

**Subject: Swaging Requirements for 4" and 6" Trolley Wheels****1. Scope**

- 1.1. This bulletin covers the procedures and guidelines for swaging 4" and 6" trolley wheels onto free trolley brackets.

**2. Process Requirements**

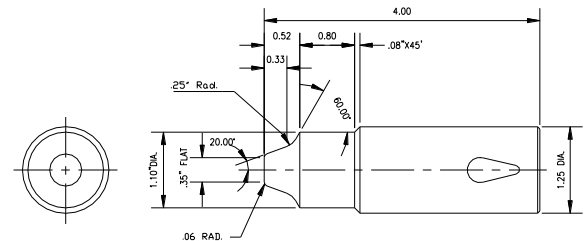
- 2.1. Trolley wheels are typically swaged on a hydraulic press with a minimum capacity of 50 tons.
- 2.2. When using a horizontal axis (roll through) press, the trolleys are to be positioned between the hydraulic ram such that the center line of the trolley wheel is inline or up to 1/16" below the centerline of the ram/swage tool. This ensures that the swage tool can center itself on the swage axle in the vertical direction. (If the trolley is slightly below the tool, the tool can lift the trolley into alignment. If the trolley is above the swage tool, no alignment is possible since the trolley will be forced into the support rails.)
- 2.3. When using a vertical axis press, a support fixture must be used to position and support the trolley bracket normal (90 degrees) to the hydraulic ram. The horizontal alignment must be within  $\pm 1/32"$ .
- 2.4. The following applied tonnages are to be used as guidelines. Tonnages may be less if the required trolley wheel breakaway torque is obtained. Do not exceed the maximum tonnages.

6" trolley wheels: 50 - 52 tons (100,000- 104,000 lbs)

4" trolley wheels: 40 - 42 tons (80,000 - 84,000 lbs)

3" trolley wheels: 18 - 20 tons (36,000 - 40,000 lbs)

- 2.5. Prior to applying the swaging pressure, both trolley wheels and red seal guards must be firmly in contact with the trolley bracket. Do not use the motion of the hydraulic ram/swage tool to push the wheels against the trolley bracket.

**Figure 1: Swage Tool SM-110-054**

- 2.6. Use swage tool SM-110-054 for 4" and 6" wheels with 1" axles on the movable ram. The stationary support on the opposite side of the swage tool is to use a 90 conical point tool.
- 2.7. The swaging pressure is normally applied using a neutral position throttle control that allows the operator to control the speed of the swage and to be able to stop and or reverse the swage ram. Automatic cycling (stroke to a limit or time at pressure) is not recommended.

**3. Mechanical Requirements**

- 3.1. The trolley wheel swaging process is to obtain the following inner race breakaway torque values.

6" trolley wheels: 120 lb-ft minimum

4" trolley wheels: 100 lb-ft minimum

3" trolley wheels: 45 lb-ft minimum

- 3.2. Wheels must be free spinning after swaging.

For questions regarding this service bulletin, call Daifuku America Corporation (DAC) Product Sales at (248) 553-1232 or email us at [dacproductsales@daifukuamerica.com](mailto:dacproductsales@daifukuamerica.com).

## Service Bulletin

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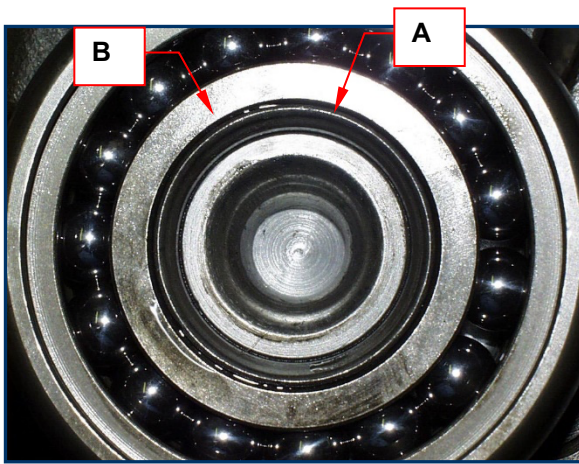
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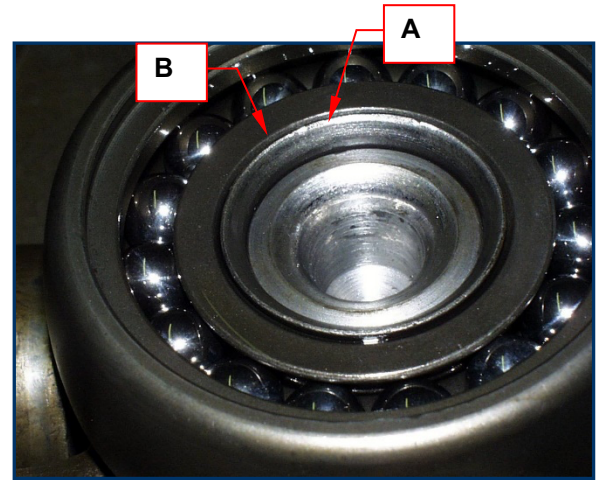
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### 4. Visual Acceptance Requirements

- 4.1. Wheels must be swaged without cracking the inner race rings. A cracked race will make an audible cracking sound when breaking.
- 4.2. No circumferential cracks or splits in the swage axle are allowable.
- 4.3. A good swage will expand the end of the 1" axle ("A" Photos 1 & 2) to approximately 1-3/16" diameter evenly around the entire circumference. There should be a minimal gap at the perimeter of the swage ("B") between the expanded axle and the trolley wheel inner race hub.



Photograph 1



Photograph 2

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