FIELD CHANGE ORDER

<table>
<thead>
<tr>
<th>PRODUCT:</th>
<th>PART/ASSEMBLY:</th>
<th>FCO KIT P/N:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fresco</td>
<td>New Cutting System</td>
<td>211-09-00-000</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>ISSUE DATE:</th>
<th>DESCRIPTION OF CHANGE:</th>
<th>SERIAL NUMBER FROM:</th>
</tr>
</thead>
<tbody>
<tr>
<td>20-Jun-00</td>
<td>Cutting System Installation</td>
<td>Up to 125 (including)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>SOFTWARE AFFECTED:</th>
<th>IMPLEMENTATION:</th>
<th>PREPARED BY:</th>
</tr>
</thead>
<tbody>
<tr>
<td>YES</td>
<td>☑ ON REQUEST</td>
<td>Alex Davidson</td>
</tr>
<tr>
<td>NO</td>
<td>☐ IMMEDIATE</td>
<td></td>
</tr>
<tr>
<td>☐ NEXT CALL</td>
<td>☐ ON FAILURE</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>TYPE OF CHANGE:</th>
<th>MATERIAL DISPOSITION:</th>
</tr>
</thead>
<tbody>
<tr>
<td>☑ MANDATORY</td>
<td>☐ N/A</td>
</tr>
<tr>
<td>☒ COST</td>
<td>☐ USE AS SPARE</td>
</tr>
<tr>
<td>☒ PRODUCTION</td>
<td>☐ DISCARD ALL</td>
</tr>
<tr>
<td>☒ MAINTENANCE</td>
<td>☒ DISCARD SELECTIVELY</td>
</tr>
<tr>
<td>☒ RELIABILITY</td>
<td>(see Mat'l Disposition)</td>
</tr>
<tr>
<td>☒ FUNCTIONALITY</td>
<td>☐ SEND BACK FOR REWORK</td>
</tr>
</tbody>
</table>

This document should be read carefully before implementing the Upgrade.
This Field Change Order (FCO) describes how to upgrade the cutting system assembly on the NUR Fresco.

The cutting system installation involves the following steps:

- **Step 1: Dismantling the Cutting System and Replacing the Adapter**, page 4, describes the removal of the cutting assembly and the replacement of the adapter.
- **Step 2: Installing the New Cutting System**, page 9, describes the procedures of the new cutting system installation.
- **Step 3: Calibration and Diagnostics**, page 10, describes the calibration of the cutting system sensors and the main board input/output indicators.
- **Step 4: Testing the Cutting System**, page 13, describes the manual and automatic cutting system tests.
- **Step 5: Material Disposition**, page 16, describes which material needs to be discarded or retained at the end of the cutting system installation.
- **Parts List**, page 17, details the components of the cutting system assembly.
List of Figures

Figure 1: Disconnect Two Air Pressure Pipes ................................................................. 4
Figure 2: Disconnect Two Cutting System Sensor Plugs .................................................. 5
Figure 3: Horizontal Bar ................................................................................................. 5
Figure 4: Cover Plate Screw .......................................................................................... 6
Figure 5: View From Above After Removing the Cover .................................................. 6
Figure 6: Two Air Pistons (one on each side) ................................................................. 7
Figure 7: Remove Spring Washers ................................................................................ 7
Figure 8: Adapter & Four Screws .................................................................................. 8
Figure 9: Vertical Pin Attached to Adapter ..................................................................... 8
Figure 10: Adapter Unit .................................................................................................. 9
Figure 11: Holder & Adapter Assembly ......................................................................... 9
Figure 12: Screws Inserted under Holders' Arm ............................................................ 10
Figure 13: Pneumatics Panel ......................................................................................... 11
Figure 14: Bottom Cutter Assembly Shield ................................................................. 11
Figure 15: Terminal Window ......................................................................................... 12
Figure 16: Define Job Dialog Box ................................................................................ 13
Figure 17: Motion Tab ................................................................................................... 14
Figure 18: Geometry Tab ............................................................................................... 15

Estimated Installation Time: Half a day
Step 1: Dismantling the Cutting System and Replacing the Adapter

 Disconnect the cutting system assembly:

 1. Ensure that the back rollers (W-axis) are open.
 2. Perform the shutting down procedure.
 3. Turn off the main power switch.
 4. Disconnect the main power plug.
 5. Close the main air pressure inlet to the machine.
 6. Disconnect the two air pressure pipes from the cutting system.

 The air pressure pipes appear under the cutting table, at the side close to the pneumatic cabinet (refer to Figure 1).

Figure 1: Disconnect Two Air Pressure Pipes
7. Disconnect the two cutting system sensor plugs, one at each side of the cutting table (refer to Figure 2).

![Figure 2: Disconnect Two Cutting System Sensor Plugs](image)

8. Remove the horizontal bar, which holds down the substrate by removing the spring washers from the two vertical pins, located at the two ends of the bar (refer to Figure 3).

![Figure 3: Horizontal Bar](image)

Note: This step is not applicable for machine no. 119-125.
9. Disassemble the cutting assembly from the adapter (remove the whole bar), as follows:
   - Remove the cutting assembly cover plate by unscrewing five screws along the plate (refer to Figure 4).

   ![Figure 4: Cover Plate Screw](image)

   - Unscrew three screws at each side of the interior cutting assembly (refer to Figure 5).
   - Remove the cutting assembly.

   ![Figure 5: View From Above After Removing the Cover](image)
10. Disassemble the tray from its holder, as follows:
   - Disconnect the two air pistons from both bottom sides of the tray, by removing the spring washers and the two pins (refer to Figure 6).

   ![Figure 6: Two Air Pistons (one on each side)](image)

   - Remove the spring washers from the two sides of the tray and remove the tray by applying horizontal movements (refer to Figure 7).

   ![Figure 7: Remove Spring Washers](image)
11. Remove the adapter from both sides of the chassis by unscrewing the four screws (refer to Figure 8). Keep the screws for later use.

![Figure 8: Adapter & Four Screws](image)

Notes: There is no need to remove the two vertical pins which are attached to the adapter and will, in any event, be replaced (refer to Figure 9). This step is not applicable for machine no. 119-125.

![Figure 9: Vertical Pin Attached to Adapter](image)

12. Disassemble the adapter from the adapter unit.
Step 2: Installing the New Cutting System

Install the new cutting system:

1. Replace the old adapter with a new adapter from the kit (the new adapter has a longer arm). Refer to Figure 10.

2. Reassemble the new adapter to the adapter unit (refer to Figure 11).

3. Assemble the holder and adapter assembly to its original place, one on each side of the chassis, using the following screws (Refer to Figure 11):
   - Two socket screws hex cap M8 x 20 S.S.
   - Two shoulder screws M8x10x25.
4. Insert the tray to its holder, as follows:
   - Insert the tray shaft into the holders' bores and secure it with a spring washer, one on each side (refer to Figure 7).
   - Connect the two air pistons at both bottom sides of the tray, by inserting the two pins and securing it using spring washers (refer to Figure 6).

5. Attach the cutting assembly to the adapter arm (with the round profile facing outside the machine). The screws are to be inserted under the holders' arm (refer to Figure 12).

   Note: For each side use the two socket hex cap M8 x 70 S.S screws which come included with the kit.

   ![Figure 12: Screws Inserted under Holders' Arm](image)

6. Reconnect the two air pressure pipes to the cutting system under the cutting table, at the side close to the pneumatic cabinet (refer to Figure 1).

7. Reconnect the two cutter sensors, one at each side (refer to Figure 2).

**Step 3: Calibration and Diagnostics**

- Check the Cutting System connections:

   1. Power up the machine.
   2. Open the main air pressure inlet to the machine.
   3. On the pneumatics panel, at solenoid no. 7& 8 (as shown in Figure 13), check that the air pressure pipes are connected correctly, as follows:
      - Press solenoid no. 7 (upper button), the cutter moves to the right side.
      - Press solenoid no. 8 (lower button), the cutter moves to the left side.
If the cutter goes the other way, switch places between the pipes.

Calibrate the cutting system sensors:

1. Remove the bottom cutting assembly shield, by unscrewing the pairs of screws along the shield (refer to Figure 14).

2. Adjust the sensors on both sides of the cutting system beam, as follows:
   - On the cutter side, move the sensor until the LED turns on, and then tighten the sensor to the beam with a special Allen key.
   - Move the cutter to the other side and repeat the above.

3. Install the bottom cutting assembly shield, by screwing the pairs of screws along the shield.
Check the output/input indicators on the main board (BAR/LED):

1. Open the Galil motion control servo design kit application.
2. Select the Terminal tab. The Terminal window is displayed as shown below (refer to Figure 15).

![Terminal Window](image)

3. Type SB26 at the prompt, and press Enter.
4. Check for the output/input indicators (BAR/LED) on the main board according to the table below.
5. Type CB26 at the prompt, and press Enter (to clear the entry).
6. Type SB25 at the prompt, and press Enter.
7. Check for the output/input indicators (BAR/LED) on the main board according to the table below.
8. Type CB25 at the prompt, and press Enter (to clear the entry).

<table>
<thead>
<tr>
<th>STATUS</th>
<th>OUTPUT (green led)</th>
<th>INPUT (yellow led)</th>
</tr>
</thead>
<tbody>
<tr>
<td>SB/CB</td>
<td>BAR/LED</td>
<td>CON</td>
</tr>
<tr>
<td>CUTTER RIGHT</td>
<td>26</td>
<td>BAR3 LED2</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CUTTER LEFT</td>
<td>25</td>
<td>BAR3 LED1</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Send Bit / Clear Bit
Step 4: Testing the Cutting System

Perform manual cutting:

1. From the Fresco main window, click to open the Define Job dialog box. The Setup tab is displayed as shown below (refer Figure 16).

![Figure 16: Define Job Dialog Box](image)

2. Select a file by clicking Browse and click Apply.
3. Click Go to print the file.
4. Click Stop to stop the printing.
5. Select the Motion tab (refer to Figure 17).

![Motion Tab](image)

6. In the Substrate display area, click Cut.

7. Check the cutting operation, as follows:
   - Verify that the substrate is trimmed smoothly.
   - Verify that the substrate is aligned with the cutting nip.

Perform automatic cutting:

1. From the Fresco main window, click to open the Define Job dialog box. The Setup tab is displayed as shown below (refer Figure 16).
2. In the Copies field, enter 2, to print two copies of the file.
3. Mark a ✓ in the Enable Cut checkbox (refer Figure 16).
4. Select the Geometry tab (refer to Figure 18).

5. In the Margins display area, enter the required values in the Top and Bottom fields.

6. Click Go to print the file.

7. Check the cutting operation, as follows:
   - Verify that the substrate is trimmed smoothly.
   - Verify that the distance between the edge of the trimmed substrate and the image matches the defined top and bottom margins.

Note: When using the new cutting system, it is recommended not to cut strips of substrate with a width of less than 10 cm, to avoid strips of substrate getting entangled with the cutting system. In addition, especially avoid recutting, which may cause hairline shreds of substrate to get entangled in the cutting system.
Step 5: Material Disposition

Discard/Retain the material:

- Discard the old adapters.
- Return the old cutting system assembly to the regional service centers, where the old linear piston will be dismantled and used later as a spare part.

Note: For machine no. 119-125, discard all material.
## Parts List

<table>
<thead>
<tr>
<th>Item</th>
<th>Part Number</th>
<th>Description</th>
<th>Qty</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>200-09-02-000</td>
<td>Cutting system assembly</td>
<td>1.0</td>
</tr>
<tr>
<td>2</td>
<td>200-09-00-101</td>
<td>Cutting system adapter- right side</td>
<td>1.0</td>
</tr>
<tr>
<td>3</td>
<td>200-09-00-201</td>
<td>Cutting system adapter- left side</td>
<td>1.0</td>
</tr>
<tr>
<td>4</td>
<td>000-14-00-058</td>
<td>Sensor for magnetic piston 24v 2 wire w/led</td>
<td>2.0</td>
</tr>
<tr>
<td>5</td>
<td>000-61-10-044</td>
<td>Screw socket hex cap M8 x 70 S.S.</td>
<td>4.0</td>
</tr>
<tr>
<td>6</td>
<td>000-61-10-059</td>
<td>Screw socket hex cap M8 x 20 S.S.</td>
<td>4.0</td>
</tr>
<tr>
<td>7</td>
<td>000-61-10-119</td>
<td>Screw socket hex cap M6 x 30 S.S.</td>
<td>4.0</td>
</tr>
<tr>
<td>8</td>
<td>000-61-10-120</td>
<td>Shoulder screw M8x10x25</td>
<td>4.0</td>
</tr>
<tr>
<td>9</td>
<td>000-61-30-006</td>
<td>Washer spring M6 S.S.</td>
<td>4.0</td>
</tr>
<tr>
<td>10</td>
<td>000-61-30-009</td>
<td>Washer spring M8 S.S.</td>
<td>8.0</td>
</tr>
<tr>
<td>11</td>
<td>000-61-30-021</td>
<td>Washer M8 S.S.</td>
<td>8.0</td>
</tr>
<tr>
<td>12</td>
<td>000-61-30-022</td>
<td>Washer M6 S.S.</td>
<td>4.0</td>
</tr>
<tr>
<td>13</td>
<td>000-62-00-056</td>
<td>Pin 6 x 30 H7</td>
<td>4.0</td>
</tr>
<tr>
<td>14</td>
<td>200-66-09-000</td>
<td>Cutting System Upgrade Document</td>
<td>1.0</td>
</tr>
</tbody>
</table>