TECHNOLOGY BULLETIN

TruTurn® Brake Drums Cast Holes vs. Drill Holes

Purpose:

The purpose of this bulletin is to explain the TruTurn brake drum cast bolt holes.

TruTurn brake drums are completely machined on the interior and exterior of the drum, which makes the drum inherently balanced without extra material removal or addition.

Bolt Hole Functionality:

The bolt holes in the drum flange are clearance holes. The clearance holes serve no purpose other than to let the wheel studs pass through the drum. The clearance hole size does not affect the stopping ability of the brake drum.

Cast Hole Size vs. Drilled Holes:

The brake drum bolt hole size is governed by the Society of Automotive Engineers (SAE) specification J1671. The TruTurn cast hole size meets the SAE J1671 specification. Cast holes are intentionally .10 of an inch bigger than comparable drilled holes. The size of the clearance hole does not affect the clamp load.

Bolt Hole Size Misconceptions:

1. The bolt holes DO NOT prevent the drum from rotating with respect to the hub. Properly torqued fasteners provide twice the necessary clamp load to prevent the wheel, drum, and hub flanges from rotating with respect to one another. Clamp load prevents the drum from rotating against the hub, NOT shear loading of the wheel studs against the clearance holes in the drum.

2. Brake drums DO NOT pilot off of bolt holes in the drum flange. All drums have a precision pilot diameter on the inner diameter of the flange that locates the drum to the hub.

3. Brake drums, during installation, ARE NOT easier to install due to the bolt hole size. Brake drums are located on a truck axle with help of the brake shoes and the hub's drum/wheel pilot.
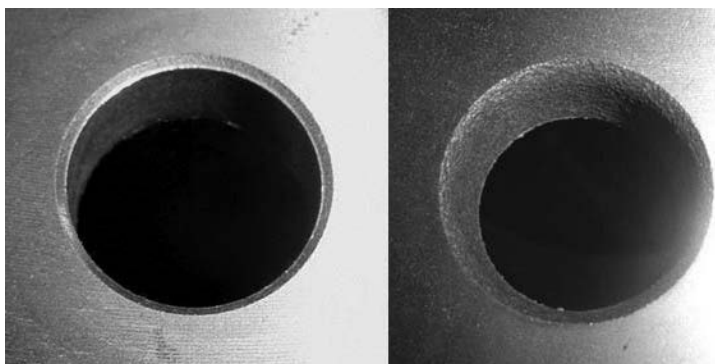
Drilled hole (left) vs. Cast hole (right)