

12 SPEED  
HEADSTOCK

No. 3

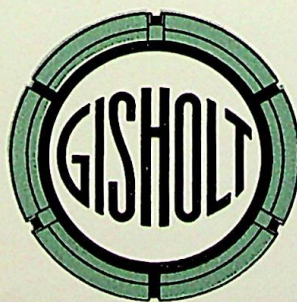
Gisholt

*Gisholt*  
*No. 3*

RAM TYPE  
UNIVERSAL

*Turret Lathe*

12 SPEED HEADSTOCK

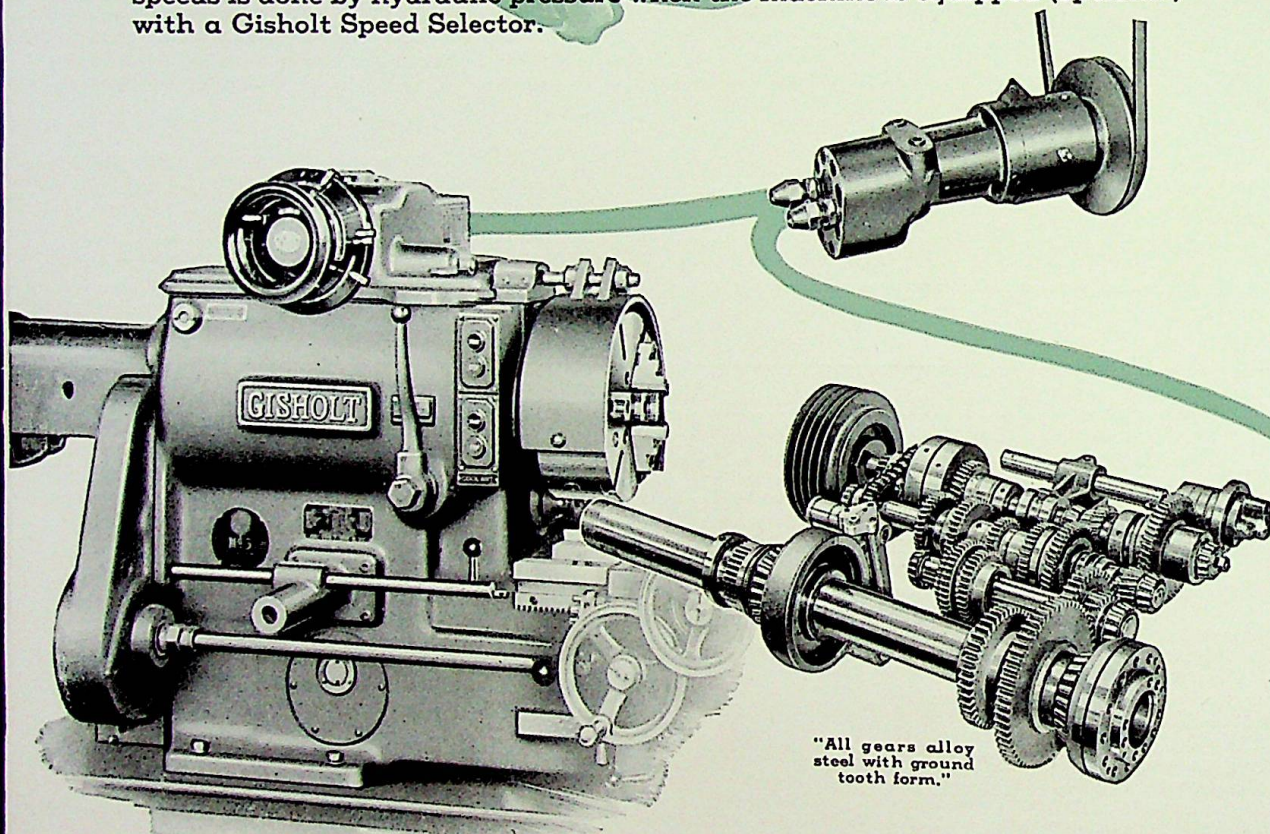


GISHOLT MACHINE COMPANY, MADISON, WISCONSIN, U.S.A.

# Oil Pressure Replaces Brawn

## IN THIS GISHOLT HYDRAULIC CONTROL FOR A 12 SPEED GEARED HEADSTOCK

● Operating levers are now control levers only and each is moved with the same ease as pushing an electric button. No longer must physical strength be used to engage or disengage the forward or reverse multiple disc clutches or to operate the spindle brake. Even the shifting of gears through all twelve speeds is done by hydraulic pressure when the machine is equipped (optional) with a Gisholt Speed Selector.



The Gisholt Speed Selector incorporates not only a means for shifting gears without effort, but also a means for indicating the sequence of speeds to be used and a means for insuring that those speeds give the correct surface feet per minute. Changing spindle speeds is accomplished by turning the handwheel to the speed desired — hydraulic pressure shifts the gears. Sequence of speeds is indicated by numbered pointers attached to the handwheel — operators need not depend on memory. Cutting speed in feet per minute is set on the dial and the pointers are set to the diameters of the work — the machine is ready to operate at that cutting speed for all diameters. A finger trip lever gives an instantaneous speed change from high to low or vice versa.

The Forward — Stop — Reverse control directs hydraulic pressure for engaging and disengaging the driving clutches and for applying the spindle brake. Movement of this control is effortless.

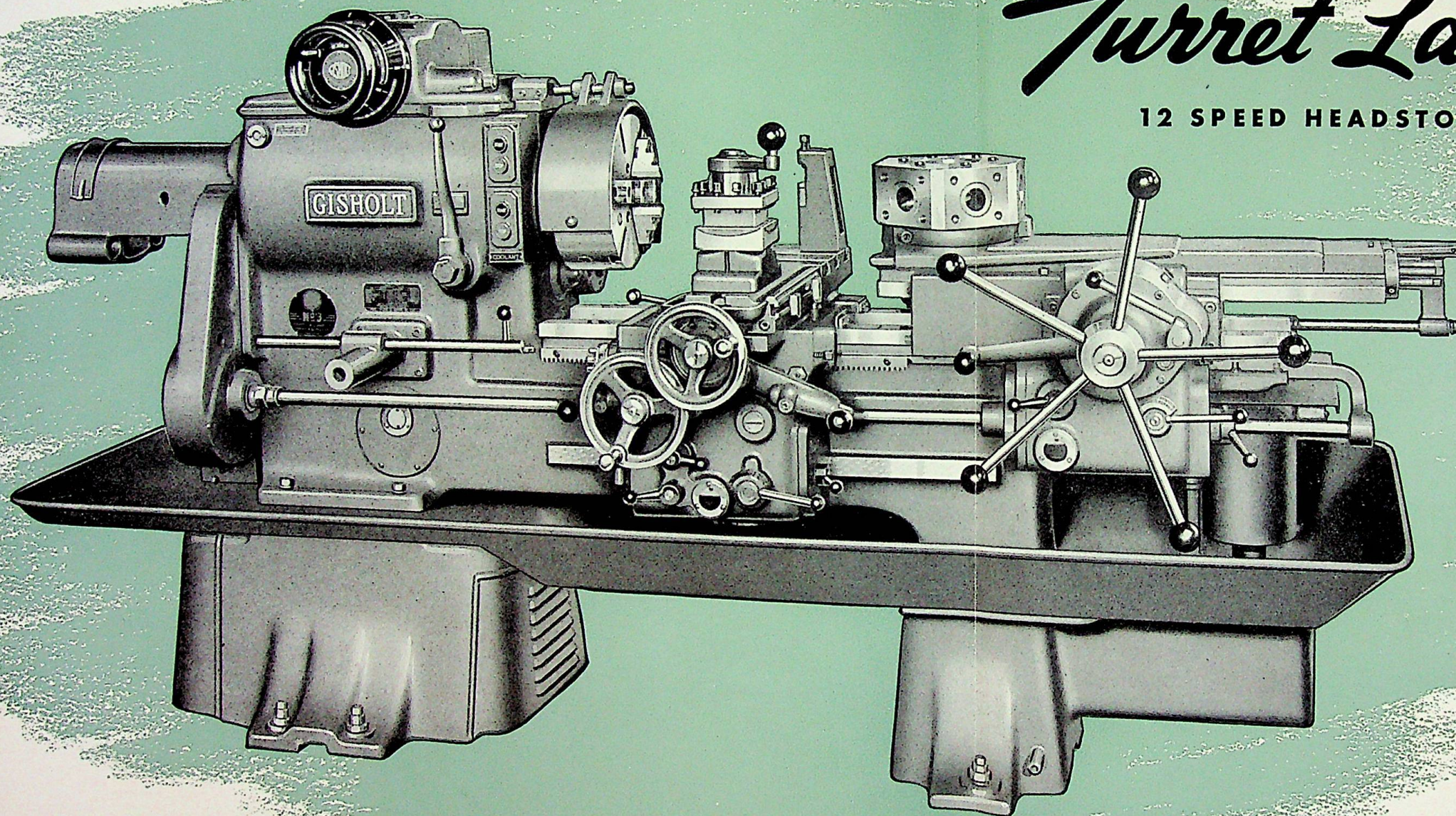
Lubrication of the entire headstock is from the same hydraulic circuit, supplying clean filtered oil to all bearings, clutches and gears.

# Gisholt No. 3

## RAM TYPE UNIVERSAL

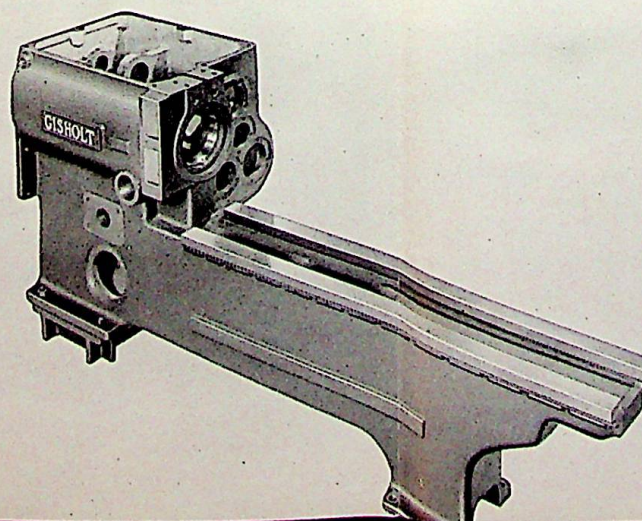
# Turret Lathe

12 SPEED HEADSTOCK

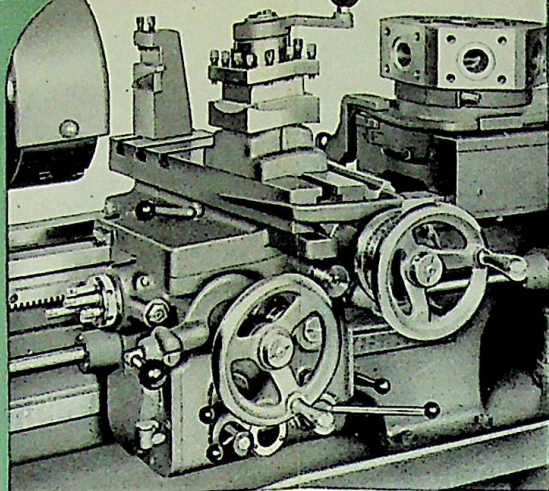


### IMPROVED BED DESIGN

The new one-piece bed casting has deeper and thicker side panels which, together with heavy cross webs, gives a rigid foundation for all types of work, but still allows adequate space for chip disposal. The solid block-type ways are straddle keyed to the bed, attached with cap screws from the underside, and ground in place to perfect alignment with the spindle. The ways are made of a special steel with all working surfaces hardened to 64-66 Rockwell "C".

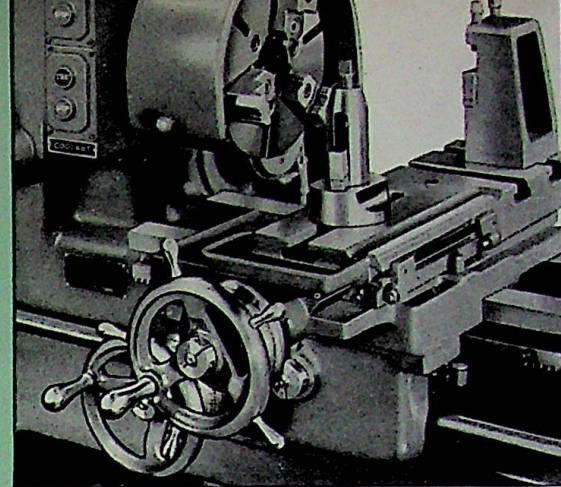
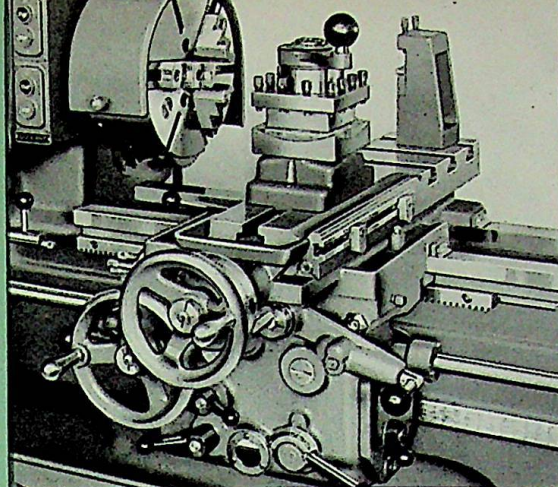


64-66 Rockwell "C" way surfaces for bearing, alignment, gibbing and clamping.



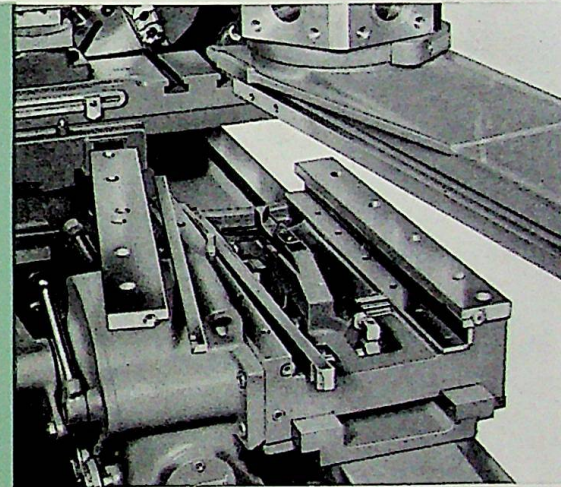
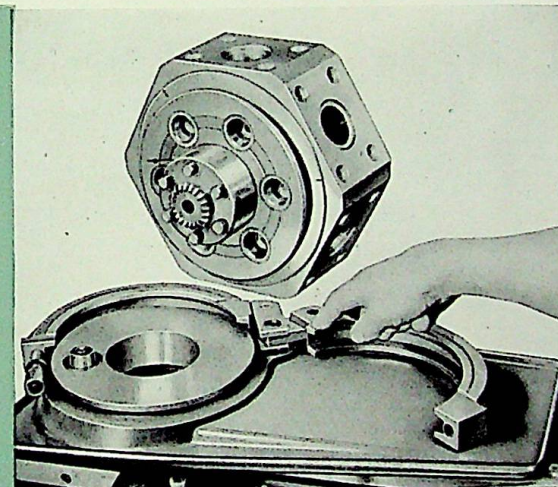
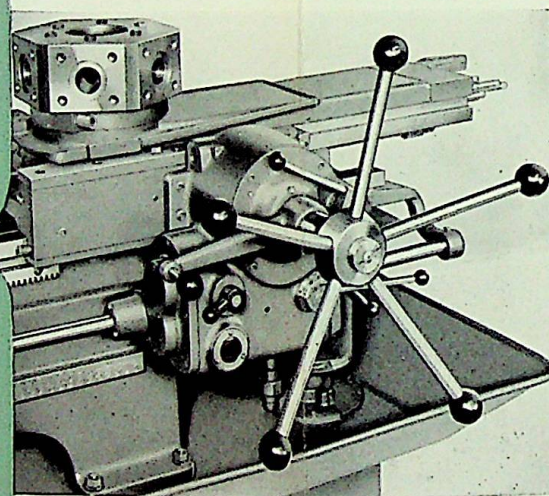
### UNIVERSAL SIDE CARRIAGE

The universal side carriage has eight selective, power, reversible cross and longitudinal feeds. A fully enclosed, oil-tight apron operates in a continuous bath of oil with replenishment necessary only when indicated by the sight gage. A direct reading dial on a single lever makes feed selection or change easy. Positive lubrication to the bed ways and cross feed screw and nut is provided by a hand operated



### PLAIN SIDE CARRIAGE

The machine can also be furnished with a plain side carriage instead of the universal where the advantages of power feeds are not required. The plain carriage has hand longitudinal positioning and a hand operated cross slide having either screw feed (shown above) or lever feed. Front and rear tool posts are furnished and the slide has dead stops for both directions.

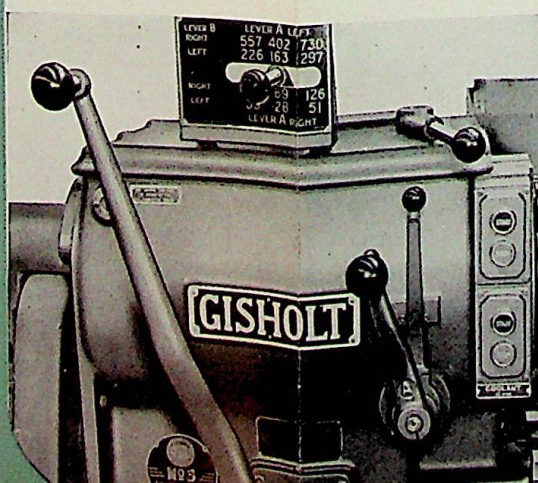


### NEW TURRET RAM AND SADDLE

The hexagon turret ram has eight selective power feeds transmitted through a fully enclosed, oil tight apron. The turret is automatically unclamped and indexed by backward movement of the ram, and forward movement again clamps it before the turret leaves the saddle. At a clearly indicated point in the travel of the ram the turret is free to turn in either direction for back or skip index-

ing. A five spoke handwheel insures convenient grip for the operator in handfeeding or indexing. The turret is mounted on a large diameter plain bearing, which, together with a tapered hardened and ground locating pin entering the hardened and ground turret bushing, insures accurate indexing. The circumference binder ring, automatically closed by a compound toggle, gives one-piece solidity to the locked

turret. Two square lock clamps, each with a hardened taper gib, hold the ram securely in the saddle and provide adjustment for vertical wear. The ram is supported by steel way strips secured to the saddle and hardened to 64-66 Rockwell C, with side adjustment provided by a hardened taper gib. Positive lubrication to the way strips is provided by a hand operated piston pump.

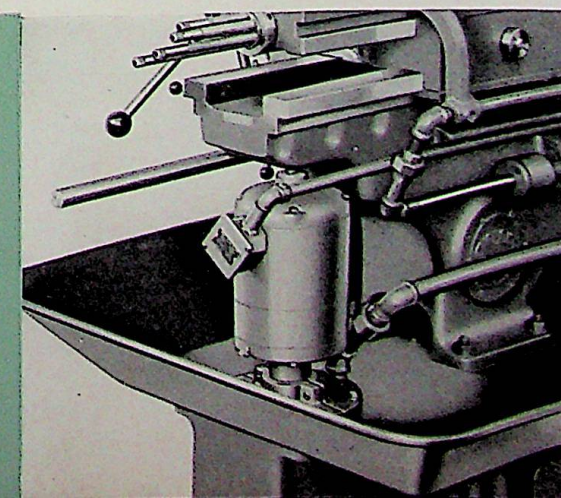


### LEVER SHIFT HEADSTOCK

When the type of work to be performed does not require frequent spindle speed changes during the machining cycle, the conventional lever shift headstock will prove satisfactory. All advantages of the hydraulic control for start — stop — reverse are retained, but shifting of gears is manual by means of two levers. A third lever gives an instantaneous high-low speed change so essential for boring and reaming or turning and threading.

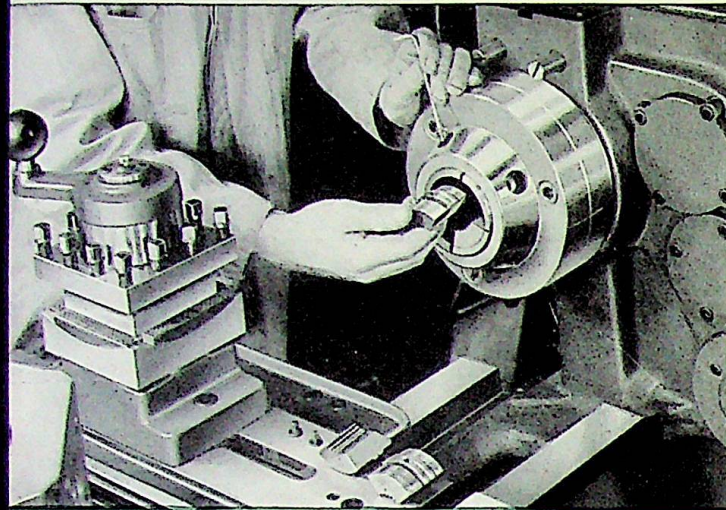
### COOLANT PUMP

An adequate coolant sump with a motor driven centrifugal coolant pump insures a full supply of cutting lubricant at all times.

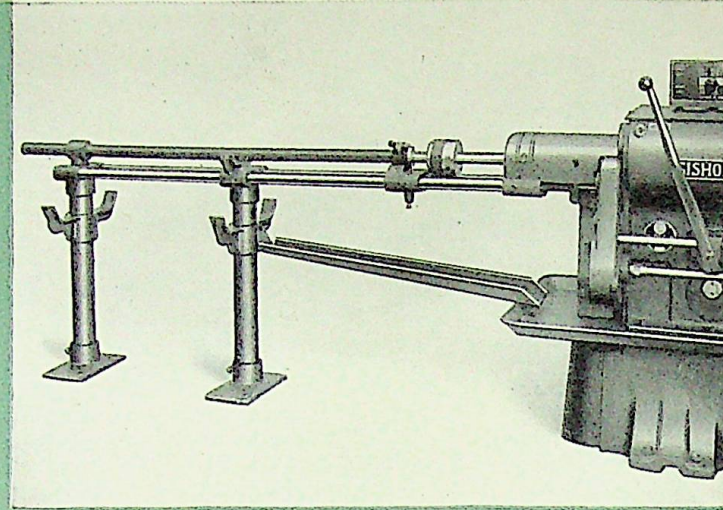


# Accessories

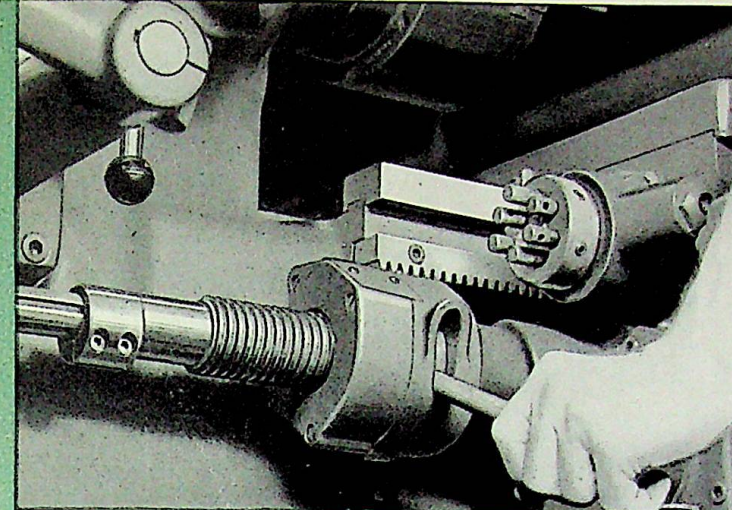
All accessories shown on these pages, with the exception of the two Lead Screw Attachments, are standard attachments that can be added to a machine at any time. When applied, they become an integral part of the machine, and in no way interfere with its normal operation.



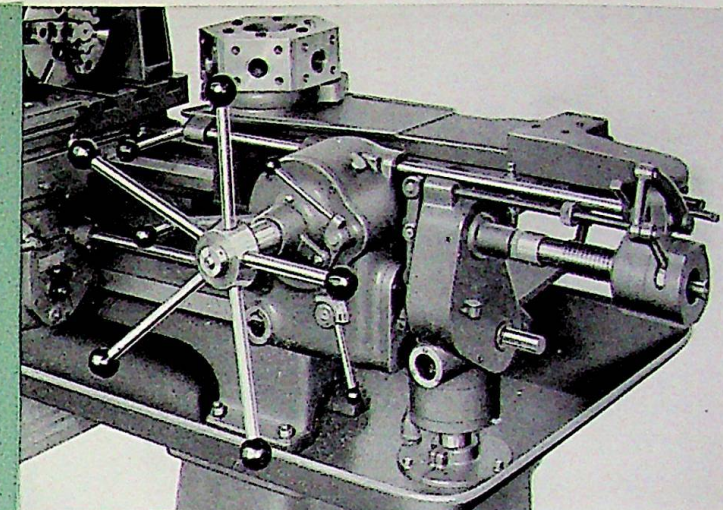
**COLLET CHUCK** is used for holding round, square or hexagon bar stock. Opening and closing is automatic by means of the bar feed lever. A four split master collet carries the pads which can be changed from one size to another without removing the collet hood.



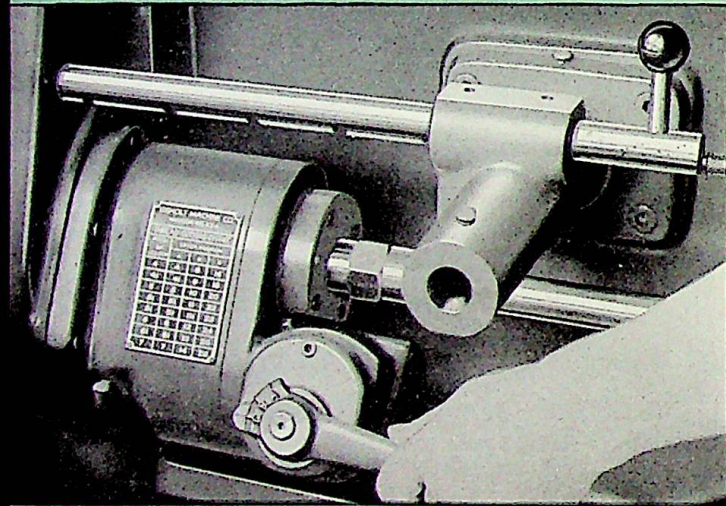
**BAR FEED** is ratchet operated from the bar feed lever and advances the stock through the collet chuck. The stock feed chuck has roller bearings and a travel of 32 inches. Two pedestals support a protective tube and also serve as a storage rack for bar stock.



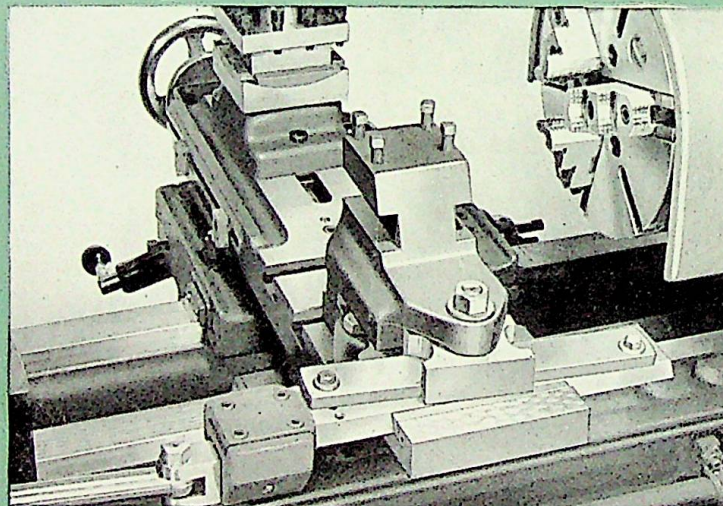
**CHASING ATTACHMENT** for the universal carriage is for chasing accurate threads. A leader of the correct pitch is clamped to the feed rod and two bronze follower nuts, held in the bracket, are closed on the leader by a lever. Separate leaders and followers are required for each thread. Capacity 4 to 24 threads per inch.



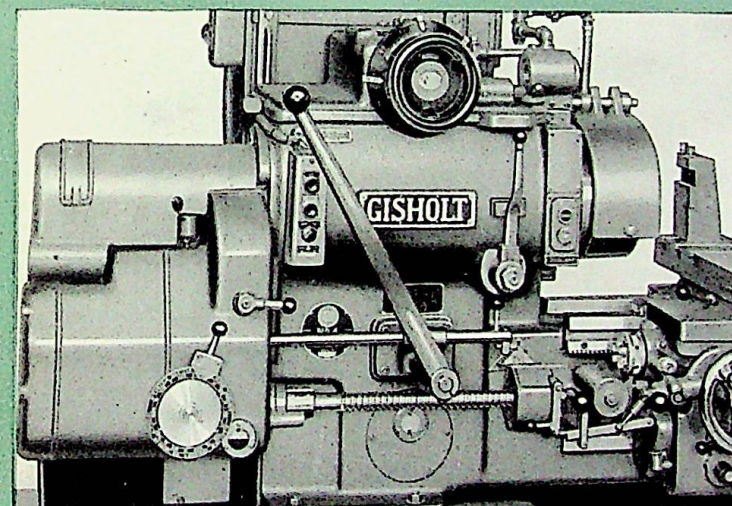
**TURRET THREADING ATTACHMENT** provides a positive lead to the turret ram for cutting threads with a die head or tap. Leaders and followers are used and an accurate trip permits threading up to shoulders. Separate leaders and followers are required for each thread. Capacity 4 to 24 threads per inch.



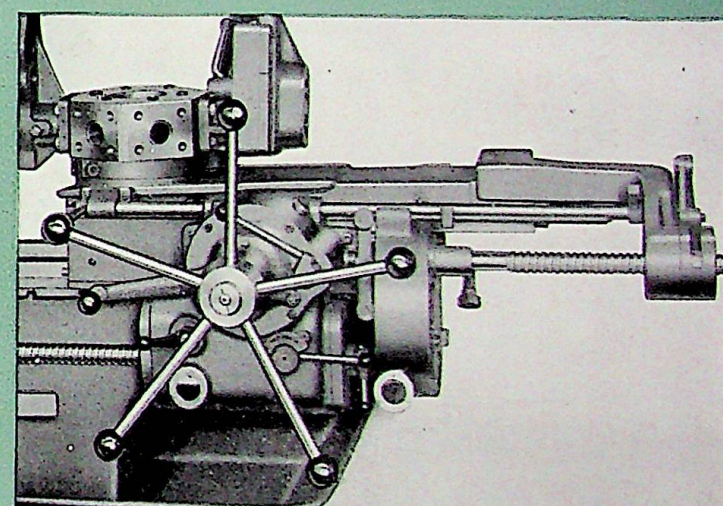
**SELECTIVE GEAR BOX** permits of cutting 3 threads with a single leader with either the chasing or turret threading attachments. The 3 threads are 1, 2, and 4 times the pitch of the leader used. Threading capacity of the attachment when machine has selective gear box — 2 to 48 threads per inch.



**TAPER ATTACHMENT** for the universal side carriage is a separate tool holder that fits on the rear of the cross slide. The taper guide is held stationary by a bar attached to the saddle. The maximum taper that can be turned is 4 inches per foot or a 19 degree included angle for a length of 7 inches.



**FULL LENGTH LEAD SCREW ATTACHMENT** includes a universal selective gear box and a lead screw for the universal side carriage, permitting all standard threads from 4 to 36 per inch to be cut for the full travel of the carriage. The engaging lever for the follower half nuts has automatic trip. This attachment can only be added at the factory.



**TURRET LEAD SCREW ATTACHMENT** can be used on a machine equipped with the Full Length Lead Screw Attachment, and permits cutting all standard threads from 4 to 36 per inch for the full travel of the turret ram. The engaging lever for the follower half nuts has automatic trip.

*Come to  
Madison*

Our Engineering Facilities  
are available at all times.  
A trip through our factory is  
educational.

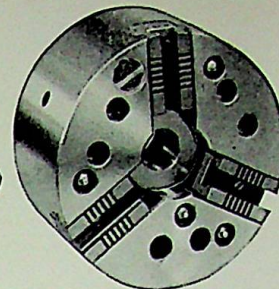
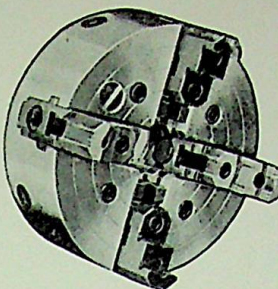
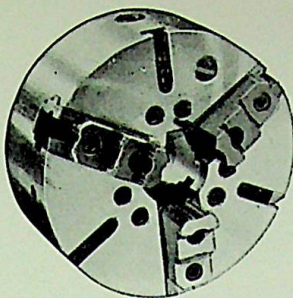
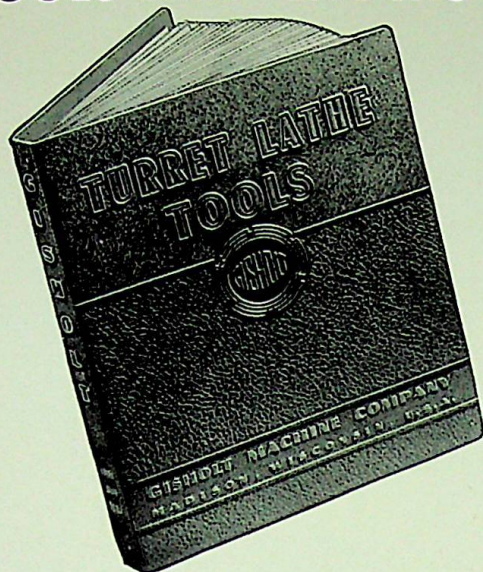


*Gisholt*  
RAM TYPE UNIVERSAL

*Turret Lathes*



# STANDARD TOOLS AND CHUCKS



Three Jaw Scroll Chuck    Four Jaw Independent Chuck    Three Jaw Air Chuck

Gisholt turret lathe tools are made to take full advantage of today's better materials for cutting tools, having the extra strength required for multiple cuts and the rigidity for heavy feeds. Simple in design, they have adjustments which reduce set-up time to a minimum, and they are adaptable to a great variety of standard as well as specialized types of work.

Gisholt chucks feature heavy, all-steel construction, and are designed to mount directly on the spindle of Gisholt machines without any intermediate plate or adapter, thus reducing overhang and insuring utmost accuracy and rigidity. The complete line of Gisholt tools and chucks, for use on all Gisholt saddle and ram type turret lathes, is fully portrayed and described in the 168-page catalog pictured here. Your firm's tool engineers need this valuable book. Consult Gisholt field or factory engineers at any time for recommendations or advice.

## SPECIFICATIONS

### GISHOLT No. 3 12 SPEED HEADSTOCK RAM TYPE UNIVERSAL TURRET LATHE

	ENGLISH	METRIC
Collet chuck capacity		
For round stock.....	1 1/2"	38 mm
For hexagon stock.....	1 3/8"	35 mm
For square stock.....	1 1/8"	28 mm
Hole through collet chuck tube.....	1 1/16"	43 mm
Standard spindle bore.....	2 1/32"	51 mm
Spindle nose.....	8-A1	8-A1
Normal spindle speeds		
12 forward and reverse.....	28-730 r.p.m.	28-730 r.p.m.
High spindle speeds		
12 forward and reverse.....	56-1460 r.p.m.	56-1460 r.p.m.
Swing over ways.....	18 1/2"	470 mm
Swing over carriage wing.....	16 5/8"	422 mm
Swing over cross slide.....	9 5/8"	244 mm
Diameter of chuck.....	8" or 10"	203 or 254 mm
Max. distance face of turret to end of spindle nose.....	26"	660 mm
Effective travel of hexagon turret.....	10"	
Swing over turret ram (diameter).....	6 7/8"	174 mm
Diameter of turret holes.....	1 1/2"	38.1 mm
Counterbore of turret holes.....	1 7/8"	47.62 mm
Width of turret across flats.....	9 3/4"	247 mm
Longitudinal travel of side carriage.....	17"	432 mm
Cross travel of cross slide.....	9"	229 mm
Width of square turret.....	5 1/4"	133 mm
Hexagon and square turret power feeds		
8 longitudinal.....	.002"—.052"	.05—1.3 mm
8 cross.....	.002"—.052"	.05—1.3 mm
Width of bed across ways.....	8 3/4"	222 mm
H. P. motor recommended		
Normal spindle speeds.....	5—10	5—10
High spindle speeds.....	7 1/2—10	7 1/2—10
Speed of motor.....	1800 r.p.m.	1500 r.p.m.
Machine floor space exclusive of bar feed.....	114" x 63"	2.9 m x 1.6 m
Bar feed projection length.....	90"	2.3 m
Net weight.....	4500 lbs.	2050 Kg.
Gross weight (tooled and boxed for export).....	6600 lbs.	2993 Kg.
Cubic space boxed for export.....	215 cu. ft.	6.1 cu. m

**GISHOLT MACHINE COMPANY**  
MADISON, WISCONSIN, U. S. A.