

# KEARNEY & TRECKER

MACHINE TOOLS



*Lewandowski*

KT-57

Jan. 59

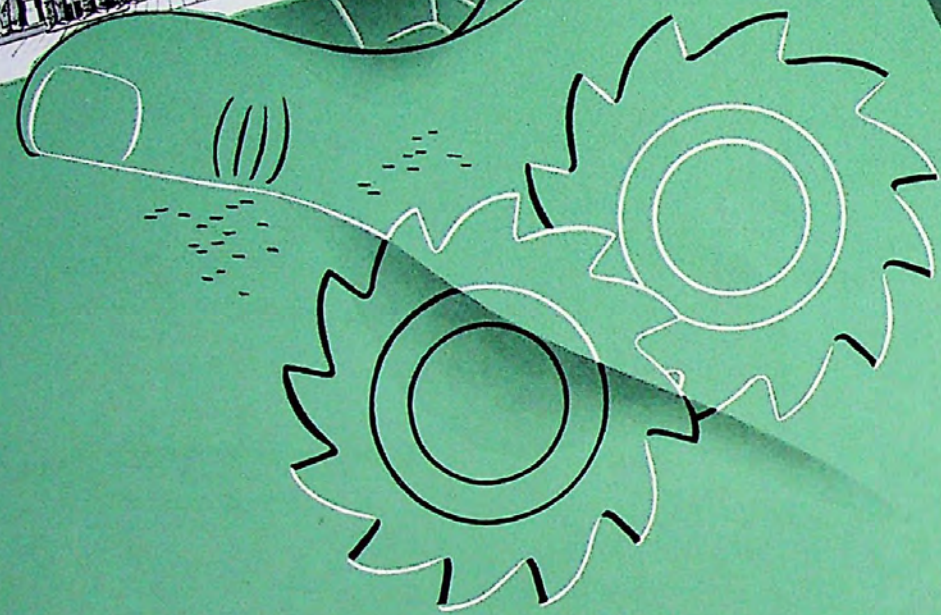
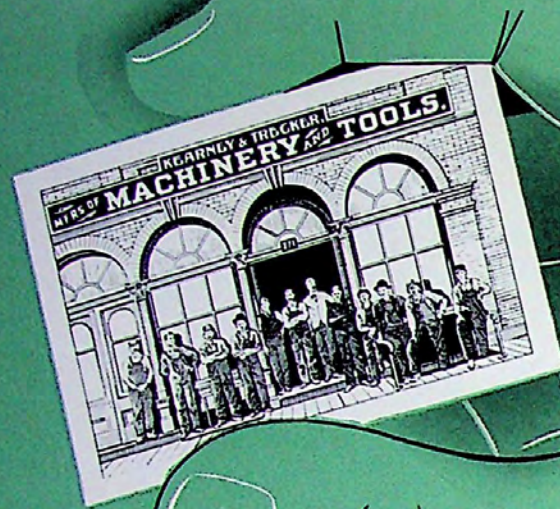
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Our cover, "Milling Chips" is an original painting by Edmund Lewandowski, well-known industrial artist and director of the Layton School of Art, Milwaukee, Wisconsin. It is an authentic interpretation of chips from many types of metals as produced by a variety of cutters. A copy of this original painting, suitable for framing, available on request.





*Producing  
precision and production  
machine tools  
since 1898*

EDWARD J. KEARNEY  
(1868-1934)



THEODORE TRECKER  
(1868-1955)

Kearney & Trecker entered the machine tool field shortly before the turn of the century — 1898 — when American enterprise was gathering momentum for the great era of industrial development just ahead — an age of invention and resourcefulness which ultimately achieved for this country undisputed leadership in productive capacity and the highest standard of living for its people. In this atmosphere of opportunity Kearney & Trecker opened its doors, destined to exert a major influence upon metal-working progress as the years passed by.

E. J. Kearney and Theodore Trecker dedicated their ability and energy to the building of products that would reflect high standards of quality, workmanship and performance. For more than half a century Kearney & Trecker - Milwaukee Machine Tools have lived up to their builders' promise, resulting in a gradual and substantial growth of the organization from a small beginning to its present position as one of the machine tool industry's outstandingly aggressive leaders, particularly in the field of milling practice.

Kearney & Trecker history is a chronicle of constant progress — a story of initiative, invention and product development, the highlights of which are shown on pages that follow.

The Company has grown from a small shop of 12 employees in 1898 to a modern manufacturing plant covering 95 acres and employing over 2000 skilled men and women.



FRANCIS J. TRECKER  
President



JOSEPH B. ARMITAGE  
Vice President, Consultant



RALPH W. BURK  
Executive Vice President



R. L. BISCHOFF  
Financial Vice President



R. A. PERKINS  
Ass't. Secretary and Ass't. Treasurer



ANDREW K. WILSON  
Vice President, Industrial Relations



J. ROBERT JONES  
Vice President, Sales

# Advanced Research and Engineering

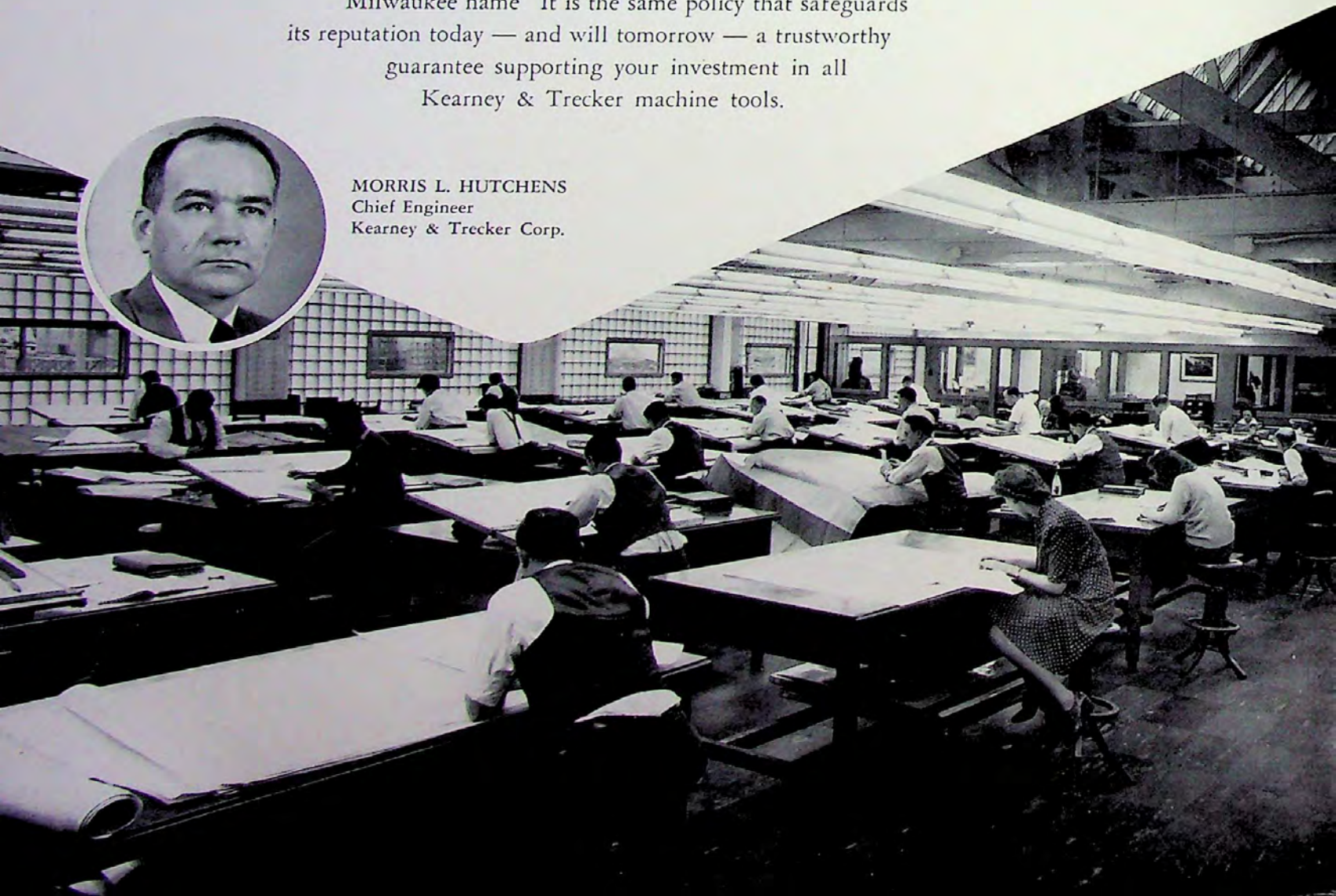
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Over the span of years since 1898 a high regard has developed for Kearney & Trecker - Milwaukee Machine Tools. From the very beginning Kearney & Trecker has sought this respect, has endeavored to be deserving of it, believing as it does today, that any true measure of merit lies in the test of performance. Performance values constantly guide Kearney & Trecker engineers in their progressive and painstaking search for practical objectives in machine tool design. It is this principle of practical engineering and performance testing that first won favor and recognition for the Kearney & Trecker-Milwaukee name. It is the same policy that safeguards its reputation today — and will tomorrow — a trustworthy guarantee supporting your investment in all Kearney & Trecker machine tools.



MORRIS L. HUTCHENS  
Chief Engineer  
Kearney & Trecker Corp.





HENRY H. LENTZNER  
Vice President, Manufacturing



# The Ultimate in modern plant facilities

---



Modern equipment, modern methods, and skilled craftsmen are essential elements in the production of precision machine tools. At Kearney & Trecker you will find all three, functioning as an experienced team to produce milling and precision boring machines of high quality, consistent with the Kearney & Trecker tradition of superior workmanship.

You are always welcome to visit our plant — to see a superbly equipped laboratory of production—where every conceivable test for quality control in machining and assembly is carried on to assure the satisfactory, profitable performance of all Kearney & Trecker machine tools.

W. HOWELL PRITCHARD  
Director of Purchases





HAROLD W. KIPPERS  
Sales Manager  
Standard Machine Division



CARL F. ENROTH  
Sales Manager  
Special Machinery Division



JOHN R. JOERGER  
Sales Manager  
Aircraft Machine Tool Division

# Enterprise in Selling

Coordinated through  
Experienced leadership,  
Fulfilling Requirements  
of Sales and Service



WILLIAM G. HUSEBY  
Assistant Sales Manager  
Standard Machine Division



JOHN C. DOOLEY  
Assistant to the Sales Manager  
Standard Machine Division



JOHN T. HOHAUS  
Assistant Sales Manager  
Special Machinery Division



GLEN EVANS  
Special Machinery Division



WILLIAM BEVERUNG  
Aircraft Machine Tool Division



JAMES E. FARLEY  
Standard Machine Division



ARTHUR A. SEARING  
Standard Machine Division

The world-wide Kearney & Trecker Sales and Service organization ... consisting of six United States branch offices with 26 direct factory representatives, and a combined domestic and foreign network of 69 distributors ... serves the broad needs of metalworking industry in three primary fields.

(1) It assists your purchase of milling and precision boring machines and tooling, sees that you have the right equipment to handle your particular work. (2) It offers you a counselling service on milling problems arising from such factors as new product designs, new workpiece and cutting tool materials, and increased production schedules. And (3), it can help you keep your present milling and precision boring equipment operating at maximum efficiency with minimum maintenance cost.

Kearney & Trecker direct representatives receive many years of practical experience in machine tool engineering, manufacturing, and service before being given responsibilities in outside sales operations. Through frequent briefing sessions and refresher courses at the factory,

they are kept up to date on the very latest developments in standard machine design, in special equipment, and in tooling practices. Regular training programs also provide similar opportunities for specialist training and instruction of dealer personnel.

Wherever you are located, whatever your milling problem — you can be sure there's a nearby Kearney & Trecker direct factory representative or dealer eager to assist you. You'll be pleasantly surprised at the fast response you get on service requests for replacement parts and maintenance help, as well as for new machines or production counselling service.



A. J. STROHMEYER  
Service Manager



AUGUST H. KRIVITZ  
Assistant Service Manager



CLARENCE A. BRUNK  
Supervisor  
Replacement Parts Service



BERT C. PETSCHAR  
Quotations  
Replacement Parts Service



RAY H. DOROW  
Order Analyst  
Replacement Parts Service



WILLIAM J. MIRGELER  
Detroit



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Detroit



CHARLES J. EICHMAN  
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Detroit



RALPH A. ANDERSON  
Detroit



JOHN E. BRENNAN  
Cleveland



JOHN F. SPILLMAN  
Cleveland



SELDEN D. TENNANT  
Cleveland



EUGENE C. BATCHELAR  
Pittsburgh

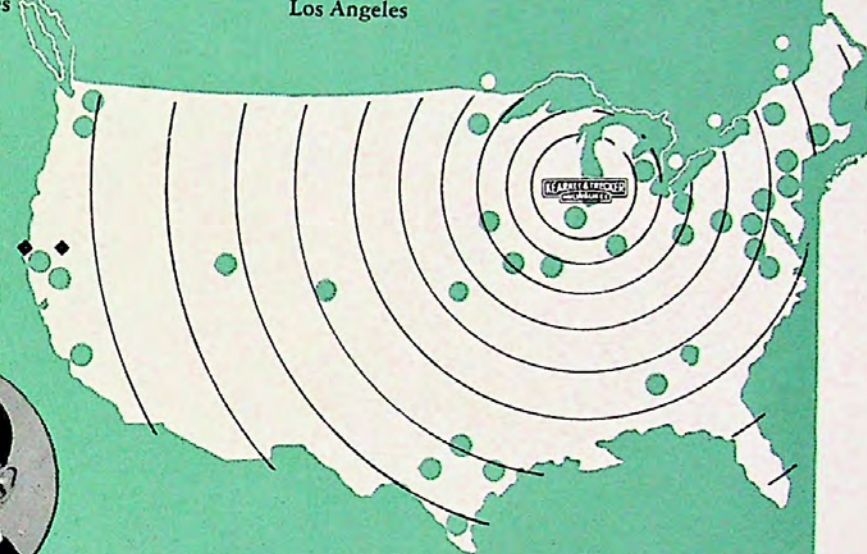


CHARLES KINGSBURY  
Los Angeles



WILLIAM HEIM  
Los Angeles

# Trained Specialists serving you...



JOHN F. BURG  
New York



WILLIAM H. GILMORE  
New York



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BRYAN MURCHISON  
New York



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New York



ROBERT SCHMIDT  
Boston



CHARLES TURNER  
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Milwaukee



WILLIAM KRAMPERT  
Milwaukee



THOMAS W. LIBBY  
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Milwaukee



JULIAN KERLIN  
Milwaukee



GEORGE SABLJACK  
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LLOYD W. CARTER  
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- LOS ANGELES, CALIF. Moore Machinery Co.
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- SALT LAKE CITY, UTAH Todd Machinery Co.
- SAN FRANCISCO, CALIF. Moore Machinery Co.
- SAN JOSE, CALIF. Moore Machinery Co.
- SEATTLE, WASH. Dawson Machinery Co.
- SHREVEPORT, LA. Peerless Supply Co., Inc.
- SYRACUSE 1, N. Y. Syracuse Supply Company
- TULSA, OKLA. White Star Machinery Co.
- WICHITA, KAN. White Star Machinery Co.

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- OTTAWA
- QUEBEC
- TORONTO
- WINDSOR Williams & Wilson Ltd.



# World Wide Representation..



J. L. WESSOLOWSKI  
European Sales Manager



Metalworking industries in the foreign markets of the world have always looked upon ownership of Kearney & Trecker — Milwaukee Machine Tools with considerable pride. The reason is not hard to find — the Milwaukee name has represented advanced, practical engineering, quality workmanship and outstanding performance since 1898.



F. E. WILSON  
Sales Director  
E. H. Jones (Machine Tools) Ltd.  
London

Sole selling agents of Kearney & Trecker — Milwaukee Machine Tools in the British Isles. Also exclusive representatives of Kearney & Trecker products manufactured under license by C. V. A. of Sussex.

## SALES REPRESENTATIVES

AUSTRALIA • ASIA • AFRICA  
EUROPE • LATIN AMERICA

- AUSTRALIA  
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A/S G. HARTMANN, Oslo
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Syrian Import, Export & Distribution Co.  
SAS (Siedco), Latakia
- TURKEY  
Burla Biraderler ve Ssi, Istanbul, Ankara
- UNION OF SOUTH AFRICA  
G. H. Langler & Co., Ltd., Johannesburg
- LATIN AMERICA  
AMTEA Corporation, New York, N. Y.



FRED M. READ  
Vice President and General Mgr.  
AMTEA Corporation,  
New York



ORLANDO SALGADO  
Resident Sales Engineer  
AMTEA Corp.,  
South America

Kearney & Trecker Customer Engineering Service is best recommended by its outstanding record in solving many hundreds of difficult and unusual milling problems arising from demands for high volume production and specialized milling requirements seeking greater accuracy and finer finish. This service analyzes every contributing factor in your problem . . . quantity, size, tolerances, materials and finish of parts to be produced . . . then establishes the most efficient machining method . . . the proper type, size and capacity of machine to be used. On the basis of accumulated data and subsequent study of the problem, Kearney & Trecker Customer Engineering Service either adapts a standard machine through fixtures and attachments, or designs a special machine to meet your exact requirements — fully conscious of the cost in relation to performance and investment.

*Special Machinery Division*

# Customer Engineering Service...

*Aircraft Machine Tool Division*

In addition, Customer Engineering Service helps you select the correct tooling for the job. It plans a sequence of operations designed to minimize the number of setups and setup time . . . to take optimum advantage of a machine's working range and capacity. Supported by engineers experienced in production milling machine design and application, this Service specializes in solving out-of-the-ordinary problems. When these situations arise you'll be money ahead consulting Kearney & Trecker's Customer Engineering Service. Use it freely without obligation. Send details of your particular problem including prints and related data, or workpieces where available. For full information contact your nearest Kearney & Trecker representative or write direct to the factory. Prompt and careful consideration is accorded every inquiry.



**JAMES FLANNERY**  
Chief Engineer  
Special Machinery Division



**WALLACE E. BRAINARD**  
Chief Engineer  
Aircraft Machine Tool Division



**ARTHUR FOTSCH**  
Proposal Engineer  
Special Machinery Division



STEP 1—Full exchange of facts and data about the job mark the first step in solving your production problem. Sales engineers, experienced in the "ground floor" method of analysis, assure ultimate customer satisfaction.



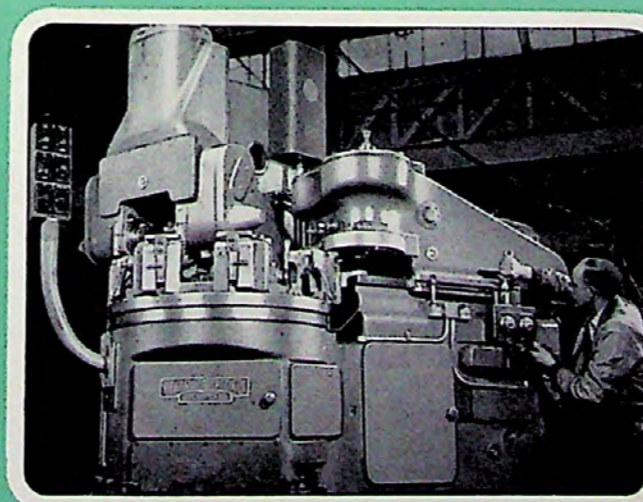
STEP 2—Customer Engineering Service goes to work. Project engineers review the problem — ideas for holding the workpiece, machining it, transferring it — are discussed. Preliminary sketches appear. Proposal is prepared.



STEP 3—Recommendation for solution of problem is submitted to customer. Modifications and changes are suggested, carefully examined, finally agreed upon, as proposal enters order stage.



STEP 4—Patterns signal the start of production as final engineering is approved. Progress in manufacture and assembly follows coordinated schedule to meet delivery requirements.



STEP 5—Final stage of assembly, preliminary to test and shipment. Finished product illustrates points of sound design — compactness, rigidity, accessibility, pleasing appearance.

Service...



# Educational Service

An extensive educational and information service is available to organizations and personnel who are associated with the purchase, operation, and maintenance of Kearney & Trecker machine tools, or who are engaged generally in the broad training and instruction of others in their use and application. This service provides practical assistance to such groups as machinist apprentices, operator trainees, machine shop instructors and foremen, standards and tool engineers and others engaged in various jobs related to vocational instruction in metalworking. Available are film aids, well illustrated and easily understood handbooks, studyviews, informative literature, speed, feed and power calculator, operation manuals, exploded view parts and maintenance data — all designed to make your job easier and increase the return on your company's investment in the tools of production. Why not take advantage of them today? Write for Bulletin ES-10.

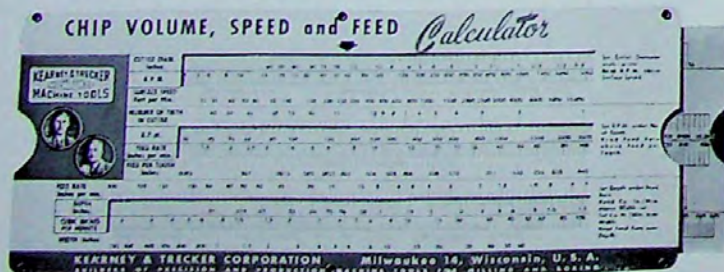


HAL W. FRANCKE  
Advertising Manager

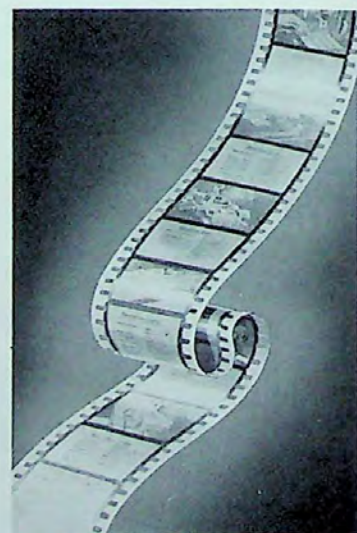


**STUDYVIEW** — poster size (40" x 60") illustration of universal style and vertical style milling machines for classroom display. Clear definition of machines' principal components. (No charge).

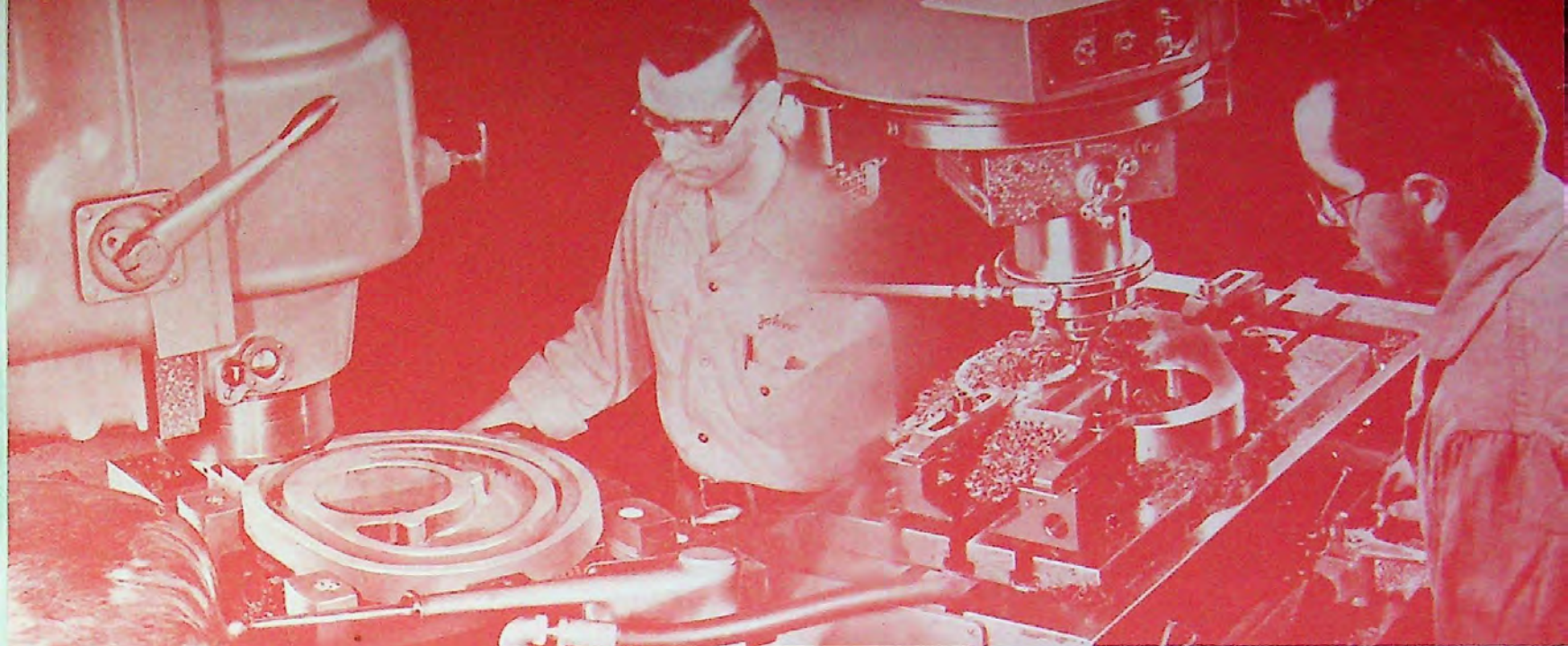
**SLIDE RULE CALCULATOR** — new, fast approach to determine chip volume, speed, feed and power factors in milling machine operation. (No charge).



**ELEMENTARY HANDBOOKS** — Book I, "The Right and Wrong in Milling Practice," and Book II, "The Milling Machine and Its Attachments." (No charge)

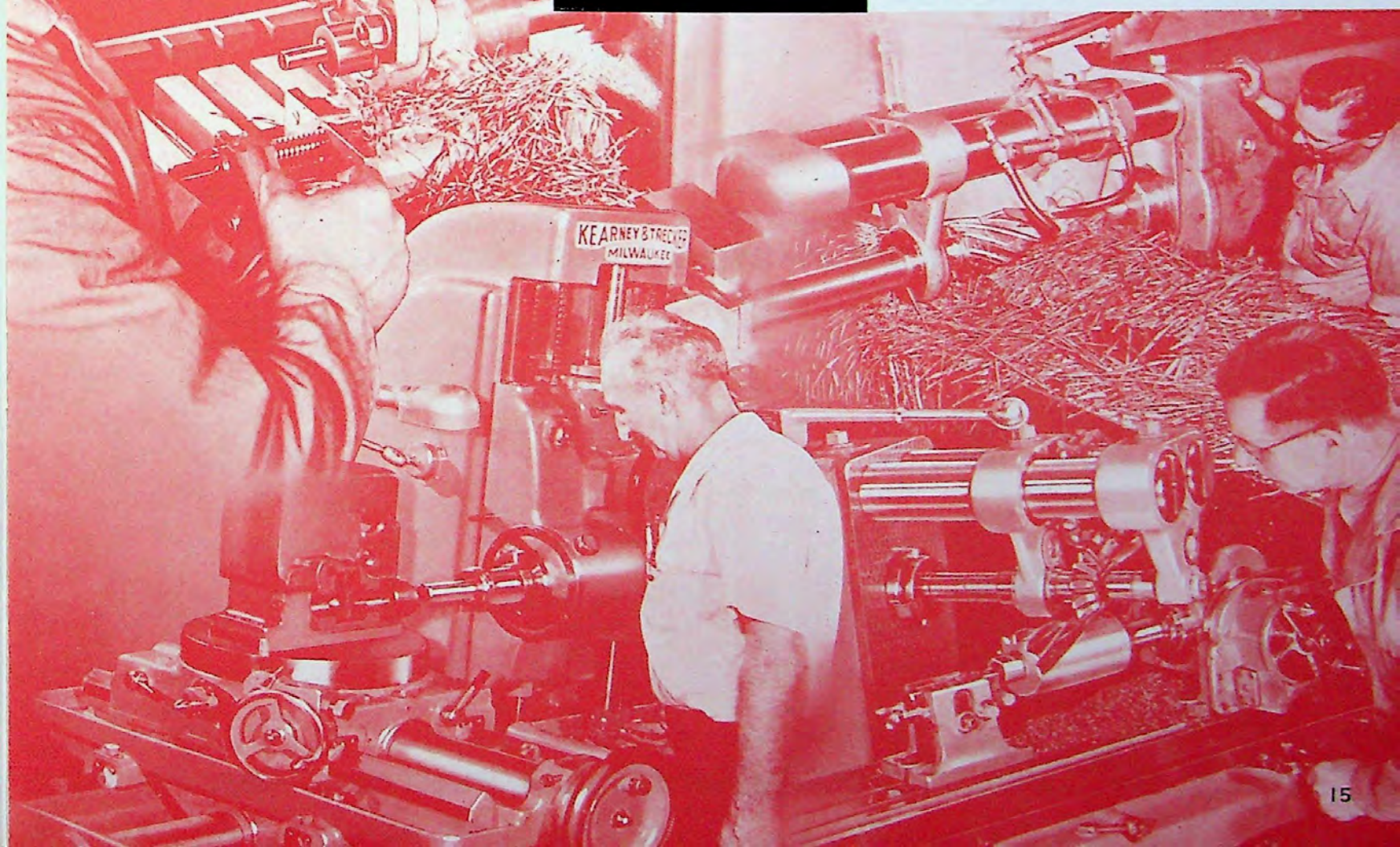


35mm SOUND-SLIDE COLOR FILM on "MILLING PRACTICE"—a complete course on fundamentals. (No charge).



**KEARNEY & TRECKER**  
**MILWAUKEE**  
**MACHINE TOOLS**

The preceding pages present a summary of Kearney & Trecker history — a free enterprise story of two men and an idea, and how it grew to stature in the field of world metal-working. Pages that follow present the modern product story of Kearney & Trecker - Milwaukee Machine Tools, products which have set the standard of comparison for dependability, accuracy, and profit-making performance for more than half a century.



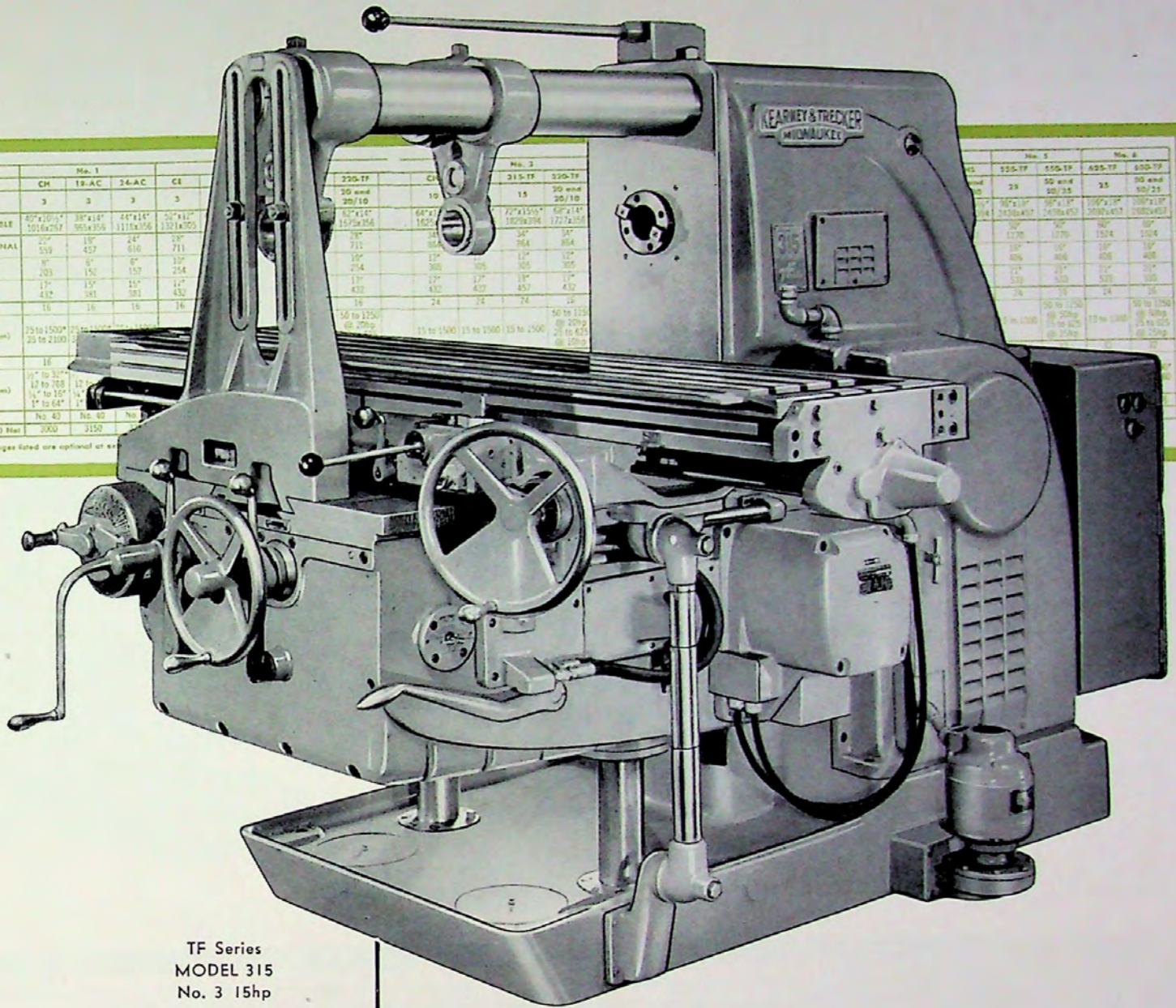




**PLAIN  
MILLING  
MACHINES**

with  
MONO-LEVER AND  
AUTOMATIC CYCLE  
TABLE CONTROL  
and  
WITH STANDARD  
DIRECTIONAL  
TABLE CONTROL

PLAIN



TF Series  
MODEL 315  
No. 3 15hp

**KEARNEY & TRECKER**  
MILWAUKEE

**PLAIN**

**KNEE TYPE  
MILLING  
MACHINES**

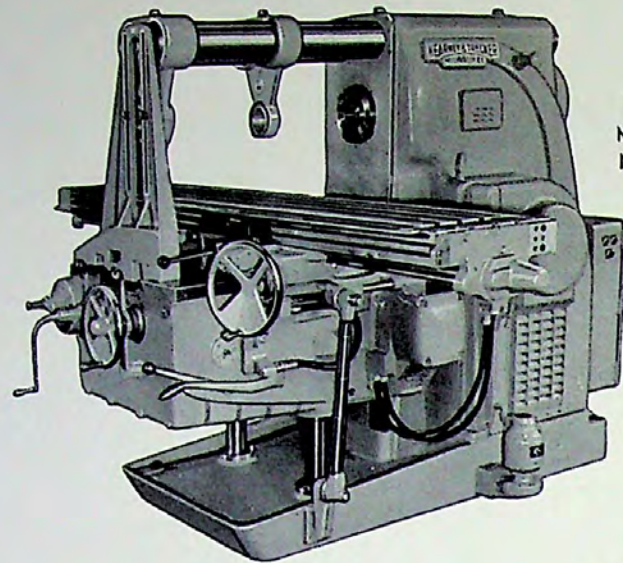
SIZE MODEL	No. 1				No. 2	No. 3		No. 4	No. 5		No. 6	
	CH	18-AC	24-AC	CE		220-TF	215-TF		220-TF	225-TF	255-TF	255-TF
HORSEPOWER	3	3	3	3	10	15	20/10	20	25	25	25	25
WORKING SURFACE OF TABLE	40"x10 1/2"	38"x14"	48"x14"	50"x12"	64"x12"	64"x12"	64"x12"	64"x12"	64"x12"	64"x12"	64"x12"	64"x12"
	1016x267	965x356	1116x356	1321x305	1627x356	1627x356	1627x356	1627x356	1627x356	1627x356	1627x356	1627x356
	25"	18"	24"	18"	30"	30"	30"	30"	30"	30"	30"	30"
	559	427	616	711	711	711	711	711	711	711	711	711
TRAVEL CAPACITY	LONGITUDINAL				CROSS		VERTICAL		CHANGES			
	8"	6"	8"	10"	10"	10"	10"	10"	10"	10"	10"	10"
	203	150	157	254	13"	12"	12"	12"	12"	12"	12"	12"
SPEEDS	RANGE (rpm)				RANGE (rpm)		RANGE (rpm)		RANGE (rpm)			
	75 to 1500*	75 to 1500*	75 to 1500*	75 to 1500*	15 to 1500	15 to 1500	15 to 1500	15 to 1500	15 to 1500	15 to 1500	15 to 1500	15 to 1500
FEEDS	RANGE (ipm)				RANGE (ipm)		RANGE (ipm)		RANGE (ipm)			
	1" to 64"	1" to 64"	1" to 64"	1" to 64"	1" to 64"	1" to 64"	1" to 64"	1" to 64"	1" to 64"	1" to 64"	1" to 64"	1" to 64"
SPINDLE SIZE (Taper) No. 43 No. 40 No. 40 No. 40												
APPROXIMATE WEIGHT (lb.) Max 3000 3150												

\*Standard Range, all other ranges listed are optional at extra cost.

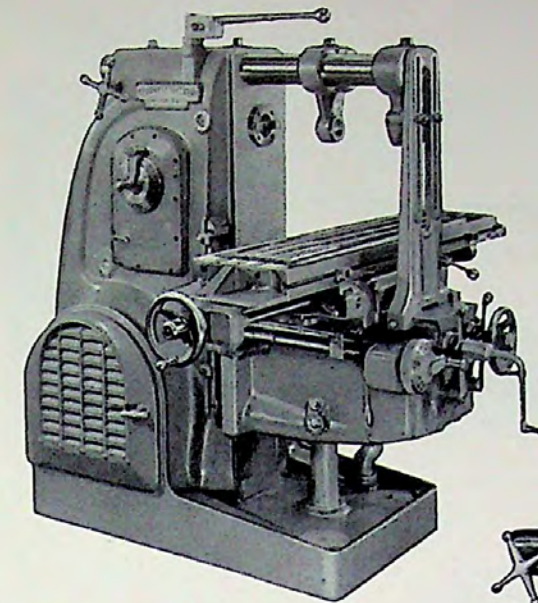
# PLAIN

**KEARNEY & TRECKER  
MILWAUKEE**

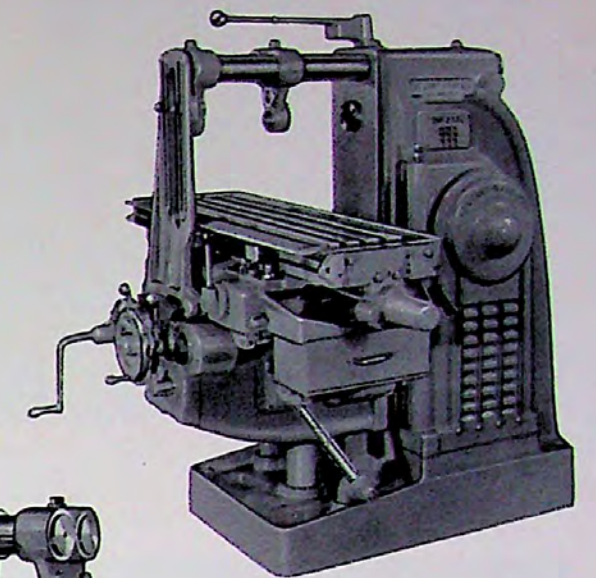
## MILLING MACHINES



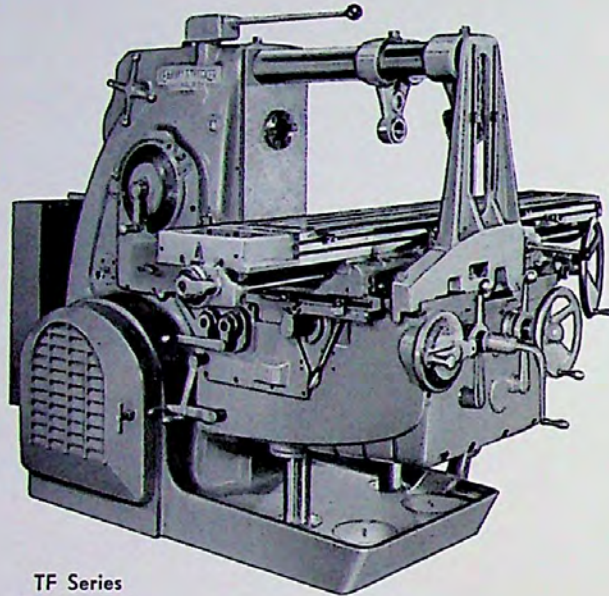
TF Series  
MODEL 525  
No. 5 25hp



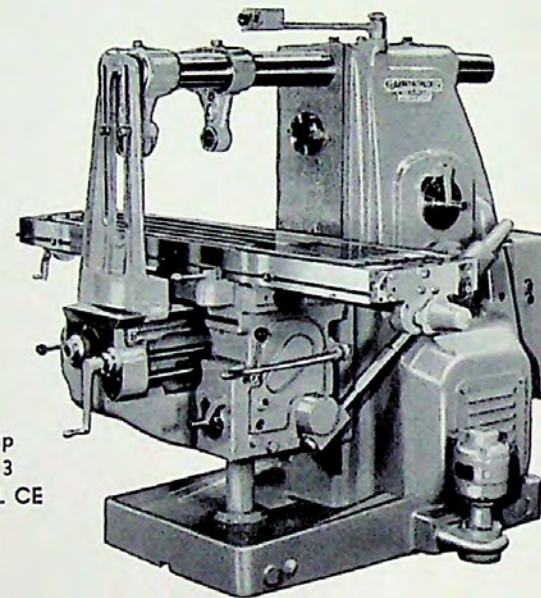
5hp No. 2 MODEL CH  
with Standard Directional  
Table Control



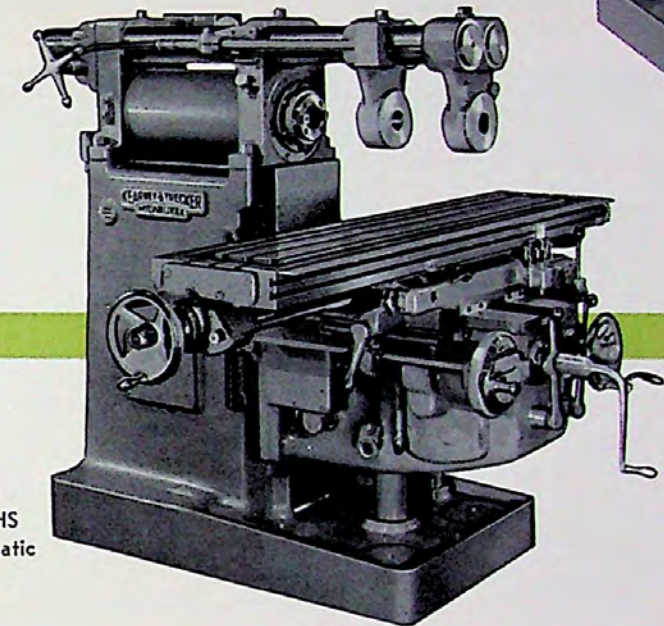
3hp 24" MODEL AC  
with Mono-Lever and Automatic  
Cycle Table Control



TF Series  
MODEL 210  
No. 2 10hp



7 1/2 hp  
No. 3  
MODEL CE



30/15hp No. 4 MODEL HS  
with Mono-Lever and Automatic  
Cycle Table Control

INDIVIDUAL BULLETINS ARE AVAILABLE FOR ALL PLAIN STYLE MACHINES.  
WRITE DIRECT OR CONTACT YOUR NEAREST KEARNEY & TRECKER REPRESENTATIVE.

# PLAIN MILLING MACHINES

with  
**MONO-LEVER AND  
AUTOMATIC CYCLE  
TABLE CONTROL**  
and  
**WITH STANDARD  
DIRECTIONAL  
TABLE CONTROL**

Note — Figures shown in color  
are metric specifications.

SIZE MODEL	No. 1					No. 2				
	CH	18-AC	24-AC	CE	CHL	CH	210-TF	220-TF	CH Ram	
HORSEPOWER	3	3	3	3	3	5	10	20 and 20/10	5†	
WORKING SURFACE OF TABLE	40"x10 1/2" 1016x267	38"x14" 965x356	44"x14" 1118x356	52"x12" 1321x305	46"x10 1/2" 1168x267	50"x12" 1270x305	62"x14" 1575x356	62"x14" 1575x356	50"x12" 1270x305	
TRAVEL CAPACITY	LONGITUDINAL	22" 559	18" 457	24" 610	28" 711	28" 711	28" 711	28" 711	28" 711	
	CROSS	8" 203	6" 152	6" 152	10" 254	10" 254	10" 254	10" 254	10" 254	
	VERTICAL	17" 432	15" 381	15" 381	17" 432	17" 432	18" 457	17" 432	18" 457	
SPEEDS	CHANGES	16	16	16	16	16	24	16	16	
	RANGE (rpm)	25 to 1500* 35 to 2100	25 to 1500* 35 to 2100	25 to 1500* 35 to 2100	25 to 1300	25 to 1500* 35 to 2100	25 to 1500* 35 to 2100	15 to 1500	25 to 1500* 35 to 2100	
FEEDS	CHANGES	16	16	16	16	16	32	32	16	
	RANGE (ipm)	1/2" to 32" 12 to 768 1/4" to 16" 1" to 64"	1/2" to 32" 12 to 768 1/4" to 16" 1" to 64"	1/2" to 32" 12 to 768 1/4" to 16" 1" to 64"	1/2" to 25" 12 to 600	1/2" to 32" 12 to 768 1/4" to 16" 1" to 64"	1/2" to 32" 12 to 768 1/4" to 16" 1" to 64"	3/4" to 90" 9 to 2160	3/4" to 90" 9 to 2160	1/4" to 32" 6 to 768
SPINDLE SIZE (Taper)	No. 40	No. 40	No. 40	No. 40	No. 40	No. 50	No. 50	No. 50	No. 50	
APPROXIMATE WEIGHT (lb.) Net	3000	3150	3250	3300	3100	4100	8400	8650	4800	

\*Standard Range, all other ranges listed are optional at extra cost. †Ram Spindle—3hp. ‡Ram Spindle—5hp.

No. 3							No. 4							No. 5		No. 6	
CE	CH	310-TF	315-TF	320-TF	330-TF	CH Ram	CH	415-TF	425-TF	430-TF	450-TF	CH Ram	HS	525-TF	550-TF	625-TF	650-TF
7 1/2	10	10	15	20 and 20/10	30 and 30/15	10‡	15	15	25	30 and 30/15	50 and 50/25	15‡	15 and 15/30	25	50 and 50/25	25	50 and 50/25
67"x15" 1702x381	64"x13 1/2" 1625x343	68"x14" 1727x356	72"x15 1/2" 1829x394	68"x14" 1727x356	72"x15 1/2" 1829x394	64"x13 1/2" 1625x343	74"x15 1/2" 1880x394	80"x15 1/2" 2032x394	88"x18" 2235x457	80"x15 1/2" 2032x394	88"x18" 2235x457	74"x15 1/2" 1880x394	74"x15 1/2" 1880x394	96"x18" 2438x457	96"x18" 2438x457	106"x18" 2692x457	106"x18" 2692x457
34" 864	34" 864	34" 864	34" 864	34" 864	34" 864	34" 864	42" 1067	42" 1067	42" 1067	42" 1067	42" 1067	42" 1067	42" 1067	50" 1270	50" 1270	60" 1524	60" 1524
12" 305	12" 305	12" 305	12" 305	12" 305	12" 305	12" 305	14" 356	16" 406	16" 406	14" 356	16" 406	14" 356	16" 406	16" 406	16" 406	16" 406	16" 406
18" 457	17" 432	17" 432	18" 457	17" 432	18" 457	17" 432	18" 457	21" 533	21" 533	18" 457	21" 533	18" 457	16" 406	21" 533	21" 533	21" 533	21" 533
16	24	24	24	16	16	24	24	24	24	16	16	24	Constant	24	16	24	16
25 to 1300	15 to 1500	15 to 1500	15 to 1500	50 to 1250 @ 20hp 25 to 625 @ 10hp	50 to 1250 @ 30hp 25 to 625 @ 15hp	15 to 1500	15 to 1500	15 to 1500	13 to 1300	50 to 1250 @ 30hp 25 to 625 @ 15hp	50 to 1250 @ 50hp 25 to 625 @ 25hp	15 to 1500	7200 @ 30hp 3600 @ 15hp	13 to 1300	50 to 1250 @ 50hp 25 to 625 @ 25hp	13 to 1300	50 to 1250 @ 50hp 25 to 625 @ 25hp
16	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32
1/2" to 25" 12 to 600	3/4" to 90" 9 to 2160	3/4" to 90" 9 to 2160	3/4" to 90" 9 to 2160	3/4" to 90" 9 to 2160	3/4" to 90" 9 to 2160	3/4" to 90" 9 to 2160	3/4" to 90" 9 to 2160	3/4" to 90" 9 to 2160	3/4" to 90" 9 to 2160	3/4" to 90" 9 to 2160	3/4" to 90" 9 to 2160	3/4" to 90" 9 to 2160	3/4" to 90" 9 to 2160	3/4" to 90" 9 to 2160	3/4" to 90" 9 to 2160	3/4" to 90" 9 to 2160	3/4" to 90" 9 to 2160
No. 50	No. 50	No. 50	No. 50	No. 50	No. 50	No. 50	No. 50	No. 50	No. 50	No. 50	No. 50	No. 50	No. 50	No. 50	No. 50	No. 50	No. 50
6000	7200	8500	10550	8750	10800	8500	9250	10650	15900	10950	16400	10850	11000	16100	16600	16300	16800

‡No. 60 Heavy Duty drive flange included.

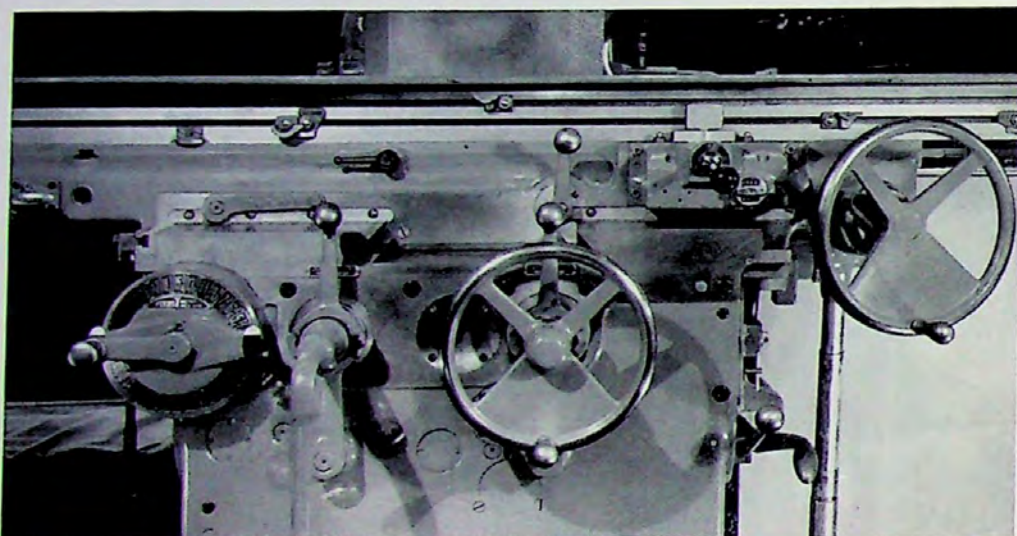
PLAIN



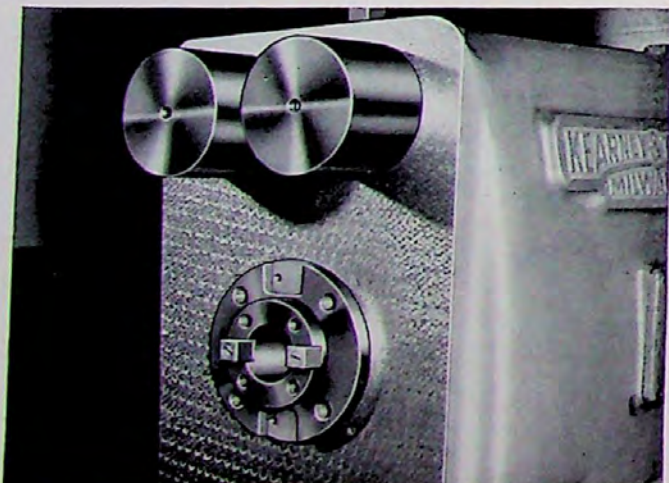
KEARNEY & TRECKER  
MILWAUKEE

# PLAIN MILLING MACHINES

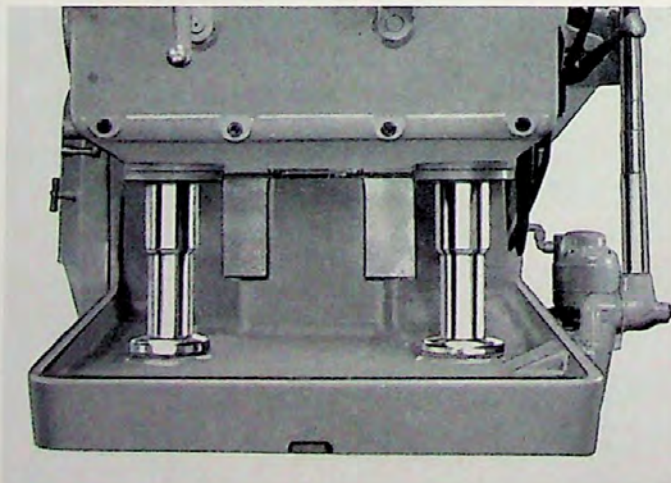
# Performance-Rated FEATURES



**"Up Front" Control Grouping** — all controls easily accessible from normal operating position — time consuming movements eliminated. Featured are the front mounted table handwheel—front mounted backlash eliminator — adjustable saddle clamping gib — saddle lubricating pump handle. Satin finish dials for improved legibility — handwheels and levers conveniently sized and located for ease of operation. Work is simplified — operator fatigue becomes non-existent.



**The Combination Spindle Nose** is a standard feature on the large Nos. 4, 5 and 6 machines to improve cutting efficiency by providing exceptionally rigid support for large diameter face mills and heavy duty flange type arbor setups. The spindle nose is designed with two driving flanges — a combination No. 60/No. 50 National Standard. The spindle taper hole itself is No. 50.

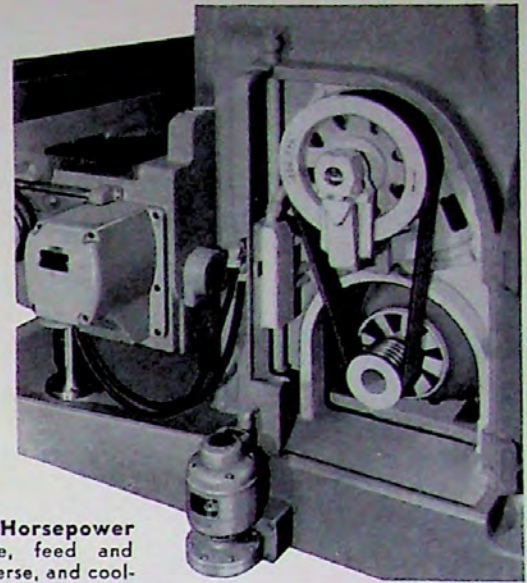


**Twin Elevating Screws** on all TF Series machines — provide greater distribution of support for large working loads and cutting with high speeds and feeds. Twin screw principle of knee elevation and support affords prolonged accuracy and reduction of wear at critical points. The added stabilization afforded by twin elevating screws means increased cutting rigidity and finer workpiece finishes.



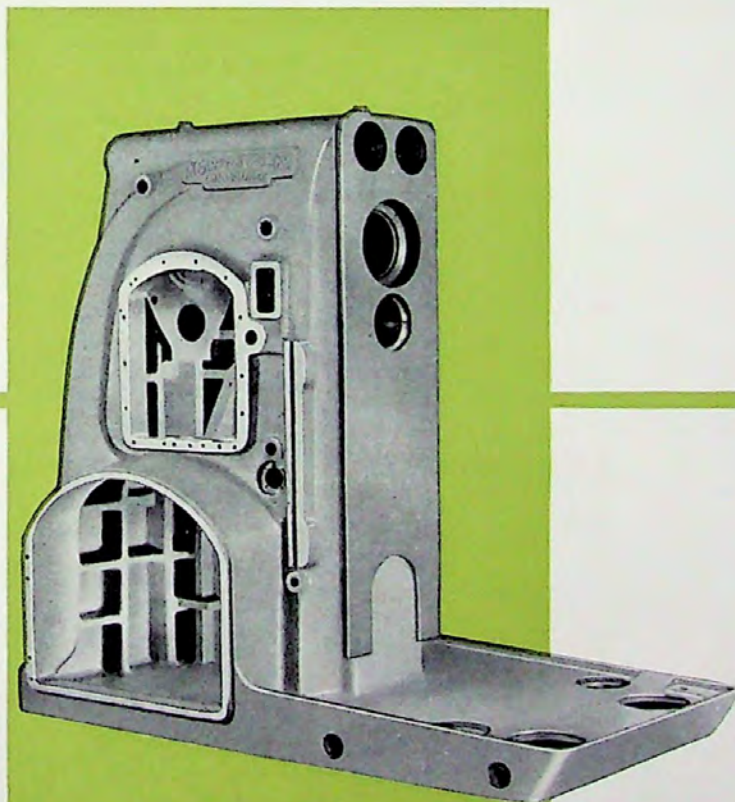
Double round, solid steel overarms provide more strength, rigidity and accuracy for arbor support than any other type — combined bearing area around both overarms is 100% greater than the single overarm style and 500% greater than the dove-tail type. Triangular effect of arbor support is the most rigid ever offered — greater torsional resistance prevents vibration. "Vibra-void" design construction and close tolerances between

column, overarms and arbor support maintains accurate alignment of arbor and cutter. Rapid cutter and arbor installation — arbor support swings and parks out of position — never requires removal.

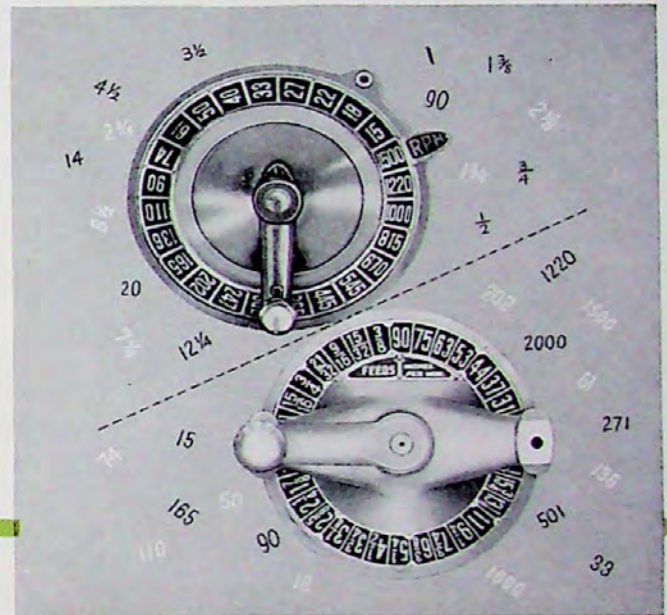


**Greater Horsepower**

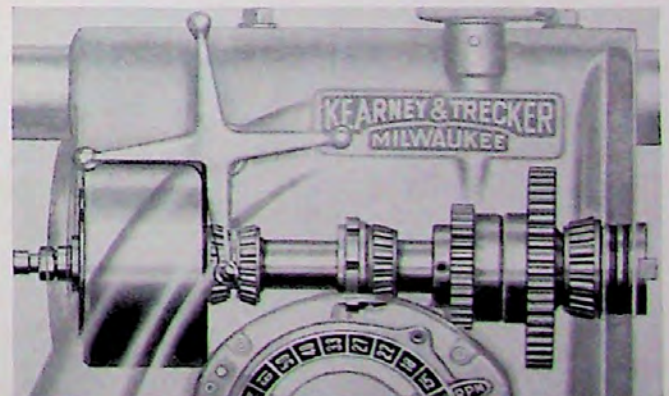
to spindle, feed and rapid traverse, and coolant pump through individual drive motors (on machines over 5hp). Direct drives eliminate spindle drive clutch — reduces maintenance. Feed motor "kicks out" when spindle becomes overloaded.



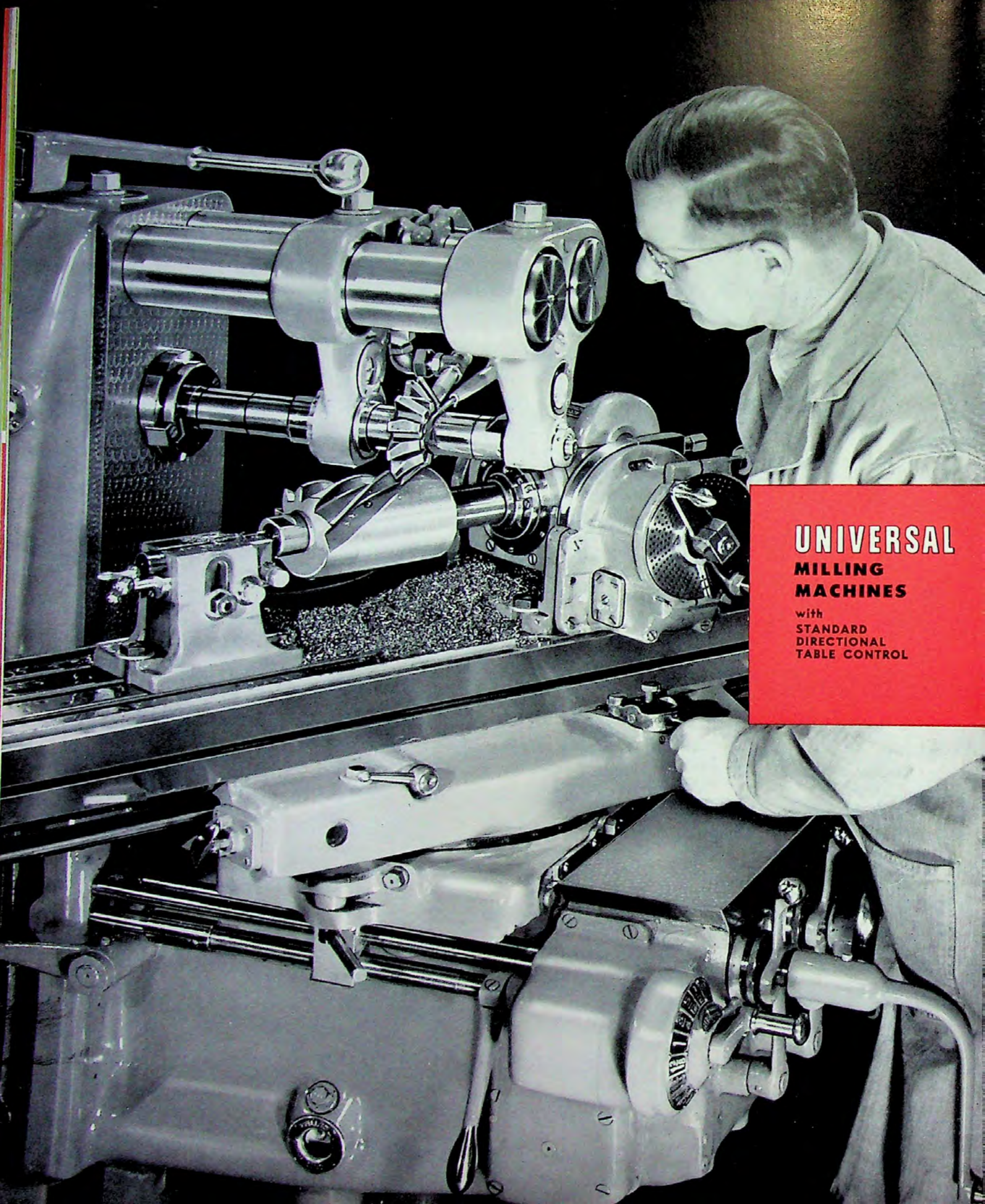
**Greater Rigidity** — through scientifically engineered columns — heavily ribbed, double box-section, sponson construction, with all metal properly distributed to absorb vibration from heaviest cutting loads. Column is cast in one piece featuring a solid back and broad base.



**Easy to Select**, quick change feeds and speeds, which are readily adaptable to the milling of all kinds of metals.



**Greater Cutting Efficiency** through spindle mounted flywheel, (see Machine Selection Chart, Pages 16-17) running with three bearing support, and driven through a train of heavy-duty, wide-faced, steel-forged gears, hardened and specially processed for quiet operation under flywheel momentum.



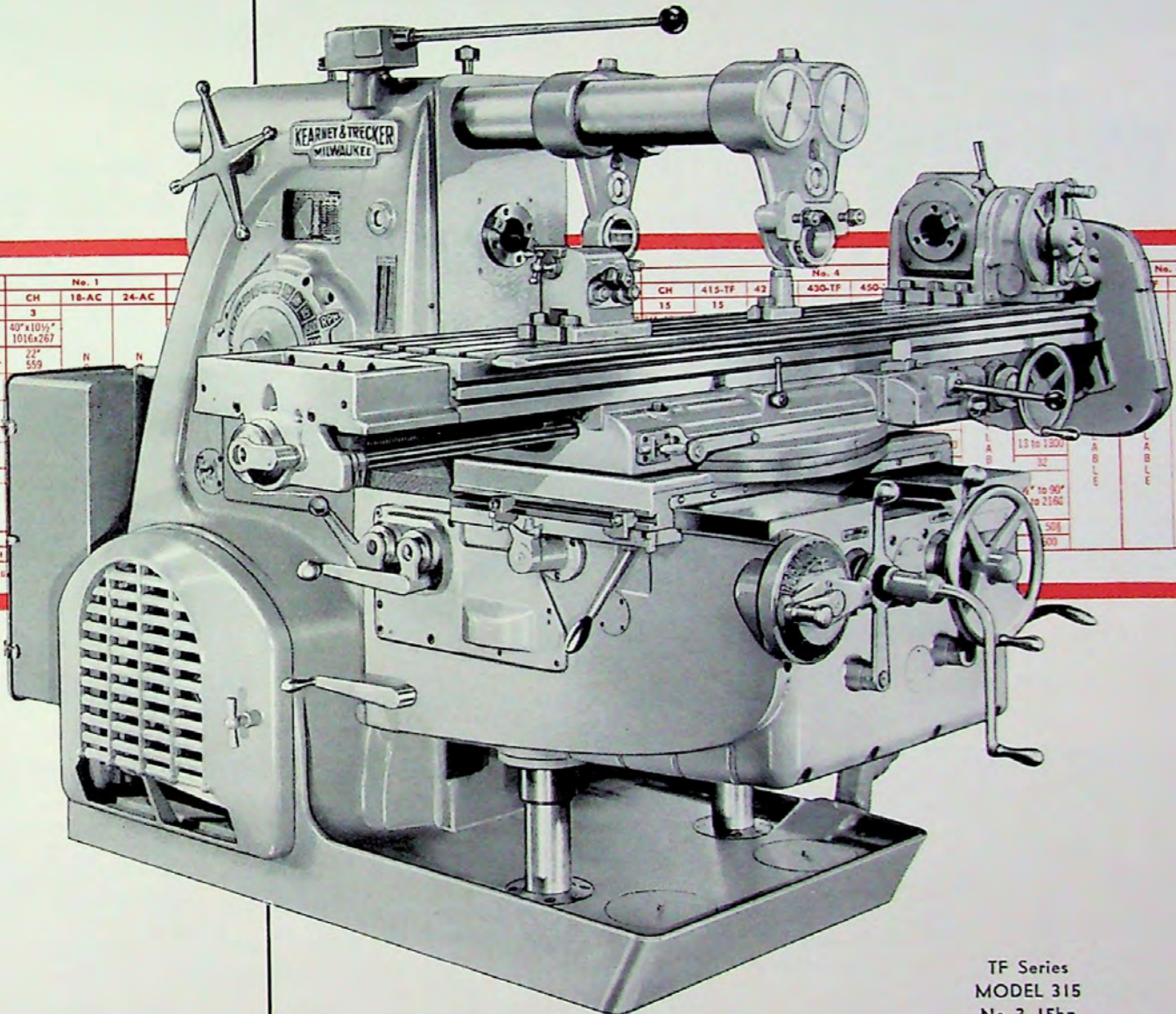
**UNIVERSAL  
MILLING  
MACHINES**

with  
STANDARD  
DIRECTIONAL  
TABLE CONTROL

**KEARNEY & TRECKER  
MILWAUKEE**

# UNIVERSAL

## KNEE TYPE MILLING MACHINES



		No. 1		
SIZE		CH	18-AC	24-AC
MODEL				
HORSEPOWER		3		
WORKING SURFACE OF TABLE		40" x 10 1/4"		
		1016 x 267		
TRAVEL CAPACITY	LONGITUDINAL	22"	N	N
	CROSS	559		
	VERTICAL			
	CHANGES			
SPEEDS	RANGE (rpm)			
	CHANGES			
FEEDS	RANGE (ipm)			
SPINDLE SIZE (Taper)				
APPROXIMATE WEIGHT (lb.) Net				
*Standard Range, all other ranges list				

		No. 4				No. 6	
		CH	415-TF	42	430-TF	450-	650-TF
		15	15				
L A B							
A B C							
D E F							
G H I							
J K L							
M N O							
P Q R							
S T U							
V W X							
Y Z							

NOT AVAILABLE

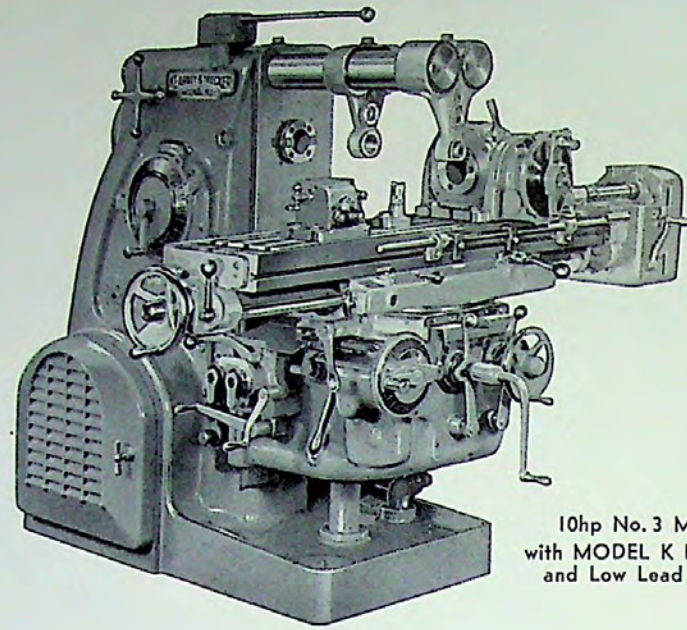
UNIVERSAL

TF Series  
MODEL 315  
No. 3 15hp

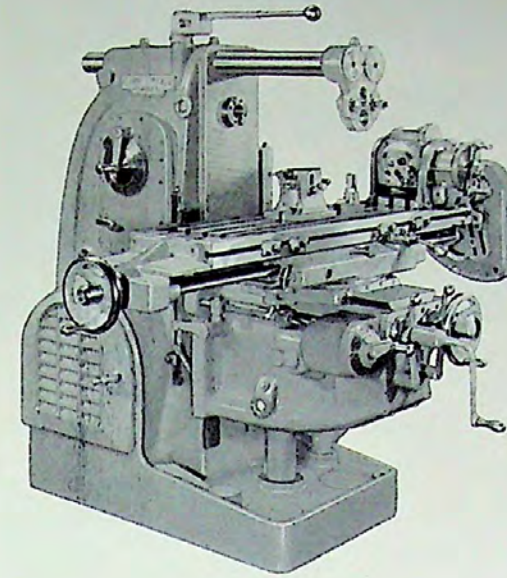
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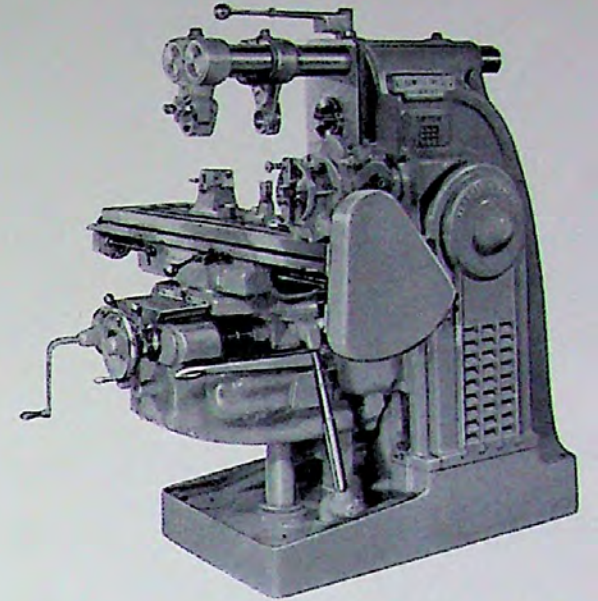
## MILLING MACHINES



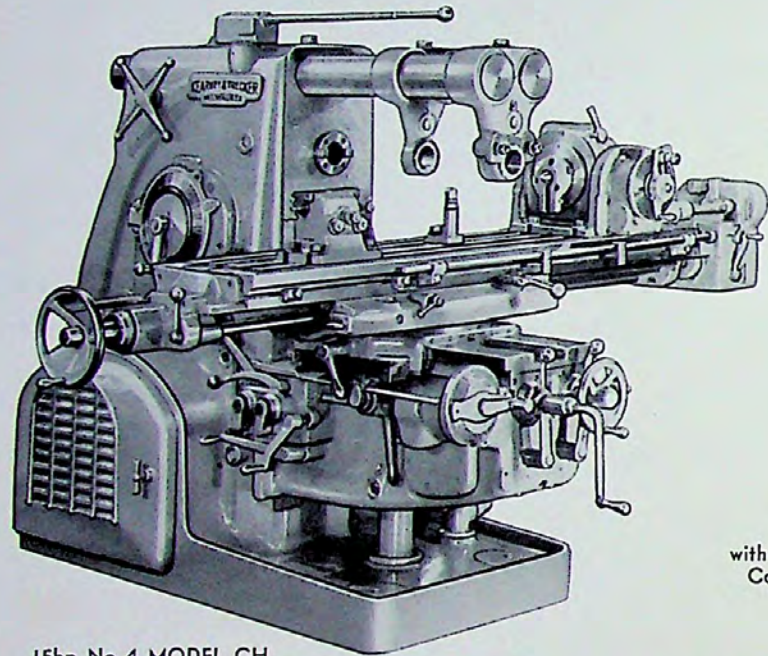
10hp No. 3 MODEL CH  
with MODEL K Dividing Head  
and Low Lead Attachment



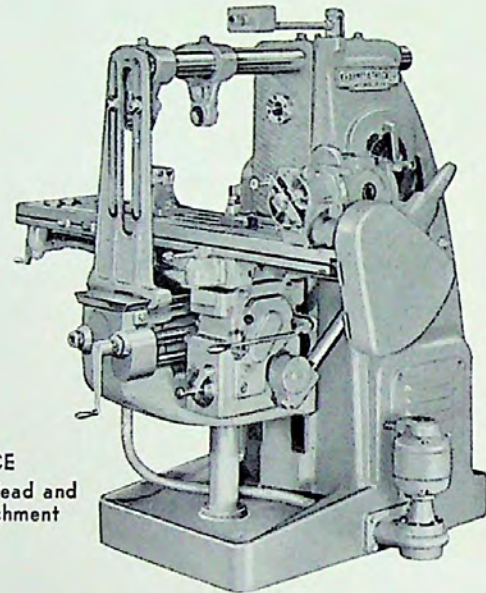
3hp No. 2 MODEL CHL  
with Model H Dividing Head  
and Conventional Lead Attachment



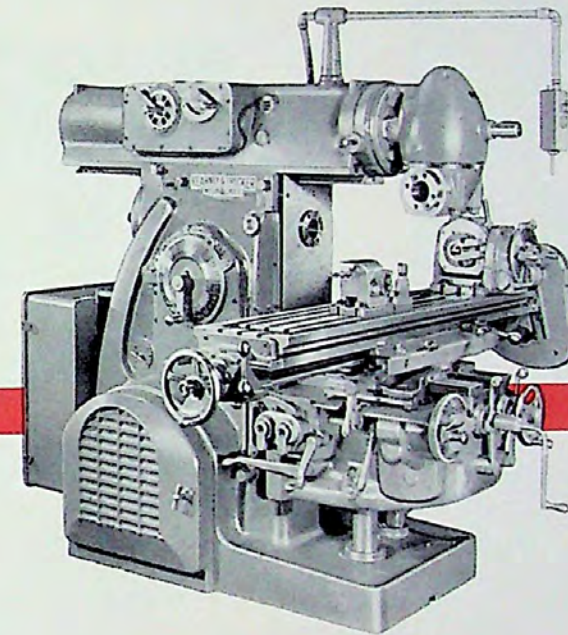
5hp No. 2 MODEL CH  
with Model H Dividing Head  
and Conventional Lead Attachment



15hp No. 4 MODEL CH  
with MODEL K Dividing Head  
and Low Lead Attachment



3hp No. 2 MODEL CE  
with MODEL H Dividing Head and  
Conventional Lead Attachment



10hp No. 3 MODEL CH Ram Head  
with Universal Swivel Head,  
MODEL K Dividing Head and  
Conventional Lead Attachment

INDIVIDUAL BULLETINS ARE AVAILABLE FOR ALL UNIVERSAL STYLE MACHINES.  
WRITE DIRECT OR CONTACT YOUR NEAREST KEARNEY & TRECKER REPRESENTATIVE.

# UNIVERSAL

## MILLING MACHINES

with  
STANDARD  
DIRECTIONAL  
TABLE CONTROL

Note — Figures shown in color  
are metric specifications.

SIZE	No. 1				No. 2					
	CH	18-AC	24-AC	CE	CHL	CH	210-TF	220-TF	CH Ram	
HORSEPOWER	3			3	3	5	10		5†	
WORKING SURFACE OF TABLE	40"x10½" 1016x267			52"x12" 1321x305	46"x10½" 1168x267	50"x12" 1270x305	62"x14" 1575x356		50"x12" 1270x305	
TRAVEL CAPACITY	LONGITUDINAL	22"	NOT AVAILABLE	28"	28"	28"	28"	NOT AVAILABLE	28"	
	CROSS	8"	NOT AVAILABLE	711	711	711	711	NOT AVAILABLE	711	
	VERTICAL	17"	AVAILABLE	10"	10"	10"	10"	AVAILABLE	10"	
	CHANGES	432	AVAILABLE	254	254	254	254	AVAILABLE	254	
SPEEDS	RANGE (rpm)	25 to 1500*	AVAILABLE	17"	17"	18"	17"	AVAILABLE	18"	
	CHANGES	35 to 2100	AVAILABLE	432	432	457	432	AVAILABLE	457	
FEEDS	RANGE (ipm)	16	AVAILABLE	16	16	16	24	AVAILABLE	16	
		25 to 1500*	AVAILABLE	25 to 1300	25 to 1500*	25 to 1500*	15 to 1500	AVAILABLE	25 to 1500*	
SPINDLE SIZE (Taper)	No. 40			No. 40	No. 40	No. 50	No. 50		No. 50	
APPROXIMATE WEIGHT (lb.) Net	3150			3500	3300	4300	8500		5050	

\*Standard Range, all other ranges listed are optional at extra cost. †Ram Spindle—3hp. ‡Ram Spindle—5hp.

No. 3										No. 4						No. 5		No. 6	
CE	CH	310-TF	315-TF	320-TF	330-TF	CH Ram	CH	415-TF	425-TF	430-TF	450-TF	CH Ram	HS	525-TF	550-TF	625-TF	650-TF		
7½	10	10	15			10‡	15	15	25			15‡		25					
67"x15"	64"x13½"	68"x14"	72"x15½"			64"x13½"	74"x15½"	80"x15½"	88"x18"			74"x15½"		96"x18"					
1702x381	1625x343	1727x356	1829x394			1625x343	1880x394	2032x394	2235x457			1680x394		2438x457					
34"	34"	34"	34"	NOT AVAILABLE	NOT AVAILABLE	34"	42"	42"	42"	NOT AVAILABLE	NOT AVAILABLE	42"	NOT AVAILABLE	50"	NOT AVAILABLE	NOT AVAILABLE	NOT AVAILABLE		
864	864	864	864	NOT AVAILABLE	NOT AVAILABLE	864	1067	1067	1067	NOT AVAILABLE	NOT AVAILABLE	1067	NOT AVAILABLE	1270	NOT AVAILABLE	NOT AVAILABLE	NOT AVAILABLE		
12"	12"	12"	12"	NOT AVAILABLE	NOT AVAILABLE	12"	14"	14"	16"	NOT AVAILABLE	NOT AVAILABLE	14"	NOT AVAILABLE	16"	NOT AVAILABLE	NOT AVAILABLE	NOT AVAILABLE		
305	305	305	305	NOT AVAILABLE	NOT AVAILABLE	305	356	356	406	NOT AVAILABLE	NOT AVAILABLE	356	NOT AVAILABLE	406	NOT AVAILABLE	NOT AVAILABLE	NOT AVAILABLE		
18"	17"	17"	18"	NOT AVAILABLE	NOT AVAILABLE	17"	18"	18"	21"	NOT AVAILABLE	NOT AVAILABLE	18"	NOT AVAILABLE	21"	NOT AVAILABLE	NOT AVAILABLE	NOT AVAILABLE		
457	432	432	457	NOT AVAILABLE	NOT AVAILABLE	432	457	457	533	NOT AVAILABLE	NOT AVAILABLE	457	NOT AVAILABLE	533	NOT AVAILABLE	NOT AVAILABLE	NOT AVAILABLE		
16	24	24	24	NOT AVAILABLE	NOT AVAILABLE	24	24	24	24	NOT AVAILABLE	NOT AVAILABLE	24	NOT AVAILABLE	24	NOT AVAILABLE	NOT AVAILABLE	NOT AVAILABLE		
25 to 1300	15 to 1500	15 to 1500	15 to 1500	NOT AVAILABLE	NOT AVAILABLE	15 to 1500	15 to 1500	15 to 1500	13 to 1300	NOT AVAILABLE	NOT AVAILABLE	15 to 1500	NOT AVAILABLE	13 to 1300	NOT AVAILABLE	NOT AVAILABLE	NOT AVAILABLE		
16	32	32	32	NOT AVAILABLE	NOT AVAILABLE	32	32	32	32	NOT AVAILABLE	NOT AVAILABLE	32	NOT AVAILABLE	32	NOT AVAILABLE	NOT AVAILABLE	NOT AVAILABLE		
½" to 25"	¾" to 90"	¾" to 90"	¾" to 90"	NOT AVAILABLE	NOT AVAILABLE	¾" to 90"	¾" to 90"	¾" to 90"	¾" to 90"	NOT AVAILABLE	NOT AVAILABLE	¾" to 90"	NOT AVAILABLE	¾" to 90"	NOT AVAILABLE	NOT AVAILABLE	NOT AVAILABLE		
12 to 600	9 to 2160	9 to 2160	9 to 2160	NOT AVAILABLE	NOT AVAILABLE	9 to 2160	9 to 2160	9 to 2160	9 to 2160	NOT AVAILABLE	NOT AVAILABLE	9 to 2160	NOT AVAILABLE	9 to 2160	NOT AVAILABLE	NOT AVAILABLE	NOT AVAILABLE		
No. 50	No. 50	No. 50	No. 50	NOT AVAILABLE	NOT AVAILABLE	No. 50	No. 50	No. 50	No. 50§	NOT AVAILABLE	NOT AVAILABLE	No. 50	NOT AVAILABLE	No. 50§	NOT AVAILABLE	NOT AVAILABLE	NOT AVAILABLE		
6400	7400	8600	10750	NOT AVAILABLE	NOT AVAILABLE	8750	9600	10850	16400	NOT AVAILABLE	NOT AVAILABLE	11150	NOT AVAILABLE	16600	NOT AVAILABLE	NOT AVAILABLE	NOT AVAILABLE		

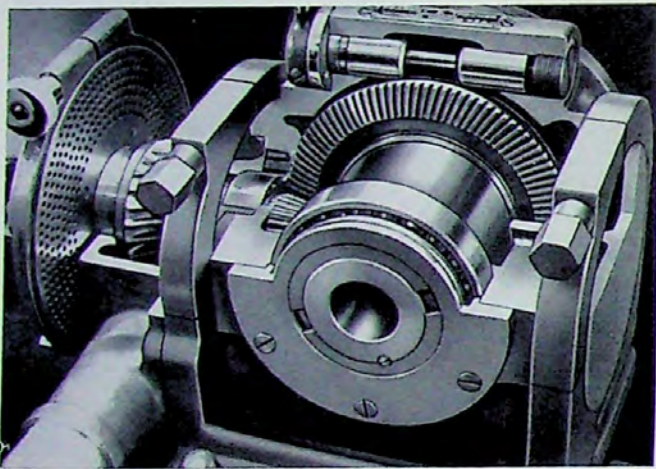
§No. 60 Heavy Duty drive flange included.

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**MILWAUKEE**

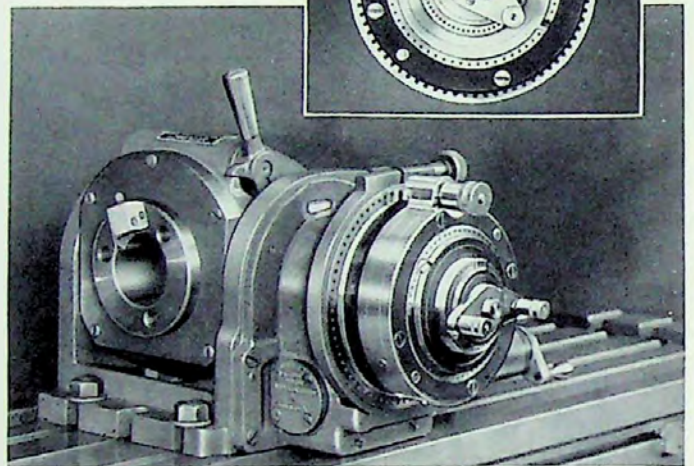
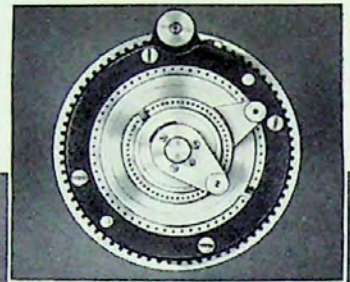
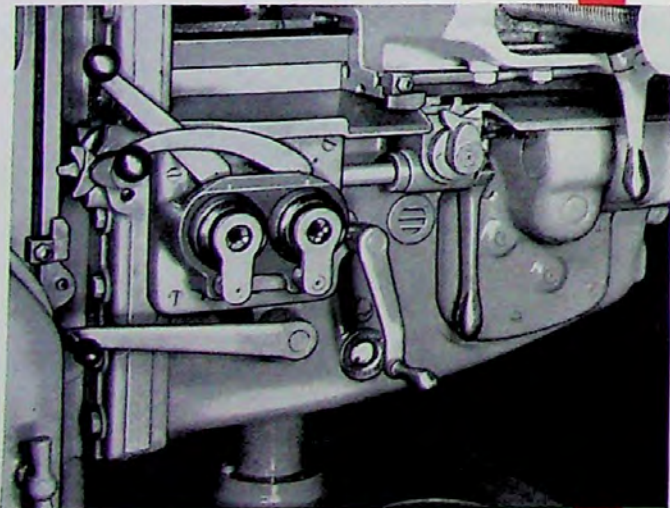
# UNIVERSAL MILLING MACHINES

# Accuracy—Producing FEATURES

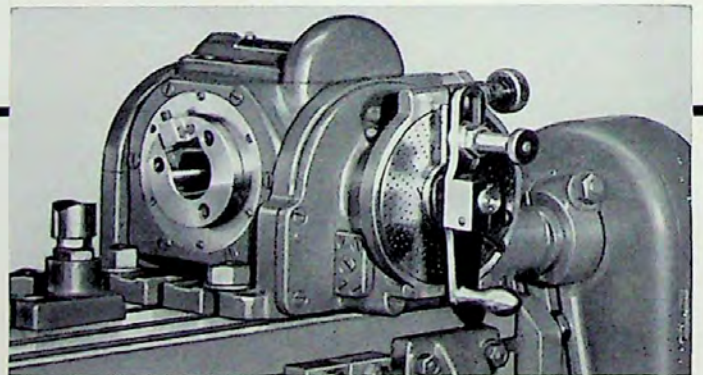


Illustrated is a cutaway view of the Model K Universal Spiral Dividing Head showing the 5:1 ratio hypoid bevel gear system. With this method a circle can be divided into five or more divisions with less than one revolution of the index crank.

Conveniently located rear controls, equipped with micrometer dials, provide the same hand and power feed and rapid traverse movements of the knee, saddle and table as is obtained from the front directional controls.



The Astronomical Divider, when mounted on the Model K Dividing Head, can divide a circle directly into 1,296,000 parts.

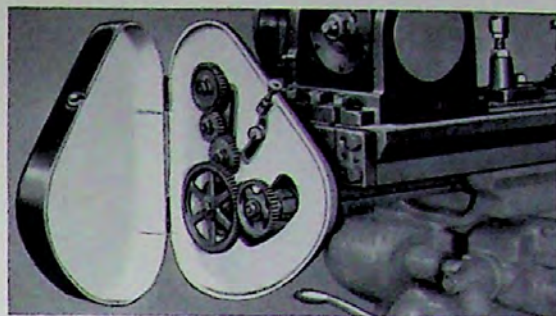


The 40 to 1 ratio Model H Universal Spiral Dividing head is available in two sizes — 10" and 12". The worm and wormwheel of these units are precision ground. The 10" head has a two-piece worm for backlash elimination, whereas the 12" size has a variable pitch worm for adjustment. The spindles of these heads revolve in preloaded oversize bearings — a guarantee of accurate work and constant dependability.

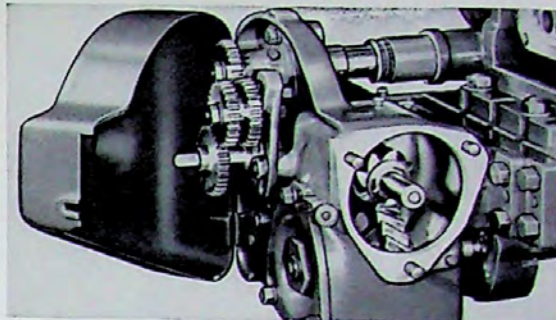
Featured as standard equipment with all Kearney & Trecker - Milwaukee Universal Milling Machines is the exclusive, super-precision Model H or Model K Universal Spiral Dividing Head. A Conventional or Low Lead Attachment is also included.

In addition to the features shown on these pages there are many other work-holding and cutter-driving attachments available to help increase the scope of application of every machine.

Yes, there is a definite place in every tool room and production shop for these highly versatile Universal mills.

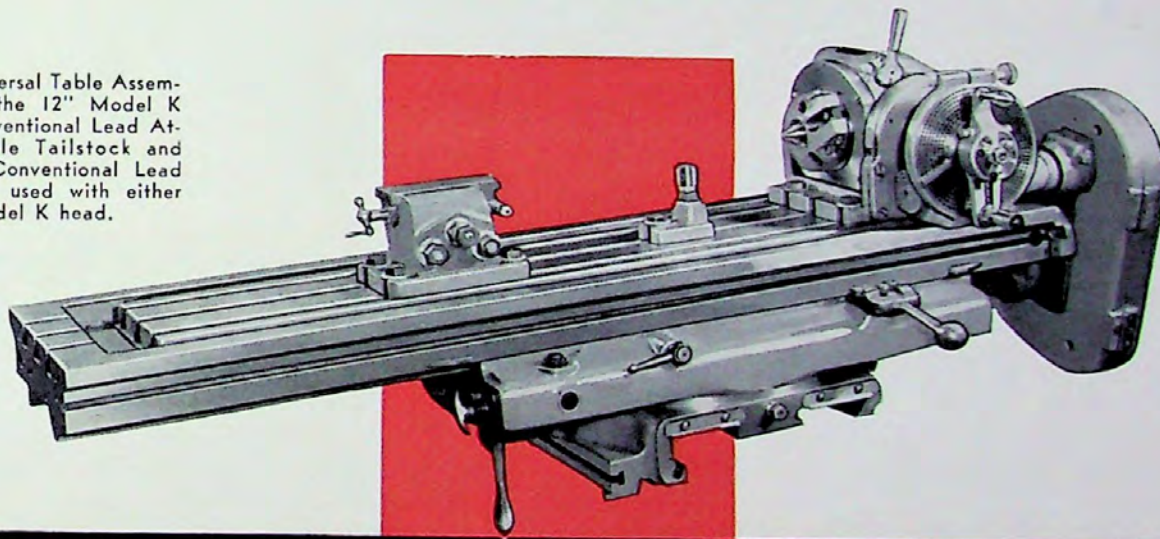


**CONVENTIONAL LEAD ATTACHMENT**  
More than 1300 leads from .670" to 149"

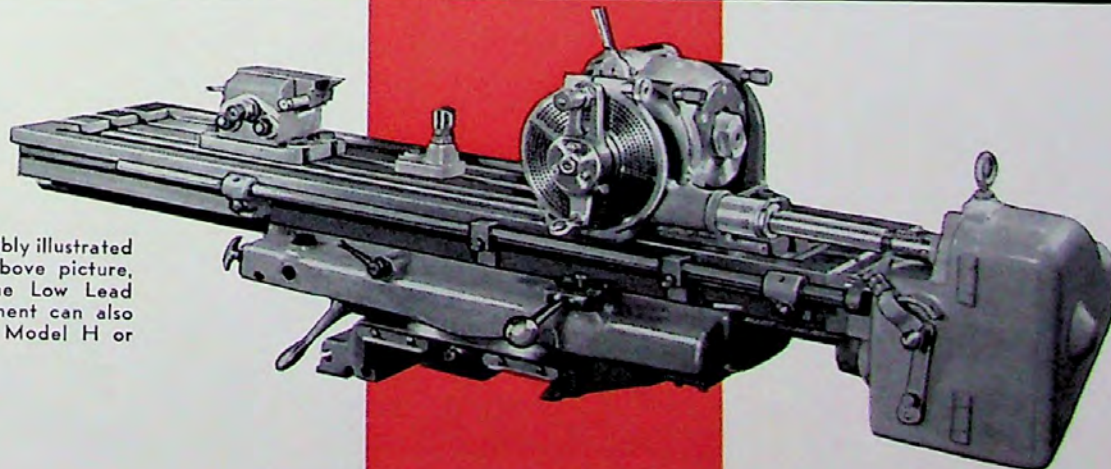


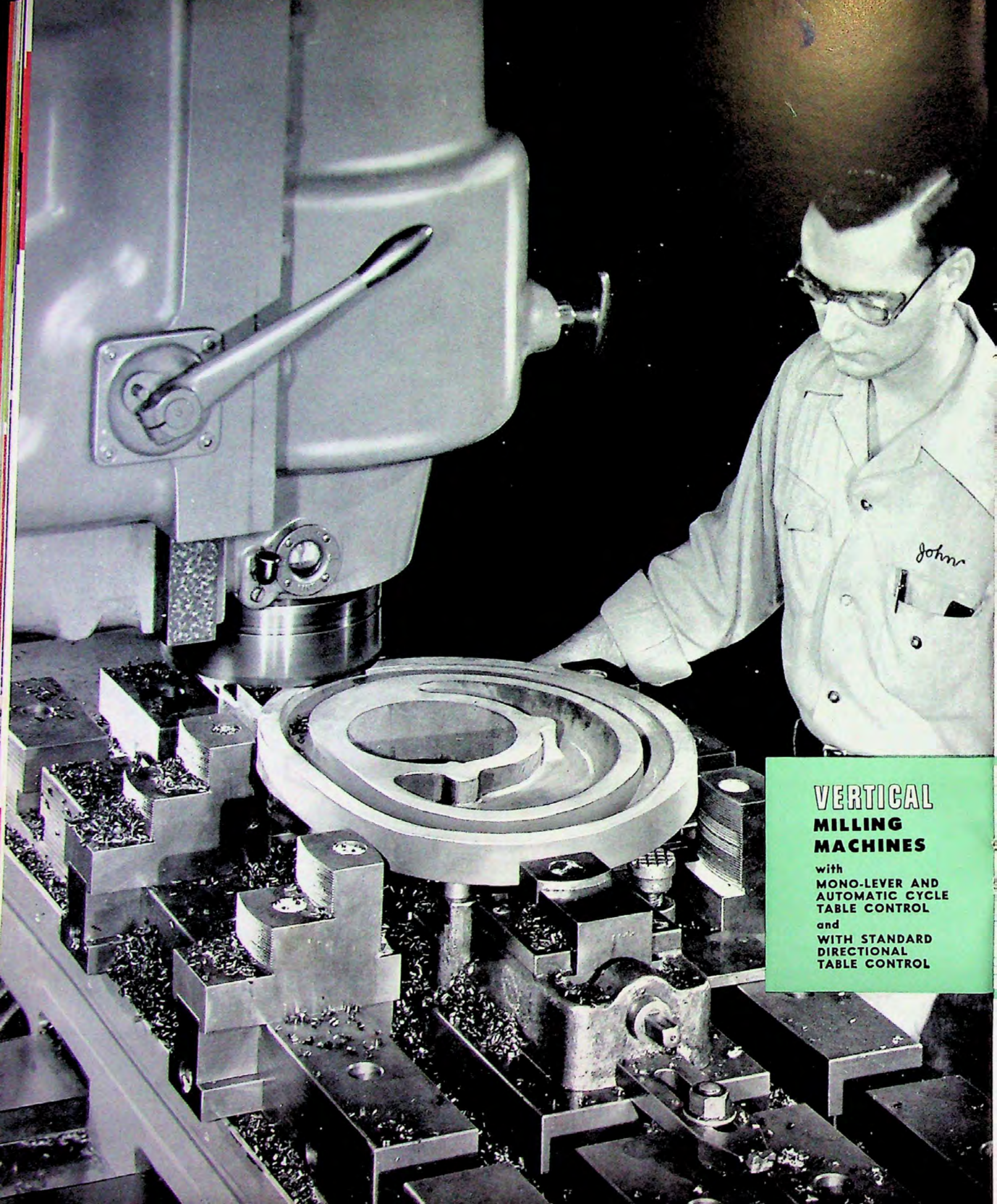
**LOW LEAD ATTACHMENT**  
Over 40,000 leads from .0219" to 2918.4"  
Either a Conventional or Low Lead Attachment can be furnished as desired at a differential in price.

Shown here is a Universal Table Assembly equipped with the 12" Model K Dividing Head, Conventional Lead Attachment, Adjustable Tailstock and Center Rest. The Conventional Lead Attachment can be used with either the Model H or Model K head.



The Universal Table Assembly illustrated here is the same as in above picture, but is equipped with the Low Lead Attachment. This attachment can also be used with either the Model H or Model K head.





**VERTICAL  
MILLING  
MACHINES**

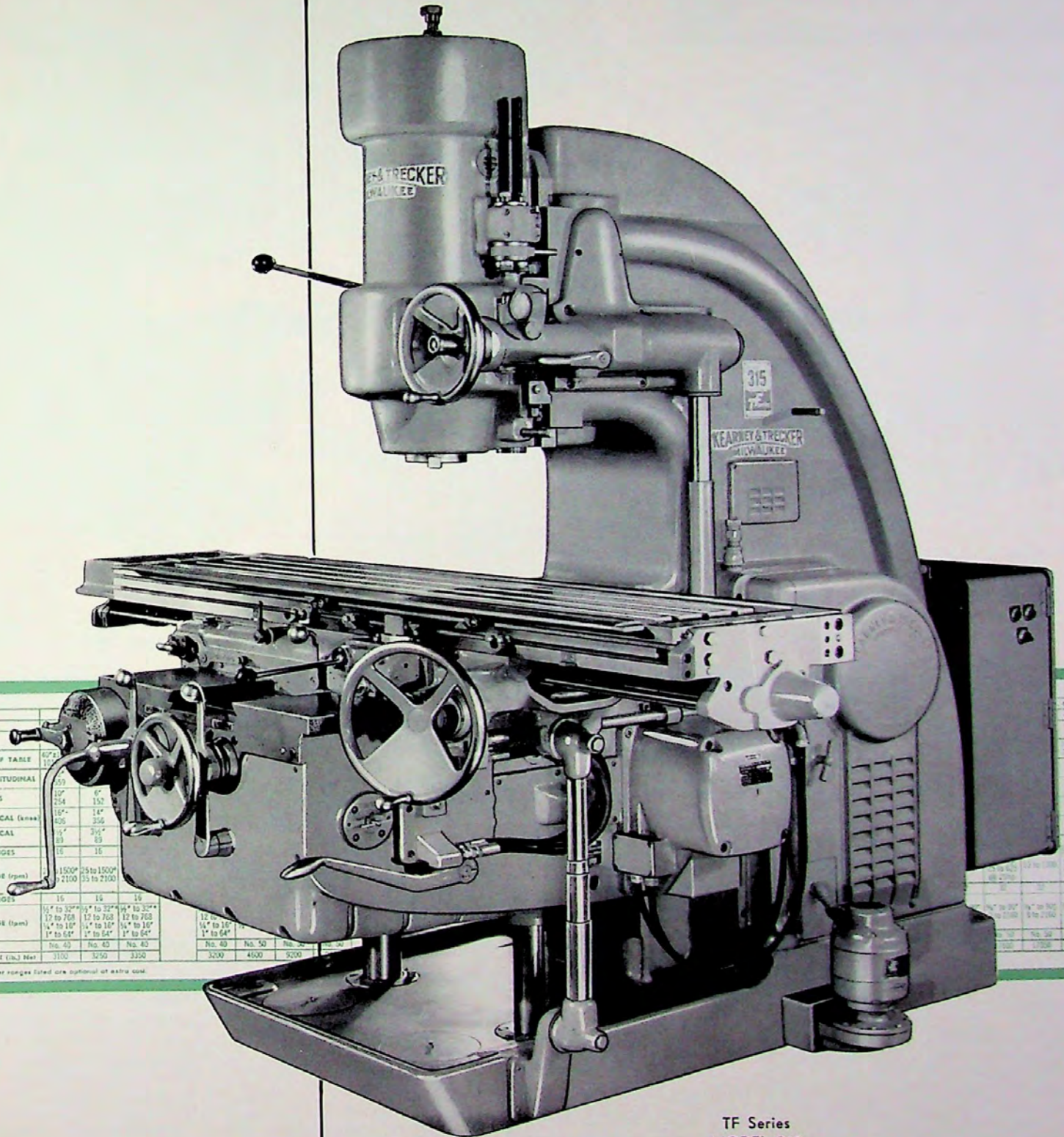
with  
**MONO-LEVER AND  
AUTOMATIC CYCLE  
TABLE CONTROL**  
and  
**WITH STANDARD  
DIRECTIONAL  
TABLE CONTROL**



**KEARNEY & TRECKER  
MILWAUKEE**

# VERTICAL

# KNEE TYPE MILLING MACHINES



SIZE	62 1/2"			
MODEL	315			
HORSEPOWER	50			
WORKING SURFACE OF TABLE	62 1/2" x 120"			
TRAVEL CAPACITY	LONGITUDINAL	120"		
	CROSS	120"		
	VERTICAL (knee)	120"		
	VERTICAL HEAD	120"		
SPEEDS	RANGE (rpm)	1500 to 2100		
	CHANGES	16		
FEEDS	RANGE (ipm)	1/4" to 32"		
	CHANGES	16		
SPINDLE SIZE (Taper)	No. 40			
APPROXIMATE WEIGHT (lb.) Net	3100			

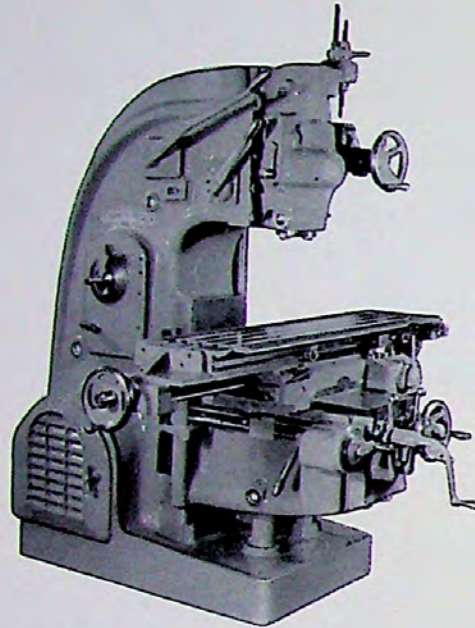
TF Series  
MODEL 315  
No. 3 15hp

VERTICAL

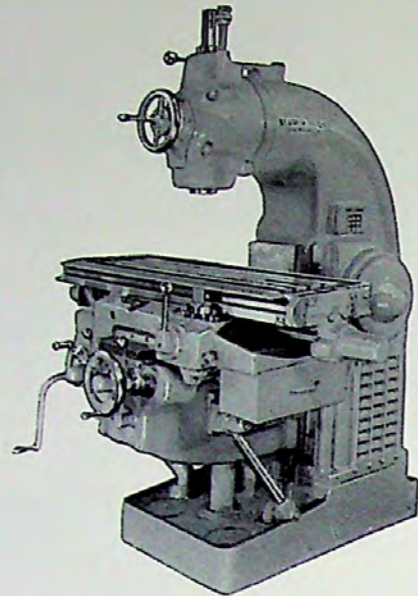
# VERTICAL

**KEARNEY & TRECKER  
MILWAUKEE**

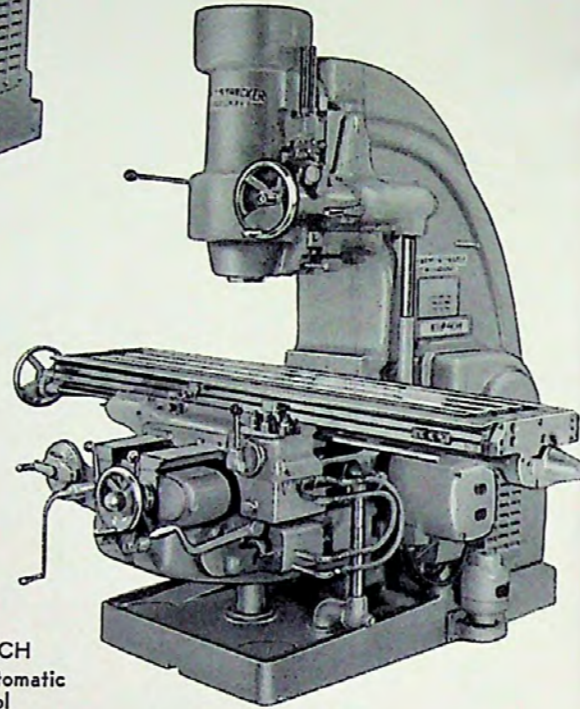
## MILLING MACHINES



5hp No. 2 MODEL CH  
with Mono-Lever and Automatic  
Cycle Table Control

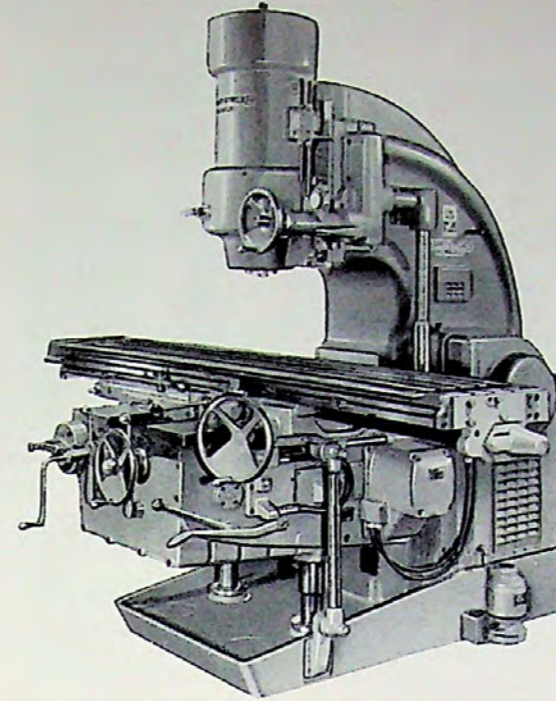


3hp 24" MODEL AC  
with Mono-Lever and Automatic  
Cycle Table Control

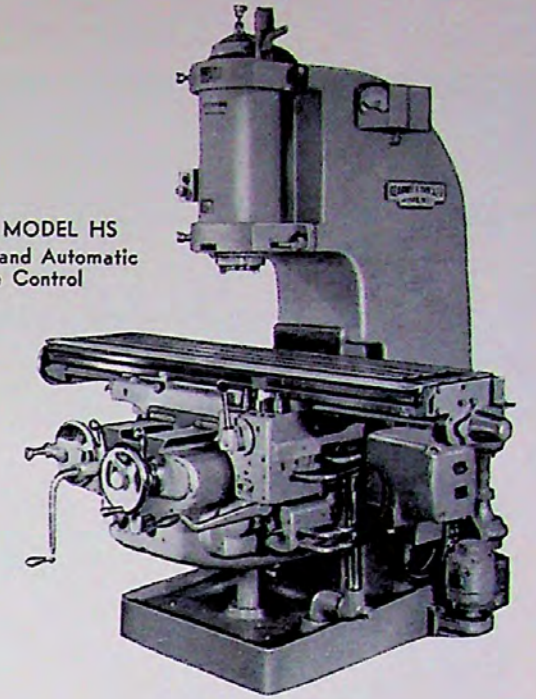


15hp No. 4 MODEL CH  
with Mono-Lever and Automatic  
Cycle Table Control

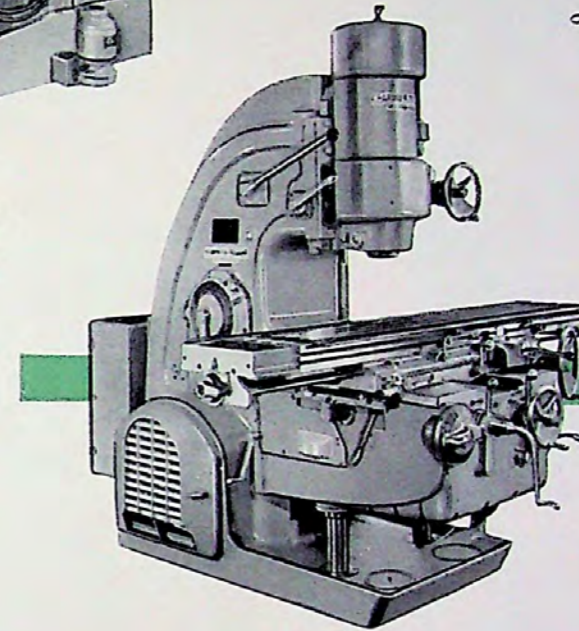
INDIVIDUAL BULLETINS ARE AVAILABLE FOR ALL VERTICAL STYLE MACHINES.  
WRITE DIRECT OR CONTACT YOUR NEAREST KEARNEY & TRECKER REPRESENTATIVE.



TF Series  
MODEL 525  
No. 5 25hp



30/15hp No. 4 MODEL HS  
with Mono-Lever and Automatic  
Cycle Table Control



TF Series  
MODEL 210  
No. 2 10hp

# VERTICAL

## MILLING MACHINES

with  
**MONO-LEVER AND  
AUTOMATIC CYCLE  
TABLE CONTROL**

and  
**WITH STANDARD  
DIRECTIONAL  
TABLE CONTROL**

Note— Figures shown in color  
are metric specifications.

SIZE	No. 1			CE	No. 2				CH Ram	No. 3	No. 4					CH Ram	No. 5		No. 6														
	MODEL	CH	18-AC		24-AC	CHL	CH	210-TF			220-TF	CH Ram	CH	415-TF	425-TF		430-TF	450-TF	CH Ram	HS	525-TF	550-TF	625-TF	650-TF									
HORSEPOWER	3	3	3		3	5	10	20 and 20/10		10	10	15	20 and 20/10	30 and 30/15		15	15	25	30 and 30/15	50 and 50/25		15 and 15/30	25	50 and 50/25	25	50 and 50/25							
WORKING SURFACE OF TABLE	40"x10½" 1016x267		38"x14" 965x356		44"x14" 1118x356			46"x10½" 1168x267	50"x12" 1270x305	62"x14" 1575x356	62"x14" 1575x356		64"x13½" 1625x343	68"x14" 1727x356	72"x15½" 1829x394	68"x14" 1727x356	72"x15½" 1829x394		74"x15½" 1880x394	80"x15½" 2032x394	88"x18" 2235x457	80"x15½" 2032x394	88"x18" 2235x457		74"x15½" 1880x394	96"x18" 2438x457	96"x18" 2438x457	106"x18" 2692x457	106"x18" 2692x457				
	22" 559		18" 457		24" 610			28" 711	28" 711	28" 711	28" 711		34" 864	34" 864	34" 864	34" 864	34" 864		42" 1067	42" 1067	42" 1067	42" 1067	42" 1067		42" 1067	50" 1270	50" 1270	60" 1524	60" 1524				
TRAVEL CAPACITY	10" 254		6" 152		6" 152			10" 254	12" 305	14" 356	14" 356		12" 305	14" 356	16" 406	14" 356	16" 406		14" 356	16" 406	18" 457	16" 406	18" 457		14" 356	18" 457	18" 457	18" 457	18" 457				
	16" 406		14" 356		14" 356			16" 406	15" 381	14" 356	14" 356		14" 356	16" 406	16" 406	16" 406	16" 406		16" 406	18" 457	18" 457	18" 457	18" 457		15½" 394	18" 457	18" 457	18" 457	18" 457				
	3½" 89		3½" 89		3½" 89			3½" 89	4" 102	4" 102	4" 102		4" 102	4" 102	4" 102	4" 102	4" 102		4" 102	4" 102	4" 102	4" 102	4" 102		0" 0	4" 102	4" 102	4" 102	4" 102	4" 102			
	CHANGES		16		16			16	16	24	16		16	16	16	16	16		24	24	24	16	16		Constant	24	16	24	16	16			
SPEEDS	RANGE (rpm)		25 to 1500*		25 to 1500*		25 to 1500*		25 to 1500*		50 to 1250 @ 20hp 25 to 625 @ 10hp			50 to 1250 @ 20hp 25 to 625 @ 10hp	50 to 1250 @ 30hp 25 to 625 @ 15hp		50 to 1250 @ 30hp 25 to 625 @ 15hp	50 to 1250 @ 50hp 25 to 625 @ 25hp		7200 @ 30hp 3600 @ 15hp	13 to 1300	50 to 1250 @ 50hp 25 to 625 @ 25hp	13 to 1300	50 to 1250 @ 50hp 25 to 625 @ 25hp	13 to 1300	50 to 1250 @ 50hp 25 to 625 @ 25hp	13 to 1300	50 to 1250 @ 50hp 25 to 625 @ 25hp					
	CHANGES		16		16			16	16	32	32		32	32	32	32		32	32	32	32	32		32	32	32	32	32	32	32			
FEEDS	RANGE (ipm)		½" to 32" 12 to 768		¼" to 32" 12 to 768		¼" to 32" 12 to 768		½" to 32" 6 to 768		¾" to 90" 9 to 2160			¾" to 90" 9 to 2160	¾" to 90" 9 to 2160	¾" to 90" 9 to 2160		¾" to 90" 9 to 2160	¾" to 90" 9 to 2160	¾" to 90" 9 to 2160	¾" to 90" 9 to 2160		¾" to 180" 9 to 4320	¾" to 90" 9 to 2160	¾" to 90" 9 to 2160	¾" to 90" 9 to 2160	¾" to 90" 9 to 2160	¾" to 90" 9 to 2160					
	SPINDLE SIZE (Taper)		No. 40		No. 40		No. 40		No. 40		No. 50			No. 50	No. 50	No. 50		No. 50	No. 50	No. 50	No. 50		No. 50	No. 50	No. 50	No. 50	No. 50	No. 50	No. 50				
APPROXIMATE WEIGHT (lb.) Net		3100		3250		3350		3200		4600		9200		9450			8150	9300	11450	9700	11700		10400	11550	16850	11900	17350		11000	17100	17600	17350	17850

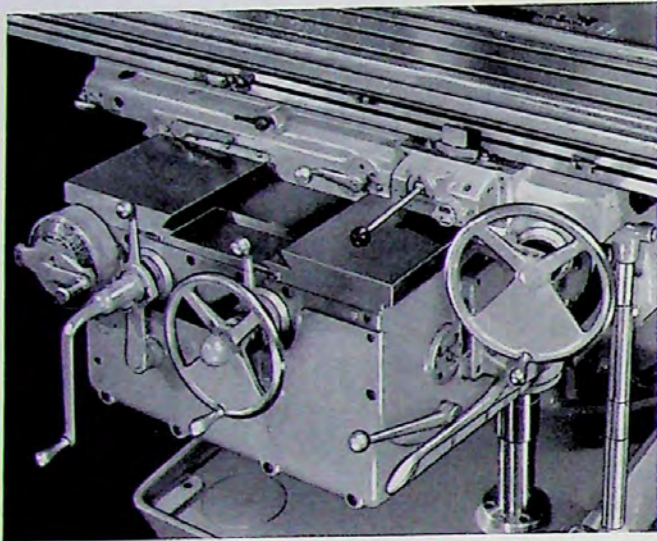
\*Standard Range, all other ranges listed are optional at extra cost.

VERTICAL

**KEARNEY & TRECKER  
MILWAUKEE**

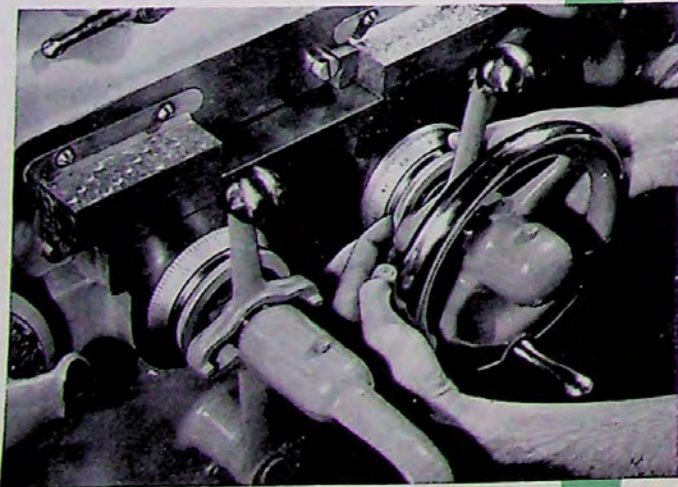
# VERTICAL MILLING MACHINES

# Time and Cost Saving FEATURES

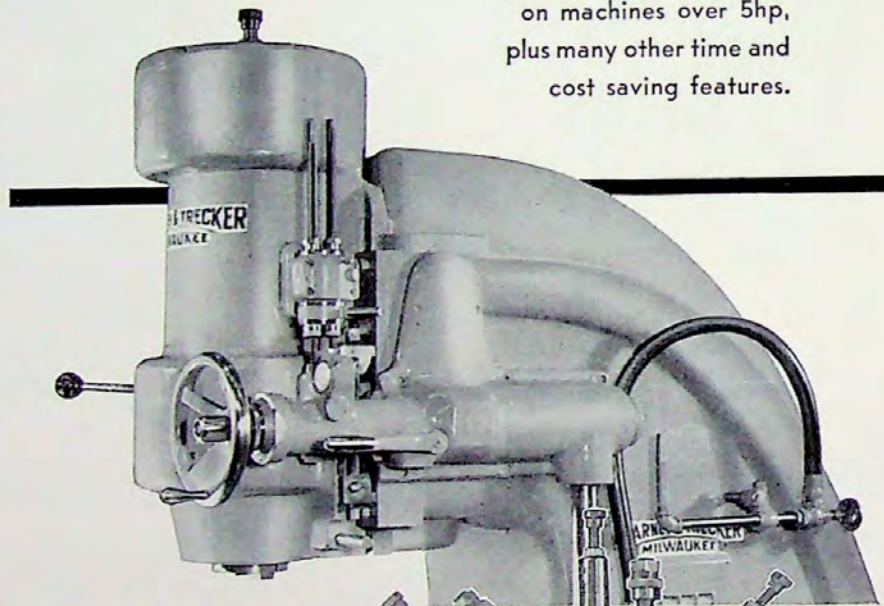


**Mono-Lever and Automatic Cycle Table Control**—provide for increased production and greater operating convenience. Mono-Lever combines feed and rapid traverse directional control of table in a single lever. Together with Automatic Cycle Table Control it provides the advantages of reciprocal milling. Work-piece lots of any size run efficiently — predetermined cycle time assures greater productivity — idle cutter time reduced to a minimum.

**Rapid-set Dials**, designed for quick, positive lock settings, have vapor-blasted satin finish for easy reading and accurate setting.

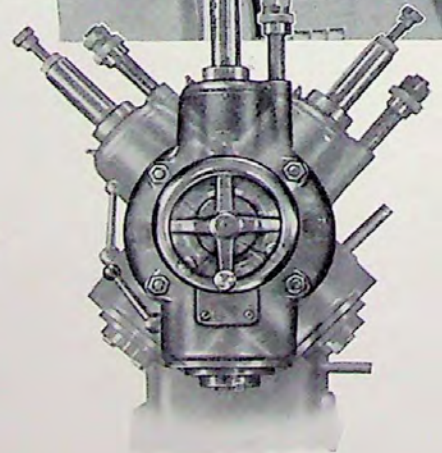


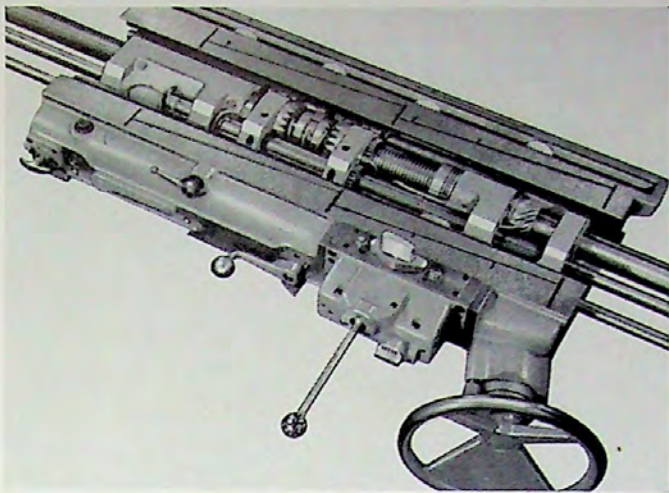
No other milling machine combines so many features so well. There's the single lever speed selector; wider speed and feed ranges; greater table working surface; spindle mounted flywheel; independent motor drives to spindle, to feed and rapid traverse and to coolant, on machines over 5hp, plus many other time and cost saving features.



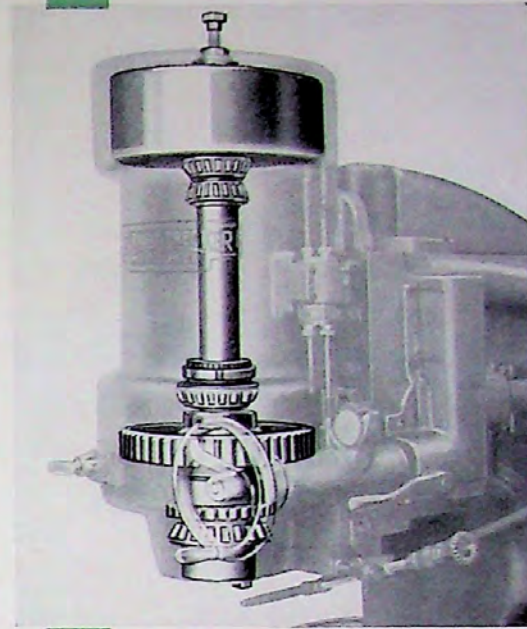
**Conveniently located** controls plus the four-position micrometer stop and dial indicator facilitate step milling operations.

**Especially adapted** for angular milling operations, the swivel head feature makes this machine extremely versatile. The head swivels 360 degrees in a vertical plane. The spindle is provided with 3 1/2 inches of movement. A micrometer dial, graduated in thousandths of an inch, facilitates spindle settings.

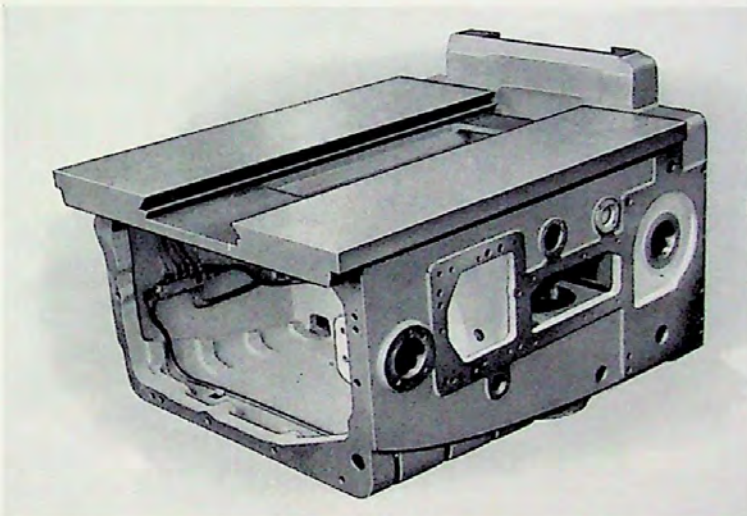




**Positive** metered pressure lubrication pump system assures proper oil distribution to table, saddle and knee ways and table feed assembly. Large diameter (2") heavy duty table feed screw and extra-long bronze nut provide greater bearing contact for longer screw life, maximum accuracy and backlash elimination. Extra large saddle ways for table minimize table deflection.

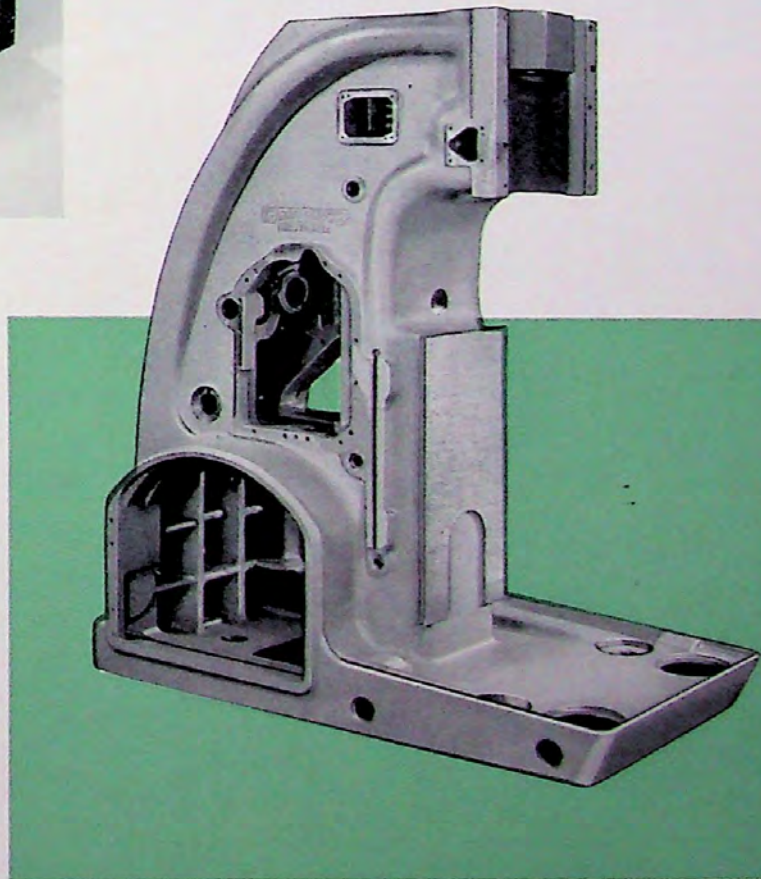


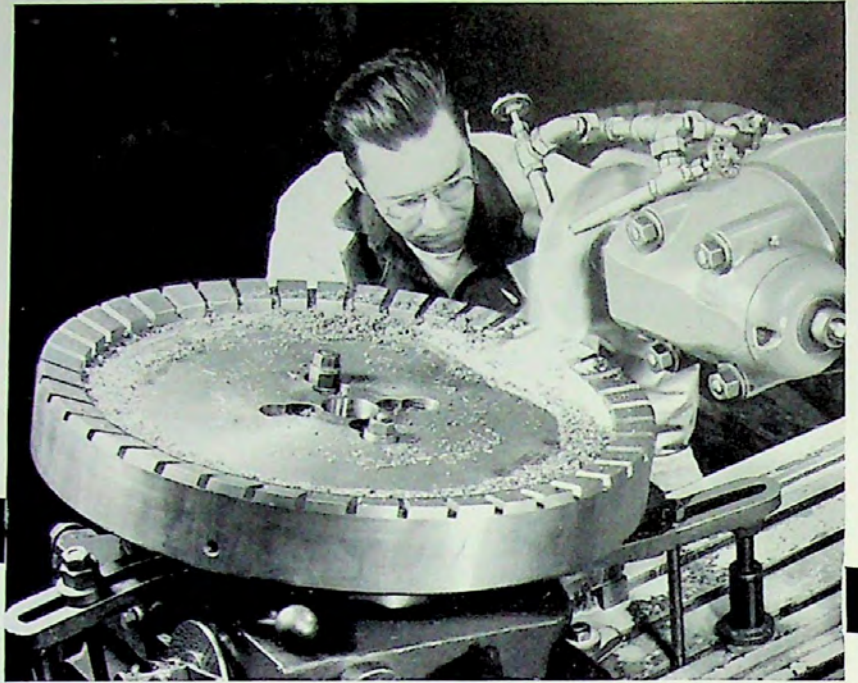
**Greater Cutting Efficiency** through spindle mounted flywheel, running with three bearing support, and driven through a train of heavy-duty, wide-faced, steel-forged gears, hardened and specially processed for quiet operation under flywheel momentum.



**Greater support** is provided by larger overall bearing surfaces of new TF Series knee. Increased knee width minimizes rocking of table and saddle over knee. Construction design features one-piece box section, with solid walls and scientific ribbing at all critical stress points. Drop center feature permits minimum table top to knee top distance for maximum rigidity.

**Greater Rigidity** through scientifically engineered solid-back column design—heavily ribbed, double box-section sponson construction, with all metal properly distributed to absorb vibration from heaviest cutting loads.

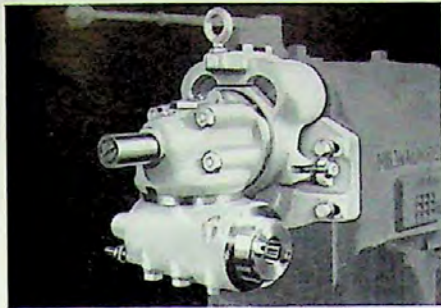




**KEARNEY & TRECKER**  
**MILWAUKEE**

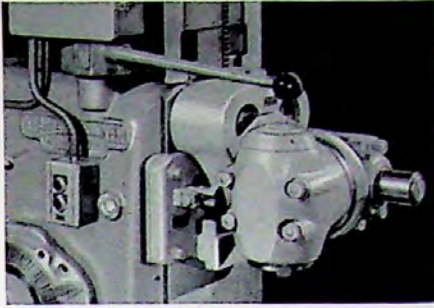
## ATTACHMENTS & ACCESSORIES

... complete selection ... for every milling requirement  
... convert standard machines into special purpose tools ... provide maximum productivity. Protect original machine tool investment by supplementing with any of the various  
Kearney & Trecker standard attachments to perform jobs not achieved on a standard milling machine. Complete specifications available  
... request bulletin listed with each illustration.



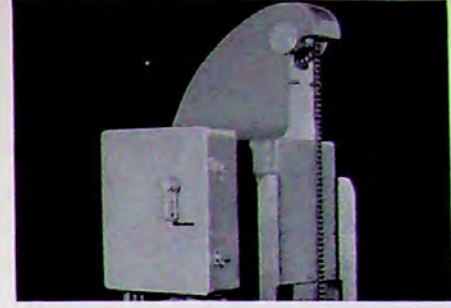
**STANDARD HIGH SPEED ADJUSTABLE UNIVERSAL MILLING ATTACHMENT**

—a truly versatile attachment adapted to a wide variety of applications in tool and die shops and for light manufacturing. Has a No. 40 national standard taper spindle and speeds up to 2500 rpm, depending on the machine spindle speed range. The spindle head has 10" of cross adjustment. Available with or without adjustable spindle. Write for Bulletin No. CA-11.



**HEAVY DUTY HIGH SPEED ADJUSTABLE UNIVERSAL MILLING ATTACHMENT**

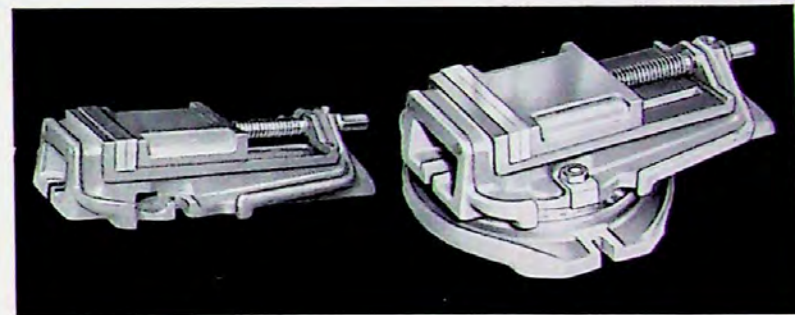
— ideally suited for heavy service —adaptable to wide variety of uses in tool and die shops and general manufacturing. Many applications for milling on dies, metal patterns, templates, T-slots, dovetails and numerous other operations in horizontal, vertical or any angular position. Has No. 50 national standard taper — 20 to 2000 rpm depending on machine spindle speed range. Spindle head has 11" of cross travel. Write for Bulletin CA-25.



**RAPID PARKING ATTACHMENT**

— motorized, self-contained unit mounted on top of machine column — supports Heavy Duty High Speed Adjustable Universal Milling Attachment either in working position or in storage position. Stores milling attachment clear of horizontal milling area, yet close enough to be brought into operating position with no loss of time or effort. Push-button control with positive positioning is stored or working location provides for improved production time, utmost security and convenience in handling.

**PLAIN AND SWIVEL VISES** — available in 5", 6", 7", 8", and 9" sizes, can be used on any standard milling machine. Of minimum height, they bring workpiece as close to the machine table as possible. Base of swivel vise is graduated through 360°, can be removed when not required. Swivel bases can be applied to plain vises in the field. Write for Catalog No. G-10.



**ATTACHMENT CRANE AND PARKING BRACKET**

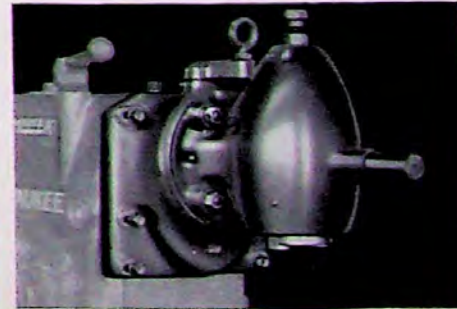
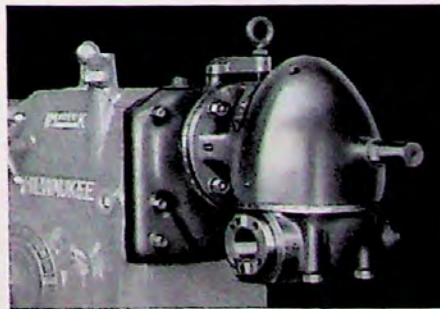
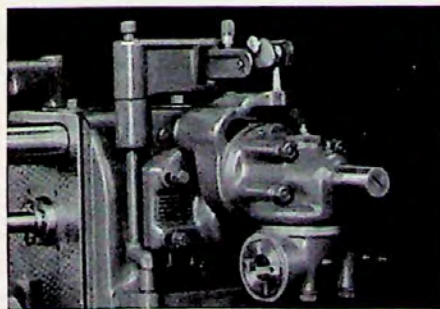
— provides for instant availability of milling attachment when needed — eliminates time normally lost due to removal and storage. Attachment can be removed from overarms and readily stored at side of machine with little effort. Shown below is standard high speed unit in its parking position, securely held by the crane.

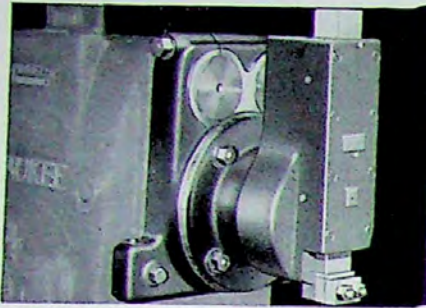
**HEAVY DUTY UNIVERSAL MILLING ATTACHMENT**

— provides heavy service with accurate results. It is clamped to the column face and supported by the double overarms. A No. 40 national standard taper spindle is provided on machines of 5 hp capacity or less, and a No. 50 taper on all other machines. Attachment spindle speeds are in one-to-one ratio with machine spindle speeds. Write for Bulletin No. CA-15.

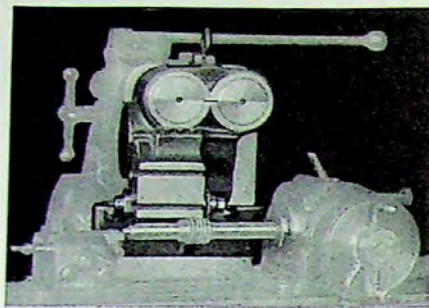
**HEAVY DUTY SWIVEL HEAD VERTICAL MILLING ATTACHMENT**

— well suited to heavy vertical or angular milling operations. Swivel base is graduated through 360°. A No. 40 national standard taper is used on machines of 5 hp capacity or less, and a No. 50 taper on all others. Attachment spindle speeds are in one-to-one ratio with machine spindle speeds. Write for Bulletin No. CA-13.

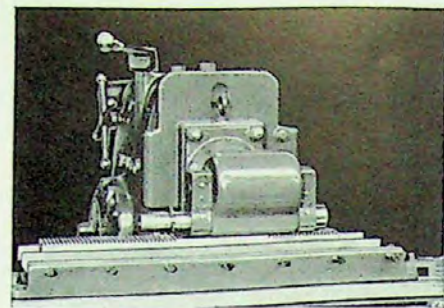




**SLOTING ATTACHMENT** — a practical necessity where the volume of work does not require a slotting machine. Attachment head swivels 360°. The ram carries hardened steel V-jaws and hardened backing plate for the positive clamping of special or standard tools and tool holders. Write for Bulletin No. CA-16.



**THREAD MILLING ATTACHMENT** — converts a standard universal milling machine into a practical thread miller. With this attachment it is possible to mill all regular thread forms cut on a standard thread miller including U.S.S., Acme and worm threads. The spindle accommodates standard cutters and hobs. Write for Bulletin No. CA-17.

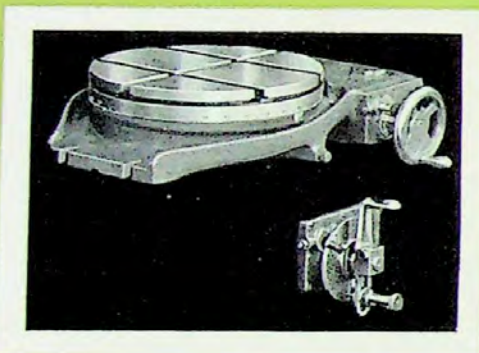


**RACK MILLING ATTACHMENT** — adapts the horizontal milling machine for rack milling operation. A splined drive collar bolted to the machine spindle nose drives the attachment through spiral bevel and helical gears. Rack indexing attachment and rack vises also are available. Write for Bulletin No. CA-18.

**KEARNEY & TRECKER  
MILWAUKEE**

## STANDARD MILLING MACHINE

## ATTACHMENTS AND ACCESSORIES

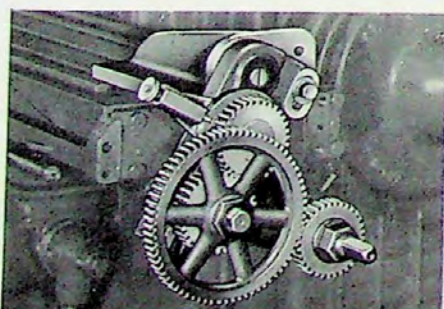
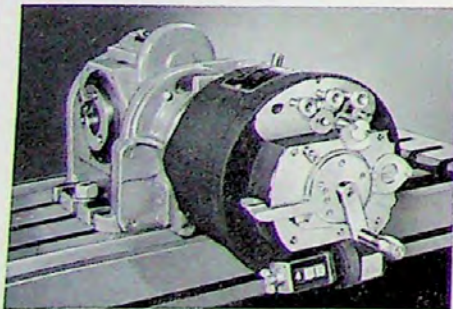


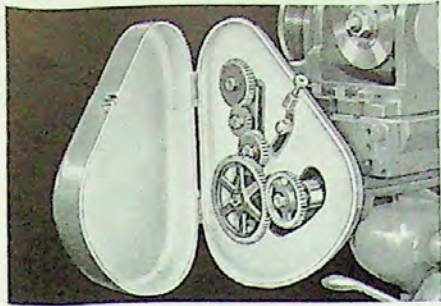
**ROTARY TABLES** — available in 12", 16", 20" and 24" diameters, used for flat, circular, and angular milling operations. Tables can be provided with or without mechanism for power feed and rapid traverse drive. Includes complete facility for indexing. Hole through the center of the table accommodates special arbor for clamping and locating purposes. Write for Bulletin No. WA-14.

**COMPUDEX INDEXING COMPUTOR** — adaptable to dividing heads and rotary tables to index all numbers from 1 through 1099, and all even numbers through 2198. This new concept in indexing possesses unlimited indexing applications — accurately divides the circle by mechanical computation. Compuindex also indexes by degrees to as low as 10 minutes of arc. Write for Bulletin No. M-12.

**RACK INDEXING ATTACHMENT** — With this attachment diametral pitch racks can be milled from 3 to 6 by half pitches, all pitches from 7 to 16, and from 18 to 32 by even pitches. Circular pitch racks from  $\frac{1}{8}$ " to 1" by sixteenths can also be milled. Write for Bulletin No. CA-18.

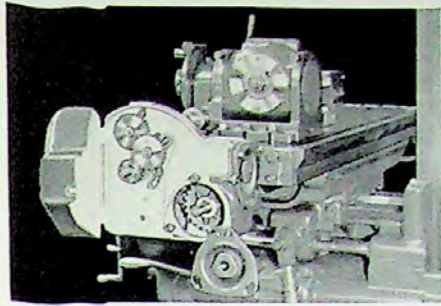
**UNIVERSAL CHUCKS** — three-jaw universal scroll-type which bolt directly to spindle nose of Models H and K dividing heads. These chucks are available in 6", 7", 8" and 9" sizes, and with single step or three-step reversible jaws. Write for Bulletin No. WA-13.



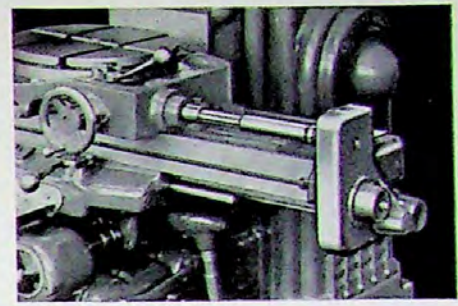


**CONVENTIONAL LEAD ATTACHMENT**

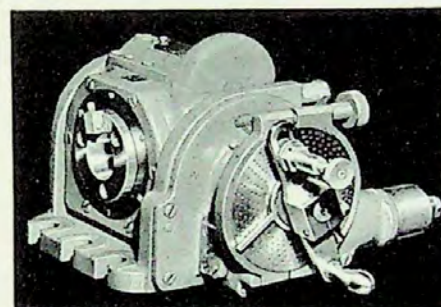
—may be used with either the Model H or Model K dividing heads and provides a selection of more than 1300 leads from .670" to 149". All leads above 3" can be cut by power, and on leads over 10" the rapid traverse rate can be used. Both left and right hand spiral milling operations are possible. All gears safely enclosed. Write for Catalog No. WA-12.



**LOW LEAD ATTACHMENT** — provides over 40,000 leads by power from .022" to 2918". Normal feed or rapid traverse rates can be used on all leads. Many short leads can be stepped up or down in increments as small as .0001". May be used with Models H and K dividing heads or with rotary tables. Capable of both right and left hand milling operations. Write for Catalog No. WA-12.

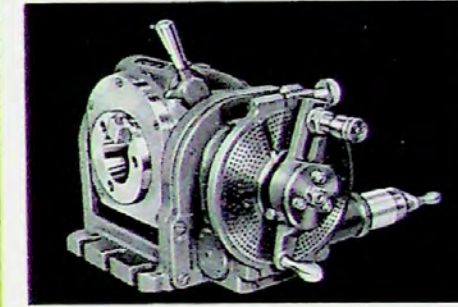


**ROTARY TABLE DRIVE BRACKET**—This power feed and rapid traverse drive mechanism adds greatly to the versatility of the rotary table. Feed rate at the periphery of the rotary table is equal to the feed selected on the table feed dial. When the low lead attachment is used as the drive mechanism, it is possible to mill scrolls, face cams, and spirals. Write for Bulletin No. WA-14.



**MODEL H UNIVERSAL SPIRAL DIVIDING HEAD**

— An ideal head, with conventional 40 to 1 index ratio. Preloaded anti-friction spindle bearings offer uniform accuracy under loaded or no-load conditions. Available in 10" size with No. 40 taper spindle and in 12" size with No. 50 taper spindle. Two-piece worm provides for elimination of any backlash. Write for Bulletin No. WA-11.



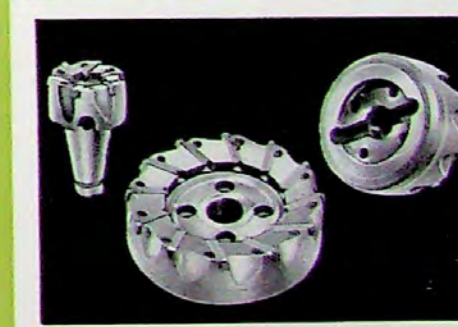
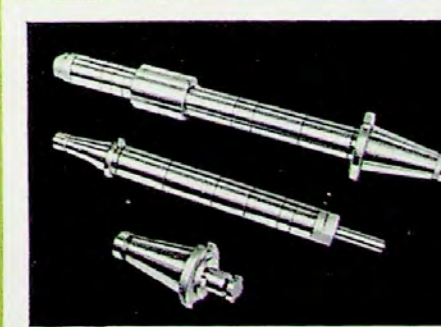
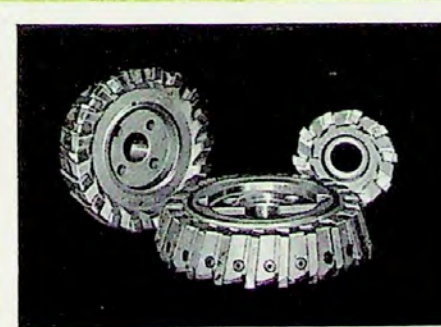
**MODEL K UNIVERSAL SPIRAL DIVIDING HEAD**

— Quick, accurate indexing is the big feature of this precision built unit. Exclusive five-to-one hypoid gear ratio between the index plunger and the spindle does the trick. Available in 10", 12" and 14" sizes. The No. 50 taper spindle is mounted on anti-friction bearings. Write for Catalog No. WA-12.

**FULL-BACK CUTTERS**—Furnished in sizes from 3" to 18" in diameter, either right or left hand, featuring solid, full blade support. Design is suitable for the face milling of cast iron, semi-steel, malleable iron, bronze, copper, brass, and aluminum. Write for Catalog No. C-10.

**ARBORS** — Kearney & Trecker offers a wide selection of No. 40 and No. 50 national standard taper milling machine arbors including styles A, B, and C; arbor bearings and collars; centering plugs, collet holders, and a variety of similar items. Write for Catalog No. C-10.

**CSM CUTTERS** — All-purpose face mills especially appropriate for carbide milling applications. Designed to minimize effects of shock and impact. Available in sizes from 1" to 16". Cutters perform efficiently at high rates of metal removal. Write for Bulletin No. C-11.





KEARNEY & TRECKER  
MILWAUKEE  
WISCONSIN U.S.A.





# PRODUCTION MILLING MACHINES

Efficient and highly productive machine tool equipment results in profitable operations. Kearney & Trecker — Milwaukee bed type production milling machines possess all the qualifications and characteristics required to attain greater production goals. These machines are unusually simple in design and flexible in application. They will solve countless and greatly varied production milling problems.

Kearney & Trecker — Milwaukee production milling machines reflect "custom-built" engineering but do not bear the usual high cost of custom building. The unit construction principle of design permits independent selection of capacity, range of travel, speed, feeds and horsepower to meet specific job requirements. Where a special approach is the only logical answer, experienced Kearney & Trecker engineers — with complete machine tool "know-how" — are available, fully prepared to solve complex mass production requirements in all fields of industry — notably automotive, aircraft and agricultural equipment.

Outstanding examples of Kearney & Trecker production engineering experience which solve the problem factors of production milling are

shown on the following pages. Here are found the M Series Simplex machines — in 3 sizes — all with 5hp — specifically designed for small size jobs. Medium size work is adequately performed on the Mil-Waukee-Mil Series — offered in simplex and duplex models — 10 sizes — from 7½ hp to 30hp. For heavy duty production milling, the widely accepted CSM Series machines will far exceed all requirements. This series is presented in the simplex and duplex styles — 18 bed and table sizes — quill and ram style spindle head units in two sizes — from 10hp to 50hp in 9 ratings.

Kearney & Trecker production bed type milling machines offer the highest standard of performance in work handling, clamping, automation, accuracy, finish and chip disposal.

Many production milling problems require application of special machinery. For detailed information regarding such machine tools — send for Kearney & Trecker Catalog SMD-57.

# M SERIES

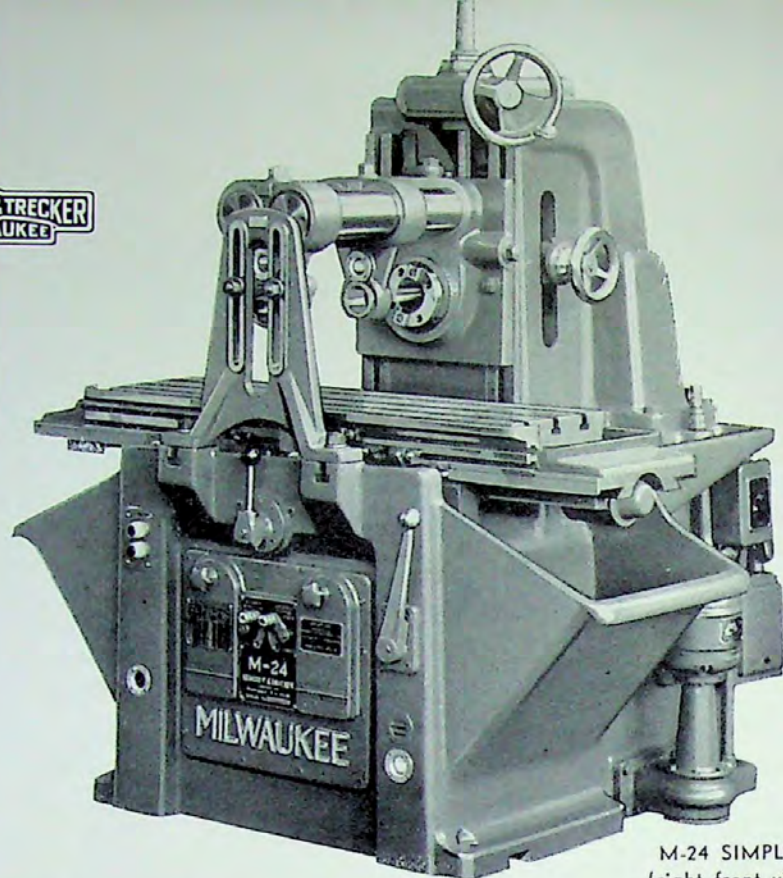
5hp SIMPLEX

KEARNEY & TRECKER  
MILWAUKEE

## BED TYPE PRODUCTION MILLING MACHINES

Kearney & Trecker M-Series Simplex Milling Machines are built to perform a wide variety of milling operations on small and medium size parts. Their operating features are so designed that they are readily adaptable to the production of a single workpiece or a hundred thousand. For single piece or small run operations complete manual control is available, while for moderate or long production runs they can be made fully automatic in operation.

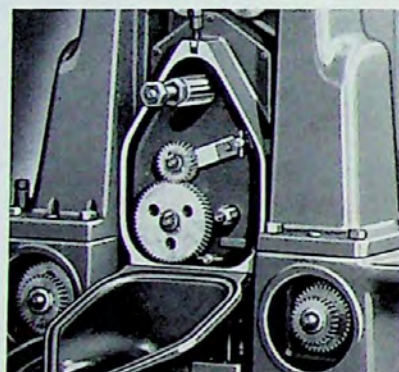
Write for Bulletin No. B10.



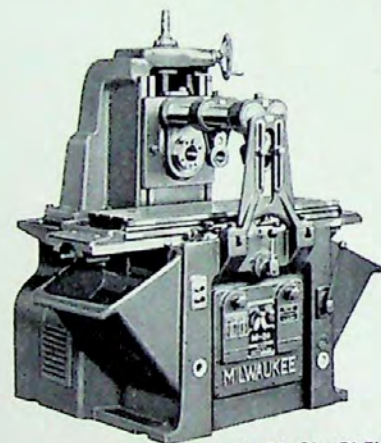
M-24 SIMPLEX  
(right front view)



Mono-Lever automatic cycle table control centralized within easy reach.



Speed changes are readily accessible in conveniently located pick-off gear boxes.



M-24 SIMPLEX  
(left front view)

### GENERAL SPECIFICATIONS

NOTE: FIGURES SHOWN IN COLOR ARE IN METRIC SYSTEM

#### M-SERIES SIMPLEX MILLING MACHINES

MACHINE NUMBER	M-18		M-24		M-30	
WORKING SURFACE OF TABLE	34"x13"	863x330	40"x13"	1016x330	46"x13"	1168x330
POWER TABLE FEED	18"	457	24"	610	30"	762
SPEED RANGE (rpm)	50 to 500* 40 to 1000	50 to 500* 40 to 1000	50 to 500* 40 to 1000	50 to 500* 40 to 1000	50 to 500* 40 to 1000	50 to 500* 40 to 1000
FEE D RANGE (ipm)	.6" to 24"* .3" to 12" 1.5" to 60"	15.2 to 610 7.62 to 305 38.1 to 1524	.6" to 24"* .3" to 12" 1.5" to 60"	15.2 to 610 7.62 to 305 38.1 to 1524	.6" to 24"* .3" to 12" 1.5" to 60"	15.2 to 610 7.62 to 305 38.1 to 1524
HORSEPOWER	5	5	5	5	5	5
SPINDLE SIZE	No. 50	No. 50	No. 50	No. 50	No. 50	No. 50
APPROXIMATE WEIGHT	4525 lb	2053 kg	4600 lb	2087 kg	4675 lb	2121 kg

\* Range furnished standard; all other ranges listed are available as options at extra cost.

# Mil-waukee-Mil

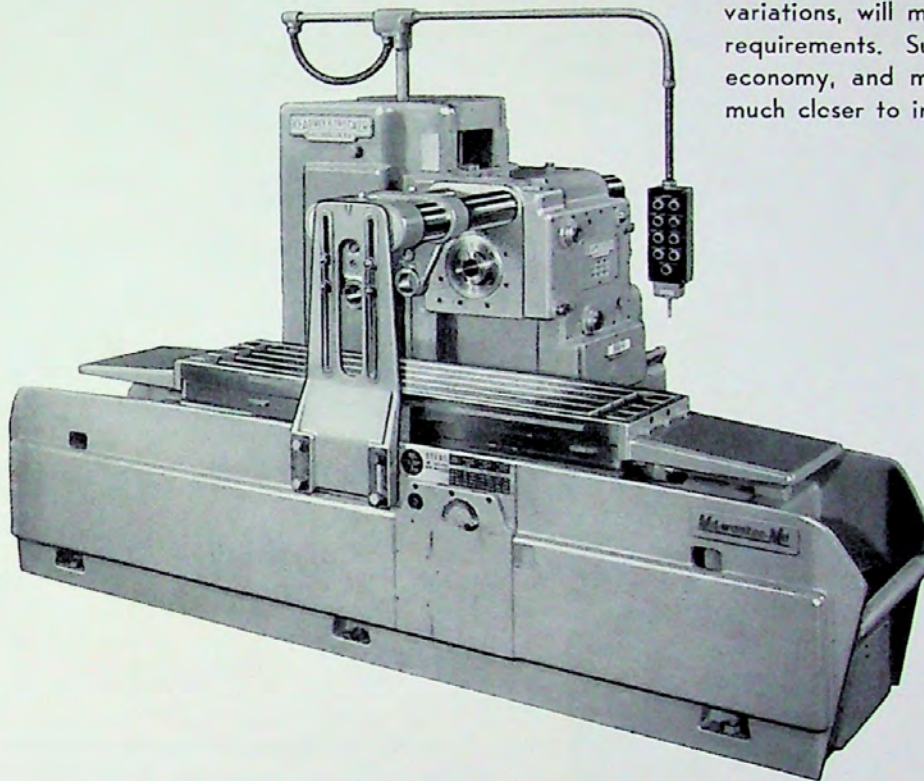
SIMPLEX — DUPLEX

7½hp — 30hp

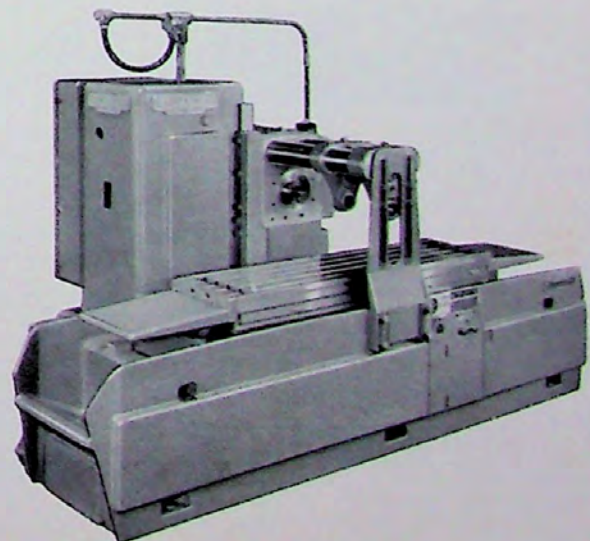
KEARNEY & TRECKER  
MILWAUKEE

## BED TYPE PRODUCTION MILLING MACHINES

A completely new line of production bed type milling machines — offering 60 different combinations in both simplex and duplex models. Unit construction permits selection of a machine with a combination of variable components to suit particular job requirements. The Mil-waukee-Mil, with its extra wide range of component variations, will meet most special and unusual milling requirements. Such a system of designing results in economy, and makes it possible to offer a machine much closer to individual milling needs.



4 table sizes ... 2 spindle heads ... 5 horsepower ratings ... 3 speed ranges ... 30 combinations in the simplex style ... 30 combinations in the duplex line to choose from. Power capacities range from 7½hp to 30hp, with all models featuring 16 speeds — 24 feeds — ½ to 150 ipm feed rate range. Power rapid traverse of 300 ipm.

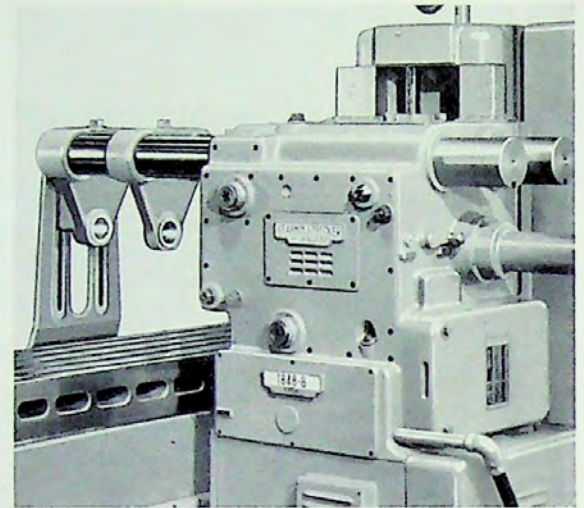
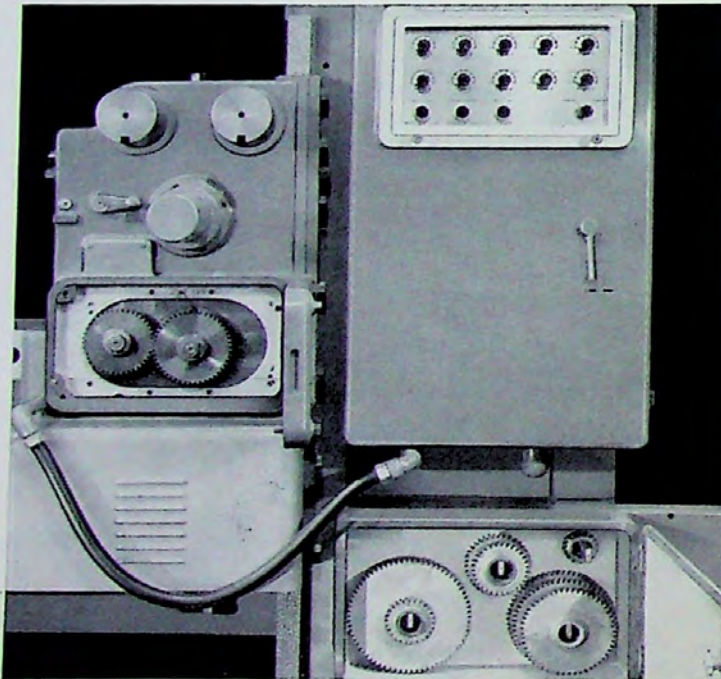


**KEARNEY & TRECKER  
MILWAUKEE**

**Milwaukee Mil**

# Work Producing FEATURES

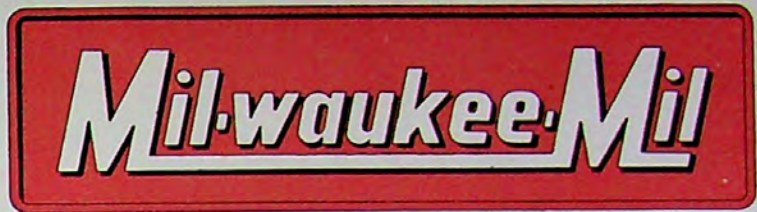
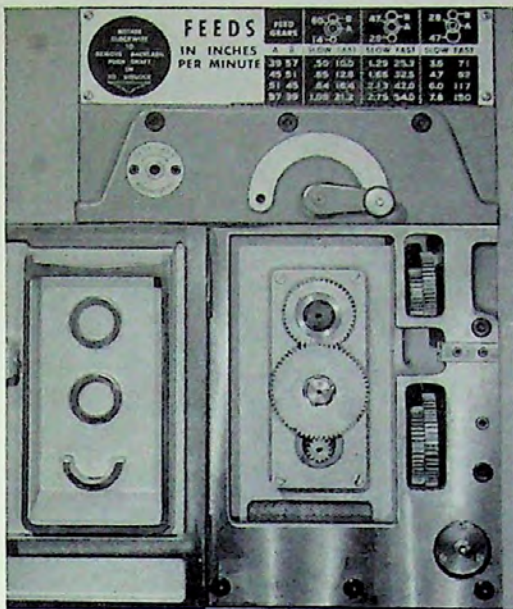
Horizontal movement of cutter and spindle is provided for by a manually adjusted quill. The adjustment is 5" on the "A" head, 7" on the "B" head. The adjustable quill affords quick, easy positioning of the cutter to accurate and precise settings for finer finishes.



Pick-off speed gears are standard equipment and are ideal for production jobs where speed changes are infrequent. Quick-change speed gears—for shorter runs and where frequent speed changes are required are optional at extra cost. The speed boxes are interchangeable on all spindle heads.

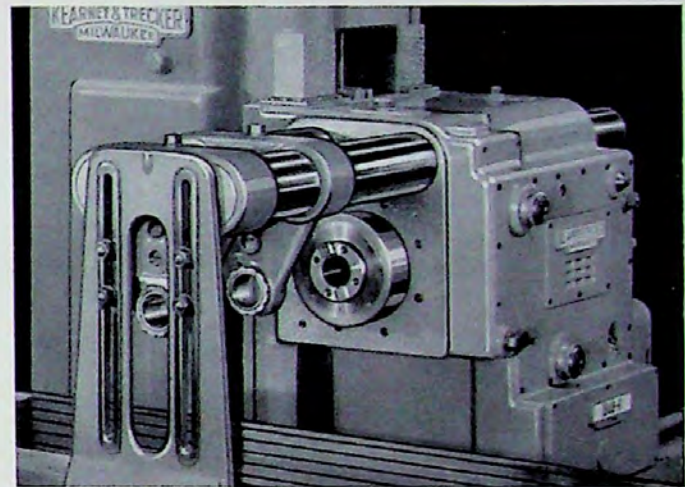
## BED DATA

MODEL	1436	1448	1848	1860	1872
TABLE WORKING SURFACE	14 x 58" 356 x 1473	14" x 70" 356 x 1778	18" x 70" 457 x 1778	18" x 82" 457 x 2083	18" x 94" 457 x 2388
LONGITUDINAL POWER FEED	36" 914	48" 1219	48" 1219	60" 1524	72" 1829
HEAD STYLES	A, B	A, B	A, B	A, B	A, B



Feed Range of 16 feeds—from 1/2 to 150 ipm is provided by pick-off feed gears which are standard equipment. Pick-off gears are best suited where feed changes are infrequent or for heavy production runs. Quick-change gears—optional at extra cost—are available when frequent feed changes or short runs are required. The feed boxes are interchangeable.

A choice of two different spindle heads — each available with three different horsepowers — is presented as standard. Both heads are of the quill type, with conventional Kearney & Trecker twin round over-arms — the most rigid method of arbor support ever offered. The head moves vertically on square wrap-around ways on the column upright — offering maximum support and accurate spindle-table alignment. This head-overarm-upright construction dampens vibration before it starts.



### SPINDLE HEAD DATA

	HEAD "A"	HEAD "B"
Available Spindle Motors — Horsepower . . . . .	7½—10—15	15—20—30
Spindle Speeds — Number of Changes . . . . .	16	16
— rpm at hp . . . . .	20—800 @ 7½hp	15—600 @ 15hp
— rpm at hp . . . . .	30—1200 @ 10hp	22—900 @ 20hp
— rpm at hp . . . . .	50—2000 @ 15hp	30—1200 @ 30hp
Quill Adjustment (Hand Only) . . . . .	5"	7"
Spindle Head Vertical Adjustment . . . . .	11"	15"
Centerline of Spindle to Top of Table—Min.—Max. . . . .	3"—14"	3"—18"
Quill Diameter . . . . .	8"	9½"
Overarm Diameter . . . . .	4¼"	4¾"
Centerline to Centerline of Overarms . . . . .	9"	9¾"

# MODEL CSM

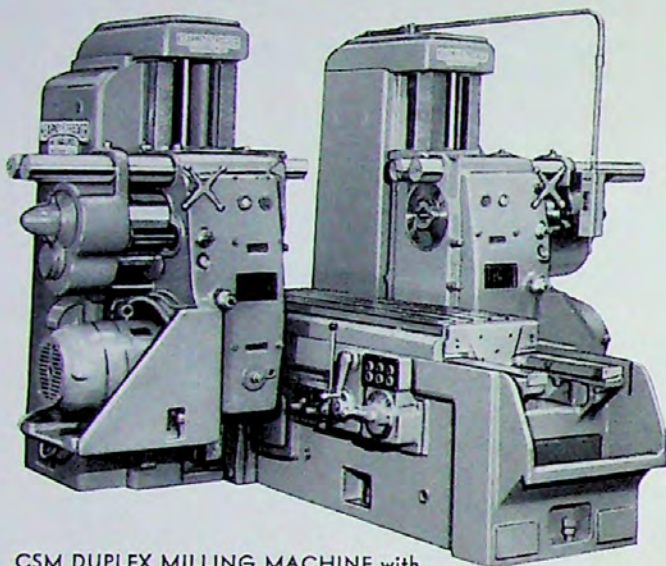
1800 }  
2400 } SERIES  
3200 }  
4200 }

10hp to 50hp SIMPLEX AND DUPLEX

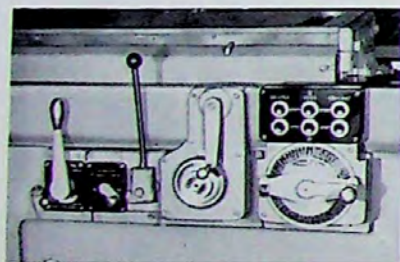
**KEARNEY & TRECKER**  
MILWAUKEE

## BED TYPE PRODUCTION MILLING MACHINES

A great variety of combinations are possible with Model CSM production milling machines. Quill type heads with 10 to 30hp (simplex or duplex) and Ram type heads with 15 to 50hp (simplex only) are offered as standard. Tables are available in four standard widths, 18", 24", 32", and 42", with travel from 4 to 12 feet. The rapid traverse rate is 150" per minute and the thirty-two feed rates range from 1/4" to 60" per minute. More information can be obtained from your local representative or direct from Kearney & Trecker — Milwaukee.



CSM DUPLEX MILLING MACHINE with 20hp No. 2 Quill Type Pick-off Head.



Conveniently located and grouped controls feature ease of operation. Mono-lever and automatic cycle table control directs all table movements.

Spindle nose is designed with two driving flanges — a combination No. 60/No. 50 National Standard to accommodate large diameter face mills and flange-type arbors.

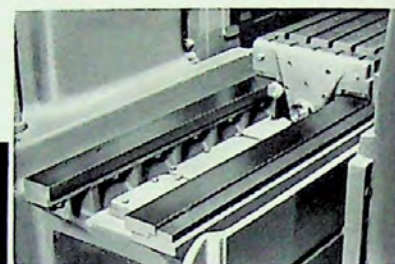
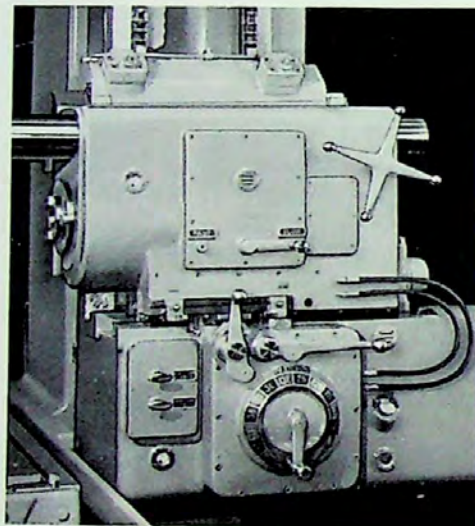
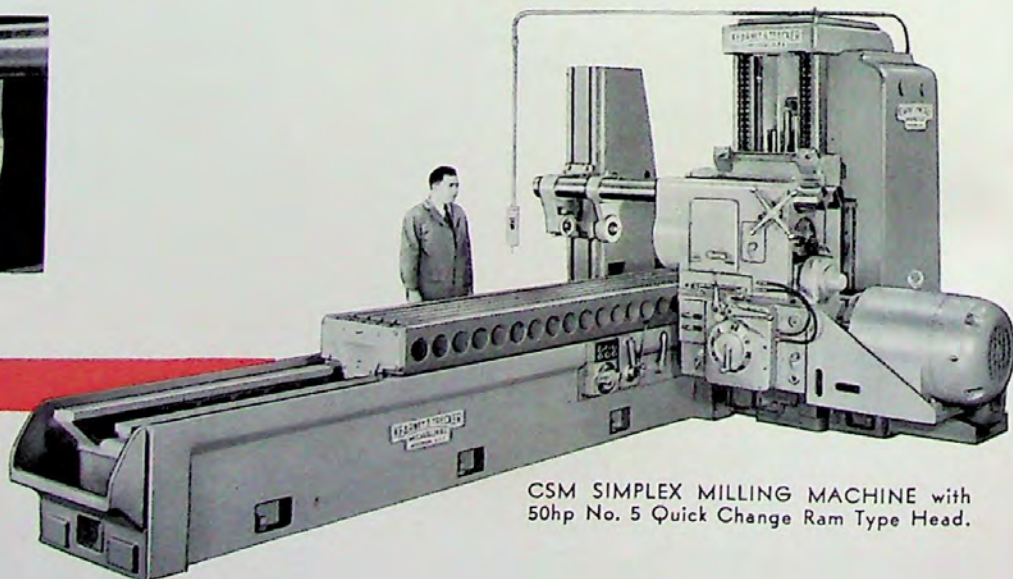


Table moves on hardened and ground steel ways supported by heavy, closely spaced ribs in rigid, one-piece bed casting.

The Ram Type Head is equipped with vertical and cross power feed and rapid traverse. Sixteen quick change speed selections are available.



CSM SIMPLEX MILLING MACHINE with 50hp No. 5 Quick Change Ram Type Head.

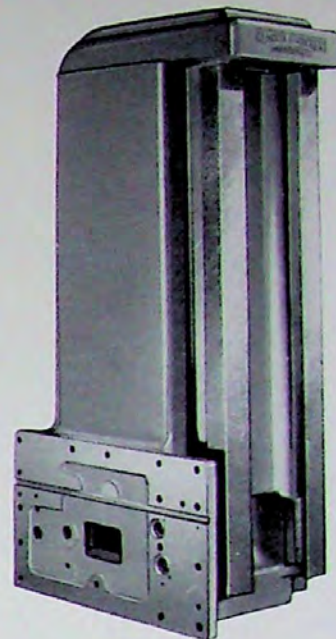
**MODEL**  
**CSM**

1800 }  
2400 } **SERIES**  
3200 }  
4200 }

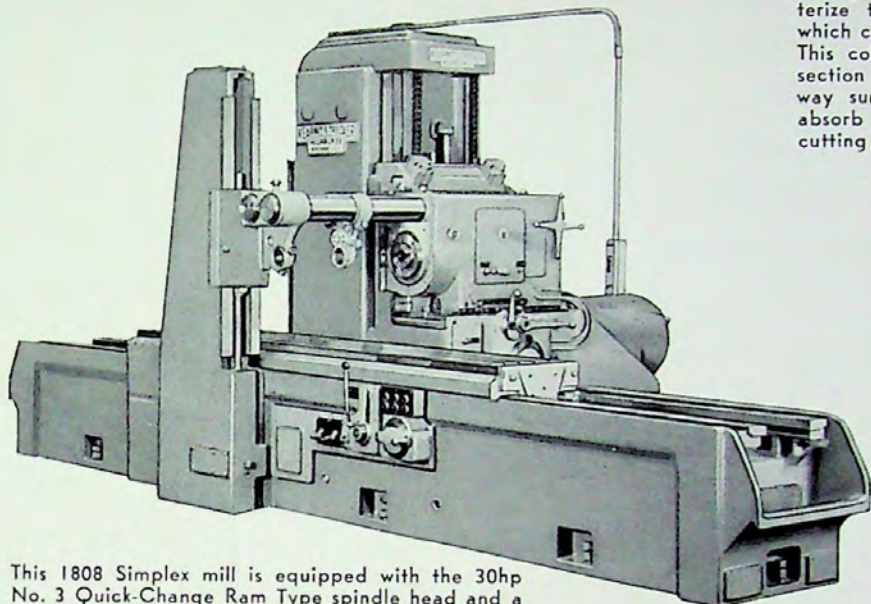
20hp to 50hp **SIMPLEX AND DUPLEX**

**KEARNEY & TRECKER**  
**MILWAUKEE**

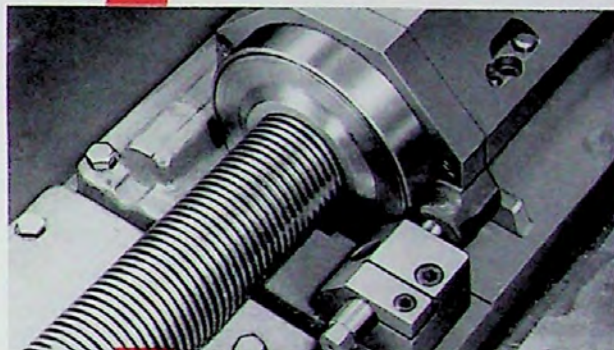
**BED TYPE  
PRODUCTION  
MILLING MACHINES**



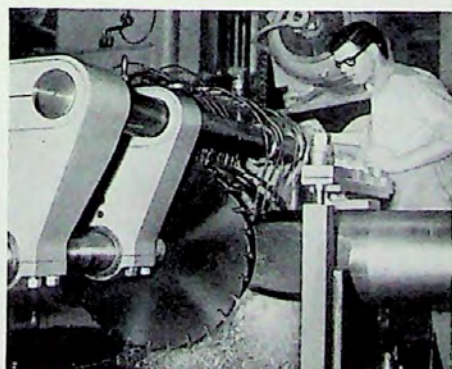
Strength and rigidity characterize the machine column, which carries the spindle head. This column is of a full box-section construction with large way surfaces — designed to absorb vibration from heaviest cutting loads.



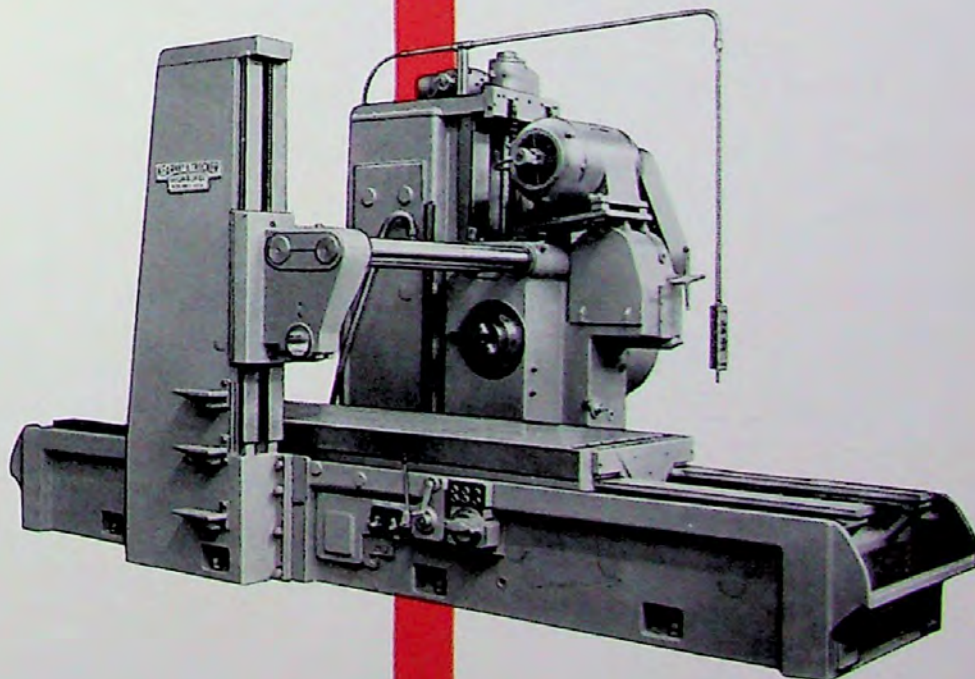
This 1808 Simplex mill is equipped with the 30hp No. 3 Quick-Change Ram Type spindle head and a power-operated outer arbor support brace. Movement of the arbor support is synchronized with the spindle head. This eliminates any possibility of distortion to the arbor during vertical movement.



Smooth feed performance is accomplished through the use of this large diameter, heavy-duty feed screw. Elimination of backlash is effectively controlled with the long bronze nut, providing for efficient climb milling operations.



Selected for this 1/2 ton cutter-arbor setup (above) was this large 4208 CSM Simplex mill (right). A 50hp No. 5 Pick-off Quill Type spindle head is used to swing a gang of 33" diameter side milling cutters with a spindle speed range of 6 to 30 rpm.



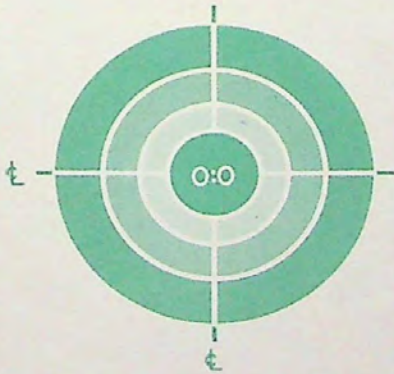
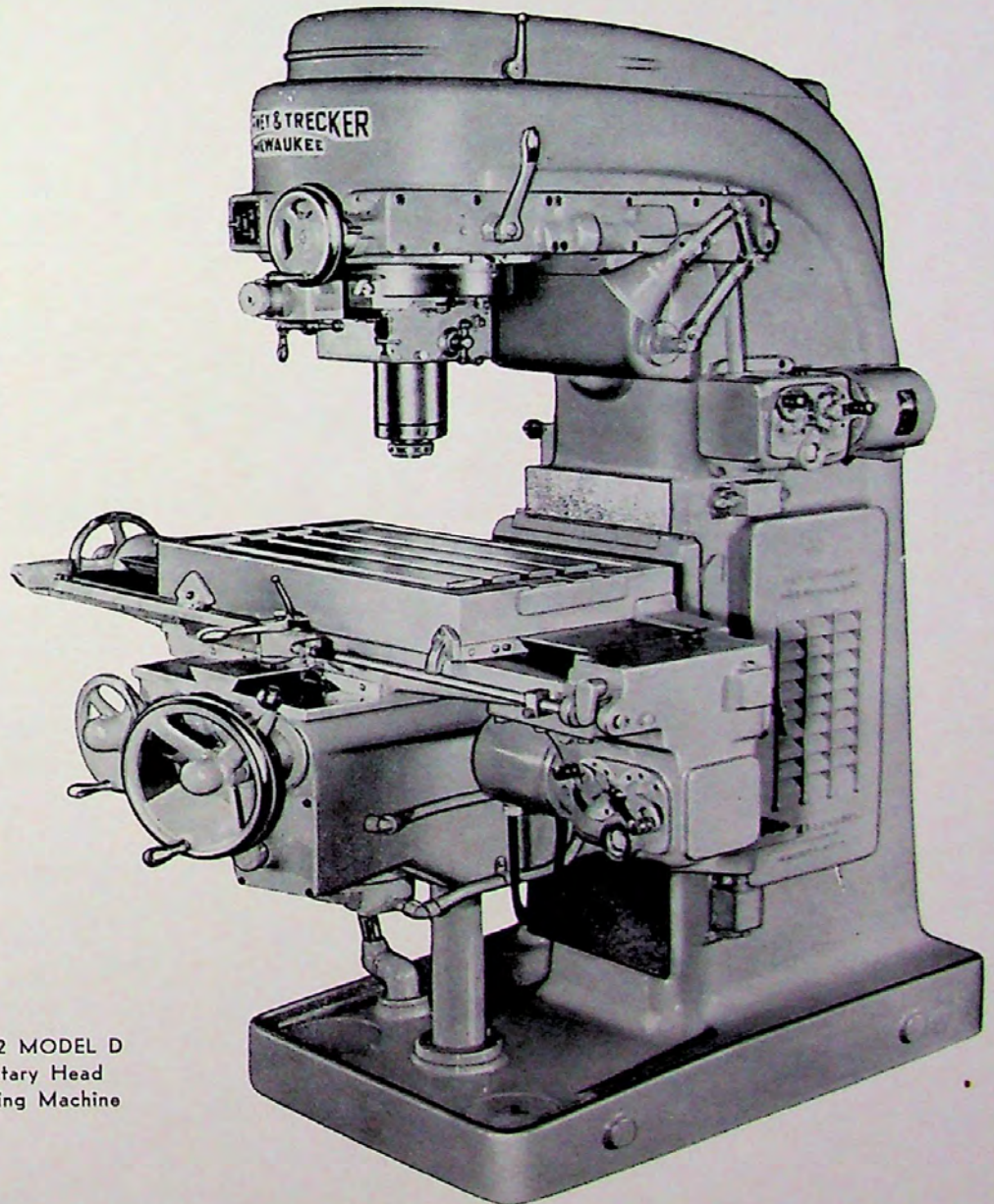




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# MODEL D

## No. 2 ROTARY HEAD MILLING MACHINE



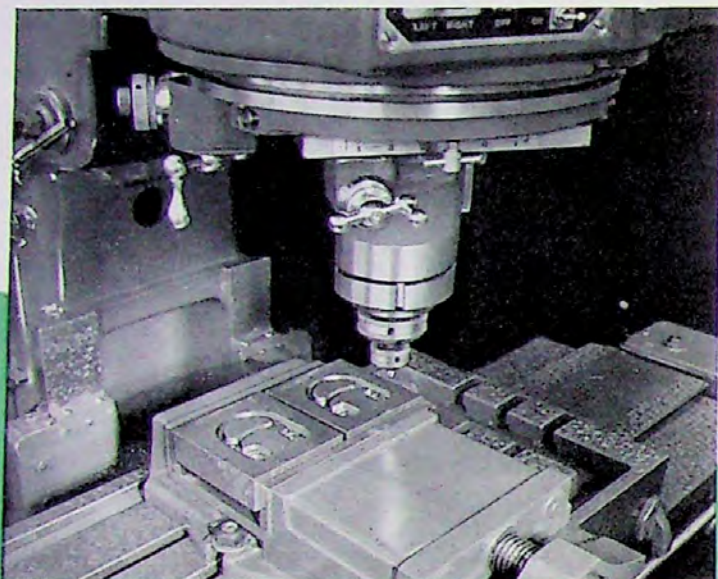
No. 2 MODEL D  
Rotary Head  
Milling Machine

**KEARNEY & TRECKER**  
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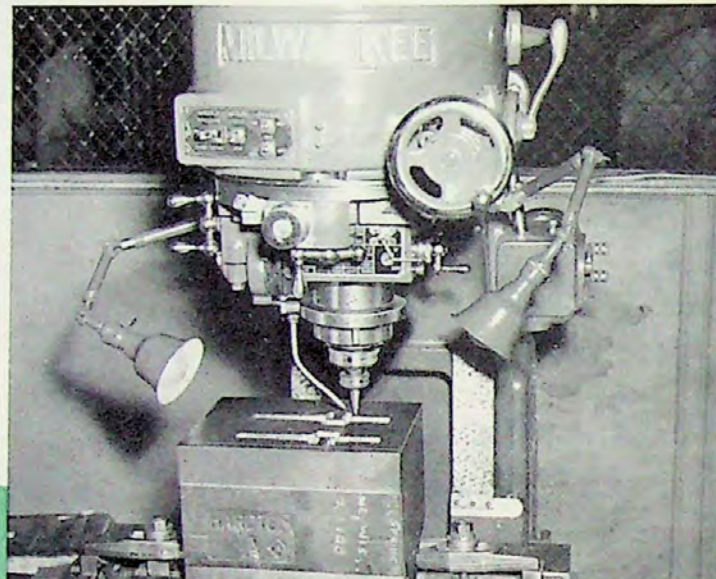
# MODEL D No. 2 ROTARY HEAD MILLING MACHINE

From print to product . . . on the machine that produces in metal, any geometric figure that can be drawn with draftsman's tools.

Exceptionally accurate in its wide range of movements — economical for tool room, die casting, forging, plastic molds, stamping dies, experimental and general manufacturing.



Dies for die castings are milled complete in a fraction of the time required when normal milling procedures are used. Both halves of the die set can be milled at the same time to assure perfect alignment. Hand finishing is practically non-existent.

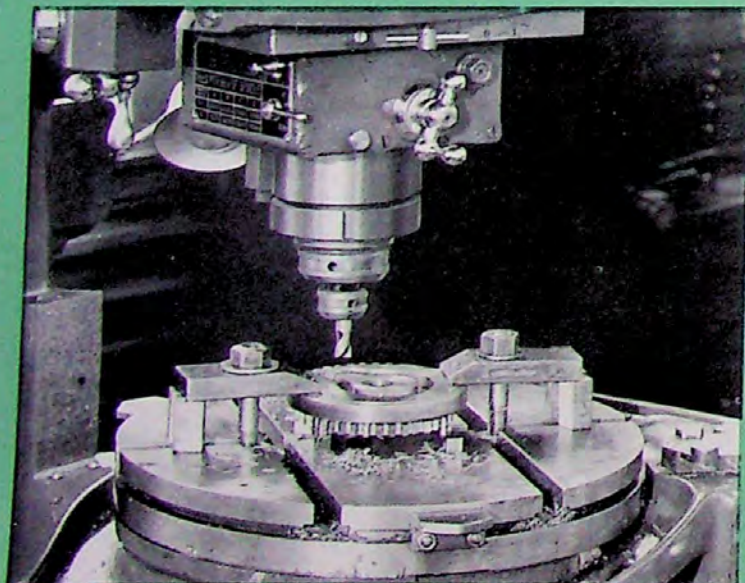


Forging cavities are produced with the utmost simplicity. Multiple sets can be milled in a single setup. The ability of the Model D Rotary Head machine to mill any shape in metal without costly hand work results in greater economy.

## GENERAL SPECIFICATIONS

(Figures shown in color are metric system)

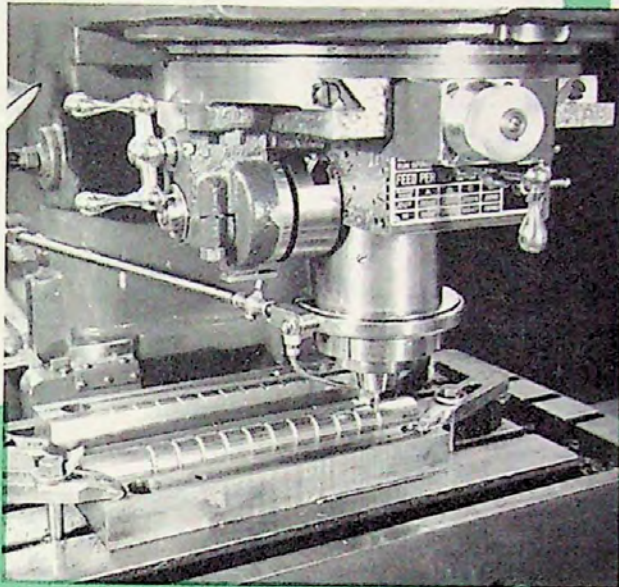
Description	No. 2, Model D
<b>TABLE:</b> Working Surface — Size Overall	30" x 16" 762 x 406
<b>TABLE FEED RANGE:</b> Longitudinal Travel — Hand or Power Feed	18" 457
Transverse Travel — Hand Feed Only	12" 305
Vertical Travel — Hand Feed Only	18" 457
Number of Table Feed Changes	Sixteen
Power Feed Range (ipm)	1/2" to 7 1/2" 12 to 190
<b>SPINDLE:</b> Size — National Standard Taper	No. 30
Number of Spindle Speed Changes	Infinite
Speed Range (rpm)	250 to 4000
Vertical Travel — Hand or Power Feed	3" 76
Number of Spindle Feed Changes	Eight
Power Feed Range (per revolution of spindle)	.0002" to .008" .005 to .190
Radial Adjustment	0 to 4 0 to 102
<b>ROTARY HEAD:</b> Power and Hand Feed Travel — Continuous	360°
Number of Rotary Head Feed Changes	Sixteen
Power Feed Range (revolutions per minute)	.2 to 3
<b>POWER POSITIONING TO KNEE:</b> Maximum Travel	18"
Rate of Travel	30 ipm



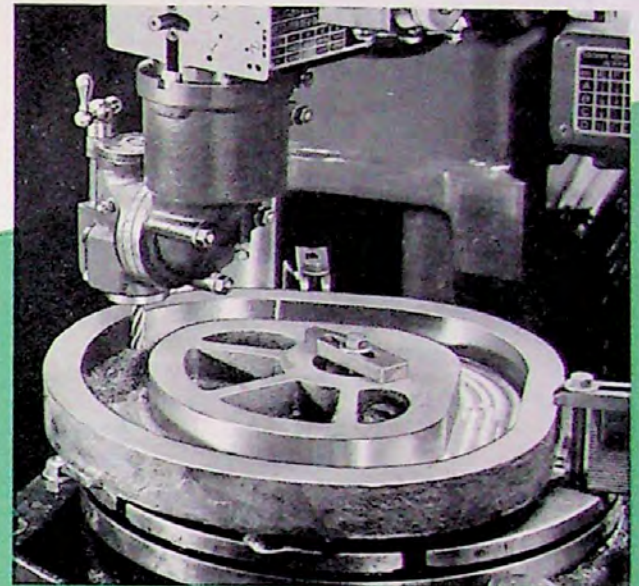
Tool room jobs — often very costly, are simplified by using this versatile rotary head milling machine. The ease with which it produces spherical and conical shapes, radii and angles — all in both the horizontal and vertical planes — makes this machine tool an extremely important part of any well equipped tool room.

# ROTARY HEAD MILLING MACHINE ATTACHMENTS

The range of the Rotary Head Milling Machine can be greatly extended to complete more complex jobs at one setup economically by means of four easily adapted attachments — cherrying, universal milling, slotting and cornering, and right angle milling. Use of the cherrying attachment in combination with the rotary head motion permits accurate, mechanically controlled generation of cones and spherical sections.



**Cherrying Attachment** — an auxiliary rotary head mounted at 90° to the rotary head of the machine. Makes possible the cutting of arcs and angles from 0° to 360° in the vertical plane. Maximum cherrying cut is 2" diameter, plus or minus the diameter of the cutter. Shown above, the Cherrying Attachment is used to mill circular cavities in a plastic mold.

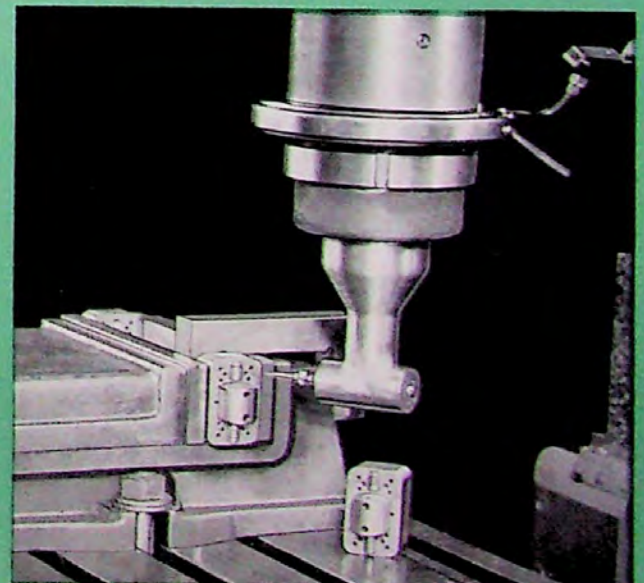
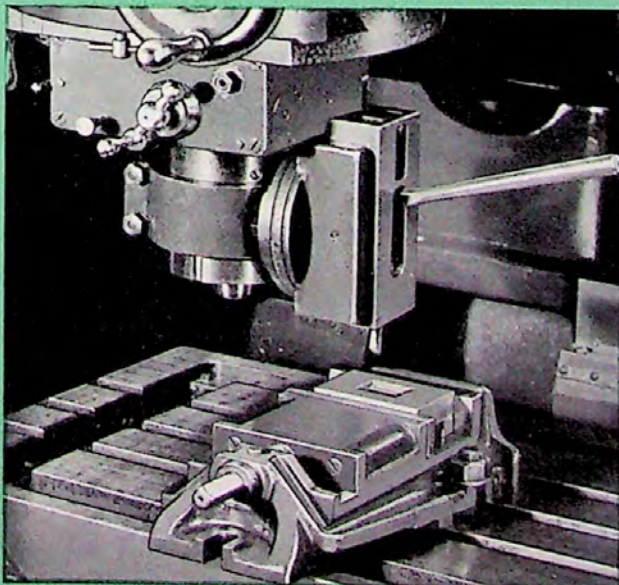


**Universal Milling Attachment** — has 4" offset spindle in relation to machine spindle, increasing planetary range to 16" diameter. Adjustable radially to mill any angle within a complete circle, also has 1 1/2" of spindle quill adjustment. Shown above, attachment increases radial movement of machine to mill all radii in cam with precision in only one setting.



**Slotting and Cornering Attachment** — a universal slotting head having a manually controlled stroke of 1 1/2". Draft may be set up to 7°. Cam action permits slotting to blind bottoms — breaks off chip at end of stroke. Shown above, a die cavity was milled and the attachment used to square out corners.

**Right Angle Milling Attachment** — useful for light horizontal milling inside die cavities and for other operations which require milling at right angles to machine spindle. Attachment spindle has 2" of vertical adjustment. Shown above, the attachment is used to mill grooves in a plastic mold.

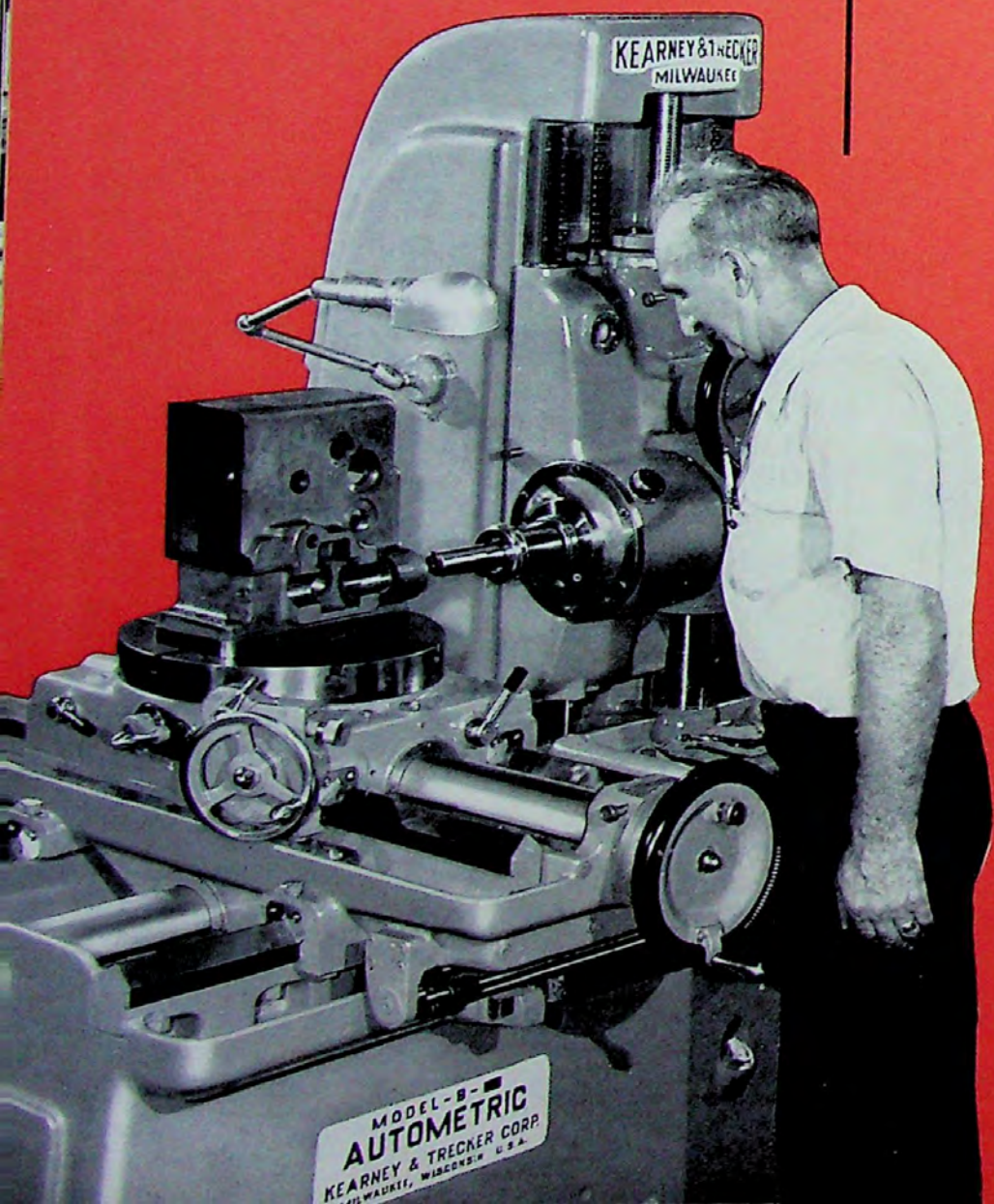


KEARNEY & TRECKER  
MILWAUKEE

# MODEL B

(HORIZONTAL)

## *Autometric* PRECISION BORING MACHINE



The Model B Autometric Boring Machine combines versatility and precision to a degree unmatched in its field and range of operation. This machine features a built-in indexing table in combination with a horizontal boring spindle and it is easy to visualize the vast variety of boring operations which can be efficiently performed. Box jigs, jig plates, gear boxes or machine parts all look alike to the Model B regardless of whether they are to be produced singly or in quantity. Ease of setup, convenient operating controls and built-in measuring and indexing devices save time and contribute to its ease of operation and the elimination of errors. A wide range of boring speeds and feeds assure efficient cutting operation with modern cutting tools on either ferrous or non-ferrous materials.

# Unmatched Versatility in Precision Boring

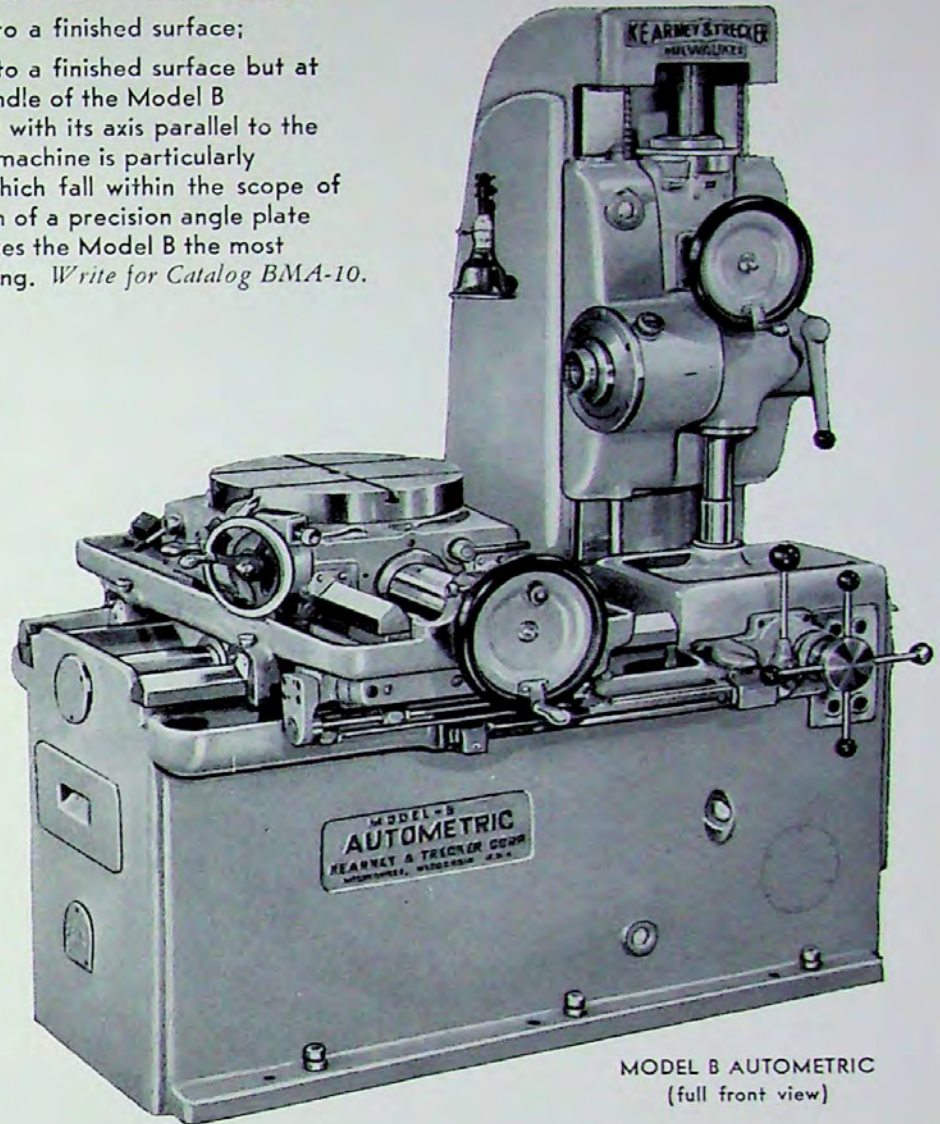
Precision boring jobs can be placed in three general classifications:

1. Boring one or more holes *perpendicular* to a finished surface;
2. Boring one or more holes *parallel* to a finished surface;
3. Boring two or more holes *parallel* to a finished surface but at angles to each other. Since the spindle of the Model B Autometric is horizontally mounted with its axis parallel to the top surface of the index table, this machine is particularly adaptable to boring operations which fall within the scope of groups two and three. The addition of a precision angle plate for handling work in group one makes the Model B the most versatile machine for precision boring. Write for Catalog BMA-10.

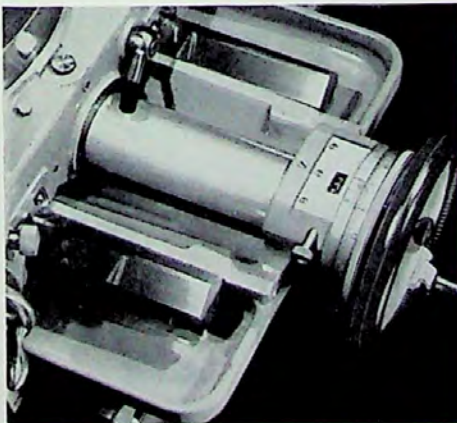
## GENERAL SPECIFICATIONS

(Figures shown in color are in metric system)

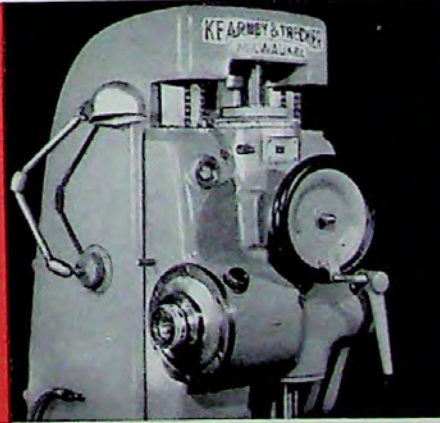
Description	
<b>ROTARY WORK TABLE:</b>	
Diameter .....	16" 406
Graduated in Increments of .....	1/2°
Vernier Reads .....	1 min. of arc
<b>CAPACITY:</b>	
Vertical Measuring Travel .....	10" 254
Transverse Measuring Travel .....	16" 406
Carriage Travel — Hand or Power..	15" 381
<b>SPINDLE:</b>	
Size — National Standard Taper ...	No. 40
Number of Speed Changes .....	Infinite
Range of Speeds (rpm) .....	50 to 2500
<b>CARRIAGE:</b>	
Number of Feed Changes .....	Eight
Range of Feeds (Per rev. of spindle)	.0005" to .0148" .0125 to .3737
Rapid Traverse Rate of Movement..	100 ipm 2500 mppm
<b>MEASURING SCREWS:</b>	
Vertical and Transverse —	
Maximum Accumulative Lead Error	
In any 1" of Length (25mm) ..	.0001" .0025
In any 12" of Length (300mm) .	.0002" .0050



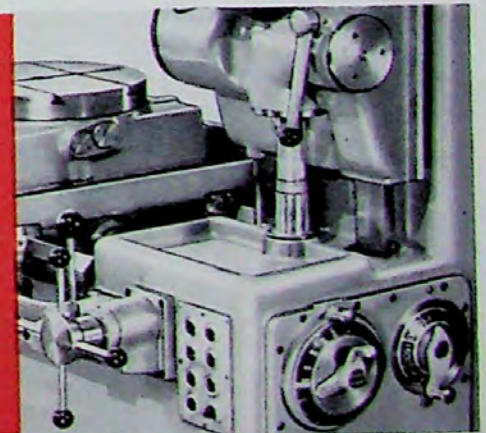
MODEL B AUTOMETRIC  
(full front view)



Large, easy-to-read micrometer dials and verniers, together with mechanical counters simplify precision hole spacing.



Boring head is counter-balanced for quick, effortless positioning. Boring spindle is lubricated by circulating oil.

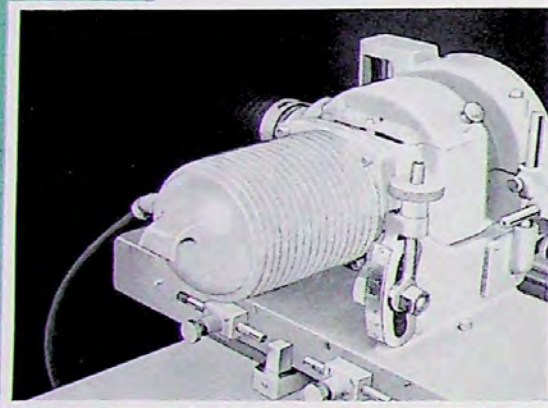


Convenient controls for selection of a wide range of speeds and feeds saves time and promotes cutting efficiency.

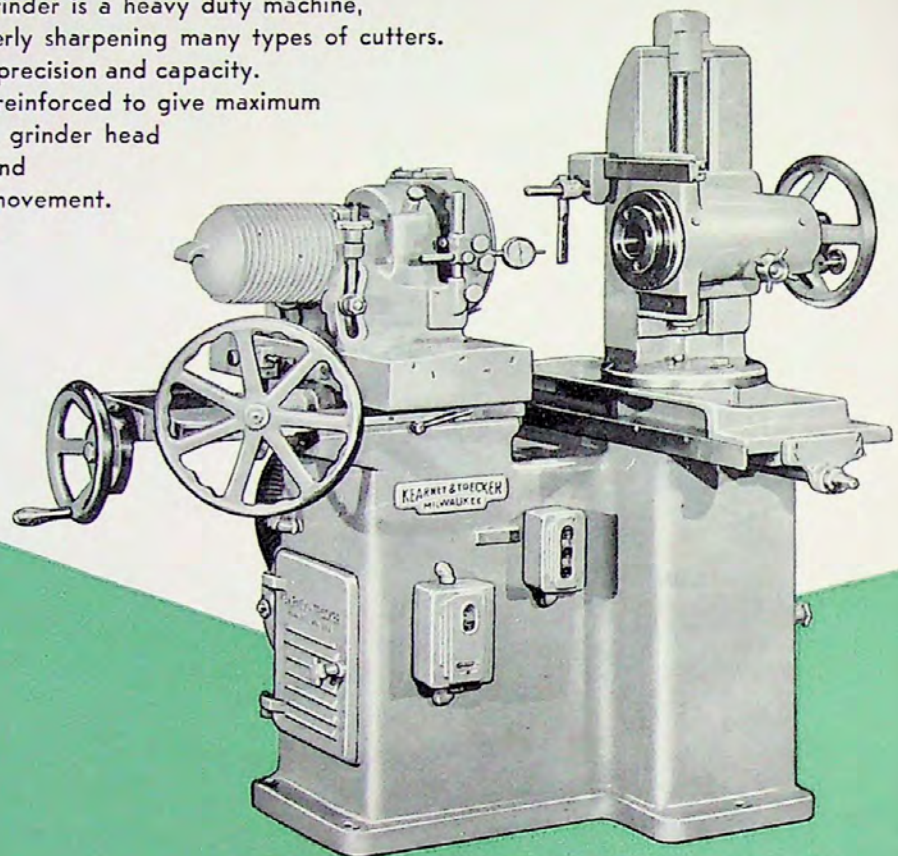
# CUTTER GRINDER

**Especially Designed for Sharpening  
Carbide Face Mill Cutters Faster and Better**

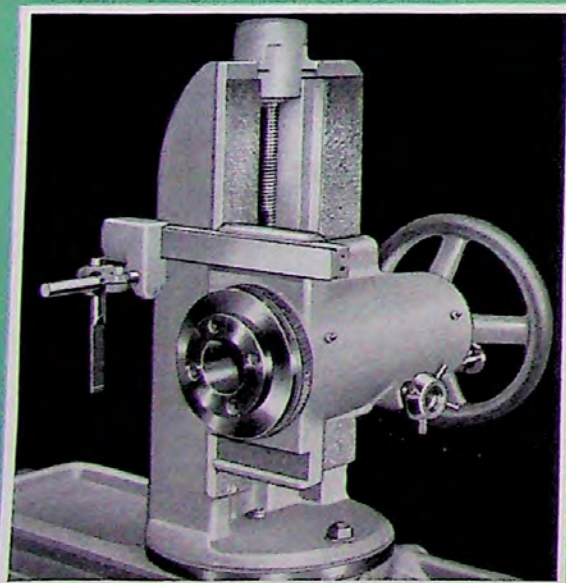
The Kearney & Trecker - Milwaukee Cutter Grinder is a heavy duty machine, incorporating every needed feature for properly sharpening many types of cutters. The basic design is one that embodies rigidity, precision and capacity. The bed is of one-piece construction, heavily reinforced to give maximum rigidity to both cutter and wheel slides. The grinder head slide is mounted on hardened and ground ball and roller bearings for permanently smooth sliding movement. A flywheel on the spindle makes it possible to maintain a constant speed of 3400 rpm during grinding operations.



Rear view close-up of grinder head showing air-cooled motor housing, adjustable limit stops, screw and stud assembly for angular adjustment of grinder head, and handwheel for actuating the grinder head cross slide.



Full Front View of Cutter Grinder



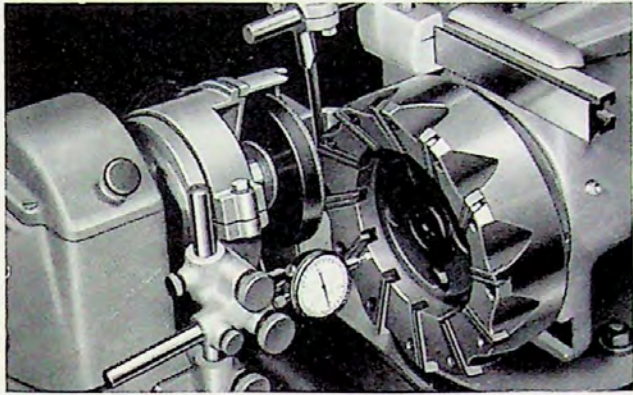
Close-up of cutter head showing circular scales on spindle nose and at base of upright which permits accurate angular adjustments. Face mill cutters up to 24" in dia. are readily accommodated.

## SPECIFICATIONS

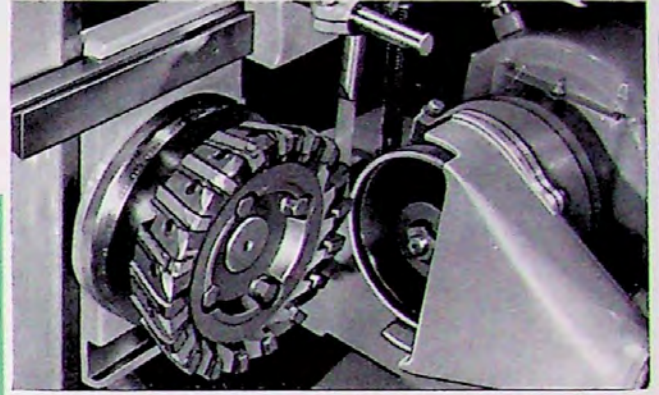
<b>GRINDING CAPACITY</b>	All types of face milling cutters, right or left hand, up to	Diameter	
		20"	24"
<b>GRINDING WHEEL SPINDLE RANGE</b>	Longitudinal slide movement	5 1/2"	
	Cross slide movement	11"	
	Head swivels — above or below horiz. plane	15°	
	Spindle speed — rpm	3400	
<b>CUTTER SPINDLE RANGE</b>	National Standard Spindle End	No. 50	
	Cross slide movement	13"	
	Vertical slide movement	13 3/4"	
	Cutter upright swivels	360°	
<b>MOTOR</b>	Grinding wheel spindle drive motor	1 hp	
<b>SHIPPING WEIGHT</b>	Net weight (approximate)	2750 lb.	2910 lb.

# TYPICAL APPLICATIONS

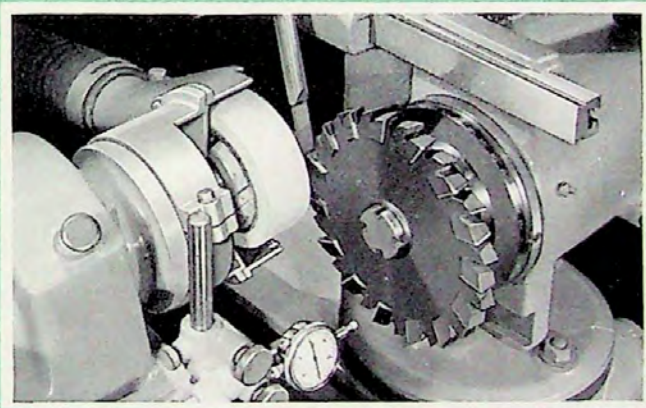
This cutter grinder is capable of sharpening all types of face mill cutters, up to 24 inches in diameter, to within an accuracy of 0.0002 of an inch. Setups are made quickly, with graduated dials facilitating adjustments. Controls are handily located for simplified operation.



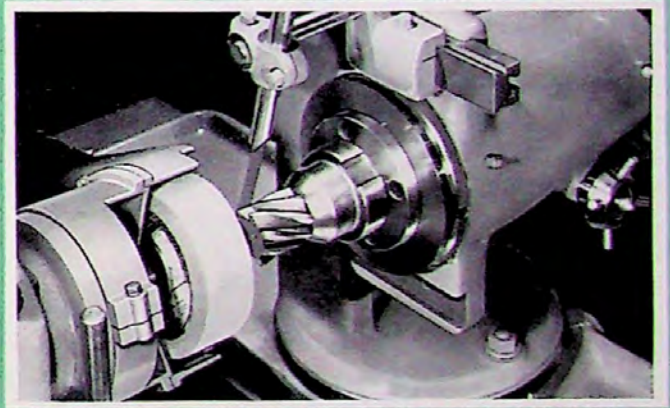
A 6" cup-type diamond wheel is used to grind the face relief and clearance angles on a 10" CSM face mill cutter.



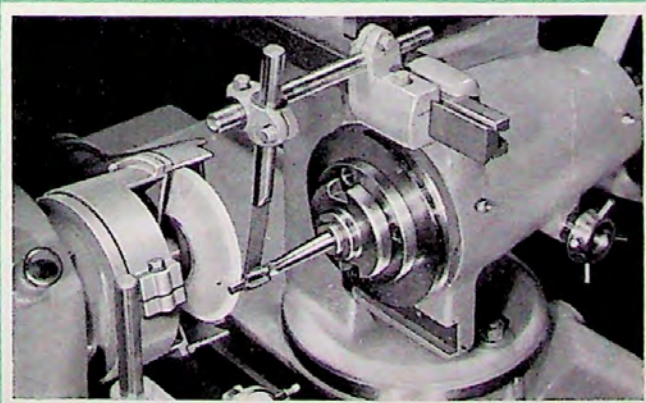
A 6" D150 grit cup-type diamond wheel is used to grind the periphery of an 8" carbide tipped full-back face mill cutter.



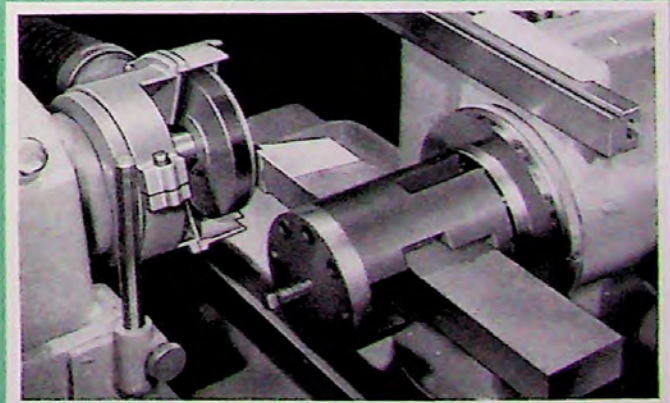
To grind the face and periphery of an 8" HSS slotting cutter a 6" 32A46 grit cup-type wheel is employed here.



In another set-up a 6" 32A46 grit vitrified cup-type wheel is used to grind the face of a 2" HSS end mill.

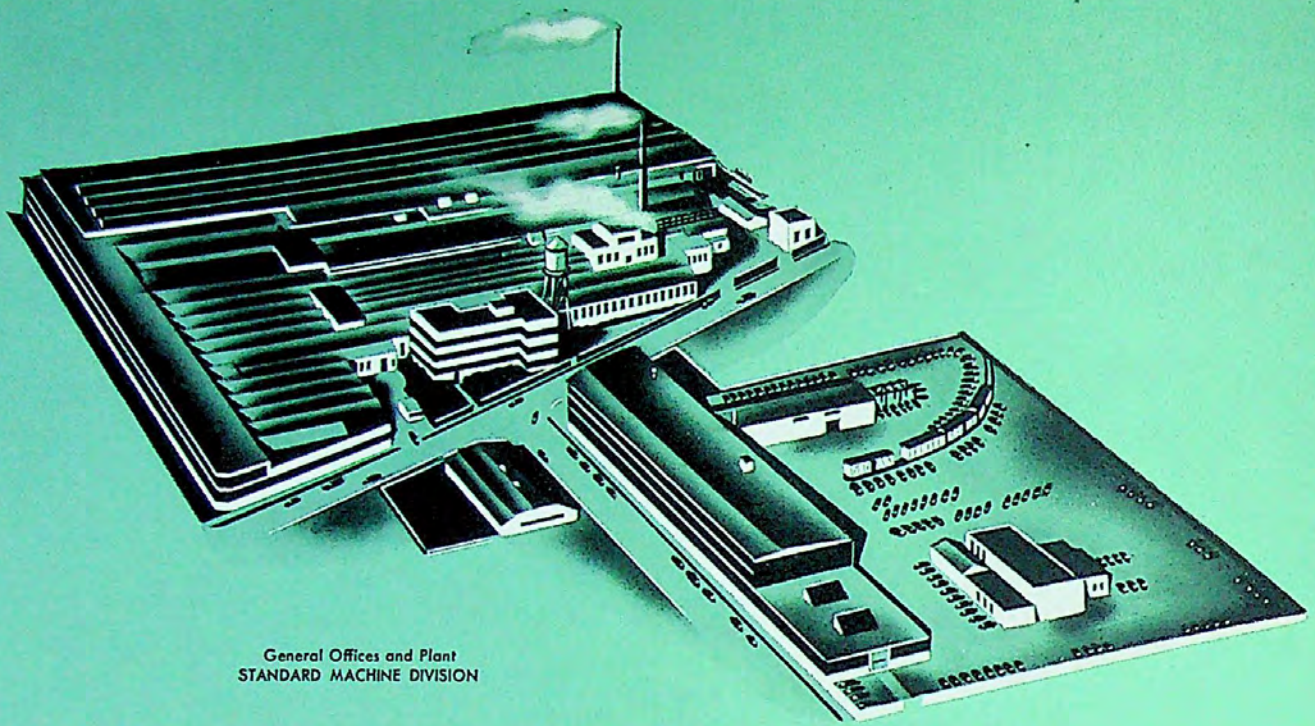


In this operation the face of a counter-bore is being ground with a 7" - 38A60 grit vitrified disk-type wheel.



A special tool holder is used here to grind the face and angles of a carbide-tipped planer tool with a 6" diamond wheel.



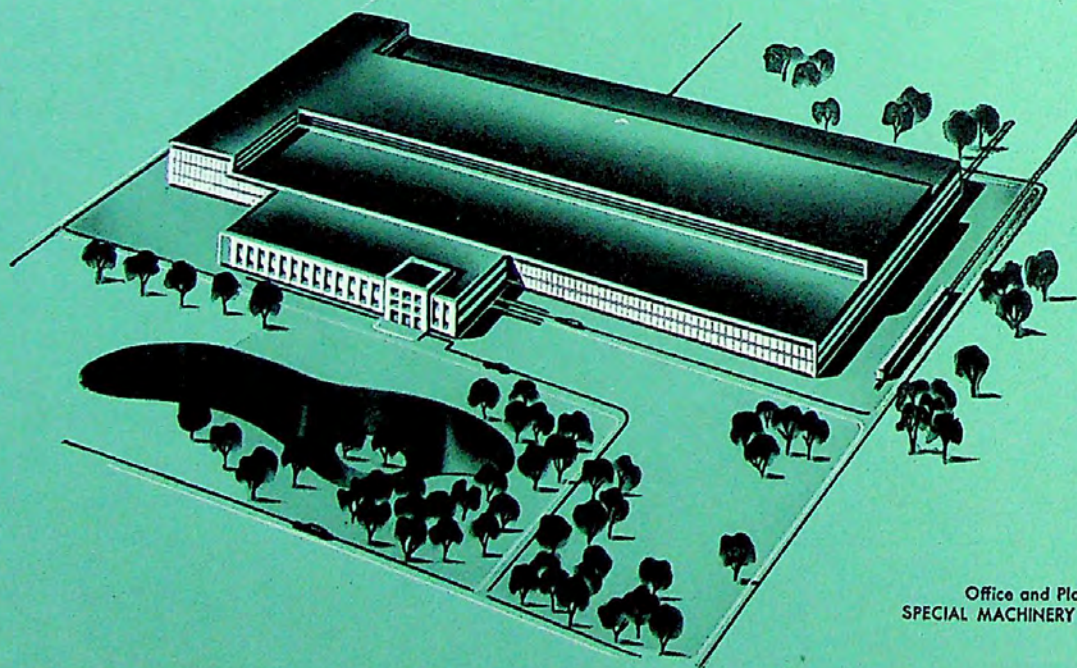


General Offices and Plant  
STANDARD MACHINE DIVISION

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