

Low Cost benchmaster

MILLING MACHINE

Mills Vertically!

Mills Horizontally!

Drills!

Grinds!

Turns!

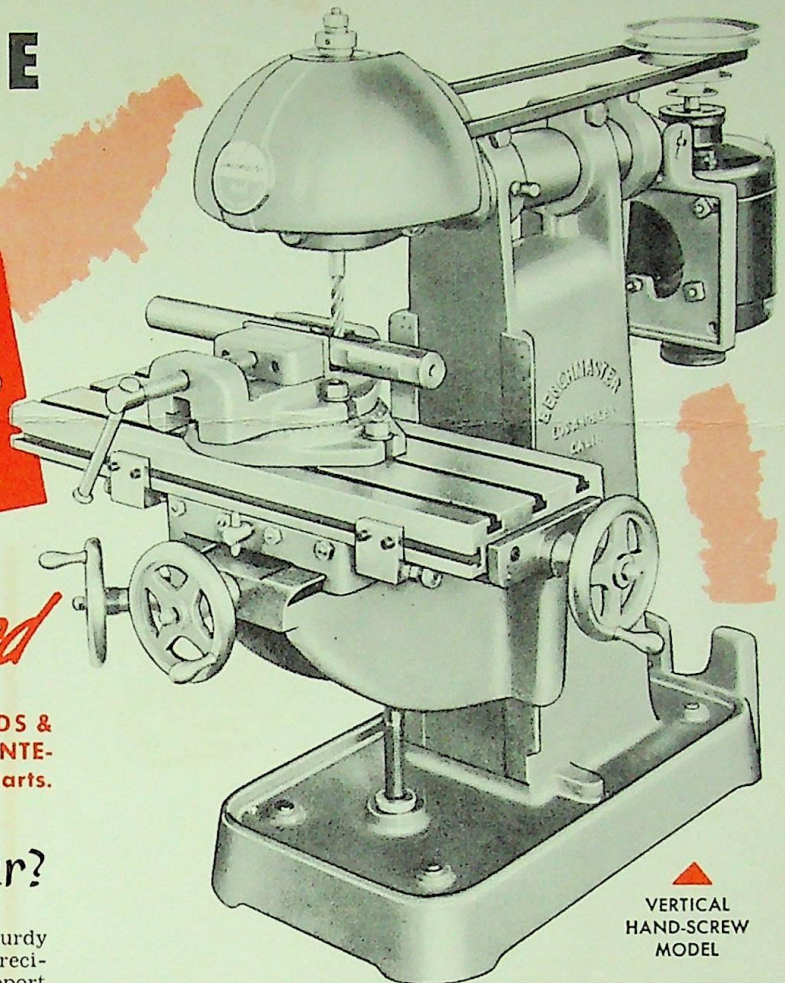
the 5 in 1 tool
that every shop
can afford!

Precision Engineered

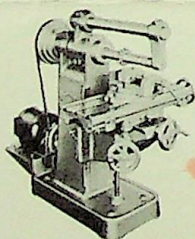
FOR TOOLS & DIES, JIGS & FIXTURES, MOLDS & MODELS, EXPERIMENTAL DEVELOPMENT, MAINTENANCE, REPAIR, and Rapid Production of Small Parts.

1 Want a Vertical Miller?

The Benchmaster Vertical Head Assembly contains a sturdy spindle with a No. 2 Morse Taper rigidly mounted in precision Timken Tapered Roller Bearings. Its heavy support insures smooth, chatterfree milling, with amazingly heavy cuts over a wide speed range. Handles smallest end mills up to large diameter fly cutters for facing operations. Precision machining, ground surfaces, careful and individual fitting of mating parts...all are your insurance of close tolerance results and long, trouble-free life! Accessories include full line of Benchmaster Collets and Drawbar; Swivel-Base Vise, and Rotary Table.

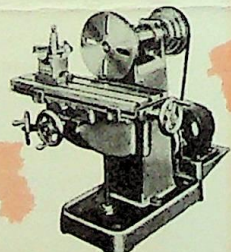


VERTICAL
HAND-SCREW
MODEL



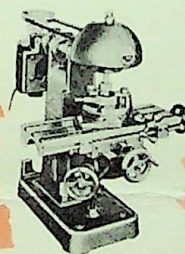
2 For Horizontal Milling

No need to buy a separate mill, just substitute the horizontal spindle assembly for the vertical head. It's equipped with Timken Tapered Roller Bearings... good for all kinds of rugged, high-speed operations. Quick to switch from vertical to horizontal operations without changing work set-ups too! Operates with or without overarm.



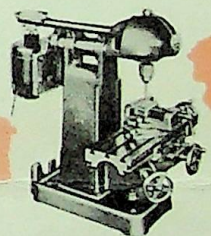
3 When is a Mill not a Mill?

Here's a handy kink to obtain extra lathe facilities for facing, turning, forming, etc. Benchmaster Accessories required: Lathe Chuck Adapter (No. 2 Morse Taper) and Tool Block. By lowering knee position and raising tool you can swing up to 23". Exceptional capacity!



4 Quick Change Artist

Here's the Benchmaster converted to a grinder! Free-rolling bearings maintain high spindle speeds without overheating or risking bearing injury. Grinds internally, surfaces, sharpens cutters, etc. Note Benchmaster 6" Rotary Table—a fine accessory for both grinding and milling.



5 And now it's a Drill Press

The No. 2 Morse Taper in spindle accepts standard Jacobs Chuck Shank. Raising table feeds work into drill. With this set-up, drilling layouts is easy—simply measure off correct hole spacing with the lead screws.

benchmaster

MANUFACTURING COMPANY
2952 WEST PICO BOULEVARD • LOS ANGELES 6, CALIF.

World's largest manufacturer of small punch presses and milling machines

*Don't tie-up Big Millers
on small precision jobs!*

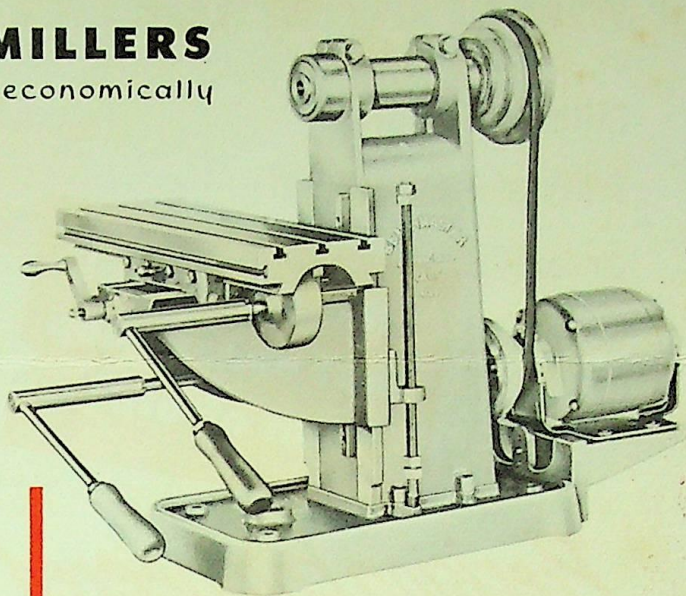
benchmaster MILLERS

will do the work faster, easier, accurately, economically

Using a big miller on a small job is like threading a needle while wearing boxing gloves! Benchmaster gives you convenience. It's just right for all small work, handy to use, rugged, precise and powerful. Possesses a long table travel, generous vertical travel and good transverse adjustment—handles surprisingly large jobs for its size whether end milling, surfacing with fly cutters or using arbor mounted cutters with overarm!

HORIZONTAL PRODUCTION MODEL (at right)

Makes fast work of repetitive parts! Rack and pinion feeds provided on both knee and table. Fast acting. Uses either vertical or horizontal spindle assembly. The ideal machine for production use where minimum investment is required!



specifications:

SPINDLE: No. 2 Morse Taper. $\frac{3}{8}$ " hole through spindle mounted in precision Timken Tapered Roller Bearings.

SPEEDS: Choice of 4: 450, 850, 1400, 2100 rpm. Vee belt drive.

COLUMN: Bearing recesses and dovetails carefully machined to insure maintenance of machine accuracy. Precision ground sliding surfaces. Hand spotted for better lubrication.

TABLE TRAVEL: Longitudinal 12 $\frac{1}{2}$ ". Transverse 5 $\frac{1}{2}$ ". Vertical (horizontal mill) 9 $\frac{1}{2}$ " (vertical mill) 8 $\frac{1}{2}$ ".

TABLE SIZE: 6 x 18". Equipped with three $\frac{3}{8}$ " Tee slots on surface and one $\frac{1}{4}$ " Tee slot on front face. Table lock and adjustable stops included.

KNEE: Sturdy box-type construction.

SADDLE: Precisely machined and hand scraped to insure exact parallelism of table to column ways. Locking clamp provided.

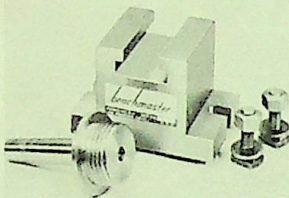
SLIDING SURFACES are all precision ground or hand scraped, then beautifully spotted for decoration and lubricant distribution.

OVER-ALL HEIGHT: All models 28".

NET WEIGHT: 215 lbs.

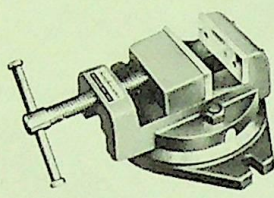
DOMESTIC SHIPPING WEIGHT: 250 lbs.

All mills complete with motor bracket, pulley, drawbar and V belt.



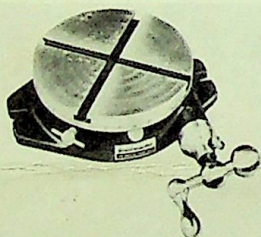
Lathe Attachment:
(Chuck adapter and tool block)

For adapting chuck or faceplate to milling machine when used as a lathe. No. 2 Morse Taper, nose 1 $\frac{1}{2}$ " x 8 thread. Taper shank drilled and tapped for $\frac{3}{8}$ ". 16 thread drawbar. Tool Post Block keyed for table slot, equipped with 1" Tee slot. Measures 2 $\frac{5}{8}$ " high. Hold down bolts included.



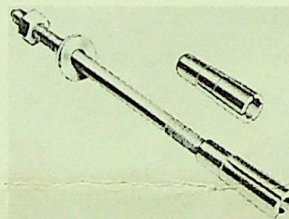
Benchmaster Swivel-Base Vise

A heavily proportioned swivel-base vise that sits close to the table. Base machine-graduated 360°. Lock bolts easily accessible to wrench. Replaceable hardened steel jaws; 10 pitch Acme screw for tight, positive grip. Jaw dimensions 3 $\frac{1}{4}$ " x 1 $\frac{1}{2}$ ". Maximum jaw opening 2 $\frac{1}{4}$ ". Height 3 $\frac{1}{8}$ ". Weight 15 lbs.



Benchmaster Rotary Table

Ideal companion piece for Benchmaster Mills and others. 6" table machine-graduated 360° around perimeter, cross-slotted with $\frac{3}{8}$ " Tee slots. $\frac{5}{8}$ " center hole. 60 to 1 worm gear, adjustable for take-up. Dial divides to 1/10 degree of arc. Table lock included. Over-all height 2 $\frac{5}{8}$ ". Shipping wt. 16 lbs.



Benchmaster Collets and Drawbars

For gripping end mills, boring bars, drills, etc. Collets made from special stress-proof steel possessing excellent spring and long wearing qualities. No. 2 Morse Taper. Available in fractional sizes by 1/16ths from $\frac{1}{8}$ " to $\frac{1}{2}$ ", inclusive. Drilled and tapped for $\frac{3}{8}$ "-16 thread drawbar. Drawbars available in two lengths for vertical and horizontal spindles.

Distributed by:

HANSBACH MACHINERY CO.
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MACHINE TOOL ENGINEERS
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Original Signed
J. C. LEHMAN