How do I install the HYTORC Reaction Washer?

The HYTORC Reaction Washer and J-Washer are installed with the beveled side (the side with markings) facing the flange. Apply lubrication only to the flat side facing the nut.

How do I install the Backup Washer?

Install the HYTORC Backup Washer between the flange and the back nut. If using a hex head bolt, install the Backup Washer with the chamfered (inside hole) side facing the bolt head fillet radius.

What are the benefits of HYTORC Washers?

When used with dual socket drivers and compatible bolting tools, the HYTORC Washer completely eliminates the need for reaction arms and potentially dangerous pinch points.

What is the HYTORC Washer made of?

HYTORC Washers are made of low-carbon steel (AISI4140), and are also available in stainless steel and non-ferrous materials.

Can the HYTORC Washer be reused?

Standard HYTORC Reaction & Backup Washers can typically be used several times before needing replacement. However, the J-Washer is designed for a single application only and should not be reused.

What coatings are available?

HYTORC Washers are available in a range of coatings to meet specific criteria based upon corrosion resistance, mechanical properties and environmental considerations. Please contact HYTORC for details.

Can they be adapted to fit my application?

Yes, all HYTORC Washers can be customized to fit onto specific applications.

What temperatures can they be used in?

Standard HYTORC Washers can be used in temperatures ranging from -20°F (-28.8°C) up to 750°F (399°C) for multiple use and up to 1,000°F (538°C) for a single use.

What is the shelf-life of a HYTORC Washer?

HYTORC Washers leave the factory packed with PW32 Vapor Corrosion Inhibitor (VCI) that protects them for up to 24 months. They should be stored in the original packaging away from direct sunlight in conditions below 85°F (30°C) and 50% RH.

Do I need HYTORC tools to use the Washer?

No, the HYTORC Washer can be used with conventional bolting tools; however, the safety benefits of pinch-point free bolting are only available when using HYTORC tools.

What do the knurls on the Washer do?

The knurls create resistance by increasing the friction between metal surfaces to prevent the washer from rotating.

Is the HYTORC Washer safer than other washers?

Yes. When used with dual socket drivers and compatible tools the HYTORC Washer system eliminates the need for reaction arms and a backup wrench, significantly reducing the risk of hand injury.

How can I tell if the HYTORC Washer has been installed properly?

Ensure that the beveled side is facing the flange and the flat side is facing the nut. All markings are stamped or engraved on the beveled side of the washer, and should NOT be visible when installing the nut.

What sizes of Washer are available?

HYTORC Reaction Washers and Backup Washers are available in sizes ranging from ½" to 3" imperial, and from M14 to M80 metric.

How hard is the HYTORC Washer?

Standard alloy HYTORC Washers are through-hardened and oil quenched to achieve a hardness of 38–45 HRC. Stainless steel washers usually have a hardness of 80-85 HRB, but can be custom treated up to 95HRB.

What do the markings on the Washers mean?

HYTORC Washers display the "HYTORC" name and washer size in imperial or metric. Some washers also have a number or letter indicating the particular material or finish.

Do they work on painted surfaces?

Yes. HYTORC Washers can be installed on painted or unprepared surfaces, but there may be a witness mark as a result of the knurl pressing into the painted surface.

Can they be used in transport equipment?

Yes. HYTORC Washers are well-suited for use in transportation applications, especially the new locking washer and backup washer that help maintain bolt integrity under vibration.

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Do I need a separate driver for each Washer and bolt size?

Yes, you will need to identify the appropriate washer driver for each washer and bolt size.

What if a reaction Washer gets accidentally installed upside down?

The fastener may not tighten properly. Simply reinstall the reaction washer with the beveled side facing the flange and the flat side facing the nut.

What is the lead time for large orders?

Most washers are available in-stock. We may require 3 to 4 weeks' notice for large or special orders; please contact HYTORC for availability.

Can I use HYTORC Washers in tight spaces?

Yes, as long the support tools are designed or modified for the specific application. Please contact HYTORC for your specific application.

What tools work with the HYTORC Washer?

HYTORC Washers are compatible with **ICE, AVANTI** and **STEALTH** Hydraulic Torque Wrenches, **jGun** and **jGun DIGITAL** Pneumatic Torque Tools, and **LION GUN** and **LITHIUM SERIES II** Electric Torque Tools.

Do I lubricate both sides of the Washer?

No. Lubricant is only applied to the flat side of the reaction washer facing the turning nut. Lubricant should not be applied to the side contacting the flange.

Is lubricating the HYTORC J-Washer different than for traditional reaction Washers?

No. HYTORC J-Washers are lubricated in the same manner as a traditional washer, with lubrication applied to the flat surface facing the nut. Do not lubricate the beveled side.

Will the J-Washer loosen if lubricated?

The J-Washer's anti-loosening properties will not change if the lubricant is properly applied to the flat surface only.

What will be the breakout torque required for the HYTORC J-Washer?

The HYTORC J-Washer generally requires the same breakout torque as HYTORC Reaction washers depending on the application, heat level and load requirements.

What is the limit of material hardness of flange the Washer is effective with?

There is no limit, but the washer hardness must be greater than the flange for the knurls to engage.

How does the Backup Washer work?

The Backup Washer and back nut are installed on the rear of the flange. The Backup Washer has ridges on both sides that prevent the back nut from rotating.

Does the HYTORC Washer comply with International Standards?

Yes, HYTORC Reaction and Backup Washers are manufactured to satisfy the requirements of ASTM F3394/F3394M Standard Specification for Hardened Steel Backup and Reaction Washers.

Was the HYTORC J-Washer tested by an independent laboratory?

Yes, multiple sizes of the J-Washer were vibration tested by an accredited independent testing facility.

Does the J-Washer need to be lubricated?

Yes. In order to achieve required bolt load with the same torque lubrication is required. Apply lubrication only to the flat side facing the nut.

What is the increase in breakout factor for the J-Washer?

Initial tests performed to HYTORC J-washer reveal that the washer knurl ridge positioning allow breakout with no extra torque applied.

Should I perform a survey to decide what type of material used for the J-Washer?

Always perform a survey to ensure that you specify the proper materials for the job. Consult with HYTORC for any special material conditions.

Will the new J-Washer will able to hold load even under cycling thermic conditions?

Picking the correct washer material is the correct way to properly address the thermal cycles for a particular application. Please contact HYTORC to review your specific application.

What are larger sizes for the J-Washer?

Currently the larger size of the washer is 2-1/4 for imperial and M56 for metric, but request for larger sizes will be considered.

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Is the torque to achieve the bolt load different for the J-washer?

No. The torque applied with bolting tools will be the same of the J-washer.

Will the knurled ridge of the J-Washer damage the nut?

No. Since the nuts are harder than the washers, installing the washer will only leave a witness mark, visible only after loosening the washer.

Is lead time for the J-Washer longer than for the standard washer?

No, J-Washers are usually in stock. For larger quantities an expected lead time of 3-4 weeks may be necessary. Please contact customer service for quotes and availability.

How does the J-Washer compare with other locking washer?

The J-Washer is an economical solution that has been proven effective in maintaining required bolt load in standardized vibration test conditions. The J-Washer does not require additional torque during the assembly process and provides for increased safety which other washers do not provide.

What happens if the J-Washer is installed upside-down?

The J-Washer may not tighten properly. Simply reinstall with the beveled side facing the flange and the flat side facing the nut.

Will the standard reaction washer and the J -Washer both be available?

Yes. The standard HYTORC Reaction Washer and the HYTORC J-Washer will both continue to be available. If an application does not require a locking feature, the standard Reaction Washer will be sufficient.

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