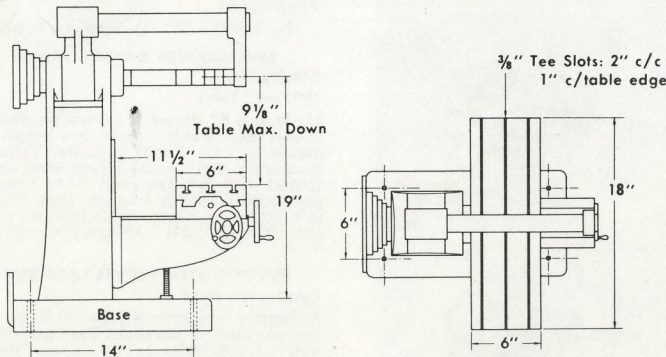
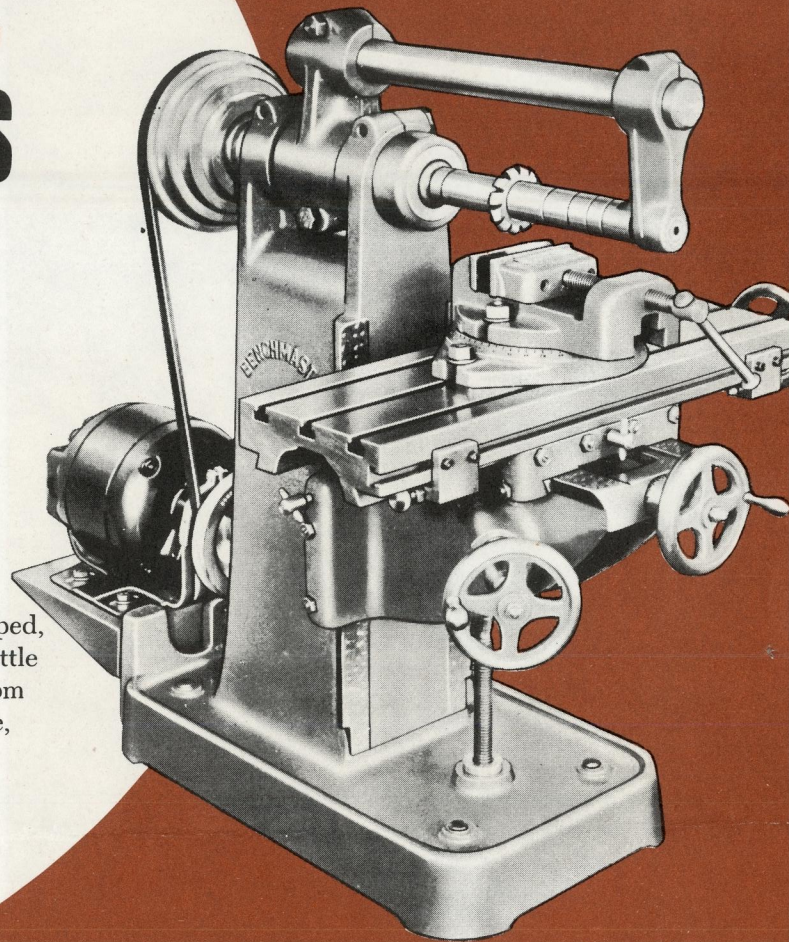


LOW COST benchmaster milling machines



No matter how large the shop—no matter how well equipped, there's always work for a Benchmaster! Why? Because this little mill earns its way day after day—taking smaller jobs away from the big machines, reducing hourly rates, saving set-up time, using unskilled labor...even female help! Handles tool room jobs or production runs. It's safe, it's simple—no confusing operation for "green" hands. What's more, it's not a one-purpose machine—your Benchmaster pinch-hits on many metal removing occasions, serving interchangeably as a horizontal or vertical mill and as an auxiliary drill press.



overarm, depending upon choice of cutters. Vertical spindle may be adjusted to any angle in the table-travel plane or instantly pins to an exact upright position.

FEATURES YOU'LL LIKE . . .

HIGH ACCURACY—Built to watch-like standards of precision, each sliding surface on the Benchmaster is dovetailed, ground and hand fitted to insure alignment and accuracy. Every known precaution is included to hold this accuracy for years to come. . . Best quality, fine grained castings are carefully normalized before machining, over-size dovetailed sliding surfaces are utilized throughout. Long dovetailed slides and gib adjustments on each achieve rigidity on all movements. All mills are individually inspected after assembly, meeting commercial standards of machine tool precision.

AUTOMATIC POWER FEED—Now you can get power feed for ANY hand-screw Benchmaster mill, new or old! Powerful 1/15 h.p. drive through worm gear reducer equals or exceeds milling capacity of the spindle, gives four separate feeds in either direction, each totally independent of spindle r.p.m.! Relieves drudgery of all hand feeding, insures smoother cuts, yet permits manual operation when desired. (See ACCESSORIES for details.)

INTERCHANGEABLE SPINDLES—Benchmaster's versatility is unmatched. The mill can be converted in a matter of minutes from vertical to horizontal operations and vice versa. Spindle assemblies are complete units, slide quickly into column mounts and lock in position without disturbing work setups. The horizontal spindle may be used with or without an

TAPERED ROLLER BEARINGS—Equipped with Timken Precision Tapered Roller Bearings, each spindle, vertical and horizontal, operates safely at high speeds and possesses high load capacity with take-up features. With this construction you're assured of heavy cuts without troublesome chatter.

SPINDLE NOSE—is equipped with a No. 2 Morse Taper—the most frequently used taper accommodating the widest variety of common shop equipment, thus saving additional dollars in accessories!

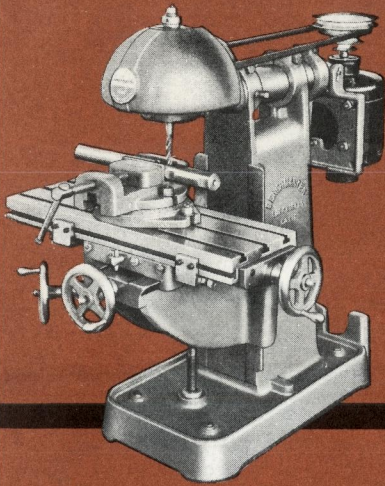
TABLE—is ample in size with a long horizontal travel. Three locks are furnished, locking against horizontal, transverse and vertical travel.

Triple Tee slots accommodate all common hold-down requirements.

TYPICAL APPLICATIONS—For making tools and dies, jigs and fixtures, molds and models. For experimental development, maintenance and repair, rapid production of small parts and every-day milling requirements.



World's largest
manufacturer of small
punch presses.



VERTICAL MILLER

Catalog No. MV-1

The MV-1 is a hand screw milling machine with lead screw feeds on horizontal, vertical and transverse movements. It is available with the M-30 Longitudinal Power Feed. If horizontal milling is desired this same basic mill can be used by substituting the MH-5 Horizontal Spindle Assembly.*

Vise, Motor and Power Feed are extras.

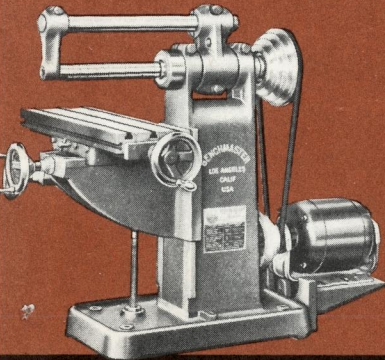
HORIZONTAL MILLER

Catalog Nos.
MH-1 without Overarm Assembly
MH-2 with Overarm Assembly
M-28 Outboard Support Bracket
(see accessories)

The above catalog numbers are the same basic milling machine as the MV-1 with the exception of a horizontal spindle assembly rather than a vertical spindle assembly. Lead screw feeds are provided on horizontal, vertical and transverse movements. This mill can be converted to vertical milling by substituting the MV-3 Vertical Spindle Assembly.**

These mills are available with the M-30 Longitudinal Power Feed.

Arbor, Motor and Power Feed are extras.



2 IN 1 MILLER

Catalog Nos.
MV-4 with Vertical Head
MH-6 Horizontal Model without
Overarm Assembly
MH-7 Horizontal Model with
Overarm Assembly

Unusually fast table travel and return on this mill is actuated by rack and pinion with hand lever. Vertical and transverse feeds are by lead screw. Either vertical or horizontal spindle assemblies may be used. These models can be converted to longitudinal lead screw feeds by using M-24 Conversion Kits.

MILLING MACHINE CONVERSION KITS

Catalog No. M-24

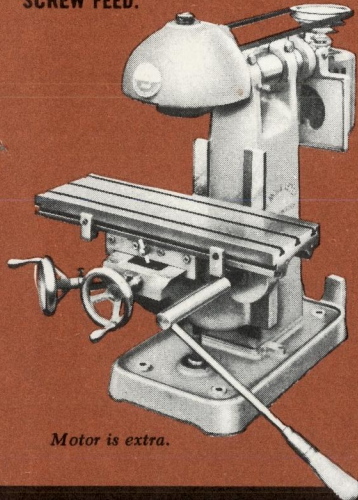
Replaces rack and pinion feed on table to conventional screw feed.

Catalog No. M-25

Replaces conventional screw feed on table to rack and pinion feed for production work.

HORIZONTAL TABLE TRAVEL:
RACK & PINION FEED.

TRANSVERSE & VERTICAL TRAVELS:
SCREW FEED.



Motor is extra.

HORIZONTAL & VERTICAL TRAVELS:
RACK & PINION FEEDS.

TRANSVERSE TRAVEL:
SCREW FEED.

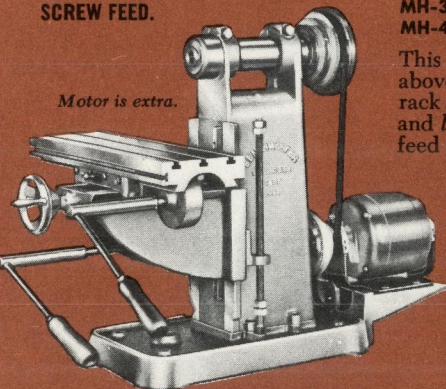
PRODUCTION MILLER

Catalog Nos.
MV-2 with Vertical Head
MH-3 without Overarm Assembly
MH-4 with Overarm Assembly

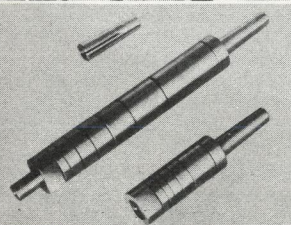
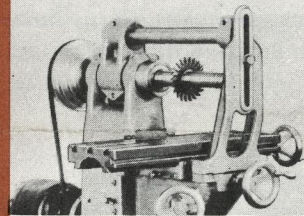
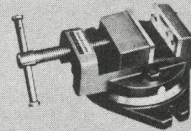
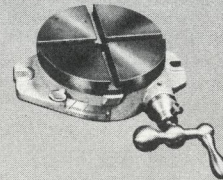
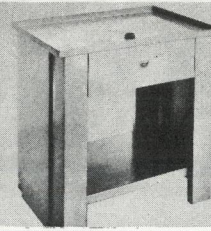
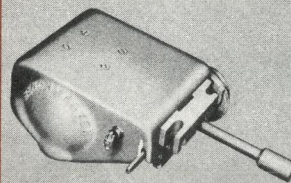
This model is similar to the 2 in 1 above, but has a hand lever with rack and pinion feed on both vertical and longitudinal travels. Transverse feed is by lead screw.

*MH-5 Horizontal Spindle Assembly—Complete, ready for installation, including Overarm Assembly, Motor Bracket, Vee Belt, Draw Bar and Motor Pulley.

**MV-3 Vertical Spindle Assembly—Complete, ready for installation, including Motor Bracket, Vee Belt, Draw Bar and Motor Pulley.



Motor is extra.



ACCESSORIES

AUTOMATIC POWER FEED

Catalog No. M-30

Adaptable to all Benchmaster hand-screw mills, regardless of age. Can be purchased as standard equipment or as an accessory. Quickly mounted, no alignment problems. Four feeds: (reversible) 1.2, 2.1, 3.2 and 4.5 i.p.m. Disengage lever and automatic table stops provided. Approx. wt.: 10 lbs. net. Dimensions: 4½" x 5½" x 8" (w/.. less connecting shaft.)

BENCHMASTER FLOOR STAND

Catalog No. M-23

This large, roomy, heavy steel floor stand gives rigid support to Benchmaster mills and other machines of similar size. Top surface is heavily braced with welded steel framework and possesses a raised lip which serves as splash tray. Single shelf below is suitable for tool storage, coolant pump, etc.

DIMENSIONS

Top 21½" x 30". Shipping Wt. 72 lbs.

BENCHMASTER ROTARY TABLES

Catalog No.

M-17—6" Table

Made in a 6" diameter for use on Benchmaster mills. Table features low height for maximum use of mill capacity. Table is graduated 360° around perimeter, cross slotted with ⅜" Tee slots. 60 to 1 worm gear adjustable for take-up. Dial divides to 1/10 degree of arc. Table lock included. Overall height: 2½". Shipping wt.: 16 lbs.

BENCHMASTER SWIVEL-BASE VISE

Catalog No. M-18

A heavily proportioned swivel-base vise that sits close to the table. Base graduated 360°. Lock bolts easily accessible to wrench. Replaceable, hardened steel jaws; 10 pitch Acme screw for tight, positive grip. Jaw dimensions 3¼" x 1½". Maximum jaw opening 2¼". Height 3⅝". Weight 15 lbs.

OUTBOARD SUPPORT BRACKET

Catalog No. M-28

Rigidly ties overarm to knee providing strong, deflection-free support for the arbor. Quickly clamps or removes from knee. Slotted for arbor height adjustment.

BENCHMASTER

COLLETS, ARBORS, STUB ARBORS

COLLETS—Catalog No. M-15

Made of special stress-proof steel possessing excellent spring and long wearing properties. No. 2 Morse Taper, tapped for ⅜" 16 thread drawbar. Fractional sizes from ½" to ½" by ⅛" steps. Special sizes to order.

ARBORS—Catalog No. M-13 (⅞" O.D.)

Catalog No. M-14 (1" O.D.)

Designed for use with outboard support. Collar thicknesses: 2", 1½", 1", ¾", ⅝", ½", ⅜"

STUB ARBOR—Catalog No. M-19 (⅞" O.D.)

Catalog No. M-20 (1" O.D.)

Designed for use close to column without outboard support. Collar thickness: ¾", ⅝", ½", ¼"

SPECIFICATIONS

SPINDLE: No. 2 Morse Taper. ⅜" hole through spindle. Mounted in Timken Precision Tapered Roller Bearings. Individually checked for run-out.

SPINDLE SPEEDS: 450, 850, 1400, 2100 rpm w/1725 rpm motor. Vee belt drive.

COLUMN: Slides dovetailed, individually ground, spotted and fitted for close accuracy.

TABLE TRAVEL: Longitudinal 12½", Transverse 5½", Vertical (horizontal mill) 9½", (vertical mill) 8½".

TABLE SIZE: 6" x 18" ground surface with 3—⅜" Tee slots on 2" centers, with outside slots on 1" center-to-table-edge. ¼" Tee slot on table edge. Table lock included. Longer tables to 30" on special order!

KNEE: Sturdy box-type construction.

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

SLIDING SURFACES are all spotted for lubricant distribution.

FLOOR SPACE: L to R 10½", F to B 19".

OVER-ALL HEIGHT: All models 28".

NET WEIGHT: 225 lbs. (less motor).

DOMESTIC SHIPPING WEIGHT: 250 lbs. All mills complete with motor bracket, pulley, drawbar and V-belt.

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