TECHNICAL DATASHEET

1. Description

Ball Lock Stainless Steel Cable Ties are high-performance fastening solutions designed for reliable and durable bundling and securing of cables, hoses, pipes, and other components in demanding environments. Featuring a robust self-locking mechanism utilising an internal ball bearing, these ties provide excellent tensile strength and resistance to environmental factors. Manufactured from high-quality stainless steel, they offer superior resistance to corrosion, chemicals, UV radiation, temperature extremes, and fire, making them ideal for indoor, outdoor, and harsh industrial applications. Available in various sizes, materials (Grade 304 and 316), and optional coatings to suit specific requirements.

2. Key Features

- **Self-Locking Mechanism:** Internal ball bearing lock ensures a strong, secure, and vibration-resistant fastening that installs quickly and easily.
- **High Tensile Strength:** Provides reliable bundling for heavy-duty applications.
- **Excellent Durability:** Resistant to abrasion and mechanical stress.
- **Corrosion:** Highly resistant to rust and corrosion (especially Grade 316 in marine/chemical environments).
- **Temperature:** Suitable for a wide range of operating temperatures, from cryogenic to very high heat.
- **UV Radiation:** Unaffected by prolonged sun exposure.
- **Chemicals:** Resistant to a broad range of chemicals, oils, and solvents.
- **Fire:** Non-flammable base material.
- **Material Options:** Available in Stainless Steel Grade 304 (general purpose) and Grade 316 (enhanced corrosion resistance).
- **Coating Options:** Available un-coated or with Polyester/Nylon/PPA coating for added protection against galvanic corrosion, chemical resistance, edge protection, and/or colour coding.
- **Smooth Edges:** Rounded edges for safer handling and reduced risk of damage to cable insulation (especially important for coated versions).
- **Variety of Sizes:** Wide range of lengths and widths available to accommodate different bundle diameters and strength requirements.

3. Technical Data

- **Material:** Stainless Steel Grade 304 or 316 .
- **Operating Temperature :** -80°C to +538°C (-112°F to +1000°F).
- **Tensile Strength (Loop):** Varies by Width, 4.6mm Width: 800 N (180 lbs); 7.9mm Width: 1200 N (270 lbs), 10.0mm Width: 1500 N (330 lbs), 12.0mm Width: 1800 N (400 lbs), 16.0mm Width: 2400 N (528 lbs), 19.0mm Width: 3000 N (660 lbs)
- **Available Widths:** 4.6mm (0.18"), 7.9mm (0.31"), 10.0mm (0.39"), 12.0mm (0.47"), 16.0mm (0.63"), 19.0mm (0.75")
- **Available Lengths:** 100 mm to 3000 mm (4" to 118").
- **Max. Bundle Diameter:** Varies by Length.
- **Flammability:** Non-Flammable (Base Metal).
- **UV Resistance:** Excellent (Uncoated and Coated versions).
- **Chemical Resistance:** Excellent (Base Metal). Grade 316 offers superior resistance.
- **Certifications/Approvals:** CE, RoHS.

4.Applications

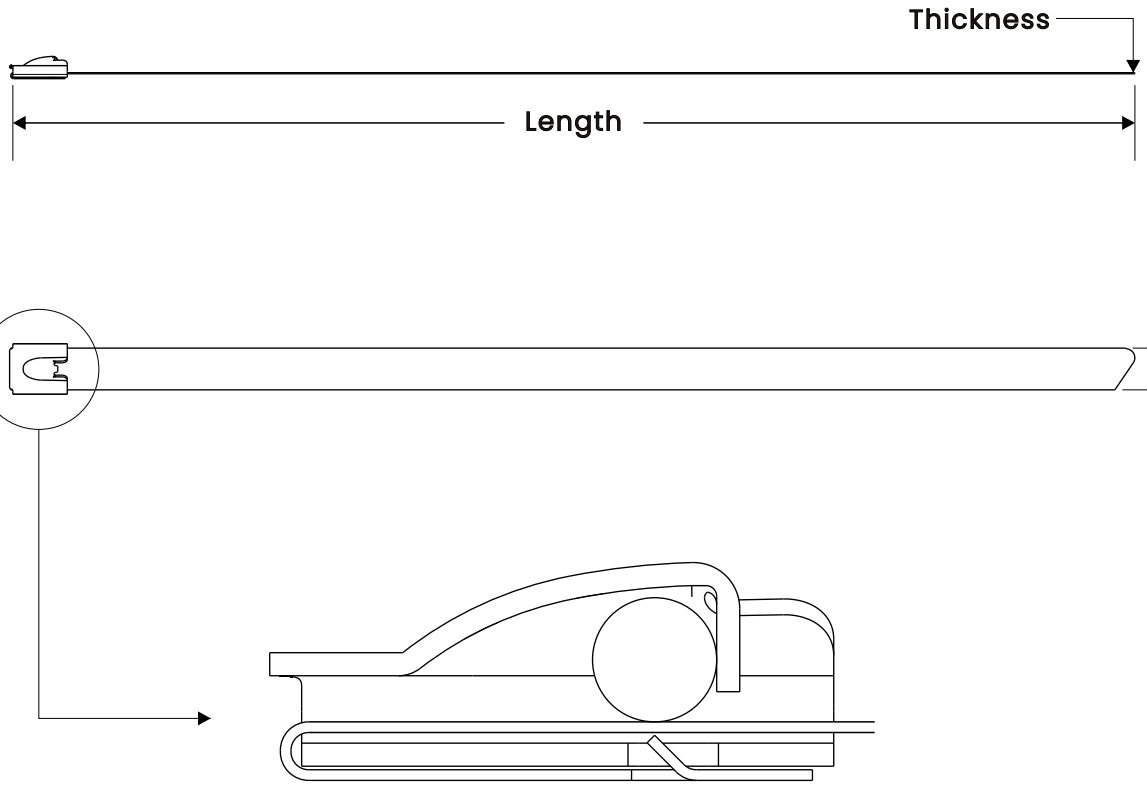
Ideal for use in harsh and demanding environments across various industries, including:

- Oil & Gas (Onshore and Offshore)
- Marine and Shipbuilding
- Chemical and Petrochemical Processing
- Power Generation (Nuclear, Conventional, Renewable Energy)
- Aerospace and Defence
- Railways and Transportation
- Mining and Tunnels
- Telecommunications (Tower Installations)
- Construction and Infrastructure
- Food and Beverage Processing (Grade 316 recommended)
- HVAC Installations
- Solar Panel Installations
- General bundling and securing where high strength and environmental resistance are critical.

5. Associated Products

- **Manual Installation Tools:** For tensioning and cutting stainless steel ties, models like LYCT01, LYCT02, LYBT004.
- **Protective Edging/Sleeving:** For protecting sensitive cables from tie edges (less critical with coated ties).

6. Specifications



Width		Thickness		Length (mm)	Optional Material
inch	mm	inch	mm		
0.18	4.6	0.010	0.25	100 ~2000	SS304 / 316
0.31	7.9	0.010	0.25	150 ~2000	SS304 / 316
0.39	10.0	0.010	0.25	250 ~2000	SS304 / 316
0.50	12.0	0.012	0.30	200 ~2000	SS304 / 316
0.63	16.0	0.015	0.40	300 ~3000	SS304 / 316
0.75	19.0	0.020	0.50	500 ~3000	SS304 / 316

Note: Any lengths from 150 to 3000mm are available for custom.
The Max Bundle Diameter = (Length-30mm)/3.14.

7.Material Specifications

- **Stainless Steel Grade 304 (SS304):** Austenitic stainless steel offering good corrosion resistance in various atmospheric and mild chemical environments. Standard choice for many industrial applications.
- **Stainless Steel Grade 316 (SS316):** Austenitic stainless steel containing molybdenum, providing superior corrosion resistance, especially against chlorides, acids, and in marine environments. Recommended for coastal areas, offshore platforms, and chemical plants.
- **Coating:** Provides electrical insulation between dissimilar metals (preventing galvanic corrosion), offers smoother edges, improves chemical resistance in specific scenarios, and allows for colour coding. Common types include:
  - **Polyester:** Good UV resistance, durable, flexible.
  - **Nylon 11/12:** Excellent chemical resistance, low water absorption, abrasion resistant.
  - **PPA (Polyphthalamide):** High-temperature performance, good chemical resistance.
  - **Halogen-Free Options:** Available for specific applications requiring low smoke and zero halogen properties.

8. Installation Guidance

- **Select:** Choose the appropriate tie length, width, material grade (304/316), and coating based on the application requirements (bundle diameter, required strength, environmental conditions).
- **Wrap:** Encircle the items to be bundled with the cable tie.
- **Insert:** Feed the tail end of the tie through the locking head. The ball lock mechanism will engage automatically.
- **Tension:** Pull the tail end tight by hand or, preferably, using a dedicated installation tool for stainless steel ties. Using the correct tool ensures proper tension without over-tightening and provides a safe, flush cut.
- **Cut:** Cut the excess tail close to the head using the installation tool. Warning: Avoid leaving a sharp protruding edge. Improper cutting can create a significant laceration hazard.
- **Safety:** Always wear appropriate Personal Protective Equipment (PPE), including safety glasses and gloves, during installation.

Disclaimer: The information provided in this datasheet is intended as a general guide and is based on typical properties. It is subject to change without notice. Users are responsible for determining the suitability of this product for their specific application through appropriate testing. The manufacturer assumes no liability for results obtained or damages incurred from the use of this product. Always follow safe installation practices.