

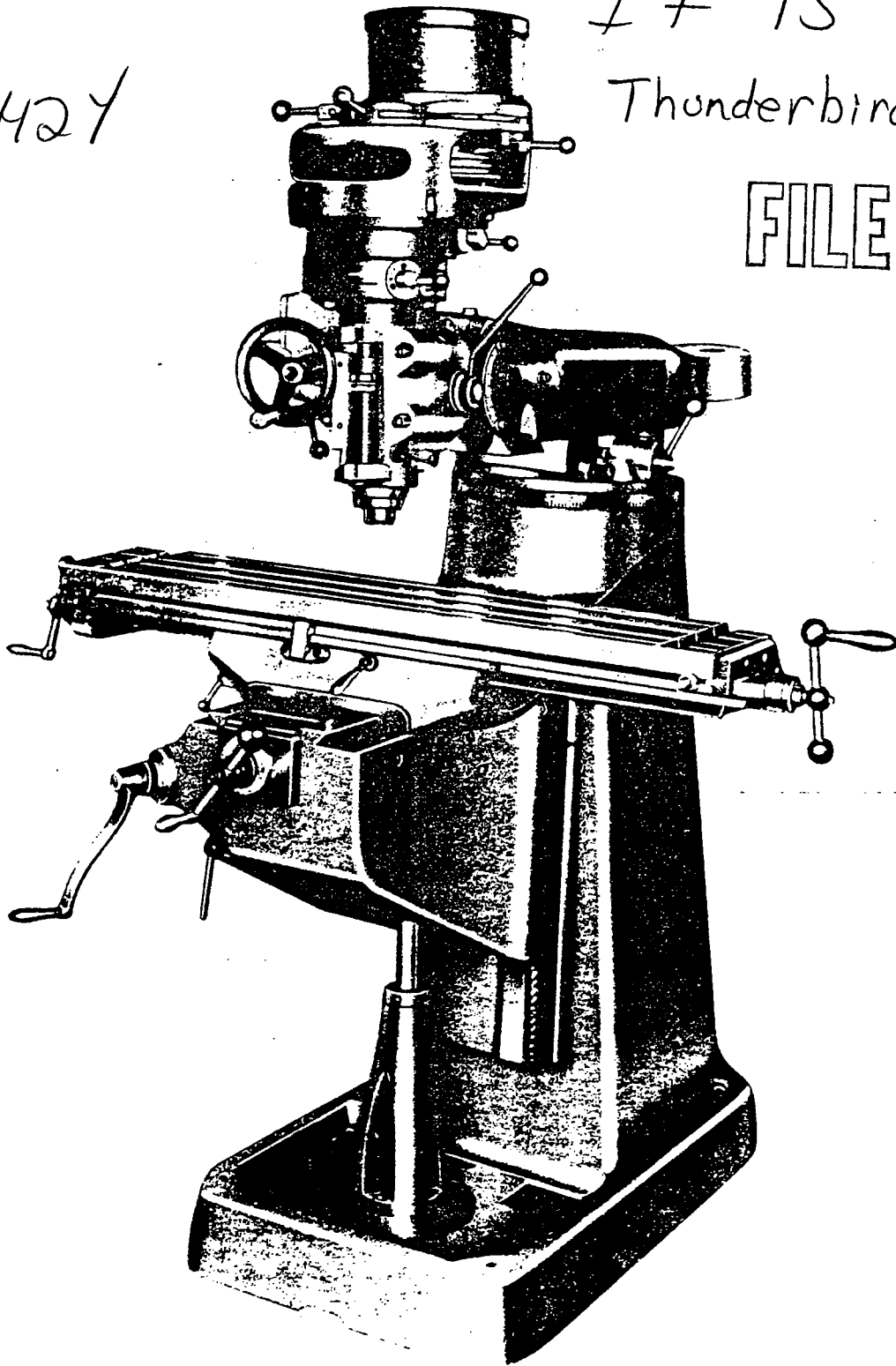
Power Feed Attachment:
Find out which Brand

It IS

Thunderbird

FILE

JVM-9427



1. Remove rust preventative before moving any slideways.
2. The coating is best removed by using paraffin applied with a clean brush. When the coating has softened, remove with clean rags.
3. Oil or grease all lubrication points. Refer to the lubrication section of this manual. (page 15)
4. Check all equipment against the delivery note. Any discrepancies should be reported IMMEDIATELY and confirmed in writing.

INTRODUCTION

INTRODUCTION

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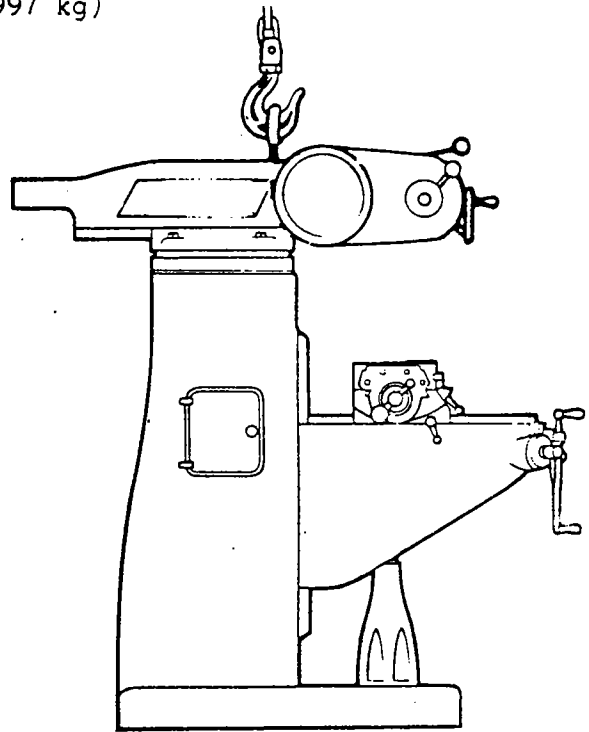
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WEIGHT

Basic machine approximately 2200 lb (997 kg)

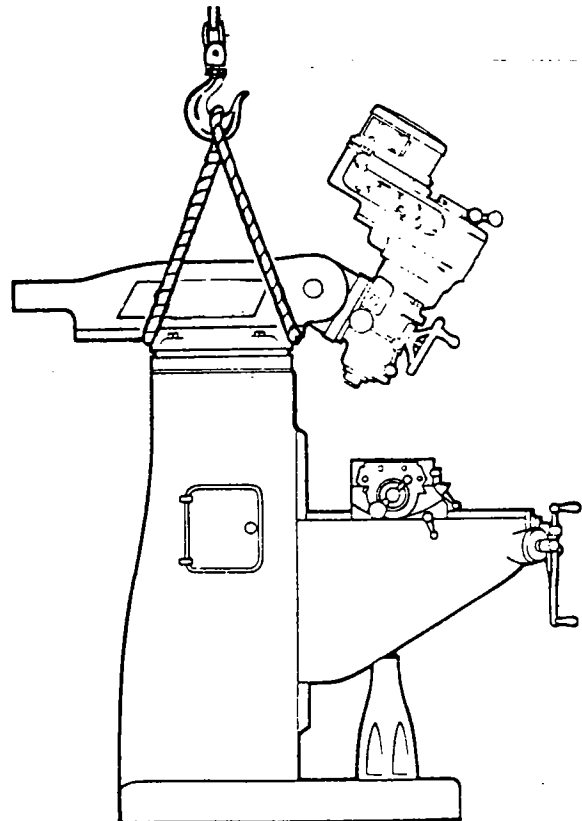
METHOD 1

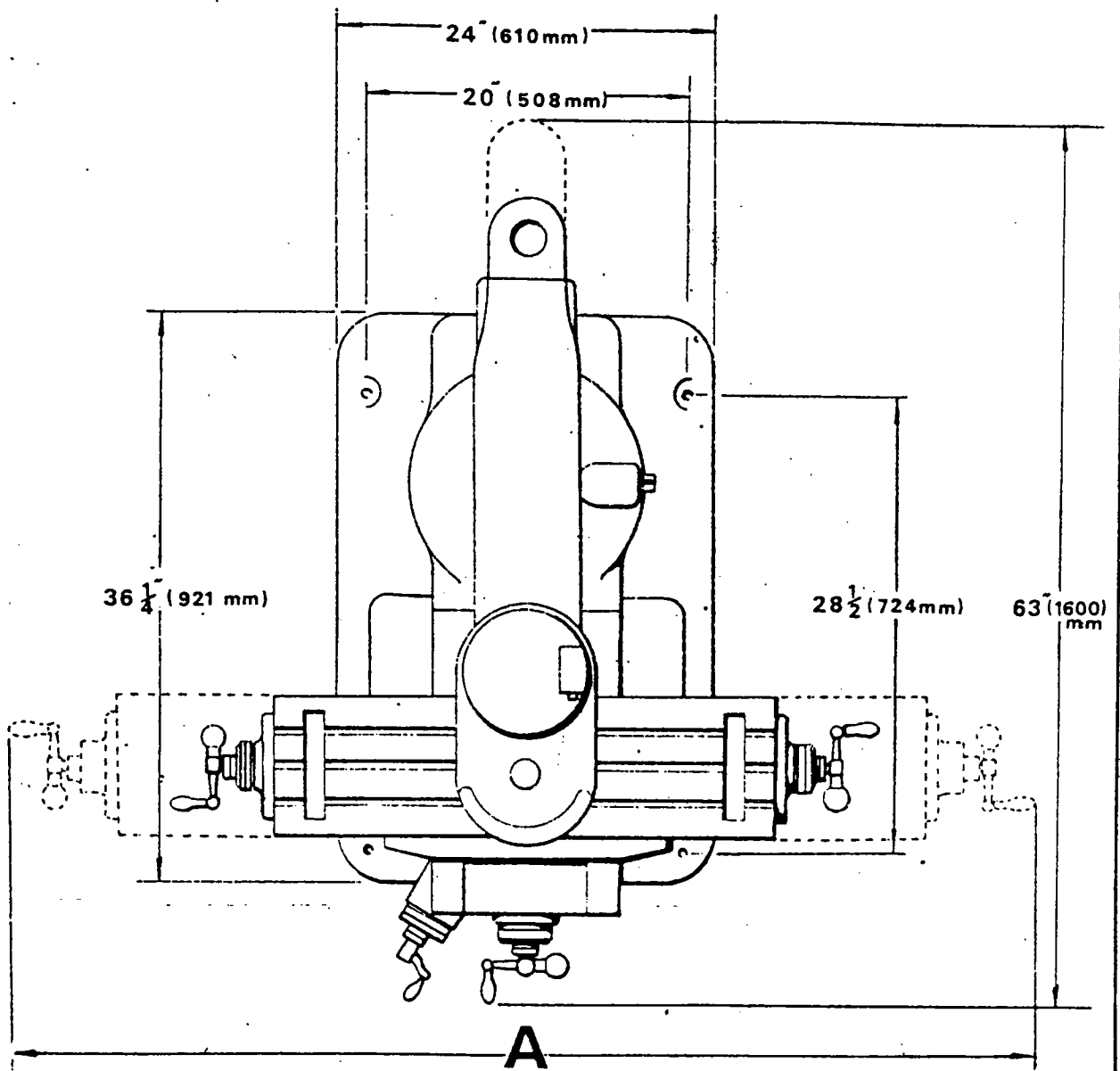
Insert $\frac{3}{4}$ " eye bolt in tapped hole. Ensure bolt is fully secured before lifting. It is advisable to swivel head before lifting machine.



METHOD 2

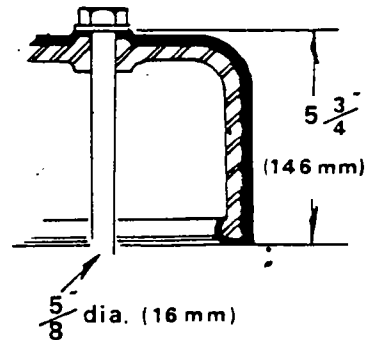
Use rope sling as illustrated. Insert pads of soft cloth between rope and machined edges. It is advisable to tilt the head before lifting machine..





A DIMENSION

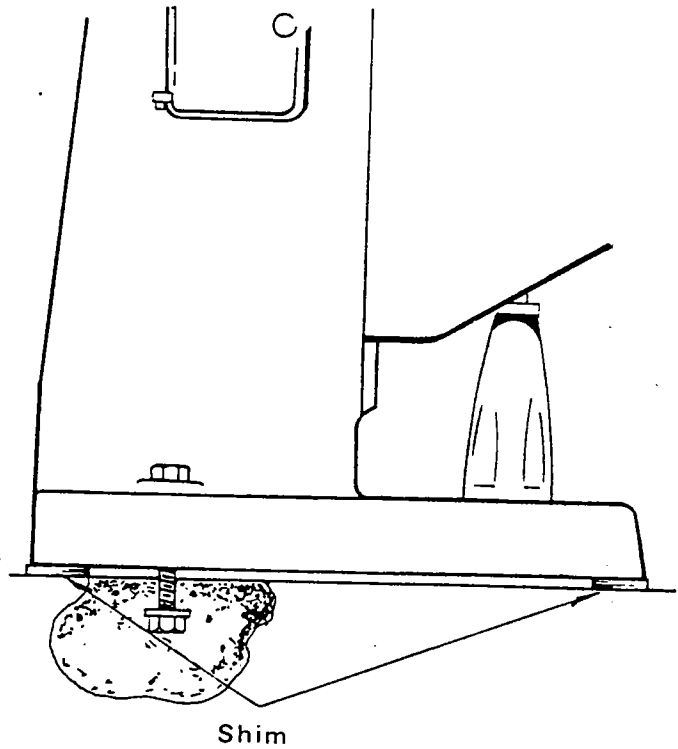
Table Size Plain machine
 42" (1067mm) 76" (1930mm)



FOUNDATION

Ideally all milling machines should be bolted to a concrete foundation.

The JVM-942 however should be placed on a solid level floor or anti-vibration pads to prevent any rocking movement.



1. If the machine was delivered in a crate, the slideway handles will have been reversed. These should be fitted as illustrated on pages 17-18.

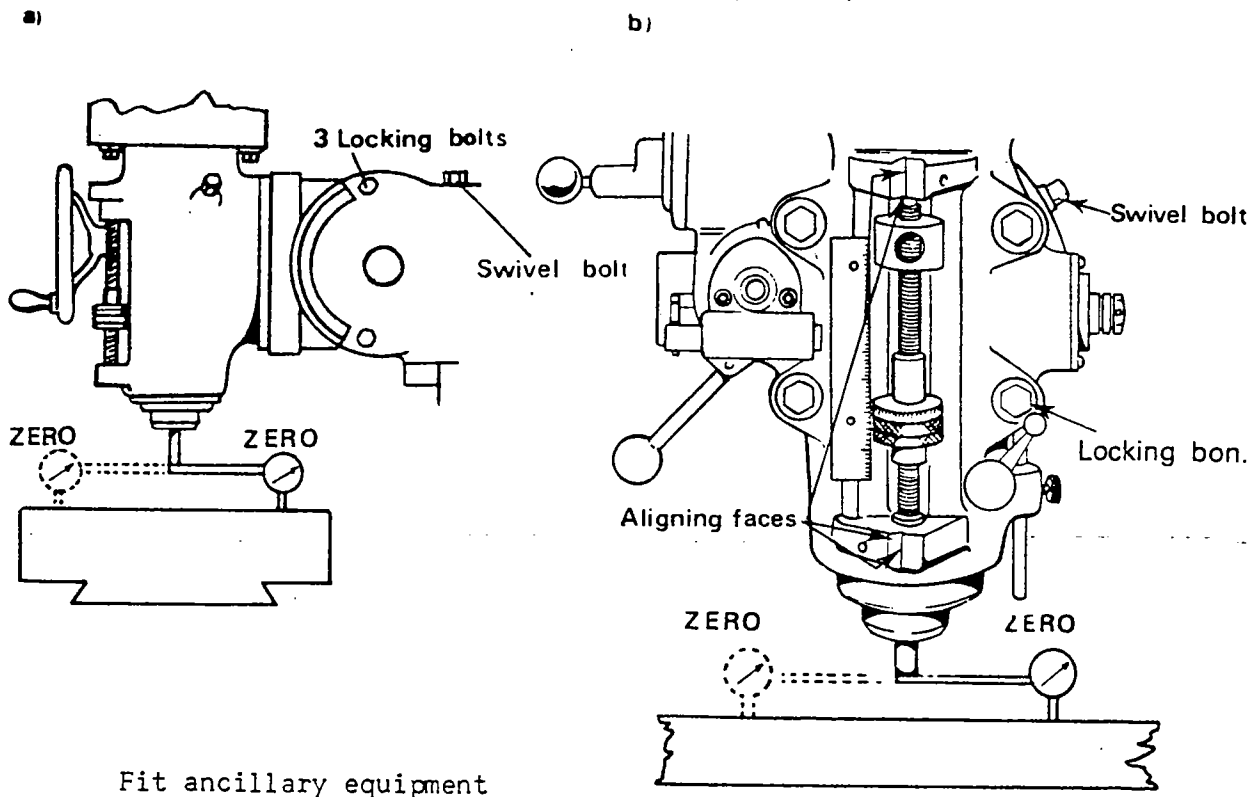
NOTE

For continuous operation in the horizontal plane the head lubrication system must be modified (drawings supplied on request).

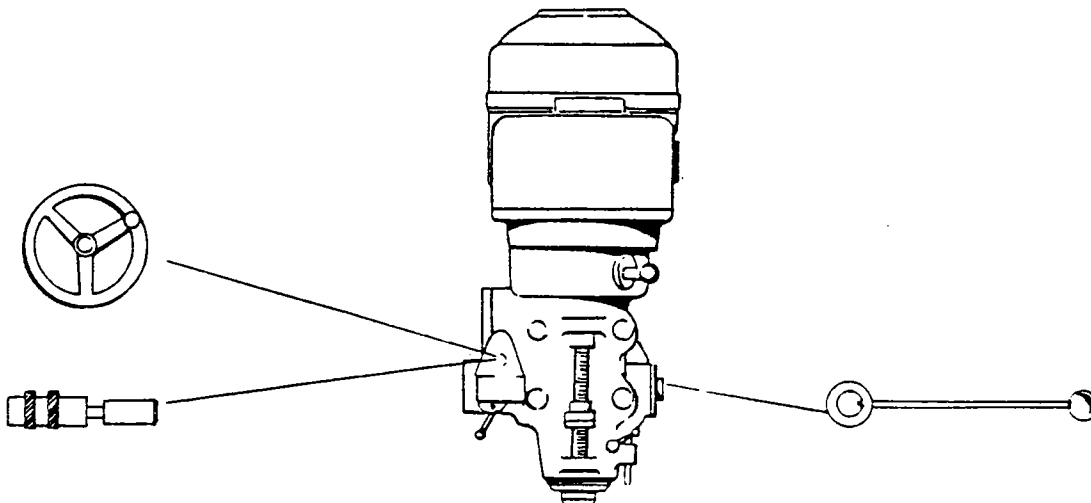
To set a milling head square to the table two methods are available:

- i. Using a large 90° setsquare mounted on the table, align faces with square.
- ii. An indicator mounted in a spindle nose travelling in a 4½" radius.

It is important that each axis is set separately and locked.

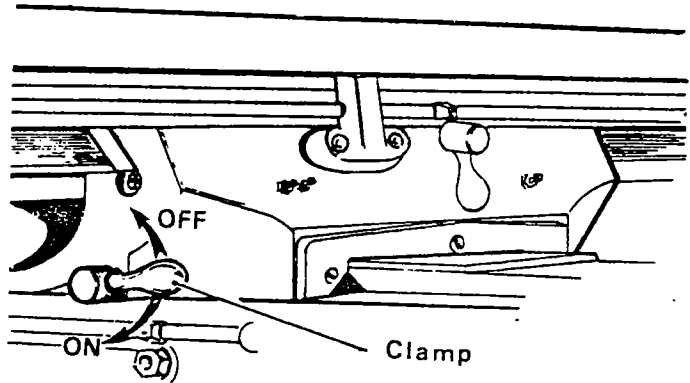


Fit ancillary equipment



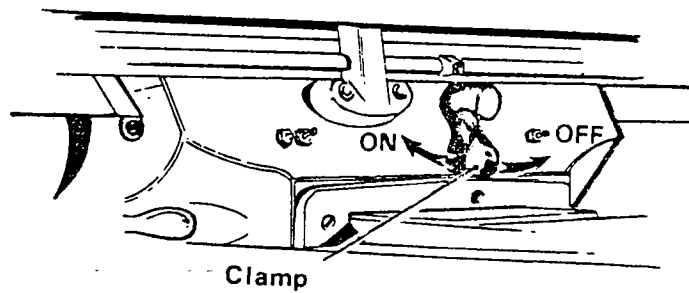
1. CLAMPING THE SADDLE KNEE SLIDE

Moderate pressure is sufficient. Excess pressure will cause distortion and make the table stiff to wind.



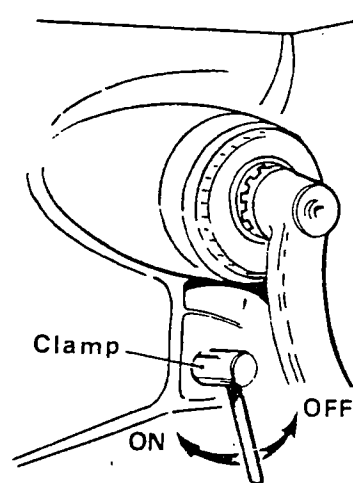
2. CLAMPING THE TABLE SADDLE SLIDE

Moderate pressure is sufficient.



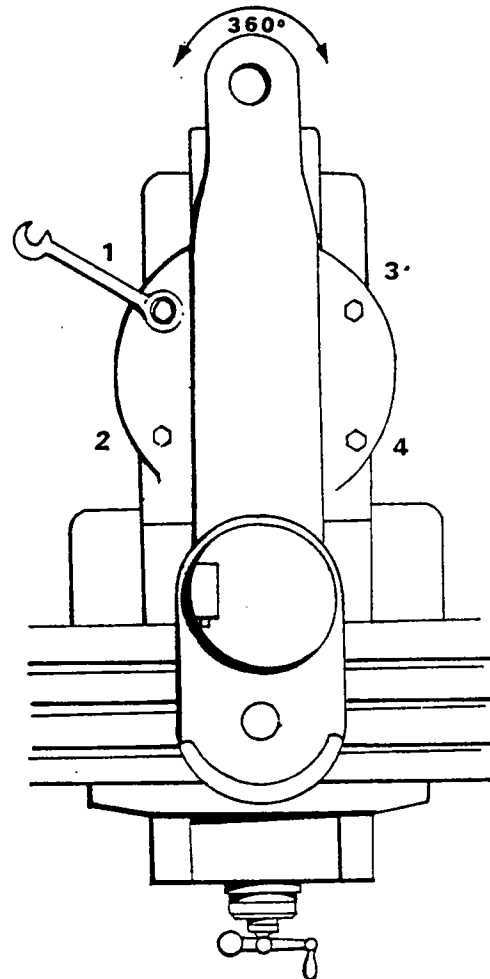
3. CLAMPING THE KNEE COLUMN SLIDE

Moderate pressure is sufficient.



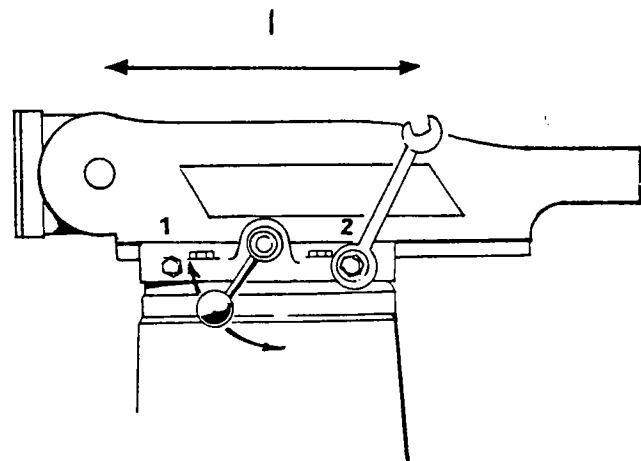
4. SWIVEL TURRET

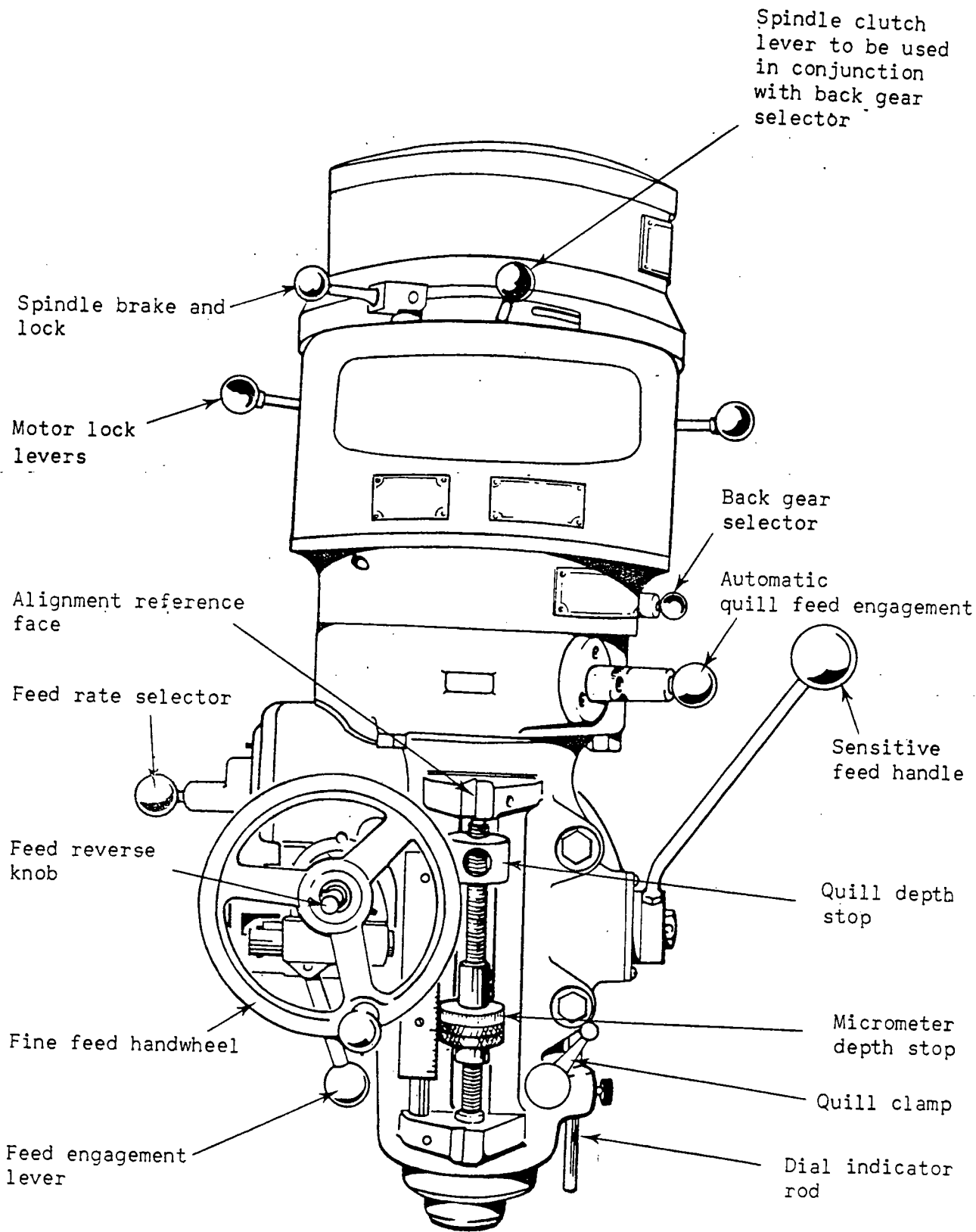
- a) Use spanner and unlock the 4 bolts.
- b) Index to the required setting.
- c) Lock the 4 bolts.



5. MOVE RAM SLIDE

- a) Use spanner and unlock the two bolts.
- b) Turn the handle to move the slide to the desired position.
- c) Lock, tightening the rear bolt first.

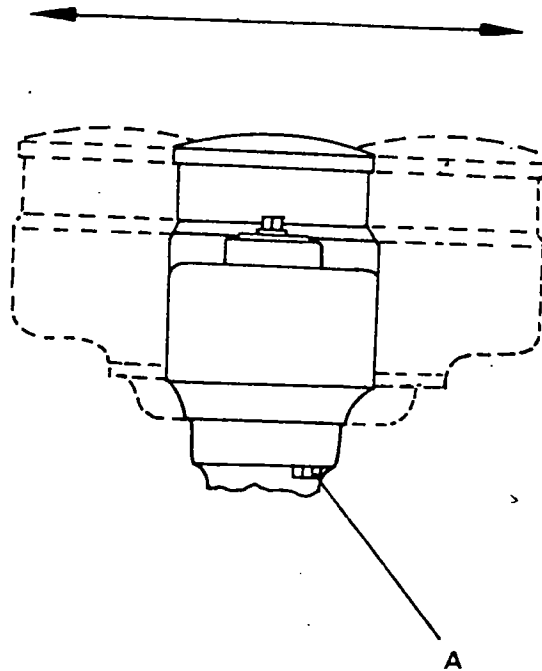




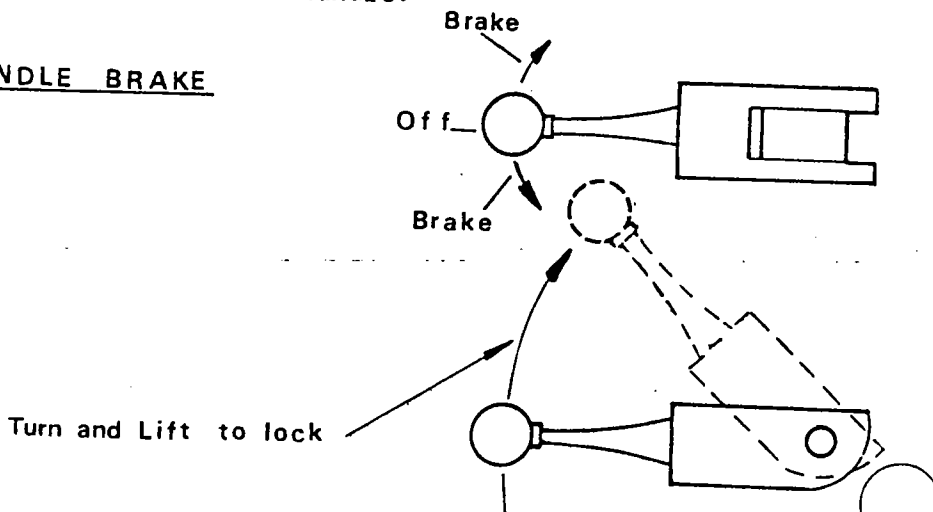
1. SWIVEL BELT HOUSING

- i. Slacken three Locking Nuts 'A'. (Retain sufficiently to stop binding).
- ii. Swivel to required angular setting.
- iii. Tighten three Locking Nuts; before finally securing, run spindle to give correct spline alignment.

NOTE: Incorrect spline alignment can be caused by unequal tightening of the locking nuts 'A' causing varying stiffness of the quill feed which can be felt through the sensitive feed handle.

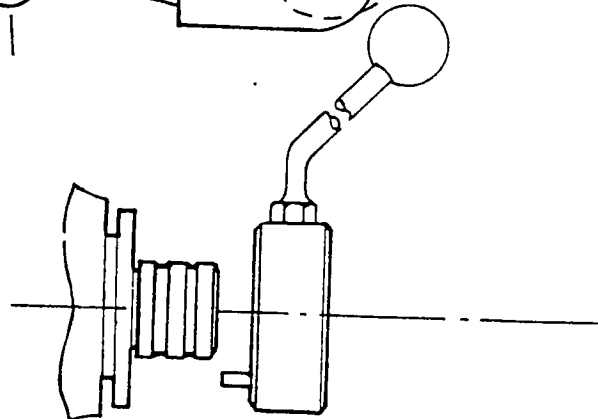


2. SPINDLE BRAKE

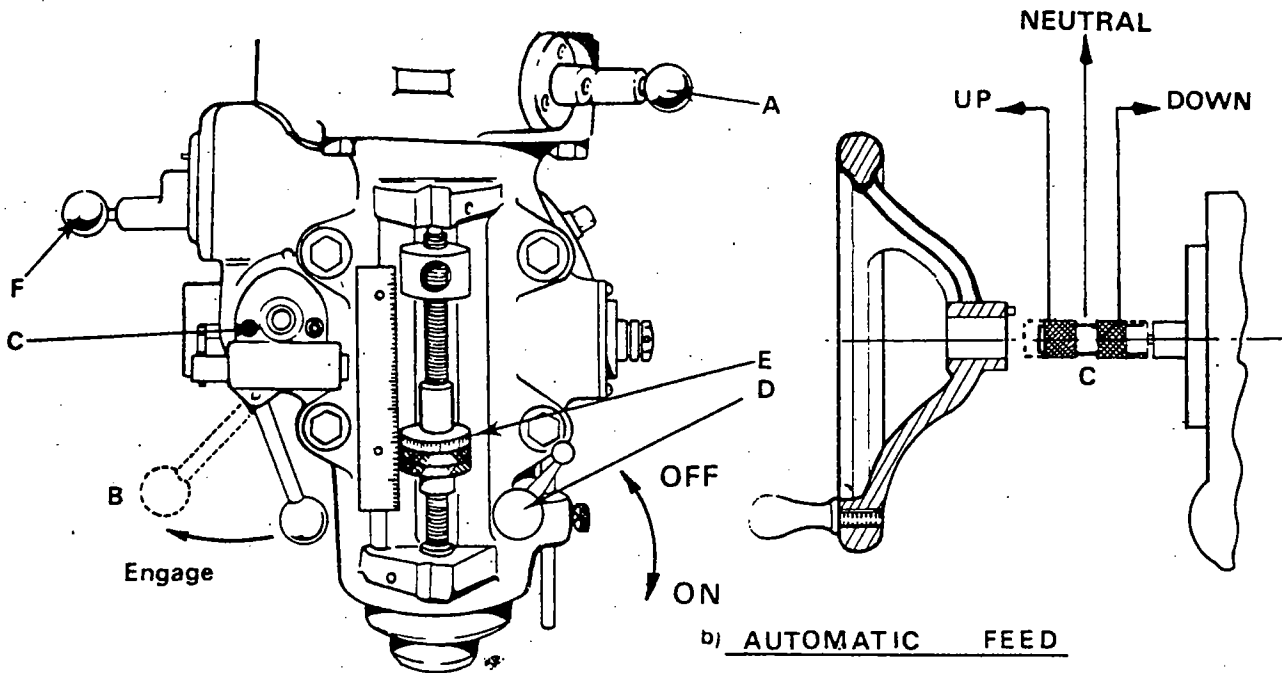


3. QUILL SENSITIVE HAND FEED

- i. Place the handle on the boss.
- ii. Select the most suitable position.
- iii. Push home until the locating pin engages.



4. QUILL FEED



a) FINE HAND FEED

- i. Disengage Auto Quill Feed 'A'.
- ii. Locate 'C' in mid (neutral) position.
- iii. Engage Feed Trip Lever 'B'.
- iv. The Quill is now under handwheel control.

b) AUTOMATIC FEED

Maximum loading 3/8" (9.5mm) dia. drill in steel.

- i. Ensure quill lock is off 'D'.
- ii. Set micrometer dial to required depth 'E'.
- iii. Engage auto quill feed 'A' (when motor has stopped).
- iv. Select feed rate 'F'.
- v. Select feed direction 'C'.
- vi. Engage feed trip lever 'B'.
- vii. The feed will automatically trip out at a depth within $\pm .010''$ ($\pm .25\text{mm}$).
- viii. Hand feed to dead stop for repeating accuracy $\pm .001''$ ($\pm .025\text{mm}$).

DO NOT ENGAGE QUILL FEED 'A' OVER 3,000 R.P.M.

5. SPINDLE SPEEDS (Stop motor before changing speed).

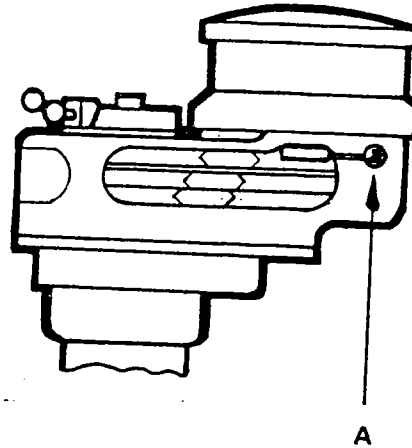
The motor is designed to give an output of 2 h. p. at 1400 r.p.m. Speeds R. P. M.

50C	67	115	180	275	←	BACK GEAR	} SWITCH POS. 1.
	550	920	1500	2300	←	DIRECT	
60C	80	135	210	325	←	BACK GEAR	
	660	1115	1750	2720	←	DIRECT	

6. SPINDLE SPEED RANGES

a). Change Speed Within Range

- i. Isolate machine
- ii. Slacken 2 motor lock levers 'A'.
- iii. Slide motor forward
- iv. Position belt on appropriate pulleys
- v. Slide motor to the rear to tension vee belt
- vi. Tighten 2 motor locking levers

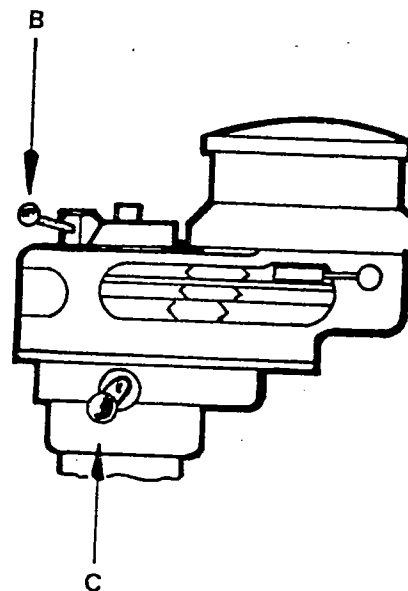


b). Change Range

1. From direct to back gear drive:-

- i. Move lever B to the right
- ii. Move knob 'C' to "IN" position

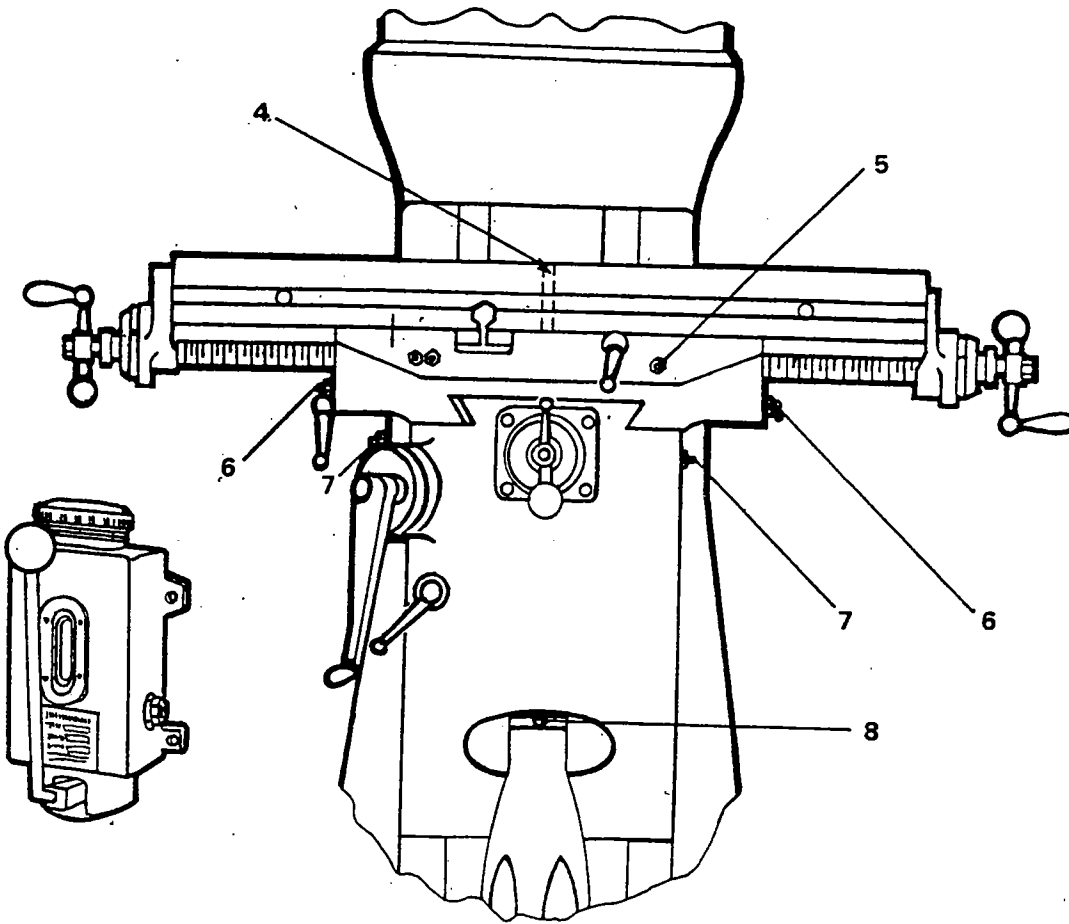
NOTE: this action will REVERSE the spindle rotation. Move motor switch to reverse position to obtain original direction of spindle rotation.



2. From back gear to direct drive:-

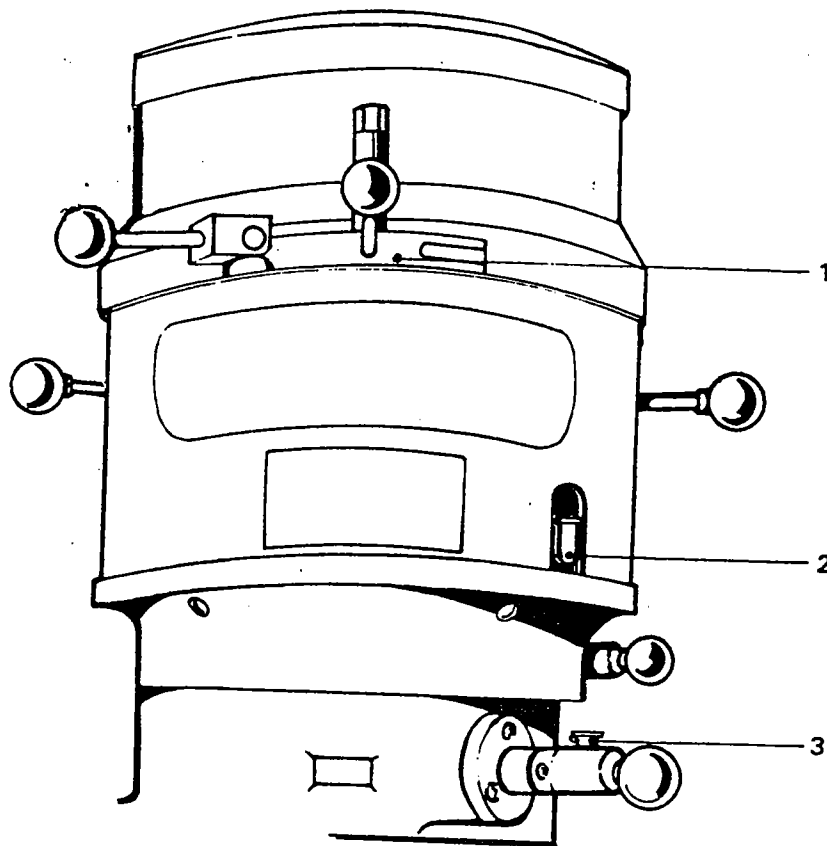
- i. Move lever 'B' to the front position
- ii. Rotate spindle by hand until the clutches are felt to engage
- iii. Move knob 'C' to "OUT" position

NOTE: this action will REVERSE the spindle rotation. Move motor switch to reverse position to obtain original direction of spindle rotation.



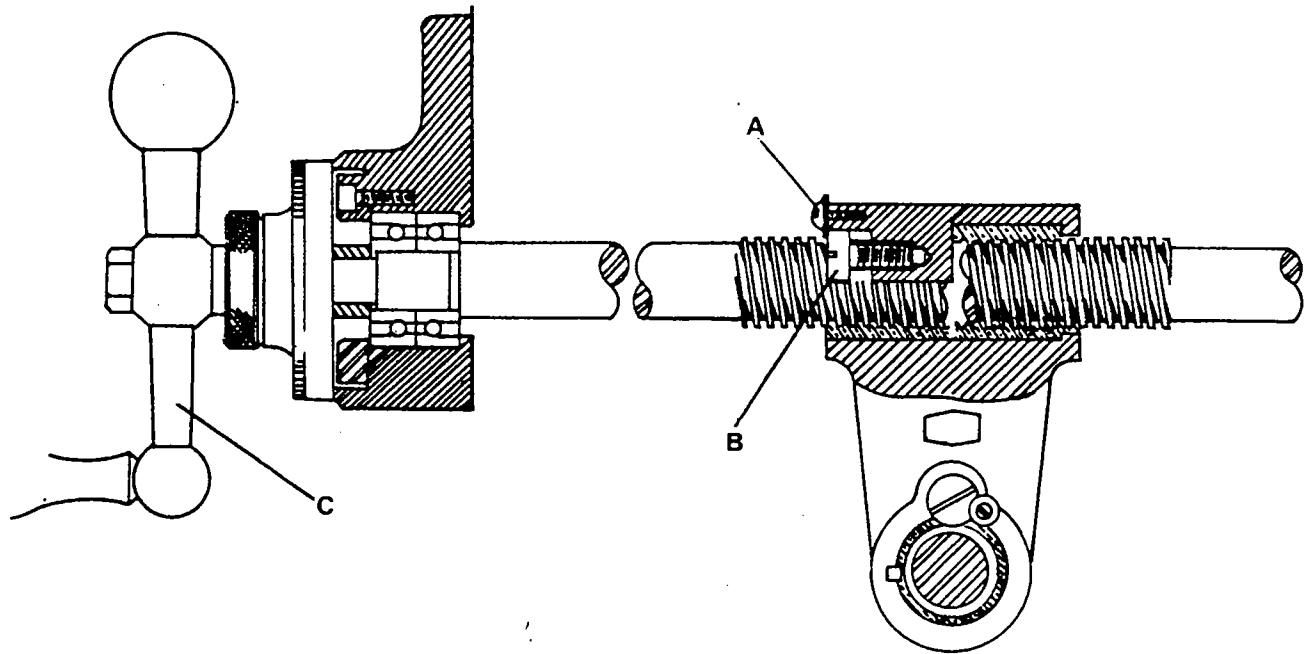
FREQUENCY	LUBRICATE	LUBRICANT	QUANTITY	LUB. AT
Twice Weekly	Lead Screw	Mobil Vactra No.2	5-10 drops	4 *
Weekly	Saddle-Table Ways	Vactra No.2	5 Shots (Oil gun)	5
Weekly	Saddle-Knee Ways	Vactra No.2	5 Shots (Oil gun)	6
Weekly	Knee Column Ways	Vactra No.2	5 Shots (Oil gun)	7
Twice Weekly	Elevating Screw	Vactra No.2	5 Shots (Oil gun)	8
Handle lubricating pump Check level weekly	Screws & Ways	Vactra No.2	One pump	9

* To oil leadscrew adjust to bring line on its front face opposite line marked "Oil" on front of cross-slide and then lubricate through 4 after removing sealing screw located in center T slot.



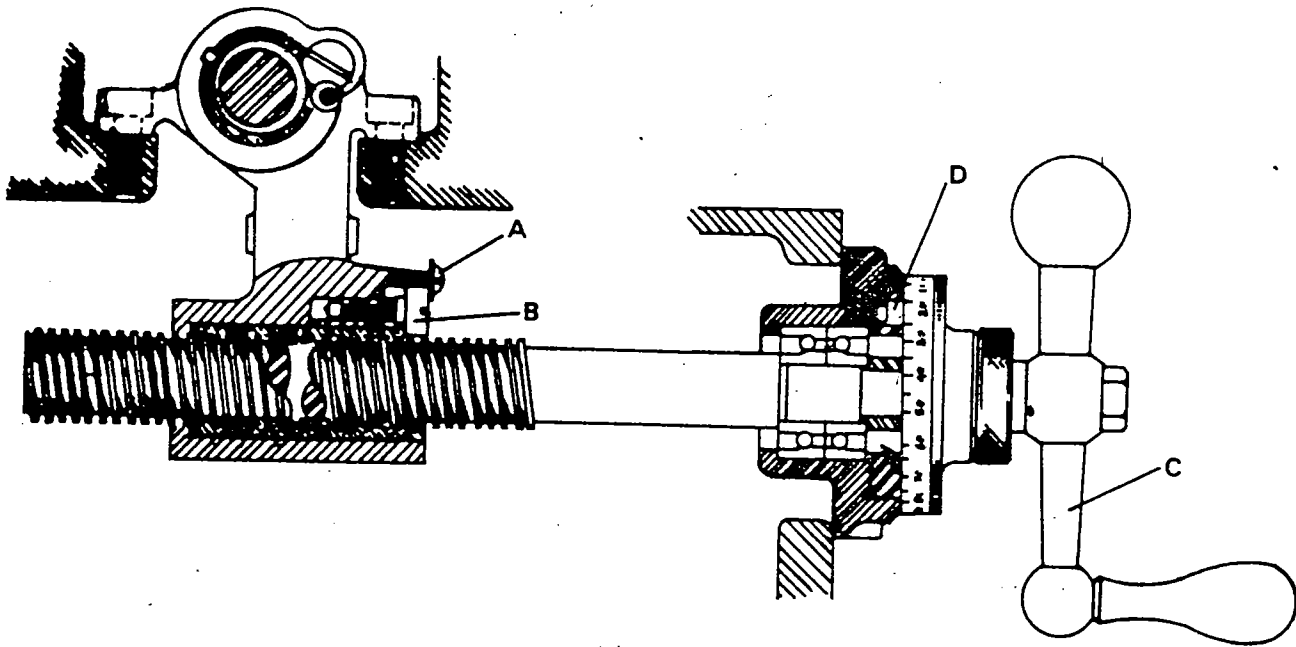
FREQUENCY	LUBRICATE	LUBRICANT	QUANTITY	LUB. AT
Twice Weekly	Pulley Cam	Vactra Heavy Medium	5 Drops	1
Twice Daily	Spindle Bearing/quill feed	Vactra Heavy Medium	Top-up	2
Twice Daily	Quill Bearings	Vactra Heavy Medium	Top-up	3

NOTE: Failure to lubricate "Quill bearings" at 3 can result in tight quills and partial seizure of quill in housing.



BACKLASH ADJUSTMENT

1. Crank the table to the left
2. Withdraw screw 'A' $\frac{1}{2}$ a turn
3. Tighten screw 'B' whilst slowly turning handle 'C' until .004" or .005" is obtained.
4. Finally lock screw 'A' on to 'B'.

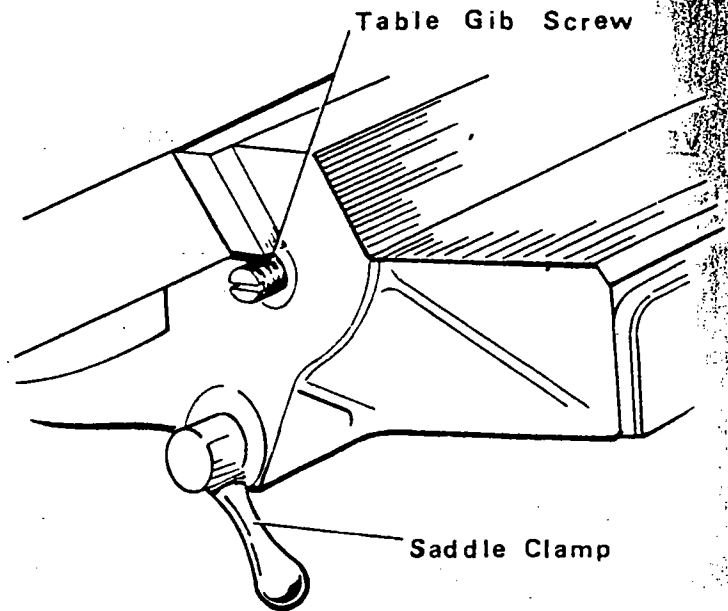


BACKLASH ADJUSTMENT

1. Crank the saddle to Mid position
2. Withdraw 4 screws 'D'
3. Pull the saddle forward to expose screws 'A' & 'B'
4. Withdraw screw 'A', $\frac{1}{2}$ a turn
5. Whilst slowly turning handle 'C' tighten screw 'B' until .004" or .005" is obtained.
6. Lock screw 'A' onto 'B'.
7. Finally crank the saddle to the front of the knee and replace 4 screws 'D'.

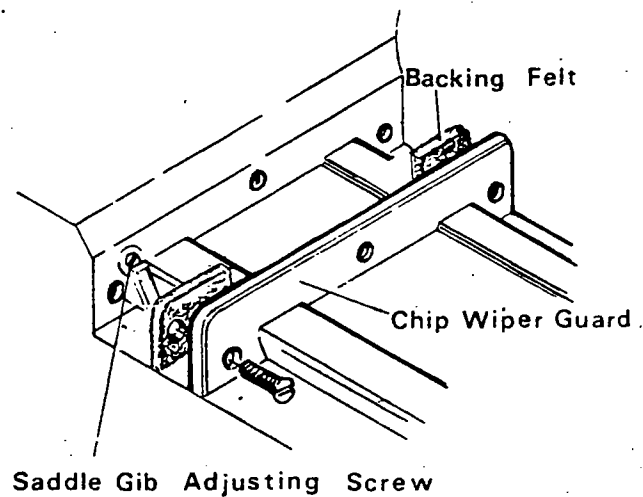
a) Table Saddle Ways

1. Remove all swarf from area.
2. Turn the table gib screw clockwise whilst moving the table until slight drag is felt.



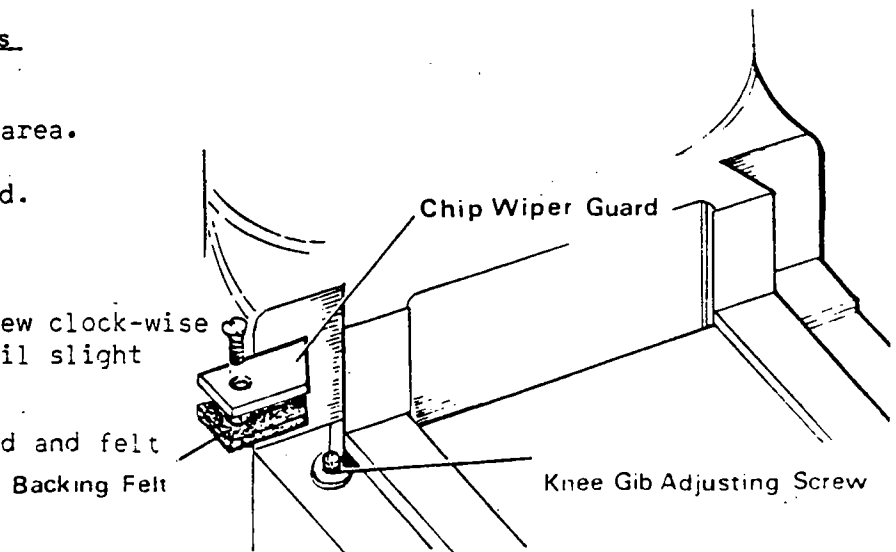
b) Saddle Knee Ways

1. Remove all swarf from area.
2. Remove chip wiper guards and felt.
3. Turn gib adjusting screw clockwise whilst moving the saddle until slight drag is felt.
4. Ensure chip wiper guard and felt are replaced.



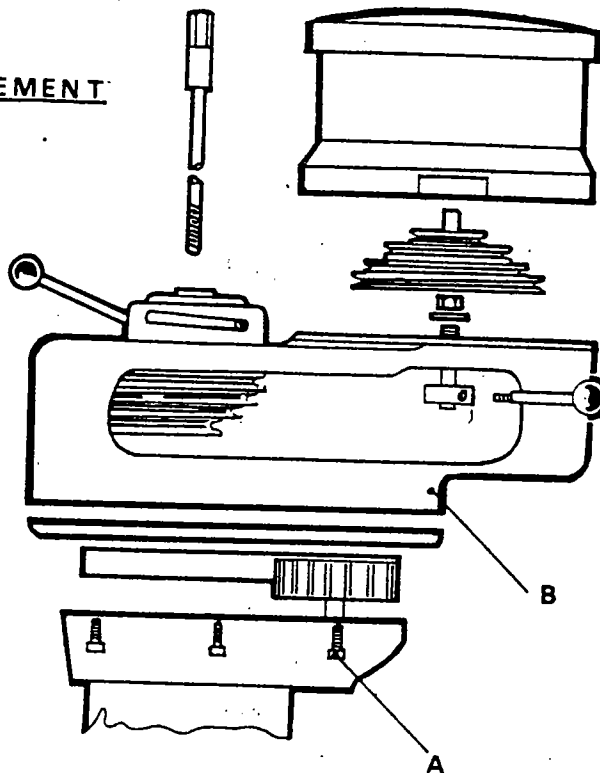
c) Knee Column Ways

1. Remove all swarf from area.
2. Remove chip wiper guard.
3. Remove felt.
4. Turn gib adjusting screw clock-wise whilst moving knee until slight drag is felt.
5. Ensure chip wiper guard and felt are replaced.



VEE AND TIMING BELT REPLACEMENT

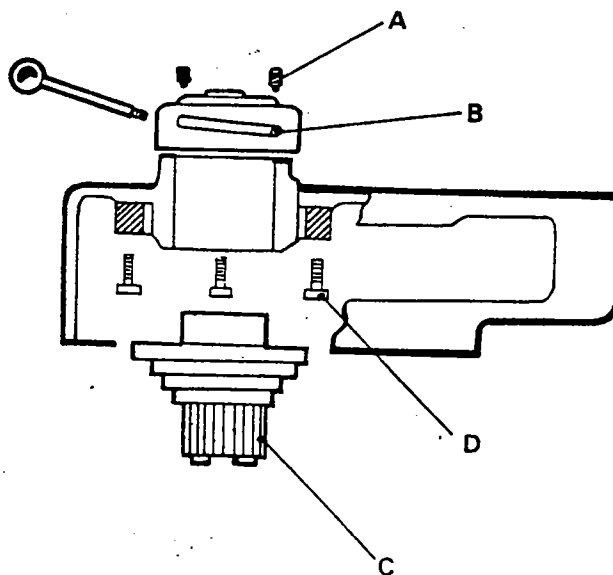
1. Isolate machine
2. Remove drawbar
3. Remove motor
4. Lower quill to full extension
5. Remove 6 screw 'A'
6. Remove belt housing 'B'; tap to withdraw from dowels
7. The belts may now be changed.



BRAKE SHOE REPLACEMENT

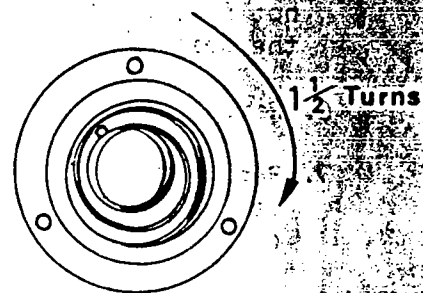
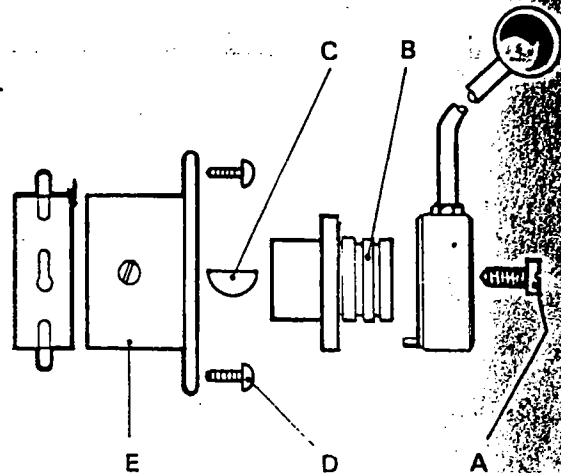
Repeat sequence 1. to 6. above

1. Remove 2 screws 'A'
2. Remove 2 screws 'B'
3. Push bearing hub 'C' clear of housing
4. Remove 3 screws 'D'
5. Replace shoe.
6. Ensure screws 'D' are fully tightened and locked with washers and nuts.



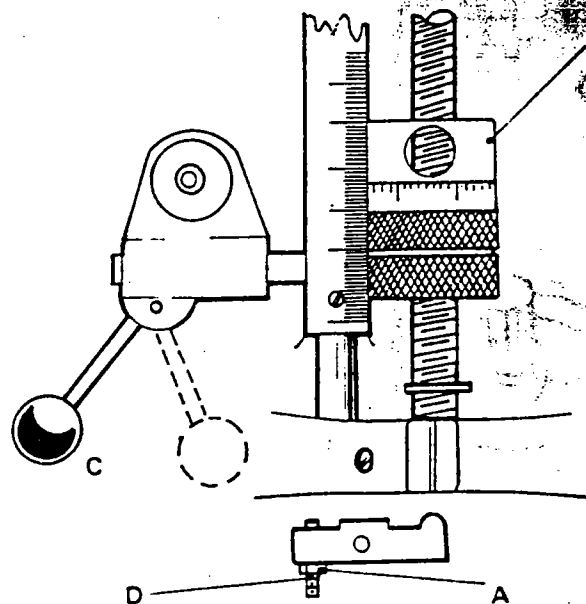
BALANCE SPRING REPLACEMENT

1. With quill at top of movement apply quill lock.
2. Remove screw 'A', hub 'B', and key 'C'.
3. Remove screws 'D', allowing housing to rotate slowly releasing spring tension.
4. Lift end of spring from peg on the pinion shaft.
5. Rotate housing 'E' anti-clockwise from head casting.
6. Remove spring from housing and replace.
7. Refit spring to main housing casting turning housing clockwise until spring locates on peg in pinion shaft.



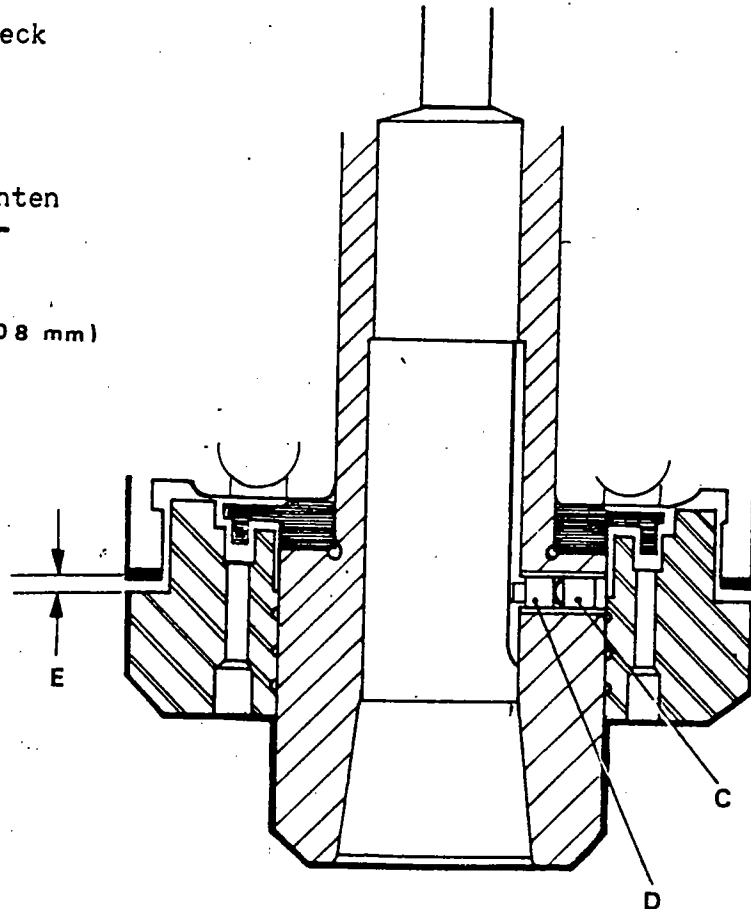
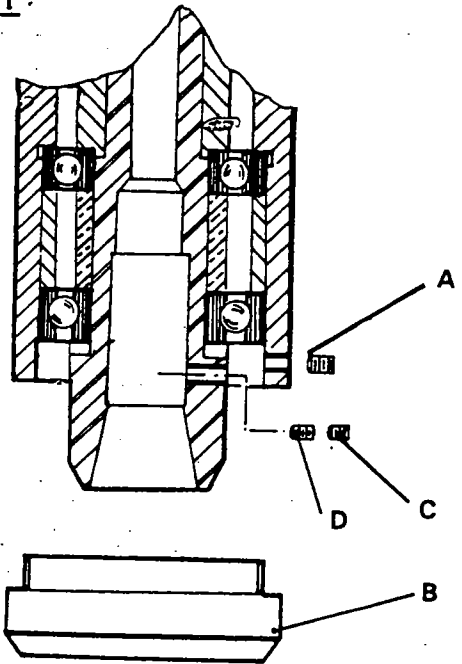
FEED TRIP ADJUSTMENT

1. Release locknut 'A'
2. Engage trip handle 'C'
3. Adjust micro nuts against quill stop 'B'
4. Slowly turn adjusting screw 'D' until lever 'C' trips
5. At this point secure locknut 'A'
6. Check that smart trip action is obtained



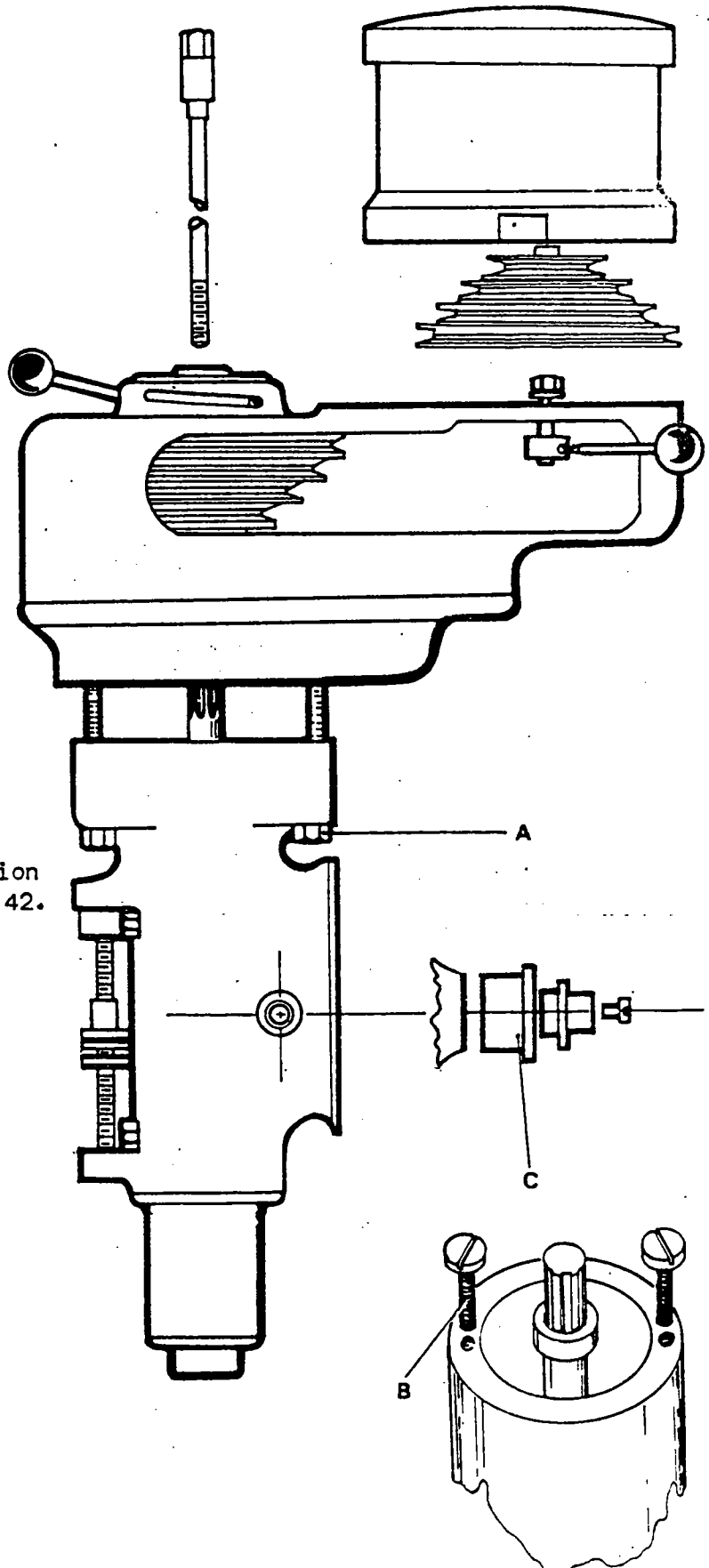
COLLET ALIGNING SCREW REPLACEMENT

1. Use felt pen, mark reference line on quill and nose cap B.
2. Remove set screw A.
3. Unscrew nose cap B.
4. Remove lock screw C and collet aligning screw D.
5. Replace D; insert R.8 collet and check that the dog on the end of the screw does not foul on the bottom of the guide slot.
6. Replace lock screw C.
7. Replace nose cap B; check felt pen markings for correct alignment.
8. Replace set screw A.
Caution do not overtighten as this will cause distortion.
9. Check gap E. (.003" = 0.8 mm)



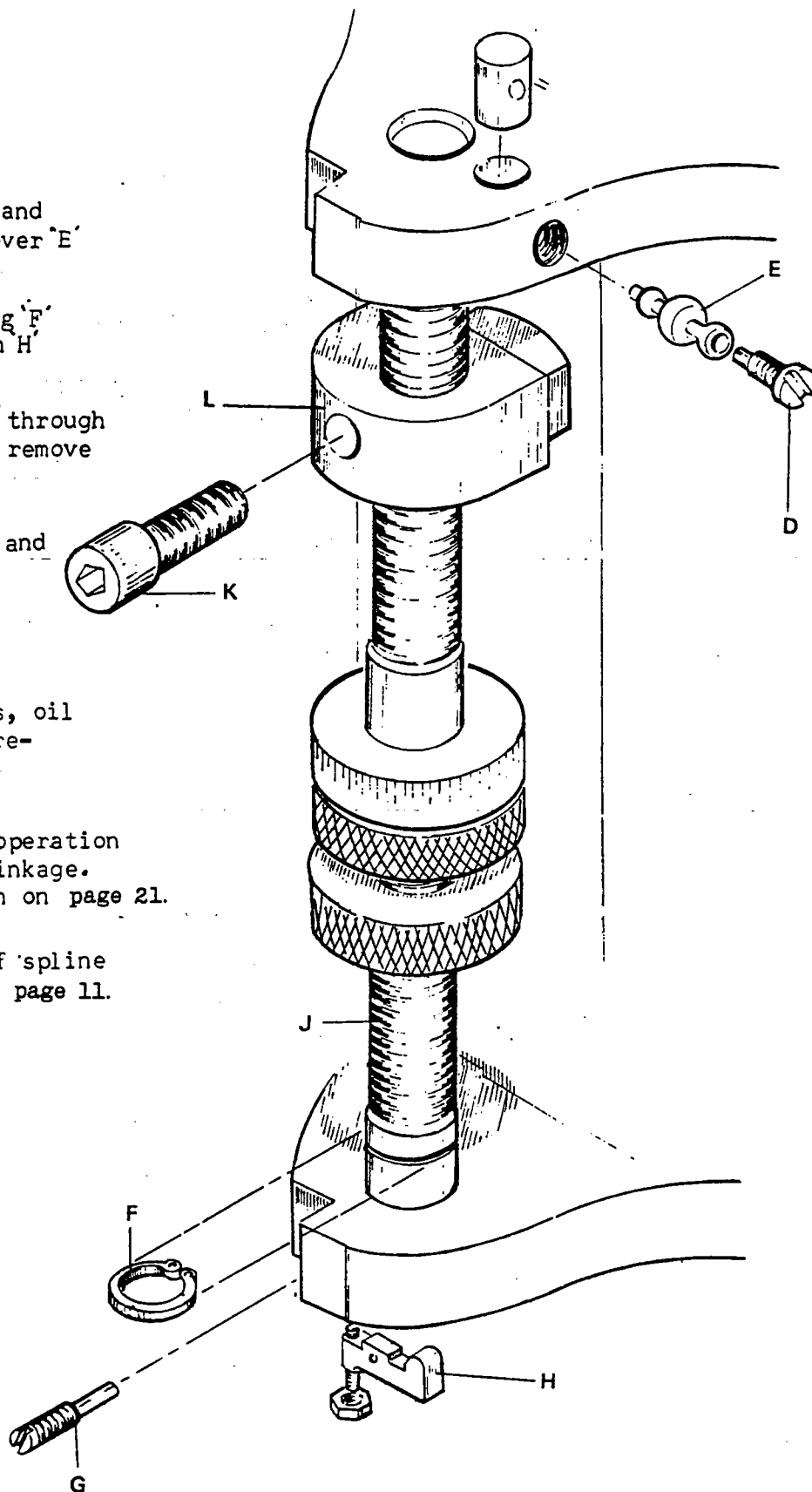
QUILL REMOVAL

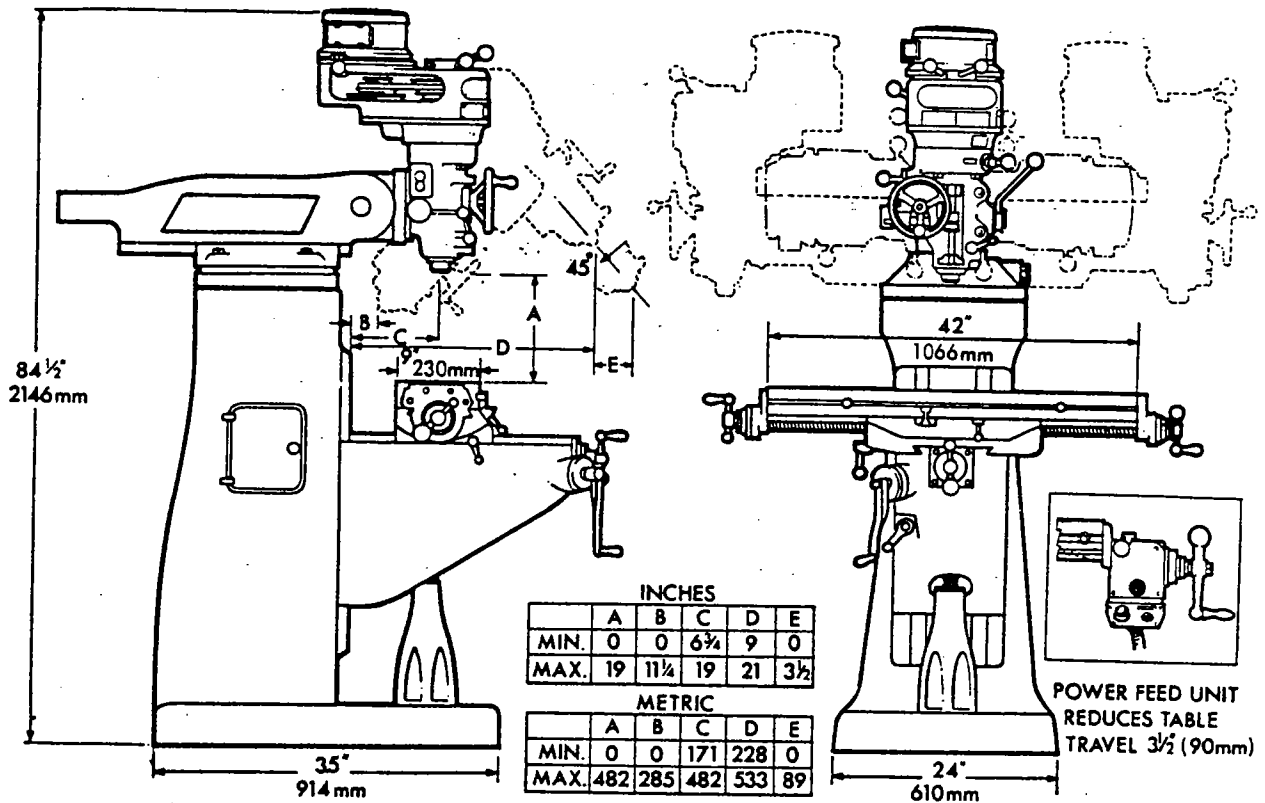
1. Isolate machine
2. Remove motor
3. Remove drawbar
4. Fully extend quill
5. Remove 3 nuts 'A'
6. Remove top section complete
7. Remove 2 screws 'B' from top of quill
8. Remove clock spring housing 'C' - see instruction on replacing spring page 42.



9. Remove screw 'D' and ball reverse lever 'E'
10. Remove snap ring 'F', screw 'G' and arm 'H'
11. Thread shaft 'J' through micro nuts and remove
12. Remove screw 'K' and stop 'L'
13. Remove quill.
14. Clean all areas, oil liberally and re-assemble
15. Check correct operation of feed trip linkage. See instruction on page 21.

Re-assembly of spline alignment. See page 11.

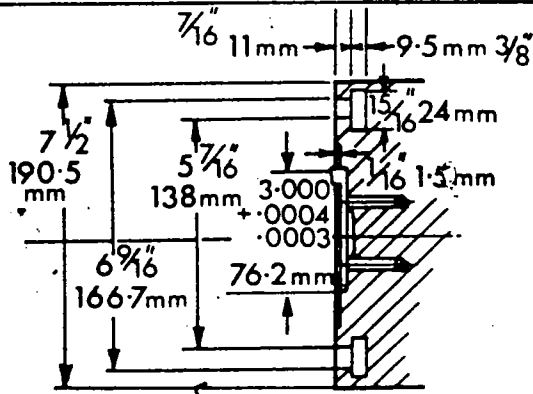
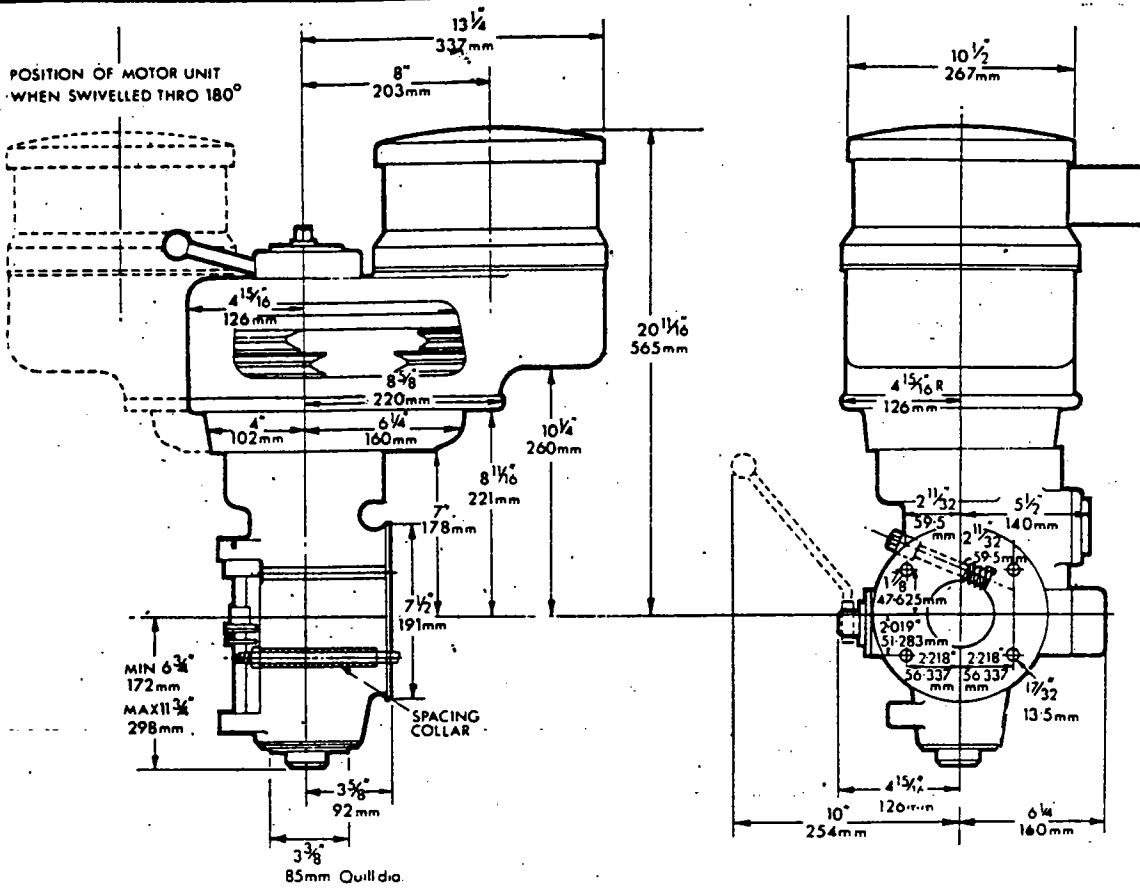




	inch	m m
Table Size	42" × 9"	1066 × 230mm
Longitudinal Traverse Hand only ..	30"	762 mm
Cross Traverse	12"	305 mm
Vertical Traverse	16"	406 mm
Number of Tee Slots	3	3
Width and Centres	$\frac{3}{8}$ " at $2\frac{1}{2}$ "	15.87 mm at 63.5 mm
Ram Movement	12"	305 mm
Spindle Speeds Number	8	8
Range rpm	67–2300	67–2300
Spindle Centre to Column Face ..	$6\frac{1}{2}$ "–19"	171–482 mm
Spindle to Table	0–19"	0–480 mm
Quill Feeds per rev of Spindle ..	0.0015"– 0.003"– 0.006"	0.04 mm–0.08 mm–0.15 mm
Motor HP	2	2
Floor Area Occupied	64" × 82"	1626 × 2085
Shipping Particulars Space Occupied	58" × 52" × 68"	1473 × 1321 × 1727 mm
Nett Weight (Basic Machine)	1960 lb	889 kg
Gross Weight (Basic Machine)	2576 lb	1168 kg

SPECIAL NOTES

1. Machines can also be fitted with a 36" × 9" (914 × 228 mm) or a 48" × 9" (1219 × 228 mm) table with longitudinal travel of 24" (610 mm) and 36" (914 mm) respectively.
2. Machines can be fitted with a tee ram to allow up to 3 milling heads to be mounted side by side.



DETAILS OF MOUNTING AND SWIVELLING FACE

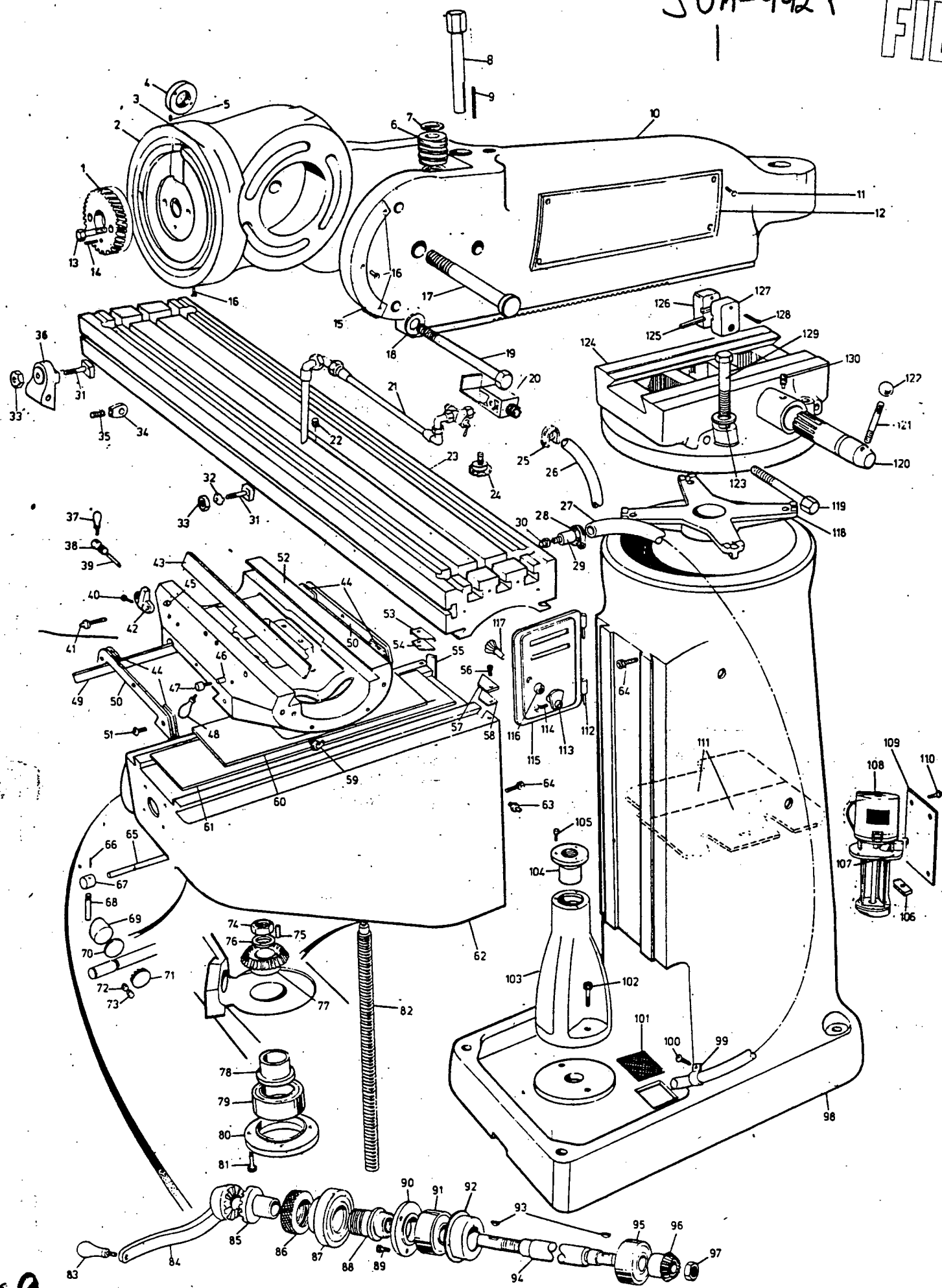
Spindle Taper	R8	
Spindle Speeds-rpm	How Range	High Range
50Hz	67, 115, 180, 275,	550, 920, 1500, 2300,
60Hz	80, 135, 210, 325,	660, 1115, 1750, 2720
Motor HP	2	
Quill Travel	5"	127mm
Power Feed of Quill	0.0015"	0.04mm
Per rev of spindle (3retes)	0.003"	0.08mm
	0.006"	0.15mm
Collet Capacity	1/8" - 3/4" x 1/6"	2-20mm 1mm
Weight	168 lb,	76 kg

When ordering replacement parts please quote :-

- THE MACHINE SERIAL No. stamped on the lubrication plate.
- THE HEAD SERIAL No. found on the front of the Belt Housing.
- ITEM NUMBER.
- PART NUMBER.
- DESCRIPTION.
- QUANTITY.

* PARTS OBTAINABLE IN ENGLISH

JUN-942 Y
1
FILE



29

Spare parts

BASIC MACHINE

JUM-942Y
FILE

ITEM No.	COMP. No.	PART No.	DESCRIPTION	QTY.
1	8007144	J-144	Quill Housing ADJ. Gear	1
2	8005225	H-225	Ram Adaptor	1
3	8007501	J-501	Adaptor Scale	1
4	8005229	H-229	Adaptor Pivot Stud Locknut	1
5	8300212	ST 212	Grub Screw 10 - 32 UNF x 3/16"	2
6	8005226	H-226	Vertical Adjusting Worm	1
7	8005232	H-232	Worm Thrust Washer	2
8	8005227	H-227	Vertical Adjusting Worm Shaft	1
9	8005235	H-235	Worm Key 3/16" x 1 7/8"	1
10	8005224	H-224	Ram	1
11	8300134	ST 134	Avdel Chebaert Rivets	12
12	7302001	ZBP 20466	Ram Plates	2
13	8300161	ST 161	1/4" x 1" Socket Cap Screw	2
14	8300027	ST 27	Roll Dowel Pin 5/16" x 1 1/4"	1
15	8005236	H-236	Angle Plate	1
16	8300118	ST 118	Round HD Drive Screws No 6 x 3/8" Long	5
17	8005228	H-228	Adaptor Pivot Stud	1
18	8009072	M-72	1/2" x 1/8" x 1" Chamfered & Hardened Washer	7
19	8005240	H-240	Adaptor Locking Bolt	3
20	8005500	H-500/1	Tap Bracket (Plastic) (extra accessory)	1
21	8300431	ST 431	LP 398 Suds Tap (extra accessory)	1
22	8005091	H-91	5/16" - 18. x 5/16" Socket Set Screw (extra accessory)	1
23	8005114	H-114	Table	1
24	8300406	ST 406	Knob and Screw (extra accessory)	1
25	8300389	ST 389	Hose Clip 3/4"	1
26	8300433	ST 433	Plastic Hose 1/2" Bore 42" Long (extra accessory)	1
27	8300434	ST 434	Plastic Hose 3/4" Bore 44" Long (extra accessory)	2
28	8300390	ST 390	Hose Clip 1" (extra accessory)	2
29	8005507	H-507/A	Gas Adaptor 1/2"	2
30	8007193	J-193	Plug for 5/8" Hole	2
31	8005126	H-126	Stop Piece T-Bolt	3
32	8005125	H-125	Table Stop Piece	2
33	8005128	H-128	3/8" - 16 Hexagon Nut	3
34	8001069	F-69	Stop Collar (extra accessory)	2
35	8006074	F-6074	1/4" x 20 x 1/4" Socket Set Screw (extra accessory)	2
36	8001068	F-68	Stop Rod Clamp (extra accessory)	1
37	8005122	H-122	Table Lock Bolt Handle	1
38	8005133	H-133	Saddle Lock Bolt	1
39	8005132	H-132	Saddle Lock Plunger	1
40	8005124	H-124	3/8" - 16 x 1/2" Hollow HD Cap Screw	2
41	8005088	H-88	Strip Adjusting Screw	3
42	8005123	H-123	Table Stop Bracket	1
43	8005119	H-119	Saddle/Table Gib	1
44	8005130	H-130	Felt Wipers	4
45	8005100	H-100	Gas Grease Nipple (Straight)	3
46	8005120	H-120	Table Lock Plunger	1
47	8005121	H-121	Table Lock Bolt	1
48	8005122	H-122	Table Lock Bolt Handle	1
49	8005131	H-131	Saddle/Knee Gib	1
50	8005129	H-129	Saddle Knee Wiper Plate	2

ITEMS 51 CONTINUED

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Spare parts

BASIC MACHINE

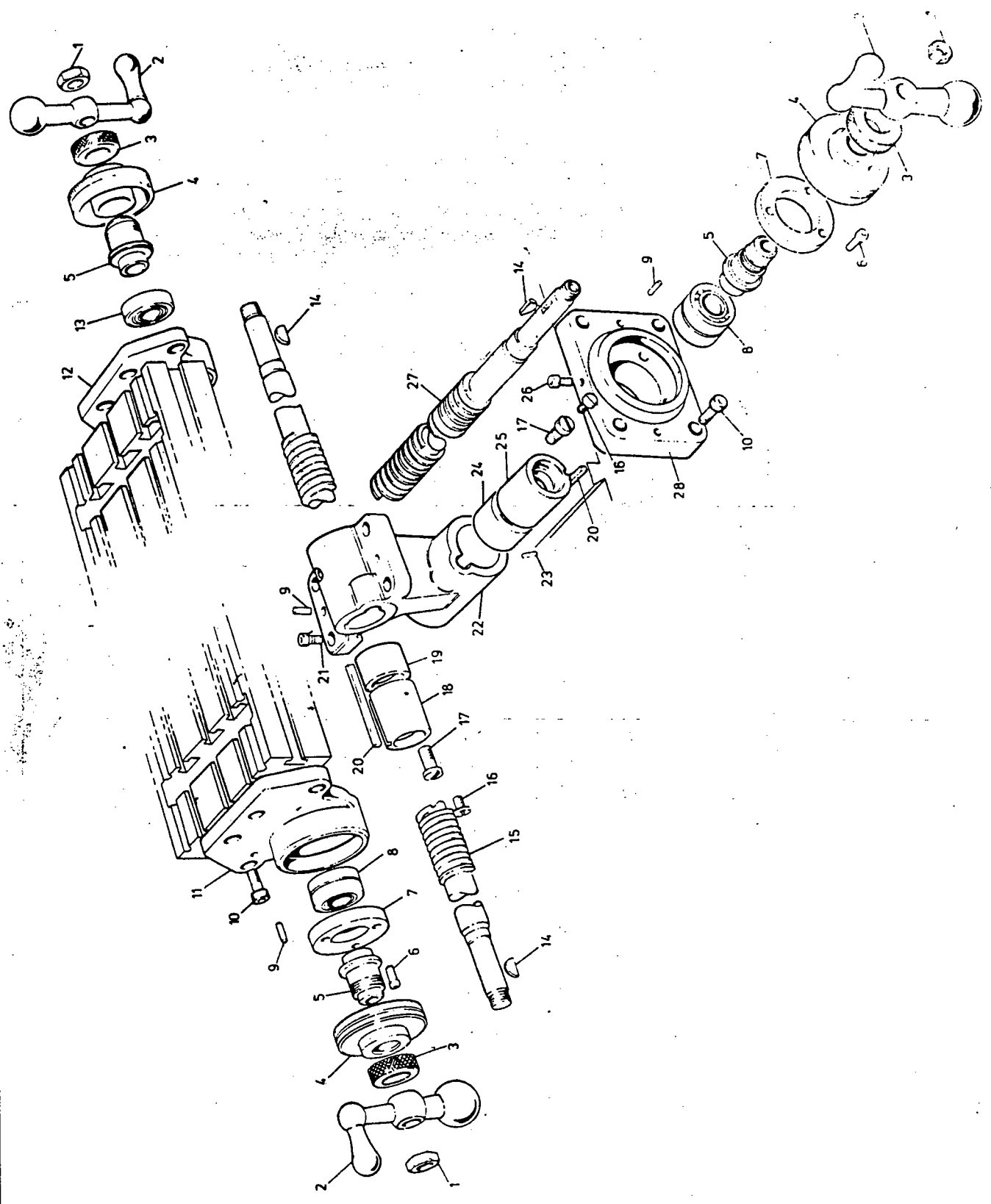
JUM-942 Y

FILE

ITEM No.	COMP. No.	PART No.	DESCRIPTION	QTY.
51	8005136	H-136	No 10 - 32 x 1/2" Oval Head Screw	6
52	8005105	H-105	Saddle	1
53	8005096	H-96	Left Hand Column Wiper Holder	1
54	8005099	H-99	Knee Wiper Felt	1
55	8005264	H-264	Knee/Column Gib	1
56	8005098	H-98	1/4" - 20 UNC x 1" Allen Cap Screw	2
57	8005097	H-97	Right Hand Column Wiper Holder	1
58	8005099	H-99	Knee Wiper Felt	1
59	8005134	H-134	1/8" Gas Grease Nipple (Angle)	3
60	8005268	H-268	Chip Guards)	1 PR
61	8005269	H-269	Chip Guards)	
62	8005263	H-263	Knee 12"	1
63	8005100	H-100	Gas Grease Nipples (Straight)	1
64	8300176	ST 176	3/16" - 16 x 1/2" Cap Screw	2
65	8005266	H-266	Knee Lock Shaft	1
66	8005095	H-95	No 1 x 1" Taper Pin	1
67	8005093	H-93	Lock Shaft Boss	1
68	8005094	H-94	Lock Shaft Handle	1
69	8005089	H-89	Knee Lock Plunger	1
70	8005538	H-538	Washer Distance/Spacer	1
71	8005146	H-146	Knee Binder Plug (Plastic)	1
72	8005091	H-91	5/16" - 18 - 5/16" Dog Point Set Screw	1
73	8005092	H-92	5/16" - 18 x 5/16" Set Screw	1
74	8005058	H-58	1/2" - 20 Jam Nut	1
75	8005056	H-56	3/16" x 3/16" x 7/8" Key	1
76	8005057	H-57	1/2" x 1" x 1/8" Thick Washer	1
77	8005059	H-59	Bevel Gear	1
78	8005055	H-55	Bearing Bush	1
79	8005052	H-52	No 3606 - J Grease Sealed Ball Bearing	1
80	8005053	H-53	Bearing Retainer Ring	1
81	8005054	H-54	1/4" x 20 x 1/2" Hollow Head Cap Screw	3
82 *	8005051	H-51	Elevating Screw	1
83	8005028	H-28	Handle	1
84	8005071	H-71	Elevating Crank	1
85	8005070	H-70	Gearshaft Clutch Insert	1
86	8005069	H-69	Dial Lock Nut	1
87	8005067	H-67	Dial with 100 Graduations	1
88	8005068	H-68	Dial Holder	1
89	8005054	H-54	1/4" x 20 x 1/2" Hollow Head Cap Screw	3
90	8005065	H-65	Bearing Retaining Ring	1
91	8005062	H-62	No 77020 Grease Sealed Bearing	1
92	8005064	H-64	Bearing Cap	1
93	8005061	H-61	No 7 Woodruff Key	2
94	8005265	H-265	Elevating Shaft for 12" Knee	1
95	8005062	H-62	No 77020 Grease Sealed Bearing	1
96	8005060	H-60	Bevel Pinion	1
97	8005058	H-58	1/2" - 20 Jam Nut	1
98	8005271	H-271	Column	1
99	8300114	ST 114	Clip N5	2
100	8300119	ST 119	Self Tapping Screw 10-24 x 5/8"	3

ITEM No.	COMP. No.	PART No.	DESCRIPTION	QTY.
101	8005545	H-545	Strainer	2
102	8005004	H-4	3/8" - 16 x 1" Hollow Head Cap Screw	2
103	8005002	H-2	Elevating Screw Housing	1
104 *	8005003	H-3	Elevating Screw Nut	1
105	8005005	H-5	1/4" - 20 x 3/4" Hollow Head Cap Screw	3
106	8005551	H-551	Clamp Bar (extra accessory)	2
107	8300161	ST 161	Socket Cap Screw 1/4" UNC x 1" (extra accessory)	2
108	8600010	AQ 3	Under Later. Coolant Pump Motor (extra accessory)	1
109	8005544	H-544	Column Cover (extra accessory)	1
110	8300119	ST 119	Self Tapping Screw 10-24 x 5/8" (extra accessory)	3
111	8005012	H-12	Wooden Shelf (2 Halves)	1
112	8005011	H-11	3/16" x 1 1/2" Hinge Pin	2
113	8005008	H-8	Door Locking Cam	1
114	8005009	H-9	1/4" - 20 x 1/4" Set Screw	1
115	8005006	H-6	Door	1
116	8005010	H-10	17/32" x 1" Spacer	1
117	8005007	H-7	Door Knob	1
118	8005256	H-256	Spider	1
119	8005230	H-230	Ram Lock Stud	2
120	8005231	H-231	Ram Pinion	1
121	8005237	H-237	Ram Pinion Handle	1
122	8005243	H-243	3/8" x 16 Ball 1 1/4" x 3/8" UNC	1
123	8009072	M-72	1/2" x 1/8" x 1" Chamfered x Hardened Washer	7
124	8005254	H-254	Turret	1
125	8005234	H-234	Ram Clamp Bar	2
126	8005239	H-239	Ram Clamp	2
127	8005233	H-233	Ram Clamp	2
128	8300109	ST 109	Split Pin 3/8" x 2 1/2"	2
129	8005270	H-270	Locking Bolt	4
130	8005238	H-238	Ram Pinion Screw	1
131	8005140	H-140	1 1/4" Open End and 1 1/16" Box End Wrench	1
132	8005141	H-141	Grease Gun	1

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Spare parts

LEADSCREW ASSEMBLY

ITEM. No.	COMP. No.	PART. No.	DESCRIPTION	QTY
1	8005081	H-81	1/2" - 20 Jam Nut	3
2	8005080	H-80	Ball Crank Handle	3
3	8005069	H-69	Dial Lock Nut	3
4	8005078	H-78	Dial with 200 Graduations	3
5	8005079	H-79	Dial Holder	3
6	8005066	H-66	1/4" - 20 x 1/2" Hollow Head Cap Screw	3
7	8005065	H-65	Bearing Retainer Ring	3
8	8005076	H-76	No XF-12 Grease Sealed Ball Bearings	6
9	8005117	H-117	3/16" x 1" Dowel Pins	2
10	8005116	H-116	3/8" - 16 x 1" Hollow Head Cap Screw	2
11	8005118	H-118	Right Bearing Bracket	8
12	8005115	H-115	Left Bearing Bracket	12
13	8005062	H-62	No 77020 Grease Seal Ball Bearing	1
14	8005061	H-61	No 7 Woodruff Key	1
15 *	8005113	H-113	Longitudinal Feed Screw (36", 42", 48", also available)	1
16	8005109	H-109	No 8 - 32 x 3/8" Washer Head Screw	1
17	8005108	H-108	Cross Feed Nut Retaining Screw	3
18 *	8005112	H-112A	Longitudinal Feed Nut A) supplied as	1
19 *	8005112	H-112B	Longitudinal Feed Nut B) one unit	1
20	8005107	H-107	3/16" x 3/16" x 2 1/2" Key	2
21	8005111	H-111	3/8" - 16 x 1" Hollow HD Cap Screw	2
22	8005110	H-110	Feed Nut Bracket	4
23	8005104	H-104	Key Pin	1
24 *	8005106	H-106A	Cross Feed Nut A) supplied as	1
25 *	8005106	H-106B	Cross Feed Nut B) one unit	1
26 *	8005084	H-84	No 10 - 32 x 5/8" Stop Screw	1
27 *	8005267	H-267	Cross Feed Screw for 12" Knee	1
28	8005077	H-77	Cross Feed Bearing Bracket	1

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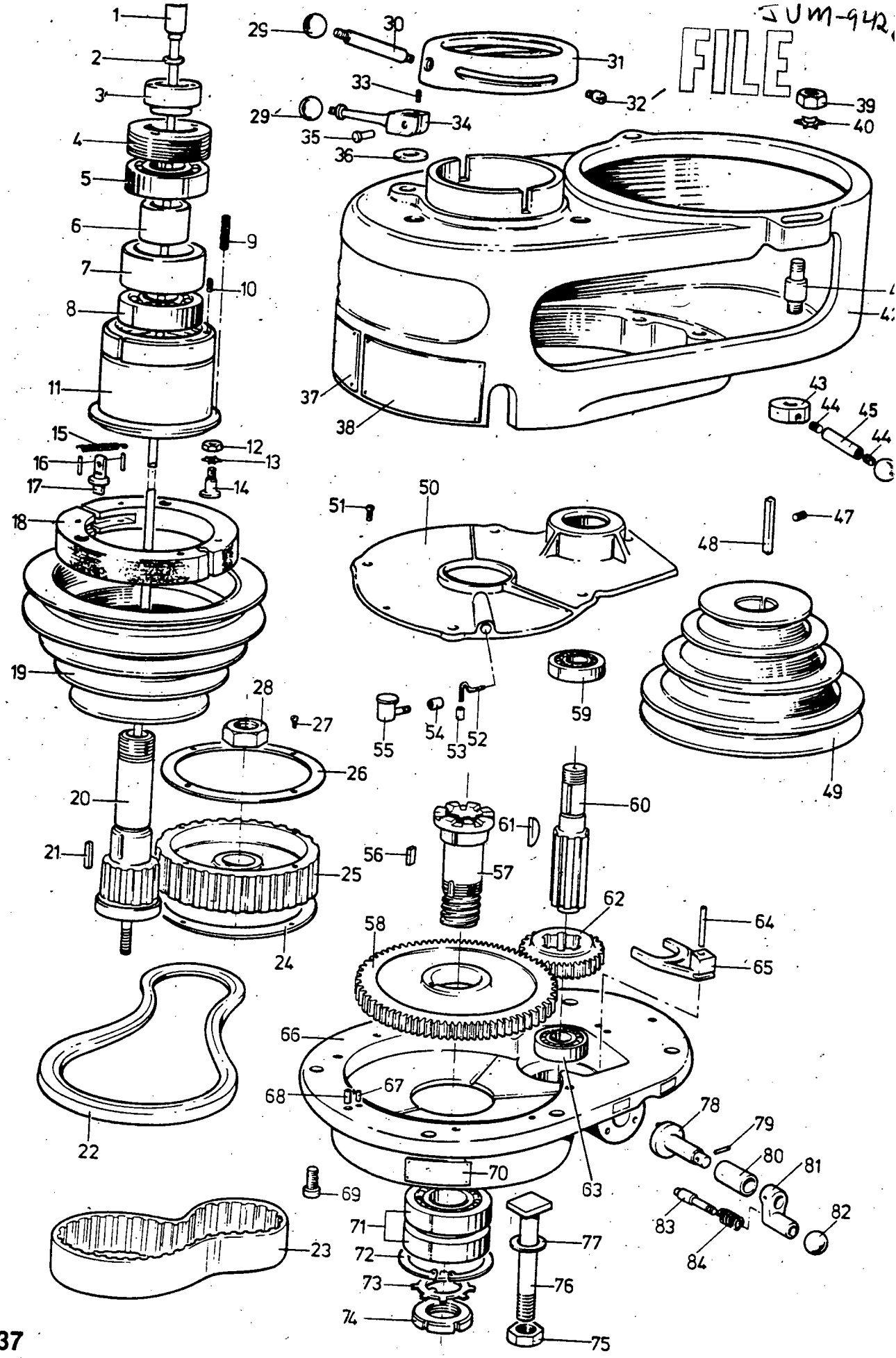
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FILE



Spare parts

HEAD TOP HOUSING

JUM-942Y

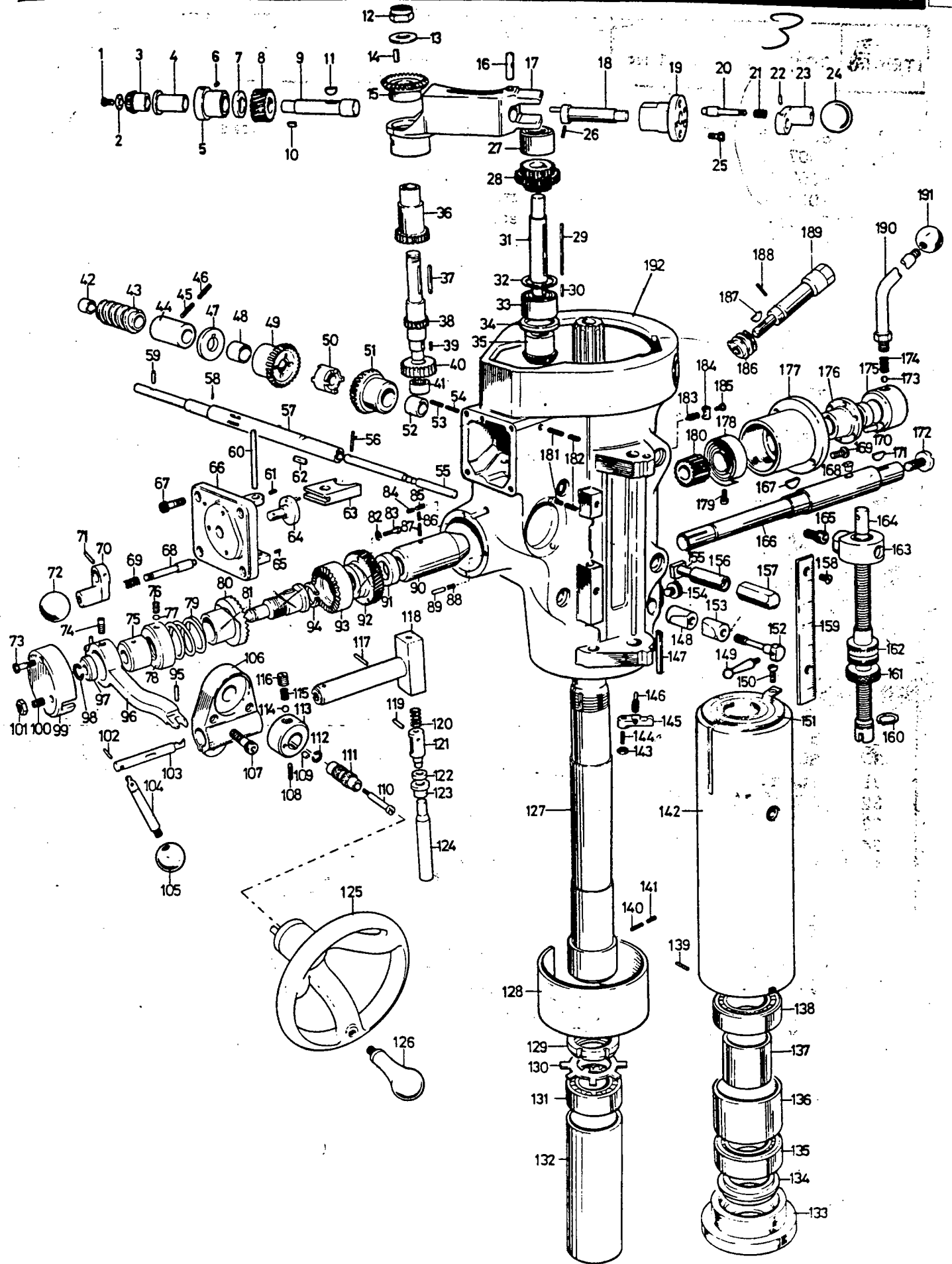
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ITEM No.	COMP. No.	PART No.	DESCRIPTION	QTY.
1	8007031	J-3102	Drawbar for R.8 Collet) supplied as	1
2	8007149	J-149	Drawbar Washer) 1 unit	1
3	8007083	J-83	Upper Bearing Locknut	1
4	8007082	J-82	Bearing Sleeve Locknut	1
5	8007293	J-293	ND 9507 Single Plate Ball Bearing (5 and 8)	1 PR
6	8007081	J-81	Upper Bearing Spacer (small)	1 PR
7	8007080	J-80	Upper Bearing Spacer (large)	
8	8007293	J-293	ND 9507 Single Plate Ball Bearing	
9	8007256	J-256	Compression Spring F-A130	4
10	8300200	ST 200	6 - 32 NC x 1/4" KP Socket Set Screw	2
11	8007013	J-13	Spindle Pulley Bearing Sleeve	1
12	8007362	J-362	5/16" - 18 Jam Nut	1
13	8007363	J-363	5/16" External Lock Washer	1
14	8007088	J-88	Brake Ring Screw	3
15	8007297	J-297	WB Jones No 167 - A External Spring	2
16	8007296	J-296	3/32" x 5/8" Long Roll Pin	4
17	8007089	J-89	Brake Lock Stud	1
18	8007087	J-87	Brake Block	1 PR
19	8007005	J-5	Spindle Pulley	1
20	8007075	J-75	Spindle Pulley Hub	1
21	8007079	J-79	Spindle Pulley Key	1
22	8007258	J-258	'V' Belt Gilmer 4LS 345	1
23	8007329	J-329	Timing Belt 1 - 1 1/4" Wide	1
24	8007008	J-8	Timing Belt Pulley Flange	1
25	8007007	J-7	Timing Belt Pulley	1
26	8007008	J-8	Timing Belt Pulley Flange	1
27	8007259	J-259	Flat Head Screw No 6 - 32 x 3/8" Long	8
28	8007300	J-300	5/8" - 18 Hex Jam Nut	1
29	8007284	J-284	Black Plastic Ball 1" Dia.	2
30	8007085	J-85	Spindle Clutch Lever	1
31	8007084	J-84	Cam Ring	1
32	8007086	J-86	Spindle Clutch Cam Ring Pin F-A142	2
33	8007298	J-298	10 - 32 x 1/4" Long Socket Set Screw	1
34	8007092	J-92	Brake Lock Handle	1
35	8007093	J-93	Brake Lock Pin	1
36	8007091	J-91	Brake Lock Washer	1
37	8007339	J-339	Spindle Speed Plate	1
38	8007340	J-340	Operating Instruction Plate	1
39	8007304	J-304	3/8" - 24 Hex Jam Nut	2
40	8007318	J-318	3/8" Lock Washer	1
41	8007133	J-133	Motor Mounting Studs	2
42	8007004	J-4	Belt Housing	1
43	8007131	J-131	Motor Locknut	2
44	8300223	ST 223	1/4" UNC x 3/4" Socket Set Screw	4
45	8007132	J-132	Motor Locknut Handle	2
46	8007284	J-284	Black Plastic Ball 1" Dia. = F-A153	2
47	8007257	J-257	Socket Set Screw 5/16" - 18 x 1/2" Long KP	1
48	8300092	ST 92	Key 3/16" x 3/16" x 2 1/2" Square Ends	1
49	8007006	J-6	Motor Pulley	1
50	8007003	J-3	Gear Housing Cover	1

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ITEM No.	COMP. No.	PART No.	DESCRIPTION	FILE	QTY.
51	8007255	J-255	Round HD Screw No 10 - 24 x 3/8" Long		5
52	8007294	J-294	Wick 1/8" OD		1
53	8007077	J-77	Oiler Tube		1
54	8007078	J-78	Oiler Plug		1
55	8007295	J-295	Gits Oil Cup No 1207		1
56	8007073	J-73	Bull Gear Key		1
57	8007072	J-72	Splined - Gear Hub		1
58	8007074	J-74	Spindle Bull Gear		1
59	8007301	J-301	ND. No 99503 Double Seal Bearing ABEC3		1 PR
60	8007095	J-95	Countershaft		1
61	8007299	J-299	No 9 Woodruff Key		1
62	8007096	J-96	Countershaft Gear		1
63	8007301	J-301	ND No 99503 Double Seal Bearing ABEC3		1
64	8007334	J-334	5/16" x 2" Long Dowel Pin		1
65	8007012	J-12	Back Gear Shifter Fork		1
66	8007002	J-2	Gear Housing		1
67	8007254	J-254	Dowel Pin 3/16" x 1/2" Long		2
68	8007365	J-365	1/4" x 3/4" Roller Pins		2
69	8007252	J-252	5/16" - 18 x 5/8" Long Socket Cap Screw		6
70	8007354	J-354	Disengage Feed Instruction Plate		1
71	8007292	J-292	ND 3208 Ball Bearing		1 PR
72	8007253	J-253	Kohinoor No 5000 - 315 Snap Ring		1
73	8007291	J-291	W-08 Lockwasher		1
74	8007290	J-290	N-08 Special 5/16" Thick Bearing Locknut		1
75	8007289	J-289	7/16" - 14 Hex Nut Hardend		3
76	8007071	J-71	Vertical Tee Bolt		3
77	8007070	J-70	Vertical Bolt Washer		3
78	8007153	J-153	Back Gear Shift Crank		1
79	8007261	J-261	1/8" x 7/8" Long Roll Pin		1
80	8007152	J-152	Back Gear Shift Bushing		1
81	8007014	J-14	Shift Crank		1
82	8007284	J-284	Black Plastic Ball 1" Dia.		1
83	8007097	J-97	Gearshift Plunger		1
84	8007262	J-262	Compression Spring		1
85			Plastic Guard for Head (extra)		1 PR



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ITEM No.	COMP. No.	PART No.	DESCRIPTION	QTY
1	8007255	J-255	No 10 - 24 x 3/8" Long RD. HD. Screw	1
2	8007123	J-123	Bevel Pinion Washer	1
3	8007327	J-327	Feed Bevel Pinion	1
4	8007124	J-124	Feed Worm Gear Shaft Sleeve	1
5	8007136	J-136	Worm Cradle Bushing	1
6	8300220	ST 220	1/4" - 20 x 5/16"	1
7	8007125	J-125	Worm Gear Spacer	1
8	8007126	J-126	Feed Drive Worm Gear	1
9	8007127	J-127	Feed Drive Worm Gear Shaft	1
10	8007122	J-122	Feed Drive Gear Key 3/8" x 5/16"	1
11	8007287	J-287	No. 7 Woodruff Key	1
12	8007356	J-356	3/8 - 24 Floploc Stop & Locknut	1
13	8007192	J-192	Washer 3/8"	1
14	8007122	J-122	Feed Drive Gear Key 3/8" x 5/16"	1
15	8007324	J-324	Feed Reverse Bevel Gear	1
16	8007128	J-128	Feed Engage Pin	1
17	8007009	J-9	Worm Gear Cradle	1
18	8007129	J-129	Worm Gear Cradle Throw-out	1
19	8007130	J-130	Shift Sleeve	1
20	8007097	J-97	Gearshift Plunger	1
21	8007262	J-262	Compression Spring	1
22	8300013	ST 13	1/8" x 7/8" Roll Pin	1
23	8007014	J-14	Shift Crank	1
24	8007284	J-284	Black Plastic Ball 1" Dia.	1
25	8007264	J-264	No 10 - 24 x 1/2" Long Cap Screw	3
26	8007315	J-315	No 10 - 24 x 3/8" Set Screw	1
27	8007147	J-147	Cluster Gear Shaft Upper Bearing	1
28	8007099	J-99 -101	Cluster Gears Assembly	1 unit
29	8007135	J-135	Cluster Gear Key	1
30	8007107	J-107	1/8" x 9/16" Round End Key	1
31	8007106	J-106	Cluster Gear Shaft	1
32	8007319	J-319	Waldes Circlip	1
33	8007108	J-108	Bevel Gear Bearing	1
34	8007109	J-109	Bevel Gear Thrust Spacer	1
35	8007146	J-146	Feed Reverse Bevel Pinion	1
36	8007105	J-105	Feed Driving Gear	1
37	8007137	J-137	1/8" x 3/8" Key Round Ends	1
38	8007104	J-104	Cluster Gear Input Shaft	1
39	8007122	J-122	3/8" x 5/16" Feed Drive Gear Key	1
40	8007103	J-103	Feed Drive Gear	1
41	8007303	J-303	B-66 Thorrrington Needle Bearing	1
42	8007353	J-353	Bushing	1
43	8007307	J-307	Boston Worm No. HL VH	1
44	8007114	J-114	Feed Worm Shaft Bushing	1
45	8007250	J-250	1/4" - 20 x 1/2" Long Socket Set Screw	1
46	8007350	J-350	1/4" - 20 Mock-it Lockscrew	1
47	8007111	J-111	Feed Worm Shaft Thrust Washer	1
48	8007305	J-305	A-672-450ilite Bearing	1
49	8007110	J-110	Feed Reverse Bevel Gear	1
50	8007112	J-112	Feed Reverse Clutch	1

Spare parts

HEAD-1 ASSEMBLY

FILE

ITEM No.	COMP No.	PART No.	DESCRIPTION	QTY.
51	8007110	J-110	Feed Reverse Bevel Gear	1
52	8007305	J-305	A-672-4 Oilite Bearing	1
53	8300226	ST 226	Special Hollow Set Screw 5/32" Chem Bl	1
54	8007251	J-251	5/16" - 18 x 5/16" Socket Set Screw	1
55	8007116	J-116	Reverse Clutch Rod	1
56	8007309	J-309	3/32" x 3/4" Long Roll Pin	1
57	8007188	J-188	Feed Worm Shaft	1
58	8007306	J-306	3/32" x 5/16" Long Pin	1
59	8007308	J-308	110 x 7/16 Long Pin	1
60	8007145	J-145	Feed Shift Rod	1
61	8007263	J-263	10-32 x 1/4" Long KP. Set Screw	1
62	8007121	J-121	1/8" x 9/16" Key Round Ends	1
63	8007011	J-11	Feed Gear Shift Fork	1
64	8007098	J-98	Cluster Gear Shift Crank	1
65	8300213	ST 213	10-32 x 1/4" Socket Set Screw	1
66	8007015	J-15	Cluster Gear Cover	1
67	8007264	J-264	No 10 - 24 x 1/2" Long Cap Screw	4
68	8007097	J-97	Gearshift Plunger	1
69	8300140	ST 140	Compression Spring	1
70	8007014	J-14	Shift Crank	1
71	8007261	J-261	1/8" x 7/8" Long Roll Pin	1
72	8007284	J-284	Black Plastic Ball 1" Dia.	1
73	8007267	J-267	10-24 x 1 1/2" Cap Screw	2
74	8007154	J-154	Clutch Ring Pin	2
75	8007053	J-53	Clutch Ring	1
76	8007275	J-275	1/4" - 20 x 1/4" Long Socket Set Screw	1
77	8007029	J-29	Brass Plug	1
78	8001061	F-61	Overload Clutch Locknut	1
79	8007321	J-321	Safety Clutch Spring	1
80	8007058	J-58	Overload Clutch	1
81	8007054	J-54	Overload Clutch Sleeve	1
82	8300374	ST 374	Single Spring Washer	3
83	8007285	J-285	8-32 x 5/8" Round Head Screw	3
84	8007350	J-350	1/4" - 20 Mock-it Lockscrew	1
85	8007250	J-250	1/4" - 20 x 1/2" Socket Set Screw	1
86	8007350	J-350	1/4" - 20 Mock-it Lockscrew	1
87	8007250	J-250	1/4" - 20 x 1/2" Socket Set Screw	1
88	8007256	J-256	Compression Spring 1/4" Dia. x 1 1/4"	1
89	8007051	J-51	Overload Clutch Lever Spring Plunger	1
90	8007062	J-62	Quill Pinion Shaft Bushing	1
91	8007061	J-61	Pinion Shaft Worm Gear Spacer	1
92	8007060	J-60	Overload Clutch Worm Gear	1
93	8007059	J-59	Overload Clutch Ring	1
94	8007288	J-288	Kohinoor Circlip	1
95	8007281	J-281	3/16" x 5/8" Dowel Pin	1
96	8007010	J-10	Overload Clutch Trip Lever	1
97	8007052	J-52	Overload Clutch Washer	1
98	8007331	J-331	5108 - 37 Kohinoor Snap Ring	1
99	8007018	J-18	Clutch Arm Cover	1
100	8007268	J-268	1/4" - 20 x 1/2" Socket Set Screw	1

ITEMS 101 CONTINUED

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FILE

Spare parts

HEAD ASSEMBLY

ITEM No.	COMP. No.	PART No.	DESCRIPTION	QTY.
101	8300352	ST 52	Chem Blacked Locknut $\frac{1}{4}$ x 20 UNC	1
102	8300045	ST 45	$\frac{3}{16}$ " x $\frac{3}{4}$ " Dowel Pin	1
103	8007048	J-48	Cam Rod	1
104	8007049	J-49	Trip Handle	1
105	8007284	J-284	Black Plastic Ball 1" Dia.	1
106	8007017	J-17	Feed Trip Bracket	1
107	8007265	J-265	$\frac{1}{4}$ " - 20 x 1" Long Cap Screw	2
108	8300220	ST 220	$\frac{1}{2}$ " x 20 x $\frac{5}{16}$ "	1
109	8007121	J-121	Key	1
110	8007156	J-156	Feed Reverse Knob Stud	1
111	8007117	J-117	Reverse Knob	1
112	8007336	J-336	Snap Ring 5100-25	1
113	8007118	J-118	Handwheel Clutch	1
114	8007310	J-310	$\frac{3}{16}$ " Dia. Steel Ball	1
115	8007311	J-311	Compression Spring	1
116	8007113	J-113	Handwheel Clutch Spring Screw	1
117	8007282	J-282	$\frac{1}{8}$ " x $\frac{9}{16}$ " Long Roll Pin	1
118	8007047	J-47	Cam Rod Sleeve Assembly	1
119	8007280	J-280	$\frac{1}{8}$ " x $\frac{7}{16}$ " Long Roll Pin	1
120	8007283	J-283	Compression Spring	1
121	8007045	J-45	Trip Plunger	1
122	8007046	J-46	Feed Trip Plunger Bushing	1
123	8007044	J-44	Trip Plunger Bushing	1
124	8007043	J-43	Feed Trip Plunger	1
125	8007021	J-21	Handwheel	1
126	8009043	M-43	Handwheel Handle	1
127	8007166	J-166	Spindle (Serial J-1200 and up)	1
128	8007035	J-35	Quill Skirt	1
129	8007272	J-272	No. 06 Locknut	1
130	8007273	J-273	W-06 Lockwasher	1
131	8007349	J-349	Fafnir Bearing M206K 132J30	1
132	8007176	J-176	Sleeve From Ser J-1750	1
133	8007172	J-172	Nose-piece	1
134	8007169	J-169	Spindle Dirt Shield	1
135	8007348	J-348	Fafnir MM207 LU35T Bearing	1 PR
136	8007170	J-170	Bearing Spacer - Large From J-1750)	1 PR
137		J-171	Bearing Spacer - Small)	
138	8007348	J-348	Fafnir MM207 LU35T Bearing	1
139	8007275	J-275	$\frac{1}{4}$ " - 20 x $\frac{1}{4}$ " Socket Set Screw	1
140	8007139	J-139/A	$\frac{1}{4}$ " x 32 UNF x 343 Special Socket Set Screw	1 PR
141	8007139	J-139	Collet Alignment Screw	
142	8007167	J-167	Quill	1
143	8300336	ST 336	Steel Nut 6-32 NC	1
144	8007279	J-279	6-32 x $\frac{3}{8}$ " Socket Set Screw	1
145	8007042	J-42	Feed Trip Lever	1
146	8007151	J-151	Trip Lever Pin	1
147	8009052	M-52	Indicator Rod	1
148	8007066	J-66	Drilled Lock Sleeve	1
149	8009047	M-47	Lock Handle	1
150	8007276	J-276	10-32 x $\frac{5}{16}$ " Long RD. HD. Screw	2

Spare parts

HEAD

ASSEMBLY

JUM-942Y
FILE

ITEM No.	COMP. No.	PART No.	DESCRIPTION	QTY.
151	8007368	J-368	Oil Strainer for Quill Bearing	1
152	8007067	J-67	Quill Lock Bolt	1
153	8007065	J-65	Quill Lock Sleeve Tapped	1
154	8009051	M-51	Indicator Rod Screw	1
155	8007601	J-601	$\frac{1}{2}$ " x 6 $\frac{3}{16}$ " Tee Bolt	4
156	8007094	J-94	Lower Clamping Bolt Spacer	2
157	8007603	J-603	$\frac{1}{2}$ " x $1\frac{1}{2}$ " Adaptor Nut	4
158	8007323	J-323	6-32 x $\frac{3}{16}$ " Chem Blacked RD. HD. Screws	2
159 *	8007322	J-322	Micrometer Scale	1
160	8007319	J-319	5108 - 62 Waldes Snap Ring	1
161 *	8007157	J-157	Quill Micro-stop Nut	1
162 *	8007038	J-38	Micrometer Nut	1
163	8007036	J-36	Quill Stop Knob	1
164 *	8007037	J-37	Quill Stop Micro-screw	1
165	8007278	J-278	$\frac{3}{8}$ - 24 x $\frac{5}{8}$ " Screw	1
166	8007063	J-63	Quill Pinion Shaft	1
167	8007287	J-287	No. 7 Woodruff Key	1
168	8009089	M-89	Spring Pin	1
169	8007255	J-255	No 10-24 x $\frac{3}{8}$ " Long RD. Head Screw	2
170	8007260	J-260	$\frac{3}{16}$ " x $\frac{3}{4}$ " Long Dowel Pin	1
171	8007286	J-286	No. 3 Woodruff Key	1
172	8007148	J-148	Pinion Shaft Hub Screw	1
173	8007310	J-310	$\frac{3}{16}$ " Steel Ball	1
174	8007330	J-330	Compression Spring	1
175	8009053	M-53	Rack Feed Handle Hub	1
176	8009033	M-33	Pinion Shaft Hub Sleeve	1
177	8007016	J-16	Spring Cover	1
178	8007328	J-328	Clock Spring 1" x .020" x 42"	1
179	8007150	J-150	Outside Spring Pin	1
180	8007064	J-64	Quill Pinion	1
181	8007250	J-250	$\frac{1}{4}$ " - 20 x $\frac{1}{2}$ " Long Socket Set Screw	1
182	8007350	J-350	$\frac{1}{4}$ " - 20 Mock-it Lockscrew	1
183	8007039	J-39	Reverse Trip Ball Lever	1
184	8007040	J-40	Feed Reverse Trip Plunger	1
185	8007041	J-41	Reverse Trip Ball Lever Screw	1
186	8007140	J-140	Worm Gear	1
187	8300067	ST 67	No. 5 Woodruff Key	1
188	8300227	ST 227	Socket Set Screw $\frac{1}{4}$ UNC x 20 x $\frac{1}{4}$	1
189	8007141	J-141	ADJ Worm Shaft	1
190	8009054	M-54	Pinion Shaft Hub Handle	1
191	8007333	J-333	Black Plastic Ball Handles $1\frac{3}{8}$ " Dia. same as M-54	1
192	8907001	J-1	Quill Housing	1