TECHNICAL DATASHEET

1. Description

Double Ear Hose Clamps, also known as 2-Ear Clips or O-Clips, are a type of permanent, tamper-proof fastener designed for securing hoses onto fittings, particularly in OEM (Original Equipment Manufacturer) and maintenance applications. They consist of a metal band with two protruding "ears." Installation involves placing the clamp around the hose and fitting, and then uniformly crimping both ears with a specialized pincer tool. This action deforms the ears, drawing the band tight and creating a consistent clamping force around the circumference of the hose. The double ear design is intended to provide a more flexible and exact fit during clamping and helps to maintain constant pressure. Once installed, these clamps offer a secure, reliable, and often low-profile connection.

2. Key Features

- **Tamper-Proof Connection:** Once properly crimped, the clamp provides a permanent seal and cannot be easily loosened or removed without destroying it, offering an extra degree of security.
- **Consistent Sealing Pressure:** The two ears, when crimped correctly, apply a balanced and even clamping force around the hose.
- **Vibration Resistance:** The permanent nature of the crimp makes these clamps resistant to loosening under vibration and thermal cycling.
- **Compact Design:** Generally offers a lower profile than traditional screw-type clamps, making them suitable for applications with limited space.
- **Quick and Simple Installation:** With the correct pincer tool, installation is straightforward and efficient, suitable for assembly line work.
- **Cost-Effective:** An economical solution for many simple hose assemblies and high-volume applications.
- **Rounded Band Edges:** Designed with smooth, deburred edges to prevent damage or cutting into the hose material during installation and use.
- **Effective on Metal-to-Metal Connections:** Can also be used for certain metal-to-metal joining applications.
- **Extra Grip:** The two ears provide additional gripping surface and help maintain pressure around the hose.

3. Technical Data

- **Type:** Double Ear Crimp Clamp / 2-Ear Pinch Clamp / O-Clip
- **Common Materials:**
  - **Carbon Steel (Mild Steel):** Typically zinc-plated (e.g., W1 material - clear or yellow/gold passivation) for corrosion resistance.
  - **Stainless Steel:**
    - AISI 304 (A2, W4) - Offers good corrosion resistance for general and outdoor applications.
    - AISI 316 (A4, W5) - Offers superior corrosion resistance, suitable for marine or more chemically aggressive environments (less common for standard double ear clamps but available).
- **Band Widths (Typical):** Ranges from approximately 5mm to 10mm or more, commonly 5mm, 6mm, 7mm, 7.5mm, 9mm. Specific width often depends on the clamp diameter.
- **Band Thickness (Typical):** Ranges from approximately 0.6mm to 1.6mm. Common thicknesses include 0.8mm, 1.0mm.
- **Clamping Diameter Range:**
  - Available in a wide array of sizes, typically defined by a nominal size or a specific clamping range (e.g., 5-7mm, 11-13mm, 18-21mm, 22-25mm).
  - Sizes can range from very small (e.g., for 3mm OD hoses) up to larger diameters (e.g., 40mm, 50mm, or more).
  - It's crucial to select a clamp where the hose's outside diameter (OD) with the fitting inserted falls within the clamp's operational range.
- **Locking Mechanism:** Permanent deformation of both "ears" by crimping with a specialized pincer tool.
- **Pressure Rating:** Generally suitable for low to medium pressure applications (e.g., air, water, other fluids). Specific pressure ratings depend on the clamp size, material, hose type, and proper installation (e.g., some sources state up to 200 PSI for certain stainless steel types). Always consult manufacturer data.
- **Relevant Standards:**
  - May be manufactured according to DIN 2393 C Rst 34-2-GBK (for material aspects of steel tubes often used in their construction).
  - General quality standards like ISO 9001 may be cited by manufacturers.
  - RoHS compliance is often noted.

4. Common Applications

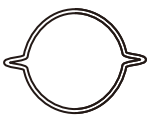
- **Automotive:** Fuel lines, coolant hoses, vacuum lines, air lines, power steering hoses, CV joint boots.
- **Industrial Machinery:** Pneumatic lines, low-pressure hydraulic lines, fluid transfer systems.
- **White Goods/Domestic Appliances:** Washing machines, dishwashers.
- **Agricultural Equipment:** Sprayer lines, fluid and air lines on machinery.
- **Brewing and Beverage Dispensing:** Securing tubing in dispensing systems.
- **Marine Applications:** (Stainless steel versions recommended) for various hose connections.
- **HVAC Systems:** Securing small diameter hoses or tubes.
- **General Engineering & Maintenance:** Securing hoses for air, water, or other fluids in light to medium-duty scenarios.
- **Bundling:** Can be used for bundling ropes, tubing, or cables.

5. Installation Guidance

- **Select the Correct Clamp Size:** Choose a clamp such that the outside diameter of the hose (once placed over the fitting) is within the clamp's specified clamping range. The clamp should fit snugly before crimping.
- **Position the Clamp:** Slide the double ear clamp over the end of the hose.
- **Attach Hose to Fitting:** Push the hose onto the barbed or plain end fitting until it is fully seated.
- **Position Clamp Correctly:** Slide the clamp over the section of the hose that covers the fitting's barbs or sealing area. Ensure the clamp is positioned to provide even pressure and is not too close to the hose end.
- **Crimp the Ears:**
  - Place the jaws of the specialized double ear clamp pliers around both "ears" of the clamp.
  - Squeeze the plier handles firmly and in a single, smooth motion. Crimp each ear evenly, often by crimping partially on one ear, then the other, and then repeating until both are fully and uniformly compressed. The goal is to reduce the size of the ears, thereby tightening the band.
  - Avoid over-crimping, as this can damage the clamp or the hose. The ears should not be completely flattened or touch each other unless specified by the manufacturer.
- **Inspect the Crimp:** Visually inspect the crimped ears to ensure they are uniformly deformed and the clamp is providing even pressure around the hose. The connection should be secure.

Open Clamp

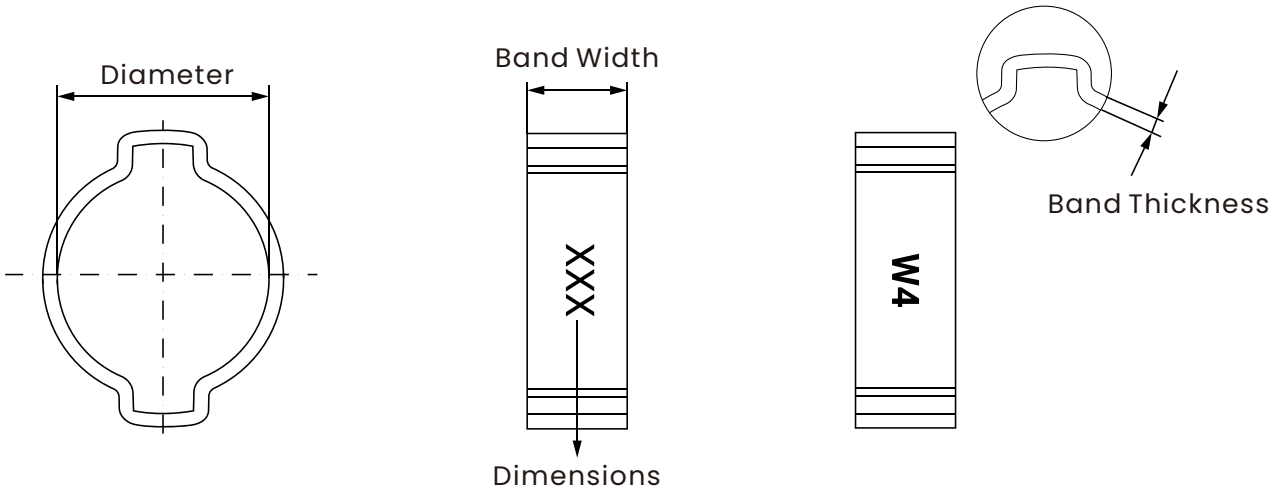
Closed Correctly



Closed Incorrectly

Pincing Plier

6. Specifications



Code (W1)	Diameter (mm)	Width (mm)	Thickness (mm)
DE105	3-5	6	0.7
DE107	5-7	6	0.7
DE109	7-9	7	0.7
DE111	9-11	7	0.9
DE113	11-13	7	1
DE115	13-15	7.5	1
DE117	14-17	7.5	1.2
DE118	15-18	7.5	1.2
DE120	17-20	7.5	1.2
DE123	20-23	9	1.3
DE125	21-25	9	1.3
DE127	23-27	9	1.4
DE128	25-28	9	1.4
DE131	28-31	9.5	1.4
DE134	31-34	9.5	1.4
DE137	34-37	9.5	1.5
DE140	37-40	10	1.6
DE143	40-43	10	1.6
DE146	43-46	10	1.6

Code (W4)	Diameter (mm)	Width (mm)	Thickness (mm)
DE405	3-5	6	0.6
DE407	5-7	6	0.6
DE409	7-9	7	0.6
DE411	9-11	7	1.0
DE413	11-13	7	1.0
DE415	13-15	7.5	1.0
DE417	14-17	7.5	1.0
DE418	15-18	7.5	1.0
DE420	17-20	7.5	1.0
DE423	20-23	9	1.0
DE425	21-25	9	1.0
DE427	23-27	9	1.0
DE428	25-28	9	1.0
DE431	28-31	9.5	1.0
DE434	31-34	9.5	1.0
DE437	34-37	9.5	1.0
DE440	37-40	10	1.0
DE443	40-43	10	1.0
DE446	43-46	10	1.0

Please contact sales for more information about other sizes.

7. Maintenance & Safety

- **Proper Installation is Crucial:** The integrity and sealing performance of the connection heavily depend on using the correct clamp size and the proper installation tool and technique.
- **Single Use Only:** Double ear hose clamps are generally considered one-time use fasteners. Once crimped, they are not designed to be reliably loosened and reused. Removal typically involves cutting the band or prying open the ears, which destroys the clamp.
- **Tool Condition:** Ensure the installation pliers are in good condition and designed for double ear clamps. Worn or incorrect tools can lead to improper crimps.
- **Material Compatibility:** Select clamp material (e.g., zinc-plated steel, stainless steel) appropriate for the application environment and any fluids or chemicals involved.
- **Application Limits:** Use within the manufacturer's recommended pressure and temperature ratings.
- **Safety Equipment:** Always wear safety glasses during installation and removal, as metal parts can spring or fragment. Wearing gloves when handling clamps is also advisable.

8. Associated Products

- Double Ear Hose Clamp Pliers (Pincers): Specialized tools are essential for proper installation. These tools are designed to crimp both ears uniformly.
  - Standard Jaw Pincers
  - Side Jaw Pincers (for better access in confined spaces)
- Hoses (rubber, plastic, silicone)
- Fittings (barbed, insert)

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