



HERON

Intelligent Equipment

亨龙智能装备

DIGITAL RESISTANCE WELDING

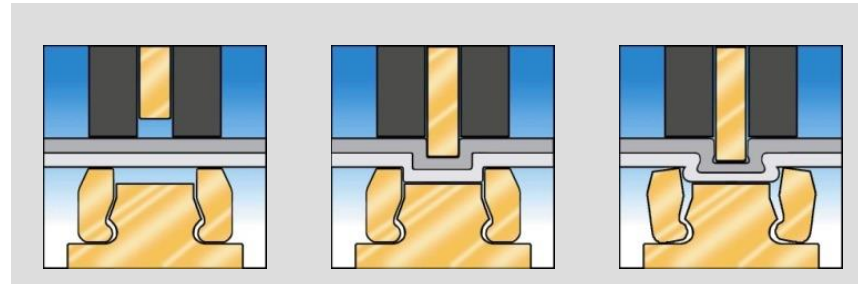
INTRODUCTION OF CLINCHING PROCESS AND EQUIPMENT



Tog-L-Loc sheet metal clinching is a cold forming process used to join sheet metal together. The process can quickly and easily join pre-painted, galvanized, or dissimilar metals without harmful heat, sparks, or fumes being emitted.

Tog-L-Loc offers the best choice for creating strong metal joints because it preserves the integrity of the metal and may be incorporated into a wide range of installation systems.

The Tog-L-Loc® Process



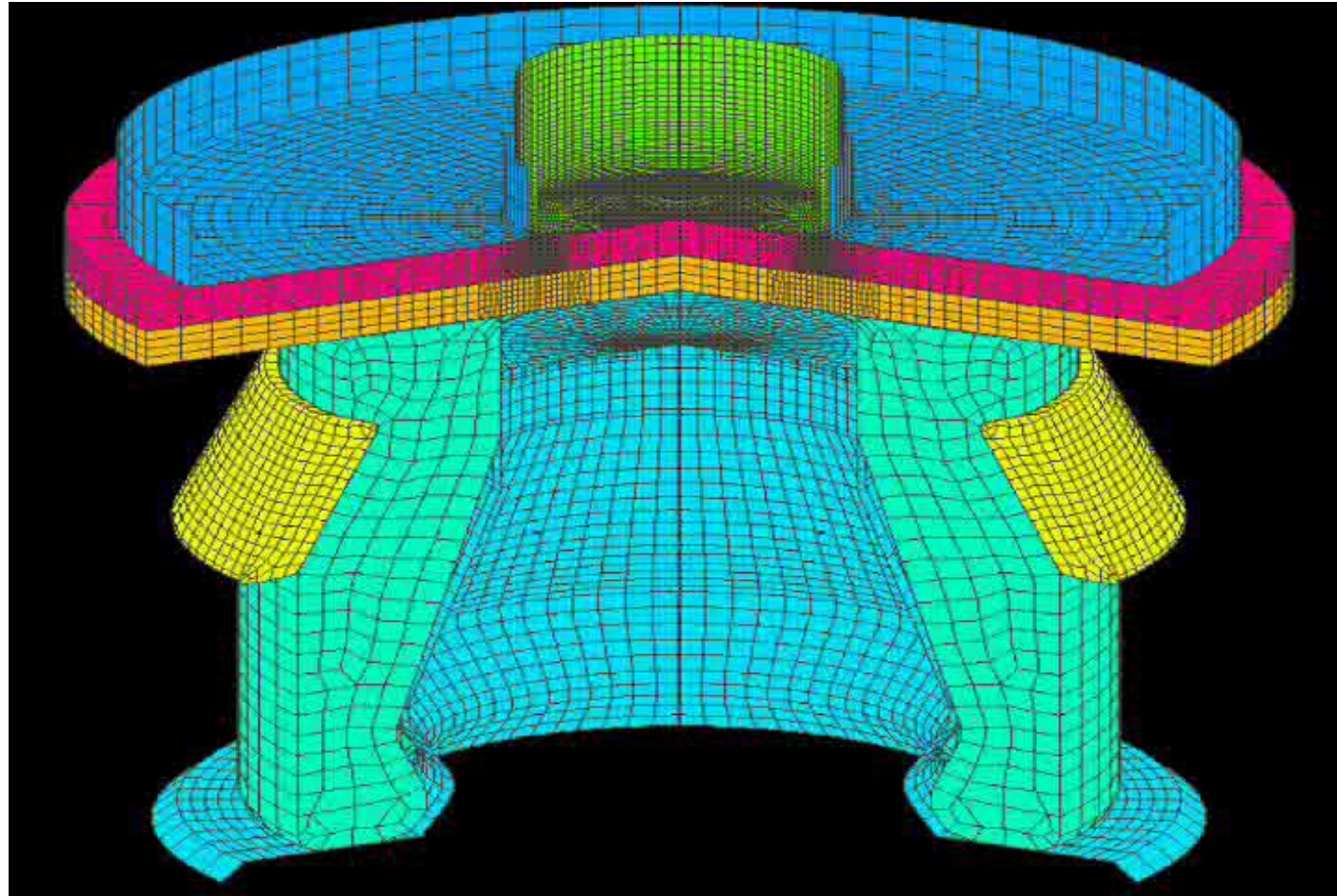
Clamps

Draws

Joins
(Forms Circular Interlock)

Tog-L-Loc® uses moving die blades to provide an exceptional flow of material into a full 360 degree interlock. The end result is a very strong connection with low internal stresses within the part material. With Tog-L-Loc®, the flow of materials into the interlock are uninhibited by stationary die components.

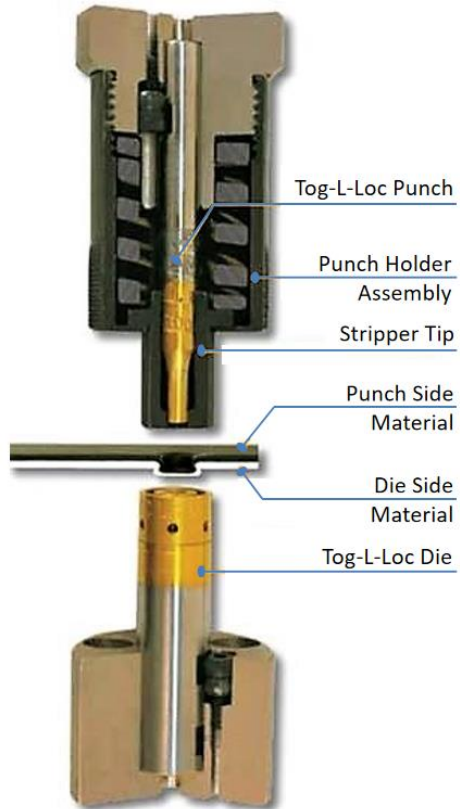
The Tog-L-Loc® Process



Tog-L-Loc[®]

SHEET METAL JOINING SYSTEM

Typical tooling configuration with a joint cross section shown.



Completed Joints



Punch Side



Die Side

Tog-L-Loc[®]

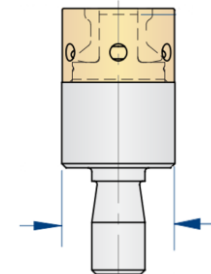
SHEET METAL JOINING SYSTEM

Tooling sizes

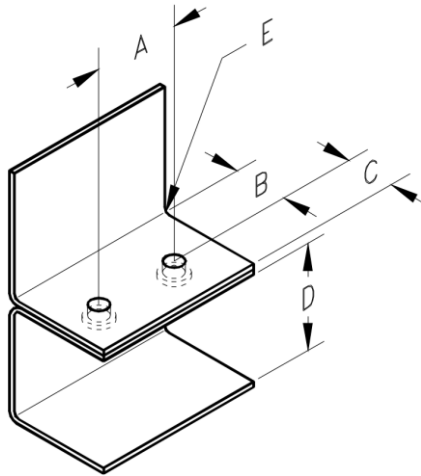
<u>Punch size</u>		<u>Die Outside Dimension</u>	
3.0 mm	0.120"	12 mm	0.470"
3.8 mm	0.150"	13.5 mm	0.531"
4.6 mm	0.181"	16 mm	0.630"
5.5 mm	0.216"	19 mm	0.748"
6.4 mm	0.250"	22 mm	0.866"



Punch Tip Diameter






Tog-L-Loc® Standard Die Joint Centers – Minimum Distances



Notes:

- As “E” (bend radius) increases from 0.8 [.03”], add amount of increase to “B” dimension.
- All noted dimensions are minimum values unless otherwise specified.
- If “C” dimension increases, “D” dimension may also be affected.
- * Making Tog-L-Loc joints with noted minimum distances requires a special stripper block.

PREFERRED

Tooling	Dim	3.0mm [.12”]	3.8mm [.15”]	4.6mm [.18”]	5.5mm [.22”]	6.4mm [.25”]
 Standard 940 Dies	A*	12.50 [.492”]	14.00 [.551”]	16.50 [.650”]	19.50 [.768”]	22.50 [.886”]
	B	6.8 [.27”]	7.5 [.30”]	8.8 [.35”]	10.3 [.41”]	11.8 [.46”]
	C	3.0 [.12”]	3.8 [.15”]	4.6 [.18”]	5.5 [.22”]	6.4 [.25”]
	D	24.0 [.94”]	28.5 [1.12”]	28.5 [1.12”]	35.5 [1.40”]	40.0 [1.57”]
	E	0.8 [.03”]	0.8 [“.03”]	0.8 [.03”]	0.8 [.03”]	0.8 [.03”]
 MINI 940 Dies	A*	11.00 [.433”]	12.50 [.492”]	14.00 [.551”]	16.50 [.650”]	21.00 [.827”]
	B	6.1 [.24”]	6.8 [.27”]	7.5 [.30”]	8.8 [.35”]	11.0 [.43”]
	C	3.0 [.12”]	3.8 [.15”]	4.6 [.18”]	5.5 [.22”]	6.4 [.25”]
	D	24.0 [.94”]	24.5 [.96”]	28.5 [1.12”]	35.5 [1.40”]	40.0 [1.57”]
	E	0.8 [.03”]	0.8 [.03”]	0.8 [.03”]	0.8 [.03”]	0.8 [.03”]
 3 Blade Elastomer Short Insert Dies	A*	14.73 [.580”]	12.70 [.500”]	14.73 [.580”]	19.05 [.750”]	22.22 [.875”]
	B	8.1 [.32”]	7.1 [.28”]	8.1 [.32”]	10.3 [.41”]	12.0 [.47”]
	C	3.0 [.12”]	3.8 [.15”]	4.6 [.18”]	5.5 [.22”]	6.4 [.25”]
	D	26.0 [1.02”]	26.0 [1.02”]	26.0 [1.02”]	32.0 [1.26”]	35.0 [1.38”]
	E	0.8 [.03”]	0.8 [.03”]	0.8 [.03”]	0.8 [.03”]	0.8 [.03”]
 3 Blade Elastomer Style “A” Dies	A*	11.18 [.440”]	12.70 [.500”]	14.73 [.580”]	19.05 [.750”]	22.22 [.875”]
	B	6.4 [.25”]	7.1 [.28”]	8.1 [.32”]	10.3 [.41”]	12.0 [.47”]
	C	3.0 [.12”]	3.8 [.15”]	4.6 [.18”]	5.5 [.22”]	6.4 [.25”]
	D	35.0 [1.38”]	35 [1.38”]	35.0 [1.38”]	35.0 [1.38”]	52.3 [1.38”]
	E	0.8 [.03”]	0.8 [.03”]	0.8 [.03”]	0.8 [.03”]	0.8 [.03”]
 2 Blade Dies	A*	14.50 [.571”]	--	16.00 [.630”]	--	20.30 [.799”]
	B	5.8 [.23”]	--	5.8 [.23”]	--	8.4 [.33”]
	C	3.0 [.12”]	--	4.6 [.18”]	--	6.4 [.25”]
	D	35.0 [1.38”]	--	35.0 [1.38”]	--	47.6 [1.88”]
	E	0.8 [.03”]	--	0.8 [.03”]	--	0.8 [.03”]

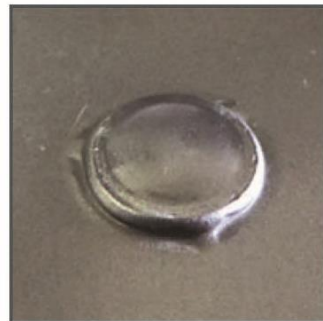
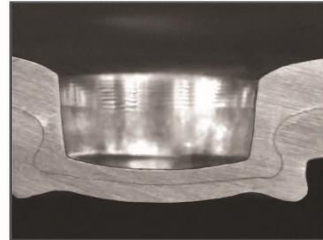
* Making Tog-L-Loc® joints with noted minimum distances requires a special stripper block.

Clinching Family

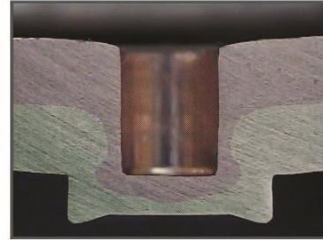
Tog-L-Loc[®]



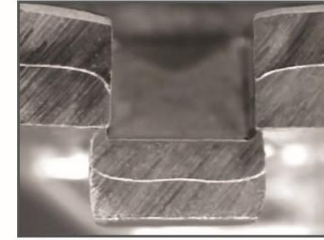
V-Loc[™]



Oval-Loc[™]



Lance-N-Loc[™]



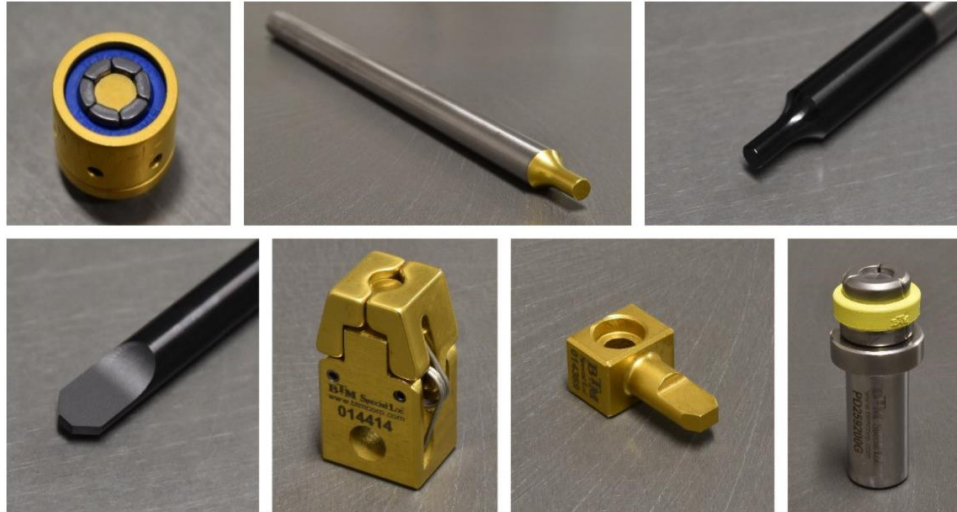
Range of clinch joint sizes from 1.5mm to 7.6mm

Joining sheet thicknesses from 0.4mm to 4.0mm

HERON-BTM provides customized engineering solutions to customers.

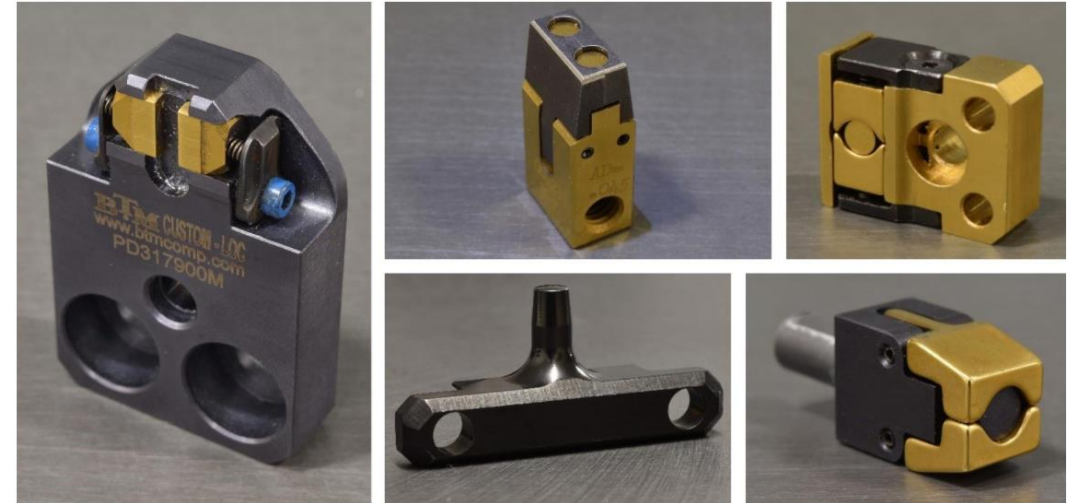
Clinching Family

Special-Loc®



Special-Loc tooling joins difficult material combinations and difficult to access locations.

Custom-Loc™



Custom-Loc tooling joins the most challenging material combinations in the most difficult to reach locations. It is purpose-engineered for your specific requirement.

Implementing Tog-L-Loc®



Die Sets

BTM can build Die Set tooling for many Tog-L-Loc applications. Part nesting, sensors, piercing and other operations can be included. Die sets may be installed in your existing presses, or ordered with BTM presses.



Press Brakes

BTM's unitized Press Brake Tooling is available with a wide range of throat depths. The units are set up for a specified metal combination, & ready to install in your brake.



Handheld Units

BTM portable Tog-L-Loc systems are available in a multitude of configurations to suit various production requirements. Hydraulic units may be ordered with single or multiple tooling and a range of strokes & throat depths.



Universal Presses

Universal Machines are designed for optimum flexibility in prototype & short run production. The large work envelope & reversible tooling stack up will accommodate a variety of part configurations. Hydraulic & pneumatic versions are available.

Implementing Tog-L-Loc®



Specialized Units

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



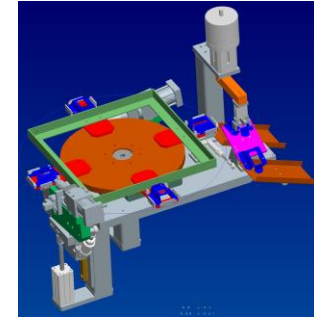
Specialized Units

Units can be designed according to End user and Tier 1 machine builders requirements and specifications



Specialized Units

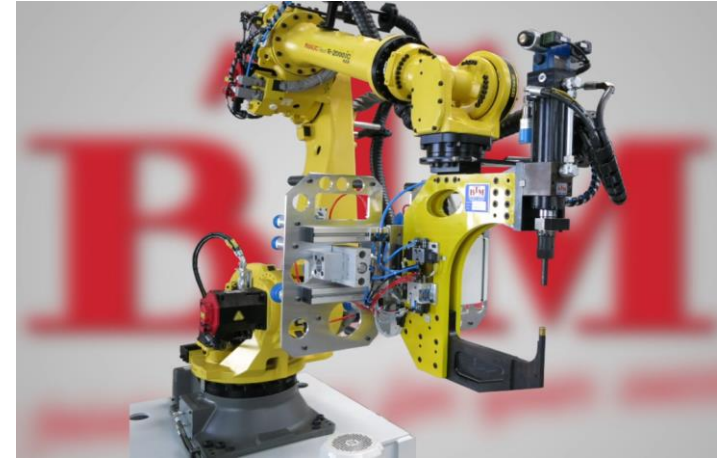
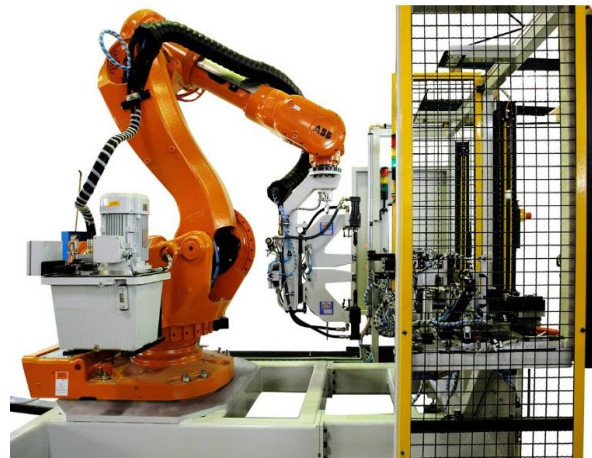
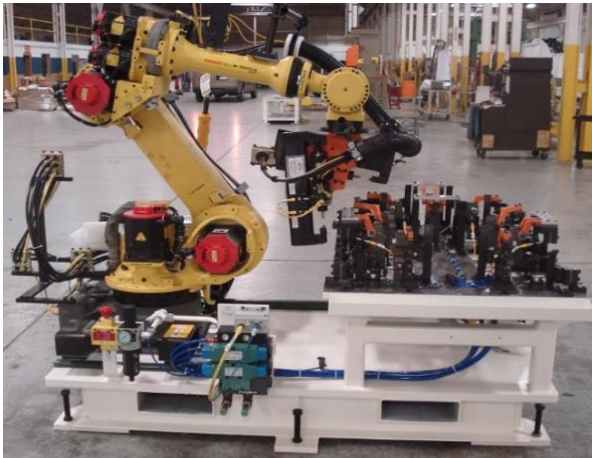
BTM has worldwide coverage to support all international machinery manufacturers for complete units or tooling.



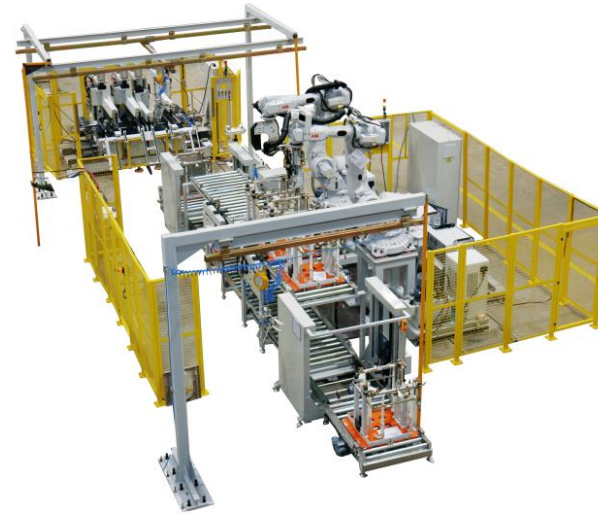
Special Fixtures

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

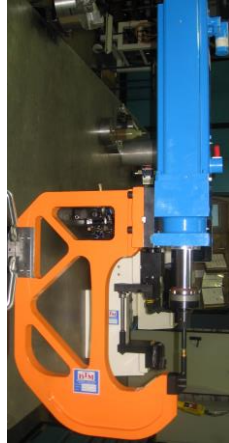
Implementing Tog-L-Loc® • Clinching System



Implementing Tog-L-Loc® • Clinching System



Implementing Tog-L-Loc® • Servo Motor-driven Clinching System



Servo Motor-driven Clinching System----ZM6

Features

HERON Servo Motor-driven Clinching System

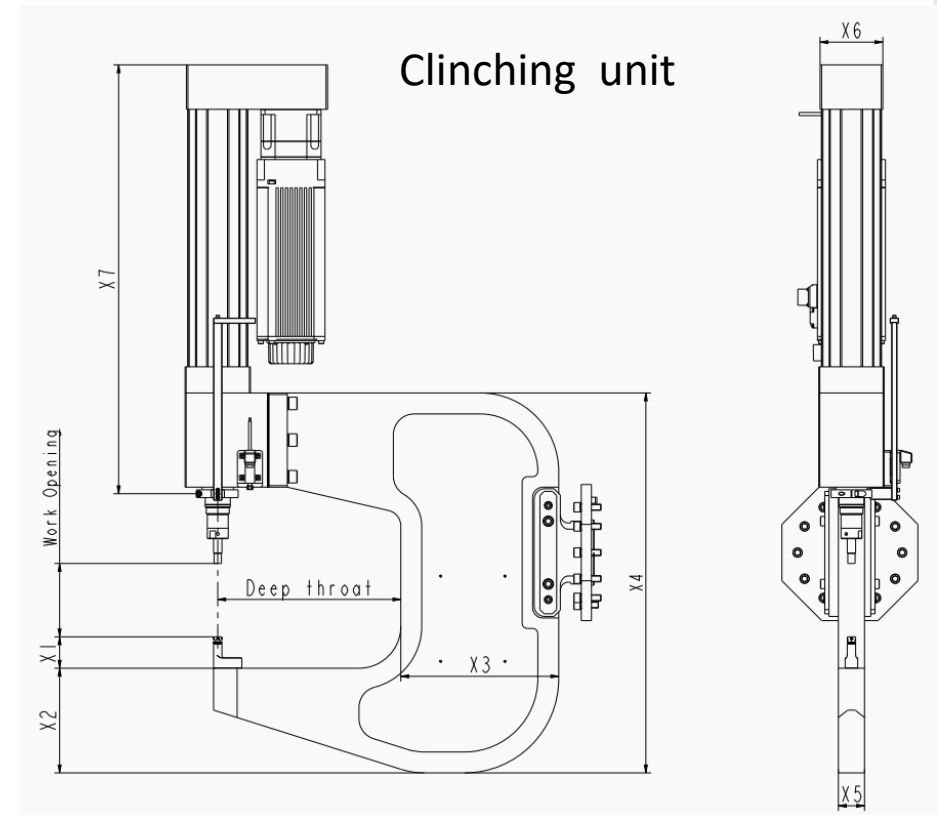
55kN or 80kN is a cost-effective press for Clinching, Piercing, mounting of fasteners and other press operations. The Universal press has a lightweight design containing customized servo drive and C-frame. The press is available with bench mount, floor stand or as a robot application.

Less carbon footprint production, energy saving, less service and maintenance.



Servo Motor-driven Clinching System----ZM6

Type	Deep throat (mm)	Work Opemimg (mm)	X1 (mm)	X2 (mm)	X3 (mm)	X4 (mm)	X5 (mm)	X6 (mm)	X7 (mm)
standard	150	140	60	175	300	701	50	120	819
	250	140	60	200	300	726	50	120	819
	300	140	60	215	300	741	50	120	819
	350	140	60	225	300	751	50	120	819
	400	140	60	240	300	766	50	120	819
	450	140	60	250	300	776	50	120	819

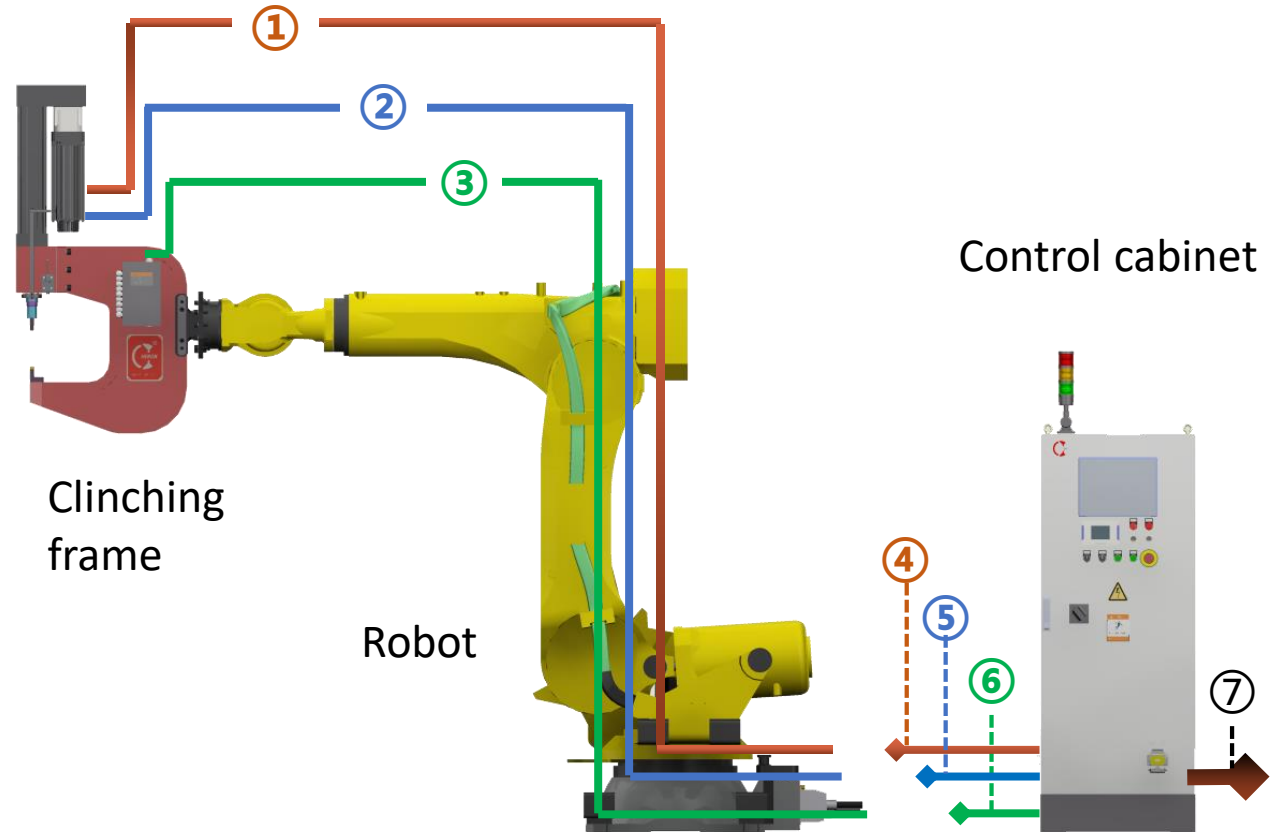


You will find various choices for frames, shapes, throat depth and widths. For more information, or to customize your own clinching system, please visit: www.heronwelder.com

Servo Motor-driven Clinching System----ZM6

Electrical cabinet mounting board - bottom wiring terminal part wiring diagram

No.	Function	DIA	Spec	Qty
①	Power line (flexible)	φ11	4*6mm ² +2*1mm ²	1
②	Encoder (flexible)	φ6	17*0.2 plug through φ40	1
③	Signal cable (flexible)	φ14	26*0.5mm ²	1
④	Power line (common)	φ11	4*6mm ² +2*1mm ²	1
⑤	Encoder (common)	φ6	17*0.2plug through φ40	1
⑥	Signal cable (common)	φ14	26*0.5mm ²	1
⑦	Main power inlet line 3	φ30	3*25mm ² +2*16mm ²	1



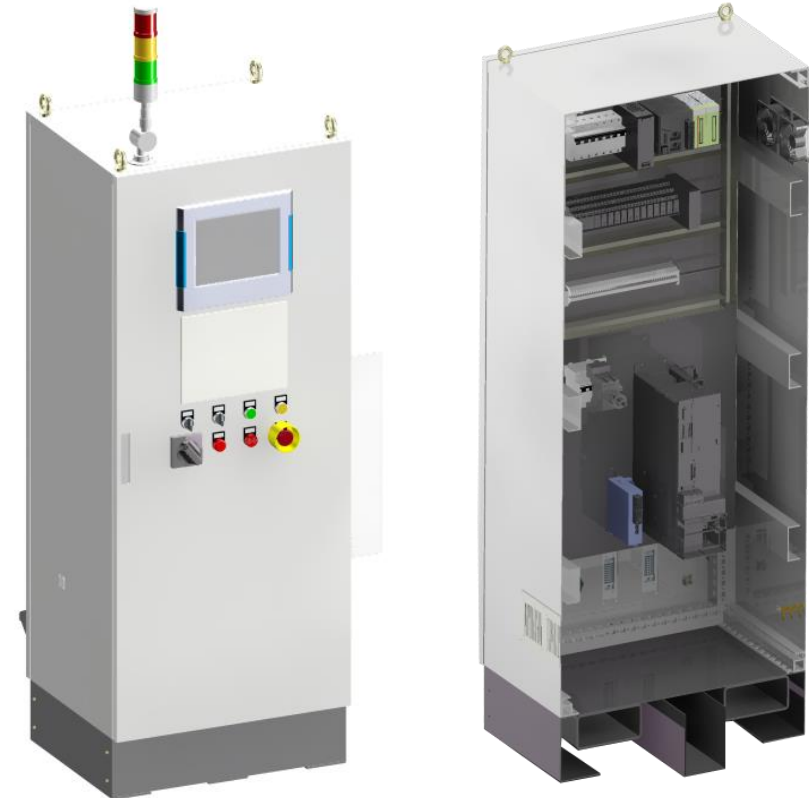
Note: The robot and the dress package of 1~3 and 7 are provided by the customer.

Servo Motor-driven Clinching System----ZM6

Electric Control System

ZM6-080-XXX-D0 Controller

The control cabinet is well suited for the installation of electrical components for robotic riveting systems. Internal expansion is possible according to different customer needs, with maximum load capacity and structured cable management for all-round applications. The standard type of extraction and suction vents are used for temperature control inside the cabinet.



Servo Motor-driven Clinching System----ZM6

HRC-670 Monitor

HRC-670 monitor can be used for real-time monitoring of riveting, press-fitting, assembly, spring testing and other processes, and form the correlation curve of force, displacement and time to detect and evaluate the production quality or production steps, which can ensure the quality of assembly and achieve defect-free production and assembly parts process. Widely used in the following production tasks:

- Clinching
- FSPR/SPR
- Press fitting
- Spring testing
- Fatigue testing



Servo Motor-driven Clinching System----ZM6

Measurement interface

The HRC-670 operating interface is user-friendly, simple to operate and easy to use:

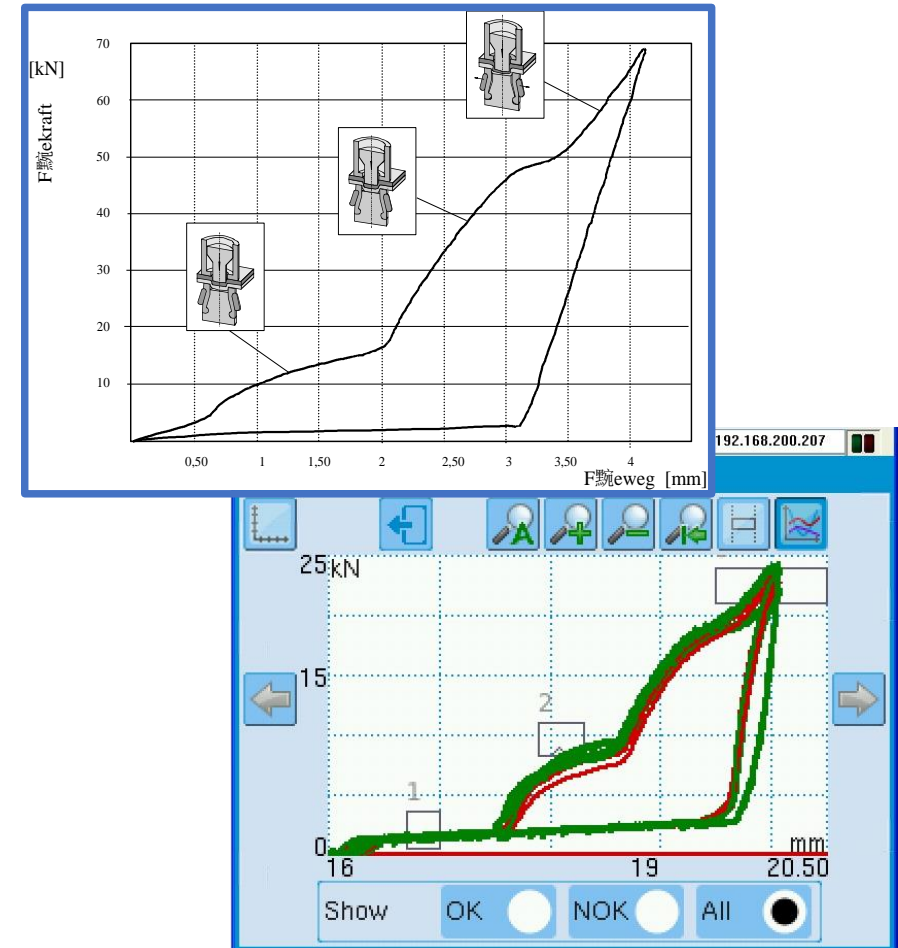
- Main interface
- Signal light page
- History curve page
- Real-time data page
-



Servo Motor-driven Clinching System----ZM6

Function of the Clinching Monitor

The appliance **HRC-670** serves to monitor the force/distance progression of pressing processes. For this purpose, the appliance reads force/distance data pairs from two measuring channels 'X' and 'Y' during measuring operation. The data are recorded in a memory and can be graphically displayed. The resulting force/distance function is compared with the preset limit data of the set window resp. envelope values. If the limit data are observed, an IO message will be emitted. Otherwise a NIO message will be emitted.



Our Customers



COOPERATIVE PARTNER

Heron's products have been widely used in the automotive industry for many years. And we have long-term stable cooperation with the customers in more than ten countries around the world, with mature technology and rich experience.

<p>AUTOMOTIVE INDUSTRY</p>							比亚迪汽车 BYD 比亚迪汽车			广汽集团 GAG GROUP	CHERY		五菱汽车
							东风汽车	Mercedes-Benz	福田汽车 FODAY AUTO	DAEWOO BUS	JMC 江铃汽车		
<p>AUTO PARTS INDUSTRY</p>							一汽解放汽车	北京汽车 BAIC MOTOR	众泰汽车 ZOTYE AUTO	广汽日野	FOTON 福田汽车		
							东风柳汽	mazda 一汽轿车	小鹏汽车	长城汽车			
延锋江森 Yancheng Jiangsen Controls	faurecia	SUSPA	LEAR CORPORATION	Webasto Feel the drive	交通集团	Hapm							
inalfa roof systems	INTIER Automotive	豪斯特	Gestamp	MINTH									
Valeo 法雷奥	华域汽车 HUAYU AUTOMOTIVE SYSTEMS	BENTELER	MAGNA										

Classic Case

Buick Verano



Buick LaCrosse



Cadillac XTS



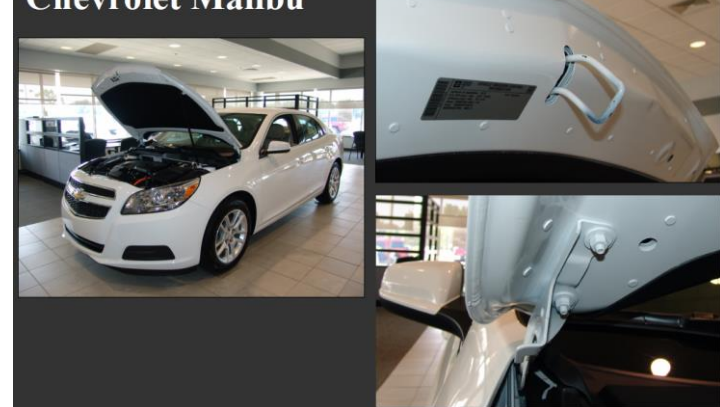
Cadillac CTS



Chevrolet Sonic



Chevrolet Malibu



Classic Case

Chevrolet Volt



Chevrolet Camaro



Chevrolet Traverse



Classic Case



Classic Case





HERON IS ALWAYS HERE FOR YOU !
PLS CONTACT US FOR MORE DETAIL!

HERON
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亨龙智能装备



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