

How to Increase Safety and Reduce Job Time in Maintenance and Production.



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HYTORC Mining Webinar
February 20th 2018

Presented By:

Mike Dolan – Chief Engineer Fasteners & PEG Director

HYTORC Mission Statement

HYTORC's Mission is to Optimize Safety, Quality and Schedule in Industrial Bolting Through Innovative Solutions and an Unyielding Commitment to Customer Satisfaction



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HYTORC Overview

HYTORC Overview

- *Invented Hydraulic Torque Tools 50 Years Ago*
- *Continuously Innovating to Make Bolting Safer and Easier*
- *Headquartered in Mahwah, NJ*
- *Over 500 Dedicated Sales Representatives Worldwide*
- *Mobile Van Technicians with Repair and Calibration Capabilities around the World*
- *Tooling can be purchased or rented*
- *Rent to own options can reduce risk and can lower the cost of ownership*



Mining Presentation Overview

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Mining
Presentation
Overview

- *Review of the Tooling Options Available from HYTORC*
- *Review of Self Reacting Technology and Benefits*
- *Review of Self Reaction Fastener Options*
- *General Application of Tooling and Self Reacting Fasteners*
- *Online Q&A Session with Remaining Time*
- *Balance of Submitted Questions will be responded to by email*



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Bolting Work in the
Mining Industry



Maintenance of Mining Equipment

- *HYTORC equipment is designed to allow for convenient and accurate loading and unloading of large bolts*
- *The size and weight of Mining equipment necessitates the use of large fasteners*
- *HYTORC offers standard tooling, making it possible to impart precise torques on bolts up to 130,000ft-lbs.*
- *HYTORC offers specialized self reacting fasteners to make the application of torque safe and convenient*



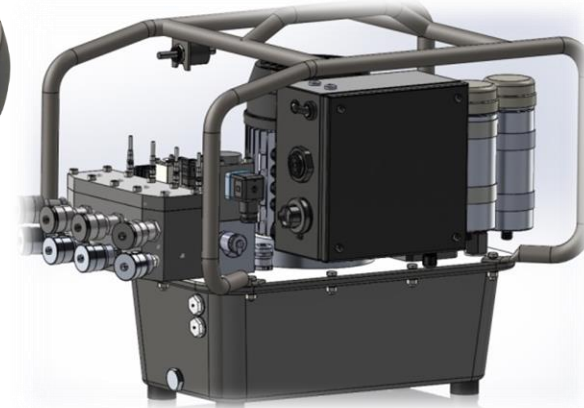
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Tooling

HYTORC Standard Tooling Lines

- *Hydraulic Square Driver Tools*
- *Hydraulic Low Clearance Tools*
- *Battery Driven Tools*
- *Pneumatic Tools*
- *Digital Power Packs*



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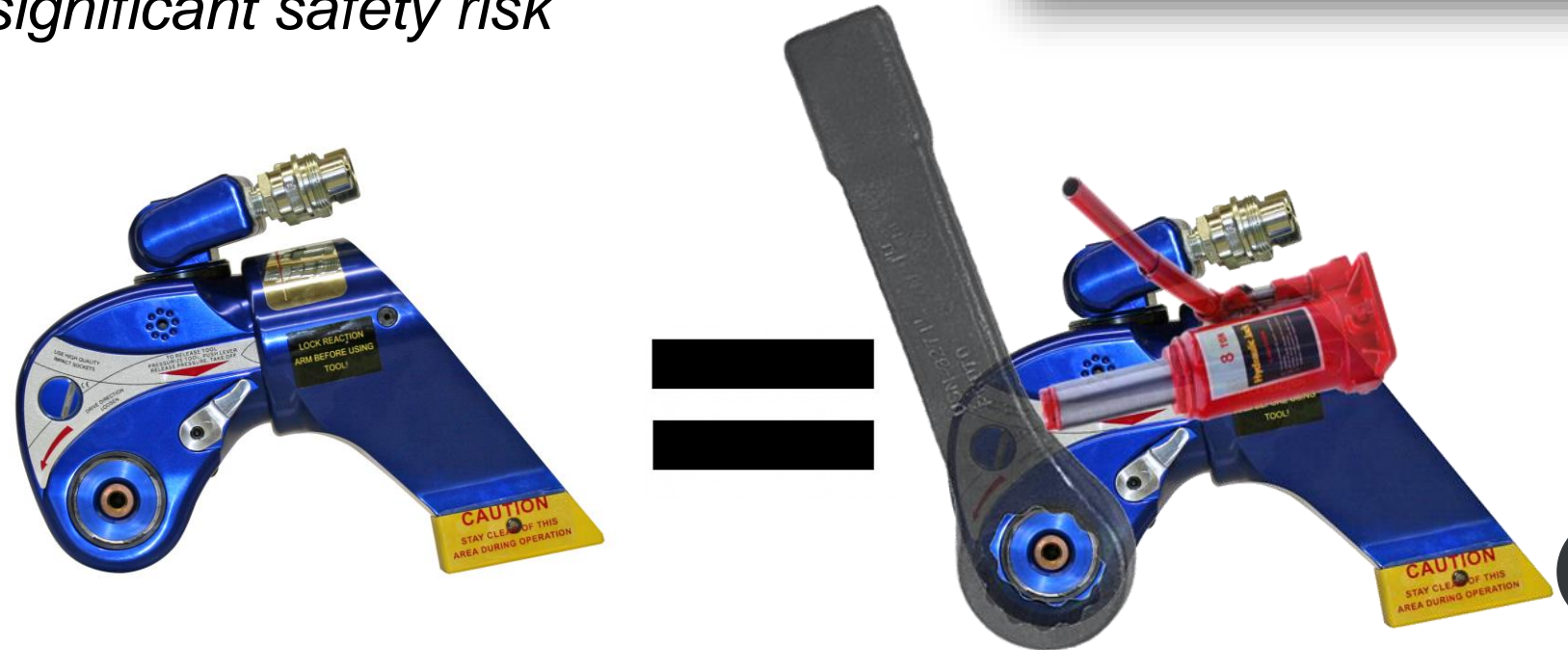
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Why Use Self Reacting Technology



Benefit of Self Reacting Fasteners

- *Conventional torque tools require the use of a reaction arm*
- *Hydraulic torque tools are essentially hydraulic jacks pushing on a short wrenches*
- *Reaction arms therefore pose a significant safety risk*





Elimination of the Reaction Arm

Washers Don't Move...

- ***EVEN IF THEY DID THE WASHER WOULD MOVE WITH NUT***
- ***HYTORC FASTENERS ALLOW THE TOOL TO REACT ON THE WASHER***



***Eliminate unsafe
reaction arm
with the addition of a
HYTORC Washer***

COMPONENTS OF THE WASHER SYSTEM



Reaction Washer

Knurled on Bottom Surface



Backup Washer

Knurled on Top & Bottom



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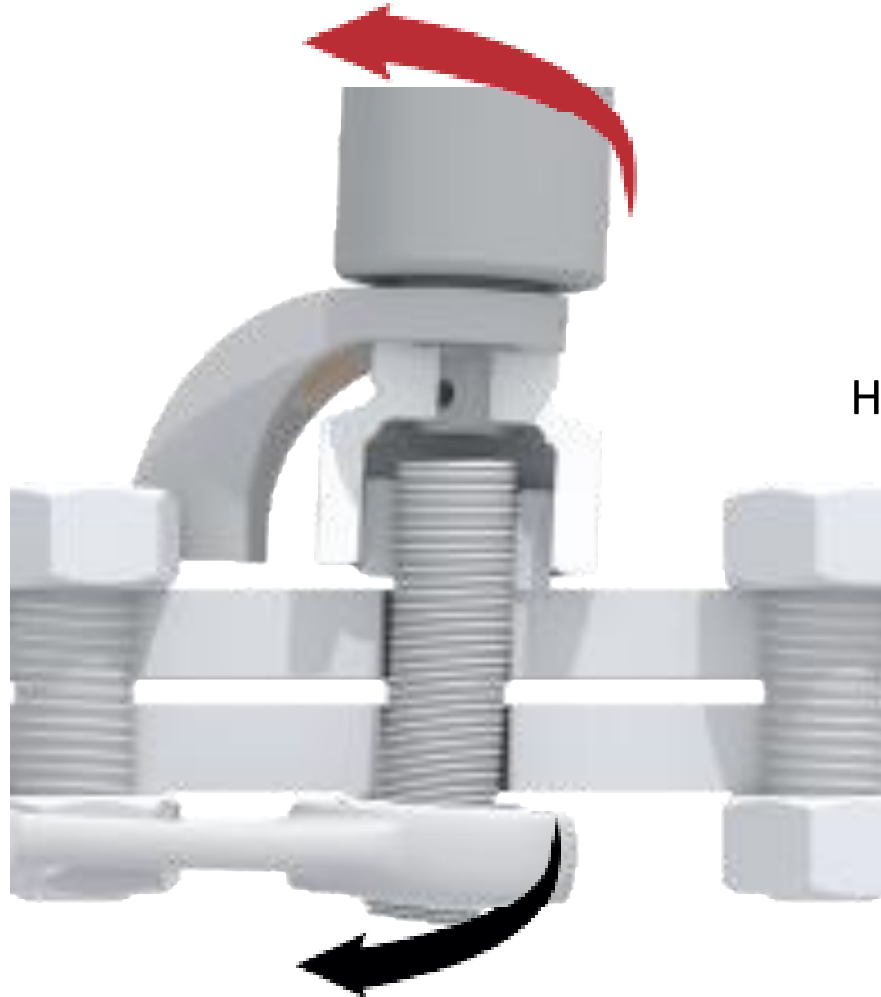
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Washer System

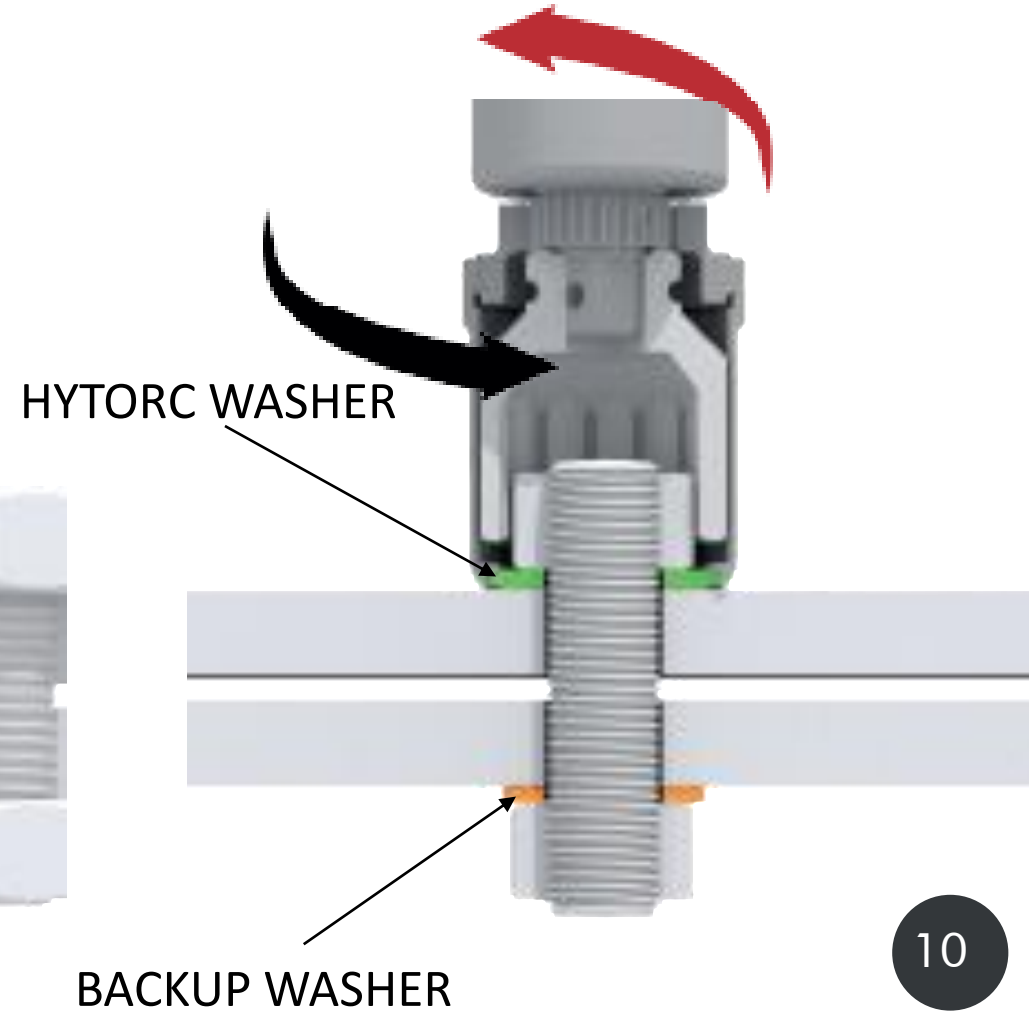


REMOVAL OF SIDE LOAD AND BACKUP WRENCHES

CONVENTIONAL SETUP

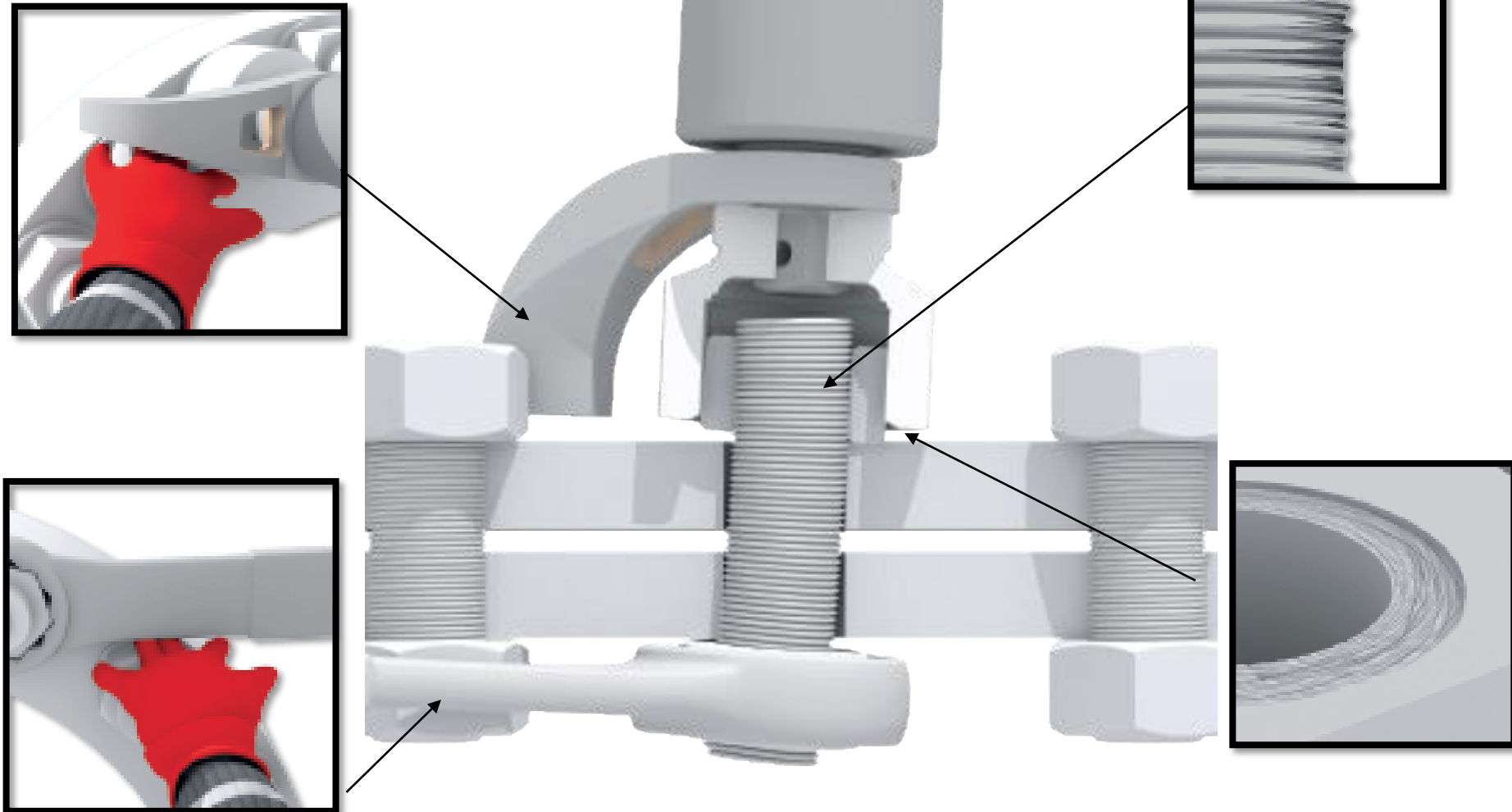


HYTORC WASHER SETUP



Safety & Quality Benefits

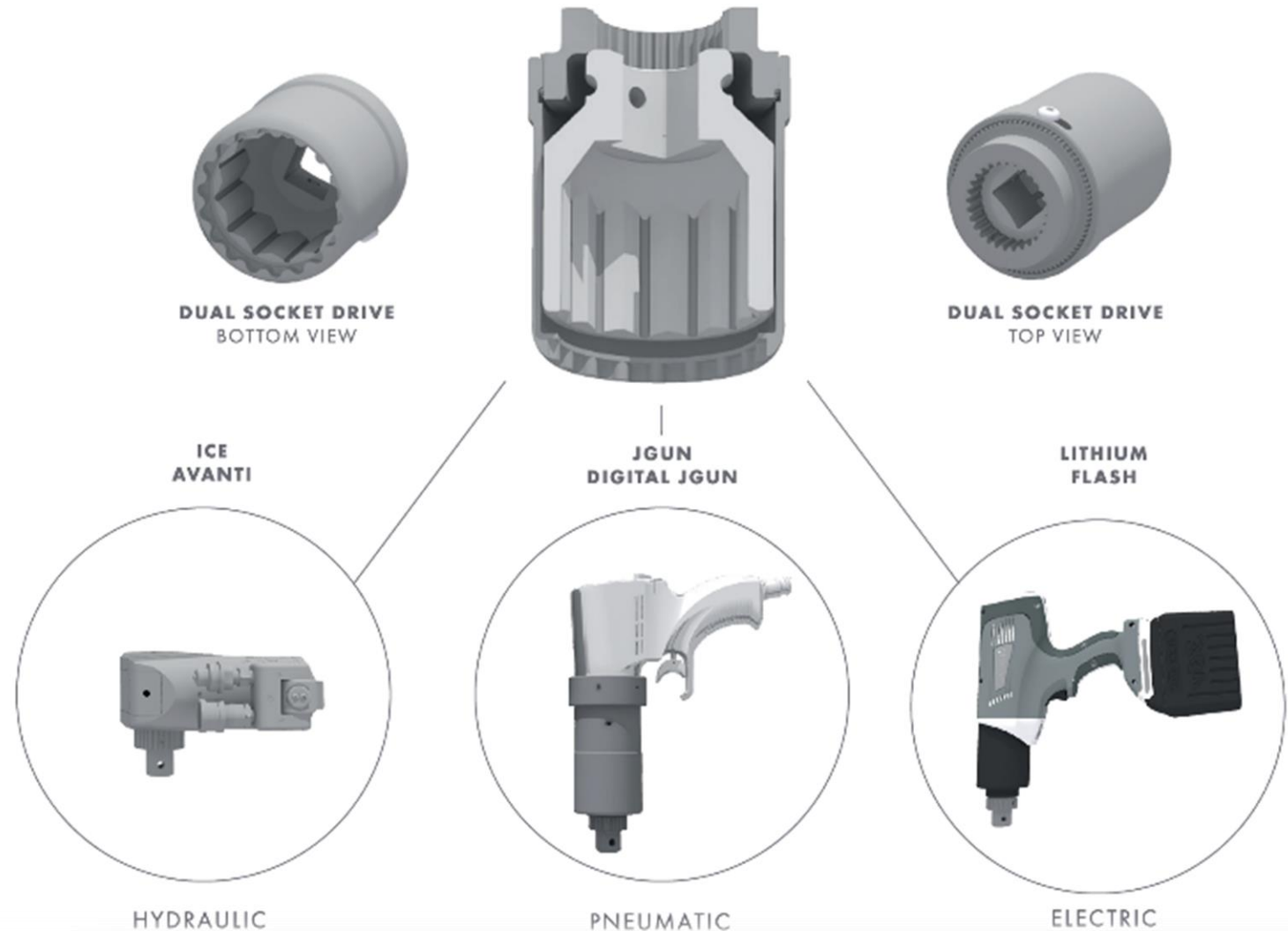
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- ADDING A WASHER & REMOVING SIDE LOAD, REDUCES CHANCES FOR BOLT OR NUT GALLING
- REMOVING REACTION ARMS AND BACKUP WRENCHES ELIMINATES THE RISK OF CATASROPHIC HAND INJURIES

SLEEVED SOCKET ASSEMBLY

- *Replaces Conventional Hex Socket*
- *Compatible with all of the Latest HYTORC Square Drive Tools*



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HYTORC WASHER MATERIAL

- **STANDARD MATERIALS MEET REQUIREMENTS OF ASTM F436**
- **SPECIAL WASHERS CAN BE MANUFACTURED TO CUSTOMER DEFINED MATERIAL AND GEOMETRY SPECIFICATIONS**
- **COMPLETE MATERIAL TRACEABILITY AND CERTIFICATION AVAILABLE**
- **HYTORC STOCKS STAINLESS STEEL AND GALVANIZED WASHERS**
- **STANDARD GEOMETRIES ARE AVAILABLE FOR HEX HEAD BOLTS, HEX NUTS AND SHCS ARRANGMENTS**



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LOW CLEARANCE WASHER HOLDING PLATE

- **Available for all Stealth Tools**
- **Retainer Available for Inverted Applications**



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36V LITHIUM GUN WITH SLEEVED REACTION SOCKET INSTALLED

- ***Battery guns available in 250, 700, 1000, 2000 & 3000ft-lb ratings***
- ***Unmatched Portability and safety by combining reaction washers with battery torque multiplying guns***



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Final Drive Bolting



HYTORC Washer Under Bolt Heads on a Haul Truck Final a Drive Application



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Front Strut
Application



HYTORC Washer System on Front Struts



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Final Drives



HYTORC Washers for Final Drive Bolting



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Crushers



HYTORC Washer with Low Clearance Stealth Tools on a Crusher



Haul Truck Wheel Bolting Applications

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Haul Truck
Wheels with
Square Drive
Tool



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HYTORC Washer on Dozer Cutting Edges Operated with Pneumatic Torque Tool

Cutting Edges
With HYTORC
Washer



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Thank You



Thank You for Attending this:

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We will be sending out detailed responses to any questions submitted during the session.

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