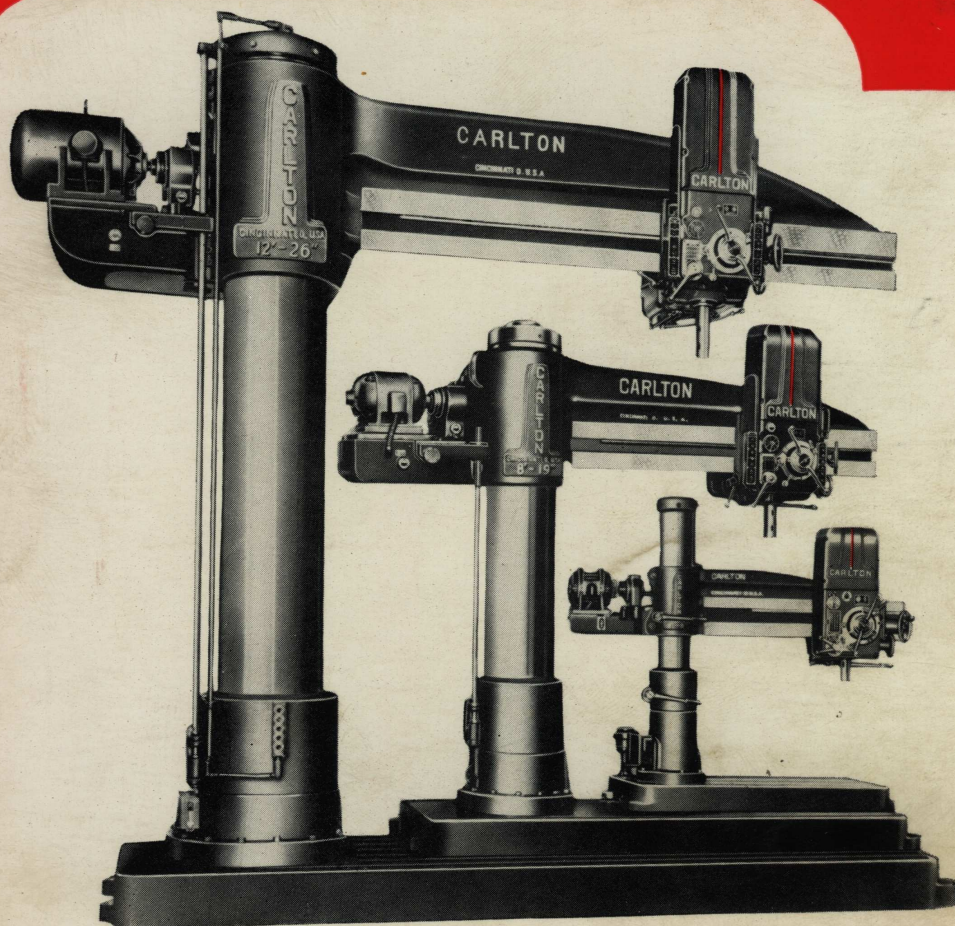


Barney Machinery Company
MACHINE TOOLS

1002 GREENTREE ROAD PITTSBURGH 20, PA.
WALNUT 2-1307



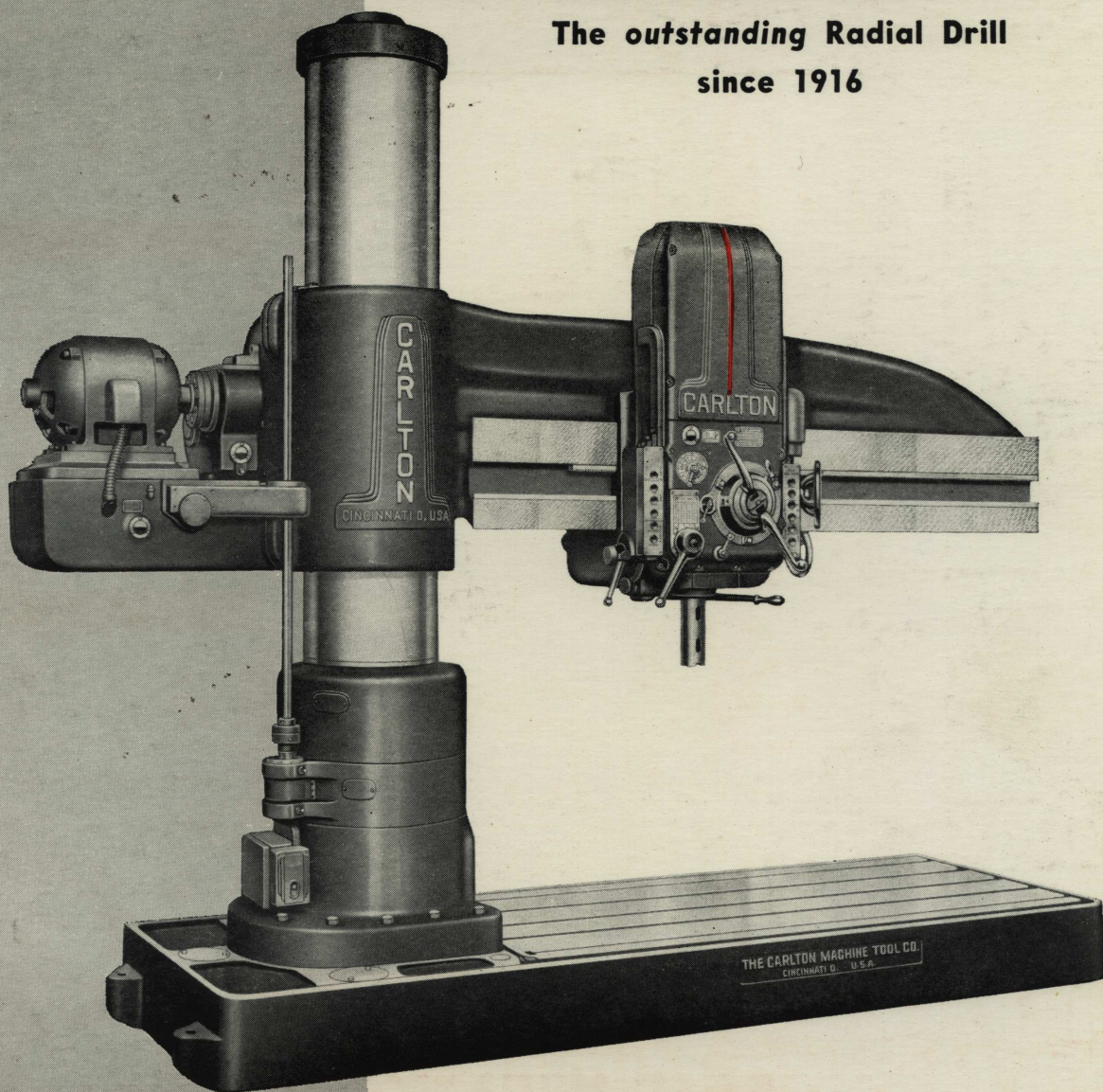
the **carlton**

"Well Story"

Models 3A, 4A, and 5A

The Carlton Radial Drill

**The outstanding Radial Drill
since 1916**

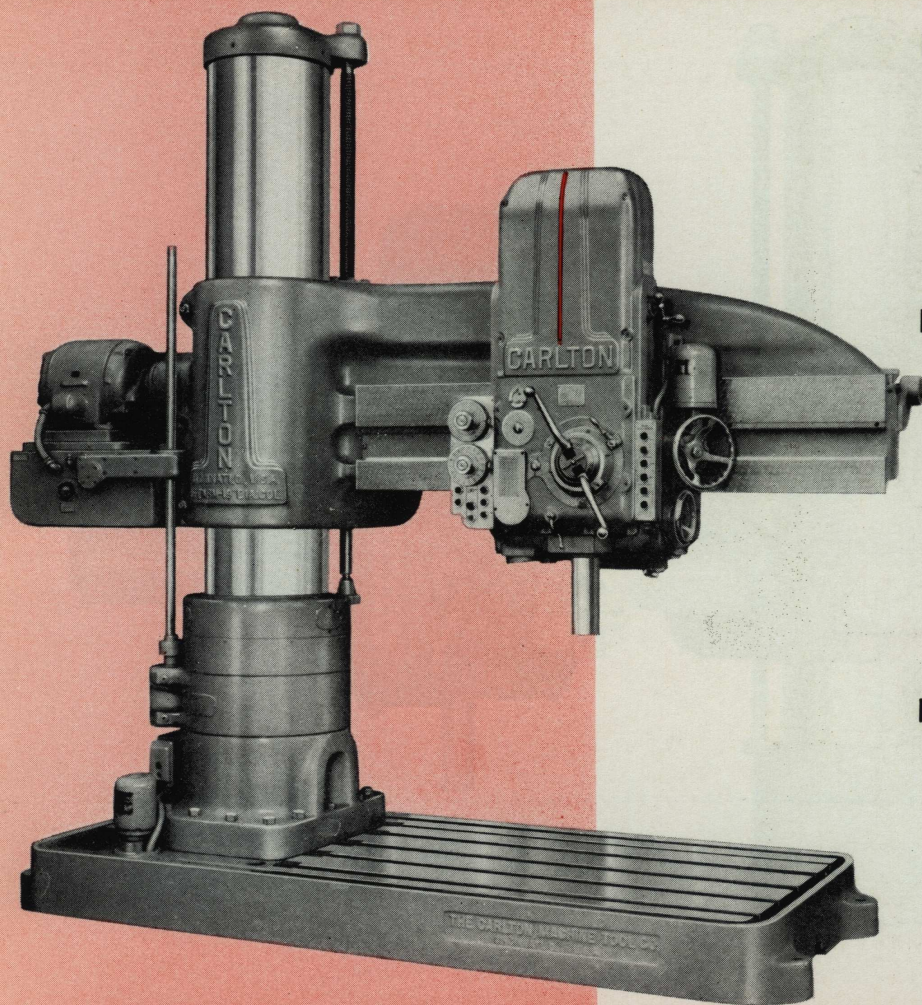


PIONEERS OF SUCH OUTSTANDING ACHIEVEMENTS IN RADIAL DRILLING AS—

**Low Hung Drive to the Spindle . . .
All Ball Bearing Construction . . .
Mounting of Head on Arm with anti-
friction Bearings . . . Dovetail Guide-
ways . . . Push Button Controls . . .
Precision Column Clamping . . . Power**

**Clamping to Arm, Column and Head
. . . CARLTON-LEBER Pre-Select for
speeds and feeds, together with
PROGRAMMING, mark the latest
advance in the improvement of
CARLTON RADIAL DRILLS.**

CARLTON RADIALS ARE DESIGNED TO SUIT EVERY REQUIREMENT



- Conventional Shift — 36 spindle speeds and 18 power feeds — controlled manually — only 2 levers for speeds and only 2 levers for feeds.

— or —

- Pre-Select — automatically changes both speeds and feeds. The speeds and feeds are pre-selected for the next operation while the spindle rotates, and are automatically, instantly and quietly changed while the operator changes tools.

— or —

- Pre-Select with Programming — Programming permits setting of speeds and feeds for all operations in advance of starting the job. The Program Console is connected to the machine by an electric cable, plugged in as easily as any household electric appliance.

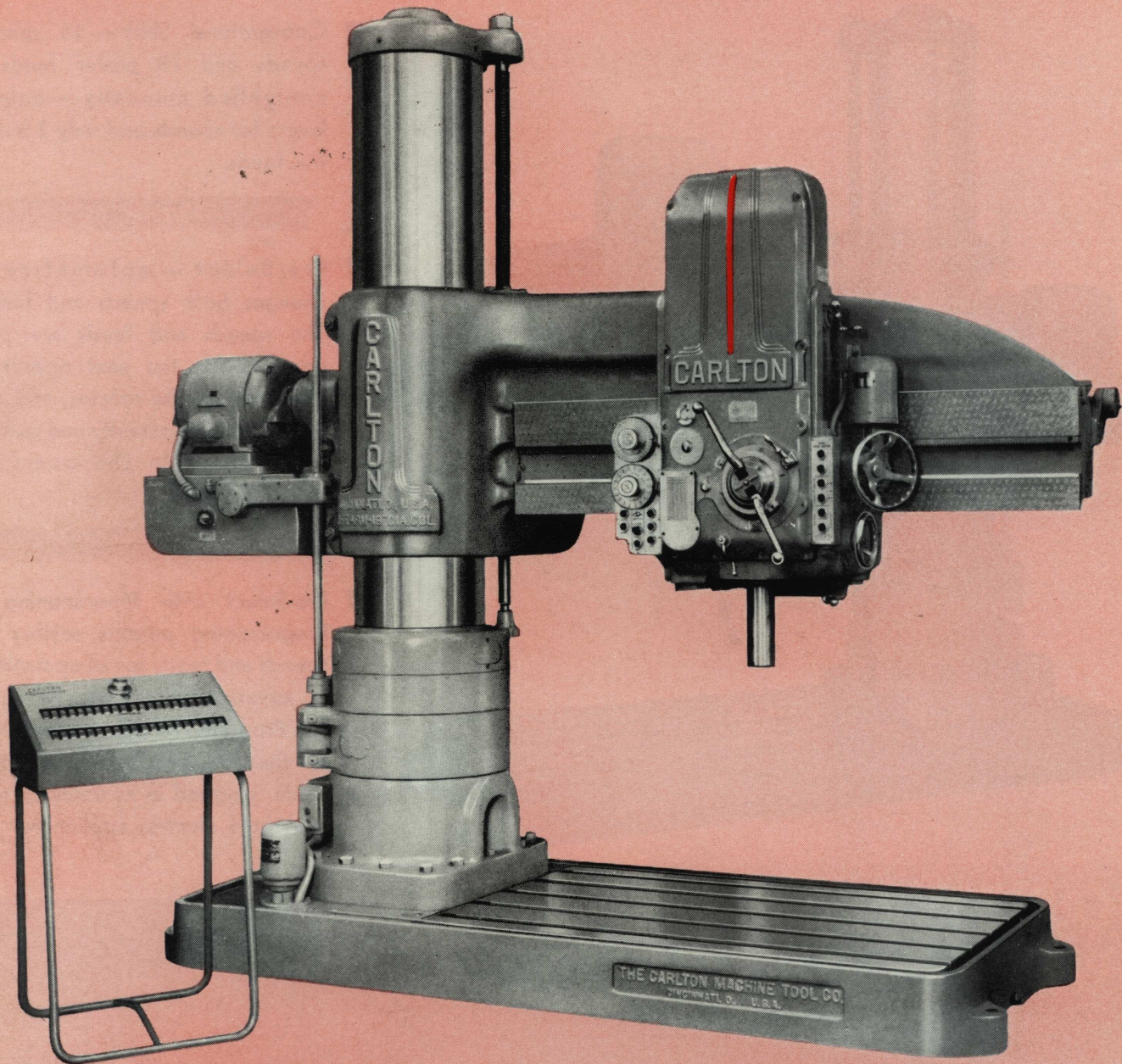
CARLTON RADIAL DRILL EQUIPPED WITH PRE-SELECT CONTROLS

This evolutionary development relieves the operator of at least 50% of the normal physical effort required to operate a radial drill. Cuts costs of hole production to another new low! Saves shifting time in between tool changes, and further, encourages the operator to drill at correct speeds and feeds at all times. Only two easily

read dials and one pushbutton are required to shift all speeds and feeds. Only three functional levers remain for the Operator to handle —

1. Start and stop the spindle.
2. Advance spindle and engage the feed.
3. Declutch power feed to fine (hand) feed.

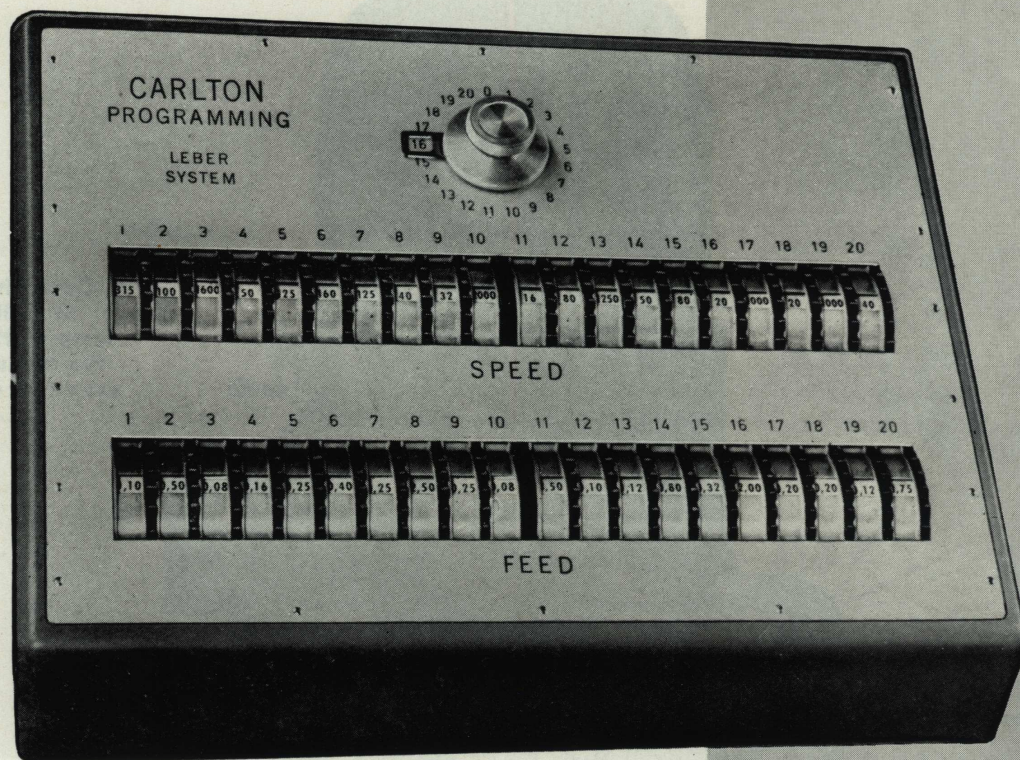
The Carlton Leber Pre-Select



and Program Radial Drill

If inexperienced or indifferent operators are the problem in your Drilling Department, the Program Console provides the way to more efficient production. More holes per hour, longer tool life and less spoilage are assured with Program Console. For a closer look see the opposite page.

THE PROGRAM CONSOLE— CARLTON LEBER SYSTEM



The Console is arranged with 20 or more operation Stations. Each Station can be set for any one of the full complement of speeds and feeds incorporated in the machine — 36 spindle speeds and 18 feeds — the fluted edge drums of each Station being easily rotated to the desired speed and feed. Tools for each operation can be arranged in the same order as the Stations. The operator need only press the shift button at the end of each operation, select the tool for the next operation in the sequence and insert it into the spindle. The numerical Indicating Dial indexes automatically each time the button is pressed. There is no guess work as to what operation is in progress. The Dial can be moved manually either to ad-

vance or reverse to any operation in the sequence. This arrangement offers versatility and flexibility to every operation. Example: If the operator wishes to revert to operation 5 from operation 16, as indicated in the photo, he turns the Dial manually either clockwise or counterclockwise to Station 4 and presses the shift button. When finished with operation 5 he advances the Dial to the number preceding the operation he wants to pick up. The Indicating Dial will only move clockwise under power. All Carlton Pre-Select machines can be arranged to receive the Program Console. This means that you can purchase it either with the machine or at a later date, whenever required. Just plug it in when ready to use.

Pre-Select Shift with Finger-Tip Control

Pre-Select
Feed Dial

Pre-Select
Speed Dial

Push Button Controls to
clamp & unclamp column

Neutral Switch

Selector Switch for
Pre-Select or Program

Shift Button

Push Button Controls to
raise, lower and stop arm

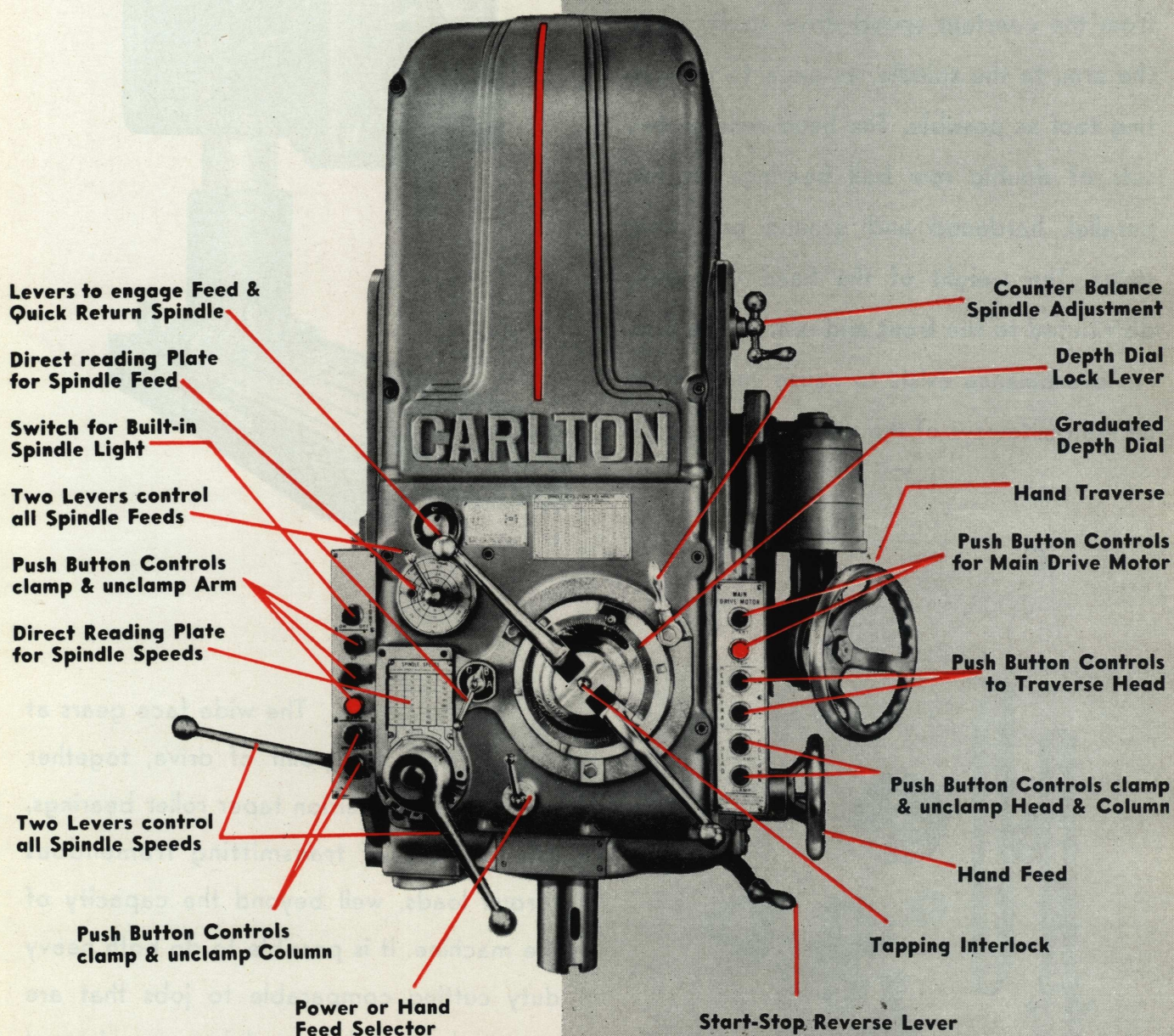
Controls on right side
of drill head are the
same as the controls on
the Manual Shift Head
shown on opposite page

The speeds and feeds change so rapidly that it is truly amazing. A flick of the wrist is all that is required to change the position of either dial to the required speed and feed. The Feed Dial at the top selects 18 positive feeds. There are tap leads included in the feeds with many combinations available. The Speed Dial selects 36 spindle speeds. Both dials ratchet into positive position, so there is no chance of error. The Neutral Switch declutches

the gears so the spindle will revolve freely. The Selector Switch changes from Pre-Select to Programming instantly, whichever method is to be used. The Shift Button signals the change as soon as it is pressed and the spindle is stopped. A safety interlock prevents rotation of the spindle until the complete shift has been quickly made, eliminating the clashing of gears. Note the absence of functional levers and the clean smooth lines of the Head.

STANDARD MANUAL SHIFT WITH CONVENIENTLY LOCATED CONTROLS

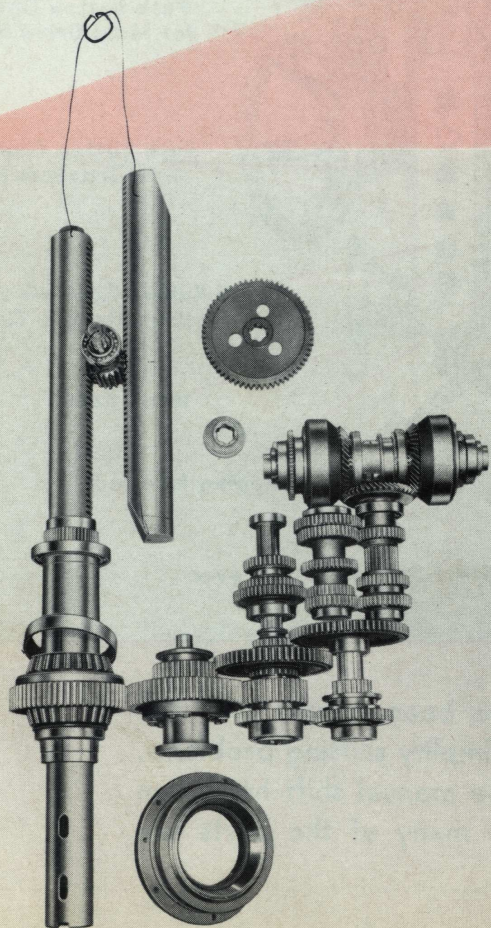
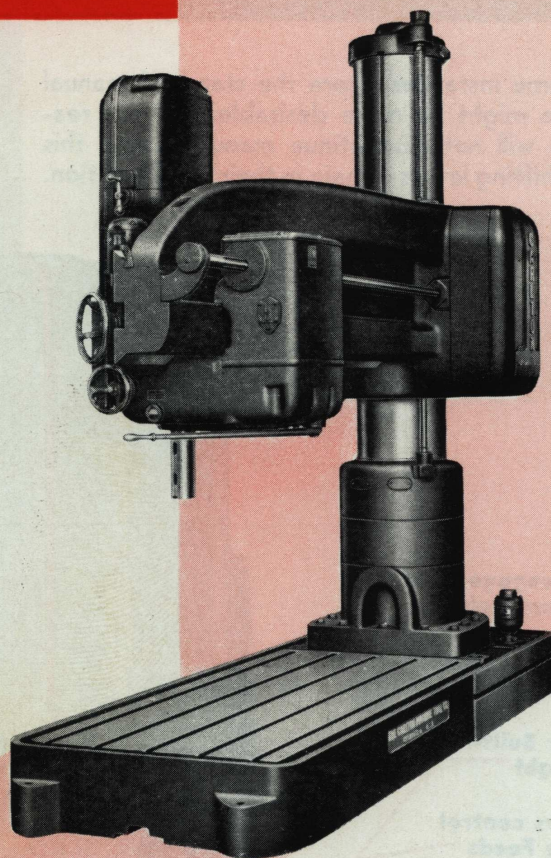
There are some instances where the standard manual shift machine might be more desirable. For this reason, Carlton will not discontinue manufacturing this model. The shifting levers remain in their usual position.



The convenience of the location of these levers has been proven over the past years. Direct reading speed and feed charts simplify shifting problems, although not as fast as the Pre-Select method. The manual shift head can be converted to Pre-Select at a later date, since many of the parts are interchangeable.

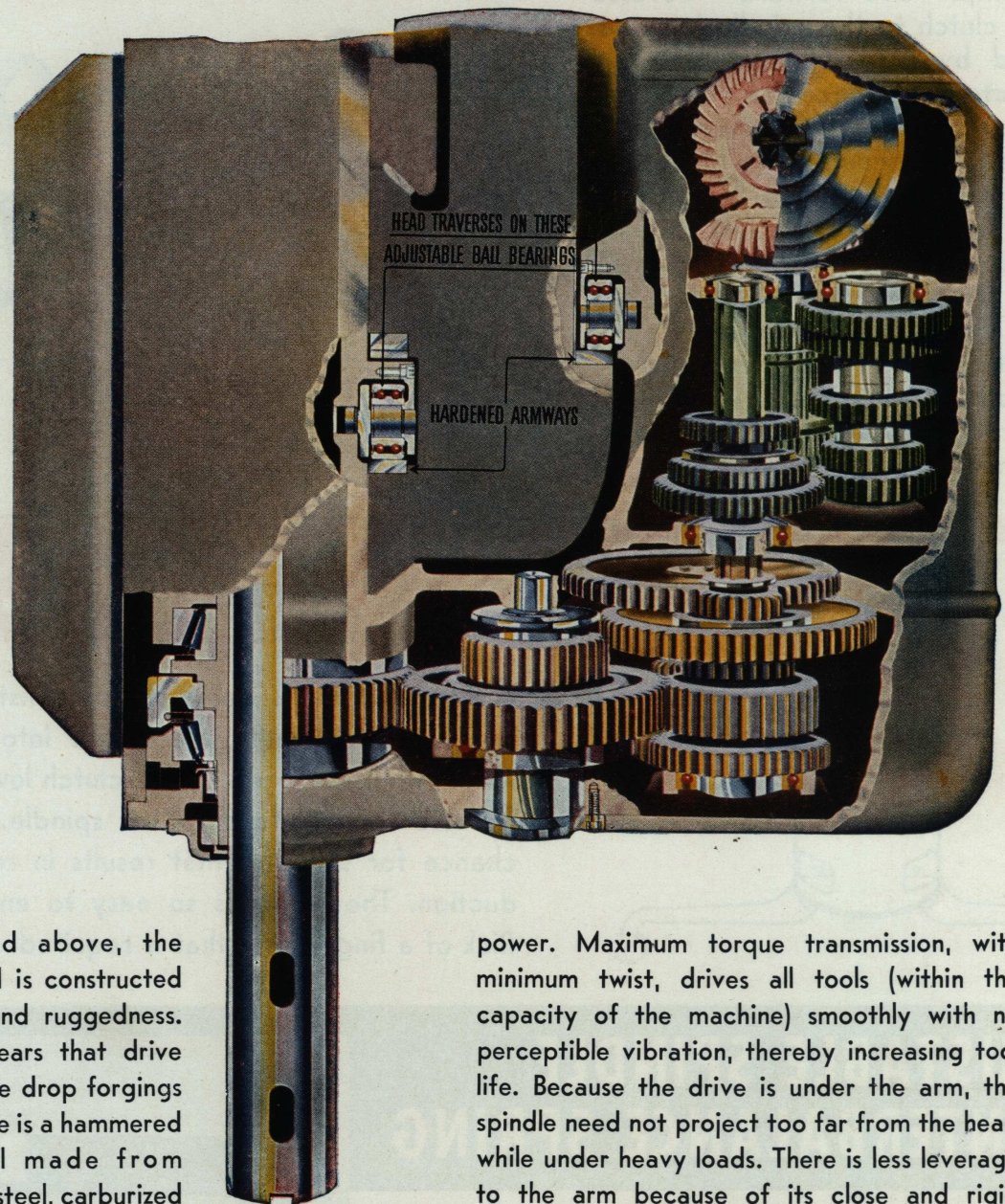
Low Hung Drive

Carlton Radial Drills are known and accepted throughout the World for their ruggedness and outstanding service. Power is transmitted from the constant speed drive shaft, under the arm, to the spindle, as close to the cutting tool as possible. The head rolls on two sets of double row ball bearings on two parallel, hardened and ground arm wear strips. The weight of the head is equally distributed to the front and rear of the arm. No overbalance exists to cause undue wear on the guideways of the arm.



The wide face gears at the point of drive, together with precision taper roller bearings, are capable of transmitting tremendous torque loads, well beyond the capacity of the machine. It is possible to do both heavy duty cutting comparable to jobs that are commonly placed on much larger equipment as well as precision boring to very close tolerances. The spindle is counterbalanced by means of a counterweight that is geared to the spindle through a solid pinion.

The Carlton Head

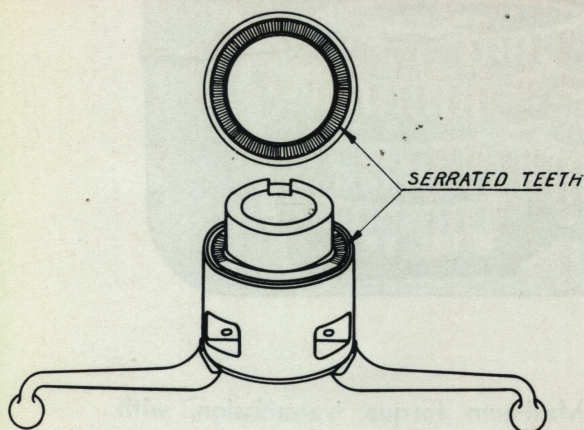
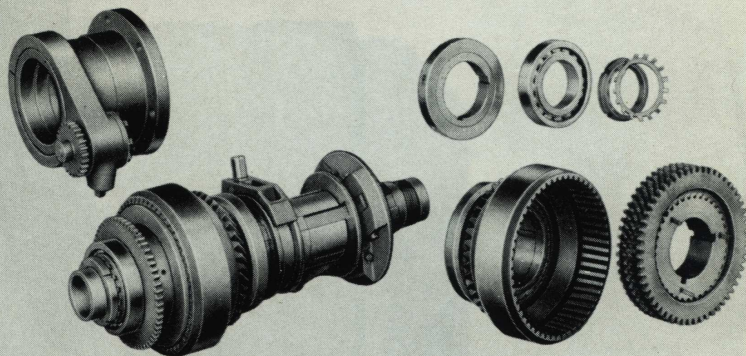


As illustrated above, the Carlton Head is constructed for rigidity and ruggedness. All of the gears that drive the spindle are drop forgings and the spindle is a hammered forging, all made from chrome-moly steel, carburized and hardened. All gears have ground teeth and run in a continuous bath of filtered oil. The gears shafts are multiple splined, hardened and ground, short and sturdy, none exceeding 8" in length. All this adds up to smooth power transmission to the tool. The spindle driving sleeve and final drive gear are mounted between selected precision taper roller bearings, accurately fitted to transmit smooth, even power to the spindle itself. The spindle is driven on the largest diameter, closest to the cutting tool, which is the most ideal way to transmit

power. Maximum torque transmission, with minimum twist, drives all tools (within the capacity of the machine) smoothly with no perceptible vibration, thereby increasing tool life. Because the drive is under the arm, the spindle need not project too far from the head while under heavy loads. There is less leverage to the arm because of its close and rigid support that results in a minimum amount of twist. The spindle bearings never feed away from the head, but are always rigidly supported close to the arm; the perfect combination for ruggedness and accuracy. The dovetail design of the armways, plus the ball bearing mounting, makes for quick and easy adjustment — eliminates the need for taper gibs that are prevalent on machines when overbalance to the head exists — and eliminates the unnecessary costs of replaning, refitting and rescraping the armways periodically.

FORWARD REVERSE CLUTCH

The multiple disc forward — reverse friction clutch to the spindle is manufactured by Carlton. It is ruggedly constructed and operates in cascading, filtered oil. It will transmit more power than is needed to drive the largest cutting tool, yet is sensitive enough for the very smallest tapping operation. By removing two small covers from the top of the transmission, the clutch can be quickly adjusted. It is the only friction clutch in the machine, which means that down time for adjustments is cut to an absolute minimum.

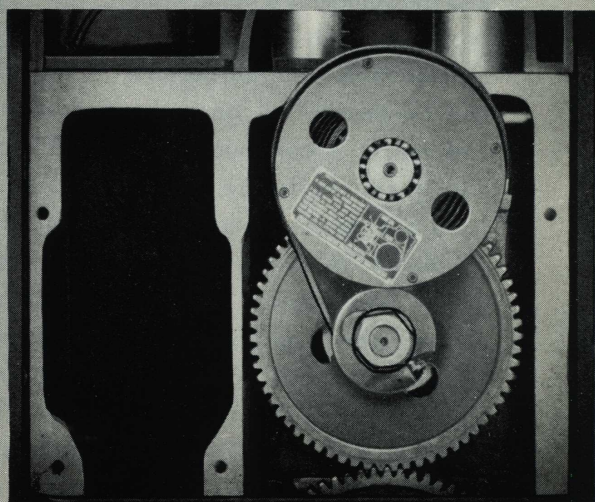


FEED CLUTCH

The feed clutch is designed for constant penetration. Serrated teeth are milled into each plate which, when engaged by the clutch levers, transmit positive vertical feed to the spindle. There is no chance for slippage that results in retarded production. The clutch is so easy to engage that a flick of a finger is all that is required.

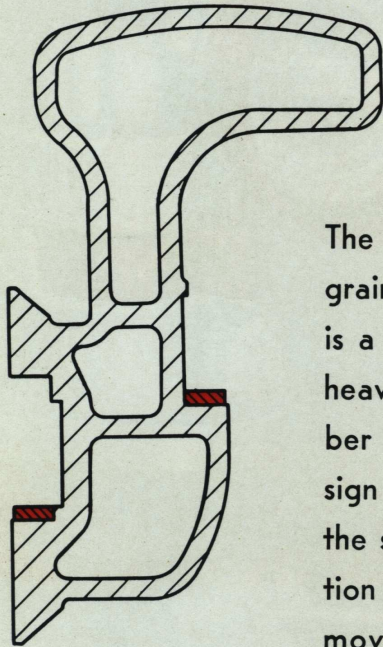
ADJUSTABLE SPINDLE COUNTERBALANCE SPRING

The spindle is counterbalanced by a geared counterweight. For normal drilling of holes up to 3" and 4" diameters the counterweight does an effective job of holding the tools at whatever position the operator may choose without engaging the feed clutch to hold that position. For heavier tools the counterbalance spring is adjusted to the proper tension that will balance the tool. Adjustment is accomplished manually with the lever extending from the upper right side of the head.



CONSTRUCTION FEATURES

ARM

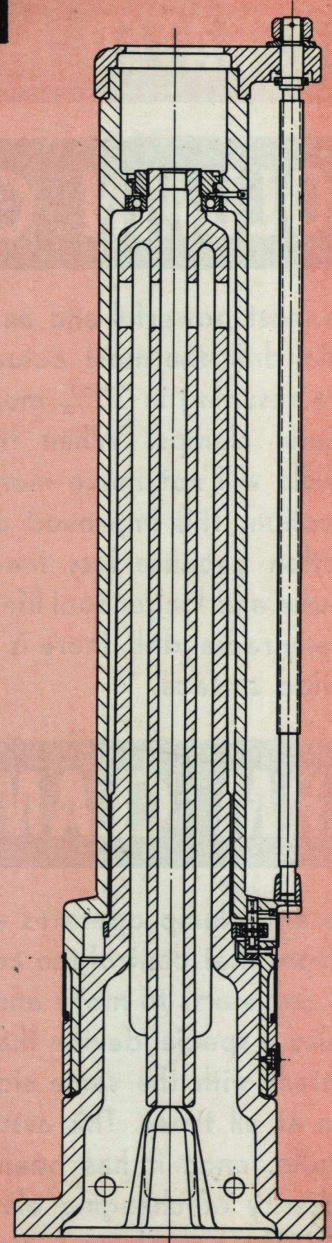
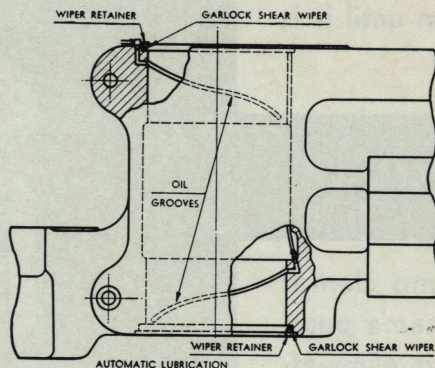


■ HARDENED AND
GROUND WAYS.

The Carlton arm is a close-grained, semi-steel casting. It is a large, triple box section, heavily ribbed support member for the spindle. This design affords rigid support to the spindle, overcomes vibration and resists the bending movements transmitted to the spindle when drilling and boring.

AUTOMATIC LUBRICATION

The arm and column are automatically lubricated each time the arm is elevated or lowered. There are Neoprene wipers installed on both the top and bottom of the arm. These wipers shear the column clean of all foreign material and prevent scoring the arm and column.



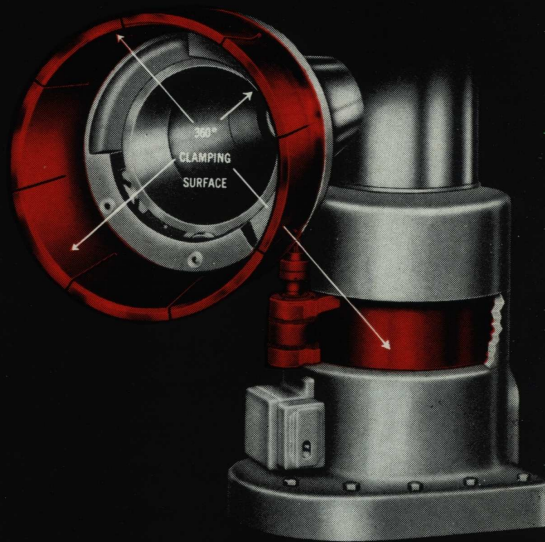
COLUMN

Both the inner and outer column are designed and proportioned to provide the greatest resistance to drilling strains. Both are made of close-grained, semi-steel castings. The inner column is heavily ribbed down to the bottom. These ribs extend directly to the bolt holes in the flange of the inner column which is bolted to the base. The outer column revolves on anti-friction bearings.

CARLTON'S 3-UNIT POWER-OPERATED MECHANICAL CLAMPING

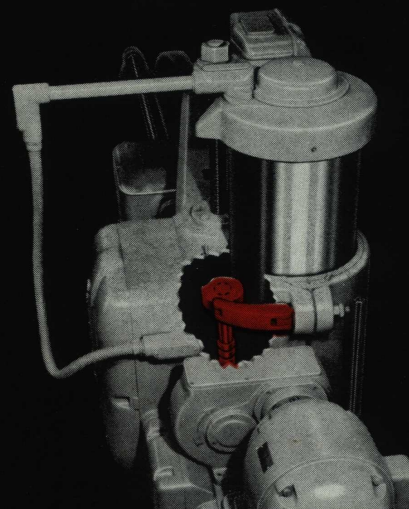
COLUMN CLAMP

The most powerful and accurate column clamp on any radial drill; the most actual square inches of clamping area resulting in 20% more rigidity than conventional column clamps. When the column is clamped, the spindle will not move more than .001" radially in any direction. This improved column clamp increases production because less time is required to locate the spindle and longer tool life is realized. For the first time on any radial drill, there is a full 360° clamping area on a wide surface.



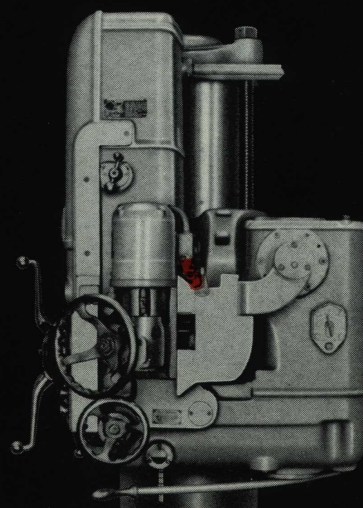
ARM CLAMP

The arm clamp operates automatically from the push-buttons that control the arm travel. It unclamps before the arm starts to move and clamps after it stops. There is also a special device that keeps the key in the arm in contact with the same side of the keyway in the column at all times. This assures constant position of the spindle, once it has been located, regardless of the necessity of changing elevation for longer or shorter tools. The arm clamp is electrically interlocked with the elevator, so it is impossible to move the arm until it is fully unclamped.



HEAD CLAMP

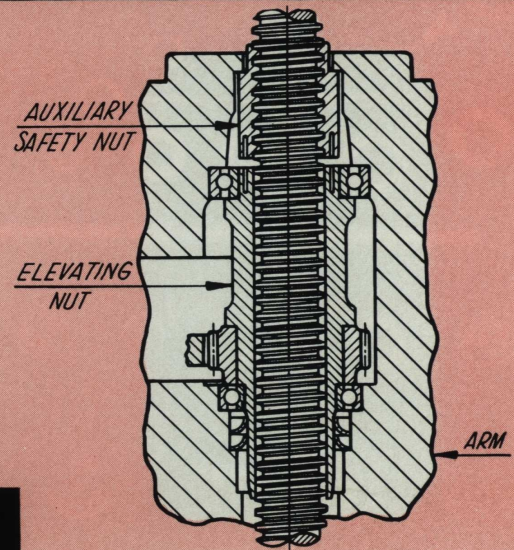
The new improved Carlton power head clamp clamps the head to the arm. It is operated by the same push-buttons that operate the column clamp, thus eliminating another operation when locating the spindle to a new position. The clamping action forces pressure against the opposed dovetail ways and assures vertical alignment between the spindle and base. The clamp is adjusted simply by turning one screw.



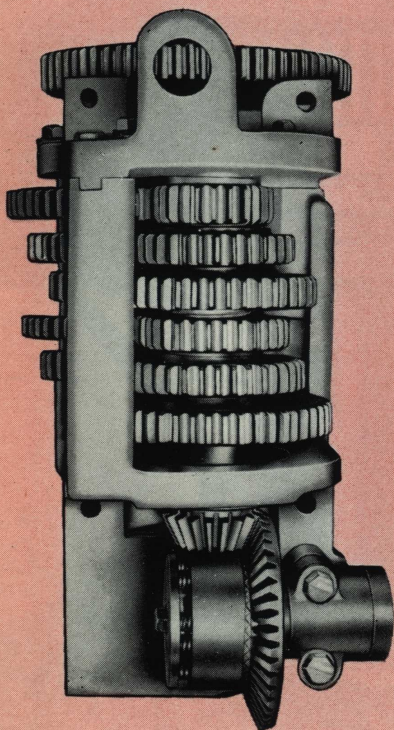
THE CARLTON RADIAL HAS ALL OF THE LATEST SAFETY FEATURES

SAFETY ELEVATING NUT

The elevating nut is actually two nuts. The main nut carries the weight of the arm; the auxiliary (safety) nut carries no load. Should the threads of the main nut ever wear out, the weight of the arm is held by the safety nut, but it will not move up or down. The nut and screw are automatically lubricated to insure long thread life.



SAFETY FEED CLUTCH

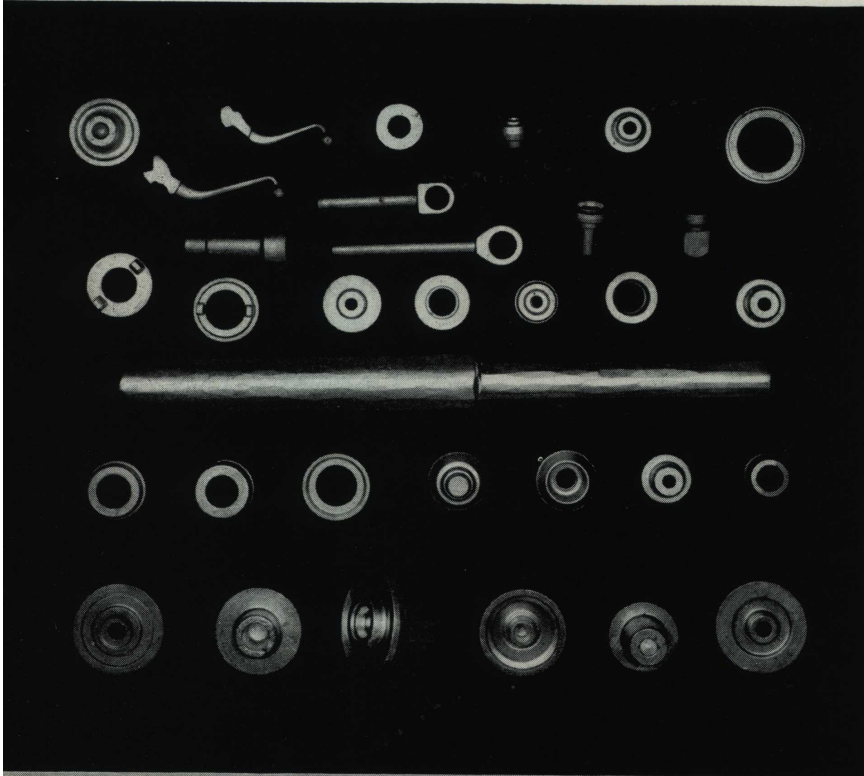


The safety feed clutch is designed to transmit 50% more thrust than the rated capacity of the machine. It will release, with a clicking noise, when taxed beyond its capacity. This clutch prevents overloading, breakage of parts and destruction of valuable tools.

Other Safety Features:

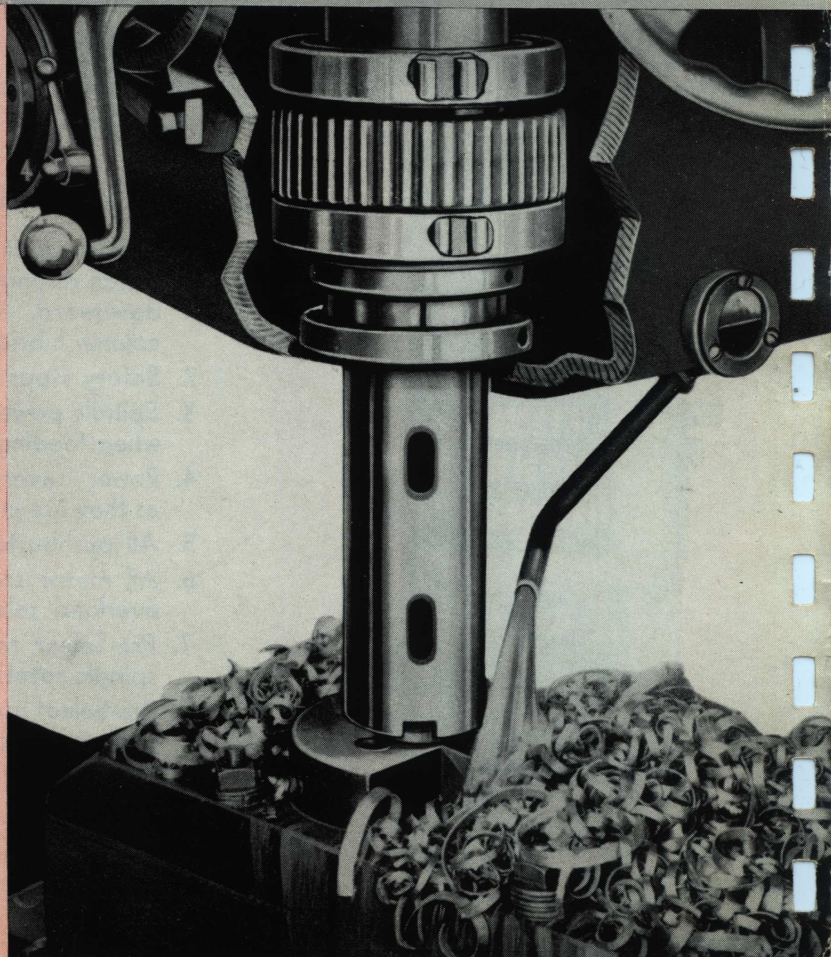
1. Safety stops prevent damage due to arm overtravel. Safety clutch disengages if the arm strikes an obstruction while moving downward. Automatic lubrication and column wipers keep the column lubricated and clean at all times.
2. Safety stops prevent overtravel of the Head on Arm.
3. Spindle power feed is automatically tripped at its limits of travel when feeding out of or into the head.
4. Power traverse of the head and arm remain inoperative as long as they are in clamped position, by means of interlocking devices.
5. All pushbutton circuits are low voltage current; 110 volts.
6. All motor starters are equipped with automatic reset thermal overload relays.
7. Pre-Select machines have interlocks that prevent starting the spindle rotation while gears are shifting.
8. Pre-Select machines are impossible to start unless the start, stop, reverse lever is in neutral.
9. Neutral shift to the spindle is included on both Pre-Select and manual shift machines for avoiding damage to tools, jigs and material.
10. Sight gauge on the head indicates proper operation of the oil pump.

CARLTON RADIALS ARE MANUFACTURED FROM THE BEST AVAILABLE MATERIALS



Each material is selected for each application. For example, the train of gears that drives the spindle is made from drop forgings. Gears produced from drop forgings have greater strength and uniformity.

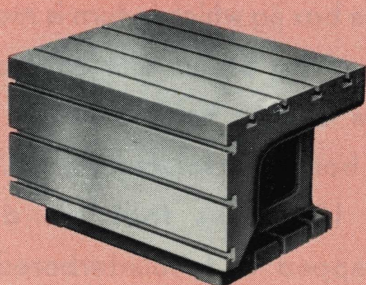
The spindle is made from a hammered forging and is carburized to full depth of case, rather than superficial hardening. Greater strength and capacity for transmitting torque is the principal advantage of this design. The combination of proper materials and engineering "know how" based on experience have gained the confidence of Carlton Radial Drill Users in all fields of manufacturing.



CARLTON TABLES

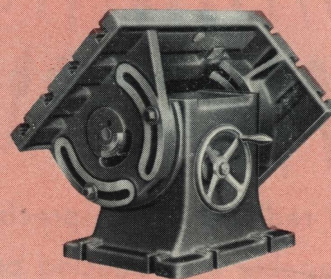
Carlton manufactures a complete line of Plain Box, Tilting and Full Universal Tables. All tee slots are machined and conform to the specifications of the American Standards Association and the National Machine Tool Builders' Association.

PLAIN BOX TABLES



18" x 24" x 18" high 26" x 33" x 20" high
24" x 30" x 20" high 26" x 40" x 20" high
Tee slots are on 6" centers — Mounting slots to base are on 9" centers.

TILTING TABLES



Anti-friction bearing design — tilts to 90°

Sizes — 24" x 30" x 24" high
28" x 32" x 24" high

Tee slots are 6" centers — Mounting slots to base are on 9" centers.

FULL UNIV. TABLE

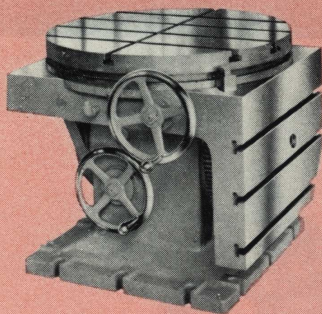
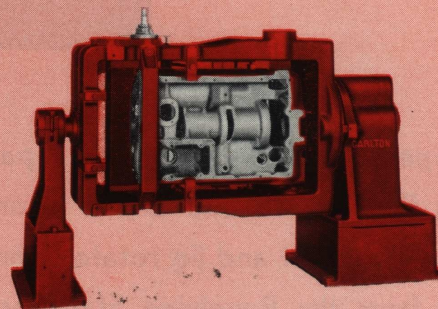


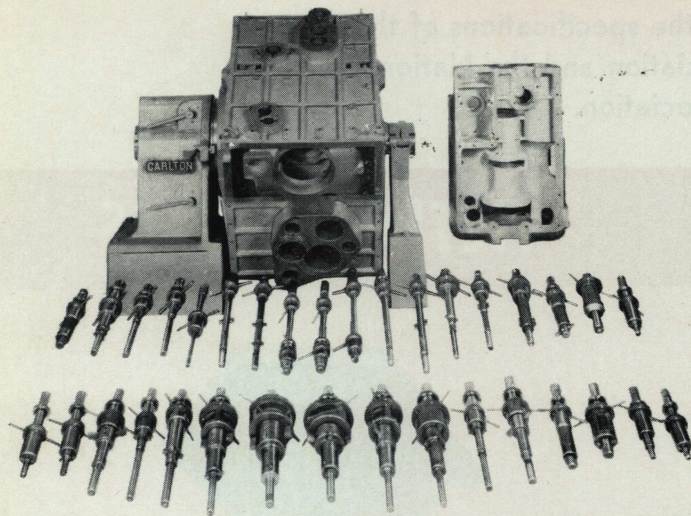
Table tilts 90° — Table top rotates through 360°
— Machine graduated in degrees — anti-friction bearing mounting. Table top is available in 32" and 48" diameters. Tee slots are on 6" centers — Mounting slots to base are on 9" centers.

REVOLVING STAND



Accurately machined with 4 locating holes for indexing at every 90 degrees. A spring loaded plunger with tapered point is located into a hardened insert. The hole in each insert is ground to the same taper as the plunger for accurate location. The Revolving Stands are available in 20" and 30" sizes. The dimensions are from the bottom face to the centerline of the face plate. End Supports are available for both sizes.

Proper Tooling Cuts Costs

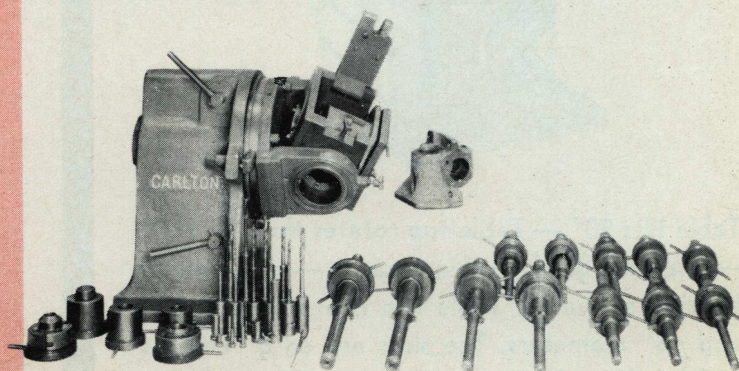


While radial drills are precision built and are capable of producing precision holes without the aid of jigs, it is more economical to produce parts with jigs. Many companies find it economically sound to use jigs with radial drills where lot quan-

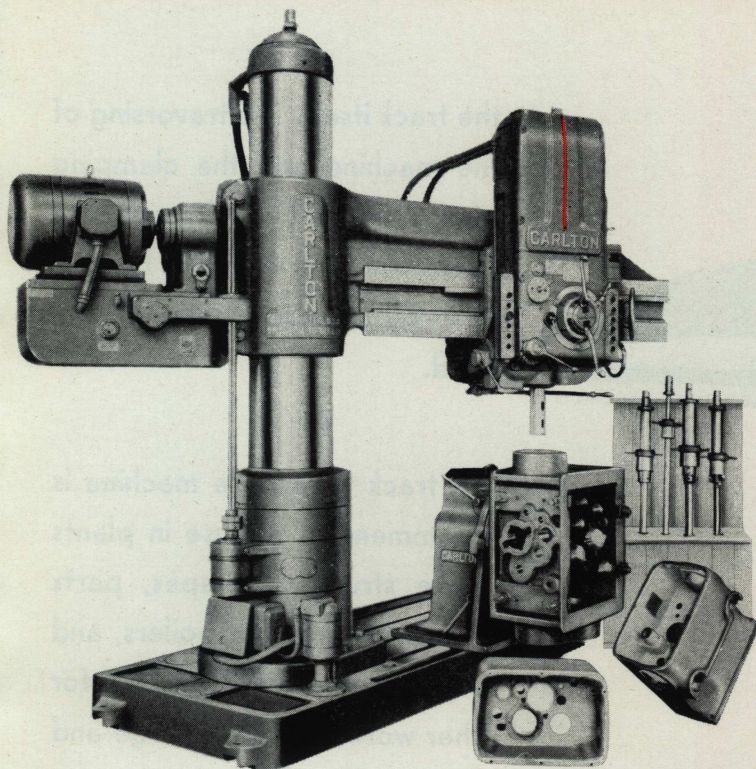
ties are as low as 5 pieces. The total number of parts that are expected to be produced is the deciding factor in the type of jig designed. Pictured here we see a head body that weighs 750 lbs. It is located in the box jig which in turn is mounted on the Revolving Stand with an End Support. There are 26 holes that are rough and finish bored to tolerances $\pm .0003''$ and over 100 holes that are drilled, reamed, tapped and counterbored. This part is machined complete in two operations in less than 12 hours. By combining precision boring and drilling operations in one jig, up to 50% savings are realized.

Double Trunnion Jig

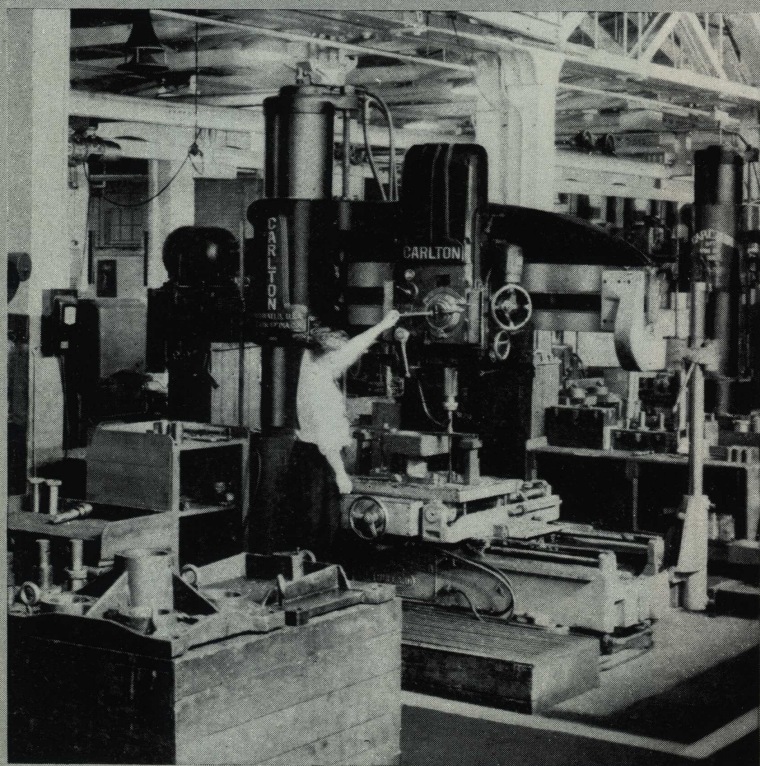
This operation shows six sides of a part being finish-bored and drilled in one setting. The part and jig rotate in one plane from the Revolving Stand and the opposite plane from journals designed into the jig. Costs are reduced in machining, tooling, and floor space. The part is handled only once after it is milled.



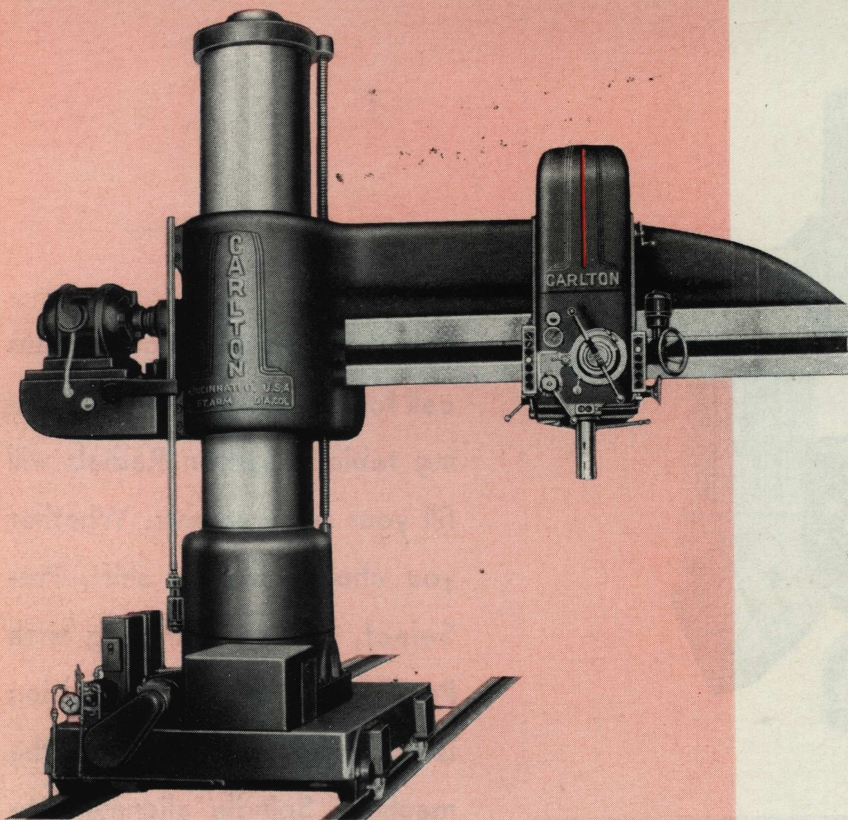
Put It Under a Carlton



Whether your production plans call for jigs and fixtures or spacing tables, Carlton Radials will fill your requirements. Whether you choose manual shift, Pre-Select, or Programming with Pre-Select the same precision is designed and built into the machine. Spindle alignment to the base, parallelism between arm and base, vertical positioning of the column to base, precision concentricity of spindle runout and precision column clamping are held to closer minimums than the standards for machine tools accepted by American and European manufacturers.



Carlton Track Type Bases

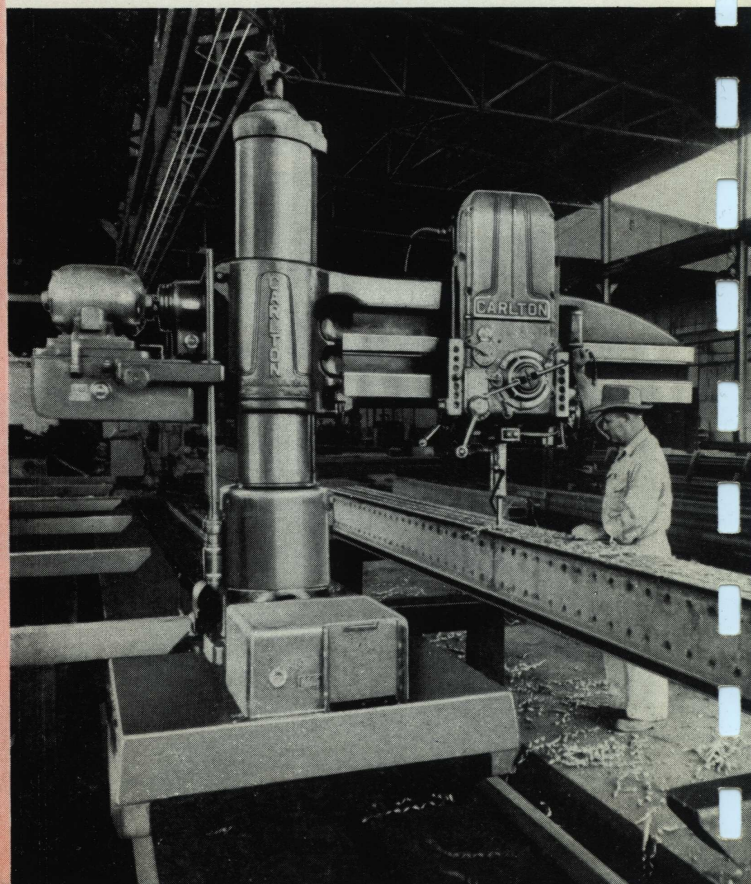


In some cases it is more economical to move the radial drill to the work than the work to the radial. Carlton can furnish track type bases for all sizes of radial drills. These track type bases are available for 56½" and 36" gauge tracks. It is suggested that the narrow gauge base be used with machines up to 5' arm on 15" column, and the 56½" gauge for all other sizes including the 12' arm on 26" diameter column.

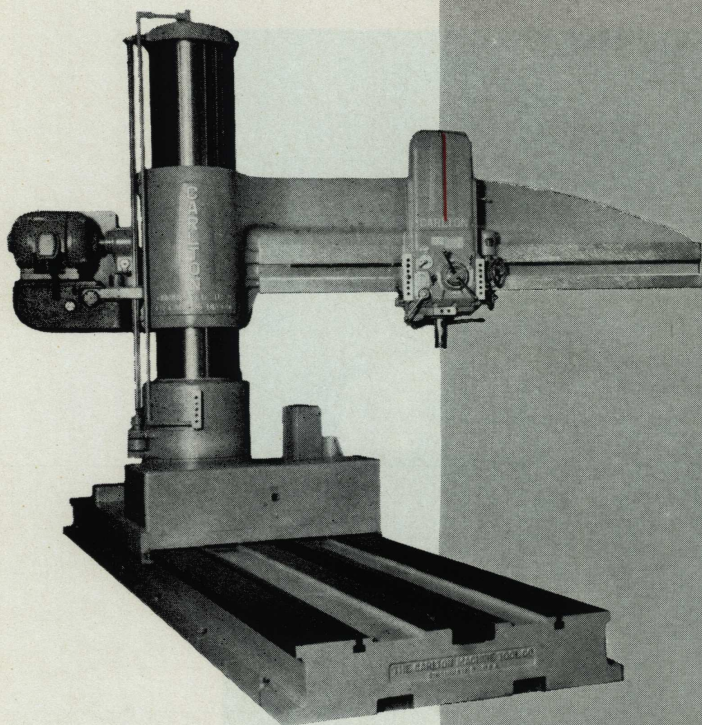
The track type base is available with power rapid traverse and power clamping to the rails. When these units are furnished, a clamp is located at each wheel. They are hydraulic clamps that exert equal force at 4 points on the track regardless of the irregularities of

the track itself. The traversing of the machine and the clamping of the machine to the rails are controlled conveniently by two push-buttons mounted on the head.

The track type base machine is recommended for use in plants where structural shapes, parts for condensers and boilers, and heavy plates are drilled, and for other work that is too large and heavy to handle very often.



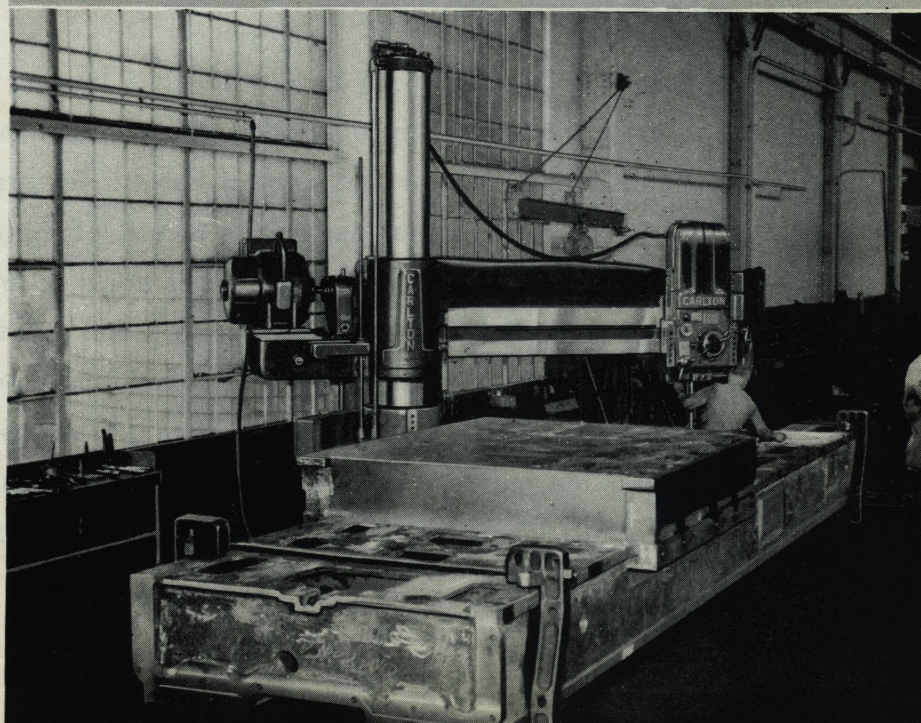
Sliding Saddle on Bedplate



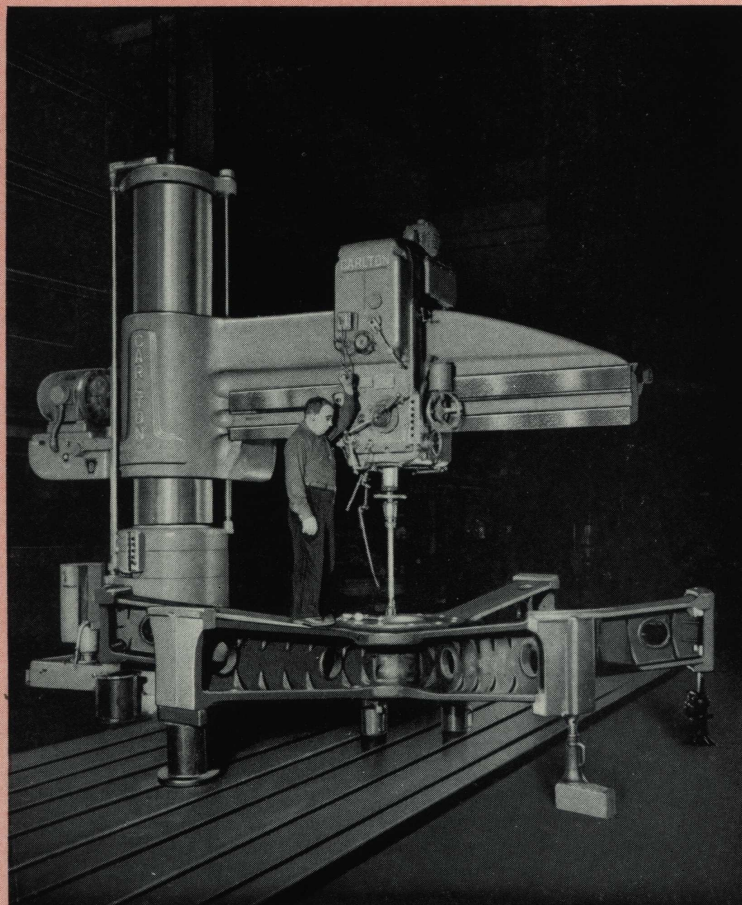
The sliding saddle on bedplate is available for all sizes of machines. The saddle is equipped with power rapid traverse, push-button controlled from the head. Levelling screws and hold down slots are placed at regular intervals, so the machine can be kept level to within your requirements. Neoprene wipers are standard equipment. Power traverse is through a motor driven gear reduction unit to a rack attached to the bedplate.

Carlton Radial Drilling of a Large Section of a Planer.

Standard equipment for this unit is non-metallic ways and power traverse. Automatic lubrication to the ways is standard equipment when power clamping is furnished. It is obvious that more stability and precision are available in the sliding base on bedplate than the track type base. Manufacturers of heavy duty machine tools, electrical machinery, large die shops and ordnance have recognized the value of this machine.



Honing Attachment



Another development by Carlton is a Honing Attachment. Automatic and adjustable reciprocation to the spindle is powered by a fluid motor and hydraulic pilot and control valves. Reciprocation can be adjusted from zero to 48 feet per minute at any of the spindle speeds furnished in the radial. The length of stroke is adjusted by two stops attached to a circular dial. The transition from a radial drill to a Honing Attachment takes less than 10 seconds. Two pull clutches, one to disengage the feed levers and one to engage the honing mechanism, and a pushbutton to start the motor are all that is required to transfer from drilling to honing. The length of stroke is $2\frac{1}{2}$ " less than standard spindle travel.

SPECIFICATIONS

MODEL 3A MACHINES

Column diameter	13"		15"			17"			
Arm length	4 ft.	5 ft.	4 ft.	5 ft.	6 ft.	5 ft.	6 ft.	7 ft.	
Face of column to Center of spindle	{ max. min.	4'0"	5'0"	4'0"	5'0"	6'0"	5'0"	6'0"	7'0"
		15"	15"	15"	15"	15"	13¾"	13¾"	13¾"
Maximum spindle radius		4'11"	5'11"	4'11"	5'11"	6'11"	6'1¾"	7'1¾"	8'1¾"
Minimum spindle radius		2'2"	2'2"	2'2"	2'2"	2'2"	2'3½"	2'3½"	2'3½"
Maximum spindle to base		5'0"	5'0"	5'6"	5'6"	5'6"	6'0"	6'0"	6'0"
Minimum spindle to base		10½"	10½"	10½"	10½"	10½"	16⅞"	16⅞"	16⅞"
Working surface Of base	{ Width Length	3'6"	3'6"	3'6"	3'6"	3'6"	4'2"	4'2"	4'2"
		4'5"	5'5"	4'5"	5'5"	6'5"	5'5"	6'5"	7'5"
Height of base		8"	8"	8"	8"	8"	10"	10"	10"
Vert. travel of spindle in head		18"	18"	18"	18"	18"	18"	18"	18"
Bearing of head on arm		21⅞"	21⅞"	21⅞"	21⅞"	21⅞"	21⅞"	21⅞"	21⅞"
Bearing of arm on column		26¾"	26¾"	30"	30"	30"	34"	34"	34"
Max. height over head		10'1"	10'1"	10'7"	10'7"	10'7"	11'3"	11'3"	11'3"
Height over column cap†		9'2"	9'2"	9'11"	9'11"	9'11"	10'10"	10'10"	10'10"
Spindle dia. (driving dia.)		3⅝"	3⅝"	3⅝"	3⅝"	3⅝"	3⅝"	3⅝"	3⅝"
Morse taper in spindle		#5	#5	#5	#5	#5	#5*	#5*	#5*
Traverse of arm on column		2'7½"	2'7½"	3'1½"	3'1½"	3'1½"	3'1⅞"	3'1⅞"	3'1⅞"
Traverse of head on arm		2'9"	3'9"	2'9"	3'9"	4'9"	3'10¼"	4'10¼"	5'10¼"
Drills to center of circle		8'0"	10'0"	8'0"	10'0"	12'0"	10'0"	12'0"	14'0"
Swing of arm		6'4"	7'4"	6'4"	7'4"	8'4"	7'6"	8'6"	9'6"
Plain box table	{ Working surface of top Working surface of side Height	24"x30"	24"x30"	24"x30"	24"x30"	24"x30"	24"x30"	24"x30"	24"x30"
		17"x30"	17"x30"	17"x30"	17"x30"	17"x30"	17"x30"	17"x30"	17"x30"
		20"	20"	20"	20"	20"	20"	20"	20"
Universal table	{ Working surface of top Working surface of side Height	24"x30"	24"x30"	24"x30"	24"x30"	24"x30"	24"x30"	24"x30"	24"x30"
		18"x24"	18"x24"	18"x24"	18"x24"	18"x24"	18"x24"	18"x24"	18"x24"
		24"	24"	24"	24"	24"	24"	24"	24"
Feeds and tap leads	18 changes— 004 to .125, including 8-11½-14-18 thread tap leads								
Spindle speeds 36, (100 to 1 ratio)	10-1000 or 12-1200 or 15-1500 RPM								
R.P.M. of motor	{ Constant speed 3 to 1 adjust speed	1200				or 1800			
		500-1500 or 575-1725							
Horse power of driving motor	7½ to 20								
Net weight of bare machine (less motor)		15,150#	16,600#	16,750#	17,500#	18,250#	22,100#	23,050#	24,000#
Shipping weight of bare machine (less motor)		15,225#	16,685#	16,835#	17,595#	18,355#	22,205#	23,165#	24,125#
Shipping weight of plain box table		755#	755#	755#	755#	755#	755#	755#	755#
Shipping weight of universal table		1100#	1100#	1100#	1100#	1100#	1100#	1100#	1100#

†Add 5" to this dimension when Coolant System is furnished. *#6 Morse Taper in Spindle available on 17" Column Machines.

SPECIFICATIONS (cont.)

MODEL 4 A and 5 A MACHINES

Column diameter	19" 4 A			22" 5 A				26" 5 A			
Arm length	6 ft.	7 ft.	8 ft.	7 ft.	8 ft.	9 ft.	10 ft.	*10 ft.	11 ft.	12 ft.	
Face of column to Center of spindle	max.	6'0"	7'0"	8'0"	7'0"	8'0"	9'0"	10'0"	10'0"	11'0"	12'0"
	min.	13¼"	13¼"	13¼"	15"	15"	15"	15"	16½"	16½"	16½"
Maximum spindle radius	7'1¾"	8'1¾"	9'1¾"	8'3"	9'3"	10'3"	11'3"	11'6"	12'6"	13'6"	
Minimum spindle radius	2'3"	2'3"	2'3"	2'6"	2'6"	2'6"	2'6"	34"	34"	34"	
Maximum spindle to base	6'6"	6'6"	6'6"	8'0"	8'0"	8'0"	8'0"	8'4"	8'4"	8'4"	
Minimum spindle to base	1'2½"	1'2½"	1'2½"	1'6½"	1'6½"	1'6½"	1'6½"	20½"	20½"	20½"	
Working surface of base	Width	4'2"	4'2"	4'2"	4'9"	4'9"	4'9"	4'9"	4'9"	4'9"	4'9"
	Length	6'5"	7'5"	8'5"	7'6"	8'6"	9'6"	10'6"	10'6"	11'6"	12'6"
Height of base	10"	10"	10"	12"	12"	12"	12"	12"	12"	12"	
Vert. travel of spindle in head	20"	20"	20"	24"	24"	24"	24"	24"	24"	24"	
Bearing of head on arm	23¼"	23¼"	23¼"	23¼"	23¼"	23¼"	23¼"	23¼"	23¼"	23¼"	
Bearing of arm on column	38"	38"	38"	44"	44"	44"	44"	4'4"	4'4"	4'4"	
Max. height over head	12'2"	12'2"	12'2"	14'4"	14'4"	14'4"	14'4"	14'8"	14'8"	14'8"	
Height over column cap†	11'9"	11'9"	11'9"	13'5"	13'5"	13'5"	13'5"	14'5"	14'5"	14'5"	
Spindle dia. (driving dia.)	4"	4"	4"	4"	4"	4"	4"	4"	4"	4"	
Morse taper in spindle	#6	#6	#6	#6	#6	#6	#6	#6	#6	#6	
Traverse of arm on column	3'7½"	3'7½"	3'7½"	4'5½"	4'5½"	4'5½"	4'5½"	4'7½"	4'7½"	4'7½"	
Traverse of head on arm	4'10¾"	5'10¾"	6'10¾"	5'9"	6'9"	7'9"	8'9"	8'8"	9'8"	10'8"	
Drills to center of circle	12'0"	14'0"	16'0"	14'0"	16'0"	18'0"	20'0"	20'0"	22'0"	24'0"	
Swing of Arm	8'6"	9'6"	10'6"	9'9"	10'9"	11'9"	12'9"	12'9"	13'9"	14'9"	
Plain box table	Working surface of Top	26"x33"	26"x33"	26"x33"	26"x40"	26"x40"	26"x40"	26"x40"	26"x40"	26"x40"	26"x40"
	Working surface of side	17"x33"	17"x33"	17"x33"	17"x40"	17"x40"	17"x40"	17"x40"	17"x40"	17"x40"	17"x40"
	Height	20"	20"	20"	20"	20"	20"	20"	20"	20"	20"
Universal table	Working surface of top	28"x32"	28"x32"	28"x32"	28"x32"	28"x32"	28"x32"	28"x32"	28"x32"	28"x32"	28"x32"
	Working surface of side	18"x28"	18"x28"	18"x28"	18"x28"	18"x28"	18"x28"	18"x28"	18"x28"	18"x28"	18"x28"
	Height	24"	24"	24"	24"	24"	24"	24"	24"	24"	24"
Feeds and tap leads		18 changes—.004 to .125, including 8-11½-14-18 thread tap leads									
Spindle speeds 36, (100 to 1 ratio)		6-600 or 8-800 or 10-1000 or 12-1200 or 15-1500 RPM									
R.P.M. of motor	Constant speed	900 or 1200 or 1800									
	3 to 1 adjust. speed	500-1500 or 575-1725									
Horse power of driving motor		20 to 40									
Net weight of bare machine (less motor)		26,210#	27,340#	28,470#	39,950#	42,260#	44,600#	46,900#	56,690#	58,950#	61,250#
Shipping weight of bare machine (less motor)		26,335#	27,475#	28,620#	42,950#	45,260#	47,600#	49,900#	59,690#	61,950#	64,250#
Shipping weight of plain box table		830#	830#	830#	1025#	1025#	1025#	1025#	1025#	1025#	1025#
Shipping weight of universal table		1280#	1280#	1280#	1280#	1280#	1280#	1280#	1280#	1280#	1280#

†Add 5" to this dimension when Coolant System is furnished. *8 FT. AND 9 FT. ARM AVAILABLE ON 26" COLUMN.

15 GOOD REASONS WHY

CARLTON IS YOUR BEST INVESTMENT IN RADIAL DRILLS

1. Pre-Select speeds and feeds to spindle.
2. Pre-Select and Programming hole production.
3. Low-Hung Drive to spindle for greater rigidity and accuracy.
4. Precision, 360 degree, column clamping.
5. Arm Elevating Control that positions the arm radially to the same location in relation to the key and keyway.
6. Pushbutton controls to reduce operator fatigue.
7. Dovetail construction of armways, plus two hardened wear strips to carry the head mounted on anti-friction bearings.
8. Clamping and unclamping of head and column by pushbutton control from one station.
9. Only one friction clutch to adjust.
10. Safety stops to prevent overtravel of the spindle, arm and head.
11. Safety Elevating Nut to prevent arm from falling should the threads wear out.
12. Safety Feed Clutch to prevent overloading of the machine and tool breakage.
13. Individual motor drive to all component units, eliminating costly clutches and unnecessary shafts, rods and levers.
14. Gears with hardened and ground teeth running on short, sturdy, ground spline shafts mounted on anti-friction bearings.
15. Automatic lubrication throughout.



THE CARLTON MACHINE TOOL CO.

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