TECHNICAL DATASHEET

1. Description

Strut Channel Clamps are mechanical fasteners designed to secure pipes, conduits, tubing, or other components to strut channel framing systems. Strut channels (often a standardized C-shaped or U-shaped metal framing member) provide a versatile and adjustable support structure, and these clamps are the interface that holds the service elements firmly in place. They come in various designs, including one-piece clamps, two-piece clamps, P-hangers, cushion clamps, and U-bolts adapted for strut channels, each suited for different sizes, load requirements, and types of supported elements. The primary function is to provide a stable, secure, and often adjustable mounting point within the strut channel framework.

2. Key Features

- **Secure Fastening:** Designed to firmly grip pipes, conduits, or tubing, preventing movement, slippage, or vibration.
- **Compatibility with Strut Channels:** Specifically designed to fit into the open side of standard strut channels (e.g., 1-5/8" wide channels), often utilizing channel nuts (spring nuts) for secure attachment.
- **Adjustability:** Many strut clamp designs allow for adjustment along the length of the strut channel before final tightening, providing flexibility in positioning.
- **Variety of Designs:** Available in multiple configurations to suit different pipe/conduit sizes, materials (e.g., rigid steel conduit, EMT, copper, PVC), and load requirements.
  - **One-Piece Clamps:** Often used for quick installation, where the clamp and fastener are integrated or form a single unit that wraps around the conduit and secures into the channel.
  - **Two-Piece Clamps (Pipe Straps):** Consist of two separate pieces that bolt together around the pipe/conduit and attach to the strut channel.
  - **Cushion Clamps:** Include a thermoplastic elastomer or rubber cushion to absorb shock, dampen vibration, reduce noise, and prevent galvanic corrosion between dissimilar metals.
  - **U-Bolt Strut Clamps:** U-bolts adapted with plates or nuts to secure pipes to the strut channel.
- **Ease of Installation:** Generally designed for quick and straightforward installation using common hand tools (screwdrivers, nut drivers, wrenches).
- **Durability:** Manufactured from robust materials to withstand mechanical stress and environmental conditions.
- **Load Bearing:** Engineered to support specified loads, ensuring the stability of the installed pipes or conduits.
- **Corrosion Resistance:** Available in various materials and finishes to provide protection against corrosion in different environments.

3. Technical Data

- **Type:** Strut Channel Pipe Clamp, Conduit Clamp, Tube Strap, Cushion Clamp for Strut
- **Common Materials:**
  - **Clamp Body:**
    - Carbon Steel (Mild Steel)
    - Stainless Steel (e.g., Type 304, Type 316)
    - Malleable Iron (for some heavier duty components)
  - **Cushion (for cushion clamps):** Thermoplastic Elastomer (TPE), EPDM Rubber, Neoprene, Hytel.
  - **Hardware (Bolts, Nuts):** Carbon Steel (Plated), Stainless Steel.
- **Surface Finish/Coating (for Carbon Steel):**
  - Electro-Galvanized (Zinc Plated - e.g., ASTM B633 SC3 Type III) - Common for indoor/dry environments.
  - Hot-Dip Galvanized (HDG - e.g., ASTM A123) - For superior corrosion resistance in outdoor or harsh environments.
  - Copper-Color Coated (for copper tubing clamps).
  - Yellow Di-Chromate.
  - Specialty coatings (e.g., epoxy, PVC) for specific environments.
- **Compatible Pipe/Conduit Sizes:**
  - Available for a wide range of standard pipe sizes (IPS - Iron Pipe Size), copper tubing sizes (CTS), and Electrical Metallic Tubing (EMT) sizes.
  - Commonly ranges from 1/4" to 12" for pipes/tubing.Strut Channel Compatibility: Typically designed to fit standard 1-5/8" wide strut channels (e.g., P1000 series and similar).
- **Fastening Mechanism:**
  - Usually involves a bolt and nut (often pre-assembled) that tightens the clamp around the pipe/conduit and secures it to a channel nut within the strut.
  - Some one-piece designs may use a screwdriver-actuated mechanism.
- **Load Rating:** Varies significantly based on clamp design, size, and material. Manufacturers provide load data (e.g., pullout strength, slip resistance) for specific clamps. Safety factors (e.g., 3:1 or 5:1) are typically applied.
- **Temperature Range (for Cushion Clamps):** Dependent on the cushion material (e.g., -50°F to 275°F / -45°C to 135°C for common TPE cushions).

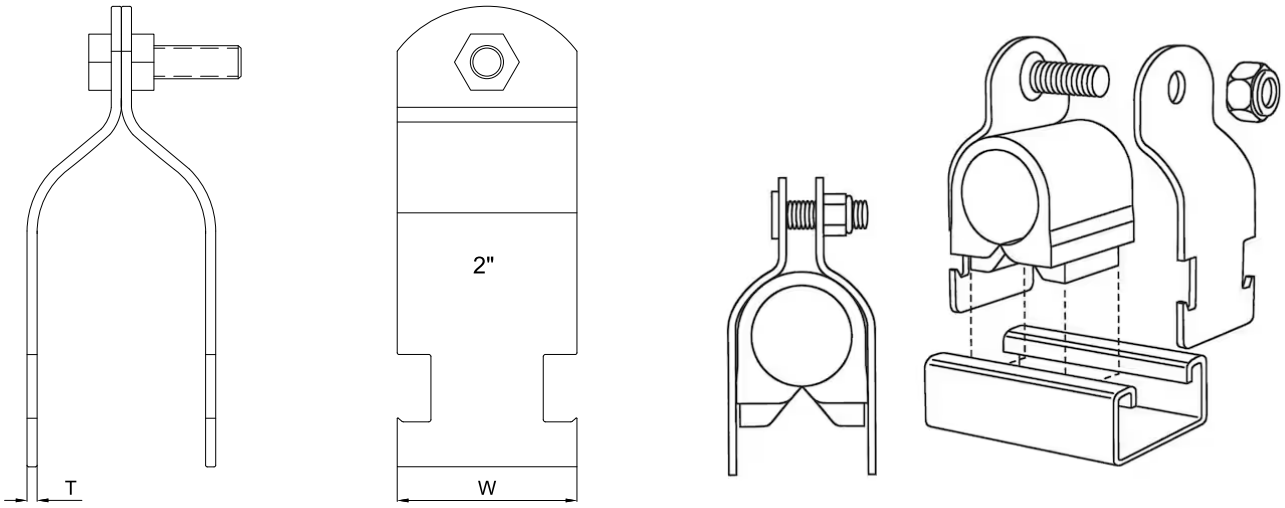
4. Common Applications

- **Electrical Systems:** Supporting electrical conduits (Rigid, IMC, EMT), cable trays, and junction boxes.
- **Mechanical Systems:** Supporting pipes for plumbing (water, drainage), HVAC (heating, ventilation, air conditioning), process piping, and medical gas lines.
- **Plumbing:** Securing copper, PEX, CPVC, steel, and cast iron pipes.
- **Industrial Facilities:** Pipe and conduit runs in manufacturing plants, refineries, power plants.
- **Commercial Buildings:** Supporting utilities in office buildings, retail spaces, hospitals.
- **Data Centers:** Cable management and support.
- **Construction Projects:** General support for pipes, conduits, and tubing.
- Applications requiring vibration isolation or noise reduction (using cushion clamps).

5. Installation Guidance

- **Select the Correct Clamp:** Choose a clamp specifically designed for the type (e.g., pipe, conduit, tubing) and outside diameter of the item to be supported. Ensure compatibility with the strut channel being used.
- **Position Channel Nut:** Insert a channel nut (spring nut) into the strut channel at the desired location. Rotate the channel nut 90 degrees so its grooves engage with the inturned edges of the channel.
- **Place Clamp:**
  - For Two-Piece Clamps: Place the bottom half of the clamp (if applicable) or position the pipe/conduit into the strut-mounted portion. Place the top strap or other half of the clamp over the pipe/conduit.
  - For One-Piece Clamps: Open or position the clamp around the pipe/conduit.
- **Align and Fasten:** Align the clamp's bolt hole(s) with the channel nut. Insert the bolt(s) (often supplied with the clamp) through the clamp and thread into the channel nut.
- **Tighten Securely:** Tighten the bolt(s) using an appropriate wrench or screwdriver. Ensure the clamp provides a firm grip on the pipe/conduit without over-tightening, which could damage the clamp, conduit, or pipe (especially with softer materials). For cushion clamps, ensure the cushion is properly compressed but not crushed.
- **Check Stability:** Verify that the pipe/conduit is securely held and properly supported.

6. Specifications



Code	Diameter		Width (mm)	Thickness (mm)	Bolt	Material
	inch	mm				
SC013	1/2	13	32	1.7	M6X32	W1/W4/W5
SC019	3/4	19	32	1.7	M6X32	W1/W4/W5
SC025	1	25	32	1.7	M6X32	W1/W4/W5
SC032	1-1/4	32	32	2.0	M6X32	W1/W4/W5
SC038	1-1/2	38	32	2.0	M6X32	W1/W4/W5
SC051	2	51	32	2.0	M6X44	W1/W4/W5
SC064	2-1/2	64	32	2.0	M6X44	W1/W4/W5
SC076	3	76	32	2.0	M6X44	W1/W4/W5
SC100	4	100	32	2.0	M8X44	W1/W4/W5
SC125	5	125	32	2.0	M8X44	W1/W4/W5
SC150	6	150	32	2.0	M8X44	W1/W4/W5
SC200	8	200	32	2.0	M8X44	W1/W4/W5
SC250	10	250	32	2.0	M8X44	W1/W4/W5
SC300	12	300	32	2.0	M8X44	W1/W4/W5

Please contact sales for more information about other sizes.

7. Maintenance & Safety

- **Regular Inspection:** Periodically inspect clamps for tightness, signs of corrosion, wear, or damage to the clamp body or cushion (if applicable). This is especially important in environments with vibration or temperature fluctuations.
- **Load Limits:** Do not exceed the manufacturer's specified load ratings for the clamps.
- **Material Compatibility:** Ensure the clamp material and any coatings/cushions are suitable for the installation environment (e.g., moisture, chemicals, temperature) and compatible with the pipe/conduit material to prevent galvanic corrosion.
- **Proper Tools:** Use the correct tools for installation to ensure proper tightening and avoid damaging the fasteners or clamps.
- **Safety Equipment:** Wear appropriate personal protective equipment (PPE) such as gloves and safety glasses during installation.

Disclaimer: This datasheet provides general information typical for Strut Channel Clamps. Specific technical data, materials, load capacities, and installation procedures can vary significantly between different manufacturers and product designs. Always refer to the manufacturer's official documentation and specifications for the particular strut channel clamp being considered or used.