

BEHLEN[®] JOINER



**A GLOBAL
SOLUTION FOR
JOINING METAL
COILS**

**SPECIALIZED HYDRAULIC
JOINERS**

Behlen Strip Joiners are designed with operational and maintenance simplicity in mind, providing you with a rugged, efficient joining machine at a lower cost than other joining methods.



WORLD-LEADING MANUFACTURER

Behlen Joiner is a proven quality leader in coil strip joining with over 900 joiners installed in over 59 countries worldwide.

Part of our quality commitment requires that every strip joiner is inspected and tested with similar material that the joiner will be seeing in your line before it is approved to leave Behlen Mfg. Co.

We strive to provide our customers with a consistent, high level of quality on every order. Quality is a way of life and must be built into every step of our operation. Our team is always working together to continually improve our systems and meet and exceed customer expectations.

Potential Uses of the Behlen Strip Joiner:

- Coil coating lines (paint, etc.)
- Annealing lines
- Tension - leveler lines
- Slitting lines
- Scrub lines (cleaning lines)
- Pickling lines
- Galvanizing lines
- Plating lines
- Other processing lines (blanking, polishing, etc.)

CHOOSING A STRIP JOINER

Factors That Affect Joiner Design:

- Material width: Minimum and maximum widths to be joined
- Material thickness: Minimum and maximum range of material thickness
- Material maximum ultimate tensile strength
- Maximum & minimum range of yield strength
- Material type
- Line tension: Maximum line tensions
- Line tension available to shift and lock the joint
- Type of line
- Annealing temperatures, if applicable
- Time allowed for splicing operation
- Passline height

Advantages of the Behlen Strip Joiner Compared to a Welder:

- Lower initial cost (1/3 or less than the cost of a welder)
- Less maintenance costs
- Lower costs for replacement parts
- Lower operating costs - welder requires more electricity and wire costs for wire welders
- Increased production due to shorter joining time and less maintenance time
- Wider range of thicknesses and types of metals to be joined
- Joins dissimilar materials

Advantages of the Behlen Strip Joiner Compared to a Stapler:

- Lower operating costs - no expense of purchasing staples
- No foreign material in the scrap to hinder recycling
- Increased production due to shorter joining time
- Less maintenance is required
- Stapler is limited to only the lower thickness ranges of materials



VALVE OPERATED JOINER

Single motor and pump with valves to operate the joiner

Hydraulic valve circuit has three settings

- Loop setting - oil is circulated from reservoir through the pump and back to reservoir
- Close setting - oil is directed to the cylinders to close the joiner/die
- Open setting - oil is pumped out of the cylinders back to the reservoir to open the joiner/die

ADVANTAGES of the Valve Operated Joiner

- Electrical demands are reduced
 1. Inrush current during plug reversing is eliminated
 2. Amperage peaks are reduced
 3. Load to the motor starter is reduced
- A soft start can be used for the first few seconds of the cycle
- **Standard NEMA or IEC motors are used**
- Smaller breakers and line wires can be utilized
- The press can be jogged without adding stress to the motor
- A timer shuts the motor off a few seconds after the stitch is made, thereby reducing energy use
- A PLC interface is available



SUPPLY SIDE



PRESSURIZED SIDE



OPTIONAL REVERSE DRIVE JOINER

The simple robust drive that we have used for over 50 years! Only electric power is required to operate the Standard Joiner.

A single motor drives dual pumps to operate the joiner.

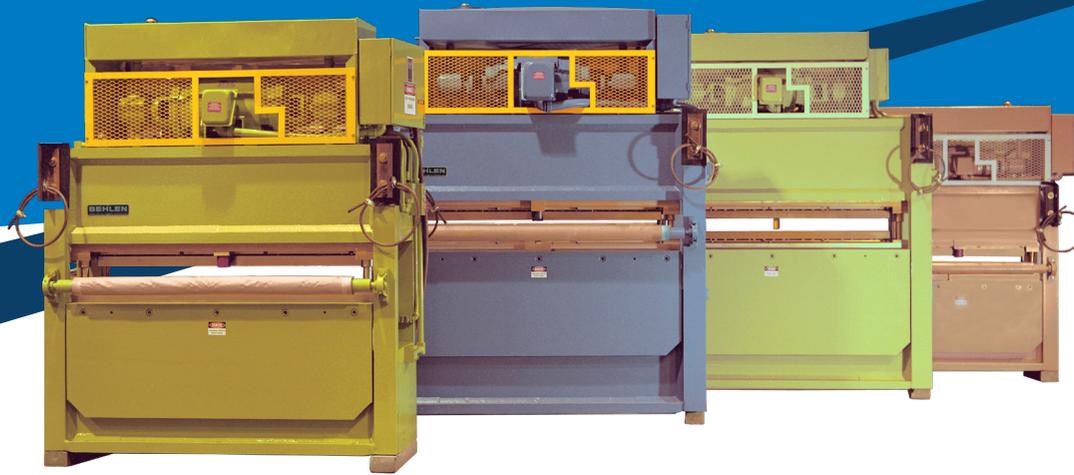
- When the stitching cycle is initiated, the motor drives pumps that pump oil into the cylinders and the die closes.
- Through precise position sensing, the electric motor is reversed and the pumps now pump oil out of the cylinders. This reverses the direction of the RAM opening the die.

ADVANTAGES of the Reverse Drive Joiner

- Simple time proven design
- The drive has very few basic parts; a motor and two pumps
- The motor only runs while the stitch is being made. The rest of the time it is off and consumes no energy
- The drive is easy to understand and operate
- A dual shaft NEMA motor is used
- A PLC interface is available



BEHLEN® JOINER



STRIP JOINER FEATURES

Reverse and Valve Drives

TWO DRIVE SYSTEMS AVAILABLE

A new valve operated drive that has reduced electrical demands and has more operational versatility (more detail in this brochure). Also our time proven standard drive that reverses the drive motor.

FAST STITCHING CYCLE

Coils are fastened in 4 to 15 seconds depending on model, power supply and die opening (2 3/4" (70 mm) standard or 4" (102 mm) option). Some larger joiners for heavy materials will have slightly longer cycle times.

WIDE RANGE OF MATERIAL THICKNESS WITH ONE MACHINE

Adjustable Depth Switch limits depth of penetration for various metal thicknesses ranging from

0.004" (0.1mm) to 0.313" (8mm)

IMPERIAL OR METRIC FASTENERS

Imperial fasteners is our standard, however, as a no cost option we will build your joiner with metric fasteners where it is possible. A few exclusive parts will still have imperial fasteners.

SELF-CONTAINED UNIT

The joiner comes complete with motor (drip proof or TEFC), reservoir, pumps, cylinders, controls and joining dies. No external hydraulic supply needed. Just anchor to floor and provide with electric power and shop air for valve drive.

COMPACT UNIT FITS EASILY INTO EXISTING LINES

Narrow width generally allows installation without rearranging existing line.

LONG LIFE DIE

Dies are precision machined with no internal moving parts.

NO CONTAMINATION BY FOREIGN MATERIALS

Stitch utilizes only the metal in your coil. Stitch section can easily be reprocessed.

LOCAL OR REMOTE OPERATION

Local two push buttons complete the stitching operation. Remote operation is by PLC interface control. The RAM is automatically reversed through RAM position sensing.

DURABLE INDUSTRIAL FINISH

Customer specifies the color(s). Allows for integration within current facility and safety code compliance.

EASY DIE REMOVAL

Die can be removed from either side or either end of the press. Quick die change kits are available to reduce change over time.

SIMPLE MAINTENANCE

Designed to give years of trouble-free service. The design of the strip joiner contains the best combination of function and reliability.

HIGH STRENGTH STITCH JOINT

No matter the thickness of material, a solid, durable stitch is made.

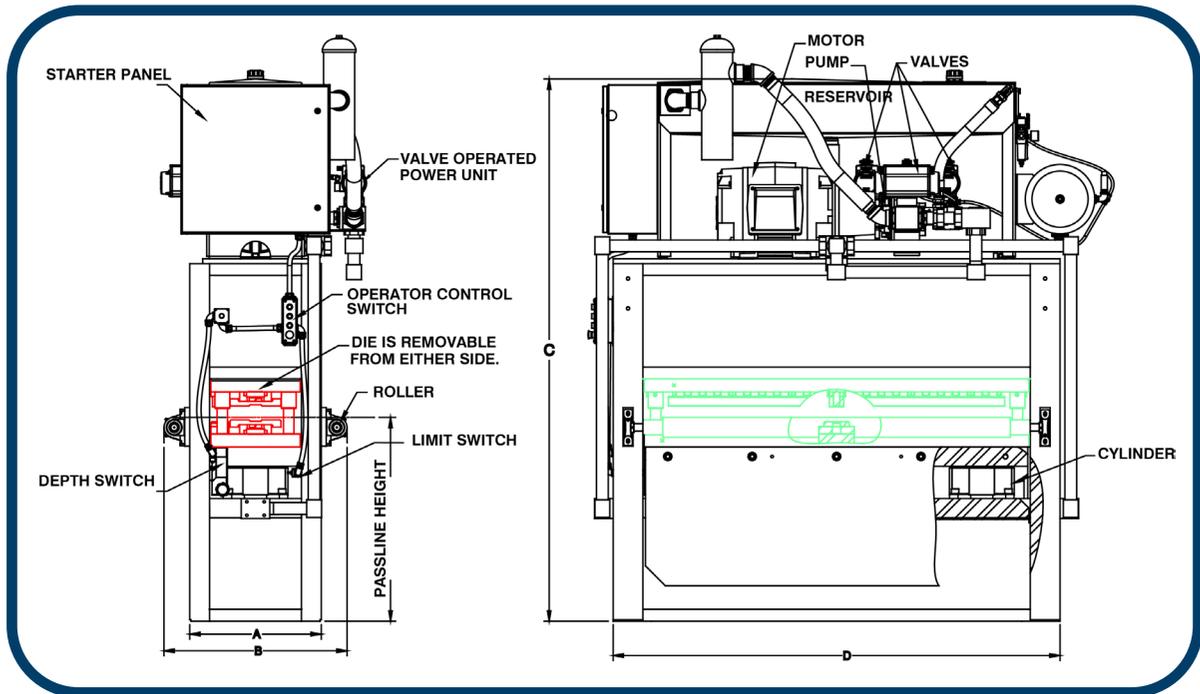
DESIGN INTEGRATION

Starter panel allows for integration into the process line controls.

OPTIONS

Splice detection hole punch, guide rollers, entry guides, exit tables, doors with safety interlock, slug chute and container, remote control, material clamps, lubrication system, air blow off system and die change roller bar.

GENERAL DIMENSIONS



Maximum Coil Width		GENERAL DIMENSIONS								Recommended Minimum Pass-line Ht.	
		A		B		C		D			
in	mm	in	mm	in	mm	in	mm	in	mm	in	mm
18	457	26	660	35	889	79	2007	38	965	30	762
24	610	26	660	35	889	84	2134	44	1118	33	838
30	762	26	660	35	889	86	2184	50	1270	33	838
36	914	26	660	35	889	91	2311	58	1437	35	889
42	1067	26	660	35	889	92	2337	64	1626	36	914
48	1219	26	660	35	889	96	2438	70	1778	38	965
54	1372	26	660	35	889	98	2489	76	1930	39	990
60	1524	26	660	35	889	100	2540	82	2083	40	1016
66	1676	28	711	37	940	102	2591	90	2286	41	1041
72	1829	28	711	37	940	106	2692	96	2438	43	1092
78	1981	28	711	40	1016	114	2896	102	2591	46	1168
84	2134	28	711	40	1016	118	2997	108	2743	48	1219
90	2286	28	711	40	1016	122	3100	114	2896	50	1270
96	2439	28	711	40	1016	126	3200	120	3048	52	1321
102	2591	28.5	724	42	1069	129	3277	128	3251	54	1372
108	2743	28.5	724	42	1069	129	3227	134	3404	56	1422
114	2896	28.5	724	42	1069	131	3327	140	3556	58	1473
120	3048	38	978	52	1321	158	4013	128	3251	62	1575

JOINER FEATURE OPTIONS

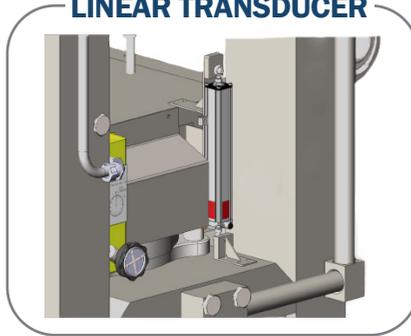
**NEW
PRODUCT**

PLC CONTROL



**NEW
PRODUCT**

LINEAR TRANSDUCER



REMOTE CONTROL

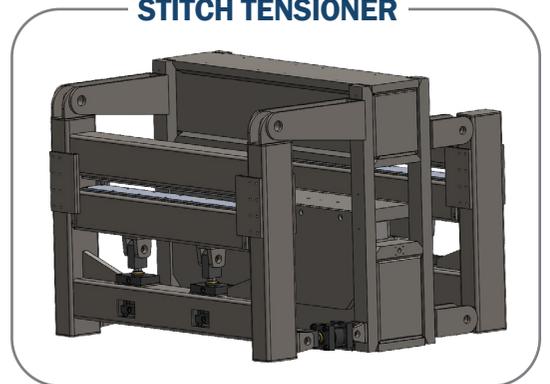


REMOTE POWER UNIT



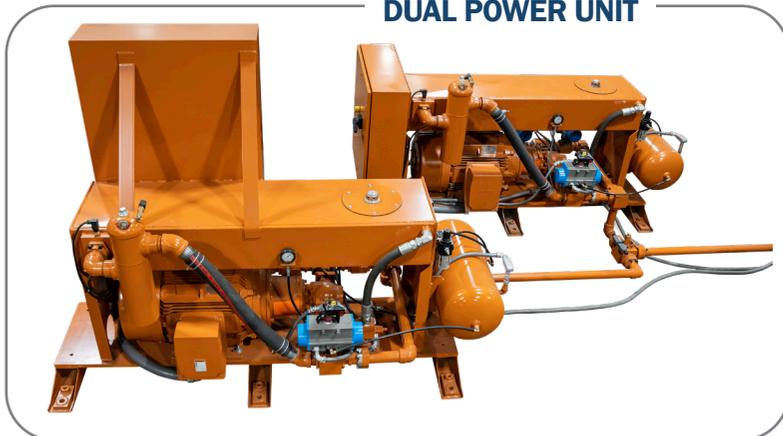
**NEW
PRODUCT**

STITCH TENSIONER



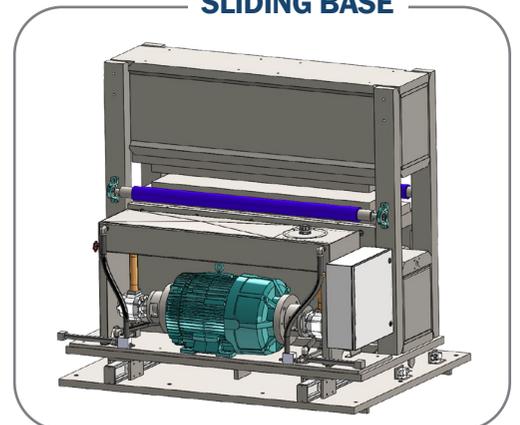
**NEW
PRODUCT**

DUAL POWER UNIT



**NEW
PRODUCT**

SLIDING BASE

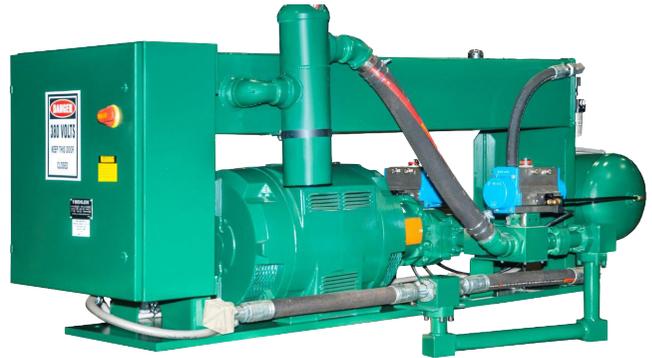


MATERIAL CLAMPS

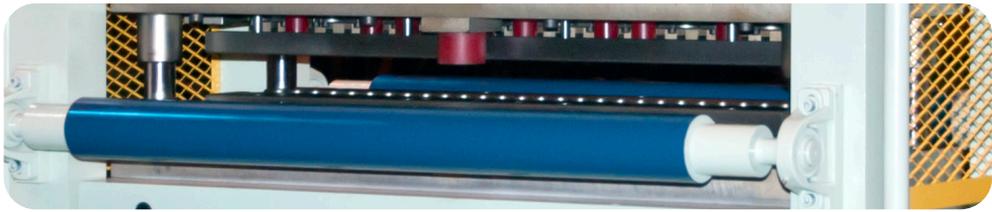


**NEW
PRODUCT**

VALVE DRIVE CONVERSION



ROLLERS



SIDE ACCESS DOORS WITH SAFETY INTERLOCK



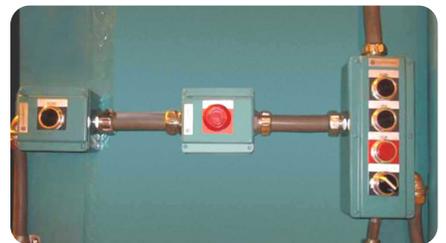
SLUG CHUTE & CONTAINER



SPARE POWER UNIT



EMERGENCY STOP



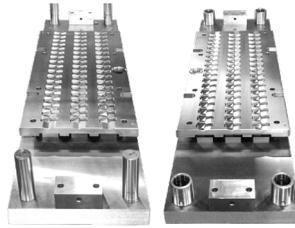
DIE FEATURE OPTIONS

DOUBLE ROW DIE



**NEW
PRODUCT**

TRIPLE ROW DIE



**NEW
PRODUCT**

DIE CHANGE ROLLER BAR



SPARE DIE



**NEW
PRODUCT**

DIE CHANGE TABLE



ENTRY GUIDE & EXIT TABLES

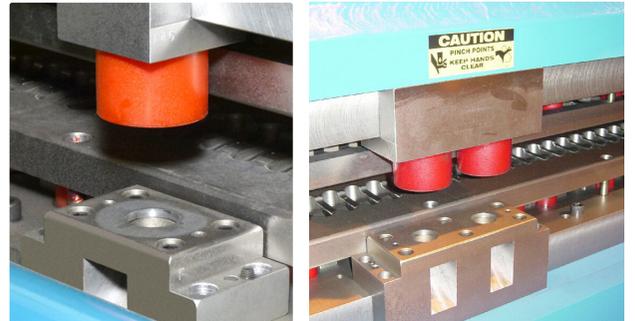


**NEW
PRODUCT**

LUBRICATION SYSTEM



SPLICE DETECTION HOLE PUNCH

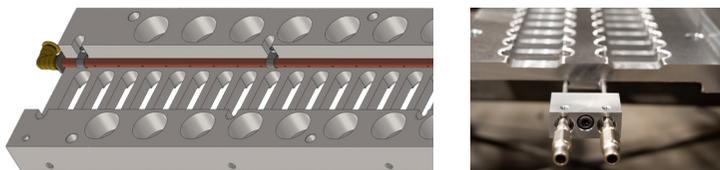


ONE HOLE PUNCH

TWO HOLE PUNCH

**NEW
PRODUCT**

AIR BLOWOFF SYSTEM



AVAILABLE WITH

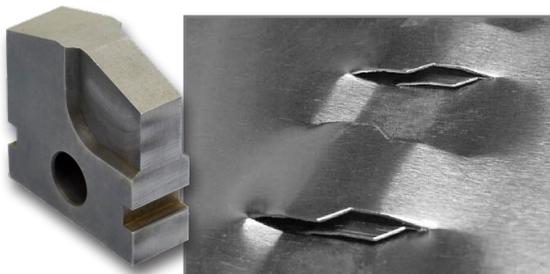
- Single Row Dies
- Double Row Dies
- Triple Row Dies

PUNCH DESIGN OPTIONS

Self-locking Arrow (AP) Design - Single and Double Row Models Available

Tension must be applied after making the stitch in order to shift and lock the stitch, it will lock only in one direction. Therefore, with this design the leading edge must always be on top or always be on bottom in order to work.

Ideal for operations which are joining a wide range of materials. It can join thin materials with reduced risk of tabs breaking off of the strip. It can join materials up to .250" thick.

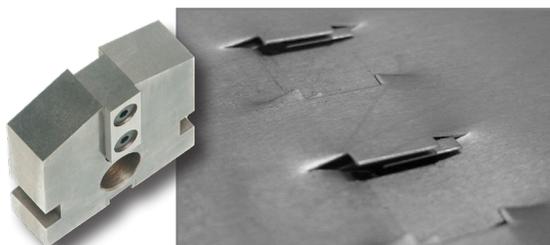


This style of stitch has four point locking, providing approximately twice the strength of the standard design.

Self-locking Standard (WR) Design - Single and Double Row Models Available

Tension must be applied after making the stitch in order to shift and lock it into position and prevent the material from coming apart. The stitch will lock if pulled from either direction.

Ideal for operations joining materials up to .1" (2.5mm) where the extra strength of the arrow design is not needed.



This style of stitch has two point locking. The stitch will lock if pulled from either direction. Providing approximately twice the strength of the standard design.

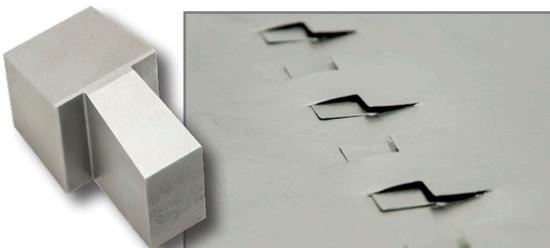
Straight Sided Design - Single and Double Row Models Available

This design is not self-locking and requires that a precut strip or rod be inserted through the row of stitches to obtain a holding stitch.



Tapered "T" Design - Single and Double Row Models Available

The TTPSJ Tapered "T" punch has tapered sides to reduce the amount of scuffing and fines made during the shifting and locking of the stitch. It also has large engagement areas on the upper part of the T configuration. Larger overlap when the stitch is fully shifted is ideal for thin soft materials. The larger overlap resists bending and pulling apart when being wrapped around rollers.





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P 402-564-3111
F 402-563-7405



P.O. BOX 569
COLUMBUS, NE 68602-0569



www.behlenjoiner.com
✉ presses@behlenmfg.com

