




HYTORC[®]
Since 1968

THE HYTORC WASHER SYSTEM



THE WORLD'S **MOST TRUSTED**
INDUSTRIAL BOLTING SYSTEMS



For improved Safety, Speed, and Accuracy on every industrial bolting job, the HYTORC Washer is the most convenient and economical solution available today.

Used and recommended by major manufacturers in all heavy industries with millions of washers installed around the world.



THE HYTORC WASHER SYSTEM

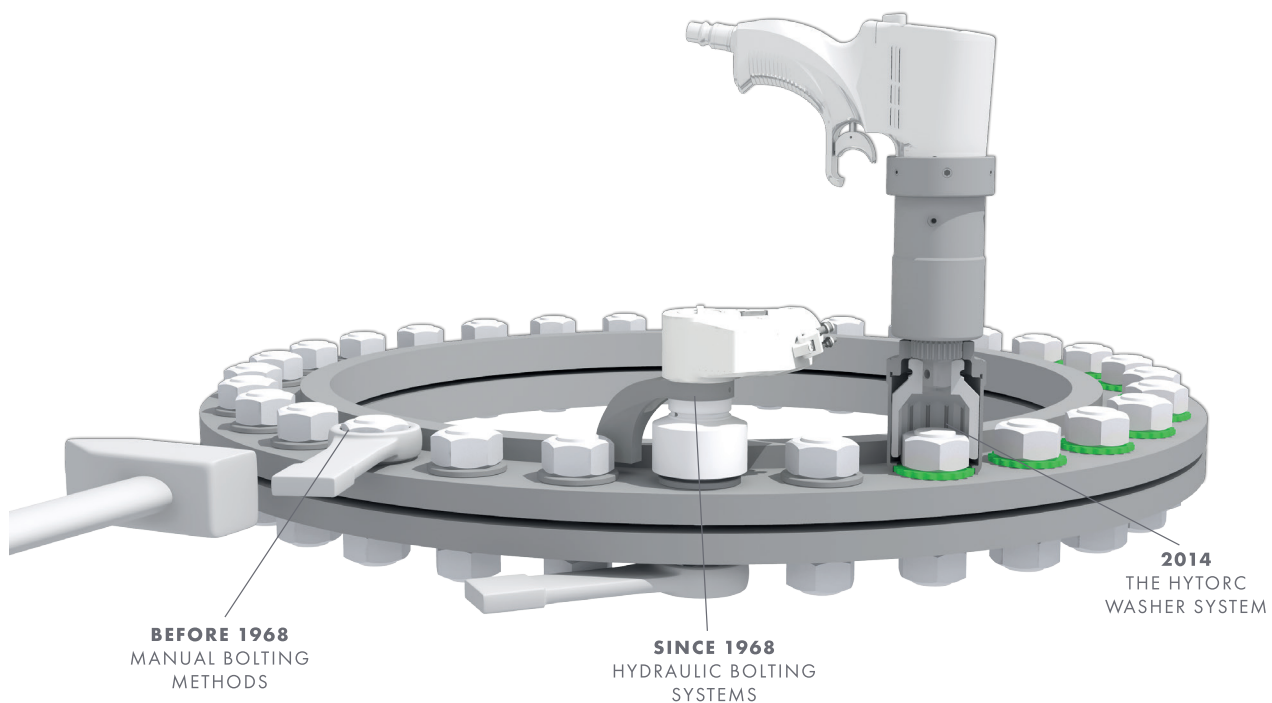
THE SIMPLE WASHER THAT ADDS SAFETY, SPEED AND ACCURACY

THE BOLTING REVOLUTION

There are many different ways to tighten and loosen bolted connections. Since 1968, HYTORC has been dedicated to improving the industry through innovative products, world-class service and worldwide training initiatives. From the first hydraulic-powered torque wrench to the latest battery-powered torque gun, HYTORC has led the industry with innovations focused on improving safety, speed and accuracy in industrial bolting.

One of the most groundbreaking innovations for industrial bolting was introduced in 2014. The HYTORC Washer changes the fundamentals of industrial bolting by eliminating the safety hazards, procedural complications and inaccuracies present in other bolting methods. Available in sizes ranging from 0.5" - 6" (M16 - M150), the HYTORC Washer is the simplest way to improve bolting methods while reducing cost.

TIMELINE OF DEVELOPMENT



THE HYTORC WASHER SYSTEM INTRODUCTION

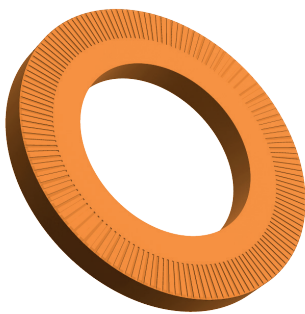
HYTORC WASHER SYSTEM



ACTIVE SIDE

The HYTORC WASHER starts the process improvement under the nut that the torque wrench is turning. Standard hydraulic, electric and air-driven torque tools need a reaction arm to abut against a fixed point. The HYTORC WASHER becomes the reaction point and eliminates the risks of hand injuries.

The HYTORC WASHER is simple and easy to use. Like every other hardened steel washer, the HYTORC Washer prevents flange surface damage and eliminates variables in friction by making the turning surface uniform across the flange.



PASSIVE SIDE

On the side opposite of the nut being turned there is often a counter nut. To prevent rotation with the bolt, this nut needs to be kept stationary by a backup wrench that abuts against a solid object. HYTORC continues the process improvement with the BACKUP WASHER, which eliminates the use of a backup wrench.

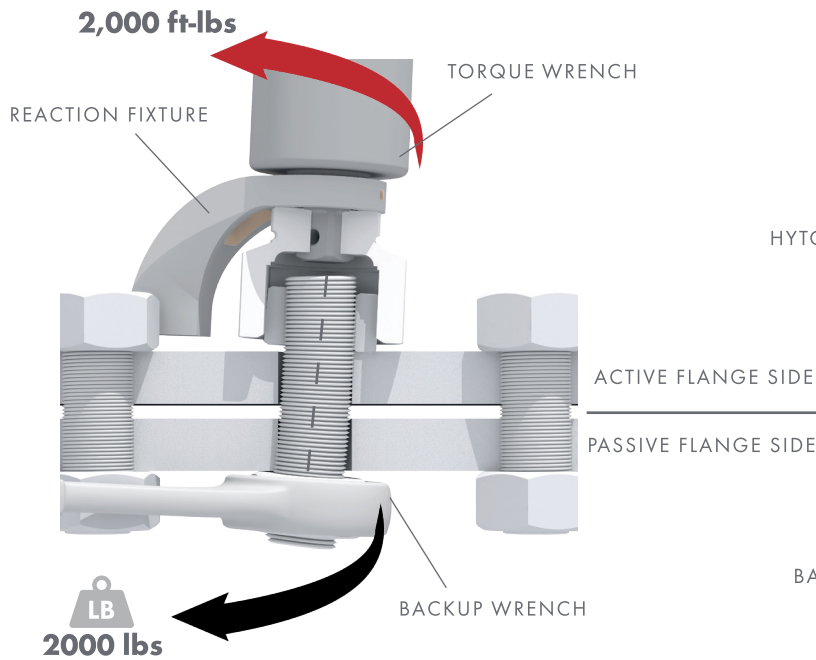
Backup wrenches add dangerous pinch points to the job; they are also inconvenient and time consuming. The BACKUP WASHER is an inexpensive alternative that can provide major improvements in safety and speed, usually leading to a return on investment after the first use.

The HYTORC WASHER SYSTEM consists of the HYTORC WASHER combined with the BACKUP WASHER. Both washers can also be used independently. Bolting has never been this safe!

THE HYTORC WASHER SYSTEM A REVOLUTION FOR INDUSTRIAL BOLTING

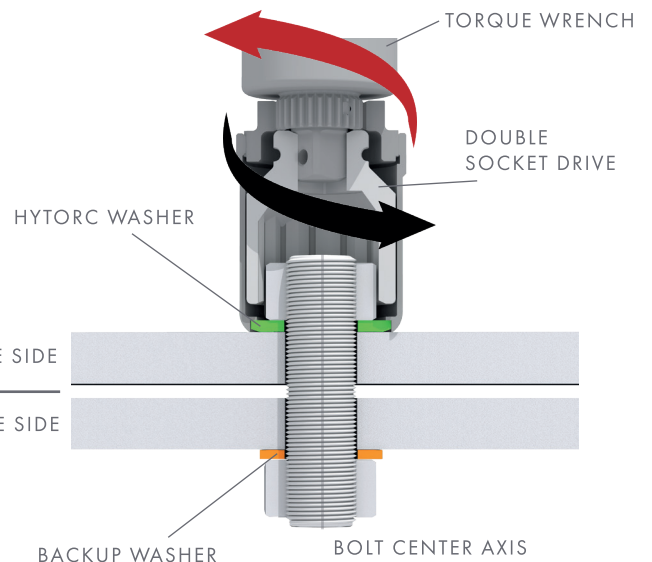
DIRECTIONAL FORCES

USING A STANDARD REACTION FIXTURE



When the reaction fixture abuts away from the bolt's center axis, side loads and bending forces are applied to the bolt.

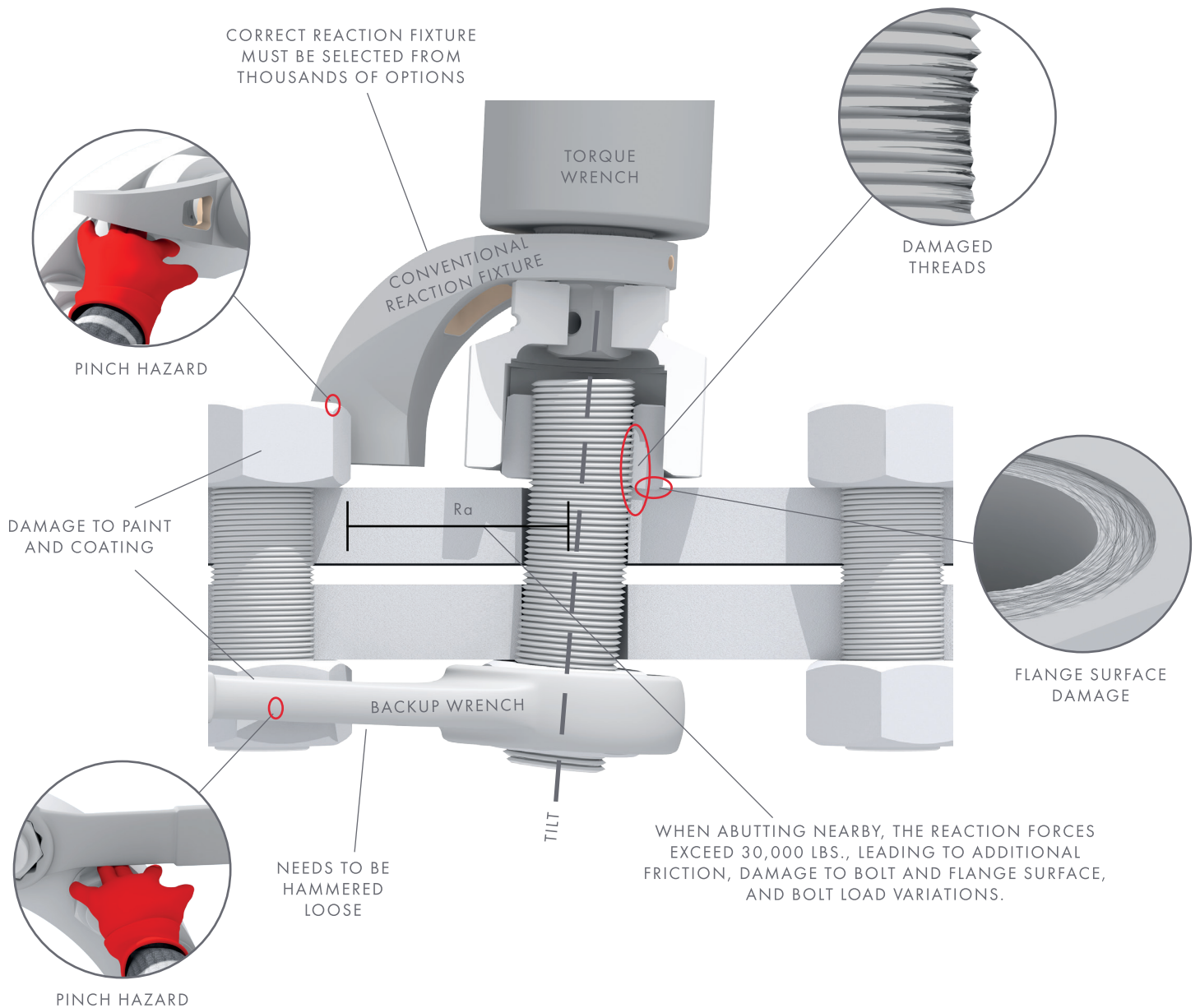
HYTORC WASHER WITH BACKUP WASHER



The HYTORC Washer enables coaxial bolting using a double drive socket. Action and reaction occur on the bolt's center axis.

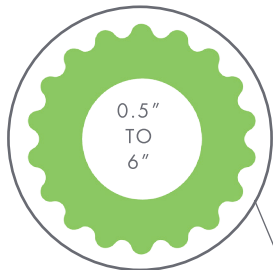
THE HYTORC WASHER SYSTEM CONVENTIONAL METHOD

CONVENTIONAL METHOD USING A REACTION FIXTURE



THE HYTORC WASHER SYSTEM A REVOLUTION FOR INDUSTRIAL BOLTING

CO-AXIAL DUAL SOCKET DRIVE

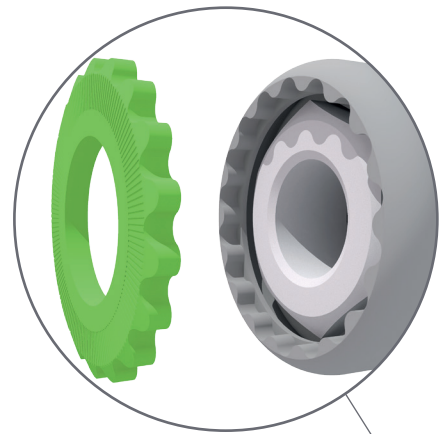
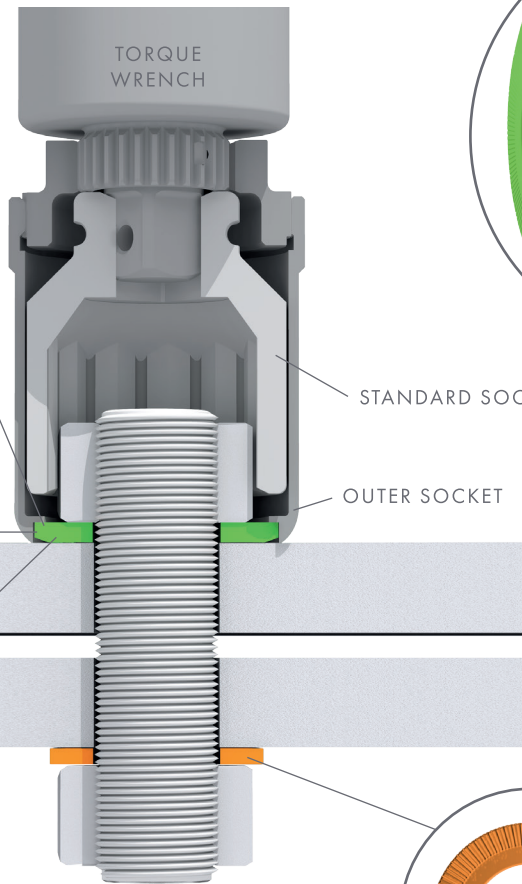


HYTORC WASHER

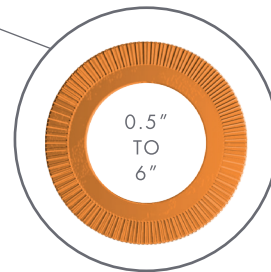
- REUSABLE DESIGN
- ECONOMICAL PRICING
- SMOOTH SURFACE IMPROVES BOLT LOAD ACCURACY
- PROTECTS FLANGE SURFACE

NO CHANCE OF PINCH HAZARD

DANGEROUS PINCH POINTS AND CUSTOM REACTION FIXTURES ARE ELIMINATED ON BOTH THE ACTIVE AND PASSIVE SIDES OF THE FLANGE.



OUTER SOCKET REACTS ON WASHER PROFILE

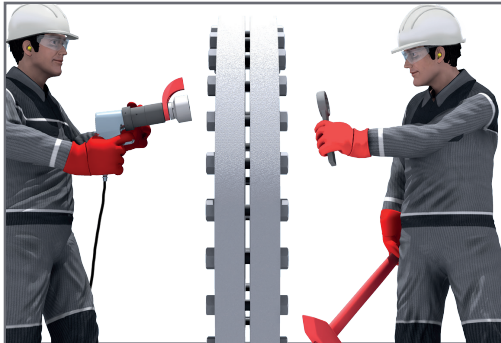


BACKUP WASHER

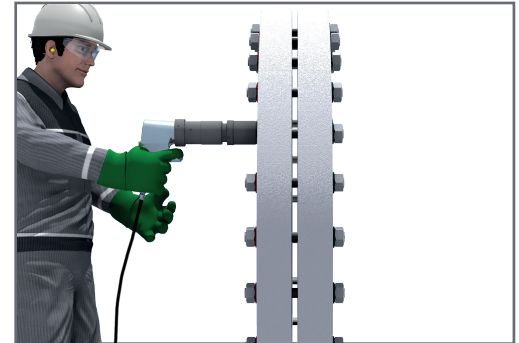
RIDGES APPLIED TO BOTH SIDES PREVENT THE COUNTER NUT FROM TURNING

THE HYTORC WASHER SYSTEM THE ADVANTAGES

CONVENTIONAL METHOD



HYTORC WASHER SYSTEM

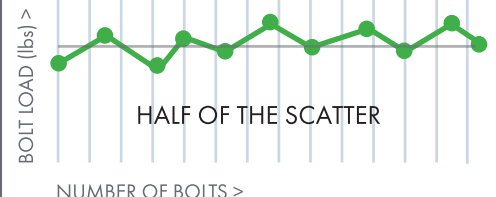
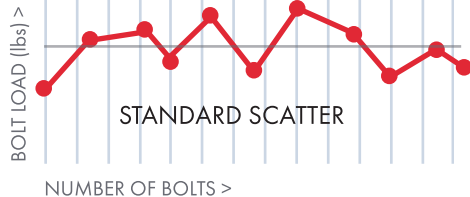


SAFETY

No pinch hazard.
Intuitive operation.
Less personnel.

EQUAL BOLT LOAD

The coefficient of friction and thus the bolt load, depends on many factors. With the WASHER SYSTEM the scatter in bolt load is cut in half.



DURABILITY

Through-hardened washers reduce surface pressure, resulting in decreased relaxation. This keeps bolt load intact over time.

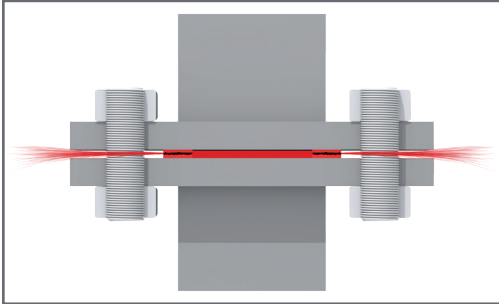


ECONOMICAL

By eliminating damaging side loads and bending forces, nuts and bolts can be reused more often and flange longevity is increased.



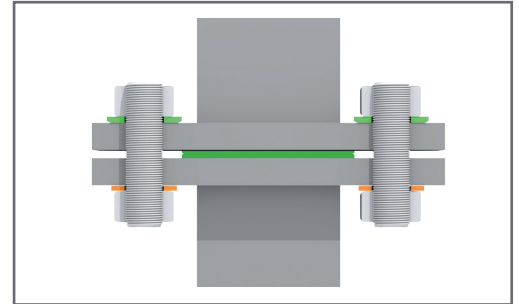
CONVENTIONAL METHOD



LEAKAGE

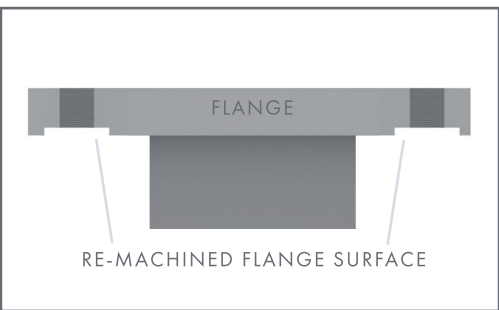
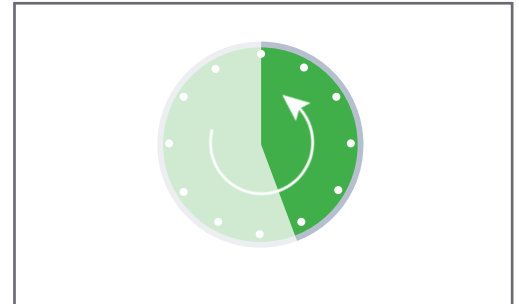
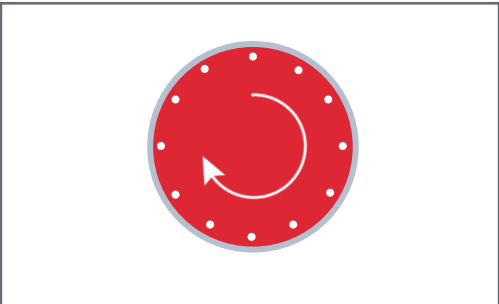
Even and accurate bolt load applies even pressure to the gasket, improving joint integrity and reducing the chance of leakage.

HYTORC WASHER SYSTEM



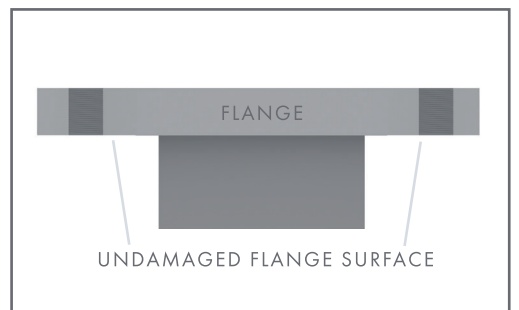
SPEED

Job time is reduced through intuitive processes and the elimination of time consuming tasks like setting up reaction fixtures and removing backup wrenches by hammer.



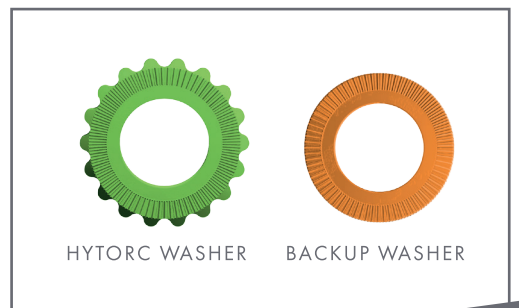
FLANGE SURFACE

The HYTORC Washer protects the flange surface eliminating the need for expensive flange resurfacing processes.



WASHER

For a complete solution, choose the HYTORC WASHER SYSTEM.

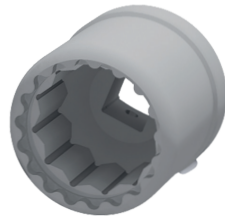


THE HYTORC WASHER SYSTEM TOOLING OPTIONS

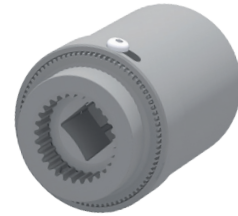
SQUARE DRIVE TOOLS

The HYTORC WASHER can be used with every modern HYTORC tool. The only accessory needed is either a double socket drive or an extra holding plate. Below you can see a cut-out of the double socket drive which can be used on all modern HYTORC tools.

DUAL SOCKET DRIVE

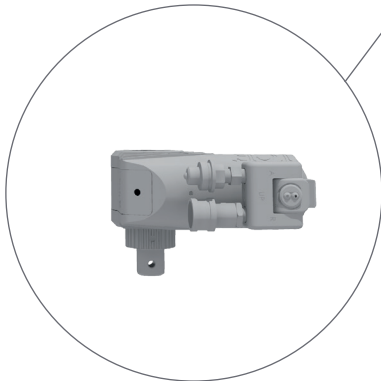


DUAL SOCKET DRIVE
BOTTOM VIEW



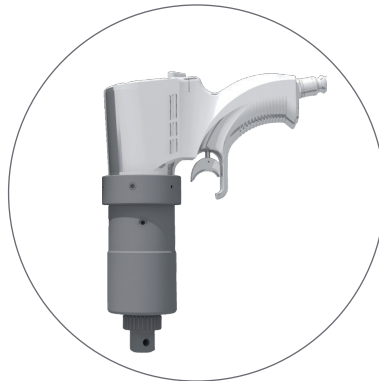
DUAL SOCKET DRIVE
TOP VIEW

**ICE
AVANTI**



HYDRAULIC

**JGUN
DIGITAL JGUN**



PNEUMATIC

**LITHIUM
FLASH**



ELECTRIC



LIMITED CLEARANCE TOOLS

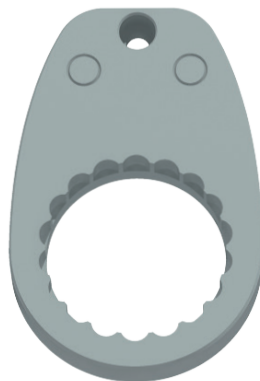
The HYTORC WASHER can be used with every modern HYTORC tool. The ratchet link with the holding plate is perfect for areas with limited overhead clearance or applications where the bolt protrudes above the nut. The offset link allows square drive tools to be used on these applications as well.

HOLDING PLATE

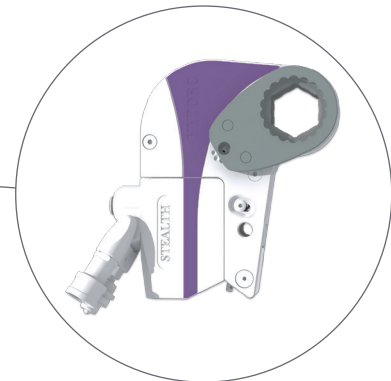
OFFSET LINK
WITH INTEGRATED PROFILE



HYDRAULIC
PNEUMATIC
ELECTRIC



STEALTH



HYDRAULIC

HIGHEST STANDARDS

The HYTORC WASHER SYSTEM meets ISO7090, ISO4759, ANSI-B18.22.1 and DIN267. ASME PCC-1-2000 and VDI2230 recommend use of a through-hardened washer on all bolted joints.

TECHNICAL INFORMATION

For technical specifications, dimensions and other information please contact your local HYTORC representative and ask for a free demonstration.



WORLDWIDE LOCATIONS

HYTORC WORLD HEADQUARTERS

MAHWAH, NJ, +1-201-512-9500

HYTORC AUSTRALIA

WESTERN AUSTRALIA, AUS, +61-8-8293-8411

HYTORC BRAZIL

RIO DE JANEIRO, BR, +55-21-2621-1911

HYTORC OF CHINA

SHANGHAI, +86-21-6254-0813

HYTORC CENTRAL EUROPE & RUSSIA

PERCHTOLDSDORF, AU, +43-1-86-51-368

HYTORC INDIA (ABS PVT. LTD)

MAHAPE, MB, +91-22-4171-4444

HYTORC JAPAN

SUGINAMI-KU, TYO, +81-3-3314-3315

HYTORC OF KOREA

KYUNGGI-DO, +82-31-708-0850

HYTORC LATIN AMERICA

MARIA DE LA PIEDAD, CTZ, +52-921-21-52760

HYTORC MIDDLE EAST

UAE, +44-7436-549468

HYTORC SINGAPORE

SINGAPORE, +65-689-789-95

HYTORC SOUTH AFRICA

MOUNT EDGECOMBE, DUR, +27-(0)315023119

HYTORC UK

CRAMLINGTON, NB, +44-1-670-363800

HYTORC has representatives in every area of the world. To find your nearest location visit:

hytorc.com/world

E: info@hytorc.com

P: +1-201-512-9500