



BB/BH SERIES

P R E S S B R A K E S



ABOUT *MC Machinery Systems*



Metalworking Success Is One Partnership Away

MC Machinery Systems customers get the best of both worlds: A single source for a diverse arsenal of manufacturing technologies and our expansive and knowledgeable support network. Our expertise spans virtually every aspect of metalworking—from simple fabrication to sophisticated, automated manufacturing cells. But it isn't just the breadth of technology—laser, EDM, additive, milling and press brake—that will bring your business to the next level; it's our ability to identify, implement and support the right combination of those technologies.

A World Of Experience

As part of the Mitsubishi Corporation, MC Machinery Systems draws from an extensive source of support and innovation. Mitsubishi Corporation employs more than 60,000 people around the world, across a wide spectrum of industries including machine tools and controls, automotive, aerospace, industrial machinery, elevator, energy, metals, chemical, food and textile. This diversity, strength and stability trickles down to MC Machinery Systems customers—who benefit from Mitsubishi's massive global R&D efforts and widespread knowledge base. To learn more about Mitsubishi Corporation, visit www.mitsubishicorp.com.



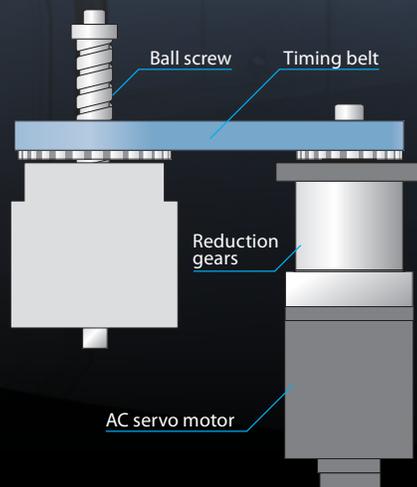
MC MACHINERY
SYSTEMS, INC.

a subsidiary of  Mitsubishi Corporation

BB SERIES *Advantages*

- High accuracy (1 micron)
- Intuitive control
- Highly reliable / High uptime
- Cost efficient operation
- World class productivity
- Ecological (all electric/oil less)

The BB Series ball screw press brake is driven by an AC Servo motor and ball screw drive mechanism. It reaches high productivity with high-speed ram and high precision repeatability ± 1 micron (± 0.001 mm). This drive method is superior in environmental performance by being oil less and quiet in operation. When you need accuracy every time you can count on the BB Series!



Ball Screw Drive Mechanism

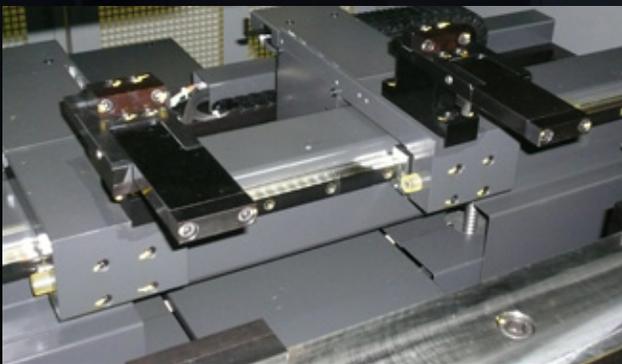
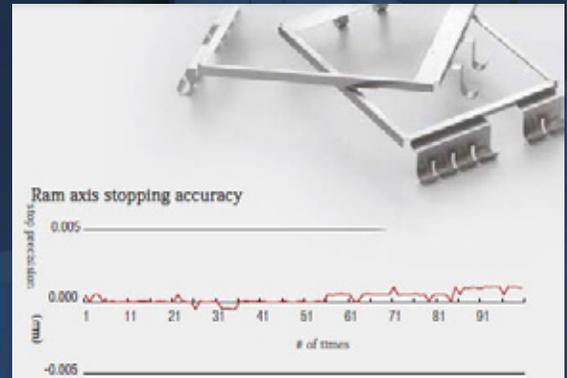
- High-speed movement by the ball screw drive
- Stable high repeating accuracy by the ball screw drive
- Environmental performance
(oil less and noise reduction by the reducer)

All Electric

The BB Series brakes are designed with a broad spectrum of ultra-modern features, high performance requirements, accuracy you can measure and a cost efficient operation our customers have come to expect in today's modern production machinery.

- High speed ram stroke by AC Servo motor and ball screw drive for fast approach, bending, and return speeds
- High quality stop accuracy by AC servo motor and ball screw for unequalled ram positioning ± 1 micron ($\pm .001$ mm)
- Environmental performance (oil less and noise reduction by reducer)
- Single AC servo motor per ram axis provides faster cycle times resulting in more parts per hour.

Accuracy you can measure.



Back Gauge

- 5 axis back gauge handles complex parts with ease
- High speed movement combined with high accuracy drives ($+ .01$ mm) ensures the back gauge is positioned quickly and precisely every time for the operator
- Low profile back gauge enables part positioning on top of the back gauge
- Independent servo drive (FF axis) allows for bending a wide variety of part shapes



BB SERIES *Specifications*



			BB4013	BB6013	BB6020
Press Force		Kn	353	539	539
		ton	36	55	55
Bending Length		mm	1260	1300	2100
Table Length		mm	1400	1300	2100
Distance Between Frames		mm	1300	900	1700
Table Width		mm	100	100	100
Open Height		mm	280	280	280
Table Height		mm	900	900	900
Machine Depth		mm	1120	1360	1360
Gap Depth		mm	100	400	400
Height From Floor		mm	2380	2610	2610
Ram Stroke		mm	150	150	150
Total Depth		mm	1850	2065	2127
Safety Door Depth		mm	620	797	905
Total Width		mm	1660	2745	3566
Control Panel Turn Area		mm	1150	878	1142
Ram Speed	Approach	mm/sec	100	95	95
	Bending	mm/sec	20	20	20
	Return	mm/sec	100	95	95
Power Requirement		kVA	15	20	20
Weight		ton	3.5	4.5	5

BH SERIES *Advantages*

- High accuracy (1 micron)
- Intuitive control
- High uptime / highly reliable
- Cost efficient operation
- World class productivity
- Cutting edge Dual Drive system



The BH Series offers a newly developed Dual Drive System with improvements in productivity, high stop accuracy, and energy savings over conventional and other hybrid servo press brakes. This new technology allows high speed movement of the ram at 200 mm/s with stable repeat stop accuracy. The proprietary technology controls high speed movement of the ram separately by servo motor ball screw and servo hydraulic pressure for bending. This new system stores energy from downward motion and returns it during upward motion which results in superior energy savings and faster cycle times. This results in machine uptime, reduced operational cost, and ease of operation for our customers, part after part, year after year!

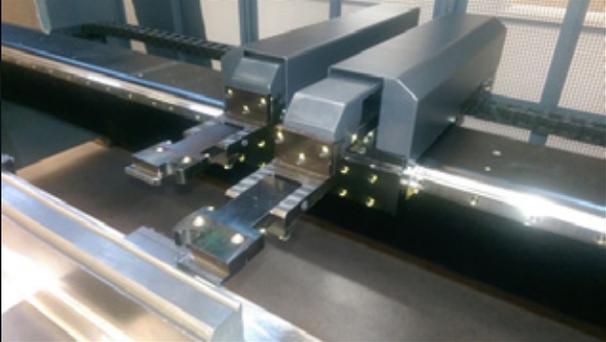
ICU Crowning System

The Ideal Curve Crowning System is created by conducting FEM analysis of the frame in pursuit of the ideal correction curve with respect to crowning which becomes a problem for press brakes. Simple and fine adjustment is enabled with use of a mono-axial curving wedge. Automatic crowning adjustment is made quickly for each bending step without stress.

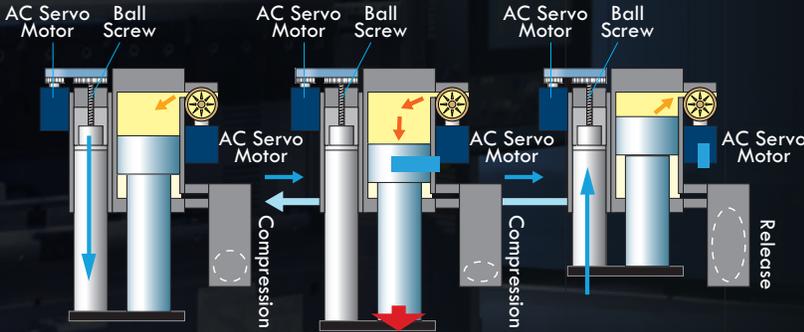
- Hydraulic assisted crowning bed design automatically provides consistent angular accuracy.
- Combining the angular accuracy from the crowning system with Automatic thickness detection through PSP and CP detection angular irregularities are minimized due to material thickness and off center bending.
- Easily program complete work flow in one handling thru staged tool setups anywhere along the bed.

Multiple Axis Back Gauge

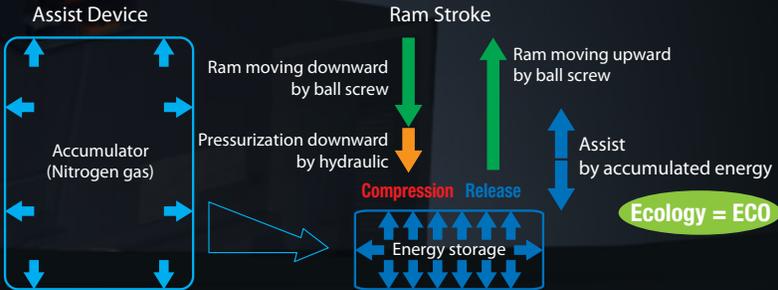
- With up to 9-axis available, the most complex parts can be easily formed.
- High speed movement combined with high accuracy drives (± 0.01 mm) ensures the back gauge is positioned quickly and precisely every time for the operator
- Low profile back gauge enables part positioning on top of the back gauge
- Independent servo drives for “Y” axis allow for tapered flanges
- Dual servo drive (FF axis) allows for bending a wide variety of part shapes



Dual Drive Technology



- High speed ram stroke with AC servo motor and ball screw drive for extreme approach, bending, and return speeds
- High quality stop accuracy by servo hydraulic mechanism for unequalled ram positioning ± 1 micron (± 0.001 mm)
- Ecology operation by assist device, less hydraulic oil with fewer oil changes required, and very low noise level in stand by and production.
- Lowest power consumption in its class – hydraulic pump motors are on only when the ram is moving for on demand power.



BH SERIES *Specifications*



		BH8525	BH13530	BH18530	BH18540	BH25030	BH25040
Press Force	Kn	833	1323	1813	1813	2450	2450
	ton	85	135	185	185	250	250
Bending Length	mm	2600	3100	3100	4100	3100	4100
Table Length	mm	2700	3200	3200	4200	3200	4200
Distance Between Frames	mm	2200	2700	2700	3700	2700	3700
Table Width	mm	170	170	170	210	210	210
Open Height	mm	380	380	380	380	380	380
Table Height	mm	900	900	900	900	900	900
Machine Depth	mm	1375	1460	1585	1610	1710	1710
Gap Depth	mm	400	400	400	400	400	400
Height From Floor	mm	2712	2730	2975	3130	3100	3230
Ram Stroke	mm	250	250	250	250	250	250
Total Depth	mm	2165	2315	2348	2348	2440	2440
Safety Door Depth	mm	800	800	765	765	760	760
Total Width	mm	3000	3500	3730	4730	3820	4820
Control Panel Turn Area	mm	1230	1200	1010	1010	990	990
Ram Speed	Approach	mm/sec	200	200	200	200	200
	Bending	mm/sec	10	10	10	10	10
	Return	mm/sec	200	200	200	200	200
Power Requirement	kVA	9	12	22	22	27	27
Weight	ton	7	8.9	16	20	17.5	22

CONTROL *BB & BH Series*



MNC 5000 is optimized for every operation

- Touch Screen LCD with user friendly programming features
- Intuitive screen layouts
- Workpiece information directly from program list (Took, 2D, 3D, & Memo)
- Work efficiency analysis
- Automatic Thickness Sensing

3D Part Simulation



Program List



Tool Setup



Direct Input



Guidance



2D Cross Section



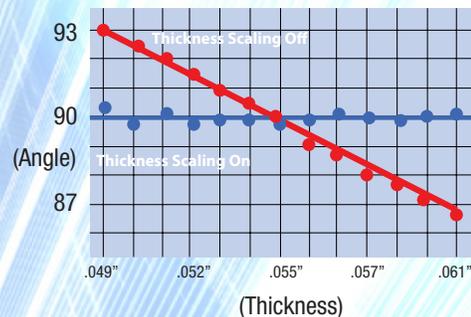
Operation Analysis



Automatic Thickness Sensing (PSP) for optimal angular repeatability

- Variances in sheet thickness create extreme fluctuations in bend quality
- PSP automatically keeps thickness variances of up to 15% to within ± 0.5 (well below ASTM allowable mill tolerances)
- PSP function can be turned off
- When activated, adds less than 0.2 seconds to bend cycle.

With integrated functions as PSP and CP detection on every machine the BB/BH machines can suppress the variation range of angles found on the shop floor.



OPTIONS *BB & BH Series*

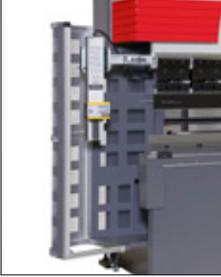
BB Options

Small Punch Holder



Available in Manual or Universal in 150mm, 100mm, or 50mm Widths.

Interlocked Side Gate



Available for all BB models

Sheet Support



Available for all BB models w/o scale (shown) & with scale

Punch Holder



200mm Widths for Manual, One Touch, Universal, or American

FF axis



Available for all BB Models w/±100mm stroke

BB Table



Available for all BB Models

BH Options

Small Punch Holder



Available in Manual or Universal in 150mm, 100mm, or 50mm widths

Punch Holder



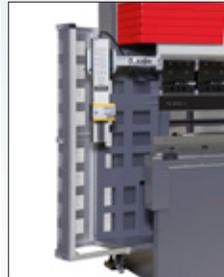
200mm Widths for Manual, One Touch, Universal, or American.

Movable Foot Pedal



Available for all BH Models

Interlocked Side Gate



Available for all BH Models

Tandem Foot Pedal



Available for all BH Models

Sheet Follower



Available for all BH models Magnetic, Vacuum, Caster or Rail

FF axis



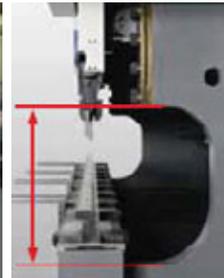
Available for all BH models 2 axis w/ 200mm stroke

Sheet Support



Available for all BH models w/o scale (shown) & with scale

Open Height Increase



Available for all BH models for 100mm & 200mm

Additional Options

- Clamp Spacer
- Punch Holder Extension
- Remote pulse handle
- Bar Code Reader
- Finger Tip Styles (Flat tip, Step Tip, Magnetic Tip, Crab Claw, Touch Sensor)

RADAN *Offline Programming and Simulation*

Radbend from Radan is the comprehensive offline programming solution for Press Brakes. Completely integrated with Radan 3D, it also provides a full 3D simulation of the bending process.

Offline Programming

Radbend enables full, accurate 3D-model simulation of the bending process, including advanced features such as automatic bend sequence calculation, automatic tool selection and automatic fingerstop placement, offering simple programming and high productivity.

The ability to program and verify bending operations offline frees up valuable machine time and improves first-off reliability, reducing manufacturing costs. Radbend also eliminates costly mistakes with automatic detection of collisions with both tooling and the machine tool itself.

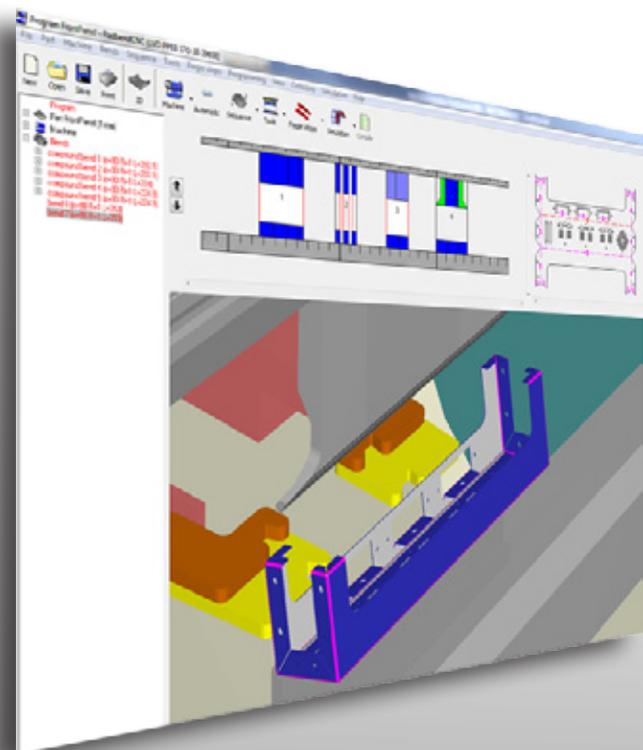
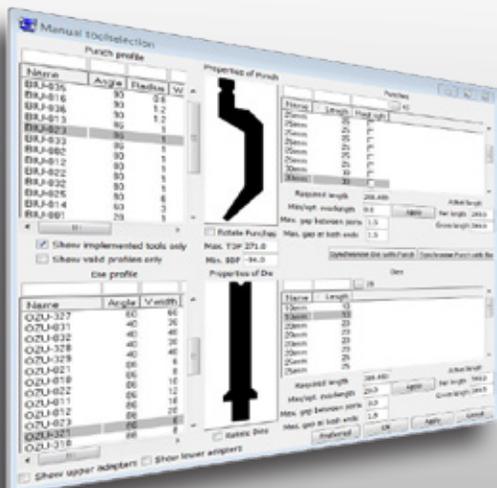
Radbend is available to provide offline programming and simulation of a wide variety of press brake machinery. Radbend can create full shop floor documentation in print form or a file for viewing on a shop floor viewer and DNC system ensuring access to only controlled data from production office through to shop floor resulting in a 'right first time' manufacturing approach.

Highly Automated

Radbend features high levels of automation. The system examines the part to be programmed and automatically determines a bending sequence taking into account part geometry and best machinery practice.

In addition, fingerstop positions are set automatically to provide reliable positioning.

Radbend's tooling library can incorporate a tooling manufacturer's complete inventory, enabling nonstandard tools to be tested and proven on new products before purchase.

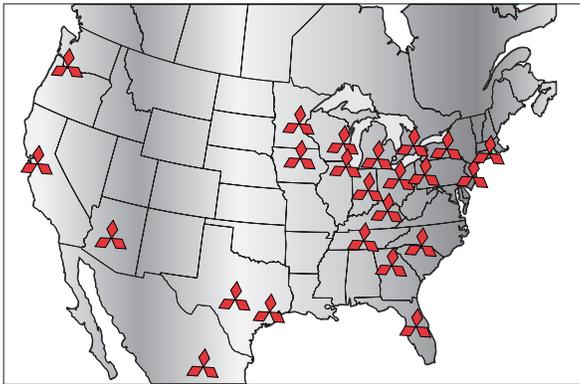


OUTSTANDING *Service and Support*

When you choose a Press Brake from MC Machinery Systems, Inc., you get industry-leading technology for peak bending performance - but that's just the beginning.

Long before your purchase, you'll know the difference the Mitsubishi Experience can make. Our field service managers and applications engineers have technical expertise and industry-specific knowledge, combined with MC Machinery's wide array of machine tools and modular automation options. This potent combination gives the flexibility to deliver a custom system designed to make your business its most efficient and competitive.

From installation and on-site training to support and service to keep you running at peak performance throughout the life of your system, our national service network is just a phone call away. No other company has greater depth of experience and resources than Mitsubishi and MC Machinery Systems Inc.



MAC Funding Corporation

Get The Financial Backing To Invest In The Future

Bank financing can deplete your available line of credit. With our captive financing arm, MAC Funding, you are financed and backed directly by Mitsubishi with some of the most competitive rates and packages in the equipment finance industry. We offer flexible financing packages structured to accommodate your business needs.

- One-stop financing
- Low interest rates
- Flexible payment schedule



**MC MACHINERY
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All machines in this brochure may be pictured with optional equipment.