

LATHE, TOOLROOM, 13 INCH SWING OVER BED
MOUNTED ON PEDESTALS.

NSN:3416-00-186-4060.

MODEL: 1340 I/M.

CATALOG NO: 52309

CONTRACT NO: F09603-91-C-0769.

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OPERATOR'S HANDBOOK

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INTRODUCTION:

The lathe is a machine designed and built to provide a means of turning and/or boring by the action of a tool on a workpiece rotating about a horizontal axis.

Specifications for this lathe may be found on page 1 of this manual.

The dimensions and center of gravity of the lathe may be found on page 3 of this manual.

The approximate weight of the machine is 2000 pounds.

This lathe model is equipped with a 3 HP dual voltage (230/460) 3-phase, 60 Hz motor. It is wired for 230 volt initial operation at the factory. The motor and electrics are in accordance with ANSI-C-113.1 (NFPA No. 79-1980). Also a voltage conversion package for re-connection to 460V operation has been supplied. Before connection to a power source, the wiring should be checked against page 9 of this manual by an electrician to determine suitability. Note that wiring changes are only required when altering voltage.

Please refer to page iv for Warranty/Guarantee information.

LIST OF LOOSE EQUIPMENT AND TOOLING

	<u>DESCRIPTION</u>	<u>QUANTITY</u>	<u>PART NO.</u>
1.	Drive Plate	1	32187
2.	Center Sleeve	1	32332
3.	Center, Dead, #3 MT	2	32333
4.	Tool Post, Quick Change Turning and	1	282-3215
	facing holder	1	282-3220
	Boring bar holder	1	282-3222
	Parting blade holder	1	281-3224
5.	Face Plate	1	32193
6.	Micrometer Carriage Stop (1 inch)	1	83713
7.	Collets, 5C round, Set of 15	1	
8.	Chuck, 10" 4-jaw independent. Steel	1	
9.	Chuck, 8" 3-jaw universal. Steel	1	
10.	Collet Chuck, Sjogren 5C	1	
11.	Depth Threading Stop	1	83746
12.	Arbor, 3MT to 3JT	1	A0305
13.	Drill Chuck, 0-1/2" Cap.	1	14N
14.	Arbor, 3MT to 3JT	1	A0303
15.	Follow Rest 3/4" to 3-1/2" Cap.	1	115153
16.	Worklight	1	LB-2
17.	Coolant System and Pump	1	Graymills X11HR-35A
18.	Acu-rite Digital Readout	1	
19.	Wrench set	1	
20.	Shear pin, spare, feed gear train	4	84100
	Shear pin, spare, leadscrew	4	83628
21.	Threading Dial	1	85107
22.	Chuck Guard	1	Enco 295-0300
23.	Chip Guard	1	Enco 295-0400
24.	Steady Rest 1/2" to 3" Cap.	1	30667
25.	Operator's Manual and Test Sheet	1	

WARRANTY/GUARANTEE INFORMATION:

The engine lathe covered by this technical manual is Warranted against defective workmanship and material for a period of 730 days after delivery. The above warranty does not include defective items resulting from inadequate maintenance or improper usage.

SPECIFICATIONS:

MACHINE:

Swing over Bed and Saddle.....	13 in.
Swing over Cross Slide.....	7.75 in.
Distance between Centers.....	40 in.
Main Drive Motor.....	3 HP.
Bar Capacity.....	1.375 in.

HEADSTOCK:

Spindle Speed Ranges.....12.
Speed Range.....60 Hz. 40-2000 RPM.
Spindle Nose-Camlock.....D1-4 in.
Spindle Hole.....1.375 in.
Spindle Center.....#3 MT.

FEEDBOX:

Number of Feed Changes.....	54	inch & 54 metric.
Number of Thread Changes.....	54	inch & 54 metric.
Inch Feed Range Longitudinal.....	.001-.062	in/rev.
Inch Feed Range Cross	.0005-.031	in/rev.
Inch Thread Range.....	4-224	T.P.I.
Metric Feed Range Longitudinal.....	.031-1.74	mm/rev.
Metric Feed Range Cross.....	.015-.87	mm/rev.
Metric Thread Range.....	.125-7mm	lead

APRON:

Double Wall construction. Double half nuts.

CARRIAGE CROSS SLIDE:

Carriage Length on Bed (Front).....	13 in.
(Rear).....	15 in.
Carriage Bridge Width.....	.6 in.
Cross Slide Length.....	15 in.
Cross Slide Travel.....	.7 in.
Compound Travel.....	3.25 in.
Dial Graduations.....	.001 in & .02 mm.

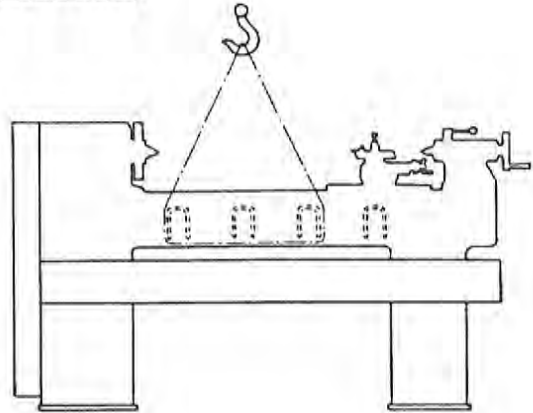
TAILSTOCK:

Spindle Diameter.....1.56 in.
Spindle Travel.....4 in.
Morse Taper with Tang Drive.....#3 MT.
Offset.....±.75 in.

1. LIFTING AND INSTALLATION INSTRUCTIONS:

(1.1) LIFTING OF MACHINE:

To lift the machine using chain slings, run the carriage to the tailstock end and place the slings around the cross rib located at the center of the bed. Protect painted surfaces with thick pads and wood blocks.



DO NOT attempt to lift this machine with a hoist having less than one ton capacity. The shipping weight of the machine is 2000 pounds.

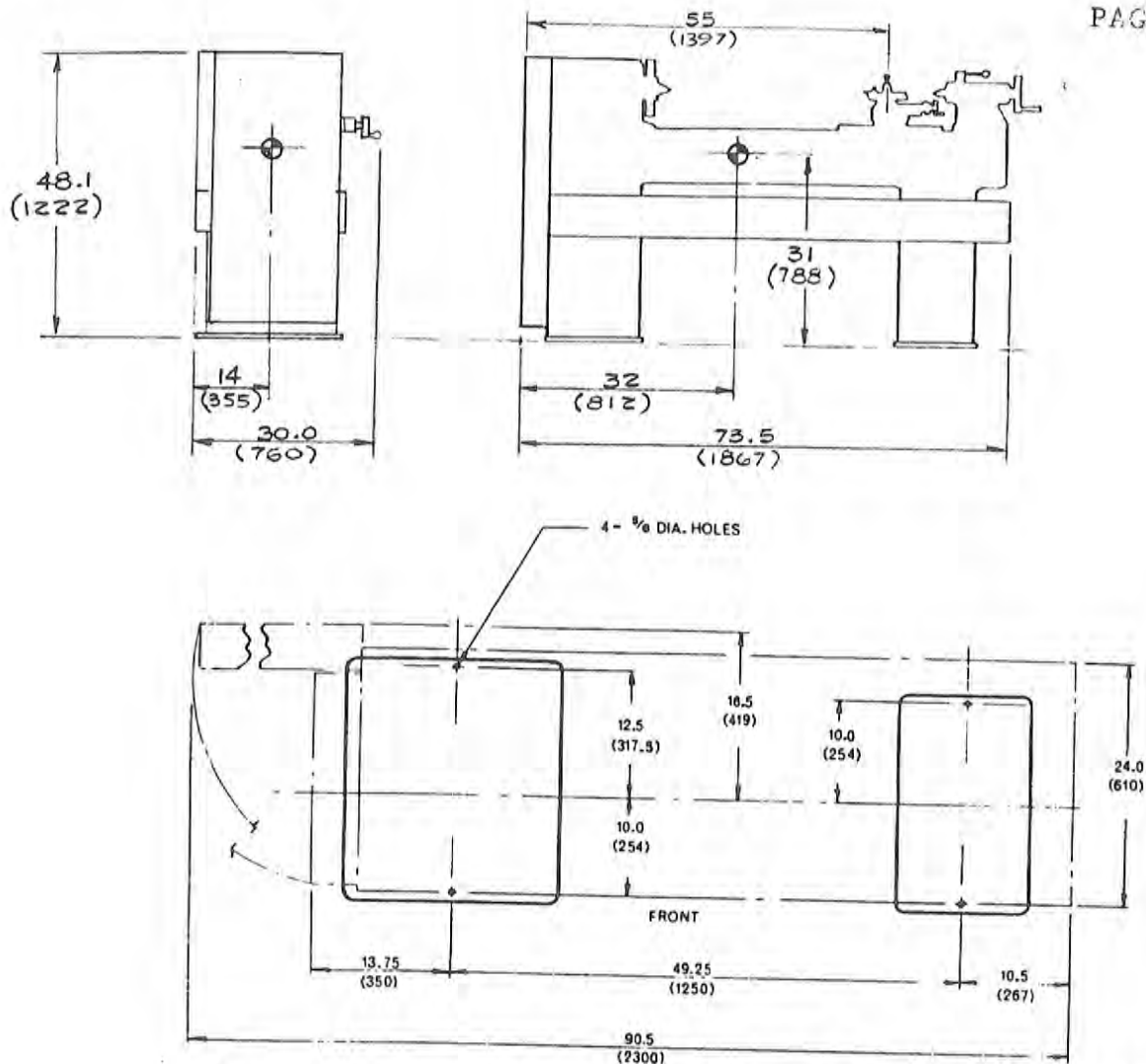
DO NOT remove skids from the machine until it is brought to its final position, especially if the machine is to be moved on rollers.

(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 Original Machine Tools Inc. 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, wipe with a clean cloth. All unpainted surfaces should be coated immediately with a film of light machine oil to prevent rust.



Overall Dimensions and Center of Gravity for Lathe .

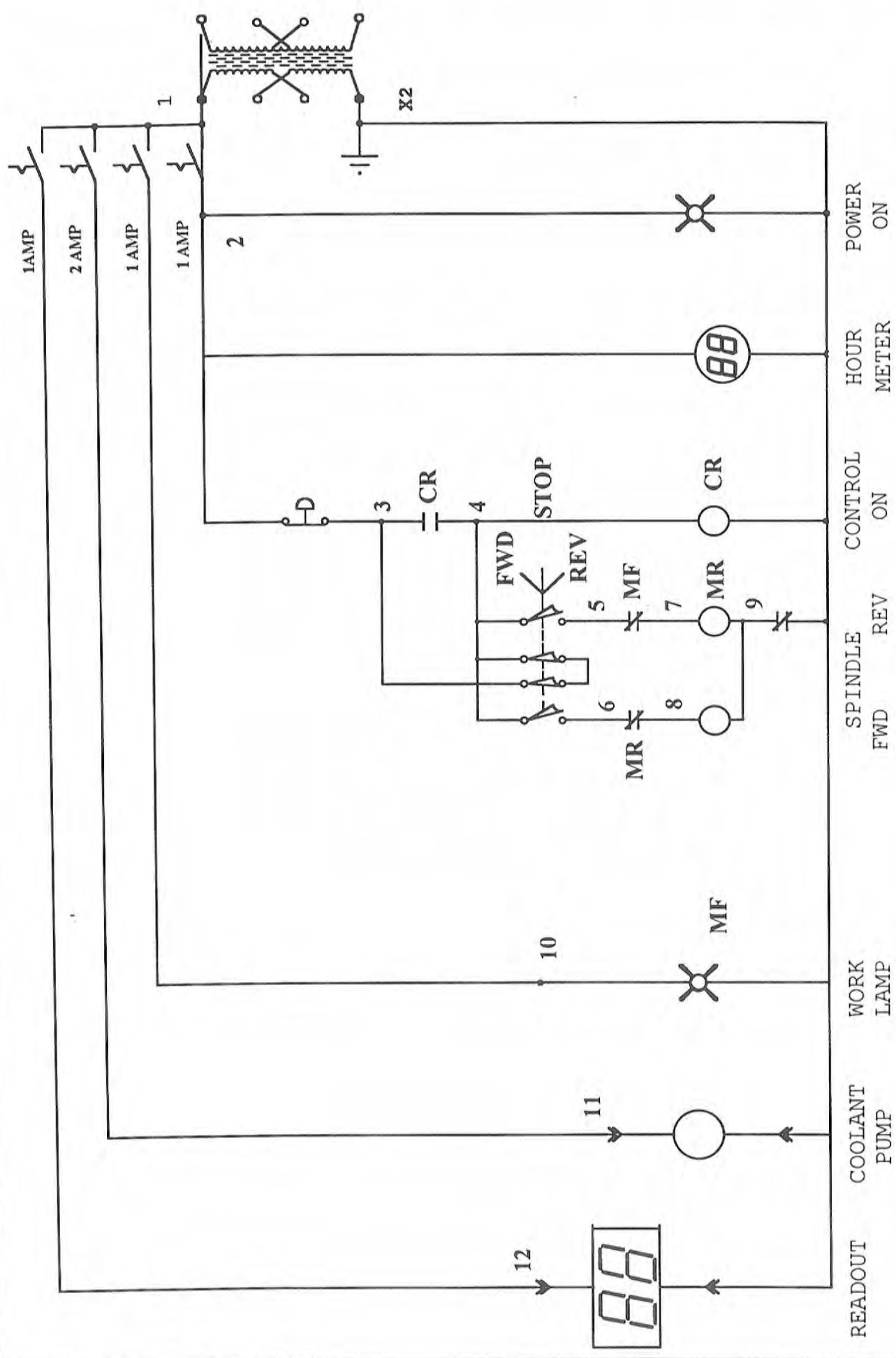
(1.4) INSTALLATION:

For proper operation, the machine should be set on a substantial floor capable of supporting a uniform pressure of 30 p.s.i.. To secure the machine on its foundation use anchor bolts or lag screws as shown on Floor Plan.

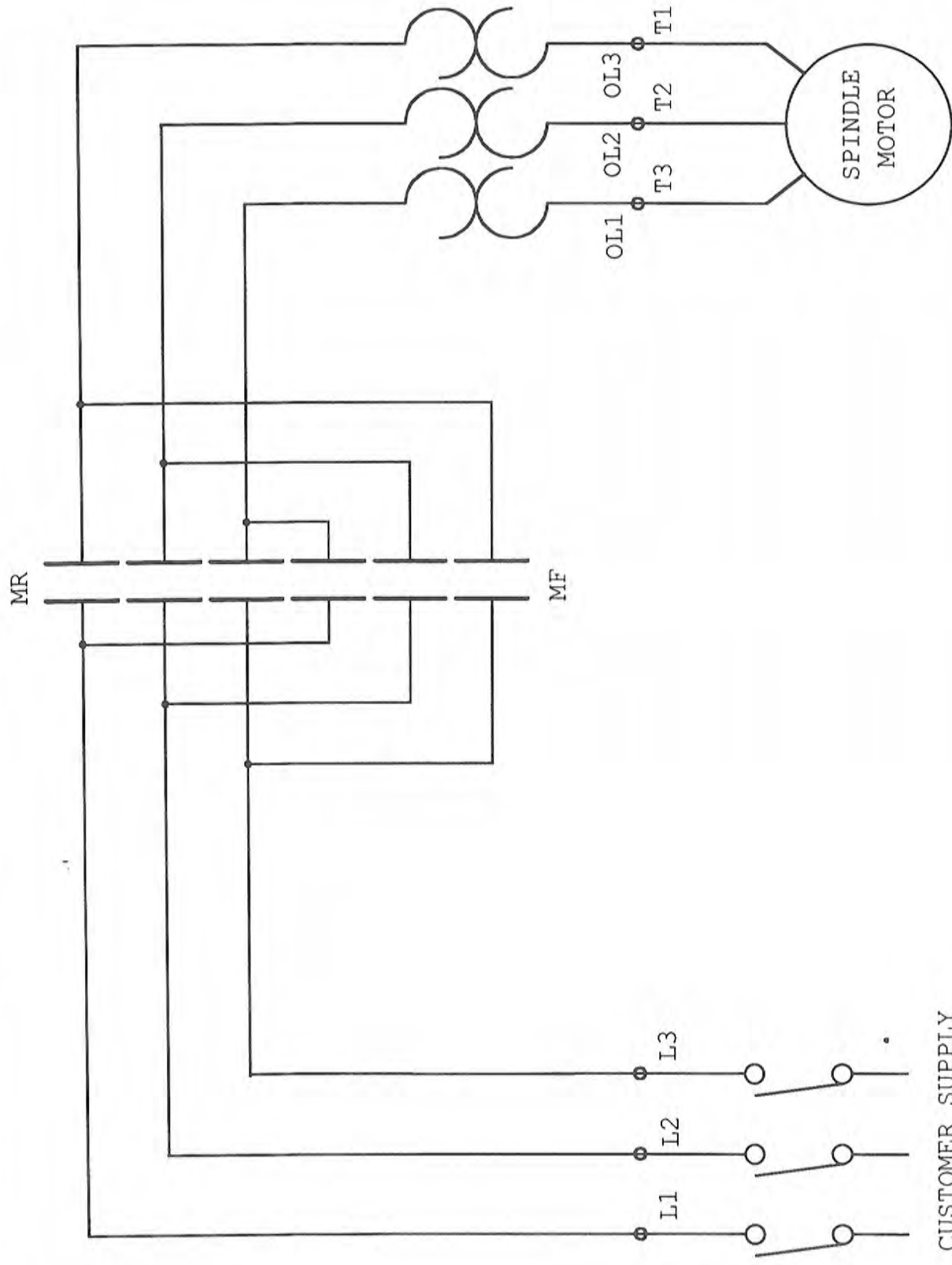
After the machine is in position, it must be levelled by use of the four levelling bushings provided, before tightening the lag screws. It will be necessary to use 4-inch square steel plates, about 3/4" thick, under the levelling bushings to prevent the ends of the bushings from sinking into the floor.

Use a precision level placed lengthwise and crosswise on the bed. To take a reading of the level for the crosswise levelling of the bed, use parallel bars placed on the flats of the bed.

After levelling within 0.0005 in/ft, the legs should be lagged to the floor and the levelling rechecked. Re-check the level of the machine at regular intervals.



ORIGINAL MACHINE TOOLS INC.		1340		BY PEM		SHT. OF	
				DATE 8/92		NO.	



ORIGINAL MACHINE TOOLS INC.

1340 MOTOR CONTROL

BY PEM SHL OF
DATE 8/92 NO.

WARNING ALL TEMPORARY CAPS OR PLUGS MUST BE REMOVED
BEFORE START-UP OR USE OF THE LATHE.

2. LUBRICATION

OIL: SAE 30 Non-detergent Mineral Oil.
Viscosity 500-550 SUS at 100 F.
MIL-L-6082D GRADE 1100
NSN: 9150-21-888-7172

GREASE: Lithium base with or without E.P. additives.
MIL-G-10924C
MIL-G-46006

EVERY SIX MONTHS CHANGE OIL

Headstock	- 5	quarts.
Feedbox	- 1 1/2	quarts.
Apron	- 1/4	quart.

EVERY 8 WORKING HOURS LIGHTLY OIL

End gear train	- 2 Oilers
Compound	- 2 Oilers
Cross slide	- 4 Oilers
Taper attachment	- 3 Oilers
Tailstock	- 3 Oilers

GREASE

End Bracket	- 4 Fittings
Apron Half-nuts	- 1 Fitting

EVERY 2 TO 6 WORKING HOURS

Carriage ways	- 1 shot
---------------	----------

Top up 1-shot reservoir when required

2.1 General

Before filling reservoirs, 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 media. 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. LUBRICATION cont'd.

2.2 END GEAR TRAIN

Oil idler gear teeth daily.

2.3 Apron

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 of the apron lubricates the half-nuts.

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 are lubricated by two oilers; one each side of the base.

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, one oiler lubricates the screw, a second oiler lubricates the screw bearing.

2.6 Cross Slide

The cross slide dovetails and bearing surfaces are lubricated by means of the two oilers located each side of the cross slide. 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 lubrication 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.

2. LUBRICATION cont'd.

2.8 Bed End Bracket and Leadscrew

Four 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; apply grease to these fittings.

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

2.9 Taper Attachment

Clean and oil the pivoted slide bar before using.

Three oilers lubricate the slide plate and the thrust bearing.

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 Use

Responsibility for the following points with respect to machining a component must inevitably rest with the user.

- (1) Ensure that the operator has had suitable training and possesses the required degree of skill and experience to undertake the work.
- (2) Provide suitable work holding and/or supporting equipment : chucks, steadies, revolving centers, etc.
- (3) Ensure that suitable tooling is provided and correctly mounted.
- (4) Ensure that suitable feeds and speeds are selected.
(If in doubt select low).
- (5) Provide and use suitable workpiece guards.

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) **KNOW HOW TO STOP THE MACHINE BEFORE STARTING IT.**
- (5) **DO NOT** interchange chucks or other spindle mounted items between lathes without checking for correct locking.
- (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.

3. LATHE SAFETY cont'd.

3.2 cont'd.

- (9) Check load capacity of revolving centers.
- (10) Ensure guards are in position before starting machine.
- (11) DO NOT use cracked or chipped tools.
- (12) CHECK before starting motor:
 - Spindle speed and 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) Stop motors and push in red safety stop switch when leaving machine unattended.
- (19) Use safety stop switch when changing workpieces, tightening or loosening chuck etc.

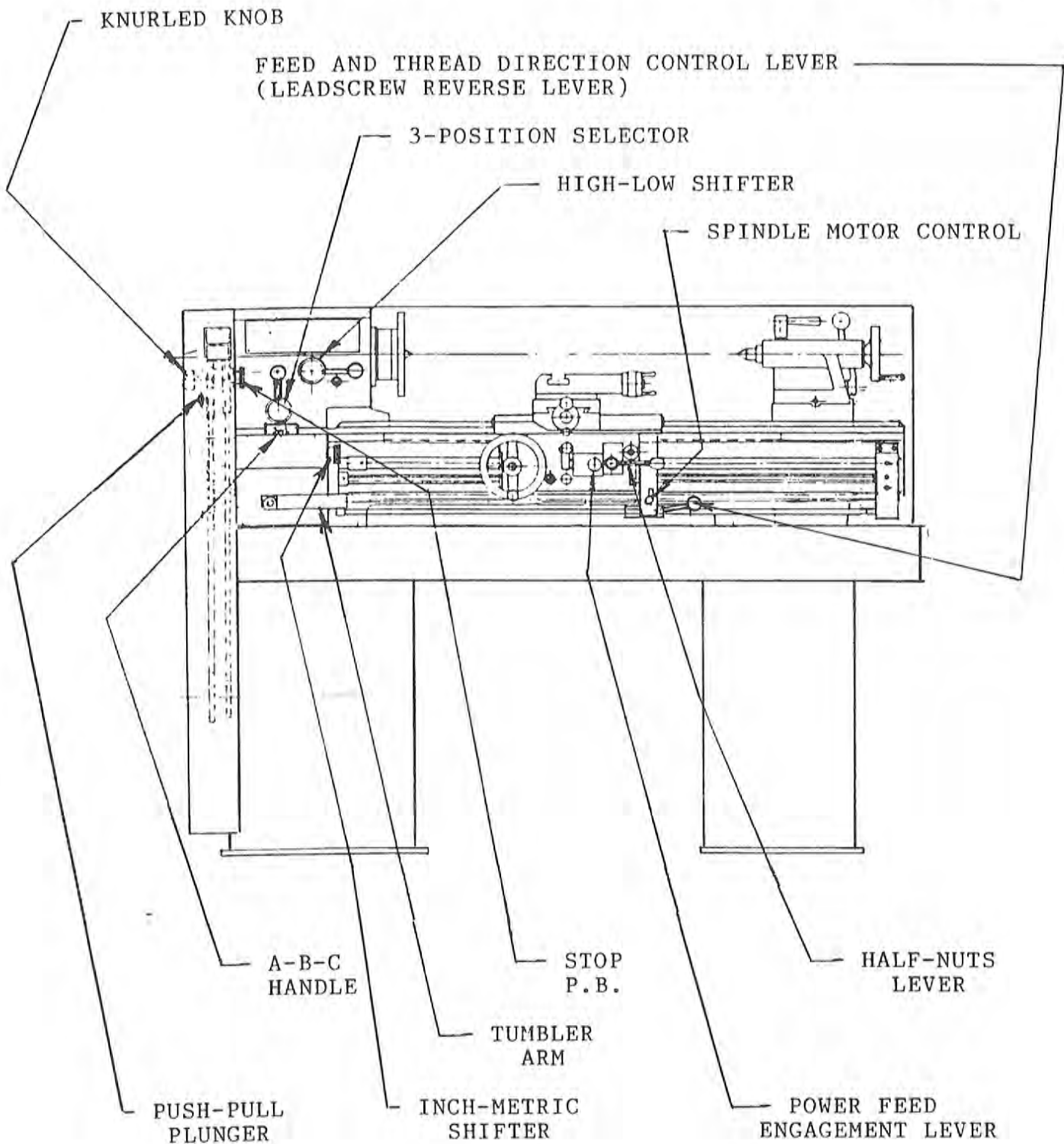
3.3 Personal Safety Rules

- (1) Report any accident as soon as 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, all burrs and sharp edges.

3. LATHE SAFETY cont'd

3.3 cont'd.

- (10) When lifting a heavy workpiece use the correct type of sling, ensuring that it is not worn or damaged and that its safe working load is not exceeded.
- (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 chips 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.



BASIC OPERATING CONTROLS

4. OPERATING INSTRUCTIONS

4.1 Motor and Spindle Control

The spindle motor is controlled by means of a control lever mounted on the apron. Lift up for FORWARD rotation, centralize for STOP and push down for REVERSE rotation.

4.2 Spindle Speed Selection

The SPINDLE SPEED CHART is located on the upper front face of the headstock.

SLOW RANGE:	40	80	160	350	700	1400
FAST RANGE:	57	115	230	500	1000	2000

The desired spindle speed range is obtained by moving the KNURLED KNOB located in a recess near the top of the belt guard.

To select Slow Range, push and twist.

To select High Range, pull and twist.

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 mid-position.

- WARNING - STOP the motor before operating any speed selectors.
- DO NOT exceed spindle speed recommended by chuck manufacturer.
 - DO NOT operate the machine with the large faceplate above 500 rpm.

4.3 Power Feeds

The trip clutch pre-load is factory set and should not require adjustment.

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.

4. OPERATING INSTRUCTIONS cont'd

4.3 cont'd

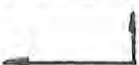
To select power longitudinal feed or power cross feed, select COARSE or FINE range by means of the PUSH-PULL PLUNGER which protrudes through the belt guard and arrange the A-B-C handle, INCH-METRIC shifter knob and TUMBLER ARM to obtain the desired feed rate according to the feeds and threads chart.

WARNING: STOP the motor before moving the PUSH-PULL PLUNGER.

CAUTION: DO NOT USE THE COARSE RANGE OF FEEDS WHEN SPINDLE SPEEDS ARE ABOVE 140 RPM.

(REFER TO PAGE 15 FOR LIST OF FEEDS)

The FEED AND THREAD DIRECTION CONTROL LEVER (leadscrew reverse lever) is located on the apron. Select the appropriate direction as shown on the CHART below.

FEED DIRECTIONAL CHART.		
	FEED & THREAD DIRECTION CONTROL LEVER	
	UP	DOWN
SPINDLE DIRECTION		
FORWARD		
REVERSE		

DO NOT CHANGE THE FEED DIRECTION ABOVE 900 RPM OR WHILST IN THE COARSE FEED RANGE. (SHEAR PIN DAMAGE COULD RESULT).

The "Power Feed Engagement Lever" is located centrally on the apron. Move up for longitudinal feed and down for cross feed. A short side shift is required before shifting from long feed to cross feed and vice versa to prevent accidental through-shifting.

NOTE: The power cross feed rate is half the longitudinal feed rate.

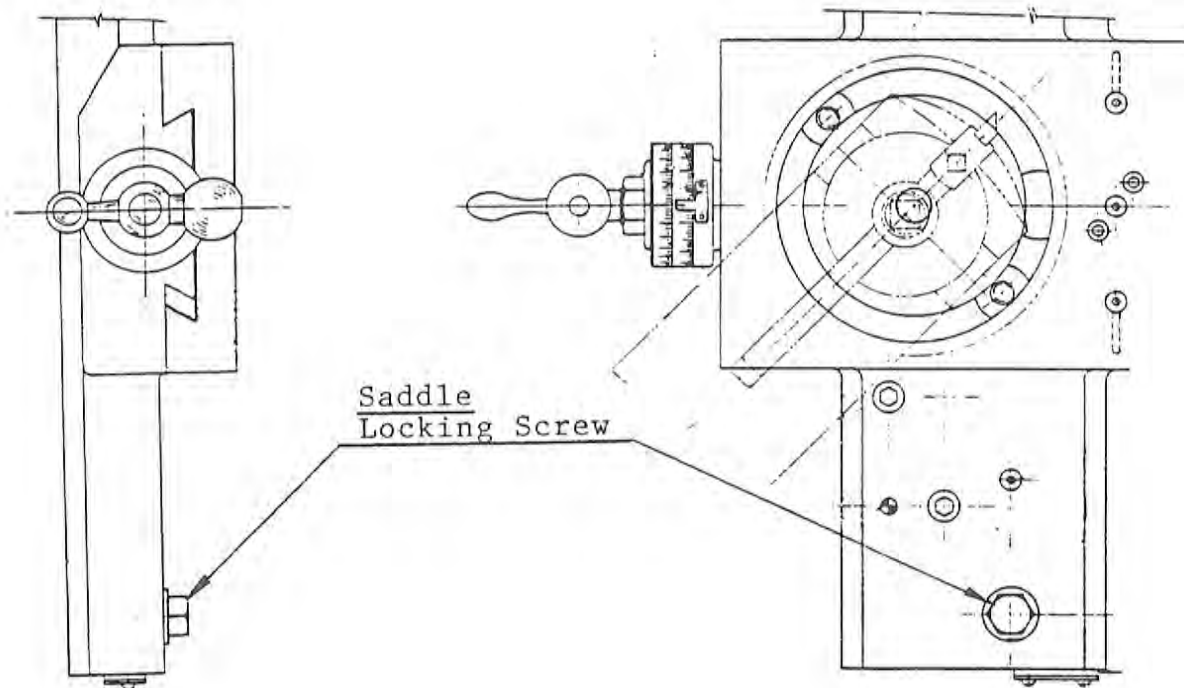
FEED RATES					
INCH (ins.per rev)			METRIC (mm. per rev)		
FINE		COARSE	FINE		COARSE
.001	C9	.009 C9	.031	A1	.249 A1
.0011	C8	.0092 C8	.035	A2	.28 A2
.0012	C7	.0096 C7	.039	A3	.312 A3
.0013	C4	.0104 C4	.042	A5	.344 A5
.0013	C6	.0108 C6	.044	A6	.358 A6
.0014	C5	.011 C5	.046	A4	.374 A4
.0016	C3	.0124 C3	.05	A7	.405 A7
.0017	C2	.0138 C2	.052	A8	.42 A8
.0019	C1	.0156 C1	.054	A9	.44 A9
.0021	B9	.0178 B9	.062	B1	.5 B1
.0023	B8	.018 B8	.07	B2	.56 B2
.0024	B7	.019 B7	.078	B3	.62 B3
.0026	B4	.021 B4	.085	B5	.69 B5
.0027	B6	.022 B6	.089	B6	.72 B6
.0028	B5	.023 B5	.093	B4	.75 B4
.0031	B3	.025 B3	.101	B7	.81 B7
.0035	B2	.028 B2	.105	B8	.84 B8
.0039	B1	.031 B1	.109	B9	.87 B9
.0044	A9	.036 A9	.124	C1	1.0 C1
.0046	A8	.037 A8	.14	C2	1.12 C2
.0048	A7	.038 A7	.156	C3	1.25 C3
.0052	A4	.042 A4	.171	C5	1.37 C5
.0054	A6	.043 A6	.179	C6	1.43 C6
.0057	A5	.045 A5	.187	C4	1.5 C4
.0062	A3	.05 A3	.202	C7	1.62 C7
.007	A2	.055 A2	.21	C8	1.68 C8
.008	A1	.062 A1	.218	C9	1.74 C9

THREADS					
THREADS PER INCH				mm PITCH	
FINE		COARSE		FINE	COARSE
224	C9	28	C9	.125	A1
216	C8	27	C8	.141	A2
208	C7	26	C7	.156	A3
192	C4	24	C4	.172	A5
184	C6	23	C6	.180	A6
172	C5	22	C5	.188	A4
160	C3	20	C3	.203	A7
144	C2	18	C2	.211	A8
128	C1	16	C1	.220	A9
112	B9	14	B9	.250	B1
108	B8	13 1/2	B8	.281	B2
104	B7	13	B7	.313	B3
96	B4	12	B4	.344	B5
92	B6	11 1/2	B6	.359	B6
88	B5	11	B5	.375	B4
80	B3	10	B3	.406	B7
72	B2	9	B2	.422	B8
64	B1	8	B1	.430	B9
56	A9	7	A9	.500	C1
54	A8	6 3/4	A8	.563	C2
52	A7	6 1/2	A7	.625	C3
48	A4	6	A4	.688	C5
46	A6	5 3/4	A6	.719	C6
44	A5	5 1/2	A5	.750	C4
40	A3	5	A3	.813	C7
36	A2	4 1/2	A2	.844	C8
32	A1	4	A1	.875	C9

4. OPERATING INSTRUCTIONS

4.3 cont'd

Provision is made for locking the saddle when facing by tightening the 1/2" hex head cap screw 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 AND THREAD DIRECTION CONTROL LEVER mounted on the Apron must be moved as shown on Page 14, This lathe is equipped with a leadscrew reversing mechanism which allows half-nuts to remain engaged during the entire threading operation.

4. OPERATING INSTRUCTIONS cont'd

- 4.4.3 CAUTION: THREADING SPINDLE SPEED LIMIT IS 900 RPM.
THE FEED AND THREAD DIRECTION CONTROL
LEVER MUST NOT BE ENGAGED ABOVE THIS
SPEED.

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

$$1) \quad \text{T.P.I.} \times 25 = \text{SAFE R.P.M.}$$

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

$$2) \quad \frac{625}{\text{mm pitch}} = \text{SAFE R.P.M.}$$

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

CAUTION: DO NOT USE ANY SPINDLE SPEED ABOVE 900 R.P.M.
FOR CUTTING THREADS.

4. OPERATING INSTRUCTIONS cont'd

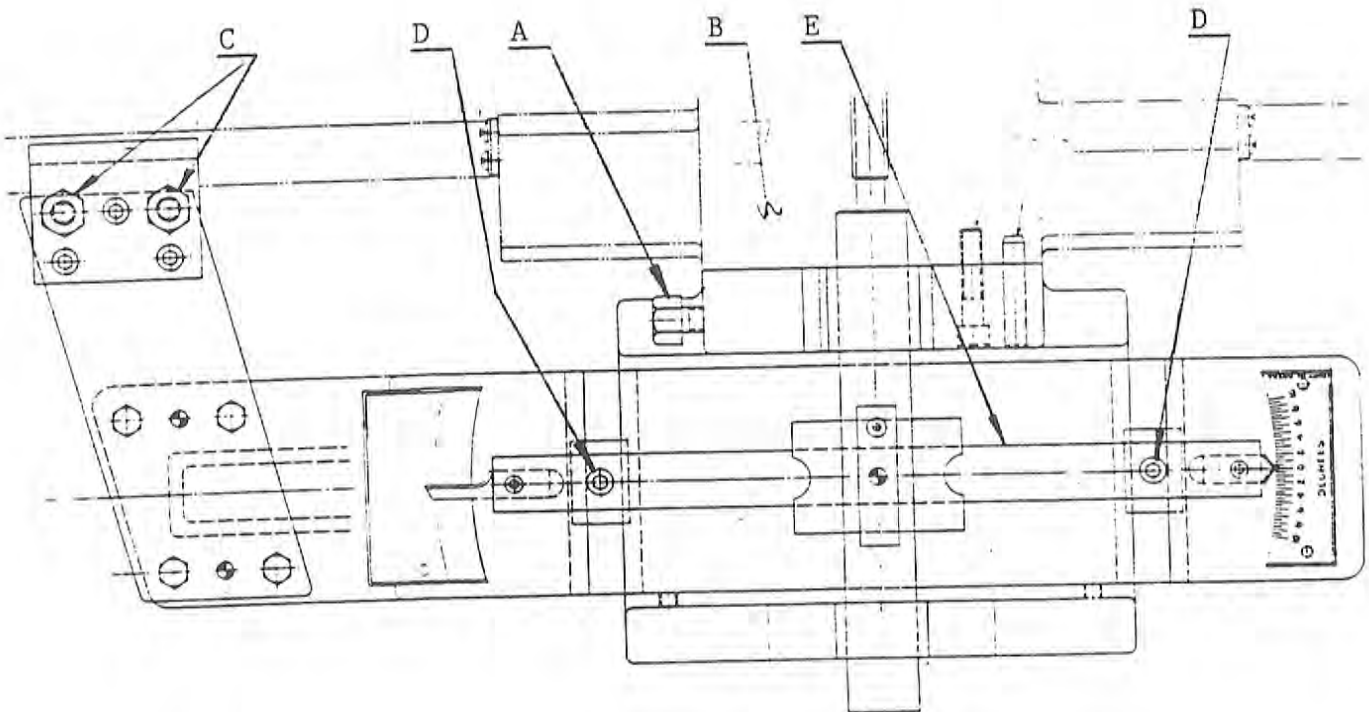
4.5 Telescopic Taper Turning Attachment

For Taper Turning:

- (i) Slacken hex clamp screw 'A'
- (ii) Locate saddle and slide casting 'B' in position required relative to workpiece and tighten 2 bed clamp nuts 'C'.
- (iii) Slacken 2 socket head cap screws 'D', set pivoted slide bar 'E' to desired taper and tighten screws 'D'
- (iv) Locate cross slide to suit diameter of workpiece.

For Straight Turning

- (i) Slacken 2 bed clamp nuts 'C'
- (ii) Tighten Hex Clamp Screw 'A'
- (iii) Leave pivoted slide bar 'E' locked in it's angular setting so that the taper attachment will move with the saddle.



4. OPERATING INSTRUCTIONS cont'd.

4.6 Face Plate Attachment

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

NOTE :- Maximum safe operating speed
for large face plates is 480 RPM.

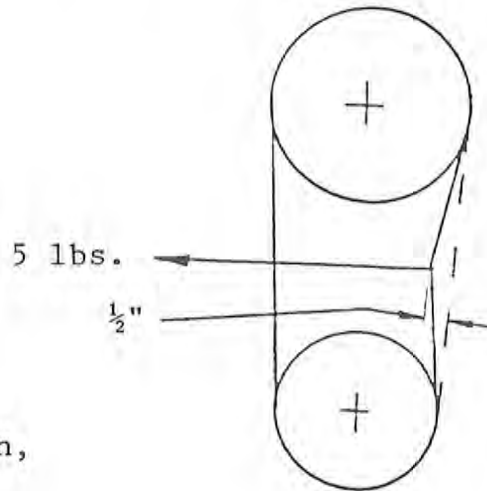
5. MAINTENANCE INSTRUCTIONS

5.1 Drive Belts Tension Control

When changing pulleys and/or belts, loosen the motor plate. With the new pulleys and/or belts in position, adjust for correct belt tension (see below) and tighten the motor plate.

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 $\frac{1}{2}$ ".



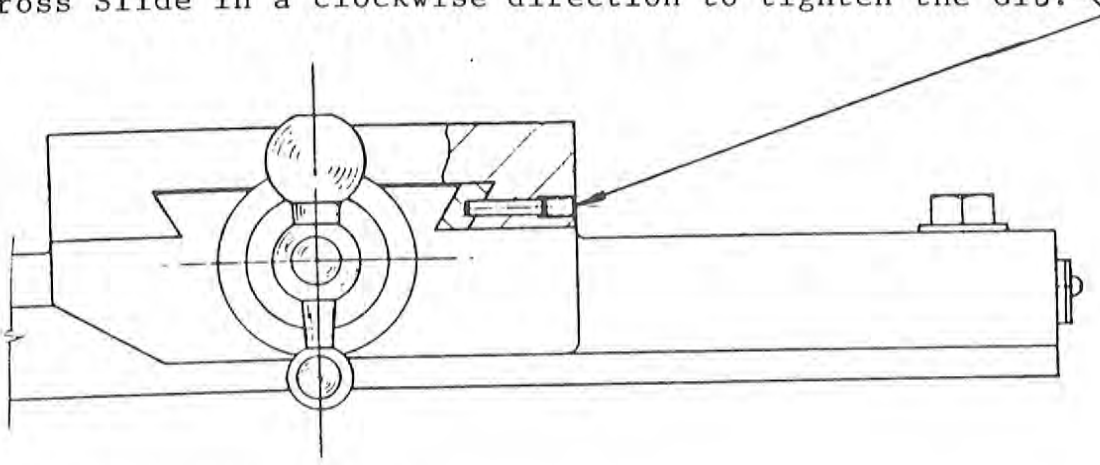
Check the tension frequently during the first day of operation and periodically thereafter. Keep pulleys and belts clean and free of any foreign material to ensure long life and better traction.

5. MAINTENANCE INSTRUCTIONS cont'd

5.2 Cross Slide Ways

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

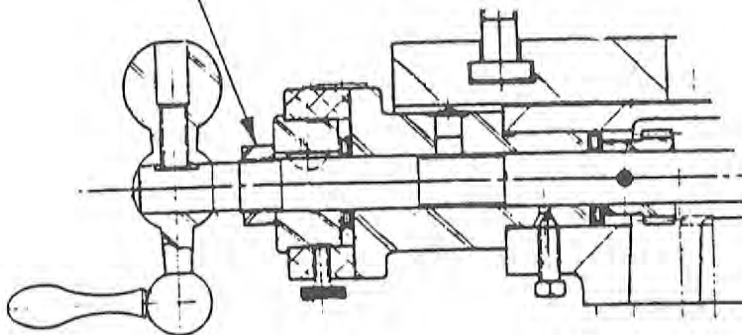
Turn 1/4 - 28 Socket Set Screws located on R.H. side of the Cross Slide in a clockwise direction to tighten the Gib.



5.3 Cross Slide Screw

Provision is made for the elimination of backlash in the Cross Slide Screw thrust bearing as follows:-

Tighten 5/8 - 18 UNF self locking nut.

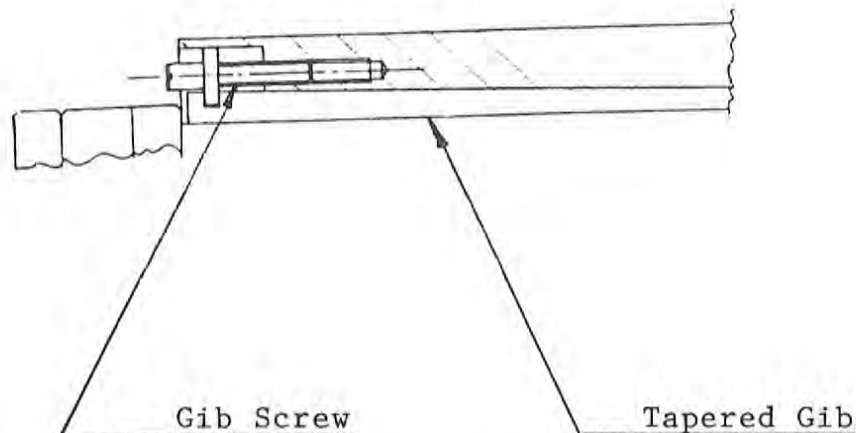


5. MAINTENANCE INSTRUCTIONS cont'd

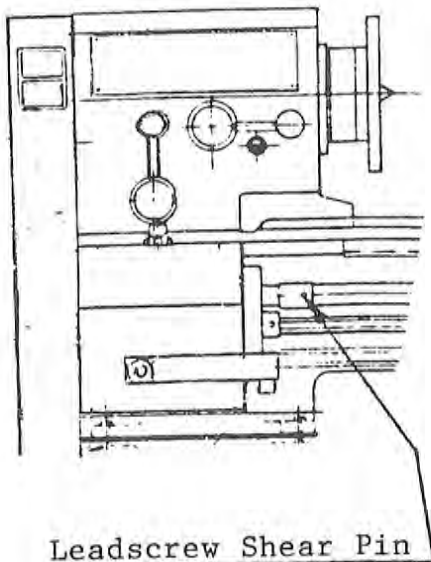
5.4 Compound Slide Ways

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



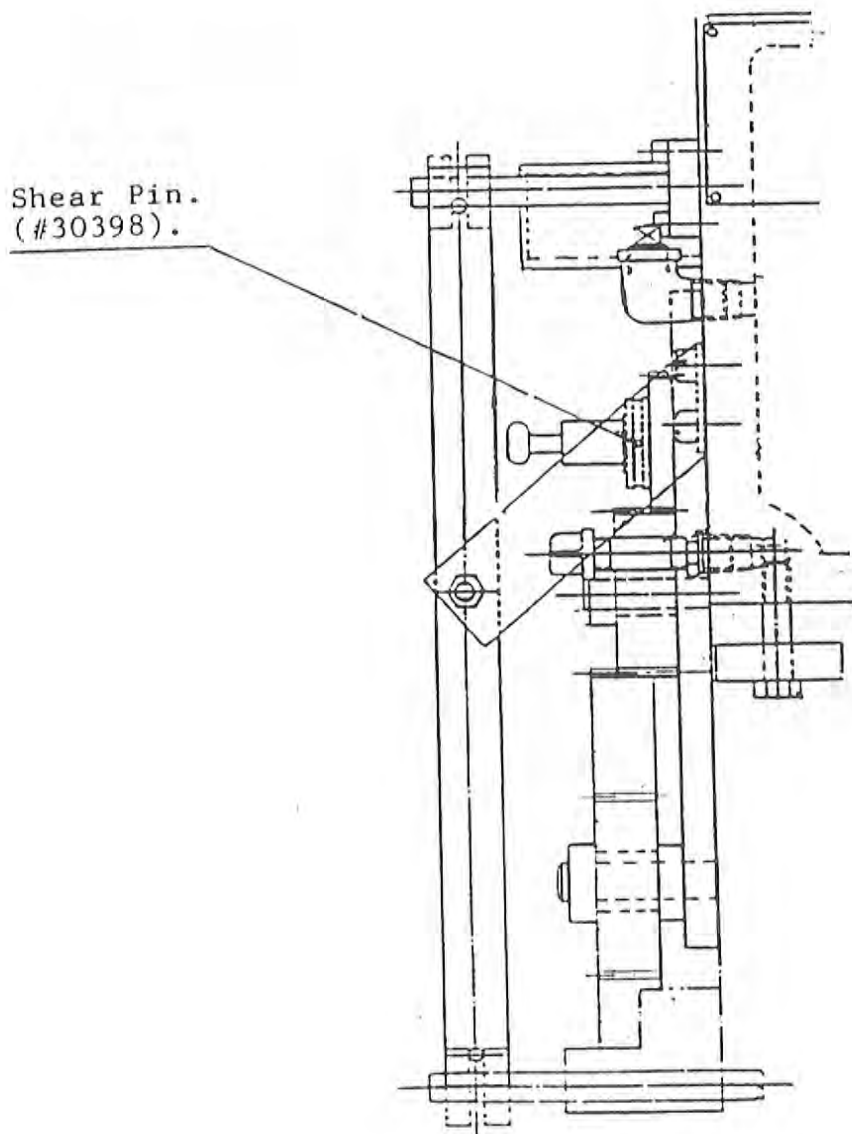
This brass shear pin is provided to prevent damage to the leadscrew should the carriage be allowed to come in contact with the headstock or some other obstruction which acts as a positive stop. When the stoppage takes place, the leadscrew continues to turn in the half nuts and will begin to move endwise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

The shear pin can be readily replaced by first withdrawing the leadscrew from the coupling to remove the three pieces 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 pins are provided with the machine) is then driven into place.

(9.6) End Gear Train Shear Pin

This brass shear pin # 30398 drives the top gear of the end gear train (see below). It is provided to prevent damage to the feed gears if abnormally excessive loads are encountered.

Spare shear pins provided with the machine, are readily fitted. First remove the snap ring and 27T gear, then remove the broken portions of the pin. Assemble the 27T gear, pin and snap ring. It is important, of course, to locate and remedy the cause of the excessive load.



5. MAINTENANCE INSTRUCTIONS cont'd.5.7 Trouble Shooting Chart

TROUBLE	PROBABLE CAUSE	CORRECTION
Vibration	Loose levelling screws	Set all screws so that they bear evenly on levelling 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	Reground tool bit or adjust tool holder so that area of contact between tool bit and work is decreased. Avoid extreme negative rake.
	Tool overhang too great	Keep point of tool bit as close as possible to tool holder.
	Using improper cutting speed.	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. (See Page 28)
	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.

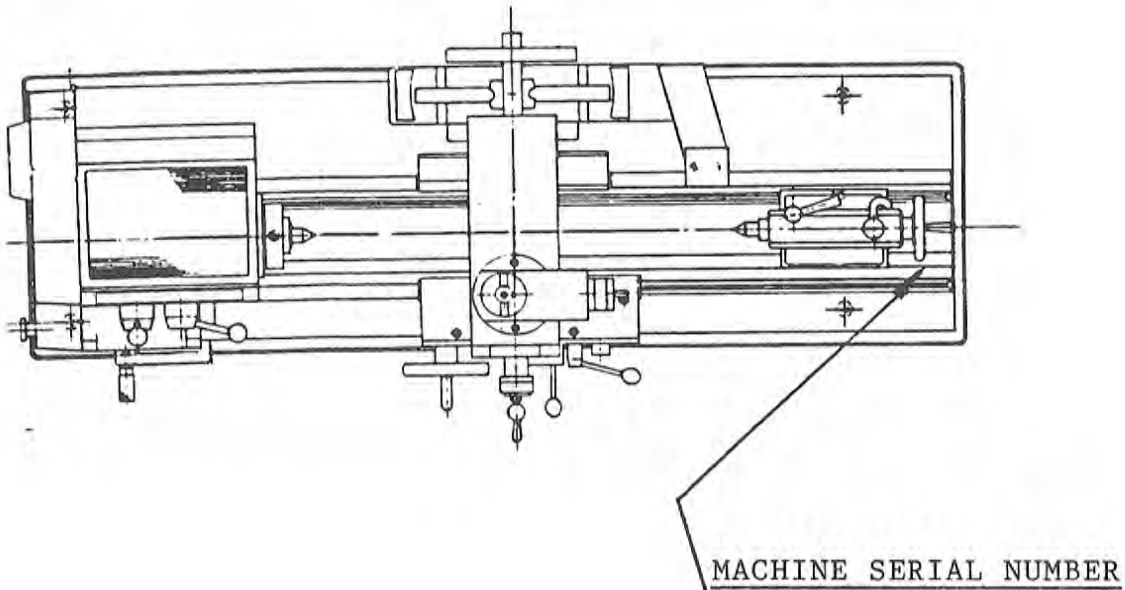
5. MAINTENANCE INSTRUCTIONS cont'd.

TROUBLE	PROBABLE CAUSE	CORRECTION
Work not turned straight	Headstock and tailstock not aligned. Work improperly supported. Bed not level.	Align tailstock center Use steady rest or follow rest. Reduce overhang from chuck. Re-level bed using precision level.
Work out of round.	Work loose between centers. Centers excessively worn. Work centers out of round Loose headstock spindle bearings.	Adjust tailstock center. Regrind centers. Lap work centers. Adjust headstock spindle bearings. (See Page 28)
Cross slide or compound rest movement does not coincide with dial	Gib setting too tight or too loose. Work is too long and slender.	Adjust gibs. Use steady rest or follow rest.

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 directly from the
illustrations.

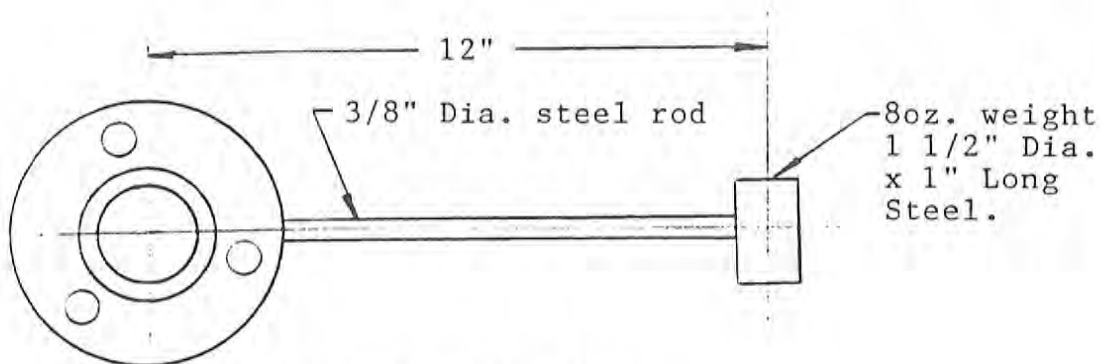
NOTE: Quantity required
(when other than one)
is given following the
Part Number itself.



HEADSTOCK BEARING PRELOAD ADJUSTMENT

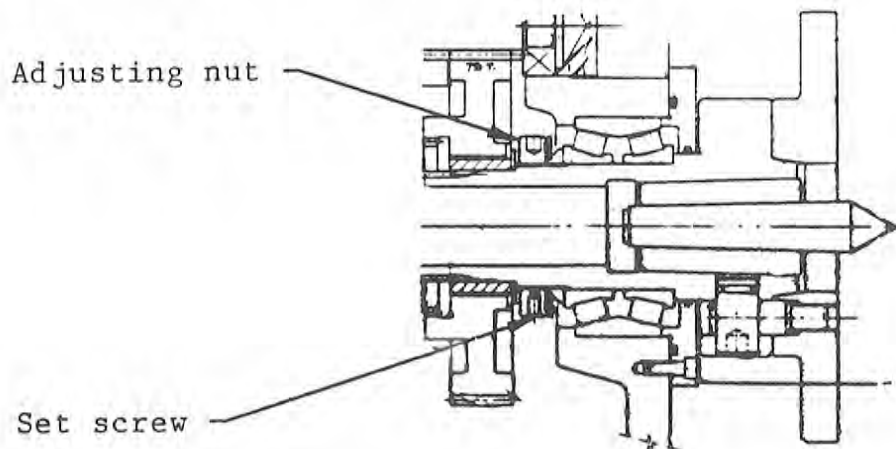
The correct preload is determined by the actual force required to turn the spindle in its bearings when the spindle is in its neutral position, i.e. with the HIGH-LOW shifter and LEADSCREW REVERSE in their respective neutral positions.

Preload torque :- .56 lbf/ft.



If an adjustment is required:-

1. Turn the disconnect switch off.
2. Remove the headstock cover.
3. Back off two (2) 1/4 - 28 soc. set screws in adjusting nut.
4. Turn adjusting nut clockwise to increase preload or vice-versa to decrease preload.
5. Re-tighten the set screws securely.
6. Replace the headstock cover.



BILL OF MATERIALS ELECTRICAL 25-M1127

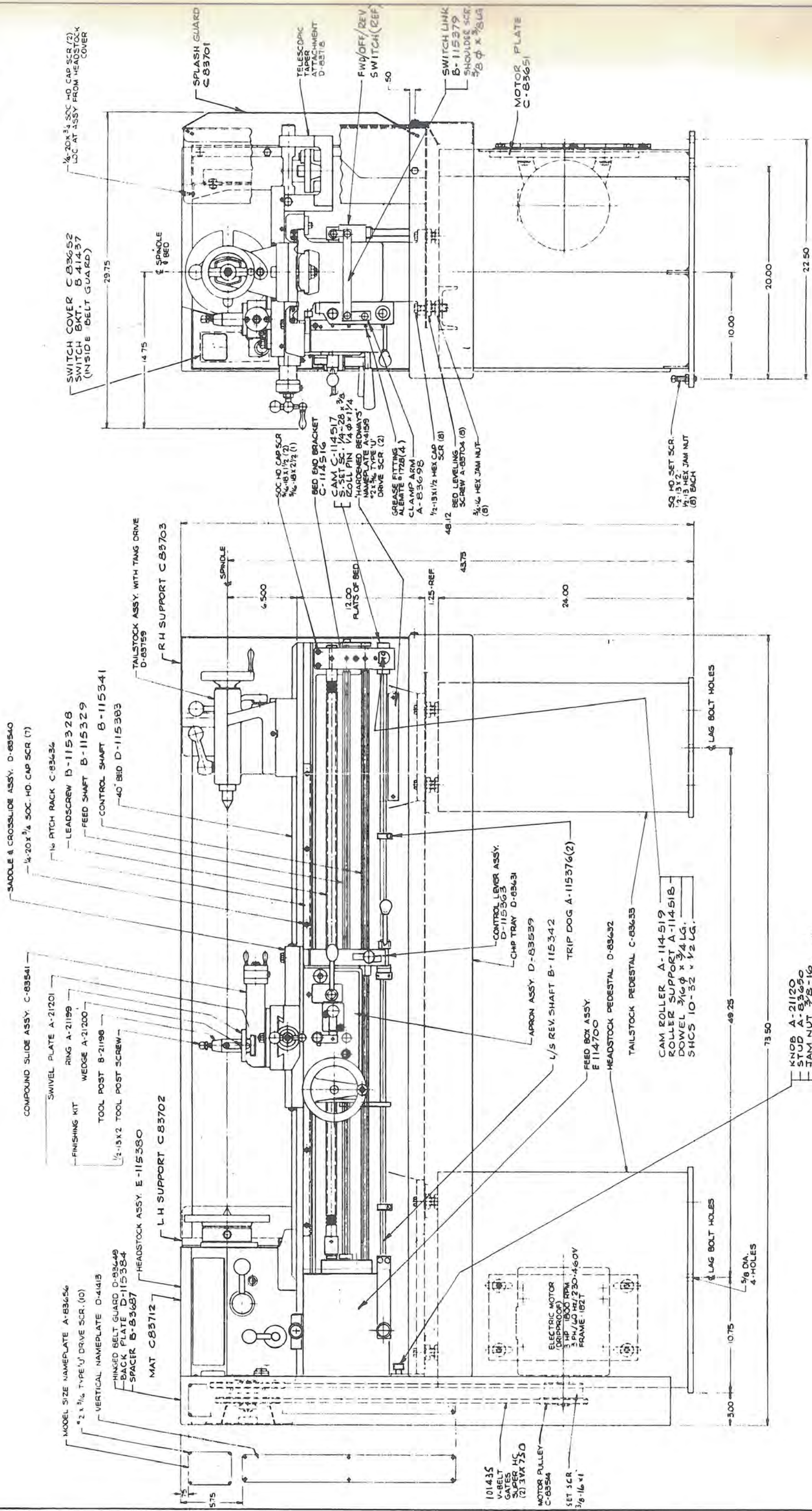
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THREE PHASE

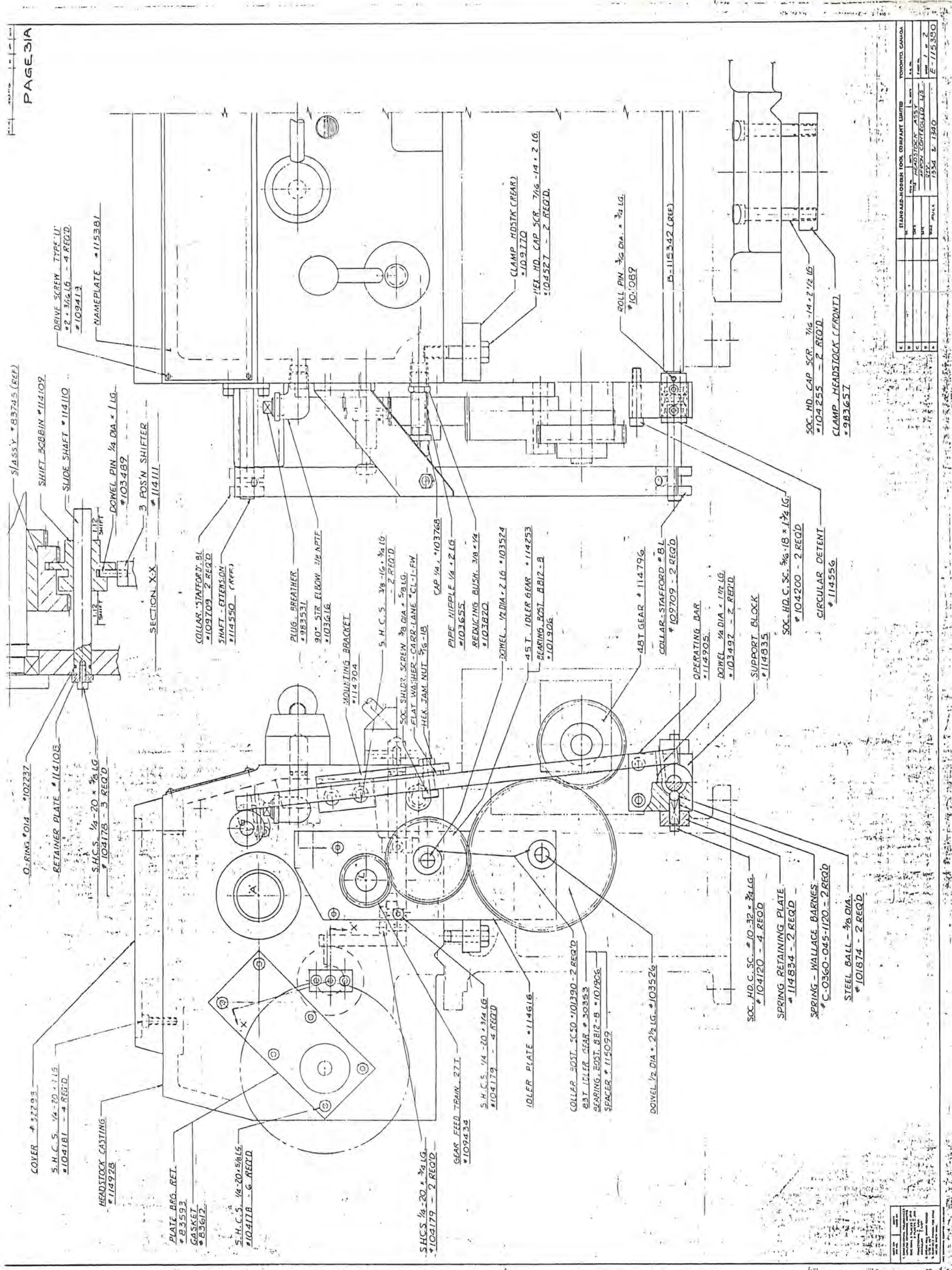
QTY.	DESCRIPTION	MANUFACTURER	FSCM	PART #
1	Motor	Leeson		3HP 230/460 3PH 60HZ
1	Enclosure	Commercial		1BOH 161006
1	Disconnect	ABB	96272	OETLNF30S
1	Strain relief	Commercial		3/4" Straight
1	"	Commercial		1/2" x 1/2" Straight
3	Liquid seal connector	Commercial		1/2" x 1/2" Straight
1	Liquid seal connector	Commercial		1/2" x 1/2" 90
8'	Liquid seal	Commercial		1/2" x 3'
12'	Cab Tyre	Commercial		12/4
3'	PCV/PCV	Commercial		16/5
	Wire	Commercial		#14 MTW Red
	Wire	Commercial		#14 MTW White
	Wire	Commercial		#12 MTW Red
1	Reversing starter	ABB	96272	B12SR-1P (NC)
1	Overload (for 460v)	ABB	96272	25DU
2	Contact Aux 1NO	ABB	96272	CA7-01 (NO)
1	Transformer	Marcus	38787	MO350E (230/460-120 350va)
3	Breaker 1A	ABB	96272	S271-K1
1	Breaker 2A	ABB	96272	S271-K2
1	Emergency Stop	Tele	OCFV5	ZB2BW64
1	Switch contact N.C.	Tele	OCFV5	ZB2BZ102
10	Terminal strip	Tele	OCFV5	AB1VV435U
1	Terminal end stops	Tele	OCFV5	AB1AB8P35
12"	DIN rail	ABB	96272	35MM
1	Fwd/rev switch	Tele	OCFV5	ZCKJ404 H7
1	Actuator arm	Tele	OCFV5	ZCK-Y11
1	Uvr relay	Idec	60886	RH1B-U-AC120
1	Uvr socket	Idec	60886	SH1B-05
1	Elapsed time meter	Lisle Metrix		E10A-A
1	Duplex TL Rec.	Hubble	74545	
1	Ampmeter	Shurite (Electrosonic)		8508Z

I.D.No.	Manufacturer	FSCM	Part No.	Nomenclature
21120	OMT	3AA35	21120	Knob
21198	OMT	3AA35	21198	Tool post.
21199	OMT	3AA35	21199	Ring
21200	OMT	3AA35	21200	Wedge
21201	OMT	3AA35	21201	Swivel plate
41413	OMT	3AA35	41413	Vertical nameplate
41437	OMT	3AA35	41437	Switch bracket
41519	OMT	3AA35	41519	Nameplate (Hardened Bedways)
83514	OMT	3AA35	83514	Pulley, motor
83539	OMT	3AA35	83539	Apron Assy
83540	OMT	3AA35	83540	Saddle and cross slide assy.
83541	OMT	3AA35	83541	Compound Slie Assy.
83631	OMT	3AA35	83631	Chip tray
83632	OMT	3AA35	83632	Headstock pedestal.
83633	OMT	3AA35	83633	Tailstock pedestal
83636	OMT	3AA35	83636	16 Pitch rack.
83649	OMT	3AA35	83649	Hinged belt guard
83650	OMT	3AA35	83650	Stud
83651	OMT	3AA35	83651	Motor plate
83652	OMT	3AA35	83652	Switch cover
83656	OMT	3AA35	83656	Nameplate
83687	OMT	3AA35	83687	Spacer
83698	OMT	3AA35	83698	Clamp arm
83701	OMT	3AA35	83701	Splash guard
83702	OMT	3AA35	83702	LH Support (Splash guard)
83703	OMT	3AA35	83703	RH Support (Splash guard)
83704	OMT	3AA35	83704	Bed levelling screw.
83712	OMT	3AA35	83712	Mat
83718	OMT	3AA35	83718	Telescopic taper attachment
83759	OMT	3AA35	83759	Tailstock assy. (Tang drive.)
114516	OMT	3AA35	114516	Bed end bracket
114517	OMT	3AA35	114517	Cam
114518	OMT	3AA35	114518	Roller support.
114519	OMT	3AA35	114519	Cam roller
114700	OMT	3AA35	114700	Feed box assy.
115328	OMT	3AA35	115328	Leadscrew
115329	OMT	3AA35	115329	Feedshaft
115341	OMT	3AA35	115341	Control shaft
115342	OMT	3AA35	115342	Leadscrew reverse shaft
115363	OMT	3AA35	115363	Control lever assy.
115376	OMT	3AA35	115376	Trip dog
115379	OMT	3AA35	115379	Switch link
115380	OMT	3AA35	115380	Headstock assy.
115383	OMT	3AA35	115383	40" Bed
115384	OMT	3AA35	115384	Backplate
101435	GATES		3VX750	Vee belt, Super HC
	MAC-IT			Toolpost screw 1/2 - 13 X 2
	LEESON			Electric motor. 3HP. 1800 RPM. Frame 182T. 230-460/3/60
	ALEMITE		1728	Grease fitting

I.D.No.	Manufacturer	FSCM	Part No.	Nomenclature
	COMMERCIAL			DRIVE SCREW TYPE 'U' #2 X 3/16
	COMMERCIAL			SOC.SET SCREW 3/8 - 16 X 1
	COMMERCIAL			SOC.SET SCREW 1/4 - 28 X 1/4
	COMMERCIAL			SOC.SET SCREW 1/4 - 28 X 3/8
	COMMERCIAL			SOC.HD.CAP SCREW 10 - 32 X 1/2
	COMMERCIAL			SOC.HD.CAP SCREW 1/4 - 20 X 3/4
	COMMERCIAL			SOC.HD.CAP SCREW 5/16 - 18 X 1 1/2
	COMMERCIAL			SOC.HD.CAP SCREW 5/16 - 18 X 2 1/2
	COMMERCIAL			HEX.HD.CAP SCREW 1/2 - 13 X 1 1/2
	COMMERCIAL			SQ.HD.SET SCREW 1/2 - 13 X 2
	COMMERCIAL			SHOULDER SCREW 3/8 DIA. X 3/8
	COMMERCIAL			JAM NUT 3/8 - 16
	COMMERCIAL			JAM NUT 1/2 - 13
	COMMERCIAL			JAM NUT 3/4 - 16
	COMMERCIAL			DOWEL 3/16 DIA. X 3/4
	COMMERCIAL			ROLL PIN 1/4 DIA. X 1 1/4



I.D.No.	Manufacturer	FSCM	Part No.	Nomenclature
101390	BOSTON GEAR	OACA6	SC50	COLLAR
101906	BOSTON GEAR	OACA6	B812-8	BEARING
101874	COMMERCIAL			STEEL BALL. 3/8 DIA.
102237	COMMERCIAL		014 BUNA N	O-RING
103275	COMMERCIAL			SOC.SET.SCREW 1/4 - 28 X 1/4 CUP POINT
103394	COMMERCIAL			WASHER 3/8 I.D. X 13/16 O.D. X 1/16
	CARR LANE	99862	CL-1-FW	WASHER
103489	COMMERCIAL			DOWEL 1/4 DIA X 1
103492	COMMERCIAL			DOWEL 1/4 X 1/2
103524	COMMERCIAL			DOWEL 1/2 DIA X 2
103526	COMMERCIAL			DOWEL 1/2 X 2 1/2
103616	COMMERCIAL			90° STREET ELBOW. 3/8 NPTF
103655	COMMERCIAL			PIPE NIPPLE. 1/4 X 2
103768	OMT	3AA35	103768	CAP 1/4
103820	COMMERCIAL			REDUCING BUSHING. 3/8 X 1/4
	COMMERCIAL			HEX. JAM NUT 5/16 - 18
104089	COMMERCIAL			ROLL PIN 3/16 DIA X 3/4.
104120	COMMERCIAL			SOC.HD.CAP SCREW 10-32 X 3/4
104178	COMMERCIAL			SOC.HD.CAP.SCREW 1/4-20 X 5/8
104179	COMMERCIAL			SOC.HD.CAP.SCREW 1/4 - 2- X 3/4
104181	COMMERCIAL			SOC.HD.CAP SCREW 1/4 - 20 X 1
104200	COMMERCIAL			SOC.HD.CAP SCREW 5/16 - 18 X 1 3/4
	COMMERCIAL			SOC.HD.CAP SCREW 3/8 - 16 X 3/4
104255	COMMERCIAL			SOC.HD.CAP SCREW 7/16 - 14 X 2 1/2
104257	COMMERCIAL			HEX.HD.CAP SCREW 7/16 - 14 X 2 1/2
109419	COMMERCIAL			DRIVE SCREW TYPE U. #2 X 3/16
109434	OMT	3AA35	109434	27T GEAR. FEED TRAIN.
109709	STAFFORD		8L	COLLAR
109770	OMT	3AA35	109770	CLAMP, HEADSTOCK. REAR.
114108	OMT	3AA35	114108	RETAINER PLATE
114109	OMT	3AA35	114109	SHIFT BOBBIN
114110	OMT	3AA35	114110	SLIDE SHAFT
114111	OMT	3AA35	114111	3-POSITION SHIFTER
114253	OMT	3AA35	114253	45T IDLER GEAR
114550	OMT	3AA35	114550	SHAFT, EXTENSION
114556	OMT	3AA35	114556	CIRCULAR DETENT
114616	OMT	3AA35	114616	IDLER PLATE
114796	OMT	3AA35	114796	48T GEAR
114834	OMT	3AA35	114834	SPRING RET. PLATE
114835	OMT	3AA35	114835	SUPPORT BLOCK
114904	OMT	3AA35	114904	MOUNTING BRACKET
114905	OMT	3AA35	114905	OPERATING BAR
114928	OMT	3AA35	114928	HEADSTOCK CASTING
115099	OMT	3AA35	115099	SPACER
115381	OMT	3AA35	115381	NAMEPLATE
30353	OMT	3AA35	30353	83T IDLER GEAR
32298	OMT	3AA35	32298	COVER
83531	OMT	3AA35	83531	PLUG, BREATHER
83593	OMT	3AA35	83593	PLATE, BEARING RETAINING
83612	OMT	3AA35	83612	GASKET
83745	OMT	3AA35	83745	S/ASSY.

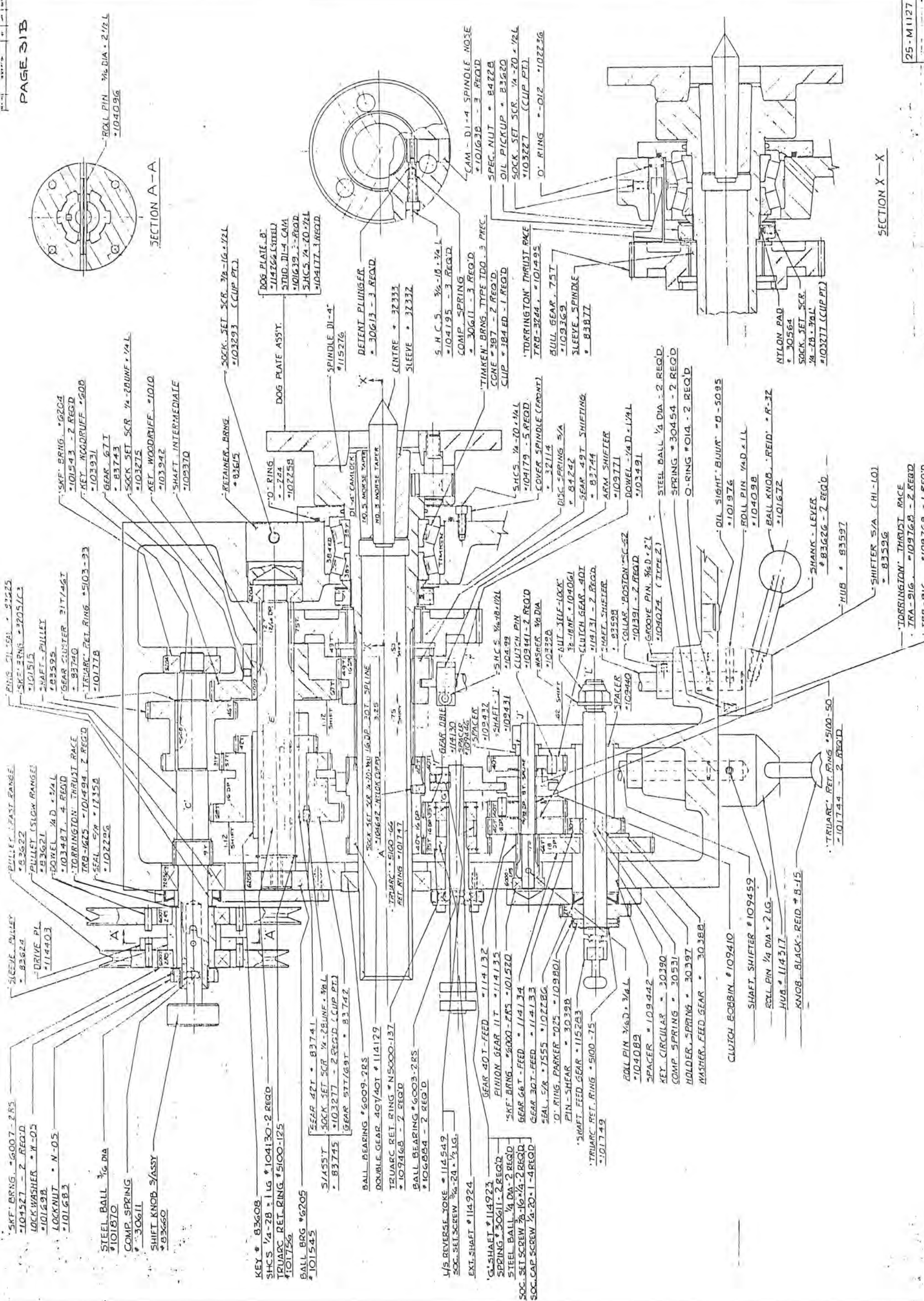


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I.D.No.	Manufacturer	FSCM	Part No.	Nomenclature
101391	BOSTON GEAR	OACA6	SC-62	COLLAR
101494	TORRINGTON	60380	TRB-1625	THRUST RACE
101495	TORRINGTON	60380	TRB-3244	THRUST RACE
101515	SKF	36121	3205-C3	BEARING
101520	SKF	36121	6000-2RS	BEARING
101530	SKF	36121	6009-2RS	BEARING
101543	SKF	36121	6204	BEARING
101545	SKF	36121	6205	BEARING
101596	TIMKEN	60038	384ED	BEARING CUP. #3 PRECISION
101597	TIMKEN	60038	387	BEARING CONE. #3 PRECISION
101638	OMT	3AA35	101638	CAM, D1-4 CAMLOCK
101639	STUD	3AA35	101639	STUD, D1-4 CAMLOCK
101672	REID	01599	R-32	BALL KNOB
101683	FAG	36069	N-05	LOCKNUT
101698	FAG	36069	W-05	LOCKWASHER
101744	WALDES TRUARC	79136	5100-50	RETAINING RING
101747	WALDES TRUARC	79136	5100-66	RETAINING RING
101749	WALDES TRUARC	79136	5100-75	RETAINING RING
101756	WALDES TRUARC	79136	5100-125	RETAINING RING
101778	WALDES TRUARC	79136	5103-93	RETAINING RING
101870	COMMERCIAL			STEEL BALL 3/16 DIA.
101871	COMMERCIAL			STEEL BALL 1/4 DIA.
101976	BIJUR	70924	B-5095	OIL SIGHT
102236	COMMERCIAL		012 BUNA N	O-RING
102237	COMMERCIAL		014 BUNA N	O-RING
102258	COMMERCIAL		244 BUNA N	O-RING
102286	CHICAGO RAWHIDE	11678	7555	SEAL
102296	CHICAGO RAWHIDE	11678	12358	SEAL
103227	COMMERCIAL			SOC.SET SCREW 1/4 - 20 X 1/2
103275	COMMERCIAL			SOC.SET SCREW 1/4 - 28 X 1/4 CUP POINT
103277	COMMERCIAL			SOC.SET SCREW 1/4 - 28 X 3/8 CUP POINT
103293	COMMERCIAL			SOC.SET SCREW 3/8 - 16 X 1/2 CUP POINT
103398	COMMERCIAL			WASHER 5/8"
103487	COMMERCIAL			DOWEL 1/4 DIA X 3/4
103491	COMMERCIAL			DOWEL 1/4 DIA X 1 1/4
103931	COMMERCIAL			WOODRUFF KEY #608 3/16 X 1
103942	COMMERCIAL			WOODRUFF KEY #1010 5/16 X 1 1/4
104061	COMMERCIAL			NUT 'SELF-LOCK' 5/8 - 18
104074	COMMERCIAL			GROOVE PIN 5/16 DIA X 2
104089	COMMERCIAL			ROLL PIN. 3/16 DIA X 3/4
104096	COMMERCIAL			ROLL PIN. 3/16D X 2 1/2
104098	COMMERCIAL			ROLL PIN. 1/4 DIA X 1
104103	COMMERCIAL			ROLL PIN. 1/4 DIA X 1 1/4
104130	COMMERCIAL			SOC.HD.CAP SCREW 1/4 - 28 X 1
104177	COMMERCIAL			SOC.HD.CAP SCREW 1/4 - 20 X 1/2
104179	COMMERCIAL			SOC.HD.CAP SCREW 1/4 - 20 X 3/4
104195	COMMERCIAL			SOC.HD.CAP SCREW 5/16 - 18 X 3/4
104199	COMMERCIAL			SOC.HD.CAP SCREW 5/16 - 18 X 1 1/2
104527	SKF	36121	6007-2RS	BEARING
104642	COMMERCIAL			SOC.SET.SCREW 1/4 - 20 X 3/8 NYLOK. CUP POINT
106884	SKF	36121	6003-2RS	BEARING
109369	OMT	3AA35	109369	BULL GEAR
109370	OMT	3AA35	109370	INTERMEDIATE SHAFT
109410	OMT	3AA35	109410	CLUTCH BOBBIN

I.D. No.	Manufacturer	FSCM	Part No.	Nomenclature
109431	OMT	3AA35	109431	SHAFT 'J'
109432	OMT	3AA35	109432	SPACER
109441	OMT	3AA35	109441	CLUTCH PIN
109442	OMT	3AA35	109442	SPACER
109446	OMT	3AA35	109446	SPACER
109459	OMT	3AA35	109459	SHAFT, SHIFTER
109468	WALDES TRUARC	79136	N5000-137	RETAINING RING
109768	TORRINGTON	60380	TRA-916	THRUST RACE
109769	TORRINGTON	60380	TRB-916	THRUST RACE
109771	OMT	3AA35	109771	ARM SHIFTER
109801	PARKER		025	O-RING
114129	OMT	3AA35	114129	40T DOUBLE GEAR
114130	OMT	3AA35	114130	DOUBLE GEAR
114131	OMT	3AA35	114131	40T CLUTCH GEAR
114132	OMT	3AA35	114132	40T FEED GEAR
114133	OMT	3AA35	114133	30T FEED GEAR
114134	OMT	3AA35	114134	66T FEED GEAR
114135	OMT	3AA35	114135	11T PINION
114266	OMT	3AA35	114266	DOG PLATE, 8" STEEL
114403	OMT	3AA35	114403	DRIVER PLATE
114317	OMT	3AA35	114317	HUB
114549	OMT	3AA35	114549	LEADSCREW REVERSE YOKE.
114923	OMT	3AA35	114923	"G" SHAFT
114924	OMT	3AA35	114924	EXT. SHAFT
115276	OMT	3AA35	115276	SPINDLE. D1-4
115283	OMT	3AA35	115283	SHAFT, FEED GEAR
30388	OMT	3AA35	30388	WASHER, FEED GEAR
30390	OMT	3AA35	30390	CIRCULAR KEY
30397	OMT	3AA35	30397	SPRING HOLDER
30398	OMT	3AA35	30398	SHEAR PIN
30454	OMT	3AA35	30454	SPRING
30531	OMT	3AA35	30531	SPRING
30564	OMT	3AA35	30564	NYLON PAD
30611	OMT	3AA35	30611	SPRING
30613	OMT	3AA35	30613	DETENT PLUNGER
32114	OMT	3AA35	32114	SPINDLE COVER (FRONT)
32332	OMT	3AA35	32332	SLEEVE
32333	OMT	3AA35	32333	CENTER
83595	OMT	3AA35	83595	PULLEY SHAFT
83596	OMT	3AA35	83596	SHIFTER SUB/ASSY
83597	OMT	3AA35	83597	HUB
83598	OMT	3AA35	83598	SHIFTER SHAFT
83608	OMT	3AA35	83608	KEY
83615	OMT	3AA35	83615	RETAINER BRG.
83620	OMT	3AA35	83624	OIL PICK-UP
83621	OMT	3AA35	83621	PULLEY (SLOW RANGE)
83622	OMT	3AA35	83622	PULLEY (FAST RANGE)
83624	OMT	3AA35	83624	SLEEVE, PULLEY
83625	OMT	3AA35	83625	OIL SEAL RING
83626	OMT	3AA35	83626	SHANK, LEVER
83660	OMT	3AA35	83660	SHIFT KNOB SUB/ASSY.
83662	OMT	3AA35	83662	SHIFT KNOB

I.D.No.	Manufacturer	FSCM	Part No.	Nomenclature
83740	OMT	3AA35	83740	31/46T CLUSTER GEAR
83741	OMT	3AA35	83741	42T GEAR
83742	OMT	3AA35	83742	69/57T GEAR
83743	OMT	3AA35	83743	67T GEAR
83744	OMT	3AA35	83744	49T GEAR, SHIFTING
83877	OMT	3AA35	83877	SPINDLE SLEEVE
84228	OMT	3AA35	84228	SPECIAL NUT
84242	OMT	3AA35	84242	DISC SPRING SUB/ASSY
	REID	01599	B-15	KNOB, BLACK.
	COMMERCIAL			SOC. SET. SCREW. 5/16 - 24 X 1/2
	COMMERCIAL			SOC. SET. SCREW. 3/8 - 16 X 1/4
	COMMERCIAL			SOC. CAP. SCREW. 1/4 - 20 X 1
	COMMERCIAL			ROLL PIN. 1/4 X 2



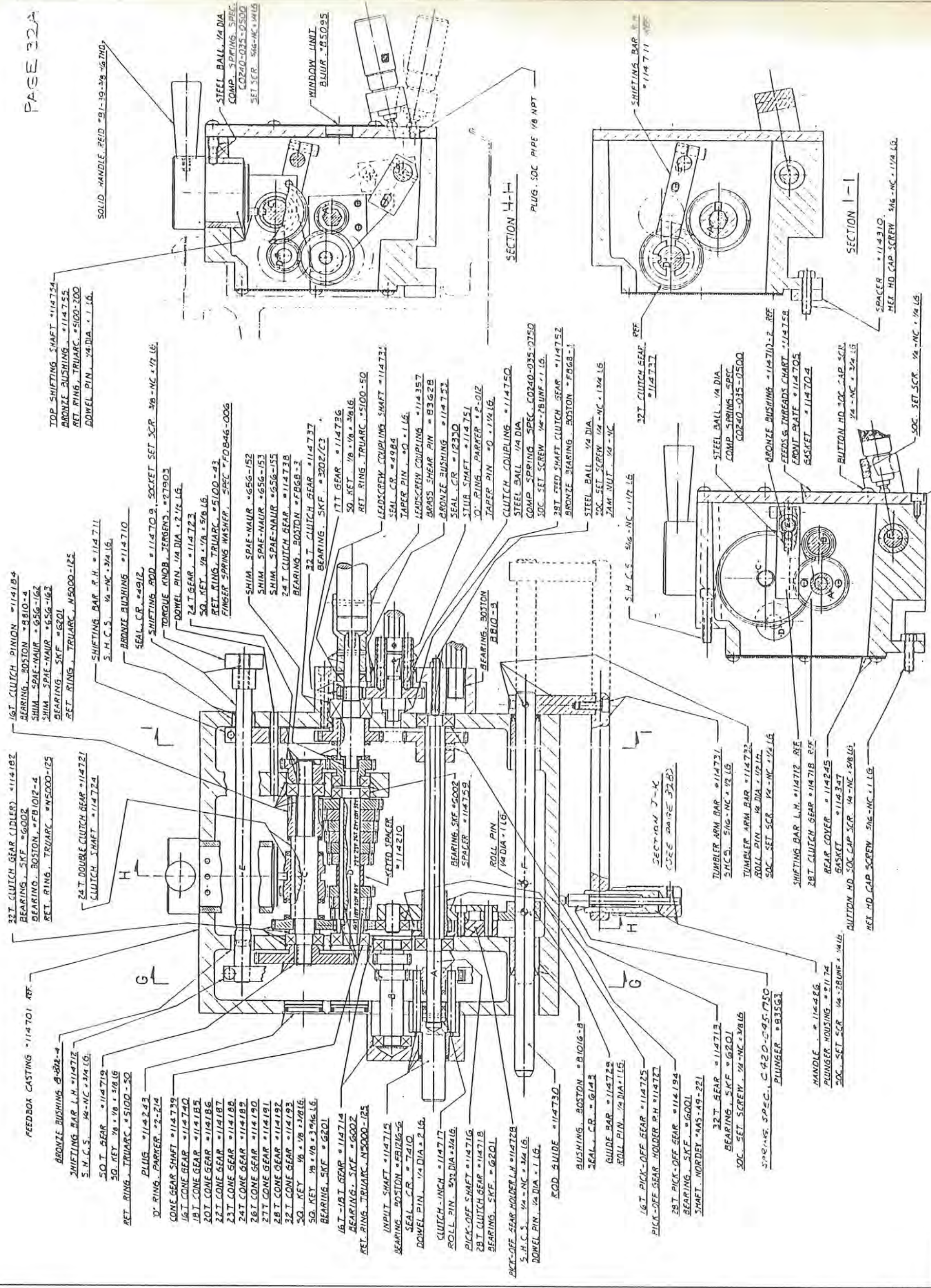
SECTION X-X

25-M1127		Standard-Modern Technologies		TORONTO, CANADA	
REV	DATE	BY	CHKD	APP'D	REVISION
1					HEADSTOCK ASSY
2					APRON CONTROLLED L/S
3					REVERSE
4					1334 & 1340
5					8 E-115380

I.D.No.	Manufacturer	FSCM	Part No.	Nomenclature
21174	OMT	3AA35	21174	PLUNGER HOUSING
83563	OMT	3AA35	83563	PLUNGER
83628	OMT	3AA35	83628	BRASS SHEAR PIN
114182	OMT	3AA35	114182	32T CLUTCH GEAR (IDLER)
114184	OMT	3AA35	114184	16T CLUTCH PINION
114185	OMT	3AA35	114185	18T CONE GEAR
114186	OMT	3AA35	114186	20T CONE GEAR
114187	OMT	3AA35	114187	22T CONE GEAR
114188	OMT	3AA35	114188	23T CONE GEAR
114189	OMT	3AA35	114189	24T CONE GEAR
114190	OMT	3AA35	114190	26T CONE GEAR
114191	OMT	3AA35	114191	27T CONE GEAR
114192	OMT	3AA35	114192	28T CONE GEAR
114193	OMT	3AA35	114193	32T CONE GEAR
114194	OMT	3AA35	114194	28T PICK-OFF GEAR
114210	OMT	3AA35	114210	KEYED SPACER
114243	OMT	3AA35	114243	PLUG
114245	OMT	3AA35	114245	REAR COVER
114310	OMT	3AA35	114310	SPACER
114347	OMT	3AA35	114347	GASKET
114357	OMT	3AA35	114357	LEADSCREW COUPLING
114426	OMT	3AA35	114426	HANDLE
114701	OMT	3AA35	114701	FEEDBOX CASTING
114704	OMT	3AA35	114704	GASKET
114705	OMT	3AA35	114705	FRONT PLATE
114709	OMT	3AA35	114709	SHIFTING ROD
114710	OMT	3AA35	114710	BRONZE BUSHING
114711	OMT	3AA35	114711	SHIFTING BAR R.H.
114712	OMT	3AA35	114712	SHIFTING BAR
114713	OMT	3AA35	114713	32T GEAR
114714	OMT	3AA35	114714	16T/18T GEAR
114715	OMT	3AA35	114715	INPUT SHAFT
114716	OMT	3AA35	114716	PICK-OFF SHAFT
114717	OMT	3AA35	114717	CLUTCH - INCH
114718	OMT	3AA35	114718	28T CLUTCH GEAR
114719	OMT	3AA35	114719	50T GEAR
114721	OMT	3AA35	114721	24T DOUBLE CLUTCH GEAR
114723	OMT	3AA35	114723	24T GEAR
114724	OMT	3AA35	114724	CLUTCH SHAFT
114725	OMT	3AA35	114725	16T PICK-OFF GEAR
114727	OMT	3AA35	114727	PICK-OFF GEAR HOLDER R.H.
114728	OMT	3AA35	114728	PICK-OFF GEAR HOLDER L.H.
114729	OMT	3AA35	114729	GUIDE BAR
114730	OMT	3AA35	114730	ROD GUIDE
114731	OMT	3AA35	114731	TUMBLER ARM BAR
114732	OMT	3AA35	114732	TUMBLER ARM BAR
114735	OMT	3AA35	114735	LEADSCREW COUPLING SHAFT
114736	OMT	3AA35	114736	17T GEAR
114737	OMT	3AA35	114737	32T CLUTCH GEAR
114738	OMT	3AA35	114738	24T CLUTCH GEAR
114739	OMT	3AA35	114739	CONE GEAR SHAFT
114740	OMT	3AA35	114740	16T CONE GEAR
114750	OMT	3AA35	114750	CLUTCH COUPLING
114751	OMT	3AA35	114751	STUB SHAFT
114752	OMT	3AA35	114752	38T FEED SHAFT CLUTCH GEAR

I.D.No.	Manufacturer	FSCM	Part No.	Nomenclature
	WALLACE BARNES	08337	F0846-006	FINGER SPRING WASHER
	WALLACE BARNES	08337	CO420-045-1750	COMPRESSION SPRING
	WALLACE BARNES	08337	CO240-035-0750	COMPRESSION SPRING
	WALLACE BARNES	08337	CO240-035-0500	COMPRESSION SPRING
101917	BOSTON GEAR	OACA6	B810-4	BEARING
101976	BLJUR	70925	B5095	WINDOW UNIT
114753	OMT	3AA35	114753	BRONZE BUSHING
114754	OMT	3AA35	114754	TOP SHIFTING SHAFT
114755	OMT	3AA35	114755	BRONZE BUSHING
114758	OMT	3AA35	114758	CHART, FEEDS AND THREADS
114759	OMT	3AA35	114759	SPACER
12330	CHICAGO RAWHIDE	11678	12330	SEAL
2-012	PARKER	17506	2-012	"O" RING
2-214	PARKER	17506	2-214	"O" RING
27903	JERGENS	94882	27903	TORQUE KNOB
3202/C3	SKF	36121	3202/C3	BEARING
4912	CHICAGO RAWHIDE	11678	4912	SEAL
4984	CHICAGO RAWHIDE	11678	4984	SEAL
5100-200	WALDES TRUARC	79136	5100-200	RETAINING RING
5100-43	WALDES TRUARC	79136	5100-43	RETAINING RING
5100-50	WALDES TRUARC	79136	5100-50	RETAINING RING
6001	SKF	36121	6001	BEARING
6002	SKF	36121	6002	BEARING
6143	CHICAGO RAWHIDE	11678	6143	SEAL
6201	SKF	36121	6201	BEARING
656-152	SPAE-NAUR	94223	656-152	SHIM
656-153	SPAE-NAUR	94223	656-153	SHIM
656-155	SPAE-NAUR	94223	656-155	SHIM
656-162	SPAE-NAUR	94223	656-162	SHIM
656-163	SPAE-NAUR	94223	656-163	SHIM
7410	CHICAGO RAWHIDE	11678	7410	SEAL
AASA9221	NORDEX	56262	AAS-A9-921	SHAFT
B1-39	REID	01599	B1-39 3/8-16 THREAD	SOLID HANDLE
B1016-8	BOSTON GEAR	OACA6	B1016-8	BUSHING
B810-8	BOSTON GEAR	OACA6	B810-8	BEARING
B812-4	BOSTON GEAR	OACA6	B812-4	BEARING
FB1012-4	BOSTON GEAR	OACA6	FB1012-4	BEARING
FB1216-6	BOSTON GEAR	OACA6	FB1216-6	BEARING
FB68-3	BOSTON GEAR	OACA6	FB68-3	BEARING
N5000-125	WALDES TRUARC	79136	N5000-125	RETAINING RING
	COMMERCIAL			STEEL BALL 1/4" DIA.
	COMMERCIAL			DOWEL PIN 1/4" DIA x 1" LG.
	COMMERCIAL			SQ. KEY 1/8 X 1/8 X 3/8"
	COMMERCIAL			SQ. KEY 1/8 X 1/8 X 5/8"
	COMMERCIAL			SQ. KEY 1/8 X 1/8 X 3-15/16"
	COMMERCIAL			DOWEL PIN 1/4" X 2-1/2"
	COMMERCIAL			ROLL PIN 5/32" X 3/4"
	COMMERCIAL			DOWEL PIN 1/4" X 2"
	COMMERCIAL			TAPER PIN #0 X 1
	COMMERCIAL			TAPER PIN #0 X 1-1/4
	COMMERCIAL			ROLL PIN 1/4" X 1"
	COMMERCIAL			ROLL PIN 1/4" X 1/2"
	COMMERCIAL			SOC. HD. CAP SCREW 5/16-NC X 1/2
	COMMERCIAL			SOC. HD. CAP SCREW 1/4-NC X 3/8
	COMMERCIAL			NUT, JAM 1/4-NC

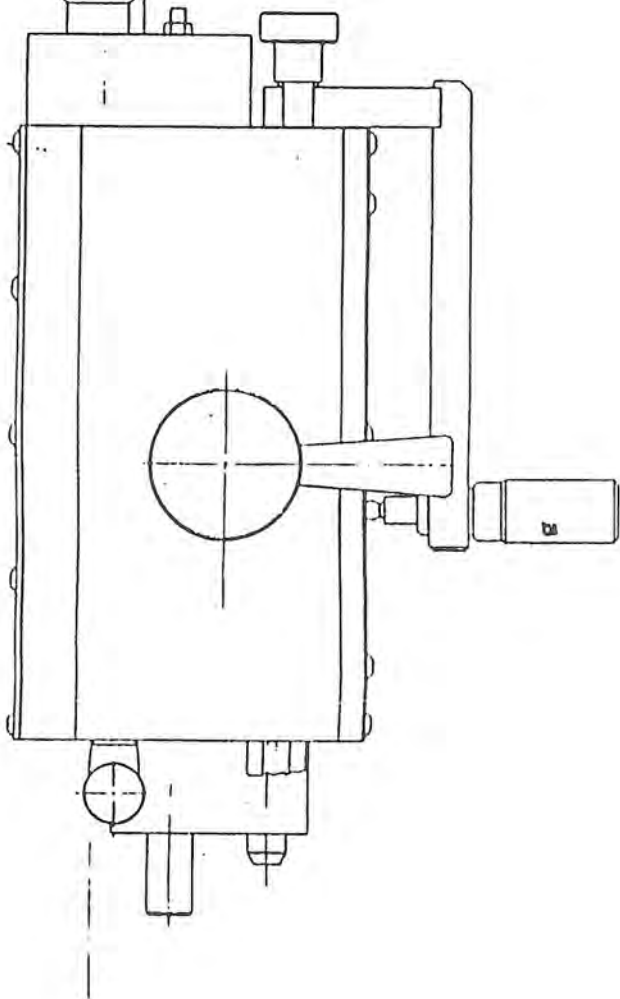
I.D.No.	Manufacturer	FSCM	Part No.	Nomenclature
	COMMERCIAL			BUTTON HD. SOC. CAP SCREW 1/4-NC X 5/8
	COMMERCIAL			BUTTON HD. SOC. CAP SCREW 1/4-NC X 3/4
	COMMERCIAL			HEX. HD. CAP SCREW 5/16-NC X 1
	COMMERCIAL			HEX. HD. CAP SCREW 5/16-NC X 1-1/4
	COMMERCIAL			SOC. PIPE PLUG 1/8 NPT
	COMMERCIAL			SOC. SET SCREW 1/4-NC X 3/8
	COMMERCIAL			SOC. SET SCREW 3/8-NC X 1/2
	COMMERCIAL			SOC. HD. CAP SCREW 5/16-NC X 1-1/2
	COMMERCIAL			SOC. SET SCREW 5/16-NC X 1/4
	COMMERCIAL			SOC. HD. CAP SCREW 1/4-NC X 3/4
	COMMERCIAL			SOC. SET SCREW 1/4-NC X 1/4
	COMMERCIAL			SOC. SET SCREW 1/4-UNF X 1
	COMMERCIAL			SOC. SET SCREW 1/4-NC X 1-3/4
	COMMERCIAL			SOC. SET SCREW 1/4-UNF X 1/4



I.D.No.	Manufacturer	FSCM	Part No.	Nomenclature
114357	OMT	3AA35	114357	Leadscrew coupling
114701	OMT	3AA35	114701	Feedbox casting
114706	OMT	3AA35	114706	Right cover
114707	OMT	3AA35	114707	Left bearing block
114750	OMT	3AA35	114750	Clutch coupling
114757	OMT	3AA35	114757	Stud adapter
	GITS	OBT82	01402	Oil cup
	COMMERCIAL			SOC.HD.CAP SCREW 1/4 - 20 X 1 3/4

LEADSCREW COUPLING *114357 REF

LEADSCREW
REF.



FEEDBOX CASTING *114701

OIL CUP, 6ITS *01402

STUD ADAPTER *114757

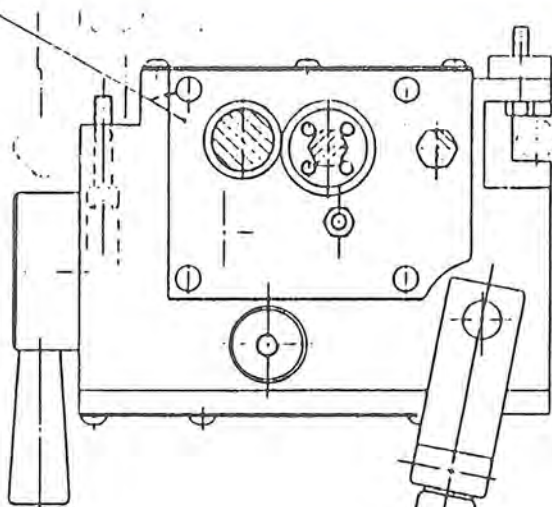
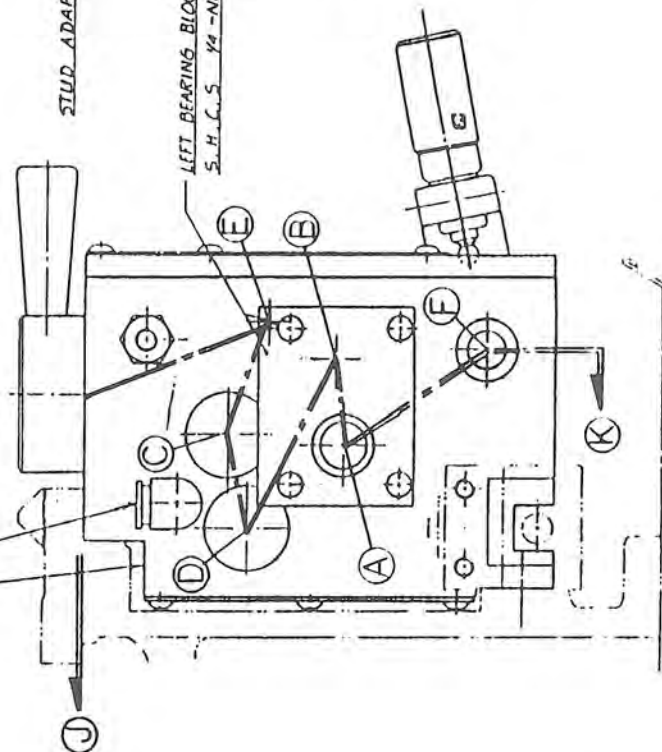
LEFT BEARING BLOCK *114707
S.H.C.S. Y4 -NC *13410

CLUTCH COUPLING *114750 REF

RIGHT COVER *114706
S.H.C.S. Y4 -NC *13410

FEED SHAFT
REF

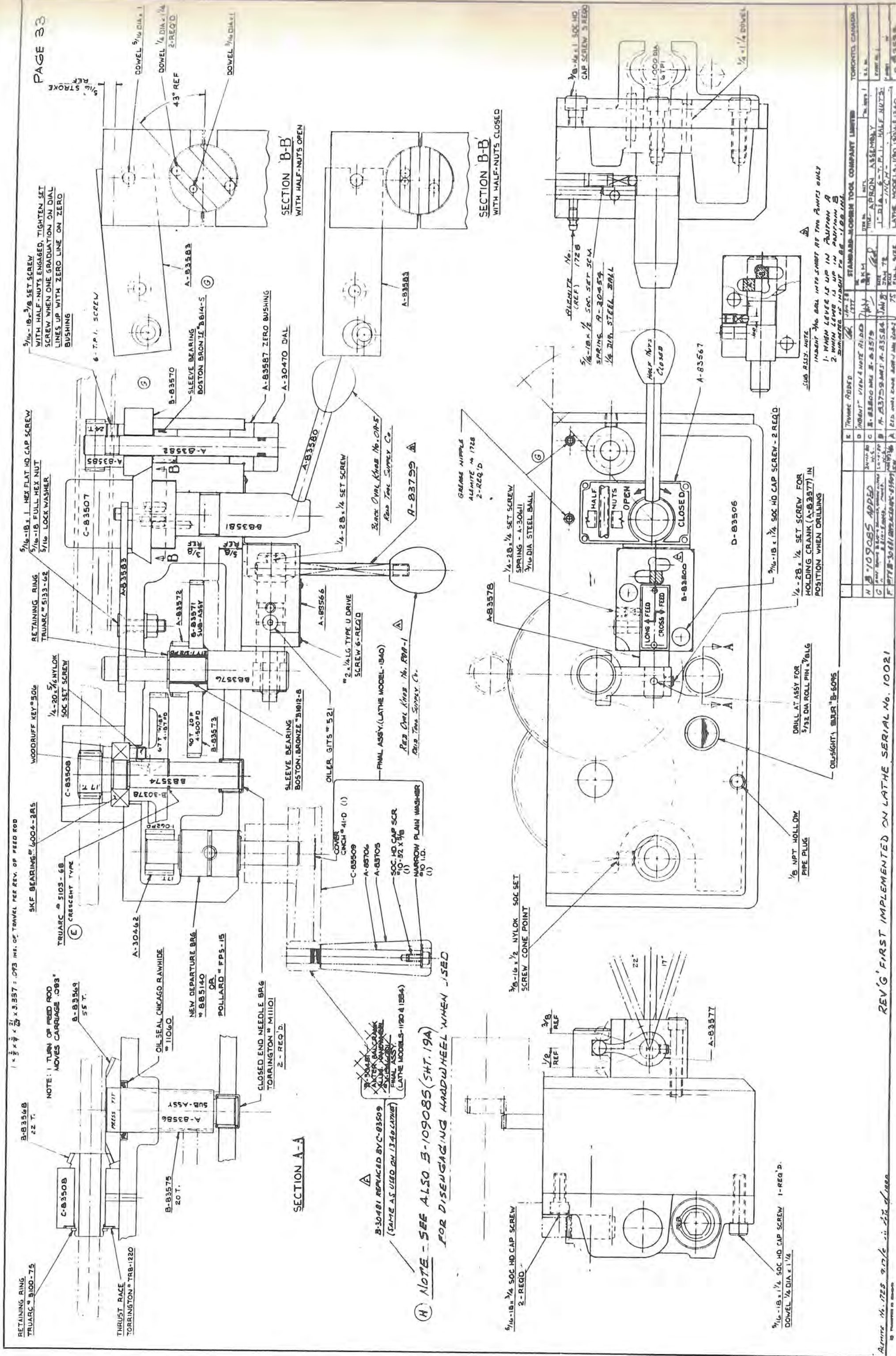
CONTROL SHAFT
REF



REV	DATE	BY	CHKD
1			

I.D.No.	Manufacturer	FSCM	Part No.	Nomenclature
	COMMERCIAL			DOWEL 1/4 DIA X 1 1/4
	COMMERCIAL			DOWEL 3/16 DIA X 1
	COMMERCIAL			DOWEL 5/16 DIA X 1
	COMMERCIAL			NYLOK SOC.SET.SCREW CONE PT 3/8 - 16 X 1/2
	COMMERCIAL			DRIVE SCREW TYPE "U" #2 X 1/4
	COMMERCIAL			HEX NUT 5/16 - 18
	COMMERCIAL			HEX.SOC.FLAT HD.CAP SCREW 5/16 - 18 X 1
	COMMERCIAL			HOLLOW PIPE PLUG 1/8 NPT
	COMMERCIAL			LOCKWASHER 5/16
	COMMERCIAL			NARROW FLAIN WASHER #10
	COMMERCIAL			SOC.SET SCREW 1/4 - 20 X 5/16 NYLOCK
	COMMERCIAL			ROLL PIN 5/32 DIA X 7/8
	COMMERCIAL			SOC.HD.CAP SCREW 10 - 32 X 3/8
	COMMERCIAL			SOC.HD.CAP SCREW 3/8 - 16 X 1
	COMMERCIAL			SOC.HD.CAP SCREW 10 - 32 X 5/8
	COMMERCIAL			SOC.HD.CAP SCREW 5/16 - 18 X 1 3/4
	COMMERCIAL			SOC.HD.CAP SCREW 5/16 - 18 X 3/4
	COMMERCIAL			SOC.HD.CAP SCREW 5/16 - 18 X 1 1/4
	COMMERCIAL			SOC.SET SCREW 1/4 - 28 X 1/4
	COMMERCIAL			SOC.SET SCREW 5/16 - 18 X 1/2
	COMMERCIAL			SOC.SET SCREW 5/16 - 18 X 3/8
	COMMERCIAL			STEEL BALL 1/4 DIA
	COMMERCIAL			STEEL BALL 3/16 DIA
	COMMERCIAL			WOODRUFF KEY #506 5/32 X 3/4
83575	OMT	3AA35	83575	20T PINION
83569	OMT	3AA35	83569	55T BEVEL GEAR
83582	OMT	3AA35	83582	DIAL SHAFT
83857	OMT	3AA35	83857	ZERO BUSHING
885140	NEW DEPARTURE		885140	BEARING
11060	CHICAGO-RAWHIDE	11678	11060	OIL SEAL
83509	OMT	3AA35	83509	HANDWHEEL
83571	OMT	3AA35	83571	PINION & GEAR ASSEMBLY
1728	ALEMITE	95879	1728	GREASE NIPPLE
30378	OMT	3AA35	30378	67T GEAR
30454	OMT	3AA35	30454	SPRING
30462	OMT	3AA35	30462	17T PINION
30470	OMT	3AA35	30470	DIAL
30611	OMT	3AA35	30611	SPRING
5100-75	WALDES TRUARC	79136	5100-75	RETAINING RING
5103-68	WALDES TRUARC	79136	5103-68	RETAINING RING
5133-62	WALDES TRUARC	79136	5133-62	RETAINING RING
521	GITS MANUF.	OBT82	521	OILER
ZE B814-5	BOSTON GEAR	OACA6	ZE B814-5	SLEEVE BEARING
6004-2RS	SKF	36121	6004-2RS	BALL BEARING
83507	OMT	3AA35	83507	HALF NUT (PAIR)
83508	OMT	3AA35	83508	BRACKET, BEVEL GEAR
83566	OMT	3AA35	83566	NAMEPLATE
83567	OMT	3AA35	83567	NAMEPLATE
83568	OMT	3AA35	83568	22T BEVEL PINION
83570	OMT	3AA35	83570	GIB PLATE
83574	OMT	3AA35	83574	RACK PINION SHAFT
83576	OMT	3AA35	83576	SHAFT SELECTOR
83577	OMT	3AA35	83577	CRANK, APRON

I.D.No.	Manufacturer	FSCM	Part No.	Nomenclature
83578	OMT	3AA35	83578	SHAFT CRANK
83580	OMT	3AA35	83580	HANDLE
83581	OMT	3AA35	83851	SHIFTER
83583	OMT	3AA35	83583	INTERLOCK
83585	OMT	3AA35	83585	HELICAL GEAR 24T
83705	OMT	3AA35	83705	HANDLE
83706	OMT	3AA35	83706	SHAFT HANDLE
83799	OMT	3AA35	83799	LEVER
83800	OMT	3AA35	83800	FEED SELECTOR BLOCK
B-5095	BIJUR	70925	B-5095	OILSIGHT
B1012-8	BOSTON GEAR	OACA6	B1012-8	SLEEVE BEARING
41-D	CINCH		41-D	COVER
M11101	TORRINGTON	60380	M11101	CLOSED END NEEDLE BEARING
OA5	REID TOOL SUPPLY	01599	OA5	BLACK OVAL KNOB
ROA-1	REID TOOL SUPPLY	01599	ROA-1	RED OVAL KNOB
TRB-1220	TORRINGTON	60380	TRB-1220	THRUST RACE



REV 'G' FIRST IMPLEMENTED ON LATHE SERIAL NO. 10021

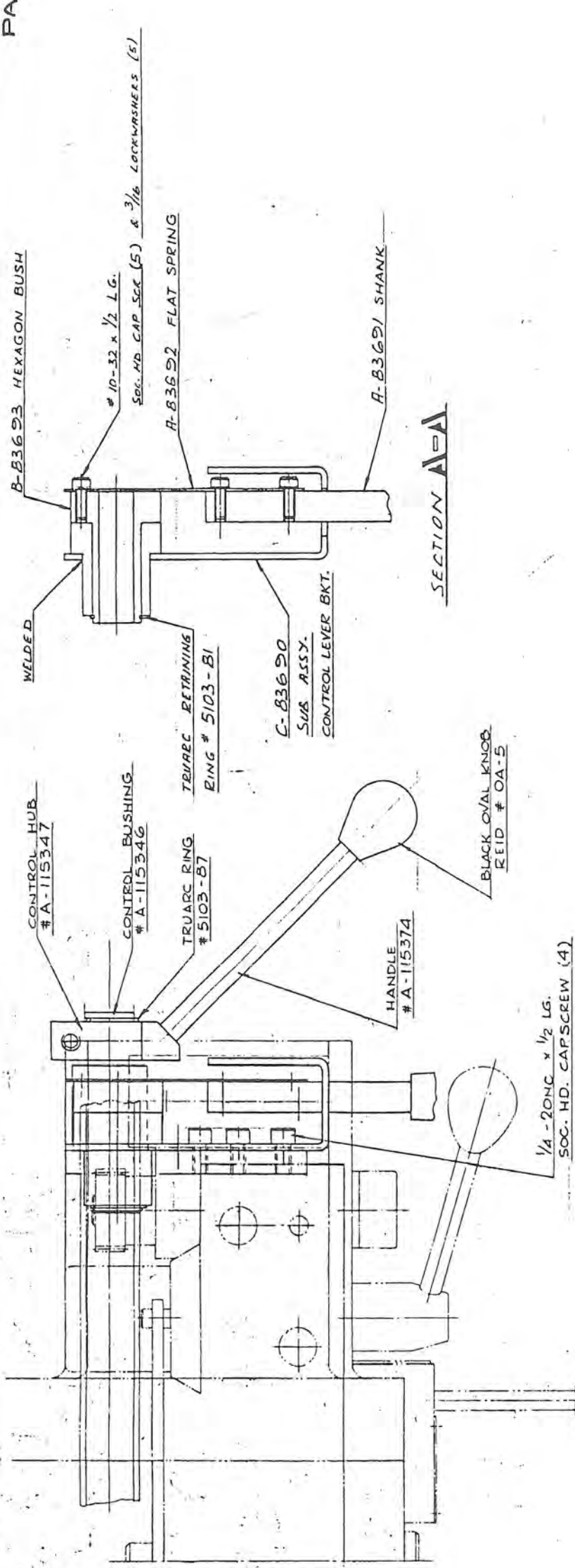
APPROX. 11-1725 9/17/6 in. 11/12/1960

STANDARD-MODERN TOOL COMPANY LIMITED										TORONTO, CANADA	
ITEM NO.	Q.T.Y.	DESCRIPTION	UNIT	PRICE	TOTAL	DATE	BY	CHKD.	APPROV.		
1	1	APRON ASSEMBLY									
2	1	1" DIA. 6-T. PL. 1/2 HALF NUTS									
3	1	1" DIA. 6-T. PL. 1/2 HALF NUTS									
4	1	1" DIA. 6-T. PL. 1/2 HALF NUTS									
5	1	1" DIA. 6-T. PL. 1/2 HALF NUTS									
6	1	1" DIA. 6-T. PL. 1/2 HALF NUTS									
7	1	1" DIA. 6-T. PL. 1/2 HALF NUTS									
8	1	1" DIA. 6-T. PL. 1/2 HALF NUTS									
9	1	1" DIA. 6-T. PL. 1/2 HALF NUTS									
10	1	1" DIA. 6-T. PL. 1/2 HALF NUTS									
11	1	1" DIA. 6-T. PL. 1/2 HALF NUTS									
12	1	1" DIA. 6-T. PL. 1/2 HALF NUTS									
13	1	1" DIA. 6-T. PL. 1/2 HALF NUTS									
14	1	1" DIA. 6-T. PL. 1/2 HALF NUTS									
15	1	1" DIA. 6-T. PL. 1/2 HALF NUTS									
16	1	1" DIA. 6-T. PL. 1/2 HALF NUTS									
17	1	1" DIA. 6-T. PL. 1/2 HALF NUTS									
18	1	1" DIA. 6-T. PL. 1/2 HALF NUTS									
19	1	1" DIA. 6-T. PL. 1/2 HALF NUTS									
20	1	1" DIA. 6-T. PL. 1/2 HALF NUTS									
21	1	1" DIA. 6-T. PL. 1/2 HALF NUTS									
22	1	1" DIA. 6-T. PL. 1/2 HALF NUTS									
23	1	1" DIA. 6-T. PL. 1/2 HALF NUTS									
24	1	1" DIA. 6-T. PL. 1/2 HALF NUTS									
25	1	1" DIA. 6-T. PL. 1/2 HALF NUTS									
26	1	1" DIA. 6-T. PL. 1/2 HALF NUTS									
27	1	1" DIA. 6-T. PL. 1/2 HALF NUTS									
28	1	1" DIA. 6-T. PL. 1/2 HALF NUTS									
29	1	1" DIA. 6-T. PL. 1/2 HALF NUTS									
30	1	1" DIA. 6-T. PL. 1/2 HALF NUTS									
31	1	1" DIA. 6-T. PL. 1/2 HALF NUTS									
32	1	1" DIA. 6-T. PL. 1/2 HALF NUTS									
33	1	1" DIA. 6-T. PL. 1/2 HALF NUTS									
34	1	1" DIA. 6-T. PL. 1/2 HALF NUTS									
35	1	1" DIA. 6-T. PL. 1/2 HALF NUTS									
36	1	1" DIA. 6-T. PL. 1/2 HALF NUTS									
37	1	1" DIA. 6-T. PL. 1/2 HALF NUTS									
38	1	1" DIA. 6-T. PL. 1/2 HALF NUTS									
39	1	1" DIA. 6-T. PL. 1/2 HALF NUTS									
40	1	1" DIA. 6-T. PL. 1/2 HALF NUTS									
41	1	1" DIA. 6-T. PL. 1/2 HALF NUTS									
42	1	1" DIA. 6-T. PL. 1/2 HALF NUTS									
43	1	1" DIA. 6-T. PL. 1/2 HALF NUTS									
44	1	1" DIA. 6-T. PL. 1/2 HALF NUTS									
45	1	1" DIA. 6-T. PL. 1/2 HALF NUTS									
46	1	1" DIA. 6-T. PL. 1/2 HALF NUTS									
47	1	1" DIA. 6-T. PL. 1/2 HALF NUTS									
48	1	1" DIA. 6-T. PL. 1/2 HALF NUTS									
49	1	1" DIA. 6-T. PL. 1/2 HALF NUTS									
50	1	1" DIA. 6-T. PL. 1/2 HALF NUTS									
51	1	1" DIA. 6-T. PL. 1/2 HALF NUTS									
52	1	1" DIA. 6-T. PL. 1/2 HALF NUTS									
53	1	1" DIA. 6-T. PL. 1/2 HALF NUTS									
54	1	1" DIA. 6-T. PL. 1/2 HALF NUTS									
55	1	1" DIA. 6-T. PL. 1/2 HALF NUTS									
56	1	1" DIA. 6-T. PL. 1/2 HALF NUTS									
57	1	1" DIA. 6-T. PL. 1/2 HALF NUTS									
58	1	1" DIA. 6-T. PL. 1/2 HALF NUTS									
59	1	1" DIA. 6-T. PL. 1/2 HALF NUTS									
60	1	1" DIA. 6-T. PL. 1/2 HALF NUTS									
61	1	1" DIA. 6-T. PL. 1/2 HALF NUTS									
62	1	1" DIA. 6-T. PL. 1/2 HALF NUTS									
63	1	1" DIA. 6-T. PL. 1/2 HALF NUTS									
64	1	1" DIA. 6-T. PL. 1/2 HALF NUTS									
65	1	1" DIA. 6-T. PL. 1/2 HALF NUTS									
66	1	1" DIA. 6-T. PL. 1/2 HALF NUTS									
67	1	1" DIA. 6-T. PL. 1/2 HALF NUTS									
68	1	1" DIA. 6-T. PL. 1/2 HALF NUTS									
69	1	1" DIA. 6-T. PL. 1/2 HALF NUTS									
70	1	1" DIA. 6-T. PL. 1/2 HALF NUTS									
71	1	1" DIA. 6-T. PL. 1/2 HALF NUTS									
72	1	1" DIA. 6-T. PL. 1/2 HALF NUTS									
73	1	1" DIA. 6-T. PL. 1/2 HALF NUTS									
74	1	1" DIA. 6-T. PL. 1/2 HALF NUTS									
75	1	1" DIA. 6-T. PL. 1/2 HALF NUTS									
76	1	1" DIA. 6-T. PL. 1/2 HALF NUTS									
77	1	1" DIA. 6-T. PL. 1/2 HALF NUTS									
78	1	1" DIA. 6-T. PL. 1/2 HALF NUTS									
79	1	1" DIA. 6-T. PL. 1/2 HALF NUTS									
80	1	1" DIA. 6-T. PL. 1/2 HALF NUTS									
81	1	1" DIA. 6-T. PL. 1/2 HALF NUTS									
82	1	1" DIA. 6-T. PL. 1/2 HALF NUTS									
83	1	1" DIA. 6-T. PL. 1/2 HALF NUTS									
84	1	1" DIA. 6-T. PL. 1/2 HALF NUTS									
85	1	1" DIA. 6-T. PL. 1/2 HALF NUTS									
86	1	1" DIA. 6-T. PL. 1/2 HALF NUTS									
87	1	1" DIA. 6-T. PL. 1/2 HALF NUTS									
88	1	1" DIA. 6-T. PL. 1/2 HALF NUTS									
89	1	1" DIA. 6-T. PL. 1/2 HALF NUTS									
90	1	1" DIA. 6-T. PL. 1/2 HALF NUTS									
91	1	1" DIA. 6-T. PL. 1/2 HALF NUTS									
92	1	1" DIA. 6-T. PL. 1/2 HALF NUTS									
93	1	1" DIA. 6-T. PL. 1/2 HALF NUTS									
94	1	1" DIA. 6-T. PL. 1/2 HALF NUTS									
95	1	1" DIA. 6-T. PL. 1/2 HALF NUTS									
96	1	1" DIA. 6-T. PL. 1/2 HALF NUTS									
97	1	1" DIA. 6-T. PL. 1/2 HALF NUTS									
98	1	1" DIA. 6-T. PL. 1/2 HALF NUTS									
99	1	1" DIA. 6-T. PL. 1/2 HALF NUTS									
100	1	1" DIA. 6-T. PL. 1/2 HALF NUTS									

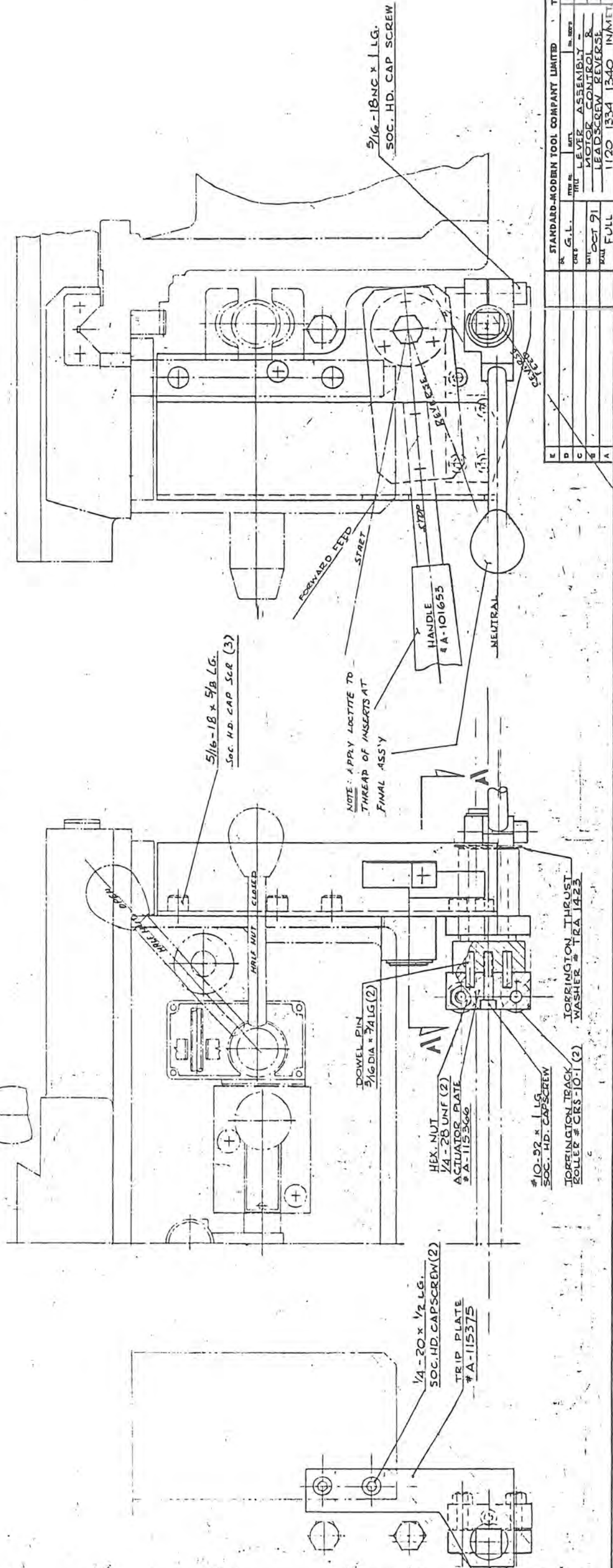
LIST OF ITEMS SHOWN ON: LEVER ASSY - MOTOR CONTROL AND
LEADSCREW REVERSE.

Sheet 1 of 1.

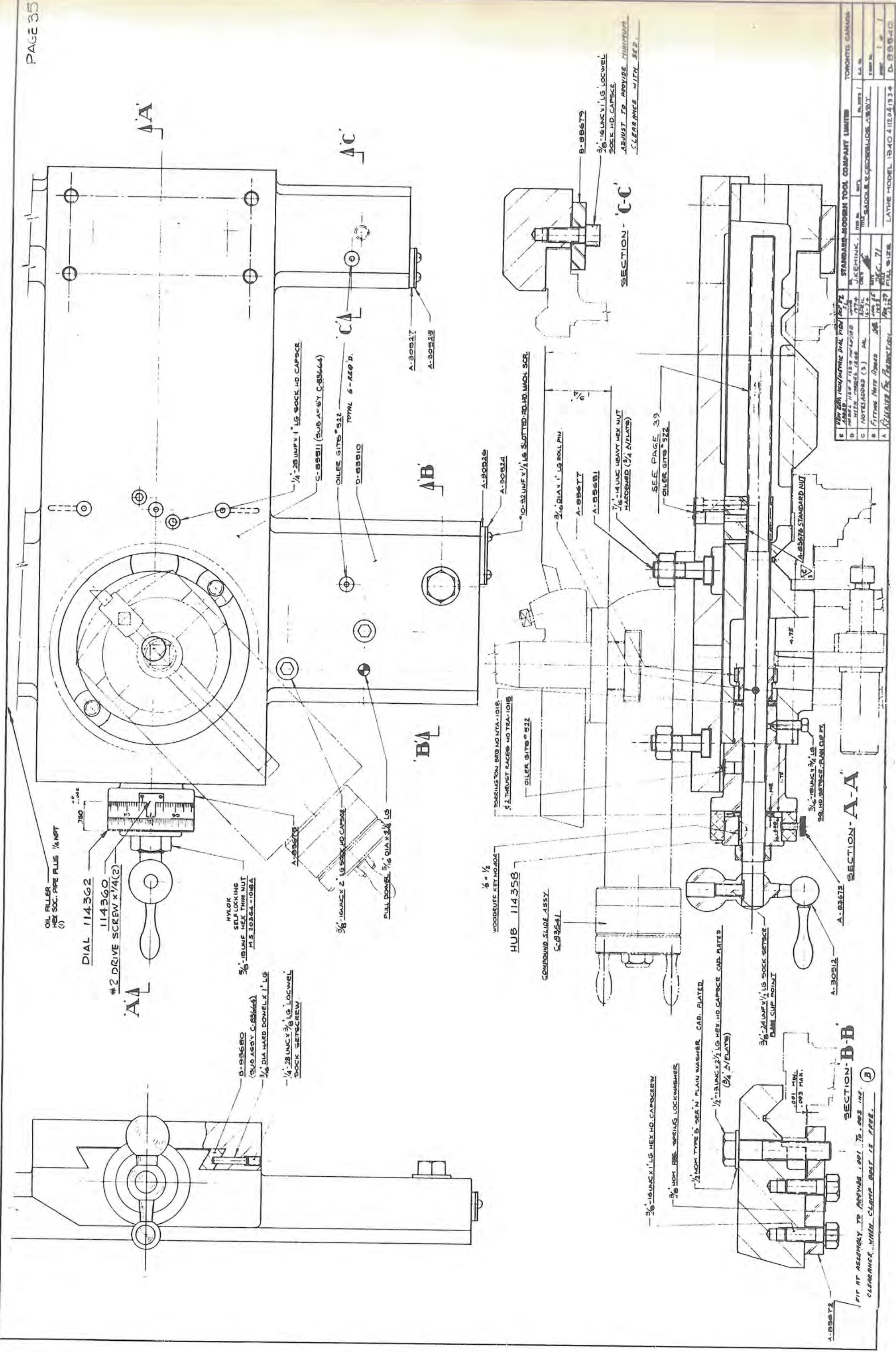
I.D.#	Manufacturer	FSCM	Part No.	Nomenclature	Qty.
83690	OMT	3AA35	83690	Sub Assy. Control lever bracket.	1
83691	OMT	3AA35	83691	Shank	1
83692	OMT	3AA35	83692	Flat spring.	1
83693	OMT	3AA35	83693	Hexagon bush.on.	1
101653	OMT	3AA35	101653	Handle. Red	1
115346	OMT	3AA35	115346	Control bushing.	1
115347	OMT	3AA35	115347	Control hub.	1
115366	OMT	3AA35	115366	Actuator plate.	1
115374	OMT	3AA35	115374	Handle.	1
115375	OMT	3AA35	115375	Trip plate.	1
	TORRINGTON	60380	CRS-10-1	Track roller	2
	TORRINGTON	60380	TRA-1423	Thrust washer.	1
	REID	01599	0A-5	Knob. Black oval.	1
	WALDES TRUARC	79136	5103-81	Retaining ring.	1
	WALDES TRUARC	79136	5103-87	Retaining ring.	1
	COMMERCIAL			Soc Hd Cap Screw 1/4 - 20 X 1/2 lg.	6
	COMMERCIAL			Soc Hd Cap Screw 5/16- 18 X 5/8 lg.	3
	COMMERCIAL			Soc Hd Cap Screw 5/16- 18 X 1 lg.	1
	COMMERCIAL			Soc Hd Cap Screw 10 - 32 X 1/2 lg.	5
	COMMERCIAL			Soc Hd Cap Screw 10 - 32 X 1 lg.	1
	COMMERCIAL			Lockwasher 3/16	5
	COMMERCIAL			Dowel pin. 3/16 Dia X 3/4 lg.	2



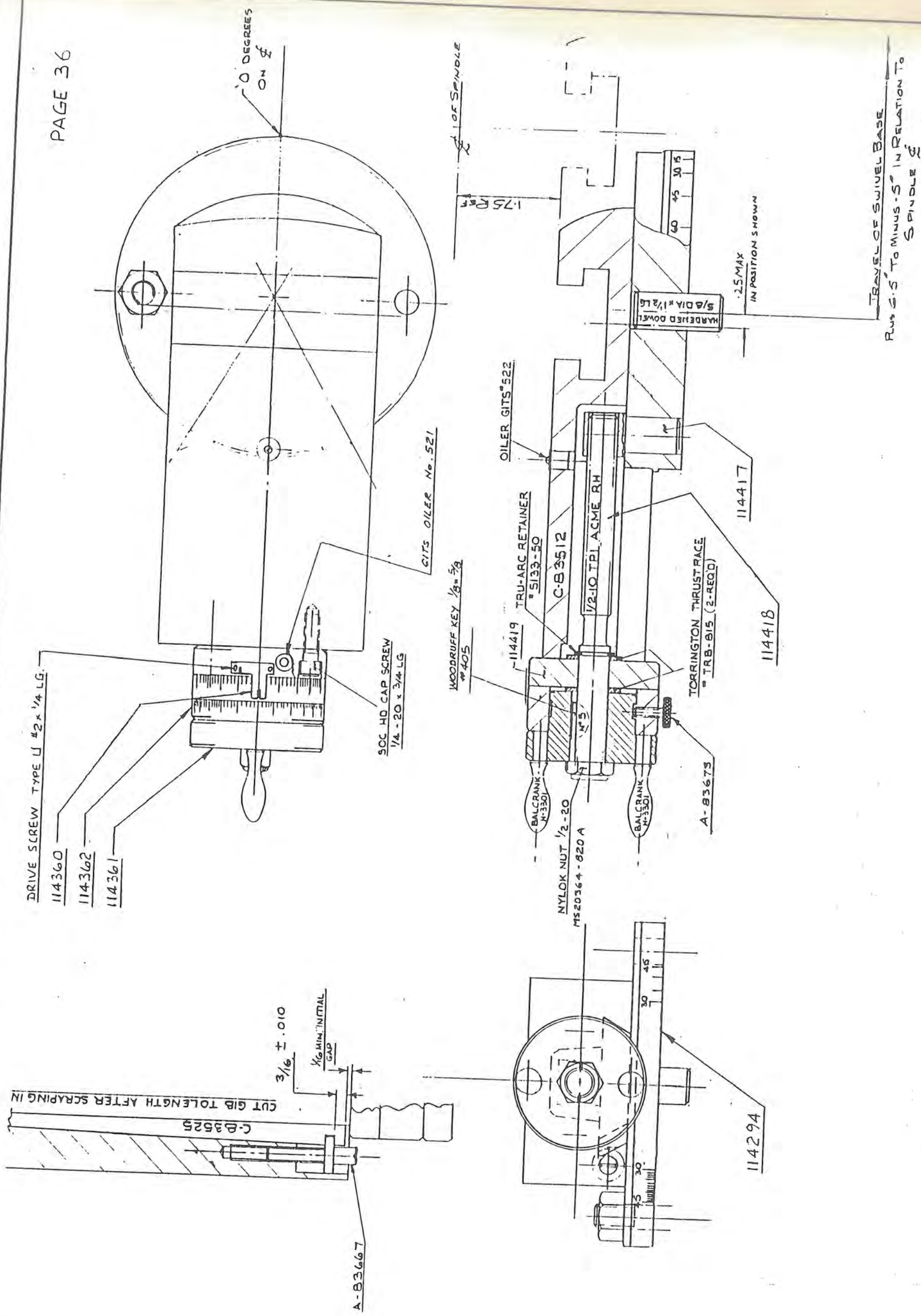
SECTION 10-1

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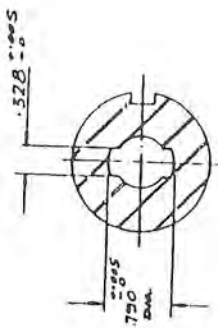
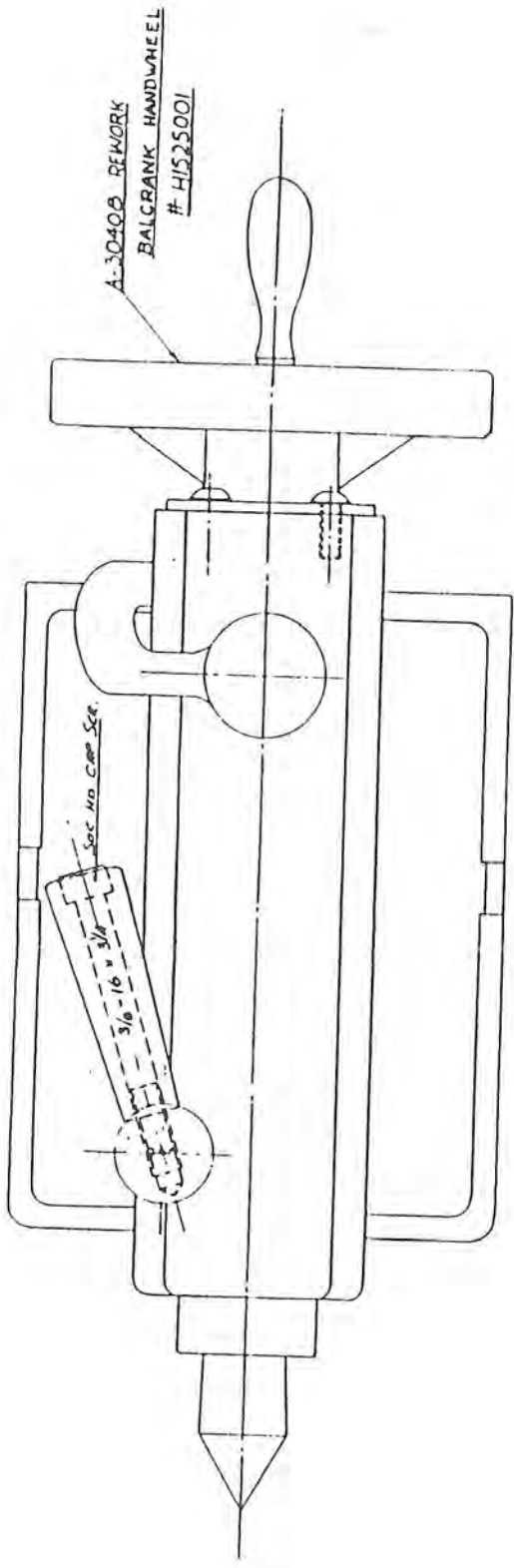
I.D.No.	Manufacturer	FSCM	Part No.	Nomenclature
	COMMERCIAL			DRIVE SCREW TYPE "U" #2 X 1/4
	COMMERCIAL			HARD DOWEL 3/16 DIA. X 1
	COMMERCIAL			HEAVY HEX NUT 7/16 - 14 HARDENED
	COMMERCIAL			HEX THIN NUT 5/8 - 18 NYLOCK
	COMMERCIAL			HEX.HD.CAP SCREW 3/8 - 16 X 1
	COMMERCIAL			HEX.HD.CAP SCREW 1/2 - 13 X 2 1/2 CAD.PLATED
	COMMERCIAL			HEX.SOC.PIPE PLUG 1/4 NPT.
	COMMERCIAL			PULL DOWEL 5/16 DIA. X 2 1/4
	COMMERCIAL			ROUND HD.SLOTTED MACH.SCREW #10 - 32 X 1/2
	COMMERCIAL			SOC.HD.CAP SCREW 3/8 - 16 X 1 LOCWEL
	COMMERCIAL			SOC.HD.CAP SCREW 1/4 - 28 X 1
	COMMERCIAL			SOC.SET SCREW 3/8 - 16 X 2
	COMMERCIAL			SOC.SET SCREW 3/8 - 24 X 1/2
	COMMERCIAL			SOC.SET SCREW 1/4 - 28 X 3/8 LOCWEL
	COMMERCIAL			SPRING LOCKWASHER 3/8
	COMMERCIAL			SQ.HD.SET SCREW 5/16 - 18 X 3/4 PLAIN CUP POINT
	COMMERCIAL			TYPE 'B' SER 'N' PLAIN WASHER 1/2 CAD.PLATED
	COMMERCIAL			WOODRUFF KEY #404 1/8 X 1/2
114358	OMT	3AA35	114358	DIAL HUB
114360	OMT	3AA35	114360	DIAL HUB COMPOUND
114362	OMT	3AA35	114362	DIAL
30512	OMT	3AA35	30512	CROSS FEED CRANK
30524	OMT	3AA35	30524	FRONT SADDLE WIPER PLATE
30525	OMT	3AA35	30525	REAR SADDLE WIPER PLATE
30526	OMT	3AA35	30526	FRONT SADDLE WIPER
30527	OMT	3AA35	30527	REAR SADDLE WIPER
522	GITS	OBT82	522	OILER
83510	OMT	3AA35	83510	SADDLE
83511	OMT	3AA35	83511	CROSS SLIDE
85672	OMT	3AA35	85672	SADDLE CLAMP
83673	OMT	3AA35	83673	DIAL SCREW
83675	OMT	3AA35	83675	EXTENSION BEARING
83676	OMT	3AA35	83676	NUT
83679	OMT	3AA35	83679	REAR SADDLE GIB
83680	OMT	3AA35	83680	CROSS SLIDE GIB
83681	OMT	3AA35	83681	TEE HEAD BOLT
NTA-1018	TORRINGTON	60380	NTA-1018	THRUST BEARING
TRA-1018	TORRINGTON	60380	TRA-1018	THRUST RACE

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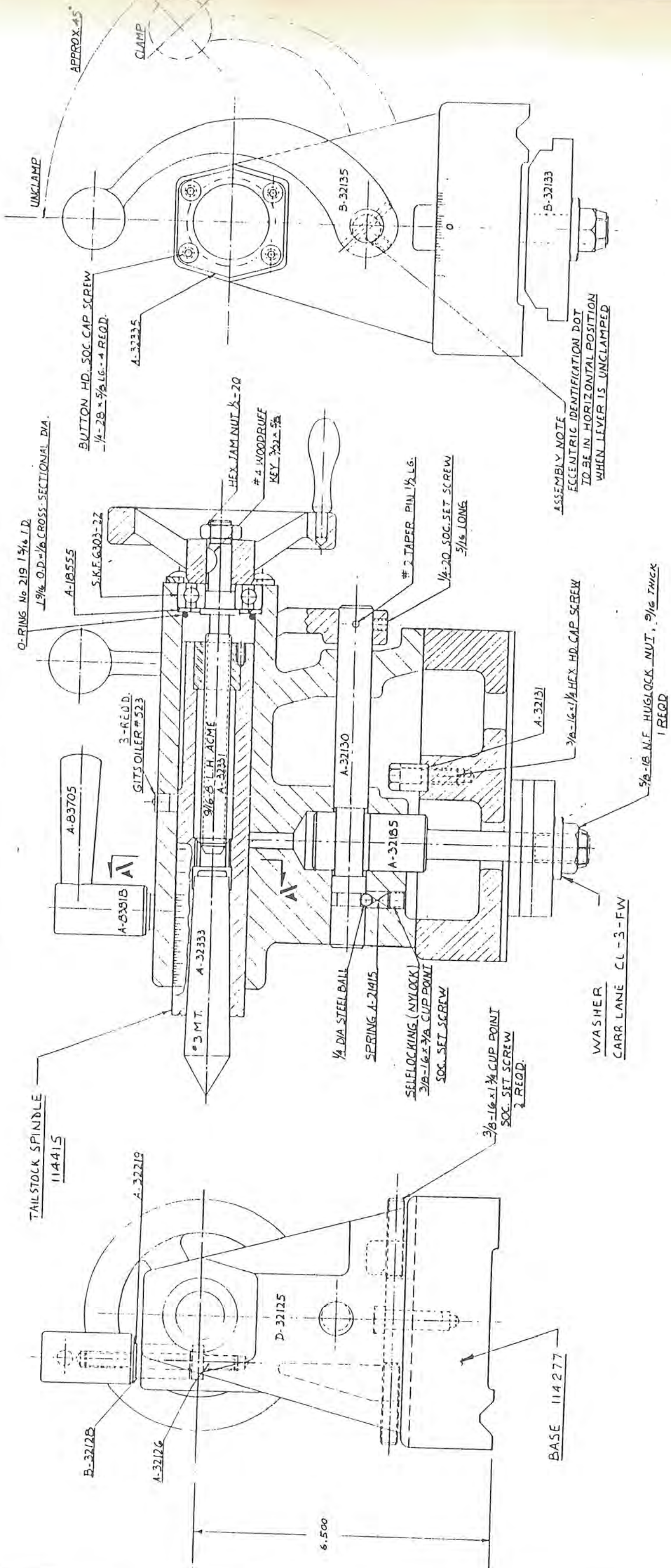
I.D.No.	Manufacturer	FSCM	Part No.	Nomenclature
	COMMERCIAL			DRIVE SCREW TYPE 'U' #2 X 1/4
	COMMERCIAL			HARD DOWEL 5/8 DIA. X 1 1/2
	COMMERCIAL			NUT 1/2 - 20 MS 20364-820A NYLOCK
	COMMERCIAL			SOC.HD.CAP SCREW 1/4 - 20 X 3/4
	COMMERCIAL			WOODRUFF KEY #405 1/8 X 5/8
114294	OMT	3AA35	114294	SWIVEL BASE - ENGRAVED
114360	OMT	3AA35	114360	POINTER
114361	OMT	3AA35	114361	DIAL HUB COMPOUND
114362	OMT	3AA35	114362	INCH/METRIC DIAL - SOLID TYPE
114417	OMT	3AA35	114417	NUT - BRASS
114418	OMT	3AA35	114418	COMPOUND SCREW - HARDENED
114419	OMT	3AA35	114419	COMPOUND END PLATE
5133-50	WALDES TRUARC	79136	5133-50	RETAINING RING
521	GITS	OBT82	521	OILER
522	GITS	OBT82	522	OILER
83512	OMT	3AA35	83512	SLIDE COMPOUND D1-4
83525	OMT	3AA35	83525	TAPERED GIB
83667	OMT	3AA35	83667	GIB SCREW
83673	OMT	3AA35	83673	DIAL SCREW
TRB-815	TORRINGTON	60380	TRB-815	THRUST RACE



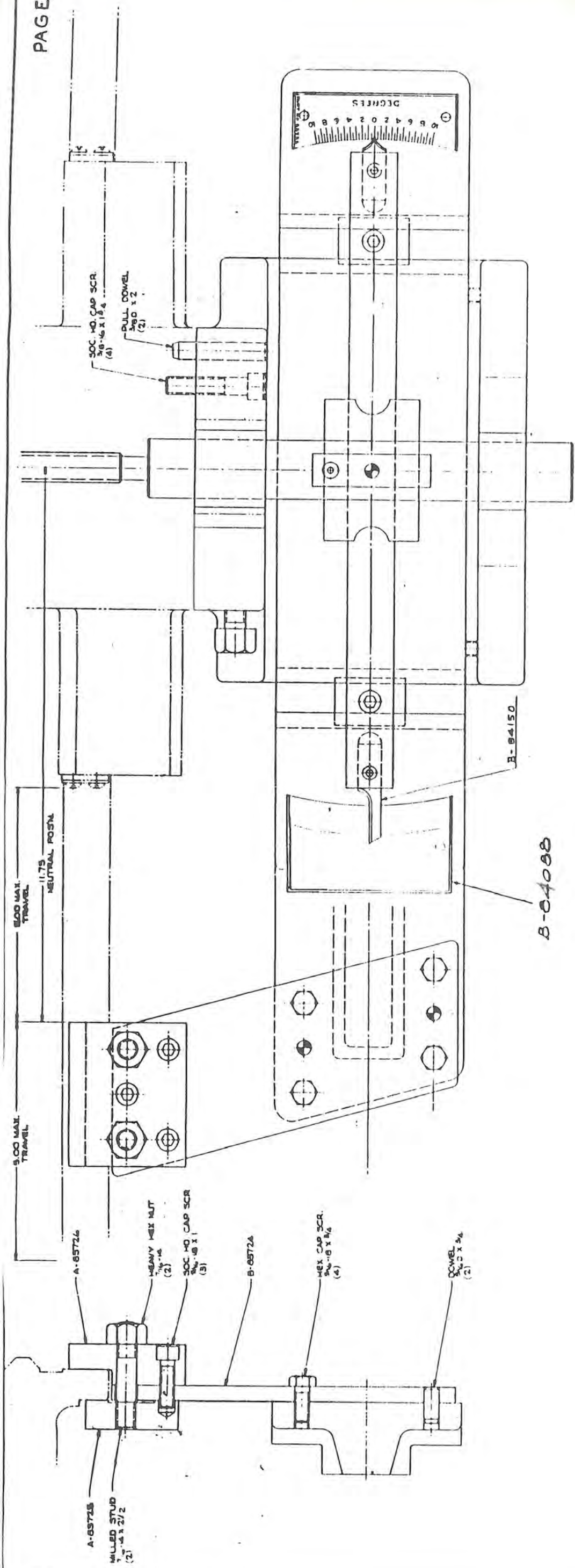
I.D.No.	Manufacturer	FSCM	Part No.	Nomenclature
	COMMERCIAL			BUTTON HD.SOC.CAP SCREW 1/4 - 28 X 5/8
	COMMERCIAL			HEX.HD.CAP SCREW 3/8 - 16 X 1 1/4
	COMMERCIAL			HUGLOCK NUT 5/8 - 18 9/16 THICK
	COMMERCIAL			JAM NUT 1/2 - 20
	COMMERCIAL		219 BUNA N	O-RING
	COMMERCIAL			SOC.HD.CAP SCREW 3/8 - 16 X 3 1/4
	COMMERCIAL			SOC.SET SCREW 3/8 - 16 X 1 3/4 CUP POINT
	COMMERCIAL			SOC.SET SCREW 3/8 - 16 X 1 3/8 CUP POINT NYLOCK
	COMMERCIAL			SOC.SET SCREW 1/4 - 20 X 5/16
	COMMERCIAL			STEEL BALL 1/4 DIA.
	COMMERCIAL			TAPER PIN #2 X 1 1/2
	COMMERCIAL			WOODRUFF KEY #4 3/32 X 5/8
114277	OMT	3AA35	114277	BASE
114415	OMT	3AA35	114415	TAILSTOCK SPINDLE
18555	OMT	3AA35	18555	RETAINING WASHER
21415	OMT	3AA35	21415	SPRING
30408	OMT	3AA35	30408	HANDWHEEL
32125	OMT	3AA35	32125	HOUSING TAILSTOCK SPINDLE
32126	OMT	3AA35	32126	STUD
32128	OMT	3AA35	32128	SPINDLE LOCKING WEDGE
32129	OMT	3AA35	32129	WASHER
32130	OMT	3AA35	32130	SHAFT CLAMP
32131	OMT	3AA35	32131	BLOCK THRUST
32185	OMT	3AA35	32185	CLAMP STUD
32331	OMT	3AA35	32331	SCREW
32333	OMT	3AA35	32333	CENTER #3 MT
32335	OMT	3AA35	32335	RETAINING PLATE
523	GITS	3AA35	523	OILER
6303-2Z	SKF	36121	6303-2Z	BALL BEARING
83705	OMT	3AA35	83705	HANDLE APRON TAILSTOCK
83818	OMT	3AA35	83818	HUB FOR TAILSTOCK
CL-3-FW	CARR LANE	99862	CL-3-FW	WASHER



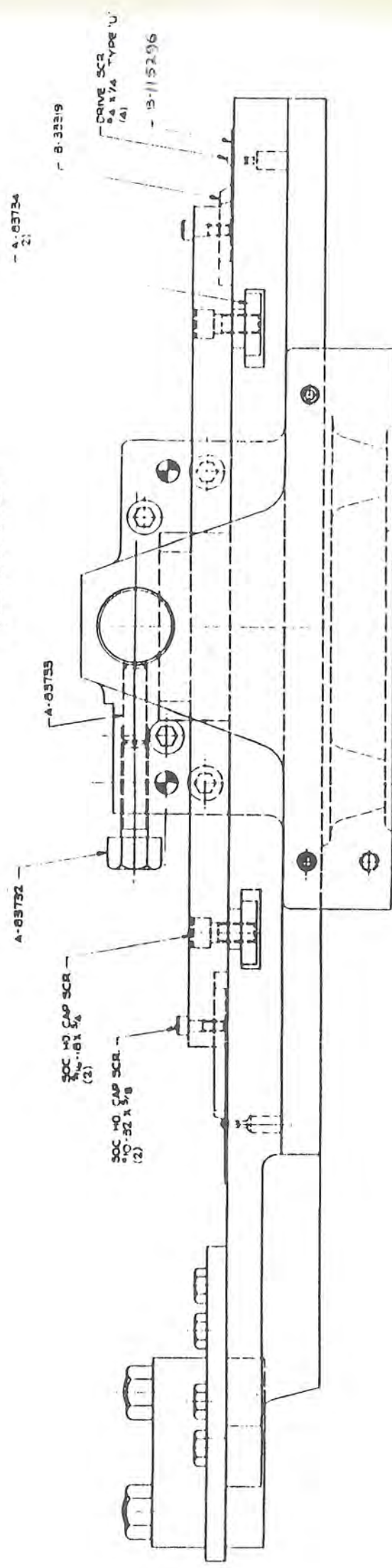
SECTION A-A



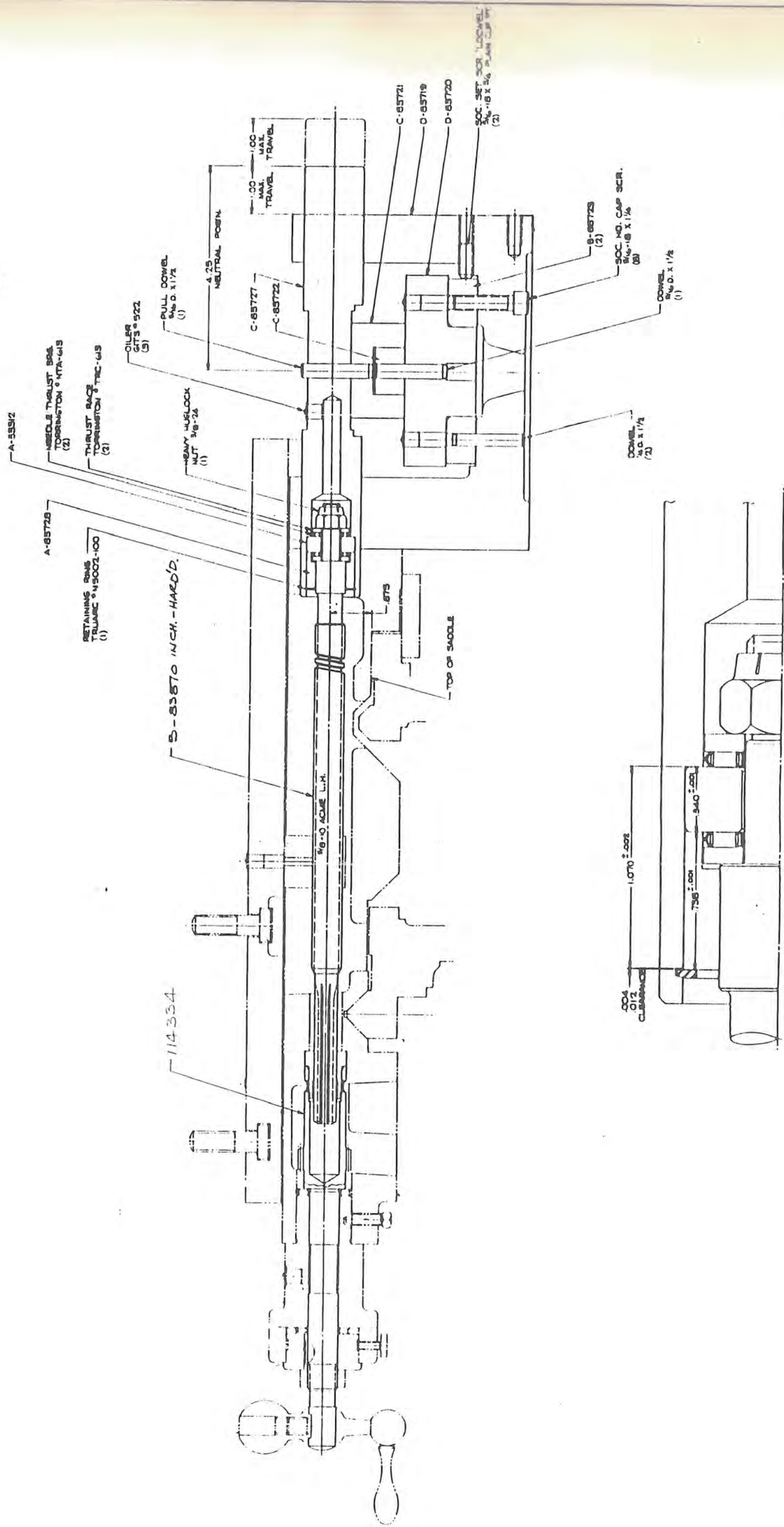
I.D.No.	Manufacturer	FSCM	Part No.	Nomenclature
	COMMERCIAL			DOWEL 5/16 DIA X 3/4
	COMMERCIAL			DRIVE SCREW TYPE "U" #4 X 1/4
	COMMERCIAL			HEAVY HEX NUT 7/16 - 14
	COMMERCIAL			HEX.HD.CAP SCREW 5/16 - 18 X 3/4
	COMMERCIAL			MILLED STUD 7/16 - 14 X 2 1/2
	COMMERCIAL			PULL DOWEL 3/8 DIA X 2
	COMMERCIAL			SOC.HD.CAP SCREW 5/16 - 18 X 3/4
	COMMERCIAL			SOC.HD.CAP SCREW 3/8 - 16 X 1 3/4
	COMMERCIAL			SOC.HD.CAP SCREW #10 - 32 X 5/8
	COMMERCIAL			SOC.HD.CAP SCREW 5/16 - 18 X 1
33319	OMT	3AA35	33319	POINTER
83724	OMT	3AA35	83724	BED ANCHOR ARM
83725	OMT	3AA35	83725	CLAMP, BED LOWER
83726	OMT	3AA35	83726	CLAMP, BED UPPER
83732	OMT	3AA35	83732	SCREW, HEX CLAMP
83733	OMT	3AA35	83733	CLAMPING ROD
83734	OMT	3AA35	83734	NUT, FLAT
84088	OMT	3AA35	84088	NAMEPLATE, GRADUATED, % OF TAPER
84150	OMT	3AA35	84150	POINTER, EXTENDED
115296	OMT	3AA35	115296	NAMEPLATE, GRADUATED.



§ SADDLE & CROSSSLIDE



I.D.No.	Manufacturer	FSCM	Part No.	Nomenclature
	COMMERCIAL			DOWEL 1/4 DIA X 1 1/2
	COMMERCIAL			DOWEL 5/16 DIA X 1 1/2
	COMMERCIAL			HEAVY HUGLOCK NUT 3/8 - 24
	COMMERCIAL			PULL DOWEL 5/16 DIA X 1 1/2
	COMMERCIAL			SOC.HD.CAP SCREW 5/16 - 18 X 1 1/4
	COMMERCIAL			SOC.SET SCREW 5/16 - 18 X 3/4 PLAIN CUP POINT LOCWEL
114334	OMT	3AA35	114334	EXTENSION SHAFT SUB/ASSY
33312	OMT	3AA35	33312	RING, BEARING
522	GITS	OBT82	522	OILER
83719	OMT	3AA35	83719	BRACKET
83720	OMT	3AA35	83720	SLIDER
83721	OMT	3AA35	83721	SHOE
83722	OMT	3AA35	83722	BAR, SLIDE
83723	OMT	3AA35	83723	GUIDE, LOWER
83727	OMT	3AA35	83727	BAR, CROSS SLIDE
83728	OMT	3AA35	83728	RETAINER
83870	OMT	3AA35	83870	SCREW, CROSS FEED
N5002-100	WALDES TRUARC	79136	N5002-100	RETAINING RING
NTA-613	TORRINGTON	60380	NTA-613	THRUST BEARING
TRC-613	TORRINGTON	60380	TRC-613	THRUST RACE

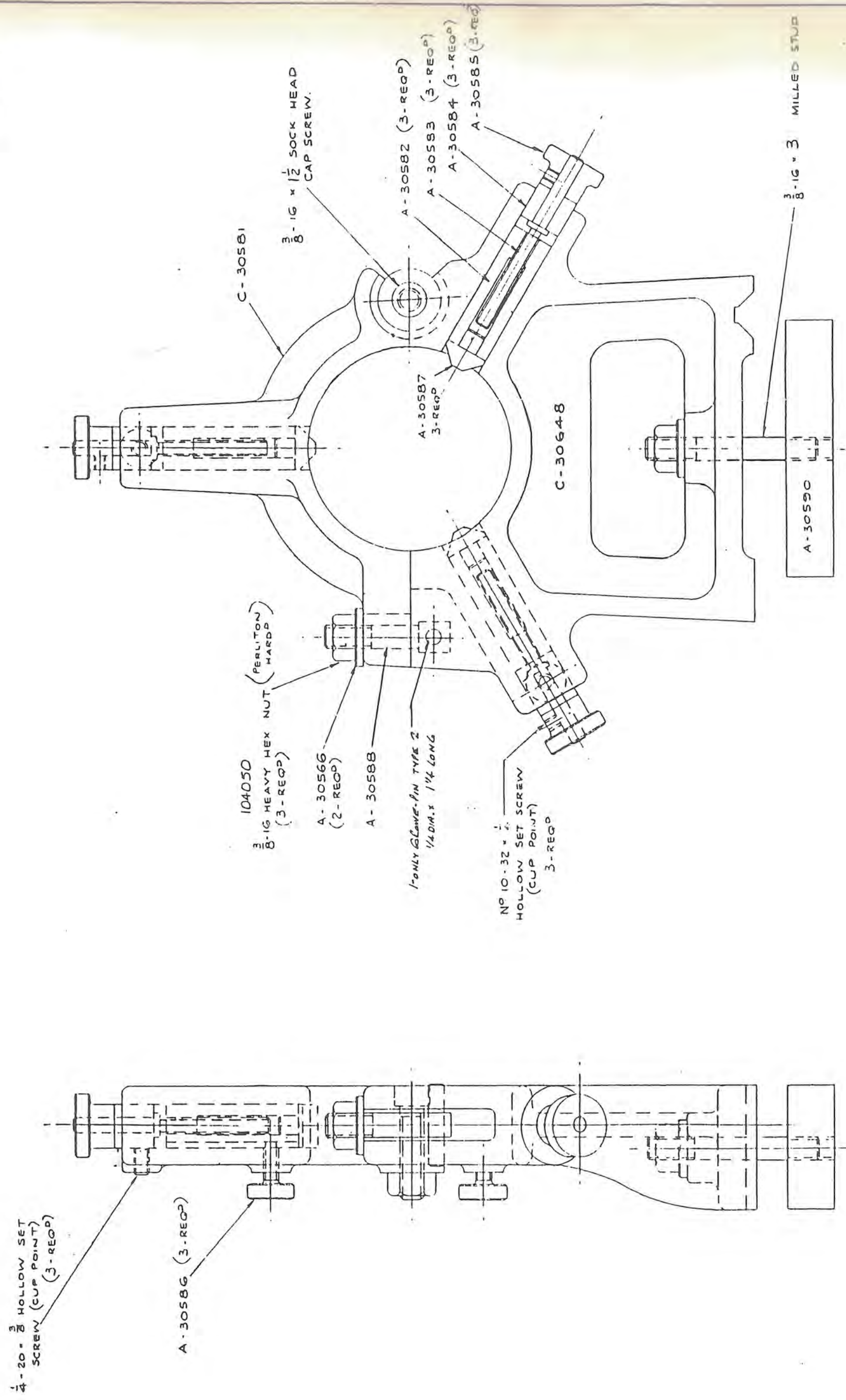


ENLARGED PARTIAL SECTION
SCALE: 4 X SIZE

USE SQUARE PIER # L-3103

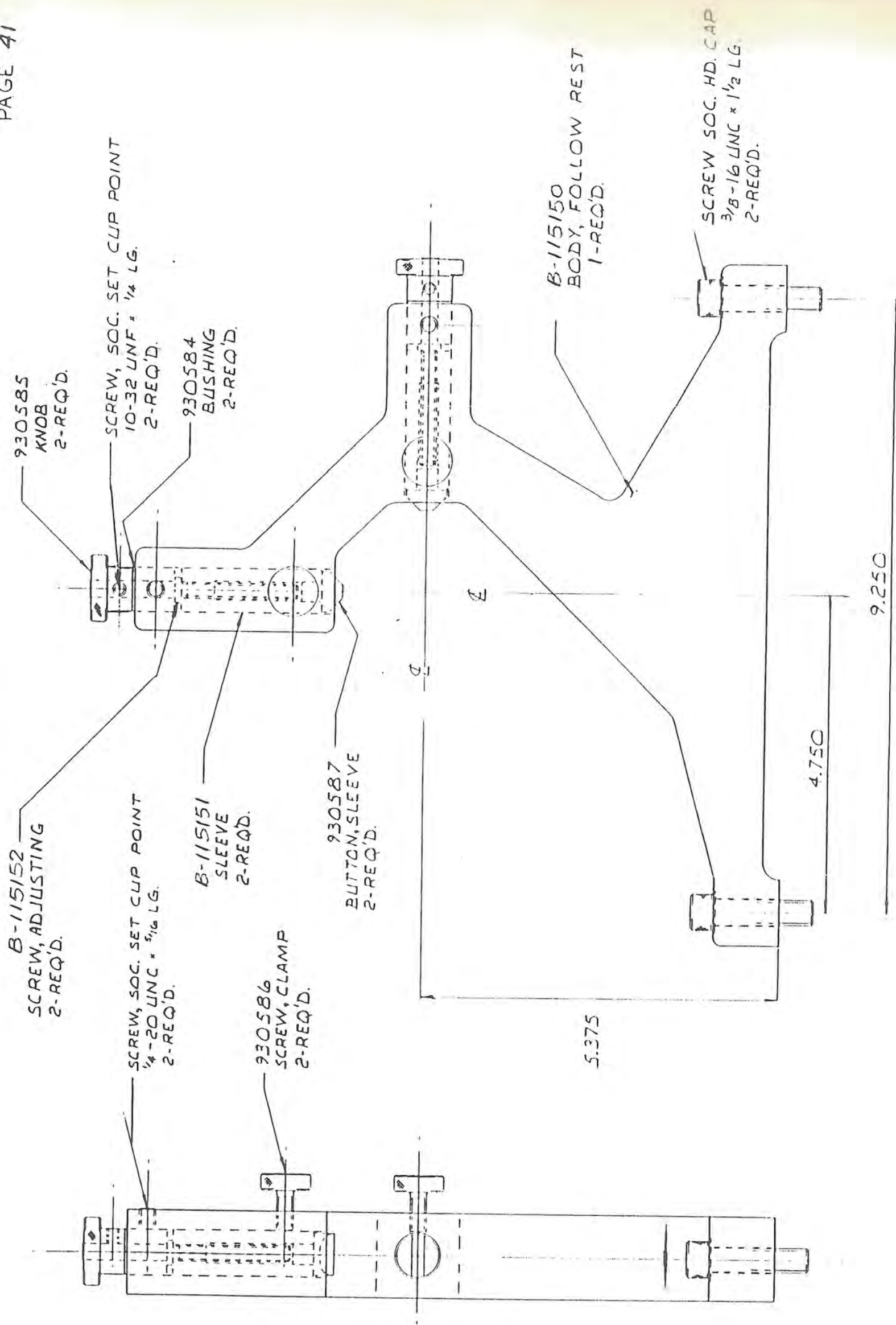
TELESCOPIC TAPER TURNING
ATTACHMENT
(See also Page 38)

I.D.No.	Manufacturer	FSCM	Part No.	Nomenclature
	COMMERCIAL			GROOVE PIN TYPE 2 1/4 DIA X 1 1/4
	COMMERCIAL			HOLLOW SET SCREW 1/4 - 20 X 3/8
	COMMERCIAL			HOLLOW SET SCREW 10 - 32 X 1/4 CUP POINT
	COMMERCIAL			MILLED STUD 3/8 - 16 X 3
	COMMERCIAL			SOC.HD.CAP SCREW 3/8 - 16 X 1 1/2
104050	OMT	3AA35	104050	HEAVY HEX.NUT 3/8 -16 HARDENED
30566	OMT	3AA35	30566	SPECIAL WASHER
30581	OMT	3AA35	30581	TOP, STEADY REST
30582	OMT	3AA35	30582	SLEEVE
30583	OMT	3AA35	30583	SCREW, ADJUSTING
30584	OMT	3AA35	30584	BUSHING
30585	OMT	3AA35	30585	KNOB
30587	OMT	3AA35	30587	BUTTON, SLEEVE
30588	OMT	3AA35	30588	BOLT, EYE
30590	OMT	3AA35	30590	CLAMP
30648	OMT	3AA35	30648	BASE, STEADY REST



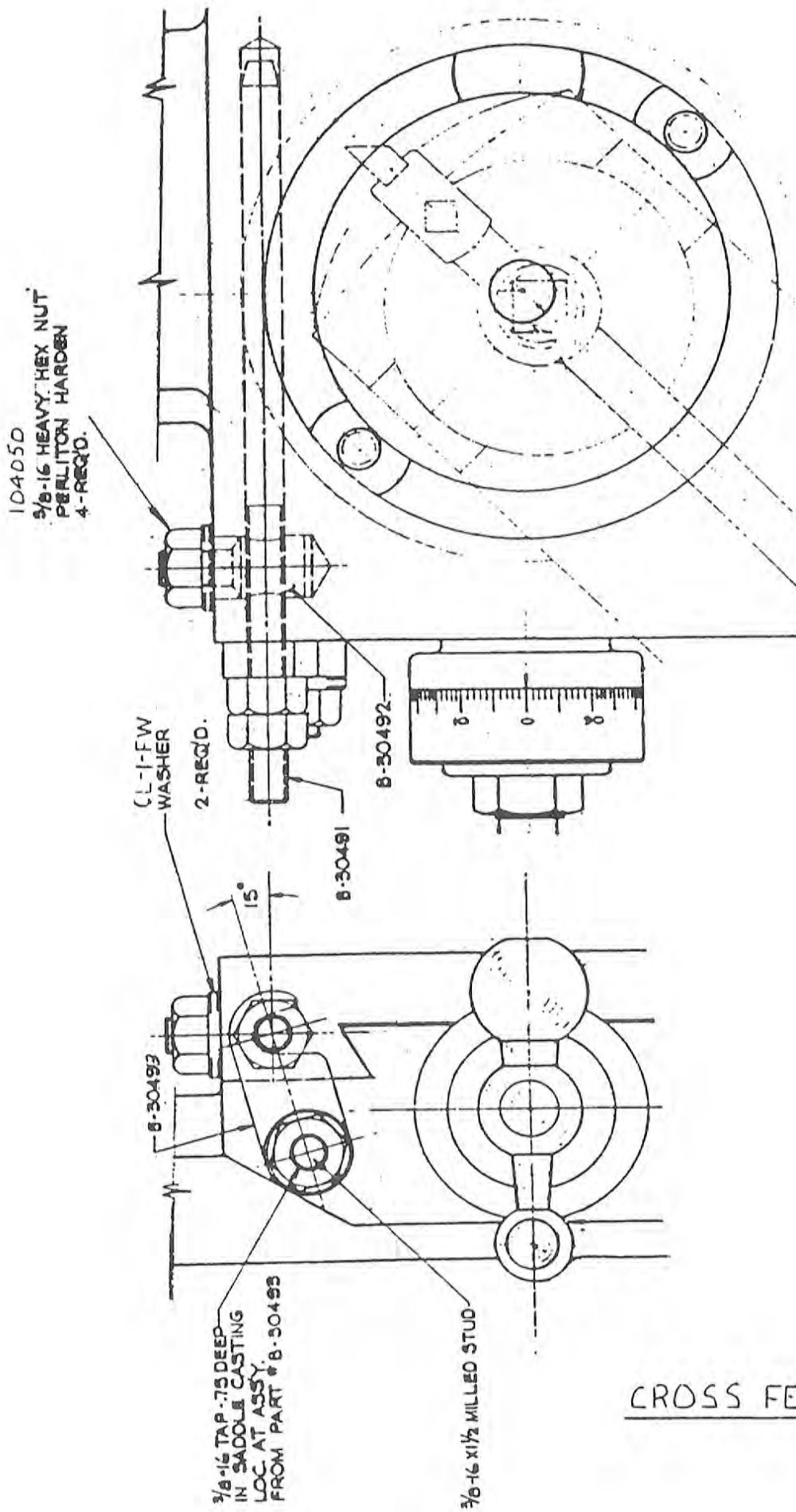
STEADY REST ASSY. ($\frac{1}{4}$ " - 3" CAPACITY)

I.D.No.	Manufacturer	FSCM	Part No.	Nomenclature
	COMMERCIAL			SOC.HD.CAP SCREW 3/8 - 16 X 1 1/2
	COMMERCIAL			SOC.SET SCREW 10 -32 X 1/4 CUP POINT
	COMMERCIAL			SOC.SET SCREW 1/4 - 20 X 5/16 CUP POINT
15150	OMT	3AA35	115150	FOLLOW REST BODY
15151	OMT	3AA35	115151	SLEEVE
15152	OMT	3AA35	115152	SCREW, ADJUSTING
10584	OMT	3AA35	930584	BUSHING
10585	OMT	3AA35	930585	KNOB
10586	OMT	3AA35	930586	CLAMP SCREW
10587	OMT	3AA35	930587	BUTTON, SLEEVE



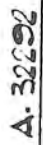
FOLLOW REST ASSY. (3/4" To 3 1/2" CAPACITY)

I.D.No.	Manufacturer	FSCM	Part No.	Nomenclature
104050	COMMERCIAL	3AA35	104050	MILLED STUD 3/8 - 16 X 1 1/2
30491	OMT	3AA35	30491	HEAVY HEX.NUT 3/8 - 16 HARDENED
30492	OMT	3AA35	30492	ROD
30493	OMT	3AA35	30493	ANCHOR BOLT
CL-1-FW	CARR LANE	99862	CL-1-FW	LATCH PLATE
				WASHER



CROSS FEED STOP PARTS

I.D.No.	Manufacturer	FSCM	Part No.	Nomenclature
	COMMERCIAL			HEAVY HEX.NUT 7/16 - 14
	COMMERCIAL			ROLL PIN 3/16 DIA X 3/4
	COMMERCIAL			S.A.E. WASHER 7/16
	COMMERCIAL			SOC.HD.CAP SCREW 7/16 - 14 X 2 3/4 (PART OF 83715)
	COMMERCIAL			TAPER PIN #4 X 1 1/4
30586	OMT	3AA35	30586	CLAMP SCREW
32292	OMT	3AA35	32292	STEM
32293	OMT	3AA35	32293	KNOB
32440	OMT	3AA35	32440	BRACKET, CLAMPING (PART OF 51713)
32441	OMT	3AA35	32441	SLEEVE, GRADUATED
51713	OMT	3AA35	51713	BODY & SLEEVE SUB/ASSY
83714	OMT	3AA35	83714	CLAMP, MICROMETER (PART OF 51713)
83715	OMT	3AA35	83715	CLAMP, PLATE SUB/ASSY



BODY & SLEEVE SUB-ASSY

No. 51713

Body
B-32449
(PART NO B-32439)
(MAKES 5 - BODIES)

7/16-14 HEAVY HEX NUT $\frac{3}{4}$ " ACROSS FLATS
7/16 S.A.E. WASHER

5-32441 TO BE ASSEMBLED
WITH GRADUATIONS IN THIS POSITION

3/16 DIA x 3/4
ROLL PIN

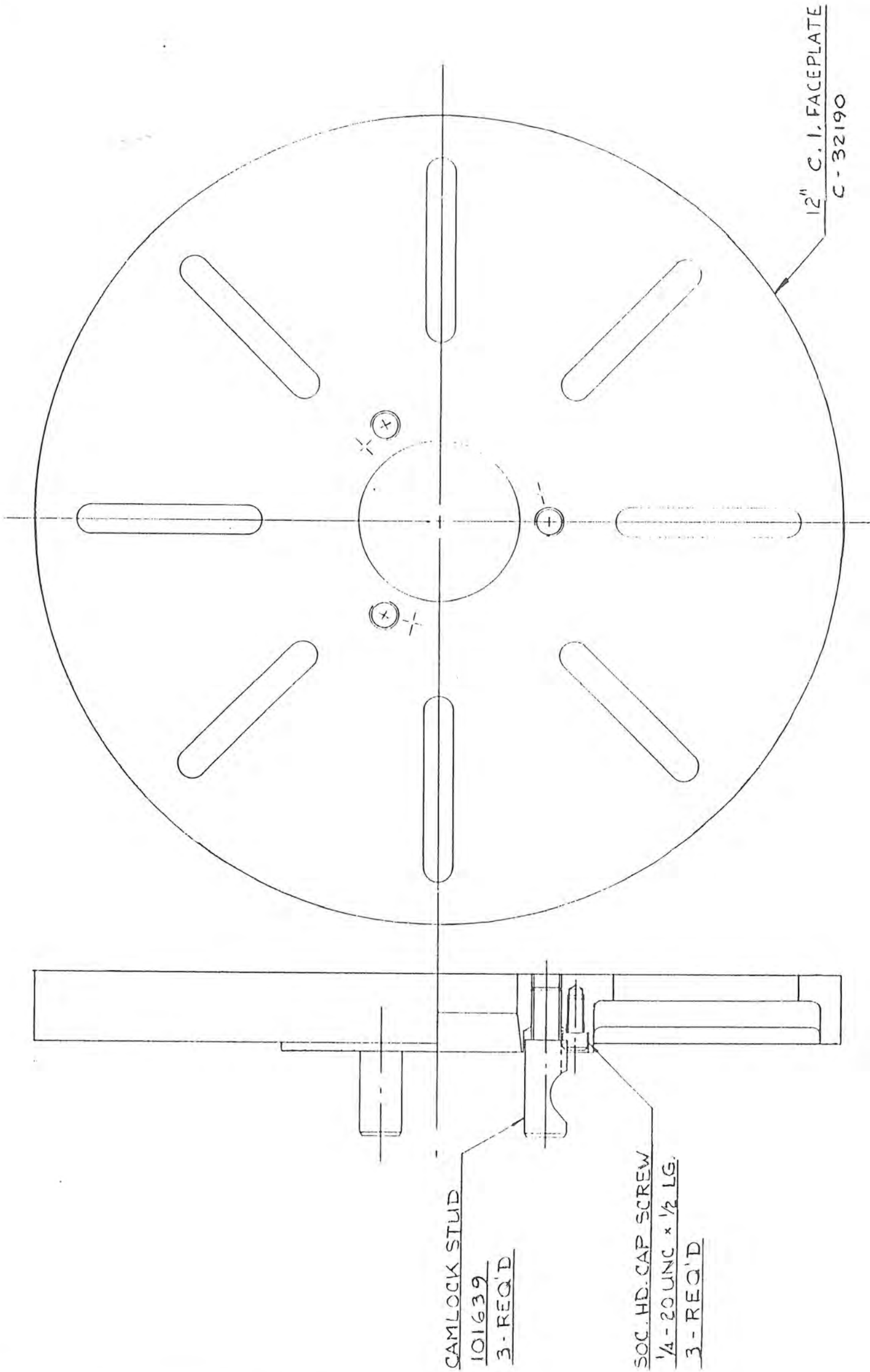
A. 83715 SUB ASS'Y.
A-83714 (PLATE)

7/16-14 * 2^{3/4} Soc HD CAP SCR

SECTION A-A

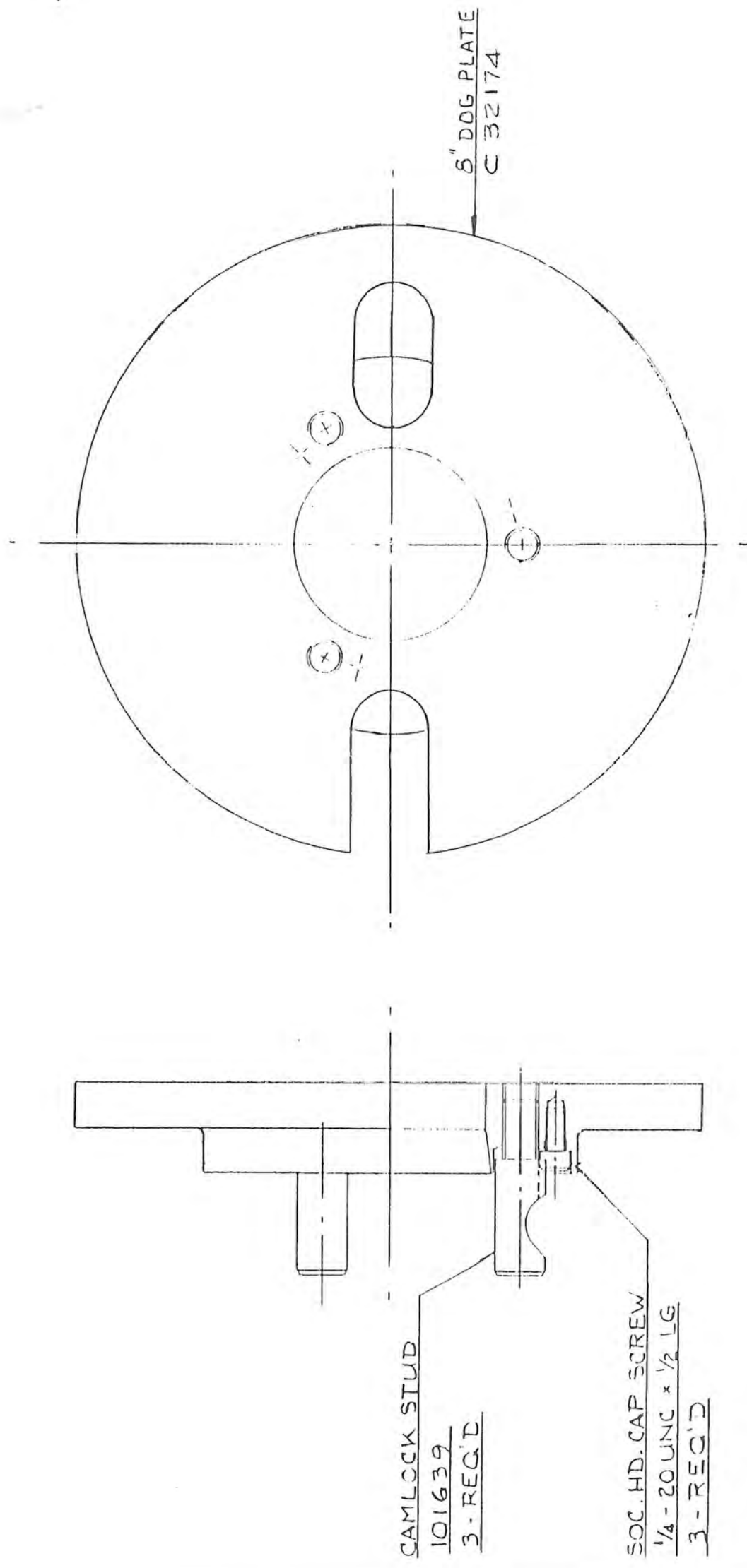
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I.D.No.	Manufacturer	FSCM	Part No.	Nomenclature
101639	COMMERCIAL			SOC.HD.CAP SCREW 1/4 - 20 X 1/2
32190	OMT	3AA35	101639	CAMLOCK STUD
	OMT	3AA35	32190	12" C.I. FACEPLATE



12" FACE PLATE ASSY.

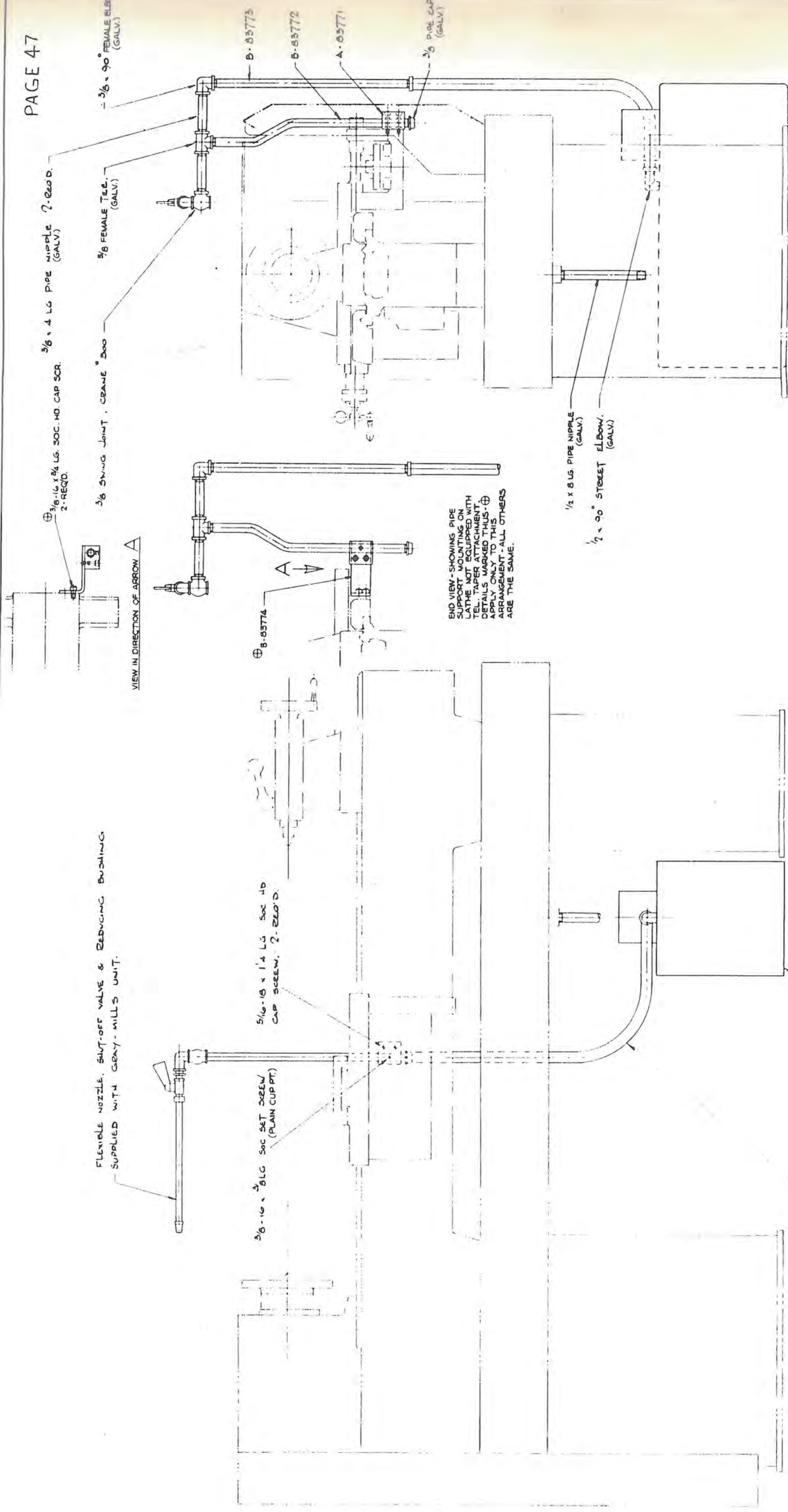
I.D.No.	Manufacturer	FSCM	Part No.	Nomenclature
101639	COMMERCIAL			SOC.HD,CAP SCREW 1/4 - 20 X 1/2
32174	OMT	3AA35	101639	CAMLOCK STUD
	OMT	3AA35	114266	8" DOGPLATE



8" DOG PLATE ASSY.

#32187

I.D.No.	Manufacturer	FSCM	Part No.	Nomenclature
83771	OMT	3AA35	83771	Block, support
83772	OMT	3AA35	83772	Pipe, stand
83773	OMT	3AA35	83773	Nipple, pipe, 3/8 X 18
	CRANE		#300	3/8 Swing joint.
	GRAYMILLS		X11-HR-35A	Coolant pump and tank.
	COMMERCIAL			Soc.Hd.Set Screw. Cup point. 3/8 - 16 X 3/8
	COMMERCIAL			Soc.Hd.Cap Screw. 5/16 - 18 X 1 1/4
	COMMERCIAL			3/8 X 4 lg pipe nipple.
	COMMERCIAL			1/2 X 8 lg pipe nipple.
	COMMERCIAL			1/2 X 90° street elbow.
	COMMERCIAL			3/8 X 90° female elbow.
	COMMERCIAL			3/8 female tee.
	COMMERCIAL			3/8 pipe cap.



STANDARD-MODERN TOOL COMPANY LIMITED										TORONTO, CANADA	
ITEM NO.		ITEM NAME		ITEM QTY.		ITEM PRICE		ITEM TOTAL		ITEM TOTAL	
C		LATHE		1		11-HESS-LA		11-HESS-LA		11-HESS-LA	
B		LATHE		1		LATHE		LATHE		LATHE	
A		LATHE		1		LATHE		LATHE		LATHE	
D		LATHE		1		LATHE		LATHE		LATHE	
E		LATHE		1		LATHE		LATHE		LATHE	
F		LATHE		1		LATHE		LATHE		LATHE	
G		LATHE		1		LATHE		LATHE		LATHE	
H		LATHE		1		LATHE		LATHE		LATHE	
I		LATHE		1		LATHE		LATHE		LATHE	
J		LATHE		1		LATHE		LATHE		LATHE	
K		LATHE		1		LATHE		LATHE		LATHE	
L		LATHE		1		LATHE		LATHE		LATHE	
M		LATHE		1		LATHE		LATHE		LATHE	
N		LATHE		1		LATHE		LATHE		LATHE	
O		LATHE		1		LATHE		LATHE		LATHE	
P		LATHE		1		LATHE		LATHE		LATHE	
Q		LATHE		1		LATHE		LATHE		LATHE	
R		LATHE		1		LATHE		LATHE		LATHE	
S		LATHE		1		LATHE		LATHE		LATHE	
T		LATHE		1		LATHE		LATHE		LATHE	
U		LATHE		1		LATHE		LATHE		LATHE	
V		LATHE		1		LATHE		LATHE		LATHE	
W		LATHE		1		LATHE		LATHE		LATHE	
X		LATHE		1		LATHE		LATHE		LATHE	
Y		LATHE		1		LATHE		LATHE		LATHE	
Z		LATHE		1		LATHE		LATHE		LATHE	
AA		LATHE		1		LATHE		LATHE		LATHE	
AB		LATHE		1		LATHE		LATHE		LATHE	
AC		LATHE		1		LATHE		LATHE		LATHE	
AD		LATHE		1		LATHE		LATHE		LATHE	
AE		LATHE		1		LATHE		LATHE		LATHE	
AF		LATHE		1		LATHE		LATHE		LATHE	
AG		LATHE		1		LATHE		LATHE		LATHE	
AH		LATHE		1		LATHE		LATHE		LATHE	
AI		LATHE		1		LATHE		LATHE		LATHE	
AJ		LATHE		1		LATHE		LATHE		LATHE	
AK		LATHE		1		LATHE		LATHE		LATHE	
AL		LATHE		1		LATHE		LATHE		LATHE	
AM		LATHE		1		LATHE		LATHE		LATHE	
AN		LATHE		1		LATHE		LATHE		LATHE	
AO		LATHE		1		LATHE		LATHE		LATHE	
AP		LATHE		1		LATHE		LATHE		LATHE	
AQ		LATHE		1		LATHE		LATHE		LATHE	
AR		LATHE		1		LATHE		LATHE		LATHE	
AS		LATHE		1		LATHE		LATHE		LATHE	
AT		LATHE		1		LATHE		LATHE		LATHE	
AU		LATHE		1		LATHE		LATHE		LATHE	
AV		LATHE		1		LATHE		LATHE		LATHE	
AW		LATHE		1		LATHE		LATHE		LATHE	
AX		LATHE		1		LATHE		LATHE		LATHE	
AY		LATHE		1		LATHE		LATHE		LATHE	
AZ		LATHE		1		LATHE		LATHE		LATHE	
BA		LATHE		1		LATHE		LATHE		LATHE	
BB		LATHE		1		LATHE		LATHE		LATHE	
BC		LATHE		1		LATHE		LATHE		LATHE	
BD		LATHE		1		LATHE		LATHE		LATHE	
BE		LATHE		1		LATHE		LATHE		LATHE	
BF		LATHE		1		LATHE		LATHE		LATHE	
BG		LATHE		1		LATHE		LATHE		LATHE	
BH		LATHE		1		LATHE		LATHE		LATHE	
BI		LATHE		1		LATHE		LATHE		LATHE	
BJ		LATHE		1		LATHE		LATHE		LATHE	
BK		LATHE		1		LATHE		LATHE		LATHE	
BL		LATHE		1		LATHE		LATHE		LATHE	
BM		LATHE		1		LATHE		LATHE		LATHE	
BN		LATHE		1		LATHE		LATHE		LATHE	
BO		LATHE		1		LATHE		LATHE		LATHE	
BP		LATHE		1		LATHE		LATHE		LATHE	
BQ		LATHE		1		LATHE		LATHE		LATHE	
BR		LATHE		1		LATHE		LATHE		LATHE	
BS		LATHE		1		LATHE		LATHE		LATHE	
BT		LATHE		1		LATHE		LATHE		LATHE	
BU		LATHE		1		LATHE		LATHE		LATHE	
BV		LATHE		1		LATHE		LATHE		LATHE	
BW		LATHE		1		LATHE		LATHE		LATHE	
BX		LATHE		1		LATHE		LATHE		LATHE	
BY		LATHE		1		LATHE		LATHE		LATHE	
BZ		LATHE		1		LATHE		LATHE		LATHE	
CA		LATHE		1		LATHE		LATHE		LATHE	
CB		LATHE		1		LATHE		LATHE		LATHE	
CC		LATHE		1		LATHE		LATHE		LATHE	
CD		LATHE		1		LATHE		LATHE		LATHE	
CE		LATHE		1		LATHE		LATHE		LATHE	
CF		LATHE		1		LATHE		LATHE		LATHE	
CG		LATHE		1		LATHE		LATHE		LATHE	
CH		LATHE		1		LATHE		LATHE		LATHE	
CI		LATHE		1		LATHE		LATHE		LATHE	
CJ		LATHE		1		LATHE		LATHE		LATHE	
CK		LATHE		1		LATHE		LATHE		LATHE	
CL		LATHE		1		LATHE		LATHE		LATHE	
CM		LATHE		1		LATHE		LATHE		LATHE	
CN		LATHE		1		LATHE		LATHE		LATHE	
CO		LATHE		1		LATHE		LATHE		LATHE	
CP		LATHE		1		LATHE		LATHE		LATHE	
CQ		LATHE		1		LATHE		LATHE		LATHE	
CR		LATHE		1		LATHE		LATHE		LATHE	
CS		LATHE		1		LATHE		LATHE		LATHE	
CT		LATHE		1		LATHE		LATHE		LATHE	
CU		LATHE		1		LATHE		LATHE		LATHE	
CV		LATHE		1		LATHE		LATHE		LATHE	
CW		LATHE		1		LATHE		LATHE		LATHE	
CX		LATHE		1		LATHE		LATHE		LATHE	
CY		LATHE		1		LATHE		LATHE		LATHE	
CZ		LATHE		1		LATHE		LATHE		LATHE	
DA		LATHE		1		LATHE		LATHE		LATHE	
DB		LATHE		1		LATHE		LATHE		LATHE	
DC		LATHE		1		LATHE		LATHE		LATHE	
DD		LATHE		1		LATHE		LATHE		LATHE	
DE		LATHE		1		LATHE		LATHE		LATHE	
DF		LATHE		1		LATHE		LATHE		LATHE	
DG		LATHE		1		LATHE		LATHE		LATHE	
DH		LATHE		1		LATHE		LATHE		LATHE	
DI		LATHE		1		LATHE		LATHE		LATHE	
DJ		LATHE		1		LATHE		LATHE		LATHE	
DK		LATHE		1		LATHE		LATHE		LATHE	
DL		LATHE		1		LATHE		LATHE		LATHE	
DM		LATHE		1		LATHE		LATHE		LATHE	
DN		LATHE		1		LATHE		LATHE		LATHE	
DO		LATHE		1		LATHE		LATHE		LATHE	
DP		LATHE		1		LATHE		LATHE		LATHE	
DQ		LATHE		1		LATHE		LATHE		LATHE	
DR		LATHE		1		LATHE		LATHE		LATHE	
DS		LATHE		1		LATHE		LATHE		LATHE	
DT		LATHE		1		LATHE		LATHE		LATHE	
DU		LATHE		1		LATHE		LATHE		LATHE	
DV		LATHE		1		LATHE		LATHE		LATHE	
DW		LATHE		1		LATHE		LATHE		LATHE	
DX		LATHE		1		LATHE		LATHE		LATHE	
DY		LATHE		1		LATHE		LATHE		LATHE	
DZ		LATHE		1		LATHE		LATHE		LATHE	
EA		LATHE		1		LATHE		LATHE		LATHE	
EB		LATHE		1		LATHE		LATHE		LATHE	
EC		LATHE		1		LATHE		LATHE		LATHE	
ED		LATHE		1		LATHE		LATHE		LATHE	
EE		LATHE		1		LATHE		LATHE		LATHE	
EF		LATHE		1		LATHE		LATHE		LATHE	
EG		LATHE		1		LATHE		LATHE		LATHE	
EH		LATHE		1		LATHE		LATHE		LATHE	
EI		LATHE		1		LATHE		LATHE		LATHE	
EJ		LATHE		1		LATHE		LATHE		LATHE	
EK		LATHE		1		LATHE		LATHE		LATHE	
EL		LATHE		1		LATHE		LATHE		LATHE	
EM		LATHE		1		LATHE		LATHE		LATHE	
EN		LATHE		1		LATHE		LATHE		LATHE	
EO		LATHE		1		LATHE		LATHE		LATHE	
EP		LATHE		1		LATHE		LATHE		LATHE	
EQ		LATHE		1		LATHE		LATHE		LATHE	
ER		LATHE		1		LATHE		LATHE		LATHE	
ES		LATHE		1		LATHE		LATHE		LATHE	
ET		LATHE		1		LATHE		LATHE		LATHE	
EU		LATHE		1		LATHE		LATHE		LATHE	
EV		LATHE		1		LATHE		LATHE		LATHE	
EW		LATHE		1		LATHE		LATHE		LATHE	
EX		LATHE		1		LATHE		LATHE		LATHE	
EY		LATHE		1		LATHE		LATHE		LATHE	
EZ		LATHE		1		LATHE		LATHE		LATHE	
FA		LATHE		1		LATHE		LATHE		LATHE	
FB		LATHE		1		LATHE		LATHE		LATHE	
FC		LATHE		1		LATHE		LATHE		LATHE	
FD		LATHE		1		LATHE		LATHE		LATHE	
FE		LATHE		1		LATHE		LATHE		LATHE	
FF		LATHE		1		LATHE		LATHE		LATHE	
FG		LATHE		1		LATHE		LATHE		LATHE	
FH		LATHE		1		LATHE		LATHE		LATHE	
FI		LATHE		1		LATHE		LATHE		LATHE	
FJ		LATHE		1		LATHE		LATHE		LATHE	
FK		LATHE		1		LATHE		LATHE		LATHE	
FL		LATHE		1		LATHE		LATHE		LATHE	
FM		LATHE		1		LATHE		LATHE		LATHE	
FN		LATHE		1		LATHE		LATHE		LATHE	
FO		LATHE		1		LATHE		LATHE		LATHE	
FP		LATHE		1		LATHE		LATHE		LATHE	
FQ		LATHE		1		LATHE		LATHE		LATHE	
FR		LATHE		1		LATHE		LATHE		LATHE	
FS		LATHE		1		LATHE		LATHE		LATHE	
FT		LATHE		1		LATHE		LATHE		LATHE	
FU		LATHE		1		LATHE		LATHE		LATHE	
FV		LATHE		1		LATHE		LATHE		LATHE	
FW		LATHE		1		LATHE		LATHE		LATHE	
FX		LATHE		1		LATHE		LATHE		LATHE	
FY		LATHE		1		LATHE		LATHE		LATHE	
FZ		LATHE		1		LATHE		LATHE		LATHE	
GA		LATHE		1		LATHE		LATHE		LATHE	
GB		LATHE		1		LATHE		LATHE		LATHE	
GC		LATHE		1		LATHE		LATHE		LATHE	
GD		LATHE		1		LATHE		LATHE		LATHE	
GE		LATHE		1		LATHE		LATHE		LATHE	
GF		LATHE		1		LATHE		LATHE		LATHE	
GG		LATHE		1		LATHE		LATHE		LATHE	
GH		LATHE		1		LATHE		LATHE		LATHE	
GI		LATHE		1		LATHE		LATHE		LATHE	
GJ		LATHE		1		LATHE		LATHE		LATHE	
GK		LATHE		1		LATHE		LATHE		LATHE	
GL		LATHE		1		LATHE		LATHE		LATHE	
GM		LATHE		1		LATHE		LATHE		LATHE	
GN		LATHE		1		LATHE		LATHE		LATHE	
GO		LATHE		1		LATHE		LATHE		LATHE	
GP		LATHE		1		LATHE</					

