LONYOU

TECHNICAL DATASHEET

1. Description

Rubber Lined Hose Clamps, often referred to as P-Clips, cushioned clamps, or adel clamps, are fastening devices designed to secure hoses, pipes, cables, or tubing while providing protection against vibration, abrasion, and in some cases, electrical insulation. These clamps consist of a metal band, typically steel or stainless steel, which is lined on its inner surface with a resilient rubber material (such as EPDM). The clamp is usually a "P" shape with two holes at the ends of the band for mounting with a screw or bolt. Some rubber-lined clamps are also available in a worm-drive style, where a rubber liner is added to a standard worm gear clamp to protect soft hoses. The rubber lining helps to absorb shock, dampen vibration, prevent chafing or damage to the clamped object, and can provide a tighter grip on uneven surfaces.

2. Key Features

- **Vibration Damping:** The rubber lining absorbs vibrations, reducing noise and protecting the clamped item and surrounding structures from fatigue.
- **Abrasion Protection:** Prevents direct contact between the metal clamp band and the surface of the hose or cable, safeguarding against wear, chafing, and cutting.
- **Secure Clamping:** Provides a firm and secure grip on hoses, pipes, or cables.
- **Noise Reduction:** The cushioning effect of the rubber helps to reduce noise generated by vibrating pipes or hoses.
- **Electrical Insulation (in some cases):** Depending on the rubber material, it can offer a degree of electrical insulation between the clamp and the clamped object.
- **Corrosion Resistance:** Metal components are often made from stainless steel or zinc-plated steel for good corrosion resistance. The rubber lining also protects the clamped surface from contact corrosion.
- **Temperature Resistance:** The choice of rubber material (e.g., EPDM) can offer good resistance to a range of temperatures.
- **Easy Installation:** Typically installed using a single screw or bolt through the mounting holes (for P-Clips) or via a standard screw mechanism (for rubber-lined worm drive clamps).
- **Reinforced Band Ends (on some P-Clip types):** Provides higher mechanical load capacity and prevents tearing at the fixing point.
- **Snug Fit:** The rubber lining can conform to slight irregularities in the hose or pipe surface, ensuring a snug fit.

3. Technical Data

- **Type:** P-Clip, D-Clip (Rubber Lined Retaining Clamp)
- **Common Materials:**
  - **Metal Band:**
    - Stainless Steel (e.g., AISI 304, AISI 316)
    - Carbon Steel (typically zinc-plated for corrosion resistance - BZP Bright Zinc Plated)
  - **Rubber Lining:**
    - EPDM (Ethylene Propylene Diene Monomer) - Common for its good resistance to weathering, ozone, UV, heat, and some chemicals.
    - Silicone - For higher temperature applications or specific chemical resistance.
    - Neoprene or Chloroprene - Offers good oil and chemical resistance.
  - **Screw/Bolt (for P-Clip fixing):**
    - Carbon Steel (zinc-plated)
    - Stainless Steel
- **Band Widths (Typical):** 12mm, 15mm, 18mm, 20mm
- **Bore Diameter Range:**
  - Available in a very wide range of sizes to accommodate various hose, pipe, or cable diameters, from a few millimeters (e.g., 6mm) up to several inches (e.g., 76mm or more).
- **Screw/Bolt Type (for P-Clips):** Typically use anM6, or M8 bolt/screw for mounting.
- **Temperature Range (Typical for EPDM lining):**
  - Approximately -20°C to +150°C (-4°F to +302°F), but can vary significantly based on the specific rubber compound. Always check manufacturer specifications.
- **Relevant Standards:**
  - **DIN 3016:** A German standard often referenced for the design and dimensions of P-type retaining clamps.
  - **SAE J1508:** May apply to the worm drive mechanism of rubber-lined worm gear clamps.RoHS compliance may be indicated.

Types of Clamps

4. Common Applications

- **Automotive:** Securing fuel lines, brake pipes, wiring harnesses, coolant hoses, and exhaust components.
- **Industrial Machinery:** Clamping hydraulic hoses, pneumatic lines, cables, and pipes to prevent movement and vibration.
- **HVAC Systems:** Supporting and securing refrigerant lines, ductwork, and condensate drains.
- **Marine Applications:** Fastening hoses, pipes, and cables in corrosive saltwater environments (stainless steel versions with appropriate rubber are crucial).
- **Aerospace:** Securing wiring and fluid lines.
- **White Goods/Appliances:** Internal wiring and hose management.
- **Construction:** Supporting plumbing pipes, electrical conduits, and hydraulic lines.
- **Telecommunications:** Organizing and securing cables.
- **Renewable Energy:** Cable management in solar and wind installations.
- **General Engineering:** Any application requiring secure clamping with vibration damping and/or abrasion protection.

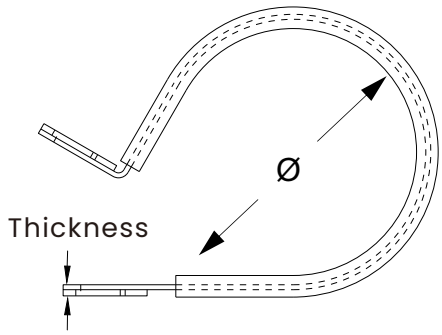
5. Associated Products

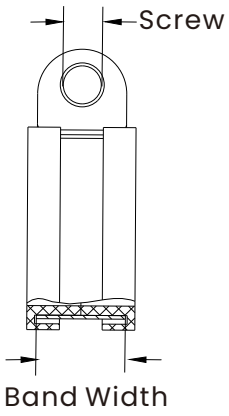
- Screws, Bolts, Nuts, and Washers (for mounting P-Clips)
- Threaded Rods (for some pipe support applications)
- Cable Ties
- Hoses and Pipes of various materials
- Screwdrivers or Hex Drivers (for worm drive types)

6. Installation Guidance

- Select the correct clamp size for the outer diameter of the hose, pipe, or cable. The fit should be snug but not overly tight before fastening.
- Open the P-Clip (if it's a one-piece design that needs to be spread).
- Place the rubber-lined portion around the object to be clamped.
- Align the mounting holes of the clamp.
- Insert a screw or bolt through the holes and secure it to a mounting surface with a nut if necessary. Tighten to the recommended torque.

7. Specifications





Diameter (mm)	Band Size(mm)		Screw	Diameter (mm)	Band Size(mm)		Screw
	Width	Thickness			Width	Thickness	
6	12	0.6	M6	6	20	0.8	M8
8	12	0.6	M6	8	20	0.8	M8
10	12	0.6	M6	12	20	0.8	M8
13	12	0.6	M6	14	20	0.8	M8
16	12	0.6	M6	16	20	0.8	M8
19	12	0.6	M6	18	20	0.8	M8
21	12	0.6	M6	20	20	0.8	M8
25	12	0.6	M6	22	20	0.8	M8
27	12	0.6	M6	24	20	0.8	M8
32	12	0.6	M6	26	20	0.8	M8
35	12	0.6	M6	28	20	0.8	M8
40	12	0.6	M6	30	20	0.8	M8
50	12	0.6	M6	32	20	0.8	M8
60	12	0.6	M6	38	20	0.8	M8
8	15	0.8	M6	40	20	0.8	M8
10	15	0.8	M6	46	20	0.8	M8
13	15	0.8	M6	48	20	0.8	M8
16	15	0.8	M6	50	20	0.8	M8
20	15	0.8	M6	55	20	0.8	M8
25	15	0.8	M6	60	20	0.8	M8
30	15	0.8	M6	65	20	0.8	M8
35	15	0.8	M6	70	20	0.8	M8

Please contact sales for more information about other sizes.

8. Maintenance & Safety

- **Regular Inspection:** Periodically inspect clamps for any signs of wear, degradation of the rubber lining (cracking, hardening, perishing), corrosion of metal parts, or loosening.
- **Material Compatibility:** Ensure the rubber lining material is compatible with any fluids or chemicals it may come into contact with, and that the metal is suitable for the environment.
- **Temperature Limits:** Do not exceed the specified operating temperature range for the rubber lining, as extreme temperatures can degrade its properties.
- **Tightening Torque:** Adhere to manufacturer's recommended tightening torques where specified to ensure a secure clamp without damaging the hose or clamp.
- **Replace if Damaged:** If the rubber lining is damaged or the metal part of the clamp is significantly corroded or deformed, replace the clamp.
- **Safety Equipment:** Wear appropriate PPE, such as gloves and safety glasses, during installation or removal.

Disclaimer: This datasheet provides general information typical for Rubber Lined Hose Clamps. Specific technical data, materials, performance characteristics, and application suitability can vary significantly between different manufacturers and product designs. Always refer to the manufacturer's official documentation and specifications for the particular hose clamp being considered or used.