All replacement hub units are not created equal.

What you don't know can cost you time, money, and customers.

Premium quality vs. “value” grade – Before you get the hubs, get the facts.

As a supplier of original equipment hub units to most of the world’s leading automakers, SKF knows better than anyone what goes into making a premium quality hub unit.

From the composition of the steel to the quality of the bearing and seals, every aspect of a hub unit is critical to long service life. Imprecise tolerances and poor surface finishing can cause noise and vibration, and low quality reproduction sensors can compromise ABS function.

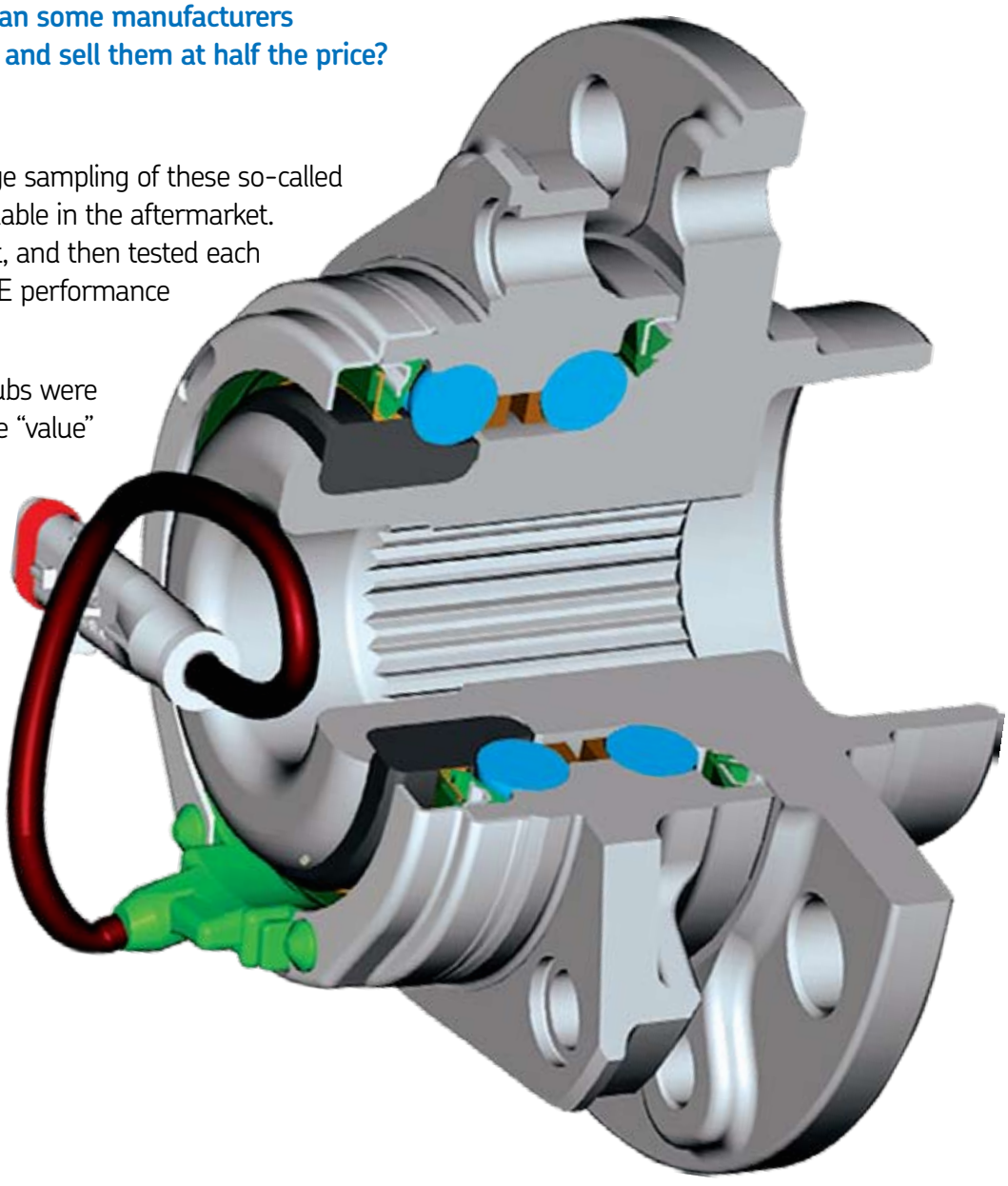
So we asked ourselves, how can some manufacturers claim to offer OE quality hubs and sell them at half the price?

The truth is, they can’t.

To prove it, we purchased a large sampling of these so-called “OE quality” hubs currently available in the aftermarket. We examined every component, and then tested each hub to every one of its actual OE performance specifications.

The results were clear: these hubs were NOT OE quality hubs. They were “value” grade hubs, which are no real value. Not only do they fail quickly, they can result in excessive NVH (noise, vibration and harshness), braking and handling problems, and expose drivers to potential safety risks.

So how much of a value are “value grade” hubs? See the results of our tests and judge for yourself.



SKF premium quality hubs vs "Value" grade hubs

SKF premium quality hubs	"Value" grade hubs
• Engineered to meet or exceed OE specifications	• Reverse engineered to generic specifications
• Life expectancy of 100,000+ miles	• Typically last about 25% to 35% as long as the OE hub (25,000 to 35,000 miles)
• OE sensors assure correct ABS functions	• Low quality reproduction sensors can cause ABS system malfunctions
• Premium seals, both inboard and outboard, protect the bearing	• Reproduction seals selected for price, not performance, quickly subject the bearing to contamination
• Precision bearing preload and correct application of advanced manufacturing techniques such as orbital rolling	• Imprecise bearing preload and inconsistent manufacturing techniques may lead to poor performance and shortened bearing life
• 100% tested to the actual OE specifications per part number for fit, form and function	• Tests not performed on all critical areas – defective return rates run 6 to 12 times higher than premium hubs
• High quality steel and surface finishes	• Inferior quality steel and surface finishes will lead to bearing noise and premature failure
• Proper implementation of heat treatment	• Heat treatment improperly applied and/or poorly controlled can result in safety issues like a wheel off condition
• Precise assembly tolerances	• Inconsistent and imprecise assembly tolerances may lead to wheel pulsation

Don't compromise your customer's vehicle safety.
Always install SKF premium quality hubs!

More parts = more weight, noise and vibration

Unlike SKF's unitized Generation 3 design, some value grade hubs are Generation 1 assemblies. With more components, each with their own tolerance, these hubs are heavier and noisier (bearing clicking noise during cornering). In addition to compromising braking performance and safety due to increased hub runout, they have a short service life (only last 25% to 35% of an OE hub).

Premium hub

Value grade hub

Structural fatigue failures = probable wheel off condition

Hub fracture due to flawed roll form design and heat treating process.

Raceway spalling occurred after 10 minutes of a 6 hour test.

Hub separation caused by poor material specification and improper bearing clearance range.

Bearing failure caused by improper press fit between inner ring and hub.

Inferior seals = water seepage and early bearing failure

60% of hub failures are caused by seal problems! Most value grade hub units have inadequate sealing systems which quickly expose the bearing to water and contaminants, causing premature failure. Unlike premium hubs, value grade hubs often use the same simple low performing seal design for both inboard and outboard positions.

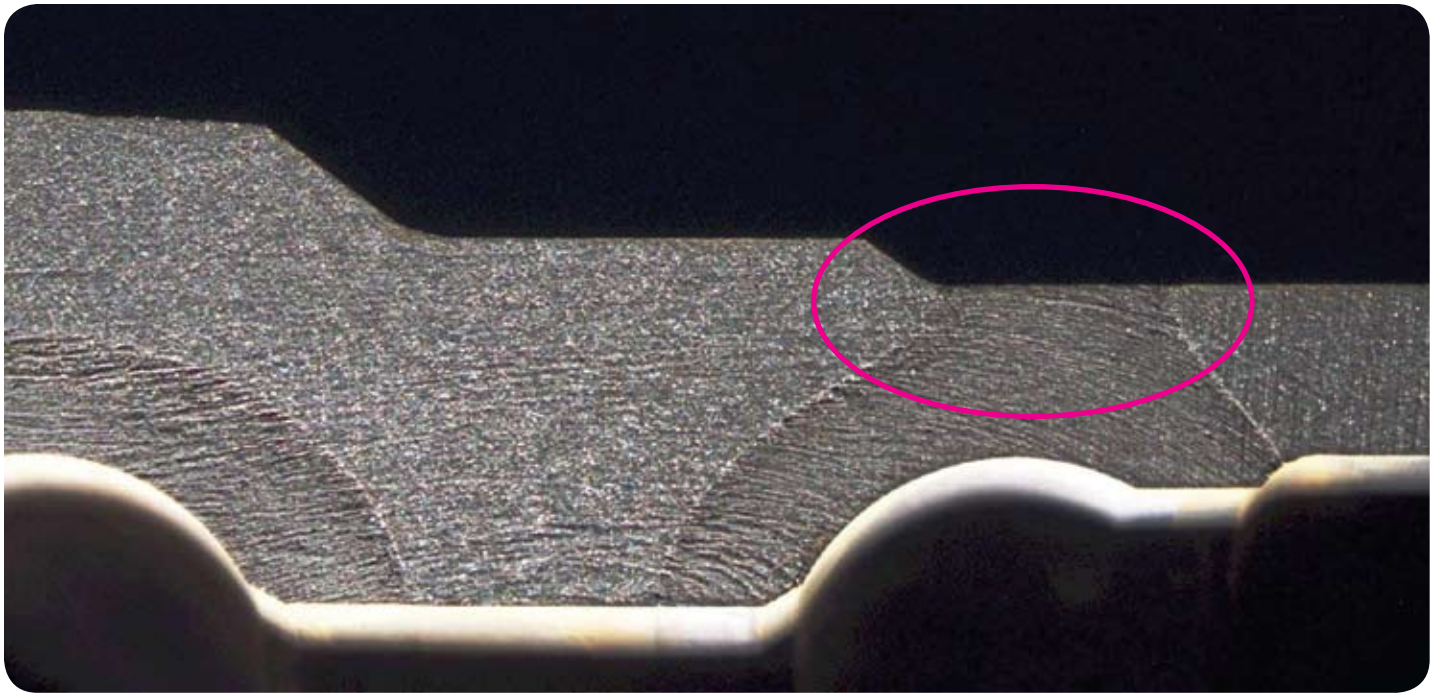
Typical premium hub inboard seal

Typical premium hub outboard seal

Typical value grade hub inboard and outboard seal

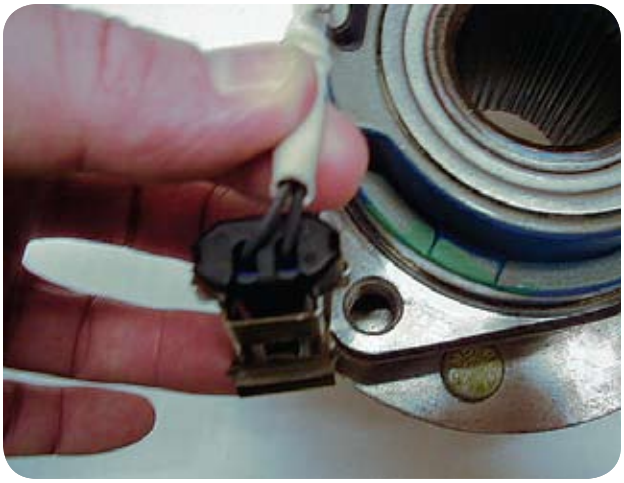
Poor heat treatment = hub fractures

Improper heat treatment techniques can result in through hardening of critical sections. Hardened sections are brittle and are subject to fracture under load.



Low quality reproduction sensors = compromised brake safety

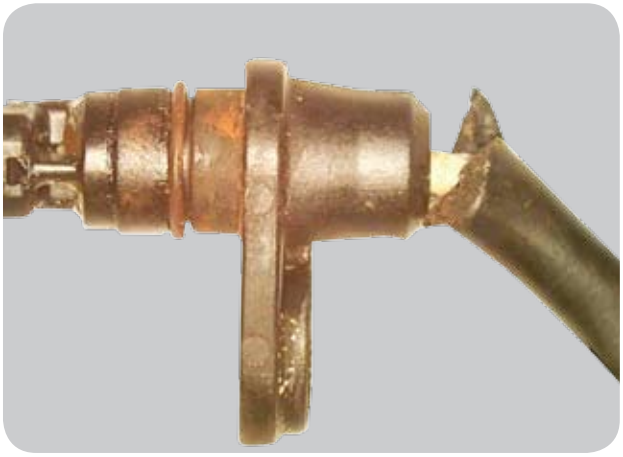
Cheap, poorly copied sensors are common in value line hubs. The result can be incorrect signals sent to the vehicle's on-board computer, potentially causing degraded ABS brake system performance. An alarming symptom can be an ABS dash indicator light that stays on.



OE hub sensor wire diameter is 1.70 mm with a polymer protection sleeve.

Value grade hub sensor wire diameter is 1.36 mm with an inferior fabric protection sleeve, exposing the sensor to damage from outside elements, wear and heat.

Poor sensor sleeve design = poor sensor performance



Improper sensor head overmolding design results in sensor wire breakage.

Value grade hub sensor suppliers claim their sensors will pass rigorous testing. Their sensors showed a direct path for water ingress, compromising sensor function.

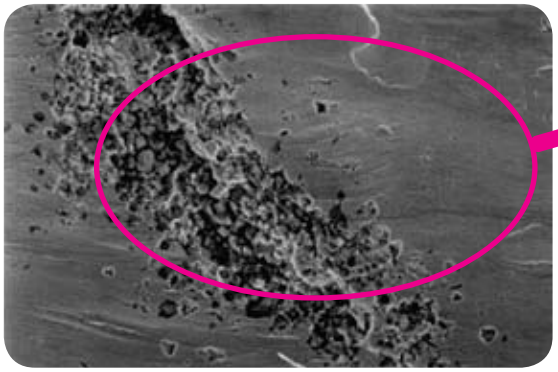
Forging flaws = short bearing life

Bearing rings are manufactured from hot forged steel. Proper control of the forging process is essential to long bearing life. Poor process controls can lead to cracks in the raceways and the hubs, providing a starting point for early failures.

Sub-surface forging crack in the bearing raceway, which will lead to early spalling and eventual failure.

Inferior steel = raceway spalling

Bearing steel needs to be very clean and inclusion free. Value grade hubs are manufactured from inferior or "dirty" steel.



Metallurgical testing revealed an aluminum oxide inclusion in the steel.

The result was bearing raceway spalling at just 1,000 miles, causing noise and vibration, which would have led to a hub failure soon afterwards.

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Unquestionable quality for OEMs – and for you

To satisfy customer demands for increasing vehicle safety, reliability, and efficiency, the world's automakers continue to count on SKF knowledge and manufacturing excellence. By combining our expertise in bearings, seals, and mechatronics, SKF has pioneered the development of each successive generation of hub bearing technology, including the integration of sensors to enable ABS system functionality.

Today, we are a trusted engineering partner and component supplier to every major vehicle manufacturer, and we continue to win industry awards and accolades from our customers. Through our distributor partners, we make this same level of quality available in the aftermarket, under the SKF brand.

Your reputation is in your hands. Protect it with premium grade hub units from SKF.

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