

Automatic Bolt Circle Drilling Machine

HEX TURRET OR SINGLE SPINDLE

The Cleereman Bolt Circle Drilling Machine is available as either a single spindle or hex turret drilling and/or tapping machine capable of machining bolt circles from 8" to 48" diameter. The large diameter spindle quill and box design spindle head assures maximum rigidity to the precision spindle.

The 36" rotary table and its programmable controller assures maximum support and positioning accuracy with up to 36,000 possible index positions. A rotary resolver feedback and electrical servo lock maintains rotary table position during the machining cycle.

Both machine and index table are automatic in operation, changeover from one bolt circle diameter to another or from one hole pattern to another can be achieved quickly, and tool alignment is constant.



For factory direct parts and service contact us at the address below.

Chas. G. Allen, Inc.
25 Williamsville Road
Barre, MA 01005
Tel: (978) 355-2911
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SPINDLE SPEED AND MOTOR CONTROL

HEX TURRET MACHINE

Spindle speeds are infinitely variable from 87 to 1750 RPM by means of a 20 to 1 adjustable frequency AC drive. The spindle speed is monitored and regulated via a tachometer feedback system. Each 1.375 ASA bore spindle is mounted in preloaded precision ball bearings.

SINGLE SPINDLE MACHINE

Spindle speeds are selected by pairs of speed pick-off gears and pairs of speed intermediate pick-off gears. (One pair of speed pick-off gears and one pair of speed intermediate pick-off gears are supplied as standard with the machine.) Each pair of speed pick-off gears may be transposed to obtain one of two different spindle speeds within a range (high or low). Two individual sets of speed intermediate pick-off gears select either high or low range.

The No. 5 Morse Taper spindle is mounted in preloaded precision ball bearings within the 4⁷/₁₆ inch diameter quill. The spindle shaft is alloy steel with 23 involute splines providing maximum bearing area in the drive bushing.

FEED TRANSMISSION

Feedrates and tap leads are determined by pairs of feed pick-off gears and one pair of feed intermediate pick-off gears. (One (1) pair of feed pick-off gears are supplied as standard with the machine.) Each pair of feed pick-off gears provide two (2) low range feedrates by transposing the feed pick-off gears, and two (2) high range feedrates by transposing the intermediate feed pick-off gears, and the feed pick-off gears. The high range feedrates include twenty-one (21) tap leads. The spindle rapid traverse is 160 IPM. An adjustable timer provides a spindle dwell at the end of the feed stroke. The dwell period is preset to one half second but can be altered to suit a specific operation. The dwell cycle is automatically eliminated in tapping operations.

BASIC OPTIONS

Speed and/or Feed Pick-Off Gears: Additional speed pick-off gears or feed pick-off gears can be supplied with the machine or ordered separately at any time. Gears are sold in pairs only.

Automatic Lubrication: The optional central automatic lubrication system replaces the standard wick feed oiling system which lubricates the spindle quill in the spindle head.

Coolant System: A self-contained flood coolant system, including pump, piping, motor and control J.I.C. Specifications can be supplied to deliver 21 GPM of water soluble coolant from the sump in the machine base to the work area below the spindle.

SPECIFICATIONS HEX TURRET

Spindle to Column	15"
Swing in Plane of Table	30"
Spindle to Table Minimum	12.75"
Spindle to Table Maximum	24"
Turret Head Travel	11.250"
Spindle Bore Size (ASA)	1.375"
Spindle Quill	4.438" Dia.
Rotary Table	36" Dia.
Linear Travel of Table	20"
Number of Index Positions	36,000
Least Programmable Increment	0.01°
Maximum Programmable Increment	360°
Index Accuracy	± 2.88 Sec.
Minimum Bolt Circle Diameter	8"
Maximum Bolt Circle Diameter	48"
Number of Spindle Speeds	Infinitely Variable
Spindle Speed Range	87-1750 RPM
Number of Spindle Quill Feeds	64
Spindle Quill Feed Range	.0029-.250 IPR
Available Tap Leads	36, 32, 28, 27, 24, 20, 18, 16, 14, 13, 12, 11½, 11, 10, 9, 8, 7, 6, 5, 4½, 4
Spindle Motor	7.5 H.P.
Thrust Capacity	5,000 lbs.
Floor Space (R to L x F to B)	36" x 117"
Height, Overall	102"
Shipping Weight	9,200 lbs.
Drilling Capacity, 250 BHN Medium Carbon Steel (4140, 4150, 4340 etc.)	1.625"

SPECIFICATIONS SINGLE SPINDLE

Spindle to Column	15"
Swing in Plane of Table	30"
Spindle to Table Minimum	6.75"
Spindle to Table Maximum	24"
Head Adjustment (3" increments)	6"
Spindle Travel	11.250"
Spindle Taper	No. 5, M.T.
Spindle Nose	3.125" Dia.
Spindle Quill	4.438" Dia.
Rotary Table	36" Dia.
Linear Travel of Table	20"
Number of Index Positions	36,000
Least Programmable Increment	0.01°
Maximum Programmable Increment	360°
Index Accuracy	± 2.88 Sec.
Minimum Bolt Circle Diameter	8"
Maximum Bolt Circle Diameter	48"
Number of Spindle Speeds	32
Spindle Speed Range	64-1740 RPM
Number of Spindle Quill Feeds	64
Spindle Quill Feed Range	.0029-.250 IPR
Available Tap Leads	36, 32, 28, 27, 24, 20, 18, 16, 14, 13, 12, 11½, 11, 10, 9, 8, 7, 6, 5, 4½, 4
Spindle Motor	15 H.P.
Thrust Capacity	7,000 lbs.
Floor Space (R to L x F to B)	36" x 117"
Height, Overall	102"
Shipping Weight	8,600 lbs.
Drilling Capacity, 250 BHN Medium Carbon Steel (4140, 4150, 4340 etc.)	2.250"

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