

## 1. Description



**T-Bolt Hose Clamps** are heavy-duty fasteners designed to provide a strong, reliable, and leak-proof seal for high-pressure applications and on hoses made of various materials, including silicone. These clamps feature a robust, solid band, often with rolled edges to prevent hose damage, and a T-shaped bolt that engages with a trunnion or saddle and is tightened with a nut. This design allows for a very high clamping force to be applied evenly around the circumference of the hose. T-Bolt clamps are superior to standard worm-drive clamps in terms of strength and sealing capability under demanding conditions, making them suitable for industrial, automotive (especially high-performance and turbo applications), marine, and heavy-duty vehicle use.

## 2. Key Features

- **High Clamping Force:** The T-bolt and nut design allows for significantly higher tightening torque and, consequently, greater clamping force compared to standard worm gear clamps.
- **Uniform Sealing Pressure:** Provides 360° even pressure distribution around the hose, ensuring a secure and leak-proof seal, even on irregular surfaces or with firm hoses.
- **Heavy-Duty Construction:** Features a strong, often wider, solid band and robust T-bolt, nut, and trunnion/saddle components designed for durability and high-stress applications.
- **Vibration Resistance:** The secure bolt and nut fastening mechanism offers excellent resistance to loosening caused by vibration.
- **Suitable for High-Pressure Applications:** Ideal for systems where high internal pressures are present, such as turbocharger connections, coolant systems, and industrial fluid transfer.
- **Hose Protection:** Bands typically have rolled or smooth edges to prevent cutting into or damaging the hose material, especially important for silicone or other soft hoses.
- **Corrosion Resistance:** Commonly manufactured from stainless steel or zinc-plated carbon steel to withstand corrosive environments.
- **Reusable:** Can generally be loosened and retightened multiple times without significant loss of performance.
- **Floating Bridge (on some designs):** A floating bridge or liner can be incorporated to ensure even pressure distribution and protect the hose from the bolt mechanism.
- **Welded Construction:** Often features welded construction for increased security and reliability of the T-bolt to the band.

### 3. Technical Data

- **Type:** T-Bolt Band Clamp
- **Common Materials:**
  - **Band, Trunnion/Saddle, T-Bolt:**
    - Stainless Steel (e.g., 300 series like AISI 301, AISI 304 for band/trunnion; bolt may be 300 series or a different grade like 410 for strength).
    - Carbon Steel (often zinc-plated for corrosion resistance).
  - **Nut:** Stainless Steel or Plated Carbon Steel (often a nylon insert lock nut or self-locking nut is used).
- **Typical Material Grade Combinations:**
  - **W1:** All parts zinc-plated carbon steel.
  - **W2:** Band, bridge/housing/trunnion in stainless steel (e.g., AISI 300 series); bolt and nut in zinc-plated carbon steel.
  - **W4:** All parts (band, bridge/housing/trunnion, T-bolt, nut) are stainless steel (e.g., AISI 304 or similar).
  - **W5:** All parts are high-grade stainless steel (e.g., AISI 316) for maximum corrosion resistance.
- **Band Design:** Typically a solid, non-perforated band with smooth or rolled edges.
- **Band Widths (Common):** 19mm (3/4").
- **Band Thickness (Typical):** 0.6mm (0.024").
- **Bolt/Screw Type:** T-Bolt (M-Bolt) with a hex nut (M6).
- **Clamping Diameter Range:**
  - Available in a wide range of sizes, from smaller diameters (32mm or 1.25") up to very large diameters (e.g., 200mm, 300mm or 8", 10", 12" and beyond).
  - Each clamp has a specific minimum and maximum clamping diameter.
- **Torque Specifications:**
  - **Recommended Installation Torque:** 75 in-lbs (8.5 Nm).
  - **Relevant Standards:** DIN 3017, SAE J1508.

### 4. Associated Products

- Silicone Hoses
- Reinforced Rubber Hoses
- Socket Wrenches or Spanners (for tightening the nut)
- Torque Wrenches (highly recommended for accurate installation)

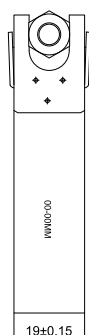
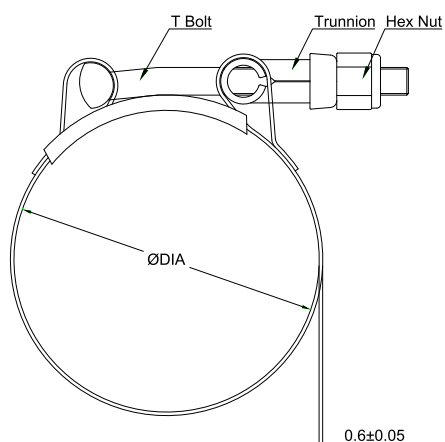
## 5. Common Applications

- **Automotive & Motorsport:** Turbocharger inlet/outlet hoses, intercooler piping, high-pressure coolant and air intake systems, exhaust joints.
- **Heavy-Duty Vehicles & Equipment:** Trucks, buses, construction machinery, agricultural vehicles for coolant, air intake, and hydraulic hose connections.
- **Industrial Machinery:** Securing hoses in high-pressure fluid and air transfer systems, pumps, compressors.
- **Marine Applications:** Engine exhaust systems, coolant lines, and other critical hose connections requiring high clamping force and corrosion resistance (stainless steel W4 or W5 recommended).
- **Irrigation Systems:** Connecting large diameter hoses.
- **Duct Systems:** Securing flexible ducting in industrial ventilation.
- **Aerospace:** Certain fluid line applications.
- **Applications with Silicone Hoses:** The smooth band and high clamping force are ideal for sealing silicone hoses without damage.

## 6. Installation Guidance

- **Select the Correct Clamp Size:** Choose a T-Bolt clamp where the outside diameter (OD) of the hose (when installed on the fitting) falls within the clamp's specified effective diameter range.
- **Position the Clamp:** Slide the clamp over the hose before fitting the hose onto the spigot or pipe.
- **Attach Hose to Fitting:** Push the hose fully onto the fitting until it is properly seated.
- **Position Clamp Correctly:** Place the clamp over the sealing area of the hose on the fitting. Ensure the band is straight and the T-bolt mechanism is accessible.
- **Tighten the Clamp:**
  - Ensure the T-bolt is correctly seated in its trunnion/saddle.
  - Use an appropriately sized socket wrench or spanner to tighten the nut on the T-bolt.
  - Tighten evenly. It is highly recommended to use a torque wrench to apply the manufacturer's specified tightening torque. This ensures optimal sealing performance and prevents over-tightening, which could damage the hose, fitting, or clamp.
- **Inspect:** Ensure the clamp is seated correctly, providing even pressure around the entire circumference, and is tightened to the correct torque.

## 7. Specifications



Code	Diameter (mm)	Band Width (mm)	Band Thickness (mm)
TB040	35-40	19	0.6
TB043	38-43	19	0.6
TB046	41-46	19	0.6
TB049	42-49	19	0.6
TB054	47-54	19	0.6
TB060	52-60	19	0.6
TB064	56-64	19	0.6
TB067	59-67	19	0.6
TB071	63-71	19	0.6
TB078	70-78	19	0.6
TB083	74-83	19	0.6
TB089	80-89	19	0.6
TB095	86-95	19	0.6
TB101	92-101	19	0.6
TB104	96-104	19	0.6
TB117	109-117	19	0.6
TB124	116-124	19	0.6
TB130	122-130	19	0.6
TB136	129-136	19	0.6
TB140	132-140	19	0.6
TB146	138-146	19	0.6
TB149	141-149	19	0.6
TB155	147-155	19	0.6
TB162	154-162	19	0.6
TB168	160-168	19	0.6
TB174	166-174	19	0.6
TB181	173-181	19	0.6
TB187	179-187	19	0.6
TB195	187-195	19	0.6

Please contact sales for customizing other specific sizes.

## 8. Maintenance & Safety

- **Proper Installation Torque:** Adhering to the specified installation torque is critical for achieving the designed clamping force and ensuring a reliable, leak-free seal. Under-tightening can lead to leaks or hose blow-off, while over-tightening can damage the hose, fitting, or the clamp itself.
- **Inspect Periodically:** In critical or high-vibration applications, periodically inspect clamps for any signs of corrosion, damage, or loosening. Re-torque if necessary, following manufacturer guidelines.
- **Material Compatibility:** Ensure the clamp materials (especially stainless steel grades) are compatible with the operating environment (e.g., fluids, chemicals, temperature, saltwater exposure) to prevent corrosion.
- **Hose Condition:** Ensure the hose is in good condition before clamping. Do not use T-Bolt clamps on damaged or deteriorated hoses.
- **Safety Equipment:** Wear gloves when handling and installing clamps, as band edges can be sharp. Wear safety glasses if there's any risk of flying debris or during high-pressure system testing.

**Disclaimer:** This datasheet provides general information typical for T-Bolt Hose Clamps. Specific technical data, materials, performance characteristics, and installation torque values can vary significantly between different manufacturers and product lines. Always refer to the manufacturer's official documentation and specifications for the particular hose clamp being considered or used.