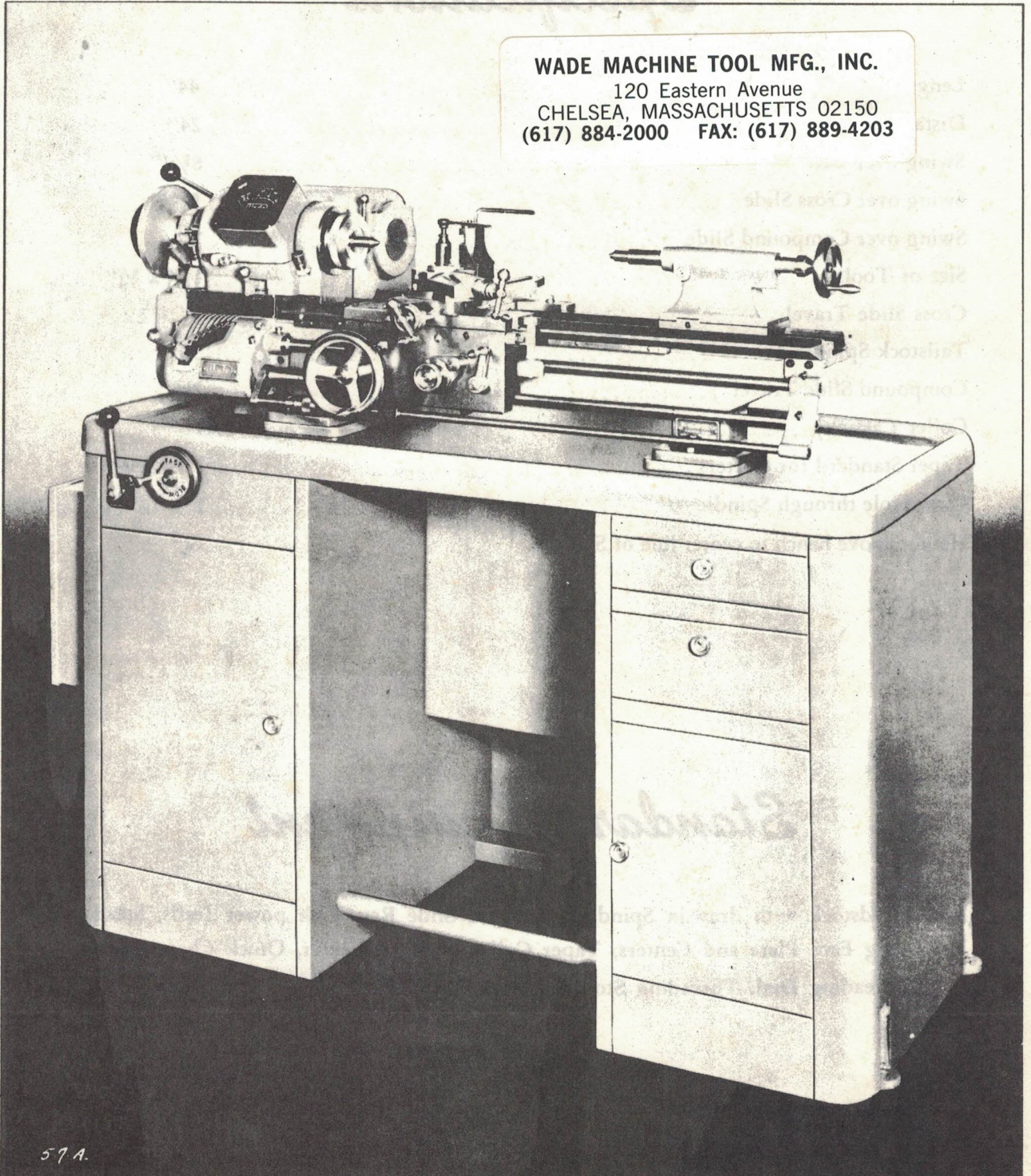


WADE No. 8 A TOOLMAKERS PRECISION LATHE

WADE MACHINE TOOL MFG., INC.
120 Eastern Avenue
CHELSEA, MASSACHUSETTS 02150
(617) 884-2000 FAX: (617) 889-4203



57A.

Specifications

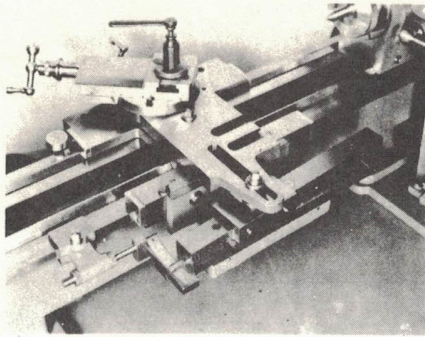
Length of Bed	44"
Distance between centers	24"
Swing over Bed	8 $\frac{1}{2}$ "
Swing over Cross Slide	5 $\frac{1}{2}$ "
Swing over Compound Slide	2 $\frac{1}{2}$ "
Size of Tools	$\frac{3}{8}$ " x $\frac{3}{4}$ "
Cross Slide Travel	5"
Tailstock Spindle Travel	3 $\frac{1}{4}$ "
Compound Slide Travel	2 $\frac{1}{2}$ "
Collet Capacity	1"
Taper Standard for Centers	No. 2 Morse
Clear Hole through Spindle	1 $\frac{3}{16}$ "
Height above bench to center line of Spindle	12"

Standard Equipment

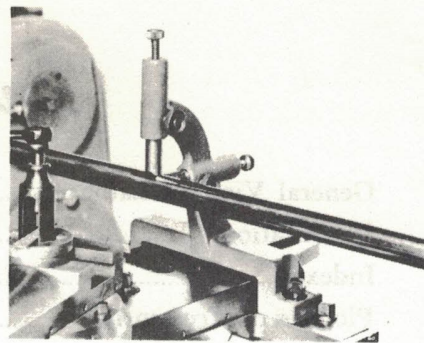
Bed, Headstock with draw-in Spindle, Tailstock, Slide Rest with power feeds, Steady Rest, Dog Face Plate and Centers, Taper Collet for Live Center, Quick Change Gear Box, Threading Dial, Threading Stop, Carriage Stop and 8" Slotted Face Plate.

Index Sheet

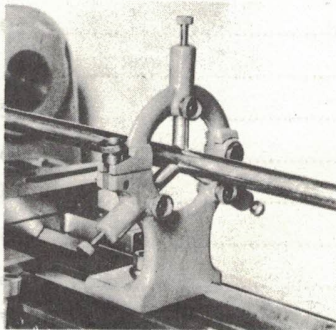
General View of Lathe	1
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Lubrication	7, 8
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Cutting Screw Threads Metric	10
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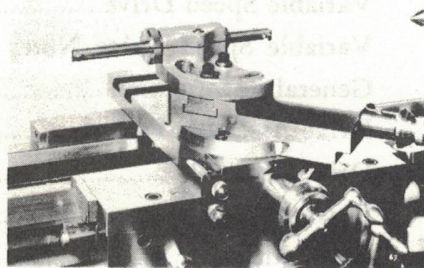
Taper Attachment



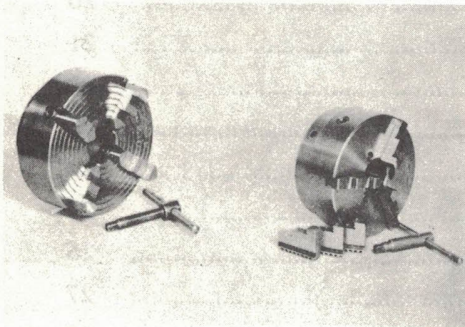
Follow Rest



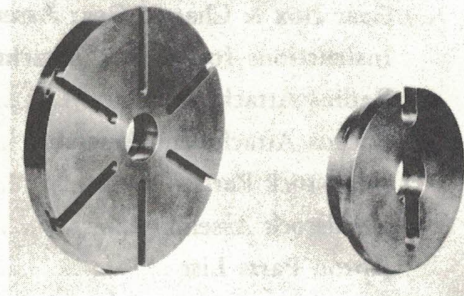
Steady Rest



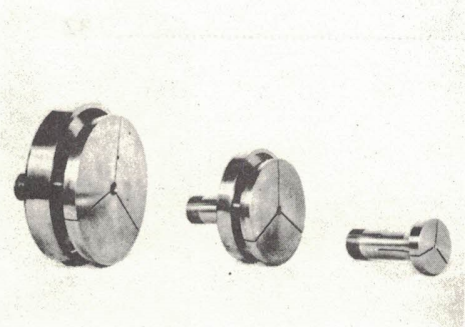
Boring & Turning Tool Holder



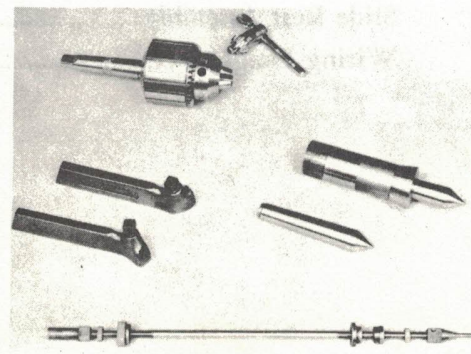
3 & 4 Jaw Chucks



Face Plates



Step Chucks



Collet Stop, Drill Chuck Etc.

LEVELING LATHE

After all the slushing oil has been removed from the new lathe, the controls properly connected and the location has been decided on, the first and most important thing is to level the lathe bed. Unless this is done properly, it is impossible to do the accurate work for which it was built.

TOOLS

- Precision level, graduated to .0005 of an inch per foot, see Fig. 1.
- Bar of steel turned similar to Fig. 2
- Micrometer (Preferable graduated in .0001")
- Wrenches suitable for jack screws
- Two size blocks .3750"

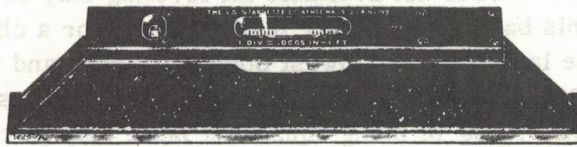


Fig. 1. Precision Level

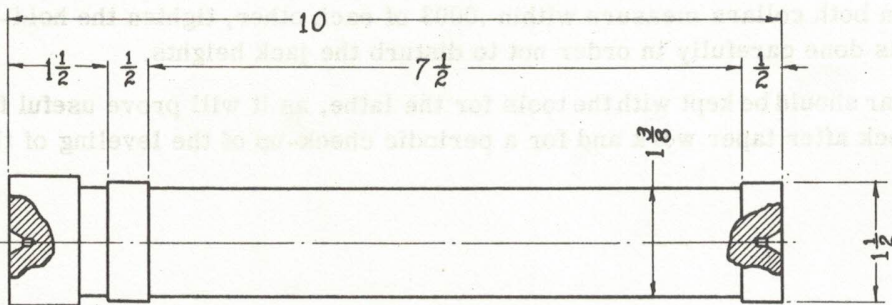


Fig. 2. Test Bar

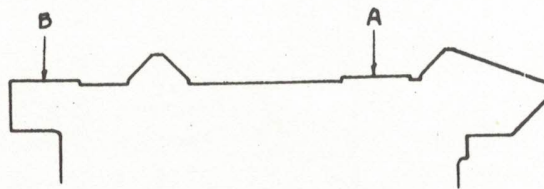


Fig. 3. Lathe Bed Outline

PROCEDURE

After the lathe has been thoroughly cleaned, place the precision level on way marked (A) Fig. 3, and by adjusting the jack screws see that the bed is approximately level longitudinally.

Check the transverse level of the bed at the head end. First, by placing the size blocks at (A) and (B) Fig. 3 and supporting the precision level on these blocks. This end of the bed is leveled by placing shims in the necessary places and then securely fastened.

Move the size blocks to the tailstock end and by using the jack screws level this end of the bed. Make a final check on the longitudinal leveling and if necessary, correct with the jack screws. Be sure the transverse level of the bed is not disturbed during this last operation.

TURNING TEST

As a final check on the alignment of the lathe bed, the turning test is necessary to insure accurate work.

In case a precision level is not available all leveling may be done this way. Turn a piece similar to Fig. 2. This bar is held either in a collet (1") or a chuck. After the bar has been rough turned, set the lathe for the slowest open belt speed and the finest feed and take a finish chip of not over .001 of an inch in depth. Measure both collars with a micrometer and if the diameters are within .0003 of being equal, the lathe may be considered level. If the outer collar is large, raise the outer jack screw. (1/6 of a turn will make an approximate change of .0005 of an inch in the difference in diameters.)

If the inner collar is large, raise the rear jack screw and take another chip off both collars. When both collars measure within .0003 of each other, tighten the hold-down bolts. Be sure this is done carefully in order not to disturb the jack heights.

This bar should be kept with the tools for the lathe, as it will prove useful for realigning the tailstock after taper work and for a periodic check-up of the leveling of the lathe.

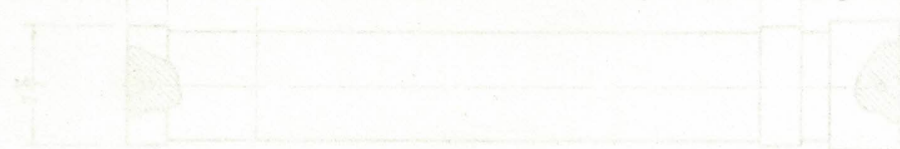


Fig. 2. Test Bar

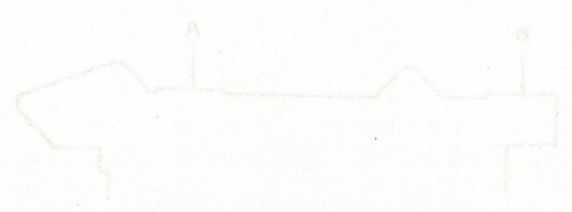


Fig. 3. Lathe Bed Outline

LUBRICATION

HEADSTOCK

Two oil cups, Fig. 4 (A) at the front of the head should be checked to see they are full each time the lathe is used. These should be kept filled with oil, equivalent to Colonial Beacon "Spinesso #38", before the lathe is started. Do not add oil while lathe is running.

On the back gear quill, there is an oil hole cover that should be filled before using the back gears. Put a few drops of oil on the gears themselves each time they are used.

When the draw bar is used a film of machine oil should be applied to the draw bar where it bears in the spindle (D) Fig. 5. Be sure the spindle at (C) is absolutely clean as a little dirt here can do a great deal of damage.

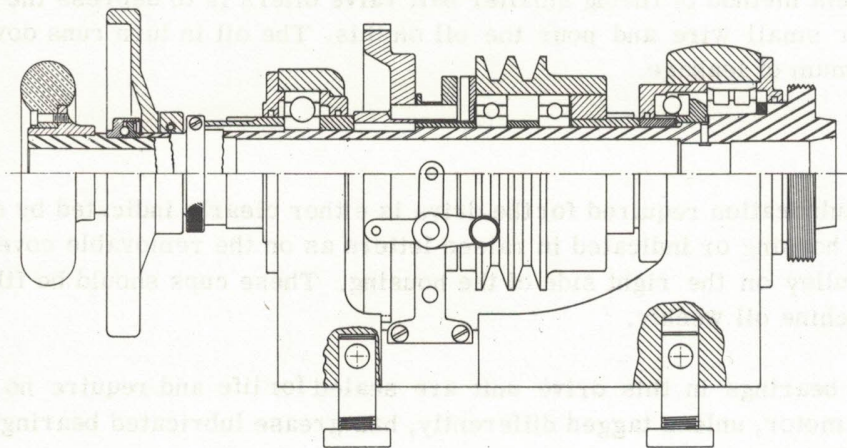


Fig. 4 Sectional View of Headstock

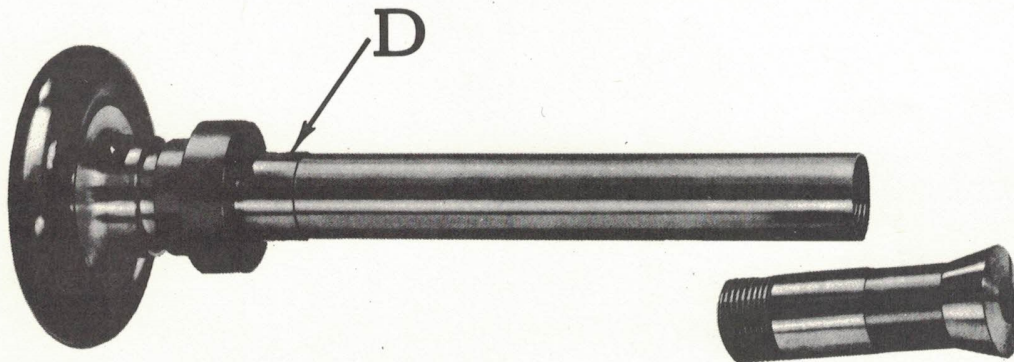


Fig. 5 Collet and Draw Bar

GEAR BOX AND CHANGE GEARS

Oil cups on the gear box are filled every day before starting the machine.

The pick-off gear cover should be removed and oil injected daily where marked. See Fig. 7. The sliding gear and the gear guard oil cup should receive attention daily with a good grade of machine oil.

SLIDE REST AND APRON

Fill all oil cups daily with a good grade of machine oil.

All dovetails and ways should be oiled often enough to maintain a thin film of oil.

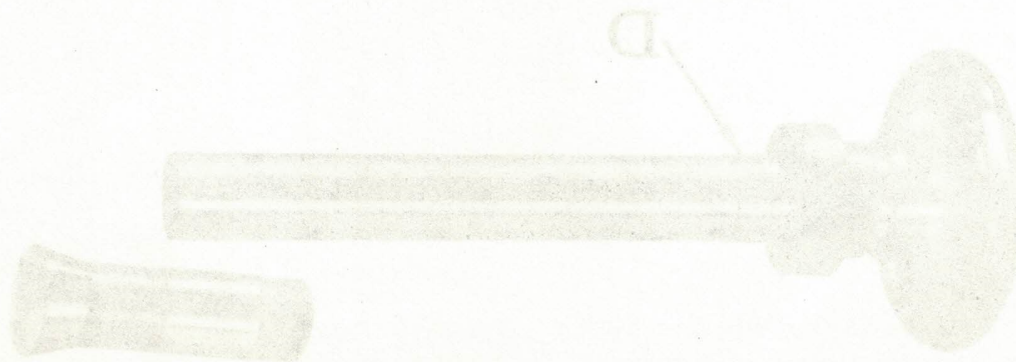
The feed rod and lead screw bearings should be oiled daily and the lead screw itself oiled before cutting a thread.

A convenient method of filling smaller ball valve oilers is to depress the ball cover with a scriber or small wire and pour the oil on this. The oil in turn runs down into the hole, with a minimum of leakage.

MOTOR DRIVE

The only lubrication required for the drive is either clearly indicated by oil cups on the outside of the housing or indicated in raised letters as on the removable cover over the variable speed pulley on the right side of the housing. These cups should be filled with a good grade of machine oil weekly.

All other bearings in this drive unit are sealed for life and require no additional lubrication. The motor, unless tagged differently, has grease lubricated bearings and need not be lubricated but once a year.



CUTTING SCREW THREADS

The purpose of these instructions is to acquaint the mechanic with the setting up of the 8A lathe for screw cutting and not for instruction in the actual machining.

SLIDING GEAR	THREADS PER INCH								TOP LEVER	PICK OFF GEAR		FEED TOP LEVER CENTRAL 10 TIMES * THREADS APPROX.
OUT *	12 1/2	11	10	9	8	7	6 1/2	6	RIGHT	INNER	OUTER	
	25	22	20	18	16	14	13	12	LEFT			
IN *	50	44	40	36	32	28	26	24	RIGHT	72	108	96
	100	88	80	72	64	56	52	48	LEFT			
OUT *			15						RIGHT	108	92	96
			30	27					LEFT			
*				11 1/2					RIGHT			

Fig. 6 Index Plate for Quick Change Gear Box

By using the quick change gear box 32 standard pitches can be cut without resorting to pick-off gears. All are American standard pitches from 6 to 100 threads per inch and are spotted on the index plate, Fig. 8. In addition 11-1/2, 27, 15, 30, 60 and 120 which are frequently used, non-standard pitches can be cut with the use of pick-off gears furnished as standard equipment with the lathe. The instructions on the index plate should be sufficient for cutting these pitches, with the possible exception of the 60 and 120 pitches. These are obtained by moving the sliding gear in, when arranged to cut either 15 or 30 threads per inch.

A threading dial is furnished as standard equipment with this lathe. A few simple rules should be followed when using this dial, they are:

1. When cutting any whole number thread, the half nuts may be engaged at any of the four lines. Succeeding cuts may be taken at any line.
2. When cutting 1/2 threads (6 1/2, 11 1/2, etc.) use numbers opposite each other (2 and 4) or (1 and 3). Succeeding cuts must be taken at either the same line or the line directly opposite it.

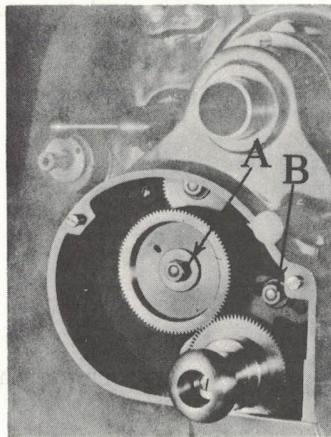


Fig. 7, Pick Off Gears

To change pick-off gears, first remove (A) in Fig. 7. This allows both pick-off gears to be removed. Before replacing any gears loosen (B) to allow bracket to move freely. Adjust gears so there is a small amount of back-lash and tighten (B). Replace (A); oil where marked, and turn gear train by hand to be sure nothing binds.

METRIC SCREW THREADS

In order to cut a wide range of metric threads, the following extra pick-off gears are required, 127, 120, 112, 105, 102 and 100.

Metric Screw Thread Chart

Millimeter Pitch	Inner Pick-off Gears	Outer Pick-off Gears	Gear Box Arranged to cut threads per inch
.25	127	120	72
.3	127	100	50
.4	127	96	36
.5	127	120	36
.6	127	100	25
.7	127	112	24
.75	127	100	20
.8	127	96	18
.85	127	102	18
.9	127	96	16
1.0	127	120	18
1.25	127	100	12
1.5	127	100	10
1.75	127	105	9
2.0	127	120	9
2.25	127	105	7
2.5	127	100	6

Formula for extra screw threads

$$\frac{A}{B} = \frac{3T}{4G} \quad \text{or} \quad T = \frac{4AG}{3B}$$

A - Inner Gear

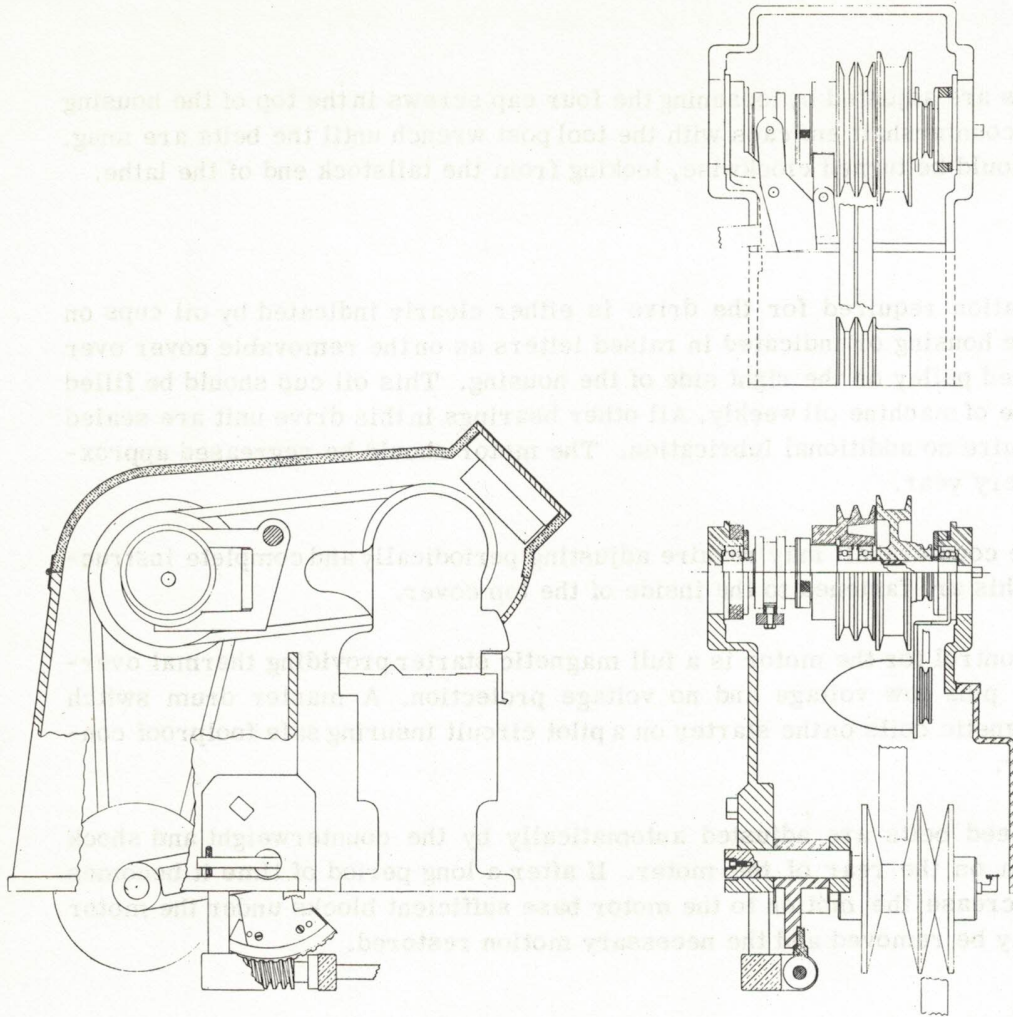
B - Outer Gear

T - Threads per inch

G - Thread from upper 4 rows of index as most convenient factor

When cutting metric threads do not use the threading dial as there is no relationship between the dial and metric threads. The lathe must be reversed, leaving the nut engaged with the lead screw.

VARIABLE SPEED DRIVE



Speed range 32 to 2000 R.P.M.

A 1200 R.P.M. motor drives a variable pitch double sheave. This sheave moves through an arc controlled by the handwheel on the front of the cabinet to give a speed range of 7 to 1 with open belts. The overall ratio of 63 to 1 is made possible by the use of 9 to 1 back gears for the low speed range. The back gears ensure adequate torque at these low speeds.

The countershaft, mounted directly behind the headstock spindle, is driven by a wide section V-belt from the variable pulley. This, in turn, is coupled to the pulley driving the pair of matched spindle belts by a multi-disc clutch. The lever, which actuates this clutch, comes out over the rear of the headstock. With the clutch in the off position, toward the operator, a brake may be applied by additional pressure toward the operator.

To adjust the brake or clutch, it is necessary to remove the four cap screws at the rear of the drive housing, remove the screw in the center of the housing top - this allows you to get at the cap screw that holds the clutch lever in place. After the clutch lever has been removed, the top housing may be lifted for clutch adjustment, brake adjustment, etc.

VARIABLE SPEED DRIVE (Continued)

Belt Adjustment

The spindle belts are adjusted by loosening the four cap screws in the top of the housing and turning the countershaft end caps with the tool post wrench until the belts are snug. The end caps should be turned clockwise, looking from the tailstock end of the lathe.

Lubrication

The only lubrication required for the drive is either clearly indicated by oil cups on the outside of the housing or indicated in raised letters as on the removable cover over the variable speed pulley on the right side of the housing. This oil cup should be filled with a good grade of machine oil weekly. All other bearings in this drive unit are sealed for life and require no additional lubrication. The motor should be regreased approximately once every year.

The clutch on the countershaft may require adjusting periodically and complete instructions for doing this are fastened to the inside of the top cover.

The electrical control for the motor is a full magnetic starter providing thermal overload protection plus low voltage and no voltage protection. A master drum switch operates the magnetic coils on the starter on a pilot circuit insuring safe foolproof control of the motor.

The variable speed belts are adjusted automatically by the counterweight and shock absorber system on the rear of the motor. If after a long period of time it becomes necessary to increase the motion to the motor base sufficient blocks under the motor base support may be removed and the necessary motion restored.

Speed range 32 to 2000 R.P.M.

A 1200 R.P.M. motor drives a variable pitch double sheave. This sheave moves through an arc controlled by the handwheel on the front of the cabinet to give a speed range of 1 to 1 with open belts. The overall ratio of 68 to 1 is made possible by the use of 9 to 1 pitch gears for the low speed range. The back gears ensure adequate torques at these low speeds.

The countershaft, mounted directly behind the headstock spindle, is driven by a wide section V-belt from the variable pulley. This, in turn, is coupled to the motor driving the pair of matched spindle belts by a multi-disc clutch. The lever, which actuates the clutch, comes out over the rear of the headstock. With the clutch in the off position, towards the operator, a brake may be applied by additional pressure toward the operator.

To adjust the brake or clutch, if necessary, to remove the four cap screws at the rear of the drive housing, remove the screw in the center of the housing top - this allows you to get at the cap screw that holds the clutch lever in place. After the clutch lever has been removed, the top housing may be lifted for clutch adjustment, brake adjustment, etc.

GENERAL INFORMATION

Never use compressed air for cleaning the lathe as it will lodge chips in between slides and other hard to reach places.

Clean the lathe every day or after every job is completed.

Never use oil of unknown characteristics on any part of this machine.

If the overload switch on the motor trips, be sure to find the cause of the overload before resetting it.

Never lay files or similar tools on the lathe bed.

The compound and cross slide gibs are adjusted by self binding screws. If these screws are tightened up and then backed off 1/4 of a turn they should be about right for general work.

The saddle gib is tapered. To tighten it, the adjusting screw facing the tailstock must first be loosened. Tighten the head end screw sufficiently to bring the gib to the desired fit and retighten the screw facing the tailstock.

When ordering repair parts or additional attachments give both the part number and the serial number of the lathe.

Example: 1 - Transmitter pin spring #8AN-67; Lathe #241. The serial number will be found on the end of the lathe bed. The lists and drawings on the following pages will enable you to find the part number.

The swivel slide has at least two index marks visible at all times. The side index reads zero when the compound slide is traveling parallel with the cross slide. Use this index when your angle is measured from a plane at right angles to the axis of the lathe, as is thread cutting. The front and rear index give one-half the included angle directly, without calculation.

INSTRUCTIONS FOR WADE THREAD-LOCK SPINDLE NOSE

This spindle nose is the same general form as the Cam-Lock Spindle Nose; that is, the short taper ensures radial concentricity and the broad flat surface behind the taper provides a true surface to clamp against.

The driving button takes all the turning torque, so the sole function of the thread segment on the clamping ring is to pull the plate or chuck against the above mentioned true surfaces.

To put a chuck on this spindle nose the procedure is:

Turn the clamp ring as far as it will go clockwise, or in the direction opposite the locking arrow.

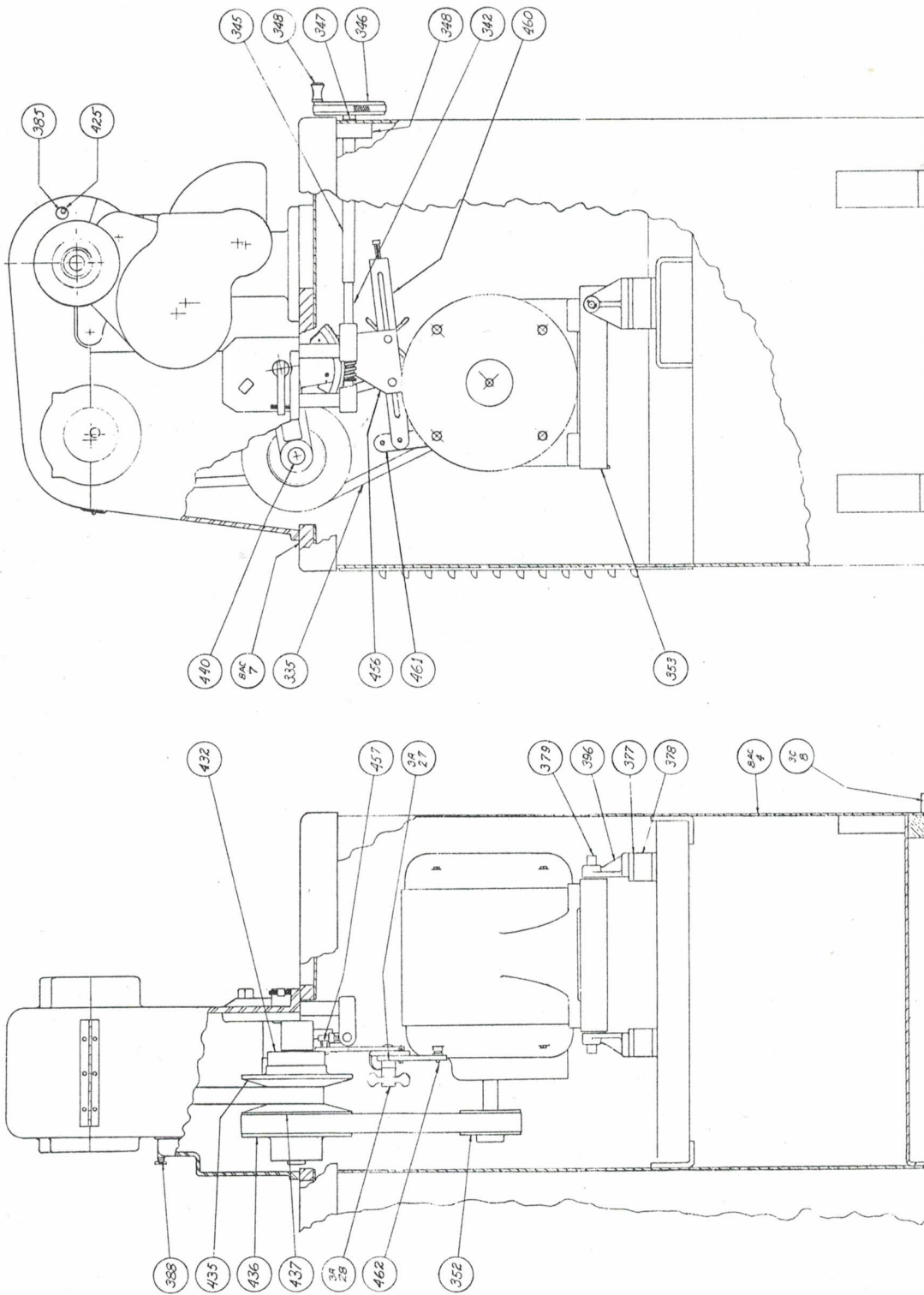
Line up the driving button with the hole in the spindle. This will automatically line up the thread segments with the openings in the spindle thread.

Turn the clamp ring by hand about an eighth of a turn. This will hold the chuck in place temporarily. The final tightening is accomplished with the pin wrench, supplied with the machine. In all, about 1/5 of a turn is necessary to tighten the chuck in place through differential thread with a clamping force approximately equal to 40 threads per inch.

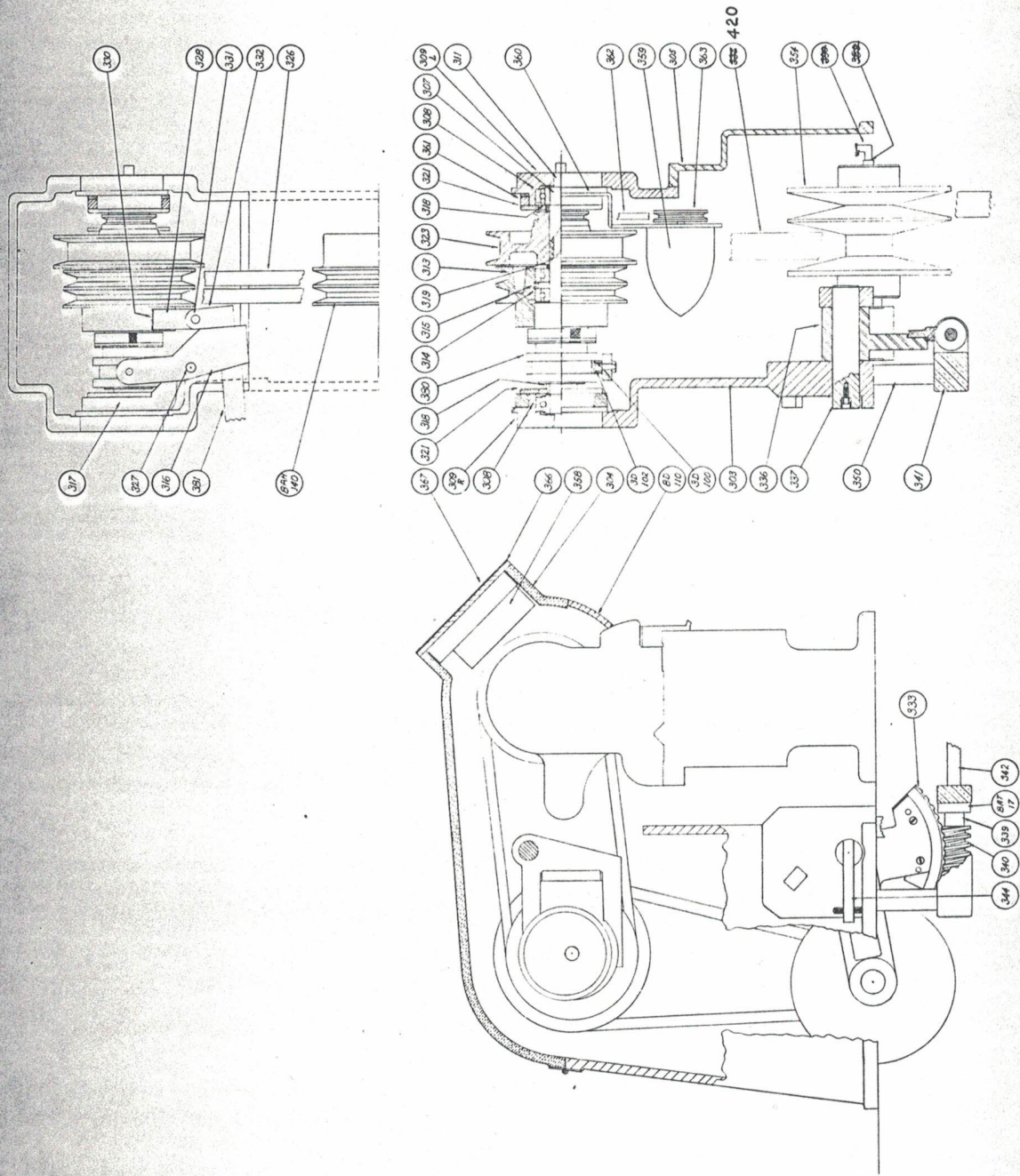
It goes without saying, both the spindle face and taper and the mating parts, must be absolutely clean to assure accurate work.

VARIABLE SPEED DRIVE FOR 8A

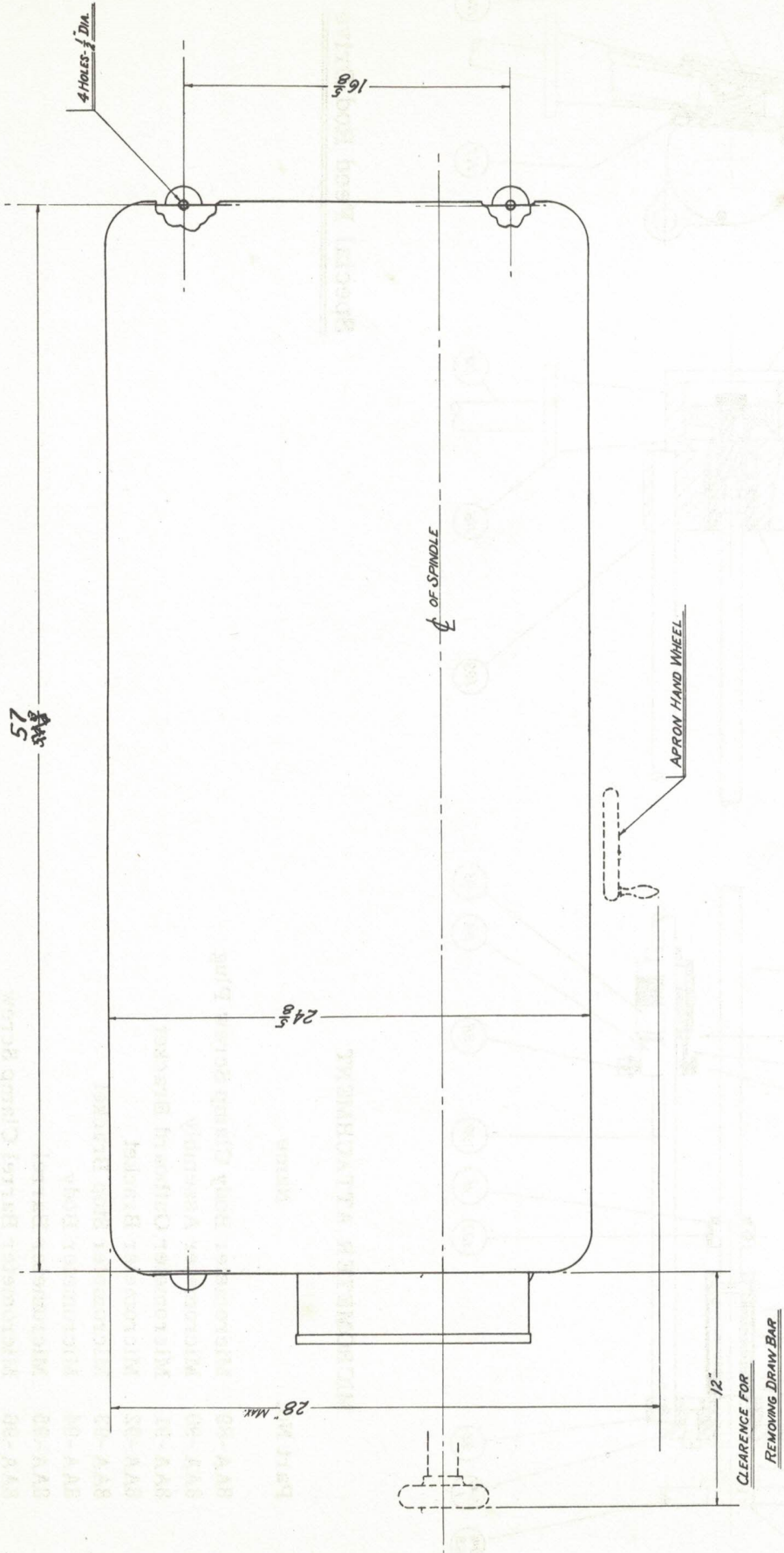
Part No.	Name	Part No.	Name
8D-300	V.S. Drive Assembly	8D-359	V.S. Drive Speed Indicator Pickup
8D-300	V.S. Drive Housing	8D-360	V.S. Drive Speed Indicator Pickup Brk.
8D-304	V.S. Drive Housing Top Cover	8D-361	V.S. Drive Speed Indicator Pickup Brk. Ret.Ring
8D-305	V.S. Drive Housing Side Cover	8D-362	V.S. Drive Speed Indicator Belt
8D-307	V.S. Countershaft	8D-363	V.S. Drive Speed Indicator Pulley
8D-308	V.S. Countershaft Bearings	8D-364	V.S. Drive Speed Indicator Pulley Screw
8D-309	V.S. Countershaft Brng. Cap	8D-365	V.S. Drive Speed Indicator Adjusting Screw
8D-310	V.S. Countershaft Brngs. Cap Pin	8D-366	V.S. Drive Speed Indicator Cover
8D-311	V.S. Countershaft Adjusting Rod	8D-367	V.S. Drive Speed Indicator Bezel
8D-313	V.S. Countershaft Clutch Pulley	8D-372	V.S. Drive Speed Indicator Dial 2000 RPM
8D-314	V.S. Countershaft Clutch Pulley Brngs.	8D-373	V.S. Drive Speed Indicator Dial 2800 RPM
8D-315	V.S. Countershaft Clutch Pulley Brngs. Ret.Ring	8D-375	Motor Base Support 1/2"
8D-316	V.S. Countershaft Clutch Yoke	8D-376	Motor Base Support 3/4"
8D-317	V.S. Countershaft Clutch Yoke Brng.	8D-377	Motor Base Support 1/4"
8D-318	V.S. Countershaft Clutch Spacer	8D-378	V.S. Drive Motor Base Support Block 1"
8D-319	V.S. Countershaft Clutch Pulley Spacer	8D-379	V.S. Drive Motor Base Hinge Pin
8D-321	V.S. Countershaft Clutch Yoke Brng. Plate	8D-380	V.S. Drive Clutch
8D-322	V.S. Countershaft Clutch Yoke Brng. Plate Screw	8D-381	V.S. Drive Clutch Handle
8D-323	V.S. Countershaft Pulley	8D-382	V.S. Drive Clutch Handle Extension
8D-324	V.S. Countershaft Pulley Key	8D-383	V.S. Drive Clutch Handle Extension Special
8D-325	V.S. Countershaft Pulley Key Screw	8D-384	V.S. Drive Clutch Handle Knob
8D-326	V.S. Countershaft Belts	8D-385	Stop Pin Bushing
8D-327	V.S. Countershaft Clutch Yoke Pivot	8D-386	Stop Pin
8D-328	V.S. Countershaft Brake Shoe	8D-387	V.S. Drive Cover Hinges
8D-329	V.S. Countershaft Brake	8D-388	V.S. Drive Side Cover Screw
8D-330	V.S. Countershaft Brake Shoe Lining	8D-389	V.S. Drive Variable Pitch Pulley Oil Cup Adapter
8D-331	V.S. Countershaft Brake Shoe Pivot	8D-390	V.S. Drive Variable Pitch Pulley Oil Cup
8D-332	V.S. Countershaft Brake Shoe Bracket	8D-391	V.S. Drive Motor Base Counterweight
8D-333	V.S. Pulley Gear Sector	8D-392	V.S. Drive Motor Base Counterweight Pulley
8D-334		8D-393	V.S. Drive Motor Base Counterweight Pulley Stud
8D-335	V.S. Pulley Belts	8D-394	V.S. Drive Motor Base Counterweight Cable
8D-336	V.S. Pulley Bracket	8D-395	V.S. Drive Motor Base Counterweight Arm
8D-337	V.S. Pulley Shaft	8D-396	V.S. Drive Motor Base Counterweight Bracket
8D-338	V.S. Pulley Shaft Screws	8D-397	V.S. Drive Motor Base Shock Absorber Cyl.
8D-339	V.S. Pulley Adj. Worm Spacer	8D-398	V.S. Drive Motor Base Shock Absorber Cyl. Cap
8D-340	V.S. Pulley Adj. Worm	8D-399	V.S. Drive Motor Base Shock Absorber Cyl.Pivot
8D-341	V.S. Pulley Adj. Worm Bracket	8D-400	V.S. Drive Motor Base Shock Absorber Cyl. Base Link
8D-342	V.S. Pulley Adj. Worm Shaft	8D-401	V.S. Drive Motor Base Shock Absorber Piston
8D-343		8D-402	V.S. Drive Motor Base Shock Absorber Piston Rod
8D-344	V.S. Pulley Adj. Stop Arm	8D-403	V.S. Drive Motor Base Shock Absorber Piston Rod Link
8D-345	V.S. Pulley Adj. Shaft Extension	8D-404	V.S. Drive Motor Pulley for 50 Cycle
8D-346	V.S. Pulley Adj. Hand Wheel	8D-408	Control Panel Shift Lever Shaft Arm
8D-347	V.S. Pulley Adj. Hand Wheel Brng.	8D-409	Control Panel
8D-348	V.S. Pulley Hand Wheel Brng. Cap	8D-410	Control Panel Shift Lever Shaft
8D-349	V.S. Pulley Adj. Hand Wheel Handle	8D-411	Control Panel Shift Lever Shaft Extension
8D-350	V.S. Pulley Adj. Worm Bracket Rods	8D-412	Control Panel Shift Lever Shaft Ext.Brng.Conn.
8D-351	V.S. Pulley Adj. Hand Wheel Stud	8D-413	Control Panel Shift Lever Connecting Rod
8D-352	V.S. Drive Motor Pulley	8D-414	Drum Switch Lever
8D-353	V.S. Drive Motor Adj. Base	8D-425	Locking Pin
8D-354	V.S. Drive Variable Pitch Pulley	8D-432	V.S. Pulley Left Bearing Housing
8D-358	V.S. Drive Speed Indicator	8D-435	V.S. Pulley Left End Plate
		8D-436	V.S. Pulley Right End Plate
		8D-437	V.S. Pulley Center Plate
		8D-440	V.S. Pulley Inner Shaft
		8D-456	Upper Belt Adj. Link Arm
		8D-457	Upper Belt Adj. Link Arm Stud
		8D-460	Lower Belt Adj. Link Arm
		8D-461	Lower Arm Extension
		8D-462	Lower Arm Stud



Drive Assembly

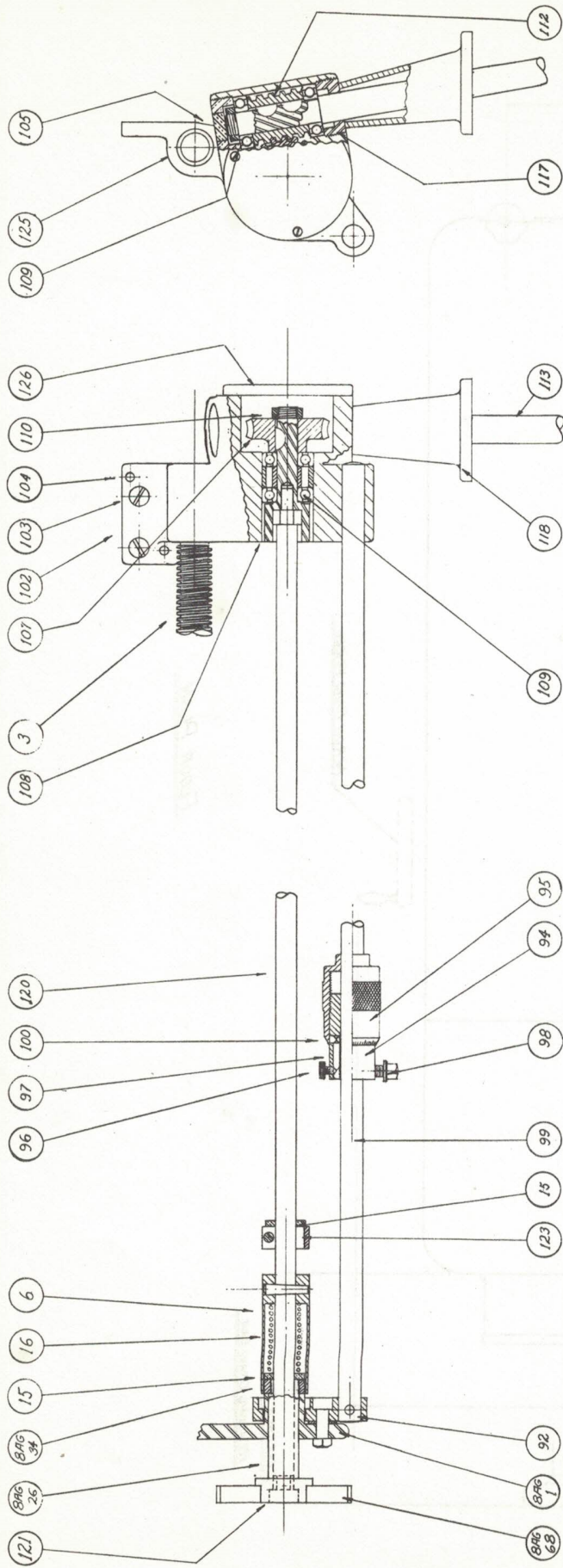


Drive Assembly



FLOOR PLAN

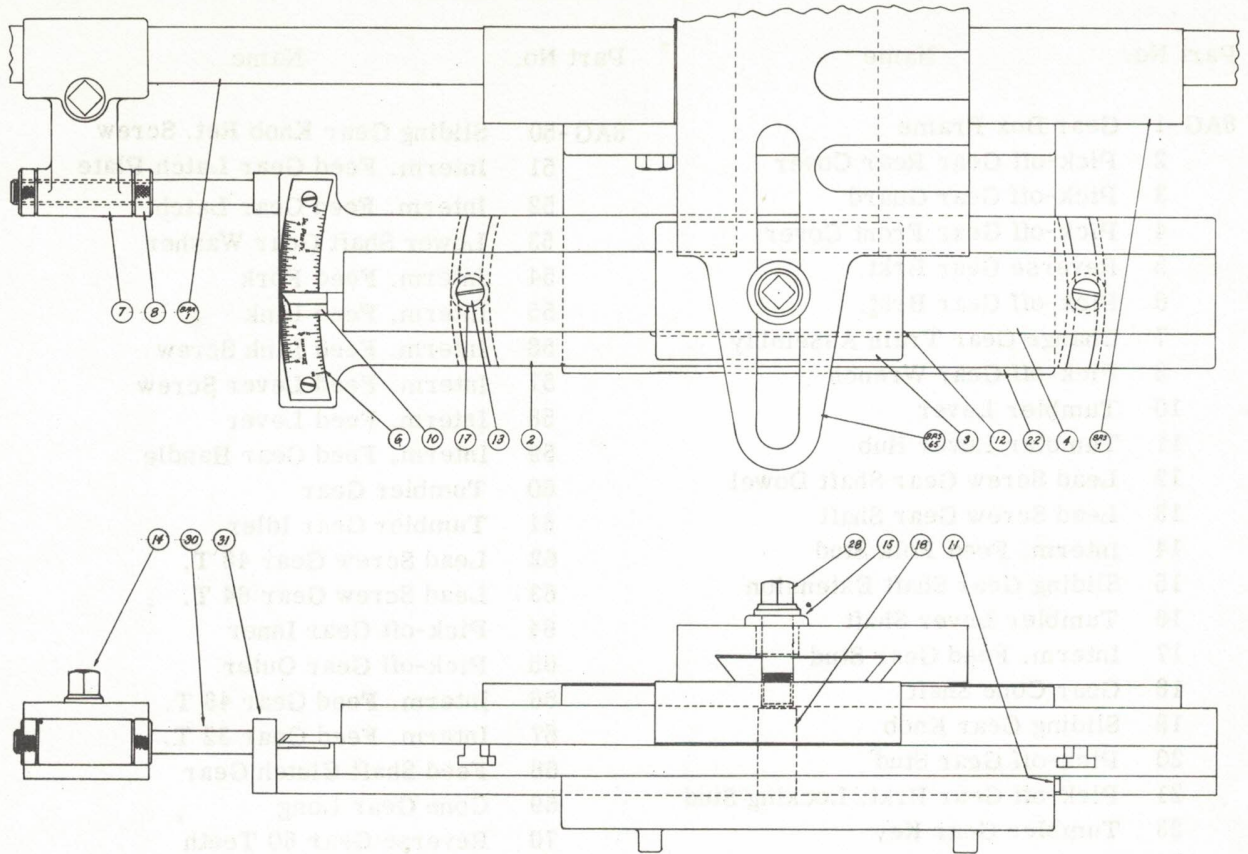
CLEARANCE FOR
REMOVING DRAW BAR



MICROMETER ATTACHMENT

Special Feed Rod Drive

Part No.	Name
8AA -89	Micrometer Body Clamp Screw Plug
8AA -90	Micrometer Assembly
8AA -91	Micrometer Outboard Bracket
8AA -92	Micrometer Bracket
8AA -93	Micrometer Stop Bracket
8AA -94	Micrometer Body
8AA -95	Micrometer Barrel
8AA -96	Micrometer Barrel Clamp Screw
8AA -97	Micrometer Barrel Clamp Rod
8AA -98	Micrometer Body Clamp Screw
8AA -99	Micrometer Rod
8AA -100	Micrometer Barrel Clamp

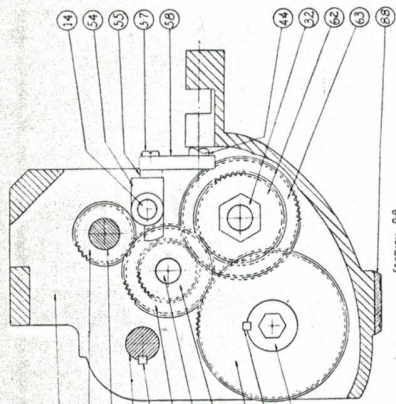


TAPER TURNING ATTACHMENT

Part No.	Name
8AB-2	Table
3	Top Slide
4	Adjustable Table
6	Table Scale
7	Anchor Bolt Bracket
8	Anchor Bolt Check Nuts
10	Pointer
11	Base Gib
12	Top Gib
13	Lock Screws
14	Anchor Bolt Bracket Clamp Screw
15	Connecting Link Clamp Bushing
17	Lock Screw Nuts
18	Center Post
19	Top Slide Gib Screw
20	Base Slide Gib Screw
22	Base
28	Connecting Link Clamp Screw
30	Anchor Bolt
31	Anchor Bolt Head

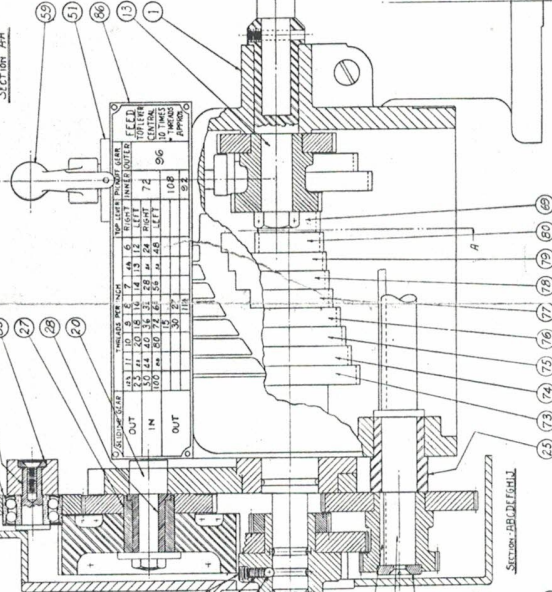
GEAR BOX AND CHANGE GEARS

Part No.	Name	Part No.	Name
8AG-1	Gear Box Frame	8AG-50	Sliding Gear Knob Ret. Screw
2	Pick-off Gear Rear Cover	51	Interm. Feed Gear Latch Plate
3	Pick-off Gear Guard	52	Interm. Feed Gear Latch
4	Pick-off Gear Front Cover	53	Lower Shaft Gear Washer
5	Reverse Gear Brkt.	54	Interm. Feed Fork
6	Pick-off Gear Brkt.	55	Interm. Feed Link
7	Change Gear Train Assembly	56	Interm. Feed Link Screw
8	Pick-off Gear Wrench	57	Interm. Feed Lever Screw
10	Tumbler Lever	58	Interm. Feed Lever
11	Tumbler Lever Hub	59	Interm. Feed Gear Handle
12	Lead Screw Gear Shaft Dowel	60	Tumbler Gear
13	Lead Screw Gear Shaft	61	Tumbler Gear Idler
14	Interm. Feed Folk Stud	62	Lead Screw Gear 48 T.
15	Sliding Gear Shaft Extension	63	Lead Screw Gear 64 T.
16	Tumbler Lever Shaft	64	Pick-off Gear Inner
17	Interm. Feed Gear Stud	65	Pick-off Gear Outer
18	Gear Cone Shaft	66	Interm. Feed Gear 48 T.
19	Sliding Gear Knob	67	Interm. Feed Gear 32 T.
20	Pick-off Gear Stud	68	Feed Shaft Clutch Gear
21	Pick-off Gear Brkt. Locking Stud	69	Cone Gear Long
23	Tumbler Gear Key	70	Reverse Gear 60 Teeth
24	Tumbler Gear Idler Stud	71	Sliding Gear 84 Teeth
25	Lower Shaft Bushing	72	Sliding Gear 42 Teeth
26	Feed Shaft Extension	73	Cone Gear 75 Teeth
27	Pick-off Gear Bushing	74	Cone Gear 66 Teeth
28	Pick-off Gear Bearing	75	Cone Gear 60 Teeth
29	Tumbler Gear Idler Bushing	76	Cone Gear 54 Teeth
30	Feed Shaft Extension Key	77	Cone Gear 48 Teeth
31	Gear Cone Shaft Key	78	Cone Gear 42 Teeth
32	Lead Screw Gear Shaft Nut	79	Cone Gear 39 Teeth
33	Interm. Feed Gear Pin	80	Cone Gear 36 Teeth
34	Feed Shaft Extension Nut	81	Lower Shaft Gear 42 Teeth
35	Tumbler Gear Index Handle	82	Lower Shaft Gear Key
36	Pick-off Gear Washer	83	Interm. Feed Gear Stud Washer
37	Tumbler Gear Index Spring Bush.	84	Reverse Gear Bearing Stud
38	Tumbler Gear Shifting Pin Bush.	85	Reverse Gear Bearing Stud Washer
39	Reverse Gear Washer	86	Thread Chart Plate
40	Reverse Gear Nut	87	Pick-off Gear Cover Screws
41	Reverse Gear Index Pin	88	Name Plate
42	Reverse Gear Index Handle	89	Reverse Gear Bearing
43	Sliding Gear Washer	91	Twist Handle Lever
44	Interm. Feed Gear Lever Shaft	92	Twist Handle Bushing
45	Tumbler Gear Index Pin	93	Twist Handle Bushing Plug
47	Tumbler Gear Index Spring	94	Reverse Gear Plunger
48	Reverse Gear Index Spring	95	Reverse Gear Plunger Spring
49	Interm. Feed Gear Handle Spring	96	Reverse Gear Plunger Spring Cap
50	Sliding Gear Knob Ret. Screw		



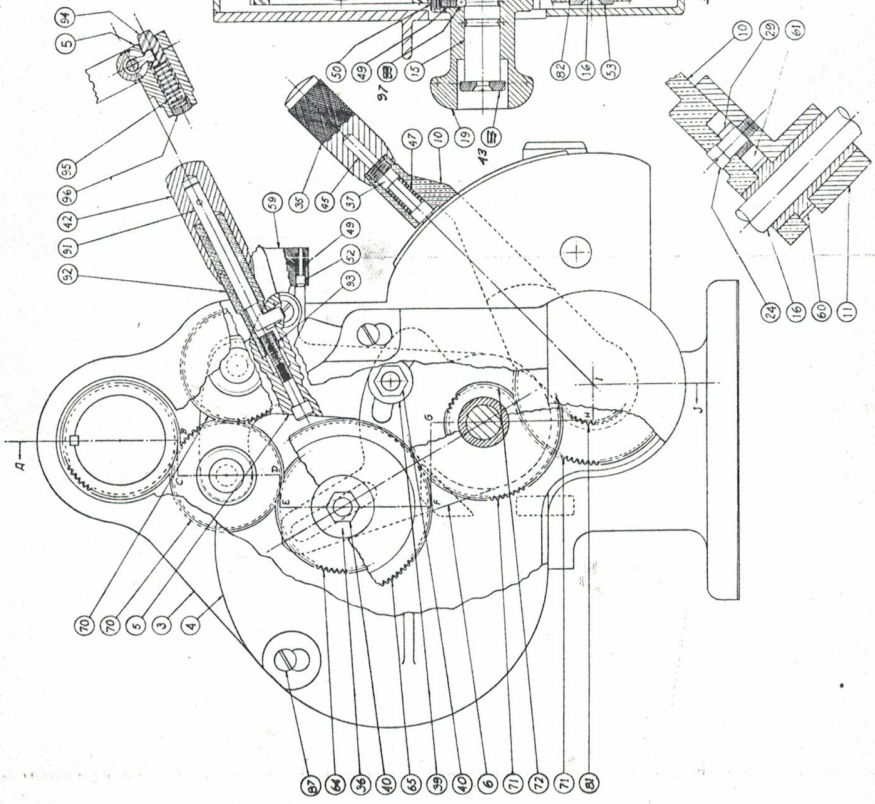
SECTION AA

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SECTION BB

TOP GEAR		MESH		BOTTOM GEAR	
IN	OUT	IN	OUT	IN	OUT
1	2	3	4	5	6
7	8	9	10	11	12
13	14	15	16	17	18
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37	38	39	40	41	42



SECTION CC

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Open
Close

INSTRUCTIONS FOR RADIUS TURNING ATTACHMENT

This attachment is for producing spherical surfaces, either concave or convex (ball shapes), and for machining half-round grooves or half-round collars on shafts or bar work.

For these different operations two tool holders are furnished which fit the attachment interchangeably. The tool holder with the upright cutter (8B-27) is required to turn grooves or collars on the bar because its shape avoids interference with the bar. Only the point comes in contact with the work. This is an exclusive feature of the Wade Radius Attachment. This tool holder may also be used on ball turning and a variety of other shapes.

The tool holder with the horizontal cutter (8B-31) is primarily for turning concave spherical surfaces on the end of a bar but may also be used for ball turning or other shapes.

To operate:

(1) Remove Base Slide (8AS-65) and replace it with the Radius Turning Attachment. The Base Slide is removed by turning the ball crank clockwise until the nut runs off the screw. This allows the base to slide freely off the dovetail saddle way. The same nut (8AS-33) is used on the radius turner as on the Base Slide, this nut should be tightened before setting the attachment to zero.

The most important part of setting up this attachment is to locate the exact center line of the lathe in relation to the radius attachment. This setting block (8B-49), furnished, is used with the key in the "A" position, to establish the center line. The tailstock spindle is exactly 1" diameter and the face of the setting block is .500 from the center line, so if the block is brought up until it just touches the tailstock spindle, the center line of the attachment will be on the center line of the lathe. Be sure the backlash is in the proper relation to the radius being turned. When the center has been found, set the base slide dial to zero.

Set the tool to the desired radius. This may be accomplished by the use of the setting block (supplied with the machine) and gage blocks, scale, or by taking a chip on a piece of work. The latter method is, of course, the most accurate. When setting for the desired radius do not touch the base slide dial but feed the tool to the correct diameter with the small dial on the tool block. The radius established, it merely remains to take the necessary chips to reduce the work to a finished form. The actual feed is accomplished by backing the base slide off and taking a series of chips, until the return is made to the original setting of zero. The piece may be checked for roundness with a micrometer.

The above applies to a ball. A concave on the end of a bar is made by feeding the saddle along the bed to a predetermined stop. The setting block key, when placed in the "B" position, brings the face of the block two inches from the center line of the attachment. This position is useful when turning a concave on the end of a bar, as the tool must be on the opposite side of the center line and on the opposite side of the lathe, for a starting position from the position for turning a ball. There is an almost infinite variety of shapes that can be generated on a bar by changing the center line of the attachment in relation to the center line of the lathe, and in all cases, the important thing to bear in mind is this center line relationship. With the desired radius set on the tool block, the clamping gib may be tightened to insure rigidity.

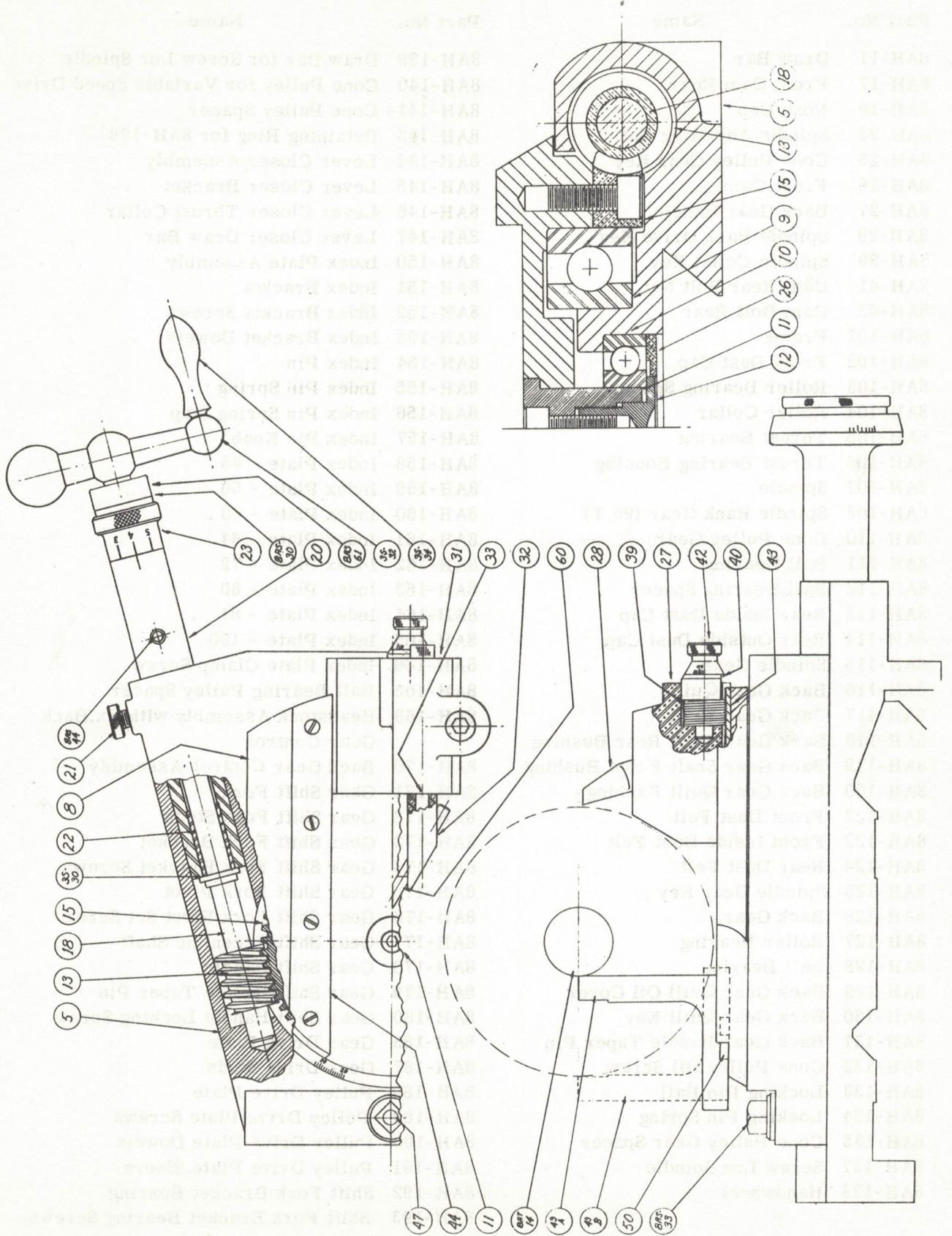
The tool-holding swivel rotates on ball bearings under a preload set at the factory. The bearings are lubricated and sealed and should not be touched unless absolutely necessary. The swivel is actuated by a worm driving a worm gear, or the worm assembly may be pulled out of engagement, after loosening the knurled head screw on the right hand side and the swivel turned by hand. This feature is valuable for turning wooden laps, non-ferrous metal - in other words, light work.

The tool blocks are provided with a graduated dial adjustment which, in the zero position, allows rapid positioning of the tool to approximately the correct position. The final adjustment may be made with the dial on the tool block.

8B RADIUS TURNING ATTACHMENT

PART NO.	NAME
8B-1	Radius Turning Attachment Assembly
8B-2	Radius Turning Attachment Assembly Exploded
8B-5	Base Slide
8B-6	Base Slide Gib
8B-7	Base Slide Gib Screws
8B-8	Swivel
8B-9	Swivel Bearing Upper
8B-10	Swivel Bearing Lower
8B-11	Swivel Bearing Stud
8B-12	Swivel Bearing Stud Lock
8B-13	Worm
8B-14	Worm Taper Pin
8B-15	Worm Wheel
8B-16	Worm Wheel Screws
8B-17	Worm Wheel Dowels
8B-18	Worm Shaft
8B-19	Worm Shaft Thrust Ring
8B-20	Worm Shaft Bushing
8B-21	Worm Shaft Bushing Retaining Screw
8B-22	Worm Shaft Bearing
8B-23	Worm Shaft Dial
8B-24	Worm Shaft Dial Key
8B-26	Swivel Bearing Cap, Lower
8B-27	Vertical Tool Holder
8B-28	Vertical Tool Bit
8B-29	Vertical Tool Bit Clamp Screw
8B-31	Horizontal Tool Holder
8B-32	Horizontal Tool Holder Shank
8B-33	Horizontal Tool Holder Clamp
8B-34	Horizontal Tool Bit
8B-35	Horizontal Tool Bit Clamp
8B-36	Horizontal Tool Bit Clamp Screw
8B-39	Tool Holder Feed Screw
8B-40	Tool Holder Feed Screw Dial Bushing
8B-41	Tool Holder Feed Screw Rack Screw
8B-42	Tool Holder Feed Screw Dial
8B-43	Tool Holder Feed Screw Rack
8B-44	Tool Holder Gib
8B-45	Tool Holder Gib Screw
8B-46	Tool Holder Gib Clamp Screws
8B-47	Base Nut Clamp
8B-49	Set Block for 8A
8B-50	Set Block Stop

IN BALL BEARING HEADSTOCK

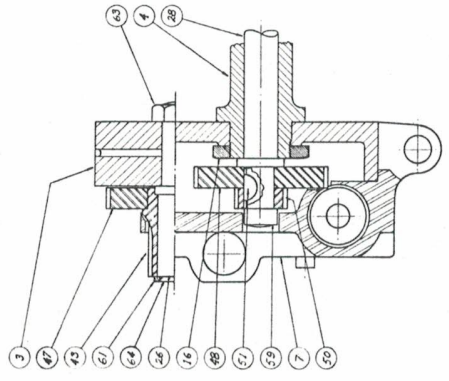
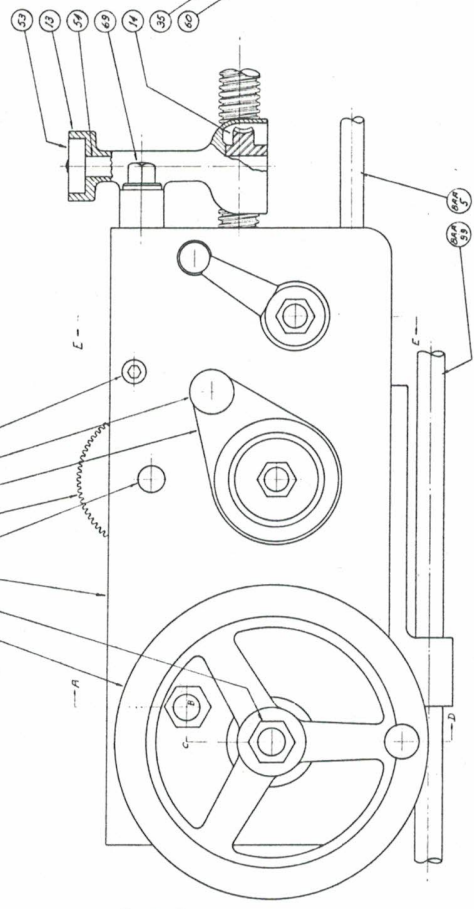
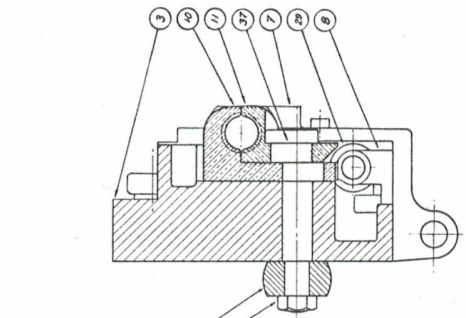
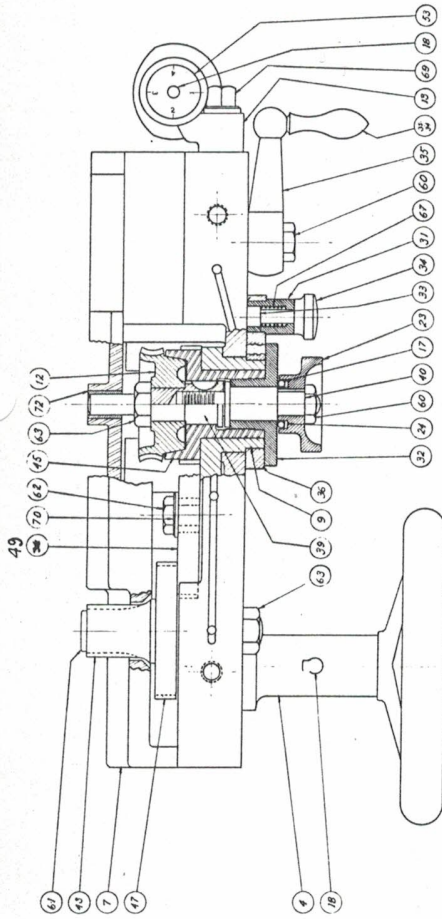


8A BALL BEARING HEADSTOCK

Part No.	Name	Part No.	Name
8AH-11	Draw Bar	8AH-139	Draw Bar for Screw Loc Spindle
8AH-17	Front Cam Rear	8AH-140	Cone Pulley for Variable Speed Drive
8AH-19	Nose Cap	8AH-141	Cone Pulley Spacer
8AH-23	Spindle Adjusting Nut	8AH-143	Retaining Ring for 8AH-128
8AH-25	Cone Pulley Gear Key	8AH-144	Lever Closer Assembly
8AH-26	Front Cam	8AH-145	Lever Closer Bracket
8AH-27	Back Gear Handle	8AH-146	Lever Closer Thrust Collar
8AH-29	Spindle Back Drive Key	8AH-147	Lever Closer Draw Bar
3AH-39	Spindle Collet Key	8AH-150	Index Plate Assembly
8AH-41	Cam Rear Bolt Nut	8AH-151	Index Bracket
8AH-43	Cam Bolt Rear	8AH-152	Index Bracket Screws
8AH-101	Frame	8AH-153	Index Bracket Dowels
8AH-102	Front Dust Cap	8AH-154	Index Pin
8AH-103	Roller Bearing Spacer	8AH-155	Index Pin Spring
8AH-104	Roller Collar	8AH-156	Index Pin Spring Stop
8AH-105	Thrust Bearing	8AH-157	Index Pin Knob
8AH-106	Thrust Bearing Housing	8AH-158	Index Plate - 45
8AH-107	Spindle	8AH-159	Index Plate - 56
8AH-108	Spindle Back Gear (96 T)	8AH-160	Index Plate - 60
8AH-110	Cone Pulley Gear	8AH-161	Index Plate - 64
8AH-111	Ball Bearing	8AH-162	Index Plate - 72
8AH-112	Ball Bearing Spacer	8AH-163	Index Plate - 80
8AH-113	Rear Inside Dust Cap	8AH-164	Index Plate - 84
8AH-114	Rear Outside Dust Cap	8AH-165	Index Plate - 100
8AH-115	Spindle Gear	8AH-166	Index Plate Clamp Screw
8AH-116	Back Gear Quill	8AH-168	Ball Bearing Pulley Spacer
8AH-117	Back Gear Shaft	8AH-169	Headstock Assembly with Ex.Back Gear Control
8AH-118	Back Gear Shaft Rear Bushing	8AH-170	Back Gear Control Assembly
8AH-119	Back Gear Shaft Front Bushing	8AH-171	Gear Shift Fork
8AH-120	Back Gear Quill Bushing	8AH-172	Gear Shift Fork Studs
8AH-122	Front Dust Felt	8AH-173	Gear Shift Fork Bracket
8AH-123	Front Inside Dust Felt	8AH-174	Gear Shift Fork Bracket Screws
8AH-124	Rear Dust Felt	8AH-175	Gear Shift Fork Pivot
8AH-125	Spindle Gear Key	8AH-176	Gear Shift Fork Pivot Set Screw
8AH-126	Back Gear	8AH-177	Gear Shift Eccentric Shaft
8AH-127	Roller Bearing	8AH-178	Gear Shift Handle
8AH-128	Ball Bearing	8AH-179	Gear Shift Handle Taper Pin
8AH-129	Back Gear Quill Oil Cover	8AH-180	Gear Shift Handle Locking Screw
8AH-130	Back Gear Quill Key	8AH-183	Gear Drive Plate
8AH-131	Back Gear Handle Taper Pin	8AH-187	Gear Drive Studs
8AH-132	Cone Pulley Oil Screw	8AH-188	Pulley Drive Plate
8AH-133	Locking Pin Ball	8AH-189	Pulley Drive Plate Screws
8AH-134	Locking Pin Spring	8AH-190	Pulley Drive Plate Dowels
8AH-135	Cone Pulley Gear Spacer	8AH-191	Pulley Drive Plate Sleeve
8AH-137	Screw Loc Spindle	8AH-192	Shift Fork Bracket Bearing
8AH-138	Handwheel	8AH-193	Shift Fork Bracket Bearing Screws

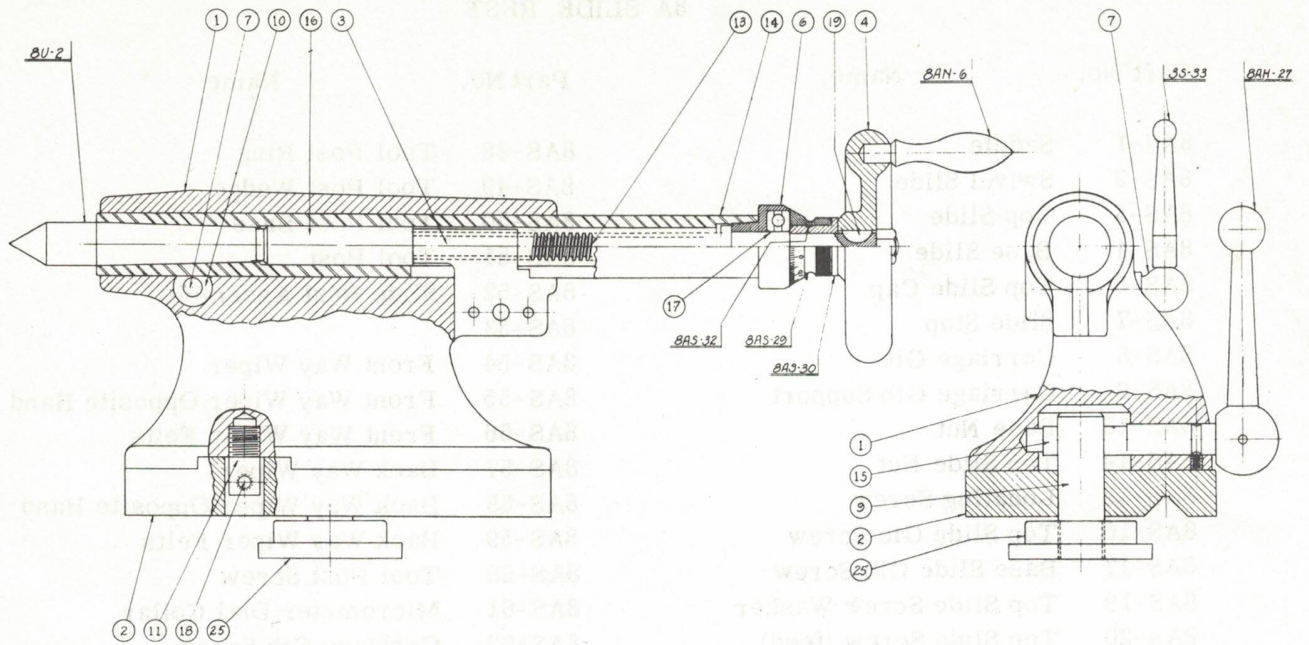
APRON

PART NO.	NAME	PART NO.	NAME
8AN-1		8AN-36	Sector
2		37	Lead Cam
3	Apron	38	
4	Apron Hub	39	Clutch Shaft
5	Hand Wheel	40	Shaft Extension
6	Hand Wheel Handle	41	Apron Tumbler Gear Stud
7	Rear Wall	42	Interm. Gear, Small
8	Interlocking Bolt	43	Feed Gear, Small
9	Apron Tumbler	45	Clutch Gear
10	Lead Nut, Upper	46	Interm. Gear, Large
11	Lead Nut, Lower	47	Feed Gear, Large
12	Worm Wheel and Clutch	48	Hand Wheel Gear
13	Threading Dial Bracket	49	Apron Tumbler Gear
14	Threading Dial Worm Gear	50	Hand Wheel Gear, Small
16	Apron Hub Nut	51	Hand Wheel Gear, Key
17	Thrust Balls	52	Feed Stop Pin
18	Threading Dial Oil Cover	54	Threading Dial and Shaft
19	Apron Screws	59	Hand Wheel Stud Nut
23	Friction Clutch Knob	60	Lead Cam Nut
24	Friction Clutch Thrust Washer	61	Feed Gear Washer
26	Feed Gear Stud	62	Clutch Nut
27	Worm Thrust Washer	63	Apron Nut
28	Hand Wheel Stud	64	Feed Gear Washer Screw
29	Feed Shaft Worm	66	Tumbler Pin
30	Feed Shaft Worm Key	67	Transmittor Pin Spring
31	Transmittor Bushing	68	Threading Dial Brkt. Stop Pin
32	Clutch Screw	69	Threading Dial Brkt. Bolt
33	Transmittor Index Pin	70	Apron Tumbler Gear Washer
34	Transmittor Knob	71	Inter Gear Stud
35	Lead Nut Lever	72	Clutch Shaft Brng.



SECTION-EE
Apron Assembly

SECTION-ABCD

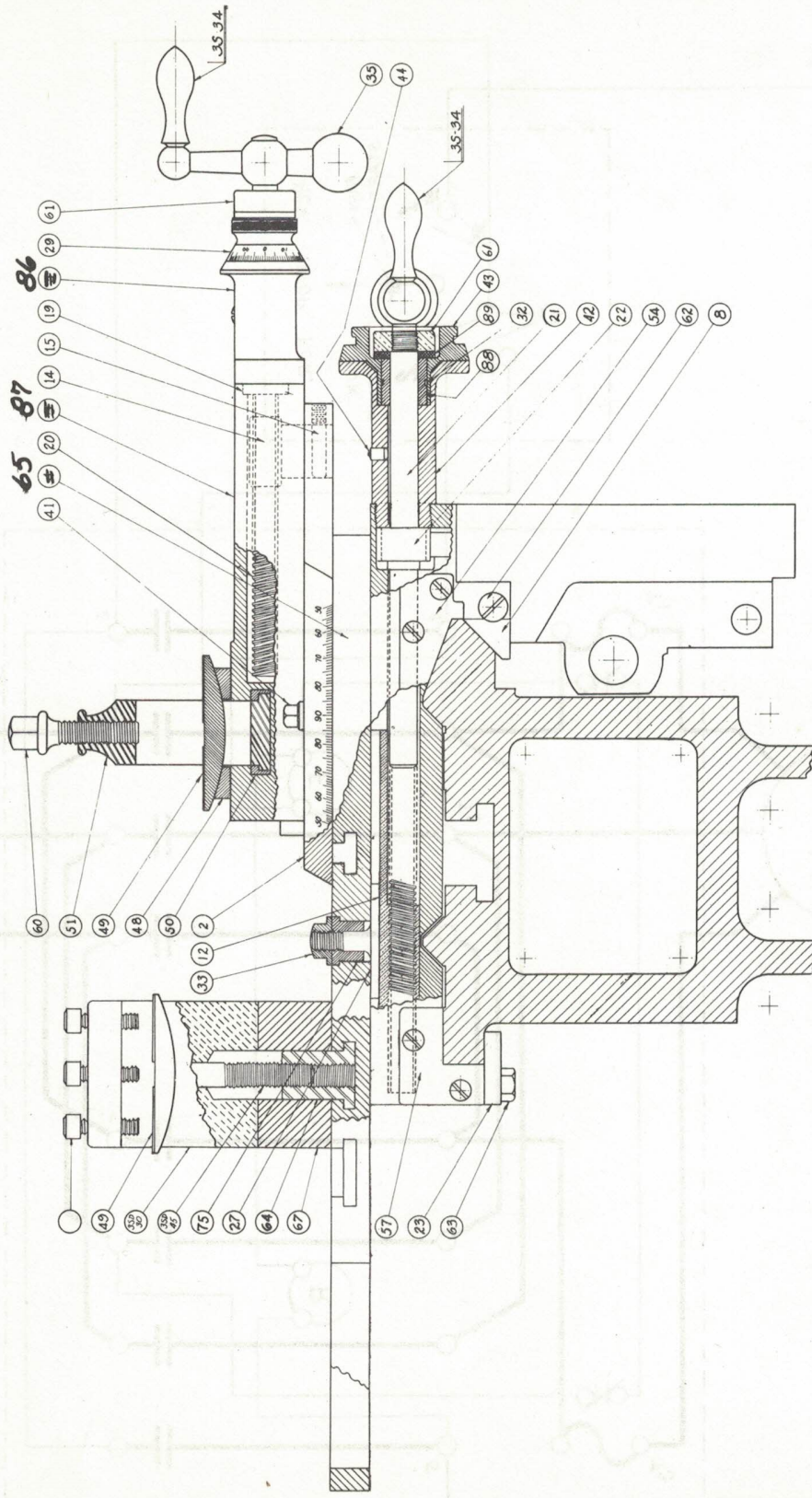


8A TAILSTOCK

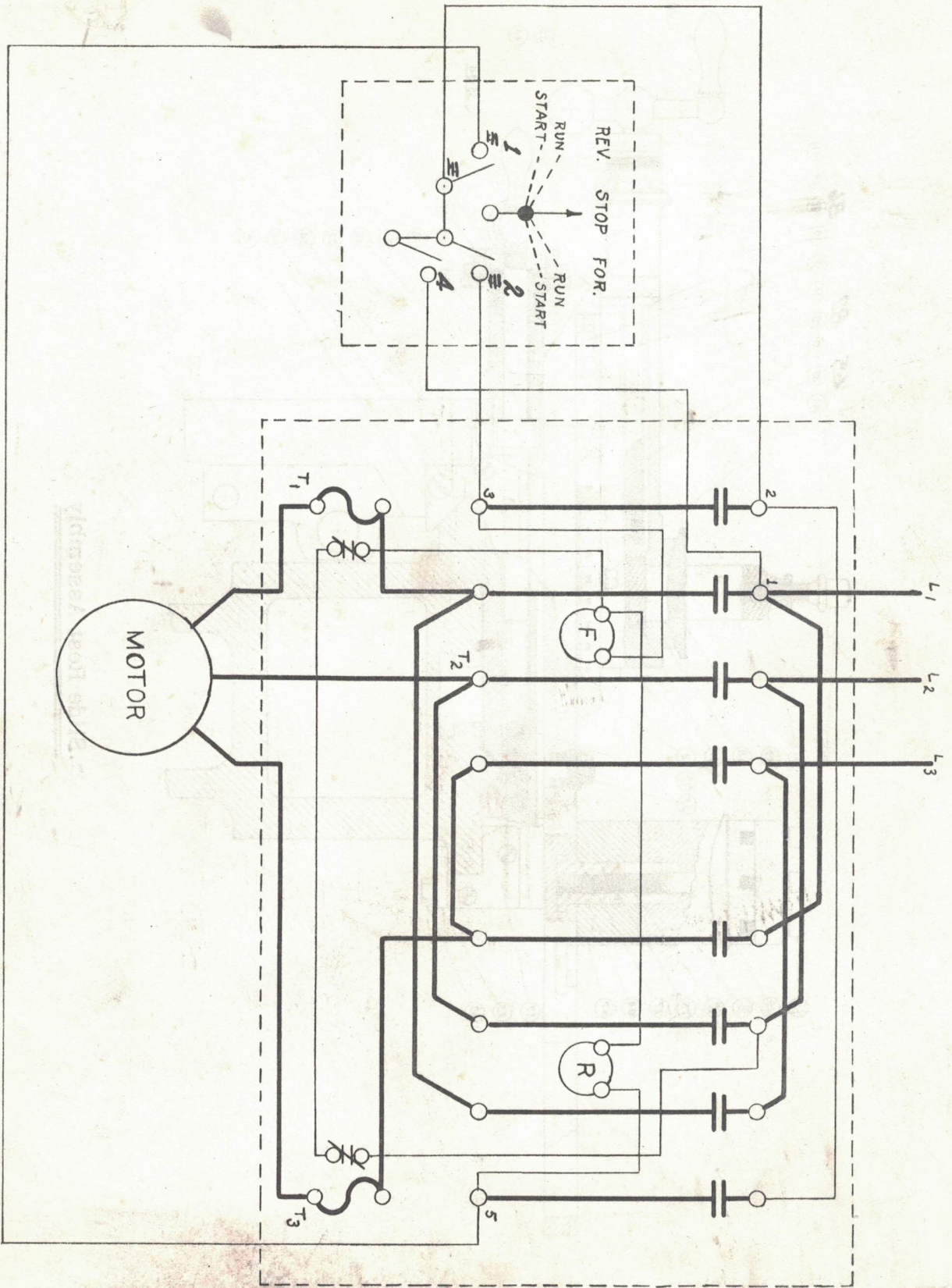
Part No.	Name
8AT-1	Tailstock Frame
8AT-2	Tailstock Base
8AT-3	Tailstock Feed Nut
8AT-4	Tailstock Hand Wheel
8AT-5	Tailstock Assembly
8AT-6	Tailstock Feed Screw Bearing
8AT-7	Tailstock Spindle Bind Screw
8AT-9	Tailstock Cam Bolt
8AT-10	Tailstock Spindle Bind Plug
8AT-11	Tailstock Set Over Nut
8AT-12	Tailstock Spindle Bind Plug
8AT-13	Tailstock Feed Screw
8AT-14	Tailstock Spindle
8AT-15	Tailstock Cam
8AT-16	Tailstock Center Knockout
8AT-17	Tailstock Thrust Bearing
8AT-18	Tailstock Set Over Screw
8AT-19	Tailstock Feed Screw Key
8AT-20	Tailstock Way Wiper
8AT-21	Tailstock Way Wiper Felt
8AT-22	Tailstock Way Wiper Screws
8AT-23	Tailstock Metric Feed Screw
8AT-24	Tailstock Feed Nut Taper Pins
8AT-25	Cam Bolt Head for Wide Slot Bed

8A SLIDE REST

Part No.	Name	Part No.	Name
8AS-1	Saddle	8AS-48	Tool Post Ring
8AS-2	Swivel Slide	8AS-49	Tool Post Wedge
8AS-3	Top Slide	8AS-50	Tool Post Base
8AS-4	Base Slide	8AS-51	Tool Post
8AS-5	Top Slide Cap	8AS-52	Slide Rest Assembly
8AS-7	Slide Stop	8AS-53	
8AS-8	Carriage Gib	8AS-54	Front Way Wiper
8AS-9	Carriage Gib Support	8AS-55	Front Way Wiper Opposite Hand
8AS-12	Base Nut	8AS-56	Front Way Wiper Felts
8AS-14	Top Slide Nut	8AS-57	Back Way Wiper
8AS-15	Locating Screw	8AS-58	Back Way Wiper Opposite Hand
8AS-16	Top Slide Gib Screw	8AS-59	Back Way Wiper Felts
8AS-17	Base Slide Gib Screw	8AS-60	Tool Post Screw
8AS-19	Top Slide Screw Washer	8AS-61	Micrometer Dial Collar
8AS-20	Top Slide Screw (feed)	8AS-62	Carriage Gib Screw
8AS-21	Bottom Slide Screw (feed)	8AS-63	Back Gib Bind Screw
8AS-22	Bottom Slide Screw Gear	8AS-64	Clamp Bolt Head
8AS-23	Back Gib	8AS-65	Base Slide with Rear Tool Station
8AS-24	Top Slide Gib	8AS-66	Base Slide Gib
8AS-25	Bottom Slide Gib	8AS-67	Base Slide Tool Block Adapter
8AS-26	Lower Screw Cover	8AS-68	Top Slide Screw Metric
8AS-27	Base Nut Clamp	8AS-69	Top Slide Nut Metric
8AS-28	Slide Stop Bind	8AS-70	Base Slide Screw Metric
8AS-29	Micrometer Dial	8AS-71	Base Slide Nut Metric
8AS-30	Micrometer Dial Bushing for Top Slide	8AS-72	
8AS-31	Micrometer Dial Bushing Key	8AS-73	Tool Post Wrench
8AS-32	Micrometer Dial Spring	8AS-74	Base Nut Clamp Screw
8AS-33	Base Nut Clamp Nut	8AS-75	Base Nut Clamp Screw Bushing
8AS-35	Feed Screw Ball Crank	8AS-77	Slide Rest Angle Iron
8AS-40	Swivel Slide Bind Nut	8AS-80	Threading Stop Rod
8AS-41	Swivel Slide Bind Bolt	8AS-81	Threading Stop Lock Screw
8AS-42	Base Slide Cap	8AS-82	Threading Stop Check Nut
8AS-43	Base Slide Dial	8AS-83	Threading Stop Latch
8AS-44	Base Slide Cap Oil Cup	8AS-84	Threading Stop Latch Screw
8AS-45	Swivel Plug	8AS-87	Top Slide - Flat Top
8AS-46	Cross Feed Stop Nut	8AS-88	Dial Bushing For Base Slide
8AS-47	Cross Feed Stop Screw	8AS-89	Dial Bushing Collar



Slide Rest Assembly



Wiring Diagram 220-440-3 HP-60 Cy.