



Buying the Right Bearing for Automotive After Market Applications

OEM Aftermarket Quality Parts.

- You can spend a lot of time and money trying to find the right Bearing which makes it important to shop with the experts. You can't do that, if the parts you use are substandard or flawed.
- Customers will be able to tell the difference, because their vehicles will not perform as well as they should.
- Their vehicles may also breakdown prematurely. By not using PFI OEM aftermarket quality parts, you will be repairing the vehicle quicker than you planned, over the long run, we want happy customers.

Three Quick Tips for Sourcing OE Quality Parts

- When you're selecting a manufacturer or distributor of OEM quality parts, be sure to source from **a business partner instead of a mere supplier.**
- **Three tips for accomplishing this include working with a partner that has**
- **1) Quality management system [PFI Bearings](#)**
- **2) Advanced supply chain management processes [PFI Bearings](#)**
- **3) Customer support services. [PFI Bearings](#)**
- **All three points represent PFI Automotive Bearing Products**

- All three of these attributes can increase the efficiency and effectiveness of your operations, without any extra cost to your business.

Should Customers Install Wheel Hub Assemblies?

- Only technicians with the proper skills and experience should attempt to install wheel hub assemblies.
- There are a number of things that can go wrong during the installation process. Customers unfamiliar with the proper installation steps may attempt to disassemble wheel hub assemblies to better understand them.
- However, wheel hub assemblies are sealed units designed to function without regular maintenance. Opening a unit could damage its inner workings.
- Also, customers unfamiliar with the proper tools can struggle installing units, resulting in wasted time and damaged assemblies. Customers should look to specialists to install wheel hub assemblies.

Pitfalls of Buying Wheel Hub Assemblies Online

- The convenience of buying auto parts online is undeniable, but there are pitfalls associated with purchasing from unknown sellers via the web.
- Trust PFI as a manufacturer and supplier thru www.hirollbearings.com.au
- Online auction sites, in particular, are often home to questionable web hub assemblies, bearings and similar parts. These parts may be misrepresented in terms of quality, even if photos of the items indicate the parts are in pristine condition.
- You may have trouble processing returns in the event you're dissatisfied. To avoid problems with quality and customer service, source wheel hub assemblies from a trusted supplier with a reputation for excellence, online and off. You can trust www.hirollbearings.com.au



Key Attributes of Quality Wheel Hub Assemblies

Whether you're interested in generation one, two or three wheel hub assemblies, there are key attributes you should look for in terms of quality.

- **PFI offer ABEC 3 tolerances with Forged Long life Rings.**
- The right materials and design are important, but you're going to want assemblies that have been subjected to rigorous testing.
- Detailed design specifications, high tolerances and product warranties are all things you should look for. Ultimately, you want OEM quality wheel hub assemblies that will optimize the performance of your vehicle.

How to Select a Source for OE Quality Parts

- When you're looking to source OEM quality parts, there are certain attributes you need to look for in a supplier. In particular, you need a supplier that provides customer support and supplementary information on how to use their parts.
- This extra communication and information can help you be more confident knowing you are buying from a manufacturer's company supporting the buyer of automotive parts. You need to select a business partner capable of helping you achieve your objectives. HI-ROLL Bearings is your partner for Automotive Bearings.

How to Install Wheel Hub Assemblies Right the First Time

- Having the right instructions and procedures in place can help you install wheel hub assembly's right the first time. The more you prepare yourself with OEM instructions which can be found on the web and adhere to manufacturer instructions, the less rework you'll experience in your fitting of the Hub Unit.
- Once you have identified the most efficient and effective way to perform an installation, you should document the process and monitor the procedure to ensure quality of service.

Attributes of Quality Bearings

- Quality wheel bearings have specific attributes that you should look for.
- In particular, bearings need to be of OEM after Market quality. PFI Automotive Bearings solve this problem.
- Quality wheel bearings come with manufacturer warranties, detailed specifications and scientifically tested tolerance thresholds. PFI Bearings offer full warranties extended thru HI-ROLL Bearings Australia

3 Reasons to Use a Torque Wrench for Wheel Hub Installation



- Although a torque wrench isn't considered mandatory by some for wheel hub installation, it's an important tool to have for three reasons. When you're installing a wheel hub, you want to make sure the unit is firmly in place, so it doesn't damage other vehicle components or wear-out prematurely.
- You want to make sure the wheel hub performs properly while the vehicle is in motion. The steering and handling of a vehicle can suffer drastically, if a wheel hub is not torqued to the right specifications.

3 Things You Need to Know About Bearings

- Wheel bearings impact on the handling of your vehicle, making it important to know these three things before you make a purchase.
- One, what is the metallic composition of bearings impacts their performance, which makes materials such as forged steel preferable compared to lower quality Bearings machined from tube steel.
- Bearing seals affect the integrity and functionality of Bearing Hub units, making the quality of seals a key consideration.
- Bearings need to meet OEM quality specifications, so that your vehicles can perform to its full potential.

Common Tools for Installing Wheel Hub Assemblies

- The tools you use to install wheel hub assemblies heavily influence the quality of your work and the performance of your customers' vehicles, making the right tools invaluable.
- Some of the most common tools used during the installation process are the most basic, such as a rubber hammer, a flathead screwdriver, wire brush, breaker bar, and a torque wrench.
- Whether its locking units into place with the right amount of force, or smoothing surfaces and removing rough edges, these tools can help you install wheel hub assembly's right the first time.

Essential Tools for Wheel Hub Assembly Replacement

- With the right tools, replacing a wheel hub can be a straightforward process. In particular, you're going to need a jack stand, ratchet, hammer or mallet, torque wrench, and a flat head screw driver. These are the essentials; without them you're going to struggle removing tires and braking equipment.
- Other tools and equipment are used to complete replacements and dispose of old wheel hub assemblies, these tools shouldn't be missing from your tool chest.

Why Should Customers Care About Wheel Bearings?



- When your customers discuss vehicle performance, wheel bearings are probably not something they mention, but in actuality, these parts are vital. Wheel bearings affect steering, the wear and tear on tires, and the overall reliability of cars and trucks once they're on the road.
- When you discuss wheel bearings with your mechanic it's important they understand the impact these parts have on driving.

Steering and Handling

- Every time your customers turn their steering wheels to change direction, bearings factor into the process and affect steering and handling. If bearings become damaged or worn out due to debris or age, you will find out quickly just how important these parts are.

- In addition to creating strange noises, malfunctioning bearings can make it harder to change direction and difficult to drive. Wheel bearings that fail completely can make steering virtually impossible. As a result, it's important for the driver to take care about their wheel bearings, because they make driving possible.

Safety

- Since wheel bearings are a vital part relative to steering and handling, they directly affect the overall safety of vehicles on the road. In extreme cases, bearing failures or malfunctions can cause drivers to lose control of their vehicle.
- To avoid safety issues, you should make sure all work done relating to wheel bearings and wheel hub assemblies is performed with the utmost skill, given the impact these parts have on safety.

Maintenance

- Well-designed wheel bearings made from the right materials, such as forged steel, last longer and reduce the amount of strain on other vehicle components. This leads to less vehicle maintenance over the long term, resulting in cost savings for customers.
- Effective bearings also lead to more efficient driving, which can translate to lower fuel costs. Wheels and tires that are responsive and operate in an optimal way lasting longer and perform better on the road. Ultimately, properly functioning wheel bearings keep vehicles out of the shop and on the road.
- Customers may not be aware of wheel bearings and their significance, but these parts matter. They affect vehicle handling, safety and reliability.

What is the Quality Standards Used for Manufacturing Bearings?

- There are a number of quality standards, including ISO 9000, that apply to the manufacturing of bearings. These standards are intended to minimize product defects while keeping bearings within design specifications. Some of the most relevant quality standards are listed below.

ISO 9000:2008 PFI standard.

- Quality management systems are integral in production environments, because they help management and employees produce high quality products that meet tight specifications. The requirements for quality management systems are outlined in ISO 9000:2008. These systems typically contain items such as a quality manual, standard operating procedures, and quality documentation, which provide guidance on how to improve quality and deal with defects. Manufacturing facilities where bearings are produced are normally run in compliance with ISO 9000 and contain quality management systems.

- Process excellence professionals normally work with machinists and production personnel to improve the quality of bearings. This means that at a production facility, there are regular meetings to discuss waste and inefficiency along with sessions to discover process improvements. Most major manufacturing companies use Six Sigma and lean methodologies to enhance the effectiveness of quality management systems. Without a systematic approach to quality, bearing production would contain far more defects and be less reliable for downstream customers.
- Quality bearings improve the performance of vehicles and enhance clients' driving experiences. As a result, the quality standards used to produce bearings indirectly influence the service you provide to your clients.

Three Consequences of Installing Poor-Quality Wheel Hub Assemblies



- When you install poor-quality wheel hub assemblies, you're likely to suffer unintended consequences, such as the loss of steering control or even a catastrophic failure while driving down the road.
- Before you decide to use poor-quality parts, consider these three consequences.

Short-Term Customer Relationships

- Buying lower-quality auto parts you may realize a short-term gain. But over the long run, the vehicle isn't performing as well as they should be.
- Quality auto parts and customer service are vital for business and for long-term success. So if you cut corners buying cheap Bearings to save a few bucks now, be prepared to suffer the consequences in the future.

Loss of Steering Control

- Given the vital areas where wheel hub assemblies are installed, any potential failures or defects in the units can have drastic consequences. You may suffer poorer quality handling or even a loss of steering control, given the magnitude of a wheel hub's failure. If you lose control of the vehicle on the road, there are all sorts of negative repercussions that can come back to haunt you or the manufacturer of the part you used.

Wheel Detachment

- In extreme cases, poor-quality wheel hub assemblies can lead to the detachment of wheels while vehicles are on the road. If there is a structural defect in a wheel hub assembly, or if the assembly is made from substandard materials, this type of failure is a real possibility.
- While wheel detachment is a rarity, it is a potential consequence of installing poor-quality assemblies. For your sake, it's important to avoid this outcome by sticking with quality assemblies.
- Although it may be tempting to purchase lower-quality parts at a discount, there are consequences of doing so that may not be easy to live with. So install quality wheel hub assemblies from a reputable source, and keep your customers' vehicles and your business running smoothly.

The Life Expectancy of Bearings



- The life expectancy, or lifespan, of wheel bearings differs depending on the manner in which a vehicle is driven. For vehicles used on difficult or unforgiving terrain, wheel bearings may last as little as six months. However, proper care and maintenance of the vehicle will give wheel bearings a much longer lifespan. Consider the following scenarios and how wheel bearings are affected by each.

Harsh, Wet, or Icy Conditions

- Some regions receive much higher annual amounts of precipitation. Slick road conditions impact the way wheel bearings function within the wheel assembly. When bearings jam as the wheel assembly stops but the vehicle continues on, the bearings begin to throw off small metal fillings. When driving in areas of high annual precipitation, the wheel bearings will last from 35,000 to 50,000 driving Klm's. However, this number may be much lower when the precipitation comes in the form of significant amounts of winter weather.

Rough Terrain

- Some vehicles demand drivers take them to the fields and explore the hazardous terrain, such as the line of ATV style vehicles, large cargo vehicles, and the iconic Hummer Series. However, every strenuous move causes bearings to twist within the wheel assembly in unusual ways, which further reduces life expectancy. When driven on rough terrain, wheel bearings may last for up to 50,000 Klm's if the terrain does not meet the above-mentioned areas of heavy annual precipitation.

Average Commute

- For vehicles driven for commuting purposes expressly, most wheel bearings will last from 120,000 to 160,000 Klm's. Some wheel bearings will last the length of the vehicle, about 12 to 15 years, when the vehicle is driven an average of less than 30 miles per day, five days a week. However, vehicles driven in excess of 125 Klm' per day will need to have the wheel bearings replaced every four to five years.
- Ultimately, the lifespan of wheel bearings depends on where, how, and how often the vehicle is driven. In ideal conditions, wheel bearings will last for at least 10 years, but poor driving and road conditions have the potential to cut this overall lifespan in half. As a general rule of thumb, the wheel bearings should be checked, which equate to a replacement, every two years since wheel bearings should only be replaced and not reused.

Signs Wheel Hub Assemblies Need to Be Replaced



- Wheel hub assemblies are designed with longevity in mind, but these units may need replacement, given specific circumstances. Fortunately, there are signs and symptoms that you and your customers can catch, so you can replace wheel hub assemblies before it's too late.

Strange Noise

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Strange Noises

- Although grinding, squeaking and other unusual noises can be indicative of multiple maintenance issues, they are tell-tale signs that wheel hub assemblies need to be replaced. You may hear these noises intermittently, or they may be constant. What's important, though, is that your customers bring their vehicles in for diagnostic procedures once the noises begin. Wheel hub assemblies can fail for a variety of reasons, but the failures can be gradual, which gives you time to replace units before a catastrophic failure occurs.

Visual Damage

- In the event of an accident and damage to the wheels and tires of a vehicle, wheel hub assemblies can also become damaged. This is particularly true when wheels are lost off vehicles due to collisions. Visual signs of damage may be easy to spot in certain instances, including scraping, gashes and other physical deformities. However, a thorough inspection should be conducted to catch the slight jarring of seals, bolts and **Poor Installation Procedures**.
- Poor installation procedures, including the use of the wrong tools or a lack of the proper tools, are a sign that wheel hub assemblies need to be replaced. A lack of standardization among technicians, poor training, and the disassembly of wheel hub assemblies before their installation are also signs to watch out for. The procedures you and your co-workers use to install wheel hub assemblies are almost as important as the quality of the units themselves.

Smoke

- If a defective or damaged wheel hub assembly is left unfixed, wheel bearings, assemblies and other related parts may end up grinding together,

creating smoke. This is a sign of catastrophic failure, though, and is something that should cause your customers to pull over right away.

- This sign is rarely seen, because there are other warning signs that normally cause customers to take their vehicles to the shop first.
- Wheel hub assemblies are designed to be reliable and rugged, making them easy to install and not think about. However, if any of the aforementioned signs and symptoms start to pop up, then it may be time to replace wheel hub assemblies. Related fixtures, which can cause wheel hub assemblies to fail if left unnoticed.

Sensors to Watch for When Making Wheel Assembly Repairs



- Modern concerns over the safety of drivers on the road have led to the development of several key systems responsible for assisting the driver during difficult road conditions.
- The tire pressure monitoring system, anti-lock brake system, and traction control systems are standard on all motor vehicles on the road today, with the exception of a few commercial and fleet vehicles, and the sensors for each respective system are located on or near the wheel assembly.
- This enables all of the systems to communicate effectively and ensure that drivers make it to their destinations safely; however, the presence of these sensors means an added complication and consideration for auto technicians when accessing the wheel assembly for wheel bearing replacement.

Tire Pressure Monitoring System

- The tire pressure monitoring system, or TPMS, uses an air pressure sensor within the tire and a receiving module, located on the vehicle, to provide an accurate display of each tire's pressure to the driver. However, the location of

the receiving module varies with different makes and models of vehicles and some vehicles have the sensor located just inside the inner fender near the wheel. Some receiving modules may not have a protective, metallic covering, and auto technicians need to locate the module before servicing the wheel assembly.

Anti-Lock Brake Systems

- The tire pressure monitoring system, or TPMS, uses an air pressure sensor within the tire and a receiving module, located on the vehicle, to provide an accurate display of each tire's pressure to the driver. Since low tire pressure has been one of the key factors in motor vehicle collisions, the U.S. government mandates that all vehicles made since 2004 to be equipped with a TPMS. However, the location of the receiving module varies with different makes and models of vehicles and some vehicles have the sensor located just inside the inner fender near the wheel. Some receiving modules may not have a protective, metallic covering, and auto technicians need to locate the module before servicing the wheel assembly.
- The anti-lock brake system, or ABS, prevents the brakes from locking when the wheel begins to spin freely on slippery road conditions. The ABS sensors are usually located near the outermost area of the wheel assembly. The ABS sensors are extremely delicate and must not be damaged when disassembling the wheel assembly. The auto technician should locate the ABS sensor and place a soft cloth over the sensor when removing the bolts to access the wheel assembly.

Traction Control Systems

- Advancements in electronic control systems led to a computer-controlled means of preventing a vehicle from sliding or spinning out of control on slippery road conditions. The electronic traction control system may be identified by differing names, such as StabiliTrak, active handling, or positrack. The sensors for the traction control system sense when one or more tires begin to rotate faster than the others and it will apply the brakes selectively to the affected tires.
- An additional sensor is located on the steering column to monitor the angle of the vehicle's turn versus the vehicle turn sensed by traction sensors on the wheel assembly. The sensors for the traction control system are often located adjacent to the ABS sensors and connect via the same connector harness. Auto technicians should disconnect the connector harness to the ABS and traction control systems prior to servicing.

- Replacing wheel bearings or accessing the wheel assembly requires auto technicians to identify and watch for several sensors in modern vehicles. By understanding where the ABS, TPMS, and traction control sensors are located, an auto technician will be able to ensure that the safety of the vehicle is not compromised by damaged sensors.

Impact of Poorly Designed & Machined Bearings

- If there is one thing that is for sure in the automotive industry, it's that defective bearings will cost you money. You should be leery of poor quality parts, because they can lead to premature failures, excessive maintenance, sub-standard driving performance, and unhappy customers. Each one of these negative outcomes can detract from your business.

Premature Failures & Maintenance

- Bearings that fail prematurely will bring customers back to your shop, but you'll probably have to replace the defective parts free of charge. That's assuming you're the one that installed the bearings in the first place. While you can charge the manufacturer for the defective parts, you still have to replace them, which take time. That is time that you could be spending doing work that pays. So, poorly designed and machined bearings may cost you money in the long run.

Poor Handling & Performance

- Defective bearings detract from the performance of vehicles, making vehicles harder to handle on the road. The decrease in performance can be noticeable on all types of vehicles, especially luxury models and sports cars. High-end cars require precision bearings in order to reach their full potential and to live up to their expensive price tags. You do not want to have to worry about installing bearings on expensive projects, especially when your reputation is on the line. Just remember even slight defects in the design or manufacture of bearings can translate into noticeable driving problems on the road.

Customer Satisfaction

- One of the biggest impacts of poorly designed and machined bearings is dissatisfied, inconvenienced customers that have to bring their vehicles to your shop for a fix. At the end of the day, customer service is something that can make your business a success or a failure. If you stock sub-standard bearings and install them you're likely to alienate your clientele. Of course you aren't responsible for defective parts, but you are responsible for stocking them in your shop. Customers are likely to blame you anyway, making it important to use OE quality bearings for all your projects.

How Can High-Quality Bearings Impact Your Work?

- When you're working in your shop, the last thing you want to worry about is the quality of your bearings. You want the parts that you use to conform to specifications and meet the strains of everyday use once they're installed. In particular, high-quality bearings can have the following effects on your work.

Fast & Efficient Installation

- High-quality bearings are easy to install, making your life easier. They can also cut down on inefficiencies in your shop, such as rework and unnecessary maintenance. Time is money in an automotive shop, and the more efficient it is to install bearings and related parts, the more vehicles you can service.
- There are both financial and personal reasons to installing high-quality bearings. Fast and efficient installation will also please your customers.

Less Maintenance

- Quality bearings not only last longer, but they also reduce the need for maintenance of other parts. The less maintenance you have to perform, the happier your customers will be. You can also focus your time enhancing the efficiency of your shop and up-selling customers on other services. The more of your time spent on value-added services, the more money your shop will make and the more customers you'll service. Morale in your shop is also likely to increase, because you and your co-workers will feel more confident about your work.

Less Time Spent on Returns

- If you have to return defective bearings, it eats into the time you could be spending doing other, more valuable tasks. You do not want to box up defective parts and send them back to where they came from, because it's non-value-added for you and your customers alike, not to mention the hassles associated with defective parts and the maintenance issues they can cause. High-quality bearings keep you off the phone with manufacturers and in your shop where you belong.

Better Reputation

- The better the work you do, the better your reputation will be. In turn, your customer loyalty should increase. Although the services you provide involve more than using high-quality bearings, they can make or break your reputation. Given the competitive nature of the automotive industry, a good reputation is essential for maintaining and growing your business.

- There is no reason to struggle with substandard parts, when you can stock your shop with reliable bearings. **High-quality bearings impact your work in many positive ways and make your customers happier.**

Four Common Errors Auto Technicians Make When Taking Apart the Wheel Assembly:



- Replacing the wheel bearings is a straightforward process. However, the delicate nature of the components in and surrounding the wheel assembly have the potential to turn a two-hour job into a day-long event. Before you begin to dismantle the wheel assembly, you need to consider the four most common errors auto technicians make when taking apart the wheel assembly.

Brake Line Disaster

- In order to access the wheel assembly, you will need to remove the brake pads and shoes from the hub. Unfortunately, some brake lines may be taught and prone to snapping, tearing, or becoming dislodged. Be sure to remove any excess brake lines from your working field before removing the brake shoes. Removing the brake line in the beginning of the process is much simpler than later trying to trace the brake line back to its origin.

Broken Brake Shoes

- Once you've removed the bolt securing one side of the brake shoe, be cautious when removing the second bolt. The brake shoe could fall suddenly and be damaged. One fall could result in replacing the shoe and increasing repair time.

Electrical Wiring Destroyed

- While most tires do not have electrical wiring nearby, some tires, such as those that light up or have spinners, will have electrical wiring present. In order to prevent damage to the wiring, disconnect and remove any wiring before servicing. This ensures that you do not damage the customer's accessories. There will also be wires running just above the axle to any additional lights on the vehicle. Be careful not to bang any wires, as this may cause the wire to split within the rubber casing.

Wheel Bushings Dislodged

- When accessing the wheel assembly, you will be two bolts away from dislodging the wheel bushings. Be sure that you do not begin to loosen these unintentionally. Otherwise, the spring-loaded bushing may suddenly dislodge with enough force to break cement.
- You need to get the customer's vehicle in and out of your shop as quickly as possible without causing additional problems. By knowing the four most common errors to watch for, you can ensure the job is completed quickly, properly, and safely.

Common Causes of Wheel Hub Failures:



- Wheel hub assemblies are designed to require little or no maintenance once they're installed, but that doesn't mean assemblies can't fail, for a variety of reasons. Some of these failures are associated with actions that take place during the installation process, while others are attributable to weather and road conditions. If you're troubleshooting failures, look to these common root causes for answers.

Disassembly Before Installation

- Sometimes inexperienced technicians, or customers themselves, will disassemble wheel hub assemblies to discover their inner workings. This action can cause unintentional damage to units, resulting in premature failures after installation.
- Leaving wheel hub assemblies sealed is important for preserving their integrity and avoiding contamination. If a unit has been tampered with, the potential for failure exists.

Excessive Vehicle Loads

- If customers' vehicles are constantly overloaded past recommended carrying capacities, vehicles can end up getting damaged, which includes the failure of wheel hub assemblies. It's important to follow manufacturer guidelines and specifications for the intended use of vehicles. Even though a vehicle may look good on the outside, components such as wheel hub assemblies can fail internally. These failures can also happen when least expected, causing further damage and inconveniences.

Road Hazards

- Whether it's a pothole, large rock or some other form of obstruction or deformity, road hazards can damage car wheels and their supporting structures. This includes wheel bearings and wheel hub assemblies, along with other parts in wheel areas. So, if one of your customers has vehicle damage attributable to a road hazard, perform a thorough inspection of a vehicle's wheels and components, to gauge the true extent of the damage.

Poor Handling

- If a customer abuses their vehicle, all sorts of bad things can happen. This includes the misalignment of wheels and tires, along with the damaging of important parts, such as wheel hub assemblies. So, if a customer is out racing their vehicle, taking repeatedly sharp turns over difficult terrain or is being irresponsible with the way they drive, wheel hub assemblies can become damaged and fail. It's important to identify the behaviours leading to failures, so that customers can be educated regarding their driving habits.
- Wheel hub assemblies can fail for a variety of reasons, including the disassembly of units before installation, excessive vehicle loads, road hazards and poor assembly and poor pre-assembly handling.

Demand the Best

PFI AUTOMOTIVE BEARINGS

