### Table (4-4) observations of assembly machine

#### Result of machines after modifications

<table>
<thead>
<tr>
<th>S/N</th>
<th>Assembly machine</th>
<th>Selected quantity</th>
<th>Duration (minute)</th>
<th>Quantity of waste</th>
<th>Percentage of waste</th>
<th>Waste states</th>
<th>Reasons of waste</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>A</td>
<td>1000</td>
<td>12</td>
<td>13</td>
<td>1.3</td>
<td>1- (11) empty case 2- (2) long case</td>
<td>1-1Shortest of the lead core 1-2 Delay in handling time 1-3 Low spring stiffness 2-1 Defect from previous stage</td>
</tr>
<tr>
<td>2</td>
<td>A</td>
<td>1000</td>
<td>11</td>
<td>12</td>
<td>1.2</td>
<td>1- (11) empty case 2- (1) short case</td>
<td>1-1Shortest of the lead core 1-2 Delay in handling time 1-3 Low spring stiffness 2-1 Defect from previous stage</td>
</tr>
<tr>
<td>3</td>
<td>A</td>
<td>1000</td>
<td>10</td>
<td>14</td>
<td>1.4</td>
<td>1- (9) empty case 2- (3) long case 3- (2) short case</td>
<td>1-1Shortest of the lead core 1-2 Delay in handling time 1-3 Low spring stiffness 2-1 Defect from previous stage</td>
</tr>
<tr>
<td>4</td>
<td>A</td>
<td>1000</td>
<td>11</td>
<td>13</td>
<td>1.3</td>
<td>1- (10) empty case 2- (3) long case</td>
<td>1-1Shortest of the lead core 1-2 Delay in handling time 1-3 Low spring stiffness 2-1 Defect from previous stage</td>
</tr>
<tr>
<td>5</td>
<td>A</td>
<td>3000</td>
<td>28</td>
<td>16</td>
<td>053</td>
<td>1- (13) empty case 2- (2) long case 3- (1) short case</td>
<td>1-1Shortest of the lead core 1-2 Delay in handling time 1-3 Low spring stiffness</td>
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<td>----------------------------------------------------------------------</td>
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</tr>
</tbody>
</table>
| 7 | A | 3000 | 27 | 15 | 0.5 1- (10) empty case  
|   |   |   |   |   | 2- (3) long case  
|   |   |   |   |   | 3- (2) short case  
|   |   |   |   |   | 1-1 Shortest of the lead core  
|   |   |   |   |   | 1-2 Delay in handling time  
|   |   |   |   |   | 1-3 Low spring stiffness  
|   |   |   |   |   | 2-1 Defect from previous stage  |
| 8 | A | 3000 | 29 | 17 | 0.56 1- (14) empty case  
|   |   |   |   |   | 2- (3) long case  
|   |   |   |   |   | 1-1 Shortest of the lead core  
|   |   |   |   |   | 1-2 Delay in handling time  
|   |   |   |   |   | 1-3 Low spring stiffness  
|   |   |   |   |   | 2-1 Defect from previous stage  |
| 9 | B | 1000 | 13 | 6 | 0.6 1- (5) empty case  
|   |   |   |   |   | 2- (1) long case  
|   |   |   |   |   | 1-1 Shortest of the lead core  
|   |   |   |   |   | 1-2 Delay in handling time  
|   |   |   |   |   | 1-3 Low spring stiffness  
|   |   |   |   |   | 2-1 Defect from previous stage  |
| 10 | B | 1000 | 12 | 5 | 0.5 1- (3) empty case  
|   |   |   |   |   | 2- (2) short case  
|   |   |   |   |   | 1-1 Shortest of the lead core  
|   |   |   |   |   | 1-2 Delay in handling time  
|   |   |   |   |   | 1-3 Low spring stiffness  
|   |   |   |   |   | 2-1 Defect from previous stage  |
| 11 | B | 1000 | 14 | 10 | 1.0 1- (8) empty case  
|   |   |   |   |   | 2- (2) long case  
|   |   |   |   |   | 1-1 Shortest of the lead core  
|   |   |   |   |   | 1-2 Delay in handling time  
|   |   |   |   |   | 1-3 Low spring stiffness  
|   |   |   |   |   | 2-1 Defect from previous stage  |
| 12 | B | 1000 | 14 | 4 | 0.4 1- (3) empty case  
|   |   |   |   |   | 2- (1) short case  
|   |   |   |   |   | 1-1 Shortest of the lead core  
|   |   |   |   |   | 1-2 Delay in handling time  
|   |   |   |   |   | 1-3 Low spring stiffness  
<p>|   |   |   |   |   | 2-1 Defect from previous stage  |</p>
<table>
<thead>
<tr>
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</thead>
</table>
| 13 | B | 3000 | 27 | 12 | 0.4 | 1- (10) empty case  
2- (2) short case  
1-1 Shortest of the lead core  
1-2 Delay in handling time  
1-3 Low spring stiffness  
2-1 Defect from previous stage |
| 14 | B | 3000 | 29 | 13 | 0.43 | 1- (8) empty case  
2- (3) long case  
3- (2) short case  
1-1 Shortest of the lead core  
1-2 Delay in handling time  
1-3 Low spring stiffness  
2-1 Defect from previous stage |
| 15 | B | 3000 | 26 | 11 | 0.36 | 1- (9) empty case  
2- (2) long case  
1-1 Shortest of the lead core  
1-2 Delay in handling time  
1-3 Low spring stiffness  
2-1 Defect from previous stage |