

## 1. Description



**High Torque Hose Clamps** are heavy-duty fastening devices engineered to provide exceptionally high clamping force and a reliable, secure seal for demanding applications. These clamps typically feature a robust worm-drive mechanism with a specially designed housing and a high-tensile band, often with a straight-line housing that ensures full screw engagement with the band. They are designed to outperform standard worm-drive clamps, particularly in situations involving high pressures, tough or wire-reinforced hoses, and applications where an extra margin of safety and reliability is critical. Their construction allows for uniform tightening and higher sealing pressures compared to conventional nut and bolt type clamps.

## 2. Key Features

- High Clamping Force:** Engineered to deliver significantly higher sealing pressure and band tension than standard worm-drive clamps.
- Heavy-Duty Construction:** Features a robust band, often thicker and wider, and a strong screw and housing mechanism designed to withstand high tightening torques.
- Straight-Line Housing (Common Feature):** This design ensures that every thread of the screw is fully engaged with the band, maximizing strength and torque transmission.
- Uniform Tightening:** Provides more even pressure distribution around the hose circumference compared to some other heavy-duty clamp types.
- Durability and Reliability:** Built for demanding environments and applications requiring long-term, secure connections.
- Vibration Resistance:** The high clamping force and robust design contribute to excellent resistance against loosening due to vibration.
- Suitable for Tough Hoses:** Specifically designed for use with wire-reinforced, thick-walled, or less pliable hoses that require higher clamping forces to seal effectively.
- Corrosion Resistance:** Commonly available in various grades of stainless steel for excellent protection against corrosion in harsh environments.
- Larger Adjustment Range (Often):** Compared to some nut and bolt clamps, they can offer a wider adjustment range per size, potentially reducing inventory needs.
- No Loose Parts:** Typically a one-piece assembly (band, housing, screw), which simplifies installation and prevents loss of components.

### 3. Technical Data

- **Type:** Heavy-Duty Worm-Drive Hose Clamp
- **Common Materials:**
  - **Band, Housing, and Screw:**
    - Stainless Steel (e.g., AISI 304 / EN 1.4301 / BS 304S15 – A2 for good corrosion resistance).
    - Stainless Steel (e.g., AISI 316 / EN 1.4401 / BS 316S31 – A4 for superior corrosion resistance, especially in marine or chemical environments).
  - Some designs might feature specific material compositions for the screw (e.g., hardened steel) to achieve higher torque capabilities, with the band and housing in stainless steel.
- **Band Design:** Typically a solid band, sometimes with perforations or embossments designed for high-strength engagement with the screw. Edges are usually rolled or deburred to protect the hose.
- **Band Widths (Common):** 12.7mm, 14.2mm, 15.8mm.
- **Band Thickness (Typical):** 0.6mm, 0.7mm, 0.8mm, 1.0mm or more.
- **Screw Head Type:**
  - 5/16"(8mm) Hexagonal Head, often slotted for use with a flathead screwdriver or hex driver.
  - May feature reinforced screw designs for higher torque application.
- **Clamping Diameter Range:**
  - Available in a wide range of sizes, from smaller diameters (e.g., 11-25mm) up to very large diameters (e.g., 300mm, 400mm, 500mm and beyond).
- **Torque Specifications:**
  - **Recommended Setting/Tightening Torque:** Significantly higher than standard clamps, often in the range of 10 Nm to 15 Nm.
  - **Breaking Torque / Failure Torque:** Considerably higher than the recommended setting torque, indicating the clamp's ultimate strength.
- **Band Tensile Strength:** High, e.g., 1150 N/mm<sup>2</sup> or higher.
- **Relevant Standards:**
  - May be manufactured in accordance with or exceed standards like BS 5315 (for worm-drive hose clips).
  - DIN 3017 (for worm-drive hose clamps) may also be referenced for design principles.
  - Lloyd's Register Type Approval may be held for specific marine applications.

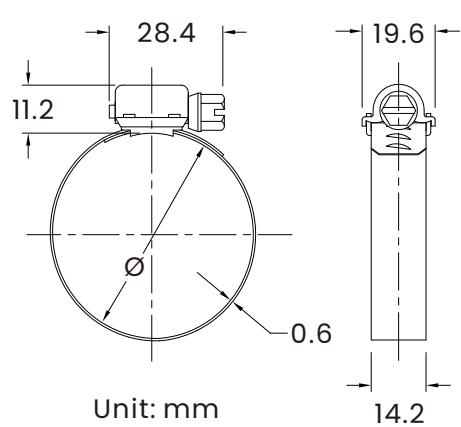
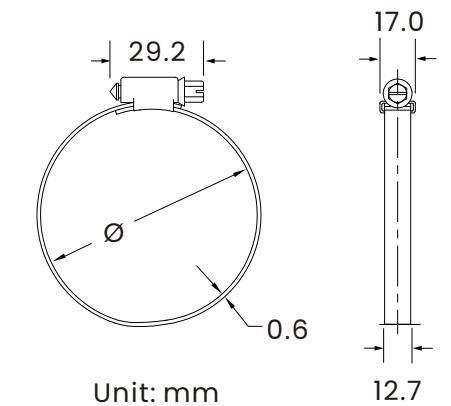
## 4. Common Applications

- **Heavy-Duty Industrial Hoses:** Suction and discharge hoses, material handling hoses (e.g., for abrasives, concrete, slurry).
- **Automotive & Heavy Vehicle:** Turbocharger hoses, exhaust systems (especially wet diesel exhaust), charge air cooler (CAC) hoses, heavy-duty coolant and air intake lines.
- **Marine Applications:** Engine exhaust systems, fuel lines, bilge pump hoses, and other critical connections requiring high clamping force and corrosion resistance.
- **Agricultural Machinery:** Hydraulic lines, irrigation systems, and other demanding hose connections.
- **Construction Equipment:** Hydraulic hoses, high-pressure air lines.
- **Mining Industry:** Slurry and dewatering hoses.
- **Chemical Industry:** Securing hoses handling various chemicals (material compatibility is crucial).
- **Oil and Gas Industry:** Various hose applications requiring robust and reliable sealing.
- **Applications with Wire-Reinforced Hoses:** Where the clamp needs to securely grip over the wire reinforcement.

## 5. Installation Guidance

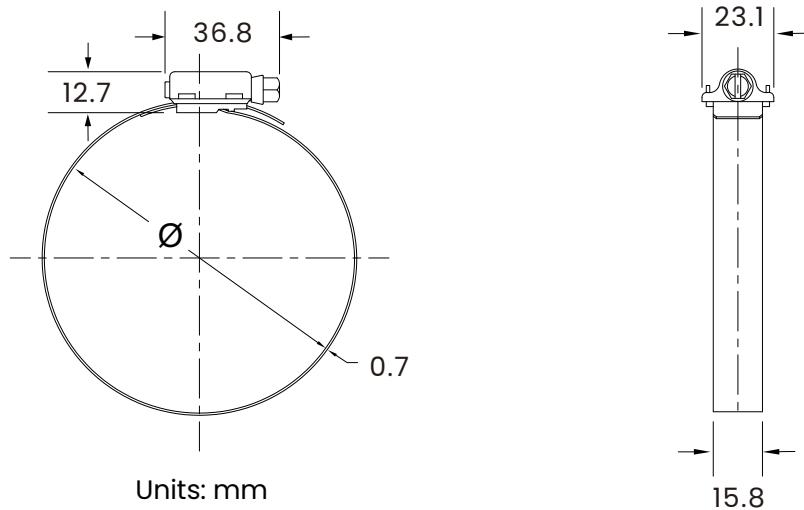
- **Select the Correct Clamp Size:** Choose a clamp where the hose's outside diameter (OD) falls within the clamp's specified adjustment range.
- **Position the Clamp:** Slide the clamp over the hose before fitting the hose onto the spigot or pipe.
- **Attach Hose to Fitting:** Push the hose fully onto the fitting.
- **Position Clamp Correctly:** Place the clamp over the sealing area of the hose on the fitting. Ensure the band is straight and not skewed.
- **Tighten the Clamp:** Use a suitable hex driver, socket wrench, or heavy-duty screwdriver to tighten the screw. 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 or clamp.
- **Inspect:** Ensure the clamp is seated correctly, providing even pressure, and tightened to the correct torque.

## 6. Specifications



Code		Inch( $\varnothing$ )		mm( $\varnothing$ )	
12.7mm	14.2mm	min	max	min	max
HTA25	HTB25	7/16	1	11	25
HTA27	HTB27	9/16	1-1/16	14	27
HTA32	HTB32	11/16	1-1/4	17	32
HTA38	HTB38	13/16	1-1/2	21	38
HTA44	HTB44	13/16	1-3/4	21	44
HTA51	HTB51	1-1/16	2	27	51
HTA57	HTB57	1-5/16	2-1/4	33	57
HTA63	HTB63	1-9/16	2-1/2	40	63
HTA70	HTB70	1-13/16	2-3/4	46	70
HTA76	HTB76	2-1/16	3	52	76
HTA82	HTB82	2-5/16	3-1/4	59	82
HTA89	HTB89	2-9/16	3-1/2	65	89
HTA95	HTB95	2-13/16	3-3/4	72	95
HTA101	HTB101	3-1/16	4	78	101
HTA108	HTB108	3-5/16	4-1/4	84	108
HTA114	HTB114	3-9/16	4-1/2	91	114
HTA127	HTB127	4-1/8	5	105	127
HTA140	HTB140	4-5/8	5-1/2	118	140
HTA152	HTB152	5-1/8	6	130	152
HTA165	HTB165	5-5/8	6-1/2	143	165
HTA178	HTB178	6-1/8	7	155	178
HTA254	HTB254	5-5/8	8-1/2	181	254
HTA311	HTB311	9-3/8	12-1/4	238	311

## 7. Specifications



Hi-Torque



Hi-Torque with Liner

Code	Inch( $\varnothing$ )		mm( $\varnothing$ )	
	min	max	min	max
HTC44	1	1-3/4	25	44
HTC54	1-1/4	2-1/8	32	54
HTC67	1-3/4	2-5/8	45	67
HTC79	2-1/4	3-1/8	57	79
HTC92	2-3/4	3-5/8	70	92
HTC105	3-1/4	4-1/8	83	105
HTC117	3-3/4	4-5/8	95	117
HTC130	4-1/4	5-1/8	108	130
HTC143	4-3/4	5-5/8	121	143
HTC156	5-1/4	6-1/8	133	156
HTC168	5-3/4	6-5/8	146	168
HTC181	6-1/4	7-1/8	159	181
HTC194	6-3/4	7-5/8	172	194
HTC206	7-1/4	8-1/8	184	206
HTC219	7-3/4	8-5/8	197	219
HTC232	8-1/4	9-1/8	210	232

## 8. Maintenance & Safety

- **Proper Installation Torque:** Adhering to the specified installation torque is critical for achieving the designed clamping force and ensuring a reliable seal. Under-tightening can lead to leaks, while over-tightening can damage the hose or the clamp mechanism.
- **Inspect Periodically:** In critical applications or harsh environments, 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 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.

**Disclaimer:** This datasheet provides general information typical for High Torque 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.