
# BEHRINGER®

Pipe Supports for Industrial Applications

# Forward

## Introduction

Thank you for choosing Behringer, the world's leading manufacturer of Pipe and Tube supports. Behringer has been manufacturing pipe clamps and support systems for over 30 years and has developed a reputation in the industrial and sanitary markets that is second to none. We have made developments and product improvements over the years both strengthening and broadening our product offering. This is evident in the breadth of our line and ability to accommodate new applications and designs. Behringer can be counted on for all clamping requirements.

## Product

Behringer Industrial Pipe and Tube Supports have natural vibration-dampening characteristics. This is important in pressure piping in order to reduce vibration, noise, and shock. This will effectively protect the system and its sensitive components from the damaging effects of these adverse system byproducts typically found in pressure piping systems.

Behringer offers many different series and within each series there are many different configurations available. We offer options for mounting such as welding, bolting, rail and strut mounting, double and group mounting, etc. Behringer always welcomes a challenge and would be happy to work with you to design a product that is custom-tailored to any application. This is where many of our developments are first generated and helps to further progress the complexity of our product. Challenge us with your requirements.

## Guarantee

Behringer Corporation, hereinafter called the "MANUFACTURER", guarantees that the product shall be free from defects in workmanship and materials. THIS GUARANTEE IS IN LIEU OF ALL OTHER GUARANTEES EITHER EXPRESSED OR IMPLIED, INCLUDING GUARANTEES FOR FITNESS FOR PURPOSE INTENDED. The MANUFACTURER'S liability is limited to the replacement of any materials which, after inspection by the MANUFACTURER at its sole option are found to be defective. The MANUFACTURER will honor only those claims that are presented to it within one hundred eighty (180) days of the delivery of the materials to the purchaser. The MANUFACTURER SPECIFICALLY DISCLAIMS ANY AND ALL LIABILITY FOR CONSEQUENTIAL DAMAGES. The MANUFACTURER shall not be liable for any damages which arise out of the misuse or abuse of the products.

## Applications

Behringer clamps are used in may different types of applications ranging from low pressure lubrication and water systems to high pressure hydraulic and process systems. Anywhere that there are pipes, tubes, or hoses is a viable application for Behringer clamps. Behringer clamps are most frequently used in the following markets and applications:

Mobile Equipment
Mining Equipment
Offshore and Marine Applications
Shipbuilding
Instrumentation
Nuclear
General Construction
Electrical / Mechanical Contracting
Process Piping
Pharmaceutical / Biotechnology
Food and Dairy
Beverage
Power Generation
Pulp and Paper
Industrial Hydraulics
Power Units
Agricultural Equipment
OEM Machinery

## Assistance

Behringer Corporation has a competent and highly skilled staff of inside sales and customer service personnel available to assist you with any of your needs. Behringer can be reached in the following ways:


Post Mail: Behringer Corporation
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Our regular business hours are Monday through Friday, 8AM - 5 PM Eastern Time. For after hours service, please contact your regional sales manager.

## Please Read

The information contained in this document is provided as an aid in properly selecting products and/or options. It is intended to be used by technically experienced users for general reference only. The supplier assumes no responsibility or liability for the accuracy or completeness of this document, as well as results obtained by the use of this information. Due to the variety of possible operating conditions, it is highly recommended that the user make their own tests to determine the safety and suitability of all products and combinations thereof. The user is solely responsible for final determination of such conditions.

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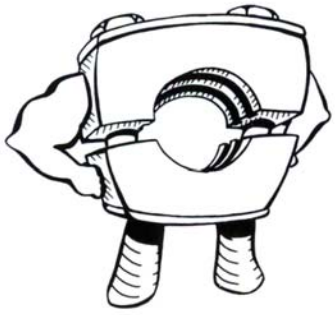


# Pipe Clamp Selection

Behringer's pipe clamps are available with many different mounting configurations and arrangements. In choosing a pipe clamp, there are five required pieces of information: series, size, clamp pair material, hardware material and mounting/hardware configuration.

## Series Selection

In order to select the proper clamp, the first thing that must be determined is the series of clamp to be used. Refer to pages 4-5 on Series Specifications to see what clamp series are available, as well as the technical characteristics of those series. The most important factors to be considered are the operating pressure of the line to be secured, the weight being supported, and the dynamic load. Other considerations include size, environment, and application. For example, a 1 in. pipe for a hydraulic system operating at 2,000 psi would typically require the use of the standard series, but the heavy series may be selected if it will be required to support the weight of a large filter or other system component. Maximum weight loads and shearing forces can be found in the Technical Appendix (pg 32). Also, the heavy series might be selected rather than the standard series if the line is on a piece of mining or mobile equipment that may see a very high amount of impact with other equipment or materials such as stones and metals. In Fig. 1 below, you can see the suggested operating pressures by series. These suggested values take into consideration the shock and vibration that a typical hydraulic system operating at these pressures can deliver.

**Fig. 1: General Pressure Guidelines by Series**

| Series | Suggested Operating Pressure |
|---|---|
| Standard | up to 2000 psi |
| Heavy | 5000 psi for single heavy/10,000 psi for double |
| Twin | up to 1500 psi |
| Heavy 4 | 5000 psi for single heavy/10,000 psi for double |

## Size

The next important factor in the selection of the pipe clamp is the size of the line to be secured. Behringer clamps use a modular group size that consists of multiple OD sizes being available within the same group. Clamps are listed as pipe or tube sizes. The difference is in the standard measurements used to rate pipe and tubing sizes. Pipe is rated by the inside diameter, and will have a larger outside diameter because of the wall thickness. For example, a 1 in. pipe has an OD of 1.315. This is a standard pipe OD size and is consistent of all hydraulic pipe, regardless of schedule. Tubing, on the other hand, is rated by the outside diameter. Therefore, a 1 in. tube will have an OD of 1.00 in. This is important in determining the size of the pipe clamp that will be selected. Also, the size may determine the series of clamp selected. For example, in a 6 in. pipe size with a low pressure line operating at 1,500 psi the Heavy Series must be used as it's not available in the Standard Series.

## Clamp Pair Material

The clamp pair material is the next thing that should be selected. Behringer's clamp pairs are offered in different materials: Polypropylene (PP), Santoprene (SP), Aluminum (AL), HDPE (NN) and High Temperature Cast Nylon (HT). The single most important determining factor of clamp pair material is operating temperature. The temperature ratings and other important specifications can be found in the Technical Appendix (pg 31). Some materials are not available in all sizes or all series. Refer to the specific clamp pair selection charts from each series to see what is available in the required size. Other considerations for materials are compatibility with the environment and for aesthetic reasons.

## Hardware Material

Once you have determined the series of pipe clamp and the size that is required, the next step is to determine the hardware materials that you will require. In the series specification pages (pg 4 - 5), you will see that each series has a standard hardware material type. See Fig. 2 for standard hardware choices. The standard hardware is either plain carbon steel or zinc plated steel. All Behringer clamps that are zinc plated use a trivalent blue zinc plating, which is more environmentally friendly than typical hexavalent zinc plating, and is RoHS compliant. In addition to the standard hardware choices, Behringer offers stainless steel in 2 grades from stock. AISI 304 Stainless Steel (A2 - 1.4301/1.4305) is used in applications where stainless steel is required. This may be in an outside environment, because of chemical compatibility reasons, or because of requirements from the FDA or other regulatory committee. AISI 316 Ti Stainless Steel (A4 - 1.4401/1.4571) is a high grade stainless steel. The 316 Stainless is used in applications where it will come in contact with salt water or air with a high salt concentration such as offshore or marine applications.

**Fig. 2: Standard Hardware Material by Series**

| Series | Code | Material |
|---|---|---|
| Standard | Z | Zinc Plated Steel |
| Heavy | C | Plain Carbon Steel |
| Twin | Z | Zinc Plated Steel |
| Heavy 4 | C | Plain Carbon Steel |

# Pipe Clamp Selection

## Mounting / Hardware Configuration

Behringer offers a multitude of mounting configurations and arrangement styles. Clamps can be mounted to the support structure by either welding, bolting, rail-mounting, strut mounting, or stanchion and special securing plates. In addition, clamps can be stacked on top of each other, suspended from threaded rods, or any number of double and group positions can be made on multiple clamp weld plates, called Group Weld Plates (GRW). These options are not available for every series. Please check the ordering code for available mounting and hardware configurations. Here are some examples of these mounting types.

### Weld Mounting [STW, SWP, TWP]

Clamps are supplied with a weld plate for welding directly to the support structure. This is the most common form of clamp mounting and it is available in all series of pipe clamps. It is typically used with a cover plate and bolts and it is a commonly stocked item.

| | |
|---|---|
| Standard Series: | STW |
| Heavy Series: | SWP / DWP |
| Twin Series: | TWP |
| Heavy 4 Series: | SWP / DWP |

### Bolt Mounting with Base Plates [BAP]

Clamps are supplied with a base plate for applications where the clamp cannot be welded into position. This is commonly used to mount the clamps to non-metallic surfaces such as wood or drywall. However, base plates can be welded into position if required. Base plates are only available in the standard series and are available from stock.

### Multiple Clamp Weld Plates [DOW, GRW]

For multiple lines, Behringer offers double weld plates or group weld plates. The double weld plates create a double clamp that allows the convenience of welding only one plate, but the strength and durability of using standard series hardware with individual clamp halves and four hex bolts. Group weld plates can accommodate between 3-10 positions, depending on the application. This is beneficial for keeping a tightly regimented center distance on the piping or tubing where multiple lines are run along the same plane. For both the double and group weld plates, all clamps to be fitted to the same plate must be within the same hardware group size.

### Rail Mounting [RCN, RAL]

Rail mounting makes installation of multiple lines of different group sizes an easy task. All clamps within one series can be mounted directly to a single channel using rail nuts that are designed for that rail. Behringer also makes proprietary rails that can accept the weld plates rather than the rail nuts [RCN]. The rail uses are as follows.

| | |
|---|---|
| RAL-0 | Standard and Twin Series Clamps with RCN-0 (standard) / RCN-T0 (twin) |
| RAL-1 | Standard and Twin Series with STW or RCN-1 (standard) / RCN-4 (twin) |
| RAL-2 | Heavy Series Clamps with SWP (H3-H5) |
| RAL-3 | Heavy Series Clamps with SWP (H6) |
| RAL-4 | Heavy Series Clamps with RCN |

### Strut Mounting [UCN]

Behringer clamps can also be supplied with strut nuts [UCN] for mounting to standard strut channel. The new spring-loaded nuts are adaptable to any strut channel that is 1-5/8” wide. The depth of the channel is not important as the UCN clips attach with spring loaded tension on the top of the channel. Strut adaptation is available for all series of pipe clamps.

### Stacking Kits

Stacking kits consist of a set of clamp halves, stacking bolts, and a safety plate. A stacking kit is everything that is needed to take an existing clamp and make it one level taller. You use the hardware from the existing clamp; remove the cover plate, clamp halves, and hex bolts from the existing clamp, insert the stacking kit onto the bottom fixture (weld plate, rail nuts, etc...), and then replace the existing clamp hardware on top. Multiple stacking kits can be added to increase the number of clamps stacked on top of each other. Stacking kits are available in all series.

# Vibration-Dampening Pipe Clamps

Behringer's vibration-dampening pipe clamps are manufactured in different series for use in many different applications. The core range of pipe clamps encompasses Standard Series, Heavy Series, and Twin Series. They meet ASTM, Shipbuilding, Nuclear, Coast Guard, and other specifications.

In addition to these main types of pipe clamps, Behringer also manufactures other clamping components and hardware. For large diameter pipes, Behringer's patented Heavy Four Series offers unparalleled performance in securing and vibration dampening, as well as electrical isolation of piping from support structure. We offer plastic saddle clamps and U-bolts as well. Behringer has its roots in the metal fabrication business and we can easily manufacture customer-specific fabricated metal or injection molded products. We currently manufacture many other items for OEMs that are specially designed for that specific customer. We work closely with key personnel in the research and design stages and can make prototypes in a very short time. Let us know what we can do for you.

**Heavy Series Pipe Clamps**
**Range:** 0.25 in. (6.4 mm) through 8.625 in. (219 mm)
**Pressure:** 5,000 to 10,000 psi
**Material:** Plain Carbon Steel, 304SS, 316SS, Zinc Plated
**Clamp Halves:** Polypropylene, Santoprene, Aluminum

Heavy series pipe clamps can withstand the shock and vibration that a hydraulic system operating at up to 5,000 psi can deliver. With the use of our Double Heavy design, lines with operating pressure of up to 10,000 psi can be accommodated. Standard hardware material is plain carbon steel. Also available from stock are 304SS and 316SS hardware. The heavy series can be mounted using a weld plate, rails, and stacking kits. Many other options are possible with existing hardware and custom arrangements are always a possibility.

**Standard Series Pipe Clamps**
**Range:** 0.25 in. (6.4 mm) through 4 in. (102 mm) OD
**Pressure:** 2,000 psi maximum
**Material:** Zinc Plated, 304SS, 316SS, Plain Carbon Steel
**Clamp Halves:** Polypropylene, Santoprene, Aluminum

Standard series pipe clamps can withstand the shock and vibration that a hydraulic system operating at up to 2,000 psi can deliver. Standard hardware material is zinc plated steel, unless otherwise noted. Also available from stock are 304SS and 316SS hardware. The standard series is offered in a multitude of configurations, such as weld-mounting, bolt-mounting, rail mounting, stacking, double weld-mounting, and group weld-mounting. Many other options are possible with existing hardware and custom arrangements are always a possibility.

**Twin Series Pipe Clamps**
**Range:** 0.25 in. (6.4 mm) through 1.66 in. (42 mm)
**Pressure:** 1,500 psi maximum
**Material:** Zinc Plated, 304SS, 316SS, Plain Carbon Steel
**Clamp Halves:** Polypropylene, Santoprene

The twin series is an excellent choice where multiple lines are required, while keeping a close center distance between the lines. Twin series pipe clamps can withstand the shock and vibration that a hydraulic system operating at up to 1,500 psi can deliver. Twin series hardware material is zinc plated steel. Also available from stock are 304SS and 316SS hardware. The twin series can be mounted using a weld plate, rails and stacking kits. Many other options are possible with existing hardware and custom arrangements are always a possibility.

# Pipe Clamps

**Heavy 4 Series Pipe Clamps**
**Range:** 8.625 in. (219 mm) through 30 in. (762 mm) OD
**Pressure:** 5,000 psi to 10,000 psi
**Material:** Plain Carbon Steel, 304SS, 316SS, Zinc Plated
**Clamp Halves:** Polypropylene
Others on request

Behringer's patented Heavy 4 Series pipe clamps are unrivaled in design and performance. Our clamps feature a unique 4-segmented plastic design which retains dimensional accuracy, resists stress and impact, absorbs vibration, and accomplishes a strong plastic-to-metal contact interface. This segmented plastic design is complemented by substantial steel support hardware.

Heavy 4 Series pipe clamps can withstand the shock and vibration that a hydraulic system operating at up to 5,000 psi can deliver and with the use of our double heavy design they can accommodate lines with pressures up to 10,000 psi. Standard hardware material is a low carbon steel. Also available are 304SS and 316SS as well as zinc plated hardware. The Heavy 4 Series is only offered as a weld mounted clamp.

**Cushioned Pipe Clamps**
**Range:** 0.25 in. (6.4 mm) through 6.625 in. (168 mm) OD
**Pressure:** Low pressure
**Material:** Zinc Plated, 304SS, 316SS
**Clamp Insert**: Thermoplastic Elastomer

Behringer's new line of cushioned clamps are designed for low pressure applications such as conduit, water, waste and other non or low pressure lines. They easily mount to standard strut channels that are available in many industrial and mobile applications. The standard hardware material is zinc plated steel. Also available are 304SS and 316SS. The cushion is manufactured from a thermoplastic elastomer material that is designed to reduce vibration and noise, while providing constant reliability in operating temperatures to 275º F.

**Saddle Series Pipe Clamps**
**Range:** 0.84 in. (21 mm) through 30 in. (762 mm)
**U-Bolt Material:** Zinc Plated, 304SS, 316SS, Plain Carbon Steel
**Saddle Material:** Polypropylene, UHMW

The Saddle Series pipe clamps consist of a heavy duty plastic saddle, and a U-bolt with 4 hex nuts. The saddle series allows for movement due to vibrations and thermal expansion and contraction. The plastic saddle eliminates the metal-to-metal contact of the piping from the support structure, preventing costly damage to pipe installations. Behringer's Saddle Series clamps are typically used in shipbuilding, offshore and marine vessels, chemical plants, or where ever large diameter, low pressure piping is installed. Behringer's saddle clamps are available in 2 different designs; Long Saddle and Short Saddle. The Long Saddle (shown above) extends past the u-bolt legs and has holes for the legs to be inserted into. The Short Saddle does not extend to the u-bolts and sits on the support structure or is held in place with location nipples.

**Custom Pipe Clamps**
**Range:** Any
**Pressure:** Any
**Material:** Any
**Clamp Insert:** Any

Customization is an easy task for Behringer's vast experience in custom metal fabrication and injection molding. If you have ideas about a custom-made product, we can easily and quickly take concepts and turn them into prototypes and ultimately production items. Behringer currently manufactures custom products for major OEM manufacturers in the mobile, offshore, industrial and construction markets. Some custom items are a variation of a standard item and others are completely different from our cataloged items. Let Behringer work for you to help resolve any of your fastening or clamping requirements.

## Clamp Pair Selection

Behringer's clamp pairs are available in different materials and incorporate a modular insert by group size. Standard series pipe clamps are available in sizes from ¼ in. (6.35mm) through 4-1/4 in. (114.3mm) OD Sizes.

Group 0

Group 1-7A

### Clamp Pair Selection and Part Numbers

| Behringer Group | Pipe Size | Tube Size | Metric ØD (mm) | Imperial ØD (Inch) | Clamp Pair P/N (See material code for *) |
|---|---|---|---|---|---|
| 0 | | 1/4 | 6.4 | 0.250 | ST-CLH-00-*-025 |
| | | 3/8 | 9.5 | 0.375 | ST-CLH-00-*-038 |
| | 1/8 | | 10.0 | 0.405 | ST-CLH-00-*-041 |
| | | 1/2 | 12.7 | 0.500 | ST-CLH-00-*-050 |
| | | 5/8 | 16.0 | 0.620 | ST-CLH-00-*-062 |
| 1 | | 1/4 | 6.4 | 0.250 | ST-CLH-01-*-025 |
| | | | 8.0 | 0.315 | ST-CLH-01-*-032 |
| | | 3/8 | 9.5 | 0.375 | ST-CLH-01-*-038 |
| | 1/8 | | 10.0 | 0.405 | ST-CLH-01-*-041 |
| | | | 12.0 | 0.472 | ST-CLH-01-*-047 |
| 2 | | 3/8 | 9.5 | 0.375 | ST-CLH-02-*-038 |
| | | 1/2 | 12.7 | 0.500 | ST-CLH-02-*-050 |
| | 1/4 | | 14.0 | 0.540 | ST-CLH-02-*-054 |
| | | | 15.0 | 0.591 | ST-CLH-02-*-059 |
| | | 5/8 | 16.0 | 0.620 | ST-CLH-02-*-062 |
| | 3/8 | | 17.1 | 0.675 | ST-CLH-02-*-068 |
| 3 | | | 18.0 | 0.709 | ST-CLH-03-*-070 |
| | | 3/4 | 19.0 | 0.750 | ST-CLH-03-*-075 |
| | 1/2 | | 21.3 | 0.840 | ST-CLH-03-*-084 |
| | | 7/8 | 22.2 | 0.870 | ST-CLH-03-*-087 |
| | | 1 | 25.4 | 1.000 | ST-CLH-03-*-100 |
| 4 | 3/4 | | 26.7 | 1.050 | ST-CLH-04-*-105 |
| | | 1 1/8 | 28.6 | 1.125 | ST-CLH-04-*-112 |
| 5 | | 1 1/8 | 28.6 | 1.125 | ST-CLH-05-*-113 |
| | | 1 1/4 | 32.0 | 1.250 | ST-CLH-05-*-125 |
| | 1 | | 33.4 | 1.315 | ST-CLH-05-*-132 |
| | | 1 1/2 | 38.1 | 1.500 | ST-CLH-05-*-150 |
| | 1 1/4 | | 42.2 | 1.660 | ST-CLH-05-*-166 |
| 6 | | 1 3/4 | 44.5 | 1.750 | ST-CLH-06-*-175 |
| | 1 1/2 | | 48.3 | 1.900 | ST-CLH-06-*-190 |
| | | 2 | 50.8 | 2.000 | ST-CLH-06-*-200 |
| 7 | | 2 1/4 | 57.2 | 2.250 | ST-CLH-07-*-225 |
| | 2 | | 60.3 | 2.375 | ST-CLH-07-*-238 |
| | 2 1/2 | | 73.0 | 2.875 | ST-CLH-07-*-288 |
| | | 3 | 76.2 | 3.000 | ST-CLH-07-*-300 |
| | 3 | 3 1/2 | 88.9 | 3.500 | ST-CLH-07-*-350 |
| 7A | | 4 | 102.0 | 4.000 | ST-CLH-7A-*-400 |
| | 4 | 4 1/2 | 114.3 | 4.500 | ST-CLH-7A-*-450 |

### Clamp Pair Material Codes (*)

| | |
|---|---|
| P | **[PP] Polypropylene** Black Color |
| S | **[SP] Santoprene** Beige Color |
| A | **[AL] Aluminum** Aluminum Color |

### Custom Sizes

Custom sizes can be made by specially boring the clamp pair to any desired size. To order a special size, first find the group that this will fall under. All groups are available starting with 1/4 in. OD and can be used up to the maximum OD size in the chart below. This is expressed in the part number as a two-digit number (G#). Once the group size has been determined, simply add the desired OD of the line to be secured in the 3 digit end number of the clamp pair (XXX) by rounding the number to two decimals and dropping the decimal point. The part number will look like this: **ST-CLH-G#-*-XXX**

Example: For a line wih OD of 1.08 in., this would fall within the group 4. The Part number will be as follows: **ST-CLH-04-*-108**

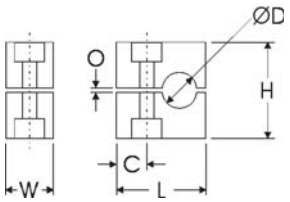
### Special Bore Range by Group

| Group (G#) | Range |
|---|---|
| 00 | 0.25 in through 0.620 in. |
| 01 | 0.25 in through 0.405 in. |
| 02 | 0.25 in through 0.675 in. |
| 03 | 0.25 in through 1.000 in. |
| 04 | 0.25 in through 1.125 in. |
| 05 | 0.25 in through 1.660 in. |
| 06 | 0.25 in through 2.000 in. |
| 07 | 0.25 in through 3.240 in. |
| 7A | 0.25 in through 4.500 in. |

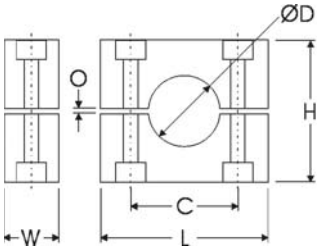
## Clamp Pair Dimensions

Dimensions for the clamp pairs can be found at the right and in the chart below. As a general rule of thumb, the outside diameter of the line to be secured should not vary over or under the ØD dimension in the chart by more than ½ of the tension clearance dimension, or no more than 0.015 in. If an acceptable size is not available, custom sizes can be made to order.

Group 0




Group 1-7A



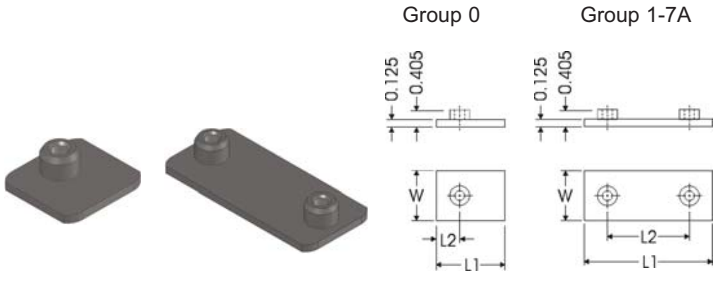

## Clamp Pair Dimensional Information

| Behringer Group | Metric ØD (mm) | Imperial ØD (Inch) | Clamp Pair P/N (See page 6 for complete order numbers) | L | W | H | O | C | Weight Ea. |
|---|---|---|---|---|---|---|---|---|---|
| 0 | 6.40 | 0.250 | ST-CLH-00-*-025 | 1.125 in. (28.6 mm) | 1.219 in. (31 mm) | 1.125 in. (28.6 mm) | 0.031 in. (0.8 mm) | 0.375 in. (9.5 mm) | 0.02 lbs |
| | 9.50 | 0.375 | ST-CLH-00-*-038 | | | | | | |
| | 10.00 | 0.405 | ST-CLH-00-*-041 | | | | | | |
| | 12.70 | 0.500 | ST-CLH-00-*-050 | | | | | | |
| | 16.00 | 0.620 | ST-CLH-00-*-062 | | | | | | |
| 1 | 6.40 | 0.250 | ST-CLH-01-*-025 | 1.375 in. (35 mm) | 1.219 in. (31 mm) | 1.375 in. (35 mm) | 0.031 in. (0.8 mm) | 0.790 in. (20 mm) | 0.03 lbs |
| | 8.00 | 0.315 | ST-CLH-01-*-032 | | | | | | |
| | 9.50 | 0.375 | ST-CLH-01-*-038 | | | | | | |
| | 10.00 | 0.405 | ST-CLH-01-*-041 | | | | | | |
| | 12.00 | 0.472 | ST-CLH-01-*-047 | | | | | | |
| 2 | 9.50 | 0.375 | ST-CLH-02-*-038 | 1.625 in. (42 mm) | 1.219 in. (31 mm) | 1.375 in. (35 mm) | 0.031 in. (0.8 mm) | 1.020 in (26 mm) | 0.04 lbs |
| | 12.70 | 0.500 | ST-CLH-02-*-050 | | | | | | |
| | 14.00 | 0.540 | ST-CLH-02-*-054 | | | | | | |
| | 15.00 | 0.591 | ST-CLH-02-*-059 | | | | | | |
| | 16.00 | 0.620 | ST-CLH-02-*-062 | | | | | | |
| | 17.10 | 0.675 | ST-CLH-02-*-068 | | | | | | |
| 3 | 18.00 | 0.709 | ST-CLH-03-*-070 | 1.875 in. (48 mm) | 1.219 in. (31 mm) | 1.375 in. (35 mm) | 0.031 in. (0.8 mm) | 1.300 in. (33 mm) | 0.05 lbs |
| | 19.00 | 0.750 | ST-CLH-03-*-075 | | | | | | |
| | 21.30 | 0.840 | ST-CLH-03-*-084 | | | | | | |
| | 22.20 | 0.870 | ST-CLH-03-*-087 | | | | | | |
| | 25.40 | 1.000 | ST-CLH-03-*-100 | | | | | | |
| 4 | 26.70 | 1.050 | ST-CLH-04-*-105 | 2.250 in. (57 mm) | 1.219 in. (31 mm) | 1.625 in. (42 mm) | 0.031 in. (0.8 mm) | 1.580 in. (40 mm) | 0.06 lbs |
| | 28.60 | 1.125 | ST-CLH-04-*-112 | | | | | | |
| 5 | 28.60 | 1.125 | ST-CLH-05-*-113 | 2.750 in. (70 mm) | 1.219 in. (31 mm) | 2.375 in. (60 mm) | 0.031 in. (0.8 mm) | 2.050 in. (52 mm) | 0.11 lbs |
| | 32.00 | 1.250 | ST-CLH-05-*-125 | | | | | | |
| | 33.4 | 1.315 | ST-CLH-05-*-132 | | | | | | |
| | 38.1 | 1.500 | ST-CLH-05-*-150 | | | | | | |
| | 42.2 | 1.660 | ST-CLH-05-*-166 | | | | | | |
| 6 | 44.5 | 1.750 | ST-CLH-06-*-175 | 3.375 in. (86 mm) | 1.219 in. (31 mm) | 2.625 in. (67 mm) | 0.031 in. (0.8 mm) | 2.600 in. (66 mm) | 0.12 lbs |
| | 48.3 | 1.900 | ST-CLH-06-*-190 | | | | | | |
| | 50.8 | 2.000 | ST-CLH-06-*-200 | | | | | | |
| 7 | 57.2 | 2.250 | ST-CLH-07-*-225 | 5.000 in. (127 mm) | 1.219 in. (31 mm) | 4.375 in. (111 mm) | 0.031 in. (0.8 mm) | 4.250 in. (108 mm) | 0.41 lbs |
| | 60.3 | 2.375 | ST-CLH-07-*-238 | | | | | | |
| | 73 | 2.875 | ST-CLH-07-*-288 | | | | | | |
| | 76.2 | 3.000 | ST-CLH-07-*-300 | | | | | | |
| | 88.9 | 3.500 | ST-CLH-07-*-350 | | | | | | |
| 7A | 102 | 4.000 | ST-CLH-7A-*-400 | 5.750 in. (146 mm) | 1.219 in. (31mm) | 4.828 in. (123 mm) | 0.031 in. (0.8 mm) | 4.948 in. (126 mm) | 0.39 lbs |
| | 114.3 | 4.500 | ST-CLH-7A-*-450 | | | | | | |

# Securing Plate Selection and Dimensions

## Weld Plate [STW]

The typical mounting configuration is one where the clamp is welded to the support structure. Weld plates can also be used in the RAL-1 mounting rail as an alternative to using the RCN-1 rail nuts.



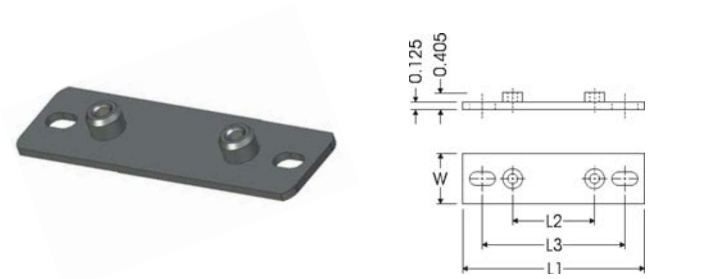

| Group | Order Number | L1 | L2 | W | Weight |
|---|---|---|---|---|---|
| 0 | ST-STW-00-* | 1.188 in. (30 mm) | 0.420 in. (11 mm) | | 0.06 lbs. |
| 1 | ST-STW-01-* | 1.510 in. (38 mm) | 0.790 in. (20 mm) | | 0.07 lbs. |
| 2 | ST-STW-02-* | 1.740in. (44 mm) | 1.020 in. (26 mm) | | 0.08 lbs. |
| 3 | ST-STW-03-* | 2.020 in. (51 mm) | 1.300 in. (33 mm) | | 0.10 lbs. |
| 4 | ST-STW-04-* | 2.300 in. (58 mm) | 1.580 in. (40 mm) | 1.223 in (31 mm) | 0.11 lbs. |
| 5 | ST-STW-05-* | 2.770 in. (70 mm) | 2.050 in. (52 mm) | | 0.13 lbs. |
| 6 | ST-STW-06-* | 3.320 in. (84 mm) | 2.600 in. (66 mm) | | 0.15 lbs. |
| 7 | ST-STW-07-* | 4.970 in. (126 mm) | 4.250 in (108 mm) | | 0.21 lbs. |
| 7A | ST-STW-7A-* | 5.776 in. (147 mm) | 4.948 in (126 mm) | | 0.27 lbs. |

***Materials:**
- **Z** — Zinc Plated Steel (Standard Material)
- **T** — AISI 304 Grade Stainless Steel (A2 - 1.4301/1.4305)
- **X** — AISI 316 Grade Stainless Steel (A4 - 1.4401/1.4571)
- **C** — Plain Carbon Steel (Special Order)

**Threads:**
- **omit** — As ordered above, the weld plates have standard 1/4 - 20 UNC thread
- **-MET** — By adding the "**-MET**" designation after the material designation above, the threads are M6 metric thread

## Base Plate [BAP]

The versatile base plate can be either welded or bolted to the structure. This is typically used where welding is not an option such as on drywall or wood support structures.



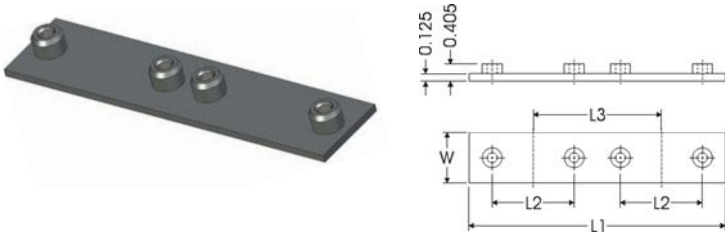

| Group | Order Number | L1 | L2 | L3 | W | Weight |
|---|---|---|---|---|---|---|
| 0 | N/A | - | - | - | - | - |
| 1 | ST-BAP-01-* | 3.000 in. (76 mm) | 0.790 in. (20 mm) | 1.750 in. (44 mm) | | 0.13 lbs. |
| 2 | ST-BAP-02-* | 3.250 in. (83 mm) | 1.020 in. (26 mm) | 2.000 in. (51 mm) | | 0.14 lbs. |
| 3 | ST-BAP-03-* | 3.500 in. ( 89 mm) | 1.300 in. (33 mm) | 2.250 in. (57 mm) | | 0.16 lbs. |
| 4 | ST-BAP-04-* | 3.813 in. (97 mm) | 1.580 in. (40 mm) | 2.563 in. (65 mm) | 1.223 in. (31 mm) | 0.16 lbs. |
| 5 | ST-BAP-05-* | 4.250 in. (108 mm) | 2.050 in. (52 mm) | 3.000 in. (76 mm) | | 0.19 lbs. |
| 6 | ST-BAP-06-* | 4.875 in. (124 mm) | 2.600 in. (66 mm) | 3.625 in. (92 mm) | | 0.20 lbs. |
| 7 | ST-BAP-07-* | 6.500 in. (165 mm) | 4.250 in. (108 mm) | 5.250 in. (133 mm) | | 0.27 lbs. |
| 7A | ST-BAP-7A-* | 7.188 in. (183 mm) | 4.948 in. (126 mm) | 5.938 in. (171 mm) | | 0.35 lbs. |

***Materials:**
- **Z** — Zinc Plated Steel (Standard Material)
- **T** — AISI 304 Grade Stainless Steel (A2 - 1.4301/1.4305)
- **X** — AISI 316 Grade Stainless Steel (A4 - 1.4401/1.4571)
- **C** — Plain Carbon Steel (Special Order)

**Threads:**
- **omit** — As ordered above, the weld plates have standard 1/4 - 20 UNC thread
- **-MET** — By adding the "**-MET**" designation after the material designation above, the threads are M6 metric thread

## Double Weld Plate [DOW]

Double weld plates allow for runs of two lines side by side, while keeping center distances aligned and reducing installation time required.



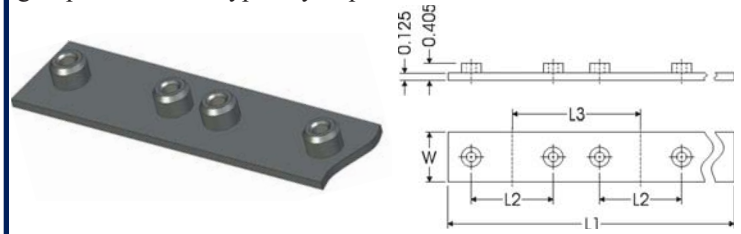

| Group | Order Number | L1 | L2 | L3 | W | Weight |
|---|---|---|---|---|---|---|
| 0 | N/A | | | | | |
| 1 | ST-DOW-01-* | 3.00 in. (76 mm) | 0.790 in. (20 mm) | 1.51 in. (38 mm) | | 0.16 lbs |
| 2 | ST-DOW-02-* | 3.50 in. (89 mm) | 1.020 in. (26 mm) | 1.74 in. (44 mm) | | 0.17 lbs |
| 3 | ST-DOW-03-* | 4.00 in. (102 mm) | 1.300 in. (33 mm) | 2.02 in. (51 mm) | | 0.19 lbs |
| 4 | ST-DOW-04-* | 4.69 in. (119 mm) | 1.580 in. (40 mm) | 2.30 in. (58 mm) | 1.223 in. (31 mm) | 0.24 lbs |
| 5 | ST-DOW-05-* | 5.63 in. (143 mm) | 2.050 in. (52 mm) | 2.77 in. (70 mm) | | 0.26 lbs |
| 6 | ST-DOW-06-* | 6.88 in. (175 mm) | 2.600 in. (66 mm) | 3.32 in. (84 mm) | | 0.30 lbs |
| 7 | ST-DOW-07-* | 10.22 in. (260 mm) | 4.250 in. (108 mm) | 5.24 in. (133 mm) | | 0.45 lbs |
| 7A | ST-DOW-7A-* | 11.69 in. (297 mm) | 4.948 in. (126 mm) | 6.02 in. (153 mm) | | 0.56 lbs |

***Materials:**
- **Z** — Zinc Plated Steel (Standard Material)
- **T** — AISI 304 Grade Stainless Steel (A2 - 1.4301/1.4305)
- **X** — AISI 316 Grade Stainless Steel (A4 - 1.4401/1.4571)
- **C** — Plain Carbon Steel (Special Order)

**Threads:**
- **omit** — As ordered above, the weld plates have standard 1/4 - 20 UNC thread
- **-MET** — By adding the "**-MET**" designation after the material designation above, the threads are M6 metric thread

## Group Weld Plate [GRW]

Group weld plates allow for runs of multiple lines side by side, while keeping regimented center distances and reducing installation time required. GRWs can run from 3 to 27 positions, depending on the group size and are typically unplated.




| Group | Order Number | L1 | L2 | L3 | W |
|---|---|---|---|---|---|
| 0 | N/A | - | - | - | - |
| 1 | ST-GRW-01-*-XXX | C/F | 0.790 in. (20 mm) | 1.51 in. (38 mm) | |
| 2 | ST-GRW-02-*-XXX | C/F | 1.020 in. (26 mm) | 1.74 in. (44 mm) | |
| 3 | ST-GRW-03-*-XXX | C/F | 1.300 in. (33 mm) | 2.02 in. (51 mm) | |
| 4 | ST-GRW-04-*-XXX | C/F | 1.580 in. (40 mm) | 2.30 in. (58 mm) | 1.223 (31 mm) |
| 5 | ST-GRW-05-*-XXX | C/F | 2.050 in. (52 mm) | 2.77 in. (70 mm) | |
| 6 | ST-GRW-06-*-XXX | C/F | 2.600 in. (66 mm) | 3.32 in. (84 mm) | |
| 7 | ST-GRW-07-*-XXX | C/F | 4.250 in (108 mm) | 5.24 in. (133 mm) | |
| 7A | ST-GRW-7A-*-XXX | C/F | 4.948 in (126 mm) | 6.02 in. (153 mm) | |

***Materials:**
- **Z** — Zinc Plated Steel (Special Order)
- **T** — AISI 304 Grade Stainless Steel (A2 - 1.4301/1.4305)
- **X** — AISI 316 Grade Stainless Steel (A4 - 1.4401/1.4571)
- **C** — Plain Carbon Steel (Standard Material)

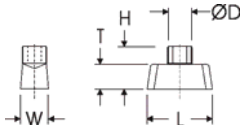
**XXX:** **Number of positions expressed as a 3-digit number**
Example #1: ST-GRW-03-C-005 = Group 3, 5 Positions, Carbon Steel
Example #2: ST-GRW-04-Z-010 = Group 4, 10 Positions, Zinc Plated Steel

**Threads:**
- **omit** — Weld plates have standard 1/4 - 20 UNC thread
- **-MET** — By adding the "**-MET**" designation after the material designation above, the threads are M6 metric thread

# Rail and Strut Mounting Options

## Rail Nut [RCN-0 / MRN-0]

The RCN-0 is for use when mounting Behringer's RAL-0, and competitor's DIN standard rails. The MRN is the same rail nut but with metric thread.

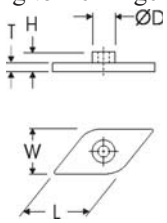



| Group | Order Number | L | W | T | H | Thread |
|---|---|---|---|---|---|---|
| 0-7A | **ST-RCN-99-*-RN0** | 0.950 in. (24 mm) | 0.405 in (10.2 mm) | 0.210 in. (5.3 mm) | 0.570 in. (14.5 mm) | 1/4 - 20 UNC |
| 0-7A | **ST-MRN-99-*-RN0** | 0.950 in. (24 mm) | 0.405 in (10.2 mm) | 0.210 in. (5.3 mm) | 0.570 in. (14.5 mm) | M6 |

| | | |
|---|---|---|
| ***Materials:** | **C** | Plain Carbon Steel (Standard Material) |
| | **T** | AISI 304 Grade Stainless Steel (A2 - 1.4301/1.4305) |
| | **X** | AISI 316 Grade Stainless Steel (A4 - 1.4401/1.4571) |
| | **Z** | Zinc Plated Steel (Special Material) |
| **Weight Ea.:** | | Approx. 0.02 lbs ea. |

## Rail Nut [RCN-1 / MRN-1]

The RCN-1 is used only when mounting to Behringer's proprietary RAL-1.

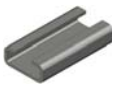


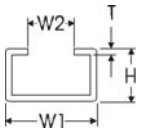

| Group | Order Number | L | W | T | H | Thread |
|---|---|---|---|---|---|---|
| 0-7A | **ST-RCN-99-*-RN1** | 1.075 in. (27.3 mm) | 0.783 in (19.9 mm) | 0.175 in. (4.4 mm) | 0.405 in. (10 mm) | 1/4 - 20 UNC |
| 0-7A | **ST-MRN-99-*-RN1** | 1.075 in. (27.3 mm) | 0.783 in (19.9 mm) | 0.175 in. (4.4 mm) | 0.405 in. (10 mm) | M6 |

| | | |
|---|---|---|
| ***Materials:** | **Z** | Zinc Plated Steel (Standard Material) |
| | **T** | AISI 304 Grade Stainless Steel (A2 - 1.4301/1.4305) |
| | **X** | AISI 316 Grade Stainless Steel (A4 - 1.4401/1.4571) |
| | **C** | Plain Carbon Steel (Special Order) |
| **Weight Ea.:** | | Approx. 0.04 lbs ea. |

## Mounting Rail [RAL-0]

Behringer's RAL-0 can be used to mount clamps with RCN-0 rail nuts only. This rail is a DIN standard rail. (DIN 3015-1)





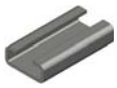

| Group | Order Number | W1 | W2 | Length | T | H |
|---|---|---|---|---|---|---|
| 0-7A | **ST-RA0-99-*-XXX** | 1.125 in. (28 mm) | 0.438 in (11 mm) | See Below | 14 gauge | 0.438 in (11 mm) |

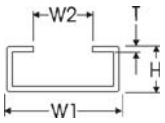
| | | |
|---|---|---|
| ***Materials:** | **C** | Plain Carbon Steel (Standard Material) |
| | **T** | AISI 304 Grade Stainless Steel (A2 - 1.4301/1.4305) |
| | **X** | AISI 316 Grade Stainless Steel (A4 - 1.4401/1.4571) |
| | **Z** | Zinc Plated Steel (Special Order) |

| | | | |
|---|---|---|---|
| **XXX Length:** | **6FT** | 72 in. (1829 mm) Length (Standard Length) | 3.30 lbs ea. |
| | **3FT** | 36 in. (914 mm ) Length (Special Length) | 1.65 lbs ea. |
| | | Custom sizes available on request | |

## Mounting Rail [RAL-1]

Behringer's Proprietary RAL-1 can be used to mount both clamps with RCN-1 rail nuts or STW weld plates. This allows more flexibility of inventories and simplifies installation and field modifications.





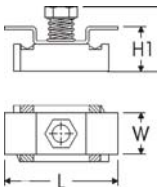

| Group | Order Number | W1 | W2 | Length | T | H |
|---|---|---|---|---|---|---|
| 0-7A | **ST-RA1-99-*-XXX** | 1.438 in. (28 mm) | 0.625 in (11 mm) | See Below | 14 gauge | 0.438 in (11 mm) |

| | | |
|---|---|---|
| ***Materials:** | **Z** | Zinc Plated Steel (Standard Material) |
| | **T** | AISI 304 Grade Stainless Steel (A2 - 1.4301/1.4305) |
| | **X** | AISI 316 Grade Stainless Steel (A4 - 1.4401/1.4571) |
| | **C** | Plain Carbon Steel (Special Order) |

| | | | |
|---|---|---|---|
| **XXX Length:** | **6FT** | 72 in. (1829 mm) Length (Standard Length) | 4.06 lbs ea. |
| | **3FT** | 36 in. (914 mm ) Length (Special Length) | 2.03 lbs ea. |
| | | Custom sizes available on request | |

## Strut Clip Nut [UCN]

The UCN nut is used to adapt Behringer's pipe clamps to standard strut channels. This allows for even greater flexibility and mounting possibilities.




| Group | Order Number | L | W | H1 | H2 | Thread |
|---|---|---|---|---|---|---|
| 0-7A | **ST-UCN-99-*N** | 1.660 in. (42 mm) | 0.635 in (16 mm) | 0.525 in. (13 mm) | 0.813 in. (20.5 mm) | 1/4 - 20 UNC |

| | | |
|---|---|---|
| ***Materials:** | **Z** | Zinc Plated Steel (Standard Material) |
| | **T** | AISI 304 Grade Stainless Steel (A2 - 1.4301/1.4305) |
| | **X** | AISI 316 Grade Stainless Steel (A4 - 1.4401/1.4571) |
| | **C** | Plain Carbon Steel (Special Order) |
| **Weight Ea.:** | | Approx. 0.10 lbs. ea. |

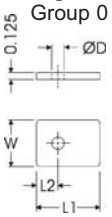
# Standard Series Pipe Clamps

## Cover and Stacking Component Selection and Dimensions

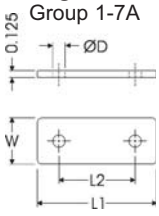
### Cover Plate [COP]

The Cover plate is the standard top fixture for securing the clamp with hexagon head bolts.

Group 0




Group 1-7A




| Group | Order Number | L1 | L2 | W | ØD | Weight |
|---|---|---|---|---|---|---|
| 0 | **ST-COP-00-*** | 1.044 in. (27 mm) | 0.370 in. (9 mm) | | | 0.04 lbs. |
| 1 | **ST-COP-01-*** | 1.362 in. (36 mm) | 0.790 in. (20 mm) | | | 0.05 lbs. |
| 2 | **ST-COP-02-*** | 1.592 in. (40 mm) | 1.020 in. (26 mm) | | | 0.06 lbs. |
| 3 | **ST-COP-03-*** | 1.872 in. (48 mm) | 1.300 in. (33 mm) | | | 0.07 lbs. |
| 4 | **ST-COP-04-*** | 2.152 in. (55 mm) | 1.580 in. (40 mm) | 1.223 in. (31 mm) | 0.275 in. (7 mm) | 0.08 lbs. |
| 5 | **ST-COP-05-*** | 2.790 in. (71 mm) | 2.050 in. (52 mm) | | | 0.10 lbs. |
| 6 | **ST-COP-06-*** | 3.340 in. (85 mm) | 2.600 in. (66 mm) | | | 0.14 lbs. |
| 7 | **ST-COP-07-*** | 5.020 in. (128 mm) | 4.250 in (108 mm) | | | 0.18 lbs |
| 7A | **ST-COP-7A-*** | 5.782 in. (147 mm) | 4.948 in (126 mm) | | | 0.27 lbs |

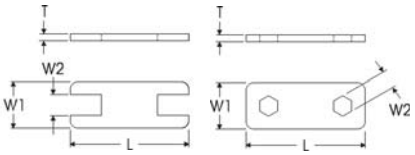
| | | |
|---|---|---|
| ***Materials:** | **Z** | Zinc Plated Steel (Standard Material) |
| | **T** | AISI 304 Grade Stainless Steel (A2 - 1.4301/1.4305) |
| | **X** | AISI 316 Grade Stainless Steel (A4 - 1.4401/1.4571) |
| | **C** | Plain Carbon Steel (Special Order) |

### Safety Plate [SAF]

The safety plate is used in conjunction with the STB stacking bolts below. This ensures that the stacking bolts will remain locked in place when tightening the clamp module stacked above.

Group 1-4

Group 5-7A




| Group | Order Number | L | W1 | W2 | T | Weight |
|---|---|---|---|---|---|---|
| 0 | **N/A** | - | - | - | - | - |
| 1 | **ST-SAF-01-*** | 1.330 in. (34 mm) | 1.125 in. (29 mm) | 0.440 in. (11.2 mm) | | 0.01 lbs. |
| 2 | **ST-SAF-02-*** | 1.560 in. (40 mm) | 1.125 in. (29 mm) | 0.440 in. (11.2 mm) | | 0.02 lbs. |
| 3 | **ST-SAF-03-*** | 1.872 in. (48 mm) | 1.125 in. (29 mm) | 0.440 in. (11.2 mm) | | 0.02 lbs. |
| 4 | **ST-SAF-04-*** | 2.120 in. (54 mm) | 1.125 in. (29 mm) | 0.440 in. (11.2 mm) | 0.046 in. (1 mm) | 0.03 lbs. |
| 5 | **ST-SAF-05-*** | 2.760 in. (70 mm) | 1.125 in. (29 mm) | 0.460 in. (11.7 mm) | | 0.04 lbs. |
| 6 | **ST-SAF-06-*** | 3.340 in. (85 mm) | 1.125 in. (29 mm) | 0.460 in. (11.7 mm) | | 0.04 lbs. |
| 7 | **ST-SAF-07-*** | 5.020 in. (128 mm) | 1.125 in. (29 mm) | 0.460 in. (11.7 mm) | | 0.07 lbs. |
| 7A | **ST-SAF-7A-*** | 5.782 in. (147 mm) | 1.125 in. (29 mm) | 0.460 in. (11.7 mm) | | C/F |

| | | |
|---|---|---|
| ***Materials:** | **Z** | Zinc Plated Steel (Standard Material) |
| | **T** | AISI 304 Grade Stainless Steel (A2 - 1.4301/1.4305) |
| | **X** | AISI 316 Grade Stainless Steel (A4 - 1.4401/1.4571) |
| | **C** | Plain Carbon Steel (Special Order) |

### Hexagon Head Bolt [HEX]

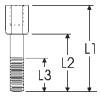
The Hexagon head bolt is used when using clamps with cover plates or cover washers.


| Group | Order Number | L | Thread | Weight |
|---|---|---|---|---|
| 0 | **ST-HEX-01-*** | 1.25 in. (32 mm) | 1/4 - 20 UNC (M6 metric) | 0.02 lbs. |
| 1 | **ST-HEX-01-*** | 1.25 in. (32 mm) | 1/4 - 20 UNC (M6 metric) | 0.02 lbs. |
| 2 | **ST-HEX-02-*** | 1.50 in. (38 mm) | 1/4 - 20 UNC (M6 metric) | 0.02 lbs. |
| 3 | **ST-HEX-02-*** | 1.50 in. (38 mm) | 1/4 - 20 UNC (M6 metric) | 0.02 lbs. |
| 4 | **ST-HEX-04-*** | 1.75 in. (44 mm) | 1/4 - 20 UNC (M6 metric) | 0.03 lbs. |
| 5 | **ST-HEX-05-*** | 2.50 in. (64 mm) | 1/4 - 20 UNC (M6 metric) | 0.04 lbs. |
| 6 | **ST-HEX-06-*** | 2.75 in. (70 mm) | 1/4 - 20 UNC (M6 metric) | 0.04 lbs. |
| 7 | **ST-HEX-07-*** | 4.50 in. (114 mm) | 1/4 - 20 UNC (M6 metric) | 0.06 lbs. |
| 7A | **ST-HEX-7A-*** | 5.00 in. (127 mm) | 1/4 - 20 UNC (M6 metric) | 0.06 lbs. |

| | | |
|---|---|---|
| ***Materials:** | **Z** | Zinc Plated Steel (Standard Material) |
| | **T** | AISI 304 Grade Stainless Steel (A2 - 1.4301/1.4305) |
| | **X** | AISI 316 Grade Stainless Steel (A4 - 1.4401/1.4571) |
| | **C** | Plain Carbon Steel (Special Order) |
| **Threads:** | **omit** | As ordered above, the weld plates have standard 1/4 - 20 UNC thread |
| | **-MET** | By adding the "**-MET**" designation after the material designation above, the threads are M6 metric thread |

### Stacking Bolt [STB]

The stacking bolt is used when another clamp module will be stacked on top of the bottom or existing module. The head of the stacking bolt has a female thread for the next bolt to engage.

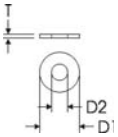



| Group | Order Number | L1 | L2 | L3 | Weight |
|---|---|---|---|---|---|
| 0 | **ST-STB-00-*** | 1.438 in. (36.5 mm) | 0.813 in. (21 mm) | 0.75 in. (19 mm) | 0.03 lbs. |
| 1 | **ST-STB-00-*** | 1.438 in. (36.5 mm) | 0.813 in. (21 mm) | 0.75 in. (19 mm) | 0.03 lbs. |
| 2 | **ST-STB-02-*** | 1.688 in. (43 mm) | 1.063 in. (27 mm) | 0.75 in. (19 mm) | 0.04 lbs. |
| 3 | **ST-STB-02-*** | 1.688 in. (43 mm) | 1.063 in. (27 mm) | 0.75 in. (19 mm) | 0.04 lbs. |
| 4 | **ST-STB-04-*** | 1.938 in. (49 mm) | 1.313 in. (33 mm) | 0.75 in. (19 mm) | 0.04 lbs. |
| 5 | **ST-STB-05-*** | 2.688 in. (68 mm) | 2.063 in. (52 mm) | 0.75 in. (19 mm) | 0.05 lbs. |
| 6 | **ST-STB-06-*** | 2.938 in. (75 mm) | 2.313 in. (59 mm) | 0.75 in. (19 mm) | 0.05 lbs. |
| 7 | **ST-STB-07-*** | 4.688 in. (119 mm) | 4.063 in. (103 mm) | 0.75 in. (19 mm) | 0.08 lbs. |
| 7A | **C/F** | - | - | - | - |

| | | |
|---|---|---|
| ***Materials:** | **Z** | Zinc Plated Steel (Standard Material) |
| | **T** | AISI 304 Grade Stainless Steel (A2 - 1.4301/1.4305) |
| | **X** | AISI 316 Grade Stainless Steel (A4 - 1.4401/1.4571) |
| | **C** | Plain Carbon Steel (Special Order) |
| **Threads:** | **omit** | As ordered above, the weld plates have standard 1/4 - 20 UNC thread |
| | **-MET** | By adding the "**-MET**" designation after the material designation above, the threads are M6 metric thread |

### Cover Washer [COW]

Cover washers can be used as an alternative to cover plates in some applications where there is little vibration, and low operating pressure.




| Group | Order Number | ØD1 | ØD2 | T | Weight |
|---|---|---|---|---|---|
| 0-7A | **ST-COW-99-*** | 0.630 in. (16 mm) | 0.265 in (6.7 mm) | 0.117 in. (3 mm) | 0.01 lbs |

| | | |
|---|---|---|
| ***Materials:** | **Z** | Zinc Plated Steel (Standard Material) |
| | **T** | AISI 304 Grade Stainless Steel (A2 - 1.4301/1.4305) |
| | **X** | AISI 316 Grade Stainless Steel (A4 - 1.4401/1.4571) |
| | **C** | Plain Carbon Steel (Special Material) |

# Complete Assembly Ordering Code

| Chart 1 | Chart 2 | Chart 3 | Chart 4 | Chart 5 |
|---|---|---|---|---|
| S | T | 5150 | - PP | - MET |

## ① Clamp Configuration

| | |
|---|---|
| **S** | Complete Clamp for Weld Mounting [STW] |
| **BS** | Complete Clamp for Bolt Mounting [BAP] |
| **DS** | Complete Double Clamp for Weld Mounting [DOW] |
| **R0S** | Complete Clamp for mounting to RAL-0 [RCN-0] |
| **R1S** | Complete Clamp for mounting to RAL-1 [RCN-1] |
| **US** | Complete Clamp for mounting to Strut Channel [UCN] |
| **G*S** | Complete Clamp for Group Weld Plate Mounting [GRW]<br>* number of positions |
| **SSK** | Stacking Kit [SAF + STB] |

## ② Hardware Materials

| | |
|---|---|
| **Omit** | Electro-Zinc Dichromate Plating<br>RCN-0 rail nuts and group weld plates (GRW) are still supplied as untreated carbon steel. Zinc plating available for these parts on request. |
| **T** | AISI 304 Stainless Steel (A2 - 1.4301/1.4305) |
| **X** | AISI 316/316Ti Stainless Steel (A4 - 1.4401/1.4571) |
| **C** | Untreated Carbon Steel |

## ④ Clamp Pair Material

| | |
|---|---|
| **PP** | Polypropylene |
| **SP** | Santoprene |
| **AL** | Aluminum<br>Groups 1-6 only |

## ⑤ Threads

| | |
|---|---|
| **Omit** | UNC Thread (Standard) |
| **MET** | Metric Thread (Special) |

## ③ Clamp Group and Size

| Behringer Group | Pipe Size | Tube Size | Metric ØD (mm) | Imperial ØD (Inch) | Clamp Halves (Set of 2) |
|---|---|---|---|---|---|
| 0 | | 1/4 | 6.4 | 0.250 | 0025 |
| | | 3/8 | 9.5 | 0.375 | 0038 |
| | 1/8 | | 10.0 | 0.405 | 00405 |
| 1 | | 1/4 | 6.4 | 0.250 | 1025 |
| | | 3/8 | 9.5 | 0.380 | 1038 |
| | 1/8 | | 10.0 | 0.405 | 10405 |
| | | | 12.0 | 0.472 | 10472 |
| 2 | | 1/2 | 12.7 | 0.500 | 2050 |
| | 1/4 | | 14.0 | 0.540 | 20540 |
| | | | 15.0 | 0.591 | 2059 |
| | | 5/8 | 16.0 | 0.620 | 2062 |
| | 3/8 | | 17.1 | 0.675 | 20675 |
| 3 | | | 18.0 | 0.709 | 3070 |
| | | 3/4 | 19.0 | 0.750 | 3075 |
| | 1/2 | | 21.3 | 0.840 | 30840 |
| | | 7/8 | 22.2 | 0.870 | 3087 |
| | | 1 | 25.4 | 1.000 | 3100 |
| 4 | 3/4 | | 26.7 | 1.050 | 41050 |
| | | 1 1/8 | 28.6 | 1.125 | 41125 |
| 5 | | 1 1/4 | 32.0 | 1.250 | 5125 |
| | 1 | | 33.4 | 1.315 | 51315 |
| | | 1 1/2 | 38.1 | 1.500 | 5150 |
| | 1 1/4 | | 42.2 | 1.660 | 51660 |
| 6 | | 1 3/4 | 44.5 | 1.750 | 6175 |
| | 1 1/2 | | 48.3 | 1.900 | 61900 |
| | | 2 | 50.8 | 2.000 | 6200 |
| 7 | | 2 1/4 | 57.2 | 2.250 | 7225 |
| | 2 | | 60.3 | 2.375 | 72375 |
| | 2 1/2 | | 73.0 | 2.875 | 72875 |
| | | 3 | 76.2 | 3.000 | 7300 |
| | 3 | 3 1/2 | 88.9 | 3.500 | 7350 |
| 7A | | 4 | 102.0 | 4.000 | 7A400 |
| | 4 | 4 1/2 | 114.3 | 4.500 | 7A450 |

## Ordering Examples

### S — Single Clamp for Weld Mounting

Consists of:
2 HEX Bolts
1 COP Cover Plate
1 CLH Clamp Set (2 halves)
1 STW Weld Plate

### DS — Double Clamp for Weld Mounting

Consists of:
4 HEX Bolts
2 COP Cover Plate
2 CLH Clamp Sets (4 halves)
1 DOW Weld Plate

### BS — Clamp for Bolt Mounting

Consists of:
2 HEX Bolts
1 COP Cover Plate
1 CLH Clamp Set (2 halves)
1 BAP Weld Plate

### SSK — Stacking Kit

Consists of:
2 STB Stacking Bolts
1 SAF Safety Plates
1 CLH Clamp Sets (2 halves)

### R0S — Clamp for Rail-0 Mounting

Consists of:
2 HEX Bolts
1 COP Cover Plate
1 CLH Clamp Set (2 halves)
2 RCN-0 Rail Nuts
Standard material for the RCN-0 rail nuts is un-plated steel.

### R1S — Clamp for Rail-1 Mounting

Consists of:
2 HEX Bolts
1 COP Cover Plate
1 CLH Clamp Set (2 halves)
2 RCN-1 Rail Nuts

### US — Clamp for Strut Mounting

Consists of:
2 HEX Bolts
1 COP Cover Plate
1 CLH Clamp Set (2 halves)
2 UCN Strut Clips

### G*S — Clamp for Group Weld Mounting

Consists of:
2 HEX Bolts Per Position
1 COP Cover Plate Per Position
1 CLH Clamp Set Per Position
1 GRW Group Weld Plate (continuous)
Standard Material for GRW is un-plated steel.

*is the number of positions
Example: Group 2, 5 positions of 1/2" Tube, PP Clamps, 304SS = G5ST2050-PP

## Clamp Pair Selection and Part Numbers

Behringer's clamp pairs are available in different materials and incorporate a modular insert by group size. Heavy Series pipe clamps are available in sizes from ¼ in. (6.35mm) through 8.625 in. (219mm) OD Sizes.

### Clamp Pair Selection and Part Numbers

| Behringer Group | Pipe Size | Tube Size | Metric ØD (mm) | Imperial ØD (Inch) | Clamp Pair (See material code for *) |
|---|---|---|---|---|---|
| H3 | | 1/4 | 6.4 | 0.250 | HS-CLH-03-*-025 |
| | | 3/8 | 9.5 | 0.375 | HS-CLH-03-*-038 |
| | 1/8 | | 10.0 | 0.405 | HS-CLH-03-*-041 |
| | | 1/2 | 12.7 | 0.500 | HS-CLH-03-*-050 |
| | 1/4 | | 13.7 | 0.540 | HS-CLH-03-*-054 |
| | | 5/8 | 16.0 | 0.620 | HS-CLH-03-*-062 |
| | 3/8 | | 17.1 | 0.675 | HS-CLH-03-*-068 |
| H4 | | 3/4 | 19.0 | 0.750 | HS-CLH-04-*-075 |
| | | | 20.0 | 0.790 | HS-CLH-04-*-079 |
| | 1/2 | | 21.3 | 0.840 | HS-CLH-04-*-084 |
| | | 7/8 | 22.2 | 0.870 | HS-CLH-04-*-087 |
| | | 1 | 25.4 | 1.000 | HS-CLH-04-*-100 |
| | 3/4 | | 26.7 | 1.050 | HS-CLH-04-*-105 |
| | | | 30.0 | 1.181 | HS-CLH-04-*-118 |
| H5 | | 1 1/4 | 32.0 | 1.250 | HS-CLH-05-*-125 |
| | 1 | | 33.4 | 1.315 | HS-CLH-05-*-132 |
| | | 1 1/2 | 38.1 | 1.500 | HS-CLH-05-*-150 |
| | 1 1/4 | | 42.2 | 1.660 | HS-CLH-05-*-166 |
| H6 | 1 | | 33.4 | 1.315 | HS-CLH-06-*-132 |
| | 1 1/4 | | 42.2 | 1.660 | HS-CLH-06-*-166 |
| | | 1 3/4 | 44.5 | 1.750 | HS-CLH-06-*-175 |
| | 1 1/2 | | 48.3 | 1.900 | HS-CLH-06-*-190 |
| | | 2 | 50.8 | 2.000 | HS-CLH-06-*-200 |
| | | 2 1/8 | 54.0 | 2.125 | HS-CLH-06-*-213 |
| | | 2 1/4 | 57.2 | 2.250 | HS-CLH-06-*-225 |
| | 2 | | 60.3 | 2.375 | HS-CLH-06-*-238 |
| | | 2 1/2 | 63.5 | 2.500 | HS-CLH-06-*-250 |
| | | 2 3/4 | 69.9 | 2.750 | HS-CLH-06-*-275 |
| H7 | | 2 3/4 | 69.9 | 2.750 | HS-CLH-07-*-275 |
| | 2 1/2 | | 73.0 | 2.875 | HS-CLH-07-*-288 |
| | | 3 | 76.2 | 3.000 | HS-CLH-07-*-300 |
| | 3 | 3 1/2 | 88.9 | 3.500 | HS-CLH-07-*-350 |
| H8 | 3 | 3 1/2 | 88.9 | 3.500 | HS-CLH-08-*-350 |
| | | 4 | 102 | 4.000 | HS-CLH-08-*-400 |
| | 4 | 4 1/2 | 114 | 4.500 | HS-CLH-08-*-450 |
| | | 5 | 127 | 5.000 | HS-CLH-08-*-500 |
| H9 | | 5 | 127 | 5.000 | HS-CLH-09-*-500 |
| | | 5 1/4 | 133 | 5.250 | HS-CLH-09-*-525 |
| | 5 | | 141 | 5.563 | HS-CLH-09-*-556 |
| | | 6 | 152 | 6.000 | HS-CLH-09-*-600 |
| | 6 | | 168 | 6.625 | HS-CLH-09-*-663 |
| H10 | 6 | | 168 | 6.625 | HS-CLH-10-*-663 |
| | | 8 | 203 | 8.000 | HS-CLH-10-*-800 |
| | 8 | | 219 | 8.625 | HS-CLH-10-*-863 |

### Clamp Pair Material Codes (*)

| | |
|---|---|
| P | **[PP] Polypropylene** Black Color |
| S | **[SP] Santoprene** Beige Color |
| A | **[AL] Aluminum** Aluminum Color |

### Custom Sizes

Custom sizes can be made by specially boring the clamp pair to any desired size. To order a special size, first find the group that this will fall under. All groups are available starting with 1/4 in. OD and can be used up to the maximum OD size in the chart below. This is expressed in the part number as a two-digit number (G#). Once the group size has been determined, simply add the desired OD of the line to be secured in the 3 digit end number of the clamp pair (XXX) by rounding the number to two decimals and dropping the decimal point. The part number will look like this:

**HS-CLH-G#-*-XXX**

Example: For a line wih OD of 1.08 in., this would fall within the group 4. The Part number will be as follows:

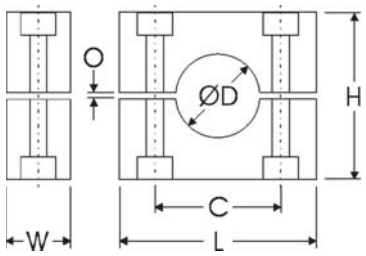
**HS-CLH-04-*-108**

### Special Bore Range by Group

| Group (G#) | Range |
|---|---|
| H3 | 0.25 in. through 0.675 in. |
| H4 | 0.25 in. through 1.050 in. |
| H5 | 0.25 in. through 1.660 in. |
| H6 | 0.25 in. through 2.750 in. |
| H7 | 0.25 in. through 3.500 in. |
| H8 | 0.25 in. through 5.000 in. |
| H9 | 0.25 in. through 6.625 in. |
| H10 | 0.25 in. through 8.625 in. |

## Clamp Pair Dimensions

The robust Heavy Series design is larger and thicker than the Standard Series, and is designed for the toughest applications. As a general rule, the outside diameter of the line to be secured should not vary over or under the ØD dimension in the chart by more than ½ of the tension clearance dimension (dimension "O"). Heavy Series pipe clamps are available in sizes from ¼ in. (6.35mm) through 8.625 in. (219mm) outside diameter sizes. If a required size is not available, custom sizes can be made to order.



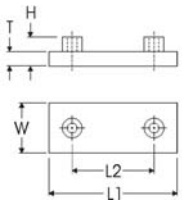

### Clamp Pair Dimensional Information

| Behringer Group | Metric ØD (mm) | Imperial ØD (Inch) | Clamp Pair P/N (See page 13 for complete order numbers) | L | C | H | O | W | Weight Ea. |
|---|---|---|---|---|---|---|---|---|---|
| H3 | 6.4 | 0.250 | HS-CLH-03-*-025 | 2.250 in. (57 mm) | 1.300 in. (33 mm) | 1.375 in. (35 mm) | 0.063 in. (1.6 mm) | 1.188 in. (30.2 mm) | 0.07 lbs |
| | 9.5 | 0.375 | HS-CLH-03-*-038 | | | | | | |
| | 10.0 | 0.405 | HS-CLH-03-*-041 | | | | | | |
| | 12.7 | 0.500 | HS-CLH-03-*-050 | | | | | | |
| | 13.7 | 0.540 | HS-CLH-03-*-054 | | | | | | |
| | 16.0 | 0.620 | HS-CLH-03-*-062 | | | | | | |
| | 17.1 | 0.675 | HS-CLH-03-*-068 | | | | | | |
| H4 | 19.0 | 0.750 | HS-CLH-04-*-075 | 2.750 in. (70 mm) | 1.770 in. (45 mm) | 1.875 in. (48 mm) | 0.063 in. (1.6 mm) | 1.188 in. (30.2 mm) | 0.09 lbs |
| | 20.0 | 0.790 | HS-CLH-04-*-079 | | | | | | |
| | 21.3 | 0.840 | HS-CLH-04-*-084 | | | | | | |
| | 22.2 | 0.870 | HS-CLH-04-*-087 | | | | | | |
| | 25.4 | 1.000 | HS-CLH-04-*-100 | | | | | | |
| | 26.7 | 1.050 | HS-CLH-04-*-105 | | | | | | |
| | 30.0 | 1.181 | HS-CLH-04-*-118 | | | | | | |
| H5 | 32.0 | 1.250 | HS-CLH-05-*-125 | 3.344 in. (87 mm) | 2.360 in. (60 mm) | 2.375 in. (60 mm) | 0.063 in. (1.6 mm) | 1.188 in. (30.2 mm) | 0.15 lbs |
| | 33.4 | 1.315 | HS-CLH-05-*-132 | | | | | | |
| | 38.1 | 1.500 | HS-CLH-05-*-150 | | | | | | |
| | 42.2 | 1.660 | HS-CLH-05-*-166 | | | | | | |
| H6 | 33.4 | 1.315 | HS-CLH-06-*-132 | 4.500 in. (115 mm) | 3.530 in. (90 mm) | 3.500 in. (89 mm) | 0.125 in. (3.2 mm) | 1.688 in. (43 mm) | 0.35 lbs |
| | 42.2 | 1.660 | HS-CLH-06-*-166 | | | | | | |
| | 44.5 | 1.750 | HS-CLH-06-*-175 | | | | | | |
| | 48.3 | 1.900 | HS-CLH-06-*-190 | | | | | | |
| | 50.8 | 2.000 | HS-CLH-06-*-200 | | | | | | |
| | 54.0 | 2.125 | HS-CLH-06-*-213 | | | | | | |
| | 57.2 | 2.250 | HS-CLH-06-*-225 | | | | | | |
| | 60.3 | 2.375 | HS-CLH-06-*-238 | | | | | | |
| | 63.5 | 2.500 | HS-CLH-06-*-250 | | | | | | |
| | 69.9 | 2.750 | HS-CLH-06-*-275 | | | | | | |
| H7 | 69.9 | 2.750 | HS-CLH-07-*-275 | 6.000 in. (152 mm) | 4.810 in. (122 mm) | 4.750 in. (121 mm) | 0.125 in. (3.2 mm) | 2.188 in. (55.6 mm) | 0.78 lbs |
| | 73.0 | 2.875 | HS-CLH-07-*-288 | | | | | | |
| | 76.2 | 3.000 | HS-CLH-07-*-300 | | | | | | |
| | 88.9 | 3.500 | HS-CLH-07-*-350 | | | | | | |
| H8 | 88.9 | 3.500 | HS-CLH-08-*-350 | 8.063 in. (205 mm) | 6.620 in. (168 mm) | 6.625 in. (168 mm) | 0.188 in. (4.8 mm) | 3.25 in. (82.6 mm) | 2.31 lbs |
| | 102.0 | 4.000 | HS-CLH-08-*-400 | | | | | | |
| | 114.0 | 4.500 | HS-CLH-08-*-450 | | | | | | |
| | 127.0 | 5.000 | HS-CLH-08-*-500 | | | | | | |
| H9 | 127.0 | 5.000 | HS-CLH-09-*-500 | 9.750 in. (248 mm) | 8.060 in. (205 mm) | 7.875 in. (200 mm) | 0.188 in. (4.8 mm) | 3.438 in. (87.3 mm) | 2.59 lbs |
| | 133.0 | 5.250 | HS-CLH-09-*-525 | | | | | | |
| | 141.0 | 5.563 | HS-CLH-09-*-556 | | | | | | |
| | 152.0 | 6.000 | HS-CLH-09-*-600 | | | | | | |
| | 168.0 | 6.625 | HS-CLH-09-*-663 | | | | | | |
| H10 | 168.0 | 6.625 | HS-CLH-10-*-663 | 12.500 in. (318 mm) | 10.430 in. (265 mm) | 10.625 in. (270 mm) | 0.188 in. (4.8 mm) | 4.438 in. (113 mm) | 7.73 lbs |
| | 203.0 | 8.625 | HS-CLH-10-*-800 | | | | | | |
| | 219.0 | 8.000 | HS-CLH-10-*-863 | | | | | | |

# Securing Plate Selection and Dimensions

## Single Weld Plate [SWP]

The typical mounting configuration is where the clamp is welded to the support structure.



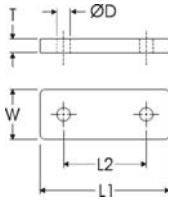

| Group | Order Number | L1 | L2 | W | T | H | Thread | Weight |
|---|---|---|---|---|---|---|---|---|
| H3 | **HS-SWP-03-*** | 2.875 in. (73 mm) | 1.30 in. (33 mm) | 1.25 in. (32 mm) | 0.313 in. (8 mm) | 0.313 in. (8 mm) | 3/8 - 16 UNC (M10 metric) | 0.34 lbs |
| H4 | **HS-SWP-04-*** | 3.375 in. (86 mm) | 1.77 in. (45 mm) | 1.25 in. (32 mm) | 0.313 in. (8 mm) | 0.313 in. (8 mm) | 3/8 - 16 UNC (M10 metric) | 0.39 lbs |
| H5 | **HS-SWP-05-*** | 4.000 in. (102 mm) | 2.36 in. (60 mm) | 1.25 in. (32 mm) | 0.313 in. (8 mm) | 0.313 in. (8 mm) | 3/8 - 16 UNC (M10 metric) | 0.45 lbs |
| H6 | **HS-SWP-06-*** | 5.875 in. (149 mm) | 3.53 in. (90 mm) | 1.75 in. (45 mm) | 0.375 in. (10 mm) | 0.380 in. (10 mm) | 7/16 - 14 UNC (M12 metric) | 1.10 lbs |
| H7 | **HS-SWP-07-*** | 7.375 in. (187 mm) | 4.81 in. (122 mm) | 2.25 in. (57 mm) | 0.375 in. (10 mm) | 0.472 in. (12 mm) | 5/8 - 11 UNC (M16 metric) | 1.71 lbs |
| H8 | **HS-SWP-08-*** | 10.000 in. (254 mm) | 6.62 in. (168 mm) | 3.00 in. (76 mm) | 0.500 in. (13 mm) | 0.680 in. (17 mm) | 3/4 - 10 UNC (M20metric) | 4.15 lbs |
| H9 | **HS-SWP-09-*** | 11.750 in. (298 mm) | 8.06 in. (205 mm) | 3.50 in. (89 mm) | 0.500 in. (13 mm) | 0.755 in. (19 mm) | 7/8 - 9 UNC (M24 metric) | 5.83 lbs |
| H10 | **HS-SWP-10-*** | 14.500 in. (368 mm) | 10.43 in. (265 mm) | 4.50 in. (114 mm) | 0.750 in. (19 mm) | 0.755 in. (19 mm) | 1-1/8 - 7 UNC (M30 metric) | 13.65 lbs |

***Materials:**
- **C** Plain Carbon Steel (Standard Material)
- **T** AISI 304 Grade Stainless Steel (A2 - 1.4301/1.4305)
- **X** AISI 316 Grade Stainless Steel (A4 - 1.4401/1.4571)
- **Z** Zinc Plated Steel (Special Order)

**Threads:**
- **omit** As ordered above, the weld plates have standard UNC thread
- **-MET** By adding the "**-MET**" designation after the material designation above, the threads will be metric

## Single Cover Plate [SCP]

The cover plate is the standard top fixture for securing the clamp with hexagon head bolts.

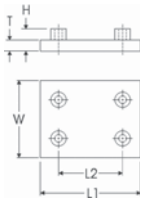



| Group | Order Number | L1 | L2 | W | T | ØD | Weight |
|---|---|---|---|---|---|---|---|
| H3 | **HS-SCP-03-*** | 2.250 in. (57 mm) | 1.30 in. (33 mm) | 1.25 in. (32 mm) | 0.313 in. (8 mm) | 0.438 in. (11 mm) | 0.21 lbs |
| H4 | **HS-SCP-04-*** | 2.750 in. (70 mm) | 1.77 in. (45 mm) | 1.25 in. (32 mm) | 0.313 in. (8 mm) | 0.438 in. (11 mm) | 0.26 lbs |
| H5 | **HS-SCP-05-*** | 3.344 in. (85 mm) | 2.36 in. (60 mm) | 1.25 in. (32 mm) | 0.313 in. (8 mm) | 0.438 in. (11 mm) | 0.32 lbs |
| H6 | **HS-SCP-06-*** | 4.500 in. (114 mm) | 3.53 in. (90 mm) | 1.75 in. (45 mm) | 0.375 in. (10 mm) | 0.500 in. (13 mm) | 0.77 lbs |
| H7 | **HS-SCP-07-*** | 6.000 in. (152 mm) | 4.81 in. (122 mm) | 2.25 in. (57 mm) | 0.375 in. (10 mm) | 0.688 in. (18 mm) | 1.28 lbs |
| H8 | **HS-SCP-08-*** | 8.063 in. (205 mm) | 6.62 in. (168 mm) | 3.00 in. (76 mm) | 0.500 in. (13 mm) | 0.813 in. (21 mm) | 3.19 lbs |
| H9 | **HS-SCP-09-*** | 9.750 in. (248 mm) | 8.06 in. (205 mm) | 3.50 in. (89 mm) | 0.500 in. (13 mm) | 0.938 in. (24 mm) | 4.58 lbs |
| H10 | **HS-SCP-10-*** | 12.500 in. (318 mm) | 10.43 in. (265 mm) | 4.50 in. (114 mm) | 0.750 in. (19 mm) | 1.188 in. (30 mm) | 11.31 lbs |

***Materials:**
- **C** Plain Carbon Steel (Standard Material)
- **T** AISI 304 Grade Stainless Steel (A2 - 1.4301/1.4305)
- **X** AISI 316 Grade Stainless Steel (A4 - 1.4401/1.4571)
- **Z** Zinc Plated Steel (Special Order)

## Double Weld Plate [DWP]

Double weld plates are used to make a double heavy clamp, with both sets of clamp halves in line with the piping. This design can accommodate double the operating pressure as the single heavy pipe clamps.



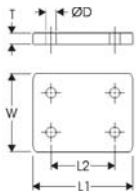

| Group | Order Number | L1 | L2 | W | T | H | Thread | Weight |
|---|---|---|---|---|---|---|---|---|
| H3 | **HS-DWP-03-*** | 2.875 in. (73 mm) | 1.30 in. (33 mm) | 2.50 in. (63 mm) | 0.313 in. (8 mm) | 0.313 in. (8 mm) | 3/8 - 16 UNC (M10 metric) | 0.72 |
| H4 | **HS-DWP-04-*** | 3.375 in. (86 mm) | 1.77 in. (45 mm) | 2.50 in. (63 mm) | 0.313 in. (8 mm) | 0.313 in. (8 mm) | 3/8 - 16 UNC (M10 metric) | 0.78 |
| H5 | **HS-DWP-05-*** | 4.000 in. (102 mm) | 2.36 in. (60 mm) | 2.50 in. (63 mm) | 0.313 in. (8 mm) | 0.313 in. (8 mm) | 3/8 - 16 UNC (M10 metric) | 0.90 |
| H6 | **HS-DWP-06-*** | 5.875 in. (149 mm) | 3.53 in. (90 mm) | 3.50 in. (89 mm) | 0.375 in. (10 mm) | 0.380 in. (10 mm) | 7/16 - 14 UNC (M12 metric) | 2.20 |
| H7 | **HS-DWP-07-*** | 7.375 in. (187 mm) | 4.81 in. (122 mm) | 4.50 in. (114 mm) | 0.375 in. (10 mm) | 0.472 in. (12 mm) | 5/8 - 11 UNC (M16 metric) | 3.42 |
| H8 | **HS-DWP-08-*** | 10.000 in. (254 mm) | 6.62 in. (168 mm) | 7.00 in. (178 mm) | 0.500 in. (13 mm) | 0.680 in. (17 mm) | 3/4 - 10 UNC (M20 metric) | 8.30 |
| H9 | **HS-DWP-09-*** | 11.750 in. (298 mm) | 8.06 in. (205 mm) | 7.00 in. (178 mm) | 0.500 in. (13 mm) | 0.755 in. (19 mm) | 7/8 - 9 UNC (M24 metric) | 11.75 |
| H10 | **HS-DWP-10-*** | 14.500 in. (368 mm) | 10.43 in. (265 mm) | 9.375 in. (238 mm) | 0.750 in. (19 mm) | 0.755 in. (19 mm) | 1-1/8 - 7 UNC (M30 metric) | 28.00 |

***Material**
- **C** Plain Carbon Steel (Standard Material)
- **T** AISI 304 Grade Stainless Steel (A2 - 1.4301/1.4305)
- **X** AISI 316 Grade Stainless Steel (A4 - 1.4401/1.4571)
- **Z** Zinc Plated Steel (Special Order)

**Threads:**
- **omit** As ordered above, the weld plates have standard UNC thread
- **-MET** By adding the "**-MET**" designation after the material designation above, the threads will be metric

## Double Cover Plate [DCP]

Double cover plates are used to make a double heavy clamp, with both sets of clamp halves in line with the piping. This design can accommodate double the operating pressure of the single heavy pipe clamps.




| Group | Order Number | L1 | L2 | W | T | ØD | Weight |
|---|---|---|---|---|---|---|---|
| H3 | **HS-DCP-03-*** | 2.250 in. (57 mm) | 1.30 in. (33 mm) | 2.50 in. (63 mm) | 0.313 in. (8 mm) | 0.438 in. (11 mm) | 0.42 lbs |
| H4 | **HS-DCP-04-*** | 2.750 in. (70 mm) | 1.77 in. (45 mm) | 2.50 in. (63 mm) | 0.313 in. (8 mm) | 0.438 in. (11 mm) | 0.52 lbs |
| H5 | **HS-DCP-05-*** | 3.344 in. (85 mm) | 2.36 in. (60 mm) | 2.50 in. (63 mm) | 0.313 in. (8 mm) | 0.438 in. (11 mm) | 0.64 lbs |
| H6 | **HS-DCP-06-*** | 4.500 in. (114 mm) | 3.53 in. (90 mm) | 3.50 in. (89 mm) | 0.375 in. (10 mm) | 0.500 in. (13 mm) | 1.54 lbs |
| H7 | **HS-DCP-07-*** | 6.000 in. (152 mm) | 4.81 in. (122 mm) | 4.50 in. (114 mm) | 0.375 in. (10 mm) | 0.688 in. (18 mm) | 2.56 lbs |
| H8 | **HS-DCP-08-*** | 8.063 in. (205 mm) | 6.62 in. (168 mm) | 7.00 in. (178 mm) | 0.500 in. (13 mm) | 0.813 in. (21 mm) | 6.38 lbs |
| H9 | **HS-DCP-09-*** | 9.750 in. (248 mm) | 8.06 in. (205 mm) | 7.00 in. (178 mm) | 0.500 in. (13 mm) | 0.938 in. (24 mm) | 9.16 lbs |
| H10 | **HS-DCP-10-*** | 12.500 in. (318 mm) | 10.43 in. (265 mm) | 9.375 in. (238 mm) | 0.750 in. (19 mm) | 1.188 in. (30 mm) | 22.62 lbs |

***Materials:**
- **C** Plain Carbon Steel (Standard Material)
- **T** AISI 304 Grade Stainless Steel (A2 - 1.4301/1.4305)
- **X** AISI 316 Grade Stainless Steel (A4 - 1.4401/1.4571)
- **Z** Zinc Plated Steel (Special Order)

# Fastening Hardware Selection and Dimensions

## Hexagon Head Bolt [HEX]

The Hexagon Head Bolt is used when using clamps with cover plates.

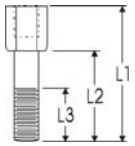

| Group | Order Number | L | Thread | Weight |
|---|---|---|---|---|
| H3 | **HS-HEX-03-*** | 1.75 in. (44 mm) | 3/8 - 16 UNC (M10 metric) | 0.06 lbs. |
| H4 | **HS-HEX-04-*** | 2.25 in. (57 mm) | 3/8 - 16 UNC (M10 metric) | 0.08 lbs. |
| H5 | **HS-HEX-05-*** | 2.75 in. (70 mm) | 3/8 - 16 UNC (M10 metric) | 0.09 lbs. |
| H6 | **HS-HEX-06-*** | 4.00 in. (102 mm) | 7/16 - 14 UNC (M12 metric) | 0.18 lbs. |
| H7 | **HS-HEX-07-*** | 5.25 in. (133 mm) | 5/8 - 11 UNC (M16 metric) | 0.50 lbs. |
| H8 | **HS-HEX-08-*** | 7.50 in. (191 mm) | 3/4 - 10 UNC (M20 metric) | 0.97 lbs. |
| H9 | **HS-HEX-09-*** | 8.50 in. (216 mm) | 7/8 - 9 UNC (M24 metric) | 1.56 lbs. |
| H10 | **HS-HEX-10-*** | 11.50 in. (292 mm) | 1-1/8 - 7 UNC (M30 metric) | 3.53 lbs. |

***Materials:**

| | |
|---|---|
| **C** | Plain Carbon Steel (Standard Material) |
| **T** | AISI 304 Grade Stainless Steel (A2 - 1.4301/1.4305) |
| **X** | AISI 316 Grade Stainless Steel (A4 - 1.4401/1.4571) |
| **Z** | Zinc Plated Steel (Special Order) |

## Stacking Bolt [STB]

The Stacking Bolt is used when another clamp module will be stacked on top of the bottom or existing module. The head of the stacking bolt has a female thread for the next bolt to engage.



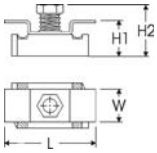

| Group | Order Number | L1 | L2 | L3 | Thread | Weight |
|---|---|---|---|---|---|---|
| H3 | **HS-STB-03-*** | 1.969 in. (50 mm) | 0.906 in. (23 mm) | 0.906 in. (23 mm) | 3/8 - 16 UNC (M10 metric) | 0.10 lbs |
| H4 | **HS-STB-04-*** | 2.469 in. (63 mm) | 1.406 in. (36 mm) | 1.000 in. (25.4 mm) | 3/8 - 16 UNC (M10 metric) | 0.11 lbs |
| H5 | **HS-STB-05-*** | 2.969 in. (75 mm) | 1.906 in. (48 mm) | 1.000 in. (25.4 mm) | 3/8 - 16 UNC (M10 metric) | 0.13 lbs |
| H6 | **HS-STB-06-*** | 4.250 in. (108 mm) | 2.875 in. (73 mm) | 1.250 in. (32 mm) | 7/16 - 14 UNC (M12 metric) | 0.24 lbs |
| H7 | **HS-STB-07-*** | 5.500 in. (140 mm) | 3.875 in. (98 mm) | 1.250 in. (32 mm) | 5/8 - 11 UNC (M16 metric) | 0.49 lbs |
| H8 | **HS-STB-08-*** | 7.750 in. (197 mm) | 5.750 in. (146 mm) | 1.500 in. (38 mm) | 3/4 - 10 UNC (M20 metric) | 1.15 lbs |
| H9 | **HS-STB-09-*** | 9.188 in. (233 mm) | 7.000 in. (178 mm) | 1.750 in. (44 mm) | 7/8 - 9 UNC (M24 metric) | 1.65 lbs |
| H10 | **HS-STB-10-*** | 12.000 in. (305 mm) | 9.500 in. (241 mm) | 2.250 in. (57 mm) | 1-1/8 - 7 UNC (M30 metric) | 2.50 lbs |

***Materials:**

| | |
|---|---|
| **C** | Plain Carbon Steel (Standard Material) |
| **T** | AISI 304 Grade Stainless Steel (A2 - 1.4301/1.4305) |
| **X** | AISI 316 Grade Stainless Steel (A4 - 1.4401/1.4571) |
| **Z** | Zinc Plated Steel (Special Order) |

## Strut Clip Nut [UCN]

The UCN Nut is used to adapt Behringer's pipe clamps to standard strut channel. This allows for even greater flexibility and mounting possibilities.




| Group | Order Number | L | W | H1 | H2 | Thread |
|---|---|---|---|---|---|---|
| H3 - H5 | **HS-UCN-345** | 1.500 in. (38 mm) | 0.866 in. (22 mm) | 0.728 in. (18.5 mm) | 1.083 in. (2.75 mm) | 3/8 - 16 UNC |
| H6 | **HS-UCN-06-*** | - | - | - | - | - |

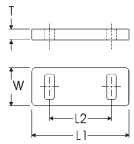
***Materials:**

| | |
|---|---|
| **C** | Plain Carbon Steel (Standard Material) |
| **T** | AISI 304 Grade Stainless Steel (A2 - 1.4301/1.4305) |
| **X** | AISI 316 Grade Stainless Steel (A4 - 1.4401/1.4571) |
| **Z** | Zinc Plated Steel (Special Order) |

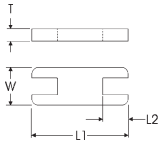
**Weight Ea.:** Approx. 0.2 lbs. ea.

## Safety Plate [SAF]

The Safety Plate is used in conjunction with the STB stacking bolts above. This ensures that the stacking bolts will remain locked in place when tightening the clamp module stacked above.



H3-H7



H8-H10

| Group | Order Number | L1 | L2 | W | T | Weight |
|---|---|---|---|---|---|---|
| H3 | **HS-SAF-03-*** | 2.281 in. (58 mm) | 1.300 in. (33 mm) | 1.219 in. (31 mm) | 0.125 in. (3.2 mm) | 0.06 lbs. |
| H4 | **HS-SAF-04-*** | 2.750 in. (70 mm) | 1.770 in. 45 mm) | 1.219 in. (31 mm) | 0.125 in. (3.2 mm) | 0.08 lbs. |
| H5 | **HS-SAF-05-*** | 3.344 in. (85 mm) | 2.360 in. (60 mm) | 1.219 in. (31 mm) | 0.125 in. (3.2 mm) | 0.11 lbs. |
| H6 | **HS-SAF-06-*** | 4.531 in. (115 mm) | 3.530 in. (90 mm) | 1.625 in. (41 mm) | 0.188 in. (4.8 mm) | 0.31 lbs. |
| H7 | **HS-SAF-07-*** | 5.938 in. (151 mm) | 4.812 in. (122 mm) | 2.125 in. (54 mm) | 0.188 in. (4.8 mm) | 0.58 lbs. |
| H8 | **HS-SAF-08-*** | 8.000 in. (203 mm) | 6.625 in. (168 mm) | 2.938 in. (75 mm) | 0.375 in. (9.5 mm) | 1.43 lbs. |
| H9 | **HS-SAF-09-*** | 9.750 in. (248 mm) | 8.062 in. (205 mm) | 3.438 in. (87 mm) | 0.375 in. (9.5 mm) | 2.17 lbs. |
| H10 | **HS-SAF-10-*** | 12.438 in. (316 mm) | 10.437 in. (265 mm) | 4.438 in. (113 mm) | 0.250 in. (6.3 mm) | - |

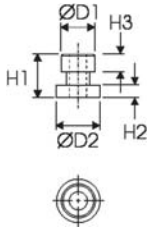
***Materials:**

| | |
|---|---|
| **C** | Plain Carbon Steel (Standard Material) |
| **T** | AISI 304 Grade Stainless Steel (A2 - 1.4301/1.4305) |
| **X** | AISI 316 Grade Stainless Steel (A4 - 1.4401/1.4571) |
| **Z** | Zinc Plated Steel (Special Order) |

# Rail and Strut Mounting Options

## Rail Nut [RCN]

Behringer's rail nuts allow mounting of the heavy series clamps to the RAL-4 Heavy series rail.

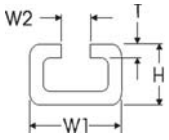



| Group | Order Number | ØD1 | ØD2 | H1 | H2 | H3 | Thread |
|---|---|---|---|---|---|---|---|
| H3<br>H4<br>H5 | **HS-RCN-99-*-RN7** | 0.698 in. (17.8 mm) | 0.750 in. (19 mm) | 0.750 in. (19 mm) | 0.297 in. (7.6 mm) | 0.219 in. (5.6 mm) | 3/8 - 16 UNC (M10 metric) |
| H6 | **HS-RCN-99-*-RN8** | 0.778 in. (19.8 mm) | 0.875 in. (22.2 mm) | 0.813 in. (20.7 mm) | 0.359 in. (9.1 mm) | 0.219 in. (5.6 mm) | 7/16 - 14 UNC (M12 metric) |
| H7 | **HS-RCN-99-*-RN9** | 0.938 in. (23.8 mm) | 1.125 in. (28.6 mm) | 1.700 in. (43.2 mm) | 1.075 in. (27.3 mm) | 0.375 in. (9.5 mm) | 5/8 - 11 UNC (M16 metric) |
| H8<br>H9<br>H10 | **N/A** | - | - | - | - | - | - |

| | | |
|---|---|---|
| ***Materials:** | **C** | Plain Carbon Steel (Standard Material) |
| | **T** | AISI 304 Grade Stainless Steel (A2 - 1.4301/1.4305) |
| | **X** | AISI 316 Grade Stainless Steel (A4 - 1.4401/1.4571) |
| | **Z** | Zinc Plated Steel (Special Order) |

## Mounting Rail [RAL-4] DIN 3015-2

Behringer's Heavy series RAL-4 is used to mount clamps with heavy rail nuts. This allows clamps from multiple groups to be mounted to the same rail. The RAL-4 conforms to the DIN 3015-2 specification.

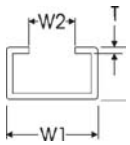



| Group | Order Number | W1 | W2 | L | T | H |
|---|---|---|---|---|---|---|
| H3-H7 | **ST-RA4-99-*-XXX** | 1.563 in. (40 mm) | 0..469 in (12 mm) | See Below | 0.188 in. (5 mm) | 0.875 in. (22 mm) |

| | | | |
|---|---|---|---|
| ***Materials:** | **C** | Plain Carbon Steel (Standard Material) | |
| | **T** | AISI 304 Grade Stainless Steel (A2 - 1.4301/1.4305) | |
| | **X** | AISI 316 Grade Stainless Steel (A4 - 1.4401/1.4571) | |
| | **Z** | Zinc Plated Steel (Special Order) | |
| **XXX Length:** | **2ME** | 78 in. (2 m) Length (Standard Length) | 14.5 lbs ea. |
| | **1ME** | 39 in. (1 m ) Length (Special Length) | 7.25 lbs ea. |
| | | Custom sizes available on request | |

## Mounting Rail [RAL-2]

Behringer's proprietary Heavy series RAL-2 is used to mount clamps with Weld Plates (SWP). The weld plate slides into the rail, eliminating the need for rail nuts. The RAL-2 fits Groups H3-H5 weld plates.

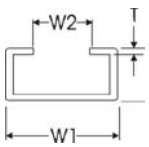



| Group | Order Number | W1 | W2 | L | T | H |
|---|---|---|---|---|---|---|
| H3-H5 | **ST-RA2-99-*-XXX** | 1.750 in. (44.4 mm) | 0.750 in (19 mm) | See Below | 0.125 in. (3 mm) | 0.750 in. (19 mm) |

| | | | |
|---|---|---|---|
| ***Materials:** | **C** | Plain Carbon Steel (Standard Material) | |
| | **T** | AISI 304 Grade Stainless Steel (A2 - 1.4301/1.4305) | |
| | **X** | AISI 316 Grade Stainless Steel (A4 - 1.4401/1.4571) | |
| | **Z** | Zinc Plated Steel (Special Order) | |
| **XXX Length:** | **6FT** | 72 in. (1829 mm) Length (Standard Length) | 8 lbs. ea. |
| | **3 FT** | 36 in. (914 mm ) Length (Special Length) | 4 lbs. ea. |
| | | Custom sizes available on request | |

## Mounting Rail [RAL-3]

Behringer's proprietary Heavy series RAL-3 is used to mount clamps with Weld Plates (SWP). The weld plate slides into the rail, eliminating the need for rail nuts. The RAL-2 fits Group H6 weld plates only.




| Group | Order Number | W1 | W2 | L | T | H |
|---|---|---|---|---|---|---|
| H6 | **ST-RA3-99-*-XXX** | 2.125 in. (54 mm) | 1.000 in (25.4 mm) | See Below | 0.125 in. (3 mm) | 0.813 in. (20.7 mm) |

| | | | |
|---|---|---|---|
| ***Materials:** | **C** | Plain Carbon Steel (Standard Material) | |
| | **T** | AISI 304 Grade Stainless Steel (A2 - 1.4301/1.4305) | |
| | **X** | AISI 316 Grade Stainless Steel (A4 - 1.4401/1.4571) | |
| | **Z** | Zinc Plated Steel (Special Order) | |
| **XXX Length:** | **6FT** | 72 in. (1829 mm) Length (Standard Length) | 9.6 lbs. ea. |
| | **3 FT** | 36 in. (914 mm ) Length (Special Length) | 4.8 lbs. ea. |
| | | Custom sizes available on request | |

# Complete Assembly Ordering Code

Chart 1 Chart 2 Chart 3 Chart 4 Chart 5

**SH T 61900 - PP - MET**

## ① Clamp Configuration

| | |
|---|---|
| **SH** | Single Heavy Complete Clamp for Weld Mounting [SWP] |
| **DH** | Double Heavy Complete Clamp for Weld Mounting [DWP] |
| **R7H** | Complete Clamp for mounting to RAL-4 (H3-H5) |
| **R8H** | Complete Clamp for mounting to RAL-4 (H6) |
| **R9H** | Complete Clamp for mounting to RAL-4 (H7) |
| **UH** | Complete Clamp for mounting to Strut Channel [UCN] |
| **HSK** | Heavy Stacking Kit [SAF + STB] |

## ② Hardware Material

| | |
|---|---|
| **Omit** | Untreated Carbon Steel |
| **T** | AISI 304 Stainless Steel (A2 - 1.4301/1.4305) |
| **X** | AISI 316/316Ti Stainless Steel (A4 - 1.4401/1.4571) |
| **Z** | Electro-Zinc Dichromate Plating |

## ④ Clamp Pair Material

| | |
|---|---|
| **PP** | Polypropylene |
| **SP** | Santoprene |
| **AL** | Aluminum |

## ⑤ Threads

| | |
|---|---|
| **Omit** | UNC Thread (Standard) |
| **MET** | Metric Thread (Special) |

## ③ Clamp Group and Size

| Behringer Group | Pipe Size | Tube Size | Metric ØD (mm) | Imperial ØD (Inch) | Clamp Halves |
|---|---|---|---|---|---|
| H3 | | 1/4 | 6.4 | 0.250 | 3025 |
| | | 3/8 | 9.5 | 0.375 | 3038 |
| | 1/8 | | 10.0 | 0.405 | 30405 |
| | | 1/2 | 12.7 | 0.500 | 3050 |
| | 1/4 | | 13.7 | 0.540 | 30540 |
| | | 5/8 | 16.0 | 0.620 | 3062 |
| | 3/8 | | 17.1 | 0.675 | 30675 |
| H4 | | 3/4 | 19.0 | 0.750 | 4075 |
| | | | 20.0 | 0.790 | 4079 |
| | 1/2 | | 21.3 | 0.840 | 40840 |
| | | 7/8 | 22.2 | 0.870 | 4087 |
| | | 1 | 25.4 | 1.000 | 4100 |
| | 3/4 | | 26.7 | 1.050 | 41050 |
| | | | 30.0 | 1.181 | 41181 |
| H5 | | 1 1/4 | 32.0 | 1.250 | 5125 |
| | 1 | | 33.4 | 1.315 | 51315 |
| | | 1 1/2 | 38.1 | 1.500 | 5150 |
| | 1 1/4 | | 42.2 | 1.660 | 51660 |
| H6 | 1 | | 33.4 | 1.315 | 61315 |
| | 1 1/4 | | 42.2 | 1.660 | 61660 |
| | | 1 3/4 | 44.5 | 1.750 | 6175 |
| | 1 1/2 | | 48.3 | 1.900 | 61900 |
| | | 2 | 50.8 | 2.000 | 6200 |
| | | 2 1/8 | 54.0 | 2.125 | 62125 |
| | | 2 1/4 | 57.2 | 2.250 | 6225 |
| | 2 | | 60.3 | 2.375 | 62375 |
| | | 2 1/2 | 63.5 | 2.500 | 6250 |
| | | 2 3/4 | 69.9 | 2.750 | 6275 |
| H7 | | 2 3/4 | 69.9 | 2.750 | 7275 |
| | 2 1/2 | | 73.0 | 2.875 | 72875 |
| | | 3 | 76.2 | 3.000 | 7300 |
| | 3 | 3 1/2 | 88.9 | 3.500 | 7350 |
| H8 | 3 | 3 1/2 | 88.9 | 3.500 | 83500 |
| | | 4 | 102.0 | 4.000 | 8400 |
| | 4 | 4 1/2 | 114.0 | 4.500 | 8450 |
| | | 5 | 127.0 | 5.000 | 8500 |
| H9 | | 5 | 127.0 | 5.000 | 9500 |
| | | 5 1/4 | 133.0 | 5.250 | 9525 |
| | 5 | | 141.0 | 5.563 | 95563 |
| | | 6 | 152.0 | 6.000 | 9600 |
| | 6 | | 168.0 | 6.625 | 96625 |
| H10 | 6 | | 168.0 | 6.625 | 06625 |
| | | 8 | 203.0 | 8.000 | 0800 |
| | 8 | | 219.0 | 8.625 | 08625 |

## Ordering Examples

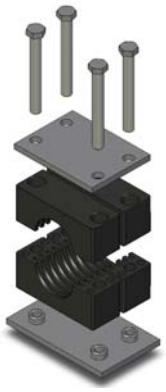
### SH

Single Complete Clamp for Weld Mounting

Consists of:
2 HEX Bolts
1 SCP Cover Plate
1 CLH Clamp Set (2 halves)
1 SWP Weld Plate

### DH

Double Complete Clamp for Weld Mounting



Consists of:
4 HEX Bolts
1 DCP Cover Plate
2 CLH Clamp Sets (4 halves)
1 DWP Double Weld Plate

### R7H R8H

Single Complete Clamp for Rail Mounting

Consists of:
2 HEX Bolts
1 SCP Cover Plate
1 CLH Clamp Set (2 halves)
2 RCN Rail Nuts

### R9H

Single Complete Clamp for Rail Mounting
Group H7 Only

Consists of:
2 HEX Bolts
1 SCP Cover Plate
1 CLH Clamp Set (2 halves)
1 SPL Spacer Plate
2 RCN-9 Rail Nuts

### HSK

Complete Stacking Kit

Consists of:
2 STB Stacking Bolts
1 SAF Safety Plate
1 CLH Clamp Set (2 halves)

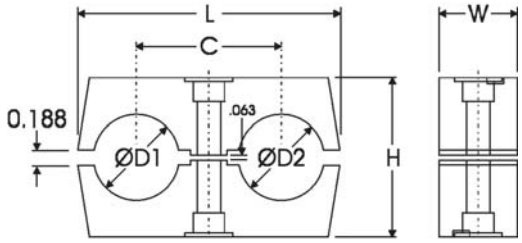
### UH

Single Complete Clamp for Strut Mounting

Consists of:
2 HEX Bolts
1 SCP Cover Plate
1 CLH Clamp Set (2 halves)
2 UCN Strut Nuts

## Clamp Pair Selection, Part Numbers and Dimensions

Behringer's clamp pairs are available in different materials and incorporate a modular insert by group size. Twin series pipe clamps are available in sizes from ¼ in. (6.35 mm) through 1.66 in. (42 mm) OD Sizes.




### Clamp Pair Selection and Part Numbers

| Behringer Group | Pipe Size | Tube Size | Metric ØD (mm) | Imperial ØD (Inch) | Clamp Pair P/N (See material code for *) |
|---|---|---|---|---|---|
| T1 | | 1/4 | 6.4 | 0.250 | TS-CLH-01-*-025 |
| | | 3/8 | 9.5 | 0.375 | TS-CLH-01-*-038 |
| | | | 12.0 | 0.472 | TS-CLH-01-*-047 |
| T2 | | 1/4 | 6.4 | 0.250 | TS-CLH-02-*-025 |
| | | 3/8 | 9.5 | 0.375 | TS-CLH-02-*-038 |
| | | 1/2 | 12.7 | 0.500 | TS-CLH-02-*-050 |
| | 1/4 | | 14.0 | 0.540 | TS-CLH-02-*-054 |
| | | 5/8 | 16.0 | 0.620 | TS-CLH-02-*-062 |
| | 3/8 | | 17.0 | 0.675 | TS-CLH-02-*-068 |
| T3 | | 3/4 | 19.0 | 0.750 | TS-CLH-03-*-075 |
| | 1/2 | | 21.3 | 0.840 | TS-CLH-03-*-084 |
| | | 7/8 | 22.2 | 0.870 | TS-CLH-03-*-087 |
| | | 1 | 25.4 | 1.000 | TS-CLH-03-*-100 |
| T4 | | 7/8 | 22.2 | 0.870 | TS-CLH-04-*-087 |
| | | 1 | 25.4 | 1.000 | TS-CLH-04-*-100 |
| | 3/4 | | 26.7 | 1.050 | TS-CLH-04-*-105 |
| | | 1 1/8 | 28.6 | 1.125 | TS-CLH-04-*-112 |
| T5 | | 1 1/4 | 32.0 | 1.250 | TS-CLH-05-*-125 |
| | 1 | | 33.4 | 1.315 | TS-CLH-05-*-132 |
| | | 1 1/2 | 38.1 | 1.500 | TS-CLH-05-*-150 |
| | 1 1/4 | | 42.2 | 1.660 | TS-CLH-05-*-166 |

### Clamp Pair Dimensional Information

| Behringer Group | L | C | H | W | Weight Ea. |
|---|---|---|---|---|---|
| T1 | 1.406 in. (36 mm) | 0.781 in. (20 mm) | 0.781 in. (20 mm) | 1.195 in. (30.4 mm) | 0.02 lbs |
| T2 | 2.188 in. (56 mm) | 1.250 in. (32 mm) | 1.000 in. (25.4 mm) | 1.195 in. (30.4 mm) | 0.03 lbs |
| T3 | 2.688 in. (68.3 mm) | 1.438 in. (36.5 mm) | 1.500 in. (38.1 mm) | 1.195 in. (30.4 mm) | 0.07 lbs |
| T4 | 3.188 in. (81 mm) | 1.813 in. (46.1 mm) | 1.750 in. (44.4 mm) | 1.195 in. (30.4 mm) | 0.09 lbs |
| T5 | 4.063 in. (103.2 mm) | 2.188 in. (56 mm) | 2.250 in. (57.1 mm) | 1.195 in. (30.4 mm) | 0.15 lbs |

### Clamp Pair Material Codes (*)

| | |
|---|---|
| P | **[PP] Polypropylene**<br>Black Color |
| S | **[SP] Santoprene**<br>Beige Color |

### Custom Sizes

Custom sizes can be made by specially boring the clamp pair to any desired size. To order a special size, first find the group that this will fall under. All groups are available starting with 1/4 in. OD and can be used up to the maximum OD size in the chart below. This is expressed in the part number as a two-digit number (G#). Once the group size has been determined, simply add the desired OD of the line to be secured in the 3 digit end number of the clamp pair (XXX) by rounding the number to two decimals and dropping the decimal point. The part number will look like this:
**TS-CLH-G#-*-XXX**

Example: For a line wih OD of 1.08 in., this would fall within the group T4. The Part number will be as follows:
**TS-CLH-04-*-108**

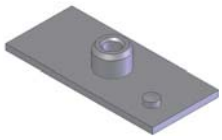
### Special Bore Range by Group

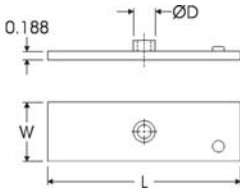
| Group (G#) | Range |
|---|---|
| 01 | 0.25 in through 0.472 in. |
| 02 | 0.25 in through 0.675 in. |
| 03 | 0.25 in through 1.000 in. |
| 04 | 0.25 in through 1.125 in. |
| 05 | 0.25 in through 1.660 in. |

# Hardware Selection and Dimensions

## Twin Weld Plate [TWP]

The typical mounting configuration where the clamp is welded to the support structure.



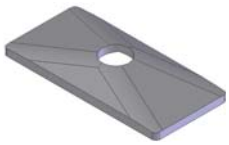


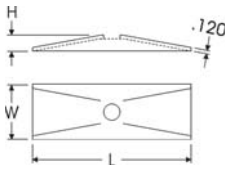

| Group | Order Number | L | W | ØD | Thread | Weight |
|---|---|---|---|---|---|---|
| T1 | TS-TWP-01-* | 1.449 in. (37 mm) | 1.188 in. (30 mm) | 0.460 in. (12 mm) | 1/4 - 20 UNC (M6 metric) | 0.08 lbs |
| T2 | TS-TWP-02-*-XXX | 2.188 in. (56 mm) | 1.188 in. (30 mm) | 0.550 in. (14 mm) | 5/16 - 18 UNC (M8 metric) | 0.14 lbs |
| T3 | TS-TWP-03-*-XXX | 2.688 in. (68.3 mm) | 1.188 in. (30 mm) | 0.550 in. (14 mm) | 5/16 - 18 UNC (M8 metric) | 0.17 lbs |
| T4 | TS-TWP-04-*-XXX | 3.188 in. (81 mm) | 1.188 in. (30 mm) | 0.550 in. (14 mm) | 5/16 - 18 UNC (M8 metric) | 0.2 lbs |
| T5 | TS-TWP-05-*-XXX | 4.063 in. (103.2 mm) | 1.188 in. (30 mm) | 0.550 in. (14 mm) | 5/16 - 18 UNC (M8 metric) | 0.26 lbs |

| | | |
|---|---|---|
| ***Materials:** | **Z** | Zinc Plated Steel (Standard Material) |
| | **T** | AISI 304 Grade Stainless Steel (A2 - 1.4301/1.4305) |
| | **X** | AISI 316 Grade Stainless Steel (A4 - 1.4401/1.4571) |
| | **C** | Plain Carbon Steel (Special Order) |
| **XXX Threads:** | **56H** | 5/16 - 18 UNC Thread (standard) |
| | **38H** | 3/8 - 16 UNC Thread (special) |
| | **-MET** | By adding the "**-MET**" designation after the material designation above, the threads are metric thread |

## Twin Cover Plate [TCP]

The cover plate is the typical top fixture used to secure twin series pipe clamps.






| Group | Order Number | L | W | H | Weight |
|---|---|---|---|---|---|
| T1 | TS-TCP-01-* | 1.225 in. (31 mm) | 0.905 in. (23 mm) | - | 0.05 lbs |
| T2 | TS-TCP-02-* | 2.040 in. (52 mm) | 1.200 in. (30.5 mm) | 0.266 in. (7 mm) | 0.08lbs |
| T3 | TS-TCP-03-* | 2.542 in. (65 mm) | 1.200 in. (30.5 mm) | 0.266 in. (7 mm) | 0.10 lbs |
| T4 | TS-TCP-04-* | 2.870 in. (73 mm) | 1.205 in. (30.6 mm) | 0.266 in. (7 mm) | 0.11 lbs |
| T5 | TS-TCP-05-* | 3.688 in. (94 mm) | 1.220 in. (31 mm) | 0.266 in. (7 mm) | 0.14 lbs |

| | | |
|---|---|---|
| ***Materials:** | **Z** | Zinc Plated Steel (Standard Material) |
| | **Y** | Yellow Zinc Plated Steel |
| | **T** | AISI 304 Grade Stainless Steel (A2 - 1.4301/1.4305) |
| | **X** | AISI 316 Grade Stainless Steel (A4 - 1.4401/1.4571) |
| | **C** | Plain Carbon Steel (Special Order) |

## Twin Hex Bolt [HEX]

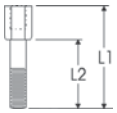
The Hexagon head bolts are used with clamps with cover plates.


| Group | Order Number | L | Thread | Weight |
|---|---|---|---|---|
| T1 | TS-HEX-01-*-XXX | 1.00 in. (25.4 mm) | 1/4 - 20 UNC (M6 metric) | 0.02 lbs |
| T2 | TS-HEX-02-*-XXX | 1.25 in. (32 mm) | 5/16 - 18 UNC (M8 metric) | 0.03 lbs |
| T3 | TS-HEX-03-*-XXX | 1.75 in. (44 mm) | 5/16 - 18 UNC (M8 metric) | 0.04 lbs |
| T4 | TS-HEX-04-*-XXX | 2.00 in. (50.8 mm) | 5/16 - 18 UNC (M8 metric) | 0.05 lbs |
| T5 | TS-HEX-05-*-XXX | 2.50 in. (63 mm) | 5/16 - 18 UNC (M8 metric) | 0.06 lbs |

| | | |
|---|---|---|
| ***Materials:** | **Z** | Zinc Plated Steel (Standard Material) |
| | **Y** | Yellow Zinc Plated Steel |
| | **T** | AISI 304 Grade Stainless Steel (A2 - 1.4301/1.4305) |
| | **X** | AISI 316 Grade Stainless Steel (A4 - 1.4401/1.4571) |
| | **C** | Plain Carbon Steel (Special Order) |
| **XXX Threads:** | **56H** | 5/16 - 18 UNC Thread (standard) |
| | **38H** | 3/8 - 16 UNC Thread (special) |
| | **-MET** | By adding the "**-MET**" designation after the material designation above, the threads are metric thread |

## Twin Stacking Bolt [STB]

The stacking bolt is used when another clamp module will be stacked on top of the existing bottom clamp. The head of the stacking bolt has a female thread for the next bolt on top to engage.



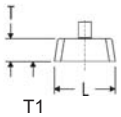

| Group | Order Number | L1 | L2 | Thread | Weight |
|---|---|---|---|---|---|
| T1 | N/A | - | - | - | - |
| T2 | TS-STB-02-*-XXX | 1.25 in. (32 mm) | 0.625 in. (16 mm) | 5/16 - 18 UNC (M8 metric) | 0.04 lbs |
| T3 | TS-STB-03-*-XXX | 1.75 in. (44 mm) | 1.125 in. (29 mm) | 5/16 - 18 UNC (M8 metric) | 0.05 lbs |
| T4 | TS-STB-04-*-XXX | 2.00 in. (50.8 mm) | 1.375 in. (35 mm) | 5/16 - 18 UNC (M8 metric) | 0.06 lbs |
| T5 | TS-STB-05-*-XXX | 2.50 in. (63 mm) | 1.875 in. (48 mm) | 5/16 - 18 UNC (M8 metric) | 0.06 lbs |

| | | |
|---|---|---|
| ***Materials:** | **Z** | Zinc Plated Steel (Standard Material) |
| | **Y** | Yellow Zinc Plated Steel |
| | **T** | AISI 304 Grade Stainless Steel (A2 - 1.4301/1.4305) |
| | **X** | AISI 316 Grade Stainless Steel (A4 - 1.4401/1.4571) |
| | **C** | Plain Carbon Steel (Special Order) |
| **XXX Threads:** | **56H** | 5/16 - 18 UNC Thread (standard) |
| | **38H** | 3/8 - 16 UNC Thread (special) |
| | **-MET** | By adding the "**-MET**" designation after the material designation above, the threads are metric thread |

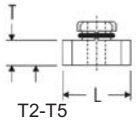
# Rail and Strut Mounting Options

## Rail Nut [RCN-0]

The RCN-0 is used when mounting Behringer's RAL-0, and competitor's standard rails.

T1

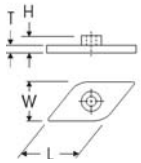
T2-T5

| Group | Order Number | L | W | T | Thread | Weight |
|---|---|---|---|---|---|---|
| T1 | **ST-RCN-99-*-RN0** | 0.950 in. (24 mm) | 0.405 in (10.2 mm) | 0.210 in. (5.3 mm) | 1/4 - 20 UNC | 0.02 lbs |
| T2-T5 | **TS-RCN-99-*-RN0** | 1.000 in. (25.4 mm) | 0.420 in (10.7 mm) | 0.210 in. (5.3 mm) | 5/16 - 18 UNC | 0.02 lbs |

| | | |
|---|---|---|
| ***Materials:** | **Y** | Yellow Zinc Plated Steel (Standard Material Groups T2-T5) |
| | **Z** | Zinc Plated Steel (Group T1 as stanadard, special T2-T5) |
| | **T** | AISI 304 Grade Stainless Steel (A2 - 1.4301/1.4305) |
| | **X** | AISI 316 Grade Stainless Steel (A4 - 1.4401/1.4571) |
| | **C** | Plain Carbon Steel (Standard Material Group T1) |
| **Weight Ea.** | | approx. 0.02 lbs ea. |

## Rail Nut [RCN-1/RCN-4]

The RCN-1 and RCN-4 are used only when mounting to Behringer's proprietary RAL-1

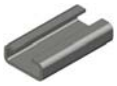
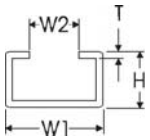




| Group | Order Number | L | W | T | H | Thread |
|---|---|---|---|---|---|---|
| T1 | **ST-RCN-99-*-RN1** | 1.075 in. (27.3 mm) | 0.783 in (20 mm) | 0.175 in. (4.4 mm) | 0.405 in. (10 mm) | 1/4 - 20 UNC |
| T2-T5 | **TS-RCN-99-*-RN4** | 1.075 in. (27.3 mm) | 0.783 in (20 mm) | 0.175 in. (4.4 mm) | 0.550 in. (14 mm) | 5/16 - 18 UNC |

| | | |
|---|---|---|
| ***Materials:** | **Z** | Zinc Plated Steel (Standard Material) |
| | **T** | AISI 304 Grade Stainless Steel (A2 - 1.4301/1.4305) |
| | **X** | AISI 316 Grade Stainless Steel (A4 - 1.4401/1.4571) |
| | **C** | Plain Carbon Steel (Special order) |
| **Weight Ea.** | | Approx. 0.04 lbs. ea. |

## Mounting Rail [RAL-0]

Behringer's RAL-0 can be used to mount clamps with RCN-0 rail nuts only.

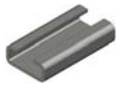
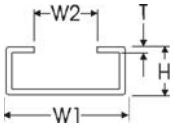




| Group | Order Number | W1 | W2 | L | T | H |
|---|---|---|---|---|---|---|
| 0-7A | **ST-RA0-99-*-XXX** | 1.125 in. (28 mm) | 0.438 in (11 mm) | See Below | 14 gauge | 0.438 in (11 mm) |

| | | |
|---|---|---|
| ***Materials:** | **C** | Plain Carbon Steel (Standard Material) |
| | **T** | AISI 304 Grade Stainless Steel (A2 - 1.4301/1.4305) |
| | **X** | AISI 316 Grade Stainless Steel (A4 - 1.4401/1.4571) |
| | **Z** | Zinc Plated Steel (Special Order) |
| **XXX Length:** | **6FT** | 72 in. (1829 mm) Length (Standard Length) |
| | **3FT** | 36 in. (914 mm) Length (Special Length) |
| | | Custom sizes available on request |

## Mounting Rail [RAL-1]

Behringer's proprietary RAL-1 can be used to mount both clamps with RCN-1 and RCN-4 rail nuts above as well as the TWP weld plates. This allows more flexibility of inventories and simplifies installation and field modifications.

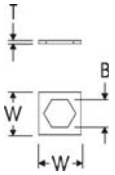




| Group | Order Number | W1 | W2 | L | T | H |
|---|---|---|---|---|---|---|
| 0-7A | **ST-RA1-99-*-XXX** | 1.125 in. (28 mm) | 0.438 in (11 mm) | See Below | 14 gauge | 0.438 in (11 mm) |

| | | |
|---|---|---|
| ***Materials:** | **Z** | Zinc Plated Steel (Standard Material) |
| | **T** | AISI 304 Grade Stainless Steel (A2 - 1.4301/1.4305) |
| | **X** | AISI 316 Grade Stainless Steel (A4 - 1.4401/1.4571) |
| | **C** | Plain Carbon Steel (Special Order) |
| XXX Length: | **6FT** | 72 in. (1829 mm) Length (Standard Length) |
| | **3FT** | 36 in. (914 mm) Length (Special Length) |
| | | Custom sizes available on request |

## Safety Plate [SAF]

The safety plate is used in conjunction with the STB stacking bolts. This ensures that the stacking bolts will remain locked in place when tightening the clamp module stacked above it.

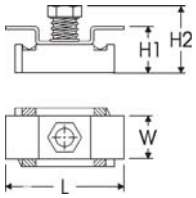




| Group | Order Number | W | B | T | Weight |
|---|---|---|---|---|---|
| T1 | **N/A** | - | - | - | - |
| T2-T5 | **TS-SAF-02-*** | 0.719 in. (18 mm) | 0.510 in. (13 mm) | 0.105 in. (2.7 mm) | 0.1 oz. |

| | | |
|---|---|---|
| ***Materials:** | **Y** | Yellow Zinc Plated Steel (Standard Material) |
| | **Z** | Zinc Plated Steel |
| | **T** | AISI 304 Grade Stainless Steel (A2 - 1.4301/1.4305) |
| | **X** | AISI 316 Grade Stainless Steel (A4 - 1.4401/1.4571) |
| | **C** | Plain Carbon Steel (Special Order) |

## Unistrut Clip Nut [UCN]

The UCN nut is used to adapt Behringer's pipe clamps to standard strut. This allows for even greater flexibility and mounting possibilities.


| Group | Order Number | L | W | H1 | H2 | Thread |
|---|---|---|---|---|---|---|
| T1 | **ST-UCN-99-*** | 1.660 in. (42 mm) | 0.635 in (16 mm) | 0.525 in. (13 mm) | 0.813 in. (20.5 mm) | 1/4 - 20 UNC |
| T2-T5 | **TS-UCN-23-2** | 1.500 in. (38 mm) | 2.090 in (53 mm) | 0.730 in. (18.5 mm) | 1.080 in. (27.5 mm) | 5/18 - 18 UNC |
| T4-T5 | **TS-UCN-45-2** | 1.500 in. (38 mm) | 3.120 in (80 mm) | 0.730 in. (18.5 mm) | 1.080 in. (27.5 mm) | 5/18 - 18 UNC |

| | | |
|---|---|---|
| ***Materials:** | **Z** | Zinc Plated Steel (Standard Material) |
| | **T** | AISI 304 Grade Stainless Steel (A2 - 1.4301/1.4305) |
| | **X** | AISI 316 Grade Stainless Steel (A4 - 1.4401/1.4571) |
| | **C** | Plain Carbon Steel (Special Order) |

## Complete Assembly Ordering Code

Chart 1 Chart 2 Chart 3 Chart 4 Chart 5

**TW T 5150 - PP - MET**

### ① Clamp Configuration

| | |
|---|---|
| **TW** | Complete Clamp for Weld Mounting [TWP] |
| **R0T** | Complete Clamp for mounting to RAL-0 |
| **R1T/R4T** | Complete Clamp for mounting to RAL-1 |
| **UT** | Complete Clamp for mounting to Strut Channel [UCN] |
| **TWSK** | Stacking Kit [SAF + STB] |

### ② Hardware Material

| | |
|---|---|
| **Omit** | Electro-Zinc Dichromate Plating<br>RCN-0 rail nuts are still supplied as untreated carbon steel. Zinc plating available for these parts on request. |
| **T** | AISI 304 Stainless Steel (A2 - 1.4301/1.4305) |
| **X** | AISI 316/316Ti Stainless Steel (A4 - 1.4401/1.4571) |
| **C** | Untreated Carbon Steel |

### ④ Clamp Pair Material

| | |
|---|---|
| **PP** | Polypropylene |
| **SP** | Santoprene |

### ⑤ Threads

| | |
|---|---|
| **Omit** | UNC Thread (Standard) |
| **MET** | Metric Thread (Special) |

### ③ Clamp Group and Size

| Behringer Group | Pipe Size | Tube Size | Metric ØD (mm) | Imperial ØD (Inch) | Clamp Halves (Set of 2) |
|---|---|---|---|---|---|
| **T1** | | 1/4 | 6.4 | 0.250 | **1025** |
| | | 3/8 | 9.5 | 0.375 | **1038** |
| | | | 12.0 | 0.472 | **10472** |
| **T2** | | 1/4 | 6.4 | 0.250 | **2025** |
| | | 3/8 | 9.5 | 0.375 | **2038** |
| | 1/8 | | 10.0 | 0.405 | **20405** |
| | | 1/2 | 12.7 | 0.500 | **2050** |
| | 1/4 | | 14.0 | 0.540 | **20540** |
| | | 5/8 | 16.0 | 0.620 | **2062** |
| | 3/8 | | 17.0 | 0.675 | **2068** |
| **T3** | | 3/4 | 19.0 | 0.750 | **3075** |
| | 1/2 | | 21.3 | 0.840 | **30840** |
| | | 7/8 | 22.2 | 0.870 | **3087** |
| | | 1 | 25.4 | 1.000 | **3100** |
| **T4** | | 7/8 | 22.2 | 0.870 | **4087** |
| | | 1 | 25.4 | 1.000 | **4100** |
| | 3/4 | | 26.7 | 1.050 | **41050** |
| | | 1 1/8 | 28.6 | 1.125 | **41125** |
| **T5** | | 1 1/4 | 32.0 | 1.250 | **5125** |
| | 1 | | 33.4 | 1.315 | **51315** |
| | | 1 1/2 | 38.1 | 1.500 | **5150** |
| | 1 1/4 | | 42.2 | 1.660 | **51660** |

## Ordering Examples

### TW

Complete Clamp for Weld Mounting

Consists of:
1 HEX Bolts
1 TCP Cover Plate
1 CLH Clamp Set (2 halves)
1 TWP Weld Plate

### UT

Complete Clamp for Strut Mounting

Consists of:
1 HEX Bolts
1 TCP Cover Plate
1 CLH Clamp Set (2 halves)
1 UCN Unistrut Clip

### R0T

Complete Clamp for RAL-0 Mounting

Consists of:
1 HEX Bolts
1 TCP Cover Plate
1 CLH Clamp Set (2 halves)
2 RCN-0 Rail Nut

### R1T R4T

Complete Clamp for RAL-1 Mounting

Consists of:
1 HEX Bolts
1 TCP Cover Plate
1 CLH Clamp Set (2 halves)
1 RCN-4 Rail Nut

### TWSK

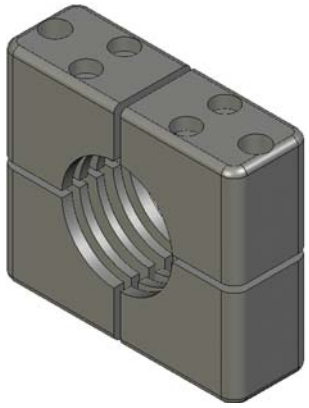
Complete Stacking Kit

Consists of:
1 STB Stacking Bolt
1 SAF Safety Plate
1 CLH Clamp Set (2 halves)

# Heavy-4 Series Pipe Clamps

## Clamp Pair Selection, Part Numbers and Dimensions

Behringer's patented Heavy-4 Series pipe clamps accomodate pipe sizes from 8 in. through 30 in. They feature a unique four-segmented plastic design which retains dimensional accuracy, absorbs vibration, resists stress and impact, and accomplishes a strong plastic-to-steel interface, strongly securing the largest pipes with ease. Substantial metal plates and bolts compliment this heavyweight of the pipe clamp world.

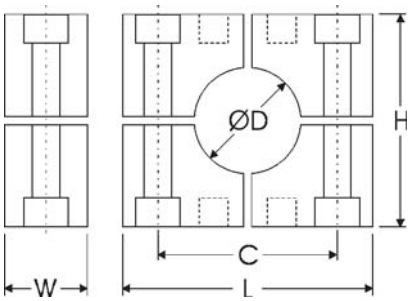


## Clamp Pair Selection and Part Numbers

| Behringer Group | Pipe Size | Metric ØD (mm) | Imperial ØD (Inch) | Clamp Pair P/N (See material code for *) |
|---|---|---|---|---|
| H11 | 8 | 219 | 8.625 | H4-CLH-11-*-08P |
| | 10 | 273 | 10.750 | H4-CLH-11-*-10P |
| | 12 | 324 | 12.750 | H4-CLH-11-*-12P |
| H12 | 14 | 356 | 14.000 | H4-CLH-12-*-14P |
| | 16 | 406 | 16.000 | H4-CLH-12-*-16P |
| H13 | 18 | 457 | 18.000 | H4-CLH-13-*-18P |
| H14 | 20 | 508 | 20.000 | H4-CLH-14-*-20P |
| H15 | 24 | 610 | 24.000 | H4-CLH-15-*-24P |
| | 30 | 762 | 30.000 | H4-CLH-15-*-30P |

### Clamp Pair Material Codes (*)

| | |
|---|---|
| P | **[PP] Polypropylene**<br>Black Color |
| S | **[SP] Santoprene**<br>Beige Color (special order) |
| A | **[AL] Aluminum**<br>Aluminum Color (special order) |




## Clamp Pair Dimensional Information

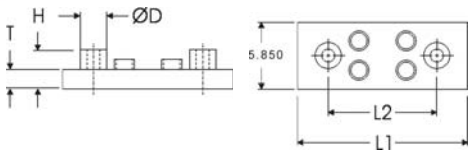
| Behringer Group | Pipe Size | Metric ØD (mm) | Imperial ØD (Inch) | Clamp Pair P/N (See above for complete order numbers *) | L | H | C | Weight |
|---|---|---|---|---|---|---|---|---|
| H11 | 8 | 219.0 | 8.625 | H4-CLH-11-*-08P | 18.25 in. (464 mm) | 16.00 in. (406 mm) | 15.688 in. (398 mm) | 24 lbs. |
| | 10 | 273.0 | 10.750 | H4-CLH-11-*-10P | | | | |
| | 12 | 323.8 | 12.750 | H4-CLH-11-*-12P | | | | |
| H12 | 14 | 355.6 | 14.000 | H4-CLH-12-*-14P | 23.50 in. (597 mm) | 20.00 in. (508 mm) | 20.875 in. (530 mm) | 32 lbs. |
| | 16 | 406.4 | 16.000 | H4-CLH-12-*-16P | | | | |
| H13 | 18 | 457.2 | 18.000 | H4-CLH-13-*-18P | 24.75 in. (629 mm) | 22.00 in. (559 mm) | 22.25 in. (565 mm) | 22 lbs. |
| H14 | 20 | 508.0 | 20.000 | H4-CLH-14-*-20P | 28.75 in. (730 mm) | 26.00 in. (660 mm) | 26.25 in. (667 mm) | 26 lbs. |
| H15 | 24 | 609.6 | 24.000 | H4-CLH-15-*-24P | 34.75 in. (883 mm) | 32.00 in. (813 mm) | 32.25 in. (819 mm) | 30 lbs. |
| | 30 | 762.0 | 30.000 | H4-CLH-15-*-30P | | | | |

# Heavy 4 Series Pipe Clamps

## Hardware Selection and Dimensions

### Single Weld Plate [SWP]

The typical mounting configuration where the clamp is welded to the support strcture.

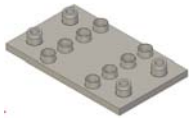


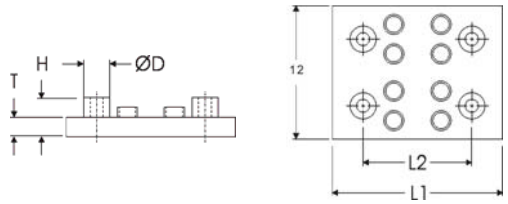

| Group | Order Number | L1 | L2 | Thread | Weight |
|---|---|---|---|---|---|
| H11 | **H4-SWP-11-*** | 20.00 in. (508 mm) | 15.688 in. (398 mm) | 1 1/4 - 7 UNC | 34 lbs. |
| H12 | **H4-SWP-12-*** | 26.00 in. (660 mm) | 20.875 in. (530 mm) | 1 1/4 - 7 UNC | 43 lbs. |
| H13 | **H4-SWP-13-*** | 27.50 in. (498 mm) | 22.25 in. (565 mm) | 1 1/4 - 7 UNC | 46 lbs. |
| H14 | **H4-SWP-14-*** | 30.00 in. (762 mm) | 26.25 in. (667 mm) | 1 1/4 - 7 UNC | 52 lbs. |
| H15 | **H4-SWP-15-*** | 36.00 in. (914 mm) | 32.25 in. (819 mm) | 1 1/4 - 7 UNC | 62 lbs. |

| *Materials: | | |
|---|---|---|
| | **C** | Plain Carbon Steel (Standard Material) |
| | **T** | AISI 304 Grade Stainless Steel (A2 - 1.4301/1.4305) |
| | **X** | AISI 316 Grade Stainless Steel (A4 - 1.4401/1.4571) |
| | **Z** | Zinc Plated Steel (Special Order) |

### Double Weld Plate [DWP]

Double weld plates are used to make a double heavy clamp, with both sets of clamp halves in line with the piping. This design can accommodate double the operating pressure as the single heavy pipe clamps. The DWP is used in conjunction with the DCP below.



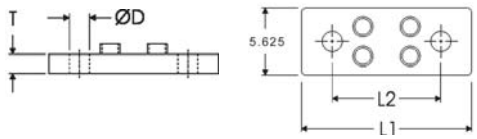



| Group | Order Number | L1 | L2 | Thread | Weight |
|---|---|---|---|---|---|
| H11 | **H4-DWP-11-*** | 20.00 in. (508 mm) | 15.688 in. (398 mm) | 1 1/4 - 7 UNC | 71 lbs. |
| H12 | **H4-DWP-12-*** | 26.00 in. (660 mm) | 20.875 in. (530 mm) | 1 1/4 - 7 UNC | 88 lbs. |
| H13 | **H4-DWP-13-*** | 27.50 in. (498 mm) | 22.25 in. (565 mm) | 1 1/4 - 7 UNC | 93 lbs. |
| H14 | **H4-DWP-14-*** | 30.00 in. (762 mm) | 26.25 in. (667 mm) | 1 1/4 - 7 UNC | 106 lbs. |
| H15 | **H4-DWP-15-*** | 36.00 in. (914 mm) | 32.25 in. (819 mm) | 1 1/4 - 7 UNC | 127 lbs. |

| *Materials: | | |
|---|---|---|
| | **C** | Plain Carbon Steel (Standard Material) |
| | **T** | AISI 304 Grade Stainless Steel (A2 - 1.4301/1.4305) |
| | **X** | AISI 316 Grade Stainless Steel (A4 - 1.4401/1.4571) |
| | **Z** | Zinc Plated Steel (Special Order) |

### Single Cover Plate [SCP]

The cover plate is the standard top fixture for securing the clamp with hexagon head bolts.

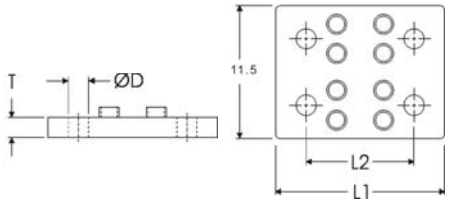



| Group | Order Number | L1 | L2 | Weight |
|---|---|---|---|---|
| H11 | **H4-SCP-11-*** | 18.25 in. (464 mm) | 15.688 in. (398 mm) | 28 lbs. |
| H12 | **H4-SCP-12-*** | 23.50 in. (597 mm) | 20.875 in. (530 mm) | 37 lbs. |
| H13 | **H4-SCP-13-*** | 24.75 in. (629 mm) | 22.25 in. (565 mm) | 40 lbs. |
| H14 | **H4-SCP-14-*** | 28.75 in. (730 mm) | 26.25 in. (667 mm) | 45 lbs. |
| H15 | **H4-SCP-15-*** | 34.75 in. (883 mm) | 32.25 in. (819 mm) | 55 lbs. |

| *Materials: | | |
|---|---|---|
| | **C** | Plain Carbon Steel (Standard Material) |
| | **T** | AISI 304 Grade Stainless Steel (A2 - 1.4301/1.4305) |
| | **X** | AISI 316 Grade Stainless Steel (A4 - 1.4401/1.4571) |
| | **Z** | Zinc Plated Steel (Special Order) |

### Double Cover Plate [DCP]

Double cover plates are used to make a double heavy clamp, with both sets of clamp halves in line with piping. This design can accommodate double the operating pressure as the single heavy pipe clamps. The DCP is used in conjunction with the DWP above.

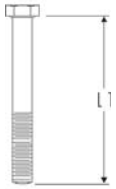



| Group | Order Number | L1 | L2 | Weight |
|---|---|---|---|---|
| H11 | **H4-DCP-11-*** | 18.25 in. (464 mm) | 15.688 in. (398 mm) | 60 lbs. |
| H12 | **H4-DCP-12-*** | 23.50 in. (597 mm) | 20.875 in. (530 mm) | 77 lbs. |
| H13 | **H4-DCP-13-*** | 24.75 in. (629 mm) | 22.25 in. (565 mm) | 82 lbs. |
| H14 | **H4-DCP-14-*** | 28.75 in. (730 mm) | 26.25 in. (667 mm) | 96 lbs. |
| H15 | **H4-DCP-15-*** | 34.75 in. (883 mm) | 32.25 in. (819 mm) | 115 lbs. |

| *Materials: | | |
|---|---|---|
| | **C** | Plain Carbon Steel (Standard Material) |
| | **T** | AISI 304 Grade Stainless Steel (A2 - 1.4301/1.4305) |
| | **X** | AISI 316 Grade Stainless Steel (A4 - 1.4401/1.4571) |
| | **Z** | Zinc Plated Steel (Special Order) |

### Hexagon Head Bolt [HEX]

The Hexagon Head Bolt is used when using clamps with cover plates.




| Group | Order Number | L | UNC Thread | Weight |
|---|---|---|---|---|
| H11 | **H4-HEX-11-*** | 17.5 in. (445 mm) | 1 1/4 - 7 UNC | lbs. |
| H12 | **H4-HEX-12-*** | 21.5 in. (546 mm) | 1 1/4 - 7 UNC | lbs. |
| H13 | **H4-HEX-13-*** | 24.0 in. (610 mm) | 1 1/4 - 7 UNC | lbs. |
| H14 | **H4-HEX-14-*** | 27.5 in. (700 mm) | 1 1/4 - 7 UNC | lbs. |
| H15 | **H4-HEX-15-*** | 33.5 in. (850 mm) | 1 1/4 - 7 UNC | lbs. |

| *Materials: | | |
|---|---|---|
| | **C** | Plain Carbon Steel (Standard Material) |
| | **T** | AISI 304 Grade Stainless Steel (A2 - 1.4301/1.4305) |
| | **X** | AISI 316 Grade Stainless Steel (A4 - 1.4401/1.4571) |
| | **Z** | Zinc Plated Steel (Special Order) |

# Heavy 4 Series Pipe Clamps

## Complete Assembly Ordering Code

Chart 1 Chart 2 Chart 3 Chart 4 Chart 5

**SH T 11275 - PP - MET**

| ① Clamp Configuration | |
|---|---|
| **SH** | Single Heavy Complete Clamp for Weld Mounting [SWP] |
| **DH** | Double Heavy Complete Clamp for Weld Mounting [DWP] |

| ② Hardware Material | |
|---|---|
| **Omit** | Untreated Carbon Steel |
| **T** | AISI 304 Stainless Steel (A2 - 1.4301/1.4305) |
| **X** | AISI 316/316Ti Stainless Steel (A4 - 1.4401/1.4571) |
| **Z** | Electro-Zinc Dichromate Plating |

| ④ Clamp Halves Material | |
|---|---|
| **PP** | Polypropylene |
| **SP** | Santoprene (Special) |
| **AL** | Aluminum (Special) |

| ⑤ Threads | |
|---|---|
| **Omit** | UNC Thread (Standard) |
| **MET** | Metric Thread (Special) |

### ③ Clamp Group and Size

| Behringer Group | Pipe Size | Metric ØD (mm) | Imperial ØD (Inch) | Clamp Halves (Set of 2) |
|---|---|---|---|---|
| H11 | 8 | 219.0 | 8.625 | **11862** |
| | 10 | 273.0 | 10.750 | **11075** |
| | 12 | 323.8 | 12.750 | **11275** |
| H12 | 14 | 355.6 | 14.000 | **12140** |
| | 16 | 406.4 | 16.000 | **12160** |
| H13 | 18 | 457.2 | 18.000 | **13180** |
| H14 | 20 | 508.0 | 20.000 | **14200** |
| H15 | 24 | 609.6 | 24.000 | **15240** |
| | 30 | 762.0 | 30.000 | **15300** |

## Ordering Examples

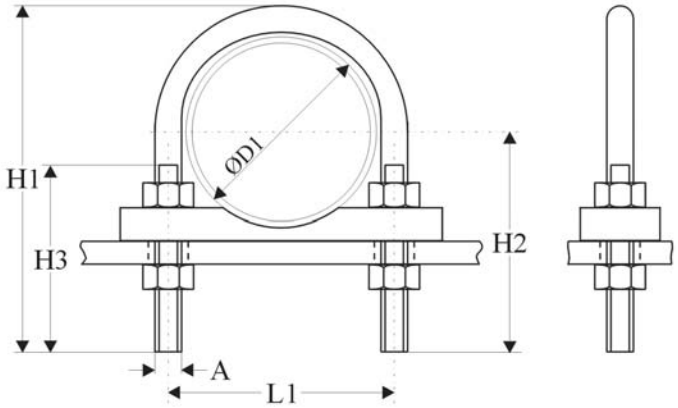
**SH** — Single Complete Clamp for Weld Mounting

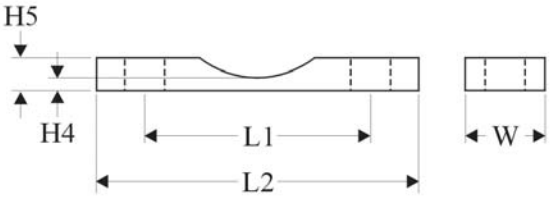
Consists of:
2 HEX Bolts
1 SCP Cover Plate
1 CLH Clamp Set (2 halves)
1 SWP Weld Plate

**DH** — Double Complete Clamp for Weld Mounting

Consists of:
2 HEX Bolts
1 SCP Cover Plate
1 CLH Clamp Set (2 halves)
1 SWP Weld Plate

## Long Saddle U-Bolt Clamp




Saddle Material = NN (HDPE)
= HT (High Temp)

| U-Bolt | | | | | | | |
|---|---|---|---|---|---|---|---|
| Nominal Pipe Size | ØD1 (pipe OD) | L1 | H1 | H2 | H3 | A (thread) | Wt. (lbs) |
| 1/2 | 0.840 | 1.188 | 3.500 | 2.750 | 2.375 | 1/4 - 20 UNC | 0.11 |
| 3/4 | 1.050 | 1.375 | 3.563 | 2.750 | 2.375 | 1/4 - 20 UNC | 0.12 |
| 1 | 1.315 | 1.625 | 3.688 | 2.750 | 2.375 | 1/4 - 20 UNC | 0.12 |
| 1 1/4 | 1.660 | 2.063 | 4.125 | 2.875 | 2.375 | 3/8 - 16 UNC | 0.28 |
| 1 1/2 | 1.900 | 2.375 | 4.378 | 3.000 | 2.500 | 3/8 - 16 UNC | 0.30 |
| 2 | 2.375 | 2.813 | 4.875 | 3.250 | 2.500 | 3/8 - 16 UNC | 0.33 |
| 2 1/2 | 2.875 | 3.438 | 5.75 | 3.750 | 3.000 | 1/2 - 13 UNC | 0.73 |
| 3 | 3.500 | 4.063 | 6.313 | 4.000 | 3.000 | 1/2 - 13 UNC | 0.78 |
| 4 | 4.500 | 5.063 | 7.313 | 4.500 | 3.000 | 1/2 - 13 UNC | 0.90 |
| 5 | 5.563 | 6.125 | 8.313 | 5.000 | 3.000 | 1/2 - 13 UNC | 1.00 |
| 6 | 6.625 | 7.375 | 10.125 | 6.125 | 3.750 | 5/8 - 11 UNC | 2.00 |
| 8 | 8.625 | 9.375 | 21.125 | 7.125 | 3.750 | 5/8 - 11 UNC | 2.30 |
| 10 | 10.750 | 11.625 | 14.563 | 8.375 | 4.000 | 3/4 - 10 UNC | 4.90 |
| 12 | 12.750 | 13.750 | 16.938 | 9.625 | 4.250 | 7/8 - 9 UNC | 7.70 |
| 14 | 14.000 | 15.000 | 18.188 | 10.250 | 4.250 | 7/8 - 9 UNC | 8.30 |
| 16 | 16.000 | 17.000 | 20.188 | 11.250 | 4.250 | 7/8 - 9 UNC | 9.20 |
| 18 | 18.000 | 19.125 | 22.688 | 12.625 | 4.750 | 1 - 8 UNC | 13.50 |
| 20 | 20.000 | 21.125 | 24.688 | 13.625 | 4.750 | 1 - 8 UNC | 14.60 |
| 22 | 22.000 | 23.125 | 26.688 | 14.625 | 4.750 | 1 - 8 UNC | 15.20 |
| 24 | 24.000 | 25.125 | 28.688 | 15.625 | 4.750 | 1 - 8 UNC | 16.90 |
| 30 | 30.000 | 31.125 | 34.625 | 18.625 | 4.750 | 1 - 8 UNC | 19.10 |

| Long Saddle | | | | | |
|---|---|---|---|---|---|
| L1 | L2 | W | H4 | H5 | Wt. (lbs) |
| 1.188 | 2.000 | 1.250 | 0.250 | 0.500 | 0.04 |
| 1.375 | 3.000 | 1.250 | 0.250 | 0.500 | 0.07 |
| 1.625 | 3.188 | 1.250 | 0.250 | 0.500 | 0.07 |
| 2.063 | 3.500 | 1.250 | 0.250 | 0.500 | 0.08 |
| 2.375 | 3.750 | 1.500 | 0.313 | 0.625 | 0.10 |
| 2.813 | 4.375 | 1.500 | 0.313 | 0.625 | 0.12 |
| 3.438 | 5.375 | 1.500 | 0.313 | 0.625 | 0.15 |
| 4.063 | 5.750 | 1.500 | 0.375 | 0.750 | 0.19 |
| 5.063 | 7.500 | 1.500 | 0.375 | 0.750 | 0.25 |
| 6.125 | 8.750 | 1.500 | 0.375 | 0.750 | 0.29 |
| 7.375 | 9.875 | 2.000 | 0.500 | 1.000 | 0.59 |
| 9.375 | 12.500 | 2.000 | 0.500 | 1.000 | 0.74 |
| 11.625 | 14.625 | 2.000 | 0.500 | 1.000 | 0.87 |
| 13.75 | 16.625 | 2.500 | 0.594 | 1.250 | 1.54 |
| 15.000 | 19.000 | 2.500 | 0.594 | 1.250 | 1.76 |
| 17.000 | 21.250 | 2.500 | 0.594 | 1.250 | 1.97 |
| 19.125 | 23.240 | 2.500 | 0.594 | 1.250 | 2.16 |
| 21.125 | 25.250 | 2.500 | 0.594 | 1.250 | 2.35 |
| 23.125 | 27.625 | 2.750 | 0.750 | 1.500 | 3.38 |
| 25.125 | 29.625 | 2.750 | 0.750 | 1.500 | 3.62 |
| 31.125 | 36.000 | 2.750 | 0.750 | 1.500 | 4.40 |

## Assembly Ordering

LSUBC-12750-NN

**Saddle Material**
NN = HDPE
HT = Hight Temp

**Pipe Diameter**
Enter ØD1 value from above, excluding decimal

**Material of U-Bolt**
C Plain Carbon Steel
Z Zinc Plated
T 304SS
X 316SS

## U-Bolt Ordering

UBC-12750

**Pipe Diameter**
Enter ØD1 value from above, excluding decimal

**Material of U-Bolt**
C Plain Carbon Steel
Z Zinc Plated
T 304SS
X 316SS

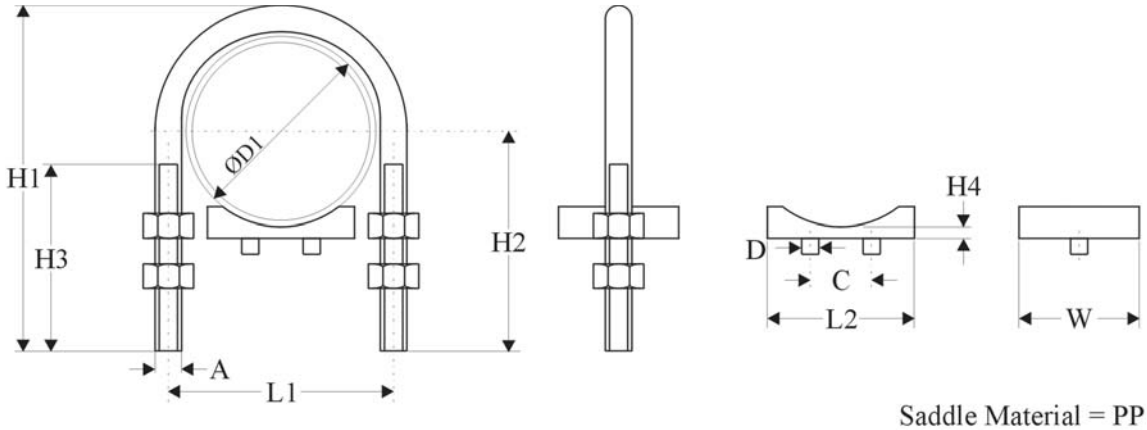
## Saddle Ordering

LS-12750-NN

**Saddle Material**
NN = HDPE
HT = Hight Temp

**Pipe Diameter**
Enter ØD1 value from above, excluding decimal

## Short Saddle U-Bolt Clamp




Saddle Material = PP (Polypropylene)

| U-Bolt | | | | | | |
|---|---|---|---|---|---|---|
| Nominal Pipe Size | ØD1 (pipe OD) | L1 | H1 | H2 | H3 | A (thread) |
| 1 1/4 | 1.660 | 2.063 | 4.125 | 2.875 | 2.375 | 3/8 - 16 UNC |
| 1 1/2 | 1.900 | 2.375 | 4.378 | 3.000 | 2.500 | 3/8 - 16 UNC |
| 2 | 2.375 | 2.813 | 4.875 | 3.250 | 2.500 | 3/8 - 16 UNC |
| 3 | 3.500 | 4.063 | 6.313 | 4.000 | 3.000 | 1/2 - 13 UNC |
| 4 | 4.500 | 5.063 | 7.313 | 4.500 | 3.000 | 1/2 - 13 UNC |
| 6 | 6.625 | 7.375 | 10.125 | 6.125 | 3.750 | 5/8 - 11 UNC |
| 8 | 8.625 | 9.375 | 21.125 | 7.125 | 3.750 | 5/8 - 11 UNC |
| 10 | 10.750 | 11.625 | 14.563 | 8.375 | 4.000 | 3/4 - 10 UNC |
| 12 | 12.750 | 13.750 | 16.938 | 9.625 | 4.250 | 7/8 - 9 UNC |
| 14 | 14.000 | 15.000 | 18.188 | 10.250 | 4.250 | 7/8 - 9 UNC |
| 16 | 16.000 | 17.000 | 20.188 | 11.250 | 4.250 | 7/8 - 9 UNC |
| 18 | 18.000 | 19.125 | 22.688 | 12.625 | 4.750 | 1 - 8 UNC |
| 20 | 20.000 | 21.125 | 24.688 | 13.625 | 4.750 | 1 - 8 UNC |
| 24 | 24.000 | 25.125 | 28.688 | 15.625 | 4.750 | 1 - 8 UNC |
| 30 | 30.000 | 31.125 | | 18.625 | 4.750 | 1 - 8 UNC |

| Short Saddle | | | | |
|---|---|---|---|---|
| L2 | C | D | H4 | W |
| 1.500 | 1.000 | 0.313 | 0.250 | 1.000 |
| 1.500 | 1.000 | 0.313 | 0.250 | 1.000 |
| 1.500 | 1.000 | 0.313 | 0.250 | 1.000 |
| 3.000 | 1.563 | 0.563 | 0.313 | 2.000 |
| 3.000 | 1.563 | 0.563 | 0.313 | 2.000 |
| 5.500 | 3.500 | 1.000 | 0.375 | 3.000 |
| 5.500 | 3.500 | 1.000 | 0.375 | 3.000 |
| 5.500 | 3.500 | 1.000 | 0.375 | 3.000 |
| 8.500 | 5.875 | 1.125 | 0.375 | 3.000 |
| 8.500 | 5.875 | 1.125 | 0.375 | 3.000 |
| 8.500 | 5.875 | 1.125 | 0.375 | 3.000 |
| 8.500 | 5.875 | 1.125 | 0.375 | 3.000 |
| 14.000 | 10.500 | 1.125 | 0.500 | 4.000 |
| 14.000 | 10.500 | 1.125 | 0.500 | 4.000 |
| 14.000 | 10.500 | 1.125 | 0.500 | 4.000 |

### Assembly Ordering

SSUBC-12750 -PP

**Pipe Diameter**
Enter ØD1 value from above, excluding decimal

**Material of U-Bolt**
- C Plain Carbon Steel
- Z Zinc Plated
- T 304SS
- X 316SS

### U-Bolt Ordering

UBC-12750

**Pipe Diameter**
Enter ØD1 value from above, excluding decimal

**Material of U-Bolt**
- C Plain Carbon Steel
- Z Zinc Plated
- T 304SS
- X 316SS

### Saddle Ordering

SS-12750 -PP

**Pipe Diameter**
Enter ØD1 value from above, excluding decimal

## Cushioned Clamping System

Behringer now offers a complete line of cushioned clamps. Cushioned clamps are typically used in pneumatic refrigeration, HVAC, and some low pressure hydraulic lines. Berhinger's cushioned clamps also eliminate metal to metal contact between the fluid lines and the support hardware. Standard material for the hardware is a clear trivalent zinc plated steel with options for both 304 and 316 grades stainless steel. Additional special options include aluminum and powder coating.

### Specifications

**Hardware:**

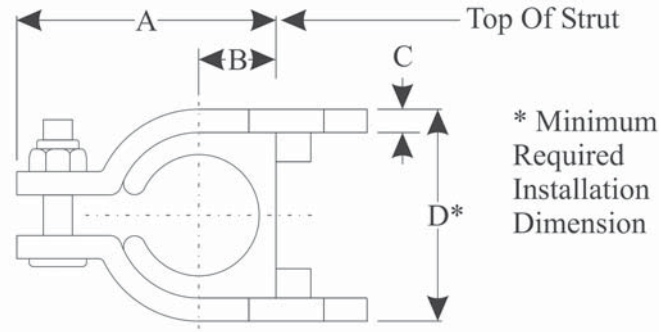
Zinc Plated Carbon Steel (standard)
AISI 304 (A2 - 1.1.4301 / 1.4305)
AISI 316 (A2 - 1.1.4401 / 1.4571)

**Cushion:**

Thermoplastic Elastomer
-65°F to 275°F operating temperature

**Required Channel:**

Fits industry standard strut channel with 1 - 5/8 in. Width.




## Ordering

Order Number Material

CC _____ - _____

| Hardware Materials | |
|---|---|
| Z | Electro-Zinc Dichromate Plating |
| T | AISI 304 Stainless Steel (A2 - 1.4301/1.4305) |
| X | AISI 316/316Ti Stainless Steel (A4-1.4401/1.4571) |

To order, use the ordering code above. Fill in the order number from the light blue shaded boxes in the chart to the right. Then add the material designation from the Hardware Materials chart above.

Ex. For 1 in. Pipe with zinc plated hardware the order number is CC1315-Z.

**Cushion Clamp Size Table**

| Size | Order Number | ØD | A | B | C | D* | Box Quantity |
|---|---|---|---|---|---|---|---|
| 1/4 T | 0250 | 0.250 | 1.110 | 0.220 | 0.075 | 0.620 | 24 |
| 3/8 T | 0375 | 0.375 | 1.240 | 0.280 | 0.075 | 0.750 | 24 |
| 1/2 T | 0500 | 0.500 | 1.360 | 0.340 | 0.075 | 0.870 | 24 |
| 1/4 P | 0540 | 0.540 | 1.410 | 0.630 | 0.075 | 0.910 | 24 |
| 5/8 T | 0625 | 0.625 | 1.500 | 0.410 | 0.075 | 1.000 | 24 |
| 3/8 P | 0675 | 0.675 | 1.590 | 0.450 | 0.075 | 1.070 | 24 |
| 3/4 T | 0750 | 0.750 | 1.780 | 0.530 | 0.075 | 1.330 | 24 |
| 1/2 P | 0840 | 0.840 | 1.910 | 0.590 | 0.075 | 1.450 | 24 |
| 7/8 T | 0875 | 0.875 | 1.910 | 0.580 | 0.075 | 1.450 | 24 |
| 1 T | 1000 | 1.000 | 2.030 | 0.660 | 0.105 | 1.660 | 12 |
| 3/4 P | 1050 | 1.050 | 2.160 | 0.720 | 0.105 | 1.790 | 12 |
| 1 1/8 T | 1125 | 1.125 | 2.160 | 0.720 | 0.105 | 1.790 | 12 |
| 1 1/4 T | 1250 | 1.250 | 2.300 | 0.780 | 0.105 | 1.920 | 12 |
| 1 P | 1315 | 1.315 | 2.750 | 0.910 | 0.119 | 2.220 | 12 |
| 1 3/8 T | 1375 | 1.375 | 2.750 | 0.910 | 0.119 | 2.220 | 12 |
| 1 1/2 T | 1500 | 1.500 | 2.750 | 0.910 | 0.119 | 2.220 | 12 |
| 1 5/8 T | 1625 | 1.625 | 3.030 | 1.030 | 0.119 | 2.470 | 12 |
| 1 1/4 P | 1660 | 1.660 | 3.030 | 1.030 | 0.119 | 2.470 | 12 |
| 1 3/4 T | 1750 | 1.750 | 3.030 | 1.030 | 0.119 | 2.470 | 12 |
| 1 7/8 T | 1875 | 1.875 | 3.280 | 1.160 | 0.119 | 2.470 | 12 |
| 1 1/2 P | 1900 | 1.900 | 3.280 | 1.160 | 0.119 | 2.470 | 12 |
| 2 T | 2000 | 2.000 | 3.280 | 1.160 | 0.119 | 2.470 | 12 |
| 1 1/8 T | 2125 | 2.125 | 3.530 | 1.280 | 0.119 | 2.970 | 1 |
| 2 1/4 T | 2250 | 2.250 | 3.780 | 1.410 | 0.119 | 3.220 | 1 |
| 2 3/8 T | 2375 | 2.375 | 3.780 | 1.410 | 0.119 | 3.220 | 1 |
| 2 P | 2375 | 2.375 | 3.780 | 1.410 | 0.119 | 3.220 | 1 |
| 2 1/2 T | 2500 | 2.500 | 4.030 | 1.530 | 0.119 | 3.470 | 1 |
| 2 5/8 T | 2625 | 2.625 | 4.030 | 1.530 | 0.119 | 3.470 | 1 |
| 2 1/2 P | 2875 | 2.875 | 4.270 | 1.660 | 0.119 | 3.720 | 1 |
| 3 T | 3000 | 3.000 | 4.520 | 1.780 | 0.119 | 3.970 | 1 |
| 3 1/8 T | 3125 | 3.125 | 4.520 | 1.780 | 0.119 | 3.970 | 1 |
| 3 P | 3500 | 3.500 | 4.910 | 1.970 | 0.119 | 4.360 | 1 |
| 3 5/8 T | 3625 | 3.625 | 5.030 | 2.030 | 0.119 | 4.470 | 1 |
| 3 1/2 P | 4000 | 4.000 | 5.530 | 2.280 | 0.119 | 4.970 | 1 |
| 4 1/8 T | 4125 | 4.125 | 5.660 | 2.340 | 0.119 | 5.090 | 1 |
| 4 P | 4500 | 4.500 | 6.030 | 2.530 | 0.119 | 5.470 | 1 |
| 5 P | 5563 | 5.563 | 7.030 | 3.030 | 0.119 | 6.470 | 1 |
| 6 P | 6625 | 6.625 | 8.030 | 3.530 | 0.119 | 7.470 | 1 |

## Material Properties Technical Data

| **Clamp Pair Materials** Other materials have been used and are available upon request. | **PP** | **SP** | **AL** | **NN** |
|---|---|---|---|---|
| | **Polypropylene** | **Santoprene** | **Aluminum** | **HDPE** |
| **Color** | **Black** | **Tan** | **Natural Aluminum** | **White** |
| **Description** | **Thermoplastic Copolymer** | **Thermoplastic Elastomer** | **AlSi12** | **High Density Polyethylene** |
| **Mechanical Properties** | | | | |
| **Tensile Strength** | 3300 psi (at yield, 73 ° F) (ASTM D638) | 1740 psi (at yield, 73 ° F) (ASTM D638) | 19,000 psi (at yield, 73 ° F) (ASTM D638) | 4500 psi (at yield, 73 ° F) (ASTM D638) |
| **Tensile Elongation** | 6.6% (at yield, 73 ° F) (ASTM D638) | 31% (at yield, 73 ° F) (ASTM D638) | 3.5% (at yield, 73 ° F) (ASTM D638) | |
| **Hardness** | | 50 Shore D (ASTM D2240) | | 65 R (Rockwell "R" Scale) |
| **Thermal Properties** | | | | |
| **Temperature Range** (Brief Exposure) | -22º F to + 215º F (-30º C to + 102º C) | -40º F to + 302º F (-40º C to + 150º C) | -65º F to + 750º F*[1] (-54º C to + 399º C) | |
| **Temperature Range** (Continuous Exposure) | -22º F to + 194º F (-30º C to + 90º C) | -40º F to + 275º F (-40º C to + 135º C) | -65º F to + 500º F*[1] (-54º C to + 260º C) | -58º F to + 175º F (-50º C to + 79º C) |
| **Electrical Properties** | | | | |
| **Dielectric Strength** | 475 V/mil (ASTM D149) | 920 V/mil (ASTM D149) | | 510 V/mil (ASTM D149) |
| **Dielectric Constant** | 2.26 - 2.36 (ASTM D150) | 2.300 (ASTM D150) | | 2.35 (ASTM D150) |
| **Volume Resistivity** | > 2 x $10^{16}$ ohm-cm (ASTM D257) | >1 x $10^{14}$ ohm-cm (ASTM D257) | 4.4 x $10^{6}$ ohm-cm (ASTM D257) | >6 x $10^{15}$ ohm-cm (ASTM D257) |
| **Standards and Specifications** | | | | |
| | FDA Regulation Title 21 CFR 177.1520 | UL Listed File# QMFZ2.E80017 | | FDA Regulation Title 21 CFR 177.1520 |
| | Meets Multiple Automotive Industry Specifications | Meets Multiple Automotive Industry Specifications | | ASTM D 1248-84 Type III, Class A |
| | EU Directive 2002/95/EC (RoHS) Compliant | EU Directive 2002/95/EC (RoHS) Compliant | | Federal Specification LP-390 Type III, Class H, Grade I |

### Special Notes

**Notes:**

***1**: Tensile and fatigue strength rise as temperature decreases. The tensile elongation decreases as the temperature decreases.

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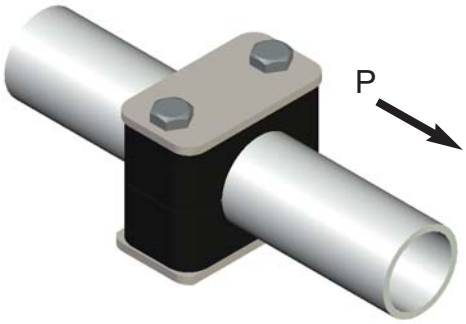
# Tightening Torques and Maximum Loads

The charts below show the force in the direction of the pipe [P] required to move the pipe through the clamp. The values are for clamps with cover plate and hexagon head bolts using the recommended tightening torques below.




## Standard Series

| Behringer Group | Hexagon Head Bolt | Polypropylene | | Santoprene | | Aluminum | |
|---|---|---|---|---|---|---|---|
| | | Tightening Torque (Ft-lbs.) | Maximum load (lbs.) in pipe direction (P) | Tightening Torque (Ft-lbs.) | Maximum load (lbs.) in pipe direction (P) | Tightening Torque (Ft-lbs.) | Maximum load (lbs.) in pipe direction (P) |
| 0 | 1/4 - 20 UNC | 6 | 135 | 6 | 135 | 9 | 785 |
| 1 | | 6 | 245 | 6 | 225 | 9 | 945 |
| 2 | | 6 | 290 | 6 | 270 | 9 | 965 |
| 3 | | 6 | 315 | 6 | 290 | 9 | 1100 |
| 4 | | 6 | 335 | 6 | 315 | 9 | 1125 |
| 5 | | 6 | 425 | 6 | 380 | 9 | 1600 |
| 6 | | 6 | 450 | 6 | 405 | 9 | 2000 |
| 7 | | 6 | 495 | 6 | 425 | 9 | N/A |
| 7A | | 6 | | 6 | | 9 | N/A |

## Heavy Series

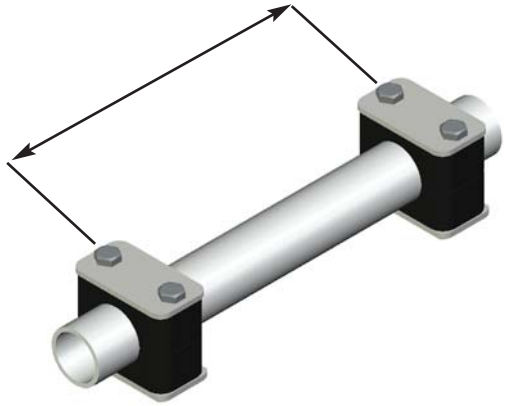
| Behringer Group | Hexagon Head Bolt | Polypropylene | | Santoprene | | Aluminum | |
|---|---|---|---|---|---|---|---|
| | | Tightening Torque (Ft-lbs.) | Maximum load (lbs.) in pipe direction (P) | Tightening Torque (Ft-lbs.) | Maximum load (lbs.) in pipe direction (P) | Tightening Torque (Ft-lbs.) | Maximum load (lbs.) in pipe direction (P) |
| H3 | 3/8 - 16 UNC | 9 | 360 | 9 | 335 | 22 | 2720 |
| H4 | | 9 | 650 | 9 | 600 | 22 | 3395 |
| H5 | | 11 | 740 | 11 | 675 | 25 | 3485 |
| H6 | 7/16 - 14 UNC | 22 | 1845 | 22 | 1755 | 40 | 6615 |
| H7 | 5/8 - 11 UNC | 33 | 2475 | 33 | 2025 | 90 | 7850 |
| H8 | 3/4 - 10 UNC | 60 | 3150 | 60 | 2700 | 160 | 15,885 |
| H9 | 7/8 - 9 UNC | 80 | 6300 | 80 | 5625 | 180 | 16,875 |
| H10 | 1 1/8 - 7 UNC | 130 | 9000 | 130 | 7650 | 370 | 19,000 |

## Twin Series

| Behringer Group | Hexagon Head Bolt | Polypropylene | | Santoprene | |
|---|---|---|---|---|---|
| | | Tightening Torque (Ft-lbs.) | Maximum load (lbs.) in pipe direction (P) | Tightening Torque (Ft-lbs.) | Maximum load (lbs.) in pipe direction (P) |
| T1 | 1/4 - 20 UNC | 4 | 100 | 4 | 100 |
| T2 | 5/16 - 18 UNC | 9 | 235 | 9 | 235 |
| T3 | | 9 | 235 | 9 | 235 |
| T4 | | 9 | 300 | 12 | 300 |
| T5 | | 6 | 300 | 6 | 300 |

* Please Note: Torque & Load values determined under laboratory conditions. Actual operating conditions may differ. All torque and load values are in accordance with DIN 3015-10

## Recommended Spacing



| Recommended Spacing | | | | |
|---|---|---|---|---|
| Pipe or Tube OD | Operating Pressure | Recommended Spacing | Operating Pressure | Recommended Spacing |
| 0.250 in. to 0.675 in. | up to 3000 psi | 5 - 7 Ft. | over 3000 psi | 3 - 5 Ft. |
| 0.750 in. to 1.050 in. | up to 3000 psi | 6 - 8 Ft. | over 3000 psi | 4 - 6 Ft. |
| 1.125 in. to 1.500 in. | up to 3000 psi | 7 - 9 Ft. | over 3000 psi | 5 - 7 Ft. |
| 1.750 in. to 2.500 in. | up to 3000 psi | 8 - 10 Ft. | over 3000 psi | 6 - 8 Ft. |
| 2.750 in. to 3.500 in. | up to 3000 psi | 9 - 11 Ft. | over 3000 psi | 7 - 9 Ft. |
| 4.000 in. to 4.500 in. | up to 3000 psi | 10 - 12 Ft. | over 3000 psi | 8 - 10 Ft. |
| 5.563 in. to 6.625 in. | up to 3000 psi | 11 - 13 Ft. | over 3000 psi | 8 - 11 Ft. |
| 6.625 in. to 8.625 in. | up to 3000 psi | 12 - 14 Ft. | over 3000 psi | 9 - 11 Ft. |
| 10.750 in. to 12.750 in. | up to 3000 psi | 13 - 15 Ft. | over 3000 psi | 8 - 10 Ft. |
| 13.750 in. to 19.750 in. | up to 3000 psi | 14 - 16 Ft. | over 3000 psi | 10 - 12 Ft. |

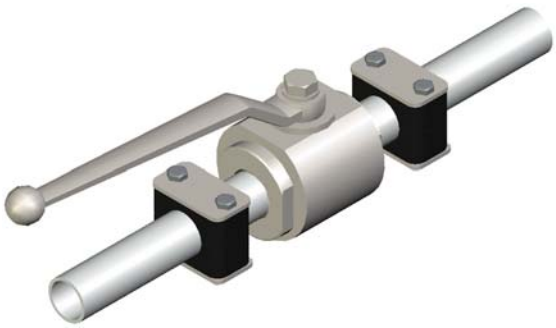
## Recommended Mounting Practices

### Bends

Behringer recommends that all pipe bends be supported by clamps placed as close to the bend as possible. The clamps should be directly after the connection (coupler, threaded connector, flange, or other).

### Components

Behringer recommends that all system components be supported by a clamp directly before and after the component in order to protect against vibrations and shock. Clamps should be located as close to the component as possible.



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