTON (On side — General Electric motor)</p> <p>402402 MOTOR</p> <p>RESET BUTTON (At top — Robbins & Myers motor)</p>

TABLE C (Cont)

80-COLUMN TRACTOR FEED PRINTER TROUBLESHOOTING

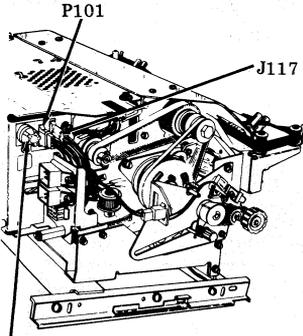
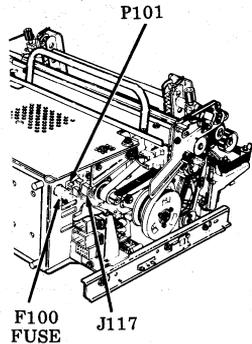
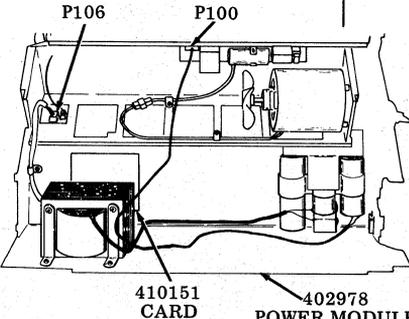
ANALYSIS QUESTION	"YES" RESPONSE DIRECTIVE	"NO" RESPONSE DIRECTIVE
<p>25. Disconnect P101.</p> <p>Operate 402779 line cord with switch to On.</p> <p>Does bench fuse blow?</p>  <p>F100 FUSE</p> <p><u>40P253</u></p>	<p>Problem is in test cable or printer cable (P101 to J113).</p> <p>Locate short.</p> <p>Replace F100 fuse (143306).</p>  <p>F100 FUSE</p> <p><u>40P154</u></p>	<p>Operate 402779 line cord with switch Off.</p> <p>Go to 26.</p>
<p>26. Reconnect P101. Disconnect P100 on the motor control assembly.</p> <p>Operate 402779 line cord with switch to On.</p> <p>Does F100 fuse blow?</p>  <p>410151 CARD</p> <p>402978 POWER MODULE</p>	<p>Operate 402779 line cord with switch Off.</p> <p>Replace F100 fuse (143306).</p> <p>Go to 31.</p>	<p>Operate 402779 line cord with switch Off.</p> <p>Go to 27.</p>

TABLE C (Cont)

80-COLUMN TRACTOR FEED PRINTER TROUBLESHOOTING

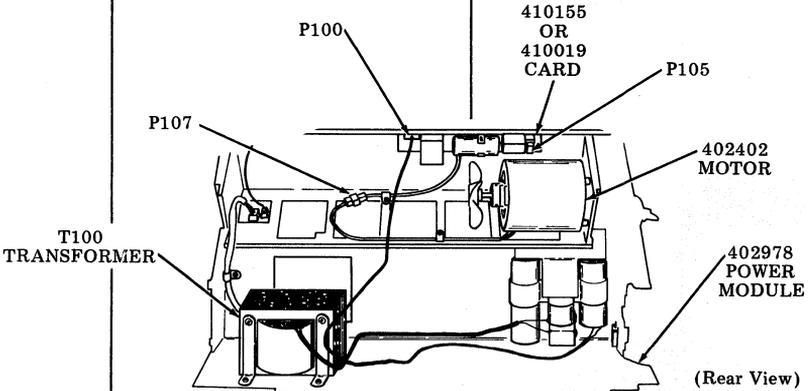
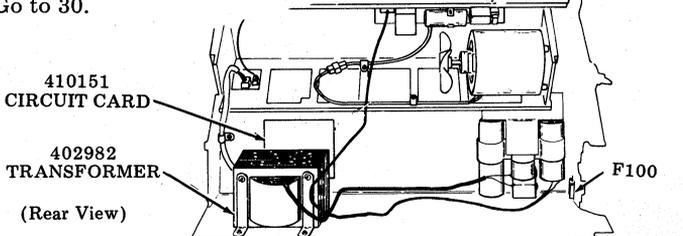
ANALYSIS QUESTION	"YES" RESPONSE DIRECTIVE	"NO" RESPONSE DIRECTIVE
<p>27. Reconnect P100. Disconnect P105 on the motor control assembly.</p> <p>Operate 402779 line cord with switch to On.</p> <p>Does F100 fuse blow?</p>	<p>Operate 402779 line cord with switch Off.</p> <p>Replace F100 fuse (143307).</p> <p>Go to 28.</p>	<p>Replace 410071 circuit card.</p> <p>After the card is installed, check the <u>Impeller Shaft Sensor (Final)</u> and <u>Flag Sensor (Final)</u> adjustment; remake if necessary.</p>
		
<p>28. Reconnect P105.</p> <p>Disconnect P107 on the motor control assembly. Operate 402779 line cord with switch to On.</p> <p>Does F100 fuse blow?</p>	<p>Operate 402779 line cord with switch Off.</p> <p>Replace 410155 circuit card or 410019 circuit card.</p> <p>Replace F100 fuse (143306).</p> <p>Go to 29.</p>	<p>Replace 402402 motor.</p>
<p>29. Reconnect P107. Remove 410151 circuit card from J102 receptacle. Operate 402779 line cord with switch to On.</p> <p>Does F100 fuse blow?</p>	<p>Operate 402779 line cord with switch Off.</p> <p>Replace F100 fuse (143306).</p> <p>Go to 30.</p>	<p>Replace 410151 circuit card. After the circuit card is installed, check for the <u>Power Supply Voltage</u> adjustment; refine if necessary.</p>
		

TABLE C (Cont)

80-COLUMN TRACTOR FEED PRINTER TROUBLESHOOTING

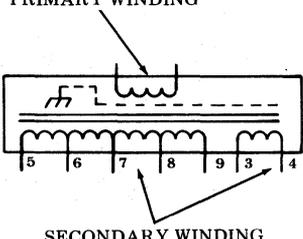
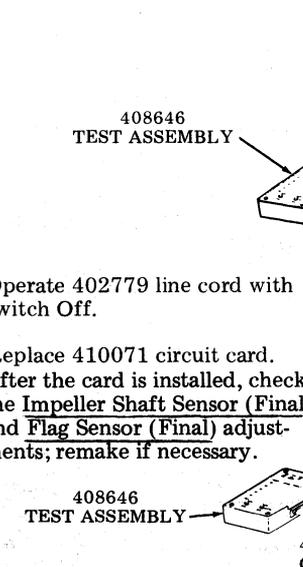
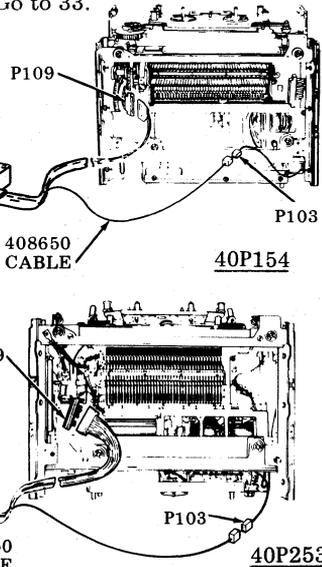
ANALYSIS QUESTION	"YES" RESPONSE DIRECTIVE	"NO" RESPONSE DIRECTIVE
<p>30. Reinsert 410151 circuit card. Remove 410071 circuit card.</p> <p>Operate 402779 line cord with switch to On.</p> <p>Does F100 fuse blow?</p>	<p>Operate 402779 line cord with switch Off.</p> <p>Reconnect 410071 circuit card.</p> <p>Replace F100 fuse (143306).</p> <p>Go to 31.</p>	<p>Operate 402779 line cord with switch Off.</p> <p>Replace 410071 circuit card.</p> <p>After the card is installed, check the <u>Impeller Shaft Sensor (Final)</u> and <u>Flag Sensor (Final)</u> adjustments; remake if necessary.</p>
<p>31. With an ohmmeter, check for short between primary and secondary windings on T100 transformer. Is transformer shorted?</p>	<p>Replace T100 transformer (402982).</p> <p>PRIMARY WINDING</p>  <p>SECONDARY WINDING</p>	<p>Replace entire printer.</p>
<p>32. Remove 410071 circuit card from printer.</p> <p>Connect the 408646 test assembly as shown.</p> <p><i>Caution: Observe caution label on 408650 cable when connecting plug to P109 connector.</i></p> <p>Operate 402779 line cord with switch to On.</p> <p>Operate MTR switch on 408646 test assembly to On.</p> <p>Does printer motor run?</p>	<p>Go to 33.</p>  <p>408646 TEST ASSEMBLY</p> <p>408650 CABLE</p> <p>Operate 402779 line cord with switch Off.</p> <p>Replace 410071 circuit card. After the card is installed, check the <u>Impeller Shaft Sensor (Final)</u> and <u>Flag Sensor (Final)</u> adjustments; remake if necessary.</p>	<p>Go to 33.</p>  <p>P109</p> <p>P103</p> <p>408650 CABLE</p> <p>40P154</p> <p>P109</p> <p>P103</p> <p>40P253</p>

TABLE C (Cont)

80-COLUMN TRACTOR FEED PRINTER TROUBLESHOOTING

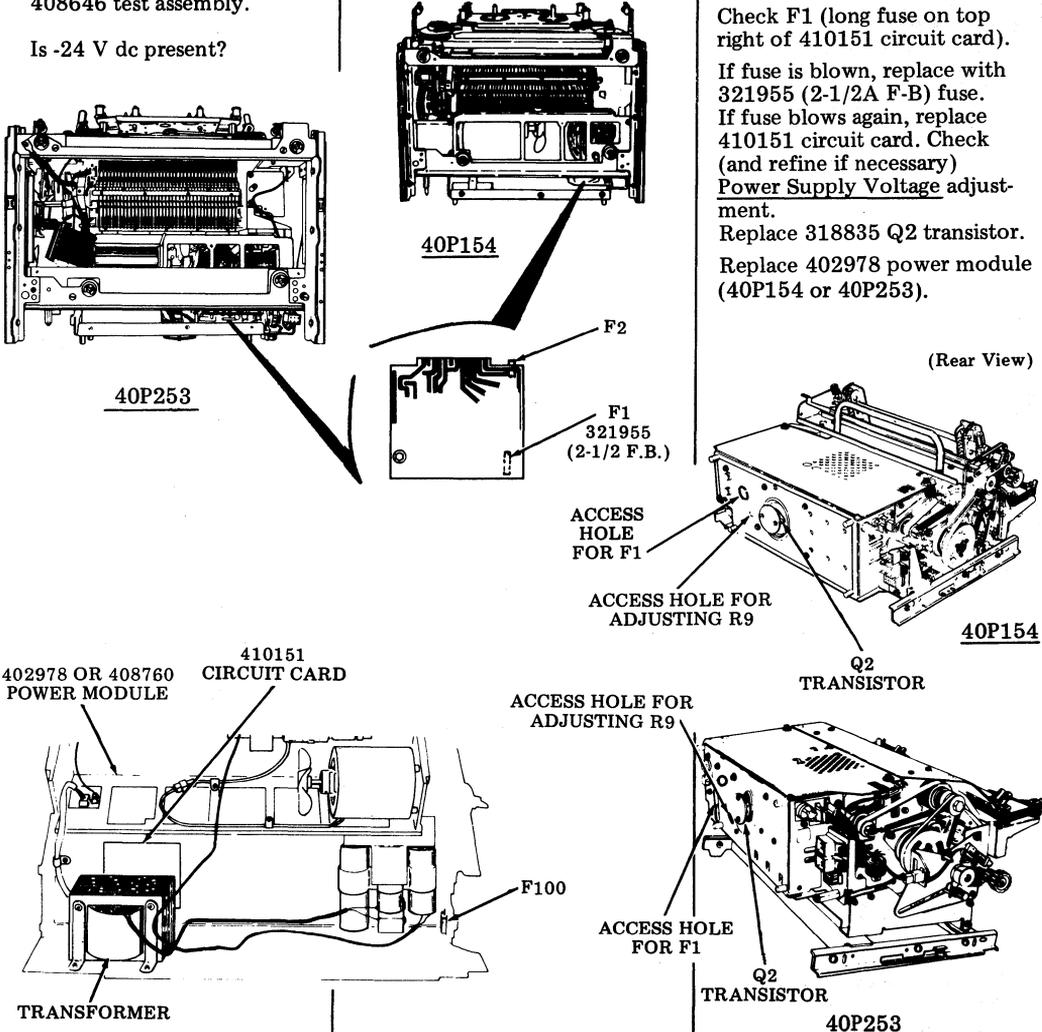
ANALYSIS QUESTION	"YES" RESPONSE DIRECTIVE	"NO" RESPONSE DIRECTIVE
<p>33. With a volt-ohmmeter, check -24 V dc $\pm 1\%$ between TP3 and TP2, TP3, and TP1 on 408646 test assembly.</p> <p>Is -24 V dc present?</p>  <p>40P253</p> <p>40P154</p> <p>402978 OR 408760 POWER MODULE</p> <p>410151 CIRCUIT CARD</p> <p>TRANSFORMER</p> <p>F100</p> <p>ACCESS HOLE FOR F1</p> <p>ACCESS HOLE FOR ADJUSTING R9</p> <p>Q2 TRANSISTOR</p> <p>40P154</p> <p>Q2 TRANSISTOR</p> <p>40P253</p>	<p>Go to 34.</p>	<p>If voltage is present but not -24 V dc $\pm 1\%$, adjust R9 resistor on 410151 circuit card.</p> <p>Check F1 (long fuse on top right of 410151 circuit card).</p> <p>If fuse is blown, replace with 321955 (2-1/2A F-B) fuse.</p> <p>If fuse blows again, replace 410151 circuit card. Check (and refine if necessary) <u>Power Supply Voltage adjustment</u>.</p> <p>Replace 318835 Q2 transistor.</p> <p>Replace 402978 power module (40P154 or 40P253).</p>
<p>34. Operate printer Test switch On.</p> <p>Does the Test lamp on 408646 test assembly light?</p>	<p>Go to 35.</p>	<p>Replace 402861 test switch.</p>

TABLE C (Cont)

80-COLUMN TRACTOR FEED PRINTER TROUBLESHOOTING

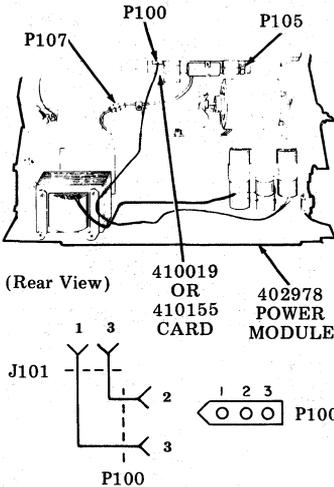
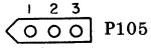
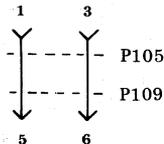
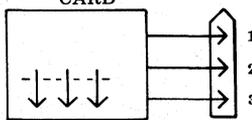
ANALYSIS QUESTION	"YES" RESPONSE DIRECTIVE	"NO" RESPONSE DIRECTIVE
<p>35. Operate the 402779 line cord with switch to Off.</p> <p>Disconnect P100 plug from 410155 circuit card assembly.</p> <p>Operate the 402779 line cord with switch to On.</p> <p>Measure 117 V ac between terminals 2 and 3 on P100 connector.</p> <p>Is 117 V ac present?</p>	<p>Operate 402779 line cord with switch Off.</p> <p>Go to 36.</p>	 <p>(Rear View) 410019 OR 410155 CARD 402978 POWER MODULE</p> <p>J101 P100</p> <p>Check wiring from J101 terminals 1 and 3 to P100 terminals 3 and 2.</p>
<p>36. Reconnect P100. Disconnect P105 plug.</p> <p>Operate 402779 line cord with switch On. With a volt-ohmmeter, check for -24 V dc between terminals 1 and 3 on P105.</p>  <p>Is -24 V dc present?</p>	<p>Operate 402779 line cord with switch Off.</p> <p>Go to 37.</p>	<p>Check wiring from P105 terminals 1 and 3 to P109 terminals 5 and 6.</p> 
<p>37. Reconnect P105. Disconnect P107 on the motor control assembly.</p> <p>Operate 402779 line cord with switch to On.</p> <p>With a volt-ohmmeter, check for 115 V ac between terminals 1 and 2 and between 2 and 3 on P107.</p> <p>Is 115 V ac present?</p>	<p>Operate 402779 line cord with switch Off.</p> <p>Go to 38.</p> <p>410019 OR 410155 MOTOR CONTROL CARD</p> 	<p>Replace 410155 or 410019 circuit card assembly.</p>

TABLE C (Cont)

80-COLUMN TRACTOR FEED PRINTER TROUBLESHOOTING

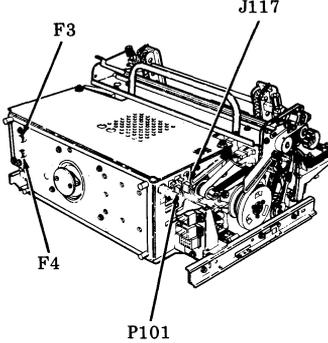
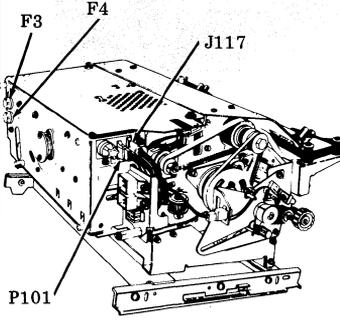
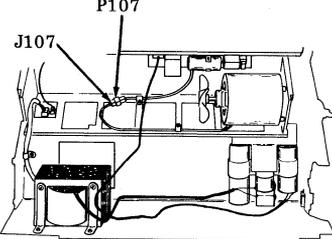
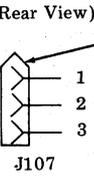
ANALYSIS QUESTION	"YES" RESPONSE DIRECTIVE	"NO" RESPONSE DIRECTIVE
<p>38. Reconnect P107. Disconnect J117 connector from power module.</p> <p>Operate 402779 line cord with switch to On.</p> <p>Measure 14 V ac between terminals 1 and 3 and between terminals 3 and 5 on P117 connector.</p> <p>Is 14 V ac present?</p>	<p>Go to 39.</p>  <p style="text-align: center;">40P154</p>	<p>Check F3 and F4 fuses. If blown, replace with 129919 fuse, 4.0A SL-BL.</p> <p>Go to 39.</p>  <p style="text-align: right;">40P253</p>
<p>39. Measure 9.2 V ac between terminals 2 and 3 and between terminals 3 and 4 on P117 connector.</p> <p>Is 9.2 V ac present?</p>	<p>Reconnect J117.</p> <p>Operate 402779 line cord with switch to Off.</p> <p>Go to 40.</p>	<p>Replace 402978 power module.</p>
<p>40. Disconnect P107.</p> <p>With an ohmmeter, measure the following resistances between the indicated terminals on J107 connector:</p> <p><u>402402 Motor — General Electric</u></p> <p>Terminal 1 to 2 — 33 ohms Terminal 1 to 3 — 45 ohms Terminal 2 to 3 — 12 ohms (All readings ±10%)</p> <p><u>402402 Motor — Robbins & Myers</u></p> <p>Terminal 1 to 2 — 19 ohms Terminal 1 to 3 — 30 ohms Terminal 2 to 3 — 11 ohms (All readings ±10%)</p> <p>Are measured resistances correct?</p>	 <p>(Rear View)</p>  <p>MOTOR PLUG</p> <p>1 2 3</p> <p>J107</p> <p>Replace 402978 power module.</p> <p>Replace entire printer.</p>	 <p>ROUND BEARING ON 402402 MOTOR (Late Design) General Electric</p> <p>(Left Side View)</p>  <p>QUINTUPLE BEARING ON 402402 MOTOR (Late Design) Robbins & Myers</p> <p>(Left Side View)</p> <p>Replace 402402 motor.</p>

TABLE C (Cont)

80-COLUMN TRACTOR FEED PRINTER TROUBLESHOOTING

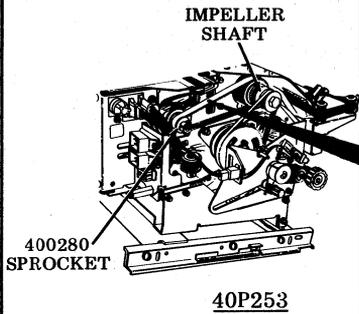
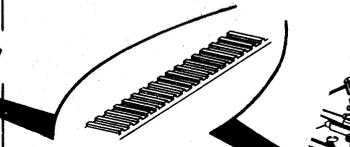
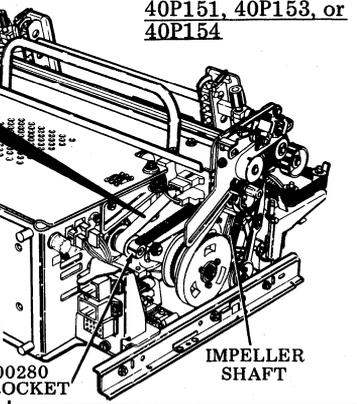
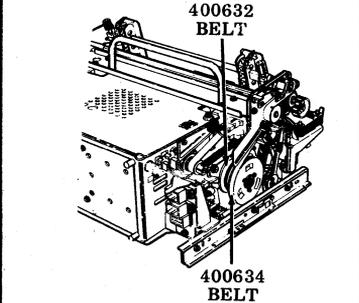
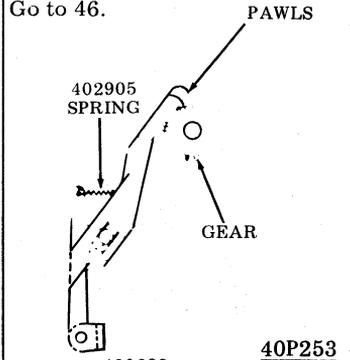
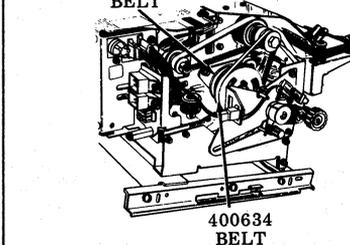
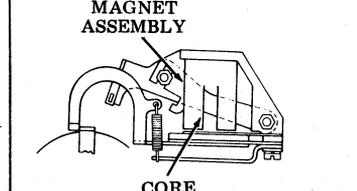
ANALYSIS QUESTION	"YES" RESPONSE DIRECTIVE	"NO" RESPONSE DIRECTIVE
<p>41. Is the impeller shaft being driven?</p>  <p>IMPELLER SHAFT</p> <p>400280 SPROCKET</p> <p>40P253</p>	<p>Go to 42.</p>  <p>400631 IMPELLER SHAFT DRIVE BELT</p>	<p>Check the 400631 impeller shaft drive belt. Replace if worn or broken.</p> <p>Check the 400280 motor shaft sprocket. Replace if worn or broken.</p> <p>40P151, 40P153, or 40P154</p>  <p>400280 SPROCKET</p> <p>IMPELLER SHAFT</p>
<p>42. Does printer line feed properly with printer Test switch On?</p>  <p>400632 BELT</p> <p>400634 BELT</p> <p>40P151, 40P153 or 40P154</p> <p>Failure symptoms are: No line feed Intermittent line feed Continuous line feed.</p>	<p>Go to 46.</p>  <p>PAWLS</p> <p>402905 SPRING</p> <p>GEAR</p> <p>400632 BELT</p> <p>40P253</p>  <p>400634 BELT</p>	<p>Check 400634 or 400632 line feed belts. Replace if worn or broken.</p> <p>Check line feed pawls for engagement with gear.</p> <p>Check line feed bail spring. Replace if broken or worn.</p>  <p>MAGNET ASSEMBLY</p> <p>CORE</p> <p>Check loose mounting of line feed magnet assembly on its core. Replace 402621 line feed assembly (on 40P151 through 40P154) or 408745 line feed assembly (on 40P253) if magnet coil is loose.</p> <p>Go to 43.</p>

TABLE C (Cont)

80-COLUMN TRACTOR FEED PRINTER TROUBLESHOOTING

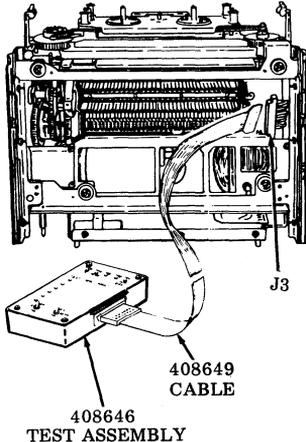
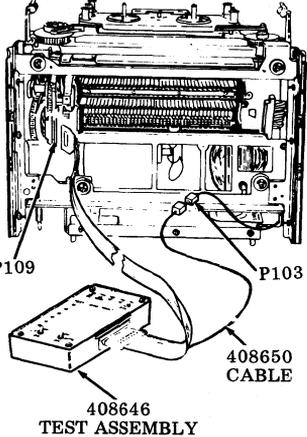
ANALYSIS QUESTION	"YES" RESPONSE DIRECTIVE	"NO" RESPONSE DIRECTIVE
<p>43. <u>40P151 or 40P153</u> Remove 410076 (or 410640) circuit card.</p> <p><u>40P154 or 40P253</u> Remove 410071 circuit card.</p> <p>Connect 408646 test assembly as shown:</p> <p><i>Caution: Observe caution label on 408649 or 408650 cable when connecting plug to J3 or P109.</i></p> <p>Operate 402779 line cord with switch to On.</p> <p>Operate MTR switch on 408646 test assembly to On.</p> <p>Operate LF switch on 408646 test assembly to On.</p> <p>Does the printer line feed?</p>	<p><u>40P151 or 40P153</u></p>  <p>Operate 402779 line cord with switch Off.</p> <p><u>40P151 or 40P153</u> Replace 410076 (or 410640) circuit card.</p> <p><u>40P154 or 40P253</u> Replace 410071 circuit card.</p> <p>After the card is installed, check the <u>Impeller Shaft Sensor (Final)</u> and <u>Flag Sensor (Final)</u> adjustments; remake if necessary.</p>	<p><u>40P154 or 40P253</u></p>  <p>Go to 44.</p>

TABLE C (Cont)

80-COLUMN TRACTOR FEED PRINTER TROUBLESHOOTING

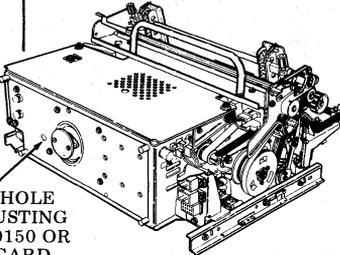
ANALYSIS QUESTION	"YES" RESPONSE DIRECTIVE	"NO" RESPONSE DIRECTIVE
<p>44. Check for -24 V dc $\pm 1\%$ between TP2 and TP3 on 408646 test assembly.</p> <p>Is -24 V dc $\pm 1\%$ present?</p>	<p>Go to 45.</p>	<p>Refine -24 V dc adjustment if voltage reading is outside tolerances.</p>  <p>(Rear View)</p> <p><u>40P151 or 40P153</u> Replace 410150 circuit card.</p> <p><u>40P154 or 40P253</u> Replace 410151 circuit card.</p>
<p>45. Operate the 402779 line cord with switch to Off.</p> <p>Disconnect P3 (40P151 or 40P153) or J109 (40P154 or 40P253) test cable from printer.</p> <p>Measure for 33 ohms resistance at the following points:</p> <p><u>40P151 or 40P153</u>: At J3 between terminals 1 and K.</p> <p><u>40P154 or 40P253</u>: At P109 between terminals 1 and 4.</p> <p>Is measured resistance correct?</p>	<p>Check the following adjustments.</p> <p><u>Clutch Shoe Release Arm</u> <u>Line Feed Armature Gap</u> <u>Line Feed Bar Eccentric and</u> <u>Drive Belt Tension</u> <u>Clutch Drive Belt</u> <u>Tension</u></p> <p><u>40P151, 40P153 or 40P154</u> Replace 402460 paper handling assembly.</p> <p><u>40P253</u> Replace entire printer.</p>	<p>Replace line feed magnet assembly:</p> <p><u>40P151, 40P153 or 40P154:</u> 402621 <u>40P253:</u> 408745</p>  <p>J3</p>  <p>P109</p> <p><u>40P151 or 40P153</u></p> <p><u>40P154 or 40P253</u></p>
<p>46. Place printer LF1 - LF2 switch to position LF2.</p> <p>Does the printer double line space properly?</p>	<p>Go to 48.</p>	<p>Go to 47.</p>

TABLE C (Cont)

80-COLUMN TRACTOR FEED PRINTER TROUBLESHOOTING

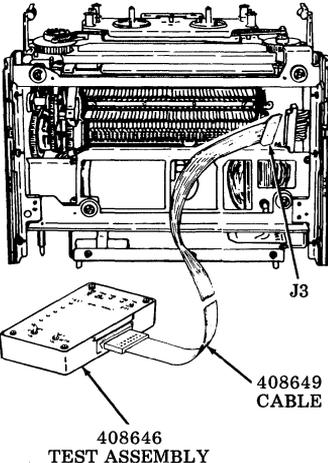
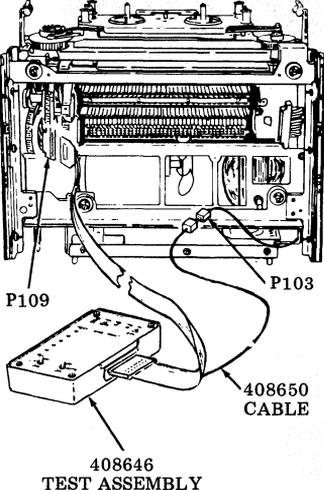
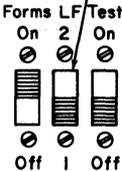
ANALYSIS QUESTION	"YES" RESPONSE DIRECTIVE	"NO" RESPONSE DIRECTIVE
<p>47. <u>40P151 or 40P153</u> Remove 410076 (or 410640) circuit card.</p> <p><u>40P154 or 40P253</u> Remove 410071 circuit card.</p> <p>Connect 408646 test assembly as shown.</p> <p><i>Caution: Observe caution label on 408649 or 408650 cable when connecting plug to J3 or P109 connector.</i></p> <p>Operate 402779 line cord with switch On.</p> <p>Does the line feed lamp on 408646 test assembly light?</p>	<p><u>40P151 or 40P153</u></p>  <p>408646 TEST ASSEMBLY</p> <p>408649 CABLE</p> <p>J3</p> <p>Operate 402779 line cord with switch Off.</p> <p><u>40P151 or 40P153</u> Replace 410076 (or 410640) circuit card.</p> <p><u>40P154 or 40P253</u> Replace 410071 circuit card.</p> <p>After the card is installed, check the Impeller Shaft Sensor (Final) and Flag Sensor (Final) adjustments; remake if necessary.</p>	<p><u>40P154 or 40P253</u></p>  <p>408646 TEST ASSEMBLY</p> <p>408650 CABLE</p> <p>P109</p> <p>P103</p> <p>Replace 402861 switch.</p>  <p>Forms LF Test On 2 On Off 1 Off</p>

TABLE C (Cont)

80-COLUMN TRACTOR FEED PRINTER TROUBLESHOOTING

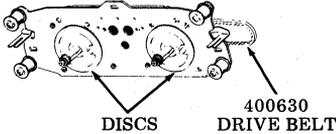
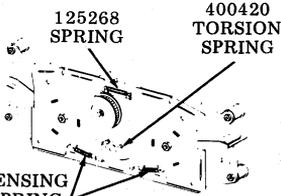
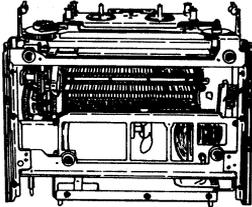
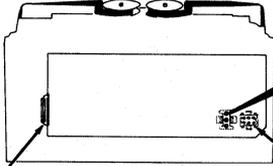
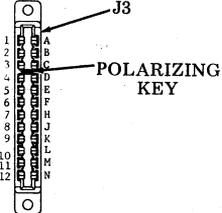
ANALYSIS QUESTION	"YES" RESPONSE DIRECTIVE	"NO" RESPONSE DIRECTIVE
<p>48. Is the ribbon feed mechanism operating properly?</p> <p>Ribbon spools rotating. Ribbon reverse working. No ribbon foldover.</p> <p><i>Note:</i> To check ribbon reversing, manually operate the reversing arms with printer operating (printer Test switch On).</p>	<p>Go to 49.</p>	<p>Check ribbon drive belt. Replace if worn or broken.</p>  <p>DISCS 400630 DRIVE BELT</p> <p>Remove ribbon mechanism and check the following springs. Replace if broken.</p>  <p>125268 SPRING 400420 TORSION SPRING 2836 SENSING ARM SPRING</p> <p>Replace 402420 ribbon mechanism.</p> <p>Check the <u>Ribbon Tracking</u> adjustment.</p>
<p>49. Are any characters being printed?</p>  <p><u>40P151 or 40P153</u></p>  <p>P109 P103</p> <p><u>40P154 or 40P253</u></p>	<p>Go to 50.</p>  <p>J3 POLARIZING KEY</p>  <p>P106</p>	<p>Check the following adjustments:</p> <p>(1) <u>Impeller Shaft Sensor Gap</u> (2) <u>Flag Sensor Gap</u></p> <p>Check impeller sensor for a maximum of 145 ohms:</p> <p><u>40P151 or 40P153:</u> Measure at J3 between terminals H and J.</p> <p><u>40P154 or 40P253:</u> Measure at P106 between terminals 1 and 2.</p> <p>Check flag sensor for a maximum of 145 ohms:</p> <p><u>40P151 or 40P153:</u> Measure at J3 between terminals E and F.</p> <p><u>40P154 or 40P253:</u> Measure at P106 between terminals 2 and 3.</p> <p>Replace sensor (400615) if open or resistance exceeds maximum requirement.</p>

TABLE C (Cont)

80-COLUMN TRACTOR FEED PRINTER TROUBLESHOOTING

ANALYSIS QUESTION	"YES" RESPONSE DIRECTIVE	"NO" RESPONSE DIRECTIVE
49. (Cont)		<p><u>40P151 or 40P153</u> Replace 410076 (or 410640) circuit card.</p> <p><u>40P154 or 40P253</u> Replace 410071 circuit card.</p> <p>After the card is installed, check the <u>Impeller Shaft Sensor (Final)</u> and <u>Flag Sensor (Final)</u> adjustments; remake if necessary.</p>
<p>50. Is the carrier font symbol the only symbol printed?</p> <p>Font symbols:</p> <p><u>AE</u> <u>A</u> Up-Low</p> <p><u>AE</u> <u>8</u> Monocase</p> <p>etc.</p>	Go to 51.	<p>If ! (exclamation) or _ (underline) are printed, check the following adjustments:</p> <p><u>Flag Sensor Gap</u> <u>Impeller Shaft Sensor Gap</u> <u>Flag Sensor Final</u></p> <p><u>40P151 or 40P153</u> Replace 410076 (or 410640) circuit card. <u>40P154 or 40P253</u> Replace the 410071 circuit card.</p> <p>After the card is installed, check the <u>Impeller Shaft Sensor (Final)</u> and <u>Flag Sensor (Final)</u> adjustments; remake if necessary.</p>
51. Are any columns not printing?	Go to 52.	Go to 56.
<p>52. Are any of the following groups of columns missing?</p> <p>1--12 13--24 25--36 37--48 49--60 61--72 73--80</p>	<p><u>40P151 or 40P153</u> Replace 410076 (or 410640) circuit card. <u>40P154 or 40P253</u> Replace 410071 circuit card.</p> <p>After the card is installed, check the <u>Impeller Shaft Sensor (Final)</u> and <u>Flag Sensor (Final)</u> adjustments; remake if necessary.</p>	Go to 53.

TABLE C (Cont)

80-COLUMN TRACTOR FEED PRINTER TROUBLESHOOTING

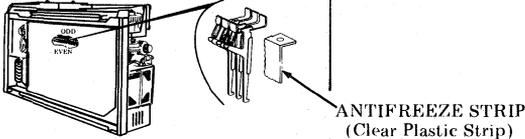
ANALYSIS QUESTION	"YES" RESPONSE DIRECTIVE	"NO" RESPONSE DIRECTIVE
<p>53. Of the columns that are missing, are they all odd-numbered (example: 1, 3, 19, 71) or are they all even-numbered (example: 2, 8, 42, 68)?</p>	<p>Check the position of the anti-freeze strip.</p> <p>Check for oil on antifreeze strip. If present, spray with 337449 Degreaser (Freon TF).</p>  <p>If antifreeze strip is distorted or missing, replace entire printer.</p>	<p>Go to 54.</p>
<p>54. Are one or more columns missing?</p>	<p>Check the following adjustments:</p> <p><u>Impeller Shaft Sensor Gap</u> <u>Flag Sensor Gap</u> <u>Impeller Shaft Sensor (Final)</u></p> <p><u>40P151 or 40P153</u> Replace 410076 (or 410640) circuit card. <u>40P154 or 40P253</u> Replace 410071 circuit card.</p> <p>After the card is installed, check the <u>Impeller Shaft Sensor (Final)</u> and <u>Flag Sensor (Final)</u> adjustments; remake if necessary.</p> <p>Replace entire printer.</p>	<p>Go to 55.</p>
<p>55. Are any characters not printed?</p>	<p>Check type carrier for missing pallets.</p> <p>Replace type carrier.</p> <p><u>40P151 or 40P153</u> Replace 410076 (or 410640) circuit card. <u>40P154 or 40P253</u> Replace 410071 circuit card.</p> <p>After the card is installed, check the <u>Impeller Shaft Sensor (Final)</u> and <u>Flag Sensor (Final)</u> adjustments; remake if necessary.</p>	<p>Place printer in service.</p>

TABLE C (Cont)

80-COLUMN TRACTOR FEED PRINTER TROUBLESHOOTING

ANALYSIS QUESTION	"YES" RESPONSE DIRECTIVE	"NO" RESPONSE DIRECTIVE																						
56. Is the font symbol clipped on the left or right?	Check the <u>Impeller Shaft To Carrier Phasing — Final</u> adjustment.	Go to 57.																						
57. Are adjacent characters in the type carrier printed in place of the proper character (T instead of S, B instead of A, etc)?	<p>Check the following adjustments:</p> <p><u>Flag Sensor Gap</u> <u>Impeller Shaft Sensor Gap</u></p> <p>Check that pallets and flags are in proper position.</p> <table border="1" data-bbox="482 555 826 842"> <thead> <tr> <th><u>Type Carrier</u></th> <th><u>Flag Position</u></th> </tr> </thead> <tbody> <tr><td>400645AA</td><td>43, 107, 171</td></tr> <tr><td>400629AB</td><td>12, 108</td></tr> <tr><td>400774AC</td><td>44, 108, 172</td></tr> <tr><td>400775AD</td><td>108, 172</td></tr> <tr><td>400776AF</td><td>12, 108</td></tr> <tr><td>400778AH</td><td>44, 108, 172</td></tr> <tr><td>400779AP</td><td>12, 108</td></tr> <tr><td>400784AN</td><td>12, 108</td></tr> <tr><td>400785AQ</td><td>43, 107, 171</td></tr> <tr><td>408346AZ</td><td>12, 60, 108, 156</td></tr> </tbody> </table> <p><i>Note:</i> For flag positions in type carriers not listed above, refer to Section 582-210-702.</p> <p>Replace entire printer.</p>	<u>Type Carrier</u>	<u>Flag Position</u>	400645AA	43, 107, 171	400629AB	12, 108	400774AC	44, 108, 172	400775AD	108, 172	400776AF	12, 108	400778AH	44, 108, 172	400779AP	12, 108	400784AN	12, 108	400785AQ	43, 107, 171	408346AZ	12, 60, 108, 156	Go to 58.
<u>Type Carrier</u>	<u>Flag Position</u>																							
400645AA	43, 107, 171																							
400629AB	12, 108																							
400774AC	44, 108, 172																							
400775AD	108, 172																							
400776AF	12, 108																							
400778AH	44, 108, 172																							
400779AP	12, 108																							
400784AN	12, 108																							
400785AQ	43, 107, 171																							
408346AZ	12, 60, 108, 156																							
58. Is copy free of horizontal ink smudges caused by the ribbon rubbing against the paper?	Go to 59.	<p>40P151, 40P153 or 40P154 Replace 402798 ribbon shield if deformed.</p> <p>Check the following adjustments:</p> <p><u>Ribbon Guide (Final)</u> <u>Paper Positioner</u></p> <p>40P253 Replace 411013 ribbon shield if deformed.</p> <p>Check the following adjustments:</p> <p><u>Ribbon Guide</u> <u>Tear Bar and Top Cover (Final)</u></p>																						

TABLE C (Cont)

80-COLUMN TRACTOR FEED PRINTER TROUBLESHOOTING

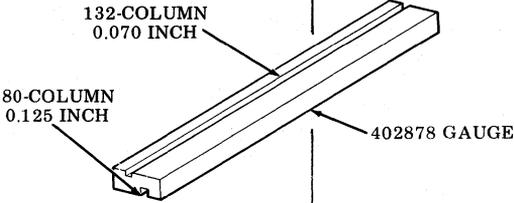
ANALYSIS QUESTION	"YES" RESPONSE DIRECTIVE	"NO" RESPONSE DIRECTIVE
<p>59. Is copy free of double print or ghost images?</p> 	<p>Go to 60.</p>	<p>Check the following adjustments:</p> <p><u>Left Carrier Sprocket</u> <u>Right Carrier Sprocket</u></p> <p>Check that type pallets are seated properly in carrier. Seat pallets with 402878 gauge. Replace type carrier.</p> <p>Replace entire printer.</p>
<p>60. Is the printed copy clear and easily readable?</p>	<p>Go to 61.</p>	<p>Replace 402444 ribbon.</p> <p>Check the following adjustments:</p> <p><u>Backup Bar (Final)</u> <u>Left Carrier Sprocket</u> <u>Right Carrier Sprocket</u> <u>Ribbon Guide (Final)</u> <u>Paper Positioner (40P151, 40P153, 40P154)</u> <u>Tear Bar and Top Cover (Final) (40P253)</u></p>
<p>61. Is printed copy free from embossing (especially noticeable on characters such as hyphen or underline)?</p>	<p>Go to 62.</p> <p>400645AA 80-Column – Monocase 400629AB 80-Column – Up-Low 400774AC 80-Column – Weather 400775AD 80-Column – Line Drawing 400776AF 80-Column – Fractions in One Eighths – Up-Low 400778AH 80-Column – Large Gothic with Fractions 400781AK 80-Column – Katakana 400784AN 80-Column – EBCDIC 400779AP 80-Column – Fractions in One Eighths – Up-Low 400785AQ 80-Column – EBCDIC Monocase 408177AT 80-Column – ASCII Monocase OCR A 408269AV 80-Column – Monocase 408346AZ 80-Column – 48-Character Set 408390BB 80-Column – ASCII Up-Low OCR B 408392BD 80-Column – ASCII Monocase OCR B</p>	<p>Check the <u>Backup Bar (Final)</u> adjustment and type carrier pallet alignment.</p> <p>Check that type pallets are seated properly in carrier. Seat pallets with 402878 gauge.</p> <p>Replace type carrier.</p>

TABLE C (Cont)

80-COLUMN TRACTOR FEED PRINTER TROUBLESHOOTING

ANALYSIS QUESTION	"YES" RESPONSE DIRECTIVE	"NO" RESPONSE DIRECTIVE
62. Is the print density uniform throughout the line without gradual variations?	Go to 63.	Check the following adjustments: <u>Left Carrier Sprocket</u> <u>Right Carrier Sprocket</u> <u>Backup Bar</u>
63. Is the print density uniform throughout the line without random variations?	Go to 64.	Check the following adjustment: <u>40P151, 40P153, or 40P154</u> <u>Paper Positioner</u> <u>40P253</u> <u>Tear Bar and Top Cover</u> <u>(Final)</u> Replace entire printer.
64. Are the bottoms of characters printed clearly (not light) at both ends of the line?	Go to 65.	Check the following adjustments: <u>Left Carrier Sprocket</u> <u>Right Carrier Sprocket</u> Check that ribbon shield is below hammer faces. Replace printer.
65. Are all individual characters printed clearly when received?	Go to 66.	Check type carrier for missing, broken, distorted, or dirty type pallets. Replace type carrier. Replace printer.

TABLE C (Cont)

80-COLUMN TRACTOR FEED PRINTER TROUBLESHOOTING

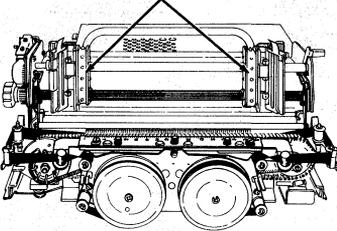
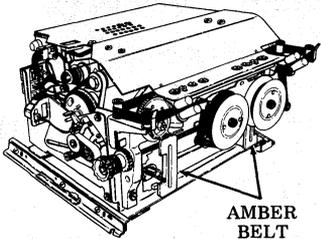
ANALYSIS QUESTION	"YES" RESPONSE DIRECTIVE	"NO" RESPONSE DIRECTIVE
<p>66. Are there erratic line feeds or some characters printing too high?</p> <p style="text-align: center;">AMBER BELT</p>  <p style="text-align: center;"><u>40P151, 40P153 or 40P154</u></p>  <p style="text-align: center;"><u>40P253</u></p> <p style="text-align: right;">AMBER BELT</p>	<p>Check for bind in paper throughout routing path. Check that paper is properly feeding through tractor assemblies.</p> <p>Check the following adjustments:</p> <p><u>Tractor Phasing</u> <u>Paper Positioner (40P151, 40P153 or 40P154)</u></p> <p><u>Tear Bar and Top Cover (Final) (40P253)</u></p> <p>Replace 400221 idler.</p> <p><u>40P151, 40P153 or 40P154</u> If amber belt in tractors is worn or broken, replace 402460 paper handling assembly.</p> <p><u>40P253</u> If amber belt in tractors is worn or broken, replace printer.</p>	<p>Go to 67.</p>
<p>67. When a FF character or local form feed is received, does paper advance one form correctly (Forms switch On)?</p>	<p>Go to 70.</p>	<p>Verify proper belt installation.</p> <p>Check that belt is not worn or cracked. Replace belt.</p> <p>Check that the selector lever on the form-out assembly is properly detented.</p> <p>Check the following adjustments:</p> <p><u>Form-Out Contact</u> <u>Lateral</u> <u>Form Selector Lever</u> <u>Guide</u> <u>Form-Out Gear Backlash</u> <u>Form-Out Contact to Belt Spacing</u> <u>Line Feed Bar Eccentric and Drive Belt Tension</u></p> <p>Go to 68.</p>

TABLE C (Cont)

80-COLUMN TRACTOR FEED PRINTER TROUBLESHOOTING

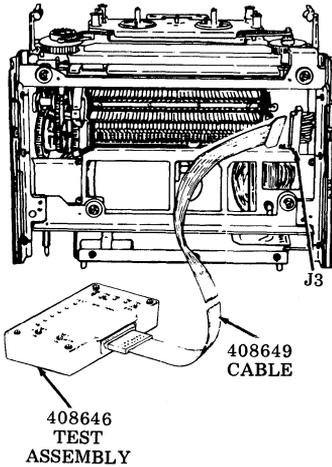
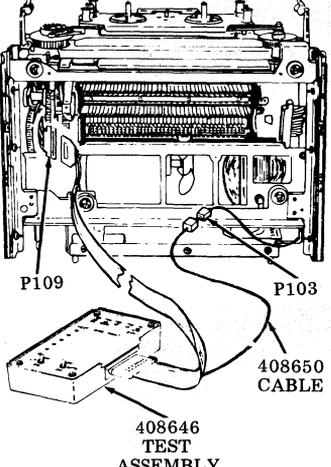
ANALYSIS QUESTION	"YES" RESPONSE DIRECTIVE	"NO" RESPONSE DIRECTIVE
<p>68. Operate 402779 line cord with switch to Off.</p> <p><u>40P151 or 40P153</u> Remove 410076 (or 410640) circuit card.</p> <p><u>40P154 or 40P253</u> Remove 410071 circuit card.</p> <p>Connect 408646 test assembly as shown.</p> <p><i>Caution: Observe caution label on 408649 or 408650 cable when connecting plug to J3 or P109 connector.</i></p> <p>Operate 402779 line cord with switch On.</p> <p>Place Forms switch on printer On.</p> <p>Does the FORMS MODE lamp on the 408646 test assembly light?</p>	<p><u>40P151 or 40P153</u></p>  <p>Go to 69.</p>	<p><u>40P154 or 40P253</u></p>  <p>Replace 402861 switch.</p>
<p>69. Operate MTR switch on the 408646 test assembly On.</p> <p>Operate LF switch on the 408646 test assembly On.</p> <p>Does the END OF FORM lamp light when the form-out contact touches the cam lobe on the belt?</p>	<p>Replace 402905 spring.</p> <p><u>40P151 or 40P153</u> Replace 410076 (or 410640) circuit card.</p> <p><u>40P154 or 40P253</u> Replace 410071 circuit card.</p> <p>After the card is installed, check the <u>Impeller Shaft Sensor (Final)</u> and <u>Flag Sensor (Final)</u> adjustments; remake if necessary.</p> <p>Replace printer.</p> <p>Check Form switch and cabling on cabinet.</p>	<p><u>40P151, 40P153 or 40P154</u> Replace 402570 form-out assembly.</p> <p><u>40P253</u> Replace 408763 form-out assembly.</p>

TABLE C (Cont)

80-COLUMN TRACTOR FEED PRINTER TROUBLESHOOTING

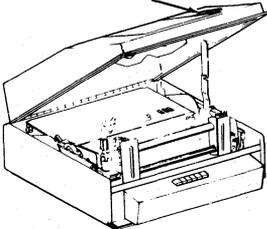
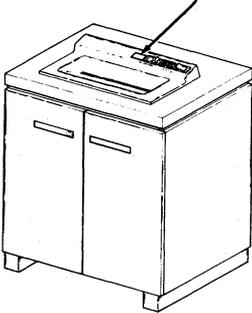
ANALYSIS QUESTION	"YES" RESPONSE DIRECTIVE	"NO" RESPONSE DIRECTIVE
<p>70. Is paper-out indication obtained when a paper-out condition exists?</p>	<p>PAPER BUTTON</p>  <p>PAPER-OUT LAMP</p>  <p>FORMS ACCESS PRINTER CABINET</p> <p>Place printer in service.</p>	<p>Check the <u>Paper-Out Switch</u> adjustment.</p> <p>Go to 71.</p>

TABLE C (Cont)

80-COLUMN TRACTOR FEED PRINTER TROUBLESHOOTING

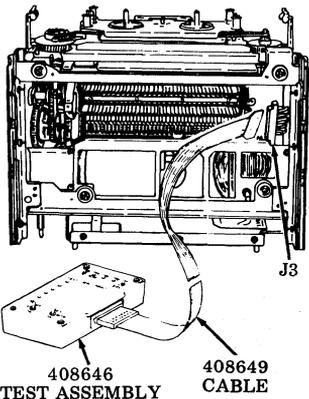
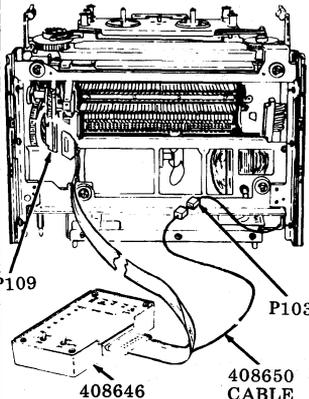
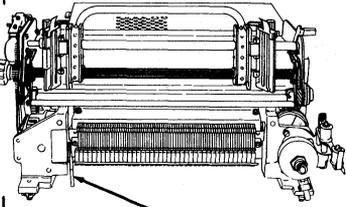
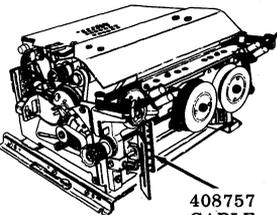
ANALYSIS QUESTION	"YES" RESPONSE DIRECTIVE	"NO" RESPONSE DIRECTIVE
<p>71. Operate 402779 line cord with switch Off.</p> <p>40P151 or 40P153 Remove 410076 (or 410640) circuit card.</p> <p>40P154 or 40P253 Remove 410071 circuit card.</p> <p>Connect 408646 test assembly as shown.</p> <p><i>Caution: Observe caution label on 408649 or 408650 cable when connecting plug to J3 or P109 connector.</i></p> <p>Operate 402779 line cord with switch On.</p> <p>Does the FORMS SUPPLY lamp on the 408646 test assembly light (paper in)?</p> <p>Remove paper. Does the FORMS SUPPLY lamp go out and the ALARM lamp light (paper out)?</p>	<p><u>40P151 or 40P153</u></p>  <p>408646 TEST ASSEMBLY 408649 CABLE J3</p> <p>Operate 402779 line cord with switch Off.</p> <p><u>40P151 or 40P153</u> Replace 410076 (or 410640) circuit card.</p> <p><u>40P154 or 40P253</u> Replace 410071 circuit card.</p> <p>After the card is installed, check the <u>Impeller Shaft Sensor (Final)</u> and <u>Flag Sensor (Final)</u> adjustments; remake if necessary.</p>	<p><u>40P154 or 40P253</u></p>  <p>P109 P103 408646 TEST ASSEMBLY 408650 CABLE</p> <p>40P151, 40P153, or 40P154 Replace 402613 switch assembly.</p>  <p>402613 PAPER-OUT SWITCH</p> <p><u>40P253</u> Replace 408757 cable assembly (with switch).</p>  <p>408757 CABLE ASSEMBLY</p>

TABLE D

132-COLUMN TRACTOR FEED PRINTER TROUBLESHOOTING

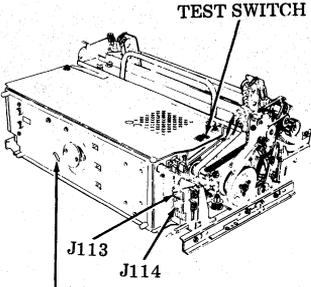
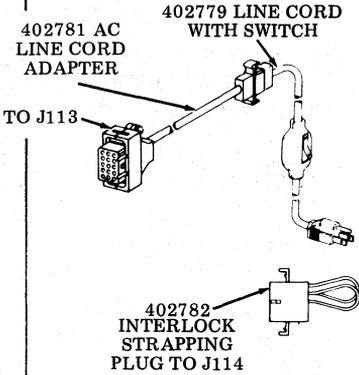
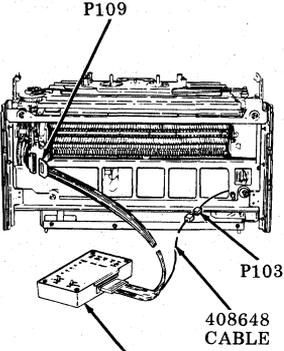
ANALYSIS QUESTION	"YES" RESPONSE DIRECTIVE	"NO" RESPONSE DIRECTIVE
<p>1. Remove printer from cabinet.</p> <p>Connect the 402781 ac line cord adapter and 402779 line cord with switch to J113 connector.</p> <p>Plug 402782 interlock plug into J114.</p> <p>Set Test switch to Off.</p> <p>Operate 402779 line cord with switch to On.</p> <p>Does printer motor run?</p>	<p>Go to 2.</p>  <p>TEST SWITCH</p> <p>J113</p> <p>J114</p> <p>ACCESS HOLE FOR ADJUSTING R9 ON 410151 CARD</p>	<p>Go to 4.</p>  <p>402779 LINE CORD WITH SWITCH</p> <p>402781 AC LINE CORD ADAPTER</p> <p>TO J113</p> <p>402782 INTERLOCK STRAPPING PLUG TO J114</p>
<p>2. Operate 402779 line cord with switch to Off.</p> <p>Remove 410072 (or 410729) circuit card.</p> <p>Connect the 408646 test assembly as shown.</p> <p><i>Caution: Observe caution label on 408648 cable when connecting plug to P109 connector.</i></p> <p>Operate MTR switch on 408646 test assembly to Off.</p> <p>Operate 402779 line cord with switch to On.</p> <p>Does printer motor run?</p>	 <p>P109</p> <p>P103</p> <p>408648 CABLE</p> <p>408646 TEST ASSEMBLY</p> <p>Go to 3.</p>	<p>Replace 410072 (or 410729) circuit card.</p> <p>Before installing circuit card, check the <u>Power Supply Voltage</u> adjustment. With a volt-ohmmeter, check -24 V dc \pm 10% between TP3 and TP2, TP3 and TP1 on 408646 test assembly. If the voltage is outside the required limits, adjust R9 resistor on 410151 circuit card. See illustration in step 1. After the card is installed, check the <u>Impeller Shaft Sensor (Final)</u> and <u>Flag Sensor (Final)</u> adjustments; remake if necessary.</p>

TABLE D (Cont)

132-COLUMN TRACTOR FEED PRINTER TROUBLESHOOTING

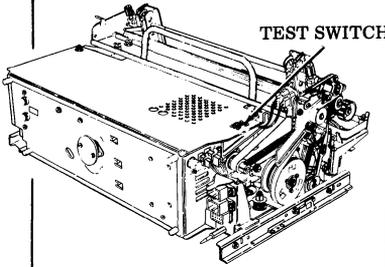
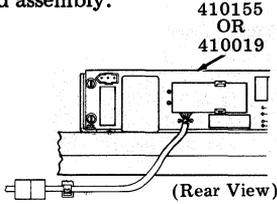
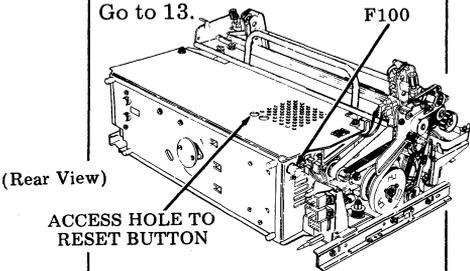
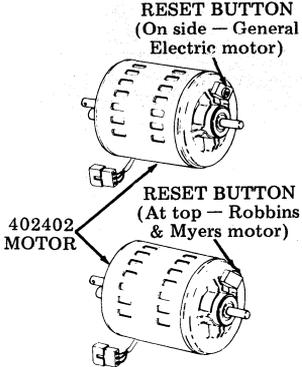
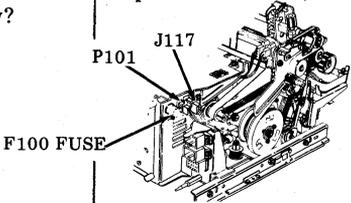
ANALYSIS QUESTION	"YES" RESPONSE DIRECTIVE	"NO" RESPONSE DIRECTIVE
<p>3. Does the TEST lamp on 408646 test assembly light?</p>	<p>Replace 402861 Test switch.</p>  <p>TEST SWITCH</p>	<p>Replace 410155 or 410019 circuit card assembly.</p>  <p>410155 OR 410019</p> <p>(Rear View)</p> <p>Replace printer.</p>
<p>4. Operate Test switch on printer to On.</p> <p>Does the printer motor run?</p>	<p>Go to 22.</p>	<p>Go to 5.</p>
<p>5. Is the motor gear and associated drive mechanisms free to operate (no mechanical bind)?</p>	<p>Check F100 fuse. If blown, replace with 143306 fuse (1 amp SL-BL MDL-1). If fuse blows again, go to 6. Check thermal overload protector — depress RED reset button on fan end of motor.</p> <p>Go to 13.</p>  <p>(Rear View)</p> <p>F100</p> <p>ACCESS HOLE TO RESET BUTTON</p>	<p>If mechanical bind is not clearly evident and easily rectified, replace entire printer.</p>  <p>RESET BUTTON (On side — General Electric motor)</p> <p>RESET BUTTON (At top — Robbins & Myers motor)</p> <p>402402 MOTOR</p>
<p>6. Disconnect P101.</p> <p>Operate 402779 line cord with switch to On.</p> <p>Does bench fuse blow?</p>	<p>Problem is in test cable or printer cable (P101 to J113). Locate short.</p> <p>Replace F100 fuse (143306).</p>  <p>P101</p> <p>J113</p> <p>F100 FUSE</p>	<p>Operate 402779 line cord with switch Off.</p> <p>Go to 7.</p>

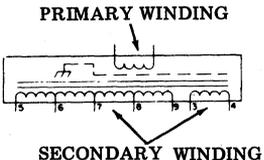
TABLE D (Cont)

132-COLUMN TRACTOR FEED PRINTER TROUBLESHOOTING

ANALYSIS QUESTION	"YES" RESPONSE DIRECTIVE	"NO" RESPONSE DIRECTIVE
<p>7. Reconnect P101. Disconnect P100 on the motor control assembly.</p> <p>Operate 402779 line cord switch to On.</p> <p>Does F100 fuse blow?</p>	<p>Operate 402779 line cord with switch Off.</p> <p>Replace F100 fuse (143306).</p> <p>Go to 12.</p>	<p>Operate 402779 line cord switch Off.</p> <p>Go to 8.</p>
<p>8. Reconnect P100. Disconnect P105 on the motor control assembly.</p> <p>Operate 402779 line cord with switch to On.</p> <p>Does F100 fuse blow?</p>	<p>Operate 402779 line cord with switch Off.</p> <p>Replace F100 fuse (143306).</p> <p>Go to 9.</p>	<p>Replace 410072 (or 410729) circuit card.</p> <p>After the card is installed, check the <u>Impeller Shaft Sensor (Final)</u> and <u>Flag Sensor (Final)</u> adjustments; remake if necessary.</p>

TABLE D (Cont)

132-COLUMN TRACTOR FEED PRINTER TROUBLESHOOTING

ANALYSIS QUESTION	"YES" RESPONSE DIRECTIVE	"NO" RESPONSE DIRECTIVE
<p>9. Reconnect P105.</p> <p>Disconnect P107. Operate 402779 line cord with switch to On.</p> <p>Does F100 fuse blow?</p>	<p>Operate 402779 line cord with switch Off.</p> <p>Replace 410155 or 410019 circuit card.</p> <p>Replace F100 fuse (143306).</p> <p>Go to 10.</p>	<p>Replace 402402 motor.</p>
<p>10. Reconnect P107. Remove 410151 circuit card from J102 receptacle. Operate 402779 line cord with switch to On.</p> <p>Does F100 fuse blow?</p>	<p>Operate 402779 line cord with switch Off.</p> <p>Replace F100 fuse (143306).</p> <p>Go to 11.</p>	<p>Replace 410151 circuit card.</p> <p>After circuit card is installed, check the <u>Power Supply Voltage</u> adjustment; refine if necessary.</p>
<p>11. Reinsert 410151 circuit card. Remove 410072 (or 410729) circuit card.</p> <p>Operate 402779 line cord with switch to On.</p> <p>Does F100 fuse blow?</p>	<p>Operate 402779 line cord with switch Off.</p> <p>Reconnect 410072 (or 410729) circuit card.</p> <p>Replace F100 fuse (143306).</p> <p>Go to 12.</p>	<p>Operate 402779 line cord with switch Off.</p> <p>Replace 410072 (or 402729) circuit card.</p> <p>After the card is installed, check the <u>Impeller Shaft Sensor (Final)</u> and <u>Flag Sensor (Final)</u> adjustments; remake if necessary.</p>
<p>12. With an ohmmeter, check for short between primary and secondary windings on T100 transformer. Is transformer shorted?</p>	<p>Replace T100 transformer (402742).</p>  <p style="text-align: center;">PRIMARY WINDING</p> <p style="text-align: center;">SECONDARY WINDING</p>	<p>Replace entire printer.</p>

F100

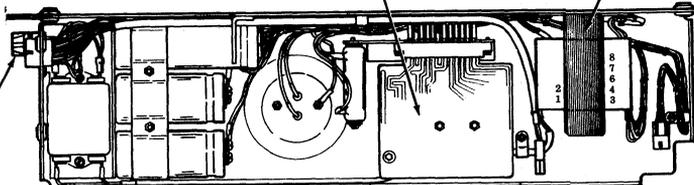
410151
CIRCUIT CARD402742
TRANSFORMER

TABLE D (Cont)

132-COLUMN TRACTOR FEED PRINTER TROUBLESHOOTING

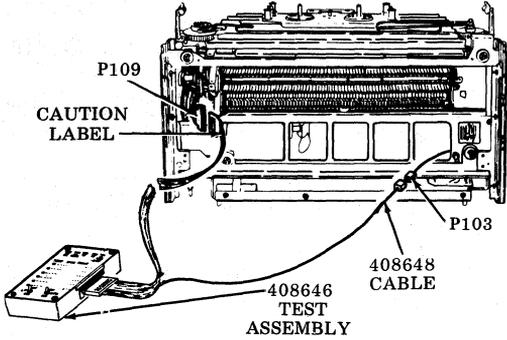
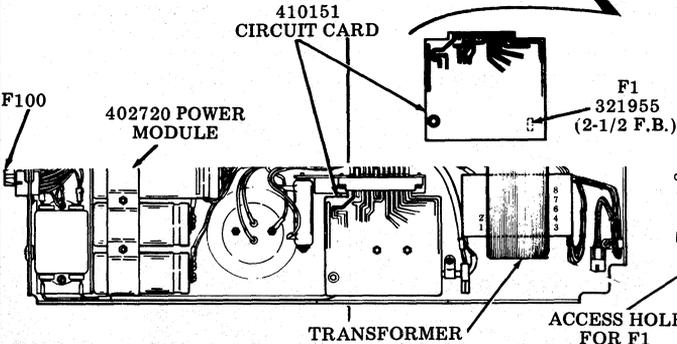
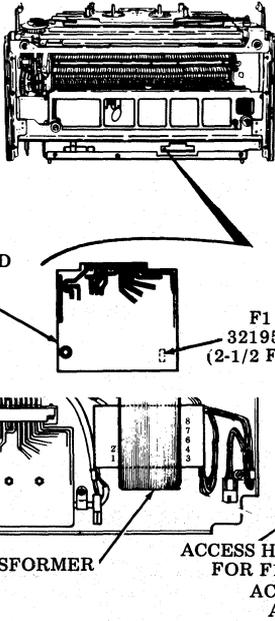
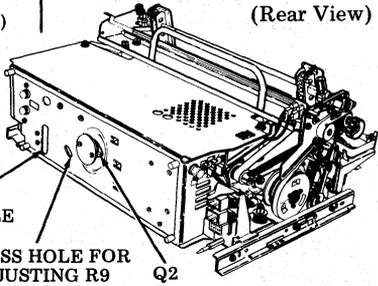
ANALYSIS QUESTION	"YES" RESPONSE DIRECTIVE	"NO" RESPONSE DIRECTIVE
<p>13. Remove 410072 (or 410729) circuit card from printer.</p> <p>Connect the 408646 test assembly as shown.</p> <p><i>Caution: Observe caution label on 408648 cable when connecting plug to P109 connector.</i></p> <p>Operate 402779 line cord with switch to On.</p> <p>Operate MTR switch on 408646 test assembly to On.</p> <p>Does printer motor run?</p>	<p>Operate 402779 line cord with switch Off.</p> <p>Replace 410072 (or 410729) circuit card.</p> <p>After the card is installed, check the <u>Impeller Shaft Sensor (Final)</u> and <u>Flag Sensor (Final)</u> adjustments; remake if necessary.</p>	<p>Go to 14.</p> 
<p>14. With a volt-ohmmeter, check -24 V dc $\pm 1\%$ between TP3 and TP2, TP3 and TP1 on 408646 test assembly.</p> <p>Is -24 V dc present?</p> 	<p>Go to 15.</p> 	<p>If voltage is present but not -24 V dc $\pm 1\%$, adjust R9 resistor on 410151 circuit card.</p> <p>Check F1 (long fuse on top right of 410151 circuit card).</p> <p>If fuse is blown, replace with 321955 (2-1/2 A F-B) fuse. If fuse blows again, replace 410151 circuit card. After circuit card is installed, check the <u>Power Supply Voltage</u> adjustment; refine if necessary. Replace 318835 Q2 transistor. Replace 402720 power module.</p> <p>(Rear View)</p> 

TABLE D (Cont)

132-COLUMN TRACTOR FEED PRINTER TROUBLESHOOTING

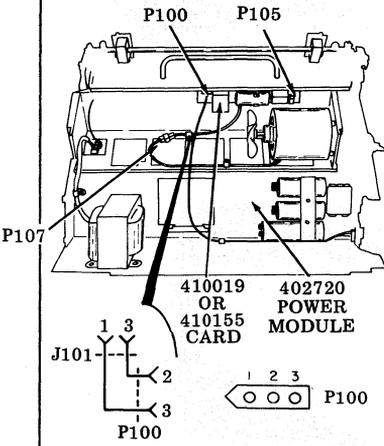
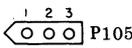
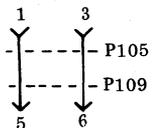
ANALYSIS QUESTION	"YES" RESPONSE DIRECTIVE	"NO" RESPONSE DIRECTIVE
<p>15. Operate printer Test switch to On.</p> <p>Does the TEST lamp on 408646 test assembly light?</p>	Go to 16.	Replace 402861 Test switch.
<p>16. Operate the 402779 line cord with switch to Off.</p> <p>Disconnect P100 plug from 410155 or 410019 circuit card assembly.</p> <p>Operate the 402779 line cord with switch to On.</p> <p>Measure 117 V ac between terminals 2 and 3 on P100 connector.</p> <p>Is 117 V ac present?</p>	<p>Operate 402779 line cord with switch Off.</p> <p>Go to 17.</p>	 <p>Check wiring from J101 terminals 1 and 3 to P100 terminals 3 and 2.</p>
<p>17. Reconnect P100. Disconnect P105 plug.</p> <p>Operate 402779 line cord with switch to On. With a volt-ohmmeter, check for -24 V dc between terminals 1 and 3 on P105.</p>  <p>Is -24 V dc present?</p>	<p>Operate 402779 line cord with switch Off.</p> <p>Go to 18.</p>	<p>Check wiring from P105 terminals 1 and 3 to P109 terminals 5 and 6.</p> 
<p>18. Reconnect P105. Disconnect P107 on the motor control assembly.</p> <p>Operate 402779 line cord with switch to On.</p>	<p>Operate 402779 line cord with switch Off.</p> <p>Go to 19.</p>	Replace 410155 or 410019 circuit card assembly.

TABLE D (Cont)

132-COLUMN TRACTOR FEED PRINTER TROUBLESHOOTING

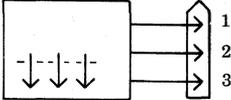
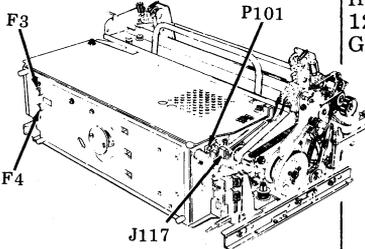
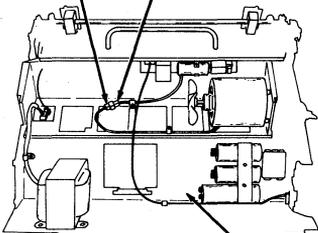
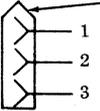
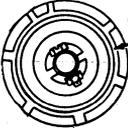
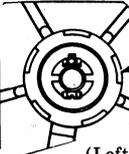
ANALYSIS QUESTION	"YES" RESPONSE DIRECTIVE	"NO" RESPONSE DIRECTIVE
<p>18. (Cont)</p> <p>With a volt-ohmmeter, check for 115 V ac between terminals 1 and 2 and between 2 and 3 on P107.</p> <p>Is 115 V ac present?</p>	<p>410019 OR 410155 MOTOR CONTROL CARD</p> <p>P107</p> 	
<p>19. Reconnect P107. Disconnect J117 connector from power module.</p> <p>Operate 402779 line cord with switch to On.</p> <p>Measure 14 V ac between terminals 1 and 3 and between terminals 3 and 5 on P117 connector.</p> <p>Is 14 V ac present?</p>	<p>Go to 20.</p> 	<p>Check F3 and F4 fuses. If blown, replace with 129919 fuse, 4.0A SL-BL. Go to 20.</p>
<p>20. Measure 9.2 V ac between terminals 2 and 3 and between terminals 3 and 4 on P117 connector.</p> <p>Is 9.2 V ac present?</p>	<p>Reconnect J117.</p> <p>Operate 402779 line cord with switch to Off.</p> <p>Go to 21.</p>	<p>Replace 402720 power module.</p>
<p>21. Disconnect P107.</p> <p>With an ohmmeter, measure the following resistances between the indicated terminals on J107 connector:</p> <p><u>402402 Motor – General Electric</u></p> <p>Terminal 1 to 2 – 33 ohms Terminal 1 to 3 – 45 ohms Terminal 2 to 3 – 12 ohms (All readings $\pm 10\%$)</p> <p><u>402402 Motor –Robbins & Myers</u></p> <p>Terminal 1 to 2 – 19 ohms Terminal 1 to 3 – 30 ohms Terminal 2 to 3 – 11 ohms (All readings $\pm 10\%$)</p> <p>Are measured resistances correct?</p>	<p>J107 P107</p>  <p>(Rear View)</p> <p>402720 POWER MODULE</p>  <p>MOTOR PLUG</p> <p>J107</p> <p>Replace entire printer.</p>	<p>ROUND BEARING ON 402402 MOTOR (Late Design) General Electric</p>  <p>(Left Side View)</p> <p>QUINTUPLE BEARING ON 402402 MOTOR (Late Design) Robbins & Myers</p>  <p>(Left Side View)</p> <p>Replace 402402 motor.</p>

TABLE D (Cont)

132-COLUMN TRACTOR FEED PRINTER TROUBLESHOOTING

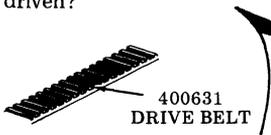
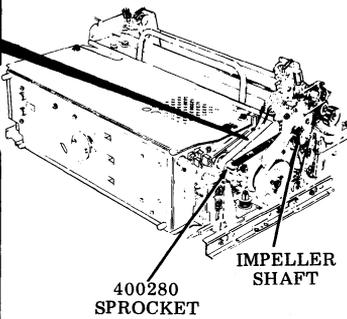
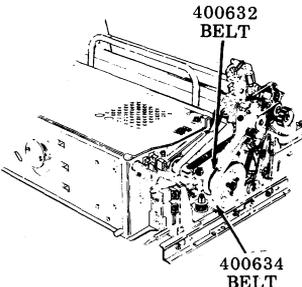
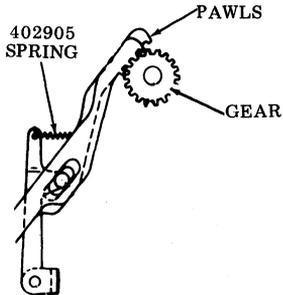
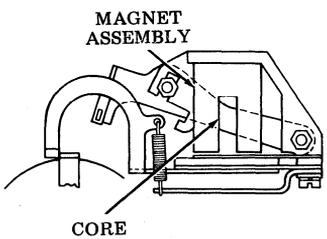
ANALYSIS QUESTION	"YES" RESPONSE DIRECTIVE	"NO" RESPONSE DIRECTIVE
<p>22. Is the impeller shaft being driven?</p>  <p>400631 DRIVE BELT</p>	<p>Go to 23.</p>  <p>400280 SPROCKET</p> <p>IMPELLER SHAFT</p>	<p>Check the 400631 impeller shaft drive belt. Replace if worn or broken.</p> <p>Check the 400280 motor shaft sprocket. Replace if worn or broken.</p>
<p>23. Does printer line feed properly with Test switch On?</p> <p>Failure symptoms are: No line feed Intermittent line feed Continuous line feed.</p>  <p>400632 BELT</p> <p>400634 BELT</p>	<p>Go to 27.</p>  <p>402905 SPRING</p> <p>PAWLS</p> <p>GEAR</p>  <p>MAGNET ASSEMBLY</p> <p>CORE</p>	<p>Check 400634 or 400632 line feed belts. Replace if worn or broken.</p> <p>Check line feed pawls for engagement with gear.</p> <p>Check line feed bail spring. Replace if broken or worn.</p> <p>Check loose mounting of line feed magnet assembly on its core. Replace 402621 line feed assembly if magnet coil is loose.</p> <p>Go to 24.</p>

TABLE D (Cont)

132-COLUMN TRACTOR FEED PRINTER TROUBLESHOOTING

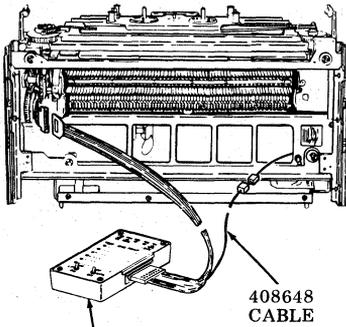
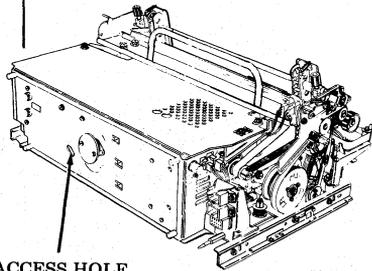
ANALYSIS QUESTION	"YES" RESPONSE DIRECTIVE	"NO" RESPONSE DIRECTIVE
<p>24. Remove 410072 (or 410729) circuit card.</p> <p>Connect 408646 test assembly as shown.</p> <p><i>Caution: Observe caution label on 408648 cable when connecting plug to P109.</i></p> <p>Operate 402779 line cord with switch to On.</p> <p>Operate MTR switch on 408646 test assembly to On.</p> <p>Operate LF switch on 408646 test assembly to On.</p> <p>Does the printer line feed?</p>	 <p>408646 TEST ASSEMBLY</p> <p>408648 CABLE</p> <p>Operate 402779 line cord with switch Off.</p> <p>Replace 410072 (or 410729) circuit card.</p> <p>After the card is installed, check the <u>Impeller Shaft Sensor (Final)</u> and <u>Flag Sensor (Final)</u> adjustments; remake if necessary.</p>	<p>Go to 25.</p>
<p>25. Check for -24 V dc±1% between TP2 and TP3 on 408646 test assembly.</p> <p>Is -24 V dc±1% present?</p>	<p>Go to 26.</p>  <p>ACCESS HOLE FOR ADJUSTING R9 ON 410151 CARD</p> <p>(Rear View)</p>	<p>Refine -24 V dc adjustment, if voltage reading is outside tolerances.</p> <p>Replace 410151 circuit card.</p> <p>After circuit card is installed, check the <u>Power Supply Voltage</u> adjustment; refine if necessary.</p>

TABLE D (Cont)

132-COLUMN TRACTOR FEED PRINTER TROUBLESHOOTING

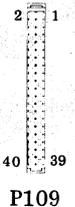
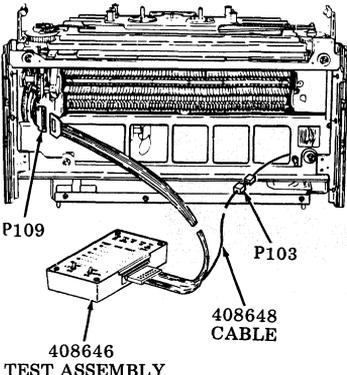
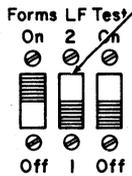
ANALYSIS QUESTION	"YES" RESPONSE DIRECTIVE	"NO" RESPONSE DIRECTIVE
<p>26. Operate the 402779 line cord with switch Off.</p> <p>Disconnect J109 test cable from printer.</p> <p>Measure for 33 ohms resistance at P109 between terminals 1 and 4.</p> <p>Is measured resistance correct?</p>	<p>Check the following adjustments:</p> <p><u>Clutch Shoe Release Arm</u> <u>Line feed Armature Gap</u> <u>Line Feed Bar Eccentric and Drive Belt Tension</u> <u>Clutch Drive Belt Tension</u></p> <p>Replace 402660 paper handling assembly.</p>	<p>Replace 402621 line feed magnet assembly.</p>  <p>P109</p>
<p>27. Place printer LF1 — LF2 switch to position LF2.</p> <p>Does the printer double line space properly?</p>	<p>Go to 29.</p>	<p>Go to 28.</p>
<p>28. Remove 410072 (or 410729) circuit card from printer.</p> <p>Connect 408646 test assembly as shown.</p> <p><i>Caution: Observe caution label on 408648 cable when connecting plug to P109 connector.</i></p> <p>Operate 402779 line cord with switch On.</p> <p>Does the LINE FEED lamp on 408646 test assembly light?</p>	<p>Replace 410072 (or 410729) circuit card.</p> <p>After the card is installed, check the <u>Impeller Shaft Sensor (Final)</u> and <u>Flag Sensor (Final)</u> adjustments; remake if necessary.</p>	 <p>P109</p> <p>P103</p> <p>408646 TEST ASSEMBLY</p> <p>408648 CABLE</p> <p>Replace 402861 switch.</p>  <p>Forms LF Test</p> <p>On 2 Off</p> <p>Off 1 Off</p>

TABLE D (Cont)

132-COLUMN TRACTOR FEED PRINTER TROUBLESHOOTING

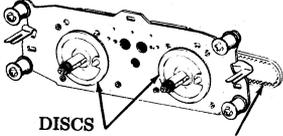
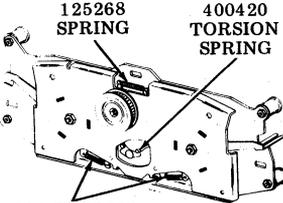
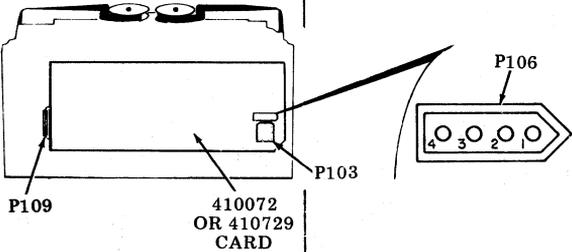
ANALYSIS QUESTION	"YES" RESPONSE DIRECTIVE	"NO" RESPONSE DIRECTIVE
<p>29. Is the ribbon feed mechanism operating properly?</p> <p>Ribbon spools rotating. Ribbon reverse working. No ribbon foldover.</p> <p><i>Note:</i> To check ribbon reversing, manually operate the reversing arms with printer operating (printer Test switch On).</p>	<p>Go to 30.</p>	<p>Check ribbon drive belt. Replace if worn or broken.</p>  <p>DISCS 400635 DRIVE BELT</p> <p>Remove ribbon mechanism and check the following springs. Replace if broken.</p>  <p>125268 SPRING 400420 TORSION SPRING 2836 SENSING ARM SPRING</p> <p>Replace 402420 ribbon mechanism.</p> <p>Check the <u>Ribbon Tracking</u> adjustment.</p>
<p>30. Are any characters being printed?</p>  <p>P109 410072 OR 410729 CARD P103 P106</p>	<p>Go to 31.</p>	<p>Check the following adjustments:</p> <p><u>Impeller Shaft Sensor Gap</u> <u>Flag Sensor Gap</u></p> <p>Check impeller sensor for a maximum of 145 ohms. Measure at P106 between terminals 1 and 2.</p> <p>Check flag sensor for a maximum of 145 ohms. Measure at P106 between terminals 3 and 4.</p> <p>Replace 400615 sensor, if open or resistance exceeds maximum requirement.</p>

TABLE D (Cont)

132-COLUMN TRACTOR FEED PRINTER TROUBLESHOOTING

ANALYSIS QUESTION	"YES" RESPONSE DIRECTIVE	"NO" RESPONSE DIRECTIVE
30. (Cont)		<p>Replace 410072 (or 410729) circuit card.</p> <p>After the card is installed, check the <u>Impeller Shaft Sensor (Final)</u> and <u>Flag Sensor (Final)</u> adjustments; remake if necessary.</p>
<p>31. Is the carrier font symbol the only symbol printed?</p> <p>Font symbols:</p> <p>⋮A: Up-Low ⋮D:</p> <p>⋮A: Monocase etc. ⋮I:</p>	Go to 32.	<p>If ! (exclamation) or _ (underline) are printed, check the following adjustments:</p> <p><u>Flag Sensor Gap</u> <u>Impeller Shaft Sensor Gap</u> <u>Flag Sensor (Final)</u></p> <p>Replace the 410072 (or 410729) circuit card.</p> <p>After the card is installed, check the <u>Impeller Shaft Sensor (Final)</u> and <u>Flag Sensor (Final)</u> adjustments; remake if necessary.</p>
32. Are any columns not printing?	Go to 33.	Go to 37.
<p>33. Are any of the following groups of columns missing?</p> <p>1--12 13--24 25--36 37--48 49--60 61--72 73--84 85--96 97--108 109--120 121--132</p>	<p>Replace 410072 (or 410729) circuit card.</p> <p>After the card is installed, check the <u>Impeller Shaft Sensor (Final)</u> and <u>Flag Sensor (Final)</u> adjustments; remake if necessary.</p>	Go to 34.

TABLE D (Cont)

132-COLUMN TRACTOR FEED PRINTER TROUBLESHOOTING

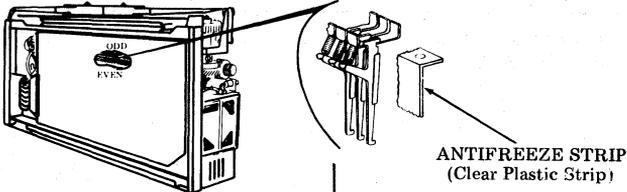
ANALYSIS QUESTION	"YES" RESPONSE DIRECTIVE	"NO" RESPONSE DIRECTIVE
<p>34. Of the columns that are missing, are they all odd-numbered (example: 1, 3, 19, 71) or are they all even-numbered (example: 2, 8, 42, 68)?</p>	<p>Check the position of the anti-freeze strip.</p> <p>Check for oil on antifreeze strip. If present, spray with 337449 Degreaser (Freon TF).</p>  <p>If antifreeze strip is distorted or missing, replace entire printer.</p>	<p>Go to 35.</p>
<p>35. Are one or more columns missing?</p>	<p>Check the following adjustments:</p> <p><u>Impeller Shaft Sensor Gap</u> <u>Flag Sensor Gap</u> <u>Impeller Shaft Sensor (Final)</u></p> <p>Replace 410072 (or 410729) circuit card.</p> <p>After the card is installed, check the <u>Impeller Shaft Sensor (Final)</u> and <u>Flag Sensor (Final)</u> adjustments; remake if necessary.</p> <p>Replace entire printer.</p>	<p>Go to 36.</p>
<p>36. Are any characters not printed?</p>	<p>Check type carrier for missing pallets.</p> <p>Replace type carrier.</p> <p>Replace 410072 (or 410729) circuit card.</p> <p>After the card is installed, check the <u>Impeller Shaft Sensor (Final)</u> and <u>Flag Sensor (Final)</u> adjustments; remake if necessary.</p>	<p>Place printer in service.</p>

TABLE D (Cont)

132-COLUMN TRACTOR FEED PRINTER TROUBLESHOOTING

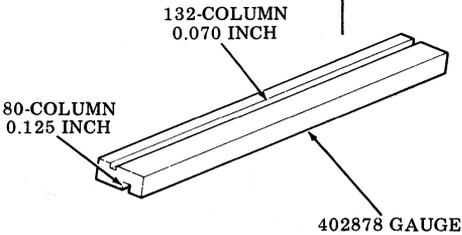
ANALYSIS QUESTION	"YES" RESPONSE DIRECTIVE	"NO" RESPONSE DIRECTIVE												
37. Is the font symbol clipped on the left or right?	Check the <u>Impeller Shaft to Carrier Phasing — Final adjustment.</u>	Go to 38.												
38. Are adjacent characters in the type carrier printed in place of the proper character (T instead of S, B instead of A, etc)?	<p>Check the following adjustments:</p> <p><u>Flag Sensor Gap</u> <u>Impeller Shaft Sensor Gap</u></p> <p>Check that pallets and flags are in proper position.</p> <table border="1" data-bbox="451 539 874 683"> <thead> <tr> <th>Type Carrier</th> <th>Flag Position</th> </tr> </thead> <tbody> <tr> <td>400777AG</td> <td>68, 164, 260</td> </tr> <tr> <td>400780AL</td> <td>4, 68, 132, 164, 228</td> </tr> <tr> <td>400783AM</td> <td>68, 164, 260</td> </tr> <tr> <td>400887AS</td> <td>4, 68, 132, 164, 228</td> </tr> <tr> <td>408271AX</td> <td>20, 68, 116, 164, 212, 260</td> </tr> </tbody> </table> <p><i>Note:</i> For flag positions in type carriers not listed above, refer to Section 582-210-702.</p> <p>Replace entire printer.</p>	Type Carrier	Flag Position	400777AG	68, 164, 260	400780AL	4, 68, 132, 164, 228	400783AM	68, 164, 260	400887AS	4, 68, 132, 164, 228	408271AX	20, 68, 116, 164, 212, 260	Go to 39.
Type Carrier	Flag Position													
400777AG	68, 164, 260													
400780AL	4, 68, 132, 164, 228													
400783AM	68, 164, 260													
400887AS	4, 68, 132, 164, 228													
408271AX	20, 68, 116, 164, 212, 260													
39. Is copy free of horizontal ink smudges caused by the ribbon rubbing against the paper?	Go to 40.	<p>Replace 402686 ribbon shield if deformed.</p> <p>Check the following adjustments:</p> <p><u>Ribbon Guide (Final)</u> <u>Paper Positioner</u></p>												
<p>40. Is copy free of double print or ghost images?</p>  <p>The diagram shows a perspective view of a type carrier. It is a long, narrow, rectangular component with a central groove. Two dimensions are indicated: '80-COLUMN 0.125 INCH' pointing to the width of the carrier, and '132-COLUMN 0.070 INCH' pointing to the width of the central groove. A '402878 GAUGE' is shown as a thin, flat strip that fits into the groove of the carrier.</p>	Go to 41.	<p>Check the following adjustments:</p> <p><u>Left Carrier Sprocket</u> <u>Right Carrier Sprocket</u></p> <p>Check that type pallets are seated properly in carrier. Seat pallets with 402878 gauge. Replace type carrier.</p> <p>Replace entire printer.</p>												

TABLE D (Cont)

132-COLUMN TRACTOR FEED PRINTER TROUBLESHOOTING

ANALYSIS QUESTION	"YES" RESPONSE DIRECTIVE	"NO" RESPONSE DIRECTIVE
41. Is the printed copy clear and easily readable?	Go to 42.	Replace 402444 ribbon. Check the following adjustments: <u>Backup Bar (Final)</u> <u>Left Carrier Sprocket</u> <u>Right Carrier Sprocket</u> <u>Ribbon Guide (Final)</u> <u>Paper Positioner</u>
42. Is printed copy free from embossing (especially noticeable on characters such as hyphen or underline)?	Go to 43. 400777AG Tractor 132-Column – Up-Low (ASCII) 400780AL Tractor 132-Column – Monocase (ASCII) 400783AM Tractor 132-Column – Up-Low (EBCDIC) 400782AR Tractor 132-Column – Up-Low Katakana 400887AS Tractor 132-Column – Monocase (EBCDIC) 408178AU Tractor 132-Column – Monocase (ASCII) OCR A 408270AW Tractor 132-Column – Monocase Block Symbol 408271AX Tractor 132-Column – Monocase 48-Character Set 408272AY Tractor 132-Column – Up-Low (ASCII) 192-Character Set 408389BA Tractor 132-Column – Monocase Katakana 408391BC Tractor 132-Column – Up-Low (ASCII) OCR B 408393BE Tractor 132-Column – Monocase (ASCII) OCR B 408518BF Tractor 132-Column – (EBCDIC) 48-Character Set 408519BG Tractor 132-Column – Monocase (ASCII) 64-Character Set 408520BH Tractor 132-Column – Up-Low (EBCDIC) 96-Character Set 408521BJ Tractor 132-Column – Monocase (ASCII) Large Gothic w/Fractions 408522BK Tractor 132-Column – Monocase (EBCDIC) OCR B 408523BL Tractor 132-Column – Up-Low (EBCDIC) OCR B	Check the <u>Backup Bar (Final)</u> adjustment and type carrier pallet alignment. Check that type pallets are seated properly in carrier. Seat pallets with 402878 gauge. Replace type carrier.
43. Is the print density uniform throughout the line without gradual variations?	Go to 44.	Check the following adjustments: <u>Left Carrier Sprocket</u> <u>Right Carrier Sprocket</u> <u>Backup Bar</u>
44. Is the print density uniform throughout the line without random variations?	Go to 45.	Check the following adjustment: <u>Paper Positioner</u> Replace entire printer.
45. Are the bottoms of characters printed clearly (not light) at both ends of the line?	Go to 46.	Check the following adjustments: <u>Left Carrier Sprocket</u> <u>Right Carrier Sprocket</u> Replace printer.

TABLE D (Cont)

132-COLUMN TRACTOR FEED PRINTER TROUBLESHOOTING

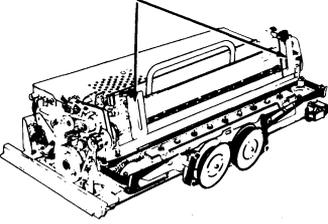
ANALYSIS QUESTION	"YES" RESPONSE DIRECTIVE	"NO" RESPONSE DIRECTIVE
<p>46. Are all individual characters printed clearly when received?</p>	<p>Go to 47.</p>	<p>Check type carrier for missing, broken, distorted, or dirty type pallets.</p> <p>Replace type carrier.</p> <p>Replace printer.</p>
<p>47. Are there erratic line feeds or some characters printing too high?</p> <p>AMBER BELT</p> 	<p>Check for bind in paper throughout routing path. Check that paper is properly feeding through tractor assemblies.</p> <p>Check the following adjustments:</p> <p><u>Paper Positioner</u> <u>Tractor Phasing</u></p> <p>Replace 400221 idler.</p> <p>If amber belt in tractors is worn or broken, replace 402660 paper handling assembly.</p>	<p>Go to 48.</p>
<p>48. When a FF character or local form feed is received, does paper advance one form correctly (Forms switch On)?</p>	<p>Go to 51.</p>	<p>Verify proper belt installation.</p> <p>Check that belt is not worn or cracked. Replace belt.</p> <p>Check that the selector lever on the form-out assembly is properly detented.</p> <p>Check the following adjustments:</p> <p><u>Form-Out Contact</u> <u>Lateral</u> <u>Form Selector Lever</u> <u>Guide</u> <u>Form-Out Gear Backlash</u> <u>Form-Out Contact to</u> <u>Belt Spacing</u> <u>Line Feed Bar Eccentric</u> <u>and Drive Belt Tension</u></p> <p>Go to 49.</p>

TABLE D (Cont)

132-COLUMN TRACTOR FEED PRINTER TROUBLESHOOTING

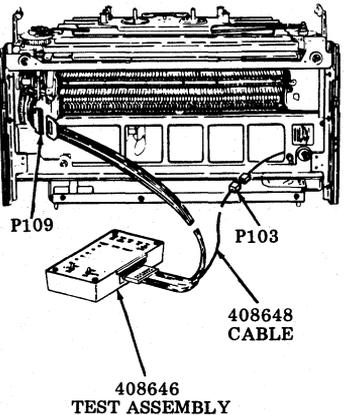
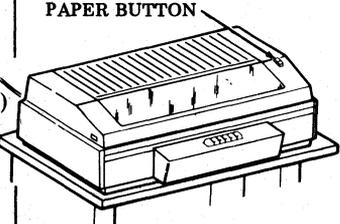
ANALYSIS QUESTION	"YES" RESPONSE DIRECTIVE	"NO" RESPONSE DIRECTIVE
<p>49. Operate 402779 line cord with switch to Off.</p> <p>Remove 410072 (or 410729) circuit card.</p> <p>Connect the 408646 test assembly as shown.</p> <p><i>Caution: Observe caution label on 408648 cable when connecting plug to P109.</i></p> <p>Operate 402779 line cord with switch to On.</p> <p>Place Forms switch on printer to On.</p> <p>Does the FORMS MODE lamp on the 408646 test assembly light?</p>	 <p>P109</p> <p>P103</p> <p>408648 CABLE</p> <p>408646 TEST ASSEMBLY</p> <p>Go to 50.</p>	<p>Replace 402861 switch.</p>
<p>50. Operate MTR switch on the 408646 test assembly to On.</p> <p>Operate LF switch on the 408646 test assembly to On.</p> <p>Does the END OF FORM lamp light when the form-out contact touches the cam lobe on the belt?</p>	<p>Replace 402905 spring.</p> <p>Replace 410072 (or 410729) circuit card.</p> <p>After the card is installed, check the <u>Impeller Shaft Sensor (Final)</u> and <u>Flag Sensor (Final)</u> adjustments; remake if necessary.</p> <p>Replace printer.</p> <p>Check Form switch and cabling on cabinet.</p>	<p>Replace 402570 form-out assembly.</p>
<p>51. <u>Printer Without Paper Jam Alarm Mechanism</u></p> <p>Is paper-out indication (illumination of paper button) obtained when a paper-out condition exists?</p> <p><u>Printer With Paper Jam Alarm Mechanism (40P204)</u></p> <p>Go to 53.</p>	 <p>PAPER BUTTON</p> <p>Place printer in service.</p>	<p>Check the <u>Paper-Out Switch</u> adjustment.</p> <p>Go to 52.</p>

TABLE D (Cont)

132-COLUMN TRACTOR FEED PRINTER TROUBLESHOOTING

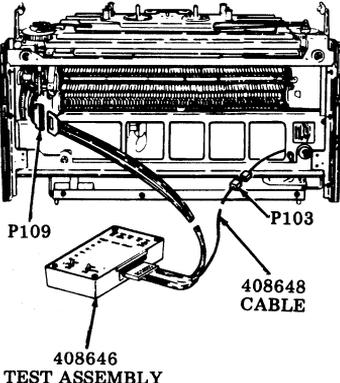
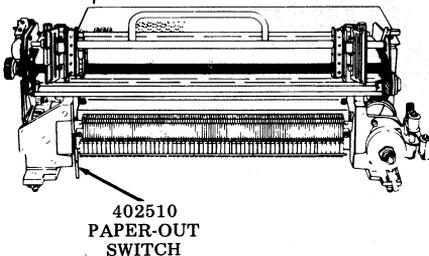
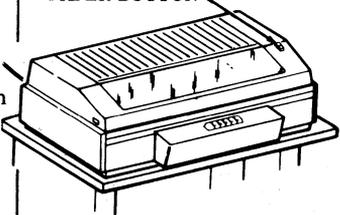
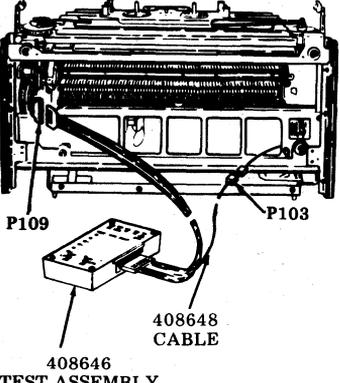
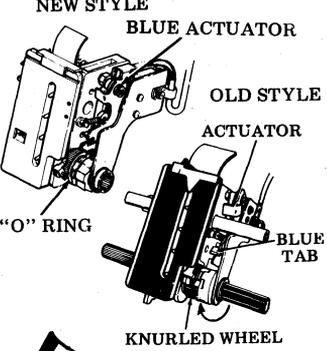
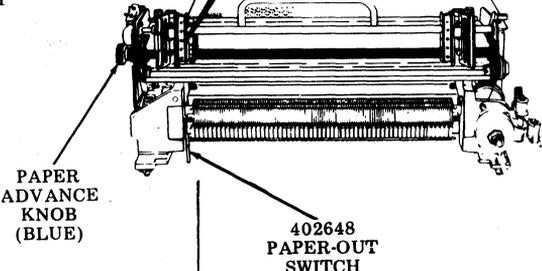
ANALYSIS QUESTION	"YES" RESPONSE DIRECTIVE	"NO" RESPONSE DIRECTIVE
<p>52. Operate 402779 line cord with switch Off.</p> <p>Remove 410072 (or 410729) circuit card.</p> <p>Connect 408646 test assembly as shown.</p> <p><i>Caution: Observe caution label on 408648 cable when connecting P109 plug.</i></p> <p>Operate the 402779 line cord with switch to On.</p> <p>Does the FORMS SUPPLY lamp on the 408646 test assembly light (paper in)?</p> <p>Remove paper. Does the FORMS SUPPLY lamp go out and the ALARM lamp light (paper out)?</p>	<p>Replace 410072 (or 410729) circuit card.</p> <p>After the card is installed, check the <u>Impeller Shaft Sensor (Final)</u> and <u>Flag Sensor (Final)</u> adjustments; remake if necessary.</p>  	<p>Replace 402510 (early design) or 402648 (late design) paper-out switch.</p>
<p>53. <u>Printer With Paper Jam Alarm Mechanism (40P204)</u></p> <p>Is paper-out/paper jam indication (illumination of paper button) obtained when a paper-out or paper jam condition exists?</p>	<p><u>PAPER BUTTON</u></p>  <p>Place printer in service.</p>	<p>Check that actuator on paper jam alarm mechanism (under left tractor lid) is reset.</p> <p>Check the <u>Paper-Out Switch</u> adjustment.</p> <p>Check the <u>Paper Jam Alarm</u> adjustment.</p>

TABLE D (Cont)

132-COLUMN TRACTOR FEED PRINTER TROUBLESHOOTING

ANALYSIS QUESTION	"YES" RESPONSE DIRECTIVE	"NO" RESPONSE DIRECTIVE
<p>54. Operate 402779 line cord with switch Off.</p> <p>Remove 410072 (or 410729) circuit card.</p> <p>Connect 408646 test assembly as shown.</p> <p><i>Caution: Observe caution label on 408648 cable when connecting P109 plug.</i></p> <p>Operate the 402779 line cord with switch to On.</p> <p>Check that actuator on paper jam mechanism is reset. (To reset, rotate knurled wheel (old style) or "O" ring (new style) toward rear until it stops.</p> <p>Push on blue painted tab of actuator (old style) or blue plastic actuator (new style) until it detents into reset condition.)</p> <p>Install paper. Does the FORM SUPPLY/NO PAPER JAM lamp on 408646 test assembly light?</p> <p>Remove paper. Does the FORM SUPPLY/NO PAPER JAM lamp go out and the ALARM lamp light?</p>	 <p>Go to 55.</p>	  <p>Replace 402648 paper-out switch.</p>
<p>55. Place a piece of paper in the paper chute and over the paper-out sensing lever. Does the FORM SUPPLY/NO PAPER JAM lamp on 408641 test assembly light?</p> <p>Close left tractor lid and pull out and rotate the paper advance knob (blue) one revolution in direction of paper movement. Does FORM SUPPLY/NO PAPER JAM lamp go out and ALARM lamp light?</p> <p>Manually reset the paper jam mechanism actuator. Does the FORM SUPPLY/NO PAPER JAM lamp on assembly light?</p>	<p>Replace 410072 (or 410729) circuit card.</p> <p>After the card is installed, check the <u>Impeller Shaft Sensor (Final)</u> and <u>Flag Sensor (Final)</u> adjustments; remake if necessary.</p>	<p>Replace 406270 paper jam alarm assembly.</p>