SAFETY GUIDELINES

INDUSTRY STANDARDS

The American Society of Mechanical Engineers (ASME) developed standards that apply specifically to the devices Peerless Industrial Group designs and manufacturers. These standards serve as a guide to government authorities, manufacturers, purchasers and operators of below-the-hook lifting devices.

ASME B30.20-2013

- Provides detailed information on the classifications, marking, construction, installation, inspection, testing, maintenance and operation of below-the-hook lifting devices.

ASME BTH-1-2014

- Provides detailed information on the design criteria of below-the-hook lifting devices.

MARKINGS, IDENTIFICATION & GENERAL CONSTRUCTION

The rated load of the lifting device is visibly marked on the main structure of the device, as well as on a tag attached to the lifter. If the below-the-hook lifting device consists of individually detachable lifters, then each of the individual lifters shall be marked and tagged with their individual rated loads.

All Peerless Industrial Group below-the-hook lifting devices are tagged with the following information:

- Manufacturer's name and address
- Serial number
- Lifter weight, if over 100 lbs. (45 kg)
- Cold current (amps) (when applicable)
- Rated voltage (when applicable)
- Rated load
- Manufacture date
- ASME BTH-1 Design category
- ASME BTH-1 Service class

All Peerless structural and mechanical lifting devices are designed and manufactured by qualified personnel. Peerless designs are in accordance with ASME BTH-1 and take into consideration the stresses that result from the application of the rated load along with the weight of the actual lifter and are designed to ASME BTH-1 Design Category B. Service Class is determined by taking into consideration the fatigue life criteria based on the expected number of load cycles.

DESIGN CATEGORY

Design category B shall be utilized when the size, scale, and variation of loads applied to the lifter are not always predictable or clearly defined, and where the environmental and loading conditions vary or could be severe.

SERVICE CLASS

- Service Class is determined by the specified fatigue life of the lifter.
  - Service Class 0 is 0 to 20,000 load cycles.
  - Service Class 1 is 20,001 to 100,000 load cycles.
  - Service Class 2 is 100,001 to 500,000 load cycles.
  - Service Class 3 is 500,001 to 2,000,000 load cycles.
  - Service Class 4 is over 2,000,000 load cycles

SERVICE CLASS LIFE

Cycles Per Day	Desired Life (Years)				
	1	5	10	20	30
5	0	0	0	1	1
10	0	0	1	1	2
25	0	1	1	2	2
50	0	1	2	2	3
100	1	2	2	3	3
200	1	2	3	3	4
300	2	3	3	4	4
750	2	3	4	4	4
1,000	2	3	4	4	4

All welding shall be in accordance with ANSI/AWS D14.1 and ASME BTH-1

Exposed moving parts such as gears, projecting shafts and chain drives that constitute a hazard under normal operating conditions are guarded.

Electrical equipment and wiring shall comply with ANSI/NFPA 70 and ASME BTH-1.

FOR INFORMATION ON MODIFICATIONS OR REPAIRS TO YOUR LIFTING DEVICE, CONTACT PEERLESS INDUSTRIAL GROUP TO ENSURE COMPLIANCE WITH THE CURRENT ASME STANDARDS

PROOF TEST

100% OF ALL PEERLESS BELOW-THE-HOOK LIFTING DEVICES ARE PROOF-TESTED TO 125% CAPACITY AND CERTIFICATES SUPPLIED AT NO ADDITIONAL CHARGE.

Requirements & Recommendations:

Requirements of the ASME standard are noted by the word **shall**.
Recommendations of the ASME standard are noted by the word **should**.

OPERATION PRACTICES FOR LIFTING DEVICES

Below-the-hook lifting devices shall only be operated by the following qualified personnel:

- Personnel designated to operate the lifter.
- Trainees who are under the direct supervision of designated personnel.
- Personnel designated to maintenance and/or conduct testing on the lifter.
- Personnel designated to inspect the lifter.

The below-the-hook lifting device shall not be overloaded beyond its manufactured rated capacity nor shall it be utilized to handle any load that it was not designed to handle.

When rigging is utilized in conjunction with the lifter, the operator shall ensure that it is not kinked and the multiple part lines are not twisted around each other.

The operator shall ensure that the load is correctly distributed for the lifter prior to the lift.

The operator shall ensure that the temperature of the load does not exceed the maximum allowable limits of the lifting device.

The operator shall ensure that the lifter is moved into place over the load in such a way as to minimize swinging.

The operator shall ensure that sudden acceleration or deceleration of the load is prevented.

The operator shall ensure that the lifter and the load do not come into contact with any obstruction.

The operator shall ensure that the load is not transported over people.

The operator shall ensure that the lifter is not utilized for side pulls or sliding the load unless explicitly authorized by a qualified person.

The operator shall ensure that suspended loads are not left unattended.

The operator shall ensure that no person rides the load or the lifter.

The operation of the lifter shall be observed prior to and during a shift. Any observed deficiency in the lifter shall be examined by designated personnel. Any deficiency that constitutes a hazard shall be removed from service and tagged "Out of Service". All hazardous deficiencies shall be reported to qualified personnel for evaluation.

All loads shall be guided in a manner to avoid endangering any part of the body as it is lowered or accidently dropped.

Miscellaneous Operating Practices

An operator shall not utilize a below-the-hook lifter that has an "out of service" tag or has been designated as non-functioning.

Only designated personnel shall be given the authority to remove "Out of service" tags on lifting devices.

When not in use the below-the-hook device should be stored in an assigned location.

Lifter markings and tags shall not be removed or damaged. Lifter markings and tags that are missing or illegible shall be replaced.

INSPECTION

Initial Inspection:

Prior to initial use, all new, altered, modified, or repaired lifting devices shall be inspected by a qualified person to ensure compliance with the provisions of the ASME B30.20 standard.

Inspection Intervals:

Below-the-hook lifters in regular service require three general types of inspection classification procedures; every lift, frequent, and periodic. The intervals for inspection are determinant upon the severity of use of the below-the-hook device, the extent of the exposure to wear and tear, as well as any history of malfunction experienced by the lifter.

Every Lift Inspection:

A visual examination performed by the operator of the below-the-hook lifter conducted prior to and during every lift.

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Frequent Inspection:

Are comprised of visual inspections performed by either the lifter operator or other assigned personnel (records are not required by the ASME standard).

- Normal use – once a month
- Heavy use – once a week to once a monthly
- Severe use – once a day to once a week
- Special or infrequent use – outlined as specified by a qualified individual prior to and following each use.
- Any lifter that has been idle for a period of one month to a year shall undergo a frequent inspection prior to use.

The following items listed below shall be included within the regular inspection schedule and shall be thoroughly inspected and an assessment formed as to the extent of the issue and the level of subsequent hazard resulting from it.

- Structural deformation
- Cracks in welds or structural members
- Excessive wear
  - Loose or missing parts, tags, safety guards, fasteners, stops, and/or housings..
  - Out of adjustment conditions that interfere with the normal operation and functionality of all mechanisms including automatic hold and release components.
  - Contact Peerless Industrial Group for replacements of missing identification tags and nameplates.

Periodic Inspections:

Are comprised of visual inspections performed by assigned personnel who record the current condition of the below-the-hook lifter in order to provide the basis for a continuing program of recorded evaluation. Dated reports for periodic inspections shall be maintained.

- Normal use – annual inspection typically performed on-site.
- Heavy use – disassembly by a qualified individual should be performed semi-annually in order to facilitate a detailed inspection.
- Severe use - disassembly by a qualified individual should be performed quarterly in order to facilitate a detailed inspection.
- Special or infrequent use – outlined as specified by a qualified individual prior to and following each use.
- Any lifter that has been idle for a period of one year or more shall undergo a periodic inspection prior to use.

Below-the-hook lifting devices shall undergo a thorough inspection based upon the previously defined intervals of every lift, frequent, and periodic. Any and all issues such as the following (as listed below) shall be investigated and a conclusion made as to if the extent of the issue and to if it is severe enough in its nature to represent a hazard. Dated inspection reports of the following critical items shall be made.

- All requirements outlined within the frequent inspection process.
- Missing or loose nuts, bolts, or fasteners.
- Fractured gears, pulleys, sheaves, sprockets, bearings, chain and belts.
- Excessive wear of linkages, gears, pulleys, sprockets, sheaves, chain, belts, bearings, hardware, and other mechanical parts.
- Excessive wear at the bail or other load bearing points.

All repairs or modifications shall be documented on dated inspection reports.

MAINTENANCE:

Preventive Maintenance:

A preventive maintenance program shall be established and be based on recommendations made by Peerless Industrial Group. It can be determined to be appropriate as designated by a qualified person to add to the maintenance program following a review of the use of the below-the-hook lifter.

Any hazards disclosed during an inspection shall be corrected before the lifting device is put back into service. Any repairs and/or adjustments shall be done only under the direction of or by a qualified person.

Replacement parts shall be equivalent to the Peerless Industrial Group's specifications.

For more information or to purchase a copy of the standard, visit ASME website, www.ASME.org.

General Safety Guidelines

Peerless Industrial Group, as a manufacturer of chain, can only control the specifications of our chain products in accordance with industry and governmental standards for chain manufacturing. It would be impossible for any warning to contain all of the possible misapplication associated with the use of Peerless Industrial Group products. Our warnings are intended to identify only those risks which are most common. The responsibility and understanding of the proper safe use and application of the products in our catalog, ultimately rest with the end user. We are not responsible for the end user's assembly in which our products may be used. Failure of the product can occur due to misapplication, abuse, intentional alteration or improper maintenance. Product failure can result in property damage, personal injury or death.

Working Load Limit (WLL)

The "Working Load Limit" (rated capacity) is the maximum load that shall be applied in direct tension to an undamaged straight length of chain, strap or fittings.

Proof Test

The "Proof Test" (manufacturing test force) is a term designating the minimum tensile force which has been applied to a product under constantly increasing force in direct tension during the manufacturing process. These loads are manufacturing integrity tests and shall not be used as criteria for service or design purposes.

Minimum Breaking Force

The "Minimum Breaking Force" is the minimum force at which the product during manufacture has been found by testing to break when a constantly increasing force is applied in direct tension. Breaking force values are not guarantees that all chain or strap segments will endure these loads. This test is a manufacturer's attribute acceptance test and shall not be used as a criteria for service or design purposes.

The Working Load Limits and the associated safety factor of each Peerless 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 assigned Working Load Limit, a reduced Working Load Limit or whether the product must be withdrawn from service. The terms "Working Load Limit", "Proof Test" and "Minimum Breaking Force" contain no implication of what load the product will withstand if the product is used in such conditions of abuse and misuse. Peerless Industrial Group accepts no liability for any such abuse or misuse.

The Working Load Limit of a sling or assembly must not exceed the lowest Working Load Limit of the components in the sling or assembly. Use only Peerless Industrial Group approved parts as replacements when servicing or repairing original Peerless Industrial Group slings or assemblies.

All Working Load Limits (WLL) shown in this catalog apply only to new or "in as new" condition products. USE ONLY GRADE 80 OR GRADE 100 ALLOY OR GRADE 50 STAINLESS STEEL CHAIN AND ATTACHMENTS FOR OVERHEAD LIFTING.

PEERLESS INDUSTRIAL GROUP PRODUCTS ARE INTENDED TO BE USED AT OR BELOW THE WORKING LOAD LIMITS (WLL) SPECIFIED IN CONSTANTLY INCREASING FORCE APPLICATIONS UNDER DIRECT TENSION OR IN A STRAIGHT LINE PULL.

SHOCK LOADING IS PROHIBITED AND SIDE LOADING MUST BE AVOIDED, AS IT EXERTS ADDITIONAL DYNAMIC FORCES OR LOADING WHICH THE PRODUCT IS NOT DESIGNED TO ACCOMMODATE.

THE CONDITIONS INVOLVING USE IN CERTAIN ENVIRONMENTAL SITUATIONS SUCH AS UNUSUAL (HIGH OR LOW) TEMPERATURE, CHEMICAL, ETC..., CAN CAUSE CHANGES IN CHAIN PERFORMANCE.

All chains and attachments in this catalog are capable of creating sparks unless otherwise noted.

Welding Peerless Industrial Group load support parts or products can be hazardous. Knowledge of materials, heat treatment and welding procedures are necessary for proper welding.

CONSULT PEERLESS INDUSTRIAL GROUP FOR ADDITIONAL INFORMATION OR QUESTIONS REGARDING THE USE AND APPLICATION OF THE PRODUCTS COVERED IN THIS CATALOG.

FOR MORE INFORMATION REGARDING THE SAFE USE OF OUR PRODUCTS, VISIT THE TECHNICAL INFO PAGE ON OUR WEBSITE.