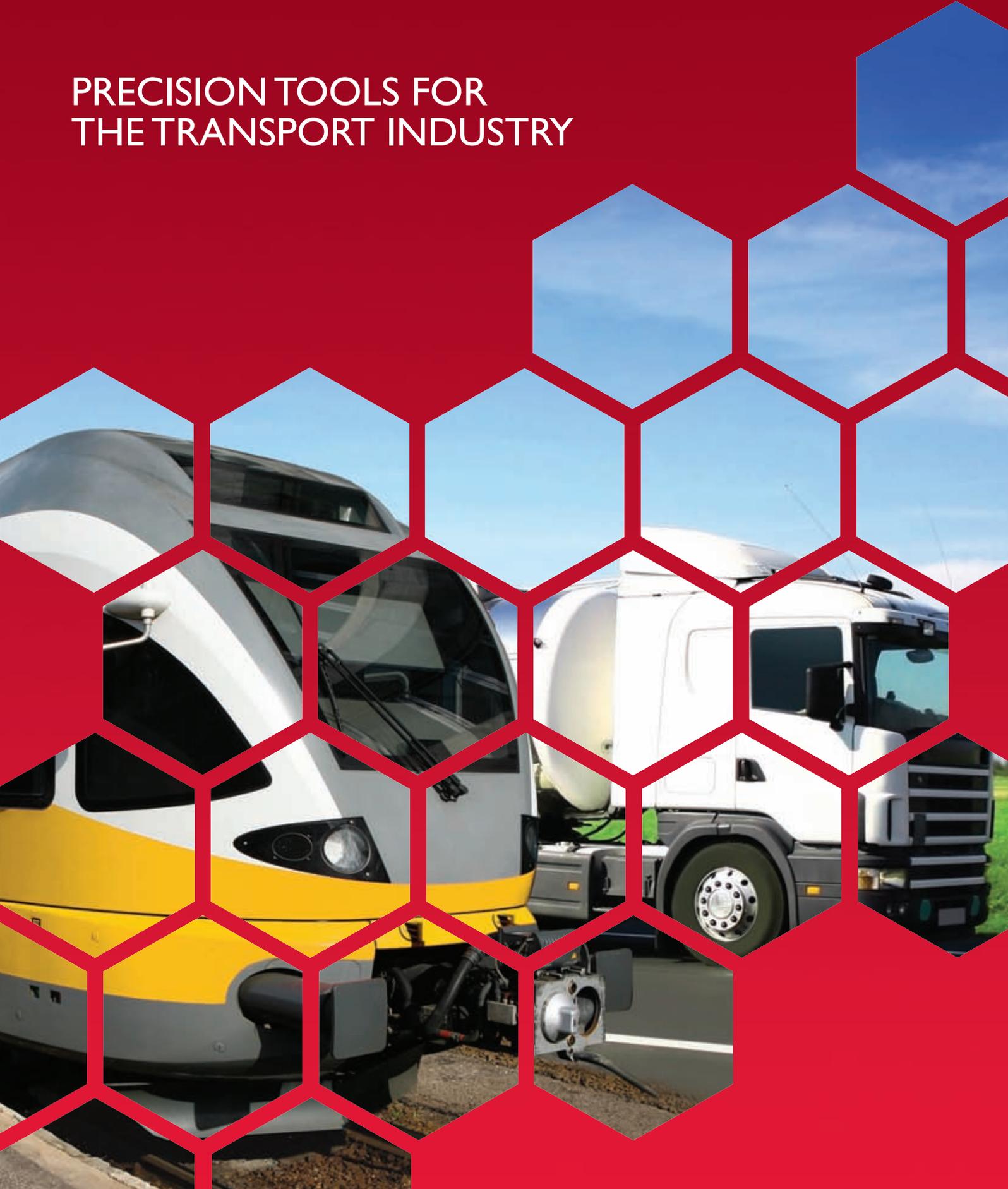




# PRECISION TOOLS FOR THE TRANSPORT INDUSTRY



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## NORBAR IN THE TRANSPORT INDUSTRY

Norbar have a long history of association with the transport industry. Our involvement starts with the manufacturers and then extends through the life of the vehicles and rolling stock travelling on our road and rail networks. We are also extensively involved with the infrastructure of transport; building and maintaining the road and rail networks.

Norbar's role in the industry is to ensure that you can provide your customers with accurately bolted assemblies from the wheel nuts on a family car to the track and point bolts on a railway line.

We will also provide your workforce with ergonomic tools: torque wrenches that are easy to read and adjust, power tools that are low in noise and vibration and torque measurement instruments that are intuitive to use.

Our commitment to you is to provide torque tools and instruments that are durable and maintain accuracy for longer than the alternatives, backed up by Norbar companies and distributors the world over.



*Professional torque wrench range*



*TruckTorque™ incorporating the sliding 'banana' reaction*

**Take Pride – Torque Norbar**

## TORQUE WRENCHES – UP TO 400 N.m

Every workshop, garage or tyre shop has torque wrenches. Norbar's research has highlighted several issues that are of concern to owners and operators of torque wrenches. These concerns have been addressed in designing our wrenches. For example, in the latest model range, TruTorque™, Norbar have put a great deal of thought and effort into achieving a wrench that is both fast and light to adjust with the clearest possible scale.

The weak point of a torque wrench is often the ratchet, particularly in high volume environments like tyre workshops. Many manufacturers get around this by simply not fitting a ratchet but this will make the wrench difficult to use. All Norbar ratchets are carefully engineered to have narrow engagement angles (essential in confined spaces) and yet be robust and long lasting.



## TORQUE WRENCHES - OVER 400 N.M

The classic Norbar torque wrench for higher torque applications in road and rail is the 'Industrial', break back torque wrench. Wrenches in this family range from the 500 N.m '3AR' to the 2000 N.m '6R'.

When an operator uses a high capacity torque wrench, they will use their body weight to actuate the wrench. After the wrench has reached the set torque the operator's momentum will inevitably apply further torque. The unique feature of the 'Industrial' wrench is that it has a 20 degree break angle. This gives the operator time to check their momentum and eliminate over torque. Furthermore, the design is simple and robust and with minimal maintenance is capable of many hundreds of thousands of tightening operations. Split versions are available for situations where space is limited, such as vehicle tool kits.

These features make the 'Industrial' ideally suited to truck and bus tyre shops and it is the most popular wrench worldwide in this application.

Another version of the 'Industrial' has found great success in the rail track maintenance industry. The 1 1/16" bi-square wrench was produced at the request of the rail industry for torque tightening rail 'fishplate' bolts. It eliminates the possibility of sockets or square drives being left on the railway track by integrating the 1 1/16" socket permanently onto the end of the wrench.



Handtorque Multiplier HT3

## TORQUE MULTIPLIERS - HANDTORQUE™

A torque multiplier is a precision engineered gearbox that will precisely multiply the input torque by a fixed ratio, most commonly 5:1 or 25:1. This means that a small torque wrench can be used with a multiplier to safely and accurately achieve very high torques. As an example, the HT-52 multiplier will achieve 1000 N.m with a 45.5 N.m input. A good choice of input tool would be Professional Model 100 which, packaged with the multiplier, gives a total weight of 3 kg, less than half the weight of a typical 1000 N.m torque wrench.

Torque multipliers can easily be carried as part of truck or rail tool kits because they eliminate the need for very large torque wrenches. The best seller in these industries, the HT3, is even nicknamed the 'Highwayman', reflecting the fact that it is the perfect tool to take out on the road.



Rail 'fishplate'



Industrial wrench 4R

## PNEUMATIC TORQUE MULTIPLIERS - PNEUTORQUE<sup>®</sup>

The most common method of tightening the road wheel nuts on trucks and buses is to run the nuts down with an impact wrench and follow up with a torque wrench. It is widely recognised that this method is far from perfect due to the fact that, all too often, the nut has been over tightened by the impact wrench before the torque wrench is applied. The operator is also subjected to noise and vibration levels from the impact wrench with the associated risks to health and safety. Internationally there is an increasing amount of legislation that now obliges employers to monitor both noise and vibration in the work place and to take appropriate action to protect employees or remove the risk.

There is an alternative. The Norbar Pneutorque<sup>®</sup> is accurate, fast, light and has very low levels of noise and vibration.

The Pneutorque<sup>®</sup> is a continuously rotating pneumatic torque wrench – there is no impacting or impulsing action and therefore almost no vibration. A typical 1000 N.m impact wrench will reach the first action level as defined by the United Kingdom's 'Control of Vibration at Work Regulations 2005' within a few minutes. A Pneutorque<sup>®</sup> would not reach the first action level even if used continuously all day. The first action level means that employers are legally obliged to introduce a programme of controls to eliminate risk or reduce exposure to vibration. For independent verification of the low vibration from Pneutorque<sup>®</sup>, see the UK Health and Safety Executive website, [www.hse.gov.uk/research/rpdf/r794.pdf](http://www.hse.gov.uk/research/rpdf/r794.pdf)

Pneutorques are not just wheel bolting tools. They have been successfully used on many transport infrastructure projects including bridge and tunnel construction and, recently, bolting together the concrete sections of a guided bus-way.



Pneutorque<sup>®</sup> PTM-72



Pneutorque<sup>®</sup> PTM-92



## TORQUE WRENCH TESTING

The importance of keeping your torque tools in peak calibration condition is well established. In the garage environment, tools will often be owned by the mechanic rather than the business so it is imperative that there is a mechanism to assure the quality of these tools.

Many businesses achieve this by using a third party calibration service. However, it is usually more convenient to perform calibration checks in-house. Torque wrenches can be checked more frequently, immediately if a problem is suspected, and they do not need to leave the site unnecessarily. Many businesses chose to check their torque wrenches daily or before each use making an in-house torque testing facility essential.

The main reasons that more companies do not perform calibration checks on their own wrenches are the cost of testers and fears over the complexity of the testing equipment. Norbar's TruCheck™ torque wrench testers remove these concerns. They are very cost effective being significantly cheaper than most similar products on the market and simpler to use.

TruCheck was designed specifically with the needs of automotive and transport workshops in mind. This is the entry level into a range of torque measurement solutions from Norbar that is amongst the best regarded in the world.



TruCheck™

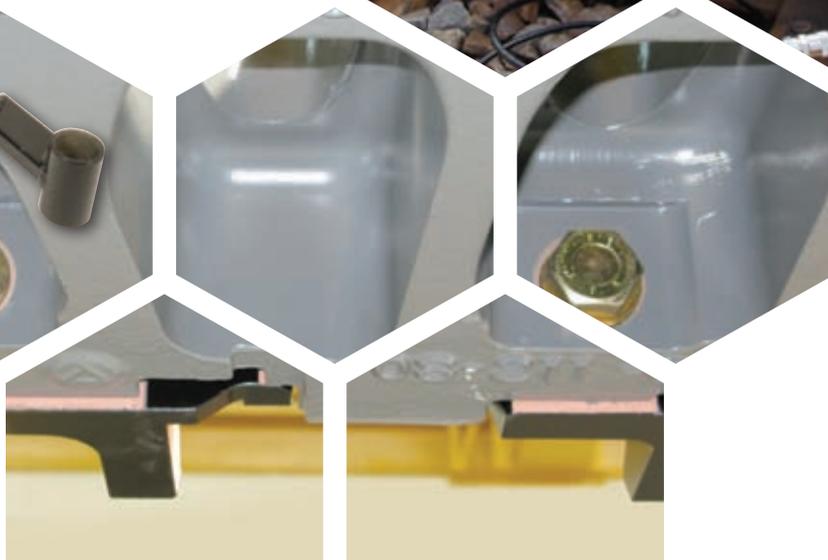
## “SPECIAL” ENGINEER TO ORDER PRODUCT SERVICE

The diverse needs of the transport industry mean that Norbar's standard products are not always suitable. This is particularly true with regard to difficult to reach bolts. Very often, specially designed reaction arms, nose extensions or offset gearboxes are essential. Norbar therefore offers an Engineer to Order service that spans a range from modified reaction arms and spanner attachments through to completely one off tools.

Prototype continuous rotation hydraulic torque tool for rail bolting



In this typical engineer to order application, the train operator was struggling to tighten the bolts pocketed into this casting. Norbar's solution was this special offset gearbox.



## GLOBAL SERVICE

Norbar is the only torque equipment manufacturer able to offer tool and instrument recalibration services to the original factory standard on four continents. The accredited laboratories in Australia, USA and Singapore use the same equipment and procedures as the factory's UKAS accredited laboratory in the UK. A further Norbar laboratory is in operation in Shanghai.



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## NORBAR PRODUCT PORTFOLIO



Torque Wrenches



Hand Torque Multipliers



Pneumatic Torque Multipliers



Torque Measurement



Torque Transducers



Ultrasonic Bolt Measurement



Calibration Services

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