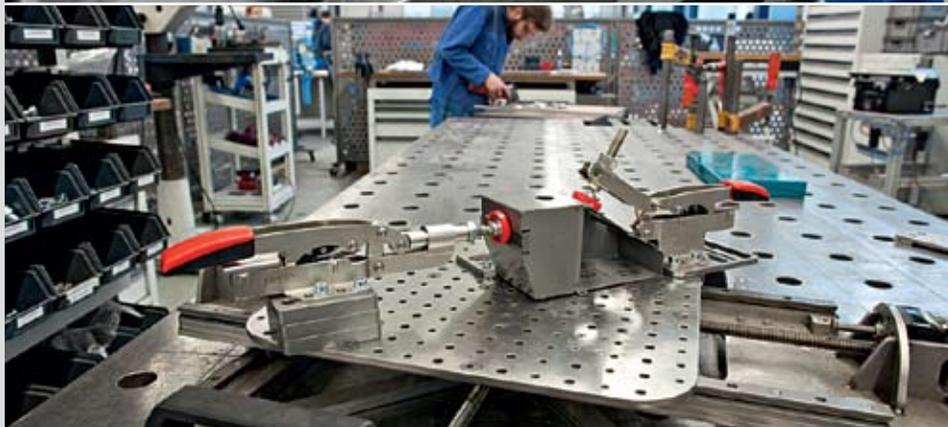


**BESSEY® Auto-Adjust Toggle Clamps**

# Auto-Adjust Toggle Clamp for rapid clamping



## The power to be in position fast!

The Auto-Adjust Toggle Clamp series from BESSEY® brings significant and positive innovation to the toggle clamp market. First, clamping force can be adjusted within a range of 25-550 lbs of pressure with the turn of an integrated pressure screw. Second, the clamp will auto-adjust to varying work piece heights without significant change in applied clamping force. Third, the holding capacity of the BESSEY® toggle clamp series is quite high, close to 700 lbs of holding capacity. The combination of these features presents a strong argument for cost-savings, enhanced productivity and greater

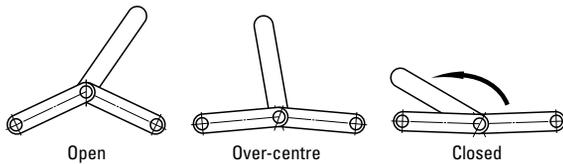
workplace safety. How? BESSEY toggle clamps can replace a broad range of competitive toggle clamp styles when a range of clamping force and capacity is required. This means lower tool inventories and enhanced set-up time. The clamps are also perceived to be safer for real-world applications where variations in work piece height can lead to applied clamping force being too high or too low (with the resulting safety hazards these conditions present). Ideal for job-shop operations or short-run set-ups; the BESSEY® Auto-Adjust Toggle Clamps add value to any operation. BESSEY®. Simply better.



## GENERAL INFORMATION

### Toggle-clamp principles:

All toggle clamps operate on the same basic principle. There are a series of fixed lengths and pivots that form a linkage that can stretch or compress to apply clamping force. One end is anchored (and pivoting); the other parts of the linkage pivot from this initial anchored point to apply clamping force. As the levers and pivots extend from a contracted position they approach the fully-extended position. This is the point at which they will realize their maximum clamping force. This position is not a stable position for clamping as it does not allow for vibration or load changes. To lock a toggle clamp linkage, the levers must be pivoted past the fully-aligned position and into a stable and locked position against an end point stop. This locked position is commonly referred to as the “over-center” position and cannot be reversed without the linkages being moved.



### Holding capacity versus clamping force:

- Clamping Force: The amount of force the clamp applies to the work piece when closed and locked. The clamping force depends on the relative position of the clamp’s components and on work piece variation
- The holding capacity is the optimized and maximum force that the clamp can sustain in its closed and locked position without permanent yielding and/or damage to the clamp’s components. Holding capacity is measured when the clamp is in its over-center condition. A clamp’s rated holding capacity should never be exceeded.

### Toggle Clamp Safety:

- Toggle clamps should engage firmly. Too tight can result in tool failure or operator injury while too loose can result in a work piece coming unclamped.
- Most clamps are metallic and will conduct electricity and heat – take precautions
- Repetitive actions can lead to fatigue and related problems – take precautions
- Do not expose toggle clamps to heat in excess of 140 F – corrosion resistance and handle functionality is impaired.
- Metal components should not be exposed to temperatures beyond 200 F
- Composite handles are resistant to salt solutions and alkalis but should not be exposed to phenols, acids or oxidizing agents
- Do not strike, or lift with, toggle clamps.
- Do not use secondary tools to augment applied clamping force
- Failure to use common sense and/or follow these guidelines will void warranties and increase the chance for failure or injury. Always wear protective gear.



### Choosing a Toggle Clamp:

Choosing a specific toggle clamp is a multi-step process:

1. Select the appropriate clamp action, base style, bar style
2. Review the size, shape and consistency of parts to be clamped
3. Determine the tool clamping forces and holding capacity that is required
4. Consider the frequency, duration and cycle time of the operation
5. Decide upon the number of clamps to use.

Determining tool specifications and designing a set-up is a complex issue and should be the responsibility of a qualified fixture designer/engineer.

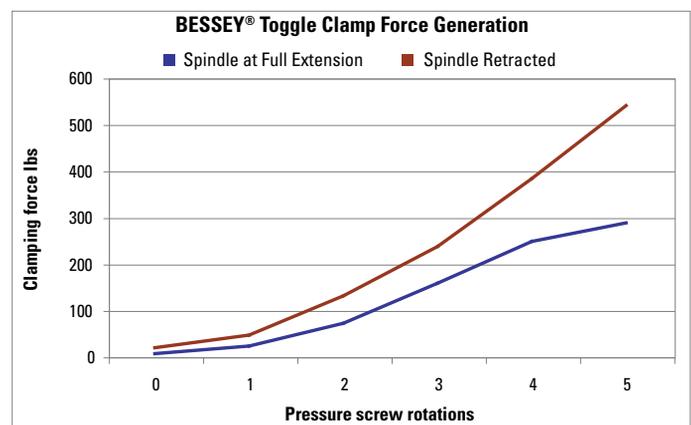
### Construction:

BESSEY® Auto-Adjust Toggle Clamps are made with the finest materials. Steel content is typically 1035 or 1045 steel and hardened completely through. The large and ergonomic handles are a combination of polypropylene and thermo-plastic and resistant to heat. Nickel plating is the standard coating unless otherwise indicated. Base hole diameters are designed for M6 or 1/4 In. fasteners. The InLine plunger thread and spindle threads, are M8.

### Clamping Force Range:

The BESSEY® Auto-Adjust Toggle Clamps will adjust automatically to variations in work piece height once the clamping force has been set. The integrated pressure screw has a range of clamping force (25-550 lbs nominal) that should be considered. Counter-clockwise rotation of the pressure screw increases clamping force and clockwise rotation decreases clamping force. Spindle location (at base or tip) can also affect clamping force. A visual representation at 30 mm clamp height is included in the chart below.

For more information email [info@besseytools.com](mailto:info@besseytools.com) or call 1-800-828-1004



Clamping height set at 30 mm. Pressure screw set initially to lowest clamp force (0) and, with one full rotation for each measurement point.

# BESSEY® Auto-Adjust Toggle Clamps

## Auto-Adjust Toggle Clamp for rapid clamping

Your benefits at a glance:

### 1 Auto-Adjust

The BESSEY Auto-Adjust Toggle Clamp automatically adjusts to variations in work piece dimensions while maintaining constant clamping force. No more time-consuming manual adjustment of the spindle height to maintain safe and correct clamping force. The removable non-marring plastic cap is included on the 7/8" diameter pads.

### 2 Adjustable Clamping Force

The integrated clamping force adjustment screw can be used to create an actually applied clamping force from 25 to 550 lbs. (max holding capacity 700 lbs.) One BESSEY® Auto-Adjust Toggle Clamp can replace a range of competitive clamps.

### 3 Adaptable Base Plate

The large (2 1/4" by 2 1/2") flanged base is designed for use with 1/4" or M6 fasteners. Mounting holes are sized & spaced for easy mounting and versatility.

### 4 Extra large handle

The large 1" x 2 1/8" handle offers greater user comfort and ease of operation.



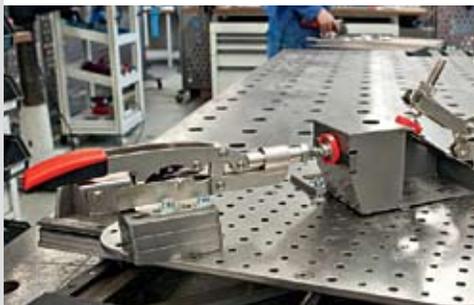
Coming in  
June 2011



### NEW Horizontal toggle clamps

| BESSEY® Product # | Opening<br>Inches | Clamping Force Range<br>Pounds | Holding Capacity<br>Pounds | Approx. Weight<br>Pounds | Case<br>qty. |
|-------------------|-------------------|--------------------------------|----------------------------|--------------------------|--------------|
| STC-HH50          | 2                 | 25-550 *                       | 700                        | 0.77                     | 6            |
| STC-HH70          | 2 3/4             | 25-550 *                       | 700                        | 0.86                     | 6            |

\* Variable and dependent on spindle settings, pressure screw setting, force applied etc.



### NEW Inline toggle clamp

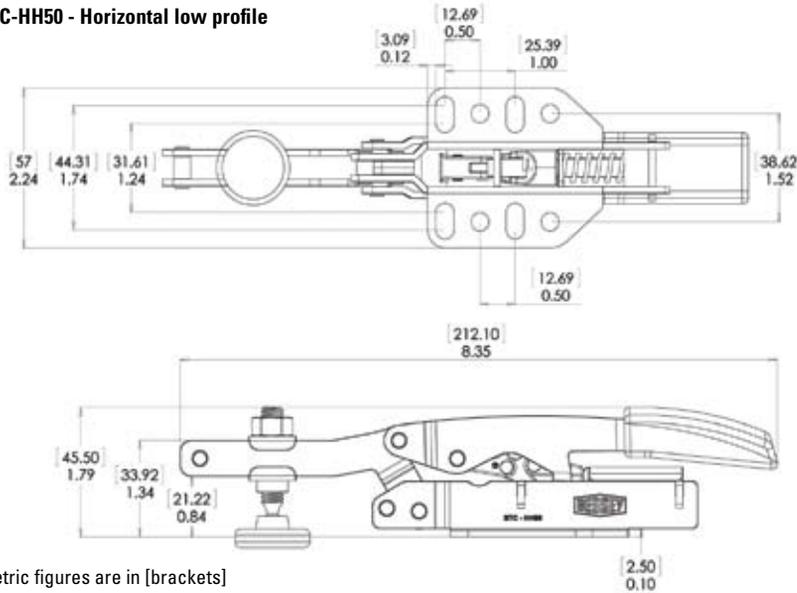
| BESSEY® Product # | Opening<br>Inches | Clamping Force Range<br>Pounds | Holding Capacity<br>Pounds | Approx. Weight<br>Pounds | Case<br>qty. |
|-------------------|-------------------|--------------------------------|----------------------------|--------------------------|--------------|
| STC-IHH25         | 1                 | 25-550 *                       | 700                        | 0.86                     | 6            |

\* Variable and dependent on spindle settings, pressure screw setting, force applied etc.

# BESSEY® Auto-Adjust Toggle Clamps

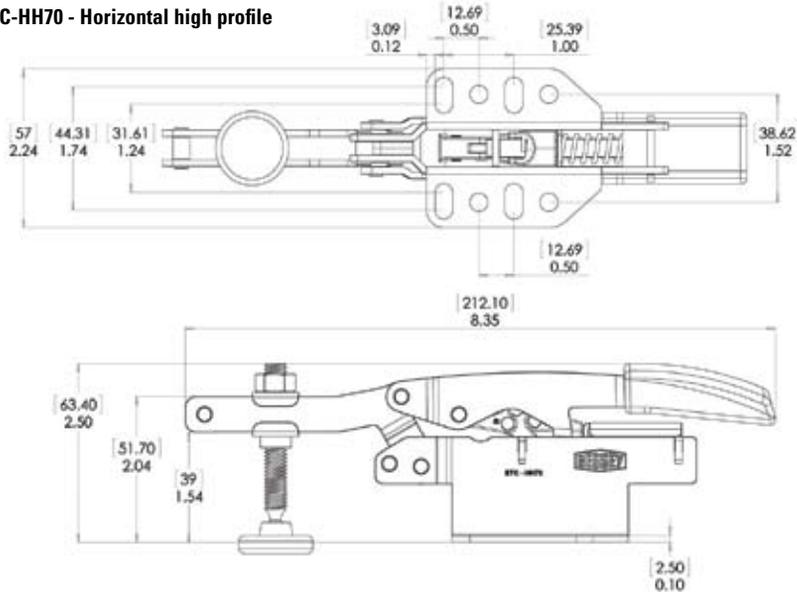


## STC-HH50 - Horizontal low profile



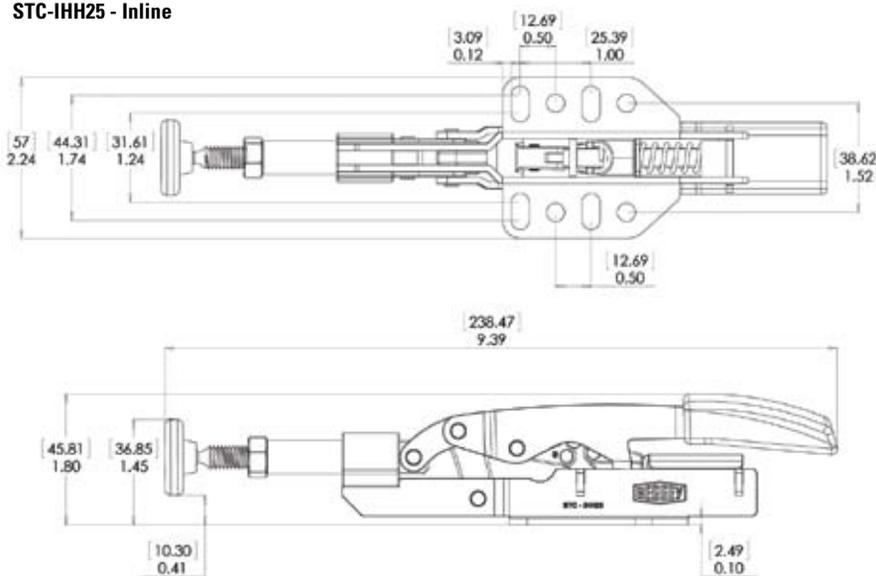
- In the clamped position the handle is horizontal
- Turn the pressure screw counter-clockwise to increase pressure and, clockwise to decrease (See chart page 10)
- Easy access mounting holes are optimized for 1/4" fasteners (M6)

## STC-HH70 - Horizontal high profile



- Replace a range of competitive clamps with each BESSEY® model
- Spindle thread is M8
- Nut size is .540" (14mm)
- Pad diameter is 7/8"

## STC-IHH25 - In-line



- High quality construction
- Plunger thread is M8
- Plunger diameter is .465"
- Snap off plastic cap is standard on all models