

ADDITIONAL FACTORS TO CONSIDER WHEN HANDLING LOADS

- Integrity of the attachment points
- Structural stability of the load
- Loose parts that could fall from load
- Power lines in the area
- Secure a clear load path and avoid any contact with objects that would impede load movement
- Tag lines can often be attached to the load and be used to aid in controlling load positioning

FOR ADDITIONAL INFORMATION

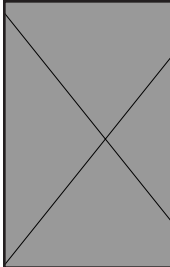
This bulletin does not contain all of the information that may be necessary to ensure the safe use of web slings. Some additional sources of training information include:

- WSTDA WS-1 Recommended Standard for Synthetic Web slings
- ASME B30.9 Sling Standard
- OSHA 29 CFR 1910.184 Regulations
- Lift-All Catalog and website at www.lift-all.com
- Rigging handbooks

Call for information on Sling Inspections and Safety Seminars.

800-909-1964

GAS BOTTLE WEB CRADLE SAFETY BULLETIN 034



WARNING

Failure to Read, Understand and Follow the information in this bulletin may result in severe **INJURY** or **DEATH** due to sling failure and/or loss of load. This bulletin contains important safety information. It **DOES NOT** contain all of the information you need to know about handling, lifting and manipulating materials and loads safely. It is your responsibility to consider all risk factors prior to using any rigging device or product.

1. **Sling users must be trained** in operating practices, including sling selection, use, inspection, rigging practices, cautions to personnel, and effects of environment.
2. **Inspect sling at least daily** and remove from service if damaged.
3. **Protect sling from being cut or damaged** by corners, protrusions, or from contact with edges that are not well rounded (Table 3-1), using material of sufficient strength, thickness and construction to prevent damage.
4. **Use sling properly** - Do not exceed a sling's rated capacities and always consider how the sling angle affects the amount of tension on the sling (See Table 4-1).
5. **Stand clear of load.** Do not stand on, under or near a load, and be alert to dangers from falling and moving loads, and the potential for snagging.
6. **Maintain and store sling properly.** Sling should be protected from mechanical, chemical and environmental damage.

1. CRADLE USERS MUST BE TRAINED AND KNOWLEDGEABLE

Cradle users must be knowledgeable about the safe and proper use of cradles and be aware of their responsibilities as outlined in all applicable standards and regulations.

If you are unsure whether you are properly trained and knowledgeable, or if you are unsure of what the standards and regulations require of you, ask your employer for information and/or training— **DO NOT** use web slings if you are unsure of what you are doing. Lack of skill, knowledge or care can result in severe **INJURY** or **DEATH** to you and others.

2. INSPECT CRADLE FOR DAMAGE

Damage to a web cradle can significantly reduce its capacity to hold or lift loads and increases the chance that the sling will fail during use. If you are not sure if a cradle is damaged, **DO NOT USE IT**.

2a. HOW TO INSPECT CRADLES

Perform a visual inspection of the entire cradle and feel along its entire length for any of the types of conditions listed in Table 2-1.

2b. REMOVAL FROM SERVICE

Remove cradle from service immediately if **ANY** of the listed types of damage are detected.

Never ignore cradle damage or attempt to perform temporary repairs of damaged slings (e.g., tie knots in the sling, etc.).

REMOVAL FROM SERVICE CRITERIA:

- Holes, tears, cuts, snags or embedded materials.
- Excessive abrasive wear.
- Exposed red core warning yarn if provided.
- Broken or worn stitches in the load bearing splices.
- Identification tag is missing or not readable.
- Sling has been tied into one or more knots.
- Signs of ultraviolet (UV) light degradation
- Any heat or chemical damage, i.e. acid or alkali burns, melting or weld spatter.
- Fittings with any cracks, excessive wear, or other damage, such as deformation, corrosion, or pitting.
- Hooks with throat opened more than 15% or twisted more than 10 degrees out of plane.
- Any conditions which cause doubt as to the strength of the sling.

TABLE 2-1.

2c. ENVIRONMENTAL CONSIDERATIONS AND OUTDOOR USE

Exposure to sunlight, and other environmental factors such as dirt or gritty matter and cyclical changes in temperature and humidity, can result in an accelerated deterioration of web cradles. The rate of this deterioration varies with the level of exposure and with the thickness of the cradle material.

Visible indication of such environmental deterioration can include the following:

- Fading of webbing color
- Uneven or disoriented surface yarn of the webbing
- Shortening of the cradle length
- Reduction in elasticity of the cradle due to an exposure to sunlight, often evident by an accelerated abrasive damage to the surface yarn of the cradle
- Breakage or damage to yarn fibers, often evident by a fuzzy appearance of the web
- Stiffening of the web, evident when web cradles are exposed to outdoor conditions

SUNLIGHT / UV EXPOSURE SERVICE LIFE

Nylon and polyester web cradles possess a limited useful outdoor service life due to the degradation caused by exposure to sunlight, or other measurable sources of UV radiation.

Lift-All web cradles that are regularly exposed to outdoor conditions should be identified with the date they are placed into service, and should be proof tested to twice its rated capacity every six months.

Lift-All nylon and polyester web cradles shall be permanently removed from service when the cumulative outdoor exposure has reached the limits shown in Table 2-2.

TABLE 2-2 – OUTDOOR EXPOSURE LIMITS
2-YEARS FOR WEB CRADLES

2d. INSPECTION FREQUENCY

Initial Inspection - Each new cradle must be inspected by a designated person to help ensure that the correct cradle has been received, is undamaged, and meets applicable requirements for its intended use.

Frequent Inspection - The cradle must be inspected by a designated person before each day or shift in **Normal** service conditions, or before each use in applications where a rapid rate of cradle wear or other degradation may exist (**Severe** service conditions).

Periodic Inspection - Every cradle must be inspected "periodically". The designated person should be someone other than the person performing the frequent inspection.

The frequency of periodic inspections should be based on the cradle's actual or expected use, severity of service, and experience gained during the inspection of other cradles used in similar circumstances, but must not exceed a one year interval. General guidelines for the frequency of periodic inspections are:

- Normal service—yearly
- Severe service—monthly to quarterly
- Special service—as recommended

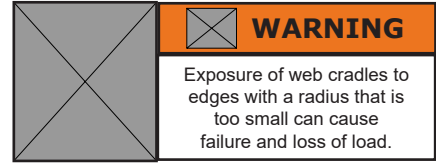
A written record of the most recent periodic inspection must be maintained. (See WSTDA WS-1 for definitions of service conditions.)

3. PROTECT CRADLE FROM DAMAGE

ALWAYS protect web cradles from being cut or damaged by corners, edges and protrusions using protection sufficient for each application.

Do not ignore warning signs of misuse. Cut marks detected during any cradle inspection serve as a clear signal that cradle protection must be added or improved.

3a. EXPOSURE OF CRADLES TO EDGES



Edges do not need to be "sharp" to cause failure of the cradle. Chamfering or cutting off edges is not an acceptable substitute for fully rounding the edges to the minimum radius. Cradles can also be damaged from contact with edges or burrs at the cradle connections.

3b. CRADLE PROTECTION

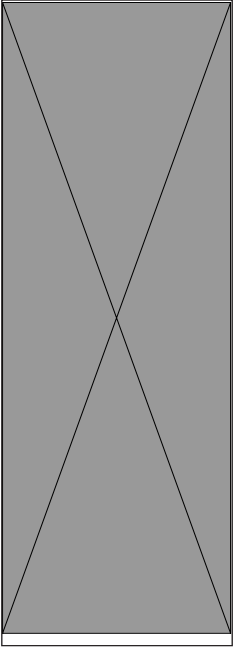
A qualified person must select materials and methods that adequately protect cradles from edges or surfaces. Lift-All offers a variety of patented cut protection products, including Edge Defender® cut protection pads and Sling Shield® aluminum corner protectors.

However, as **no protective device is 'cut proof'**, several 'test' lifts (done in a non-consequence setting), should be performed as necessary to determine the suitability of protection devices for each application. After each 'test' lift, inspect all slings and protection devices for damage.

4. CRADLE SELECTION AND USE

In order to safely lift a load and not exceed the cradle's rated capacity, a qualified person must select cradles having suitable characteristics and consider the following:

- **Load information** including size, shape, weight, composition, and center of gravity.
- **Lifting conditions** including overhead clearance, temperature, and chemicals.
- **Hoisting equipment and attachment options** including the number and method of connections to the load.



4a. RIGGING CONFIGURATION AND LOAD STABILITY

A qualified person must review each lift and create a rigging plan. This process should consider:

Load Control and Stability: A qualified person must choose the number of cradles needed to effectively maintain load control. Resistance to tipping must be maintained if the cradles are attached below the center of gravity.

Cradle Securement: Each cradle must be hitched to prevent slippage, yet not restrict the cradle from maintaining uniform tensioning.

4b. CRADLE CAPACITY & THE EFFECT OF ANGLES

Do not exceed the cradle's rated capacity or the capacity of any of the components of the rigging system.

Cradle Capacity: Determine the load weight, the tension applied to each cradle, and verify that the amount of tension applied to the cradle does not exceed its capacity for the chosen hitch.

4c. CRADLE HARDWARE AND CONNECTIONS

Connection surfaces must be smooth to avoid abrading or cutting web cradles.

4d. AVOID ACTIONS THAT CAUSE DAMAGE TO CRADLES

- Using hooks, shackles or other hardware that have edges or rough surfaces.
- Twisting, kinking or knotting the cradle.
- Using cradles to pull on stuck or constrained objects.
- Pulling cradles from under loads when the load is resting on the cradle – place blocks under load if feasible.
- Dropping or dragging cradles on the ground, floor or over abrasive surfaces.
- Shortening or connecting cradles by knotting, twisting, or other methods not approved by the cradle manufacturer or qualified person.
- Exposing cradles to temperatures above 200°F (90°C), or below -40°F (-40°C).
- Driving over cradles with a vehicle or other equipment
- Accelerating or decelerating the load too quickly, also known as **shock loading**.
- Exposing cradles to damaging acids or alkalis.

5. ALL PERSONNEL MUST REMAIN CLEAR OF LOADS AND ALERT TO RISKS

To prevent possible injury when using cradles, all personnel must:

- Stand clear of lifted loads and never be under, on, or near suspended loads.
- Avoid placing any parts of the body between the cradle and load, or between the cradle and lifting hook or connections.
- Be alert to the potential for the cradle to become

6. MAINTAIN AND STORE CRADLES PROPERLY

Attempt to keep cradles clean and free of dirt, grime and foreign materials. If cradles are cleaned, use only mild soap and water. Also:

- Do not use bleaching agents.
- Do not machine wash or tumble dry cradles, as this can significantly reduce their strength.

When not in use, cradles should be stored in an area free from environmental or mechanical sources of damage, such as weld spatter, splinters from grinding or machining,