

# THE SOUTH BEND VERTICAL MILLING MACHINE

Whether big shop or little shop, you can afford a new South Bend Vertical Milling Machine, and you can't afford to be without one.

In the big shop there's no end to the mighty important smaller work that has to be done, but . . . ties up your large equipment and is costly to set-up and run.

South Bend's Vertical Mill can turn these jobs out in "apple pie" order, being easy to set-up, truly accurate and built to give you long years of service.

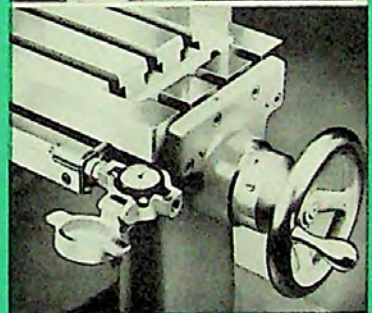
With many smaller shops, almost all your mill work can be handled by this one machine. Tooling, maintenance or production work . . . a South Bend Vertical Mill in your shop does them all.

Just plain good common sense used in designing, coupled with years of experience building Precision Machine Tools . . . every adjustment simplified and easy . . . with the same precision you've come to expect from South Bend . . . The South Bend Vertical Mill can be one of your best money-making investments.

Through worm and gear drive, head swivels 360°. The large locking flange is graduated in degrees and vernier scales attached to the stationary flange on ram gives extremely accurate head settings in any position.

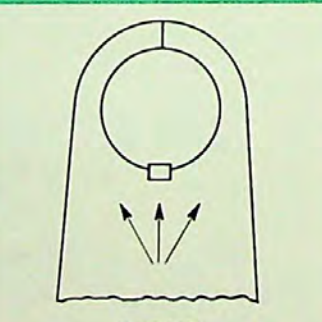
Positive action controls with large, easy to read graduated collars. Collars can be quickly adjusted. Wipers to clear cross feed ways and vertical ways are provided as standard equipment. Precision Measuring Bar Trays and Micrometer Dial Indicator Stop, as illustrated, available as extra equipment.

Built to do the job, with strong, easily accessible T-slots for any-position clamping of the work, the table has manual feed. Large, adjustable graduated collars at both right and left longitudinal controls give maximum ease and accuracy in operation. Measuring Bar Trays and Micrometer Dial Indicator Stop available as extra equipment.



**THIS IS THE  
OLD WRONG WAY**

Wrong design, absolutely no positive control of head setting due to the round overarm that can turn in its bearing. Head cannot be adjusted in and out for cross cut, without losing accuracy of setting, and there is always the possibility of overarm slipping!



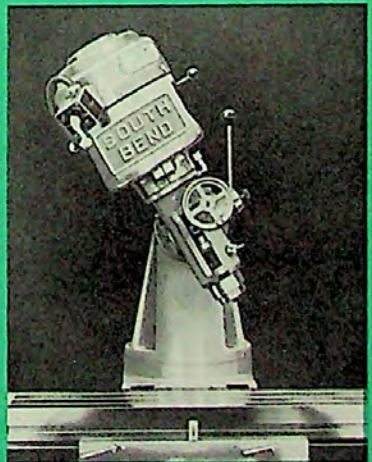
**RIGHT  
THIS IS SOUTH BEND'S WAY**

South Bend's way, the right way, takes the problem and solves it realistically. An overarm that cannot turn, with permanently fitted rack, gibbed to keep it accurate for years and years, plus the overall support of a round overarm. This type construction gives many times the bearing area for the ram, than what you get with the slim dovetail bearing. This means longer life and more machine for your money when you choose South Bend's Vertical Mill.



**THIS IS THE  
NEW WRONG WAY**

All wrong again! The dovetail overarm on a mill cannot give the working head enough support to be rough and tough and still maintain the accuracy that you must have. Slim lines of bearing area, or even pinpoints of set screws holding gibs in place, are taking all the wear and cannot possibly give you the long years of service that you have a right to expect from a vertical mill.



Head casting honed to a perfect fit to quill. Ram does not turn, therefore head can be moved in and out regardless of angle it may be set.



# The greatest milling machine value

for Toolroom, Production Shop, Tool & Die Shop!

Compare these features for proof...

of variety of jobs; lower set-up costs; more efficient production!

- 1 Eight spindle speeds, from 135 to 3750 R.P.M. or 90 to 2500 R.P.M.
- 2 Lo-Loss drive to spindle at all speeds, full utilization of H. P. at all times. Spindle driven by timing belt.
- 3 Dependable micrometer depth stop graduated in thousandths, and positive quill lock.
- 4 4" Quill travel. (Manual feed standard. Automatic feed available at extra cost on deferred delivery basis.)
- 5 Turnstile lever for rapid hand feed, disengages when worm and worm gear fine feed is used.
- 6 Collet capacity to  $\frac{3}{4}$ "—individual tool holders to 1" capacity.
- 7 Quill  $3\frac{1}{4}$ " diameter—ground and precision fitted to bored and honed head.
- 8 Head semi-steel casting honed to a perfect precision fit to quill—360° rotation of head by worm and gear.
- 9 Spindle hardened and ground alloy steel,  $1\frac{1}{4}$ "—10 spline drive—No. 30 milling machine taper and precision bearings. Face tapped to receive four  $\frac{3}{8}$ "-16 mounting screws.
- 10  $4\frac{1}{2}$ " diameter flanged ram with rack and permanently fitted pinion with tapered gib for easy, positive and accurate in-and-out movement of ram—this feature allows and increases the cross milling capacity and assures accurate movement for change in set-ups.
- 11 Rugged, heavy ribbed column, knee and table construction with wide dovetail ways and tapered gibs for maximum rigidity.
- 12 Precision anti-friction bearings throughout.
- 13 Alemite lubrication to all flat bearing surfaces. Oil reservoir for spindle lubrication.
- 14  $1\frac{1}{4}$ "—5-pitch Acme precision feed screws. All fitted with large, easy to read, graduated adjustable collar reading in thousandths.
- 15 Adjustable stops in "T" slot for regulating length of table travel.
- 16 Manual longitudinal and cross feeds to table are standard equipment. Power longitudinal feeds available at extra cost on deferred delivery basis.
- 17 Trays and precision measuring bars with dial indicator stops are available at extra cost.

Most important points to check about a milling machine —

versatility!

productivity!

price!

## Specifications

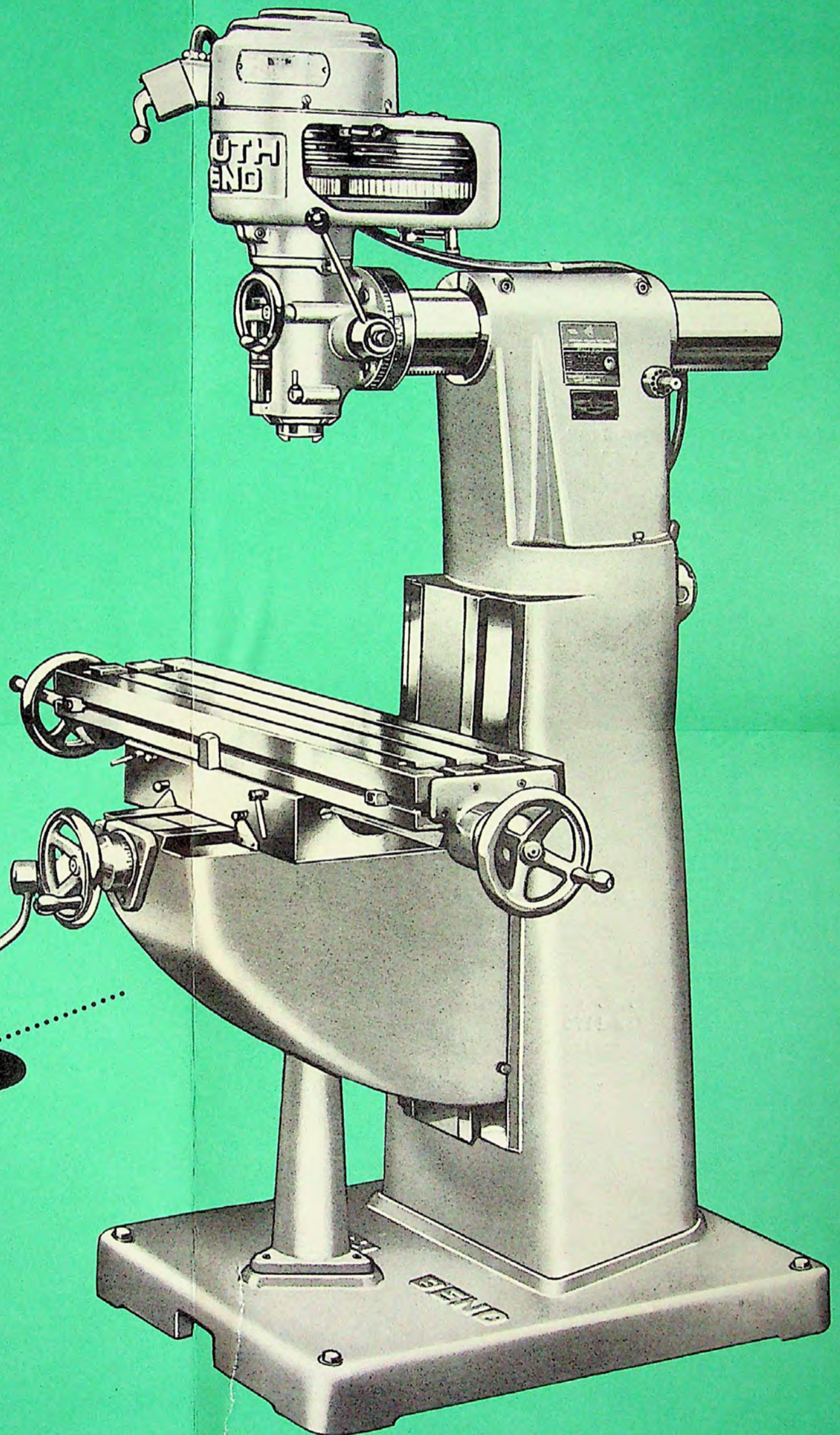
Table length .....	32"								
(42" Table Optional At Extra Cost)									
Table width .....	9"								
Longitudinal table travel .....	20"—30"								
Cross feed .....	9½"								
Vertical feed of knee .....	18"								
Maximum distance spindle to table .....	20"								
Maximum distance spindle to column .....	20"								
Ram travel by rack and pinion .....	15"								
Spindle taper .....	#30 M.M.								
Number of spindle speeds .....	8								
Spindle speeds based on choice of motor:									
1 H.P. 1800 R.P.M. motor	<table border="0"> <tr> <td>135</td> <td>220</td> <td>350</td> <td>560</td> </tr> <tr> <td>900</td> <td>1450</td> <td>2330</td> <td>3750</td> </tr> </table>	135	220	350	560	900	1450	2330	3750
135	220	350	560						
900	1450	2330	3750						
¾ H.P. 1200 R.P.M. motor	<table border="0"> <tr> <td>90</td> <td>150</td> <td>230</td> <td>375</td> </tr> <tr> <td>600</td> <td>965</td> <td>1550</td> <td>2500</td> </tr> </table>	90	150	230	375	600	965	1550	2500
90	150	230	375						
600	965	1550	2500						
Spindle travel .....	4"								
Head rotation .....	360°								
Approximate net weight .....	1650 lbs.								

Above specifications subject to change without formal notice.

### Standard Equipment

Choice of motor as follows:

- 1 H.P. 3 phase 60 cycle 220/440 Volt 1800 R.P.M. motor,
- ¾ H.P. 3 phase 60 cycle 220/440 Volt 1200 R.P.M. motor.
- Reversible switch for right and left hand rotation.
- 9" x 32" Table.
- Master collet holder, wrench and four collets—sizes  $\frac{3}{8}$ "— $\frac{1}{2}$ "— $\frac{5}{8}$ "— $\frac{3}{4}$ ".



South Bend Vertical Milling Machine  
20" x 20" x 20"  
(Table travel x Spindle to table x  
Spindle to column)  
F.O.B. South Bend, Indiana

**\$1742**



**SOUTH BEND LATHE WORKS**  
425 East Madison Street  
SOUTH BEND 22, INDIANA, U.S.A.



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W. C. Cowden Machine Company  
Box 1176  
Syracuse 1, New York

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**BULLETIN 5649**

POSTMASTER: Form 3547 requested.

## The Name "SOUTH BEND" Is Your Assurance Of Quality In Machine Tools!

The new South Bend Vertical Milling Machine is a product of the South Bend Lathe Works—manufactured in South Bend's own plant to the same exacting standards which have made South Bend Lathes, Drill Presses, Shapers, and Tool Grinders famous for quality throughout the entire world.

For your best investment in Milling Machines, use the coupon below for complete information, quotation, and name of nearest dealer.

M5649—IAIXM—9-56

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South Bend Lathe Works, South Bend 22, Indiana.

Send the following information regarding your new Vertical Milling Machine:

- Complete description, specifications, prices
- Quotation
- Name of nearest authorized Dealer

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