



PLATE CLAMPS OVERVIEW

Plate clamps are most often used to lift and move steel plates from both horizontal and vertical positions. CM Plate Clamps operate through a self-actuating spring that engages when the clamp is attached to a plate. When using plate clamps, it is important that the load weighs no less than 20 percent of the clamp's working load limit. When lifting stainless steel, materials over 300 HRB in hardness or when leaving marks on the material is undesirable, special clamps are available.

Plate Clamps are available in universal, hinged, and horizontal styles. A few examples of plate clamps include:



Universal Plate Clamps



Hinged Plate Clamps



Gentle Grip Clamps



Girder Clamps



Horizontal Clamps



Container Lugs

Camlok™ PLATE AND BEAM CLAMPS

Camlok™ lifting clamps are part of an extensive portfolio of rigging and below-the-hook attachments from Columbus McKinnon. Available as stand-alone components or complete lifting systems, the Camlok line of clamps address a multitude of application needs and provide secure lifts for a variety of loads. These include:

- Structural Steel Plates
- Stainless Steel
- Iron
- Aluminum
- Girders/Beams
- Sheet Plates
- Steel Piles
- Rolled Steel Joists
- Manhole Pipes
- Shipping Containers

Camlok Clamps are manufactured in accordance with ISO9002, and the company is accredited by BSI (British Standards Institute) and a member of the Lifting Equipment Engineers Association (LEEA).



HOW TO SELECT THE RIGHT CLAMP FOR YOUR APPLICATION

For efficient, reliable, and secure operation of a lifting clamp, the selection of the correct clamp for the job is extremely important. Clamps can be used on most types and grades of steel up to a surface hardness of 300 Brinell (32HRc), and are suitable for certain grades of aluminum sheet and brass. Clamps are not suitable for steel over 300 Brinell (32HRc), stainless steel, lead, certain grades of copper and materials over 120°C or 250°F surface temperature. Some clamps are available for steel over 300 Brinell and stainless steel upon request.

DETERMINING PROPER SIZE

The working load limit (WLL) of the clamp should be as close as possible to the actual load to be lifted. This ensures the clamp works at maximum efficiency, reduces wear, and increases the clamp's service life. The maximum jaw capacity of the clamp should also be as close as possible to the plate thickness being lifted. The spring will be stretched to its maximum and will be providing the maximum amount of initial grip to the lift.

Excessive wear and a reduction in working life can be caused if a clamp is continuously used to lift material of the same thickness. With this type of application, the teeth of the clamp's moving jaw where the wear is concentrated must be inspected regularly. Scheduled or periodic rotation of duties will increase the operational life of your clamp inventory. Speciality clamps can be manufactured for specific needs as well.

DETERMINING PROPER TYPE

For lifting thin, light sheets, operators should choose a narrow throat clamp. The pad side of a narrow throat clamp is closer to the moving jaw, thus increasing the initial grip of the clamp by causing the spring to be stretched.

For lifting thick, but small, plates, the best solution is a larger clamp where the pad side is further away from the moving jaw.

For lifting loads of made of hardened steel, the operator should avoid using clamps with teeth that may damage the load. Non-marking clamps should be used instead.

CHOOSE AN ACCREDITED & EXPERIENCED SOURCE

Camlok is accredited by BSI (British Standards Institute) and is a member of the Lifting Equipment Engineers Association (LEEA). Our clamps are manufactured in accordance with ISO9002. Whether you need a single clamp or a complete lifting system that includes forged rigging attachments, hoists and overhead cranes, count on the decades of engineering and application-driven experience provided by Columbus McKinnon and Camlok.

⚠ WARNING

If not properly installed, operated and maintained, the use of all mechanical equipment presents the possibility of personal injury or property damage. Before using lifting clamps, become familiar with applicable installation, operation and maintenance requirements. Clamps should be used only by authorized, properly trained operators.

TO AVOID INJURY:

- ▲ Inspect clamps and equipment before use. Do not use if components are bent, elongated, gouged, nicked excessively, worn, or damaged. Make sure that nuts, bolts, pins and other fasteners are tightened and secure. Make sure clamps are functional and will grip the load.
- ▲ Do not exceed the clamp's rated load or working load limit of other lifting equipment components.
- ▲ Lift only one plate at a time when using lifting clamps.
- ▲ Do not lift unbalanced loads. Avoid sudden jerks when applying the load. Rapid load application can produce overloading.
- ▲ Use clamps and lifting equipment only if authorized and properly trained.
- ▲ Always stand clear when lifting and lowering.
- ▲ Use more than one clamp suspended from a lifting beam when lifting long loads.
- ▲ Always gently lift and lower.

MECHANICS OF A CLAMP

The maximum load imposed on a device determines the structure and size of a plate clamp. The manufacturer will design the internal components of the clamp to cope with these forces in consideration of the expected mechanical losses of the system.

Most Camlok™ clamps use sharp teeth to bite into the plate being lifted. Once a clamp has bitten into the plate, it effectively becomes one with the plate and allows the plate to be safely lifted. The design of the clamp is such that the load applied to the hook ring is magnified through a system of links to create a high gripping force that pushes the jaw teeth into the lifted plate. This gripping force is directly proportional to the load applied and self actuating (i.e. the higher the load applied, the higher the gripping force). This is known as the primary action.

A secondary force generated by movement in the lifted plate supplements the primary gripping force. If the plate starts to slip from the clamp, the moving jaw is turned with the plate and the cam shape of the jaw increases the gripping force.

Plate lifting clamps are simple machines. Like all machines with mechanisms they are subject to naturally occurring phenomenon that reduce efficiency. These include:

- Friction between moving parts. This will reduce the forces transmitted through the mechanism.
- Inertia of the components. This will assert a degree of drag into the system slowing the reaction to changing inputs.

The system of links and pivots in a plate clamp are simple, lightweight, and move over a small distance when in operation. The bearings in a plate clamp are generally simple “metal on metal” type, have large forces acting through them, and have poor lubrication. Therefore, the friction loss can be significant if the clamp is poorly maintained and suffering from wear.

The mechanism of the plate clamp is not static during operation, but the movements are small. The inertia and friction of the mechanism can have a significant effect on the performance of the clamp when lifting material from the horizontal to the vertical position. The imposed load on the clamp fluctuates from 50% of the load being lifted to zero and then to 100% at the “top dead center” position. (The point when the center of gravity of the plate passes over the pivot point contact on the floor and is then lifted clear.)

The amount a tooth penetrates into the lifted plate is dependent on a number of factors:

- The gripping force
- The hardness of the plate being lifted
- The shape of the clamp tooth

In simple terms, a tooth will penetrate into the material until the gripping force, divided by the projected area of the tooth contact, equals the indent stress of the material.

LIFTING PAD & JAW DESIGN

SQUARE PADS

Unlike round pads on the market, Camlok uses a wide spacing or square pad layout. The wide spacing and layout of the teeth on the Camlok square pad help prevent pivoting of the plate and clamp during lifting. This protects the straight teeth on the moving jaw. All the teeth on the square pad can be used to lift the load therefore maximizing efficiency. The pads are marked with the maximum material hardness.

ROUND PADS

On round pads the gripping force must push all teeth into the material. However, only the top and bottom quarter of the pad can be used to effectively lift the load, thus reducing the efficiency of the pad. There is no resistance to pivoting and straight teeth on the jaw suffer rotational stress and wear.

SQUARE VS. ROUND PADS

	SQUARE	ROUND
Pivoting Resistance	Excellent	Poor
Teeth Wear	Excellent	Average
Full Surface Contact	Excellent	Poor
Load Distribution	Excellent	Poor
Pad Bolt Stress	Low	High



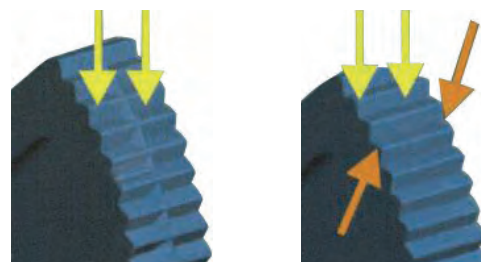
CAMLOK™ JAW

The wide pad and teeth layout on the Camlok clamp prevents the load from twisting or pivoting in the jaws. This helps prevent any unnecessary wear or damage on the teeth.

The force of the load on the Camlok clamp is distributed through the pad directly to the clamp housing. This means there is no load stress on the pad bolts and reduces the possibility of pad bolt failure during lifting.

Figure 1. When the load on round pads twists, the narrow jaw resists it. This places very high loads on the edge of the jaw, which is not designed to sustain this pivoting load.

FIGURE 1



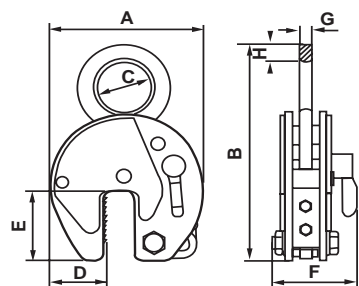
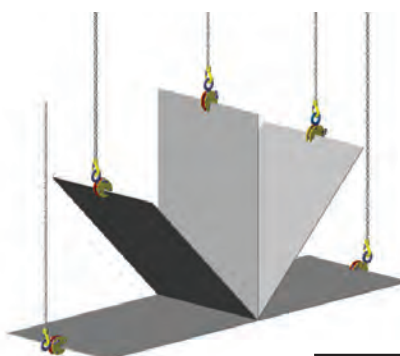
CZ UNIVERSAL PLATE CLAMP

WORKING LOAD LIMIT: 120 TO 66,000 LBS.

CZ Plate Clamps can be used on all hot rolled structural steel plates and sections up to a surface hardness of 300 Brinell (32HRc).

BENEFITS & FEATURES

- Body of clamp is welded construction
- Can be used to lift a plate from the horizontal to vertical position and vice versa through 180°
- Clamp jaws and pads are manufactured from high-tensile steel
- Fitted with a hold open and lock closed lever. To initiate the self actuating force, a spring is incorporated into the clamp to give an initial bite on the material. If the plate should start to slip during lifting, the cam shape of the jaw turns with the material and increases the gripping force.
- The cam handle is ergonomically designed with a flat surface to allow for ease of operation while wearing protective gloves
- The cam handle connects to the cam via a robust square drive
- Unlike others, these plate clamps are designed with a sloping slot, which increases the grip on the load when the clamp is in the horizontal position
- Design factor 4:1



▶ INSPECTION, CARE & USE

DO NOT side load clamp more than 15° – use type CY or CX clamp for side loading

DO NOT lift plates with a temperature greater than 120°C or 250°F

DO NOT use to lift stainless steel, lead or copper.

For stainless steel plates, use LJ or HG Clamp.

DO NOT use on a double, triple, or quad sling. When using two clamps to lift a steel plate, a lifting beam must be used between the two clamps, so the clamps operate in a vertical position. Use a CY or CX clamp for slings with more than one leg.

Product Code	Working Load Limit		Jaw Capacity (in.)	Dimensions (in.)								Weight (lbs.)
	Minimum (lbs.)	Maximum (lbs.)		A	B	C	D	E	F	G	H	
92 500	120	1,100	0 to 5/8	3.898	7.677	1.142	1.299	1.850	1.969	0.393	0.433	3.3
92 1500	350	3,300	0 to 3/4	4.961	8.858	1.969	1.929	2.756	3.228	0.472	0.472	6.6
92 2000	450	4,400	0 to 1-1/4	7.559	12.283	3.150	2.953	3.780	3.937	0.787	0.787	17.6
92 3000	675	6,600	0 to 1-1/4	7.559	12.283	3.150	2.953	3.780	3.937	0.787	1.181	22.0
CZ4	1,100	8,800	0 to 1-1/4	7.756	14.606	3.150	2.677	3.661	5.079	0.787	1.181	26.5
CZ4L	1,100	8,800	1-1/8 to 2-3/8	8.976	15.354	3.150	2.677	3.661	5.079	0.787	1.181	39.7
CZ6	1,600	13,200	0 to 2	11.535	19.055	3.504	3.740	5.630	5.079	0.984	1.378	46.3
CZ8	2,150	17,600	0 to 2	11.535	19.370	3.504	3.740	5.630	5.079	0.984	1.654	57.3
CZ8L	2,150	17,600	2 to 4	14.252	20.630	3.504	4.488	5.630	5.079	0.984	1.654	70.5
CZ10	3,350	22,000	0 to 2	11.535	21.457	4.331	3.740	5.630	5.472	0.984	1.772	66.1
CZ10L*	3,350	22,000	2 to 4	14.252	21.457	4.331	4.488	5.630	5.472	0.984	1.772	81.6
CZ15	6,650	33,000	0 to 2	14.173	24.134	5.118	4.921	6.378	8.031	1.772	2.165	165.3
CZ15L*	6,650	33,000	2 to 4	18.110	26.693	5.118	6.890	6.378	8.031	1.772	2.165	194.0
CZ20*	8,850	44,000	0 to 2-1/2	18.189	29.724	5.118	6.496	8.268	9.252	1.772	2.559	271.2
CZ20L*	8,850	44,000	2-1/2 to 5	22.047	31.693	5.118	7.677	8.268	9.252	1.772	2.559	299.8
CZ30*	13,250	66,000	0 to 2-1/2	18.189	28.819	2.362	6.496	8.268	11.614	2.559	–	429.9

*Not Stocked

CY HINGED UNIVERSAL PLATE CLAMP

WORKING LOAD LIMIT: 450 TO 6,600 LBS.

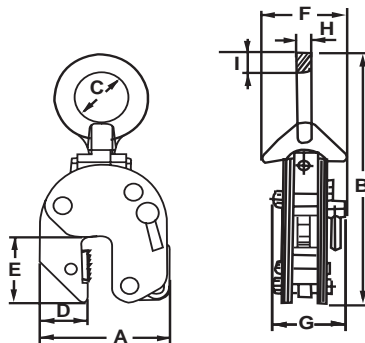
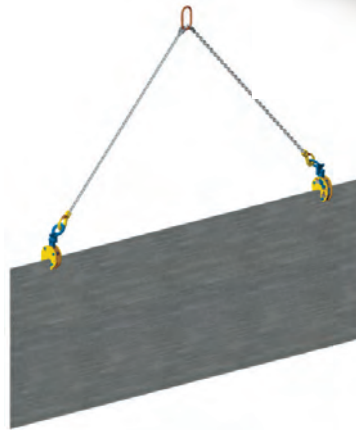
CY Plate Clamps can be used on all structural steel plates up to a surface hardness of 300 Brinell (32HRc). These clamps are designed to be used with a two leg chain sling for lifting longer plates.

BENEFITS & FEATURES

- Can be used to lift a plate from the horizontal to vertical position and vice versa
- Can turn a plate from the horizontal to vertical position
- Sufficient clamping of the load is achieved by the special shape of the hook ring
- Fitted with a cam-operated closing mechanism that can be replaced with a chain pull open/close mechanism
- Because of the swiveling hook ring, clamps can be fitted to a steel plate in any position
- Design factor 4:1

INSPECTION, CARE & USE

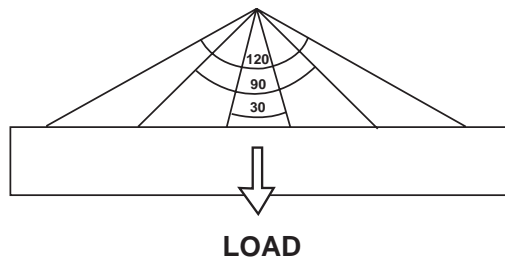
DO NOT lift loads less than 20% of working load limit of clamp
DO NOT lift plates with a temperature greater than 120°C or 250°F
DO NOT use to lift stainless steel, lead or copper.
 For stainless steel plates, use LJ or HG Clamp.



Product Code	Working Load Limit		Jaw Capacity (in.)	Dimensions (in.)								
	Minimum (lbs.)	Maximum (lbs.)		A	B	C	D	E	F	G	H	I
CY1	450	2,200	0 to 3/4	4.961	10.630	1.969	1.929	2.756	3.740	2.480	0.472	0.906
CY2	900	4,400	0 to 1-1/4	7.559	15.039	3.150	2.953	3.780	5.197	3.622	0.787	1.181
CY3	1,350	6,600	0 to 1-1/4	7.559	15.039	3.150	2.953	3.780	5.197	3.622	0.787	1.181

SAFE LOADS FOR TWO CLAMPS

Angle (degrees)	Product Code		
	CY1 (lbs.)	CY2 (lbs.)	CY3 (lbs.)
0 to 30	4,400	8,800	13,200
30 to 90	2,200	4,400	6,600
90 to 120	1,100	2,200	3,300



CX HEAVY-DUTY HINGED UNIVERSAL PLATE CLAMP

WORKING LOAD LIMIT: 1,000 TO 22,000 LBS.

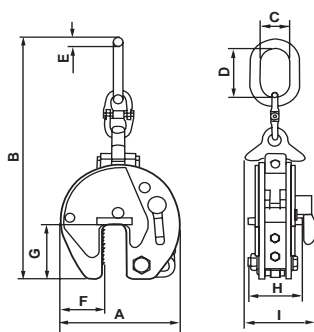
CX Plate Clamps are a more robust, heavy-duty model of the CY clamp. The CX clamp has a reinforced plate at the top of the mouth and a heavy-duty hook ring. The CX clamp is more suitable for turning vertically racked plates.

BENEFITS & FEATURES

- Used on all hot rolled structural steel plates and sections up to a surface hardness of 300 Brinell (32HRc)
- Lifts plates from horizontal to vertical position and vice versa through 180°
- Vertically racked plates can be turned over due to the built-in lifting eye and link
- Clamps can be used with 2 leg slings
- Design factor 4:1



Hammerlok® and link not included



▶ INSPECTION, CARE & USE

- DO NOT** lift loads less than 20% of working load limit of clamp
- DO NOT** lift plates with a temperature greater than 120°C or 250°F
- DO NOT** use to lift stainless steel, lead or copper.
For stainless steel plates, use LJ or HG Clamp.



Product Code	Working Load Limit		Jaw Capacity (in.)	Dimensions (in.)									Weight (lbs.)
	Minimum (lbs.)	Maximum (lbs.)		A	B	C	D	E	F	G	H	I	
CX3000	1,000	6,600	0 to 1-1/4	7.756	20.276	2.638	5.433	0.748	2.677	3.661	3.189	4.331	26.5
CX6000	2,650	13,200	0 to 2	11.496	29.016	3.740	6.929	1.102	3.740	5.630	5.394	7.402	83.8
CX6000L	2,650	13,200	2 to 4	14.449	30.906	3.858	7.087	1.102	4.528	5.630	5.315	7.402	105.8
CX8000	3,550	17,600	0 to 2	11.496	29.016	3.858	6.929	1.102	3.740	5.630	5.354	8.268	86.0
CX8000L*	3,550	17,600	2 to 4	14.449	30.906	3.858	7.087	1.102	4.528	5.630	5.354	8.268	112.4
CX10000	4,400	22,000	0 to 2	14.173	35.551	4.331	7.677	1.299	4.921	6.378	6.693	8.780	134.5
CX10000L*	4,400	22,000	2 to 4	17.559	36.260	4.409	7.677	1.299	6.614	6.378	6.693	8.780	167.5

*Not Stocked

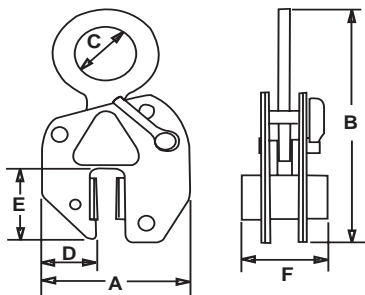
LJ GENTLE GRIP CLAMP

WORKING LOAD LIMIT: 60 TO 3,300 LBS.

LJ Plate Clamps can be used to lift and turn all structural steel plates, including stainless steel, iron and aluminum, without marking or damaging the surface.

BENEFITS & FEATURES

- Designed to lift thin-gauge steel plates, stainless steel, iron, timber, and aluminum without marring or damaging the surface
- Lifts plates from the horizontal to vertical position and vice versa through 180°
- The performance on the leather jaws is not affected by standing water so the clamp can be used with submerged plasma cutting machines
- The LJ clamp is suitable for surface hardness greater than 300 Brinell (32HRC)
- Minimum load will not affect the LJ clamps as they do not have teeth for bite. However some load is required to combat friction in the clamp. Extra care must be taken when lifting plates in the lower 20% of their rated capacity. Thin plates are best lifted with the fixed jaw on top when performing a horizontal to vertical lift.
- The clamp may not be suitable for lifting highly polished plates where the polish process may leave lubricating compounds
- Design factor 4:1



► INSPECTION, CARE & USE

DO NOT use the clamp on plates with surface contamination (dirt, grease, scale, etc...). Minimize dirt and dust on the surface to be lifted. Pads can tolerate surface water on the plate but shall not be submerged under water.

DO NOT use on smooth polished surfaces. Polished surfaces leave behind lubricating compounds. The leather pads need to surround the irregularities in the surface to grip the load effectively.

DO clean the leather pads regularly. Clean in water only and use a brass suede brush to rough up the surface.

DO NOT use solvents to clean the jaw lining as this may affect the bond between the surface material and the metal of the jaw.

DO inspect the clamp before each use. Make sure the pads are clean. If pads are cut or worn, or can not be cleaned, take clamp out of service and replace pads. When in doubt, remove clamp from service.

Product Code	Working Load Limit		Jaw Capacity (in.)	Dimensions (in.)						Weight (lbs.)
	Minimum (lbs.)	Maximum (lbs.)		A	B	C	D	E	F	
LJ500	60	1,100	0 to 3/8	5.000	7.874	2.165	2.047	2.717	2.992	7.7
LJ1500	400	3,300	0 to 3/4	8.465	13.583	3.346	2.953	5.315	4.646	26.5

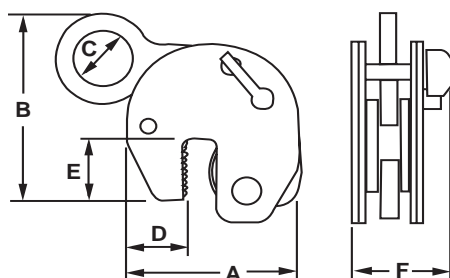
TTR GIRDER CLAMP

WORKING LOAD LIMIT: 90 TO 6,600 LBS.

TTR Clamps can be used on girders and rolled steel joists up to a surface hardness of 300 Brinell (32HRc). These clamps are designed for handling structural beams with the flange in a vertical position, or “H” position.

BENEFITS & FEATURES

- Used to lift and transport structural beams up to a surface hardness of 300 Brinell (32HRc) with the flanges in the upright position
- Versatile tool for transporting girders and joists. Can be used to lift and stack girders horizontally.
- The hook rings are designed to be as near to the center of gravity as possible, resulting in a near horizontal lift
- Clamp is fitted with a cam-operated locking mechanism
- Short beams may be lifted with a single clamp, longer beams should use 2 clamps in combination with a spreader beam
- Design factor 4:1



▶ INSPECTION, CARE & USE

DO NOT lift plates with a temperature greater than 120°C or 250°F
DO NOT use to lift stainless steel, lead or copper.

Product Code	Working Load Limit		Flange (in.)	Dimensions (in.)						Weight (lbs.)
	Minimum (lbs.)	Maximum (lbs.)		A	B	C	D	E	F	
TTR750*	90	1,600	1/4 to 5/8	5.375	7.500	2.000	1.750	2.375	3.500	7.7
TTR1500	350	3,300	1/4 to 1	7.500	10.625	2.625	2.625	3.000	4.875	22.0
TTR3000*	700	6,600	1/4 to 1	8.250	9.875	3.500	2.625	3.375	5.000	26.5

*Not Stocked

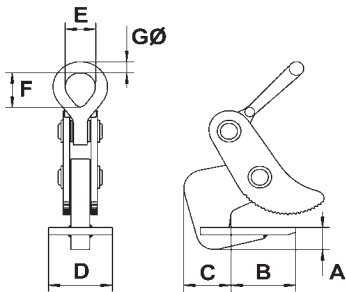
CH HEAVY-DUTY HORIZONTAL PLATE CLAMP

WORKING LOAD LIMIT: 2,200 TO 17,600 LBS.

CH Clamps must be used in pairs and can be used on all types of materials in plate form, providing the plate can withstand the forces imposed. Standard CH clamps are supplied with smooth jaws.

BENEFITS & FEATURES

- CH clamps are designed for loading process machines and to lift and transport sheet steel plates in the horizontal position
- Can be designed to suit any load or plate thickness
- Clamps are suitable for lifting one plate at a time, or bundles of plates provided the plates are the same width, have straight square sides, and are thicker than 10% of the maximum jaw capacity of the clamp
- Clamps have smooth teeth so they can be used on all types of material
- The smooth jaws can be replaced with serrated, hardened steel teeth and used on material up to 300 Brinell (32HRC)
- Designed to be used with 2 legged slings
- CH clamps should never be side loaded
- Sold in pairs
- Design factor 4:1



INSPECTION, CARE & USE

DO NOT side load CH clamps.

DO NOT use on a quad sling. When lifting long plates, use a beam or spreader bar that has a double leg sling at each end and connect clamps to the slings.

Product Code	Working Load Limit (lbs. per pair)	Jaw Capacity (in.)	Dimensions (in.)							Weight (lbs. per pair)
			A	B	C	D	E	F	G	
CH1	2,200	1/4 to 1-1/4	1.181	3.228	2.362	3.937	1.260	1.732	0.512	13.2
CH2	4,400	1/4 to 1-1/4	1.181	3.228	2.362	3.937	1.969	2.874	0.709	24.3
CH2/L	4,400	3/4 to 2	1.181	3.228	2.362	3.937	1.969	2.874	0.709	26.5
CH4	8,800	1/4 to 1-1/4	1.575	4.409	3.150	3.937	2.520	3.622	0.984	37.5
CH4/L	8,800	2 to 4	1.575	4.409	3.150	3.937	2.520	3.622	0.984	50.7
CH6	13,200	1/4 to 3	2.165	6.772	3.937	5.118	3.543	5.118	1.378	101.4
CH6/L	13,200	2 to 5	2.165	6.772	3.937	5.118	3.543	5.118	1.378	123.5
CH8	17,600	1/4 to 3	2.165	6.772	4.134	5.118	3.543	5.118	1.378	116.8
CH8/L	17,600	2 to 5	2.165	6.772	4.134	5.118	3.543	5.118	1.378	132.3
CH10	22,000	1/4 to 4	2.559	8.465	4.724	5.906	4.488	5.118	1.378	209.4
CH10/L	22,000	2 to 6	2.559	8.465	4.724	5.906	4.488	5.118	1.378	238.1
HH8	17,600	1/4 to 2	2.165	6.614	4.134	5.118	4.134	5.118	3.543	46.3
HH8/L	17,600	2 to 4	2.165	6.614	4.134	5.118	3.543	4.488	1.378	61.7

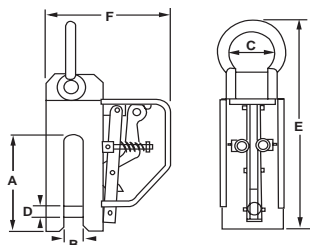
CP PILE PITCHING CLAMP

WORKING LOAD LIMIT: 4,400 TO 11,000 LBS.

CP Clamps are designed specifically for pitching sheet steel and have the advantage of an attached rope for easy release from the ground.

BENEFITS & FEATURES

- Designed specifically for pitching sheet steel piling
- Ideal clamp for heavy construction
- Rope is fitted for easy release from the ground
- These are not designed to extract driven piles, use the PP series clamps for this
- Design factor 4:1



▶ INSPECTION, CARE & USE

DO NOT use CP Clamps to extract a driven pile. Use the PP series clamps for this application.



Product Code	Working Load Limit (lbs.)	Dimensions (in.)						Weight (lbs.)
		A	B	C	D	E	F	
CP2	4,400	8.976	0.787	2.000	0.787	16.750	8.500	41.9
CP3	6,600	8.976	1.024	2.500	1.181	17.875	8.875	50.7
CP5	11,000	8.976	1.378	3.250	1.181	19.875	9.500	72.8

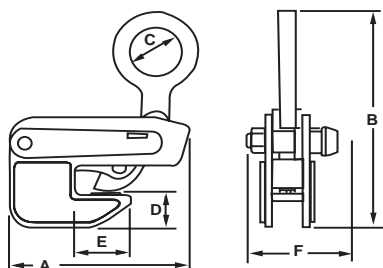
TTG HORIZONTAL GIRDER CLAMP

WORKING LOAD LIMIT: 200 TO 16,500 LBS.

TTG Clamps are designed to lift and transport structural steel beams in the horizontal position.

BENEFITS & FEATURES

- Designed to lift and transport structural steel beams in the horizontal position
- Fitted with a Camlok spring-operated safety lock and is operated by pulling the lock upwards
- For short beams, a single clamp can be used. Long beams should be lifted using 2 clamps attached to opposite beam flanges
- Maximum hardness of material to lift should not exceed 300 Brinell (32HRC)
- Design factor 4:1



▶ INSPECTION, CARE & USE

DO NOT lift plates with a temperature greater than 120°C or 250°F



Product Code	Working Load Limit		Plate (in.)	Dimensions (in.)						Weight (lbs.)
	Minimum (lbs.)	Maximum (lbs.)		A	B	C	D	E	F	
TTG1500	200	3,300	0 to 1-1/8	9.000	10.875	3.750	1.750	2.750	4.000	12.1
TTG3000	350	6,600	0 to 1-3/8	11.125	11.625	3.125	2.125	2.875	4.500	24.3
TTG4500	1,000	9,900	0 to 1-1/2	12.375	13.250	3.500	2.375	3.000	4.625	32.0
TTG7500	1,650	16,500	0 to 1-3/4	14.500	15.000	4.375	2.500	3.625	6.625	61.7

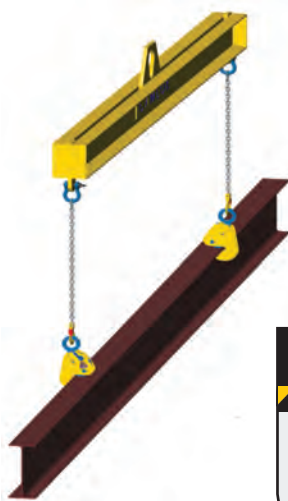
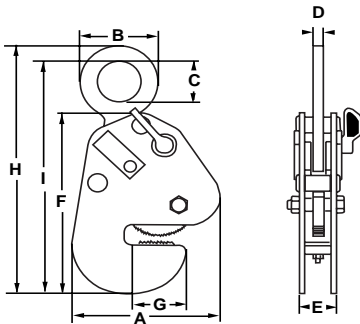
CG GIRDER TURNING CLAMPS

WORKING LOAD LIMIT: 250 TO 13,200 LBS.

CG Clamps can lift and turn girders through 90° and are designed to meet the requirements of the heavy steel industry. They are general purpose clamps and can be used on rolled steel joists, beams, and fabrications up to a surface hardness of 300 Brinell (32HRc).

BENEFITS & FEATURES

- Can be used on beams, fabrications, channels and rolled steel joists
- Can lift and turn beams up to 90° and are designed to land the beam in either the vertical or horizontal position.
- Fitted with a cam/spring-operated safety lock
- Incorporates a positive lock onto one of the uppermost edges, which will allow the beam to be set down with the flange vertical
- For long girders, fabrications and welded structures, two clamps and a lifting beam may be required
- Design factor 4:1



► INSPECTION, CARE & USE

DO NOT lift plates with a temperature greater than 120°C or 250°F

Product Code	Working Load Limit		Jaw Capacity (in.)	Dimensions (in.)									Weight (lbs.)
	Minimum (lbs.)	Maximum (lbs.)		A	B	C	D	E	F	G	H	I	
CG1	250	2,200	0 to 5/8	8.307	3.543	1.969	0.512	1.693	10.354	2.520	13.780	13.268	13.2
CG2	450	4,400	0 to 1-1/4	11.417	5.512	3.150	0.787	2.362	12.480	3.937	18.307	17.126	30.9
CG4	900	8,800	0 to 1-1/4	11.417	6.339	3.504	0.787	3.031	12.835	4.252	20.591	18.976	41.9
CG6	1,350	13,200	7/16 to 2	13.268	6.732	3.504	0.984	4.055	14.764	5.709	21.693	20.630	81.6

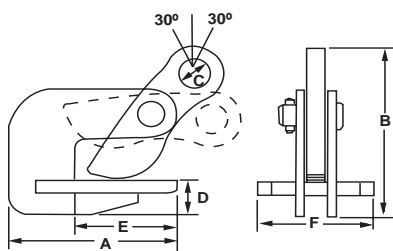
THK HORIZONTAL PLATE CLAMP

WORKING LOAD LIMIT: 90 TO 19,800 LBS.

THK Clamps have a jaw that pivots in the reverse direction to our normal horizontal clamps and are designed to lift and handle thin sheet plates that tend to sag when being lifted.

BENEFITS & FEATURES

- Designed to lift and transport thin steel plates in the horizontal position
- The reverse jaw feature ensures that the grip of the clamp increases the more the plate deflects under its own self weight
- Clamps are used in pairs with a two legged chain sling. Two pairs of clamps supported from a lifting beam must be used when handling long plates
- Only lift one plate at a time
- Design factor 4:1



Product Code	Working Load Limit		Plate (in.)	Dimensions (in.)						Weight (lbs. per pair)
	Minimum (lbs.)	Maximum (lbs.)		A	B	C	D	E	F	
THK750	90	1,600	0 to 1	4.625	5.375	0.750	1.000	2.875	3.125	6.6
THK1500	200	3,300	0 to 1-3/8	5.375	6.625	1.000	1.250	3.125	3.500	13.2
THK4500*	500	9,900	0 to 1-3/4	8.625	8.625	1.750	4.000	4.375	4.375	35.3
THK6000	700	13,200	0 to 2-3/8	8.375	10.500	1.375	1.875	4.875	4.375	50.7
THK9000	1,000	19,800	0 to 2-3/8	8.750	11.375	1.625	2.250	4.500	5.500	77.2

*Not Stocked

▶ INSPECTION, CARE & USE

DO NOT use THK clamps with 3 or 4 leg slings. Use a spreader beam.



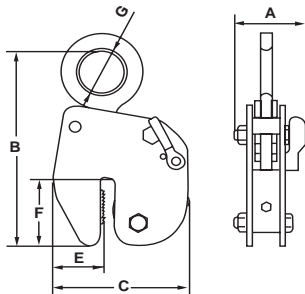
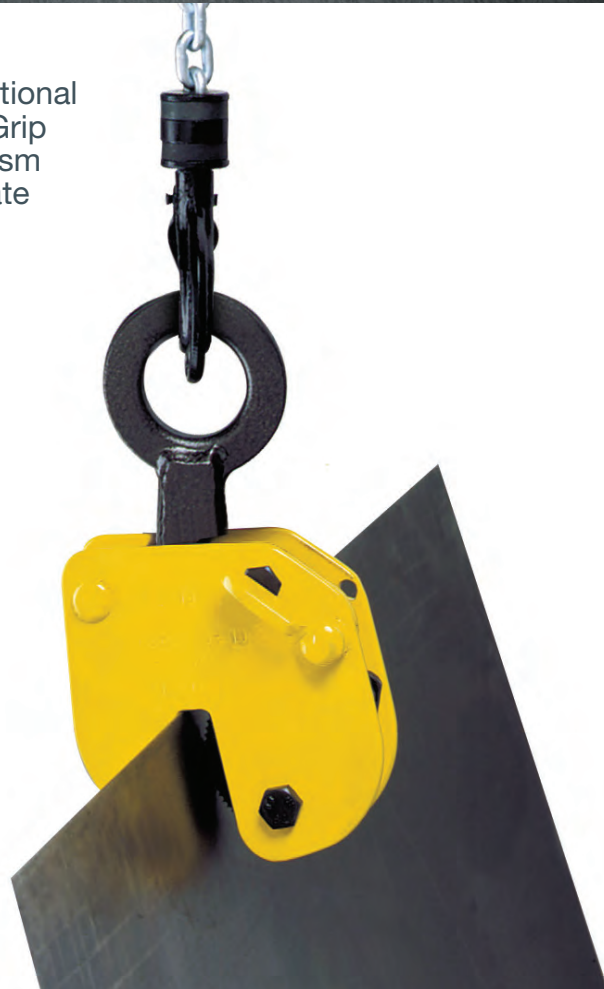
HG HIGH GRIP PLATE CLAMP

WORKING LOAD LIMIT: 100 TO 8,800 LBS.

HG High Grip Clamps are designed to give additional grip forces to products during lifting. The High Grip has an additional lever in the clamping mechanism thus asserting a higher gripping force on the plate being lifted.

BENEFITS & FEATURES

- Can be used on hot rolled structural steel plates
- Can be used to lift stainless steel plates or plates with hardened surfaces due to cold rolling
- Smaller jaw range makes these clamps more efficient for lifting thinner steel
- Suitable for hardness up to 371 Brinell (40 HRc)
- Can be used for lifting and turning plates from the horizontal to vertical position or vice versa, through 180°
- Clamp has serrated teeth and will mark plate
- Standard clamp is fitted with a hook ring but can be alternatively supplied with a short length of chain
- Design factor 4:1



► INSPECTION, CARE & USE

DO NOT side load clamp more than 15°

DO NOT lift plates with a temperature greater than 120°C or 250°F

DO NOT use clamps on a double chain sling, when using two clamps to lift a steel plate, a lifting beam must be used between the two clamps to allow clamps to hang vertically

Product Code	Working Load Limit		Jaw Capacity (in.)	Dimensions (in.)						Weight (lbs.)
	Minimum (lbs.)	Maximum (lbs.)		A	B	C	E	F	G	
HG500	100	1,100	0 to 3/8	1.654	9.055	5.827	2.165	3.110	1.969	11.0
HG1000	150	2,000	0 to 5/8	3.661	11.698	8.268	2.638	4.488	2.638	26.5
HG2000	450	4,400	0 to 3/4	4.331	16.378	12.008	4.016	6.260	3.150	48.5
HG3000	700	6,600	0 to 3/4	4.331	16.378	12.008	4.016	6.260	3.150	59.5
HG4000	900	8,800	0 to 3/4	4.724	13.189	12.008	4.016	6.220	3.150	70.5

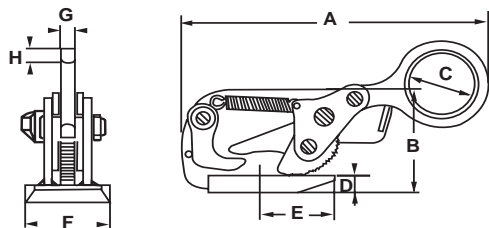
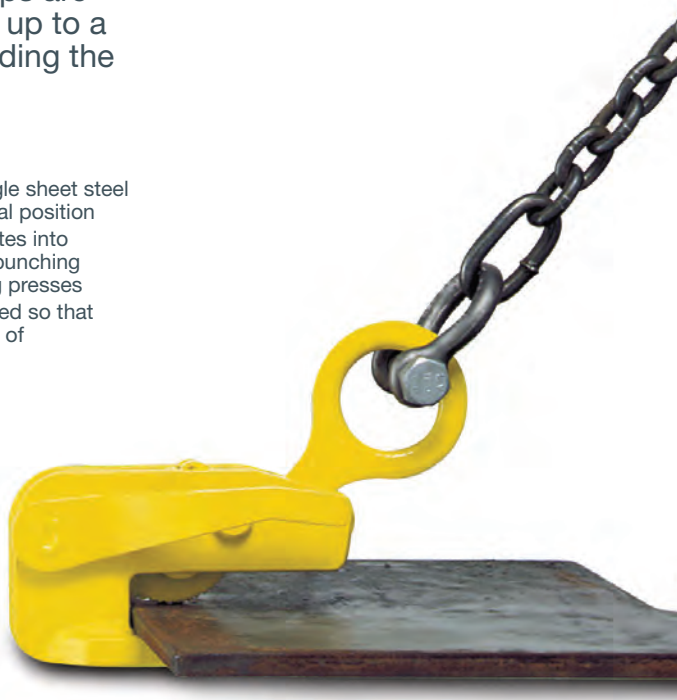
THS PLATE CLAMP

WORKING LOAD LIMIT: 90 TO 9,900 LBS.

THS Plate Clamps can be used with single or two leg slings with a maximum angle of 60°. The clamps are designed to be used on structural steel plates up to a surface hardness of 300 Brinell (32HRc), providing the plate can withstand the forces imposed.

BENEFITS & FEATURES

- Spring/lever-operated mechanism securely locks the clamp onto the horizontally positioned plate
- Do not use to lift stainless steel, lead or copper
- Can be used in single or 2 leg slings
- Use lifting beams for longer plates
- Clamp locks quickly onto the plate, enabling a single operator to set up the plate for lifting
- Lifts and handles single sheet steel plates in the horizontal position
- Useful for loading plates into guillotines, presses, punching machines and folding presses
- Caution should be used so that maximum sling angle of 60° is not exceeded
- Design factor 4:1



▶ INSPECTION, CARE & USE

- DO NOT** use with endless, 3 or 4 leg slings
- DO NOT** exceed 60° angle when lifting
- DO NOT** lift plates with a temperature greater than 120°C or 250°F
- DO NOT** use to lift stainless steel, lead or copper

Product Code	Working Load Limit		Jaw Capacity (in.)	Dimensions (in.)								Weight (lbs.)
	Minimum (lbs.)	Maximum (lbs.)		A	B	C	D	E	F	G	H	
THS750	90	1,600	0 to 3/4	10.039	3.819	1.969	0.591	2.756	3.150	0.472	0.591	6.6
THS1500	175	3,300	0 to 1-3/8	13.189	4.724	2.756	0.787	3.150	3.543	0.591	0.669	13.2
THS4500*	500	9,900	0 to 1-3/4	17.717	7.717	3.543	2.323	4.331	4.331	0.787	1.181	37.5

*Not Stocked

TSH SCREW CLAMP

WORKING LOAD LIMIT: 3,300 TO 11,000 LBS.

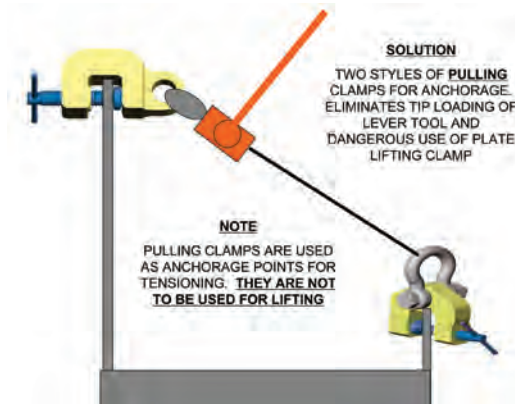
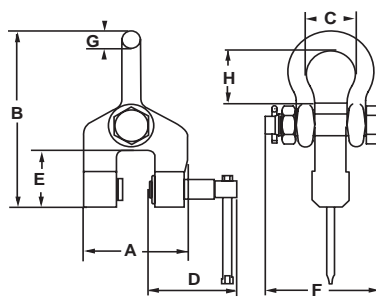
TSH clamps are designed for pulling and holding sheet metal, girders, and related steel objects.

BENEFITS & FEATURES

- Recommended for use with lever tools
- Offer the best means of holding and securing loads - great for positioning
- Primarily used as anchor points to allow fabrications to be pulled together and positioned during assembly or prior to welding
- Supplied complete with an alloy shackle that allows for pulling 180°
- High force screw threads
- Hardened steel jaws
- The clamps are attached by turning the screwed threaded axle
- When load is applied to the clamp, the circular toothed pad pivots in a cam action, gripping the load
- Swivel jaws increase grip if plate moves
- Maximum hardness of material to lift should not exceed 300 Brinell (32HRc)
- Not recommended for lifting applications
- Design factor 4:1

INSPECTION, CARE & USE

- DO NOT** lift plates with a temperature greater than 120°C or 250°F
- DO NOT** use with stainless steel, lead or copper
- DO NOT** over torque the threaded axle. This could cause damage to the pad.



Product Code	Working Load Limit (lbs.)	Jaw Capacity (in.)	Dimensions (in.)								Weight (lbs.)
			A	B	C	D	E	F	G	H	
TSH1500	3,300	0 to 1-1/4	5.118	10.039	2.559	4.528	2.953	5.000	1.024	3.701	15.4
TSH3000	6,600	0 to 2	6.693	11.417	2.913	4.921	3.346	5.669	1.181	4.646	24.3
TSH5000	11,000	0 to 3-1/8	10.039	18.504	5.118	6.890	5.315	9.449	1.969	6.890	59.5

CLB CONTAINER LIFTING LUGS

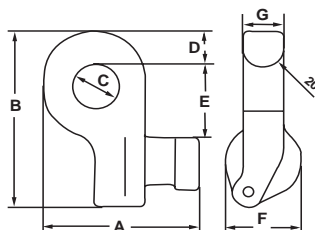
WORKING LOAD LIMIT: 88,100 LBS. (PER SET OF 4)

Supplied in sets of 4, CLB Lifting Lugs serve as flexible lashing points for transporting containers from the sides.

BENEFITS & FEATURES

- Spring-loaded bolt to prevent accidental release
- Mounted horizontally at the side of the container in either upper or lower holes
- Easy installation and removal – simply insert and turn to install
- Designed to eliminate the dangerous use of standard hooks
- Lugs cannot drop out when slings become slack
- The set of (4) lugs has (2) right hand and (2) left hand units.
- For maximum capacity, use a lifting beam in conjunction with CLB lifting lugs
- Design factor 4:1

Product Code	Working Load Limit (lbs. per set of 4)	Dimensions							Weight (lbs.)
		A	B	C	D	E	F	G	
CLB40	88,100	5.98	7.13	1.77	1.46	2.87	2.95	1.58	39.7



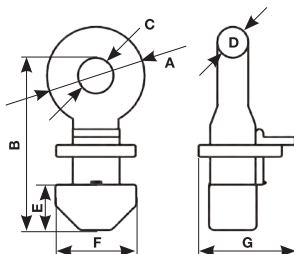
CLT CONTAINER LIFTING LUGS

WORKING LOAD LIMIT: 123,480 LBS. (PER SET OF 4)

Supplied in sets of 4, CLT Lifting Lugs serve as flexible lashing points for transporting containers from the top.

BENEFITS & FEATURES

- Mounted vertically at the top of the container
- Easy installation and removal – simply insert and turn to install
- Designed to eliminate the dangerous use of standard hooks
- Lugs lock into place by simply turning the lug 90°. This configuration allows for transportation via the use of a lifting frame in conjunction with cables, chains or slings.
- Design factor 4:1



Product Code	Working Load Limit at 90° (lbs. per set of 4)	Dimensions (in.)							Weight (lbs.)
		A	B	C	D	E	F	G	
CLT56	123,480	4.84	8.54	1.77	1.54	2.24	3.98	4.76	61.7



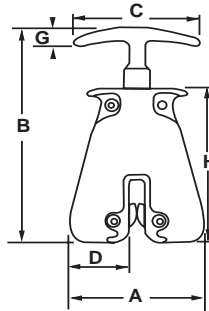
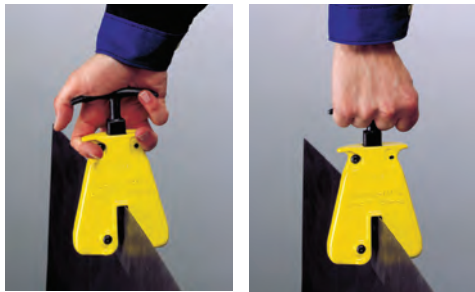
HGC HAND GRIP CLAMP

WORKING LOAD LIMIT: 500 LBS.

The HGC Hand Grip Clamp is designed to manually lift, carry or pull any object that will fit into the jaws and is primarily used in workshop environments.

BENEFITS & FEATURES

- Additional lever in clamping mechanism provides a very high gripping force
- Can be used to lift plate from horizontal to vertical position and vice versa
- Can be used on all structural steel plates and sections up to a surface hardness of 300 Brinell (32HRC)
- Not suitable for steel over 300 Brinell, stainless steel, lead, copper and materials over 120°C/ 250°F surface temperature
- Enables the operator to open and attach the clamp to sheet material by depressing the lifting handle
- Two pre-tensioned, hardened, serrated toothed jaws grip the sheet securely when the handle is released, preventing plate slippage
- Design factor 4:1



INSPECTION, CARE & USE

DO NOT lift plates with a temperature greater than 120°C or 250°F

DO NOT use to lift stainless steel, lead or copper.

NOTE: Clamp in photo above is shown with handle.

For loads heavier than 75 lbs., use a clamp with a lifting ring.

DO NOT use a sling in conjunction with the handle-style clamp.

Product Code	Working Load Limit (lbs.)	Plate Size (in.)	Dimensions (in.)							Weight (lbs.)	
			A	B	C	D	E	F (Thickness)	G		H
HGC	500	0 to 3/8	4.25	7.25	3.875	1.875	2.125	0.875	0.375	5.125	2.0

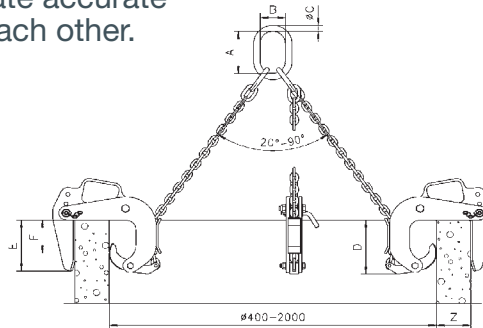
BTG GROUNDWORKS

WORKING LOAD LIMIT: 3,300 TO 6,600 LBS. (PER SET OF 3)

BTG Clamps are designed to lift and handle concrete manhole pipes in the vertical position. These clamps enable the manhole trench size to be minimized and facilitate accurate positioning of pipes on top of each other.

BENEFITS & FEATURES

- Solid construction and lightweight design
- Sold in sets of 3
- Simple handling - Attachment and removal of the clamps from the pipes is extremely easy due to the simple and straight-forward design
- Large jaw capacity
- Service friendly
- Design factor 4:1



Product Code	Working Load Limit (lbs. per set of 3)	Jaw Capacity (Z, in.)	Dimensions (in.)						Weight (lbs.)
			A	B	C	D	E (Mouth)	F (Pressure Line)	
BTG1500/3	3,300	1-1/2 to 4-3/4	5.315	5.315	0.709	7.087	6.496	3.937	75.0
BTG3000/3	6,600	2 to 7	6.890	3.937	1.024	12.205	9.646	6.890	132.3
BTG3000L/3	6,600	3-1/2 to 8-5/8	6.890	3.937	1.024	12.205	9.646	6.890	172.0