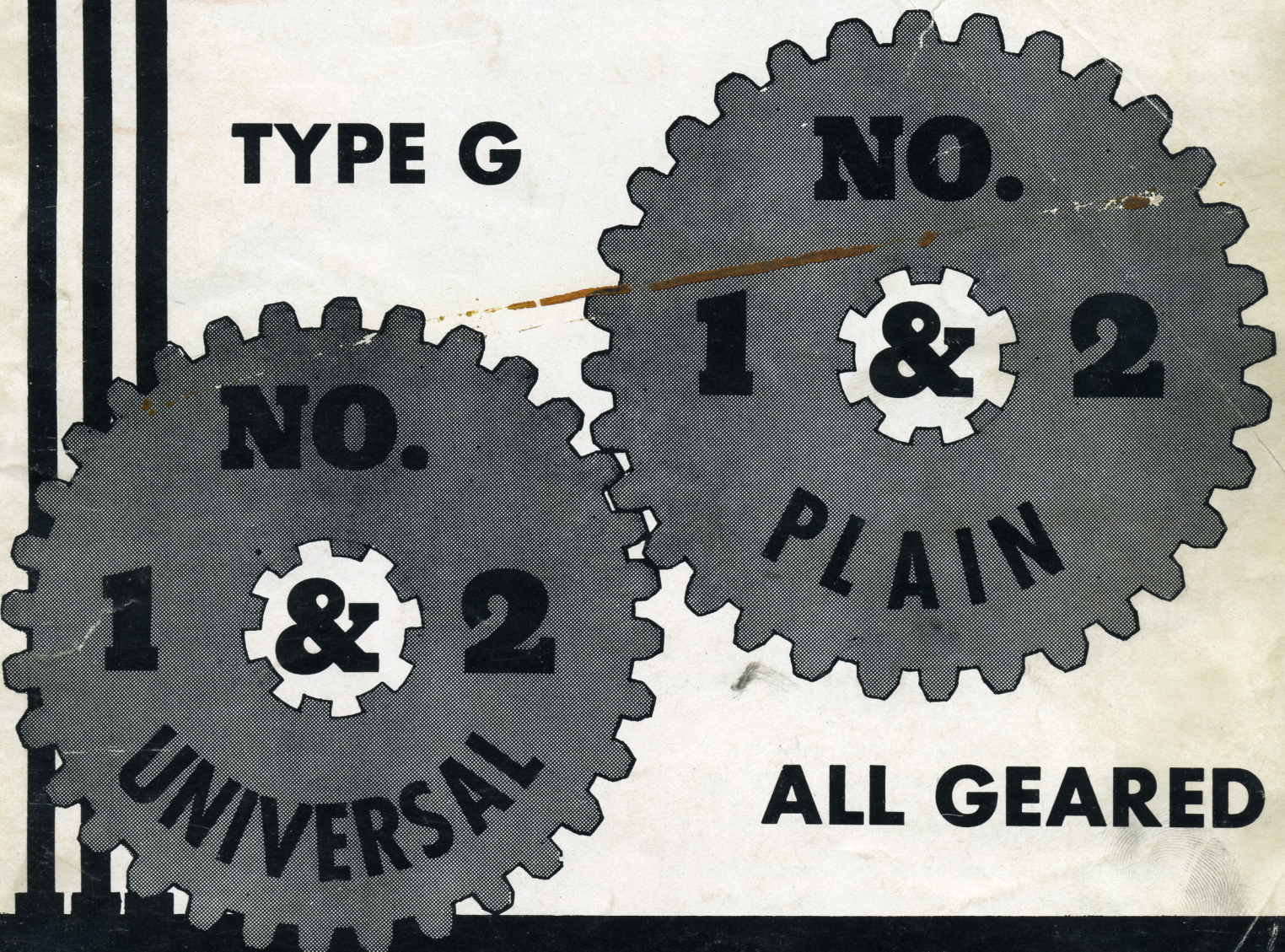


MILLING MACHINES

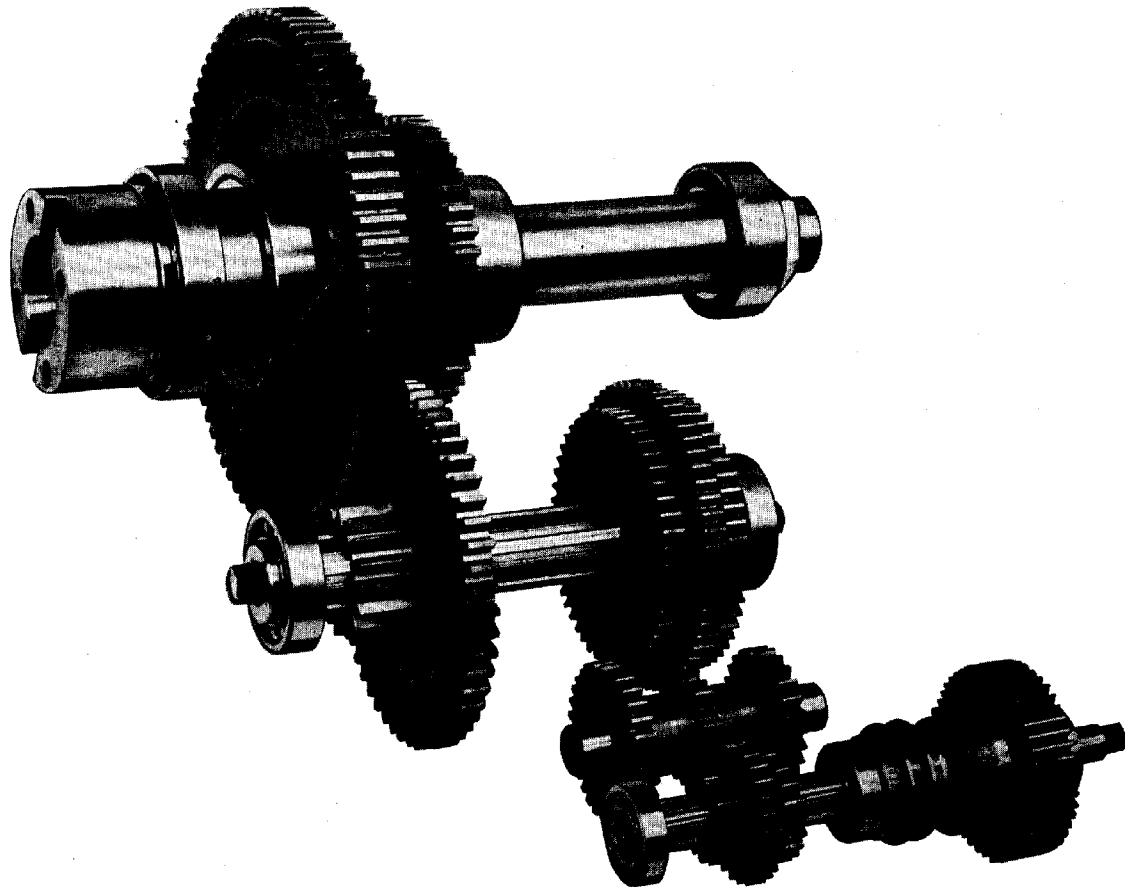
ATLANTIC MACHINERY CORP.
149 BROADWAY
NEW YORK

TYPE G



ALL GEARED

KEMPSMITH.
Machine **COMPANY**
MILWAUKEE • WISCONSIN, U.S.A.



NOTHING ROLLS LIKE A BALL

A well built speed transmission is one of the most important factors in gaining smooth, chatterless cutting.

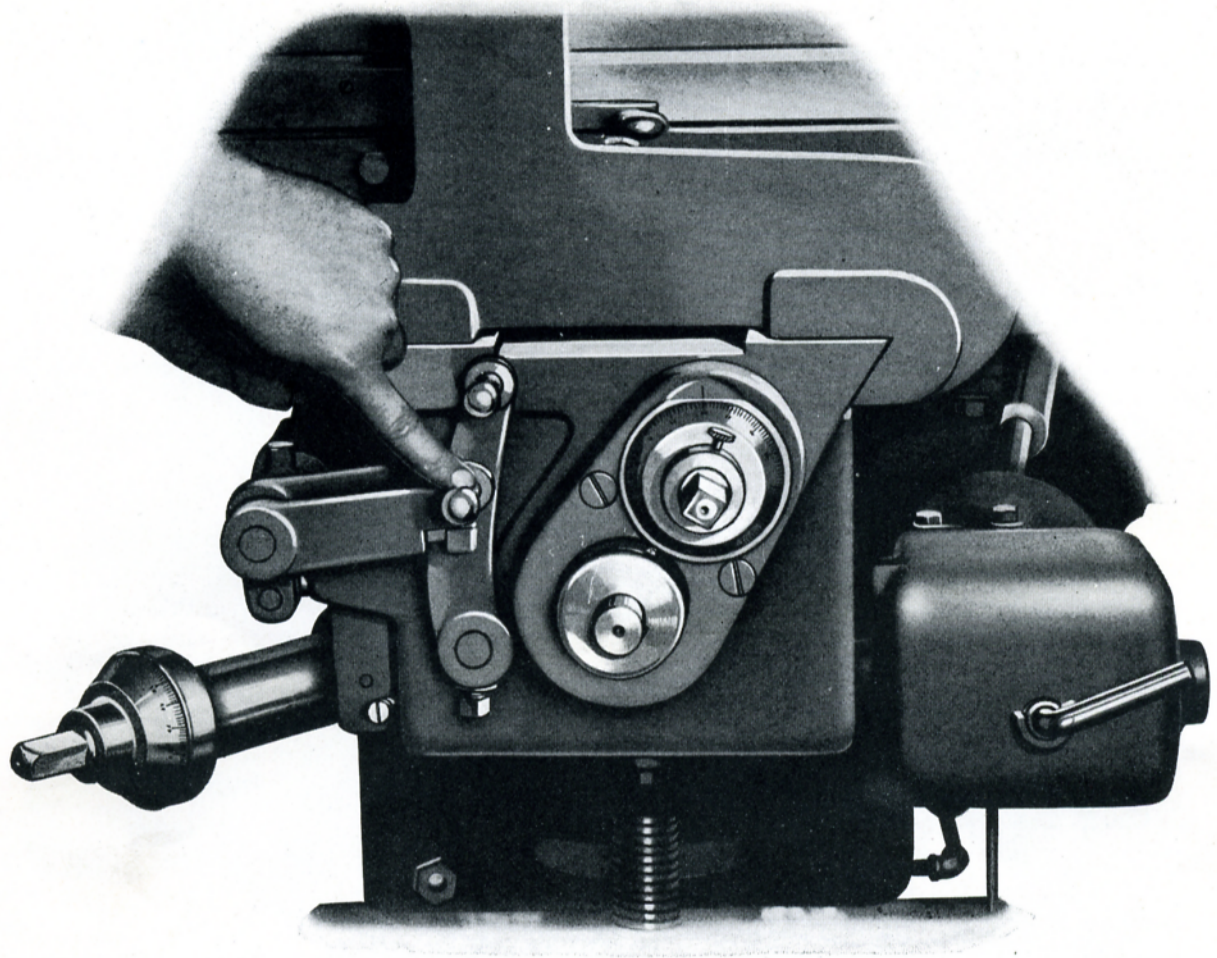
There are three thoughts which guided us in the design. It was to be (1) simple, (2) rugged, and (3) frictionless. Examine the photograph and see if we have not accomplished this end.

Through 13 gears we obtained a selection of 18 different speeds. At no time are more than three gear contacts between clutch and cutter. The power input is direct from the motor pinion to the lower shaft. This shaft is set in motion by engaging the multiple disc clutch.

All the gears and shafts are made of high carbon steel and are running in a bath of oil. All the gears are driven through shafts which are ten-splined, at

fixed center-distances, and the gears slide on these shafts to make speed changes. Observe the wide faced, large diameter gear on the spindle. This gear, $13\frac{3}{4}$ " in diameter, is in mesh when the machine is being subjected to the heavier loads. The transmission assures smooth chatterless cutting with the largest diameter cutters.

The shafts and the spindle are running on Precision ball bearings. We decided on the use of ball bearings, even though the cost is greater, because they represent in our belief the bearing which comes nearest to eliminating all friction evils, and will hardly ever require attention in the life of the machine. These bearings, generous in size, $13/16$ " diameter balls on the spindle, will hold the gears in mesh to their original efficiency and eliminate spindle bearing adjustments for years.



Simple, Foolproof Control

The Type "G" Milling Machine is extremely simple in construction, and easy to operate. An inexperienced workman can run one with safety. In the accompanying illustration the finger points to the lever through which Power Feed in any direction can be disengaged instantaneously by exerting a slight pressure upwards. The lever directly above if pressed to the right makes Power Feed again available. The lever

on the extreme lower right side of the illustration reverses the direction of the Power Feed.

It is this concentration of controls on the front of the machine where they are easy to get at which cuts the cost of milling operations to a minimum. The few levers there are to think of, and their positiveness enables the operator to concentrate his entire energy on the work, and relieves him of any worry.

No. 1 or 2 Type "G" Plain or Universal

FEATURES

- | | |
|---|--|
| 18 Speeds—18 to 575 R. P. M. | Twin Disc. Clutch running in oil. |
| 18 Feeds—1/2 to 20 inches per minute. | Rigidity—Knee and saddle have one piece angular tongue gib. |
| Power feeding all directions. | Wedge locked steel self aligning overarm. |
| Sliding gear transmission for speed and feed changes. | Automatic splash lubrication for speed and feed drives. |
| Anti-friction feed and speed transmission — Spindle included. | Centralized station oiling system for knee saddle and table. |
| Simple centralized control for all movements. Motor in Base. | |

POWER QUICK TRAVERSE MAY BE ARRANGED AT ADDITIONAL COST

SPECIFICATIONS

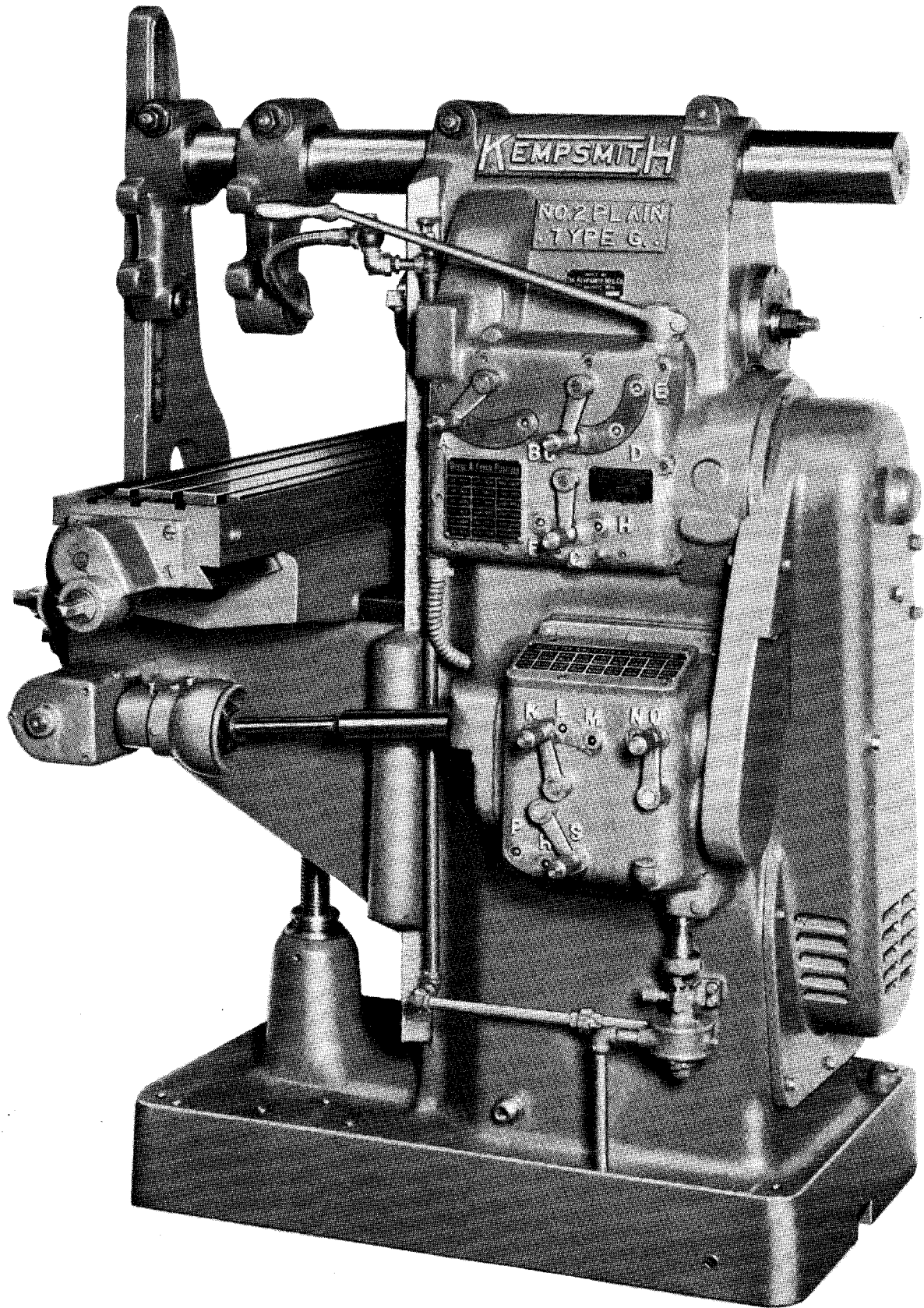
Standard Equipment with Plain Machines:

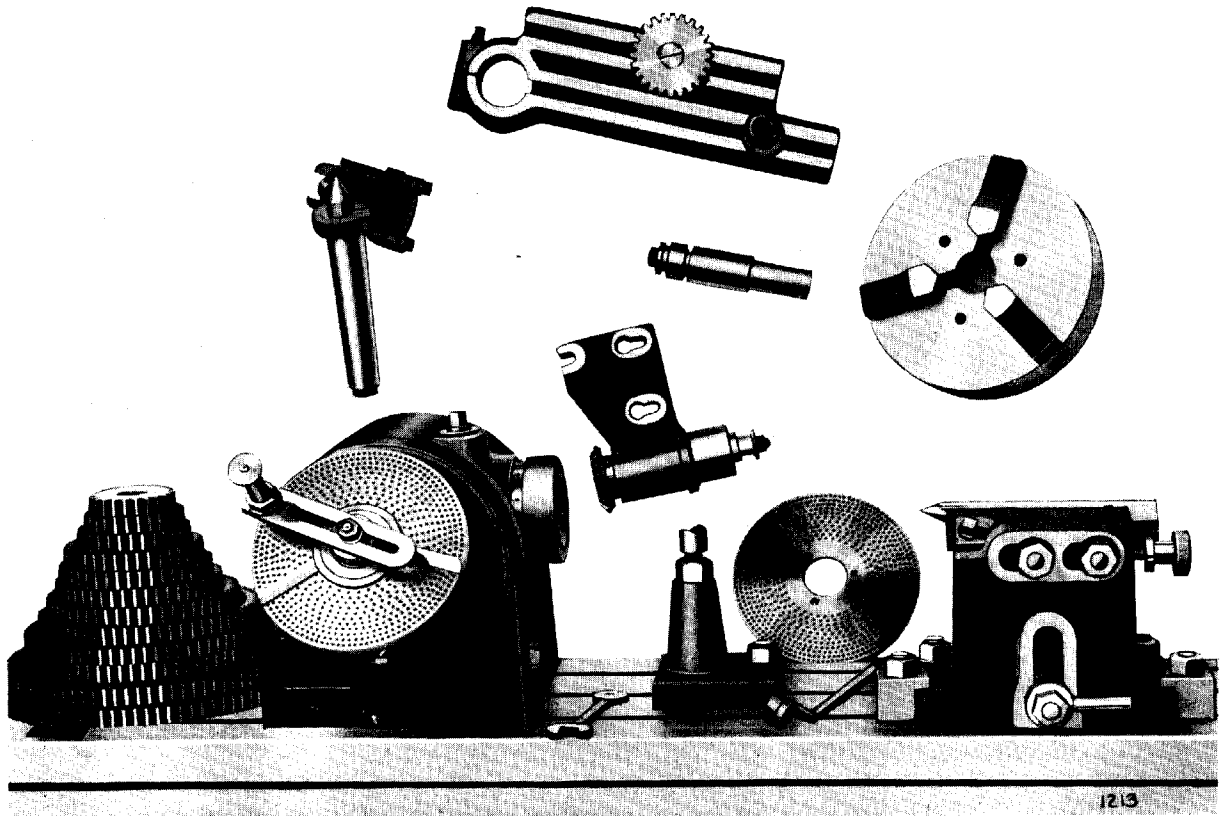
Two Arbor Supports, Semi-Steel Harness, Coolant Pump and Piping, No. 3 Plain Vise, Draw-in Rod, Crank Handles and Wrenches.

Standard Equipment with Universal Machines:

Two Arbor Supports, Semi-Steel Harness, Coolant Pump and Piping, No. 3 Swivel Vise, Draw-in Rod 10 1/2" Universal Dividing Head complete with Tailstock, Centering Rest, Dog and Driver, Two Index Plates, set of change gears for spiral milling and index charts for operating, Universal Chuck, and Crank Handles and Wrenches.

	No. 1	No. 2		No. 1	No. 2
POWER FEED RANGE:			UNIVERSAL DIVIDING HEAD (with Universal machine only)		
Lengthwise	22"	28"	Swing and length between centers	10 1/2"x22"	10 1/2"x28"
Cross	8"	10"	Spindle taper hole (B. & S.)	No. 10	No. 10
Vertical			Spindle hole through	1-1/16"	1-1/16"
Plain	18"	18"			
Universal	19"	19"	UNIVERSAL CHUCK (with Universal machine only)		
TABLE:			Maximum opening diameter	2 1/4"	2 1/4"
Working Surface	42"x10"	45"x10"	FLOOR SPACE:		
T - Slots	Three 5/8"	Three 5/8"	In direction of spindle	66"	66"
OVERHANGING ARM:			In direction of table travel	85"	97"
Diameter	4"	4"	SHIPPING DATA:		
Distance to center of arbor	6 3/4"	6 3/4"	Plain machine		
WIDTH:			Net weight	3500	3700
Face of Column to brace	24"	24"	Domestic shipping weight	3800	4000
SPINDLE:			Export shipping weight	4000	4200
Standardized Taper No.	50	50	Case for export—dimensions	70x70x40"	70x70x40"
Hole through, diameter	1 1/8"	1 1/8"	Universal machine		
Speeds	18	18	Net weight	3800	4000
Range R. P. M.	18-575	18-575	Domestic shipping weight	4100	4300
MOTOR, H. P.	3	3	Export shipping weight	4300	4500
FEED:			Case for export—dimensions	70x70x40"	70x70x40"
Number of changes	18	18			
Range—inches per minute	1/2"-20"	1/2"-20"			





Universal Dividing Head

The Universal Dividing Head with other items shown above, and a Swivel Vise are standard equipment on the Universal Type G Milling Machine.

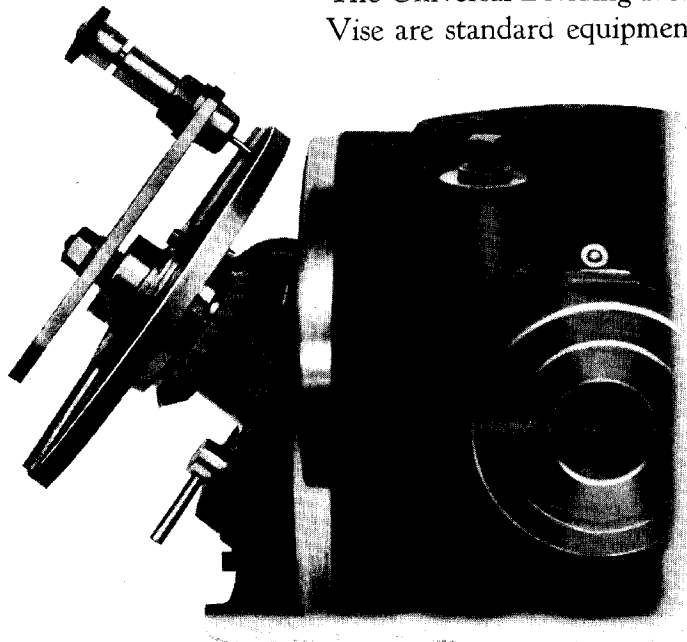
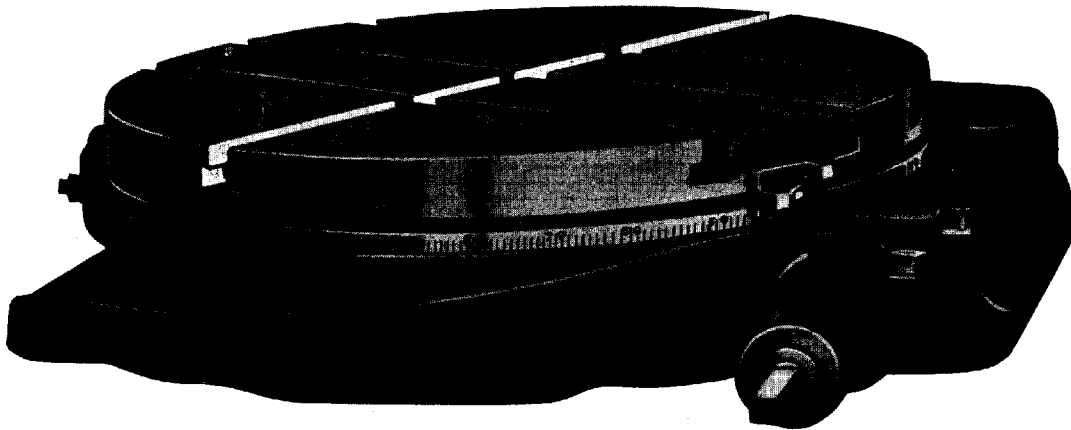


Figure 1

The Universal Dividing Head is the most important mechanism connected with a universal milling machine, and deserves very serious consideration.

The ideal dividing head must be accurate. It must both by its rigidity of construction and by its method of adjustment preserve that accuracy throughout the life of the machine. It must likewise be convenient to operate.

We have embodied all these factors in this Kempsmith Universal Dividing Head.



Circular Milling Attachment

Made in two sizes, 16 in. and 24 in., Hand or Power Feed.

The Kempsmith Circular Attachment adds greatly to the variety of work possible on the milling machine.

It is of special value in milling circles, and segments of circles, large cams and irregular contours. It can also be used in gear cutting.

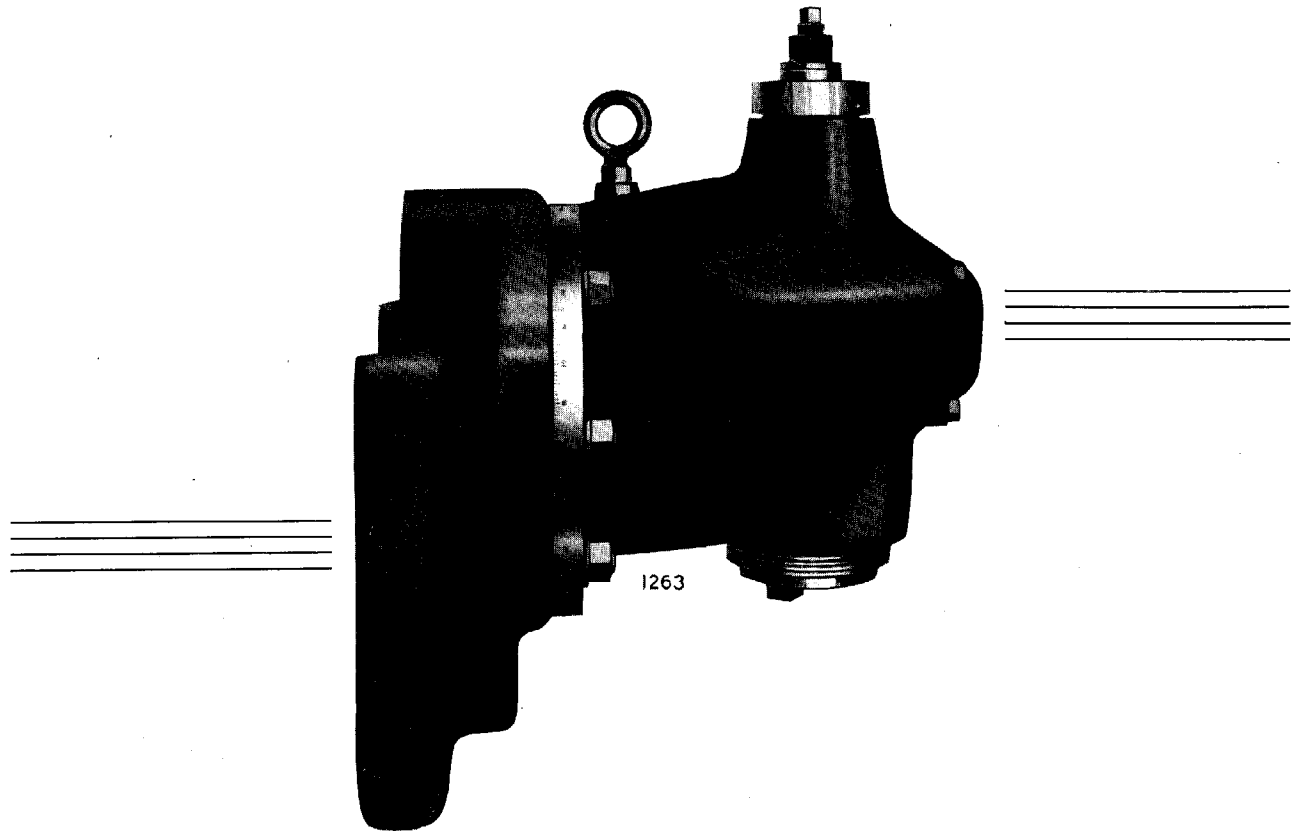
When used with a circular work holding fixture and a vertical machine or attachment it performs high speed continuous milling, the most rapid method known of machining large quantities of small and medium size pieces.

The attachment is of rigid, powerful, long wearing and accurate design and construction that

will stand up to any duty the milling machine can impose or the cutters endure.

POWER FEED can be readily applied, at the same time leaving the hand feed available for use. The power feed attachment is provided with trips for stopping at any fixed point and a reverse making it possible to feed in either direction. The power feed has the same number of changes as the table feeds.

INDEXING ATTACHMENT using the standard index plates can be attached in place of the regular hand feed. This can be done quickly and easily.



Standard Vertical Milling Attachment

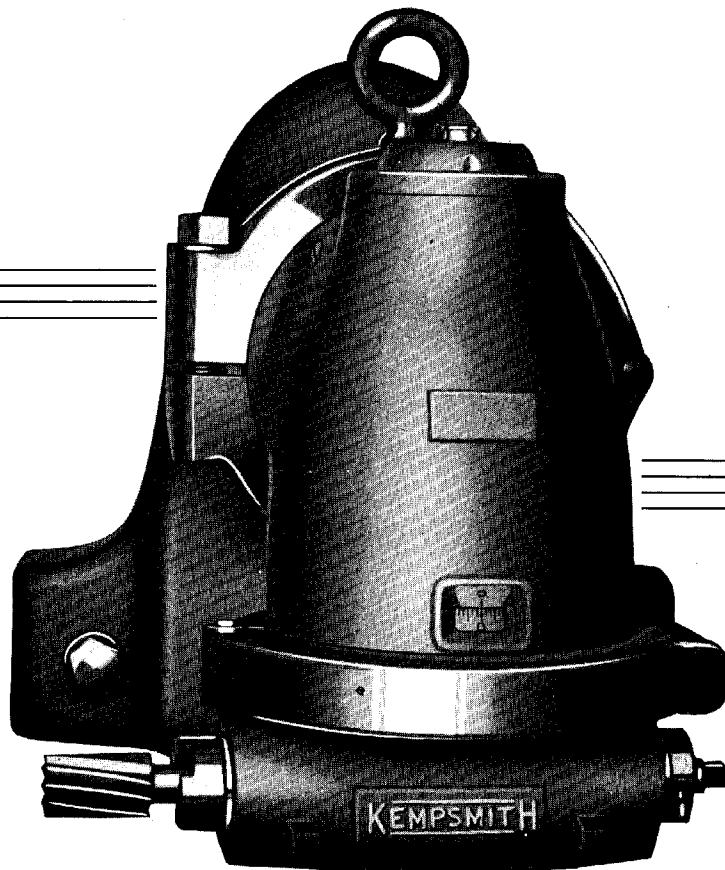
This vertical attachment was designed to give the range and rigidity of a vertical machine. It is rigidly mounted on the column face with full length gibs and a pilot bearing on the overarm. The spindle carrier swivels in a plane at right angles to the spindle for angular milling. Four heavy clamp bolts prevent rotation of the head

while cutting thrust is taken by the pivot member.

The spindle itself is of the same diameter as the machine spindle and is mounted on the same size ball bearings. These bearings provide ample strength and rigidity while permitting high spindle speeds. The spindle drive is through hardened gears mounted on ball bearings.

SPECIFICATIONS

Throat Distance	13"
Greatest Distance Spindle Nose to Table—Plain.....	18"
Greatest Distance Spindle Nose to Table—Universal	17"
Weight—Net	385
Weight—Shipping	425
Code Word (Type "G" Machines Only).....	KELTA



High Speed Universal Attachment

This attachment combines the strength of alloy steel gears and shafts, the rigidity and permanence of ball bearings, and the lightness and rigidity of high tensile strength aluminum alloys.

With the drive taken from a large hardened gear on the machine spindle through two pairs of bevel gears and one pair of spur gears, we have eliminated large gear ratios and gained maximum strength and smoothness.

Nine high grade ball bearings rigidly support the drive.

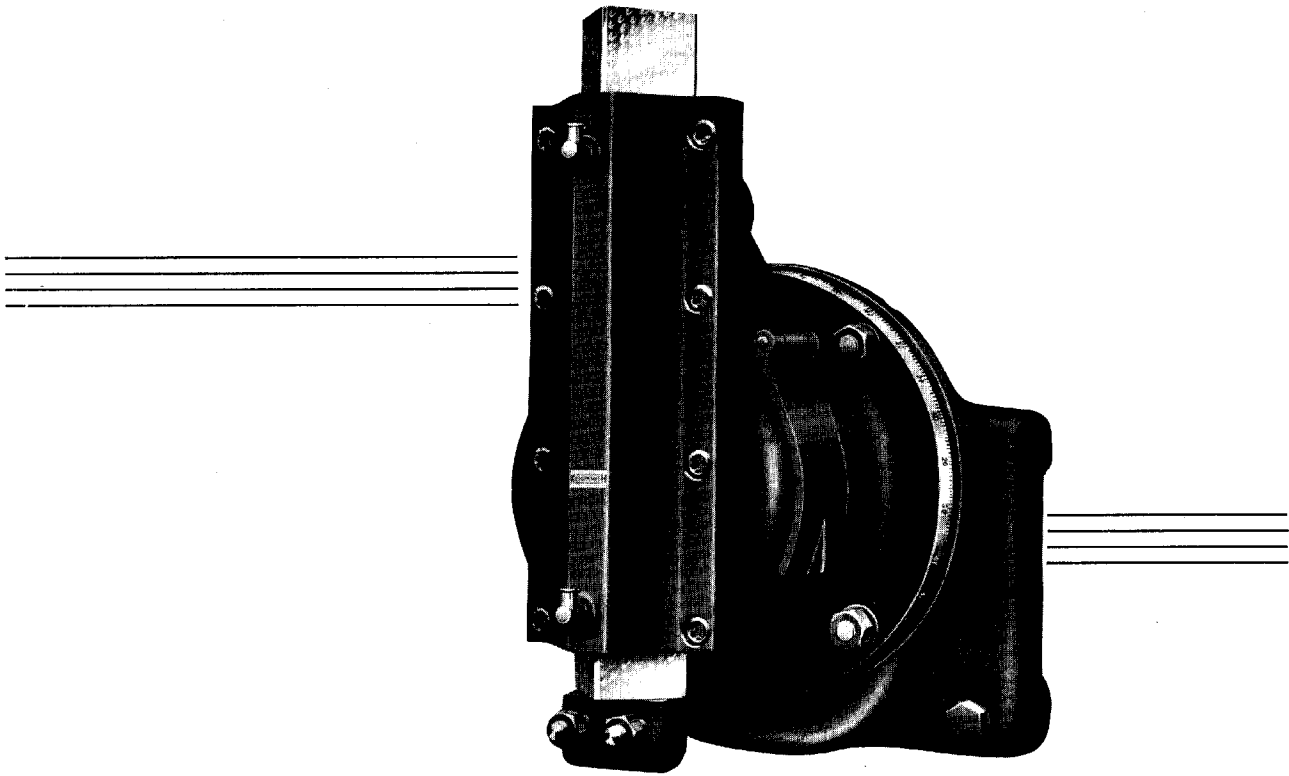
Body, base, and spindle carrier are high tensile

strength aluminum. One man can mount it easily. Time for mounting is far less than usual, because the tee bolts generally used have been replaced by ring clamps closed by a single screw.

Spindle alignment lugs are provided for making accurate angular settings more accurately than is possible with graduations, and for settings parallel to a previously machined surface. One end of spindle is made with a No. 7 B. & S. taper and has a driving clutch as well as tang drive for end mills and arbors. Other end has a No. 5 B. & S. taper for smaller cutters.

SPECIFICATIONS

Spindle Center to Table, Max.....	16-7/16
Spindle Center to Table, Min.....	1-5/16
Throat Distance	12 7/8"
Speed Range—High Series	90-2850
Speed Range—Low Series	22-695
Net Weight	132
Shipping Weight	170



Slotting Attachment

Because of its simple and rigid construction the attachment is unusually accurate and is therefore strongly recommended for tool and die work.

An attachment that greatly adds to the value of a milling machine in the tool room, the contract shop, and for general repair work.

The attachment is clamped to the face of the milling machine column and is driven by a spur gear mounted on the machine spindle nose. The body swivels to any angle in a plane at right

angles to the machine spindle and is clamped in any position by four large tee bolts. The clamping flange is large; is centered on the base by a large finished boss and is graduated to degrees on the outside edge.

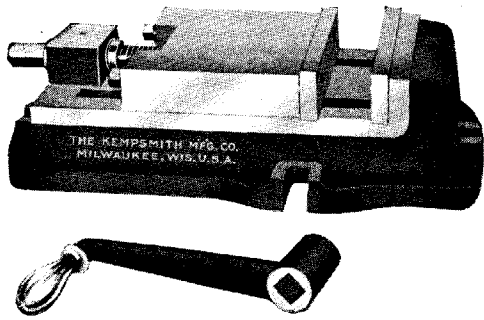
The ram is square, hollow and is driven by a bronze bushed link. The stroke is easily adjustable from 0 to 4 inches. The ram slides in carefully scraped guides. All adjustments are made by the cap, no gibs being used.

The tool holder is strong and simple and will hold any shape of tool.

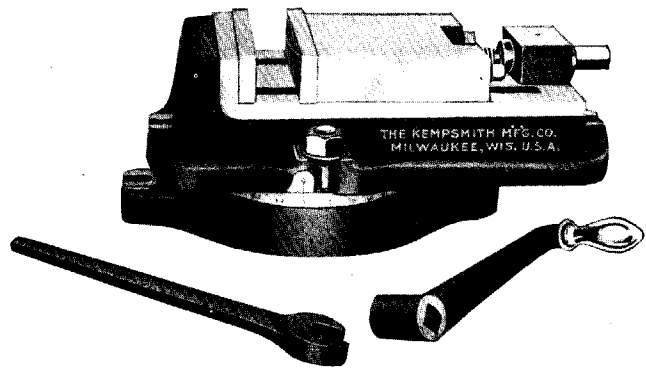
NOTE:—Always give serial number of machine attachment will be used on.

SPECIFICATIONS

Column to Tool Holder	12 ⁷ / ₈ "
End of Ram to Table—Max. Plain Mach.....	16"
End of Ram to Table—Max. Univ. Mach.....	15"
Net Weight.....	250
Shipping Weight	290



STANDARD PLAIN VISE



STANDARD SWIVEL VISE

Kempsmith standard vises are high grade vises intended for milling, drilling, grinding and similar operations. All operating surfaces are held accurately to size and squareness. Table slot keys are set accurately to alignment with jaws.

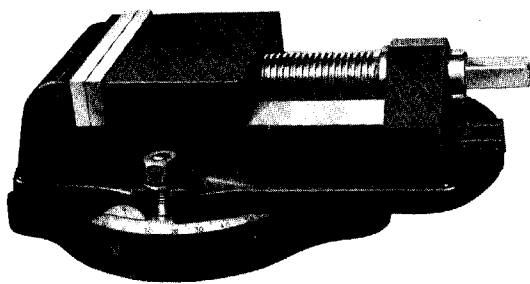
The swivel base can be applied to any plain vise and may be ordered separately.

is required than is found in ordinary vises. They have extra large diameter screws and heavy center guides with large hold down gibs. The number 3 has a semi-steel body and the usual type of compression screw. The number 4 has a steel body and a tension screw with thrust taken by an anti-friction bearing to secure greatest clamping power. On cutting tests it has easily held 15 H. P. cuts.

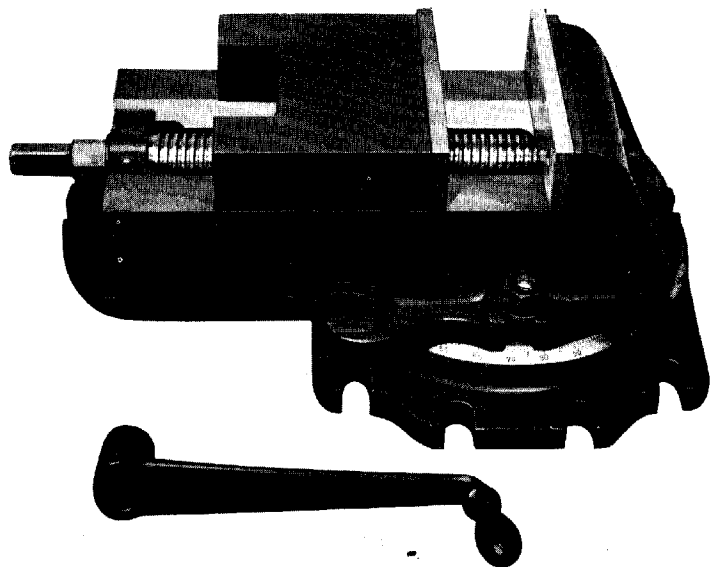
Number	Depth of Jaw	Width of Jaw	Opens with Steel Jaws	Opens without Steel Jaws	Net Weight	Code Word
2 Plain	1 3/8	4 1/2	3 1/2	4	30	Kelsop
3 Plain	1 1/2	6 1/4	3 3/4	4 1/4	60	Kestrel
4 Plain	2	7 1/2	4 1/2	5 1/2	105	Ketac
2 Swivel	1 3/8	4 1/2	3 1/2	4	45	Kettle
3 Swivel	1 1/2	6 1/4	3 3/4	4 1/4	75	Kevel
4 Swivel	2	7 1/2	4 1/2	5 1/2	135	Keвок

Number	Depth of Jaw	Width of Jaw	Opens with Steel Jaws	Opens without Steel Jaws	Net Weight	Code Word
3 H. Plain	1 1/2	6 3/8	3 1/2	4 1/2	64	Ketap
4 H. Plain	1 1/4	7 1/8	5 1/2	6 1/2	95	Kenop
3 H. Swivel	1 1/2	6 3/8	3 1/2	4 1/2	85	Ketas
4 H. Swivel	1 1/4	7 1/8	5 1/2	6 1/2	135	Kenos

Kempsmith heavy duty vises are made for production milling when a greater holding power



NO. 3 HEAVY SWIVEL VISE



NO. 4 HEAVY STEEL BASE

ARBORS . . . for Standardized Spindles

Catalog No.	Diameter	Length Shoulder to Nut	Style	Diameter of Bearing	Keyway	
					Width	Depth
3/8 A 10	3/8"	10"	A	.718	3/8	1/16
1 A 12	1"	12"	A	.718	1/4	3/32
1 A 18-4	1"	18"	A	2.125	1/4	3/32
1 1/4 A 12	1 1/4"	12"	A	.718	5/16	3/16
1 1/4 A 18-4	1 1/4"	18"	A	2.125	5/16	3/16
1 B 24-4	1"	24"	B	2.125	1/4	5/32
1 B 24-5	1"	24"	B	2.750	1/4	5/32
1 1/4 B 24-4	1 1/4"	24"	B	2.125	5/16	3/16
1 1/4 B 24-5	1 1/4"	24"	B	2.750	5/16	3/16
1 1/2 B 18-4	1 1/2"	18"	B	2.125	3/8	7/32
1 1/2 B 18-5	1 1/2"	18"	B	2.750	3/8	7/32
1 1/2 B 24-4	1 1/2"	24"	B	2.125	3/8	7/32
1 1/2 B 24-5	1 1/2"	24"	B	2.750	3/8	7/32
1 1/2 B 30-5	1 1/2"	30"	B	2.750	3/8	7/32
1 1/2 B 36-5	1 1/2"	36"	B	2.750	3/8	7/32
2 B 30-5	2"	30"	B	2.750	1/2	5/16
2 B 36-5	2"	36"	B	2.750	1/2	5/16

No. 4 Collar for Cone Type Machines and Type "G" Machines—2 1/8" O. D. } All bearing collars
 No. 5 Collar for No. 33 Production Machines and all Maximillers—2 3/4" O. D. } are 3 1/4" long.

When ordering Arbors give construction number of machine.

We can supply at any time our Standard Arbors with diameters in millimeters for use with metric cutters.

ARBORS . . . Standard

Type A and B Arbors with tang, for use on machines built prior to summer of 1906 are not carried in stock, but are made special. Type C and D Arbors, for machines with draw-in rods, built prior to summer of 1915. Type CL 1 and CL 3 Arbors, for present cone type machine with draw-in rod and slotted spindle nose. Type CL 4 Arbors for Maximiller and Production Millers with No. 12 B. and S. taper in Spindle.

Machines on which used	No.	Style	No. of Taper B. & S.	Diameter	Length from Shoulder to Nut	Dia. and Length of Bearing Collar	Diameter of Outer Bearing	Width of Spindle Slot
1 and 2 Plain and Universal, built before June, 1915	26	C	10	1"	10 1/2"	1 1/2" x 3 1/4"	.740"	.....
	28	C	10	1 1/4"	10 1/2"	1 1/2" x 3 1/4"	.740"	.....
1 and 2 Plain and Universal, built since June, 1915	15	CL 1	10	3/8"	6"	.....	.740"	1.289"
	16	CL 1	10	1"	6"	.....	.740"	1.289"
	18	CL 1	10	1 1/4"	6"	.....	.740"	1.289"
	25	CL 1	10	1 1/2"	10 1/2"	1 1/2" x 3 1/4"	.740"	1.289"
	26	CL 1	10	1"	10 1/2"	1 1/2" x 3 1/4"	.740"	1.289"
	28	CL 1	10	1 1/4"	10 1/2"	1 1/2" x 3 1/4"	.740"	1.289"
	29	CL 1	10	1 1/2"	10 1/2"	1 1/2" x 3 1/4"	.740"	1.289"
No. 3 Plain and Universal, built before June, 1915	38	C	11	3/8"	10"	1 1/2" x 3 1/4"	.740"	.....
	39	C	11	1"	10"	1 1/2" x 3 1/4"	.740"	.....
	41	C	11	1 1/4"	10"	1 1/2" x 3 1/4"	.740"	.....
	42	C	11	1 1/2"	10"	1 1/2" x 3 1/4"	.740"	.....
	45	C	11	1"	14"	1 1/2" x 3 1/4"	.740"	.....
	47	C	11	1 1/4"	14"	1 1/2" x 3 1/4"	.740"	.....
No. 32, built before June, 1915	38	CL 3	11	3/8"	14"	2 1/4" x 3 1/4"	2 1/4"	1.531"
	39	CL 3	11	1"	14"	2 1/4" x 3 1/4"	2 1/4"	1.531"
	41	CL 3	11	1 1/4"	14"	2 1/4" x 3 1/4"	2 1/4"	1.531"
	42	CL 3	11	1 1/2"	14"	2 1/4" x 3 1/4"	2 1/4"	1.531"
	45	CL 3	11	1"	19"	2 1/4" x 3 1/4"	2 1/4"	1.531"
No. 32, built since June, 1915	47	CL 3	11	1 1/4"	19"	2 1/4" x 3 1/4"	2 1/4"	1.531"
	48	CL 3	11	1 1/2"	19"	2 1/4" x 3 1/4"	2 1/4"	1.531"
No. 32, built since June, 1915	52	D	10	1"	21 1/4"	1 1/2" x 3 1/4"	.740" & 1 1/2"	.....
	53	D	10	1 1/4"	21 1/4"	1 1/2" x 3 1/4"	.740" & 1 1/2"	.....
	52	CL 3	10	1"	21 1/4"	1 1/2" x 3 1/4"	.740" & 1 1/2"	1.289"
	61	CL 3	10	1"	21 1/4"	1 1/2" x 3 1/4"	.740" & 1 1/2"	1.289"
Maximillers, up to April 1, 1927	53	CL 4	12	1"	25 3/4"	2 1/2" x 3 1/4"	2 1/2"	1"
	54	CL 4	12	1 1/4"	25 3/4"	2 1/2" x 3 1/4"	2 1/2"	1"
	55	CL 4	12	1 1/2"	25 3/4"	2 1/2" x 3 1/4"	2 1/2"	1"
	84	CL 4	12	1 1/4"	33 1/4"	2 1/2" x 3 1/4"	2 1/2"	1"
	85	CL 4	12	1 1/2"	33 1/4"	2 1/2" x 3 1/4"	2 1/2"	1"
No. 33 Production from October, 1919 to April 1, 1927	87	CL 4	12	2"	33 1/4"	2 1/2" x 3 1/4"	2 1/2"	1"