

Common Warranty Claims



Common Warranty Claims

The most common warranty claims for brake drums are:

**Out of Round
&
Cracked**



Out of Round

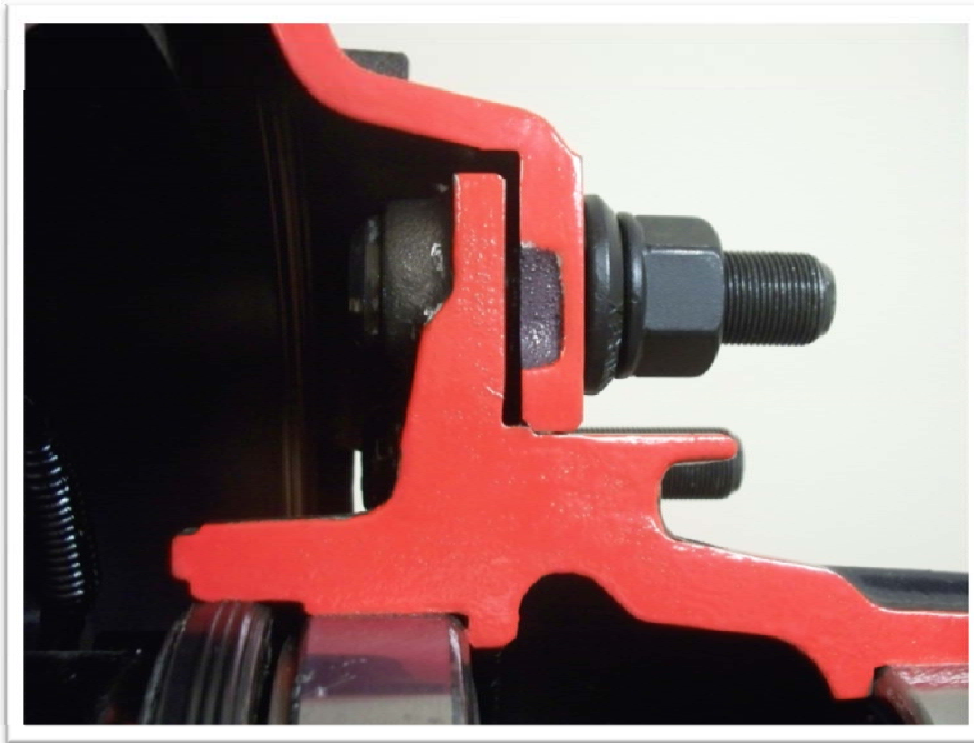
- An “Out of Round” condition is generally the result of:
 - Incorrect Machining
 - Braking Bore/Mounting Pilot machined incorrectly
 - Drum not balanced or improperly balanced
 - Incorrect Assembly Installation
 - Drum improperly centered on mating hub
 - Hub and drum mounting surfaces not flush with one another
- The primary cause for “Out of Round” warranty returns is the drums were improperly mounted on the hubs.
- Indications of an improperly mounted brake drum include:
 - The drum’s mounting pilot may reveal an indentation that closely resembles the pilot on the drums mating hub.
 - A hub imprint that visually appears eccentric with the bolt holes and mounting pilot on the inside mounting surface of the drum.
 - Wear variations around the braking surface.



Out of Round

Improper Mounting – Inspecting the Pilot

- The drum's pilot hole is the feature that centers the drum onto the hub. This is true for inboard, outboard, ball-seat, and hub-piloted applications. All hub's, both spoke wheel and disc, have a receiving pilot. During assembly, if the drum is allowed to slip off of the hub's pilot and the assembly is tightened, the drum will push down on the hub's pilot causing an indentation.



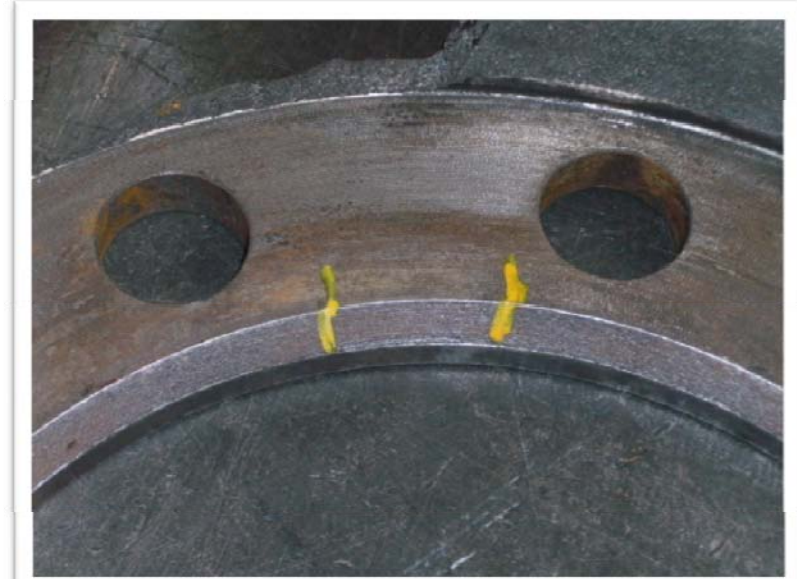
Out of Round

Improper Mounting – Inspecting the Pilot

- Indentations can be very pronounced or barely visible. As a rule, if the metal has been deformed to any degree, the drum was improperly mounted.



Large indentation

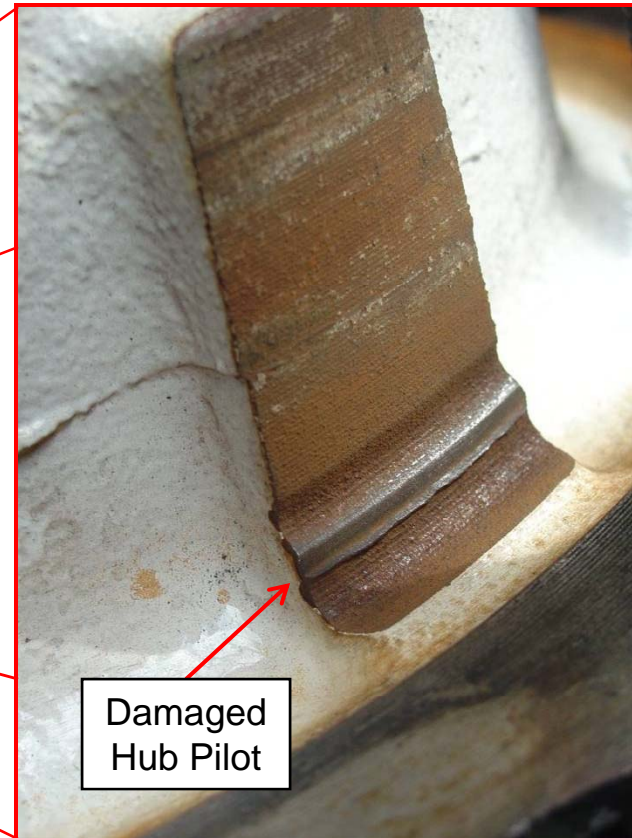
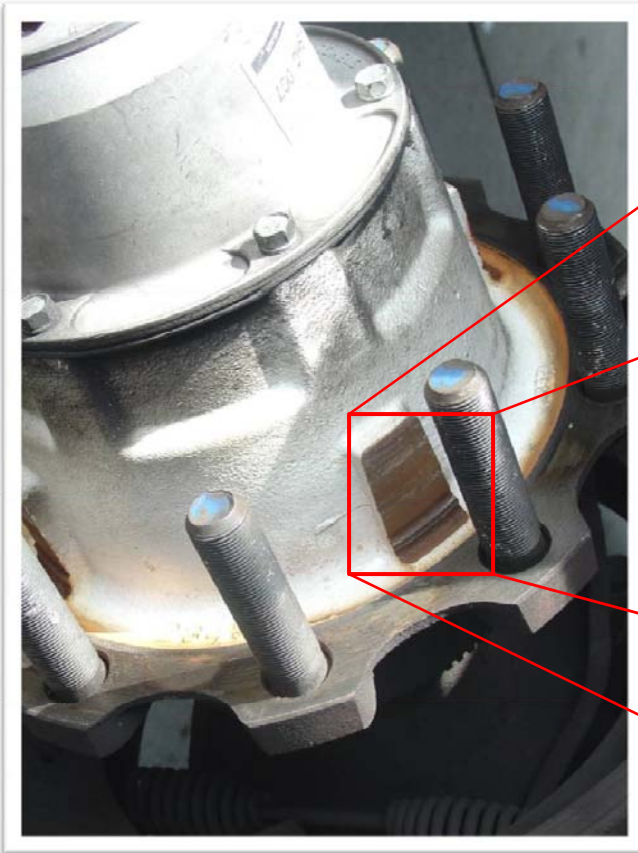


Small Indentation

Out of Round

Improper Mounting – Inspecting the Pilot

- Improperly mounting a brake drum onto a hub also affects the hub's pilot as seen below. This damage would prevent future drums from piloting correctly and could lead to "out of round" complaints for a drum with no quality or workmanship defects. The drum may also not show any indentations in the pilot.



Damaged
Hub Pilot

Out of Round

Improper Mounting - Hub Imprint

- Over time, brake dust and debris will build up on the drum's inside mounting surface around the hub's mounting flange, leaving the imprint of the hub's mounting surface. By looking at the distance between the imprint and bolt holes, you may see that the hub imprint is eccentric with the bolt holes.
**Notice the difference in spacing between the two bolt holes and hub imprint below.*



- If the drum was mis-mounted and an offset hub imprint was found, the braking surface should reveal localized heat checking, discoloration, and/or wear in the area where the bolt hole/imprint spacing is the largest ... confirming a mis-mount.

Out of Round

Improper Mounting - Braking Surface

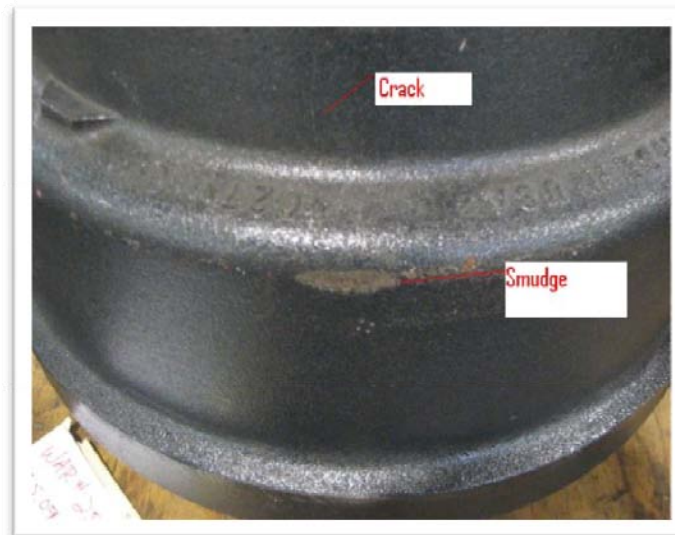
- The braking surface of the drum is an indicator whether the drum was or wasn't properly centered.
- If the braking surface displays even wear, even heat checking (if present), and even blue spots or discoloration, it is doubtful that the drum was improperly mounted.
- If the braking surface wear is uneven and/or heat checking is localized and/or blue spotting is localized, the drum and brakes were not concentric. This means the drum was improperly mounted or it could mean the drum may have been machined incorrectly.
- The only way to verify if the drum was machined incorrectly is to have it returned for full inspection.



Cracks

Between Pilot and Bolt Holes

- Brake drums with cracks between the pilot and bolt holes are generally caused by:
 - Improper handling (drum was dropped or impacted with a hard object)
 - The mounting surfaces of the drum and hub were not assembled flush with one another.
- If a crack is caused by the brake drum being dropped, a smudge can generally be located on the OD of the drum as seen below. This smudge generally aligns with the crack.
 - It is Webb policy that if a brake drum were to be dropped, it is immediately taken to the QA department for full inspection.



Cracks

Between Pilot and Bolt Holes

- If the mounting surface is struck with a hard object, this can also cause a crack.
- If the hub and drum's mounting surfaces are not flush during assembly, tightening of the assembly can cause the flange to stress and crack.

Common causes are:

- Debris/dirt/corrosion in the hub's pilot radius
- Debris or foreign material trapped between the two surfaces during assembly.
- The drum was mounted on an incorrect hub (i.e. hub's pilot much larger than the drum's)
- Improper mounting.



Impacted Drum



Installed on Incorrect Hub

Cracks

Braking Surface

- Cracks on the braking surface are typically caused by heat checks forming on the braking surface and coalescing together. Cracks can also be caused by:
 - Being dropped
 - Parking brake engaged while drum is hot and thermally expanded
- A crack on braking surface can propagate to the bottom of the plunge cut and will typically do 1 of 2 things:
 - Wrap 360 degrees around the drum, separating the braking surface from the flange and wrap around.
 - Propagate straight through the wrap around and wrap 360 degrees around the flange, separating the braking surface and wrap around from the mounting flange.



Cracks

Braking Surface - Continued

- If a brake drum is mis-mounted, brake shoes only contact a portion of the braking surface. If not caught in time, a crack can form in the offset region of the braking surface.

