

OPERATOR'S HANDBOOK

Index	Page No.
Index -----	1
Lifting & Installation Instructions -----	2,3
Floor Plan -----	4
Electrical Diagram -----	5
Lubrication -----	7,8,9,10
Lathe Safety -----	11,12,13
Operating Instructions -----	14,15,16,17,18 19,20,21,22,
Maintenance Instructions -----	23,24,25,26, 27,28
Parts Ordering Procedure -----	29
Parts Section:	
- General Assembly -----	31
- End Gear Train -----	32
- Controls -----	33
- Headstock -----	34,35,36,37
- Apron -----	38,39,40
- Feedbox -----	41
- Saddle & Cross Slide -----	42
- Compound -----	43
- Tailstock -----	44
- Telescopic Taper Attachment -----	45
- Thread Chasing Dial -----	45A
- Micrometer Carriage Stop -----	46
- Depth Threading Stop -----	47
- Faceplate - 26" dia. -----	48
- Steady Rest -----	49
- Follow Rest -----	50

MODEL 2630 LATHE

DI 8" CAMLOCK SPINDLE NOSE

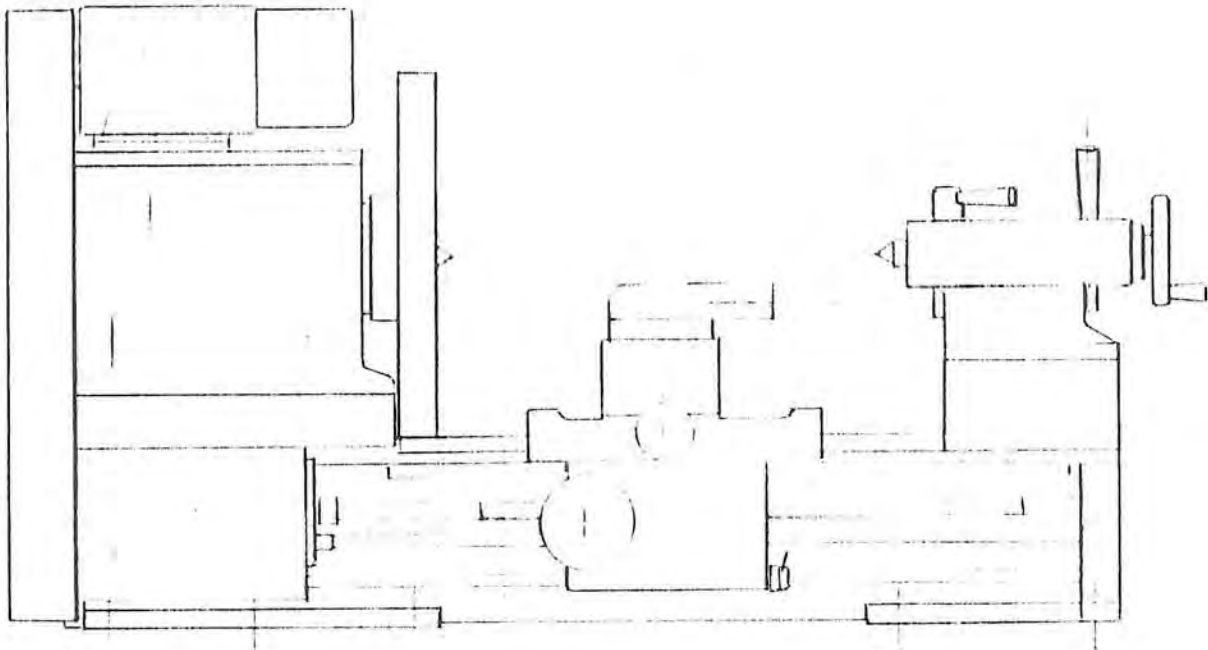
LIFTING AND INSTALLATION INSTRUCTIONS

1. Lifting the Machine

To lift the machine use any available equipment having minimum 4,500 lbs. lifting capacity.

Protect painted surfaces with thick pads and wood blocks.

Do not remove skids from the machine until it is brought to its final position.



1. LIFTING AND INSTALLATION INSTRUCTIONS, contd.

1.2 Inspection

Check your delivery slip against the accessories that were ordered with the machine. If there is a shortage or error, report it to Standard-Modern Tool Company Limited immediately, giving the serial number of the machine which is stamped in the recessed face on top of the bed at the tailstock end.

1.3 Cleaning

All unpainted parts of the machine have been coated with an anti-rust compound. This should be thoroughly removed after the machine is installed and before moving the carriage, compound rest or tailstock.

To remove the anti-rust compound use a wiper dipped in Varsol or Kerosene.

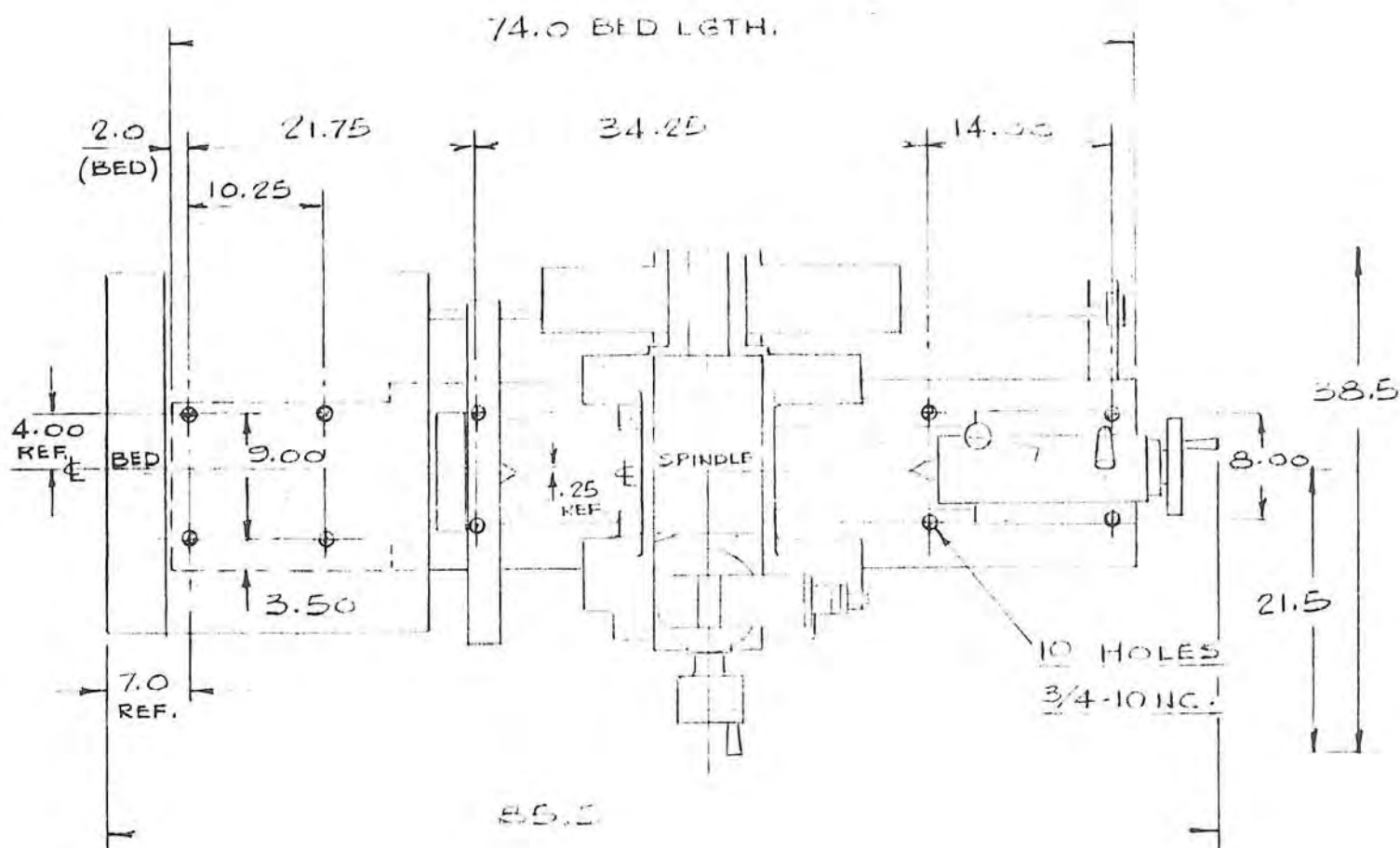
All unpainted surfaces should be coated immediately with a film of light machine oil to prevent rust.

1.4 Installation

For proper operation the lathe should be set on a substantial base capable of supporting the weight safely, and secured in position with ten 3/4-10 hex head cap screws.

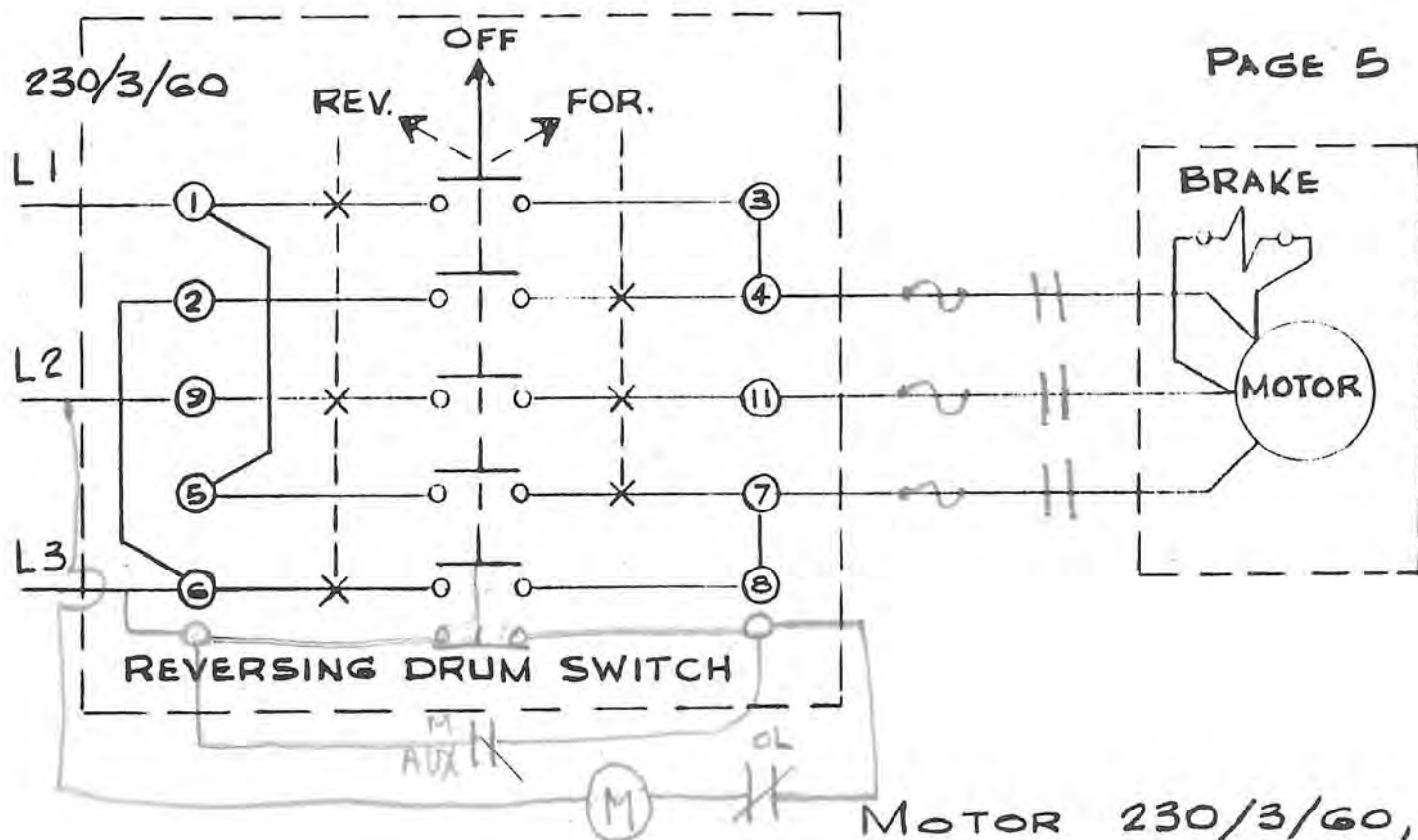
For the size of the lathe and the location of the screw holes, see Page 4.

After the machine is in position, it must be levelled in order to produce accurate work. Use a precision level placed lengthwise and crosswise on the lathe bed. Recheck the level of the machine at regular intervals.



FLOOR PLAN

2630 LATHE



REVERSING DRUM SWITCH
SIZE 1

'ALLEN-BRADLEY' 350-BAY-104
WITH R INTERLOCK
LESS OPERATING HANDLE

MOTOR 230/3/60,
5 HP, 1800 RPM, D.P.,
FRAME 184 T., FOOT MTD,
FUNGUS PROOFED
C/W FLANGE MTD. BRAKE
15 LB./FT. 230/60
'STEARN'S' 105505201

NOTE

MOTOR AND BRAKE
WIRED AS A UNIT.

576 V

ELECTRICAL DIAGRAM

26 x 30 BENCH LATHE

A-96722

1/81

2. LUBRICATION

OIL: SAE 20W30 Mineral Oil (SUNOCO - "SUNFLEET" HP 20W30).
Viscosity 500 at 100 deg. F. - MIL-L-46152 & 2104B.

CAUTION: DO NOT USE DETERGENT TYPE AUTOMOTIVE OR MULTIPURPOSE OILS.

Grease: Lithium Base with or without E.P. additives.
(SUNOCO "SUNAPLEX-1EP") MIL-G-18709A & 24139.

EVERY SIX MONTHSCHANGE OIL

Headstock	-	10.5 liters	or	11 U.S. quarts
Feedbox	-	2.4	"	" 2½ "
Apron	-	1	"	" 1 "

EVERY MONTHLIGHTLY OIL

Leadscrew Reverse Linkage Pivot.

Grease:

Apron Controls	-	2 Fittings
Leadscrew Reverse Cam	-	1 Fitting and Cam Track

EVERY 8 WORKING HOURSTOP UP WITH OIL

Apron	-	1 Cup
Compound	-	1 Pipe Plug, 1 Oiler
Cross slide nut and bearing		2 Oilers
Taper attachment	-	1 cup, 4 Oilers
Tailstock		2 Oilers

GREASE END BRACKET - 3 FITTINGS.

2.1 All machines are shipped with the lubricant oil drained from the oil sumps in the Headstock, Feedbox and Apron and must be serviced before being put into use.

Before filling reservoirs or oil cups, always wipe off any accumulation of old oil, grease or dirt that might get into a part being lubricated.

Depending on operating conditions, usually about every six months, the Headstock, Feedbox and Apron should be drained and thoroughly flushed out, before adding new oil.

Because most solvents tend to soften paints, they are not recommended as flushing mediums. A light mineral oil, to which a small percentage of kerosene has been added, may be used to flush out any dirt or sediment. Run the machine for several minutes without load so that the flushing oil can circulate through the reservoir. The flushing oil should then be drained and new oil added.

2.2 END GEAR TRAIN

Oil idler gear teeth daily.
(See page 32).

LUBRICATION, contd.

2.3 Apron

The oil level should be checked and replenished daily as the "one-shot" lubricating pump draws its oil from this reservoir in order to lubricate the saddle and cross slide ways.

The "one-shot" lubrication system plunger is located on the front face of the apron close to the handwheel and should be used once every 2-6 working hours, depending on operating conditions.

The apron oil reservoir should be drained, flushed and refilled with fresh clean oil at least once every six months.

One grease nipple located on the right hand end face of the apron lubricates the half-nut control shaft. A second grease nipple lubricates the leadscrew reverse control hub.

2.4 Tailstock

The spindle and screw are lubricated by an oiler located on top of the spindle housing. The bedways on which the tailstock slides should be cleaned and oiled frequently.

Dry red lead mixed with machine oil to a creamy consistency is an excellent lubricant for the tailstock center when a revolving center is not available.

2.5 Compound

On the compound rest, remove the pipe plug in the top face to lubricate the ways and the screw. Replace the pipe plug after applying oil. A ball type oiler lubricates the screw bearing.

2.6 Cross Slide

The cross slide dovetails and bearing surfaces are lubricated by the "one-shot" lubricator pump located in the apron. One oiler, at the center on top of the cross slide lubricates the Cross Feed Nut and the threaded portion of the Cross Feed Screw. The cross feed screw bearing is lubricated through an oiler behind the cross feed dial.

2.7 Saddle

The saddle ways are lubricated by means of the "one-shot" lubricating system through oil passages and oil grooves.

The oil is retained at the bearing surfaces by felt seals located at either end of the saddle wings which also provide an even distribution of the lubricant over the ways.

LUBRICATION, contd.2.8 Bed End Bracket and Leadscrew

Three grease fittings, located on the front face of the Bed End Bracket lubricate the ends of the Leadscrew, Feed Shaft, Control Shaft and Leadscrew Reverse Shaft and Trip Cam.

Grease the ends of the Leadscrew and Feedshaft every 8 working hours. The end of the Control Shaft and Leadscrew Reverse Shaft require grease once a month, as indicated on Lubrication Plate.

Before cutting a thread, clean and oil the Leadscrew thoroughly.

2.9 Leadscrew Reverse Linkage

The leadscrew reverse linkage and cam are serviced after opening/removal of the belt guard.

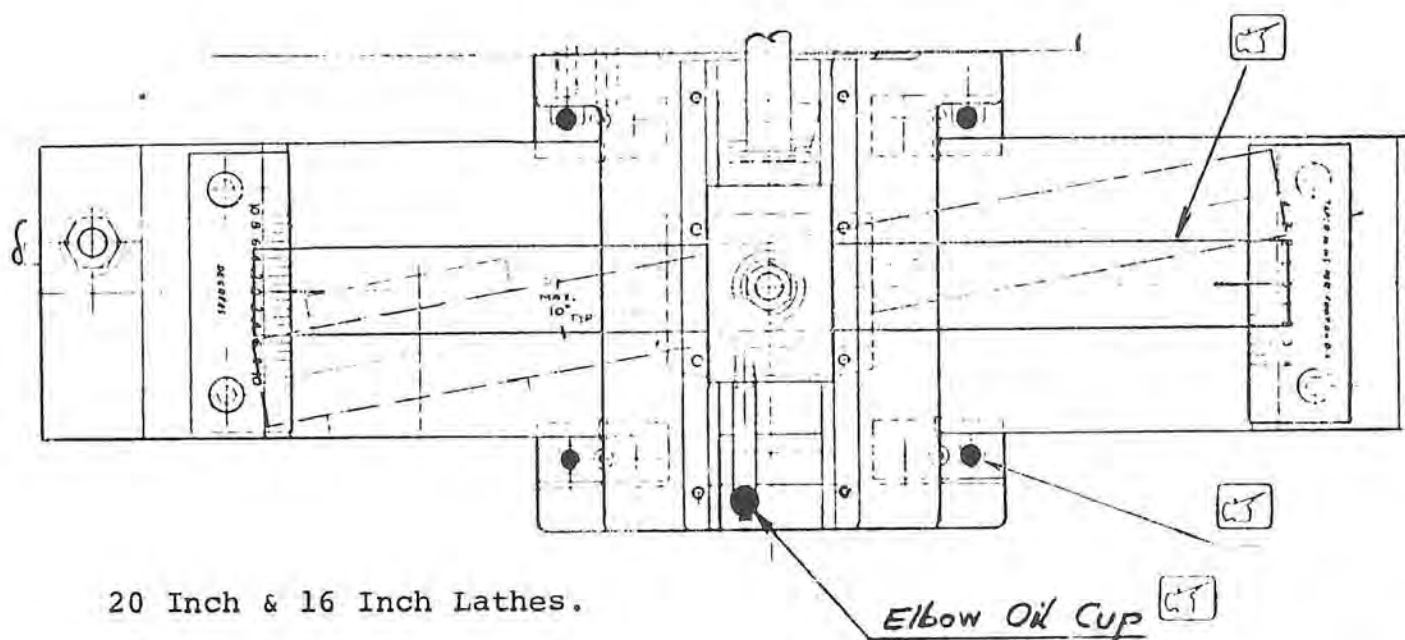
Once per month, grease should be applied to the top of the operating bar, the cam track and the grease nipple in the operating cam body. The pivot should also be lightly oiled at this time.

2.10 Taper Attachment

Clean and oil the pivoted Slide Bar before using

Four oilers lubricate the slide plate.

The elbow oil cup located at the back of the sliding block lubricates the cross-feed shaft bearings, sliding block and pivot bolts.



3. LATHE SAFETY

Every effort has been made in the design and production of the lathe to comply with statutory safety requirements and to provide a fundamentally safe machine tool.

In the further interests of safety, attention should be given to the following notes:

3.1 Machine Capacity

The dimensions of a component which can be accommodated on the lathe are limited only by the physical restrictions of the machine itself but responsibility for the following points with respect to machining a component must inevitably rest with the user.

- (1) Ensuring that the operator has had suitable training and possesses the required degree of skill and experience to undertake the work.
- (2) Providing suitable work holding and/or supporting equipment, i.e. chucks, steadies, revolving centers, etc.
- (3) Ensuring that suitable tooling is provided and correctly mounted.
- (4) Ensuring that suitable feeds and speeds are selected (if in doubt select the lowest).
- (5) Providing suitable workpiece guards and ensuring that these are consistently used.

3.2 Lathe Safety Rules

- (1) Read and understand operation notes before attempting to use the machine.
- (2) Keep lathe work areas clean.
- (3) Keep area surrounding machine tidy.
- (4) ENSURE YOU KNOW HOW TO STOP THE MACHINE BEFORE STARTING IT.
- (5) DO NOT interchange chucks or other spindle mounting items between lathes without checking for correct locking (see operational notes).
- (6) We recommend only high speed chucks.
- (7) Before operating the lathe, note the maximum rated speed for chucks and faceplates as supplied by the manufacturer.
- (8) Remove chuck key immediately after use.
- (9) Check load capacity of revolving centers.

3. LATHE SAFETY, contd.

3.2 contd.

- (10) Ensure workpiece guards are in position before starting machine.
- (11) DO NOT use cracked or chipped tools.
- (12) CHECK before starting motor:
 - Spindle speed selected
 - Feed rate selected
 - Feed and thread cutting levers are disengaged
- (13) STOP MACHINE IMMEDIATELY IF ANYTHING UNEXPECTED HAPPENS.
- (14) DO NOT use coarse feed range on high spindle speeds.
- (15) DO NOT change spindle speeds when spindle is rotating.
- (16) DO NOT touch revolving chuck, spindle or workpiece.
- (17) DO NOT remove work from the machine without retracting the tool to a safe position.
- (18) Disconnect power supply when leaving machine unattended.
- (19) Disconnect power supply when changing workpieces, tightening or loosening chuck, etc.

3.3 Personal Safety Rules

- (1) Report any accident, however small, immediately it happens.
- (2) Wear safety glasses.
- (3) Wear safety shoes.
- (4) Use barrier creams provided.
- (5) Wear your overalls buttoned up.
- (6) Roll sleeves up, or button the cuffs.
- (7) Keep hair short or wear a cap.
- (8) Use the correct size wrench at all times.
- (9) Be careful of, and remove if possible, burrs and sharp edges.
- (10) When lifting workpiece use the correct type of sling, ensuring it is not worn or damaged, and the correct safe working load.

3. LATHE SAFETY, contd.

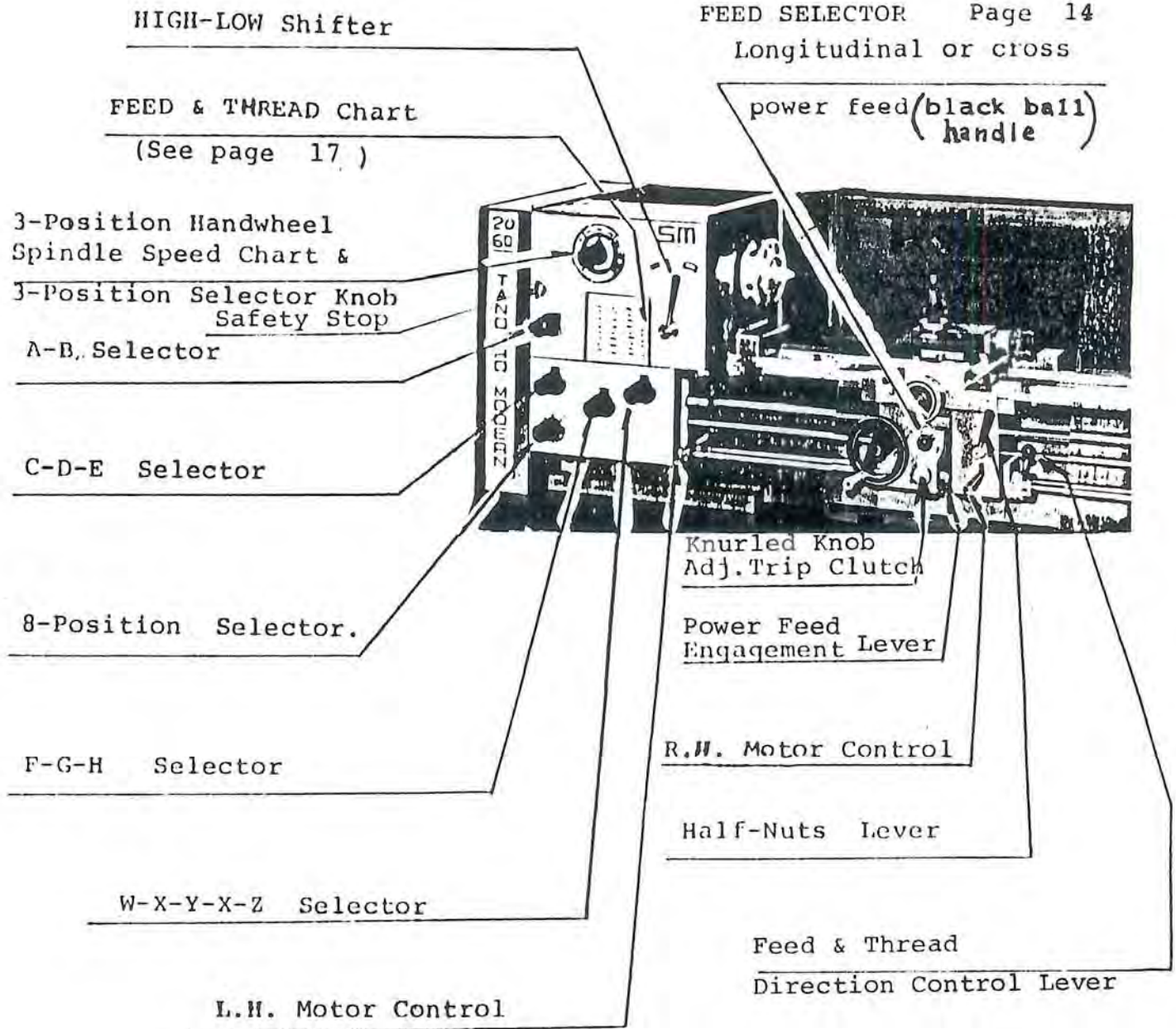
3.3 Personal Safety Rules, contd.

- (11) Stand clear when lifting workpieces or equipment by crane.
- (12) Obtain assistance when mounting heavy or awkwardly shaped workpieces.
- (13) DO NOT wear rings, watches, ties, etc.
- (14) DO NOT keep tools (scribers, etc.) in overall pockets.
- (15) DO NOT remove guards unless machine is stationary.
- (16) DO NOT wash hands in coolant.
- (17) DO NOT remove swarf with bare hands, use a rake or brush.
- (18) DO NOT manually lift heavy equipment.
- (19) DO NOT use files, scrapers, etc., on machine tools.
- (20) DO NOT lean on the machine.
- (21) DO NOT tamper with electrical equipment.

20 Inch & 16 Inch Lathes.

9/79.

Longitudinal or cross



4. OPERATING INSTRUCTIONS

4.1 Motor and Spindle Control

The spindle motor is controlled by means of two control levers. The L.H. motor control causes forward rotation and stop. It is intended primarily for jogging when changing gear. The R.H. motor control, mounted on the apron is lifted up for FORWARD rotation, centralized for STOP and pushed down for REVERSE rotation. In the CENTRAL or STOP position, a fail-safe brake is engaged.

4. OPERATING INSTRUCTIONS, contd.4.2 Spindle Speed Selection

LOW:	27	35	45	55	70	90	115	150	190
HIGH:	240	300	380	480	600	775	1000	1250	1600

The desired spindle speed range is obtained by moving the 3-POSITION HANDWHEEL. Any spindle speed within that range can be obtained by moving the 3-POSITION SELECTOR KNOB and the High-Low shifter.

For free hand rotation of the spindle, move the HIGH-LOW shifter lever to its vertical position.

- WARNING - STOP the motor before operating any speed selectors.
- Do not exceed spindle speed recommended by chuck manufacturer.
 - Operate machine with the large faceplate at 480 rpm maximum.

4.3 Power Feeds

The automatic trip clutch pre-load may be adjusted using the knurled knob next to the power feed engagement lever. Turn clockwise to increase feed torque.

A safety interlock is fitted so that it is impossible to engage the POWER FEED ENGAGEMENT LEVER and the HALF-NUTS LEVER at the same time.

To select the power longitudinal feed or the power cross feed, arrange the "A-B" selector knob on the headstock and the "C-D-E", "F-G-H", "W-X-Y-X-Z" and "8-POSITION" knob on the feedbox to correspond with the desired feed rate indicated on the FEEDS and THREADS CHART. (Shown on Pages 17 and 18).

CAUTION: AVOID THE COARSE RANGE OF FEEDS WHEN SPINDLE SPEEDS ARE ABOVE 480 RPM.

Push the black ball handle located on front of apron in for longitudinal feed or pull out for cross feed.

Select "L.H" longitudinal feed and "OUT" cross feed or "R.H" longitudinal feed and "IN" cross feed using the FEED & THREAD DIRECTION CONTROL LEVER, situated at the right hand side of the apron.

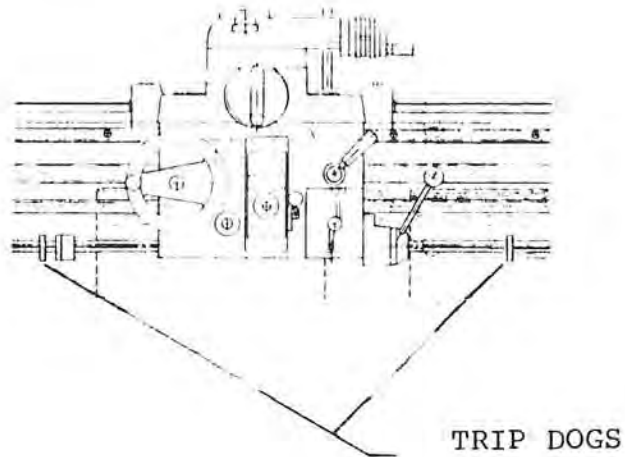
To engage power feed, lift the POWER FEED ENGAGEMENT LEVER. Power feed may be engaged when the spindle is running.

4. OPERATING INSTRUCTIONS, contd.

4.3 Power Feeds, contd.

For automatic feed kickout in power feed longitudinal operations, set the TRIP DOGS as required.

CAUTION: TRIP DOGS MUST NOT BE USED WHEN SPINDLE IS OPERATED IN THE REVERSE DIRECTION.



CAUTION: Do not use this procedure for spindle speeds above 800 RPM.

20 Inch & 16 Inch Lathes.

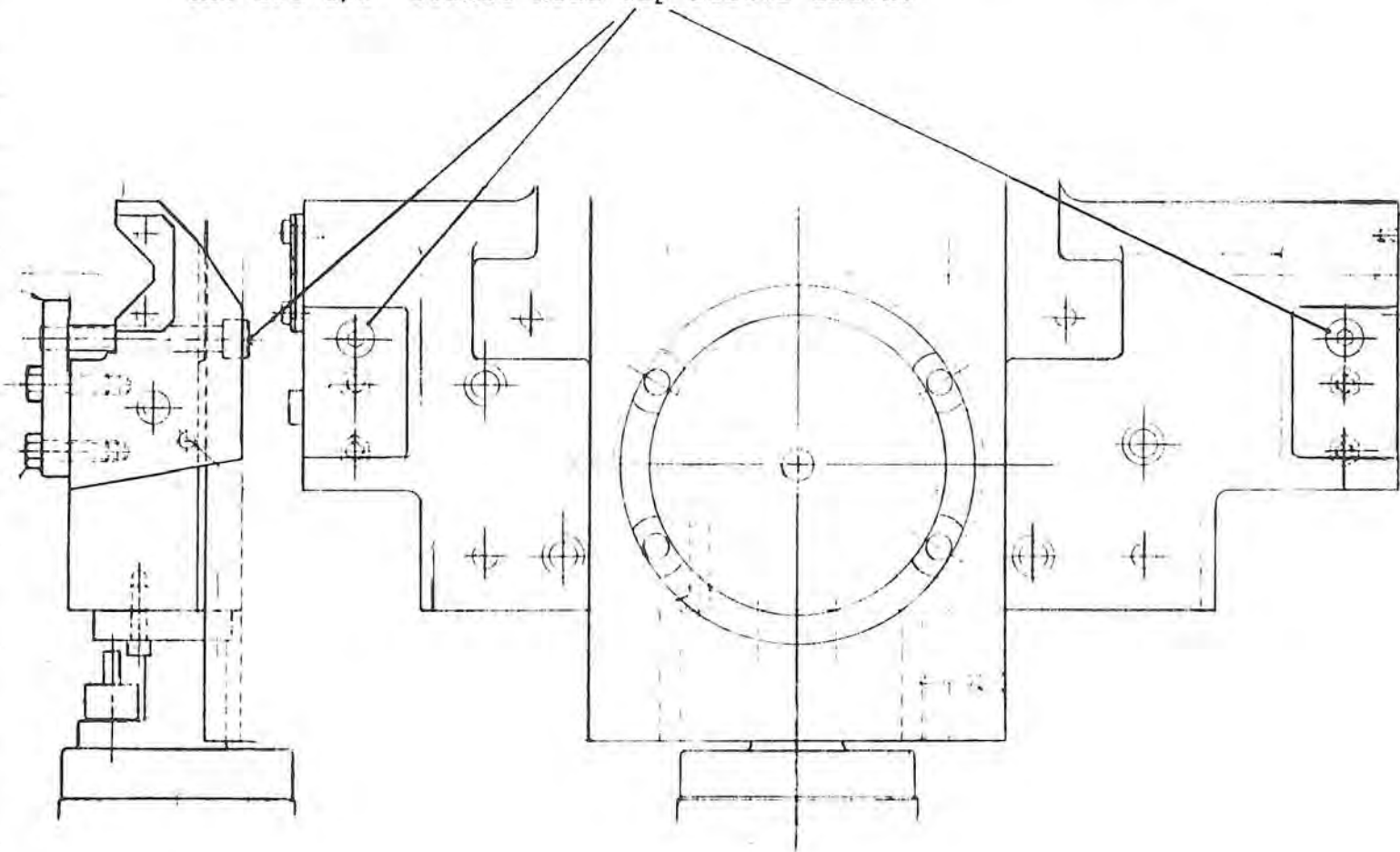
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THREADS PER INCH				m.m. PITCH			
A		B		A		B	
127	EH1W	7 1/2	CF3Z	.2	EH1W	4.0	DF1W
84	CG7Z	7 1/8	DH1Z	.225	EH2W	4.4	EG8W
78	CG6Z	7	CF7Y	.25	EH3W	4.5	DF2W
72	CG5Z	6 1/2	CF6Y	.275	EH8W	4.6	EG4W
69	CG4Z	6	CF5Y	.2875	EH4W	4.75	CG7W
66	CG8Z	5 3/4	CF4Y	.3	EH5W	4.8	EG5W
60	CG3Z	5 1/2	CF8Y	.325	EH6W	5.0	DF3W
56	CG7Y	5 1/4	CH7Z	.35	EH7W	5.5	DF8W
54	CG2Z	5	CF3Y	.4	EF1W	5.75	DF4W
52	CG6Y	4 3/4	DH1Y	.45	EF2W	6.0	DF5W
48	CG5Y	4 1/2	CF2Y	.5	EF3W	6.5	DF6W
46	CG4Y	4 1/8	CH8Z	.55	EF8W	7.0	DF7W
44	CG8Y	4	CH1Y	.575	EF4W	8.0	DG1W
42	CF7Z	3 3/4	CH3Z	.6	EF5W	9.0	DG2W
40	CG3Y	3 1/2	CH7Y	.625	DH3W	10.0	DG3W
39	CF6Z	3 3/8	CH2Z	.65	EF6W	11.0	DG8W
36	CG2Y	3 1/4	CH6Y	.6875	DH8W	11.5	DG4W
33	CF8Z	3	CH5Y	.7	EF7W	12.0	DG5W
32	CG1Y	2 7/8	CH4Y	.71875	DH4W	12.7	CH1Y
34 1/2	CF4Z	2 3/4	CH8Y	.75	DH5W	13.0	DG6W
30	DH1Z	2 1/2	CH3Y	.8	EG1W	14.0	DG7W
28	CF7Y	2 1/4	CH2Y	.8125	DH6W		
27	CF2Z	2	CH1Y	.875	DH7W		
26	CF6Y			.9	EG2W		
24	CF5Y			1.0	DF1W		
23	CF4Y			1.1	EG8W		
22	CF8Y			1.125	DF2W		
21	CH7Z			1.1875	CG7W		
20	CF3Y			1.2	EG5W		
19	DH1Y			1.25	DF3W		
18	CF2Y			1.3	EG6W		
16 1/2	CF8Z			1.375	DF8W		
16	CF1Y			1.4	EG7W		
15	CH3Z			1.4375	DF4W		
14	CH7Y			1.5	DF5W		
13 1/2	CH2Z			1.625	DF6W		
13	CH6Y			1.75	DF7W		
12	CH5Y			2.0	DG1W		
11 1/2	CH4Y			2.25	DG2W		
11	CH8Y			2.5	DG3W		
10	CH3Y			2.75	DG8W		
9	CH2Y			2.875	DG4W		
8	CH1Y			3.0	DG5W		
				3.25	DG6W		
				3.5	DG7W		

FEED PER REV.					
Inch m.m.			Inch m.m.		
A (Fine)			B (Coarse)		
.0015	EH1X	.04	.028	EG2X	.71
.0017	EH2X	.045	.030	DF1X	.76
.002	EH3X	.05	.033	EG8X	.84
.0021	EH8X	.053	.034	DF2X	.86
.0022	EH4X	.055	.035	EG4X	.89
.0023	EH5X	.058	.037	EG5X	.93
.0025	EH6X	.06	.038	DF3X	.97
.0027	EH7X	.07	.039	EG6X	1.00
.003	EF1X	.08	.042	DF8X	1.07
.0034	EF2X	.085	.043	EG7X	1.09
.0038	DH1X	.095	.044	DF4X	1.12
.004	EF3X	.10	.046	DF5X	1.15
.0041	EF8X	.104	.049	DF6X	1.24
.0042	DH2X	.107	.053	DF7X	1.35
.0044	EF4X	.110	.060	DG1X	1.55
.0046	EF5X	.115	.068	DG2X	1.73
.005	EF6X	.125	.076	DG3X	1.93
.0052	DH8X	.13	.084	DG8X	2.14
.0053	EF7X	.135	.087	DG4X	2.21
.0055	DH4X	.14	.091	DG5X	2.30
.0057	DH5X	.145	.100	DG6X	2.54
.006	EG1X	.15	.108	DG7X	2.75
.0062	DH6X	.155			
.0068	EG2X	.17			
.007	DH7X	.18			
.0075	DF1X	.19			
.0084	EG8X	.20			
.0087	EG4X	.21			
.009	DF2X	.22			
.0092	EG5X	.23			
.0095	DF3X	.24			
.0099	EG6X	.25			
.0106	EG7X	.26			
.011	DF8X	.27			
.0114	DF5X	.29			
.0124	DF6X	.31			
.013	DF7X	.34			
.015	DG1X	.38			
.017	DG2X	.44			
.019	DG3X	.48			
.021	DG8X	.53			
.0228	DG5X	.57			
.025	DG6X	.63			
.027	DG7X	.67			

4. OPERATING INSTRUCTIONS, contd.

Provision is made for locking saddle when facing, tightening the two 1/2" Socket Head Cap Screws shown.



4.4 Thread Cutting

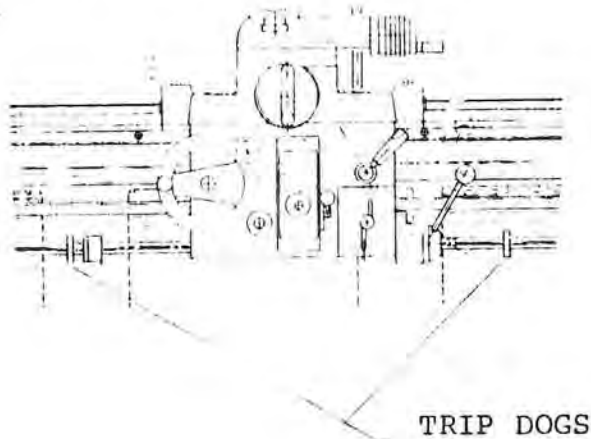
- 4.4.1 When cutting screw threads, begin by selecting the desired mm pitch or T.P.I., in a manner similar to feed selection (4.3).
- 4.4.2 The FEED & THREAD DIRECTION CONTROL LEVER mounted on the extreme righthand side of the Apron must be moved:
- UP for R.H. threads.
 - DOWN for L.H. threads.
 - In the CENTRAL position the entire feed and thread gear train is disengaged.

This lathe is equipped with a leadscrew reversing mechanism which allows half-nuts to remain engaged during the entire threading operation.

4. OPERATING INSTRUCTIONS, contd.

4.4.3 For automatic thread kickout set the TRIP DOGS as required.

CAUTION: TRIP DOGS MUST NOT BE USED WHEN SPINDLE IS OPERATED IN THE REVERSE DIRECTION.



4.4.4 CAUTION: THE THREADING SPINDLE SPEED LIMIT IS 800 RPM. THE TRIP DOGS OR THE FEED & THREAD DIRECTION CONTROL LEVER MUST NOT BE USED ABOVE THIS SPEED.

Approximate safe thread cutting speeds can be determined by using the following formulae:

(1) $T.P.I. \times 25 = \text{SAFE R.P.M.}$
e.g. $20 \text{ T.P.I.} \times 25 = 500 \text{ R.P.M.}$

(2) $\frac{625}{\text{mm pitch}} = \text{SAFE R.P.M.}$
e.g. $\frac{625}{.9 \text{ mm pitch}} = 695 \text{ R.P.M.}$

CAUTION: DO NOT USE ANY SPINDLE SPEED ABOVE 800 RPM FOR CUTTING THREADS.

4. OPERATING INSTRUCTIONS, contd.

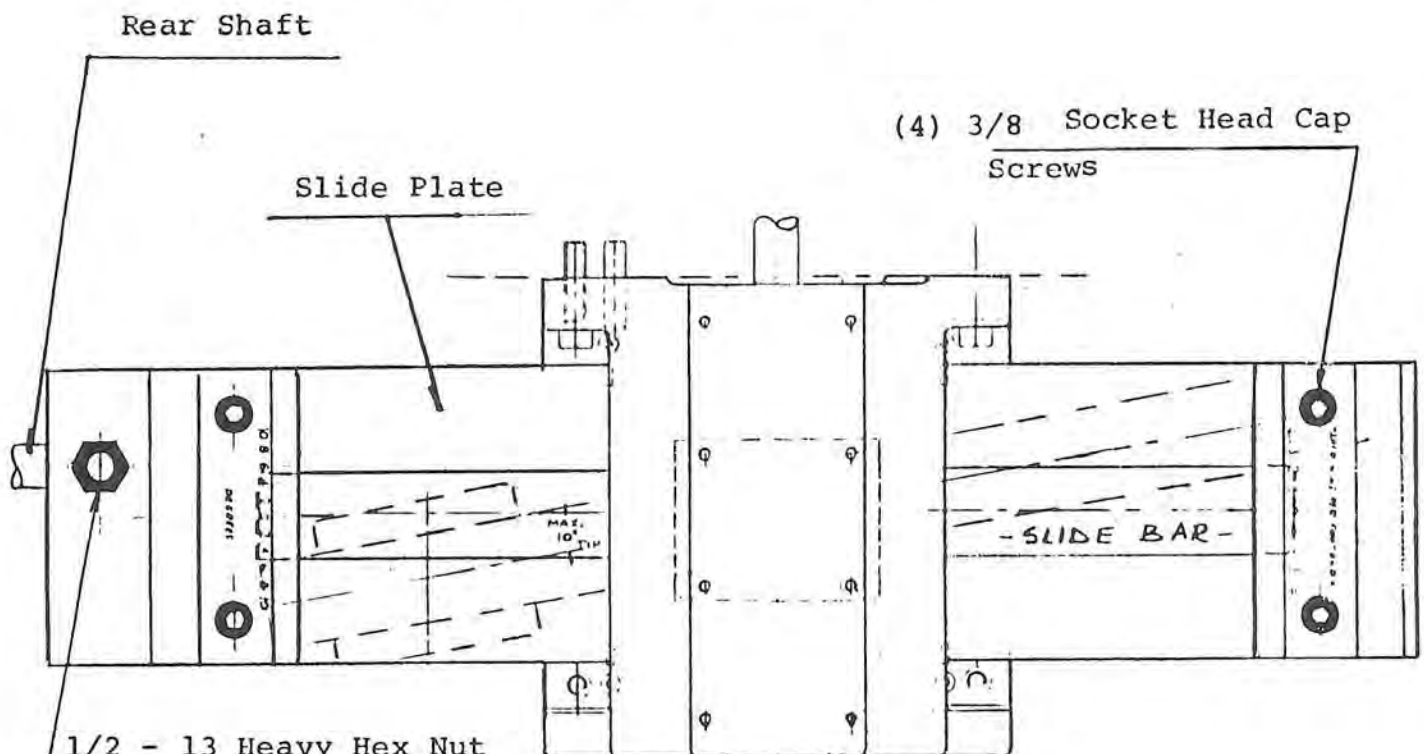
4.5 Telescopic Taper Turning Attachment

For taper turning:

- (1) Loosen HEAVY HEX. NUT on rear shaft.
- (2) Locate saddle on bed in relation to workpiece.
- (3) Locate SLIDE PLATE in relation to workpiece.
- (4) Tighten HEAVY HEX. NUT on rear shaft.
- (5) Adjust SLIDE BAR to desired taper and lock securely by means of the 4 - 3/8 SOC. HD. SCREWS located towards each end.

For straight turning:

Loosen HEAVY HEX. NUT on rear shaft.



1/2 - 13 Heavy Hex Nut
For clamping the Slide
Plate

20 Inch & 16 Inch Lathes.

9/79.

4. OPERATING INSTRUCTIONS, contd.

4.6 Coolant Attachment

Available with centrifugal pump unit, GRAYMILLS MODEL NO. X11-HR35-A which delivers a copious volume of liquid at relatively low pressure.

The flow may be throttled or shut off completely without overloading the motor.

The motor has permanently lubricated oilite bearings and no lubrication is required for either pump or motor.

This unit has a 10 gal. tank supplied with removable chip and sludge collecting tray with a baffle and deflector for settling out sediment. Easily removed for cleaning.

Coolant tank should be cleaned and re-filled every 6 months or more frequently depending on usage.

The pump motor is supplied with a 6 foot cord complete with plug for use with the 115 volt receptacle mounted at the back of the lathe when required.

4.7 Face Plate Attachment

The face plate as shipped from the factory is rough turned on the part mounting surface, and must be machined using a skim cut prior to first usage.

Note maximum safe operating speed for large face plates is 480 RPM.

5. MAINTENANCE INSTRUCTIONS

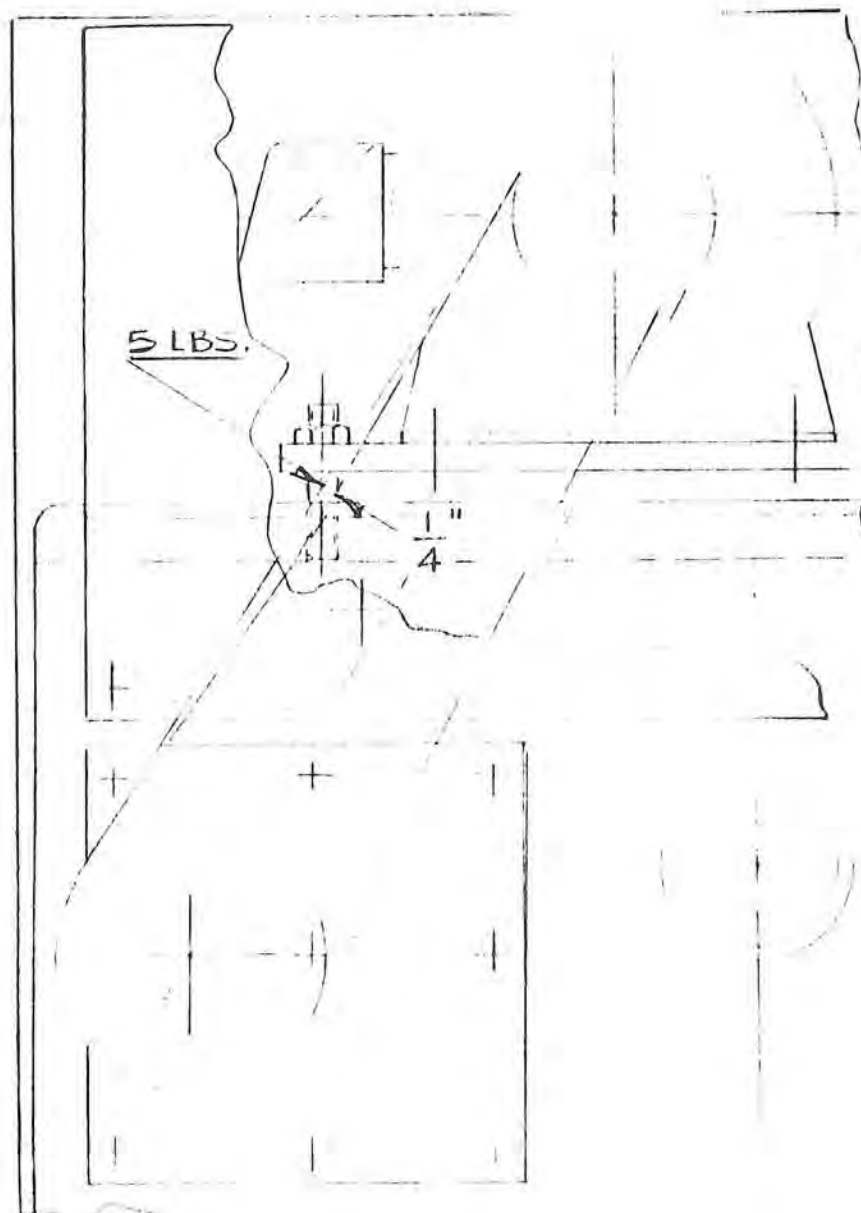
5.1 Drive Belts Tension Control

When changing pulleys and/or belts, loosen the motor plate clamp and lift the motor plate by means of the adjusting screw provided. With the new pulleys and/or belts in position, adjust for correct belt tension (see below) and tighten the nut on the motor plate clamp.

For correct belt tension, use the following method:

At the center of the span apply a force of **5 lbs.**, with a spring scale to deflect the belt $\frac{1}{4}$ ".

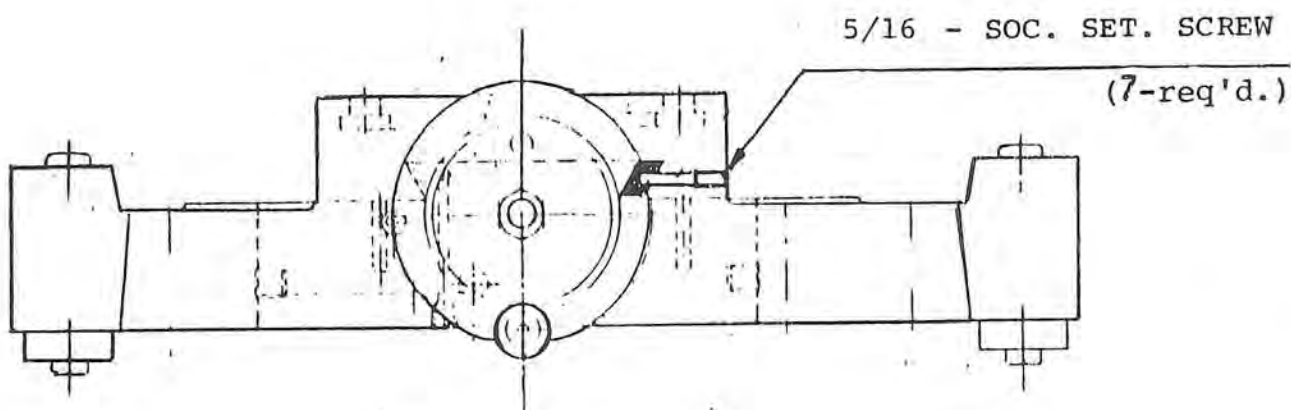
Check the tension frequently during the first day of operation and periodically thereafter. Keep pulleys and belts clean and free of any foreign material to ensure long life and better traction.



5.2 Cross Slide Ways

Wear in the Cross Slide Ways may be adjusted as follows:-

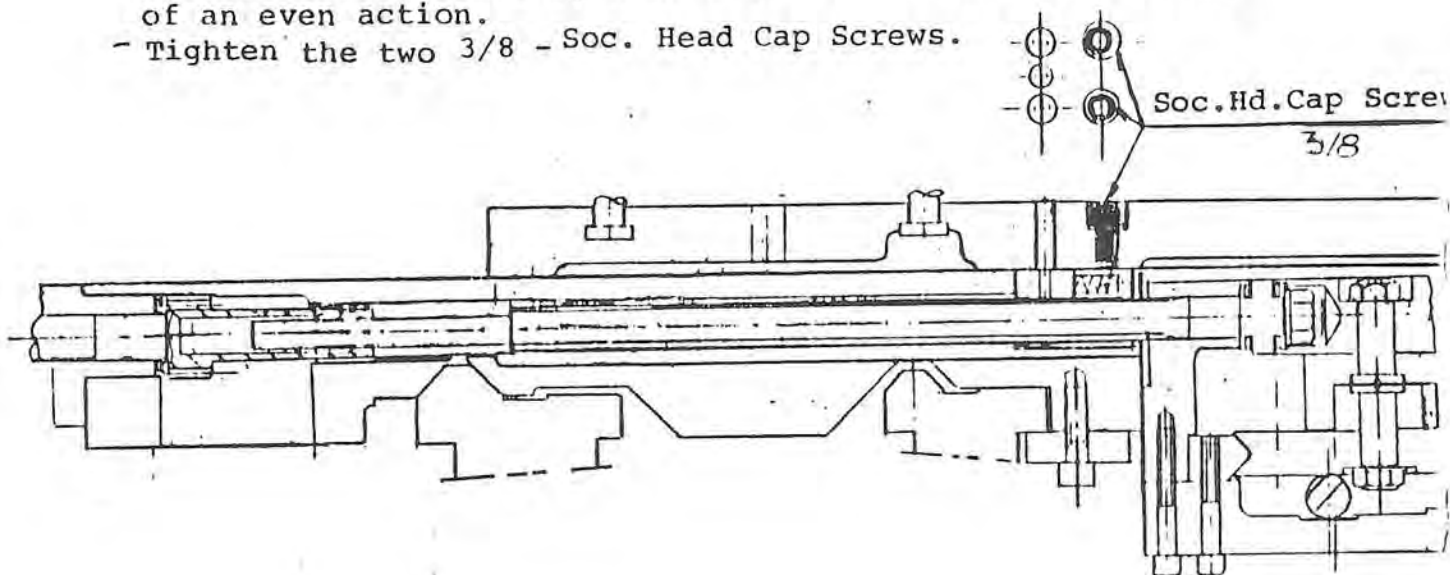
Turn ALL Seven - 5/16 Socket Set Screws located on R.H. side of the Cross Slide in a clockwise direction to tighten the "Gib".



5.3 Cross Slide Nut

Provision is made for the elimination of backlash in the Cross Slide Nut, as follows:-

- Position the Cross Slide close to the center line of the lathe.
- Slacken only the two 3/8 Soc. Head Cap Screws shown. The Captive Spring will take up the backlash automatically.
- Move the Cross Slide by hand over full travel to be sure of an even action.
- Tighten the two 3/8 - Soc. Head Cap Screws.

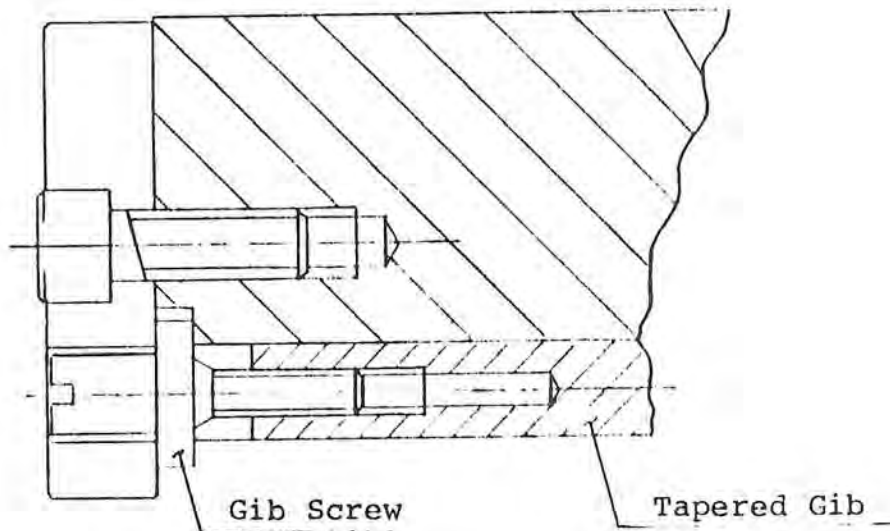


5. MAINTENANCE INSTRUCTIONS, contd.

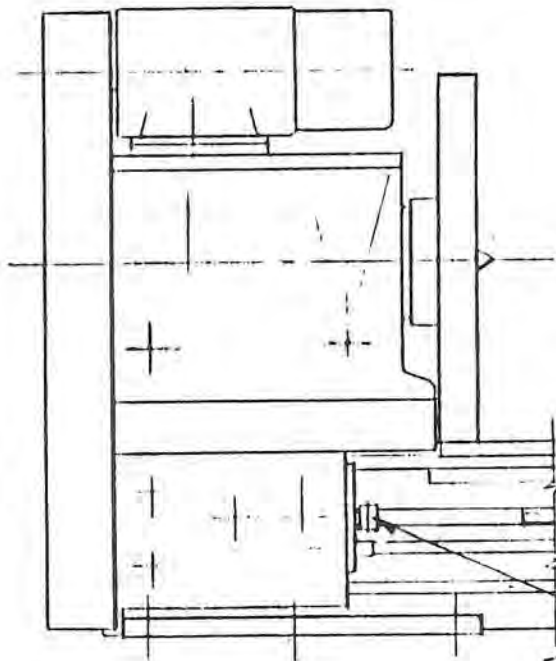
5.4 Compound Slide Ways

Wear in the Compound Slide Ways may be adjusted by means of the Tapered-Gib as follows:

Turn the slotted Head Gib Screw at the handle end in a clockwise direction to tighten.

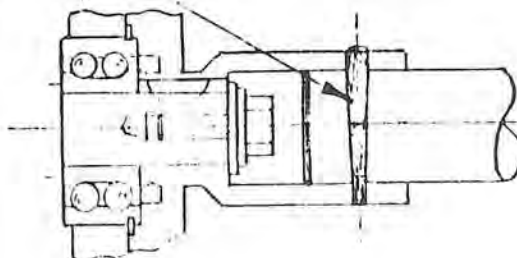


5.5 Leadscrew Shear Pin



This brass shear pin is provided to prevent damage to the leadscrew should the carriage be allowed to come in contact with the headstock or some other obstruction which acts as a positive stop. When the stoppage takes place, the leadscrew continues to turn in the half nuts and will begin to move endwise thus shearing the pin.

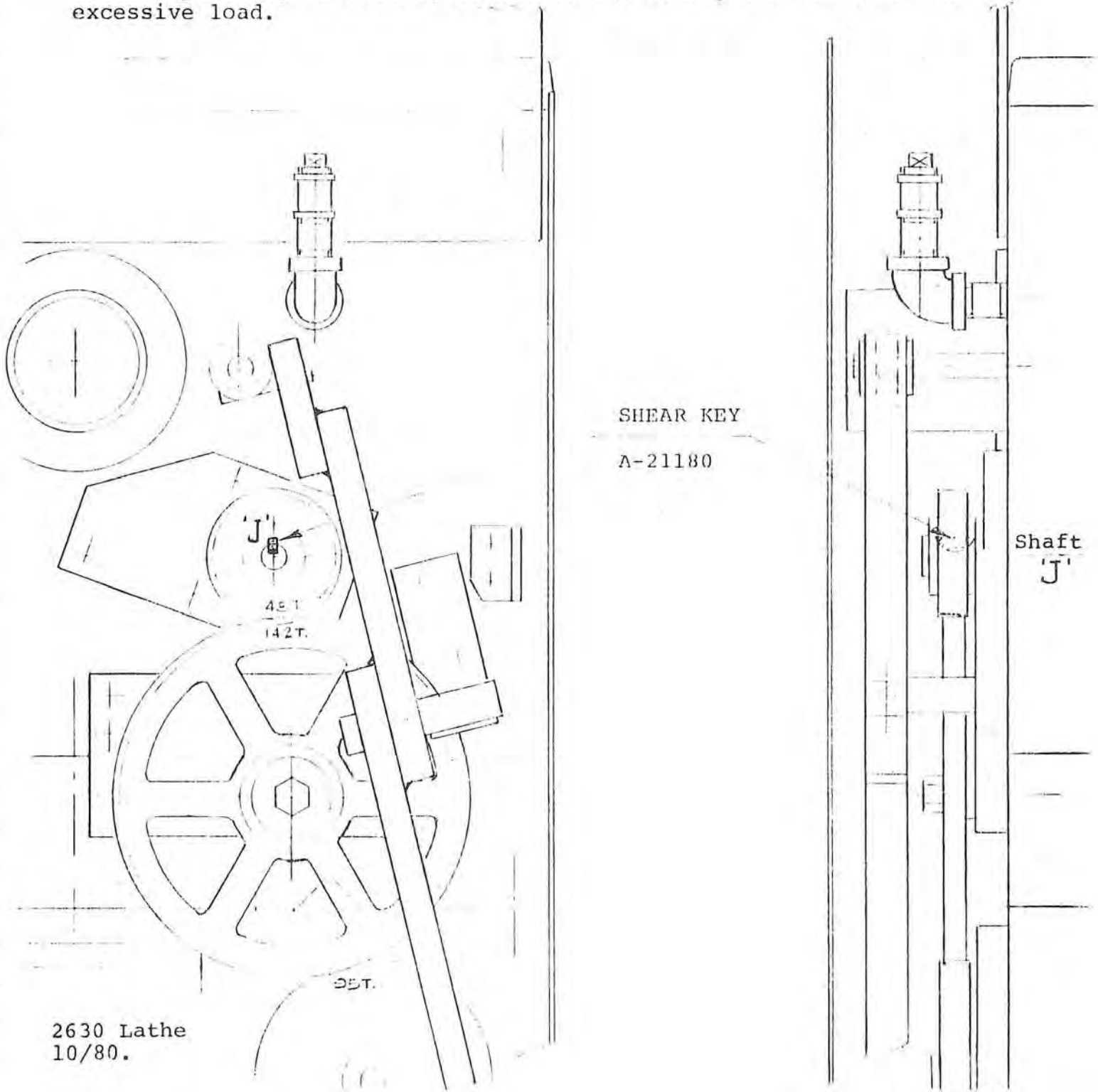
The shear pin can be readily replaced by first withdrawing the leadscrew from the coupling to remove the three portions of broken pin. It is then returned to the coupling and rotated by hand until the zero line on the screw coincides with that on the coupling. A new shear pin (4 spare are provided with the machine) is then driven into place.



5.6 End Gear Train Shear Key

This brass shear key # A-21180 drives the top gear of the end gear train (see below on shaft - J). It is provided to prevent damage to the feed gears if abnormally excessive loads are encountered.

A Spare Shear Key, which is provided with the machine, can be readily fitted. First remove the 48T gear, then remove the broken portion of the key from the shaft with a small square nose chisel. The new key is then fitted to the shaft and the gear assembled. It is important, of course, to locate and remedy the cause of the excessive load.



5. MAINTENANCE INSTRUCTIONS, contd..5.7 Trouble Shooting Chart

TROUBLE	PROBABLY CAUSE	CORRECTION
Vibration	Loose leveling screws	Set all screws so they bear evenly on leveling plates.
	Torn or mismatched vee belts	Replace vee belts with matched set.
	Work or chuck out of balance operating at high spindle speeds	Balance chuck or reduce spindle speed.
	Motor out of balance	Contact local representative of motor manufacturer.
Chatter	Tool bit improperly ground or not on center	Regrind tool bit or adjust tool holder so that area of contact between tool bit and work is decreased. Avoid extreme negative rake angle.
	Tool overhang too great	Keep point of tool bit as close as possible to tool holder.
	Using improper surface	Reduce or increase spindle speed.
	Feed rate too high or too low.	Reduce or increase feed.
	Gibs of cross slide or compound rest loose.	Adjust gibs.
	Spindle bearings worn or loose.	Adjust spindle bearings.
	Work improperly supported.	Adjust tailstock center. Use steady rest or follow rest for long slender shafts. Minimize tailstock barrel extension.
	Vibration	See "Vibration" trouble above.

5. MAINTENANCE INSTRUCTIONS, contd.5.7 Trouble Shooting Chart, contd.

TROUBLE	PROBABLE CAUSE	CORRECTION
Work not turned straight.	Headstock & tailstock not aligned. Work improperly supported. Bed not level. Tool not on center when using taper attachment.	Align tailstock center. Use steady rest or follow rest. Reduce overhang from chuck. Re-level bed, using precision level. Put tool on center.
Work out of round.	Work loose between centers or centers are excessively worn - work centers out of round. Loose headstock spindle bearings.	Adjust tailstock center. Regrind centers. Lap work centers. Adjust headstock spindle bearings.
Cross slide or compound rest movement does not coincide with dial movement of respective adjusting screw.	Gib setting too tight or too loose. Work is too long and slender.	Adjust gibs. Use steady rest or follow rest.

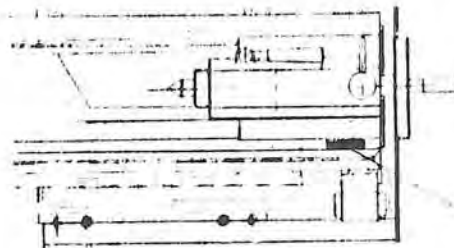
20 Inch & 16 Inch Lathes.

9/79.

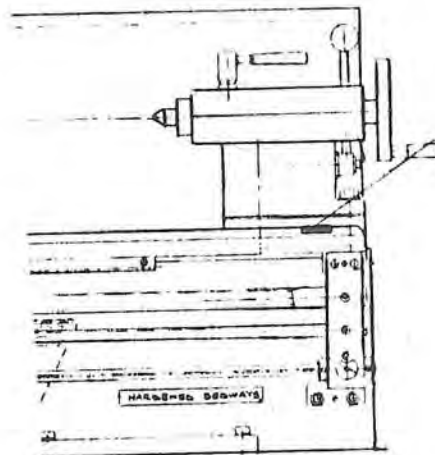
PARTS ORDERING PROCEDURE

- (1) Always quote the Machine Serial Number
which will be found
stamped in the recessed
face on top of the bed
at the tailstock end.
- (2) Refer to the appropriate assembly and
INDIVIDUAL PART NUMBERS
taken direct from the
illustrations.

NOTE: Quantity required
(when other than one)
is given following the
Part Number itself.

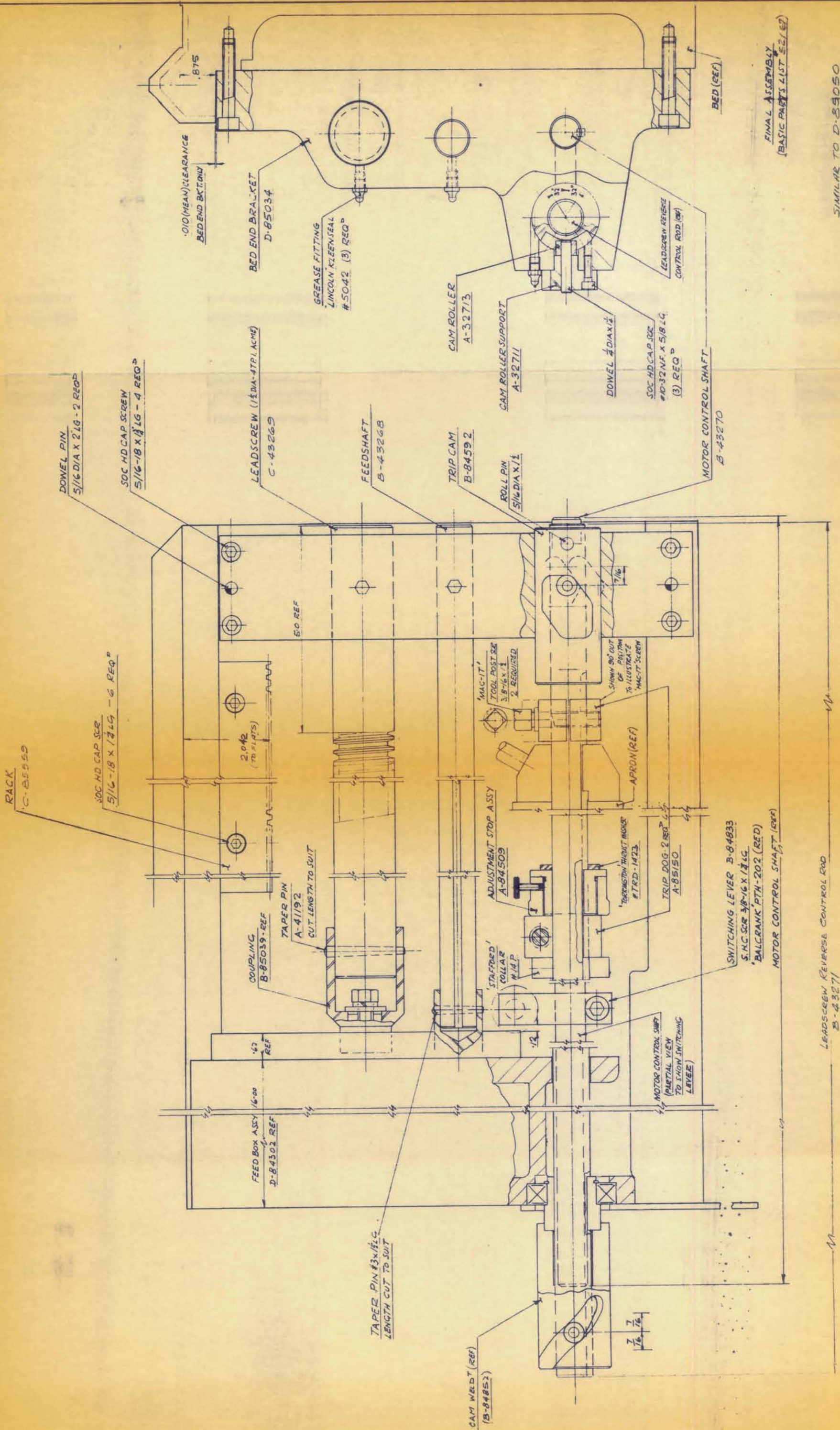


MACHINE SERIAL NO.



20 Inch & 16 Inch Lathes.

9/79.



FINAL ASSEMBLY
(BASIC PARTS LIST 52/57)

LEADSCREW REVERSE CONTROL ROD
B-43271

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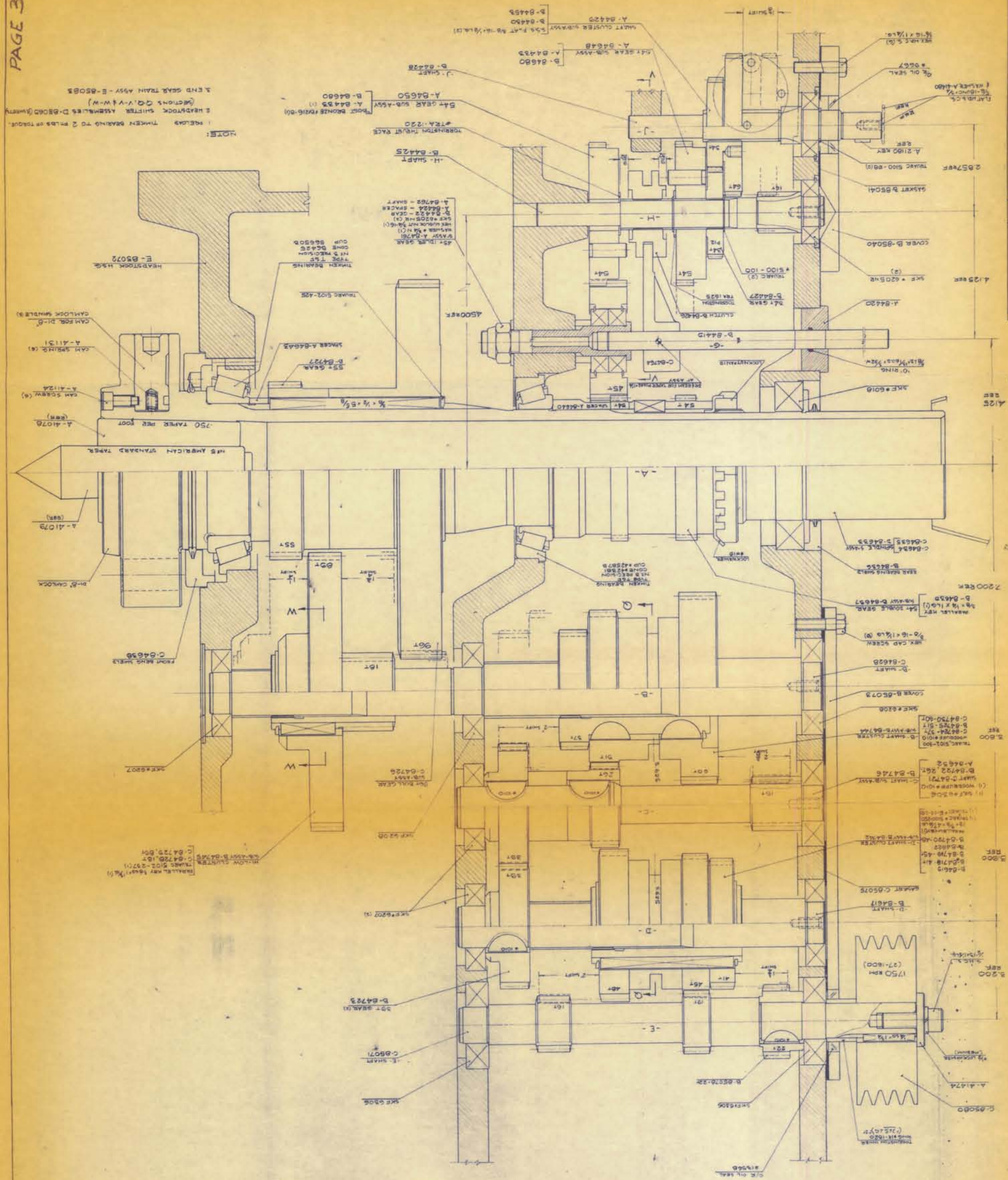
11

11

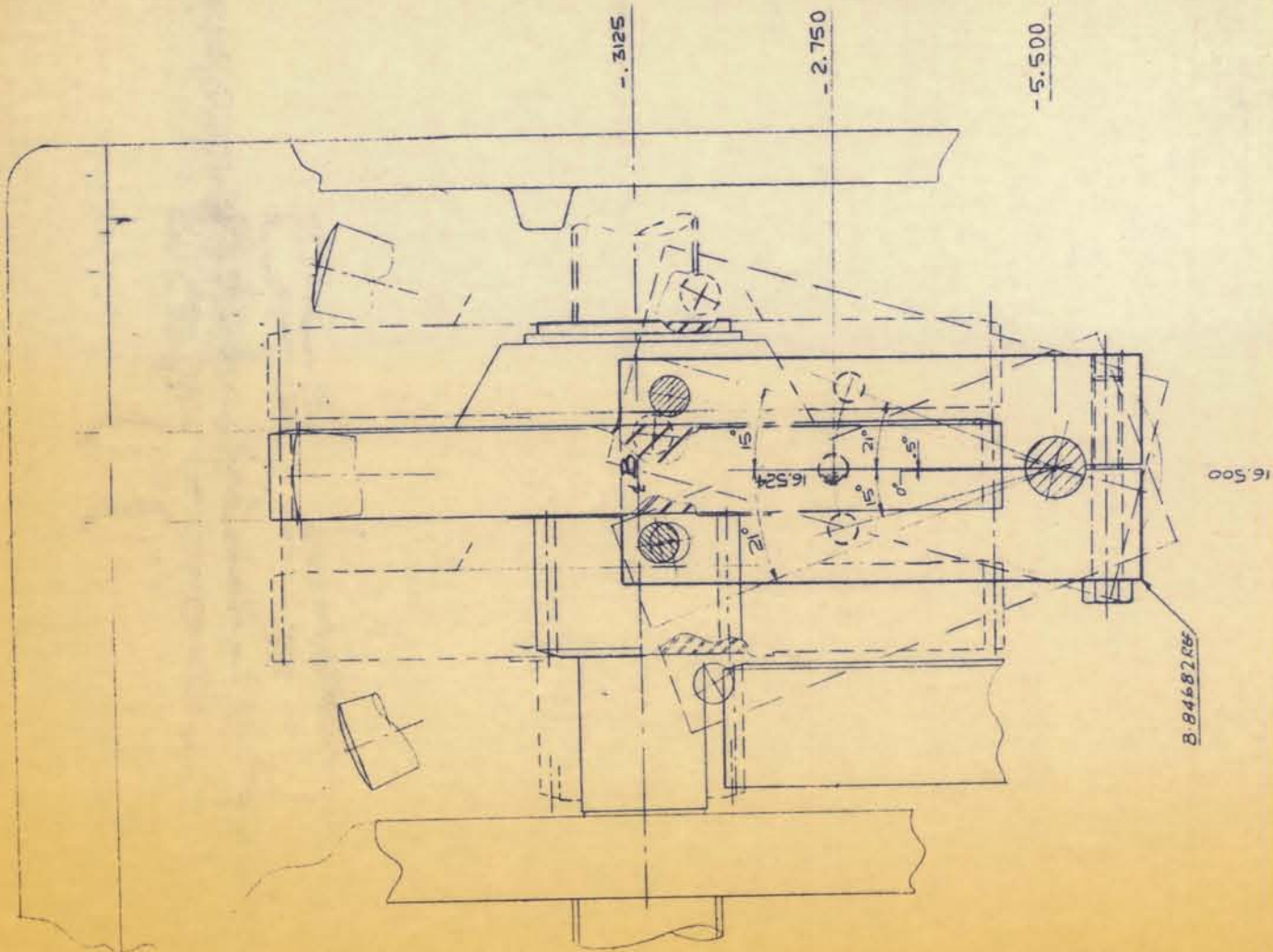
11

11

STANDARD-MODERN TOOL COMPANY LIMITED	TORONTO, CANADA
ITEM NO.	NO. REV.
DATE	REV.
BY	REV.
CHECKED	REV.
APPROVED	REV.
18 SPEED HEADSTOCK WITH 18 SPEED MOTOR	18 SPEED MOTOR
2630 LATHE	D-43273

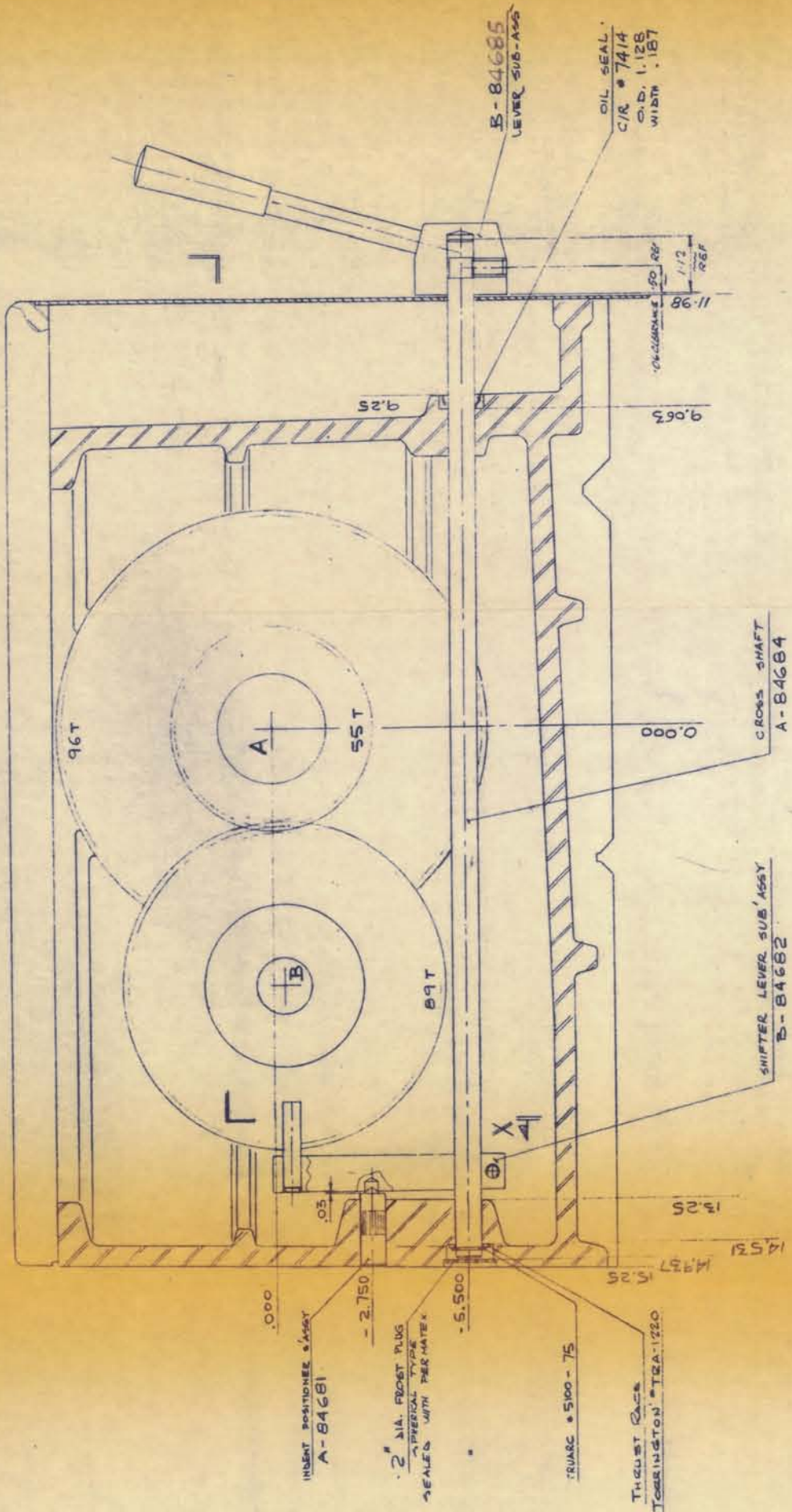


丁



SECTION

SCALE: FULL SIZE

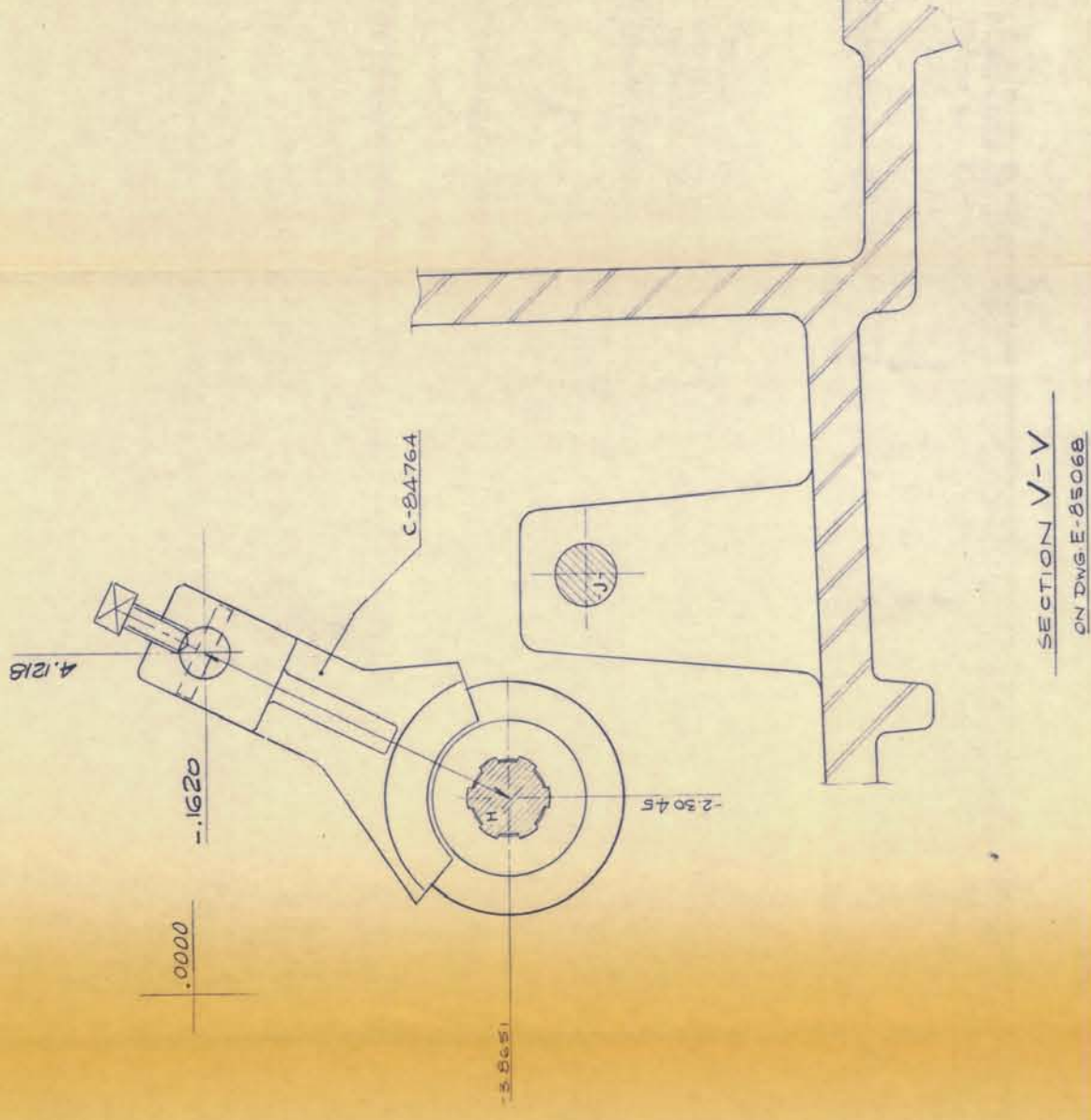
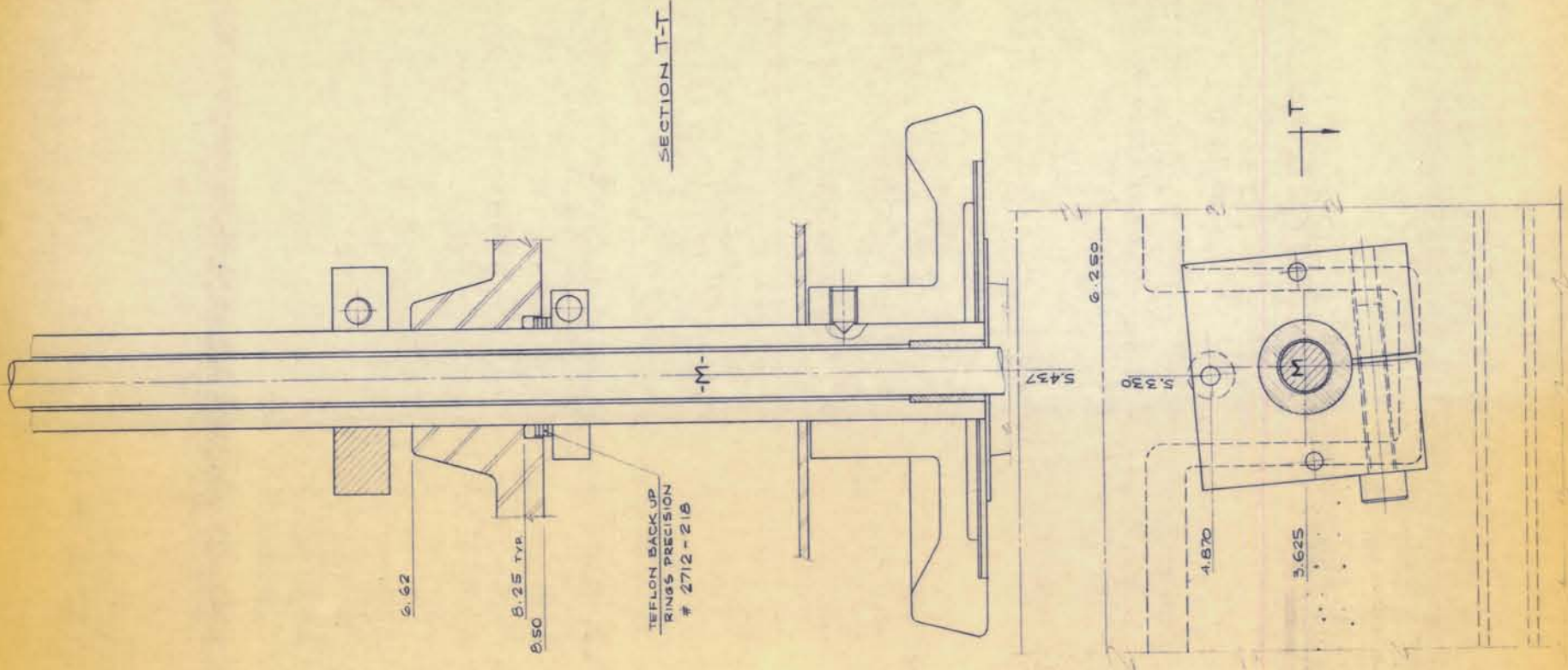


ITEMS REQUIRED BUT NOT SHOWN

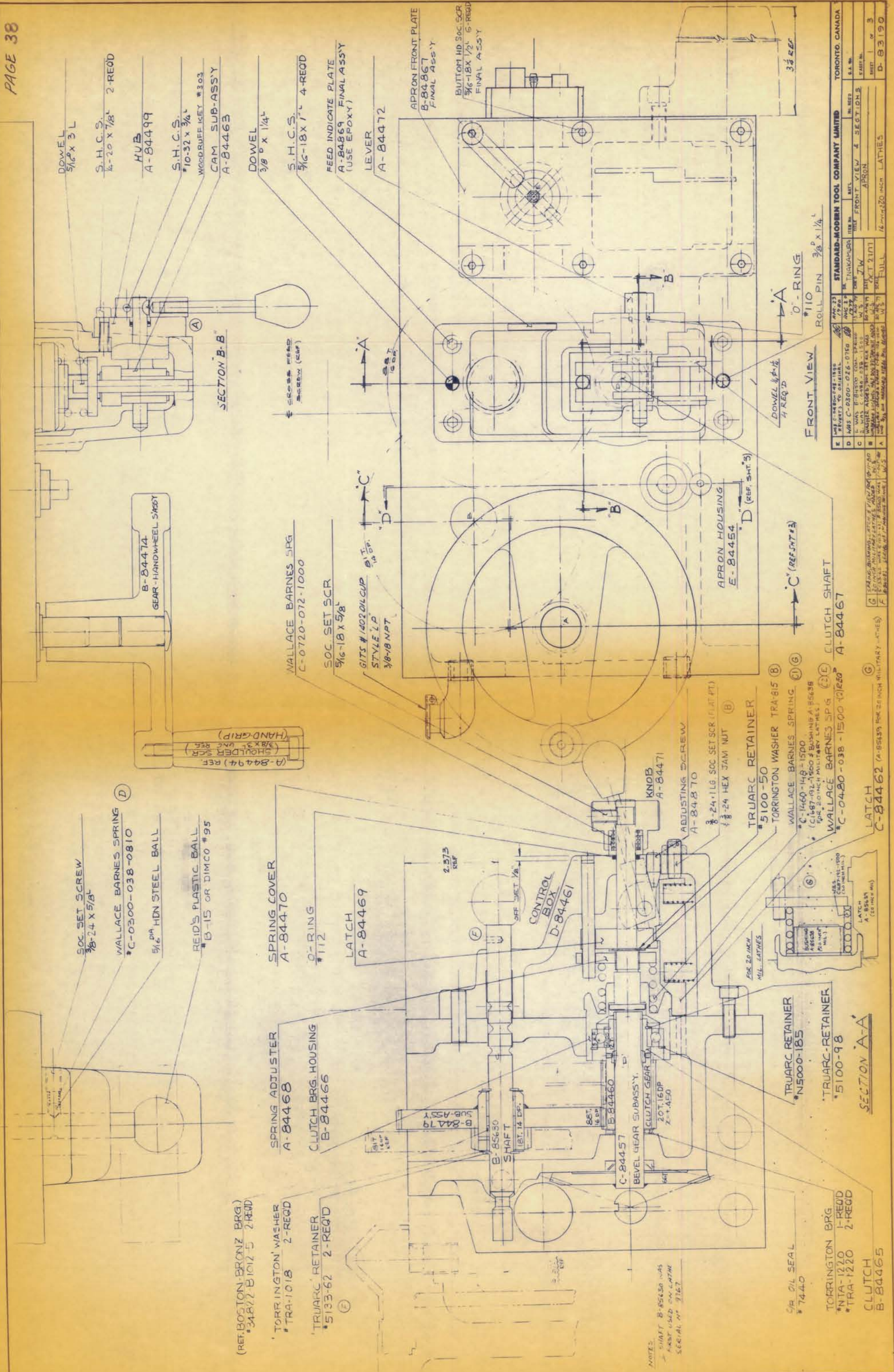
[illegible]

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D								
C								
B								
A								

[illegible]



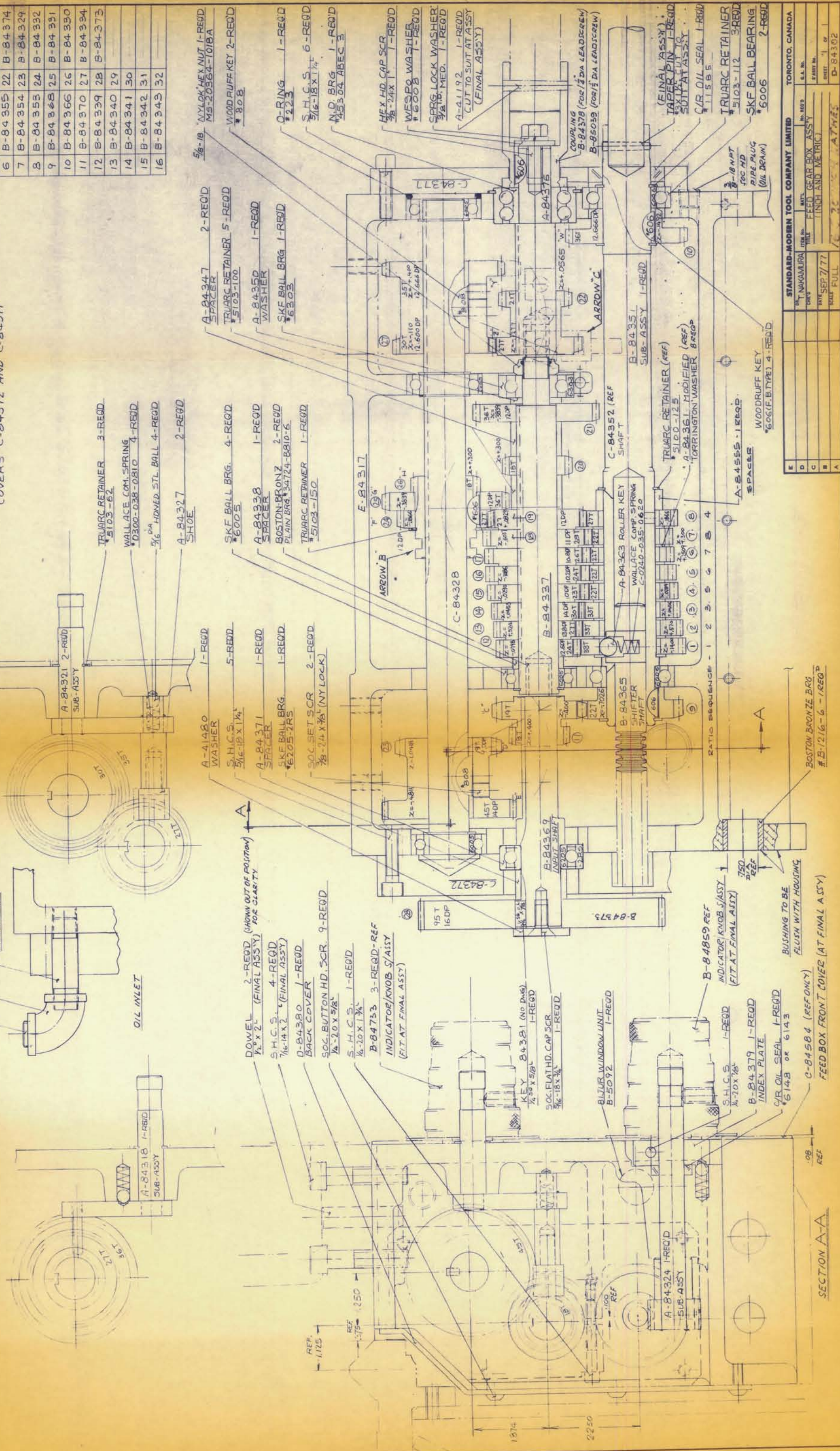
STANDARD-MODERN TOOL COMPANY LIMITED				TORONTO, CANADA	
BL.	CR.	ITEM NO.	QTY.	UNIT	PRICE
D	L	5			
C					
B					
A					

[illegible]

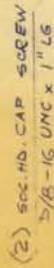
RIGHT HAND SIDE SHIFTER ASSY AT ARROW 'C'

3/8-18 NPT
SOC HD PIPE PLUG
3/8 GALV 90° ELBOW
3/8 x 2 1/2
GALV. NIPPLE

MIDDLE PORTION SHIFTER ASSY AT AEROW B



SECTION A-A

XX
SCRAP SECTION

A-41321

GIB SCREW
1/4-28 NF - L.H.

C - 41330
TAPERED GIB



(3) #6-32 x 3/8 LG
LOC. HD. CAP SCREW

GITS. OILER # 522

TORRINGTON, THRUST RACE (4)
* TRB - B15 (.060/.063 THK)

..TORRINGTON THRUST BEARING(2)

* NTA - 815

A-41319 STD NUT

HEX SOC PIPE PLUG $\frac{1}{8}$ NAT
TO BE LEVEL OR BELOW TOP SURFACE

5.0 TOTAL TRAVEL

MS 20364 - 820 A

1/4 - 20 UNC x 2 1/8"

GRIND SPECIAL THRUST
WASHER TO PROVIDE
.004 TO .008 CLEARANCE
AT FINAL ASSY.

160 REF

THIS LEAVES APPROX.
.020 FOR GRINDING
AT FINAL ASSY.



9.75

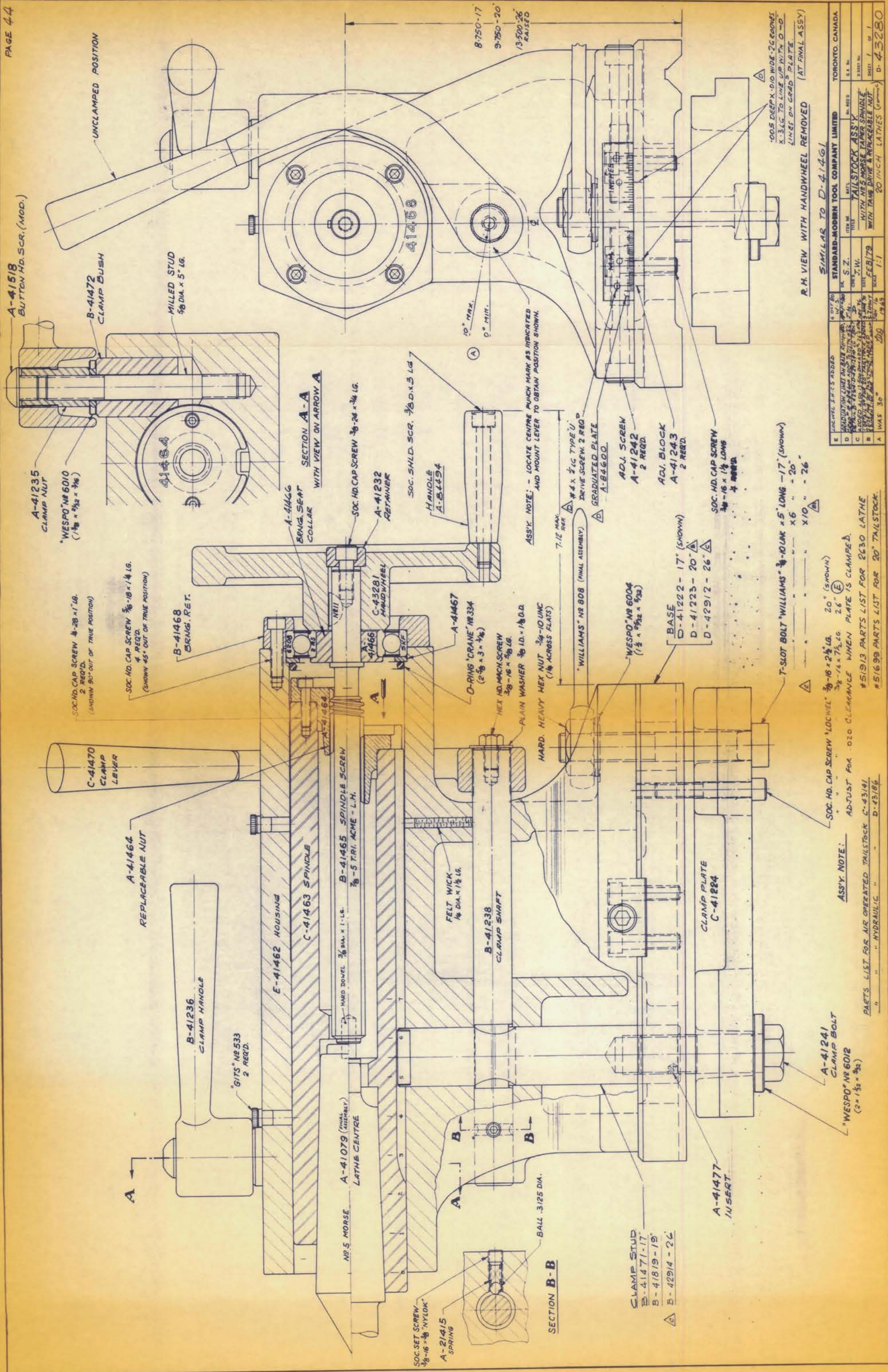
 $\angle$

1375

4.125

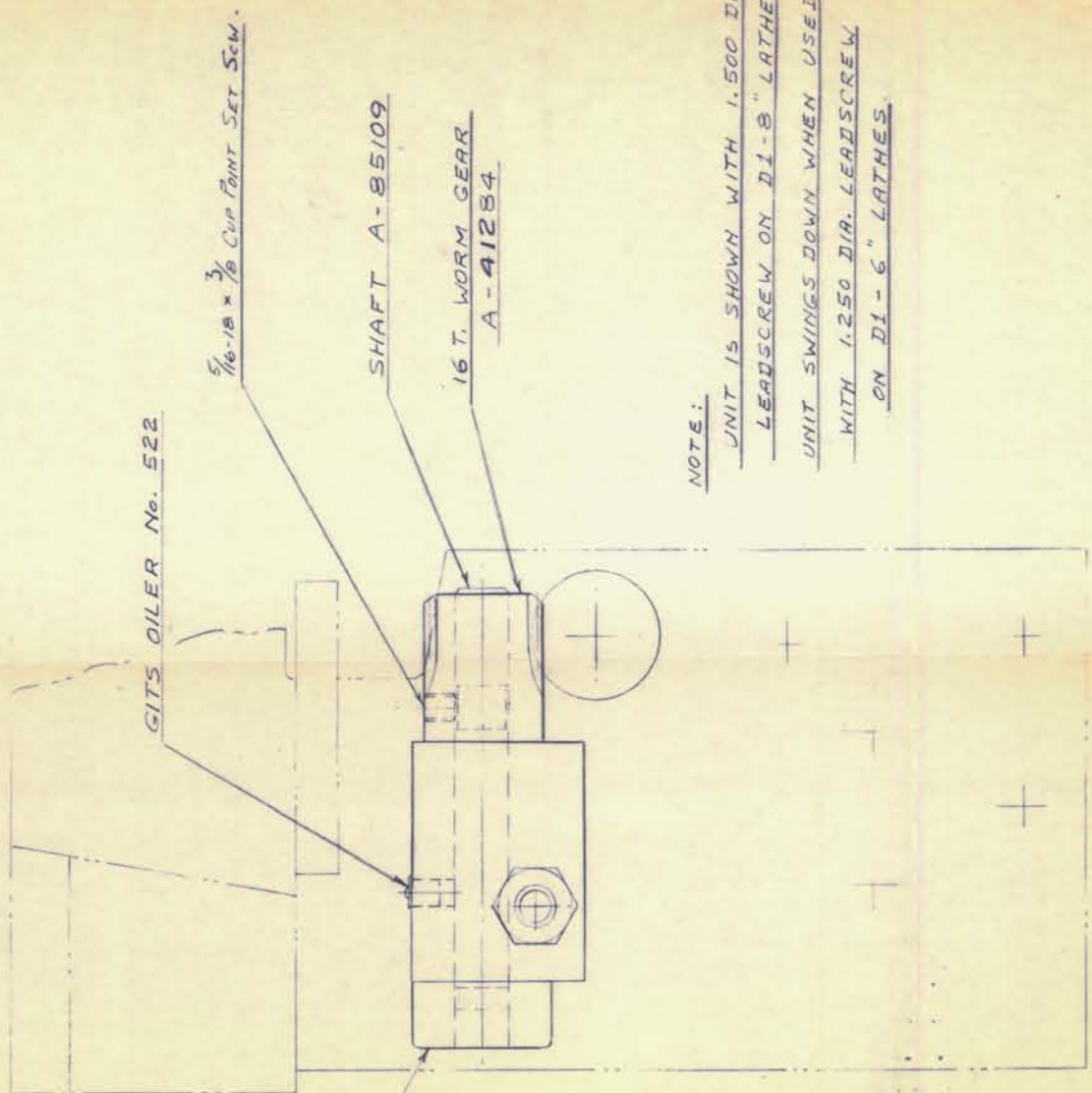
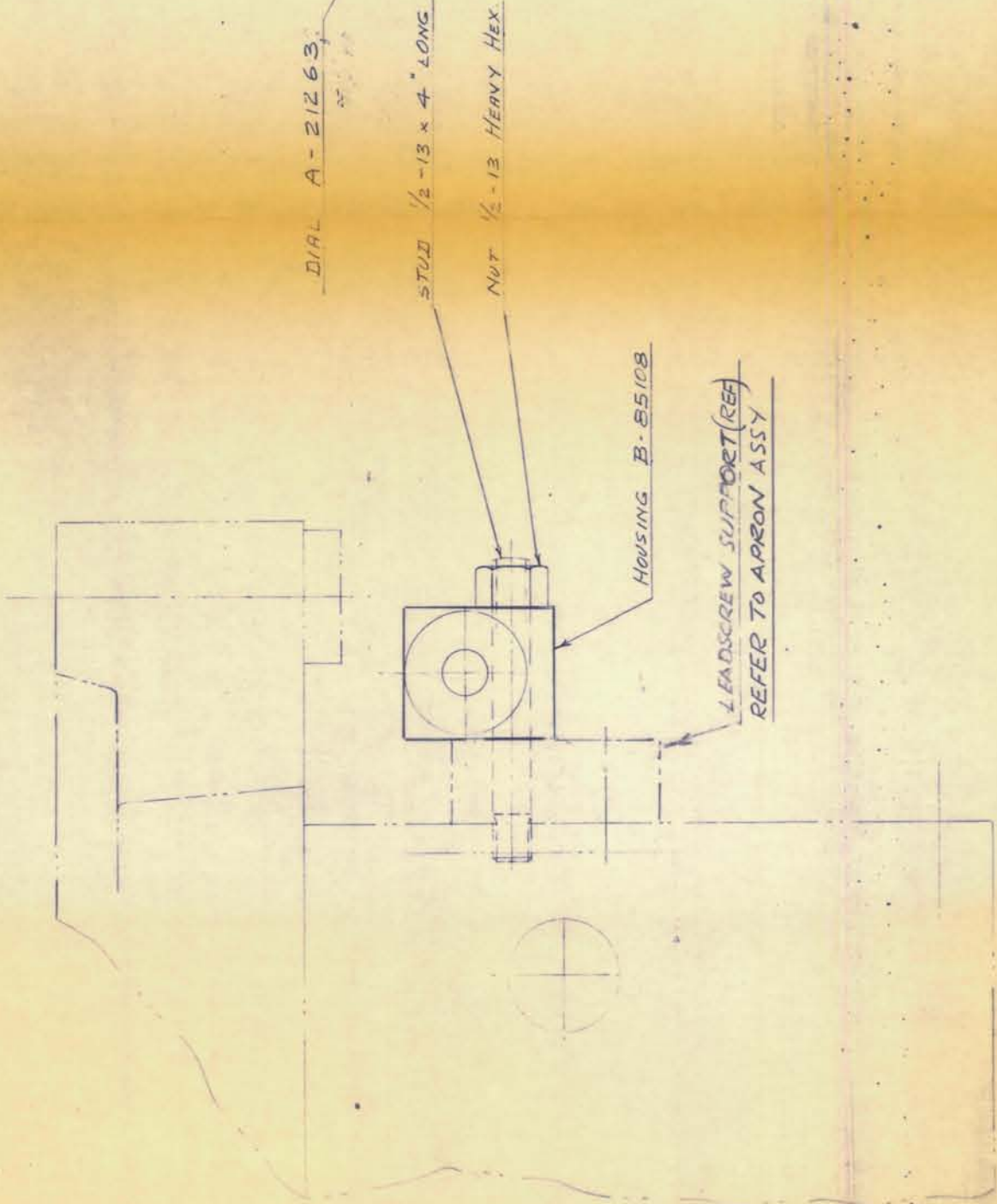
500

[illegible]

[illegible]

PARTS LIST FOR AIR OPERATED TAILSTOCK	C-4341
"	D-4386
"	"
"	" HYDRAULIC "
#51913 PARTS LIST FOR 2x30 LATHE	
#51699 PARTS LIST FOR 20" TAILSTOCK	

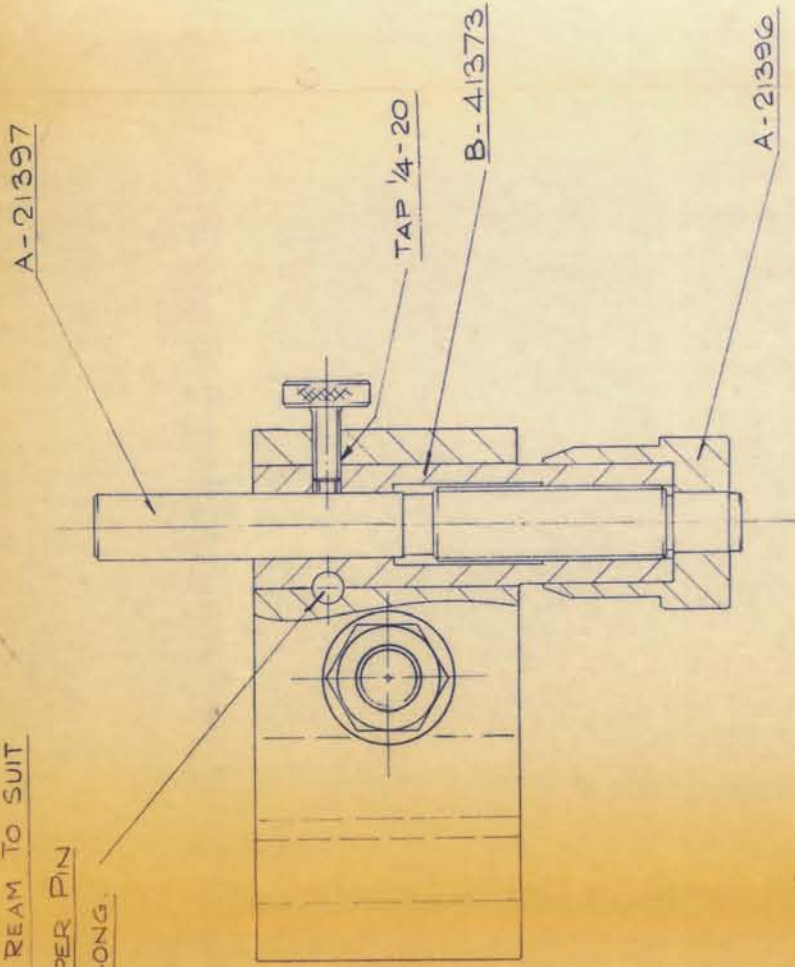
- A-41241
CLAMP BOL.
WESPO, NR 6012
(2 = 1/32 = 3/32)



NOTE:
UNIT IS SHOWN WITH 1.500 DIA.
LEADSCREW ON D1-8" LATHES.
UNIT SWINGS DOWN WHEN USED
WITH 1.250 DIA. LEADSCREW
ON D1-6" LATHES.

E					STANDARD-MODERN TOOL COMPANY LIMITED					TORONTO, CANADA	
D					BY <i>DRESEST</i>	ITEM NO.	MAT'L	REVISED		C.A. No.	
C					CHECK					SHEET No.	
B					DATE	TITLE		THREAD CHASING DIAL			
A					SCALE	BY <i>ENT 14-78</i>		— SUE-ASSY —			
						DATE		— NEW ARRON —		SHEET	OF
						SCALE		Full		D-85107	
								PI - 6 " 4 DI - 8 " LATHE			

DRILL #4 (209 DIA) & REAM TO SUIT
#4 TAPER PIN
1 1/2 LONG



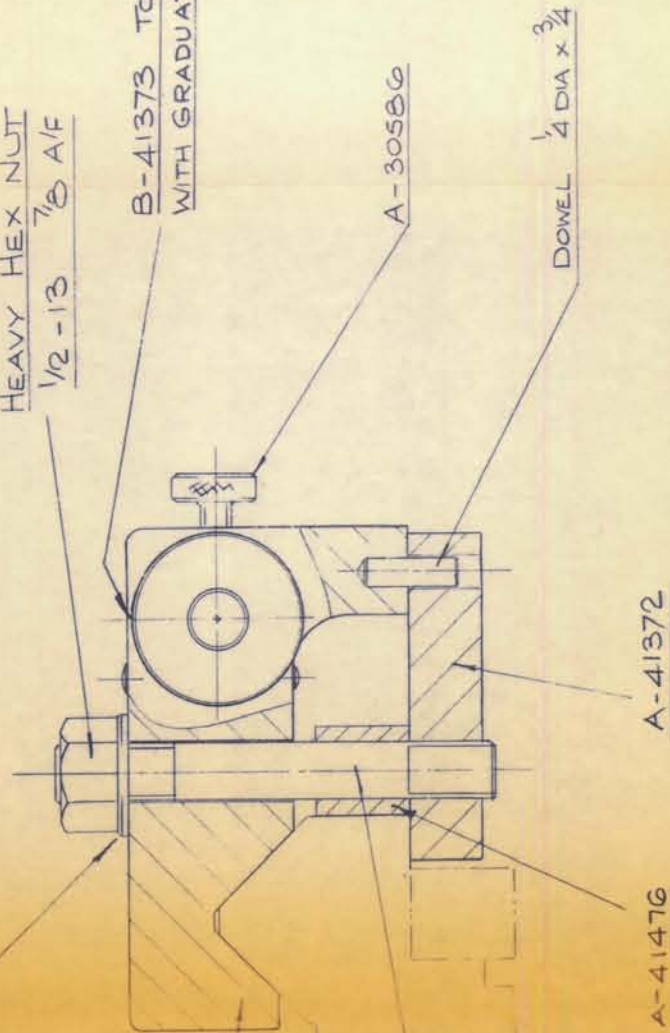
WESPO WASHER #6002

HEAVY HEX NUT
1/2-13 7/8 A/F

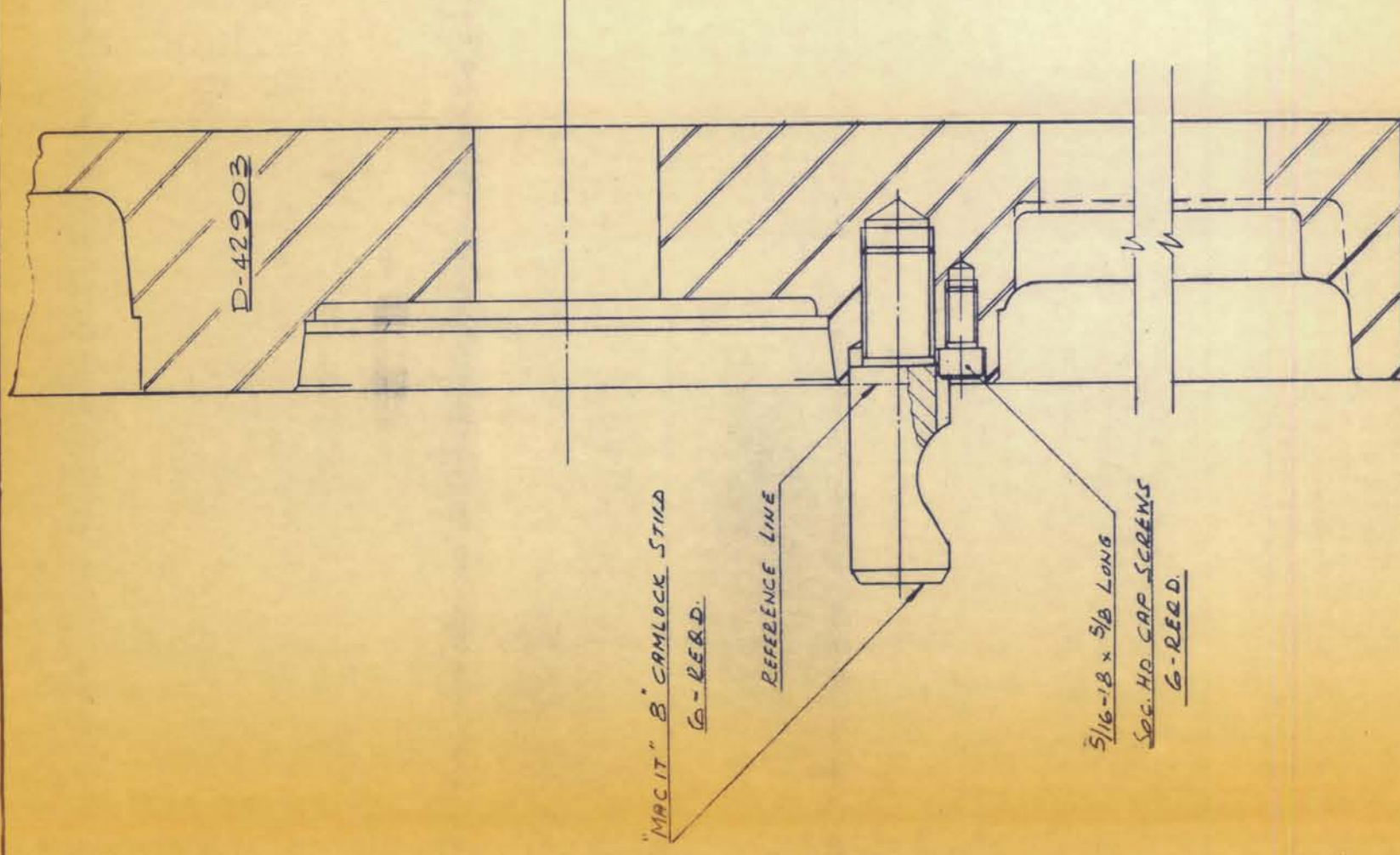
B-41373 TO BE ASSEMBLED
WITH GRADUATIONS IN THIS POSN

B-41374
(PART. NO. 41371)

MILLED STUD
1/2-13 x 4 LG.



STANDARD-MODERN TOOL COMPANY LIMITED				TORONTO, CANADA			
E	DR	ITEM NO.	MATL	No. REG'D	G.A. NO.	SHEET	OF
	WESTMOORELAND	TITLE					
	CHRD	MICROMETER CARRIAGE					
	DATE	STOP ASSEMBLY					
D							
C							
B							
A							
SCALE FULL				SERIES 20" LATHES			
				C-41370			



CROSS SECTIONAL VIEW

ASSEMBLY NOTES

1. TURN STUDS IN UNTIL REFERENCE LINE IS FLUSH WITH FINISHED FACE OF FACE PLATE
2. CONTINUE TURNING STUD IN UNTIL GROOVE LINES UP WITH LOCK SCREW HOLE
(REFERENCE LINE MUST BE FLUSH OR BELOW)
3. INSERT LOCK SCREW AND TIGHTEN

[illegible]

Drawn 10 mm Dia x 23 mm lg. - 3 Exp'd.

A-21292 - 3 Exp'd.

A-41505 - 3 Exp'd.

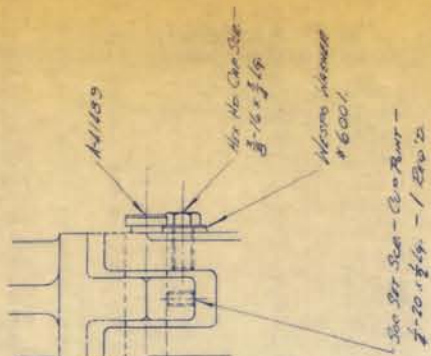
See Str. Sec. - Cap Nut -
3/8-16 x 3/4 - 6 Exp'd.

A-41506 - 3 Exp'd.

5/16 Ball Bush #6200
- 2 Exp'd.
- 3 Exp'd.



Part Section A-A



See Str. Sec. - Cap Nut -
3/8-20 x 3/4 - 3 Exp'd.

A-41485 - 3 Exp'd.

A-41483 - 3 Exp'd.

005 E'

E-41583

3/8-20

Ball Bush - 5/16
Heavy Hex Nut 3/8-13.

Heavy Hex Nut #6009

A-41483

A-21292

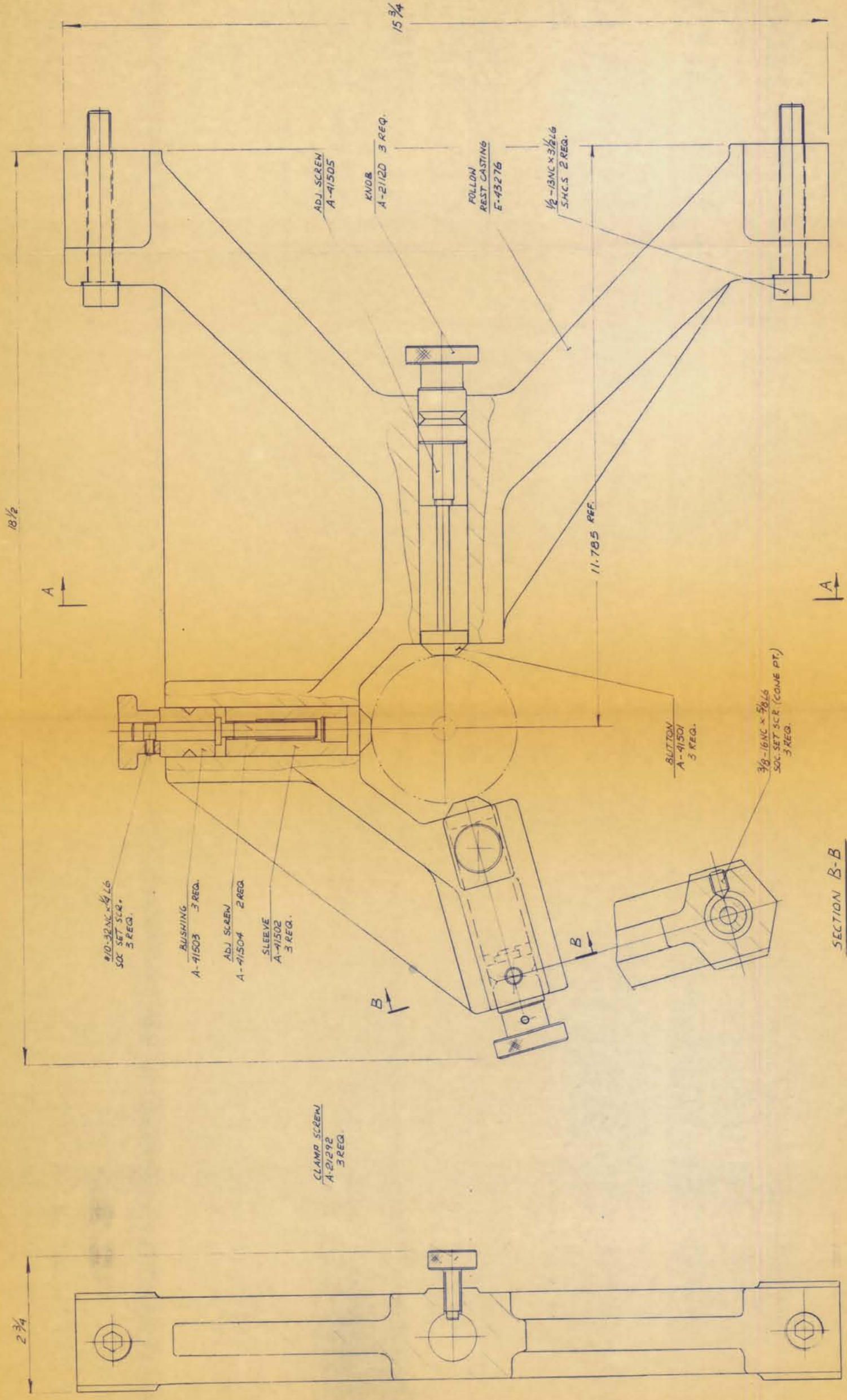
Ball Bush - 5/16
Heavy Hex Nut 3/8-13.

Heavy Hex Nut #6009

Mixed Stud -
3/8-10 x 4 1/4

B-41495

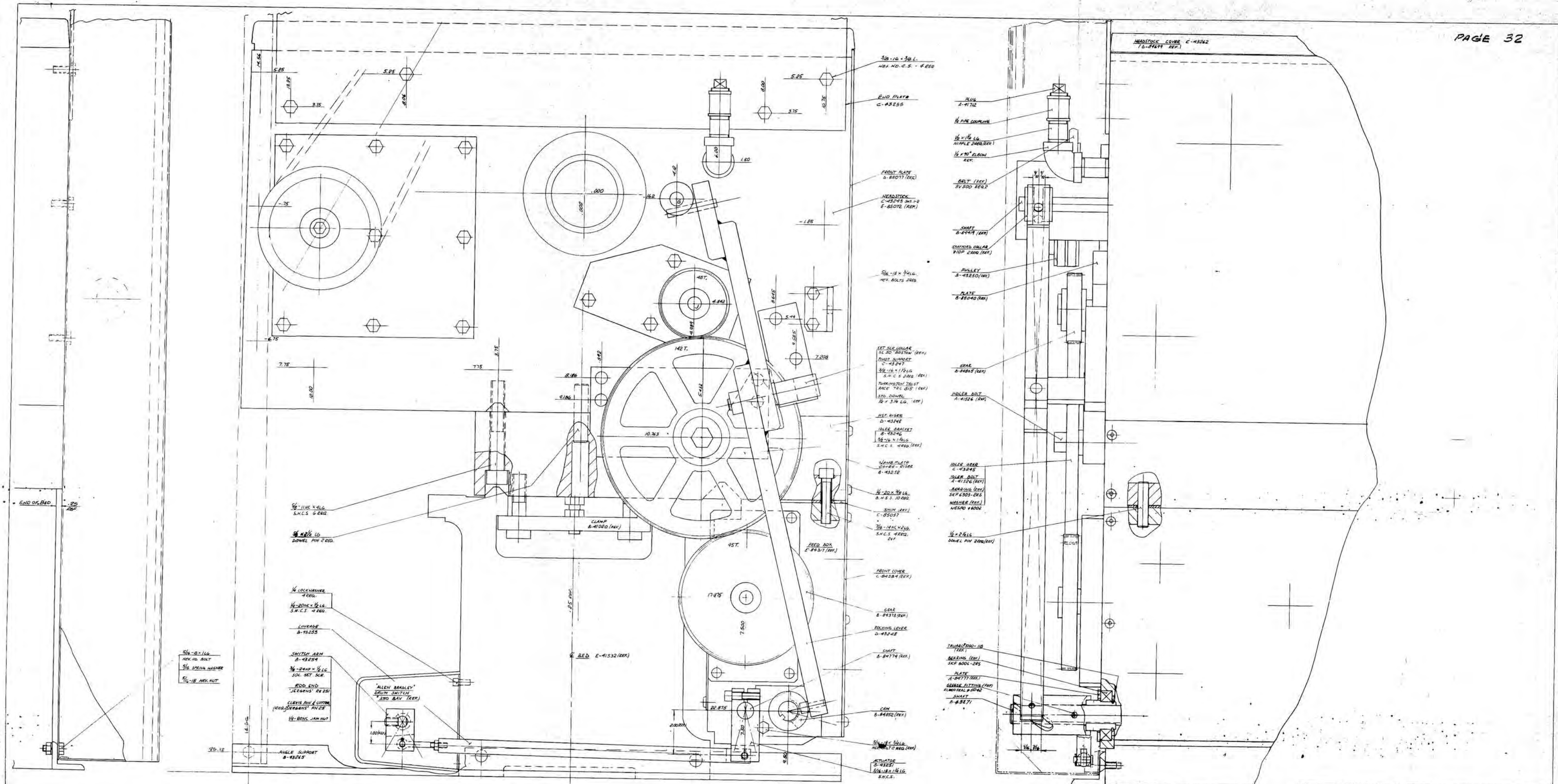
STANDARD MUSEUM TOOL COMPANY LIMITED		TORONTO, CANADA	
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13	14	15	16
17	18	19	20
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25	26	27	28
29	30	31	32
33	34	35	36
37	38	39	40
41	42	43	44
45	46	47	48
49	50	51	52
53	54	55	56
57	58	59	60
61	62	63	64
65	66	67	68
69	70	71	72
73	74	75	76
77	78	79	80
81	82	83	84
85	86	87	88
89	90	91	92
93	94	95	96
97	98	99	100



SECTION A-A

SECTION B-B

[illegible]



E			STANDARD - MODERN TOOL COMPANY LIMITED				TSHR/INO CANADA	
D			OR K.S.	789 No.	SEAL ASS'Y	NO 8007	6 4 No. E-85279	
C			DATE OCT. 20	1971	END GEAR TRAIN			EX387 No.
B			SCALE 1:1	FINAL ASS'Y			SWEE 1 OR 2	
A				2630 LATHE			E-43844	

25-40309

TAPER TURNING ATTACHMENT

3 OILERS - DAILY

SADDLE & CROSSION ASSY

2 OILERS - DAILY

TAILSTOCK ASSY

2 OILERS - DAILY

COMPOUND SLIDE ASSY

1 OILER, 1 PIPE PLUS - DAILY

HEAD END BOLT

5 FITTINGS

GREASE - DAILY

APRON CHAIN

2 FITTINGS

GREASE EVERY MONTH

APRON ASSY

CHAIN

3/4 PIPE PLUS

APRON OIL SIGHT GAUGE

2 FITTINGS

GREASE EVERY MONTH

FEED BOX OIL SIGHT GAUGE

2 FITTINGS

GREASE EVERY MONTH

FEED BOX ASSY

CHAIN

3/4 PIPE PLUS

END GEAR TRAIN ASSY

2 OILERS - DAILY

2 FITTINGS

GREASE EVERY MONTH

FEED BOX ASSY

CHAIN

3/4 PIPE PLUS

HEADSTOCK ASSY

2 OILERS

1/2 PIPE PLUS

GREASE

LUBRICATION - OIL: S.A.E. 20 W 50 MINERAL OIL - MIL. L. 6822-58

VISCOSITY 500 SUS AT 100 DE F.

GREASE: LITHIUM BASE WITH OR WITHOUT

E.P. ADDITIVES - MIL. S. 1609A-2415

CAUTION: DO NOT USE DISTILLATE TYPE OIL

CHECK LEVELS DAILY

1	STANDARD TOOL COMPANY LIMITED	STANDARD TOOL COMPANY LIMITED
2	1000	1000
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100	1000	1000