

Milwaukee

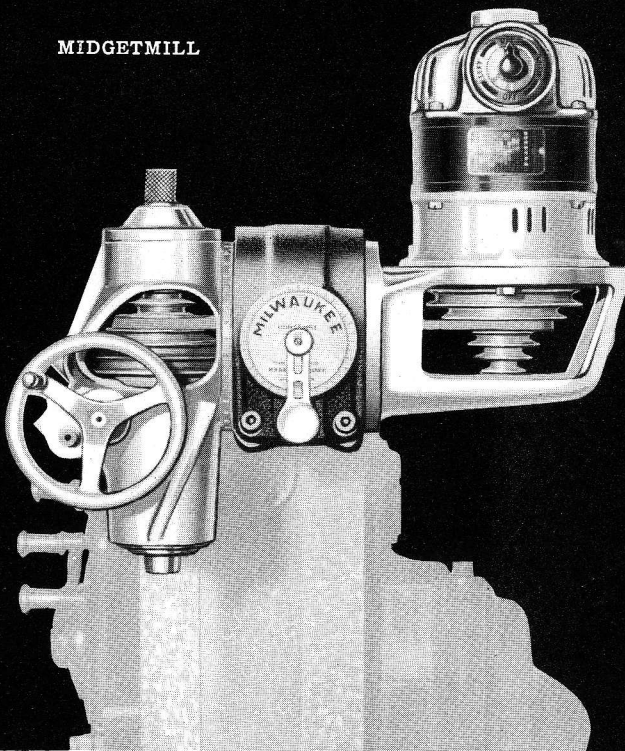
MIDGETMILL and SPEEDMILL *

High Speed Attachments for All Milling Machines

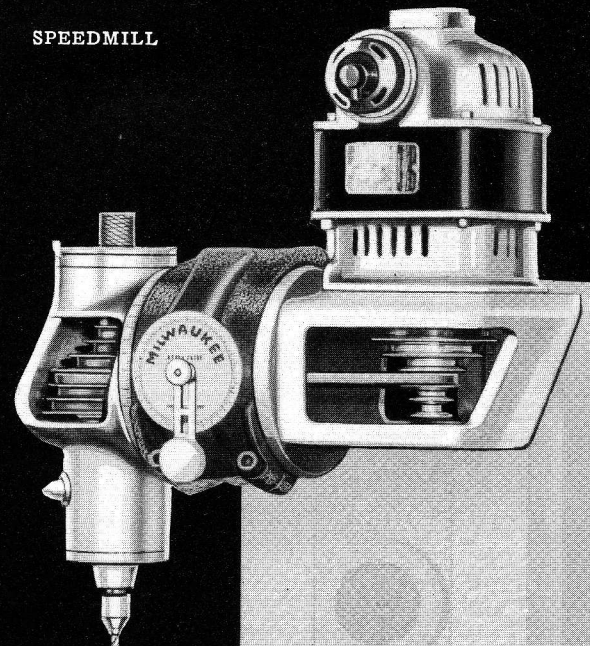
The makers of Milwaukee Milling Machines now offer the profitable *Midgetmill* and *Speedmill*, two versatile attachments, completely universal in every respect. Applications to work on dies, fixtures, metal patterns, templates and the like are innumerable. Moreover, these attachments may be applied on overarms of any make milling machine. Employing aluminum for the main-body casting, the Midgetmill and Speedmill are truly lightweight attachments that give maximum performance on light milling, drilling and boring operations. See on the following pages how these time-saving high speed attachments apply to your shop or plant in different ways.

*By order of the War Production Board, the use of aluminum in the manufacture of these attachments has been discontinued.

MIDGETMILL



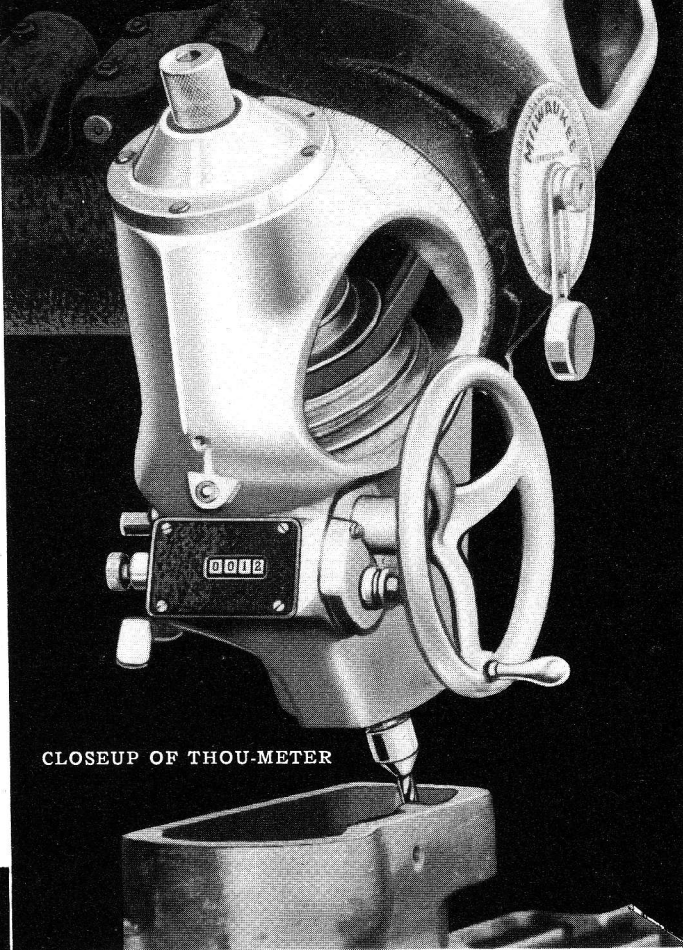
SPEEDMILL



KEARNEY & TRECKER CORPORATION
MILWAUKEE, WISCONSIN, U. S. A.

The Milwaukee MIDGETMILL

It mills! It drills! It bores! — that's the New Milwaukee *Midgetmill*. Designed to produce with precision and speed, this attachment mills accurately, drills cleanly and bores smoothly with utmost rigidity. A uniformly balanced construction makes setting up a simple one man job. The Midgetmill provides a 2½" spindle adjustment, a convenient auxiliary inside pinion for the handwheel and possesses six speeds necessary to cover the range needed for end mill sizes.



CLOSEUP OF THOU-METER

THE THOU-METER

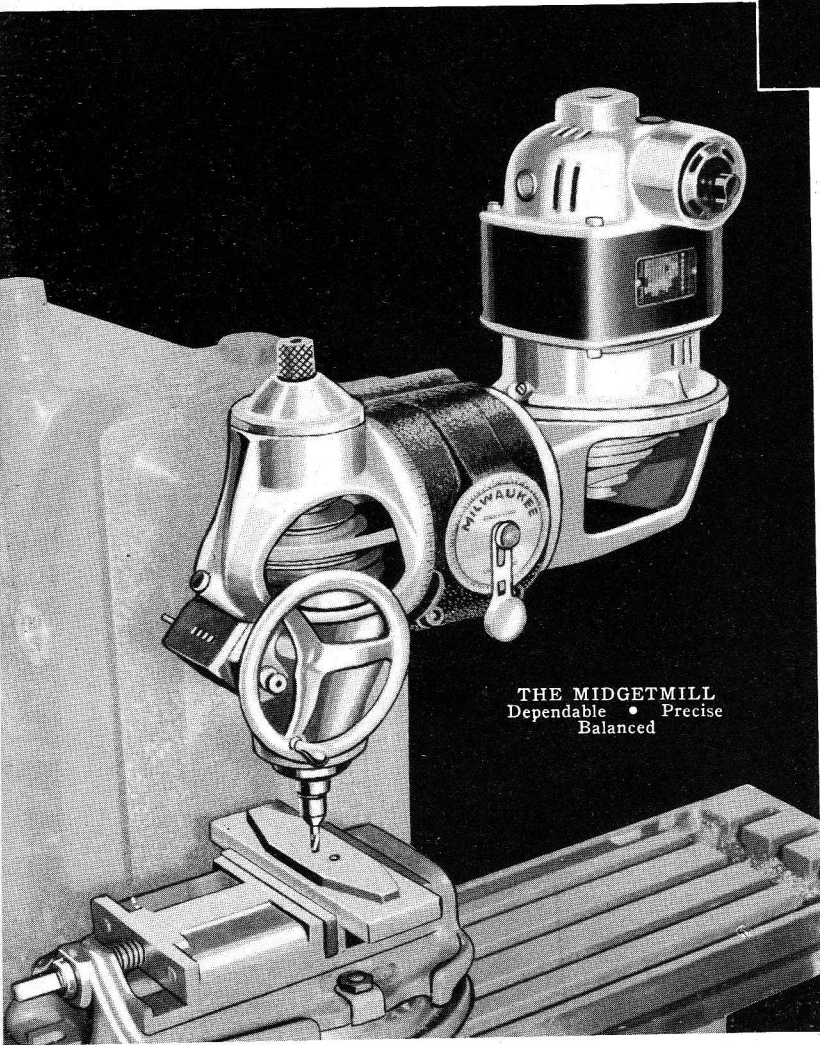
Principal feature of the Midgetmill is the *Thou-Meter*. Reading directly in thousandths of an inch, this device registers instantaneously, eliminating costly errors in close work.

The Thou-Meter has no graduations, no dials, no stops, no "counting turns," no binding screws. Long life of this precision instrument is assured since the first number wheel of the Thou-Meter is integral with the pinion shaft.

HOW SIMPLE IT IS

Example: To mill a slot .375" deep—

- a. Touch end mill or tool to work.
- b. Turn zero reset thumb nut so window reads 0.000".
- c. Turn handwheel to depth until window reads 0.375".



THE MIDGETMILL
Dependable • Precise
Balanced

ADAPTABLE TO ANY MILLING MACHINE

Typical Milwaukee

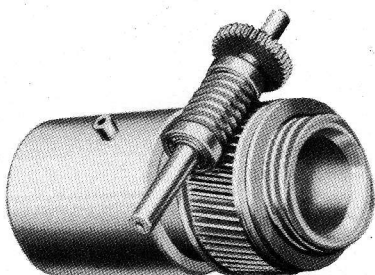
MIDGETMILL

Set-Ups

The Midgetmill is equipped with a detachable overarm cradle to facilitate mounting on the milling machine. The cradle is secured to the overarm separately. The attachment itself then is set into the cradle and the cradle cap bolted together — the whole set-up taking not more than just a few minutes.

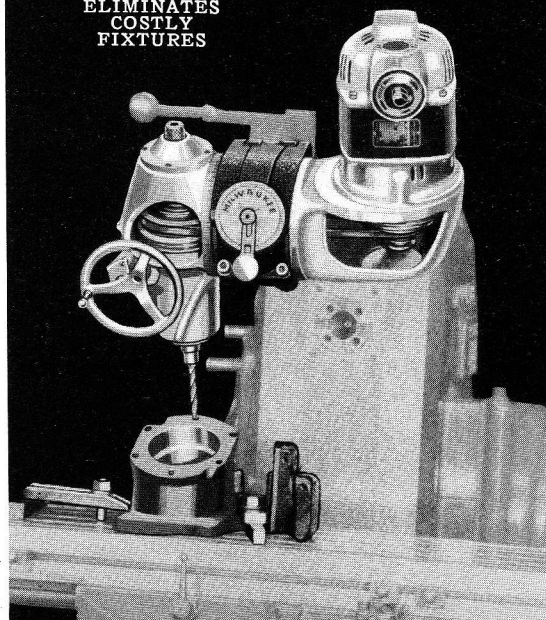
The completely universal feature, swiveling either toward or away from the column face, or parallel to the column face in either direction, extends the versatility of this attachment to hundreds of applications, a few of which are shown here.

ASSEMBLED
QUILL, SLEEVE, NUT,
AND WORM

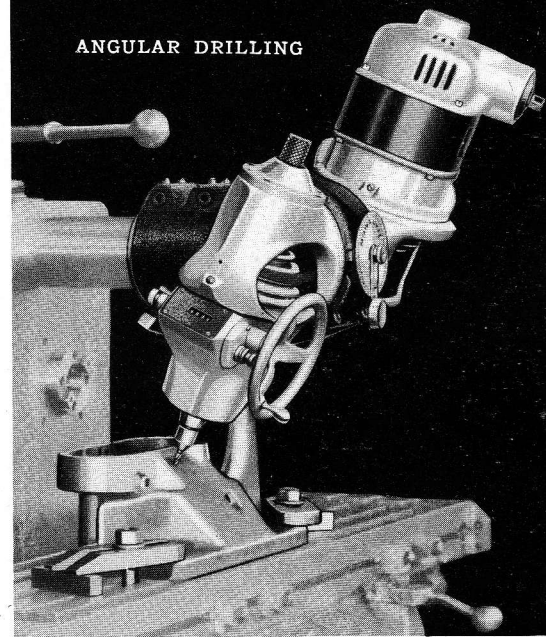


This assembly is the principal factor in maintaining long-life accuracy in the Milwaukee Midgetmill high speed milling attachment.

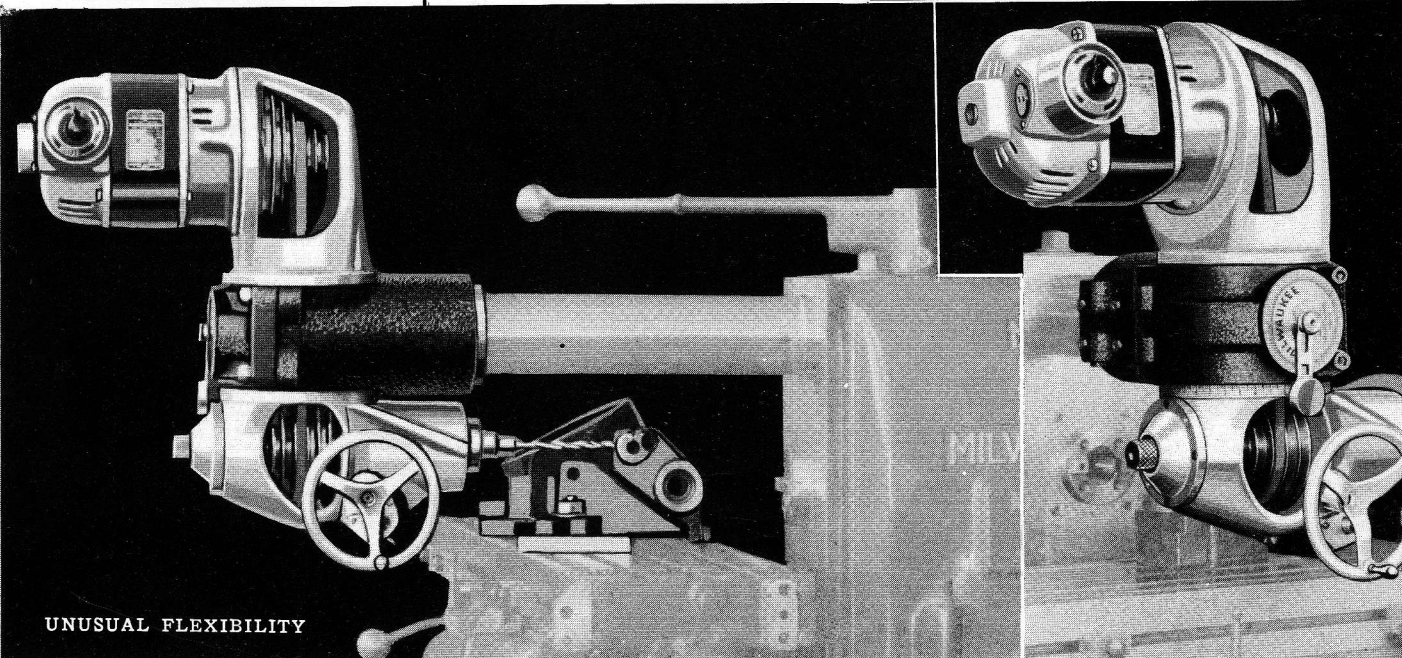
ELIMINATES
COSTLY
FIXTURES



ANGULAR DRILLING



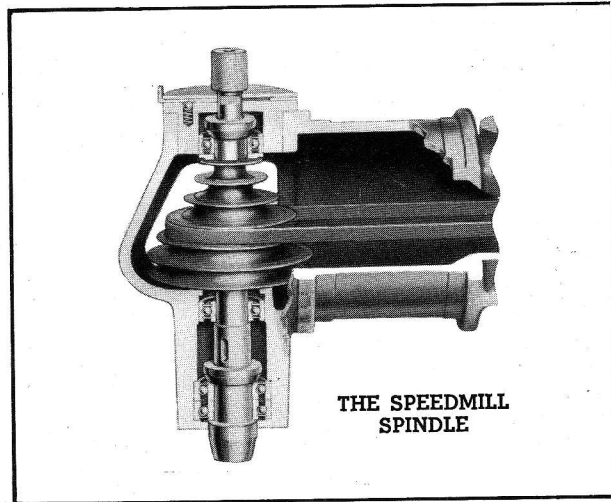
HORIZONTAL BORING PARALLEL TO TABLE



UNUSUAL FLEXIBILITY

The Milwaukee SPEEDMILL

When using small end mills for accurate toolroom work, the Milwaukee **Speedmill** is particularly efficient. With the choice of overarm cradles and use of adapters, it can be used with any type of milling machine. As the name implies, the Speedmill is built for speed and simplified operation. The housing is made of aluminum to facilitate mounting. The Speedmill is capable of providing speeds up to 5300 R.P.M. The spindle is made of the finest available grade of steel and is perfectly machined to afford

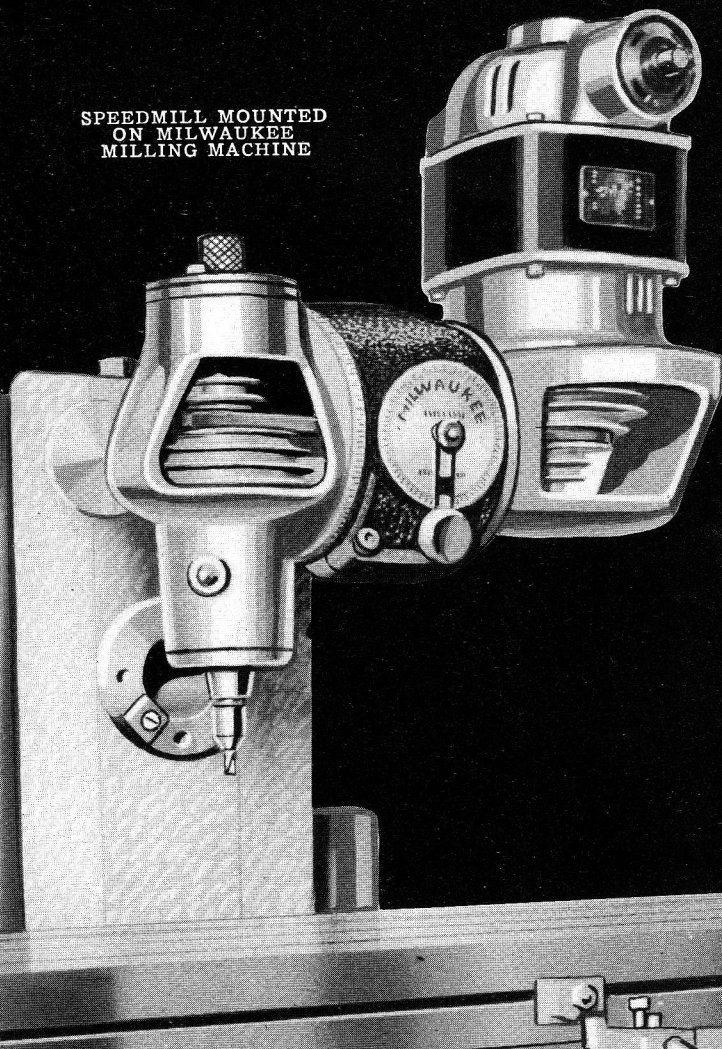


THE SPEEDMILL
SPINDLE

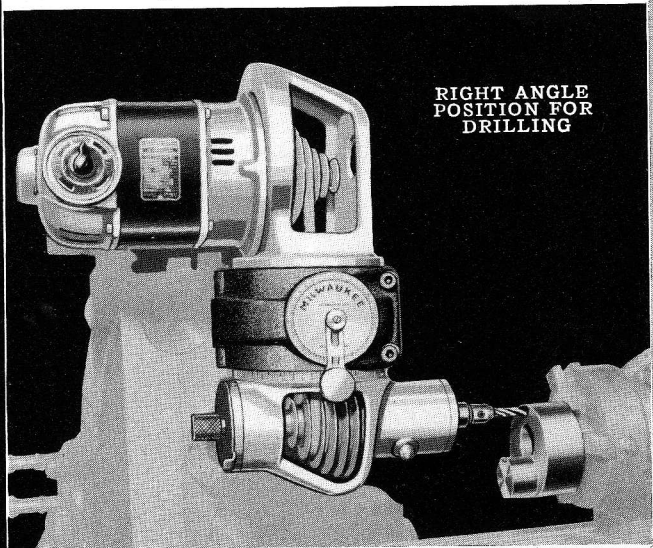
the means for accurate workmanship that is demanded of this high speed attachment.

Through the use of a Speedmill attachment you will find the answer to 1—faster feeds; 2—closer sizes; 3—improved finishes, and 4—stopping abuses and breakage of end mills.

SPEEDMILL MOUNTED
ON MILWAUKEE
MILLING MACHINE



RIGHT ANGLE
POSITION FOR
DRILLING



The Speedmill is equipped with a lightweight heavy duty repulsion induction type motor. Aluminum end shields provide the necessary balance and overcome any dangerous off-center weight on this completely universal attachment.

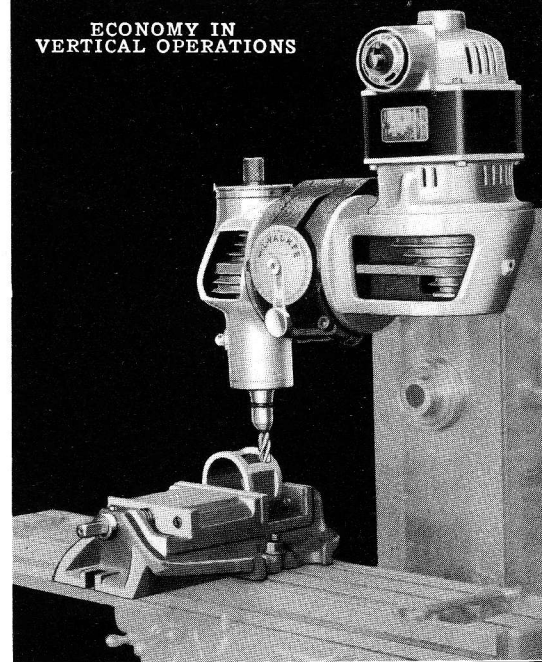
Typical Milwaukee SPEEDMILL Set-Ups

End milling is an important operation. Correctly charted speeds will drive end mills properly and in Milwaukee's Speedmill you will obtain the most satisfactory results.

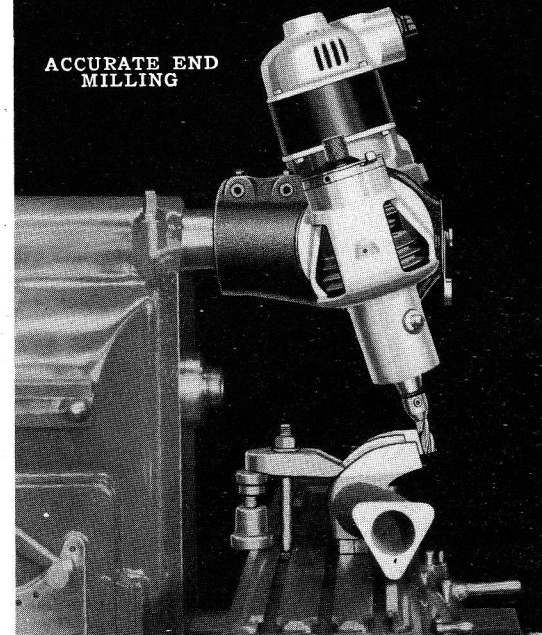
Consider the three groups of speed ranges offered on a Speedmill, depending on the motor selected: In the first group, with a 60 cycle motor (1140 R.P.M.), low speeds from 275 to 2800 R.P.M. are obtainable; the high range in this group includes speeds from 350 to 3500 R.P.M. The second group, with either a 25 or 50 cycle motor (1425 R.P.M.), has a low range of 350 to 3500 R.P.M., and a high range from 425 to 4400 R.P.M. The third of these speed combinations is secured with a 60 cycle motor (1725 R.P.M.), and has a low range from 425 to 4200 R.P.M. and a high range from 500 to 5300 R.P.M.

THE WELDON CHART OF APPROXIMATE
SPEEDS FOR END MILLS

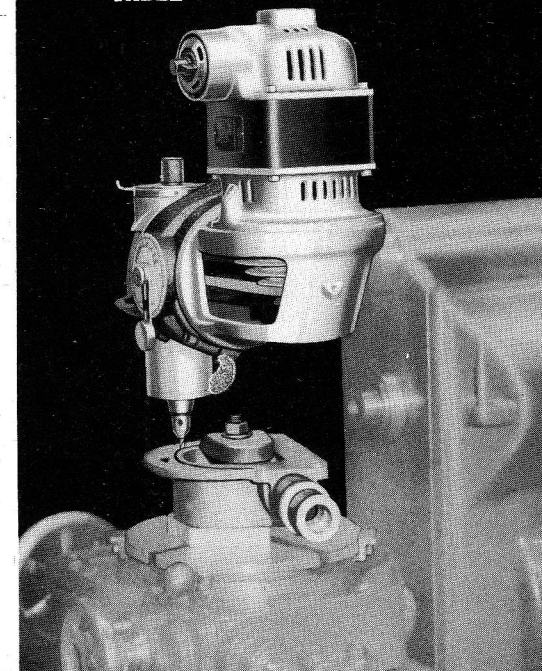
DIAMETER OF END MILL	TOOL STEEL 70 FT. P. M. R. P. M.	MACHINE STEEL 80 FT. P. M. R. P. M.	CAST IRON 90 FT. P. M. R. P. M.
$\frac{1}{16}$ "	4276	4888	5498
$\frac{3}{32}$ "	2855	3259	3688
$\frac{1}{8}$ "	2140	2440	2750
$\frac{3}{16}$ "	1420	1625	1830
$\frac{1}{4}$ "	1070	1222	1375
$\frac{5}{16}$ "	856	978	1100
$\frac{3}{8}$ "	713	815	917
$\frac{7}{16}$ "	611	698	786
$\frac{1}{2}$ "	535	611	688
$\frac{9}{16}$ "	475	543	611
$\frac{5}{8}$ "	428	489	550
$\frac{11}{16}$ "	389	444	500
$\frac{3}{4}$ "	357	407	458



ACCURATE END
MILLING

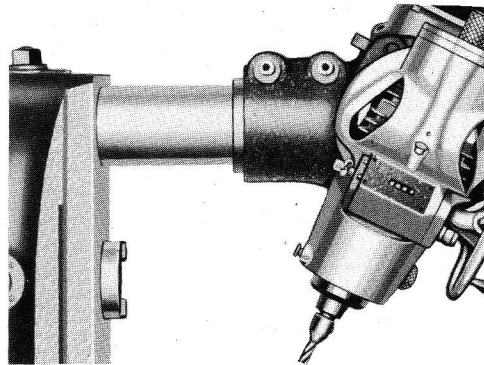


CIRCULAR MILLING
WITH ROTARY
TABLE

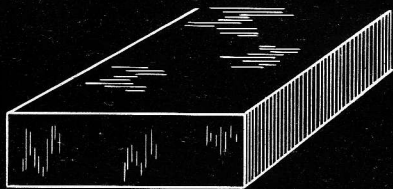


ADAPTED TO ALL TYPES OF MILLING MACHINE OVERARMS

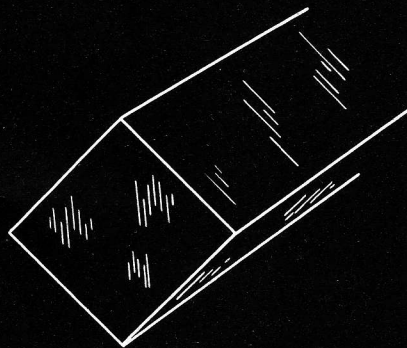
Milwaukee Midgetmill and Speedmill attachments can be used on any type of milling machine—those with round overarms from 2 $\frac{1}{4}$ " to 7" in diameter, those with rectangular overarms, and all other designs employed by the milling machine industry. Users also have made adapters for application to Horizontal Boring Mills and Heavy Duty Die Sinkers. You have the choice of 3 $\frac{1}{2}$ ", 4 $\frac{1}{4}$ ", and 5" diameter overarm cradles. Adapter sleeves are furnished for other sizes. Special adapters are made for round overarms over 5" diameter and for rectangular overarms. Illustrations below show the various type overarms to which the Milwaukee Midgetmill and Speedmill can be easily and economically adapted.



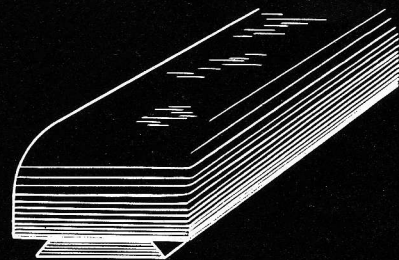
Round, square or rectangular, dove-tailed, single or double—any of these overarm combinations can accommodate the Milwaukee Midgetmill and Speedmill attachments.



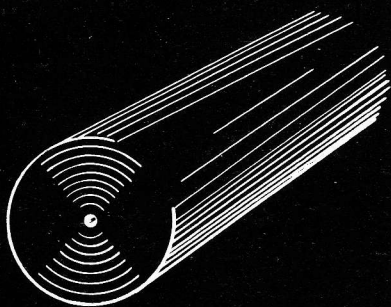
SINGLE RECTANGULAR OVERARM



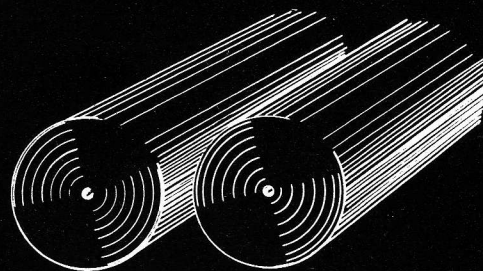
SINGLE SQUARE OVERARM



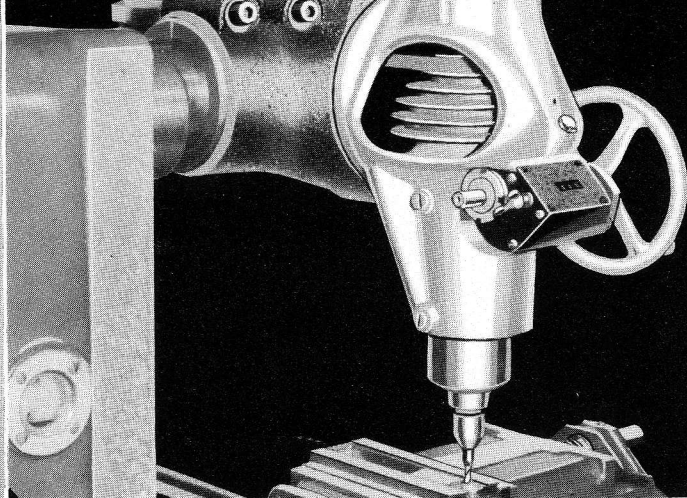
SINGLE DOVETAIL OVERARM



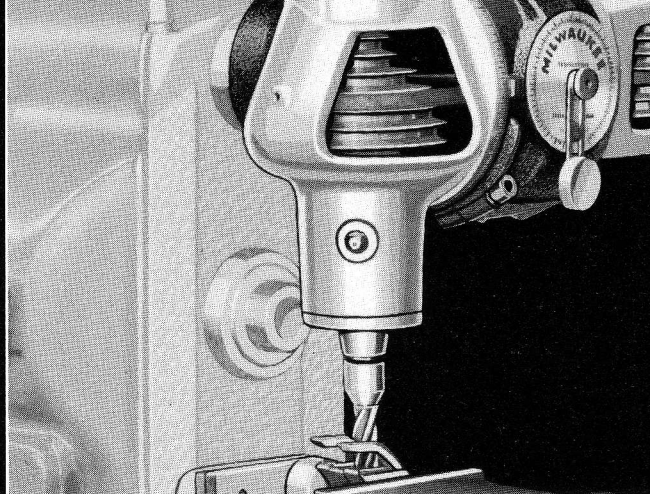
SINGLE ROUND OVERARM



DOUBLE ROUND OVERARMS



For reasons of safety and convenience, the Midgetmill has an extended handwheel shaft on the left side to place the wheel there when expedient.



With the sole exception of the quilled spindle, every feature of the Midgetmill has been incorporated in the Speedmill attachment.

Cast Iron
Overarm
Cradle

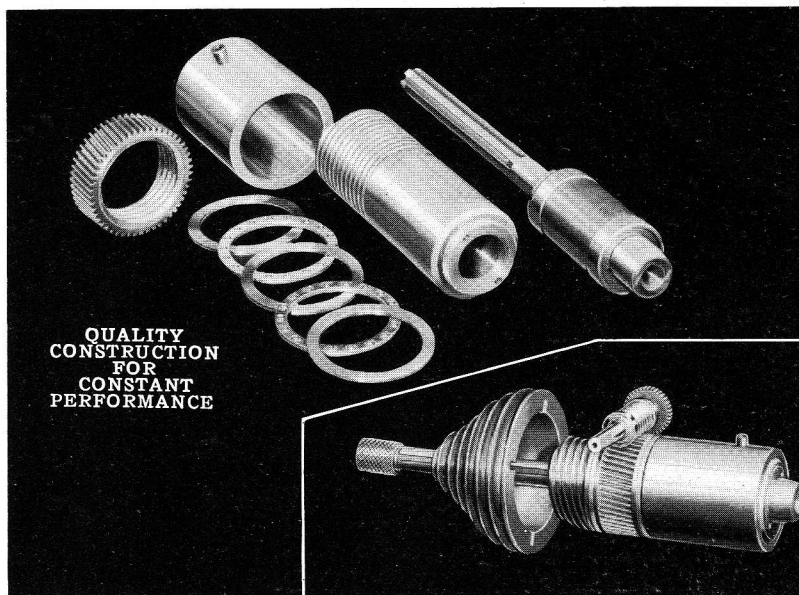


ANALYZING THE *Lightweight* FUNDAMENTAL

This solid ribbed overarm cradle is made of cast iron, designed especially for mounting and removing separately. Two pair of powerful draw-type clamps grip overarm securely, prevent slipping and provide one more factor for accurate workmanship. The cradle weighs 25 lbs. thus reducing the total weight of the attachment to be lifted by that amount and saving time by providing quicker and safer set-ups.

DESIGNED FOR *Precision*

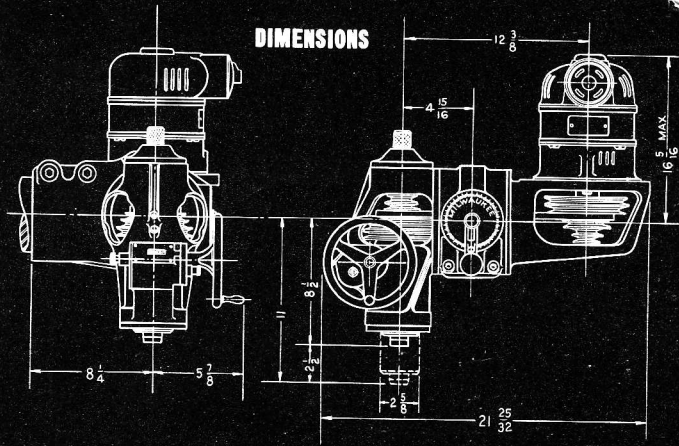
Quill, nut, worm and lead screw are hardened and ground for lasting precision. The sleeve is made of cast iron. The spindle and pulley are mounted in four selected sealed-type ball bearings for permanently quiet, effortless performance. The spindles of both Midgetmill and Speedmill are made from S.A.E. Steel 3140 and are specially heat-treated and ground to assure accurate operation on high speed work.



QUALITY
CONSTRUCTION
FOR
CONSTANT
PERFORMANCE

SAFE AS ANY ATTACHMENT CAN BE MADE

DIMENSIONS



Motors are repulsion induction type. D.C. and A.C. motors with 25, 50 or 60 cycle, mono- and polyphase are carried in stock. A $1/3$ H.P. motor is supplied with the Midgetmill and is recommended with the Speedmill, although, upon request, a $1/4$ H.P. motor can be supplied with the latter attachment.

NOTE: When ordering please specify voltage, cycle and phase of electrical facilities. We recommend use of the lighting circuit.

extension bracket can be supplied at extra cost. It keeps the tables of large milling machines in low operating positions.

NOTE: Adapter sleeves are available at slight extra cost for overarms of intermediate size than those referred to above. Adapters for rectangular overarms are supplied at extra cost. When ordering specify the milling machine manufacturer's model number, or in the case of round overarms, the exact diameter.