Portable Tri-Roller Swaging Tool Instruction Manual
GLOBAL MASTER DISTRIBUTOR:

Carter Manufacturing Limited
TEL: +44 (0) 1865 821 720
EMAIL: sales@carterbearings.co.uk
Table of Contents

Table of Figures ................................................................. 4
Part List .............................................................................. 5
Tool Component Breakdown ................................................. 6
Bearing Terminology ............................................................ 6
Precautions Prior to Use ..................................................... 7
Primary Swage ..................................................................... 8
   Set-Up Instructions .......................................................... 8
   Operating Instructions ......................................................... 10
      Step 1 – Tighten Hex Nut .................................................... 10
      Step 2 – Rotate Roller Fixture Assembly ............................... 10
      Step 3 – Repeat Steps 1 and 2 ............................................. 10
      Step 4 – Inspect Swage ....................................................... 10
Secondary Swage ................................................................ 11
   Set-Up Instructions .......................................................... 11
   Operating Instructions ......................................................... 12
      Step 1 – Tighten Hex Nut .................................................... 12
      Step 2 – Rotate Roller Fixture Assembly ............................... 12
      Step 3 – Repeat Steps 1 and 2 ............................................. 12
      Step 4 – Inspect Swage ....................................................... 12
Table of Figures

<table>
<thead>
<tr>
<th>Figure</th>
<th>Description</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Portable Tri-Roller Swaging Tool</td>
<td>5</td>
</tr>
<tr>
<td>2</td>
<td>Tool component breakdown</td>
<td>6</td>
</tr>
<tr>
<td>3</td>
<td>Bearing terminology</td>
<td>6</td>
</tr>
<tr>
<td>4</td>
<td>Disassemble tool using spanner on hex nut</td>
<td>8</td>
</tr>
<tr>
<td>5</td>
<td>Remove plastic spacer from assembly</td>
<td>8</td>
</tr>
<tr>
<td>6</td>
<td>Flip ring in primary anvil position</td>
<td>9</td>
</tr>
<tr>
<td>7</td>
<td>Draw rod inserted through bearing bore</td>
<td>9</td>
</tr>
<tr>
<td>8</td>
<td>Keyway and flat aligned to assemble tool</td>
<td>9</td>
</tr>
<tr>
<td>9</td>
<td>Hex nut tightened until tool is finger tight</td>
<td>9</td>
</tr>
<tr>
<td>10</td>
<td>Tighten hex nut approximately 30 degrees</td>
<td>10</td>
</tr>
<tr>
<td>11</td>
<td>Rotate roller fixture assembly clockwise</td>
<td>10</td>
</tr>
<tr>
<td>12</td>
<td>Inspect swage with feeler gauge</td>
<td>10</td>
</tr>
<tr>
<td>13</td>
<td>Inspect swage to ensure no smearing or galling is present</td>
<td>10</td>
</tr>
<tr>
<td>14</td>
<td>Draw rod inserted through bearing bore</td>
<td>11</td>
</tr>
<tr>
<td>15</td>
<td>Flip ring in secondary anvil position</td>
<td>11</td>
</tr>
<tr>
<td>16</td>
<td>Keyway and flat aligned to assemble tool</td>
<td>11</td>
</tr>
<tr>
<td>17</td>
<td>Hex nut tightened until tool is finger tight</td>
<td>11</td>
</tr>
<tr>
<td>18</td>
<td>Hex nut tightened approximately 30 degrees</td>
<td>12</td>
</tr>
<tr>
<td>19</td>
<td>Roller fixture assembly rotated clockwise</td>
<td>12</td>
</tr>
<tr>
<td>20</td>
<td>Unasis Portable Proof Load Tool and Unasis Breakaway Torque Tool, respectively</td>
<td>12</td>
</tr>
</tbody>
</table>
Tool Component Breakdown

<table>
<thead>
<tr>
<th>Number</th>
<th>Tool Component</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Hex Nut</td>
</tr>
<tr>
<td>2</td>
<td>Locating Feature</td>
</tr>
<tr>
<td>3</td>
<td>Flip Ring</td>
</tr>
<tr>
<td>4</td>
<td>Plastic Spacer</td>
</tr>
<tr>
<td>5</td>
<td>Draw Rod</td>
</tr>
<tr>
<td>6</td>
<td>Roller</td>
</tr>
<tr>
<td>7</td>
<td>Roller Fixture Assembly</td>
</tr>
</tbody>
</table>

Bearing Terminology

Figure 2 - Tool component breakdown
Figure 3 - Bearing terminology
Precautions Prior to Use

- The bearing must be properly installed and centred in the housing using an install/remove tool before swaging.

- Ensure the housing has suitable clearance for tool operation to be performed.

- Make sure all contact surfaces are clean and free of debris.

- Application of a light machine oil is advised.
Primary Swage

Set-Up Instructions

- Disassemble tool by unscrewing the hex nut (1) on the locating fixture (2).

- Remove plastic spacer (4) from between the roller fixture assembly (7) and flip ring (3).

- Place flip ring (3) into locating fixture (2) with the flat side facing out designated as the primary anvil position.

Figure 4 - Disassemble tool using spanner on hex nut

Figure 5 - Remove plastic spacer from assembly
• Insert draw rod (5) into the bore of the bearing until the rollers (6) are seated on the v-groove of the bearing.

• Align flat on draw rod (5) with matching keyway within locating fixture (2).

**NOTE: ENSURE THE FLIP RING IS IN PRIMARY ANVIL POSITION.**

• Tighten hex nut (1) until the rollers (6) are seated against the v-groove of the bearing and flip ring (3) is flush against the housing.

**CAUTION: OVER-TIGHTENING CAN CAUSE ROLLERS TO DENT OR MAKE AN IMPRESSION ON THE V-GROOVE OF THE BEARING.**

• Rotate roller fixture assembly (7) by hand to ensure there are no restrictions.
Operating Instructions

Step 1 – Tighten Hex Nut

- Tighten hex nut (1) clockwise approximately 30 degrees causing rollers (6) to apply a small amount of pressure on v-groove.

**NOTE:** PRESSURE BETWEEN ROLLERS AND V-GROOVE SHOULD BE LIGHT ENOUGH TO ALLOW HAND ROTATION.

Step 2 – Rotate Roller Fixture Assembly

- Rotate roller fixture assembly (7) three complete revolutions or until it rotates without resistance.

**NOTE:** A SPANNER CAN BE USED ON TOP OF THE ROLLER FIXTURE ASSEMBLY TO ASSIST WITH ROTATING THE ASSEMBLY. ENSURE SPANNER IS ROTATED CLOCKWISE.

Step 3 – Repeat Steps 1 and 2

- Repeat Step 1 and Step 2 until the hex nut (1) is rotated approximately 180° or until the v-groove is completely swaged.

**NOTE:** A COMPLETE SWAGE IS DEFINED BY A 0.002”-0.005” GAP OR THE GIVEN MANUFACTURER SPECIFICATION.

Step 4 - Inspect Swage

Inspect v-groove to ensure the swage is complete and within specification.

- Inspect bearing to ensure no smearing or galling is present on the v-groove surface.
Secondary Swage

Set-Up Instructions

- Insert draw rod (5) into the bore of the bearing, on the opposite side as previously swaged, until the rollers (6) come into contact with the v-groove of the bearing.

- Rotate flip ring (3) to secondary anvil position.

- Align keyway on draw rod (5) with matching keyway within locating fixture (2).

NOTE: ENSURE THE FLIP RING IS IN SECONDARY ANVIL POSITION

- Tighten hex nut (1) until the rollers (6) are seated against the v-groove of the bearing and flip ring (3) is flush against the v-groove.

CAUTION: OVER-TIGHTENING CAN CAUSE ROLLERS TO DENT OR MAKE AN IMPRESSION ON THE V-GROOVE OF THE BEARING.

- Rotate roller fixture assembly (7) by hand to ensure there are no restrictions.
Operating Instructions

Step 1 – Tighten Hex Nut

- Tighten hex nut (1) clockwise approximately 30 degrees causing rollers (6) to apply a small amount of pressure on v-groove.

**NOTE:** PRESSURE BETWEEN ROLLERS AND V-GROOVE SHOULD BE LIGHT ENOUGH TO ALLOW HAND ROTATION.

Step 2 – Rotate Roller Fixture Assembly

- Rotate roller fixture assembly (7) three complete revolutions or until it rotates without resistance.

**NOTE:** A SPANNER CAN BE USED ON TOP OF THE ROLLER FIXTURE ASSEMBLY TO ASSIST WITH ROTATING THE ASSEMBLY. ENSURE SPANNER IS ROTATED CLOCKWISE.

Step 3 – Repeat Steps 1 and 2

- Repeat Step 1 and Step 2 until the hex nut (1) is rotated approximately 180° or until the v-groove is completely swaged.

**NOTE:** A COMPLETE SWAGE IS DEFINED BY A 0.002”-0.005” GAP OR THE GIVEN MANUFACTURER SPECIFICATION.

Step 4 - Inspect Swage

- Inspect v-groove swage as previously explained to ensure swage is within manufacture’s specification.

**NOTE:** REASSEMBLE TOOL IMMEDIATELY AFTER COMPLETION TO ENSURE NO COMPONENTS ARE MISPLACED.

**NOTE:** YOUR BEARING IS NOW FULLY INSTALLED AND READY FOR INSPECTION TESTS WITH THE USE OF UNASIS PORTABLE PROOF LOAD TOOL AND UNASIS BREAKAWAY TORQUE TOOL.
This catalogue has been produced with a great amount of care and attention; all data has been checked for its accuracy. However, no liability can be assumed for any incorrect or incomplete data.

Due to the constant development and expansion of the product range, we reserve the right to make modifications without prior notice.

All rights reserved. Reproduction in whole or in part without authorisation is prohibited.