



# HAITOR

Based in 1982, Haitor Oy is a Finnish industrial company providing full service of safe, precise and thereby efficient methods and equipment into the industry for tightening bolt and screw connections. Our operations cover the latest know-how in bolting, the highest quality tools on the market, tool maintenance, calibration and rental services. We tailor all the necessary technology to the needs of our customers and go alongside them from the design stage to maintenance and modernization of fastening solutions.

We offer the versatile and economical solutions for bolting industry with the long experience and latest knowledge. Our wide range of services enables flexible solutions for any industrial bolting need. We import directly from the leaders of the bolting industry guaranteeing the latest and safest tools and solutions. We offer maintenance and calibration services at our own laboratory but also at the customer's premises or elsewhere in the field, which is often the fastest and most cost-effective option. To minimize down time when tools are at service, we offer replacement tools for that time. We always have plenty of spare parts in stock which allows us to cut down maintenance time. We are able to offer all of this on competitive terms.

Our operations require knowledge and understanding of our customers' processes and needs. We are constantly working on developing our operating methods so that we can offer our customers the best equipment and service solutions in the industry. We create all the necessary technology according to the needs of our customers and take the project alongside with the customer from design to implementation and ongoing upkeeping. Thanks to our flexible and customer-based operations Haitor's customer will never been left alone.

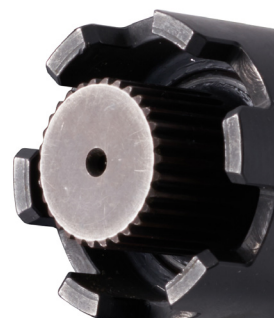


## BEST RESULTS COME WITH THE BEST TOOLS



### SALES AND SPARE PARTS

Our wide range of products covers industry leaders torque wrenches, tensioners, hydraulic cylinders and tools for torque measuring and calibrating. On top of the base models, we can customize tools for unique needs. Our services naturally include spare parts for the tools that we sell, which we have plenty in our warehouse and in addition, we deliver even rarer parts with quick delivery times.

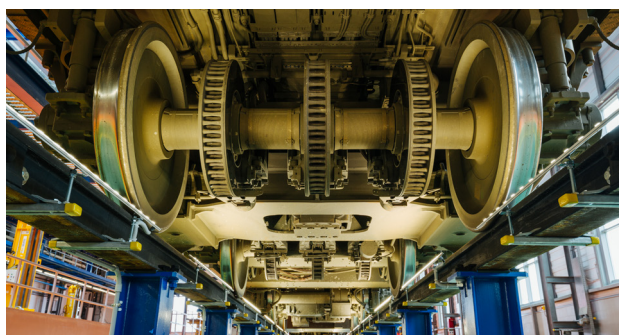


## EFFECTIVE SOLUTIONS TO UNIQUE CHALLENGES



### CONSULTING AND MEASUREMENT

We like to take part on the project from the get-go and dive in to really understand the requirements and implementations for the tools. On our experience that has been the most efficient way to ensure the best outcome. Understanding requirements and use cases helps us to offer you the best possible tool for the job. Having the right tool or the job increases the quality of the work and productivity without forgetting safety improvements. In joint analysis, we use different methods, from torque measurement to ultrasound measurement, and we apply the information we receive extensively in our customer base. We can guarantee that taking tool solutions and tightening and maintenance measures into account already at the design stage will always have a positive impact on productivity.



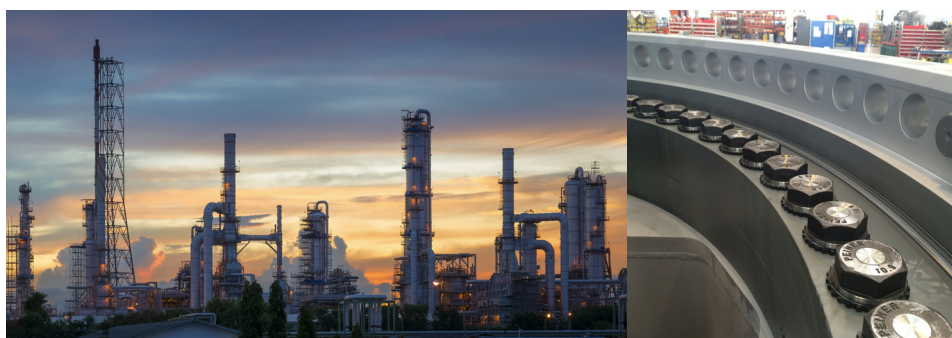


## MAINTENANCE 24/7



### MAINTENANCE

When regularly maintained, the service life of the tools is extended and the safety of use is improved. We take care of pre-maintenance, calibrations and the most demanding equipment repairs, and always take care of your tools quickly back for production use. We also offer a variety of service contracts for larger service packages. Depending on your wishes, we can carry out maintenance either on site or at our premises in Helsinki. If necessary, you will also receive a substitute tool from us during maintenance. We serve 24/7!

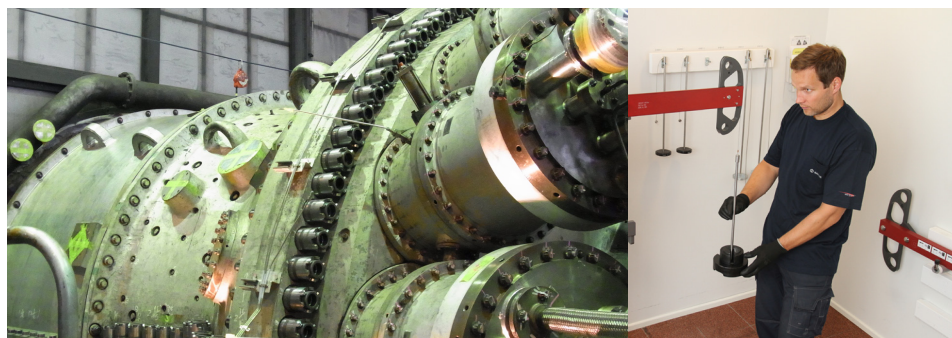


## THE ONLY ACCREDITED TORQUE CALIBRATION SERVICE IN FINLAND



### CALIBRATION

Your bolted connections will be tightened precisely to the correct torque when your tools are properly calibrated. Our accredited torque calibration service handles all torque tools and chisels and pump units with meters – regardless of the make or model of the tools. In addition, we calibrate torque sensors and measuring instruments in our FINAS-accredited calibration laboratory. Our service also includes monitoring the calibration interval of your tools in our system.



## RIGHT SOLUTION FOR SHORT TERM NEEDS



### RENTAL

Our rental service offers a full range of high-quality torque and tensioning tools, hydraulic pumps, impact sockets, hydraulic cylinders and other bolted connection tools with accessories. Get your job done quickly with the right tools. We will also be there to instruct and provide user training if necessary. With our Vuokraluotto™ service the rents you pay are accumulated as credit, which you can use if you decide to acquire the tools as your own. Also inquire about alternatives to our leasing contracts!



## SKILLED USERS - BEST OUTCOME



### TRAINING

As Finland's leading expert in bolting connections, we also offer our customers the best training in the field. You will always receive the necessary user training in connection with the receiving of equipment, and we will also organize more extensive training sessions for our customers. In this way, we ensure that everyone who uses tools knows how to tighten bolts not only efficiently, but above all safely. We can arrange trainings either in our own premises in Konala, Helsinki, or we can come to you.



# HYTORC TORQUE WRENCHES

HYTORC from the US is a pioneer in hydraulic torque wrenches and the market leader in its own field. HYTORC has been manufacturing torque tools since its founding in 1968 and has been one step ahead of the others. Today the company's patented solutions enable among other things, safe and reaction arm free tightening. HYTORC's wrenches are the standard for quality and provides the best possible accuracy quickly and accurately. Haitor has collaborated with HYTORC throughout its operations.



## HYTORC ICE

The HYTORC ICE can automatically release itself when locked on a bolt. This reduces unplanned interruptions in the bolting process. The 360° x 360° x 180° rotating hydraulic hose connector and 360° rotating reaction arm positioning ensure easy positioning at the work site. The extra strong and lightweight frame material ensure the long service life of the tool.



## HYTORC STEALTH

HYTORC STEALTH is the best and most reliable hydraulic torque wrench where space is a limiting factor. Thanks to its unique patented double-piston system, the speed of the wrench has been increased. The new piston design of the STEALTH makes the housing of the drive cylinder only as thick as the ratchet link. The lightness and safety of the wrench make it a very user-friendly tool.



## HYTORC AVANTI

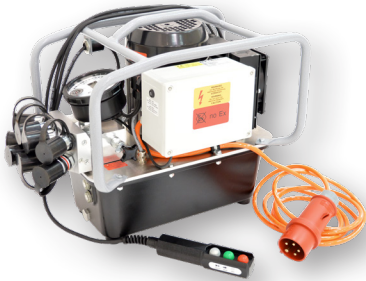
The heavy-duty HYTORC AVANTI achieves repeatably calibrated accuracy for tensioning (better than  $\pm 5\%$ ) and torque (better than  $\pm 3\%$ ). In the AVANTI, the torque is taken around the drive instead of the stern of the frame, which improves the durability and reliability of the tool. The drive cylinder and the reaction arm turn independently of each other around the bolt axis, which means there is no internal torsion in the tool, improving the already well-known durability and reliability of the AVANTI even further.



## HYTORC MXT+

The HYTORC MXT+ hydraulic torque wrench combines the best of the original MXT with the latest advances in the bolting technology including coaxial reaction drive, auto-release feature and a new cycle counter. The coaxial drive reaction combined with the rear feature provides flexibility to configure the tool in the field, eliminating the need for two separate tools. The original MXT is still available along with the MXT+.

# HYDRAULIC PUMPS AND ACCESSORIES



## HYDRAULIC PUMPS AND DUAL HOSE SETUPS

High-yield electrical and compressed-air hydraulic units are also ideal for simultaneous use of several wrenches. These pumps are equipped with precise pressure controls and designed to be compact and to keep noises under the regulation. Available with comprehensive automatic and documentation functions that meet the quality requirements. Dual hydraulic hoses together with appropriate connectors ensure the safety when working with pumps.



## HYTORC NUT

The HYTORC NUT is a 3-part tensioning system for extremely difficult applications. The special construction lets the bolt move with the inner sleeve without side loads, torsion or reaction because the nut does not turn on the flange surface.



## HYTORC WASHERS

The HYTORC Washer and J-Washer is the simplest upgrade for instant improvements in safety, speed and accuracy. This unique, patented system eliminates the need for reaction arms and other custom fixtures required to hold the tool in place. Additionally, the precision machined surface reduces variation in bolt load across the flange for improved accuracy and loosening prevention.



## HYTORC GALL-FREE NUT

HYTORC Gall-Free nut is the new anti-galling technology in a standard hex nut. The HYTORC Gall-Free nut in combination with the HYTORC Washer guarantees the elimination of galled or damaged threads during installation and removal.



## HYTORC OFFSET LINK

The HYTORC Offset Link provides an extension for HYTORC Square drive tools allowing operators to tighten bolts that are difficult or impossible to reach with limited overhead clearance or nearby obstructions. The Offset Link also work great where bolts protrude above the nut where standard sockets won't fit.



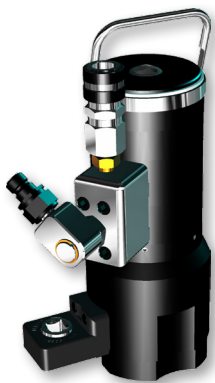
# TENSIONING

In addition to torquing, an alternative method – tensioning – can also be used for bolt connections with high tightening values. In tensioning the mechanical effort to create torque is replaced with hydraulic pressure. When the bolt has achieved preload, the nut can be rotated against the surface, which ensures an accurate and even tensile tension on the bolt. We also provide customized tensioner solutions according to the requirements of our customers applications.



## HYDRAULIC TENSIONERS

Hydraulic tensioners offer an effective alternative way for tightening bolts due to their compact size. Designed to be as versatile as possible they are well suited for most standard flange joints. Above all tractors are easy and safe to use.



## DRAWBAR TENSIONERS

Designed to tighten the wings of wind turbines assures with its quality. The built-in spring mechanism automatically returns the piston to its initial position after pressure relief, leaving the tool ready for the next tightening immediately. The replaceable lower part spacer increases the use of the tool in various work areas.



## HYDRAULIC BOLTS

Hydraulic bolts based on stretchable bolt connection technology are the recommended solution for repeatedly fastening and loosening applications where minimizing maintenance time is important. Hydraulic bolts replace standard hexagon bolts providing a fast, accurate and even tightening solutions for every bolted joint. The method can be used to tighten several bolts at the same time, while ensuring very precise tension in the joints.



## PUMPS FOR TENSIONERS

To go along with tensioners you can get manual, compressed and electric hydraulic pumps from us. All pump units are designed for demanding conditions and are supplied with a calibrated pressure gauge, quick connectors, declaration of conformity and pressure test certificate. To ensure smooth and safe operation use leak-protected high-pressure hoses and appropriate connectors.



# BATTERY AND ELECTRIC TORQUE WRENCHES

Our battery and electric torque wrenches offer a high-quality, accurate and fast alternative to fastening in light form. The low maintenance engines of the wrench are long-lasting and efficient, making them a reliable tool option for long time.



## HYTORC LITHIUM II

LITHIUM II torque wrench brings a new revolution to the series of battery-powered wrenches. Its extended features make the tool more durable and usable. Lightweight 36-volt battery-powered wrench with torque up to 6 700 Nm. A state-of-the-art solution for industrial bolting worldwide. The tool is compatible with HYTORC Washers and HYTORC Nut mounting elements.



## HYTORC LION

Representing the cutting edge of HYTORC's product development the LION is a lightweight and powerful battery-powered torque wrench suitable for professional use. Lion offers quiet, vibration-free and efficient torque power without action-limiting hoses or cables at a consumer-friendly price. The built-in computer records the results of all tightening with the wrench.



## NORBAR EBT

The Norbar EBT series' sensed battery wrenches have brushless motors and data transfer capabilities. The long and unyielding development work together with Norbar's high-quality transmission gearbox has brought to the market a battery-powered wrench set that does not bow down to others in terms of quality, speed and accuracy.



## NORBAR EVOTORQUE 2

Equipped with smart connection detection, tenaciously twisting high torque Evotorque 2 wrenches comes with impressive 200 – 6 000 Nm torque range and tightening angle measurement. For Evotorque 2 Norbar has used advanced engine technology and an engine control system to create the most accurate, durable and user-friendly electric wrench on the market.

# PNEUMATIC TORQUE TOOLS

Pneumatic torque wrenches offer vibration and noise-free solution with an excellent power-to-weight ratio. Our comprehensive range of pneumatic torque wrenches includes both one- and two-speed wrench models. All our pneumatic torque wrenches are delivered with a calibration certificate.



## HYTORC JGUN DIGITAL

With digital number display HYTORC jGun DIGITAL is pistol-style pneumatic torque wrench which does not require an external pressure control unit. The airflow control on the handle is used to set the desired torque to the wrench. The digital display directly indicates the torque value provided by the barometric pressure placed on the wrench.



## HYTORC JGUN SINGLE SPEED

Quiet and vibration-free, single-speed jGun ensures fast and easy operation – and best of all – the screws can be securely tightened to the torque value with  $\pm 5\%$  accuracy. The evenly twisting jGun meets all the requirements for noise and vibration.



## HYTORC JGUN DUAL SPEED

The two-speed model achieves clear time savings by driving screws and bolts first at higher speed to zero and then at a slower speed tenaciously twisting to the final tightening value. You can change the speed from the rotary switch on the frame.



## NORBAR PNEUTORQUE

PneuTorque is quiet – less than 85 dB(A) – and completely vibration-free torque wrench. Each PneuTorque series wrench is equipped with a strong air motor and a high-quality Norbar multiplier, which together guarantee the exact result of the screw connections. Direct-wheel drive air pressure models can reach up to  $\pm 5\%$  and models with torque sensors can reach up to  $\pm 2\%$  torque accuracy. For direct drive models the exact torque is achieved with an air pressure control unit that makes it easy to set the correct setting with the pressure torque graph that comes with the torque wrench and calibration certificate. The torque of the wrench with the torque sensor is electronically controlled by the control unit. PneuTorque models are available up to 300 000 Nm.



# WRENCHES FOR ASSEMBLY

Our product portfolio for professional torque wrenches is designed for the demanding and versatile needs for Finnish industry. As an importer and authorized representative of the labels Haitor guarantees the best service and customer support throughout the product lifecycle.



## CLECO PULSE WRENCHES

With Cleco's impulse wrench usability, reliability and repeatability come in the same package and every tightening is always handled quickly and accurately. Thanks to a comprehensive range of products, you can find the right pulse wrench for your purpose with or without the automatic cut-off function.



## TEKKOR PULSE WRENCHES

After a long-term development process, Haitor has released its own series of high-quality and cost-effective impulse wrenches. Reliable tools are ideal for professional use – the balanced and ergonomic models are both accurate and easy to use.



## CLECO PNEUMATIC WRENCHES

Cleco's pneumatic wrenches are a great choice for production applications as well as service and maintenance. There is a wide range of pistol, straight and angle models to choose from with different sizes of drivers and quick-change drivers.



## CLECO CELLCORE BATTERY WRENCHES

Cleco CellCore battery wrench series offers a reliable alternative for professionals in challenging conditions. Smart sensor-controlled battery wrenches are designed to meet the changing needs of assembly work and withstand high operating volumes. The wrench interface allows you to set tightening values even without a separate control unit.



## CLECO NEOTEK BATTERY WRENCHES

The tools are easy to use and ergonomic, guaranteed by the NeoTek series tool cable, which is thinner and more flexible than the corresponding cables of competitors. The operation of the electric wrench is controlled by clear and loud beeps and the four programmable LED light rings on the wrench handle. The wide range cover pistol, straight, angle and special torque sensors up to 850 Nm, and older models also offer a solution for reaching up to 2 000 Nm.



# SMALL SCREWDRIVERS FOR ELECTRONIC INDUSTRY

Small, electrical screwdrivers are often used in demanding applications in the electronics industry. Our range of electric screwdrivers covers models from simple, single-value switch-operated screwdrivers to advanced torque sensing wrenches.



## DOGA-SCREWDRIVERS

DOGA's switch-operated electric screwdrivers are an easy-to-use alternative to a traditional manual operated screwdriver. When you want something more advanced from your screwdrivers is power-controlled screwdrivers with angle-based tightening programs and data collection capabilities an excellent choice.

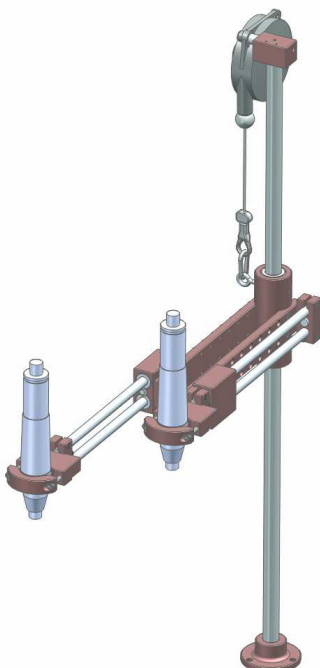


## ASG-SCREWDRIVERS

ASG is a high quality and cost-effective solution when choosing today's rational choice for your tightening needs on assembly line. ASG's wide range includes hand-operated smart wrenches as well as solutions that utilize automatic input, automation cells and cobot integrations.

# TORQUE REACTION ARMS AND BALANCERS

The function of the torque arms is to absorb the counterforce of the torque wrench, so that a conventional reaction arm is not required. In line production and repeated torquing applications this will be a significant help as the workload decreases and occupational safety improves. The torque arms also achieve better tightening accuracy than the traditional bolting methods. In addition, the torque arms support the weight of the tool in the same way as traditional lighteners.



## DOGA-REACTION ARMS

Market leader DOGA offers a comprehensive range of different torque arms with a suitable solution for all uses. The collection includes versatile linear arms, flexible articulated stems and telescopic carbon-fiber arms (so-called carbo-arm).

In addition to the basic collection, we offer various hybrid solutions that combine the features of the above-mentioned arms. Especially larger torque arms can be customized and manufactured to suit the application, for example according to dimension, tightening torque and workstation requirements.

The wide range of accessories in the torque arms includes everything that is required for efficient line work; rails, cats, brakes, handles, triggers and fixed and reversible tool holders. We also offer a wide range of traditional lighteners up to 100 kg weights.

# HAND TORQUE TOOLS AND OTHER FASTENING ACCESSORIES

**Our product range covers a very wide range of hand-operated torque chisels, wrenches and multipliers. The tools consist of a range of standard clicking models and more advanced electronic or sliding switch models.**



## TORQUE WRENCHES

All our torque keys are designed to be durable and long-lasting. In our collection you will find wide range of adjustable, single value lockable, dial measuring and digital torque wrenches for all uses. All the torque wrenches meet the requirements of ISO6789:2017 standard and we always deliver them with a valid calibration certificate.



## TORQUE SCREWDRIVERS

All our torque screwdrivers are designed to be easy to use and reliable. The accuracy of our tools exceeds the requirements of ISO6789:2017 standard and maintains accuracy after thousands of tightenings. In our collection you will find adjustable, single value lockable, dial measuring and digital torque screwdrivers, all of which are always delivered with a valid calibration certificate.



## TORQUE MULTIPLIERS

Torque multipliers are the right option for applications where it is not possible to achieve the required torque with standard methods, for example due to lack of space or force. Stainless steel torque multipliers can reach up to 47 500 Nm with accuracy better than  $\pm 4\%$ .



## IMPACT SOCKETS AND ACCESSORIES

High-quality impact sockets and bits are a critical part of the torque tool set. It is important for the smoothness and safety of the work that the right type of socket model is chosen for each application and object. Our wide range covers high-quality and durable sockets and bits from industry-leading manufacturers. We will help you to find the perfect product for any of your needs. We also manufacture customized socket solutions for our customers' needs.

# TORQUE MEASUREMENT AND CALIBRATION INSTRUMENTS

Norbar started manufacturing electronic measuring devices in the early 1970s and is today the world's leading manufacturer of torque measuring and calibration equipment. Norbar's wide range of products, from easy-to-use and cost-effective TruCheck to advanced T-BOX 2 monitors and TDMS applications, provide the perfect solution for calibrating, data collection and managing torque tools.



## TORQUE TOOL TESTER

Norbar's measuring products are known for their high torque accuracy and excellent reliability. Easy-to-use torque measuring devices provide a convenient way to ensure that the torque wrench or screwdriver produces the correct torque value.



## TORQUE TRANSDUCERS

Norbar's transducer range covers static torque sensors, rotating sensors and flange-like mountable sensors, all of which are available either Nm (.LOG) or mv/V calibration (.IND). The accuracy of the sensors has made them a top choice for many calibration laboratories around the world.



## TORQUE WRENCH LOADERS

Norbar's calibration benches provide an accurate and cost-effective method for testing and calibrating torque wrenches. Calibration benches are available with both manual and automatic functions.



## CALIBRATION BEAMS

The high-precision calibration beams for calibrating torque sensors are calibrated in Norbar's own laboratory. The calibration beams have been developed for static calibration of torque sensors and mechanical torque measuring devices and designed to minimize the uncertainties affecting the measurement result.



## MEASURING DEVICES FOR TENSIONING VALUES

The USM-3 works like a sonar to measure the elongation of a screw by various tightening methods. The device can determine the bolt elongation produced in the tightening on basis of the ultrasonic wave passing through the screw and with it the stress applied to the screw.

# HYDRAULIC CYLINDERS

BVA Hydraulics cylinders, pump units and accessories are known for their durability and excellent value for money. Single-acting hydraulic cylinders with steel and aluminum frames are reliable solutions for any situation, while double-acting hydraulic cylinders are sure choices for situations requiring reciprocating and fast movement of the piston. Our range also includes BVA's high-quality, compact and high-speed hydraulic pumps. Wide selection covers both manually used pumps and units used with either pneumatic, electric or petrol. In addition, our range also includes BVA's cost-effective spreaders, mini jacks and pullers for hydraulic cylinders – with all the accessories, of course.







## YOUR EXPERT PARTNER IN BOLTING SOLUTIONS

**Haitor Oy offers expert service in complete solutions for bolted joint applications. We sell, service, and rent hydraulic torque wrenches and torque tools. Our services also include accredited torque calibration services.**



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