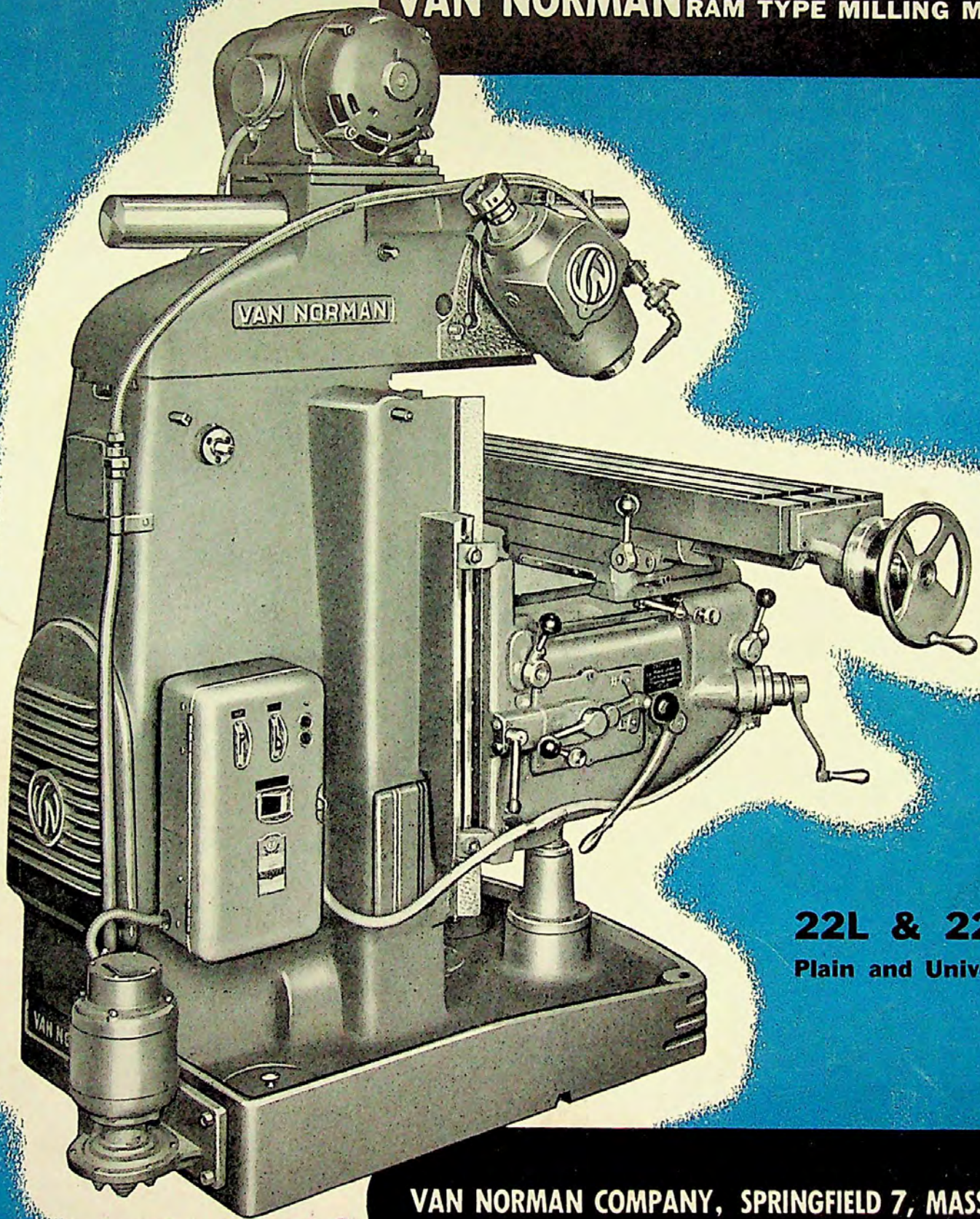


VAN NORMAN RAM TYPE MILLING MACHINES



22L & 22M
Plain and Universal

VAN NORMAN COMPANY, SPRINGFIELD 7, MASS., U. S. A.

No. 22L AND 22M RAM TYPE MILLING MACHINES SAVE TIME . . . CUT COSTS . . . REDUCE IDLE MACHINE TIME ON EVERY TYPE OF MILLING

The versatility of the new Van Norman No. 22L and 22M Ram Type Milling Machines meets the daily fluctuating milling requirements in the tool room, machine shop, production department, experimental laboratory and pattern shop. They minimize idle machine time, reduce work reset-ups and improve accuracy . . . and provide more profitable milling at lower costs.

Among the many advantages of these sturdy, compact millers is the adjustable cutterhead mounted on a movable ram. This feature alone cuts idle operator and machine time by as much as 50%. It enables the operator to perform any type of conventional milling . . . horizontal or vertical as well as angular . . . all with ONE machine. Because set-ups are minimized, errors that often occur when the workpiece is changed are eliminated. In addition, there is no waiting for single-purpose machines . . . no moving the work from one machine to the other.

Another important feature of the Van Norman No. 22L and 22M Ram Type Millers is their adaptability to meet all daily milling needs in those plants and departments having group installations where milling requirements continually change. If one work period calls for a majority of horizontal work the required number of horizontal setups are immediately available. When production needs call for a preponderance of vertical milling, the required capacity is available at a moment's notice. Overall milling capacity . . . vertical or horizontal . . . is at peak efficiency always — and in addition all of standard milling operations involving angular milling are just as easily performed with the simplest of fixtures or setups.

The combination of the movable ram and adjustable cutterhead provides greater milling capacity and improved accuracy. Front and rear directional controls of all power feeds and 6-way rapid traverse provide visibility and control of the cutting operation from either position . . . eliminates back and forth operator motion . . . reduces worker fatigue . . . increases efficiency.

The No. 22L and 22M Van Norman Ram Type Millers described on the following pages are the most accurate, easy-to-operate machines available for all-purpose milling. Many new features have been added to make definite important contributions to faster, easier precision milling . . . combine rugged strength with utmost sensitivity of operation and ease of control.

IMPORTANT VAN NORMAN FEATURES

• VERSATILITY

Rugged adjustable cutterhead permits horizontal, vertical or angular milling . . . all on ONE machine . . . with standard tooling.

• EASE OF OPERATION

Finger-tip front and rear control of all power feeds . . . Front and rear 6-way rapid traverse. . . Large easy-to-read graduated dials. Aluminum alloy arbor supports for easy handling.

• SIMPLICITY OF CONTROL

All power feed controls are DIRECTIONAL — operate in direction of desired table, saddle and knee movement . . . Rotary-type feed selector . . . Convenient and accessible speed selector.

• INCREASED RANGE

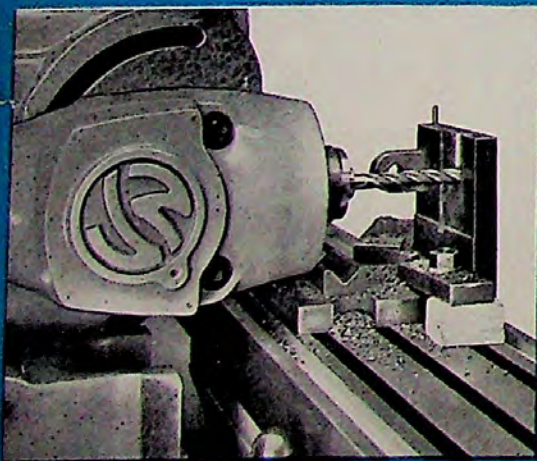
Ram adjustment, in and out over column, provides added work range and capacity.

• RIGIDITY AND POWER

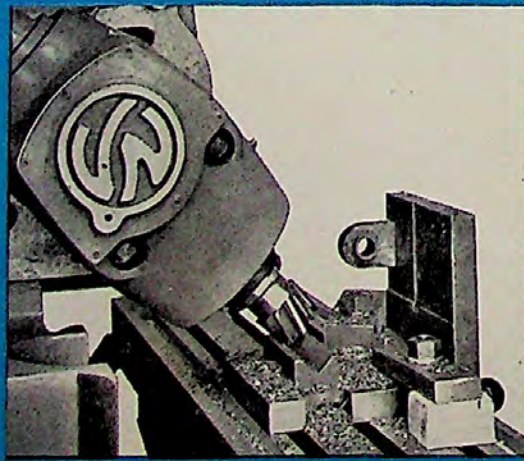
Spindle transmission gears are made of hardened alloy steel . . . Lapped to assure smooth precision operation . . . Hardened alloy steel . . . Multi-spline shafts operate on taper roller bearings. . . . Rugged column and base . . . Massive knee.

• LONG LIFE

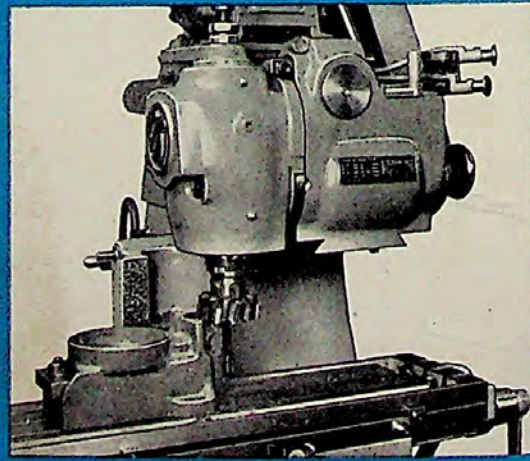
Precision built . . . Automatic lubrication.



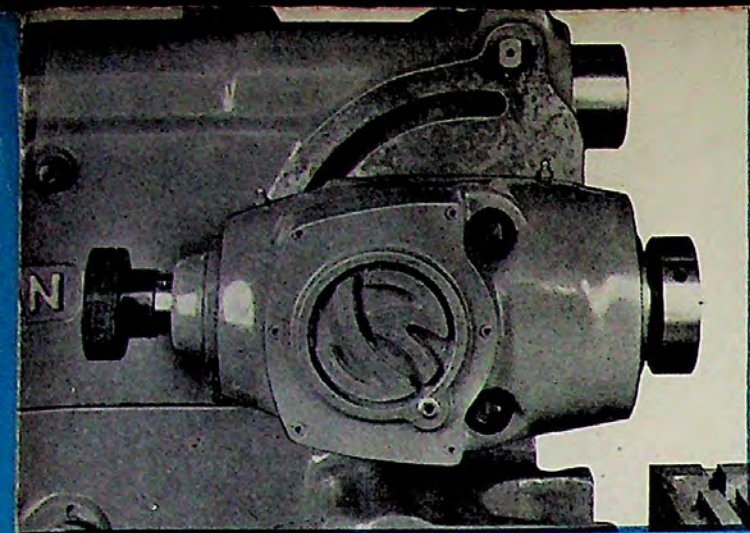
HORIZONTAL MILLING — With the head locked in the horizontal position, the 22L mills a slot in the workpiece. Hardened stop set at factory assures positive 0° setting.



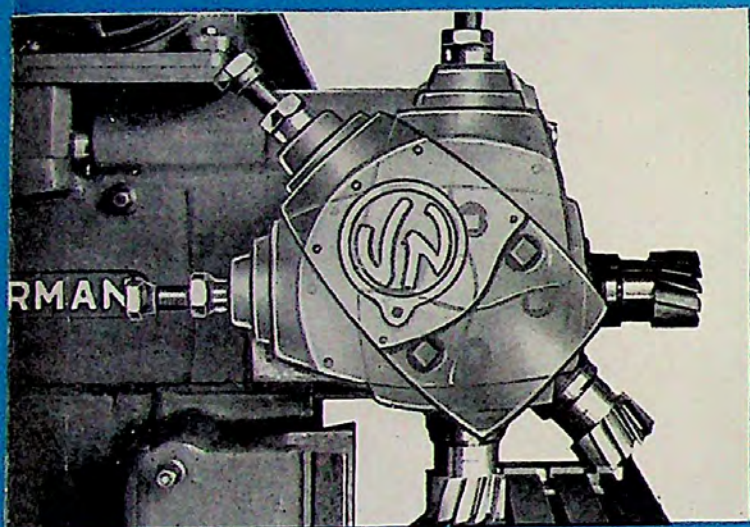
ANGULAR MILLING — Milling a "V" in the workpiece. Note that the work is still in the original setup . . . saving set-up time and assuring accuracy.



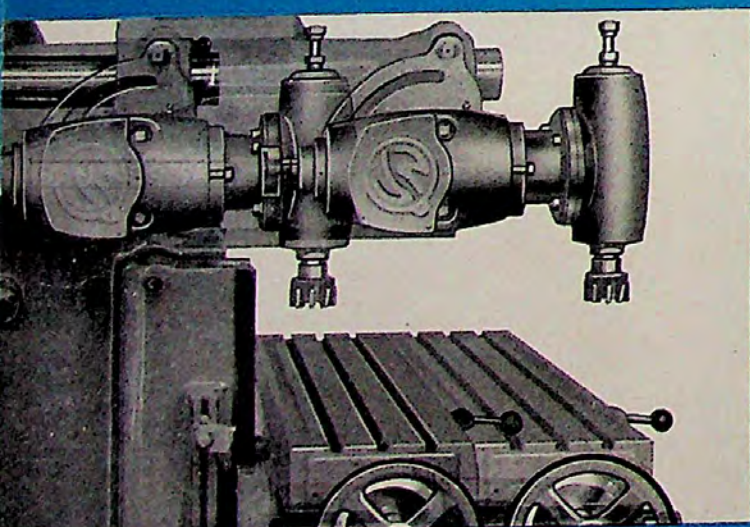
VERTICAL MILLING — Face milling operation with cutterhead in vertical position. Permanently fixed hardened stop permits easy setting of cutterhead at 90°.



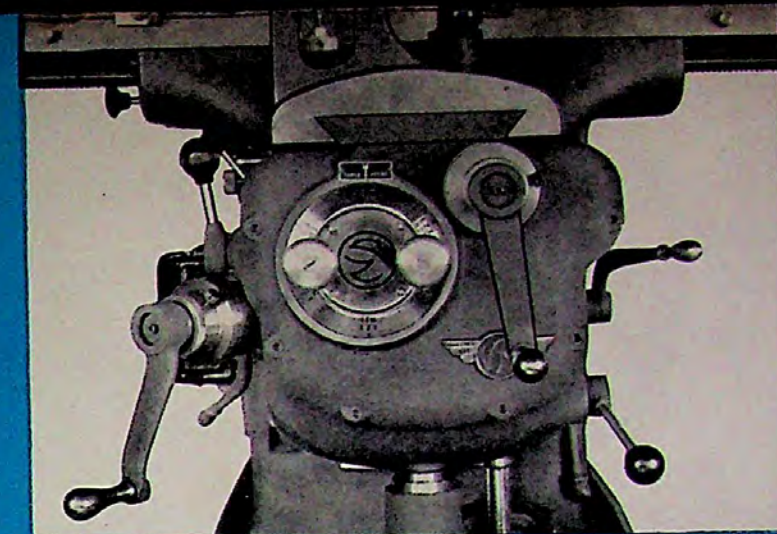
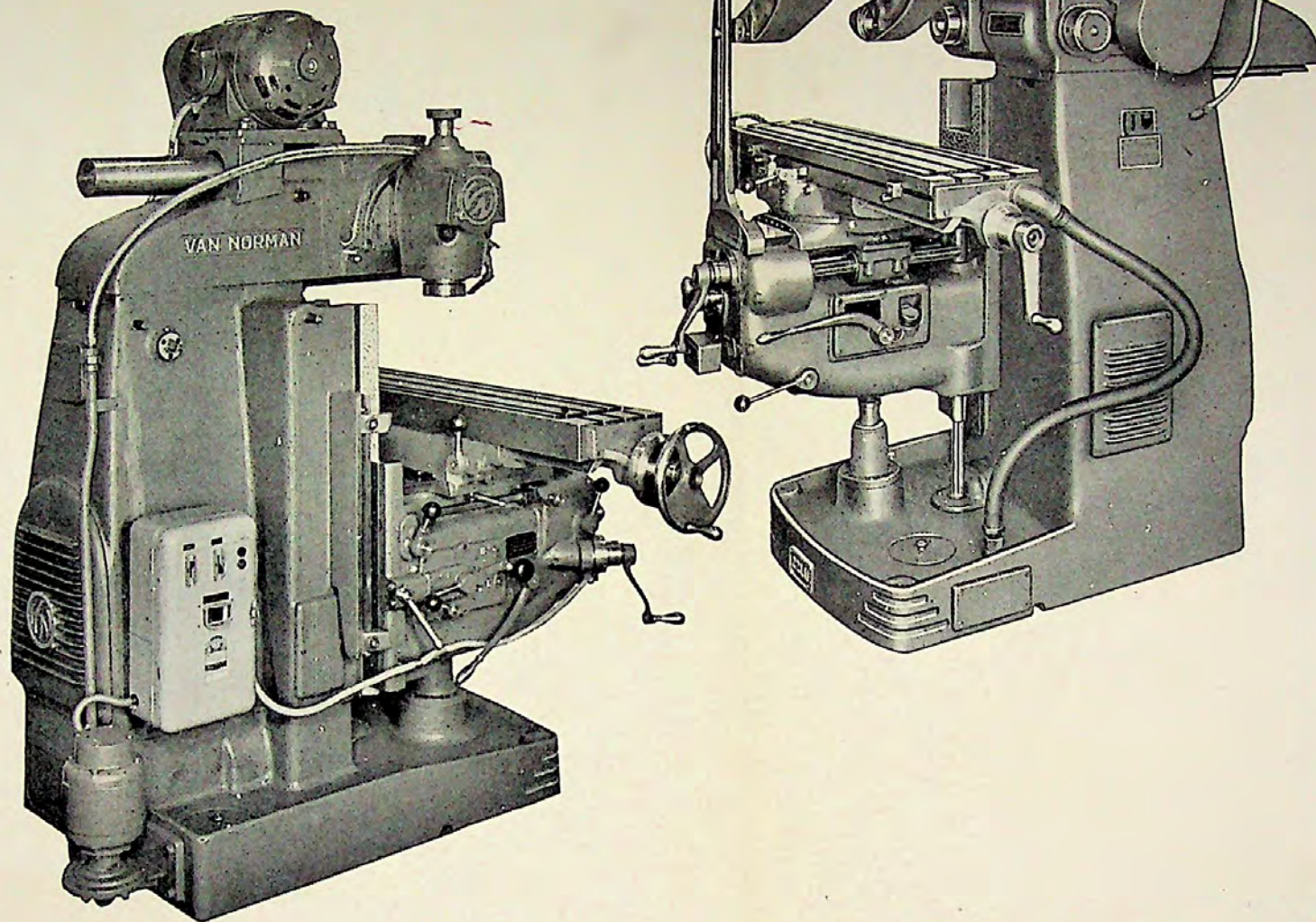
MASSIVE NEW CUTTERHEAD is adjustable. The heavy hardened alloy steel spindle is mounted on taper roller bearings front and rear. Hardened spiral bevel type drive gears have greater tooth area.



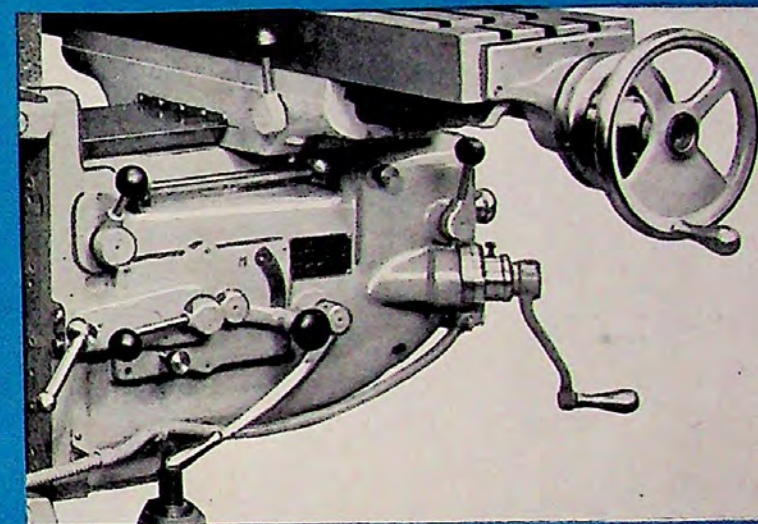
ADJUSTABLE CUTTERHEAD permits horizontal, angular or vertical milling by simply positioning the cutterhead. It gives the work range of several single purpose machines . . . reduces work setups . . . improves accuracy. The cutterhead is graduated from 0° to 90° for accurate positioning . . . has rigid, fast means for clamping.



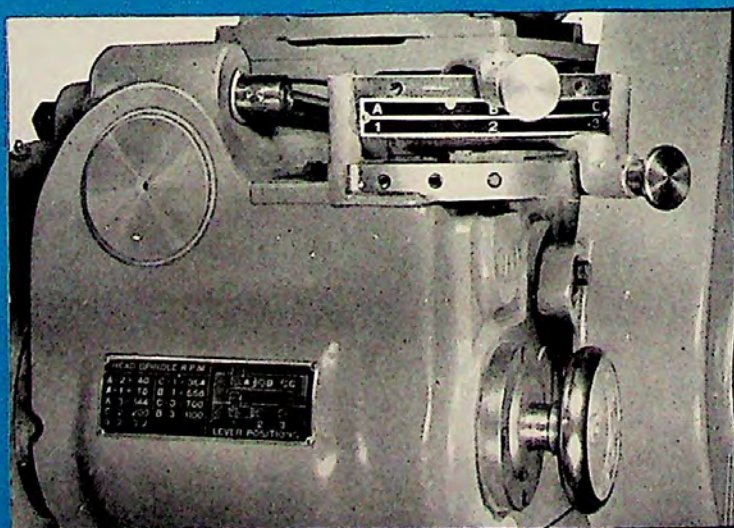
MOVABLE RAM — Phantom view showing wide range possible with the movable ram and table cross feed movements. The sub head is shown mounted on the cutterhead providing a maximum throat distance of 21½ inches.



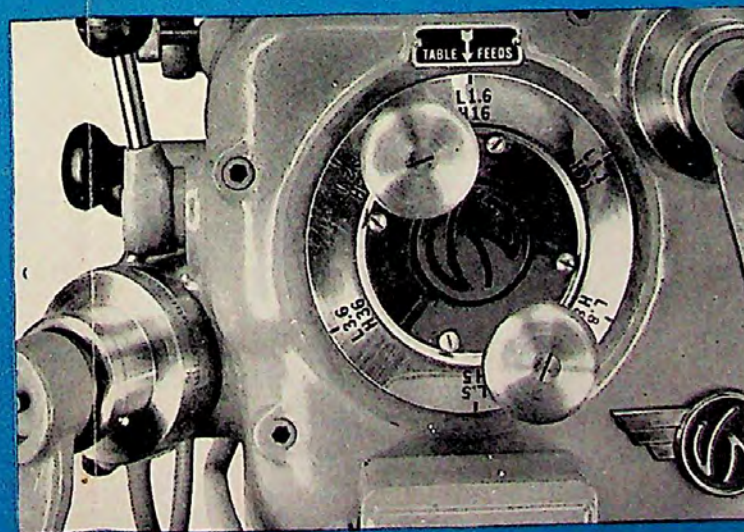
FRONT POWER FEED LEVERS are conveniently located for easy control of saddle, table and knee, as well as six-way rapid traverse. Controls are directional providing utmost in operating safety.



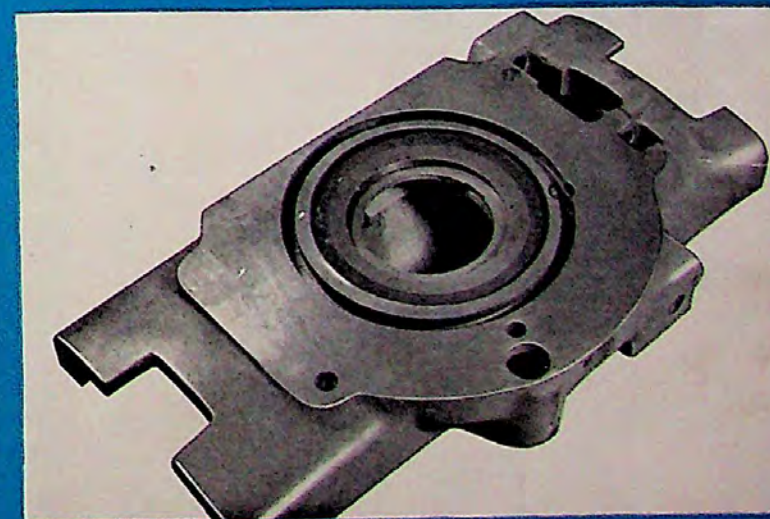
REAR POWER FEED CONTROLS permit operation from rear of machine. Dual fingertip controls eliminate back and forth motion, reduce worker fatigue, provide complete visibility of the cutting operation.



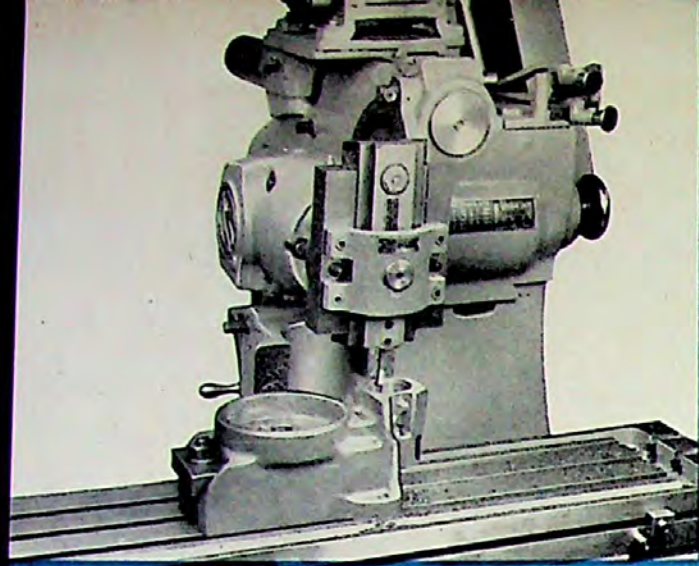
SPEED SELECTOR, located on the front of the ram, permits quick selection of speed gear changes from 40 to 1100 rpm by means of two levers.



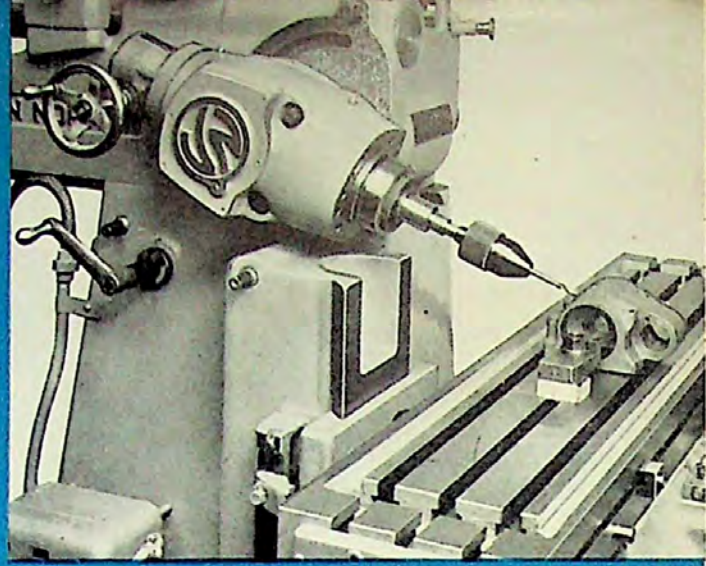
ROTARY FEED SELECTOR (located on the front of knee and "high-low" series lever on side of knee) provides feed changes from ½ in. to 36 in.



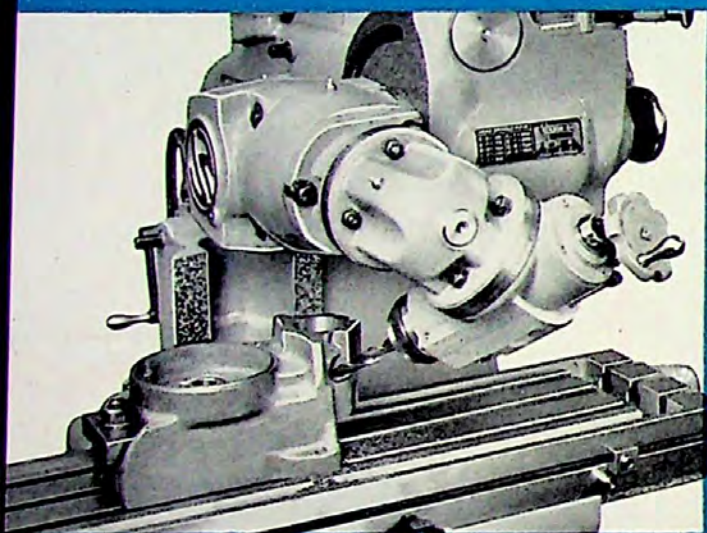
UNIVERSAL SADDLE permits the table to be swiveled 45° to the left and 30° to the right with angular position indicated by graduation on lower member. Both upper and lower swivel units have broad extensions to right and left adding 15% more effective length of support.



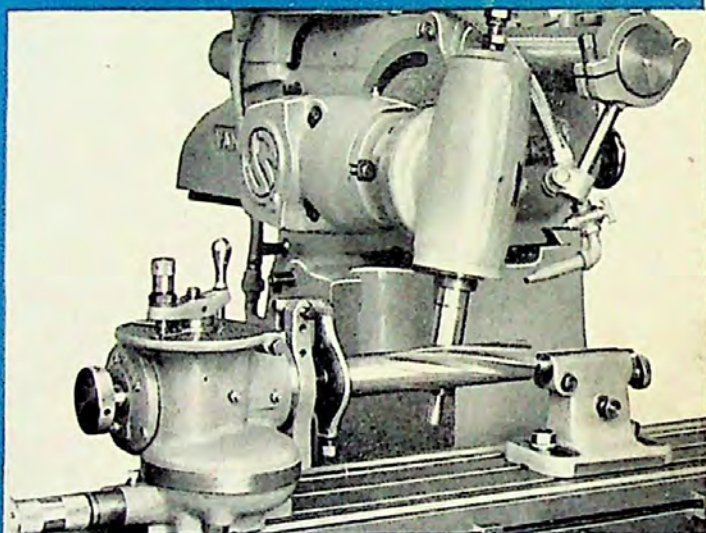
SLOTTER mounted on cutterhead for vertical slotting in a workpiece. Keyway and slotting operations are easily handled with this attachment which has a 2" stroke. Slotter is adjustable through 360° arc.



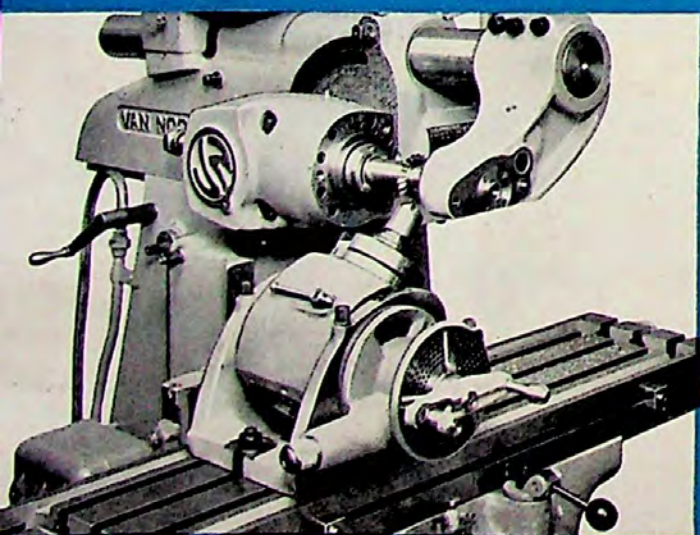
DRILLING—Drilling a hole at an angle using the adjustable Boring and Drilling attachment. Ordinarily, this operation would require a special setup. Attachment spindle travel is 4½".



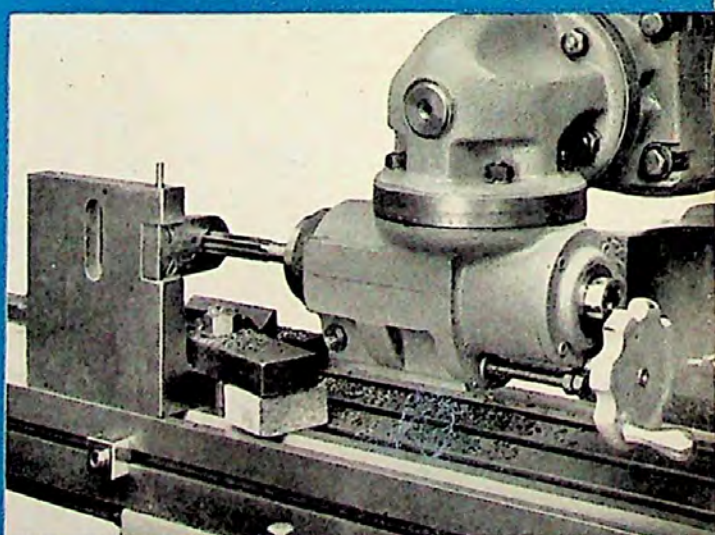
REVERSE COMPOUND ANGLE BORING is easily performed with the Universal High Speed Milling attachment. Note that no special jigs or blocking of the workpiece is necessary.



SPIRALS—Milling a spiral taper using a new 10° horizontal swivel dividing head and universal subhead.



10° VERTICAL SWIVEL DIVIDING HEAD—Milling a counter bore with the cutterhead locked in horizontal position. Overarm and arbor support assure rigidity.



UNIVERSAL HIGH-SPEED ATTACHMENT used for a reaming operation. Mounted in a compound swivel element, it permits boring, drilling, reaming and milling at any angle. Spindle quill has 2½" hand adjustment.

Specifications

VAN NORMAN RAM TYPE MILLING MACHINES No. 22L AND No. 22M

	22L Plain	22L Universal	22L Special Plain	22L Special Universal	22M Plain	22M Universal
TABLE						
Size — Working Surface.....	45" x 10"				50" x 10"	
Table T-Slots — Number and Size.....	Three — 1½"				Three — 1½"	
Centre Distance — T-Slots.....	2½"				2½"	
Longitudinal Feed.....	28"				28"	
SADDLE						
Length.....	23"				25"	27"
Cross Feed.....	10"				10"	
KNEE						
Vertical Feed.....	17"		18½"		20"	
Distance C/L spindle in horizontal position to table.....	Min. 1" Max. 18"	Min. ¼" Max. 17¼"	Min. 4¼" Max. 22¾"	Min. 3¼" Max. 22¼"	Min. 1" Max. 21"	Min. ¼" Max. 20¼"
Distance nose of cutterhead in vertical position to table.....	Min. 0 Max. 12¾"	Min. 0 Max. 11¾"	Min. 0 Max. 17¾"	Min. 0 Max. 16¾"	Min. 0 Max. 15¾"	Min. 0 Max. 14¾"
Max. distance face of column to C/L spindle in vertical position.....	12"				12"	
RAM						
Length at ways.....	34"				34"	
Ram movement.....	19"				19"	
Ram bearing on column.....	19"				19"	
OVERARM — Bar Type						
Length.....	3½" diameter 41"				3½" diameter 41"	
Cutter Clearance.....	5¾"				5¾"	
CUTTERHEAD						
Adjustable — graduated in degrees, vertical to horizontal.....	90°				90°	
SPINDLE*						
Hole thru spindle.....	No. 13 B&S Taper — No. 40 National Standard Taper Optional 1½" (2½" on No. 40 NST)				No. 13 B&S Taper — No. 40 National Standard Taper Optional 1½" (2½" on No. 40 NST)	
Nine speeds R.P.M.....	40 - 75 - 144 - 200 - 312 - 364 - 556 - 700 - 1100				40 - 75 - 144 - 200 - 312 - 364 - 556 - 700 - 1100	
FEED RATES — 12						
Longitudinal.....	.5 - .8 - 1.1 - 1.6 - 2.3 - 3.6 - 5 - 8 - 11 - 16 - 23 - 36 inches per minute				.5 - .8 - 1.1 - 1.6 - 2.3 - 3.6 - 5 - 8 - 11 - 16 - 23 - 36 inches per minute	
Cross.....	.5 - .8 - 1.1 - 1.6 - 2.3 - 3.6 - 5 - 8 - 11 - 16 - 23 - 36 inches per minute				.5 - .8 - 1.1 - 1.6 - 2.3 - 3.6 - 5 - 8 - 11 - 16 - 23 - 36 inches per minute	
Vertical.....	.3 - .5 - .7 - 1 - 1.4 - 2.2 - 3 - 5 - 7 - 10 - 14 - 22 inches per minute				.3 - .5 - .7 - 1 - 1.4 - 2.2 - 3 - 5 - 7 - 10 - 14 - 22 inches per minute	
RAPID TRAVERSE						
Power Operated — per minute.....	130"				130"	
Longitudinal.....	130"				130"	
Cross.....	130"				130"	
Vertical.....	75"				75"	
CONTROLS						
Longitudinal, Cross, Vertical.....	Power — Front and Rear; Hand — Front				Power — Front and Rear; Hand — Front	
Feed Changes.....	Front				Front	
Rapid Traverse.....	Power in six directions — Front and Rear				Power in six directions — Front and Rear	
Speed Changes.....	Front				Front	
LUBRICATION						
Spindle Transmission, Knee.....	Automatic				Automatic	
Saddle and Table.....	One Shot				One Shot	
COOLANT RESERVOIR						
Capacity.....	7 Gallons				7 Gallons	
Pump.....	Independent Motor Operated ¼ H.P.				Independent Motor Operated ¼ H.P.	
SPINDLE MOTOR						
	2 H.P. 1140 RPM (60 Cycle) — 1425 RPM (50 Cycle)				3 H.P. 1140 RPM (60 Cycle) 1425 RPM (50 Cycle)	
FEED MOTOR						
	1½ H.P. 1140 RPM (60 Cycle) — 1425 RPM (50 Cycle)				1½ H.P. 1140 RPM (60 Cycle) 1425 RPM (50 Cycle)	
INSTALLATION DATA						
Floor space required.....	93" x 72"				98" x 72"	
Height — Floor to C/L of Spindle.....	49"		55¼"		55¼"	
Height of machine without motor.....	58½"		65"		65"	
SHIPPING DATA						
Net Weight.....	3400 lbs.	3500 lbs.	3550 lbs.	3650 lbs.	3650 lbs.	3750 lbs.
Crated Weight.....	4200 lbs.	4300 lbs.	4350 lbs.	4450 lbs.	4475 lbs.	4575 lbs.
Boxed Weight (Export).....	4800 lbs.	4900 lbs.	4950 lbs.	5050 lbs.	5100 lbs.	5200 lbs.
Boxed Dimensions (Export).....	72" x 69" x 69"		72" x 69" x 74"		72" x 74" x 74"	
Cubic Measurement.....	198 cu. ft.		212 cu. ft.		228 cu. ft.	

STANDARD EQUIPMENT

Set of Wrenches, Pulleys, Guard and Belts for Spindle Drive, Chain and Sprockets for Feed Motor Drive, Inner and Outer Arbor Supports, Outer Support Brace, Draw-in Bar. If machine fitted with No. 13 B&S Taper, the following equipment is standard: Adapter for Van Norman No. 2 Collet, ¾" Collet. If No. 40 National Standard Taper specified, Adapter for Van Norman No. 2 Collet and ¾" Collet not furnished.

It is not possible to use Boring and Drilling Attachment with No. 40 National Standard Taper Spindle.

DESIGN AND SPECIFICATIONS SUBJECT TO CHANGE WITHOUT NOTICE.

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VAN NORMAN COMPANY - SPRINGFIELD, MASSACHUSETTS

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