



THE MINSTER MACHINE COMPANY



HB

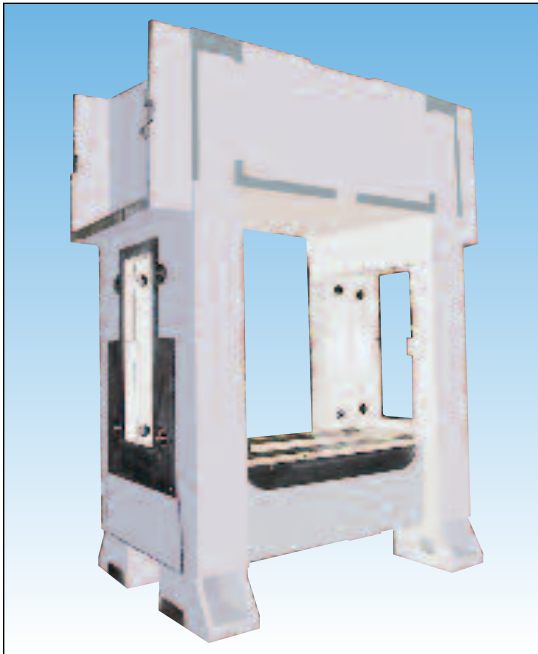
HUMMINGBIRD

60 & 80 TONS CAPACITY



HB Series Presses

TECHNOLOGICALLY ADVANCED TO PROVIDE
GREATER FLEXIBILITY AND INCREASED PRODUCTION



STANDARD FEATURES

Speed and Precision.

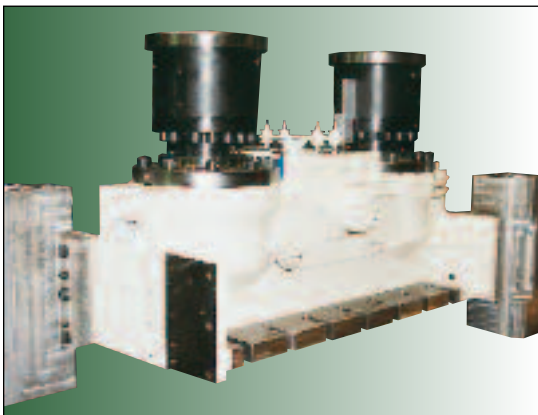
Minster *Hummingbird* presses provide consistent accuracy automated high speed blanking. The 80 metric ton machine is capable of 1000 SPM with a stroke length of 25mm making the *Hummingbird* the fastest machine of its type in this tonnage range.

One-Piece Cast Frame.

The *Hummingbird* frame is of class 40 grade cast iron. Minster's construction provides the compressive strength and vibration dampening that provides greater die life and part accuracy.

Heavy Duty Bed for Stability and Precision.

The massive bed of the *Hummingbird* press has a maximum deflection of .001" per foot increasing die life and improving part quality.



Heavy Drive Connection and Rigid Slide.

The *Hummingbird* slide is designed to minimize deflection under full loading. The high strength 1045 steel connections and pistons are made specifically for high speed blanking. This feature, designed to handle snap-through forces equal to 50% tonnage rating of the press, reduces punch penetration and promotes die life.

Flywheel Drive Arrangement for Maximum Press Efficiency.

The *Hummingbird* series are flywheel type presses to provide higher speeds for punching, notching and blanking operations. Minster's patented combination hydraulic clutch and brake produces the maximum torque possible providing for faster starting and stopping, resulting in increased production. A segmented drive disc design provides easy maintenance. In addition, Minster's clutch and brake unit requires no adjustment and years of maintenance-free operation, resulting in less downtime and higher production rates.



Dynamic Balancer System.

The dynamic balancing system on the *Hummingbird* greatly reduces the effect of the slide and tooling inertia forces caused by running at high speeds. This reciprocating balancer helps maintain precise slide bottom-dead-center repeatability resulting in less die wear and greater part accuracy.

FEATURES

Touch Screen Control.

Minster Full Function Production Management Control featuring:

- Programmable Limit Switch
- Clutch engagement hour meter
- Color touch screen operator interface
- Diagnostic capability
- Maintenance mode monitoring capability
- Production counter with batch capability
- Analog/digital stroke position indicator
- Control voltage 24 VDC where possible
- Tool ID storage
- Multiple language capability

Sealed Crown.

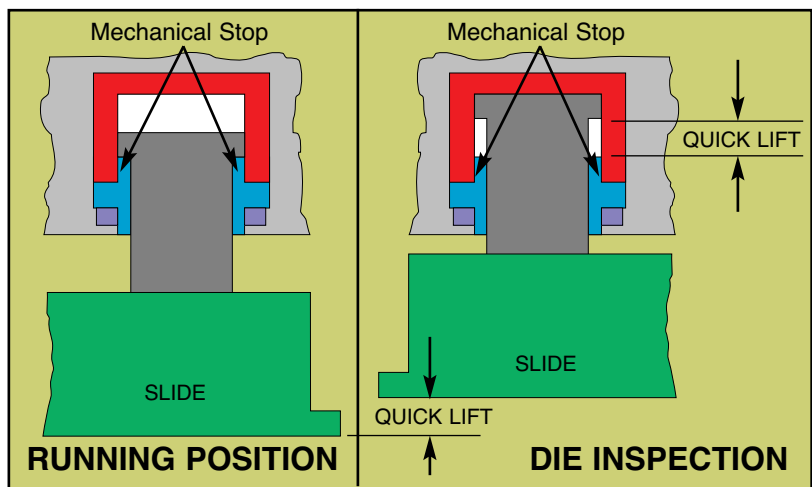
The design of the HB Series features a totally sealed crown and hydrostatic piston drive system. This helps keep contaminants out of the lube system, prevents oil loss and provides a cleaner work environment.

Thermal Control Package.

Minster's *Hummingbird* presses provide a Thermal Control Package consisting of an air/oil heat exchanger and preheating system. A thermostatically controlled heating system helps maintain the oil at a constant temperature, thereby reducing shutheight fluctuations.

Fully Hydrostatic Slide Guiding.

The *Hummingbird* is guided by four hydrostatic passline guide posts for accuracy and repeatability.



Hydraulic Quick-Lift.

Quick access to dies is provided by a hydraulic system which lifts the slide as much as 50mm. The hydraulic system returns the slide to the original shutheight position against a mechanical stop, maintaining tool settings. This feature enhances die accessibility and allows fast and easy unsticking from the bottom even with shorter strokes and higher speeds, thus contributing to greater production efficiency.

Also Included As Standard on Minster *Hummingbird* Presses:

- Powered Shutheight Adjustment with Electronic Readout.
- Cast Iron Bolster Plate with General Purpose T-Slots.
- Flywheel Brake.
- Four Vibration Mounts.
- Minster Full Function Pedestal Control.

OPTIONAL FEATURES

Infinitely Adjustable Stroke

Provides more flexibility and higher production due to the ability to produce either blanked/shallow formed parts or drawn/higher formed parts on the same press.

- No limit on stroke length within the range.
- Quick and simple pushbutton adjustment.
- Dial-in, or pushbutton stroke length via die number automatically sets stroke & shutheight for easy changeover.
- Provides power microinch mechanism for easier die set-up.
- Extremely accurate BDC repeatability & parallelism.

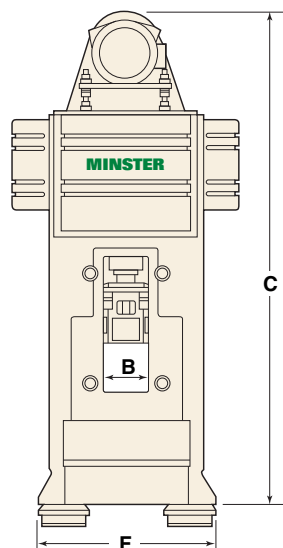
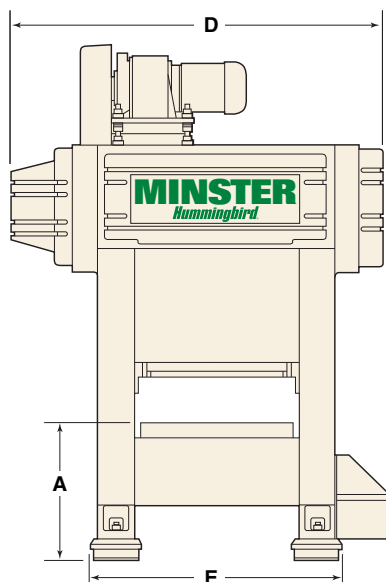
Adjustment-In-Motion.

Minster offers an Adjustment- In-Motion feature on *Hummingbird* presses. The A.I.M. allows the operator to make precise shutheight adjustments with just the touch of a button ... while the press is running. The operator can adjust the press for close tolerance parts without sacrificing production time.

- Load Monitoring.
- Remote Stroke Position Indicator.
- Quick-Die-Change Systems. • Feeds.
- Stock Lubrication. • Conveyors.
- Material Handling Systems. • Die Doors.

Specifications and Dimensions

Dimen.	PRESS SIZE	HB-60		HB-80		HB-60 SPM	HB-80 SPM
		English	Metric	English	Metric	Max.	Max.
	Tonnage	66	600 kN	90	800 kN		
	Stroke of Slide (Standards)	.98"	25 mm	.98"	25 mm	1000	1000
		1.18"	30 mm	1.18"	30 mm	900	900
		1.57"	40 mm	1.57"	40 mm	750	750
		1.97"	50 mm	1.97"	50 mm	650	650
	Stroke of Slide (Adjustable)	.59"	15 mm	.59"	15 mm	1000	1000
		.79"	20 mm	.79"	20 mm	900	900
		.98"	25 mm	.98"	25 mm	800	800
		1.18"	30 mm	1.18"	30 mm	750	750
		1.38"	35 mm	1.38"	35 mm	700	700
		1.57"	40 mm	1.57"	40 mm	650	650
		1.77"	45 mm	1.77"	45 mm	600	600
		1.97"	50 mm			550	
	Slide Adjustment	1.97"	50 mm	1.97"	50 mm		
	Shutheight on Bolster, S.D.A.U.	13.98"	355 mm	13.00"	330 mm	Varies According To Stroke Length	
	Shutheight on Bed, S.D.A.U.	19.00"	483 mm	18.29"	464,60 mm		
	Thickness of Bolster Plate	5.00"	127 mm	5.30"	134,60 mm		
	Area of Slide, R-L x F-B	43.30 x 18.90"	1100 x 480 mm	48.03 x 20.08"	1220 x 510 mm		
	Area of Bed, R-L x F-B	43.50 x 28.60"	1105 x 724 mm	48.50 x 28.00"	1232 x 711 mm		
	Area of Bolster, R-L x F-B	43.30 x 27.60"	1100 x 700 mm	48.03 x 27.56"	1220 x 700 mm		
	Bed Opening, R-L x F-B	37.00 x 10.00"	940 x 254 mm	44.00 x 11.00"	1117 x 280 mm		
A	Distance Floor to Top of Bed	33.0"	838 mm	33.0"	838 mm		
B	Upright Opening, F-B	15.0"	381 mm	15.0"	381 mm		
C	Approximate Overall Height	157"	3988 mm	160"	4070 mm		
D	Overall Width	116"	2946 mm	120"	3048 mm		
E x F	Area of Footprint, R-L x F-B	74.0 x 54.00"	1880 x 1371 mm	81.0 x 57.25"	2057 x 1454 mm		
	Strokes Per Minute @ 25 mm	125-1000	125-1000	125-1000	125-1000		
	Motor HP and Speed	40-1800	30 kW-1800	50-1800	37.5 kW-1800		
	Approximate Weight	38,000 Lbs.	17.263 kg	45,000 Lbs.	20.410 kg		



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