

# Tackle Block and Sheave Assembly

## Warning, Use & Maintenance Information

### WARNING

- A potential hazard exists when lifting or dragging heavy loads with tackle block assemblies.
- Failure to design and use tackle block systems properly may cause a load to slip or fall – the result could be serious injury or death.
- Failure to design lifting system with appropriate sheave assembly material for the intended application may cause premature sheave, bearing or wire rope wear and ultimate failure – the result could be serious injury or death.
- A tackle block system should be rigged by a qualified person as defined by ANSI/ASME B.30.
- Instruct workers to keep hands and body away from block sheaves and swivels – and away from “pinch points” where rope touches block parts or loads.
- Do not side load tackle blocks.
- See OSHA Rule 1926.550(g) for personnel hoisting by cranes and derricks, and OSHA Directive CPL 2-1.29 — Interim Inspection Procedures During Communication Tower Construction Activities. Only a Crosby or McKissick Hook with a PL latch attached and secured with a bolt, nut and cotter pin (or toggle pin) or a PL-N latch attached and secured with toggle pin; or a Crosby hook with an S-4320 latch attached and secured with cotter pin or bolt, nut and pin; or a Crosby SHUR-LOC® Hook in the locked position may be used for any personnel hoisting. A hook with a Crosby SS-4055 latch attached shall NOT be used for personnel lifting.
- Instruct workers to be alert and to wear proper safety gear in areas where loads are moved or supported with tackle block systems.
- Use only genuine Crosby parts as replacement.
- Read, understand, and follow these instructions to select, use and maintain tackle block systems.

### General Cautions or Warnings

Ratings shown in Crosby Group literature are applicable only to new or “in as new” products.

Working Load Limit ratings indicate the greatest force or load a product can carry under usual environmental conditions. Shock loading and extraordinary conditions must be taken into account when selecting products for use in tackle block systems. Working Load Limit ratings are based on all sheaves of tackle block system being utilized. If all sheaves are not utilized, balance must be maintained, and the working Load Limit must be reduced proportionally to prevent overloading sheave components. Changes from full sheave reeving arrangement should be only at the recommendation of a qualified person, and incorporate good rigging practices.

In general, the products displayed in Crosby Group literature are used as parts of a system being employed to accomplish a task. Therefore, we can only recommend within the working Load Limits, or other stated limitations, the use of products for this purpose.

The Working Load Limit or Design (Safety) Factor of each Crosby product may be affected by wear, misuse, overloading, corrosion, deformation, intentional alteration, and other use conditions. Regular inspection must be conducted to determine whether use can be continued at the catalog assigned WLL, a reduced WLL, a reduced Design (Safety) Factor, or withdrawn from service.

Crosby Group products generally are intended for tension or pull. Side loading must be avoided, as it exerts additional force or loading which the product is not designed to accommodate.

Always make sure the hook supports the load. The latch must never support the load.

Welding of load supporting parts or products can be hazardous. Knowledge of materials, heat treatment, and welding procedures are necessary for proper welding. Crosby Group should be consulted for information.

### Definitions

**STATIC LOAD** – The load resulting from a constantly applied force or load.

**WORKING LOAD LIMIT** – The maximum mass or force which the product is authorized to support in general service when the pull is applied in-line, unless noted otherwise, with respect to the center line of the product. This term is used interchangeably with the following terms.

1. WLL
2. Rated Load Value
3. SWL
4. Safe Working Load
5. Resultant Safe Working Load

**WORKING LOAD** – The maximum mass or force which the product is authorized to support in a particular service.

**PROOF LOAD** – The average force applied in the performance of a proof test; the average force to which a product may be subjected before deformation occurs.

**PROOF TEST** – A test applied to a product solely to determine non conforming material or manufacturing defects.

**ULTIMATE LOAD** – The average load or force at which the product fails, or no longer supports the load.

**SHOCK LOAD** – A force that results from the rapid application of a force (such as impacting and/or jerking) or rapid movement of a static load. A shock load significantly adds to the static load.

**DESIGN (SAFETY) FACTOR** – An industry term denoting a product's theoretical reserve capability; usually computed by dividing the catalog Ultimate Load by the Working Load Limit. Generally expressed for blocks as a ratio of 4 to 1.

**TACKLE BLOCK** – An assembly consisting of a sheave(s), side plates, and generally an end fitting (hook, shackle, etc.) that is used for lifting, lowering, or applying tension.

**SHEAVE / SHEAVE BEARING ASSEMBLY** – Purchased by O.E.M. or end user to be used in their block or lifting system design.

### Fitting Maintenance

Fittings, including hooks, overhaul balls, shackles, links, etc., may become worn and disfigured with use, corrosion, and abuse resulting in nicks, gouges, worn threads and bearings, sharp corners which may produce additional stress conditions and reduce system load capacity.

Grinding is the recommended procedure to restore smooth surfaces. The maximum allowance for reduction of a product's original dimension due to wear or repair before removal from service is:

1. Any single direction - No more than 10% of original dimension;
2. Two directions - No more than 5% of each dimension.

For detailed instructions on specific products, see the application and warning information for that product. Any greater reduction may necessitate a reduced Working Load Limit.

Any crack or deformation in a fitting is sufficient cause to withdraw the product from service.