

BESSEY Product Training

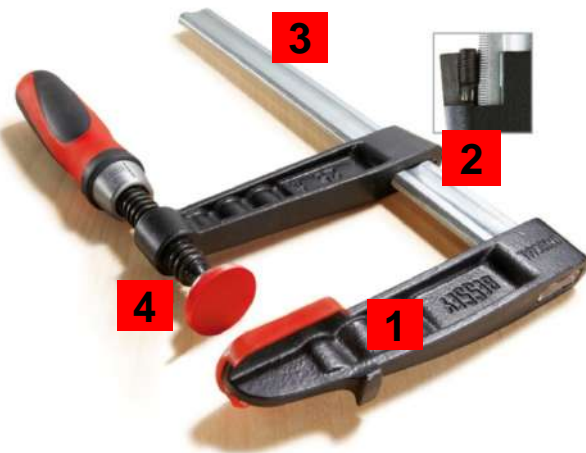


BESSEY Tools North America
Malleable Cast Bar Clamps (TGJ & TG)

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- 1) Malleable cast fixed jaw & sliding arm are powder coated for protection against corrosion. Corrugated jaw design adds strength & rigidity. Fixed jaw is press-fit to the rail – no mechanical fastener that will loosen over time. Made in Germany
- 2) BESSEY anti-slip system - hardened set screw molded into the sliding arm interlocks with serrations on the rail to prevent slipping
- 3) Profiled rail made from high quality steel produced in BESSEY's own steel mill. Profile is optimized for clamping applications, redirects forces for maximum strength.
- 4) Smooth-running hardened spindle with large ACME type thread - faster clamping with less effort.



Malleable Cast Bar Clamps (TGJ & TG)



TGJ series:

- ❑ Capacities available: 6", 12", 18", 24", 30" & 36"
- ❑ Profiled rail, wood and 2K handle versions
- ❑ Throat Depth = 2-1/2"
- ❑ Clamping Force rating 600 lbs

TG Light Duty series:

- ❑ Capacities available: 8", 12", 16" & 24"
- ❑ Profiled rail, wood and 2K handle versions
- ❑ Throat Depth = 4"
- ❑ Clamping Force rating 880 lbs



Note: 2K handle versions come with field replaceable pads

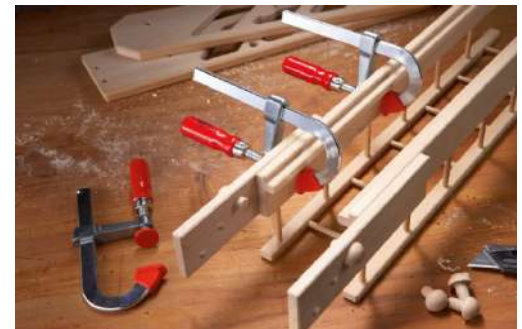
Malleable Cast Bar Clamps (TGJ & TG)

TG series - Medium duty, 4-1/2" throat depth

- ❑ Capacities available: 12", 18", 24", 30" & 40"
- ❑ Profiled rail, wood and 2K handle versions
- ❑ Clamping Force rating 1000 lbs

TG Series - Medium duty, 5-1/2" throat depth

- ❑ Capacities available: 12", 18" & 24"
- ❑ Profiled rail, wood and 2K handle versions
- ❑ Clamping Force rating 1320 lbs



Note: 2K handle versions come with field replaceable pads

Malleable Cast Bar Clamps (TGK)



TG Series - Medium duty, 7" throat depth

- ❑ Capacities available: 16", 24", & 48"
- ❑ Profiled rail, wood and 2K handle versions
- ❑ Clamping Force rating 1320 lbs

TGK series – Heavy Duty, 4-1/2" throat depth

- ❑ Capacities available: 16", 24", 40", 50" & 79"
- ❑ Profiled rail, wood and 2K handle versions
- ❑ Clamping Force rating 1540 lbs



Note: 2K handle versions come with field replaceable pads

Malleable Cast Bar Clamps (TC)



TC Series

- ❑ Flat rails are an economical alternative – BESSEY® quality at a lower retail price, wood handle version only
- ❑ Solid flat rail with serration instead of a profiled rail
- ❑ Heavy Acme type thread on the spindle
- ❑ Large diameter pad on end of screw with soft protective pads
- ❑ Four models available:
 - ❑ TC4.008 - throat depth of 4", capacity 8", clamping force 800 lbs
 - ❑ TC4.512 - throat depth of 4-1/2", capacity 12", clamp force 950 lbs
 - ❑ TC5.512 - throat depth of 5-1/2", capacity 12", clamp force 1200 lbs
 - ❑ TC7.016 - throat depth of 7", capacity 16", clamping force 1200 lbs



Malleable cast bar clamps



Simply better.

TG series

The original BESSEY® malleable cast iron bar clamp is available in two designs. Either with the tried-and-true wooden handle, or the modern BESSEY® 2K handle. The high quality 2K composite handle with comfort insert allows you to complete tasks more effectively and with less hand fatigue.

1 Integrated anti-slip system

Maximum safety with the integrated anti-slip system. A set screw molded into the sliding arm interlocks with the serration on the rail.

2 Reinforced jaw and sliding arm

Corrugated malleable cast iron fixed jaw and sliding arm generate powerful, rigid clamping.

3 High quality profiled rail

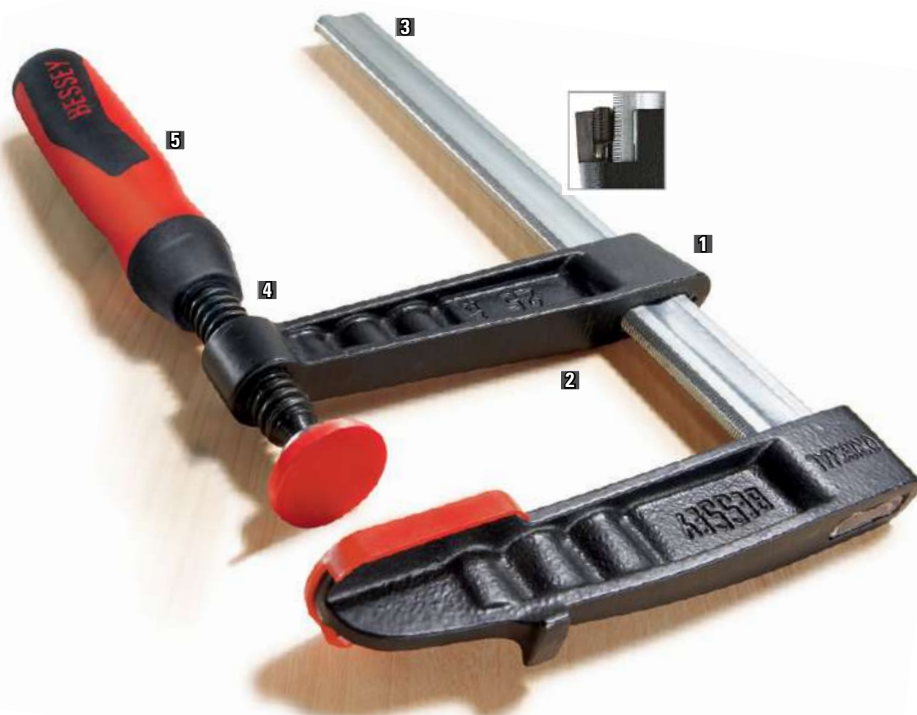
The BESSEY® profiled rail from our own German steel plant has been optimized for clamps. The profile acts against torsional forces.

4 BESSEY® smooth running spindle

Smooth running spindle with Acme thread allows for more clamping with less effort. Replaceable pressure plates.

5 BESSEY® comfort handle

The TG series offers both the tried-and-true wooden handle or 2K composite handle with comfort insert.



Light duty TG & TGJ, with 2K handle

The rail's hourglass profile contributes to the TG series's ability to resist flex. Includes ergonomic 2K handle. Standard pads are field replaceable.

	Clamping Capacity	Throat Depth	Clamping Force	Approx. Weight
TGJ2.506+2K	6"	2 ½"	600 lbs	1.45 lbs
TGJ2.512+2k	12"	2 ½"	600 lbs	1.80 lbs
TGJ2.518+2k	18"	2 ½"	600 lbs	2.15 lbs
TGJ2.524+2k	24"	2 ½"	600 lbs	2.50 lbs
TGJ2.530+2k	30"	2 ½"	600 lbs	2.90 lbs
TGJ2.536+2k	36"	2 ½"	600 lbs	3.25 lbs
TG4.008+2k	8"	4"	880 lbs	2.35 lbs
TG4.012+2k	12"	4"	880 lbs	2.62 lbs
TG4.016+2k	16"	4"	880 lbs	2.90 lbs
TG4.024+2k	24"	4"	880 lbs	3.48 lbs



Light duty TG & TGJ, with wood handle

The rail's hourglass profile contributes to the TG series's ability to resist flex. Includes tried-and-true wooden handle.

	Clamping Capacity	Throat Depth	Clamping Force	Approx. Weight
TGJ2.506	6"	2 ½"	600 lbs	1.45 lbs
TGJ2.512	12"	2 ½"	600 lbs	1.80 lbs
TGJ2.518	18"	2 ½"	600 lbs	2.15 lbs
TGJ2.524	24"	2 ½"	600 lbs	2.50 lbs
TGJ2.530	30"	2 ½"	600 lbs	2.90 lbs
TGJ2.536	36"	2 ½"	600 lbs	3.25 lbs
TG4.008	8"	4"	880 lbs	2.35 lbs
TG4.012	12"	4"	880 lbs	2.62 lbs
TG4.016	16"	4"	880 lbs	2.90 lbs
TG4.024	24"	4"	880 lbs	3.48 lbs



Malleable cast bar clamps



Simply better.

Medium duty, TG, with 2K handle

Load up on pressure, durability & versatility. Six serrated edges withstand a lot of pressure without slipping. Includes ergonomic 2K handle.

	Clamping Capacity	Throat Depth	Clamping Force	Approx. Weight
TG4.512+2K	12"	4 ½"	1000 lbs	3.55 lbs
TG4.518+2k	18"	4 ½"	1000 lbs	4.30 lbs
TG4.524+2k	24"	4 ½"	1000 lbs	4.65 lbs
TG4.530+2k	30"	4 ½"	1000 lbs	5.40 lbs
TG4.540+2k	40"	4 ½"	1000 lbs	6.23 lbs
TG5.512+2k	12"	5 ½"	1320 lbs	4.85 lbs
TG5.518+2k	18"	5 ½"	1320 lbs	5.80 lbs
TG5.524+2k	24"	5 ½"	1320 lbs	6.25 lbs
TG7.016+2k	16"	7"	1320 lbs	5.95 lbs
TG7.024+2k	24"	7"	1320 lbs	7.00 lbs
TG7.048+2k	48"	7"	1320 lbs	9.65 lbs



Medium duty TG with wood handle

Features tried-and-true wooden handle.

	Clamping Capacity	Throat Depth	Clamping Force	Approx. Weight
TG4.512	12"	4 ½"	1000 lbs	3.55 lbs
TG4.524	24"	4 ½"	1000 lbs	4.65 lbs
TG4.540	40"	4 ½"	1000 lbs	6.23 lbs
TG5.512	12"	5 ½"	1320 lbs	4.85 lbs
TG5.524	24"	5 ½"	1320 lbs	6.25 lbs
TG7.016	16"	7"	1320 lbs	5.95 lbs
TG7.024	24"	7"	1320 lbs	7.00 lbs
TG7.048	48"	7"	1320 lbs	9.65 lbs



Heavy duty, TGK, with 2K handle

More clamp force than most of us will ever need. High-end quality throughout. The 2K composite handle with comfort insert is standard.

	Clamping Capacity	Throat Depth	Clamping Force	Approx. Weight
TGK4.516+2K	16"	4 ½"	1540 lbs	5.80 lbs
TGK4.524+2K	24"	4 ½"	1540 lbs	6.75 lbs
TGK4.540+2K	40"	4 ½"	1540 lbs	9.05 lbs
TGK4.550+2K	50"	4 ½"	1540 lbs	10.65 lbs
TGK4.579+2K	79"	4 ½"	1540 lbs	14.65 lbs



Malleable cast bar clamps



Simply better.

Malleable cast, TC, with flat rail

Flat rails are an economical alternative - stable solid flat rail with serration. German quality at an appealing price for industrial application. Comes with ergonomically shaped wood handle, standard pad, and plastic cap.

	Clamping Capacity	Throat Depth	Clamping Force	Approx. Weight
TC4.008	8"	4"	800 lbs	2.85 lbs
TC4.512	12"	4 1/2"	950 lbs	3.36 lbs
TC5.512	12"	5 1/2"	1200 lbs	4.85 lbs
TC7.016	16"	7"	1200 lbs	5.95 lbs



Deep reach, CDS, with flat rail

Need some extra reach? The CDS offers a throat depth of up to 20" when you need that extra deep reach. The large flat rail is serrated to prevent slipping. Comes with: Flat rail profile, standard pad, and plastic cap.

	Clamping Capacity	Throat Depth	Clamping Force	Approx. Weight
CDS24-10 WP	24"	10"	1550 lbs	11.05 lbs
CDS24-12 WP	24"	12"	1550 lbs	13.90 lbs
CDS24-20 WP	24"	20"	990 lbs	20.15 lbs



Lightweight die-cast zinc, step-over U shape!

Light duty, zinc die cast, step over bar clamp, LMU

Small, light weight and made of quality durable material. The U shaped bar helps to clamp over small obstructions and apply the clamping force where you need it. Comes with two plastic pressure caps.

	Clamping Capacity	Throat Depth	Clamping Force	Approx. Weight
LMU2.004	4"	2"	330 lbs	0.50 lbs
LMU2.006	6"	2"	330 lbs	0.60 lbs
LMU2.008	8"	2"	330 lbs	0.65 lbs



Light duty, zinc die cast, LM

Small, light weight, made of quality durable material. Clamping arm manufactured in toughened die cast zinc, black powder coated to prevent chemical corrosion. Plastic cap on pressure pad.

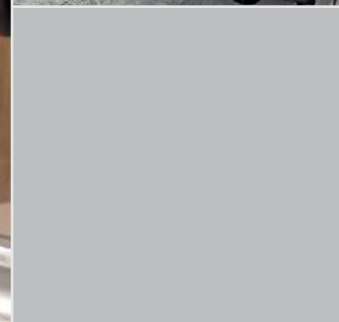
	Clamping Capacity	Throat Depth	Clamping Force	Approx. Weight
LM2.004	4"	2"	330 lbs	0.55 lbs
LM2.006	6"	2"	330 lbs	0.60 lbs
LM2.008	8"	2"	330 lbs	0.70 lbs
LM2.012	12"	2"	330 lbs	0.80 lbs



Clamps: Safe Use & Selection



Simply better.



Industrial Tool Safety & Clamp Selection

Employers are responsible for maintaining in good repair any tools and equipment supplied to workers. Workers must use tools and equipment properly and report any defects to supervisors. Tools and equipment should be inspected regularly. Use the guards and personal protective equipment which we all know are needed but sometimes tend to overlook. **Never** disable, for the sake of convenience any built in safety features or guards on tools. Basic hazard awareness and common sense can prevent serious injuries with industrial hand and power tools.

Common Causes of Accidents - Typical causes of hand and power tool accidents include the following:

- Using the wrong tool for the job
- Tools falling from overhead
- Sharp tools carried in pockets
- Using cheaters on tool handles
- Excessive vibration
- Failure to support or clamp work in position
- Carrying tools by hand up or down ladders

Safe practices for the industrial work place

- **Use the right tool for the job.** Using a clamp to lift, using a cheater bar on a handle or, using pliers instead of a proper wrench are typical examples of the mistakes which commonly lead to accidents and injuries.
- **Use tools as recommended by the manufacturer.** For example, don't use cheaters on handles. This will exert greater forces on the tool than it was designed for and is likely to cause breakage and possible injury.
- **Damaged or broken tools should be removed from service.** Clamps with broken pads, bent handles, corroded pads, snips with notched blades, bent clamps, damaged spindles etc. are all unsafe and should be removed from service and be either repaired or destroyed.

- **Maintain tools in safe operating condition.** Keep handles, pads and spindles clean, secure and safe. Don't rely on friction tape to secure split handles or to prevent handles from splitting. Check wedges and handles frequently. Keep handles smooth and free of rough or jagged surfaces. Replace handles, spindles, blades and pads that are split, corroded, or that cannot be refitted securely.
- **Never climb ladders with tools in your hand.** Tool holders / pouches free your hands while climbing or working on ladders, scaffolding, and other areas where access may be difficult. When carrying tools up or down from elevated places, put them in substantial bags or boxes and raise and lower them with strong ropes.
- **Spark-resistant tools** (non-ferrous tools) are recommended where flammable materials or explosive dusts or vapors might be present. These tools, such as brass or copper hammers or mallets, should still be used with caution; remember, they may not guarantee safety in all explosive situations such as in the presence of gasoline vapors. It is always safer to eliminate the hazard by ensuring a safe atmosphere through isolation, ventilation, or purging.
- **Protect the cutting edges of tools when carrying them.** Carry them in such a way that they won't be a hazard to yourself and others. Carry pointed or sharp edged tools in pouches or holsters.
- **Keep your hand tools clean.** Protect them against damage caused by corrosion. Wipe off accumulated dirt and grease. Dip the tools occasionally in cleaning fluids or solvents and wipe them clean.
- **Lubricate** adjustable and other moving parts to prevent wear and misalignment.
- **Stay aware of your surroundings** – look around and keep a mental note of what is going on around you. Identify & be mindful of potential dangers.
- **Falling tools** are a dangerous hazard for workers below. Keep track of tools, especially when working at heights on scaffolds or other access equipment.

- **Inspection and Repair of Industrial Tools** - Tools should be inspected by a person qualified through training and experience to determine the safe condition of the tool. Worn or damaged tools should be tagged “**DEFECTIVE – DO NOT USE**” and returned to the shop for repair or replacement. Regular inspection of all tools is necessary and should cover tool maintenance. Observing proper handling and storage of tools should also be a part of the inspection process. Responsibility for inspection is usually left to the supervisor; however, tools should be checked by those who use them daily. Hand tools that get the heaviest use and abuse should be inspected frequently. To maintain and repair tools properly requires the right facilities and equipment. A good workbench, repair tools, vises, and good lighting are necessities. Only persons skilled in the repair of tools should be allowed to do the repairs.
- **Misuse** - Misuse of hand tools is a common cause of injury in the work place. In many cases, the injury results because it is assumed that everyone knows how to use most common hand tools. This is not the case. It is the responsibility of the supervisor and employer to ensure that workers are trained in the safe and proper use of hand tools.

Personal Protection

Hands – Hands can be caught in machines, crushed by objects, or cut by sharp-edged tools such as chisels, knives, and saws. Hands can also be damaged by being burned, fractured, or sprained unless you stay alert. Always wear protective gloves appropriate to the job being done.

Feet – Always wear the correct protective footwear for the job (Steel toed, rubber, leather etc...)

Eyes – Eyes are highly susceptible to injury; however, most eye injuries are preventable. Always wear appropriate safety glasses / face shields for the job.

Ears – Hazardous noise levels are inherent in industry. Hearing protection should be worn whenever there is a risk of excessive exposure.

Safe Use & selection of Clamping Tools

Proper selection

1. Always choose the style of clamp that best matches the requirements of the job at hand.
2. Choose a clamp size best suited to the job – too small a clamp may break, causing damage and/or personal injury.
3. Always select the proper clamps by determining the required opening, throat depth, clamping force and any physical characteristics such as over all size & weight.
4. When using “C” clamps, select a clamp that has a maximum capacity that closely matches (only slightly larger than) the over all thickness of the work.

Even the highest quality clamp, like any tool, can be damaged by rough handling, improper selection and overloading. Like with all other hand tools (pliers, hammers, wrenches etc...), a clamp’s design is the key determining factor of the type of work it is intended to safely perform.

Improper use of clamps may lead to personal injury or material damages!
BESSEY® Tools will not accept any liability for damages or injuries caused by improper use of our products

Safe use

1. BESSEY® clamps are **NOT** certified lifting devices – Do not use for lifting, pulling or transporting. Clamps are temporary work holding devices.
2. Discard any clamp that shows any signs of damage such as being bent, cracked, missing swivel pad etc...
3. Before using, make sure the swivel pad on the end of the screw turns freely.
4. Clamps should **only** be tightened manually, without the use of any auxiliary tools. (except those specifically designed for use with wrenches or power torque tools)
5. Overextending the screw can cause it to bend & the clamp to break free. Try to keep only 2 or 3 threads exposed to clamping forces. This is very easy to do with sliding arm clamps.
6. **Never** over tighten a clamp. The purpose of a clamp is not to force two ill-fitting surfaces together, but to maintain uniform pressure between two well machined pieces being joined together until the joining process (welding, gluing or some form of mechanical fastening) is completed.

7. Do **NOT** modify clamps by cutting, welding on extra pieces or, welding to an assembly. Any modification voids any warranty & absolves BESSEY® Tools of any and all liabilities.
8. BESSEY® Tools publishes nominal clamping force ratings for sliding arm clamps & nominal load limits for “C” clamps. These values only apply to the BESSEY® brand of clamps. Do **NOT** use as an indicator of clamping capacity of similar products from other manufacturers.
9. **Never** use clamps at the maximum nominal limits.
10. **Always** give yourself a margin of safety. If the job requirement is close to a clamps maximum rating, then add a second clamp or switch to a heavier duty clamp.