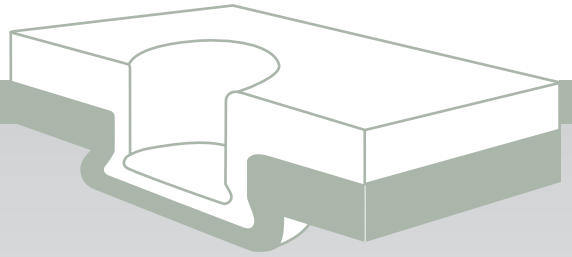


□ Innovative Solutions for
Sheet Metal Assembly



Automotive Hood ::

◀ Tog-L-Loc joins the latch plate to the inner hood.

Tog-L-Loc[®]

SHEET METAL JOINING SYSTEM

Reduce Cost with Tog-L-Loc clinching

No additional fasteners, no fumes, no sparks

Join galvanized, pre-painted, or dissimilar metals

BTM[®]
CORPORATION

www.Tog-L-Loc.com

810-364-4567

□ Tog-L-Loc in the *Automotive* Industry

BTM invented the economical, round leakproof sheet metal clinch joint known as Tog-L-Loc. This technology is used throughout the automotive, appliance, electronic, and construction industries as a cost effective way to join sheet metals. There are no additional fasteners, no heat, fumes, or sparks in the Tog-L-Loc process which has proven very effective in joining pre-painted, coated, and dissimilar sheet metals.

Tog-L-Loc is currently being used by many automotive suppliers. Tog-L-Loc is also used directly by GM, Volvo, and Ford.

Our application engineering department will work with you to develop the most effective solution for reducing your production cost.

A free sample of your parts joined with Tog-L-Loc can be obtained by contacting our Application Engineering Department.

How it Works

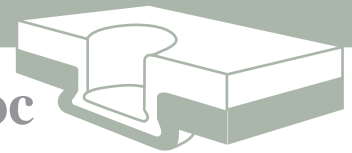


Step 1: The parts to be joined are clamped together and to the die.

Step 2: The punch draws the sheet metal parts into the die.

Step 3: The punch squeezes the parts against the bottom of the die to form an interlocked, leak proof, joint.

A few *production parts* joined with Tog-L-Loc



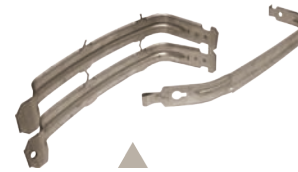
Steering Wheel Pivot Arm Adjustment ::

This part, designed for the shaft of an electric motor equipped steering wheel, was joined using 5 Tog-L-Loc joints.



Quiet Steel Floor Pan ::

The cross bar on this "Quiet Steel" floor pan was attached using 8 Tog-L-Loc joints.



Gas Tank Straps ::

Tog-L-Loc was incorporated into a progressive die to join the loop end of the strap.



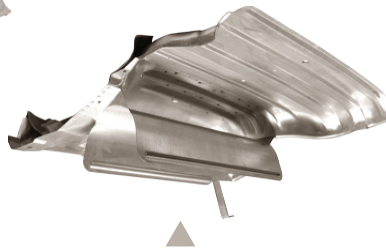
Air Conditioning Tube ::

This tube's aluminum brackets are joined using Tog-L-Loc.



Package Tray ::

Joined with 64 Tog-L-Loc joints.



Gas Tank Shield ::

3 part assembly joined with 33 Tog-L-Loc joints.



Automotive Hood ::

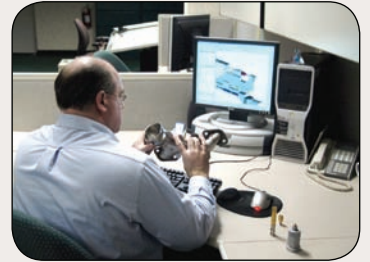
This hood features Tog-L-Loc joining aluminum to steel.

□ The world leader in

Clinch Joining Technology

BTM Tog-L-Loc Clinching is simply the best form of clinching on the market today. The exclusive action of the moving die blades allows the metals to flow into the interlock with minimal stress and force thus providing superior joint strength and tool life.

There are many variations available of the types of Tog-L-Loc equipment shown below. Let our experienced Application Engineers assist you in selecting the best solution based on your production requirements.



Types of *Equipment*

□ Tog-L-Loc Tooling

Tog-L-Loc punch and die tooling sizes are: 1.5, 2.3, 3.0, 3.8, 4.6, 5.5, 6.4, and 7.6mm



□ Press Brakes

Use your existing Press Brake to make Tog-L-Loc joints inexpensively.



□ Handheld Units

BTM manufactures a variety of handheld units for low volume applications.



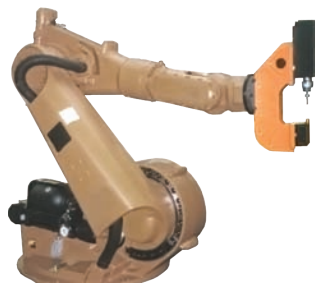
□ Universal Presses

These presses easily adapt to join a variety of parts.



□ Specialized Units

BTM provides pneumatic, hydraulic, air-oil and electrically driven units with single or dual motions for both stationary and robotic applications.



BTM will provide support for your project from start to finish by first providing a sample of your parts joined with Tog-L-Loc and then a price quote for the appropriate equipment. Upon receipt of your order project management will guide you through the steps required for a successful project. Support is also available in the form of installation, training and service.

Our extensive experience combined with listening to your requirements will provide you with a successful cost reduction project.

□ Die Sets

Tog-L-Loc tooling can be inexpensively designed into single or compound motion die set packages.



□ Special Fixtures

Manually loaded and unloaded dedicated tooling can be built for a single part or a family of parts.



□ Special Systems

Achieve faster cycle times with automatic parts handling and/or by combining processes.



□ Innovative

Piercing Solutions

BTM has extensive experience piercing shaped holes and extruded holes in metals and plastics.

Piercing can be combined with Tog-L-Loc assembly to achieve accurate geometric features.

Examples of BTM *PIERCED PARTS*...

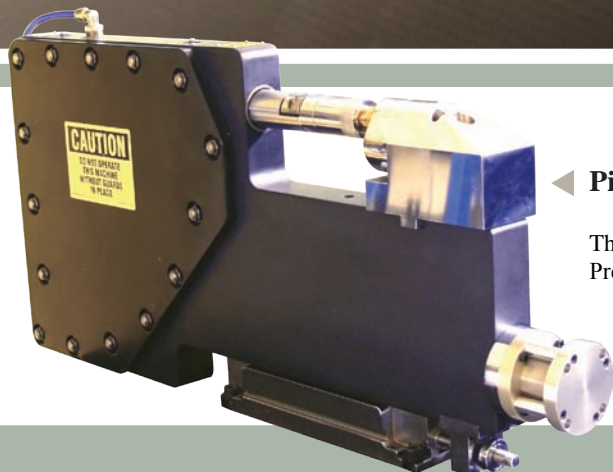
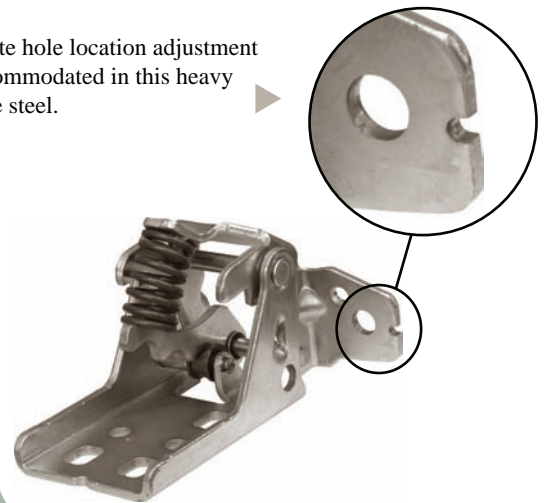


Antenna Hole ::

A BTM unit pierces the hole for this automotive antenna.

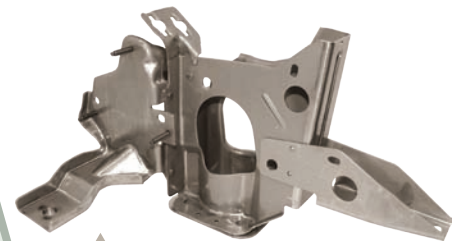
Hinge Pierce ::

Accurate hole location adjustment is accommodated in this heavy gauge steel.



Pierce Press ::

This pierce unit uses a BTM Air Toggle Press configured for dual motion.



A Pierced Part ::

A BTM special machine uses Tog-L-Loc to join this 5 piece assembly while simultaneously piercing 4 holes for superior dimensional accuracy.

www.BTMcorp.com

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