

1. Description



Ratchet Lock Stainless Steel Cable Ties are high-performance, durable fastening solutions designed for demanding applications where strength, vibration resistance, and longevity are critical. Constructed from industrial-grade stainless steel, these ties feature a unique self-locking ratchet mechanism that ensures a secure, non-releasable hold once tensioned. The smooth, rolled edges enhance safety during handling and installation. Suitable for use in harsh environmental conditions, including extreme temperatures, corrosive atmospheres, and high vibration areas.

2. Key Features

- **High Strength & Durability:** Offers superior tensile strength compared to nylon cable ties.
- **Ratchet Lock Mechanism:** Provides a reliable, permanent, self-locking fastening that resists loosening under vibration.
- **Corrosion Resistance:** Made from stainless steel (typically Grade 304 or 316) for excellent resistance to weathering, chemicals, and saltwater.
- **Wide Temperature Range:** Suitable for operation in extreme high and low temperatures where plastic ties would fail.
- **UV Resistance:** Inherently resistant to ultraviolet light degradation.
- **Fire Resistance:** Non-flammable material.
- **Abrasion Resistance:** Robust construction withstands physical wear.
- **Safe Handling:** Smooth, rounded edges minimize risk of cuts during installation.
- **Permanent Installation:** Designed for non-releasable applications ensuring long-term bundling and securing.
- **Optional Coatings:** Available with polyester or other polymer coatings for additional edge protection and insulation between dissimilar metals.

3. Technical Data

- **Material:**
 - **Standard:** Stainless Steel Type 304 (SS304 / UNS S30400)
 - **High Corrosion Resistance Option:** Stainless Steel Type 316 (SS316 / UNS S31600) - Recommended for marine or highly corrosive chemical environments.
 - **Optional Coating:** PVC in Black
- **Locking Mechanism:** Stainless Steel Ratchet Lock (Internal Locking Teeth/Pawl)
- **Operating Temperature Range:**
 - **Uncoated:** Typically -80°C to +538°C (-112°F to +1000°F)
 - **Coated:** Typically -40°C to +150°C (-40°F to +302°F) (Varies by coating material)
- **Tensile Strength (Minimum Loop):** Varies significantly by width and thickness.
- **Available Widths:** 10.0mm (0.39"), 15.0mm (0.59"), 19.0mm (0.75").
- **Available Lengths:** 400mm (16") up to 3000mm (118") or longer.
- **Maximum Bundle Diameter:** Dependent on tie length. Manufacturer to specify for each length.
- **Thickness:** 0.25mm (0.010"), 0.40mm (0.015").
- **Resistance:** Excellent resistance to UV, chemicals, radiation, weathering, vibration, and flame.
- **Flammability:** Non-flammable.

4. 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.
- **PVC Coating:** Provides electrical insulation between dissimilar metals (preventing galvanic corrosion), offers smoother edges, improves chemical resistance in specific scenarios, and allows for colour coding.

5. Installation Guidance

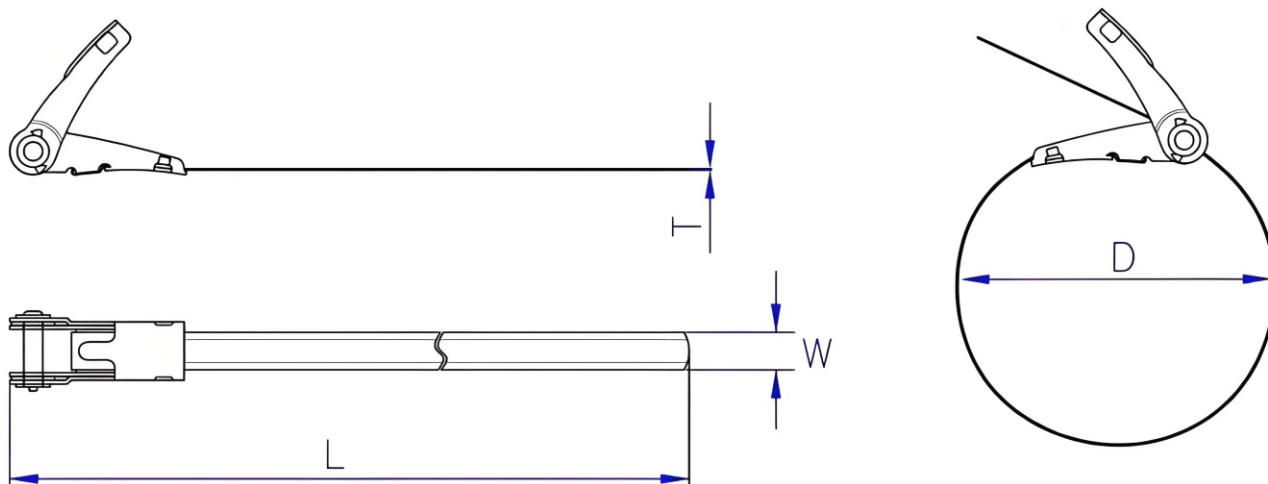
- **Wrap:** Loop the stainless steel cable tie around the items to be bundled or secured.
- **Insert:** Feed the tail end of the tie through the ratchet locking head.
- **Tension:** Pull the tail end tight manually to initially secure. Rotate the buckle lever to make the ratchet roll the tie end for tensioning.
- **Cut:** Once the desired tension is achieved, use the installation tool (or appropriate cutters) to cut the excess tail flush with the head for a safe, snag-free finish.
- **Safety:** Wear appropriate safety gloves and eye protection during installation, as cut stainless steel edges can be sharp.

6.Applications

Ideal for securing and bundling cables, hoses, pipes, and components in harsh or hazardous environments, including:

- **Industrial:** Heavy machinery, manufacturing plants, automation.
- **Marine & Offshore:** Shipbuilding, oil rigs, docks (SS316 recommended).
- **Oil & Gas:** Pipelines, refineries, exploration sites.
- **Aerospace & Defense:** Aircraft wiring, vehicle assembly.
- **Automotive:** Under-hood applications, exhaust systems, securing lines.
- **Construction:** Securing rebar, temporary structures, ductwork.
- **Utilities & Power Generation:** Power plants, substations, telecommunications towers.
- **Solar Installations:** Mounting cables and hardware.
- **Transportation:** Railways, heavy trucking.
- **Food & Beverage Processing:** Where cleanability and corrosion resistance are needed.

7. Specifications



Width		Thickness		Length (mm)	Optional Material
inch	mm	inch	mm		
0.39	10.0	0.015	0.40	300 ~3000	SS304 / 316
0.59	15.0	0.015	0.40	400 ~3000	SS304 / 316
0.75	19.0	0.015	0.40	500 ~3000	SS304 / 316

Note: Any lengths from 150 to 3000mm are available for custom.

The Max Bundle Diameter(D) = (Length-50mm)/3.14.

Disclaimer: The information provided in this datasheet is intended as a general guide. Specific performance characteristics can vary based on the application conditions and the specific product variant. Users should evaluate the product suitability for their specific requirements. Manufacturer reserves the right to change specifications without notice.