

LATHE, ENGINE, GAP, SLIDING BED, CLASS A, SIZE 1912/36
BETWEEN CENTERS - CLOSED, 30 INCHES, OPEN, 54 INCHES.

MIL-L-13896E

NSN: 3416-01-166-2572

STANDARD-MODERN MODEL 19/36 X 54

CATALOG NO: 52296

CONTRACT NO: F09603-89-C-2878

JOB NO: ML000702

DATE OF ISSUE: 17 DECEMBER 1990.

Original Equip. Manufacturer (OEM) Part No.	FSCM	True Vendor Part No.	FSCM	Item of Supply Part No.	FSCM.
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		13568	11678		
		14P	65646		
		1708	OBT82		
		1728	95879		
		190	01599		
		20P	65646		
		3204	36069		
		3204	36069		
		34301	60038		
		3441B	60038		
		34822	11678		
		3Vx530	14003		
		4938	60038		
		498	60038		
		5100-100	79136		
		5100-112	79136		
		5100-118	79136		
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		5100-98	79136		
		5102-225	79136		
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		5108-75	79136		
		5133-62	79136		
		521	OBT82		
		522	OBT82		
		523	OBT82		
		533	OBT82		
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		6001-2RS	36069		
		6002	94882		
		6002-2RS	36069		
		6002-2RSR	36069		
		6005	36069		

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		6006	36069		
		6006-2RSR	36069		
		6006-RSR	36069		
		6014	36069		
		6148	11678		
		6148-HMI-R	11678		
		6202	36069		
		6204-2RS	36069		
		6204-2RSR	36069		
		6205-2RS	36069		
		6205NR	36069		
		6206	36069		
		6207	36069		
		6208-2RS	36069		
		6303	36069		
		6304-2RN	36069		
		7000A	01226		
		7414	11678		
		8405-0093	17506		
		8P	65646		
		9667	11678		
		A163-2000/100	30405		
		A3889	70924		
		B-15	01599		
		B-5093	70924		
		B1012-5	OACA6		
		B1014-6	OACA6		
		B1216-6	OACA6		
		B1218-12	OACA6		
		B5095	70924		
		B810-6	OACA6		
		BL-56N	01226		
		C0240-035-0620	08337		
		C0240-038-0620	08337		
		C0300-032-075	08337		
		C0300-038-0810	08337		
		C0360-042-0560	08337		
		C0420-055-2000	08337		
		C0600-055-1250	08337		
		C0800-038-1000	08337		
		FB68-6	OACA6		
		IR-1812	60380		
		J-88	60380		
		JH-1016	60380		
		JH-1416	60380		
		KM2	36069		

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		N5000-218	79136		
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		NTA-1220	60380		
		NTA-1425	60380		
		NTA-1828	60380		
		NTA-815	60380		
		PTH 202	1JZ80		
		RB-247	94223		
		ROA-2	01599		
		SP-52	36069		
		TRA-1018	60380		
		TRA-1220	60380		
		TRA-1423	60380		
		TRA-162	60380		
		TRA-1828	60380		
		TRA-815	60380		
		TRB-815	60380		
		TRC-1018	60380		
		TRC-815	60380		
		TRD-1423	60380		
		W2132-023	08337		
		WK-2528-2	36069		

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 approximate weight of the machine is 6500 lbs.

This lathe model is equipped with a 7-1/2 HP dual voltage (230/460) 3-phase, 60 Hz motor. It is wired for 230 volt initial operation at the factory. The motor is rated for continuous duty and contains permanently lubricated and sealed bearings. Further, the motor is supplied with a drip-proof enclosure. Also this motor meets all of the requirements specified under the ANSI/NEMA MG-1 code. The electrics are in accordance with ANSI/NFPA 79.

A fusible disconnect and voltage conversion package has been supplied. An identified grounding terminal is installed near the disconnect switch for grounding the machine when installed. This terminal is in accordance with ANSI/NFPA 79 specifications.

Before connection to a power source, the wiring should be checked against page 6A of this manual by an electrician to determine suitability. Note that wiring changes are only required when altering voltage.

Refer to the following pages for a list of items furnished with this lathe and the Warranty/Guarantee information.

LIST OF LOOSE EQUIPMENT AND TOOLING

<u>ITEM</u>	<u>QTY.</u>	<u>PART NO.</u>
1. Drive Plate	1	51634
2. Face Plate	1	115109
3. Micrometer Carriage Stop (Inch)	1	41370
4. Micrometer Carriage Stop (Metric)	1	109791
5. Four Position Carriage Stop	1	114587
6. Steady Rest	1	41440
7. Follow Rest	1	42370
8. Center Sleeve	1	41064
9. Dead Center, #4 MT.	2	22639
10. Round Toolpost	1	21459
11. Shear Key, Feedgear Train	1	21180
12. Shear Pin, Leadscrew	4	41192
13. 12" Chuck, 3-Jaw, Universal	1	115158
14. 16" Chuck, 4-Jaw, Independent	1	115159
15. Live Center	1	EG-4
16. Turret Tool Post	1	280-0041
17. Collet Chuck	1	2D6
18. Collets, set of 22	1	1/16"-1-3/8" 1/16"increment
19. Drill Chuck	1	14N
20. Arbor	1	A0403
21. Electrical conversion kit	1	LR1-D12316
22. Work-light	1	DUN-10
23. Extension Rest	1	109800
24. Toolpost Wrench	1	563D
25. Tailstock Wrench	1	808
26. Turret Toolpost Wrench	1	35-512
27. Extension Rest / Compound Wrench	1	30-806
28. Sliding Bed Opening Wrench	1	436-719-669
29. Camlock Wrench	1	41210
30. Saddle Clamp Allen Key	1	3/8"
31. Taper Attachment Allen Key	1	5/16"

WARRANTY/GUARANTEE INFORMATION

The engine lathe covered by this technical manual is Warranted against defective workmanship and material for a period of 1125 days after delivery. The above warranty does not include defective items resulting from inadequate maintenance or improper usage.

SPECIFICATIONS

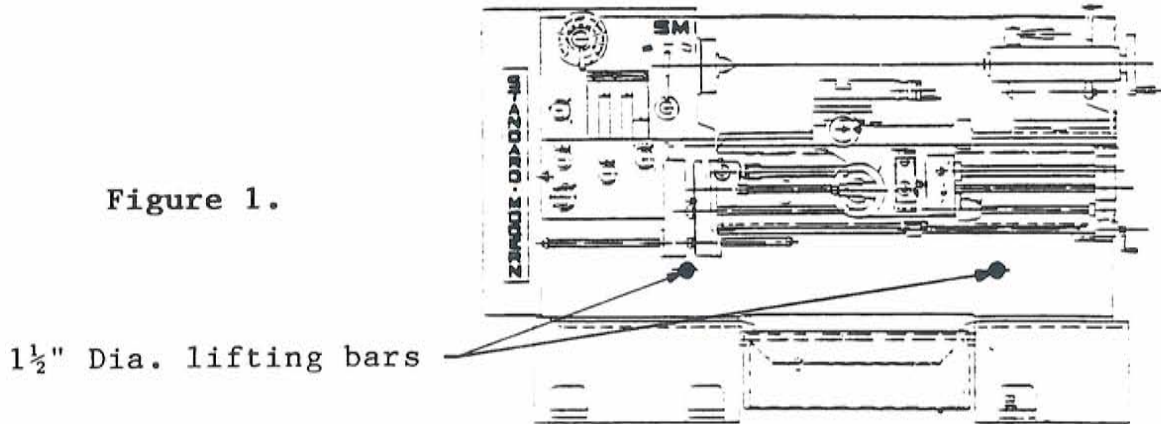
MACHINE	Swing over Bed and Saddle	19 in.
	Swing through gap	36 in.
	Swing over Cross Slide	12 in.
	Distance between Centers (closed)	30 in.
	Distance between Centers (open)	54 in.
	Main Drive Motor	7 1/2 H.P.
	Bar Capacity	2 in.
HEADSTOCK	Spindle Speeds	18
	Speed Range	17 - 1000 RPM
	Geared Head	
	Spindle Nose - Camlock	D1-6 in
	Spindle Hole	2.06 in
	Spindle Center	#4 MT
FEEDBOX	Number of feed changes	(66 inch & 66 metric)
	Number of thread changes	(66 inch & 66 metric)
	Inch Feed Range	.0015 - .105 in/rev
	Inch Thread Range	2 - 127 T.P.I.
	Metric Feed Range	.04 - 2.67 mm/rev
	Metric Thread Range	.2 - 14 mm lead
APRON	Double Wall Construction	
	Half-nuts	Double
CARRIAGE CROSS SLIDE	Carriage length on bed	26 in.
	Carriage bridge width	10 in.
	Cross slide length	30½ in.
	Cross slide travel	15 in.
	Compound Travel	5 in.
	Dial graduations	.001 in. and .02 mm
TAILSTOCK	Spindle diameter	2.937 in.
	Spindle travel	7 in.
	Morse Taper with tang drive	#4 MT
	Setover	± .75 in.
MISCELLANEOUS	Steady Rest Capacity	1/2 - 6 in.
	Taper Turning Attachment	16" X ± 10° (4¼" / Ft.)

1. LIFTING AND INSTALLATION INSTRUCTIONS

1.1 Lifting the Machine

To lift the machine using chain slings, put the slings around 1 1/2" dia. lifting bars placed in the holes provided for that purpose in the fixed bed as shown in Fig.1. Protect painted surfaces with thick pads and wood blocks.

Figure 1.



Do not attempt to lift this machine with a hoist having less than four tons capacity. The shipping weight of the machine is 6500 lbs.

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

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.

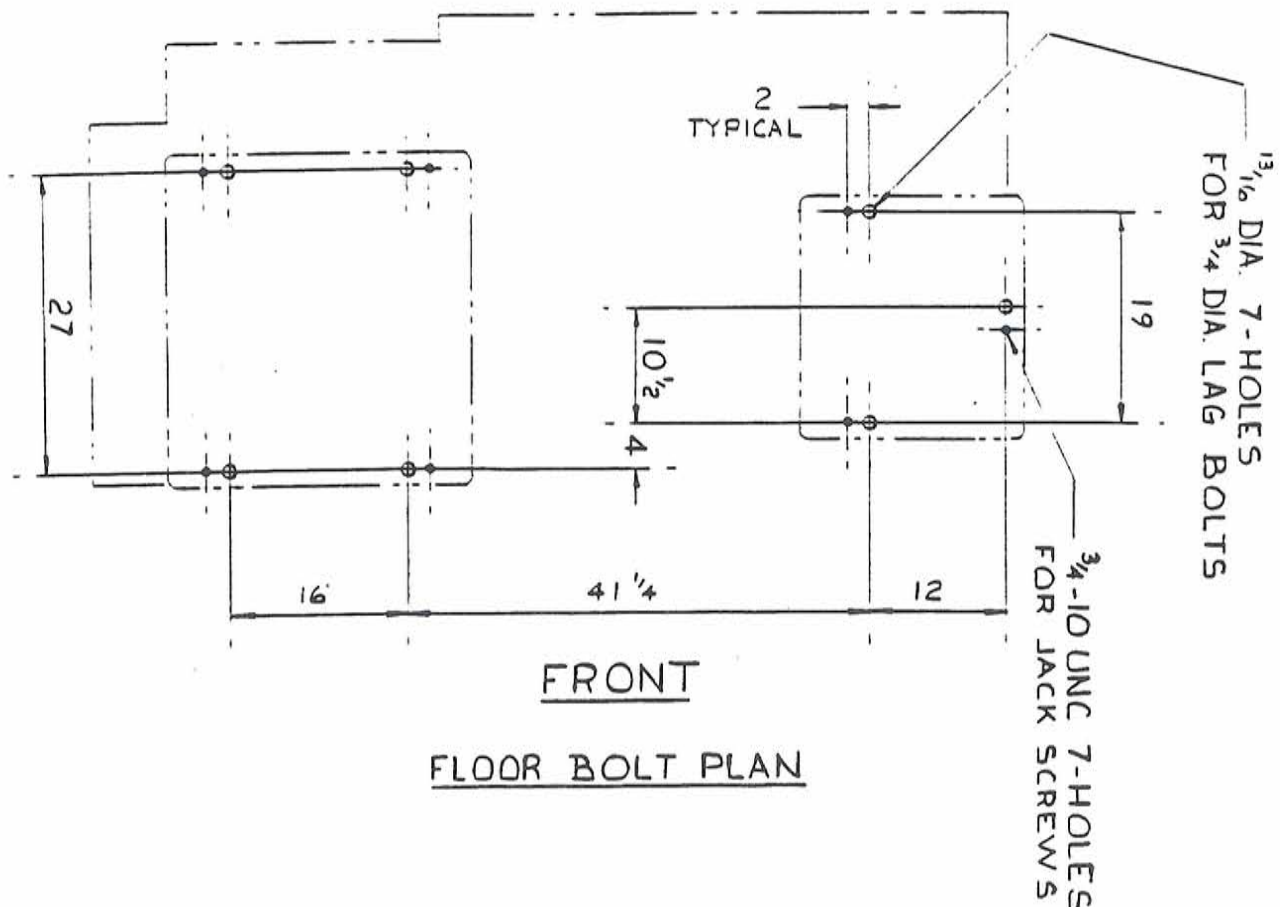
1. LIFTING AND INSTALLATION INSTRUCTIONS cont'd1.4 Installation

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. (See page 4.)

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 $\frac{3}{4}$ " 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 cabinet should be lagged to the floor and the levelling rechecked. Re-check the level of the machine at regular intervals.



ELECTRICAL PARTS LIST & WIRING DIAGRAM

- Motor specs - 7.5 HP - 230-460/3/60.

<u>QTY</u>	<u>DESCRIPTION</u>
1 Note: 4	Drive motor, 7.5 HP, 1800 RPM Drip proof, Frame 215T 230/460/3/60
1	Enclosure Hammond 1418 JC7
1	Disconnect switch 30A, Fusible FPL AE16361
3	Fuse Kit 30A Type "J" FPL 3101821
3 Note: 3	Fuse 25 Amp. Form I, Class J 230VAC 15 Amp. Form I, Class J 460VAC
1 Note: 1	Overload (O/L) Telemecanique LR1-D40322-230VAC LR1-D12316/LA7D0964- 460VAC
1 Note: 2	Transformer 350VA, 120V Secondary Pri 240-480V Hammond MH350QP
1	Terminal block end barrier Allen-Bradley - 1492-NB6
3	Terminal block Allen-Bradley - 1492-CE6
13	Terminal block Allen-Bradley - 1492-H1
1	Starter Telemecanique LC2D503K
1	130V Light Bulb
2	Aux. Contactor Telemecanique LA1D11

ELECTRICAL PARTS LIST & WIRING DIAGRAM (Cont'd)

<u>QTY</u>	<u>DESCRIPTION</u>
1	Rectifier Motorola KBPC 10-06 10AMP
2	Stop Push Button Telemechanique ZB2-BL4
1	Resistor, 082 Ohm, 10 Watt
1	Oiltight Push/Pull Unit Telemechanique ZB2BW065
1	Color Cap Telemechanique ZB2BW64
1	P.B. Enclosure 3.25" x 2.75" x 3.5" Hammond 1435-A22 or equal
2	Stop Push Button Base Telemechanique ZB2-BZ102
4	Start Push Button Telemechanique ZB2-BA3
2	Single Receptacle (Twistlock) Hubbel 4710
4	Start Push Button Base Telemechanique ZB2-BZ101
2	Enclosure Telemechanique XAP-M2203E
1	Grounding Lug Ilsco TA 2/O-14
2	Single Cover Hubbel 7420
1	Receptacle Box Rab 5613
4	Rubber Grommets Spae Naur RB-169

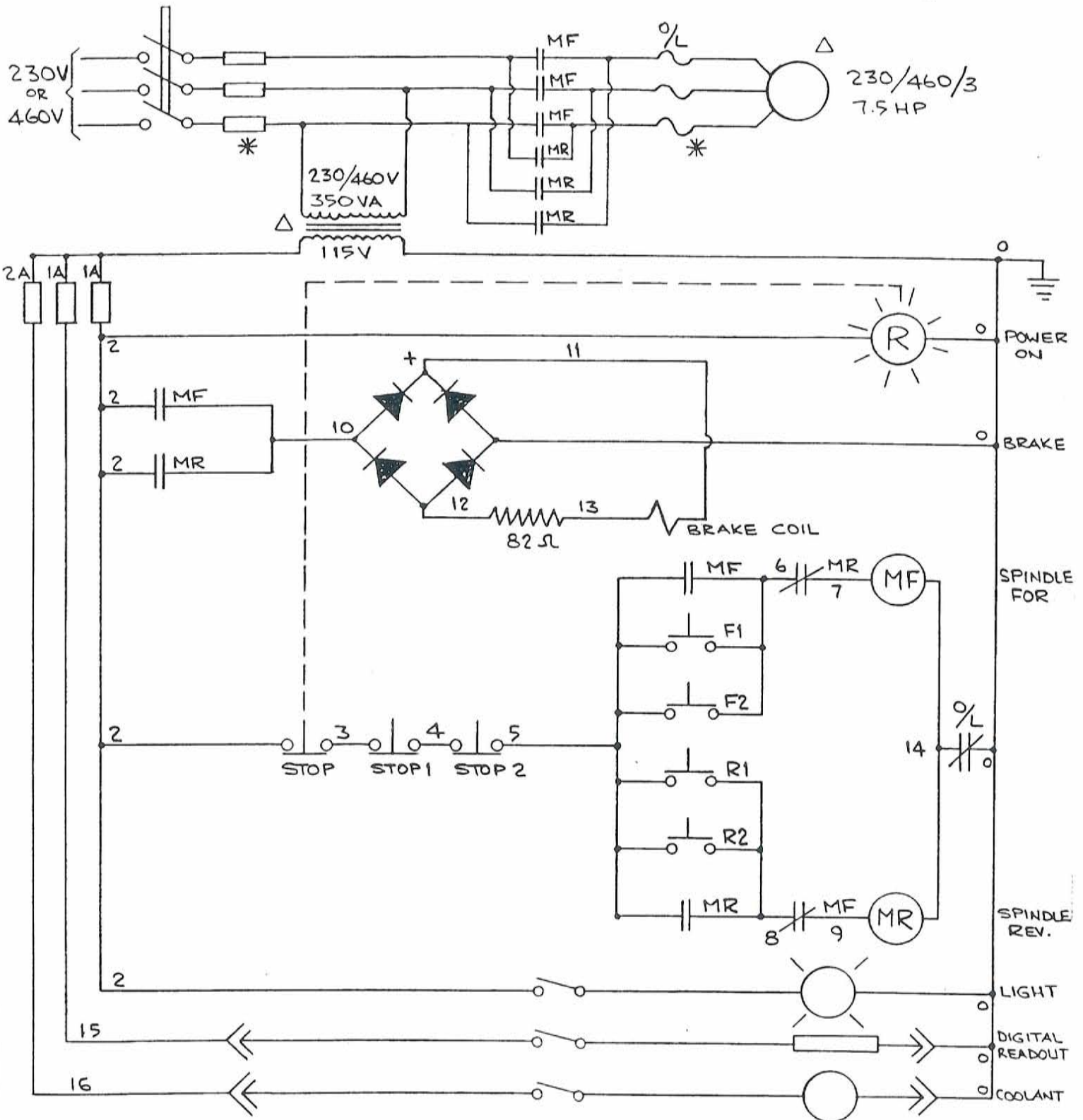
ELECTRICAL PARTS LIST & WIRING DIAGRAM (cont'd)

<u>QTY</u>	<u>DESCRIPTION</u>
2	Fuse, 1 Amp, Fusetron FNM-1
1	Fuse, 1 Amp, Fusetron FNM-1
1	Nameplate "COOLANT"
1	Nameplate "DIGITAL READOUT"
As Needed	WIRES
	#10 MTW Black
	#10 MTW Green
	#14 MTW White
	#14 MTW Red
	#16 MTW Blue

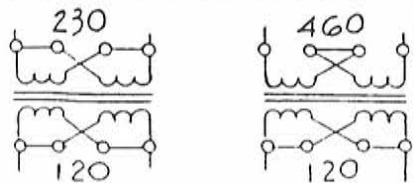
NOTE:

To change from 230V to 460V

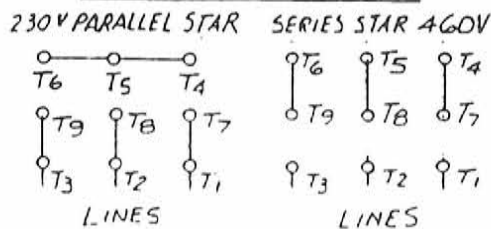
1. Replace O/L on starter.
2. Change connection on control transformer per drawing.
3. Change line fuses.
4. Change motor connections.



Δ CONTROL TRANSFORMER



Δ MOTOR CONNECTION



* THESE ITEMS MUST BE SIZED TO ACCOMMODATE LINE VOLTAGE AS PER MATERIAL LIST.

Δ THESE ITEMS MUST BE CONNECTED TO SUIT LINE VOLTAGE

ELECTRICAL SCHEMATIC

2. LUBRICATION

OIL : SUNOCO Way Lube 80 or equivalent.

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

EVERY SIX MONTHSCHANGE OIL

Headstock	-	15 quarts.
Feedbox	-	3 quarts.
Apron	-	1 quart.
Feed drive Gearbox	-	1/8 pint

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	-	Oil Sump.
Compound	-	1 Pipe Plug, 1 Oiler.
Cross slide nut and bearing	-	2 Oilers.
Taper attachment	-	1 Cup, 4 Oilers.
Tailstock	-	2 Oilers.

GREASE

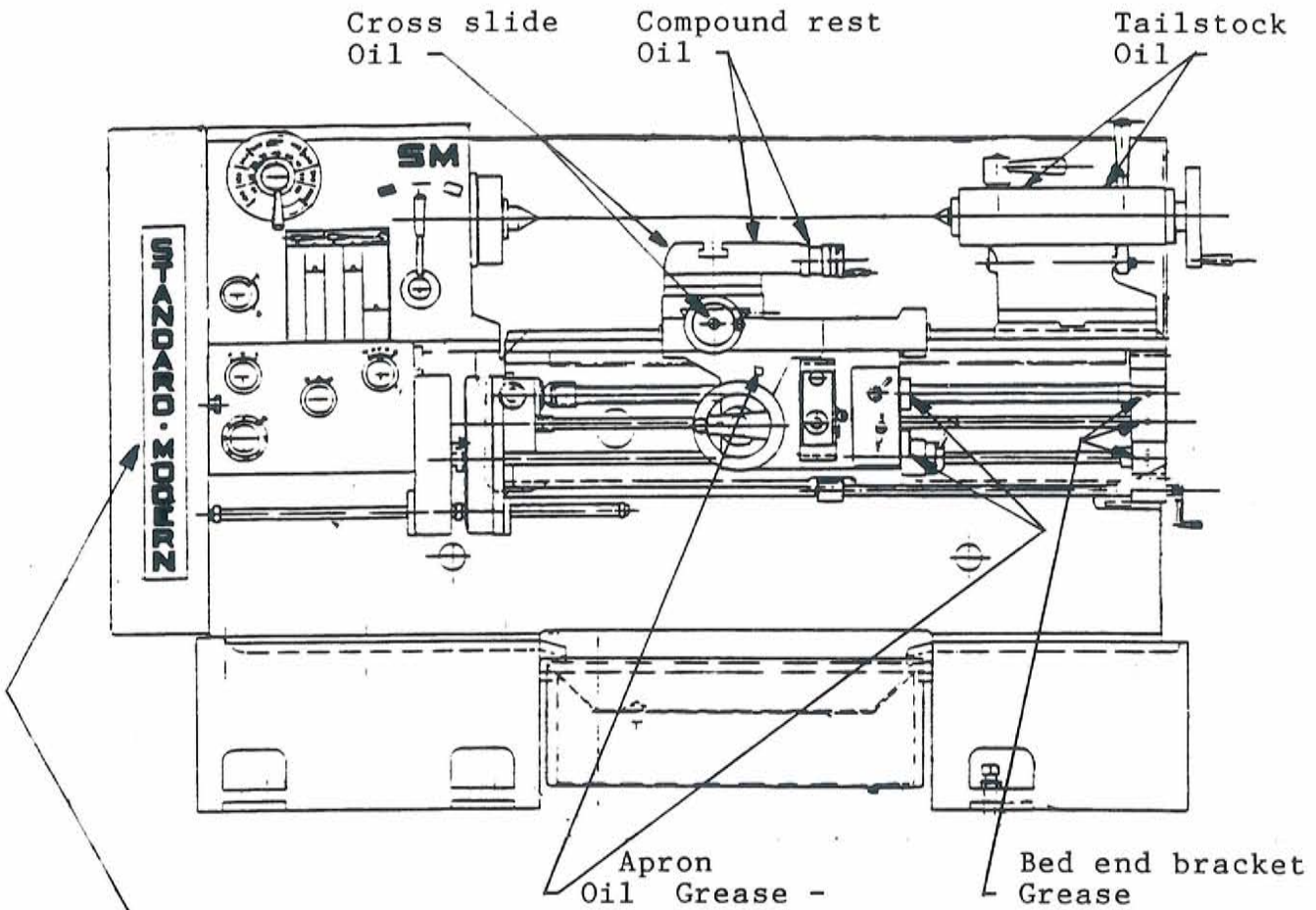
End Bracket	-	3 FITTINGS.
-------------	---	-------------

2.1 General

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 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.



Always turn the main disconnect switch OFF before opening the belt guard. Access to the following require the belt guard to be opened :-

- Headstock filler. (1 1/2" Pipe Plug.)
- Feedbox filler. (1/2" Pipe Plug.)

- Leadscrew reverse cam. (Grease fitting & track.)
- Leadscrew reverse linkage pivot (Oil).

LUBRICATION cont'd.

2.2 End gear train

Oil idler gear teeth daily.

2.3 Apron

The oil level should be checked and replenished daily as the automatic lubrication system draws its oil from this reservoir in order to lubricate the saddle and cross slide.

The apron oil reservoir should be drained, flushed and refilled with fresh clean oil 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 two oilers located on top of the spindle housing. The bedways on which the tailstock slides should be cleaned and oiled frequently.

2.5 Compound rest

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 automatic lubrication system 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 automatic 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.

LUBRICATION cont'd.

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 ends 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 turning the main disconnect switch OFF and opening 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 turning attachment

Clean and oil the pivoted slide bar before using.

Four oilers lubricate the slide plate.

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

2.11 Bed adjusting screw

Remove chips and oil once per week.

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.

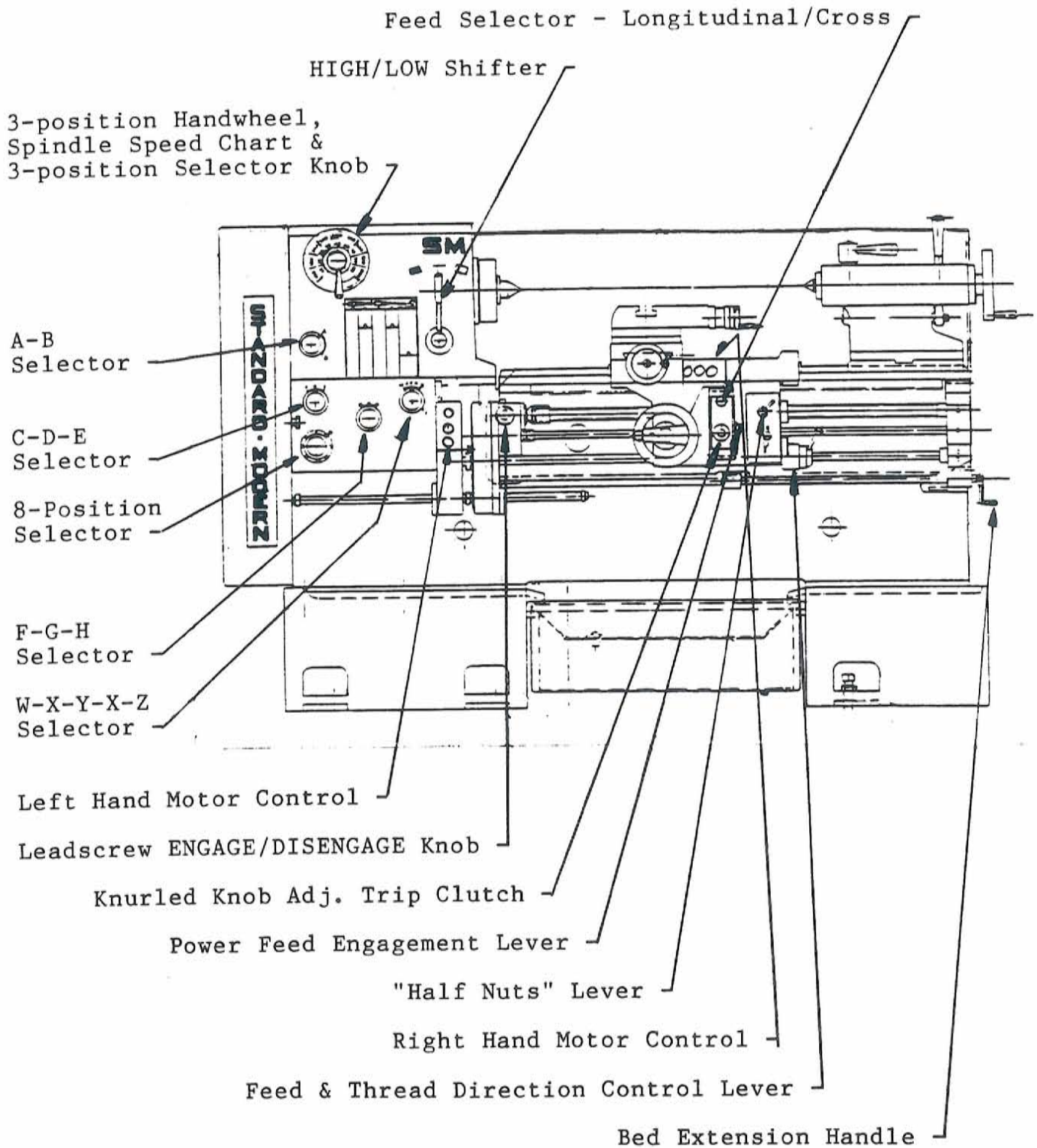
3.3 Personal Safety Rules

- (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 the RIGHT HAND MOTOR 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

LOW RANGE:	17	22	28	35	45	60	75	93	120
HIGH RANGE:	150	190	240	305	390	495	630	800	1000

The desired spindle speed range is obtained by moving the HIGH/LOW SHIFTER. Refer to the direct reading SPINDLE SPEED CHART attached to the 3-POSITION HANDWHEEL. Any spindle speed may be selected using the 3-POSITION HANDWHEEL and the 3-POSITION SELECTOR KNOB.

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

To assist speed changing, the LEFT HAND MOTOR CONTROL lever is provided. This lever is used to jog the spindle motor and can only cause the spindle to stop or run forwards.

- 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 390 rpm.

4.3 Power Feeds

The automatic trip clutch pre-load may be adjusted by means of the KNURLED KNOB located on the apron 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.

4. OPERATING INSTRUCTIONS cont'd

4.3 cont'd

To select the power longitudinal or power cross feed, arrange the A-B SELECTOR knob on the headstock and the C-D-E SELECTOR, F-G-H SELECTOR, W-X-Y-X-Z SELECTOR and 8-POSITION SELECTOR knobs on the feedbox to correspond with the desired feed rate required. Available feedrates and threads are shown on the front nameplate mounted on the headstock and on the auxillary nameplate mounted on the belt guard.

(REFER TO PAGE 17 FOR LIST OF FEEDS)
(REFER TO PAGE 18 FOR LIST OF THREADS)

To select neutral, set W-X-Y-X-Z SELECTOR to X.

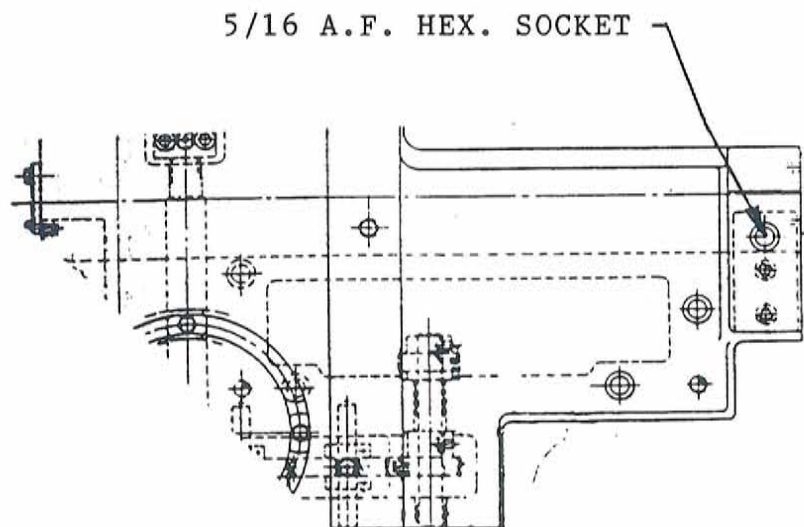
CAUTION: Do not use the coarse range of feeds when spindle speeds are above 495 R.P.M.

Push the FEED SELECTOR black ball handle (located on the front of the apron) in for longitudinal feeds or pull out for cross feeds.

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 on 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.

Provision is made for locking the saddle during facing as shown below :-



THREADS PER INCH				mm 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	CF1Y	.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	CF3Z	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	DF8Y			1.25	DF3W		
18	CF2Y			1.3	EG6W		
16 1/2	CH8Z			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			mm		
A (Fine)			B (Coarse)		
.0015	EH1W	.04	.027	EG2W	.69
.0017	EH2W	.045	.030	DF1W	.76
.002	EH3W	.05	.033	EG8W	.84
.0021	EH8W	.053	.034	DF2W	.86
.0022	EH4W	.055	.035	EG4W	.89
.0023	EH5W	.058	.037	EG5W	.93
.0025	EH6W	.06	.038	DF3W	.97
.0027	EH7W	.07	.039	EG6W	1.00
.003	EF1W	.08	.042	DF8W	1.07
.0034	EF2W	.085	.043	EG7W	1.09
.0038	DH1W	.095	.044	DF4W	1.12
.004	EF3W	.10	.046	DF5W	1.15
.0041	EF8W	.104	.049	DF6W	1.24
.0042	DH2W	.107	.053	DF7W	1.35
.0044	EF4W	.110	.060	DG1W	1.55
.0046	EF5W	.115	.068	DG2W	1.73
.005	EF6W	.125	.076	DG3W	1.91
.0052	DH8W	.13	.083	DG8W	2.10
.0053	EF7W	.135	.087	DG4W	2.22
.0055	DH4W	.14	.091	DG5W	2.30
.0057	DH5W	.145	.098	DG6W	2.48
.006	EG1W	.15	.105	DG7W	2.67
.0062	DH6W	.155			
.007	EG2W	.17			
.0075	DF1W	.19			
.0084	EG8W	.20			
.0086	DF2W	.217			
.0088	EG4W	.222			
.009	EG5W	.23			
.0095	DF3W	.24			
.0099	EG6W	.25			
.0106	EG7W	.26			
.011	DF8W	.27			
.0114	DF5W	.29			
.0124	DF6W	.31			
.013	DF7W	.34			
.015	DG1W	.38			
.017	DG2W	.43			
.019	DG3W	.48			
.021	DG8W	.53			
.022	DG4W	.55			
.0228	DG5W	.57			
.025	DG6W	.63			
.027	DG7W	.67			

4. OPERATING INSTRUCTIONS cont'd4.4 Thread cutting

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

When cutting screw threads, begin by selecting the desired mm pitch or T.P.I., in a manner similar to feed selection (See 4.3).

Set the LEADSCREW ENGAGE/DISENGAGE KNOB (located at the left hand end of the sliding bed) to the "ENGAGED" position.

The FEED & THREAD DIRECTION CONTROL LEVER must be moved :-

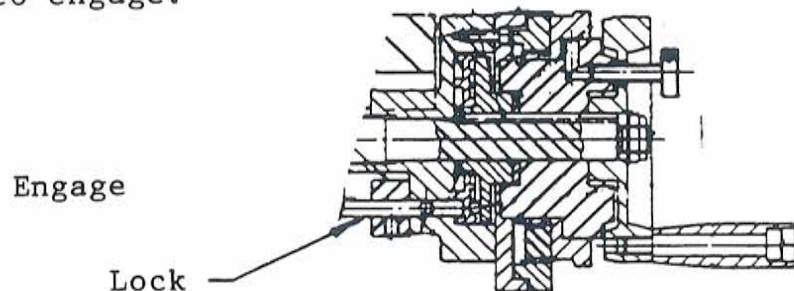
- UP for R.H. threads,
- DOWN for L.H. threads,
- CENTRAL to disengage the entire feed train.

Engage the HALF-NUTS when ready.

It is not necessary to disengage the HALF-NUTS during the threading operation, use the FEED & THREAD DIRECTION CONTROL LEVER. This will cause the tool to cut its own relief.

If the trip dogs are used, only run the spindle in the forward direction during threading. Cut R.H. threads towards the headstock & L.H. threads towards the tailstock.

Use the depth threading stop on the cross slide handwheel to control the cross slide position and set the compound rest to an angle to suit the thread. Control the cutting depth using the compound rest. The lock is situated behind the lower part of the cross slide dial and is moved towards the operator to engage.



It is recommended that the LEADSCREW ENGAGE/DISENGAGE KNOB be set to the "DISENGAGED" position when the leadscrew is not in use.

4. OPERATING INSTRUCTIONS cont'd

4.4 cont'd.

CAUTION: THREADING SPINDLE SPEED LIMIT IS 800 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 800 R.P.M.
FOR CUTTING THREADS.

4. OPERATING INSTRUCTIONS cont'd

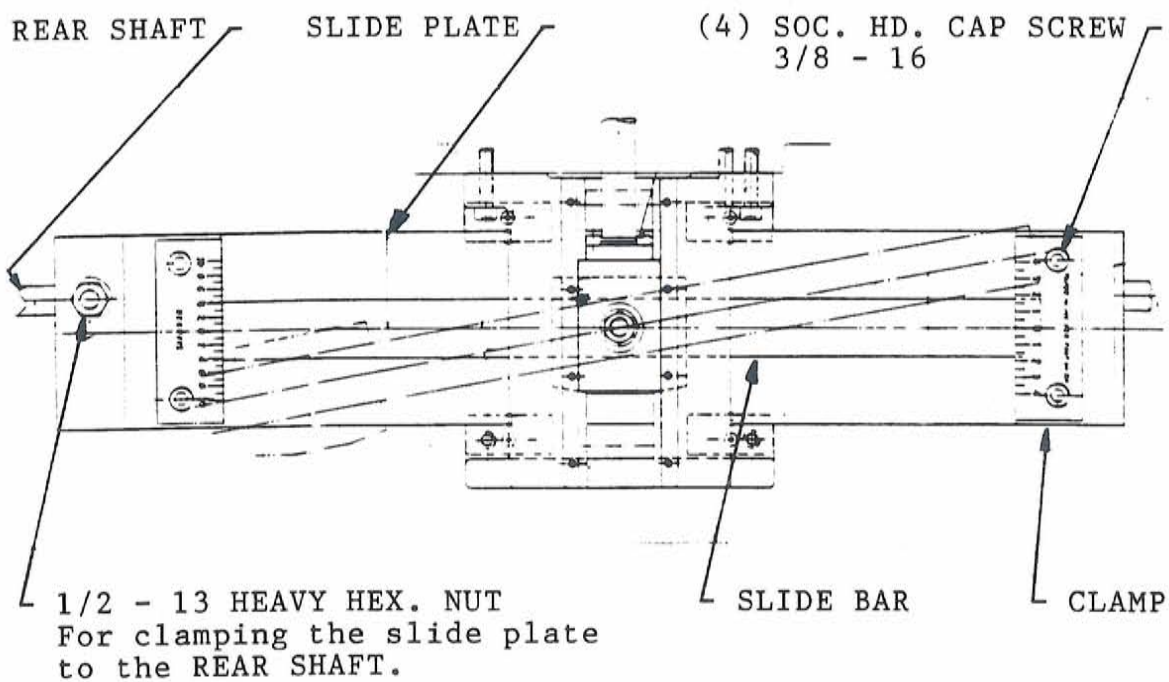
4.5 Telescopic Taper Turning Attachment

For Taper Turning:

- (i) Slacken HEAVY HEX. NUT (1/2 - 13) on which clamps the SLIDE PLATE to the rear shaft.
- (ii) Locate saddle on bed in relation to workpiece.
- (iii) Tighten HEAVY HEX. NUT on to clamp the SLIDE PLATE to the REAR SHAFT.
- (iv) Adjust SLIDE BAR to desired taper and lock securely by means of the four SOC. HD. CAP SCREWS (3/8 - 16) located on the CLAMPS.

For Straight Turning

- (i) Slacken the HEAVY HEX. NUT to unclamp the SLIDE PLATE from the REAR SHAFT.



4. OPERATING INSTRUCTIONS cont'd.4.6 Face Plate Attachment

NOTE :- Maximum safe operating speed
for large face plate is 390 RPM.

4.7 Extension Rest

The extension rest is for turning awkwardly shaped parts which cannot be machined in a conventional manner. It is capable of spanning the fully opened gap. It also has a standard tee slot for the mounting of tool posts.

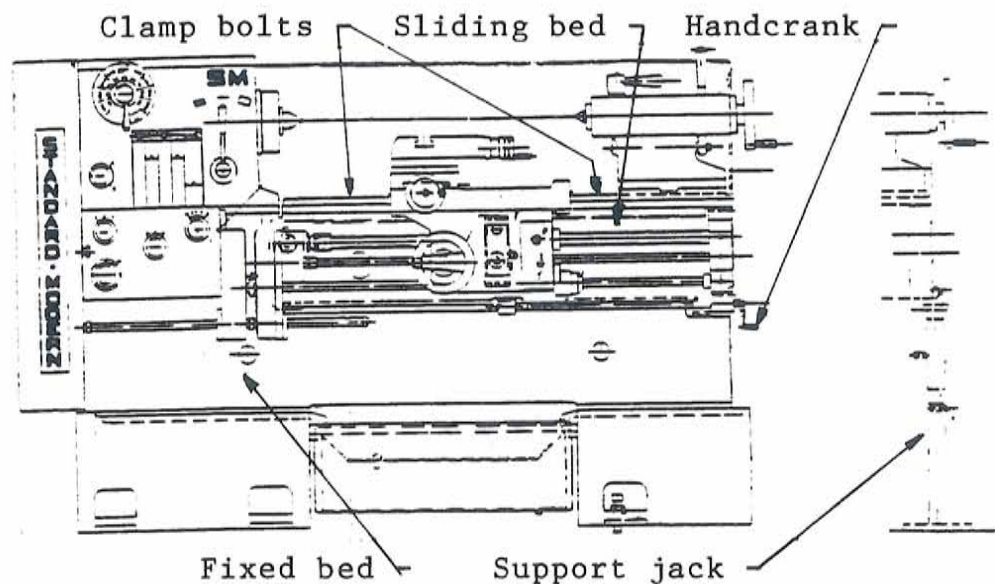
To use the extension rest, first remove the compound rest then mount the extension rest in its place.

4.8 Sliding Bed

The sliding bed of this lathe has a maximum travel of 20". In order to take full advantage of this feature, a distance of 20" must be made available at the tailstock end of the machine.

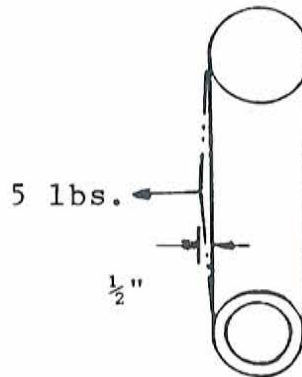
To set the gap, loosen the two clamp bolts inside the sliding bed, which are accessible from the top, then turn the handcrank, located at the right hand end of the sliding bed, until the desired gap is achieved. Tighten the two clamp bolts

Support any overhang with the support jack provided.



5. MAINTENANCE INSTRUCTIONS5.1 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 1/2".

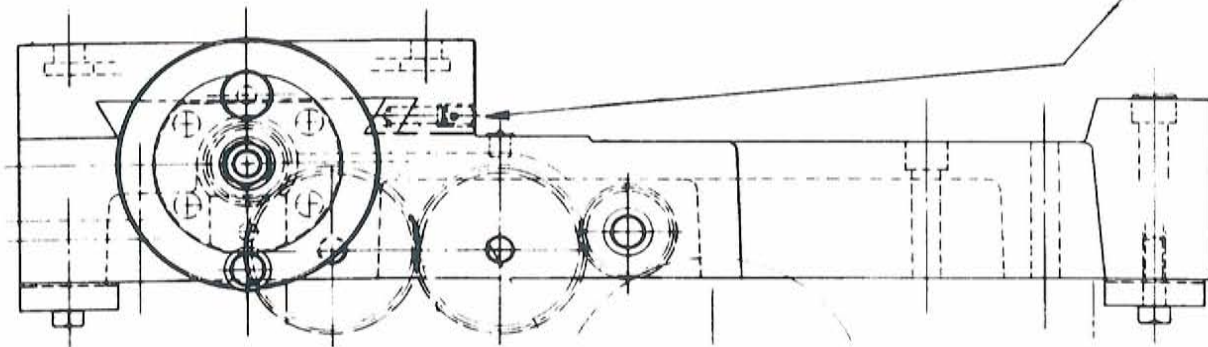
Check the tension frequently during the first day of operation and periodically thereafter. Keep pulleys and belts clean and free of any foreign material to ensure long life and better traction.

5. MAINTENANCE INSTRUCTIONS cont'd

5.2 Cross Slide Ways

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

Turn 5/16 - 18 Socket Set Screws located on R.H. side of the Cross Slide in a clockwise direction to tighten the Gib.

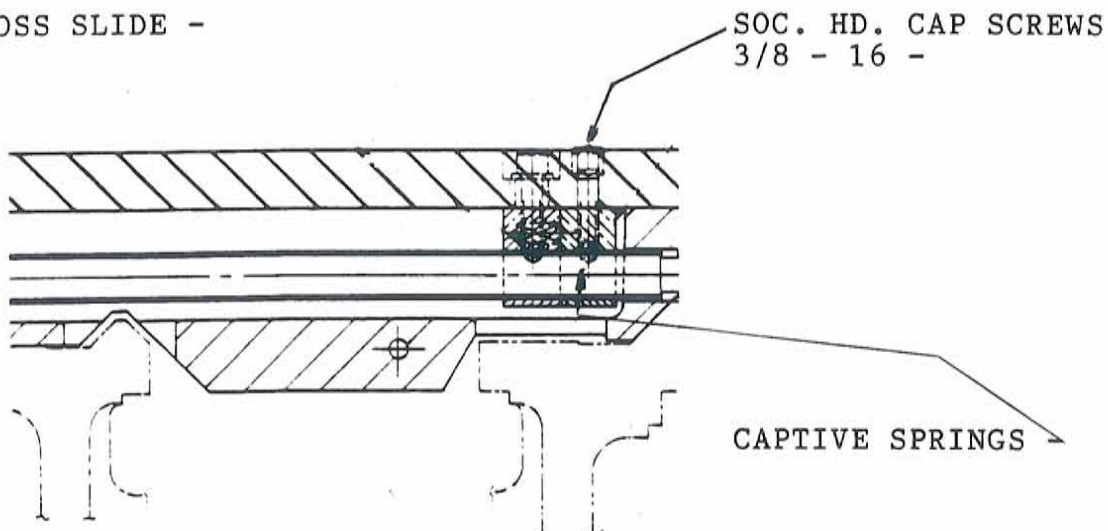


5.3 Cross Slide Nut

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

- (i) Move the CROSS SLIDE close to the center line of the lathe.
- (ii) Slacken ONLY the two 3/8 - 16 SOC. HD. CAP SCREWS shown. The CAPTIVE SPRINGS will take up the backlash automatically.
- (iii) Move the CROSS SLIDE back and forth over the full travel to be sure of an even action.
- (iv) Tighten the two 3/8 - 16 SOC. HD. CAP SCREWS.

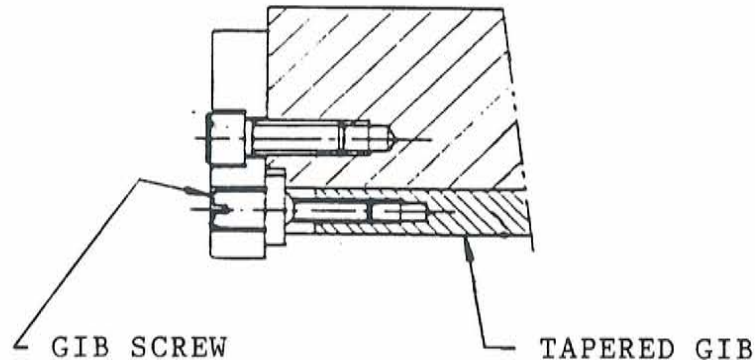
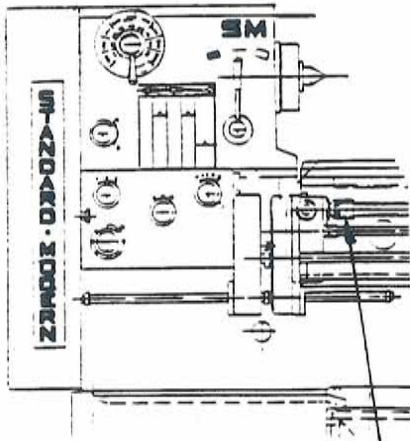
CROSS SLIDE -



5. MAINTENANCE INSTRUCTIONS cont'd5.4 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

Leadscrew Shear Pin

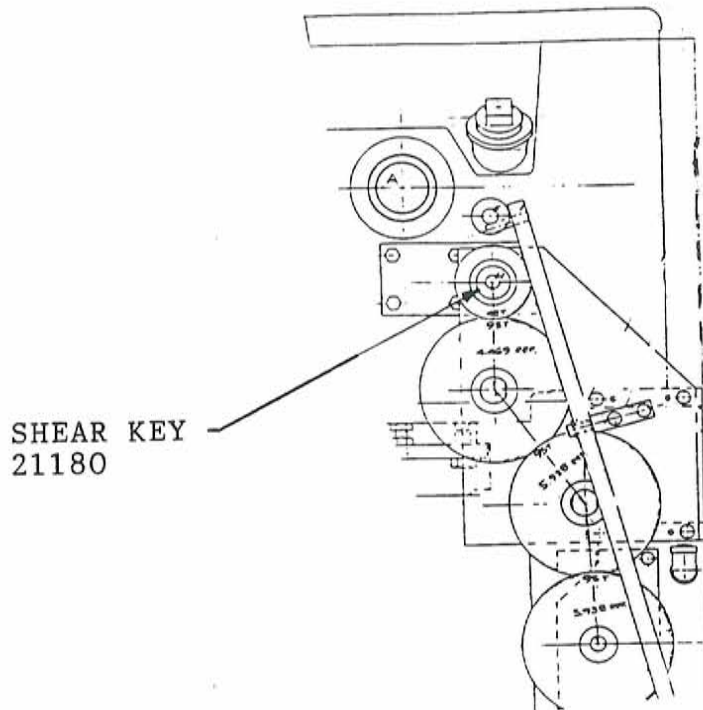
This brass SHEAR PIN is provided to prevent damage to the leadscrew should the carriage be allowed to come in contact with the headstock or some other obstruction which acts as a positive stop. When the stoppage takes place, the leadscrew continues to turn in the half nuts and will begin to move endwise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

5. MAINTENANCE INSTRUCTIONS cont'd.5.6 End Gear Train Shear Key

This brass SHEAR KEY # 21180 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.

A spare SHEAR KEY, provided with the machine, is readily fitted. First, remove the 48T gear, then remove the broken portion of the key using a small square nose chisel. Fit the new brass SHEAR KEY to the shaft and re-assemble the 48T gear. 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	<p>Loose levelling screws</p> <p>Torn or mismatched vee belts.</p> <p>Work or chuck out of balance operating at high spindle speeds.</p> <p>Motor out of balance.</p>	<p>Set all screws so that they bear evenly on levelling plates.</p> <p>Replace vee belts with matched set.</p> <p>Balance chuck or reduce spindle speed.</p> <p>Contact local representative of motor manufacturer.</p>
Chatter	<p>Tool bit improperly ground or not on center</p> <p>Tool overhang too great</p> <p>Using improper cutting speed.</p> <p>Feed rate too high or too low.</p> <p>Gibs of cross slide or compound rest loose.</p> <p>Spindle bearings worn or loose.</p> <p>Work improperly supported.</p> <p>Vibration</p>	<p>Regrind tool bit or adjust tool holder so that area of contact between tool bit and work is decreased. Avoid extreme negative rake.</p> <p>Keep point of tool bit as close as possible to tool holder.</p> <p>Reduce or increase spindle speed.</p> <p>Reduce or increase feed.</p> <p>Adjust gibs.</p> <p>Adjust spindle bearings. (See Page 28A)</p> <p>Adjust tailstock center. Use steady rest or follow rest for long slender shafts. Minimize tailstock barrel extension.</p> <p>See "Vibration" trouble above.</p>

5. MAINTENANCE INSTRUCTIONS cont'd.

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

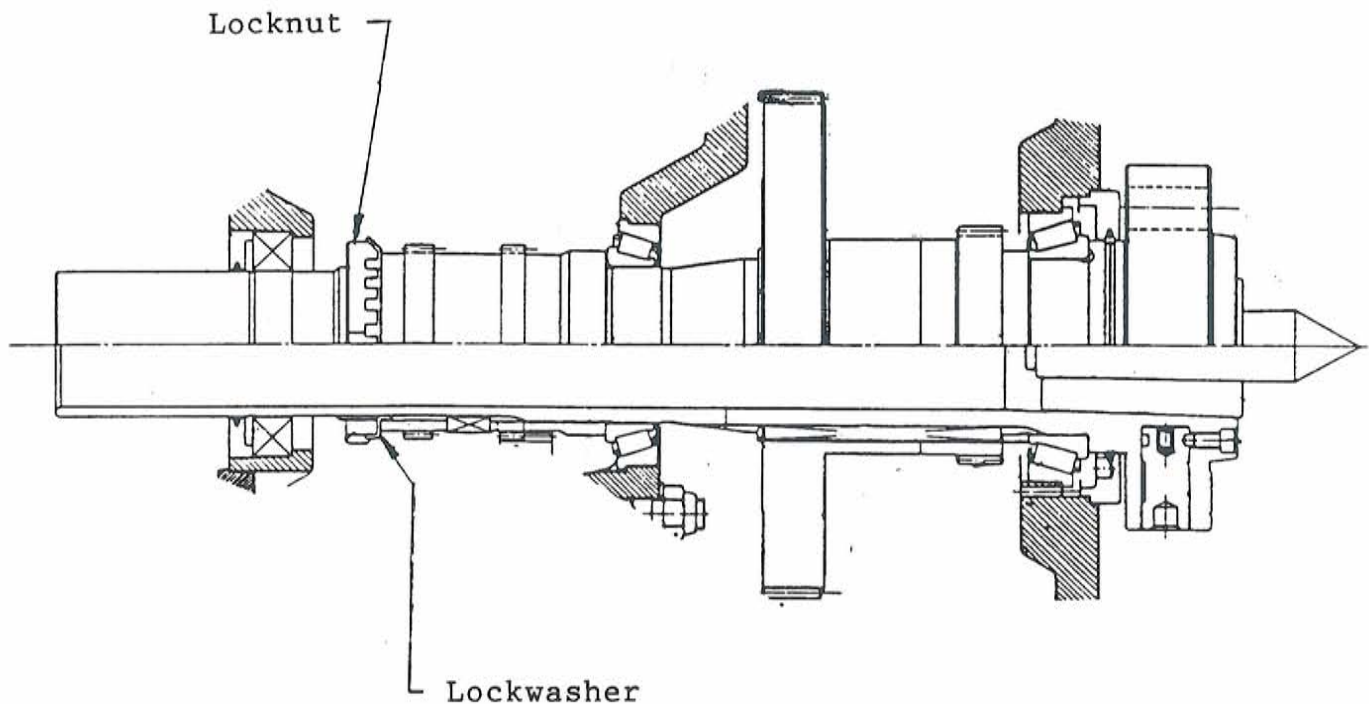
HEADSTOCK BEARING PRELOAD ADJUSTMENT

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 :- 2 lbf/ft.

If an adjustment is required:-

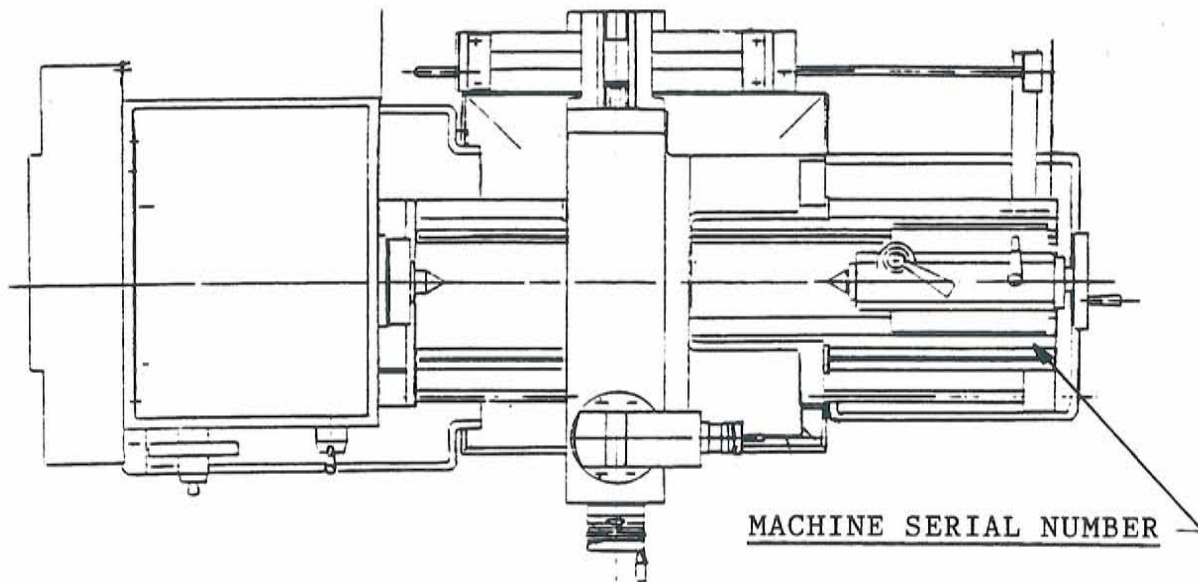
1. Turn the disconnect switch off.
2. Remove the headstock cover.
3. Straighten the lockwasher tab out of engagement with the locknut.
4. Turn adjusting nut clockwise to increase preload or vice-versa to decrease preload.
5. Bend a lockwasher tab into one of the slots in the locknut. (Probably only one will line up.)
6. Replace the headstock cover.



PARTS ORDERING PROCEDURE

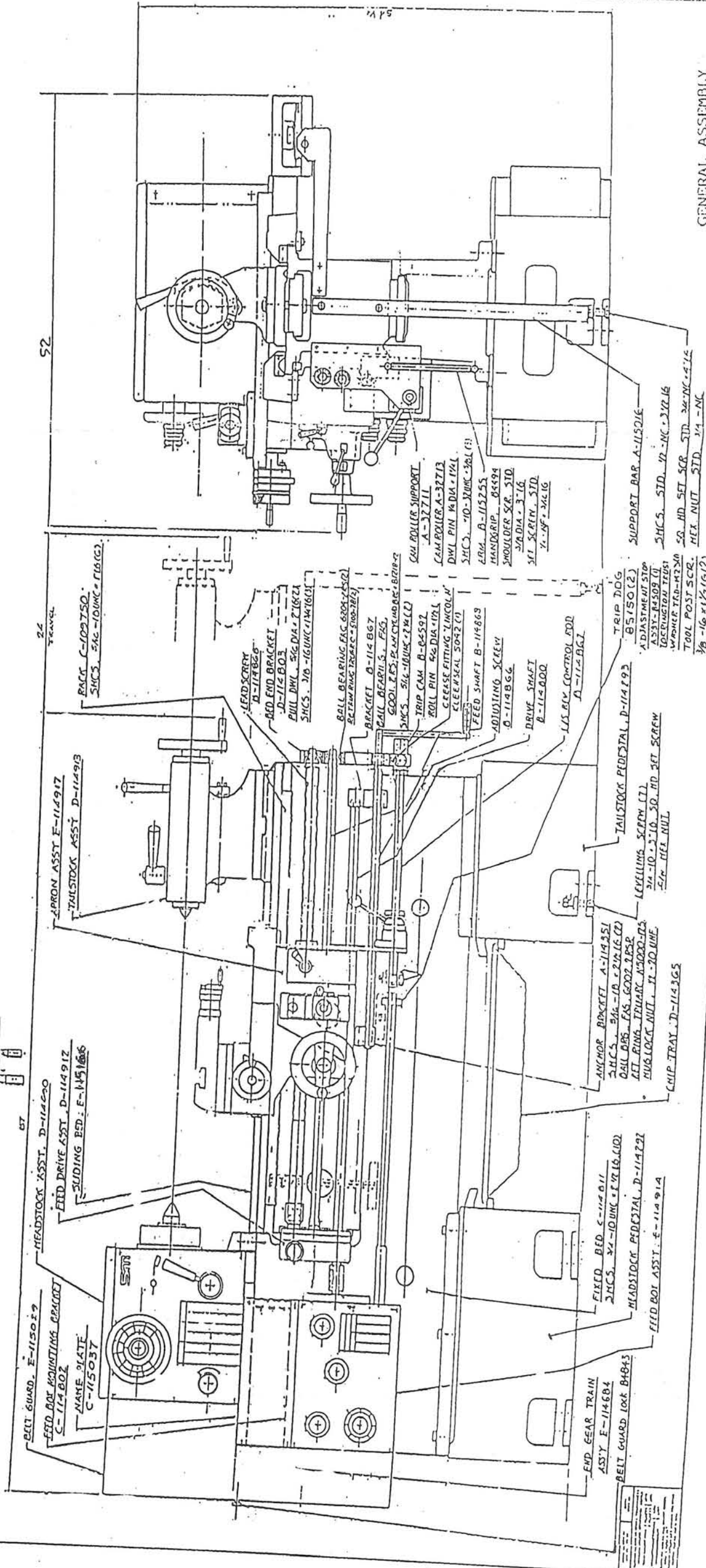
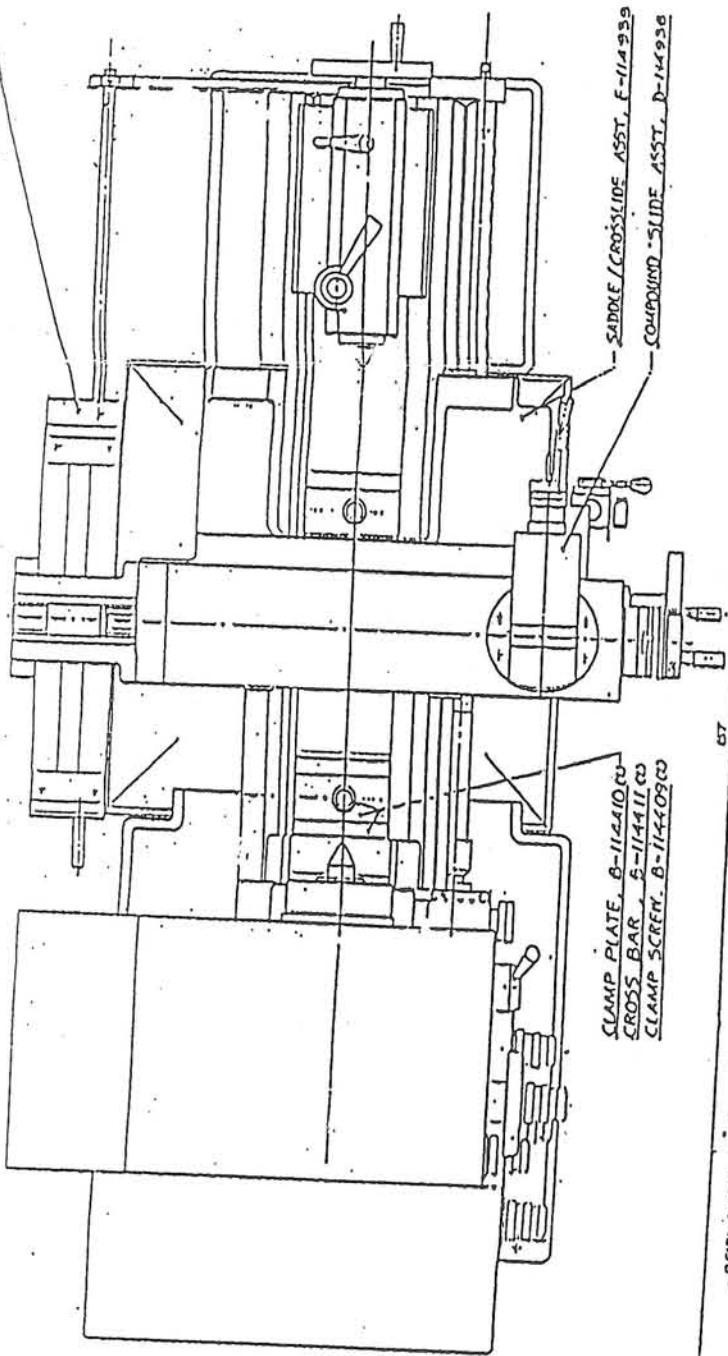
- (1) ALWAYS QUOTE THE MACHINE SERIAL NUMBER
which will be found
stamped in the recessed
face on top of the bed
at the tailstock end.
- (2) Refer to the appropriate assembly and
INDIVIDUAL PART NUMBERS
taken directly from the
illustrations.

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



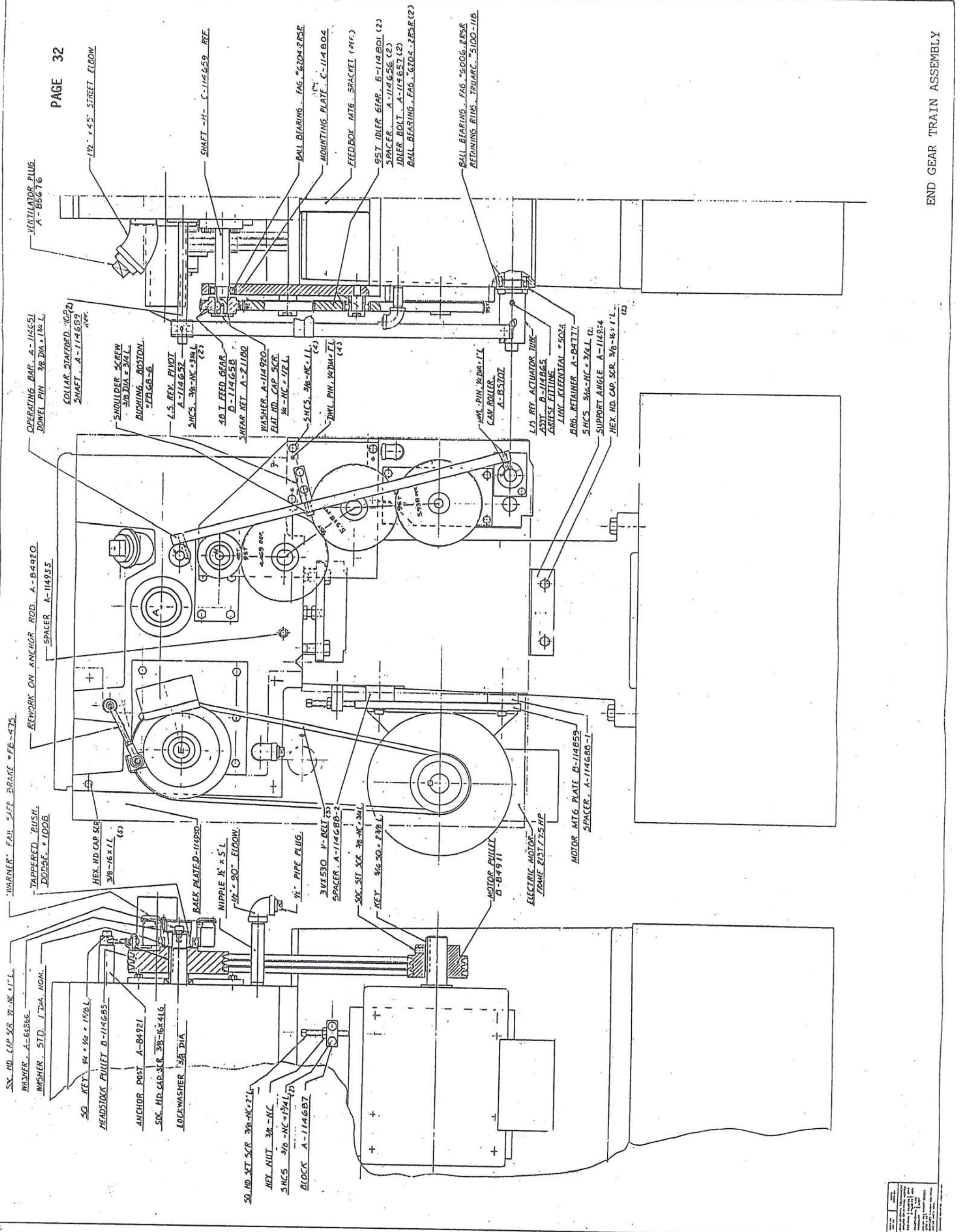
I.D.No.	Manufacturer	FSCM	Part No.	Nomenclature	Qty.
32711	OMT	3AA35	32711	CAM ROLLER SUPPORT	1
32713	OMT	3AA35	32713	CAM ROLLER	1
41413	OMT	3AA35	41413	VERTICAL NAMEPLATE	1
84494	OMT	3AA35	84494	HAND GRIP	1
84509	OMT	3AA35	84509	ADJUSTMENT STOP ASSEMBLY	1
84592	OMT	3AA35	84592	TRIP CAM	1
84843	OMT	3AA35	84843	BELT GUARD LOCK	1
85150	OMT	3AA35	85150	TRIP DOG	2
106832	OMT	3AA35	106832	LUBRICATION NAME PLATE	1
109750	OMT	3AA35	109750	RACK	1
114255	OMT	3AA35	114255	I.D. NAME PLATE	1
114292	OMT	3AA35	114292	CLAMP SCREW	1
114293	OMT	3AA35	114293	TAILSTOCK PEDESTAL	1
114351	OMT	3AA35	115351	ANCHOR BRACKET	1
114365	OMT	3AA35	114365	CHIP TRAY	1
114409	OMT	3AA35	114409	CLAMP SCREW	1
114410	OMT	3AA35	114410	CLAMP PLATE	1
114411	OMT	3AA35	114411	CROSS BAR	2
114684	OMT	3AA35	114684	END GEAR TRAIN ASSEMBLY	REF
114690	OMT	3AA35	114690	HEADSTOCK ASSEMBLY	REF
114770	OMT	3AA35	114770	SLIDING BED	1
114800	OMT	3AA35	114800	DRIVE SHAFT	1
114802	OMT	3AA35	14802	FEEDBOX MOUNTING BRACKET	1
114803	OMT	3AA35	114803	ED END BRACKET	1
114811	OMT	3AA35	114811	FIXED BED	1
114862	OMT	3AA35	114862	L/S REV. CONTROL	1
114866	OMT	3AA35	114866	ADJUSTING SCREW	1
114867	OMT	3AA35	114867	BRACKET	1
114868	OMT	3AA35	114868	LEAD SCREW	1
114869	OMT	3AA35	114869	FEED SHAFT	1
114912	OMT	3AA35	114912	FEED DRIVE ASSEMBLY	REF
114913	OMT	3AA35	114913	TAILSTOCK ASSEMBLY	REF
114914	OMT	3AA35	114914	FEEDBOX ASSEMBLY	REF
114917	OMT	3AA35	114917	APRON ASSEMBLY	REF
114921	OMT	3AA35	114921	HIGH-LOW SHIFTER ASSEMBLY	REF
114922	OMT	3AA35	114922	L.H. HEADSTOCK SHIFTER	REF
114938	OMT	3AA35	114938	COMPOUND SLIDE ASSEMBLY	REF
114939	OMT	3AA35	114939	SADDLE/CROSSLIDE ASSEMBLY	REF
115016	OMT	3AA35	115016	SUPPORT BAR	1
115029	OMT	3AA35	115029	BELT GUARD	1
115037	OMT	3AA35	115037	NAMEPLATE	1
115111	OMT	3AA35	115111	TAPER TURNING ATTACHMENT ASSEMBLY	REF
115255	OMT	3AA35	115255	ARM	1
101502	TORRINGTON	60380	101502	WASHER-TRD-1423	1
101540	FAG	36069	101540	BEARING-6002-2RS	1
101756	TRUARC	79136	101756	BEARING RING-N5000-125	1
109728	TRUARC	79136	109728	RETAINING RING-5100-78	2
115064	LINCOLN		115064	KLEENSEAL GREASE FITTING-5042	1
115103	FAG	36069	115103	BEARING-6001-2RS	1
115106	FAG	36069	115106	BEARING-6204-2RS	2
115118	BOSTON	OACA6	115118	BEARING-B1218-12	1

I.D.No.	Manufacturer	FSCM	Part No.	Nomenclature	Qty.
	COMMERCIAL			3/4-10 UNC X 2-1/2 LG SOC HD CAP SCRW	10
	COMMERCIAL			1/2-13 UNC X 3-1/2 LG SOC HD CAP SCRW	2
	COMMERCIAL			5/16-18 UNC X 2-1/2 LG SOC HD CAP SCRW	2
	COMMERCIAL			5/16-18 UNC X 2-1/4 LG SOC HD CAP SCRW	2
	COMMERCIAL			5/16-18 UNC X 1 LG SOC HD CAP SCRW	6
	COMMERCIAL			3/8-16 UNC X 1-3/4 LG SOC HD CAP SCRW	3
	COMMERCIAL			#10-32 UNC X 5/8 LG SOC HD CAP SCRW	3
	COMMERCIAL			1/4-28 UNF X 3/16 LG SOC HD SET SCRW	1
	COMMERCIAL			3/4-10 UNC X 4 LG SQ HD SET SCRW	1
	COMMERCIAL			3/4-10 UNC X 3 LG SQ HD SET SCRW	7
	COMMERCIAL			3/8 DIA X 3 LG SQ HD SET SCREW	1
	COMMERCIAL			3/4-10 UNC HEX NUT	8
	COMMERCIAL			1/2-20 UNF HUGLOCK NUT	1
	COMMERCIAL			5/16DIA X 2 LG PULL DOWEL	2
	COMMERCIAL			5/16DIA X 1-1/2 LG ROLL PIN	1
	COMMERCIAL			1/4DIA X 1-1/4 LG DOWEL PIN	1
	COMMERCIAL			3/8-16 UNC X 1-1/2 LG TOOL POST SCREW	2



I.D.No.	Manufacturer	FSCM	Part No.	Nomenclature	Qty.
21180	OMT	3AA35	21180	SHEAR KEY	1
84777	OMT	3AA35	84777	BEARING RETAINER	1
84866	OMT	3AA35	84866	WASHER	1
84911	OMT	3AA35	84911	MOTOR PULLEY	1
84920	OMT	3AA35	84920	ANCHOR ROD	1
84921	OMT	3AA35	84921	ANCHOR POST	1
85676	OMT	3AA35	85676	VENTILATOR PLUG	1
85707	OMT	3AA35	85707	CAM ROLLER	1
114651	OMT	3AA35	114651	OPERATING BAR	1
114652	OMT	3AA35	114652	L/S REVERSE PIVOT	1
114656	OMT	3AA35	114656	SPACER	2
114657	OMT	3AA35	114657	IDLER BOLT	2
114658	OMT	3AA35	114658	48T FEED GEAR	1
114685	OMT	3AA35	114685	HEADSTOCK PULLEY	1
114687	OMT	3AA35	114687	BLOCK	1
114688-1	OMT	3AA35	114688-1	SPACER	1
114688-2	OMT	3AA35	114688-2	SPACER	1
114801	OMT	3AA35	114801	95T IDLER GEAR	2
114804	OMT	3AA35	114804	MOUNTING PLATE	1
114859	OMT	3AA35	114859	MOTOR MOUNTING PLATE	1
114865	OMT	3AA35	114865	L/S REVERSE ACTUATOR TUBE ASSEMBLY	1
114920	OMT	3AA35	114920	WASHER	1
114950	OMT	3AA35	114950	BACK PLATE	1
114954	OMT	3AA35	114954	SUPPORT ANGLE	1
114955	OMT	3AA35	114955	SPACER	1

I.D.No.	Manufacturer	FSCM	Part No.	Nomenclature	Qty.
	COMMERCIAL			DOWEL 1/4 DIA. X 1	5
	COMMERCIAL			FLAT HD. SOC. CAP SCREW 1/4 - 20 X 1/2	1
	COMMERCIAL			HARDENED DOWEL 3/8 DIA. X 1-3/4 Lg	1
	COMMERCIAL			SOC HD. CAP SCREW 1/2 - 13 X 1	1
	COMMERCIAL			HEX. HD. CAP SCREW 3/8 - 16 X 1	7
	COMMERCIAL			HEX. NUT 3/8 - 16	1
	COMMERCIAL			KEY 1/4 X 1/4 X 1-5/8	1
	COMMERCIAL			KEY 5/16 x 5/16 x 2-3/8	1
	COMMERCIAL			WASHER 1"	1
	COMMERCIAL			LOCKWASHER 3/8	1
	COMMERCIAL			SOC HD CAP SCREW 3/8-16 x 3-1/4	2
	COMMERCIAL			SOC HD SET SCREW 3/8-16 X 3/4	1
	COMMERCIAL			SQ HD SET SCREW 3/8-16 x 2	1
	COMMERCIAL			SOC. HD. CAP SCREW 3/8 - 16 X 1 3/4	2
	COMMERCIAL			SOC. HD. CAP SCREW 5/16 - 18 X 3/4	2
	COMMERCIAL			SOC. SET SCREW 3/8 - 16 X 1	4
	COMMERCIAL			SOC. HD. CAP SCREW 3/8 - 16 X 4	1
	COMMERCIAL			SHOULDER SCREW 3/8 x 3/4	1
	COMMERCIAL			ELBOW 1/2 x 90DEG.	1
	COMMERCIAL			NIPPLE 1/2 x 5	1
	COMMERCIAL			PIPE PLUG 1/2	1
	COMMERCIAL			STREET ELBOW 1 1/2 X 45°	1
101382	DODGE	9G100	1008 x 1	TAPERED BUSHING 1008	1
101386	STAFFORD	65646	10P	COLLAR	2
101525	FAG	36069	6006-2RS	BALL BEARING	1
101755	WALDES TRUARC	79136	5100-118	RETAINING RING	1
115064	LINCOLN	36251	5024	KLEENSEAL GREASE FITTING	1
115105	GATES	14003	#3V x 530	SUPER H.C. V-BELT	3
115106	FAG	36069	6204-2RS	BEARING	3
115107	BOSTON	OACA6	FB68-6	BUSHING	1
	WARNER			FAIL SAFE BRAKE	1



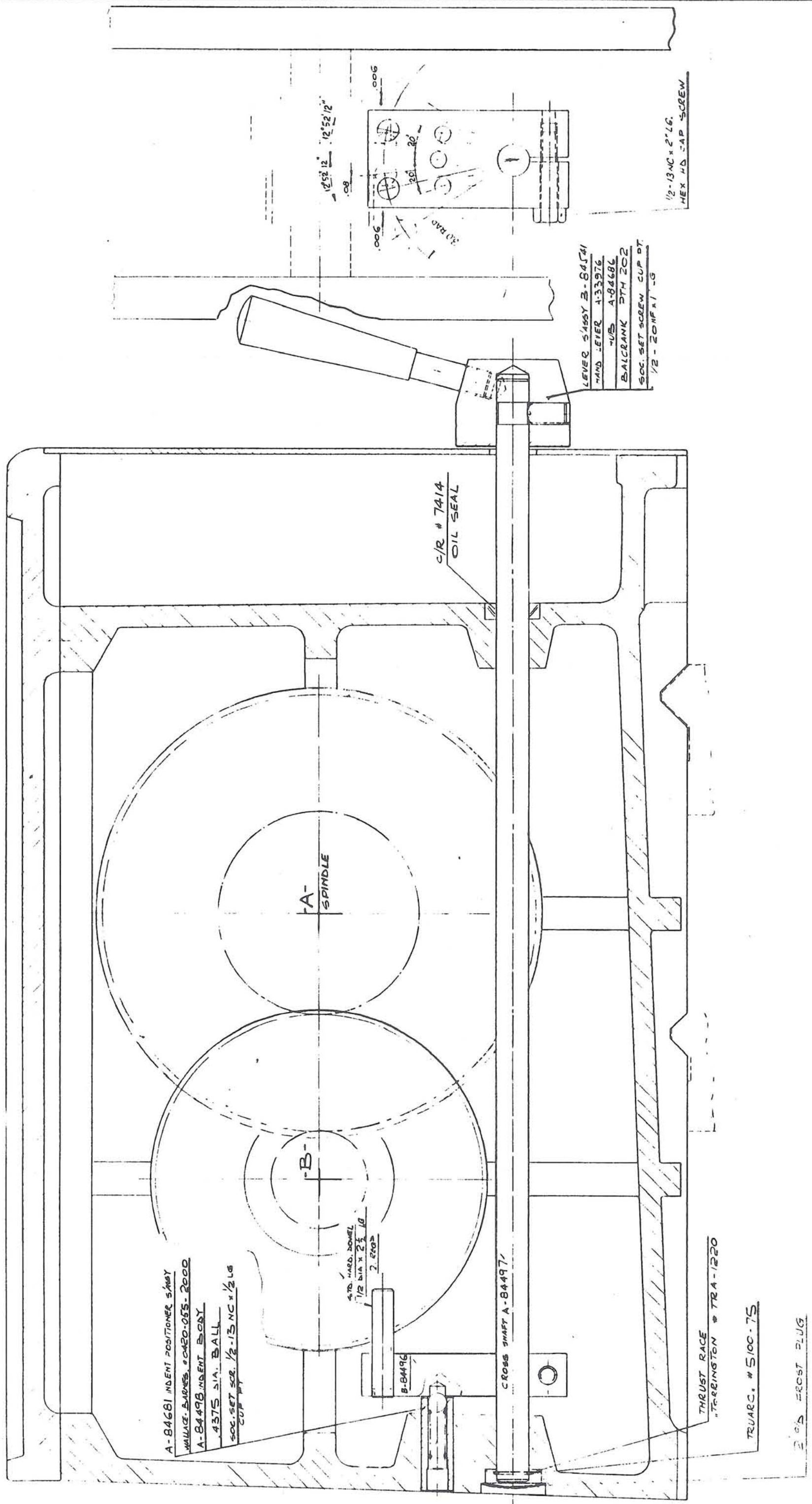
1. All dimensions are in inches unless otherwise specified.
 2. All tolerances are as shown on the drawing.
 3. All parts are to be furnished in accordance with the specifications listed.
 4. All parts are to be furnished in accordance with the specifications listed.
 5. All parts are to be furnished in accordance with the specifications listed.

I.D.No.	Manufacturer	FSCM	Part No.	Nomenclature	Qty.
84421	OMT	3AA35	84421	YOKE	1
22639	OMT	3AA35	22639	LATHE CENTER.	1
41020	OMT	3AA35	41020	FRONT CLAMP PLATE	1
41064	OMT	3AA35	41064	SLEEVE.	1
41123	OMT	3AA35	41123	CAM SCREW.	6
41131	OMT	3AA35	41131	CAM SPRING	6
84290	OMT	3AA35	84290	5T GEAR.	1
84291	OMT	3AA35	84291	92T GEAR.	1
84390	OMT	3AA35	84390	SHAFT.	1
84391	OMT	3AA35	84391	24T GEAR.	1
84392	OMT	3AA35	84392	SHAFT.	1
84393	OMT	3AA35	84393	41T GEAR.	1
84394	OMT	3AA35	84394	45T GEAR.	1
84395	OMT	3AA35	84395	SPACER.	1
84396	OMT	3AA35	84396	48T GEAR.	1
84397	OMT	3AA35	84397	SLEEVE.	1
84398	OMT	3AA35	84398	37T GEAR.	2
84399	OMT	3AA35	84399	COVER.	1
84400	OMT	3AA35	84400	SHAFT.	1
84401	OMT	3AA35	84401	25T GEAR.	1
84402	OMT	3AA35	84402	60T GEAR.	1
84403	OMT	3AA35	84403	SPACER.	1
84404	OMT	3AA35	84404	50T GEAR.	1
84405	OMT	3AA35	84405	37T GEAR.	1
84406	OMT	3AA35	84406	SHAFT.	1
84407	OMT	3AA35	84407	SLEEVE.	1
84408	OMT	3AA35	84408	17T PINION.	1
84410	OMT	3AA35	84410	45T DOUBLE GEAR.	1
84411	OMT	3AA35	84411	BULL GEAR.	1
84413	OMT	3AA35	84413	FRONT BEARING SHIELD.	1
84414	OMT	3AA35	84414	SPACER.	1
84415	OMT	3AA35	84415	SPACER.	2
84416	OMT	3AA35	84416	GASKET.	1
84417	OMT	3AA35	84417	SPINDLE.	1
84418	OMT	3AA35	84418	SHAFT.	1
84420	OMT	3AA35	84420	COVER.	1
84422	OMT	3AA35	84422	45T GEAR.	1
84423	OMT	3AA35	84423	45T GEAR.	2

I.D.No.	Manufacturer	FSCM	Part No.	Nomenclature	Qty.
84424	OMT	3AA35	84424	SPACER.	1
84425	OMT	3AA35	84425	SHAFT.	1
84426	OMT	3AA35	84426	CLUTCH.	1
84427	OMT	3AA35	84427	34T GEAR.	1
84430	OMT	3AA35	84430	34T GEAR.	1
84431	OMT	3AA35	84431	COVER.	1
84432	OMT	3AA35	84432	GASKET.	1
84433	OMT	3AA35	84433	PIN CLUTCH.	2
84453	OMT	3AA35	84453	64T GEAR.	1
84532	OMT	3AA35	84532	FRONT CLAMP PLATE.	1
84533	OMT	3AA35	84533	FROST PLUG.	1
84538	OMT	3AA35	84538	45T DOUBLE GEAR.	1
85127	OMT	3AA35	85127	REAR OIL SHIELD.	1
85145	OMT	3AA35	85145	KEY.	1
85146	OMT	3AA35	85146	KEY.	1
85147	OMT	3AA35	85147	KEY.	1
114640	OMT	3AA35	114640	HEADSTOCK CASTING	1
114659	OMT	3AA35	114659	SHAFT	1
114689	OMT	3AA35	114689	SHAFT	1
101462	TORRINGTON	60380	101462	INNER RING.-IR-1812	1
101483	TORRINGTON	60380	101483	THRUST RACE.-TRA-1220	1
101586	TIMKEN	60038	101586	BEARING CUP. ("0" PRECISION)-493B	1
				BEARING CONE. ("0" PRECISION)-498	1
101590	TIMKEN	60038	101590	BEARING CUP. ("0" PRECISION)-3441B	1
				BEARING CONE. ("0" PRECISION)-34301	1
101640	MAC-IT		101640	CAM FOR D1-6".	6
101751	TRUARC	79136	101751	SNAP RING.-5100-98.	2
101752	TRUARC	79136	101752	SNAP RING.-5100-100.	2
101755	TRUARC	79136	101755	SNAP RING.-5100-118.	1
101763	TRUARC	79136	101763	SNAP RING.-5100-225.	2
101767	TRUARC	79136	101767	SNAP RING.-5102-225.	3
101771	TRUARC	79136	101771	SNAP RING.-5102-334.	1
101975	BIJUR	70924	101975	WINDOW UNIT.-B-5093.	1
102288	CHICAGO RAWHD	11678	102288	OIL SEAL.-9667.	1
102297	CHICAGO RAWHD	11678	102297	OIL SEAL.-13568.	1
115067	TORRINGTON	60380	115067	THRUST RACE.-TRA-162.	1

I.D.No.	Manufacturer	FSCM	Part No.	Nomenclature	Qty.
115068	FAG	36069	115068	BEARING.-NJ206	1
115069	FAG	36069	115069	BEARING.-6206	6
115070	FAG	36069	115070	BEARING.-6207	2
115071	FAG	36069	115071	BEARING.-6014	1
115072	FAG	36069	115072	BEARING.-6205NR	4
115073	AFBMA		115073	NUT.-AN15	1
	COMMERCIAL			#807 WOODRUFF KEY.	1
	COMMERCIAL			#809 WOODRUFF KEY.	3
	COMMERCIAL			3/8 SQ. X 1-5/16 LG. KEY STOCK.	1
	COMMERCIAL			3/8-16 X 1-1/4 LG. HEX HD. CAP SCRW.	8
	COMMERCIAL			#W15 LOCKWASHER.	1
	COMMERCIAL			5/16-18 X 1-1/2 LG. SQ. HD. SET SCRW.	1
	COMMERCIAL			5/16 LOCKWASHER.	1
	COMMERCIAL			5/16-18 HEX NUT.	1
	COMMERCIAL			#114 "O" RING.	1
	COMMERCIAL			3/4 LOCKWASHER.	1
	COMMERCIAL			3/4-16 HEX JAM NUT.	1
	COMMERCIAL			5/8-11 X 2-3/4 LG. SOC. HD. CAP SCRW.	2
	COMMERCIAL			5/16-18 X 1/2 LG. BUTT. HD. CAP SCRW.	16
	COMMERCIAL			3/8-24 X 1/2 LG. SOC. SET SCRW.	2
	COMMERCIAL			3/8-16 X 1-1/4 LG. HEX HD. CAP SCRW.	6
	COMMERCIAL			5/16-18 X 3/4 LG. FLT. HD. CAP SCRW.	1

I.D.No.	Manufacturer	FSCM	Part No.	Nomenclature	Qty.
33976	OMT	3AA35	33976	HAND LEVER.	1
84496	OMT	3AA35	84496	LEVER.	1
84497	OMT	3AA35	84497	CROSS SHAFT.	1
84498	OMT	3AA35	84498	INDENT BODY.	1
84686	OMT	3AA35	84686	HUB.	1
101483	TORRINGTON	60380	101483	THRUST RACE.-TRA-1220.	1
101749	TRUARC	79136	101749	SNAP RING.-5100-75.	1
101853	WALLACE	08337	101853	SPRING.-CO420-055-2000.	1
102282	BARNES				
102282	CHICAGO	11678	102282	OIL SEAL.-7414	1
115074	RAWHIDE				
115074	BALCRANK	1JZ80	115074	HANDLE.-PTH 202.	1
	COMMERCIAL			.4375 DIA. BALL.	1
	COMMERCIAL			1/2-13 X 1/2 LG. SOC. SET SCRW.	1
	COMMERCIAL			1/2 DIA. X 2-1/2 LG. HARD DOWEL.	2
	COMMERCIAL			2" O/D FROST PLUG.	1
	COMMERCIAL			1/2-20 X 1 LG. SOC. SET SCRW.	1
	COMMERCIAL			1/2-13 X 2 LG. HEX HD. CAP SCRW.	1



HIGH-LOW SHIFTER ASSEMBLY.

I.D.No.	Manufacturer	FSCM	Part No.	Nomenclature	Qty.
41020	OMT	3AA35	41020	HEADSTOCK CLAMP	1
84421	OMT	3AA35	84421	CLUTCH LEVER.	1
84434	OMT	3AA35	84434	TOP HEADSTOCK COVER.	1
84436	OMT	3AA35	84436	GEAR SHAFT LEVER	1
84437	OMT	3AA35	84437	SHIFTER.	1
84439	OMT	3AA35	84439	CROSS SHAFT.	1
84440	OMT	3AA35	84440	TUBE.	1
84441	OMT	3AA35	84441	SHIFTER.	1
84442	OMT	3AA35	84442	SHIFTER.	1
84443	OMT	3AA35	84443	SHIFTER LEVER.	1
84451	OMT	3AA35	84451	SHIFTER LEVER.	1
84526	OMT	3AA35	84526	RUBBER MAT	1
84528	OMT	3AA35	84528	OIL SUPPLY TRAY.	1
84702	OMT	3AA35	84702	INDENT POSITIONER ASSEMBLY.	1
84731	OMT	3AA35	84731	KNOB.	1
84732	OMT	3AA35	84732	DIAL INDICATOR PLATE.	2
84741	OMT	3AA35	84741	HANDWHEEL	1
85111	OMT	3AA35	85111	INDENT POSITIONER ASSEMBLY.	2
85114	OMT	3AA35	85114	HUB.	1
85115	OMT	3AA35	85115	COUPLING STUD.	1
109776	OMT	3AA35	109776	SPEED PLATE.	1
114544	OMT	3AA35	114544	FRONT COVER PLATE	1
101386	STAFFORD	65646	101386	COLLAR-10P	2
101389	STAFFORD	65646	101389	COLLAR-20P	1
101482	TORRINGTON	60380	101482	THRUST WASHER-TRA-1018	1
101835	PRODUCTO		101835	SPRING-MHP-02	2
101927	BOSTON	OACA6	101927	BRONZE BEARING-B1014-6	2
115074	BALCRANK	1JZ80	115074	HANDLE-PTH 202	1
115075	CHICAGO RAWHIDE	11678	115075	OIL SEAL.-6148-HMI-R	1

I.D.No.	Manufacturer	FSCM	Part No.	Nomenclature	Qty.
	COMMERCIAL			7/16-14 X 1/2 LG. SOC. SET SCRW.	2
	COMMERCIAL			.375 DIA. BALL.	2
	COMMERCIAL			5/16 DIA. X 1-1/8 LG. HARD DOWEL.	1
	COMMERCIAL			3/8-16 X 1 LG. SOC. HD. CAP SCRW.	1
	COMMERCIAL			#014 "O" RING.	1
	COMMERCIAL			3/8 DIA. X 2-1/2 LG. HARD DOWEL.	1
	COMMERCIAL			5/16-18 X 1/2 LG. HEX CAP SCRW.	2
	COMMERCIAL			1/2 DIA. X 1-1/2 LG. DOWEL.	1
	COMMERCIAL			3/8-16 X 1-3/4 LG. SOC. HD. CAP SCRW.	1
	COMMERCIAL			1/4 X 1 LG. DOWEL.	2
	COMMERCIAL			3/8-16 X 2-1/4 LG. SOC. HD. CAP SCRW.	1
	COMMERCIAL			#322 "O" RING.	1
	COMMERCIAL			1/4 DIA. X 1-1/4 LG. HARD DOWEL.	2
	COMMERCIAL			5/16-18 X 1-1/4 LG. SOC. HD. CAP SCRW.	6
	COMMERCIAL			3/8-16 X 3/4 LG. SOC. HD. CAP SCRW.	1
	COMMERCIAL			1/2-13 HEX JAM NUT.	2
	COMMERCIAL			1/2-13 X 1 LG. HEX. HD. CAP SCRW.	2
	COMMERCIAL			5/8-11 X 2-1/4 LG. (GR.5) HEX. CAP SCW.	2
	COMMERCIAL			3/8 DIA. X 1-3/4 LG. DOWEL.	1
	COMMERCIAL			1/4-20 X 1/2 LG. BUTT. HD. CAP SCRW.	6
	COMMERCIAL			3/8-16 X 3/4 LG. SOC. SET SCRW.	1
	COMMERCIAL			3/8-16 X 1/2 LG. SOC. SET SCW CONE PT.	1

SPEED PLATE/HANDWHEEL SHA
B-8474

APPLY LOCTITE GASKET SEALANT #504
TO HEADSTOCK AT FINAL ASSY

RUBBER MAT
B-8452

OIL SUPPLY TRAY
C-8452B

MEX. C.S. 5/16-18 x 1/8 LG
2 REQD

C-84434

STAFFORD COLLAR NO. 10P
TOURMENTION IMPACT WASHER TRP-1018

STD. NOM'L DOWEL
5/16 DIA x 2 1/4 LONG

D. RING - PRECISION BOLT ASSEMBLY
C7X7218 x 5/8 LG (INTERNAL)

S.H.C.S. 3/8-16 x 1 LG

INDENT POSITIONER-A-85111

SHIFTER, A-84442
1/4 X 1 DOWEL
(2) REQD (NOT SHOWN)

POST - BRONZE (2)
B-8414-6

S.H.C.S. 3/8-16 x 1 1/2 LG

B-84440

B-84434

A-84437

STD. NOM'L DOWEL
5/16 DIA x 1 1/8 LONG

PRODUCTO. SPRING (2)
MHP-02

SHIFTER LEVER SHAFT-B-84435

DOWEL WELD B-84436

A-84441

STD. DOWEL
1/2 DIA x 1 1/2 LG

S.H.C.S. 3/8-16 x 2 1/4 LG

PRECISION C-RING
NO. 322

STD. WELD. DOWEL
1/4 x 1 1/2 LG (2 REQD)

45T

50T

64T

64T

64T

64T

A-84443

STD. DOWEL
1/2 DIA x 1 1/2 LG

INDICATOR-KNOB S/ASSY
B-84733 - B-84731
A-84732
U.S. 5-CUP POINT

INDICATOR-KNOB S/ASSY
B-84733 - B-84731
A-84732
U.S. 5-CUP POINT

C/R OIL SEAL
6148 HMM-R

45T

25T

25T

25T

25T

25T

A-85111

(2) INDENT POSITIONER

FRONT COVER PLATE
D-114544 1/4-20 NCV 1/2 LG
BAYTON NB

STAFFORD COLLAR
NO. 20P

STAFFORD COLLAR NO. 10P
A-84702

45T

45T

45T

45T

45T

45T

A-84452

CLAMP PLATE
N.H.C.S. 1/2-13 x 1 LG
(2 REQD)

CLAMP PLATE
N.H.C.S. 1/2-13 x 1 LG
(2 REQD)

CLAMP PLATE
N.H.C.S. 1/2-13 x 1 LG
(2 REQD)

CLAMP PLATE
N.H.C.S. 1/2-13 x 1 LG
(2 REQD)

45T

45T

45T

45T

45T

45T

A-84452

CLAMP PLATE
N.H.C.S. 1/2-13 x 1 LG
(2 REQD)

CLAMP PLATE
N.H.C.S. 1/2-13 x 1 LG
(2 REQD)

CLAMP PLATE
N.H.C.S. 1/2-13 x 1 LG
(2 REQD)

CLAMP PLATE
N.H.C.S. 1/2-13 x 1 LG
(2 REQD)

H.H.C.S. 5/8-11 x 2 1/4 LG (GRADE 5)

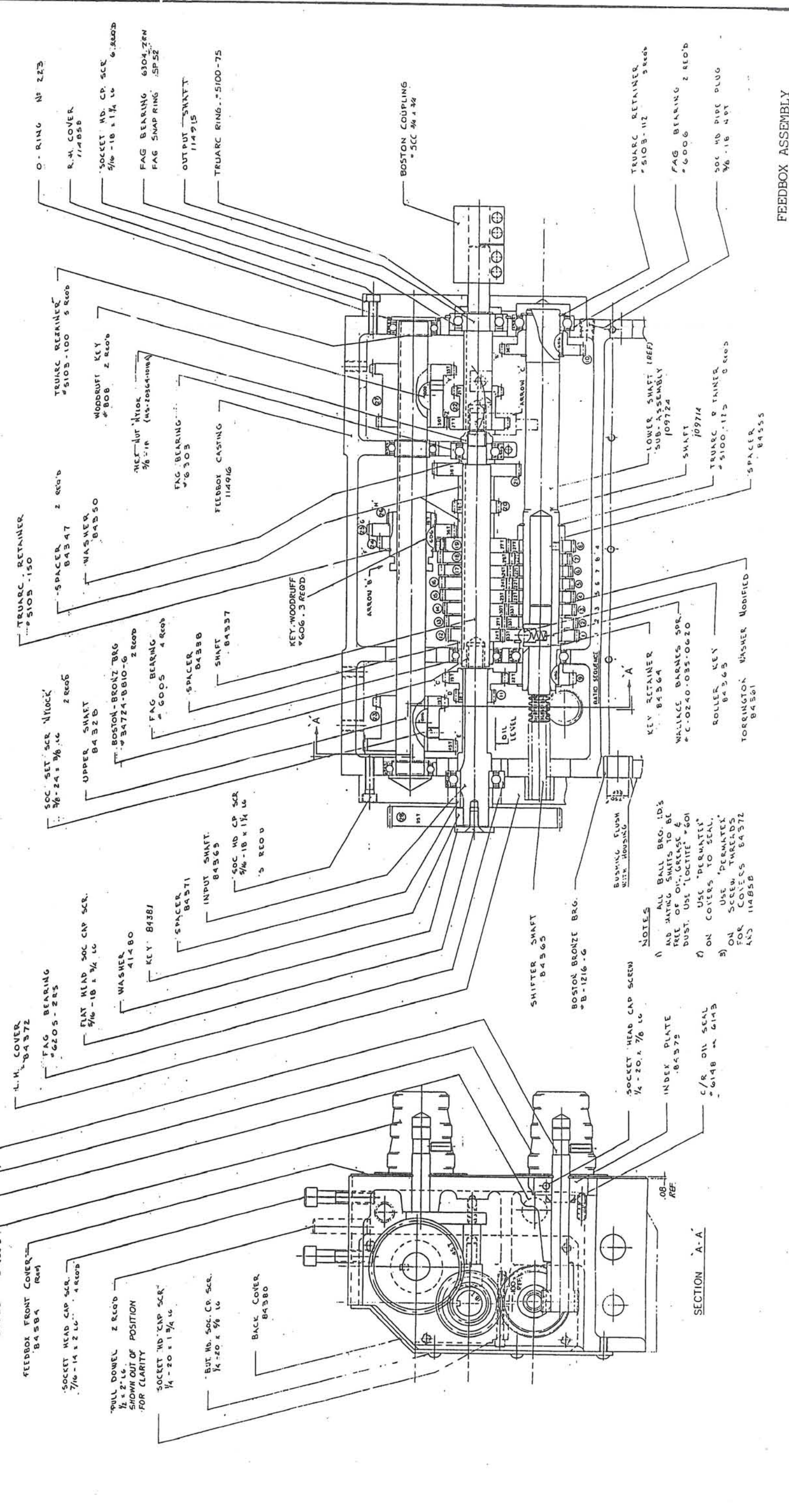
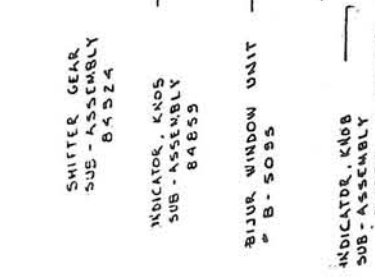
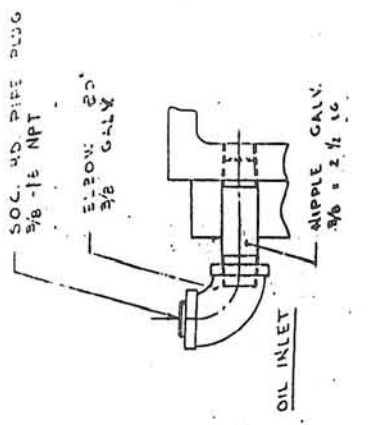
L.H. HEADSTOCK SHIFTERS ASSEMBLY.

I.D.No.	Manufacturer	FSCM	Part No.	Nomenclature	Qty.
41480	OMT	3AA35	41480	WASHER.	1
84318	OMT	3AA35	84318	SHIFTER ASSEMBLY.	1
84321	OMT	3AA35	84321	LEVER ASSEMBLY.	2
84327	OMT	3AA35	84327	SHOE.	1
84328	OMT	3AA35	84328	UPPER SHAFT.	1
84329	OMT	3AA35	84329	45T/19T FEED GEAR.	1
84330	OMT	3AA35	84330	18T FEED GEAR.	1
84331	OMT	3AA35	84331	36T FEED GEAR.	1
84332	OMT	3AA35	84332	27T FEED GEAR.	1
84334	OMT	3AA35	84334	35T/30T FEED GEAR.	1
84337	OMT	3AA35	84337	SHAFT.	1
84338	OMT	3AA35	84338	SPACER.	1
84339	OMT	3AA35	84339	24T FEED GEAR.	1
84340	OMT	3AA35	84340	27T FEED GEAR.	1
84341	OMT	3AA35	84341	30T FEED GEAR.	1
84342	OMT	3AA35	84342	23T FEED GEAR.	1
84343	OMT	3AA35	84343	24T FEED GEAR.	1
84344	OMT	3AA35	84344	26T FEED GEAR.	1
84345	OMT	3AA35	84345	28T FEED GEAR.	1
84346	OMT	3AA35	84346	27T FEED GEAR.	1
84347	OMT	3AA35	84347	SPACER.	2
84348	OMT	3AA35	84348	18T FEED GEAR.	1
84349	OMT	3AA35	84349	36T FEED GEAR.	1
84350	OMT	3AA35	84350	WASHER.	1
84353	OMT	3AA35	84353	27T FEED GEAR.	1
84354	OMT	3AA35	84354	22T FEED GEAR.	1
84355	OMT	3AA35	84355	22T FEED GEAR.	1
84356	OMT	3AA35	84356	22T FEED GEAR.	1
84357	OMT	3AA35	84357	22T FEED GEAR.	1
84358	OMT	3AA35	84358	33T FEED GEAR.	1
84359	OMT	3AA35	84359	33T FEED GEAR.	1
84360	OMT	3AA35	84360	33T FEED GEAR.	1
84361	OMT	3AA35	84361	WASHER.	1
84363	OMT	3AA35	84363	ROLLER KEY.	1
84364	OMT	3AA35	84364	KEY RETAINER.	1
84365	OMT	3AA35	84365	SHIFTER SHAFT.	1
84366	OMT	3AA35	84366	36T FEED GEAR.	1

I.D.No.	Manufacturer	FSCM	Part No.	Nomenclature	Qty.
84368	OMT	3AA35	84368	22T FEED GEAR.	1
84369	OMT	3AA35	84369	INPUT SHAFT.	1
84370	OMT	3AA35	84370	18T/19T FEED GEAR.	1
84371	OMT	3AA35	84371	SPACER.	1
84372	OMT	3AA35	84372	L.H. COVER.	1
84373	OMT	3AA35	84373	95T SIDE GEAR.	1
84374	OMT	3AA35	84374	27T/21T FEED GEAR.	1
84379	OMT	3AA35	84379	INDEX PLATE.	1
84380	OMT	3AA35	84380	BACK COVER.	1
84381	OMT	3AA35	84381	KEY.	1
84524	OMT	3AA35	84524	SHIFTER GEAR ASSEMBLY.	1
84555	OMT	3AA35	84555	SPACER.	1
84584	OMT	3AA35	84584	FEEDBOX FRONT COVER.	1
84733	OMT	3AA35	84733	INDICATOR KNOB ASSEMBLY.	1
84859	OMT	3AA35	84859	INDICATOR KNOB ASSEMBLY.	1
109714	OMT	3AA35	109714	SHAFT.	1
109724	OMT	3AA35	109724	LOWER SHAFT ASSEMBLY.	1
114504	OMT	3AA35	114504	FEED CHART.	1
114858	OMT	3AA35	114858	R.H. COVER.	1
114915	OMT	3AA35	114915	OUTPUT SHAFT.	1
114916	OMT	3AA35	114916	FEEDBOX CASTING.	1
101523	FAG	36069	101523	BEARING.-6005.	4
101547	FAG	36069	101547	BEARING.-6205-2RS.	1
101558	FAG	36069	101558	BEARING.-6303.	1
101749	TRUARC	79136	101749	SNAP RING.-5100-75	1
101756	TRUARC	79136	101756	SNAP RING.-5100-125.	8
101773	TRUARC	79136	101773	SNAP RING.-5103-62.	1
101779	TRUARC	79136	101779	SNAP RING.-5103-100.	5
101780	TRUARC	79136	101780	SNAP RING.-5103-112.	1
101781	TRUARC	79136	101781	SNAP RING.-5103-150.	1
101839	WALLACE	08337	101839	SPRING.-C0240-035-0620.	1
101843	WALLACE	08337 BARNES	101843	SPRING.-C0300-038-0810.	1
101918	BOSTON	OACA6	101918	BEARING.-B810-6.	2
101930	BOSTON	OACA6	101930	BEARING.-B1216-6	1
101976	BLJUR	70924	101976	WINDOW UNIT-B5095	1
102279	CHICAGO	11678 RAWHIDE	102279	OIL SEAL - 6148	1

I.D.No.	Manufacturer	FSCM	Part No.	Nomenclature	Qty.
115076	FAG	36069	115076	BEARING.-6006.	2
115077	FAG	36069	115077	BEARING.-3204.	1
115115	FAG	36069	115115	BEARING.-6304-2RS	1
115116	FAG	36069	115116	SNAP RING.-SP 52	1
115117	BOSTON	OACA6	115117	COUPLING-5CC-3/4 X 3/4	1
	COMMERCIAL			1/4-20 X 7/8 LG. SOC. HD. CAP SCRW.	1
	COMMERCIAL			1/4-20 X 5/8 LG. BUT. HD. SOC. SCRW.	3
	COMMERCIAL			1/4-20 X 1-3/4 LG. SOC. HD. CAP SCRW.	1
	COMMERCIAL			1/2 DIA. X 2 LG. PULL DOWEL.	2
	COMMERCIAL			7/16-14 X 2 LG. SOC. HD. CAP SCRW.	4
	COMMERCIAL			3/8-18 NPT SOC. HD. PIPE PLUG.	2
	COMMERCIAL			3/8 NPT 90 ELBOW (GALV.)	1
	COMMERCIAL			3/8 NPT X 2-1/2 LG. NIPPLE (GALV.)	1
	COMMERCIAL			5/16-18 X 3/4 LG. FLT. HD SOC CAP SCRW	1
	COMMERCIAL			5/16-18 X 1-1/4 LG. SOC HD CAP SCRW.	5
	COMMERCIAL			3/8-24 X 3/8 LG. 'NYLOK' SOC SET SCRW	2
	COMMERCIAL			5/16 DIA. HARDENED STEEL BALL.	1
	COMMERCIAL			#808 WOODRUFF KEY.	2
	COMMERCIAL			5/8-18 'NYLOK' HEX NUT.	1
	COMMERCIAL			#223 'O' RING.	1
	COMMERCIAL			5/16-18 X 1-1/4 LG. SOC. HD. CAP SCRW.	6
	COMMERCIAL			#606 WOODRUFF KEY.	4

ID.	PART NO.	QTY.	DESCRIPTION
1	84300	33	12.6
2	84339	33	11.8
3	84358	33	14.0
4	84357	22	10.0
5	84356	22	10.2
6	84355	22	10.8
7	84354	22	11.0
8	84353	27	12.0
9	84366	22	9.0
10	84366	22	11.6
11	84370	19	9.0
12	84339	26	11.8
13	84340	27	11.8
14	84341	27	14.0
15	84342	27	10.9
16	84343	26	10.2
17	84344	26	10.8
18	84345	27	11.0
19	84346	27	12.0
20	84347	27	12.0
21	84348	27	12.0
22	84349	27	12.0
23	84350	27	12.6
24	84351	27	12.6
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26	84353	27	12.6
27	84354	27	12.6
28	84373	28	16.0

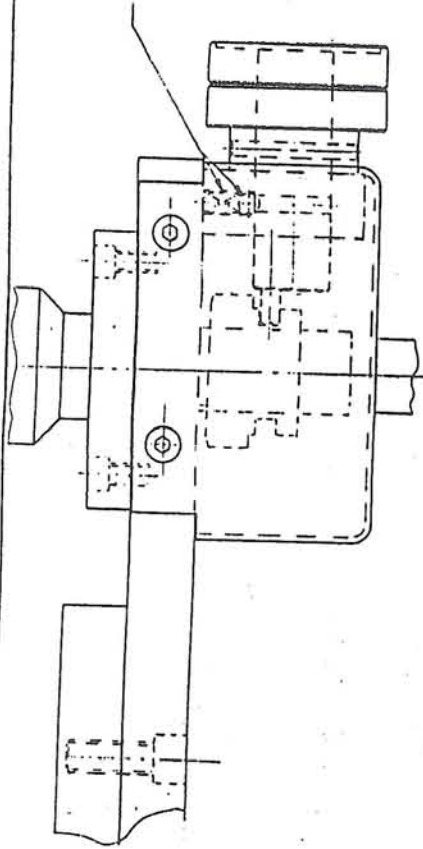


NOTES

- ALL BALL BRG. IDs AND MATING SHKTS TO BE FREE OF OIL, GREASE & DUST. USE 'LOCTITE' #601
- USE 'PERMATEX' ON COVERS TO SEAL.
- USE 'PERMATEX' ON SCREW THREADS FOR COVERS #B4372 AND #114858

I.D.No.	Manufacturer	FSCM	Part No.	Nomenclature	Qty.
109681	OMT	3AA35	109681	36T GEAR	1
109682	OMT	3AA35	109682	21T GEAR	1
109686	OMT	3AA35	109686	KNOB	1
109687	OMT	3AA35	109687	NAMEPLATE	1
114691	OMT	3AA35	114691	SPACER	1
114692	OMT	3AA35	114692	SHAFT	1
114693	OMT	3AA35	114693	AXLE	1
114694	OMT	3AA35	114694	21T IDLER GEAR	1
114695	OMT	3AA35	114695	SPACER	1
114696	OMT	3AA35	114696	SHIFTER	1
114697	OMT	3AA35	114697	BRACKET	1
114698	OMT	3AA35	114698	SHAFT	1
114699	OMT	3AA35	114699	21T GEAR	1
114797	OMT	3AA35	114797	RETAINING PLATE	1
114798	OMT	3AA35	114798	MOUNTING PLATE	1
114799	OMT	3AA35	114799	COVER	1
114800	OMT	3AA35	114800	DRIVE SHAFT	1
101525	FAG	36069	6006-2RS	BALL BEARING	2
101750	TRUARC	79136	5100-87	RETAINING RING	1
101755	TRUARC	79136	5100-118	RETAINING RING	1
101839	WALLACE BARNES	08337	CO240-038-0620	SPRING	1
115077	FAG	36069	3204	BALL BEARING	1
115119	FAG	36069	MB2	LOCK WASHER	1
115120	FAG	36069	KM2	LOCK NUT	1
115121	FAG	36069	6005-2RS	BALL BEARING	1
115122	FAG	36069	6002-2RS	BALL BEARING	1
115124	SPAE-NAUR		W-157	WASHER	1
115125	SPAE-NAUR		W-179	WASHER	1
	COMMERCIAL			3/8-16 x 1 SOC HD CAP SCREW	6
	COMMERCIAL			5/16-18 x 3/4 SOC HD CAP SCREW	1
	COMMERCIAL			1/4-20 x 2 SOC HD CAP SCREW	2
	COMMERCIAL			1/4-20 x 1/2 BUTTON HD CAP SCREW	4
	COMMERCIAL			3/8-24 x 1 HEX HD CAP SCREW	1
	COMMERCIAL			1/4 DIA. STEEL BALL	1
	COMMERCIAL			3/8 SPRING WASHER	1
	COMMERCIAL			WOODRUFF KEY - 606	1
	COMMERCIAL			WOODRUFF KEY - 807	1
	COMMERCIAL			3/8 DIA x 1 FULL DOWEL	2
	COMMERCIAL			1/4 DIA x 3/4 DOWEL PIN	1
	COMMERCIAL			3/16 DIA x 1-1/2 ROLL PIN	1

COMP. SPRING SPEC. #C0240-038-0620
STEEL BALL, STD. 1/4 DIA.



SHCS. 3/8-NC x 1-1/2 LG (6)
PULL DWL. 3/8 DIA x 1-1/2 LG (2)
(NOT SHOWN)

SHIFT. A-114696
DWL. PIN 1/4 DIA x 3/4 LG

RET. RING, TRUARC. #5100-BZ

KNOB. A-109686
NAME PLATE. A-109687
ROLL PIN. 3/16 DIA x 1 1/2 LG.

36T GEAR. B-109681
WOODRUFF KEY. #807

COVER. C-114799

BRACKET. A-114697

SHCS. 1/4-NC x 2-1/2 LG (2)

MOUNTING PLATE. C-114798

SHCS. 5/16-NC x 3/4 LG
WASHER, SPAE-NAUR. #W-157

DRIVE SHAFT. B-114800

HEX. HD. CAP SCR. 3/8-24 UNF x 1-1/2
SPRING WASHER 3/8 I.D.
WASHER, SPAE-NAUR. #W-179

COUPLING. B-B5039

BALL BRG. FAG. #6005.2RSR

SHAFT. A-114698

SPACER. A-114695

RET. RING, TRUARC. #5100-11B

BALL BRG. FAG. #6006.RSR (2)

SHAFT. A-114692

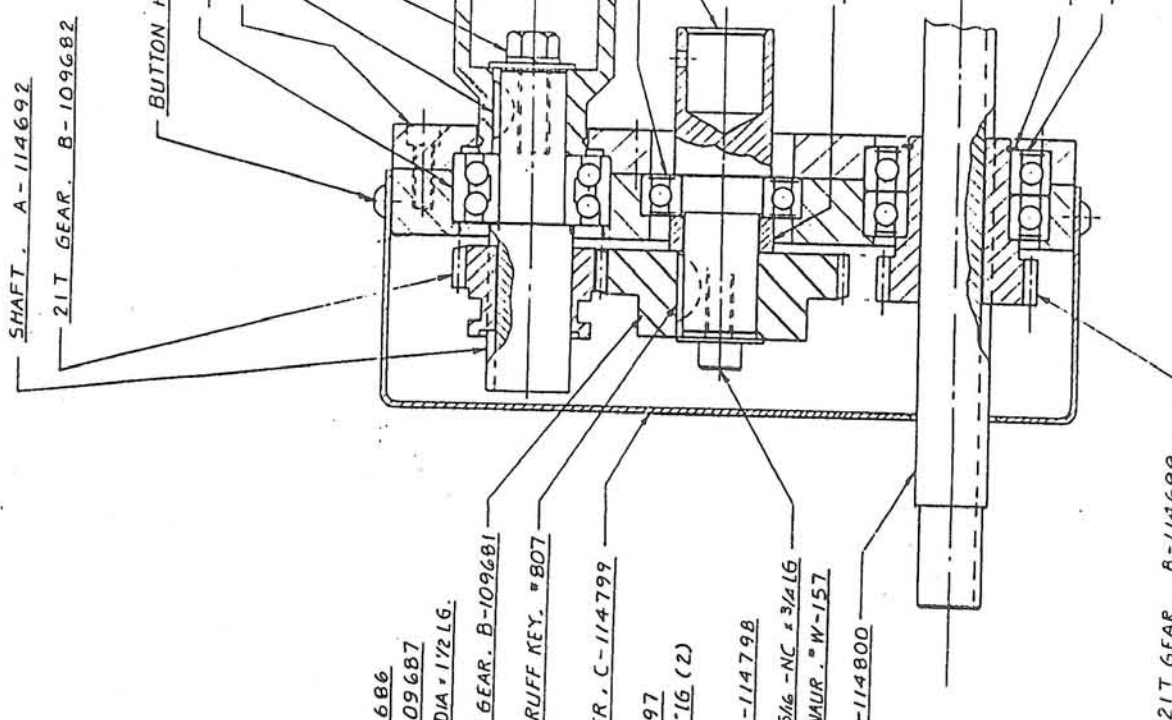
21T GEAR. B-109682

BUTTON HD. CAP SCR. 1/4-NC x 1/2 LG (4)

BALL BRG. FAG. #3204

RETAINING PLATE. B-114797

WOODRUFF KEY. #606



21T GEAR. B-114699

21T IDLER. A-114694

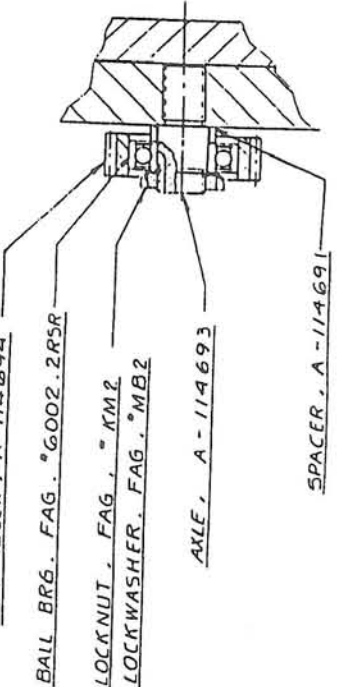
BALL BRG. FAG. #6002.2RSR

LOCKNUT. FAG. #MM2

LOCKWASHER. FAG. #MB2

AXLE. A-114693

SPACER. A-114691

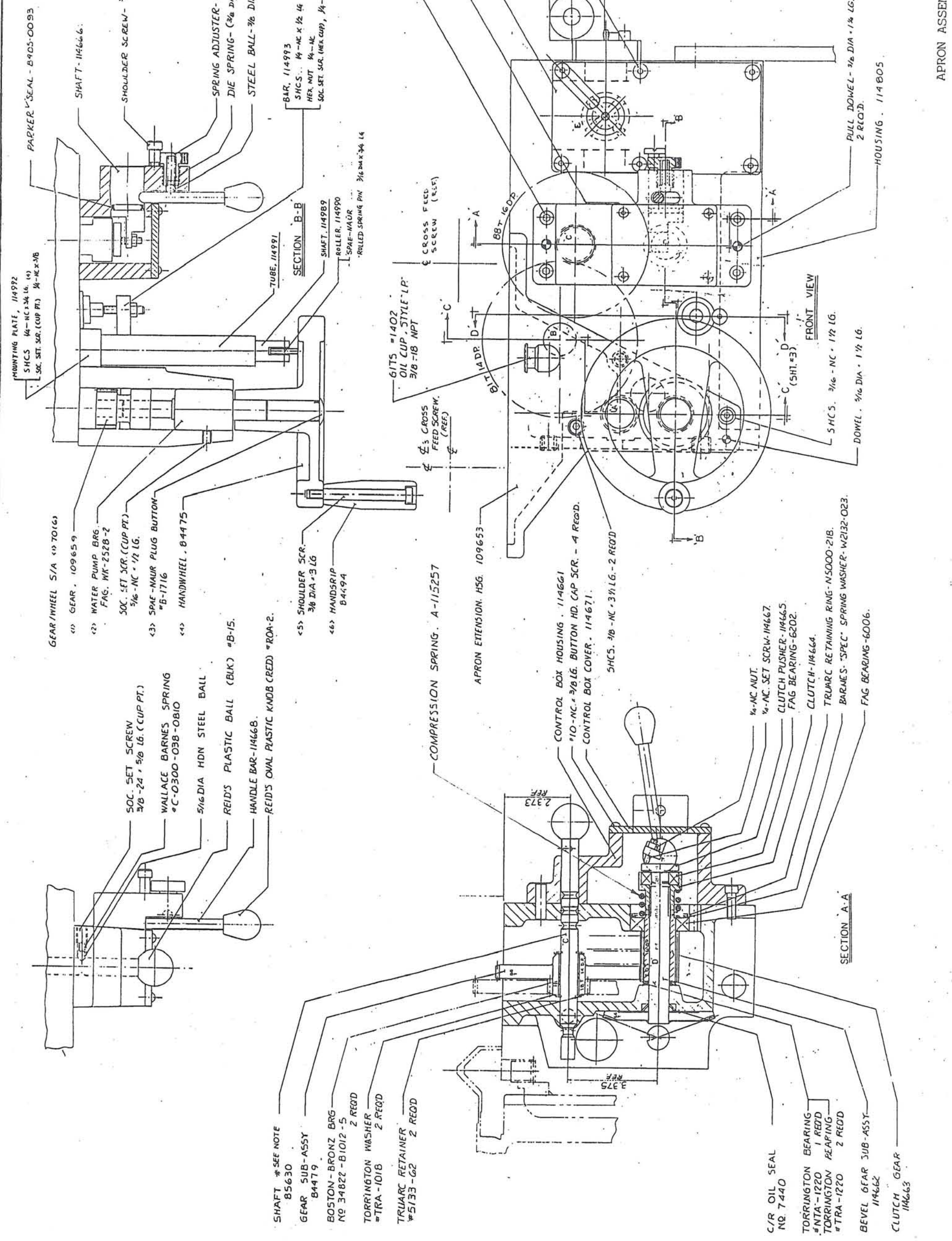


SECTION A-A

SECTION B-B

I.D.No.	Manufacturer	FSCM	Part No.	Nomenclature	Qty.
115082	PARKER	17506	115082	SEAL.-8405-0093.	1
115083	BARNES	08337	115083	"SPEC" SPRING WASHER.-W2132-023.	1
115084	REID	01599	115084	PLASTIC BALL (BLACK).-B-15.	1
	FAG	36069	WK-2528-2	WATER PUMP BEARING	1
	SPANAU		B-1716	PLUG BOTTOM	1
	SPANAU			ROLLED SPRING PIN-3/16 DIA. X 3/4 LG.	1
	COMMERCIAL			1/4-20 HEX NUT.	1
	COMMERCIAL			#10-NC X 3/8 LG. RD. HD. SOC. SCRW.	4
	COMMERCIAL			3/8-24 X 5/8 LG. SOC. SET SCRW. CUP PT	1
	COMMERCIAL			5/16 DIA. HDN. STEEL BALL.	1
	COMMERCIAL			#10-NC X 1/4 LG. SOC. SET SCREW.	1
	COMMERCIAL			3/8-16 X 3 LG. SHOULDER SCREW.	1
	COMMERCIAL			5/16-18 X 1 LG. SOC. HD. CAP SCREW.	1
	COMMERCIAL			5/16-18 X 1/2 LG. BUTT HD SOC CAP SCRW	6
	COMMERCIAL			1/4-NC X 1/4 LG. SOC. HD CAP SCREW.	1
	COMMERCIAL			3/8 DIA. X 1-1/4 LG. DOWEL.	2
	COMMERCIAL			1/4-20 X 1-1/2 SOC SET SCRW HEX PT	1
	COMMERCIAL			1/4-20 X 3/8 SOC SET SCREW CUP PT	1
	COMMERCIAL			3/8 DIA X 3/4 SHOULDER SCREW	1
	COMMERCIAL			3/8-16 X 3-1/2 SOC HD CAP SCREW	2
	COMMERCIAL			1/4-20 X 3/4 SOC HD CAP SCREW	4
	COMMERCIAL			1/4-20 X 1/2 SOC HD CAP SCREW	1
	COMMERCIAL			#12-24 X 1-1/2 SOC HD CAP SCREW	1
	COMMERCIAL			5/16-18 X 1/2 BUTT HD SOC CAP SCREW	6
	COMMERCIAL			5/16 DIA X 1-1/2 DOWEL	1
	COMMERCIAL			3/8 DIA STEEL BALL	1

I.D.No.	Manufacturer	FSCM	Part No.	Nomenclature	Qty.
84475	OMT	3AA35	84475	HANDWHEEL	1
84479	OMT	3AA35	84479	GEAR ASSEMBLY.	1
84494	OMT	3AA35	84494	HANDGRIP.	1
84869	OMT	3AA35	84869	FEED INDICATOR PLATE.	1
85107	OMT	3AA35	85107	THREAD CHASING DIAL.	1
85630	OMT	3AA35	85630	SHAFT.	1
109653	OMT	3AA35	109653	APRON EXTENSION HOUSING.	1
109659	OMT	3AA35	109659	GEAR.	1
114661	OMT	3AA35	114661	CONTROL BOX HOUSING.	1
114662	OMT	3AA35	114662	BEVEL GEAR ASSEMBLY.	1
114663	OMT	3AA35	114663	CLUTCH GEAR.	1
114664	OMT	3AA35	114664	CLUTCH.	1
114665	OMT	3AA35	114665	CLUTCH PUSHER.	1
114666	OMT	3AA35	114666	SHAFT.	1
114667	OMT	3AA35	114667	1/4-NC SET SCREW.	1
114668	OMT	3AA35	114668	HANDLE BAR.	1
114669	OMT	3AA35	114669	SPRING ADJUSTER.	1
114671	OMT	3AA35	114671	CONTROL BOX COVER.	1
114805	OMT	3AA35	114805	HOUSING	1
114989	OMT	3AA35	114989	SHAFT.	1
114990	OMT	3AA35	114990	ROLLER	1
114991	OMT	3AA35	114991	TUBE	1
114992	OMT	3AA35	114992	MOUNTING PLATE	1
115238	OMT	3AA35	115238	APRON FRONT PLATE	1
115257	OMT	3AA35	115257	COMPRESSION SPRING	1
101477	TORRINGTON	60380	101477	BEARING.NTA-1220.	1
101482	TORRINGTON	60380	101482	WASHER.-TRA-1018.	2
101483	TORRINGTON	60380	101483	BEARING.-TRA-1220.	2
101539	FAG	36069	101539	BEARING.-6202.	1
101670	REID	01599	101670	OVAL PLASTIC KNOB (RED).-ROA-2	1
101788	TRUARC	79136	101788	RETAINER.-5133-62.	2
101836	PRODUCTO		101836	3/8 DIA. X 1-1/2 LG. DIE SPRING.	1
101843	BARNES	08337	101843	SPRING.-C0300-038-0810.	1
101924	BOSTON	OACA6	101924	BEARING.-B1012-5.	2
102284	CHICAGO RAWHD	11678	102284	OIL SEAL.-7440.	1
110058	TRUARC	79136	110058	RETAINER.-N5000-218.	1
115005	GITS	OBT82	115005	OIL CUP STYLE "LP" 3/8-18 NPT.-1402.	1
115076	FAG	36069	115076	BEARING.-6006.	1



- GEAR / WHEEL S/A (1) TO (16)
- 1) GEAR, 109659
- 2) WATER PUMP BRG. FAG. WK-2528-2
- 3) SOC. SET SCR. (CUP PT.) 5/16 - NC - 1/2 LG.
- 4) SPAE-NAUR PLUG BUTTON #B-1716
- 5) HANDWHEEL, B-4475

- SOC. SET SCREW 3/8 - 24 x 5/8 LG. (CUP PT.)
- WALLACE BARNES SPRING #C-0300-038-0810
- 5/16 DIA HDN STEEL BALL
- REID'S PLASTIC BALL (BLK) #B-15.
- HANDLE BAR-114668.
- REID'S OVAL PLASTIC KNOB (CRED) #ROA-2.

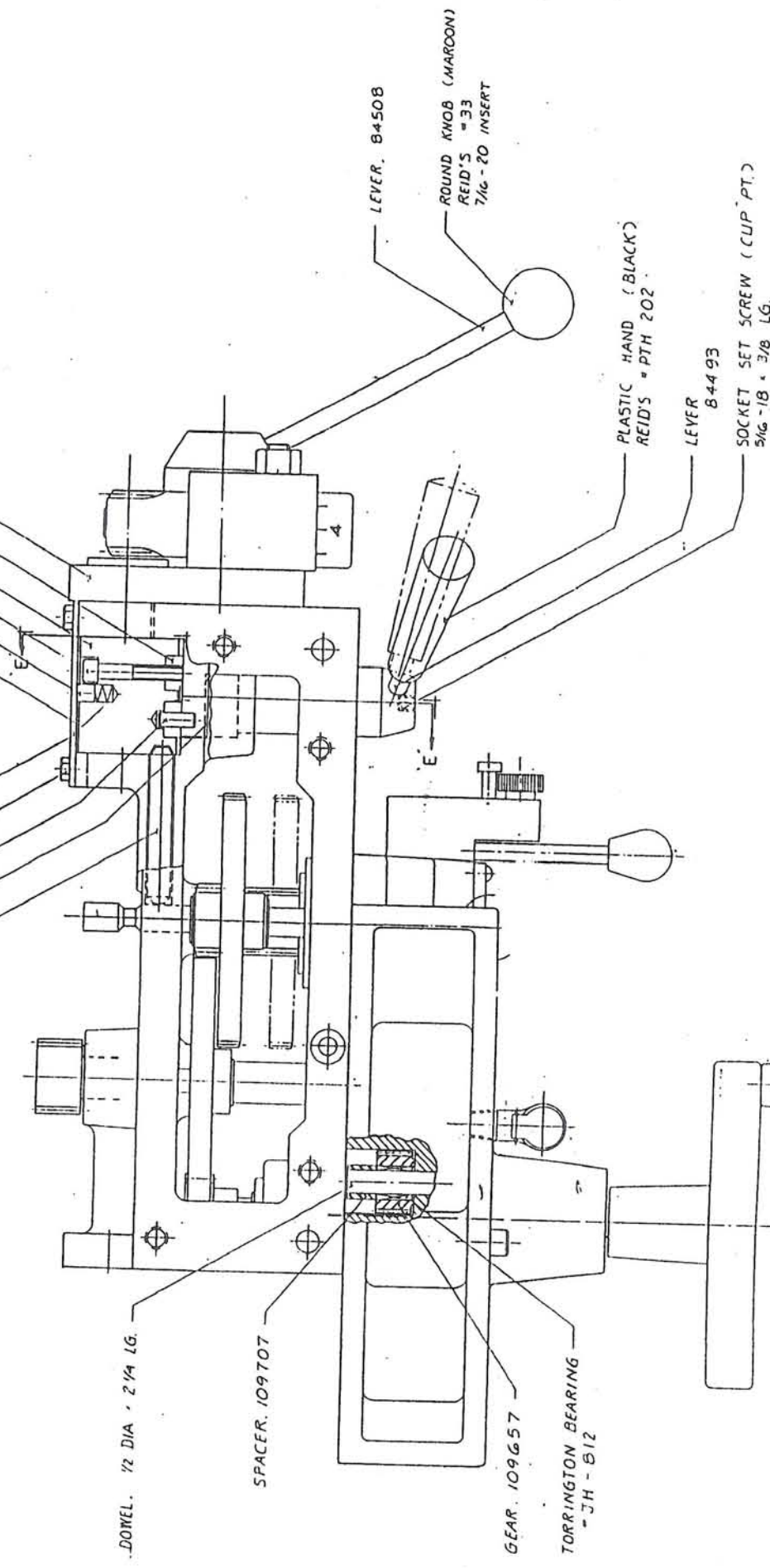
- SHAFT *SEE NOTE B5630
- GEAR SUB-ASSY B4479
- BOSTON-BRONZ BRG NO 34822-B1012-5 2 REQD
- TORRINGTON WASHER #TRA-1018 2 REQD
- TRIARC RETAINER #5133-G2 2 REQD

- 5) SHOULDER SCR. 3/8 DIA x 3 LG
- 6) HANDSRIP B4494
- COMPRESSION SPRING, A-115257
- APRON EXTENSION HSG. 109663
- CONTROL BOX HOUSING, 114661
- 10-NC-3/8 LG. BUTTON HD. CAP SCR. - 4 REQD.
- CONTROL BOX COVER, 114671.
- S.H.C.S. 5/16 - NC - 3/4 LG. - 2 REQD

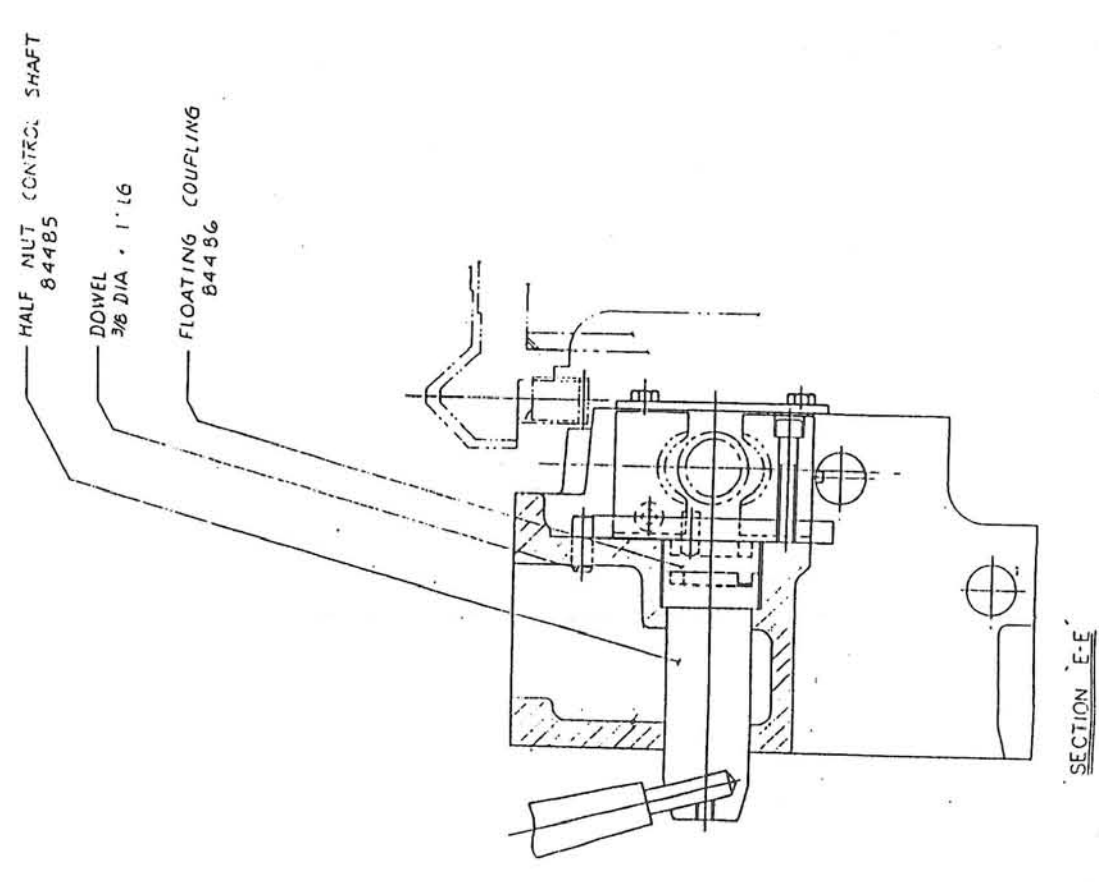
- C/R OIL SEAL NO. 7440
- TORRINGTON BEARING #NTA-1220 1 REQD
- TORRINGTON BEARING #TRA-1220 2 REQD
- BEVEL GEAR SUB-ASSY 114662
- CLUTCH GEAR 114663
- 1/2-NC NUT.
- 1/2-NC SET SCR. 114667.
- CLUTCH PUSHER-114665
- FAG BEARING-6202.
- CLUTCH-114664.
- TRIARC RETAINING RING-NS000-218.
- BARNES "SPEC" SPRING WASHER-W2132-023.
- FAG BEARING-6006.

I.D.No.	Manufacturer	FSCM	Part No.	Nomenclature	Qty.
84484	OMT	3AA35	84484	LOCKING BAR.	1
84485	OMT	3AA35	84485	HALF NUT CONTROL SHAFT.	1
84486	OMT	3AA35	84486	FLOATING COUPLING.	1
84487	OMT	3AA35	84487	GUIDE.	2
84489	OMT	3AA35	84489	PAD.	2
84490	OMT	3AA35	84490	HALF NUT COVER.	1
84493	OMT	3AA35	84493	LEVER.	1
84508	OMT	3AA35	84508	LEVEL	1
85063	OMT	3AA35	85063	HALF NUT SET	1
85563	OMT	3AA35	85563	LEADSCREW SUPPORT	1
109657	OMT	3AA35	109657	GEAR	1
109707	OMT	3AA35	109707	SPACER	1
101847	BARNES	08337	101847	SPRING.-C0360-042-0560.	1
115074	REID	01599	115074	PLASTIC HANDLE (BLACK).-PTH 202.	1
115085	REID	01599	115085	PLASTIC HANDLE (RED).-190.	1
	TORRINGTON		JH-812	BEARING	1
	REID	01599		RED KNOB (MAROON) 7/16-20 INSERT	1
	COMMERCIAL			5/16 DIA. X 3/4 LG. DOWEL.	1
	COMMERCIAL			5/16-18 X 3/4 LG. HEX HD CAP SCREW.	4
	COMMERCIAL			5/16-24 X 1-3/4 LG. SOC. HD. CAP SCREW	1
	COMMERCIAL			5/16-18 X 3/8 LG. SOC SET SCRW CUP PT	1
	COMMERCIAL			3/8 DIA. X 1 LG. DOWEL.	1
	COMMERCIAL			1/2 DIA X 2-1/4 DOWEL	4

- WALLACE BARNES SPRING
#C-0360-042-0560
- PAD 84489 2 REQ'D
- SOCKET HD CAP SCREW
5/16 - 24 UNF x 1 3/4 LG.
- HALF NUT SET 85063
- GUIDE 84487 2 REQ'D
- LEADSCREW SUPPORT 83563
- HALF NUT COVER 84490
- HEXAGON HD CAP SCR
5/16 - 18 x 3/4 LG 4 REQ'D
- DOWEL 5/16 DIA x 3/4 LG.
- FLOATING COUPLING 84486
- LOCKING BAR 84484



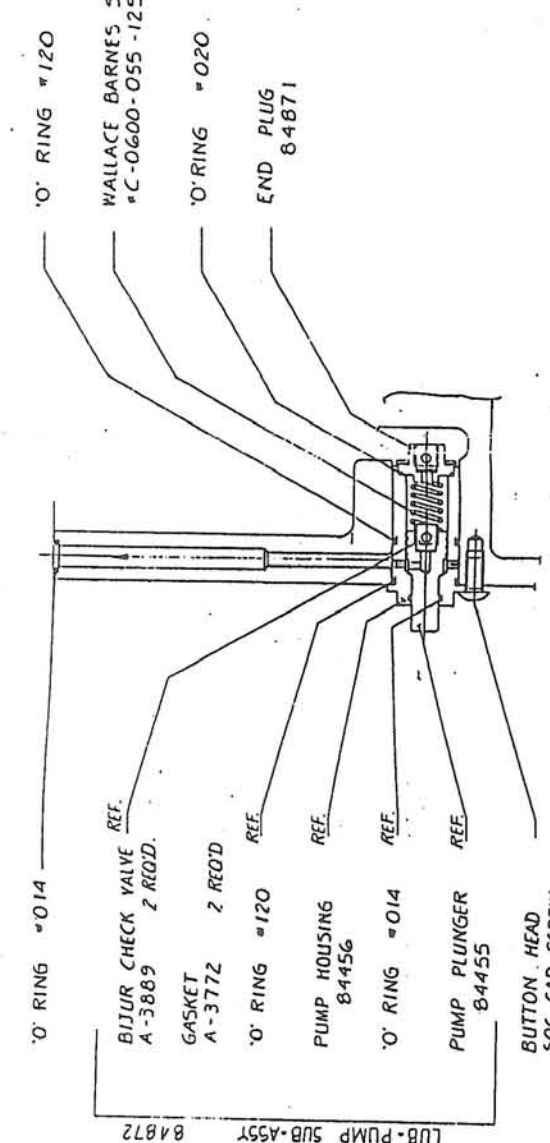
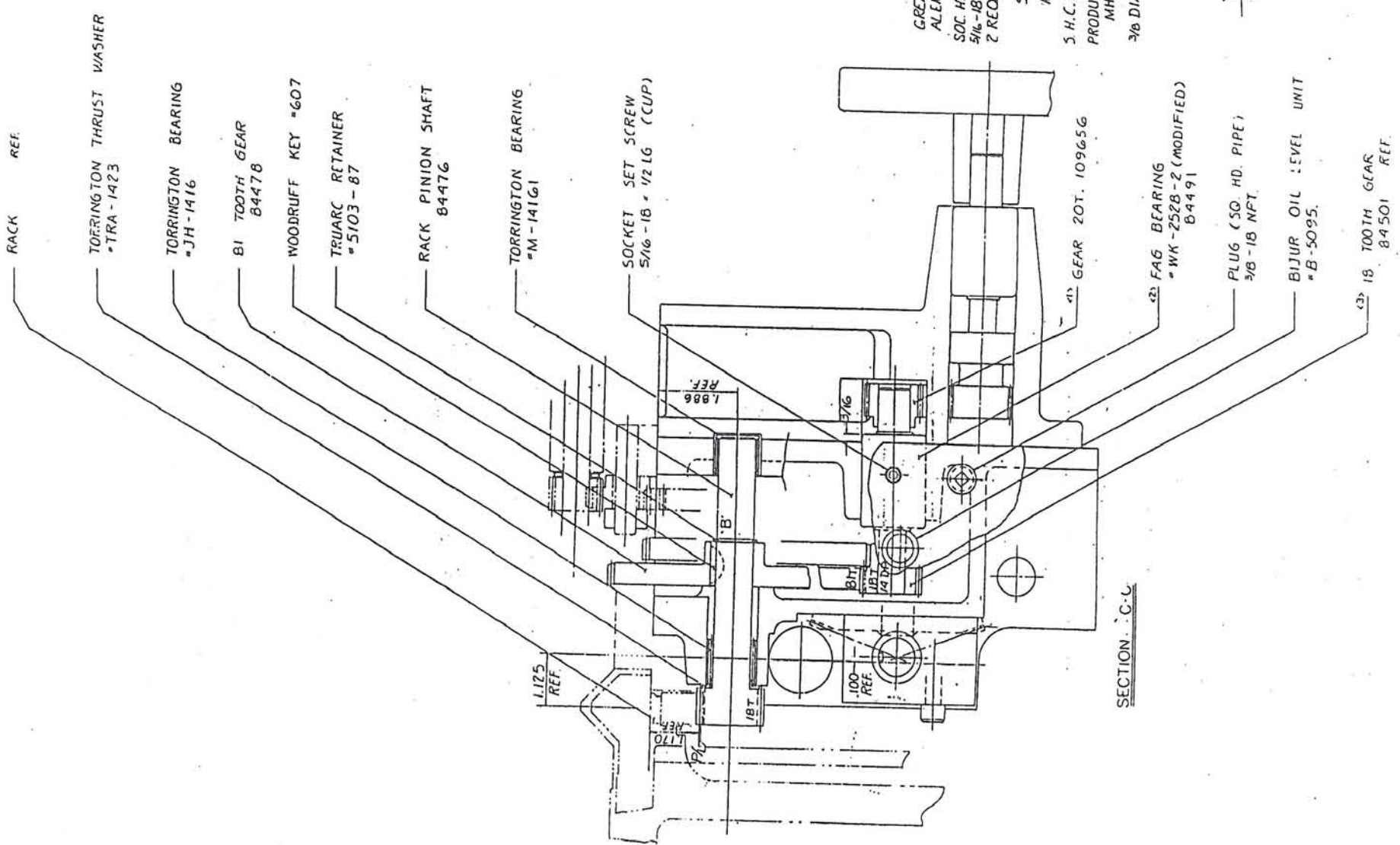
- DOWEL, 1/2 DIA x 2 1/4 LG.
- SPACER, 109707
- GEAR, 109657
- TORRINGTON BEARING
- JH - 612
- LEVER, 84508
- ROUND KNOB (MAROON)
REID'S # 33
7/16 - 20 INSERT
- PLASTIC HAND (BLACK)
REID'S # PTH 202
- LEVER 84493
- SOCKET SET SCREW (CUP PT.)
5/16 - 18 x 3/8 LG.



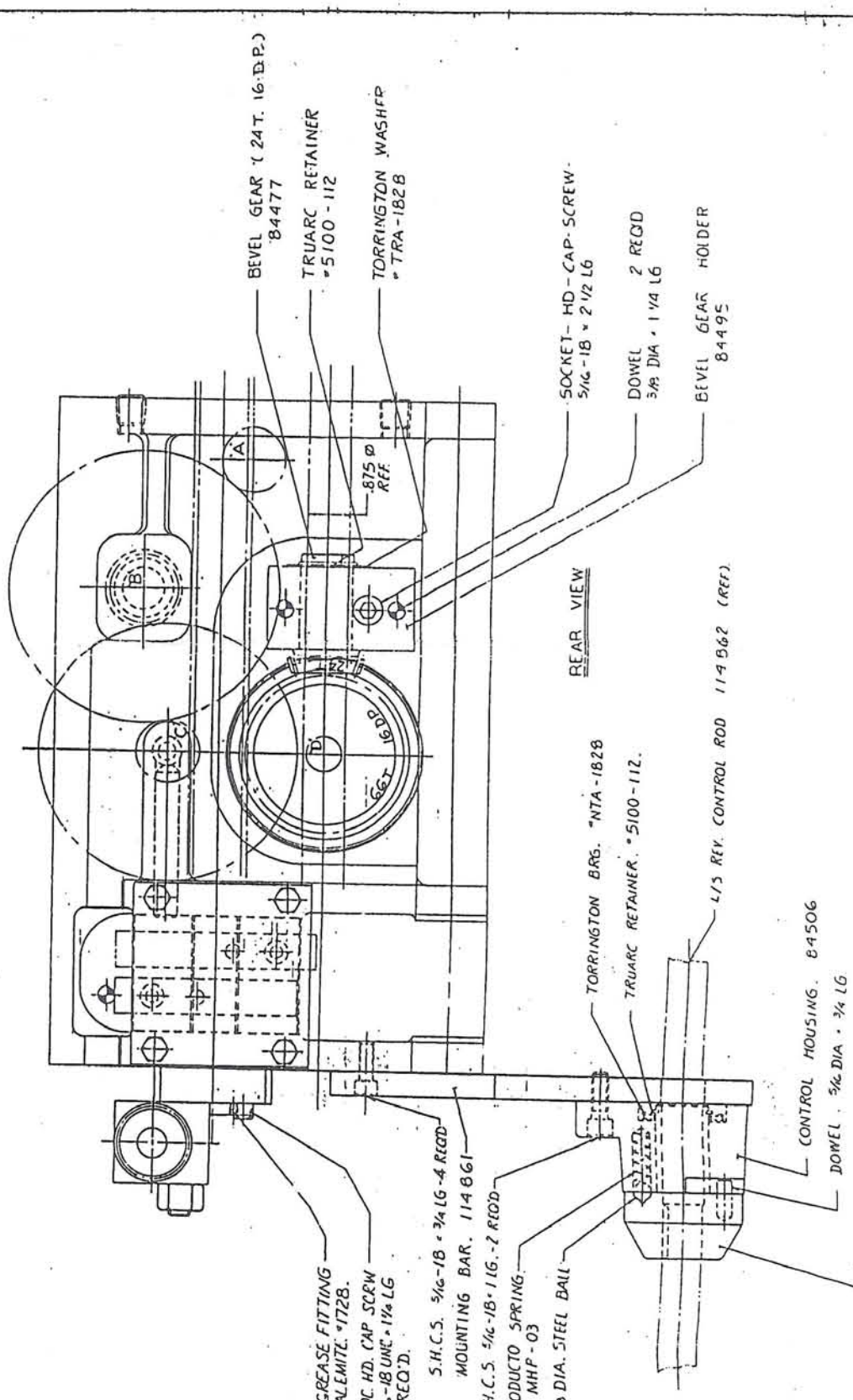
- HALF NUT CONTROL SHAFT
84485
- DOWEL
3/8 DIA x 1 LG
- FLOATING COUPLING
84486

SECTION E-E

I.D.No.	Manufacturer	FSCM	Part No.	Nomenclature	Qty.
84455	OMT	3AA35	84455	PUMP PLUNGER.	1
84456	OMT	3AA35	84456	PUMP HOUSING.	1
84476	OMT	3AA35	84476	RACK PINION SHAFT.	1
84477	OMT	3AA35	84477	24T BEVEL GEAR.	1
84478	OMT	3AA35	84478	81T GEAR.	1
84495	OMT	3AA35	84495	BEVEL GEAR HOLDER.	1
84501	OMT	3AA35	84501	18T GEAR.	1
84506	OMT	3AA35	84506	CONTROL HOUSING.	1
84507	OMT	3AA35	84507	CONTROL HUB.	1
84871	OMT	3AA35	84871	END PLUG.	1
101965	OMT	3AA35	101965	GASKET	1
109565	OMT	3AA35	109565	GEAR	1
114861	OMT	3AA35	114861	MOUNTING BAR	1
101467	TORRINGTON	60380	101467	BEARING.-JH-1416.	1
101471	TORRINGTON	60380	101471	BEARING.-M-14161.	1
101479	TORRINGTON	60380	101479	THRUST RACE.- NTA-1828	1
101484	TORRINGTON	60380	101484	THRUST WASHER.-TRA-1423.	1
101486	TORRINGTON	60380	101486	WASHER.-TRA-1828.	1
101504	FAG	36069	101504	BEARING.-WK-2528-2	1
101754	TRUARC	79136	101754	RETAINER.-5100-112.	1
101777	TRUARC	79136	101777	RETAINER.-5103-87.	1
101836	PRODUCTO		101836	SPRING. - MHP-03	1
101856	BARNES	08337	101856	SPRING.-CO600-055-1250.	1
101942	ALEMITE	95879	101942	GREASE FITTING.-1728.	1
101968	BIJUR	70924	101968	CHECK VALVE.-A3889.	2
101976	BIJUR	70924	101976	OIL LEVEL UNIT.-B5095.	1
	COMMERCIAL			3/8-18 NPT PLUG (SQ. HD. PIPE.)	1
	COMMERCIAL			#607 WOODRUFF KEY.	1
	COMMERCIAL			5/16-18 X 1/2 LG. SOC. SET SCRW (CUP)	1
	COMMERCIAL			5/16-18 X 1-1/4 LG. SOC. HD CAP SCRW	2
	COMMERCIAL			5/16-18 X 2-1/2 LG. SOC. HD. CAP SCRW	1
	COMMERCIAL			5/16-18 X 1 SOC HD CAP SCREW	2
	COMMERCIAL			5/16-18 X 3/4 SOC HD CAP SCREW	4
	COMMERCIAL			3/8 DIA. X 1-1/4 LG. DOWEL.	2
	COMMERCIAL			5/16 DIA. X 3/4 LG. DOWEL.	1
	COMMERCIAL			#014 "O" RING.	2
	COMMERCIAL			#120 "O" RING.	2
	COMMERCIAL			#020 "O" RING.	1
	COMMERCIAL			5/16-18 X 5/8 LG. BUTT HD SOC CAP SCRW	1
	COMMERCIAL			BALL, 3/8 DIA. HARDENED STEEL.	1



SCRAP SECTION D-D
(SHEET #1) REF.

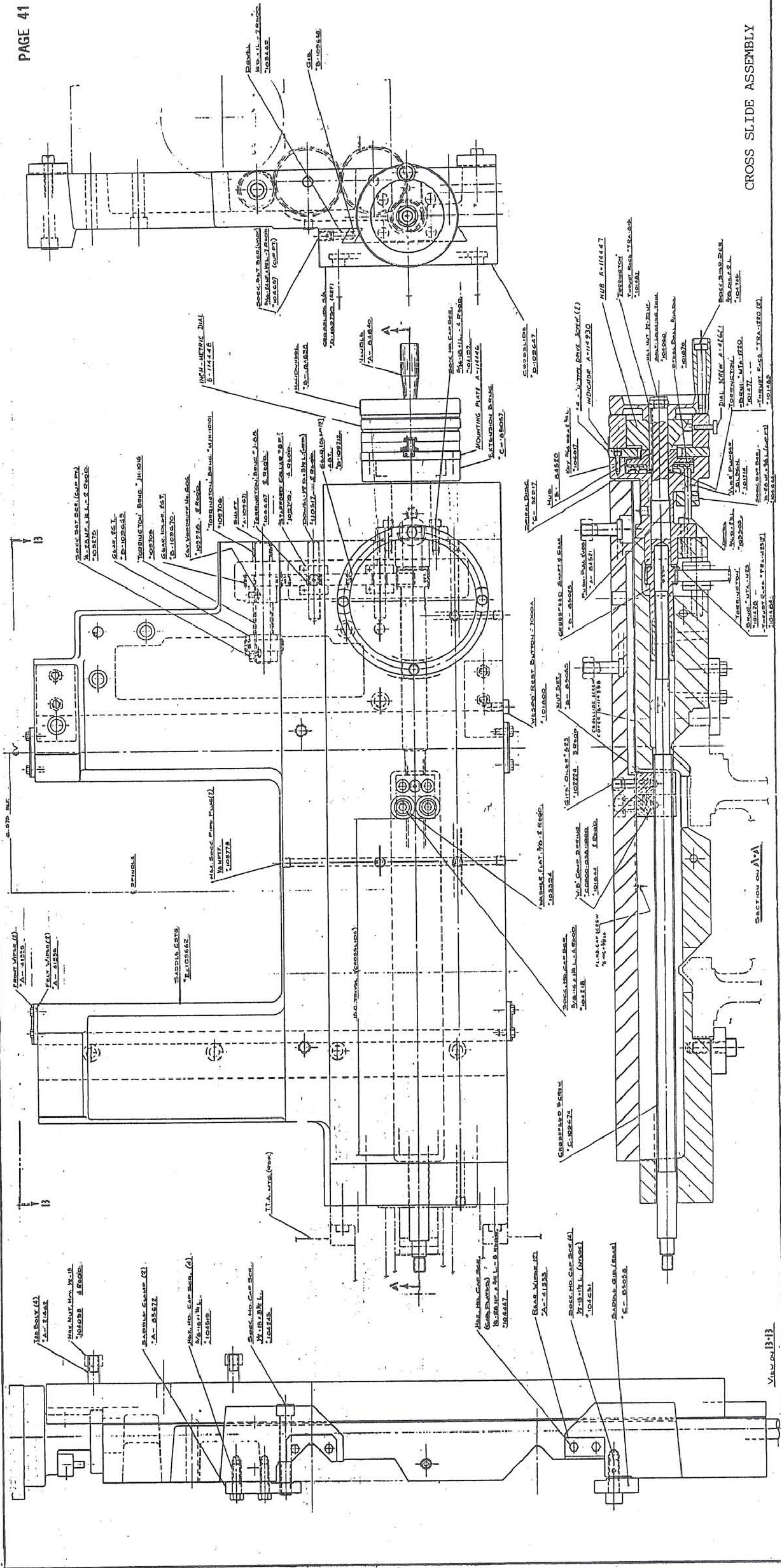


REAR VIEW

413 TO 413 GEAR/BRG ASSY 109656

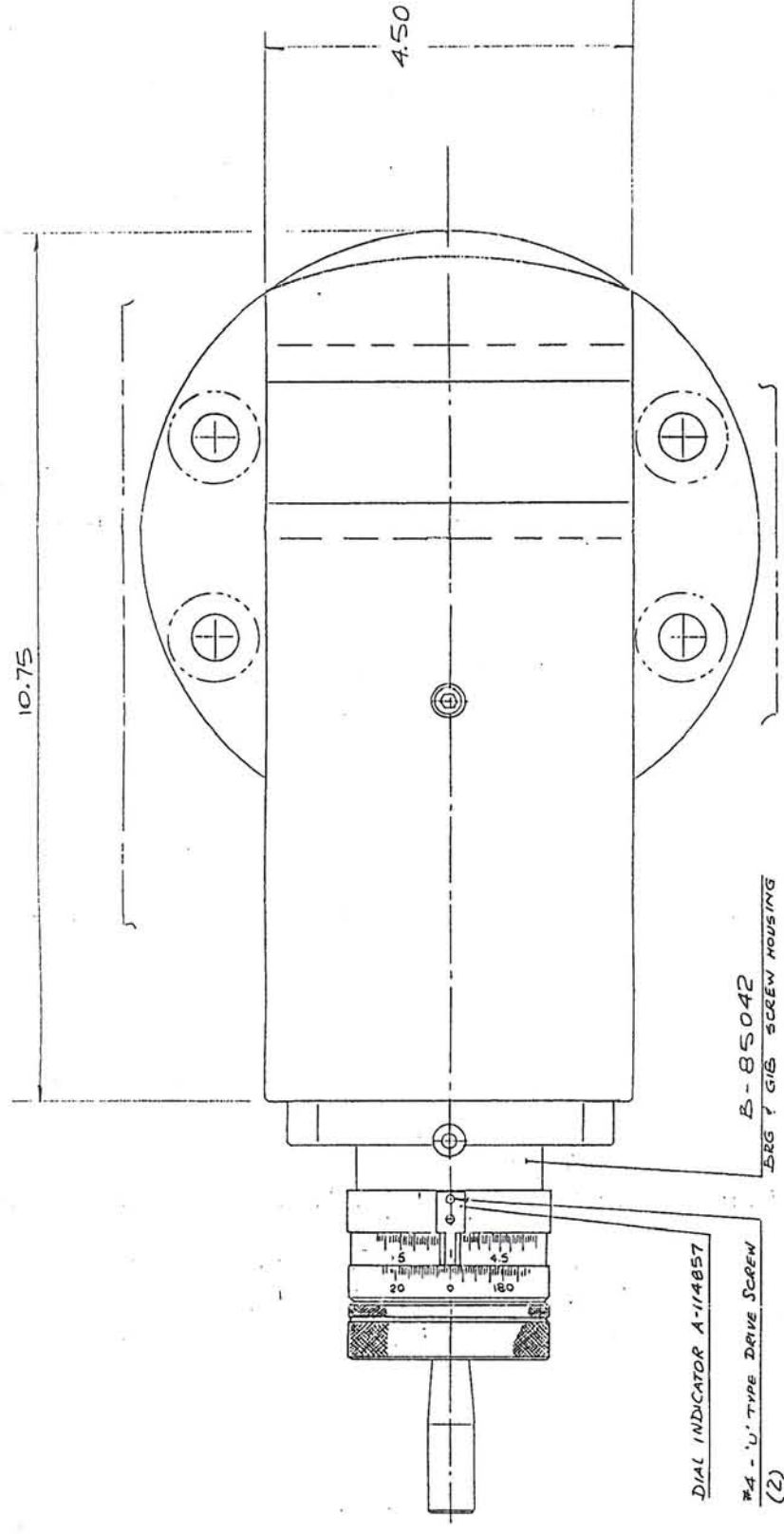
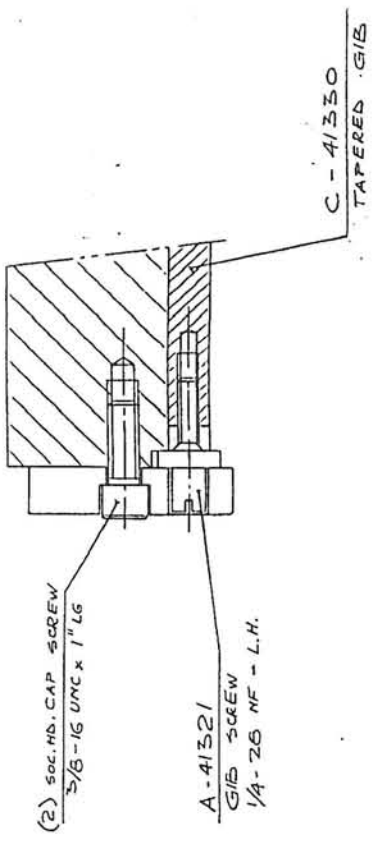
I.D.No.	Manufacturer	FSCM	Part No.	Nomenclature	Qty.
21462	OMT	3AA35	21462	TEE BOLT	2
32917	OMT	3AA35	32917	SPIRAL DISC	1
41333	OMT	3AA35	41333	REAR WIPER	2
41335	OMT	3AA35	41335	FRONT WIPER	2
41336	OMT	3AA35	41336	FELT WIPER	2
42621	OMT	3AA35	42621	DIAL SCREW	1
83672	OMT	3AA35	83672	SADDLE CLAMP	2
84520	OMT	3AA35	84520	HUB	1
84521	OMT	3AA35	84521	PUSH-PULL KNOB	1
84838	OMT	3AA35	84838	HANDWHEEL	1
84840	OMT	3AA35	84840	HANDLE	1
85025	OMT	3AA35	85025	CROSSFEED SHAFT & GEAR	1
85055	OMT	3AA35	85055	NUT SET	1
85057	OMT	3AA35	85057	EXTENSION BEARING	1
85058	OMT	3AA35	85058	REAR SADDLE GIB	1
109647	OMT	3AA35	109647	CROSS SLIDE	1
109648	OMT	3AA35	109648	GIB	1
109662	OMT	3AA35	109662	SADDLE CASTING	1
109669	OMT	3AA35	109669	GEAR, 26T	1
109670	OMT	3AA35	109670	GEAR, IDLER, 26T	1
109671	OMT	3AA35	109671	SHAFT	1
109674	OMT	3AA35	109674	CROSSFEED SCREW	1
109712	OMT	3AA35	109712	GEAR, IDLER, 48T	2
109759	OMT	3AA35	109759	CROSS SLIDE SUB/ASSY	REF
114446	OMT	3AA35	114446	MOUNTING PLATE	1
114447	OMT	3AA35	114447	HUB	1
114448	OMT	3AA35	114448	INCH/METRIC DIAL	1
114930	OMT	3AA35	114930	INDICATOR	1
114988	OMT	3AA35	114988	CROSS SLIDE SCREW COVER	1
101477	TORRINGTON	60380	NTA-1220	BEARING	1
101478	TORRINGTON	60380	NTA-1425	BEARING	1
101481	TORRINGTON	60380	TRA-816	THRUST RACE	1
101483	TORRINGTON	60380	TRA-1220	THRUST RACE	1
101484	TORRINGTON	60380	TRA-1425	THRUST RACE	1
101714	VLIER	01226	BL56N	PLUNGER	1
101800	WESPO	01226	7000A	REST BUTTON	1
101844	WALLACE BARNES	08337	C-0800-038-1000	SPRING	1
102224	GITS	0BT82	523	OILER	1
106687	TORRINGTON	60380	J-88	BEARING	2
109709	STAFFORD	65646	8P	COLLAR	4
115258	INA	27737	SCH1018	BEARING	1
115259	INA	27737	BCH1010	BEARING	1

I.D.No.	Manufacturer	FSCM	Part No.	Nomenclature	Qty.
	COMMERCIAL			SOC. SET SCREW 1/4 - 28 X 1/4 CUP POINT	2
	COMMERCIAL			WASHER, FLAT 3/8	2
	COMMERCIAL			DOWEL 1/4 DIA. X 1	7
	COMMERCIAL			DOWEL 5/16 DIA. X 2 1/4	1
	COMMERCIAL			DOWEL 1/2 DIA. X 3 1/2	2
	COMMERCIAL			HEX. SOC. PIPE PLUG 1/8 NPTF	7
	COMMERCIAL			WOODRUFF KEY #606 3/16 X 3/4	2
	COMMERCIAL			HEX. NUT, HVY 1/2 - 13	4
	COMMERCIAL			HEX. NUT 1/2 - 20 SELF-LOCKING	1
	COMMERCIAL			SOC. HD. CAP SCREW 5/16 - 18 X 1	4
	COMMERCIAL			SOC. HD. CAP SCREW 3/8 - 16 X 1 1/4	4
	COMMERCIAL			SOC. HD. CAP SCREW 1/2 - 13 X 3 1/2	1
	COMMERCIAL			HEX. HD. CAP SCREW 3/8 - 16 X 1 1/4	4
	COMMERCIAL			SOC. HD. CAP SCREW 1/2 - 13 X 1 1/2	4
	COMMERCIAL			SOC. SET. SCREW 1/4 - 28 X 3/4 CUP POINT	1
	COMMERCIAL			SOC. SET SCREW 5/16 - 24 X 1/2 NYLOK	7
	COMMERCIAL			SHOULDER SCREW 3/8 DIA. X 2	1
	COMMERCIAL			KEY 3/16 X 3/16 X 2 3/4	1
	COMMERCIAL			HEX. HD. CAP SCREW	8
	COMMERCIAL			FLAT. HD. CAP SCREW #6-32 x 3/8	1
	COMMERCIAL			STEEL BALL 3/16DIA.	1
	COMMERCIAL			DRIVE SCREW #4 'U' TYPE	2



I.D.No.	Manufacturer	FSCM	Part No.	Nomenclature	Qty.
41307	OMT	3AA35	41307	COMPOUND SLIDE	1
41319	OMT	3AA35	41319	COMPOUND NUT	1
41321	OMT	3AA35	41321	GIB SCREW	1
41330	OMT	3AA35	41330	TAPERED GIB	1
41498	OMT	3AA35	41498	SWIVEL BASE	1
83673	OMT	3AA35	83673	THUMB WHEEL	1
84882	OMT	3AA35	84882	HANDLE	1
85042	OMT	3AA35	85042	BEARING & GIB SCREW HOUSING	1
85043	OMT	3AA35	85043	COMPOUND SCREW	1
114439	OMT	3AA35	114439	MOUNTING PLATE	1
114440	OMT	3AA35	114440	HUB	1
114441	OMT	3AA35	114441	DIAL	1
114857	OMT	3AA35	114857	INDICATOR	1
102223	GITS	OBT82	522	OILER	1
101475	TORRINGTON	60380	NIA-815	THRUST RACE	2
101488	TORRINGTON	60380	TRB-815	THRUST RACE	4
	COMMERCIAL			DOWEL 5/8 DIA. X 2	1
	COMMERCIAL			HEX. NUT 1/2 - 20 MS 20364-820 NYLOK	1
	COMMERCIAL			HEX. SOC. PIPE PLUG 1/8	1
	COMMERCIAL			SOC. HD. CAP SCREW 3/8 - 16 X 1	1
	COMMERCIAL			SOC. HD. CAP SCREW 6 - 32 X 3/8	3
	COMMERCIAL			SOC. HD. CAP SCREW 1/4 - 20 X 2	1
	COMMERCIAL			WOODRUFF KEY #406 1/8 X 3/4	1
	COMMERCIAL			#4 "U" TYPE DRIVE SCREW	2

SCRAP SECTION XX



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

GITS. OILER # 522

TORRINGTON THRUST RACE (4)

TRB-B15 (.066/.063 THK)

TORRINGTON THRUST BEARING (2)

NTA-B15 (.0761)

406 WOODRUFF KEY
(1/8 x 3/4 DIA)

INCH METRIC DIAL 8-114441

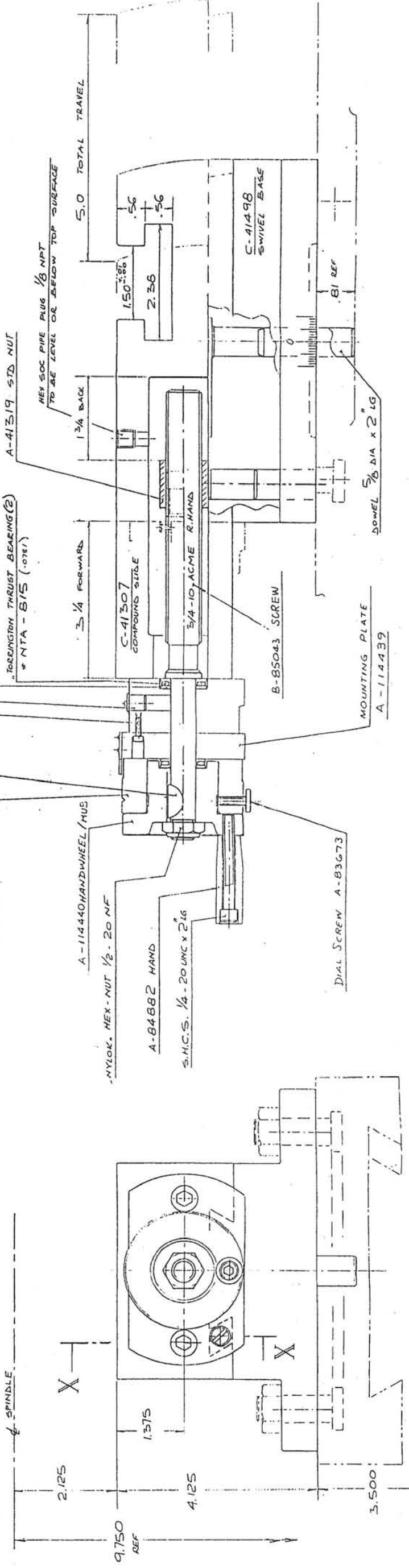
-NYLOK. HEX-NUT 1/2-20 NF

A-84882 HAND

S.H.C.S. 1/4-20 UNC x 2 1/4

A-114440 HANDWHEEL/HUB

DIAL SCREW A-83673



I.D.No.	Manufacturer	FSCM	Part No.	Nomenclature	Qty.
21415	OMT	3AA35	21415	SPRING	1
22639	OMT	3AA35	22639	LATHE CENTER #4 MT	1
41223	OMT	3AA35	41223	TAILSTOCK BASE CASTING	1
41224	OMT	3AA35	41224	CLAMP PLATE	1
41232	OMT	3AA35	41232	RETAINER	1
41235	OMT	3AA35	41235	CLAMP NUT	1
41236	OMT	3AA35	41236	CLAMP HANDLE	1
41238	OMT	3AA35	41238	CLAMP SHAFT	1
41241	OMT	3AA35	41241	CLAMP BOLT	1
41242	OMT	3AA35	41242	ADJUSTING SCREW	2
41243	OMT	3AA35	41243	ADJUSTING BLOCK	2
41465	OMT	3AA35	41465	SPINDLE SCREW	1
41466	OMT	3AA35	41466	BEARING SEAT COLLAR	1
41467	OMT	3AA35	41467	BEARING SPACER	1
41468	OMT	3AA35	41468	BEARING RETAINER	1
41469	OMT	3AA35	41469	HANDWHEEL	1
41470	OMT	3AA35	41470	CLAMP LEVER	1
41477	OMT	3AA35	41477	INSERT	1
41518	OMT	3AA35	41518	BUTTON HD. SCREW, MODIFIED	1
84494	OMT	3AA35	84494	HANDLE	1
84600	OMT	3AA35	84600	GRADUATED PLATE	1
114077	OMT	3AA35	114077	HOUSING	1
114079	OMT	3AA35	114079	REPLACABLE NUT	1
114081	OMT	3AA35	114081	CLAMP BUSHING	1
114144	OMT	3AA35	114144	CLAMP STUD	1
114957	OMT	3AA35	114957	SPINDLE #4 MT	1
101555	SKF	36121	6208-2RS	BALL BEARING	1
101795	WILLIAMS	65814		T-BOLT 3/4-10 X 6	1
102225	GITS	OBT82	533	OIL HOLE COVER	2
	WESPO		6001	WASHER	1
	CARR LANE		6004	WASHER	1
	CARR LANE		6010	WASHER	1
	PARKER		2-330	O-RING	1
	COMMERCIAL			DRIVE SCREW #4 X 1/4 TYPE U	2
	COMMERCIAL			FELT WICK 1/4 DIA. X 1 1/2	1
	COMMERCIAL			HARD DOWEL 3/8 DIA. X 2	1
	COMMERCIAL			HARD. HEAVY HEX NUT 3/4 - 10	1
	COMMERCIAL			HEX. HD. MACH. SCREW 3/8 - 16 X 5/8	1
	COMMERCIAL			MILLED STUD 5/8 DIA. X 5	1
	COMMERCIAL			PLAIN WASHER 3/8 X 1 1/8	1
	COMMERCIAL			SOC. HD. CAP SCREW 3/8 - 24 X 3/4	1
	COMMERCIAL			SOC. SET SCREW 3/8 - 16 X 3/8 NYLOK	1
	COMMERCIAL			SOC. HD. CAP SCREW 3/8 - 16 X 1 1/2	4
	COMMERCIAL			SOC. HD. CAP SCREW 3/8 - 16 X 2 1/2 LOCWEL	1
	COMMERCIAL			SOC. HD. CAP SCREW 1/4 - 28 X 1	2
	COMMERCIAL			SOC. HD. CAP SCREW 5/16 - 18 X 1 1/4	4
	COMMERCIAL			SOC. SHOULDER SCREW 3/8 DIA. X 3	1
	COMMERCIAL			STEEL BALL 5/16 DIA.	2
	COMMERCIAL			WOODRUFF KEY #607	1

A-41518
BUTTON HD. SCR. (MOD.)

UNCLAMPED POSITION

B-11A061
CLAMP BUSH

MILLED STUD
3/8 DIA. x 5" LG.

A-41235
CLAMP NUT

"WESPO" NR 6010
(1 1/2 x 5/32 x 5/8)

SECTION A-A
WITH VIEW ON ARROW A

A-41466
BRNG. SEAT
COLLAR

SOC. HD. CAP SCREW 3/8-24 x 3/4 LG.

A-41232
RETAINER

SOC. HD. CAP SCREW 1/2-20 x 1/2 LG.

10° WRK.
C° FIN.

9.750
NOT TO SCALE

ASSY. NOTE: - LOCATE CENTRE PUNCH MARK AS INDICATED
AND MOUNT LEVER TO OBTAIN POSITION SHOWN.

GRADUATED PLATE
A-84600

ADJ. SCREW
A-41242
2 REED.

ADJ. BLOCK
A-41243
2 REED.

SOC. HD. CAP SCREW
3/8-16 x 1 1/2 LONG
4 REED.

R.H. VIEW WITH HANDWHEEL REMOVED

TAILSTOCK ASSEMBLY

SOC. HD. CAP SCREW 1/2-20 x 1 1/4 LG.
2 REED.
(SHOWN 90° OUT OF TRUE POSITION)

SOC. HD. CAP SCREW 3/8-16 x 1 1/4 LG.
4 REED.
(SHOWN 45° OUT OF TRUE POSITION)

B-41468
BRNG. RET.

C-43281
HANDWHEEL

A-41467

D-RING "PACKET"
2 1/2 x 2 1/8 x 1/16
HEX HD. MACH. SCREW
3/8-16 x 5/8 LG.

PLAIN HEAVY WASHER 3/8 ID. x 1/8 O.D.

HARD. HEAVY HEX NUT 3/4-10 UNC
(1 1/4 ACROSS FLATS)

"WILLIAMS" NR 808 (FINAL ASSEMBLY)
7.5 MAX. DIA.

"WESPO" NR 6004
(1 1/2 x 5/32 x 5/32)

BASE
D-41223

T-SLOT BOLT "WILLIAMS" 3/8-10 UNC x 6 LONG

ASSY. NOTE: - SOC. HD. CAP SCREW "LOCWEL" 3/8-16 x 2 1/2 LG.
- ADJUST FOR .020" CLEARANCE WHEN PLATE IS CLAMPED.

C-11A075
REPLACEMENT NUT

B-41236
CLAMP HANDLE

"GITS" NR 533
2 REED.

E-114077 HOUSING

C-11A957 SPINDLE
HARD BOWEL 3/8 DIA. x 1 1/4 LG.
B-41465 SPINDLE SCREW
3/8-5 TRI. ACME - L.H.

FELT WICK
1/4 DIA. x 1 1/2 LG.

B-41238
CLAMP SHAFT

BALL .3125 DIA.

CLAMP STUD
C-11A144

CLAMP PLATE
C-41224

A-41477
INSERT

A-41241
CLAMP BOLT
"WESPO" NR 6012
(2 x 1 1/2 x 5/32)

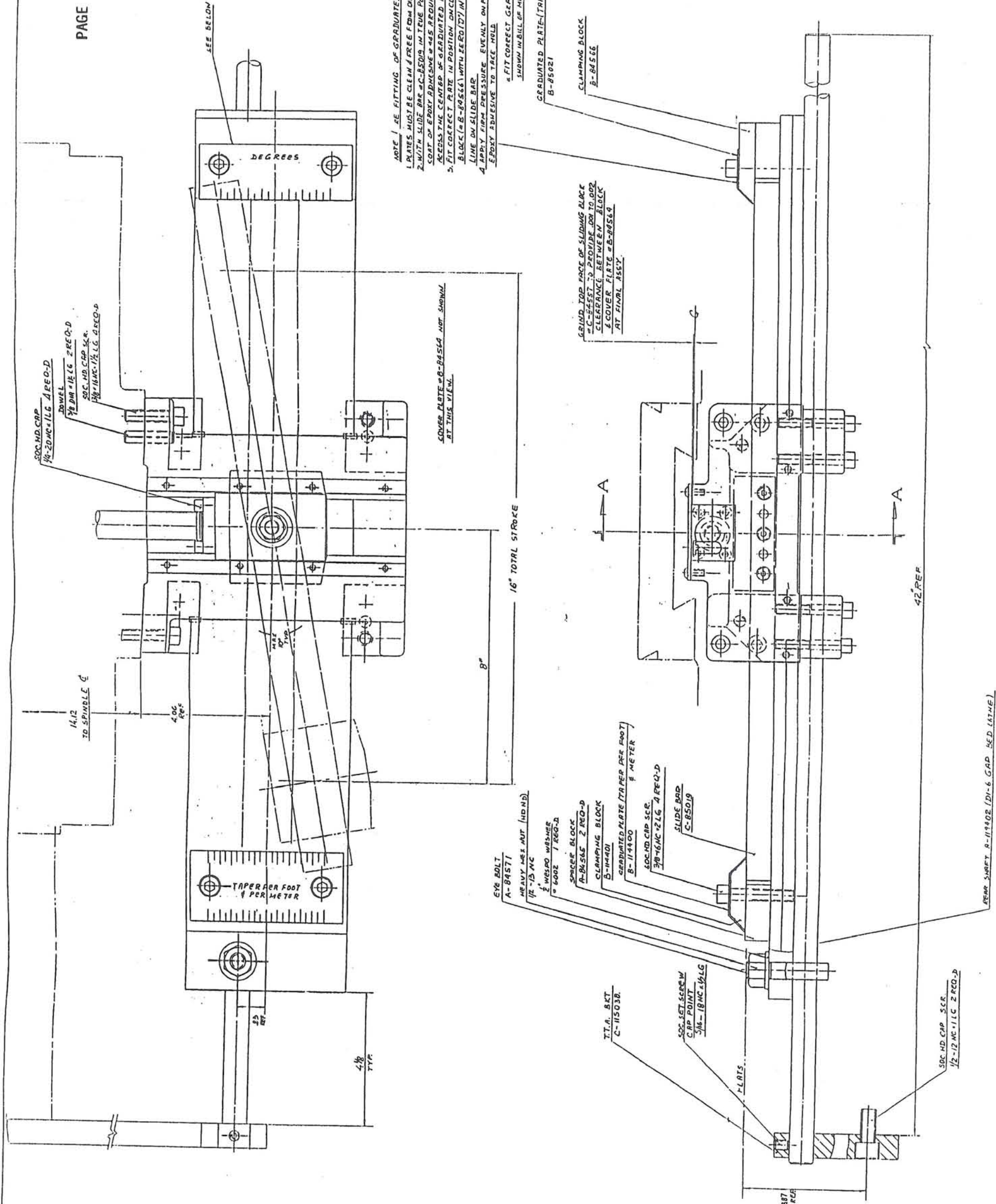
SOC. SET SCREW
3/8-16 x 5/8 "NYLON"

A-21415
SPRING

SECTION B-B

I.D.No.	Manufacturer	FSCM	Part No.	Nomenclature	Qty.
84557	OMT	3AA35	84557	SLIDING BLOCK	1
84458	OMT	3AA35	84458	BLOCK	1
84559	OMT	3AA35	84559	SLIDER	1
84560	OMT	3AA35	84560	BRACKET	1
84561	OMT	3AA35	84561	GUIDE BLOCK	4
84562	OMT	3AA35	84562	FELT WIPER	4
84563	OMT	3AA35	84563	BRIDGE BAR	2
84564	OMT	3AA35	84564	COVER PLATE	1
84565	OMT	3AA35	84565	SPACER BLOCK	2
84566	OMT	3AA35	84566	CLAMPING BLOCK	1
84568	OMT	3AA35	84568	PIVOT BOLT	2
84571	OMT	3AA35	84571	EYE BOLT	1
84828	OMT	3AA35	84828	GIB PLATE	1
85018	OMT	3AA35	85018	SLIDE PLATE	1
85019	OMT	3AA35	85019	SLIDE BAR	1
85021	OMT	3AA35	85021	GRADUATED PLATE DEGREES	1
106996	OMT	3AA35	106996	TELESCOPIC TAPER ATTACHMENT HOUSING	1
114400	OMT	3AA35	114400	COMBINATION GRADUATED PLATE ins/FT & mm/METRE	1
114401	OMT	3AA35	114401	CLAMP BLOCK	1
114402	OMT	3AA35	114402	REAR SHAFT	1
115038	OMT	3AA35	115038	BRACKET	1
115078	TORRINGTON	60380	NTA-1018	ROLLER BEARING	2
101482	TORRINGTON	60380	TRA-1018	THRUST RACE	2
101488	TORRINGTON	60380	TRB-815	THRUST RACE	1
101498	TORRINGTON	60380	TRC-1018	THRUST RACE	2
101497	TORRINGTON	60380	TRC-815	THRUST RACE	1
102222	GITS	OBT82	521	OILER	4
115065	WESPO	94882	6002	WASHER	1
115079	GITS	OBT82	1708	ELBOW OIL CUP	1
115080	SPAE NAUR	94223	RB-247	RUBBER GROMMET	1

I.D.No.	Manufacturer	FSCM	Part No.	Nomenclature	Qty.
	COMMERCIAL			1/2-20 "NYLOK" HEX NUT.	2
	COMMERCIAL			5/16-18 X 2 LG. SOC. HD CAP SCRW	16
	COMMERCIAL			#2-20 "HUGLOCK" NUT.	1
	COMMERCIAL			3/8-16 X 3/4 LG. HEX HD. CAP SCRW.	4
	COMMERCIAL			1/2-13 HEAVY HEX NUT.	1
	COMMERCIAL			#10-32 X 1/2 LG. BUTT. HD SOC CAP SCRW	8
	COMMERCIAL			5/16-18 X 1/2 LG. "LOCWEL" SOC SET SCW	3
	COMMERCIAL			1/4-28 X 5/8 LG. "LOCWEL" SOC SET SCW	4
	COMMERCIAL			1/4 X 3/4 LG. DOWEL.	2
	COMMERCIAL			5/16-18 X 1/2 LG. SOC. SET SCRW CUP PT	1
	COMMERCIAL			3/8-16 X 2 LG. SOC HD CAP SCRW.	4
	COMMERCIAL			3/8 FLAT WASHER.	2
	COMMERCIAL			3/8-16 X 1-1/2 LG. HEX HD CAP SCRW	2
	COMMERCIAL			1/4-20 X 1 LG. SOC. HD CAP SCRW.	4
	COMMERCIAL			3/8 DIA. X 1-1/2 LG. DOWEL.	2
	COMMERCIAL			3/8-16 X 1-1/2 LG. HEX HD. CAP SCRW.	4
	COMMERCIAL			1/4-20 X 5/8 LG. BUT HD SOC CAP SCRW.	2
	COMMERCIAL			1/4 SPRING LOCKWASHER.	2
	COMMERCIAL			1/4 DIA. FLAT WASHER.	1
	COMMERCIAL			1/4-20 WELD NUT.	1
	COMMERCIAL			1/8 CLOSE NIPPLE	1
	COMMERCIAL			1/8 PIPE COUPLING	1



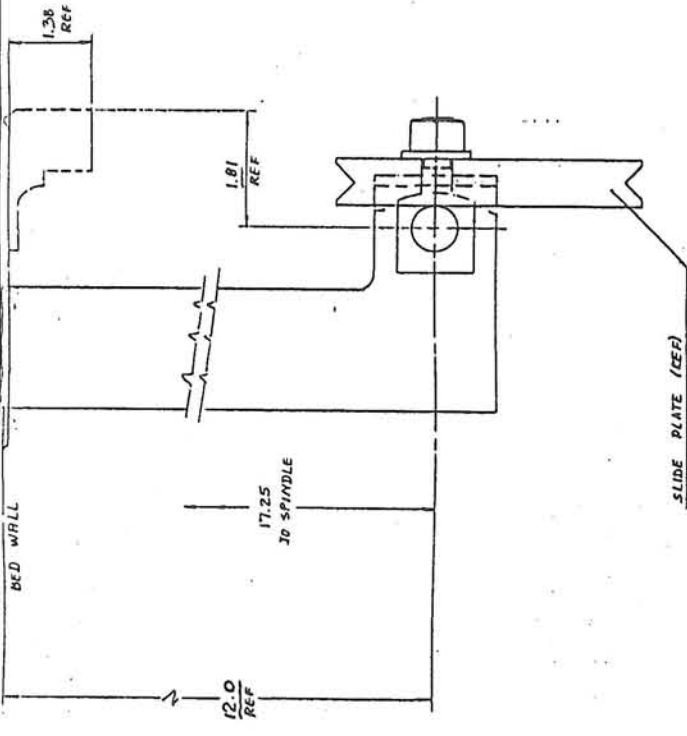
NOTE 1 - FITTING OF GRADUATED PLATES

1. PLATES MUST BE CLEAN & FREE FROM OIL, GREASE, DUST, ETC.
2. WITH SLIDE BAR C-85019 IN TRUE POSITION, APPLY LIGHT COAT OF EPOXY ADHESIVE #445 AROUND OUTER EDGE & ACROSS THE CENTER OF GRADUATED PLATES.
3. FIT CORRECT PLATE IN POSITION, ON CLAMPING BLOCK (B-84566) WITH ZERO (0) IN ALIGNMENT WITH CENTER LINE ON SLIDE BAR.
4. APPLY FIRM PRESSURE, EVENLY ON PLATE TO ALLOW EPOXY ADHESIVE TO TAKE HOLD.
5. FIT CORRECT GRADUATED PLATE AS SHOWN IN BILL OF MATERIAL PARTS LIST.

COVER PLATE #B-84564 NOT SHOWN AT THIS VIEW.

GRIND TOP FACE OF SLIDING BLOCK - C-84567 TO PROVIDE .001 TO .002 CLEARANCE BETWEEN BLOCK & COVER PLATE #B-84564 AT FINAL ASSEMBLY.

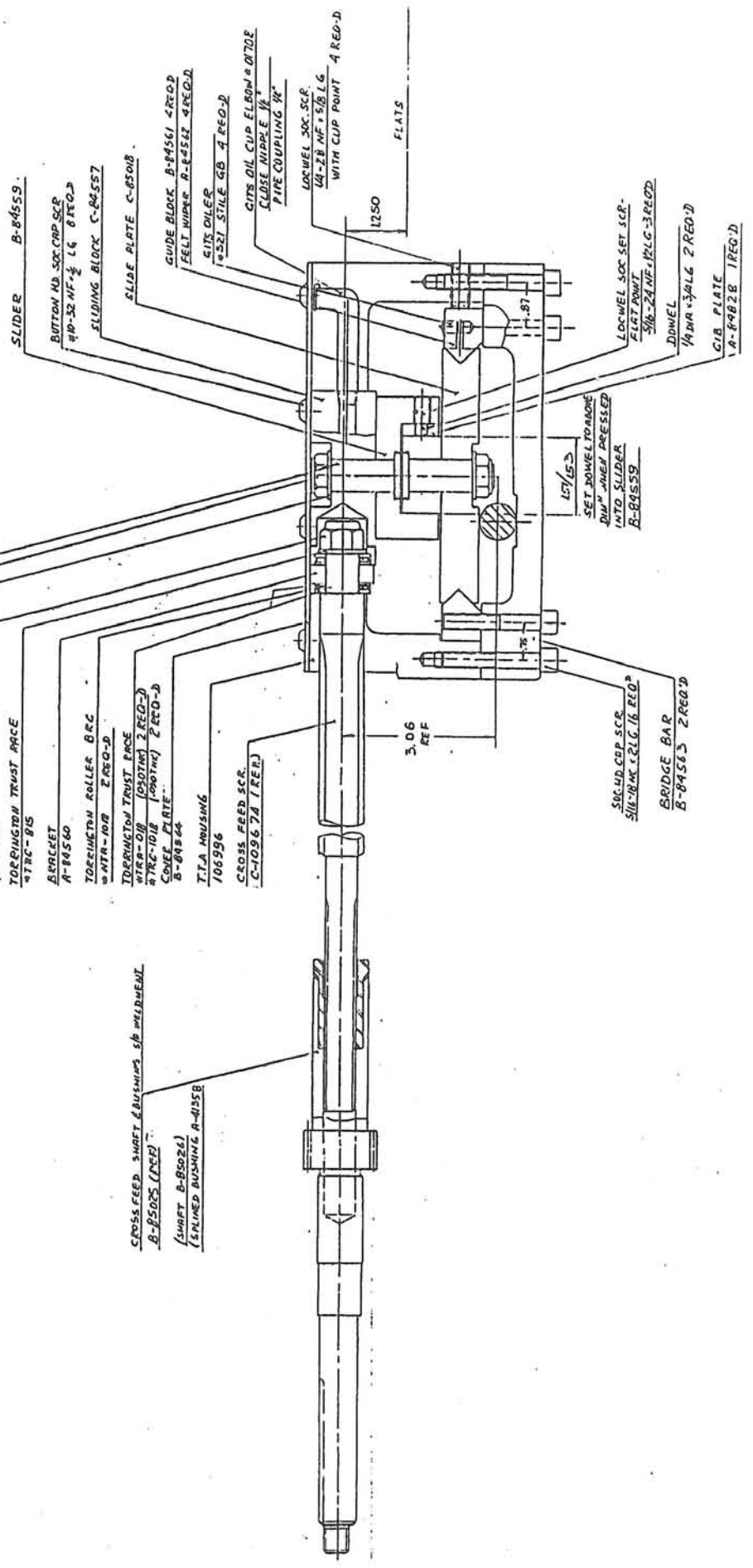
NO.	DESCRIPTION	QTY	UNIT
1	GRADUATED PLATE (TAPER IN DEGREES)	1	PC
2	CLAMPING BLOCK	1	PC
3	SLIDE BAR	1	PC
4	SPACER BLOCK	2	PC
5	CLAMPING BLOCK	2	PC
6	GRADUATED PLATE (TAPER PER FOOT)	1	PC
7	SOC HD CAP SCR	2	PC
8	SLIDE BAR	1	PC
9	SOC HD CAP SCR	2	PC
10	REAR SHAFT	1	PC
11	T.T.A. BKT	1	PC
12	SOC LST SCREW CAP POINT	1	PC
13	SOC HD CAP SCR	2	PC



SLIDE PLATE (REF)
C-85018

- PIVOT BOLT A-8456B 2 REQ³
- NYLON HEX NUT 47-20 N.P. 2 REQ³
- TORRINGTON THRUST RACE WTCB 2 REQ³
- WASHER NUT 47-20 N.A.
- TORRINGTON THRUST RACE 4TRC-85
- BRACKET A-84560
- TORRINGTON ROLLER BRC 4TRC-848 2 REQ³
- TORRINGTON THRUST RACE WTR-08 (5021M) 2 REQ³
- TRC-1018 (5001M) 2 REQ³
- GUIDE PLATE B-84564
- T.T.A HOUSING 106996
- CROSS FEED SCR. C-10967A 1 REF

CROSS FEED SHAFT & BUSHINGS SH WELDED
B-85025 (REF)
(SHAFT B-8024)
(SHIMED BUSHING A-81558)

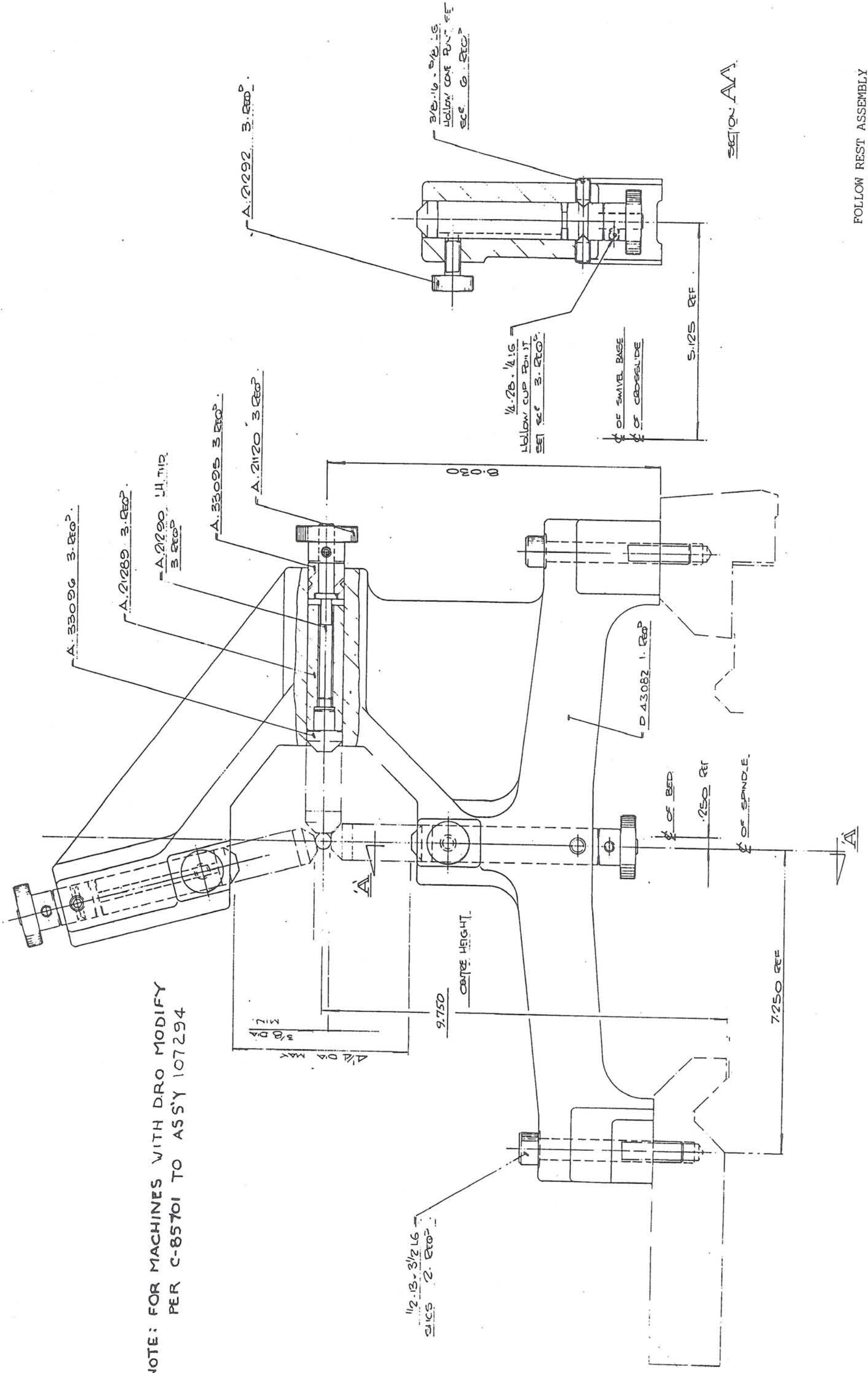


SECTION A-A

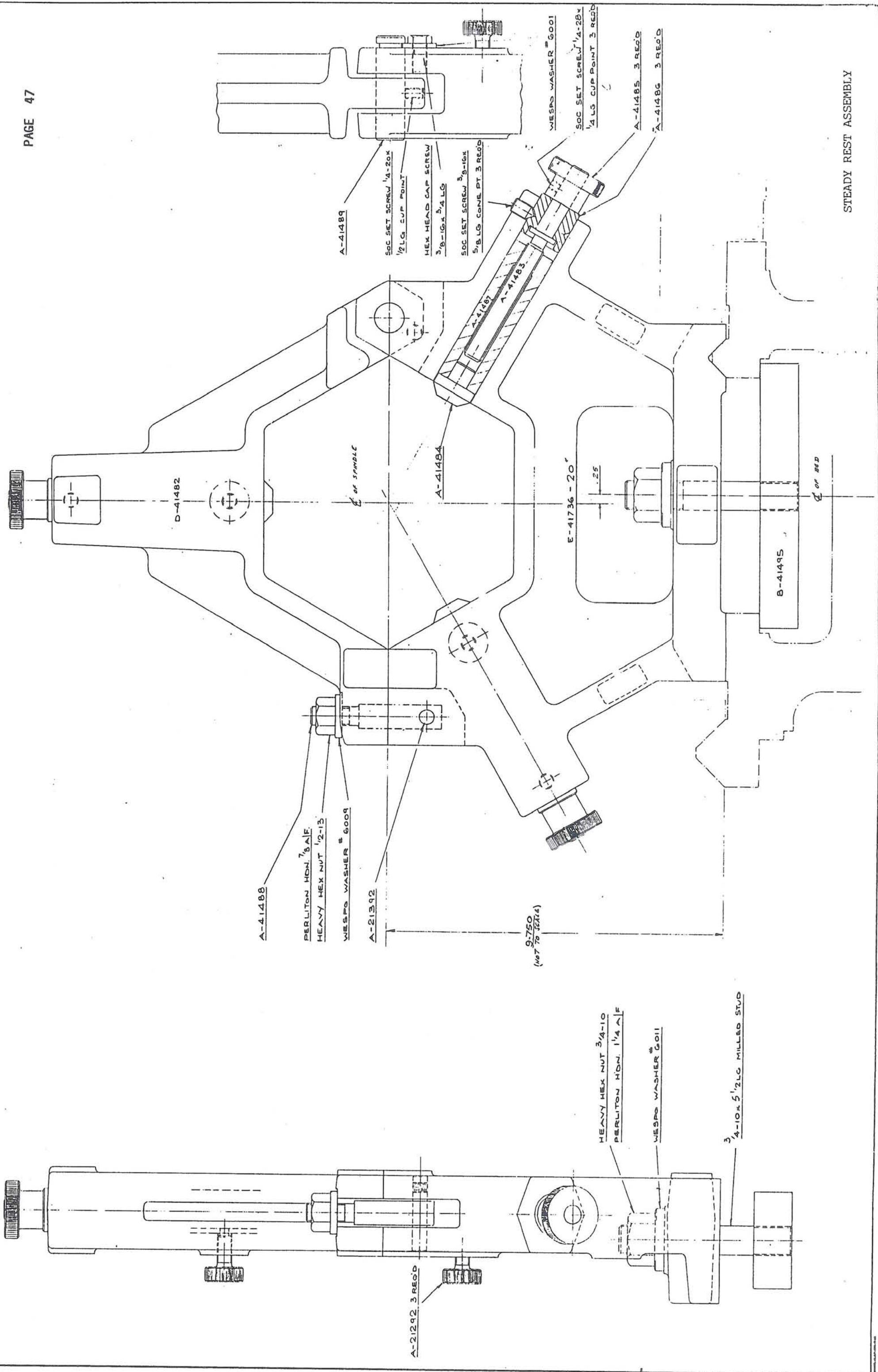
REV	DATE	BY	CHKD
1			

I.D.No.	Manufacturer	FSCM	Part No.	Nomenclature	Qty.
21120	OMT	3AA35	21120	KNOB	3
21289	OMT	3AA35	21289	SPACER	3
21290	OMT	3AA35	21290	THREADED SHAFT	3
21292	OMT	3AA35	21292	CLAMP SCREW	3
33095	OMT	3AA35	33095	BUSHING	3
33096	OMT	3AA35	33096	CONTACT TIP	3
42371	OMT	3AA35	42371	FOLLOW REST CASTING	1
	COMMERCIAL			1/2 x 13 x 3-1/2 SOC. HD. CAP SCREW	2
	COMMERCIAL			3/8-16 x 5/8 SOC. SET SCREW CONE PT.	6
	COMMERCIAL			1/4-18 x 1/4 SOC SET SCREW CUP PT.	3

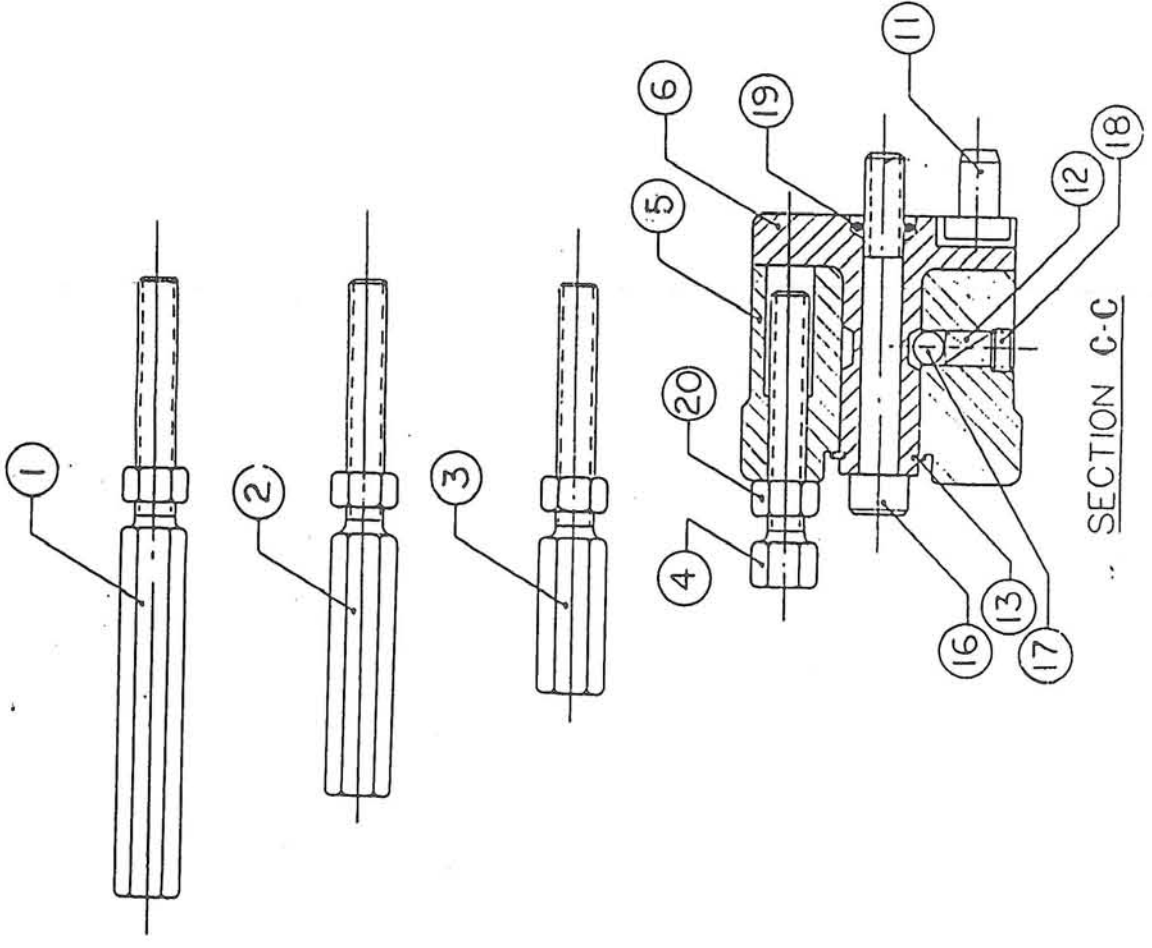
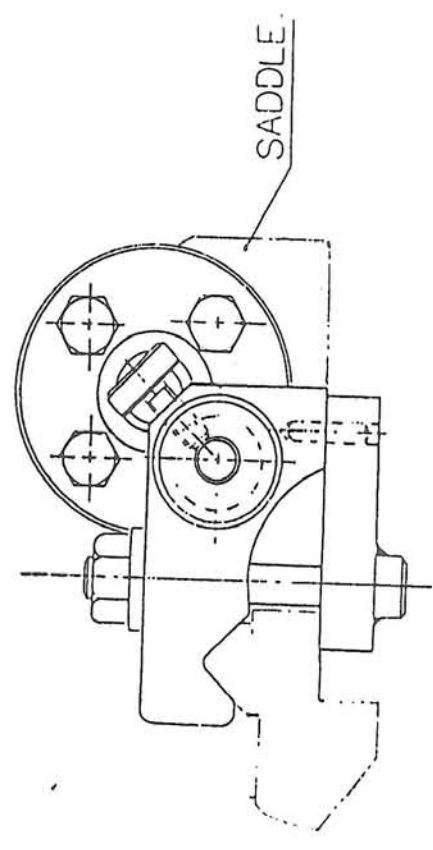
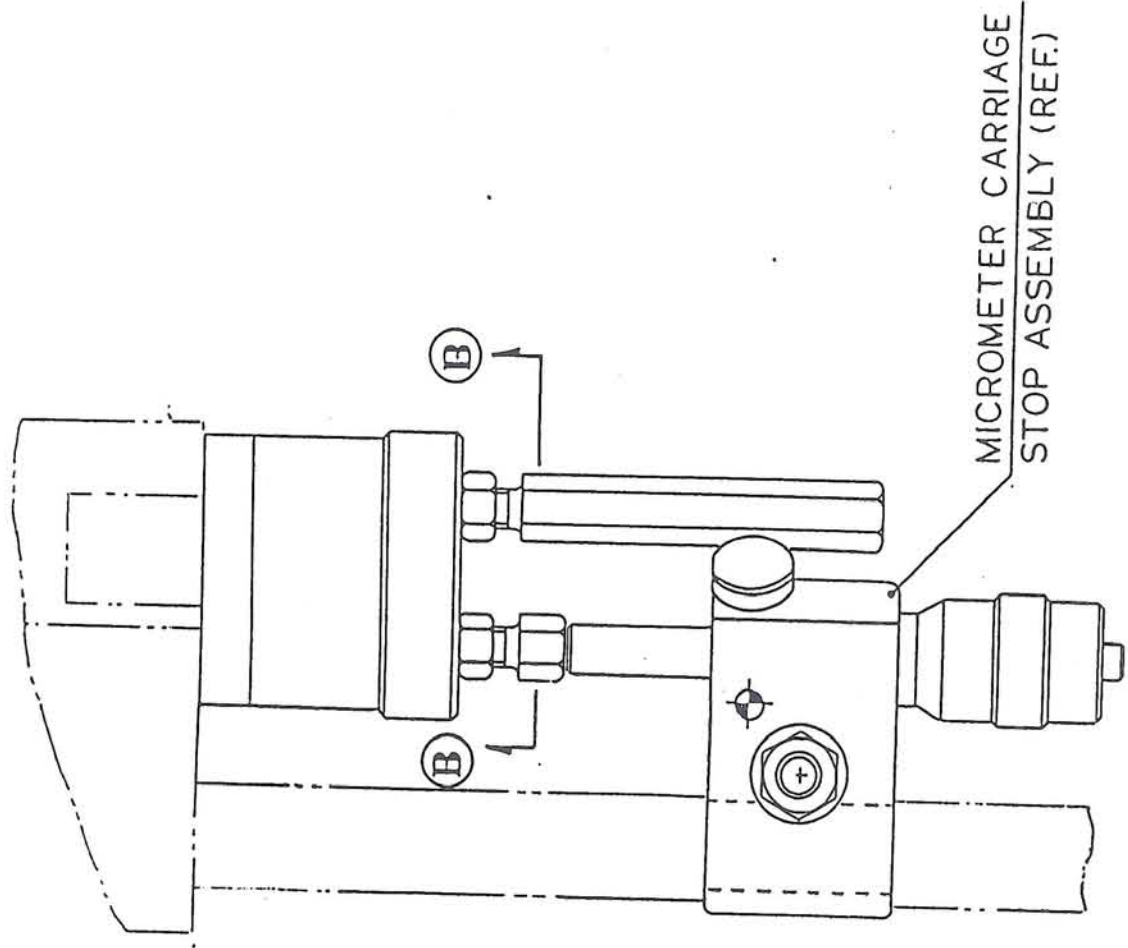
NOTE: FOR MACHINES WITH DRO MODIFY
PER C-85701 TO ASS'Y 107294



I.D.No.	Manufacturer	FSCM	Part No.	Nomenclature	Qty.
21292	OMT	3AA35	21292	CLAMP SCREW	3
21392	OMT	3AA35	21392	PIVOT PIN	1
41482	OMT	3AA35	41482	SWING TOP CASTING	1
41483	OMT	3AA35	41483	SCREW, ADJUSTING	3
41484	OMT	3AA35	41484	BUTTON	3
41485	OMT	3AA35	41485	HAND KNOB	3
41486	OMT	3AA35	41486	BUSHING	3
41487	OMT	3AA35	41487	THREADED BUSHING	3
41488	OMT	3AA35	41488	EYE BOLT	1
41489	OMT	3AA35	41489	KING PIN	1
41495	OMT	3AA35	41495	CLAMP	1
41736	OMT	3AA35	41736	BASE CASTING	1
	WESPO		6011	WASHER	1
	WESPO		6009	WASHER	1
	WESPO		6001	WASHER	1
	COMMERCIAL			3/4-10 HEAVY HEX NUT	1
	COMMERCIAL			1/2-13 HEAVY HEX NUT	1
	COMMERCIAL			3/4-10 x 5-1/2 MILLED STUD	1
	COMMERCIAL			3/8-16 x 5/8 SOC. SET SCREW CONE PT.	3
	COMMERCIAL			1/4-20 x 1/2 SOC. SET SCREW CUP PT.	1
	COMMERCIAL			1/4-28 x 1/4 SOC. SET SCREW CUP PT.	3
	COMMERCIAL			3/8-16 x 3/4 HEX. HD. CAT SCREW	1



I.D.No.	Manufacturer	FSQM	Part No.	Nomenclature	Qty.
42921	OMT	3AA35	42921	TURRET BASE	1
42922	OMT	3AA35	42922	TURRET BODY	1
42923	OMT	3AA35	42923	4" ADJUSTABLE STOP	1
42924	OMT	3AA35	42924	3" ADJUSTABLE STOP	1
42925	OMT	3AA35	42925	2" ADJUSTABLE STOP	1
42926	OMT	3AA35	42926	1" ADJUSTABLE STOP	1
115058	WESPO		7000A-CL-5-RB	REST BUTTON	1
101842	BARNES	08337	CO300-032-075	COMPRESSION SPRING	1
101784	TRUARC	79136	5108-75	RETAINING RING	1
	COMMERCIAL			3/8-16 x 3 SOC. HD. CAP SCREW	1
	COMMERCIAL			5/16 DIA. STEEL BALL	1
	COMMERCIAL			3/8-16 x 1/4 SOC. SET SCREW CUP POINT	1
	COMMERCIAL			"O" RING "BUNA N" #110	1
	COMMERCIAL			3/8-16 HEX. JAM NUT	4

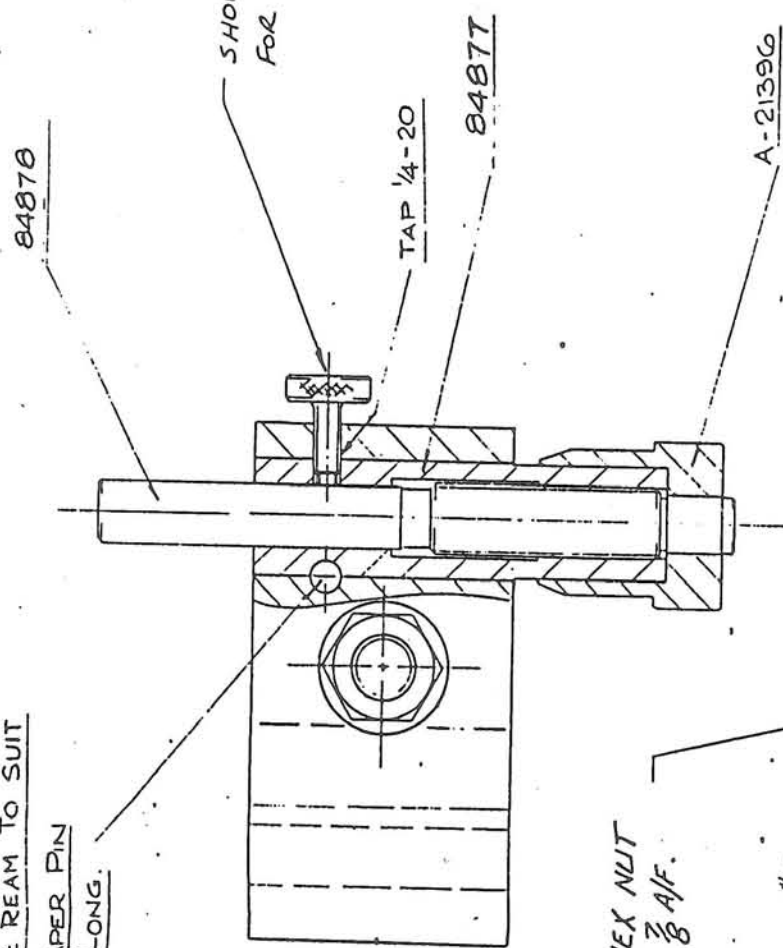


4-POSITION CARRIAGE STOP
ASSEMBLY DRAWING.

I.D.No.	Manufacturer	FSCM	Part No.	Nomenclature	Qty.
21396	OMT	3AA35	21396	KNOB	1
30586	OMT	3AA35	30586	CLAMP SCREW	1
41372	OMT	3AA35	41372	CLAMP	1
41374	OMT	3AA35	41374	BODY	1
41476	OMT	3AA35	41476	COLLAR	1
84877	OMT	3AA35	84877	GRADUATED SLEEVE	1
84878	OMT	3AA35	84878	SCREWED STEM FOR MICROMETER STOP	1
103402	WESPO		103402	WASHER	1
	COMMERCIAL			MILLED STUD 1/2 - 13	1
	COMMERCIAL			HEAVY HEX. NUT 1/2 - 13 X 7/8 A/F	1
	COMMERCIAL			ROLL PIN 1/4 DIA. X 1	1
	COMMERCIAL			#4 x 1-1/2 TAPER PIN	1

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

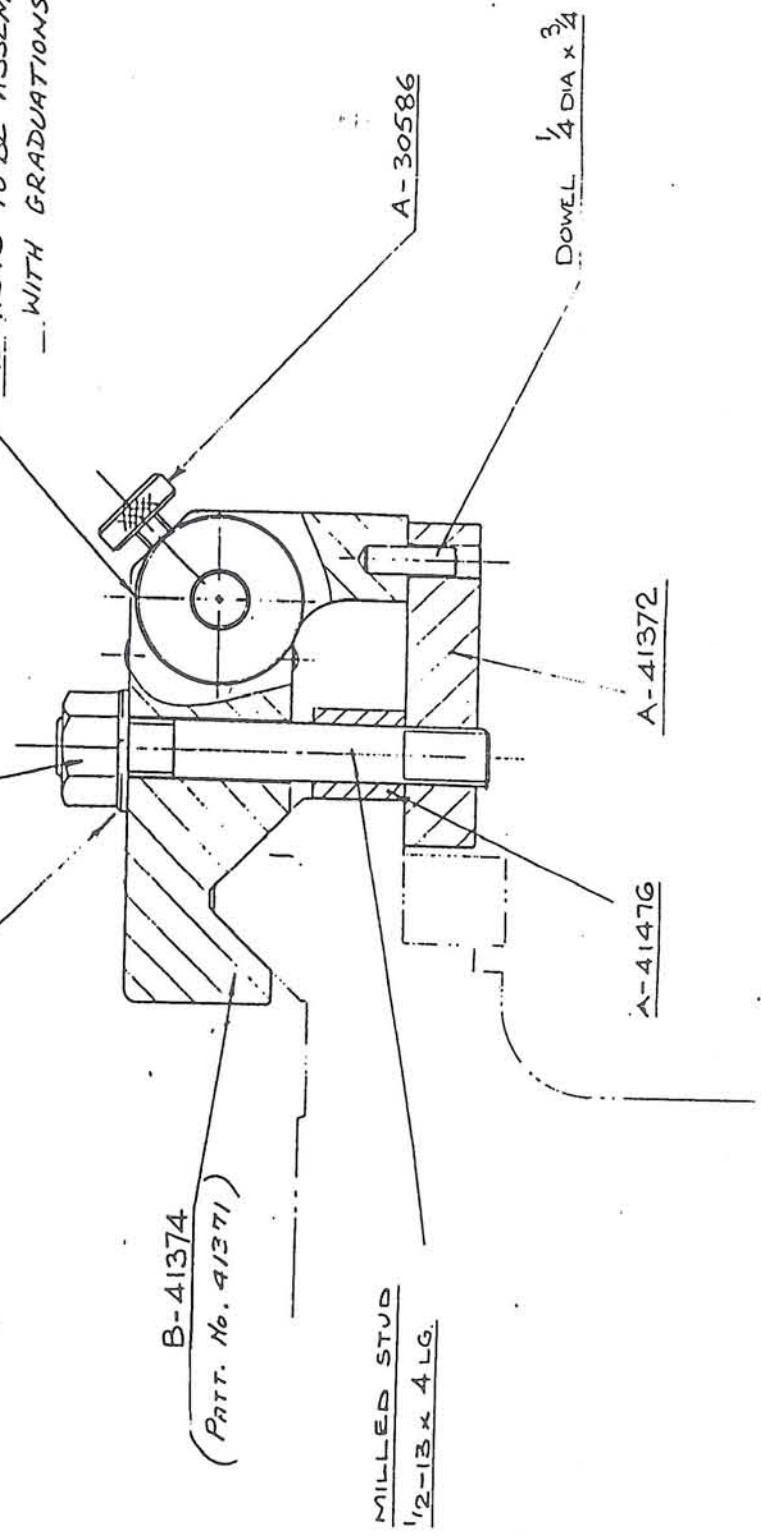
SHOWN OUT OF POS'N
FOR ILLUSTRATION PURPOSES.



HEAVY HEX NUT
1/2-13 x 3/8 A/F.

MESPO WASHER # 6002

B-41373 TO BE ASSEMBLED
WITH GRADUATIONS IN THIS POS'N.



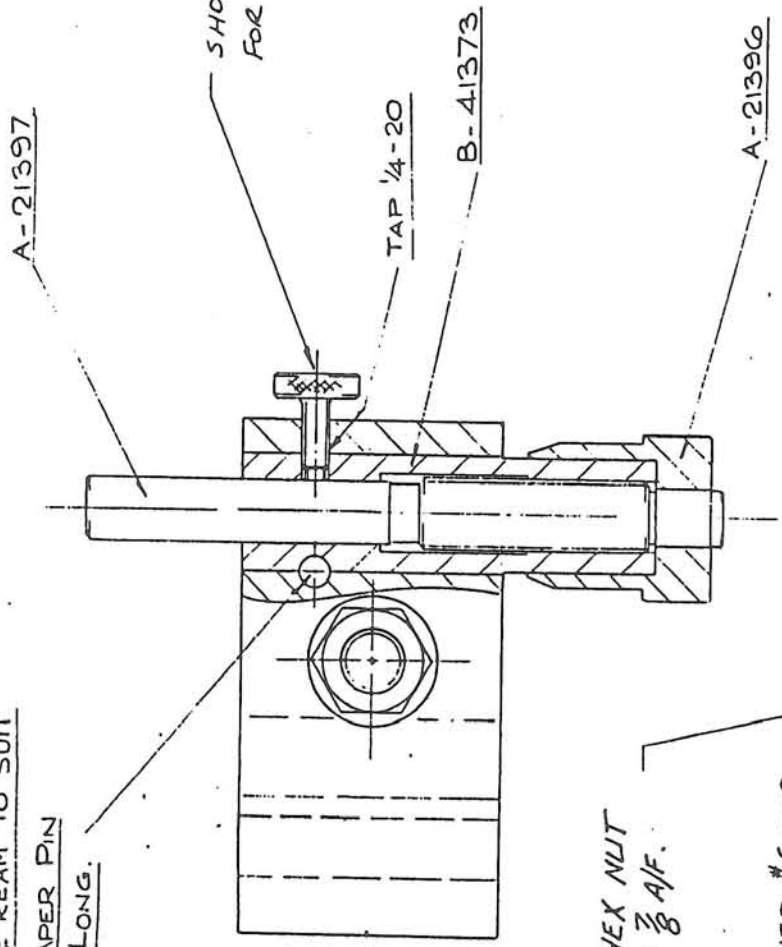
LIST OF ITEMS SHOWN ON: MICROMETER CARRIAGE STOP ASSEMBLY (INCH)

SHEET 1 OF 1

I.D.No.	Manufacturer	FSCM	Part No.	Nomenclature	Qty.
21396	OMT	3AA35	21396	KNOB	1
21397	OMT	3AA35	21397	SCREWED STEM FOR MICROMETER STOP	1
30586	OMT	3AA35	30586	CLAMP SCREW	1
41372	OMT	3AA35	41372	CLAMP	1
41373	OMT	3AA35	41373	GRADUATED SLEEVE	1
41374	OMT	3AA35	41374	BODY	1
41476	OMT	3AA35	41476	COLLAR	1
103402	WESPO		103402	WASHER	1
	COMMERCIAL			MILLED STUD 1/2 - 13	1
	COMMERCIAL			HEAVY HEX. NUT 1/2 - 13 X 7/8 A/F	1
	COMMERCIAL			ROLL PIN 1/4 DIA. X 1	1
	COMMERCIAL			#4 x 1-1/2 TAPER PIN	1

DRILL #4 (2.09 DIA.) & REAM TO SUIT
#4 TAPER PIN
1/2 LONG.

SHOWN OUT OF POS'N
FOR ILLUSTRATION PURPOSES.



A-21397

TAP 1/4-20

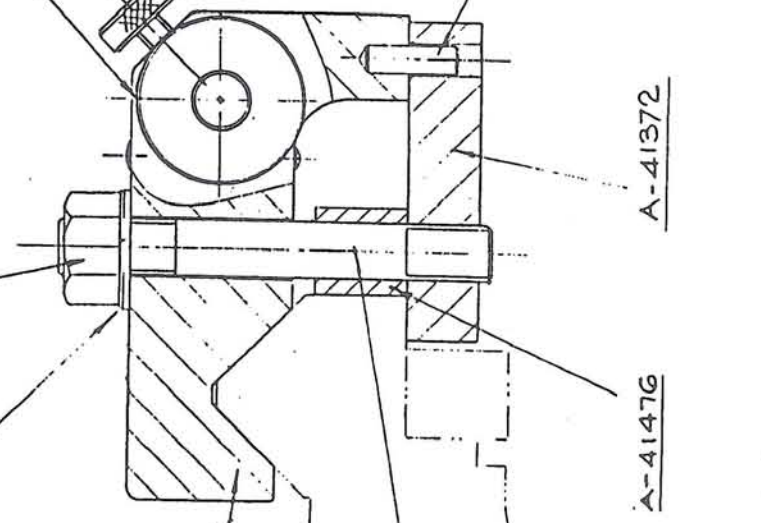
B-41373

A-21396

HEAVY HEX NUT
1/2-13 x 3/8 A/F.

NESPO WASHER #6002

B-41373 TO BE ASSEMBLED
WITH GRADUATIONS IN THIS POS'N.



B-41374
(PART. No. 41371)

MILLED STUD
1/2-13 x 4 LG.

(A)

A-30586

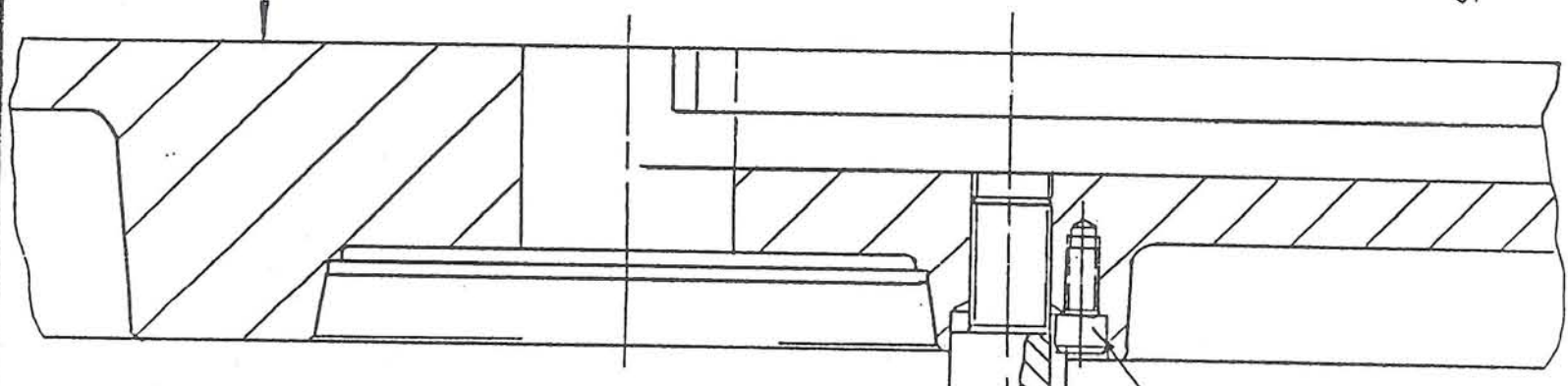
DOWEL 1/4 DIA x 3/4

A-41372

A-41476

I.D.No.	Manufacturer	FSCM	Part No.	Nomenclature	Qty.
115108	OMT	3AA35	115108	15" DIA. FACEPLATE	1
101641	OMT	3AA35	101641	D1-6 CAMLOCK STUD	6
	COMMERCIAL			5/16-18 x 5/8 SOC. HD. CAP SCREW	6

115108

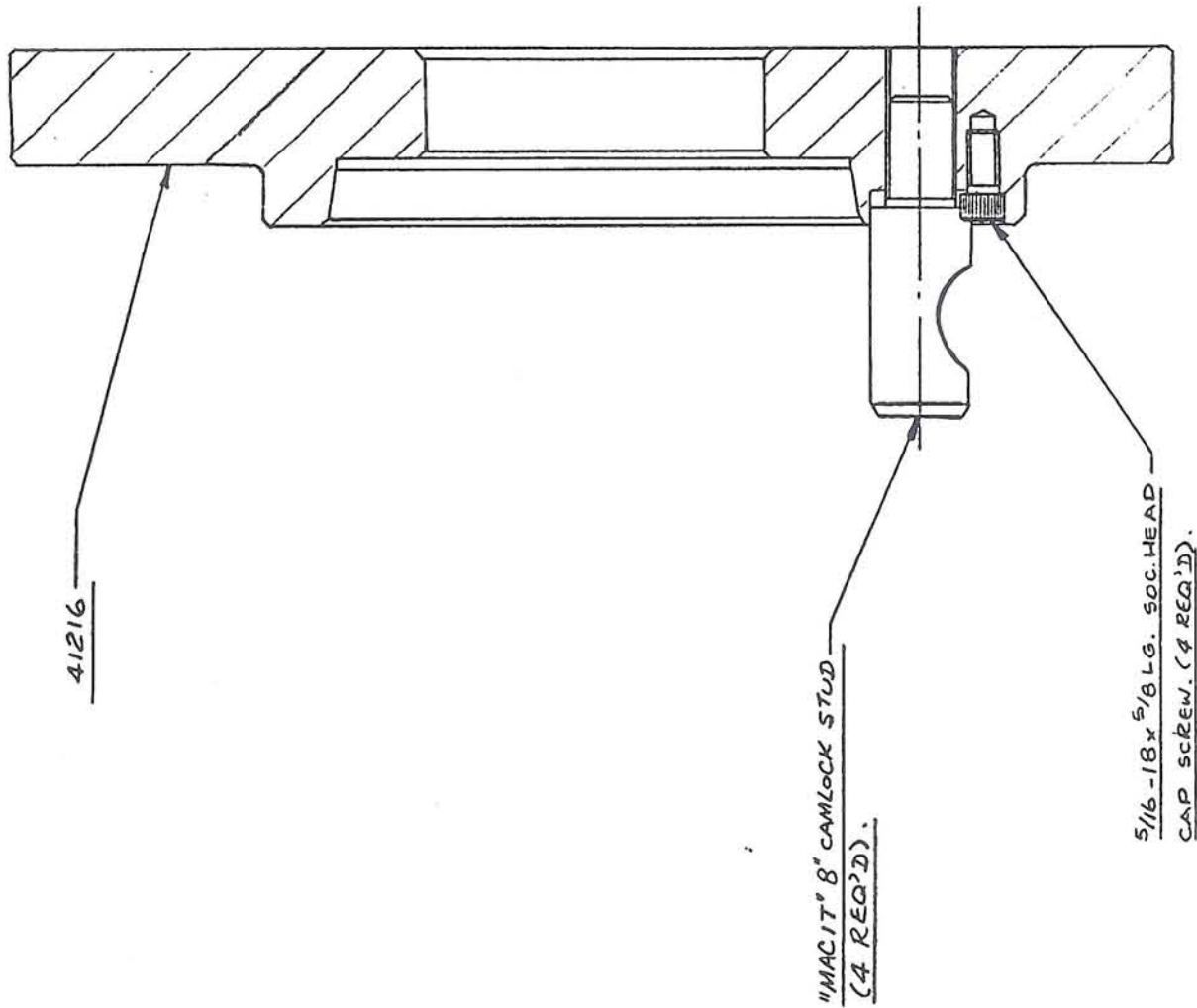


"MACIT" 6"
CAMLOCK STUD
6-REQ'D

5/16-18 x 5/8 LG
SOC. HD. CAP SCREWS
6-REQ'D.

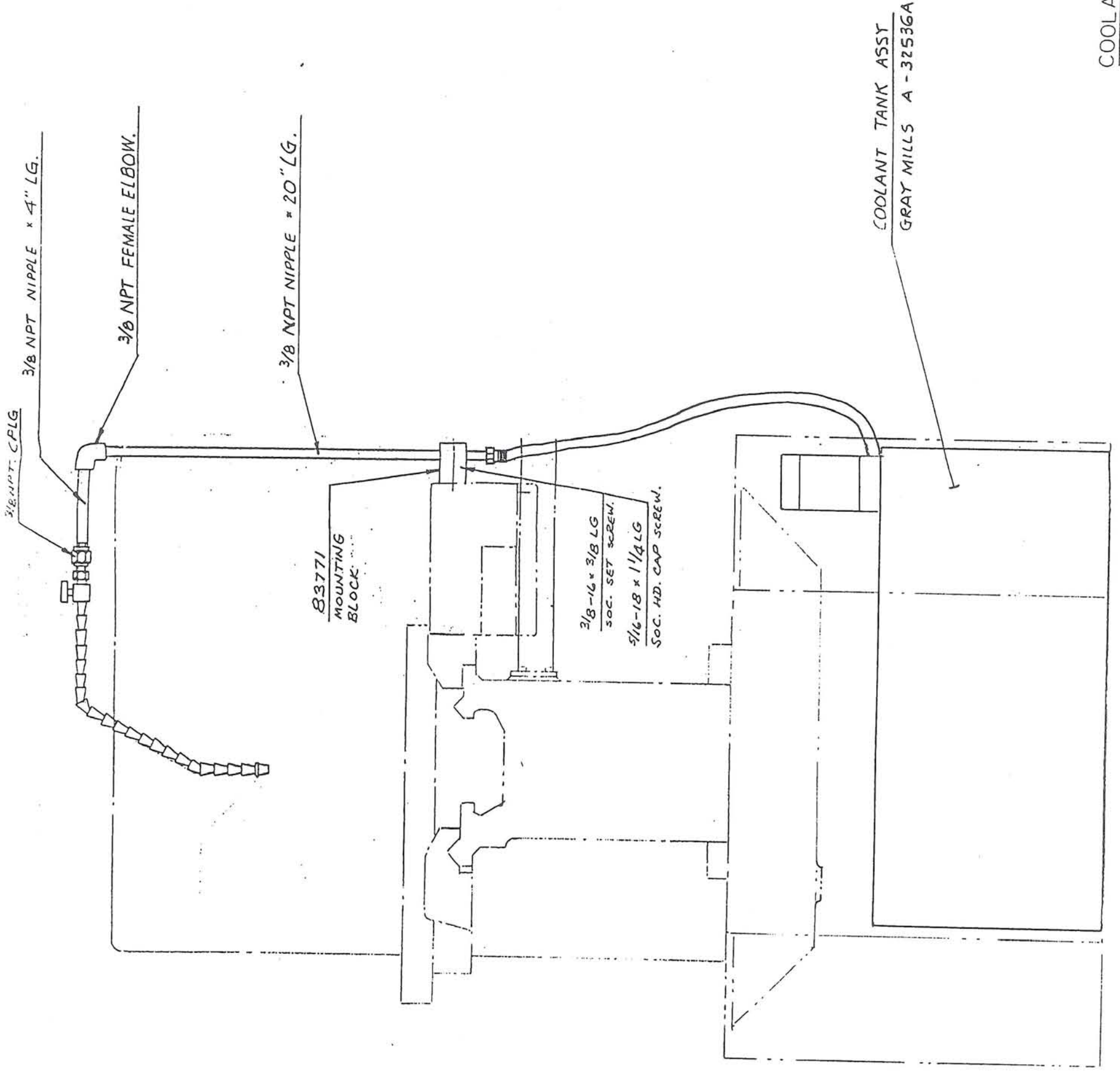
CROSS SECTIONAL VIEW

I.D.No.	Manufacturer	FSCM	Part No.	Nomenclature	Qty.
41216	OMT	3AA35	41216	10' DIA. DOGPLATE	1
101641	OMT	3AA35	101641	D1-6 CAMLOCK STUD	4
	COMMERCIAL			5/16-18 x 5/8 SOC. HD. CAP SCREW	4



10" DIA. DOG PLATE ASSEMBLY.

I.D.No.	Manufacturer	FSCM	Part No.	Nomenclature	Qty.
83771	QMT	3AA35	83771	MOUNTING BLOCK	1
	GRAY MILLS		A32536A	COOLANT TANK ASSEMBLY	1
	COMMERCIAL			3/8-16 x 3/8 SOC. SET SCREW	1
	COMMERCIAL			3/8 NPT NIPPLE x 20" LG.	1
	COMMERCIAL			3/8 NPT FEMALE ELBOW x 4" LG.	1
	COMMERCIAL			3/8 NPT NIPPLE x 4" LG.	1
	COMMERCIAL			3/8 NPT COUPLING	1
	COMMERCIAL			5/16-18 x 1-1/4 SOC. HD. CAP SCREW	2



COOLANT SYSTEM ASSEMBLY.