

# BL150

150mm Lathe .  
Operating Instructions

PLEASE INSERT SERIAL NUMBER OF YOUR MACHINE HERE

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FOR SERVICE, SPARES AND TOOLING CONTACT:-

BURSGREEN LTD

TEL. 0116 276 9111

[www.wadkinbursgreen.co.uk](http://www.wadkinbursgreen.co.uk)

WHEN ORDERING SPARES OR REQUESTING SERVICE  
PLEASE QUOTE FULL SERIAL NUMBER AND INDICATE MODEL TYPE.

MODIFICATIONS ARE MADE TO THESE BOOKS FROM TIME TO TIME  
AS IT IS OUR CONSTANT POLICY TO IMPROVE THE DESIGN OF  
BURSGREEN MACHINES. IT IS THEREFORE IMPORTANT THAT THE  
BOOK SUPPLIED WITH THE MACHINE BE USED AS AN INSTRUCTION  
MANUAL.



## HEALTH & SAFETY

### SAFETY OF WOODWORKING MACHINES

Woodworking machines can be dangerous if improperly used. The wide range of work of which they are capable, requires adequate safeguarding arrangements against possible hazards.

Many injuries to machinists are caused by carelessness or failure to use the guards provided or to adjust them correctly.

WADKIN LTD., supply machinery designed for maximum safety which they believe, as a result of thorough testing, minimizes the risks inevitable in their use. It is the user's responsibility to see that the following rules are complied with to ensure safety at work:

1. The operation of the machine should conform to the requirements of the Woodworking Machines Regulations 1974. All guards should be used and adjusted correctly.
2. Safe methods of working only should be adopted as given in the Health and Safety Work Booklet No.41, "Safety in the Use of Woodworking Machines", (obtainable from Her Majesty's Stationery Office) and as advised by Wadkin Ltd.
3. Only personnel trained in the safe use of a machine should operate it.
4. Before making adjustments or clearing chips, etc., the machine should be stopped and all movement should have ceased.
5. All tools and cutters must be securely fixed and the speed selected must be appropriate for the tooling.

*SAFETY IS OUR WATCHWORD BUT THE USER MUST COMPLY WITH THE ABOVE RULES IN HIS OWN INTEREST. WE WOULD BE PLEASED TO ADVISE ON THE SAFE USE OF OUR PRODUCTS,*

oOo

## **SAFETY**

- 1. Read Instruction Book.**
- 2. Securely Lock Cutters.**
- 3. Set Guards Correctly.**
- 4. Select Correct Speed.**
- 5. Use Feeding Devices Where Possible.**
- 6. Refer To HSW Booklet No.41. (in UK) For Safety In The Use Of Woodworking Machinery.**

## SECTIONS

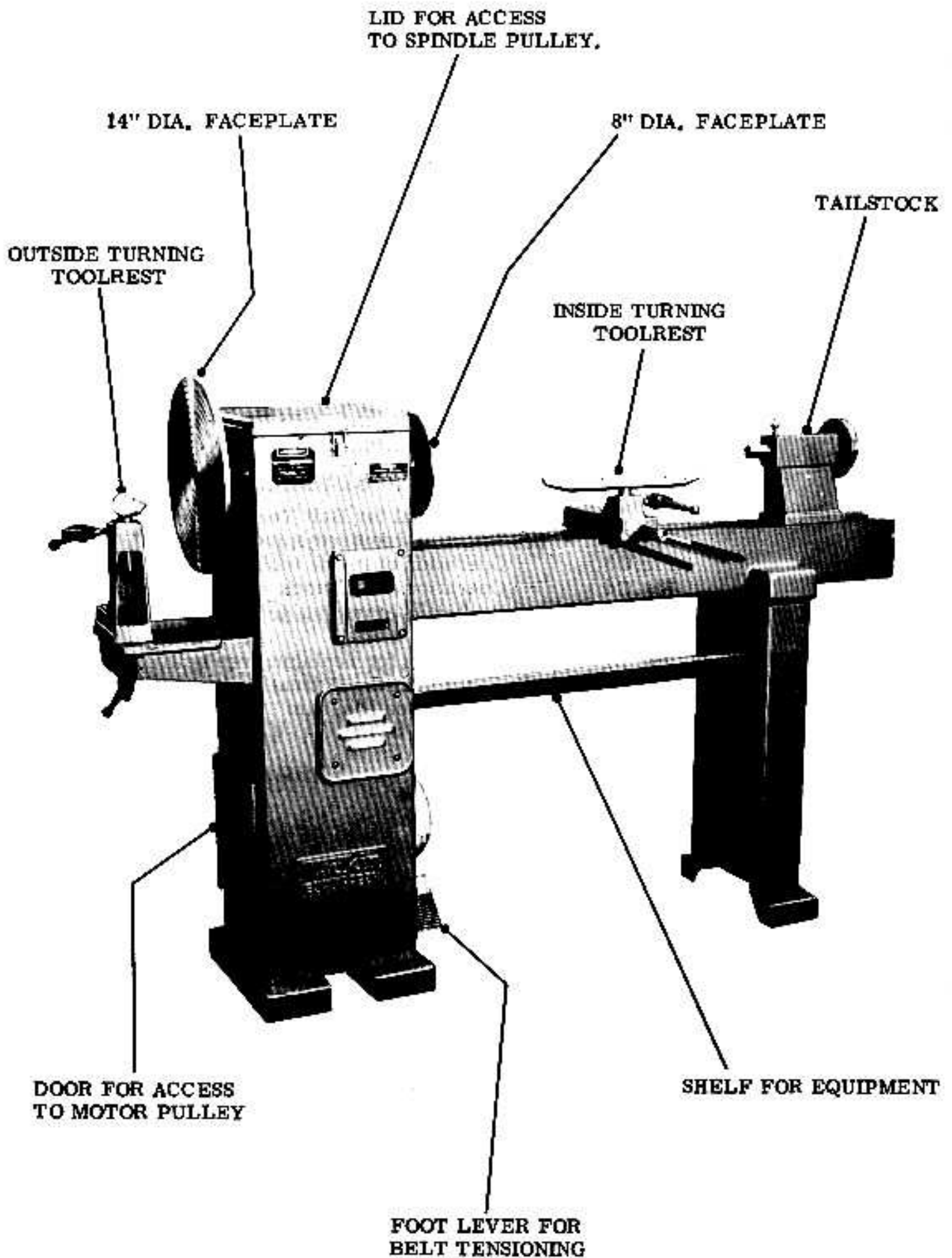
SECTION A	SPECIFICATION
SECTION B	INSTALLATION
SECTION C	DESCRIPTION AND OPERATION
SECTION D	MAINTENANCE
SECTION E	SPARE PARTS LIST

## ILLUSTRATIONS

SECTION A	Fig. A1	6" Lathe Type BL150
SECTION B	Fig. B1 Fig. B2 Fig. B3	Wiring Diagram (3phase) Wiring Diagram (1phase) Foundation Plan
SECTION C	Fig. C1 Fig. C2 Fig. C3 Fig. C4 Fig. C5	Foot Pedal for Belt Tension Selecting required spindle speed Operation of inside toolrest Operation of tailstock Operation of outside toolrest
SECTION D	Fig. D1 Fig. D2 Fig. D3	Operation for replacing vee belt Gap Bed Lathe (Extra) Lubrication Diagram

# 6" WOOD TURNING LATHE. TYPE BL.150.

FIG A. 1.



**SECTION A**  
**SPECIFICATION.**

Height to centre *	6½"	159 mm
Will take between centres	39"	1m
Height from floor to centres	40"	1020 mm
Diameter turned over handrest	9"	230 mm
Diameter turned with gap bed	18"	457 mm
Width turned with gap bed	7½"	191 mm
Speed of spindle	425, 800, 1400 and 2300 r p m	
Horsepower of motor	1 HP	
Speed of motor - 50 cycles	1500 r p m	
- 60 cycles	1800 r p m	
Morse taper of spindle	No. 3	
Spindle bored	25/32"	20 mm
Morse taper in tallstock	No. 2	
Tallstock bored	½"	12.7 mm
Diameter of inside faceplate	8"	200 mm
Diameter of outside faceplate	14"	350 mm
Capacity of outside turning	5" wide x 22" dia. 125 x 560 mm.	
	9" wide x 17½" dia. 230 x 445 mm.	
Approx. floor space	72" x 24"	1830 x 610 m.m.
Approx. net weight	400 lbs	180kg
Approx. shipping dimensions	40 cu. ft	1.1m <sup>3</sup>

\* Note : Machine will swing a maximum of 12½" (317 mm) over bed between centres.

## SECTION B INSTALLATION.

Remove protective coating from all bright parts by applying a cloth soaked in paraffin, turpentine or other solvent.

When the machine is cased for export the outside turning assembly is removed and packed individually. Remove and re-assemble as shown in Fig A.1.

### FOUNDATION

See Fig. B.3. for bolt positions and clearances required. When installing the machine, level the bed by packing under the feet. Foundation bolts are not supplied with the machine except by special order.

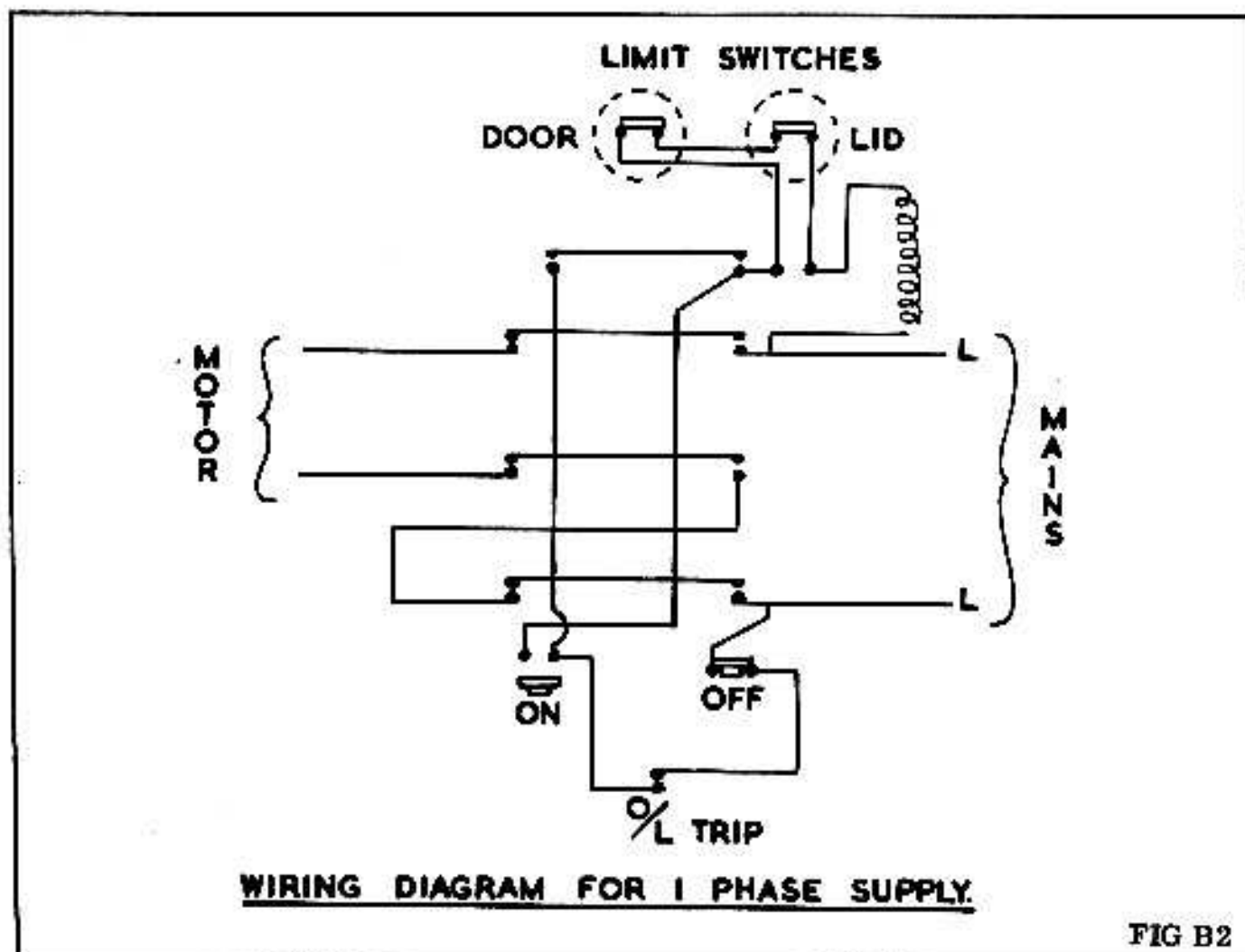
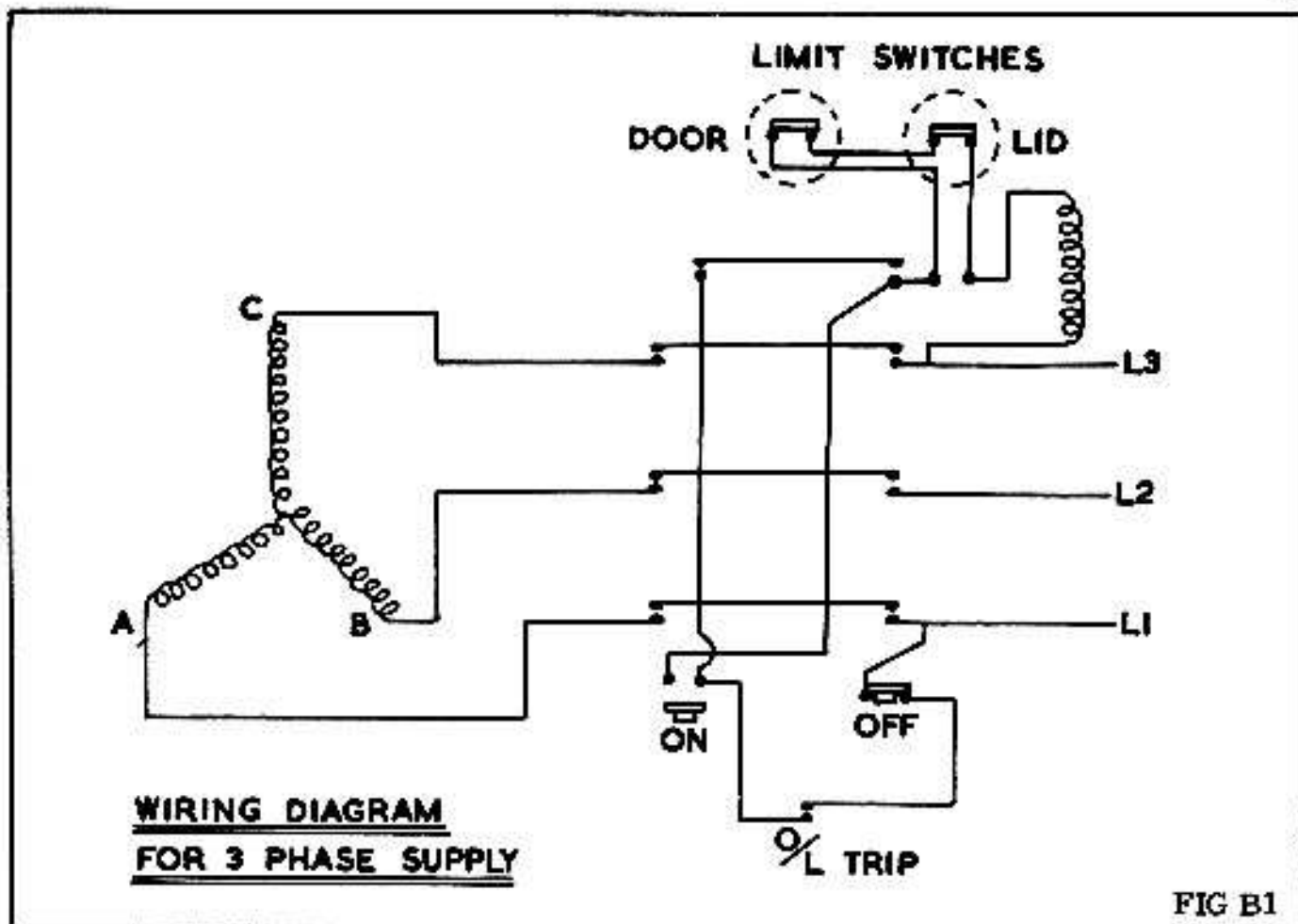
### WIRING DETAILS

The motor and control gear have been wired in before despatch. All that is required, is to connect the power supply to the starter.

Points to note when connecting to power supply :-

1. Check that the voltage, phase and frequency correspond to those on the motor plate, also the correct coils and heaters are fitted to the starter.
2. It is important that the correct cable is used to give the correct voltage to the starter as running on low voltage will damage the motor.
3. Check the main line fuses are of the correct capacity. See list below.
4. Connect the line leads to the appropriate terminals.  
See Fig. B1 for single phase supply.  
See Fig. B2 for three phase supply.
5. Check all connections are sound.
6. Check the rotation of the motor for the correct direction. If this is incorrect for three phase supply, reverse any two of the line lead connections.

<u>VOLTAGE</u>	<u>PHASE</u>	<u>CYCLES</u>	<u>HP</u>	<u>SWG TINNED COPPER WIRE</u>	<u>AMPS</u>
220	3	50	1	25	15
340/420	3	50	1	30	8.5
200/250	1	50	1	23	20
220	3	60	1	25	15
400/550	3	60	1	30	8.5





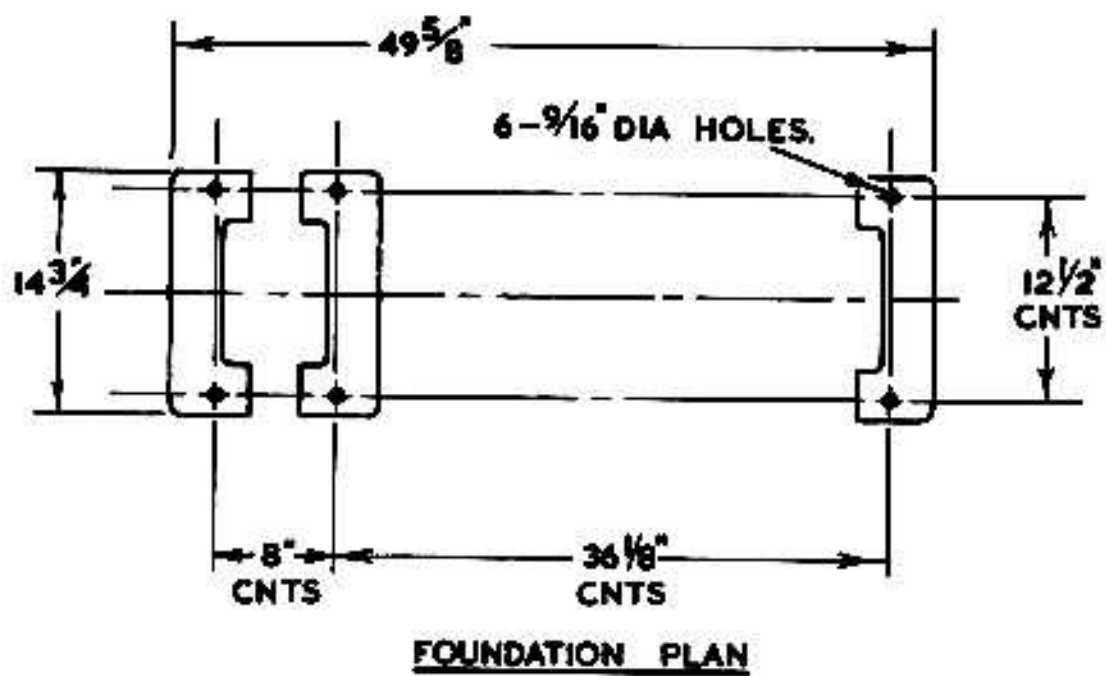


FIG B3

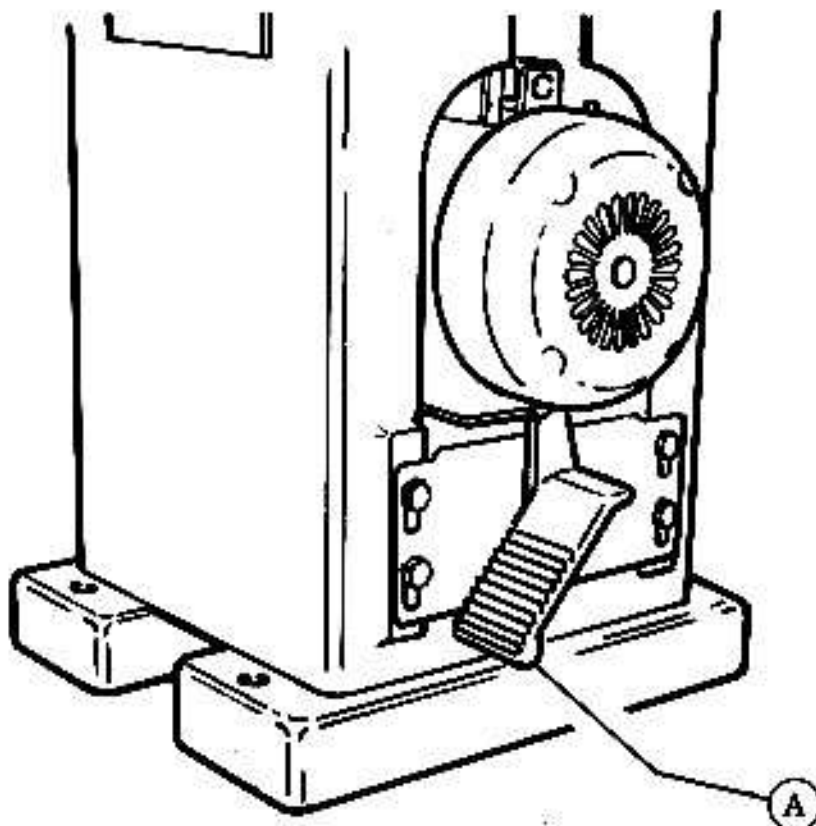


FIG C1

## SECTION C

### HEADSTOCK SPINDLE UNIT

The spindle is threaded at both ends to receive chucks and faceplates. All centres with a No. 3 morse taper shank will fit into the taper bore in the spindle end, which is over the bed.

The centre can be ejected from the spindle by means of the knock out rod provided, being placed down the centre of the spindle and given a sharp tap.

### BELT TENSION

The drive is by means of an inter-changeable vee belt from a 1HP motor mounted on a bracket fitted with anti-vibration rubber inserts. A foot lever releases tension on the belt for speed changing.

### IMPORTANT

FOR THE SAFETY AND WELL BEING OF THE OPERATOR IT IS IMPERATIVE THAT THE SELECTED HEAD STOCK SPINDLE SPEED IS COMPATABLE TO THE SIZE, DIA. AND WEIGHT OF THE WORK PIECE.

### TO CHANGE SPEED FOLLOW UNDERMENTIONED PROCEDURE :-

1. Release lid fastener and swing lid clear of pulley at top of machine. This automatically breaks contact in micro-switch, cutting off supply to motor.
2. Release tension from belt by lifting foot lever "A" in Fig. C1.
3. Select required speed on stepped spindle pulley "A" in Fig. C2.
4. Open door at base of machine to give access to motor pulley. This breaks contact of a further micro-switch which renders the machine inoperative whenever the door is opened. Select required speed on stepped motor pulley.
5. Retension belt by depressing foot lever.
6. Secure lid at top of machine and door on base.

### OPERATION OF TOOLREST

The toolrest has a quick action lock for ease and quickness of positioning in any position on the bed. Lock or unlock entire toolrest assembly by hand lever "A" in Fig. C3, while adjustable handle "B" locks or unlocks toolrest only.

The toolrest is locked to the bed by means of an eccentric spindle holding a clamping plate to the underside of the bed. If this does not lock correctly or sufficiently for the toolrest to move freely along the bed, the  $\frac{1}{2}$ " whit. aerotight nut securing the clamping plate should be adjusted by the required amount until the toolrest locks correctly.

### OPERATION OF THE TAILSTOCK

The movement of the tailstock spindle is controlled by the handwheel "A" in Fig. C4. Turning of the handwheel in the direction of the arrow in Fig. C4 moves the tailstock spindle towards the workpiece. The tailstock spindle is locked in position by means of the ball lever screw "B". Unlock spindle at all times before attempting to move it in or out by the handwheel.

An adjustable handle "C" locks the tailstock in position by a clamping plate on the underside of the bed.

## TAILSTOCK SPINDLE

All centres with a No. 2 Morse taper shank will fit into the taper bore in the tailstock spindle. Before inserting the centres make sure they are free from burrs, rust and dirt. Place a few drops of oil on the shanks of all centres before inserting in position. The centres can be ejected from the tailstock spindle, by means of the knock out rod provided, being placed down the centre of the spindle and given a sharp tap.

## SECTION D

### TO REPLACE A WORN OR BROKEN BELT FOLLOW UNDERMENTIONED PROCEDURE

1. Release lid fastener and swing lid clear at top of machine. Release belt tension by footlever "A" in Fig. C1.
2. Secure spindle by locating toggle bar into spindle pulley. Remove outside turning faceplate.
3. Loosen two socket head grub screws "A" in Fig. D.1. which secure inside turning bearing to spindle.
4. Remove four hexagon head bolts, nuts and washers "B" in Fig. D.1. which secure outside turning bearing block to trunk. Remove end cover plate "C".
5. Slide outside turning bearing block from dowels and slide spindle assembly "D" towards tailstock.
6. Worn or broken belt can now be changed.

**NOTE :-** To re-assemble, reverse above procedure ensuring that grub screws line up with dimples "E" on spindle, and bearing block lines up with dowels.

## CARE OF THE BED

The bed of this lathe has been precision ground to provide a smooth and true surface for the tailstock and toolrest assemblies to slide on. Care should be taken not to damage the surface of the bed through careless handling of the tools as this will affect the accuracy of the machine, also the action of the toolrest and tailstock.

Keep the bed clear of chippings and wipe it frequently with an oily rag for ease of operation and to prevent rusting.

## GAP BED LATHE (EXTRA)

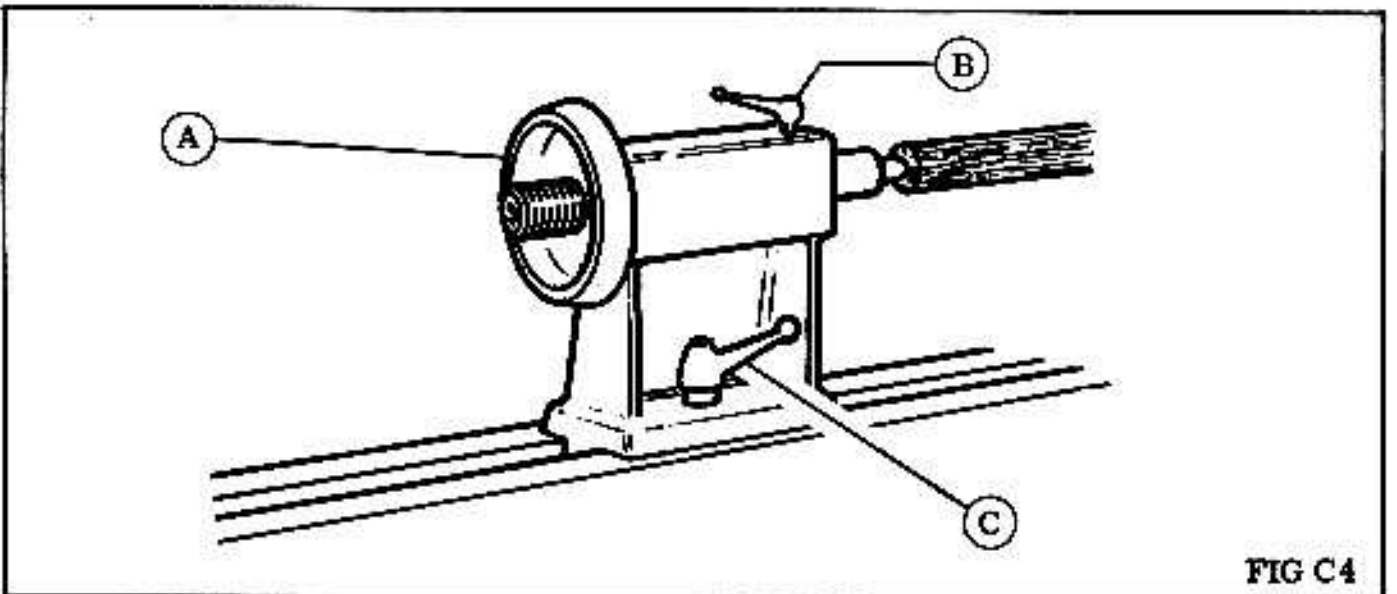
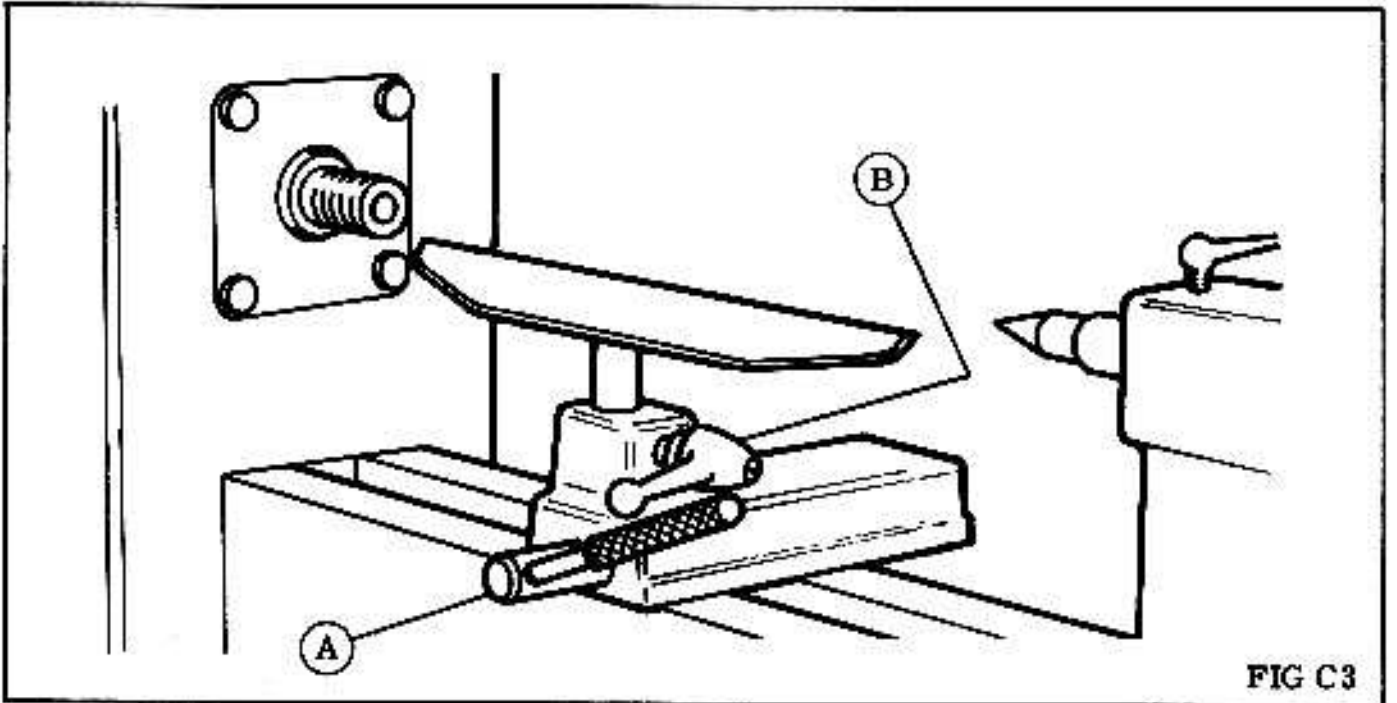
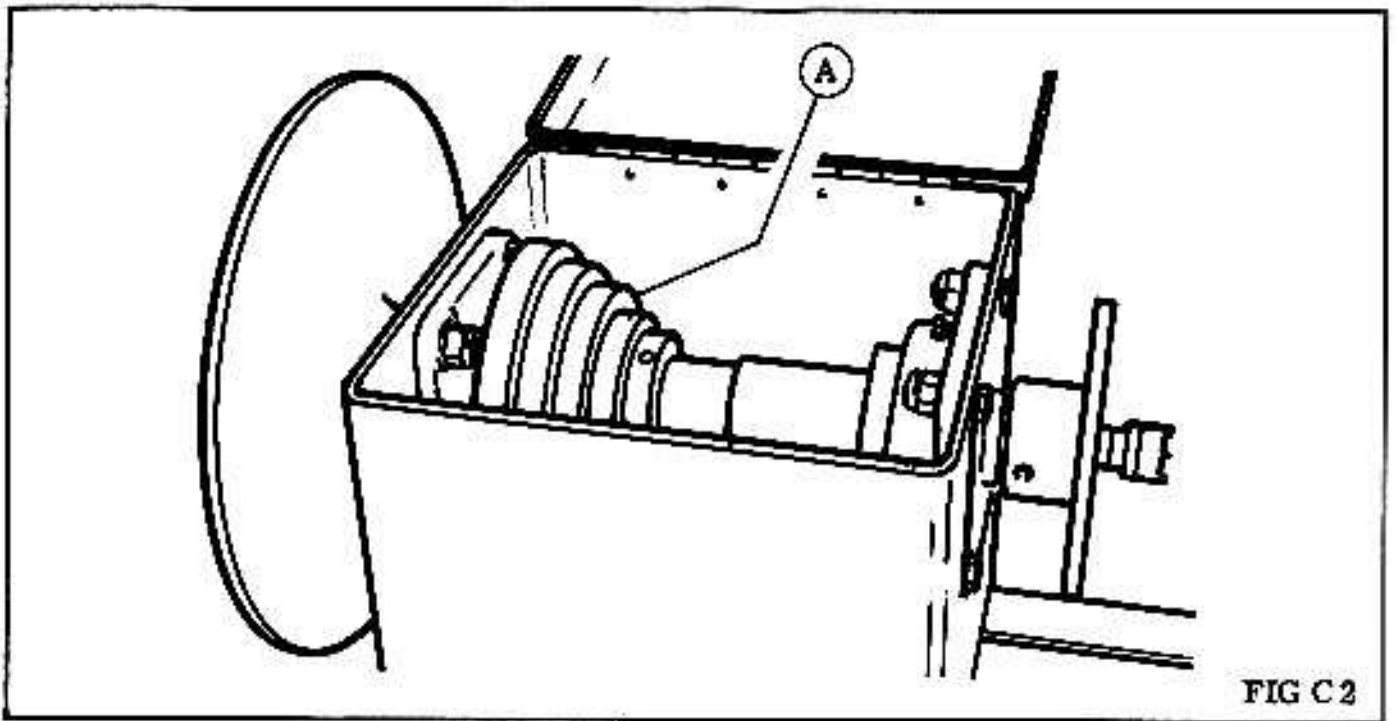
When machine is fitted with a gap bed the capacity is increased to 18" (457mm) inside turning circle x 7½" (191 mm) wide.

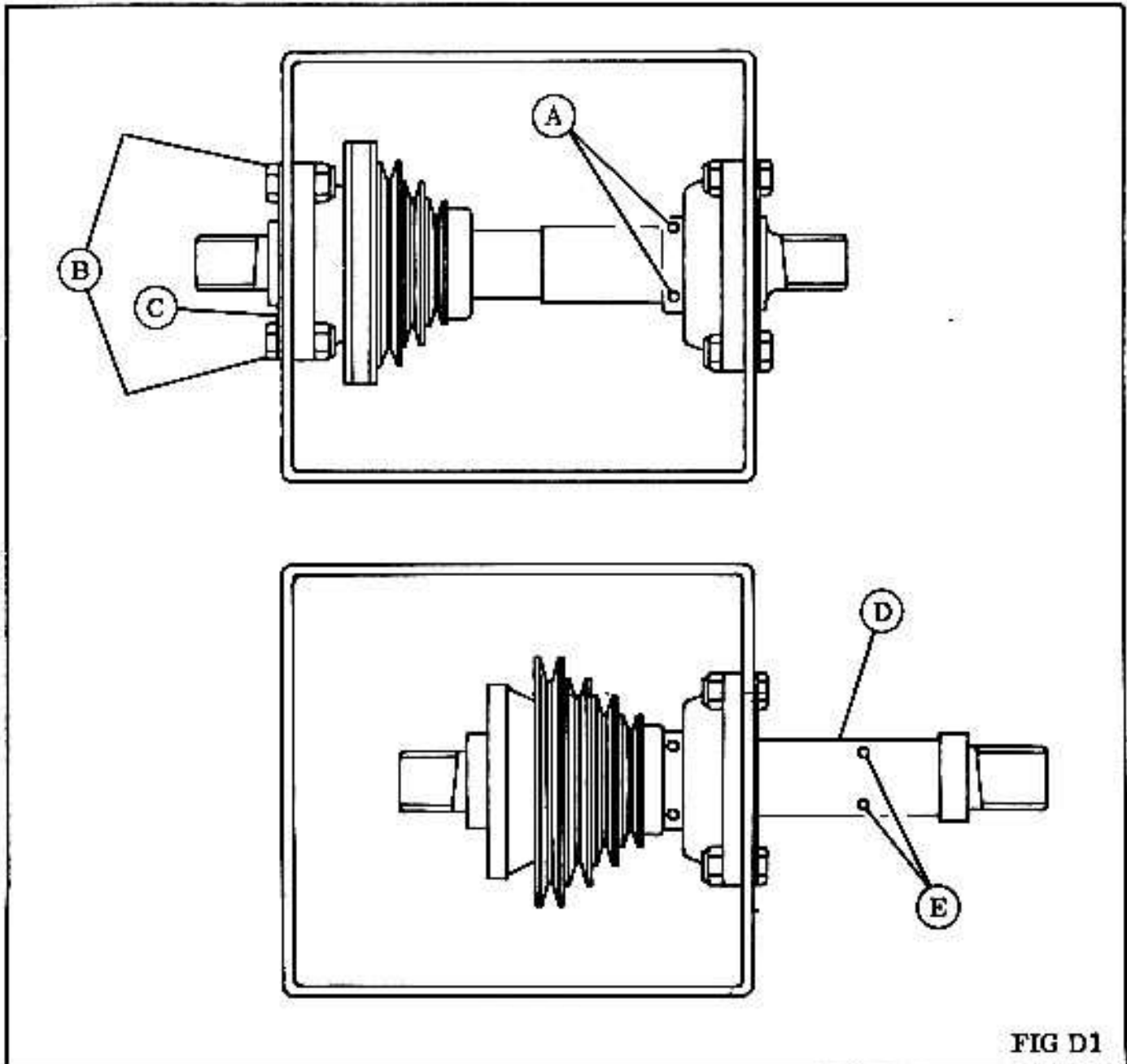
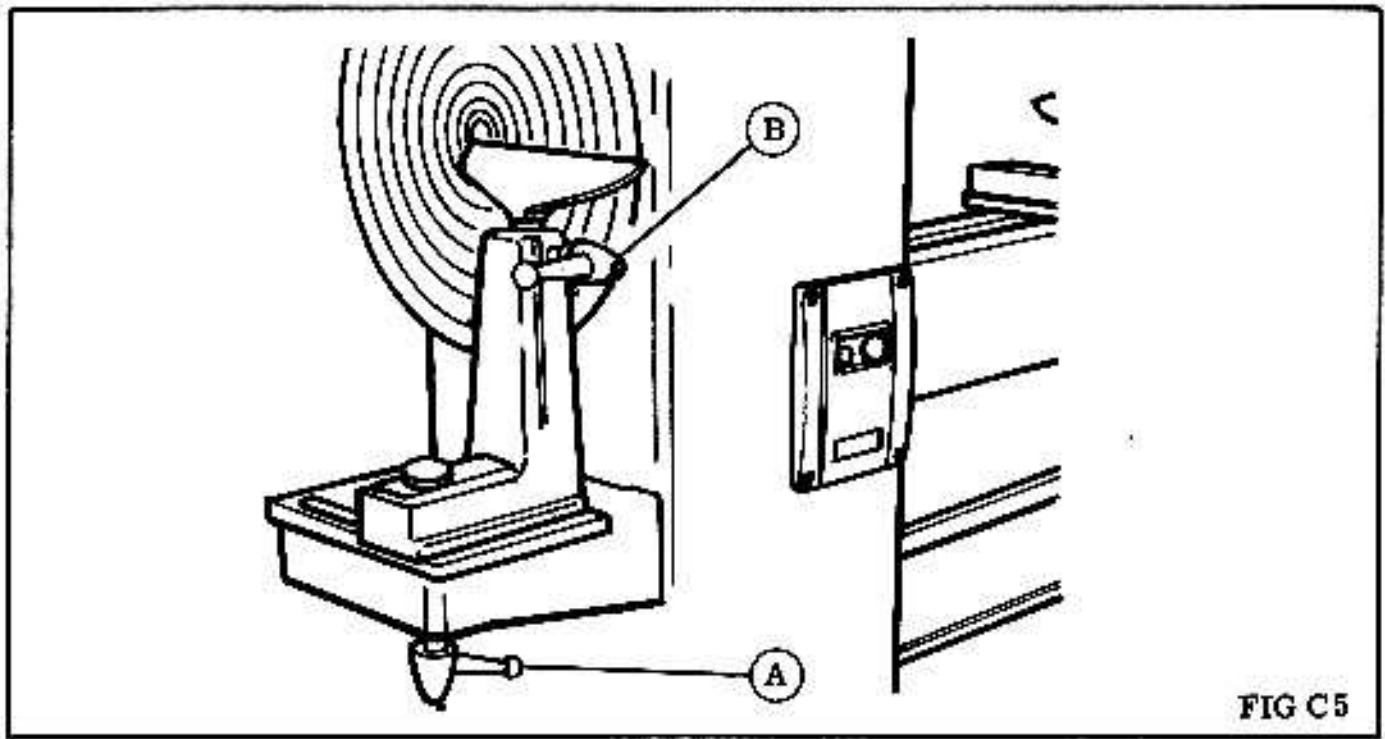
To remove the gap bed section, loosen 2 - 3/8" whit hexagon bolts and washers "A" in Fig. D2 then lift gap bed section "B" clear of machine. Replace by reversing above mentioned procedure **NOTE :** Ensure gap is free from dirt and chippings before replacing gap bed section "B".

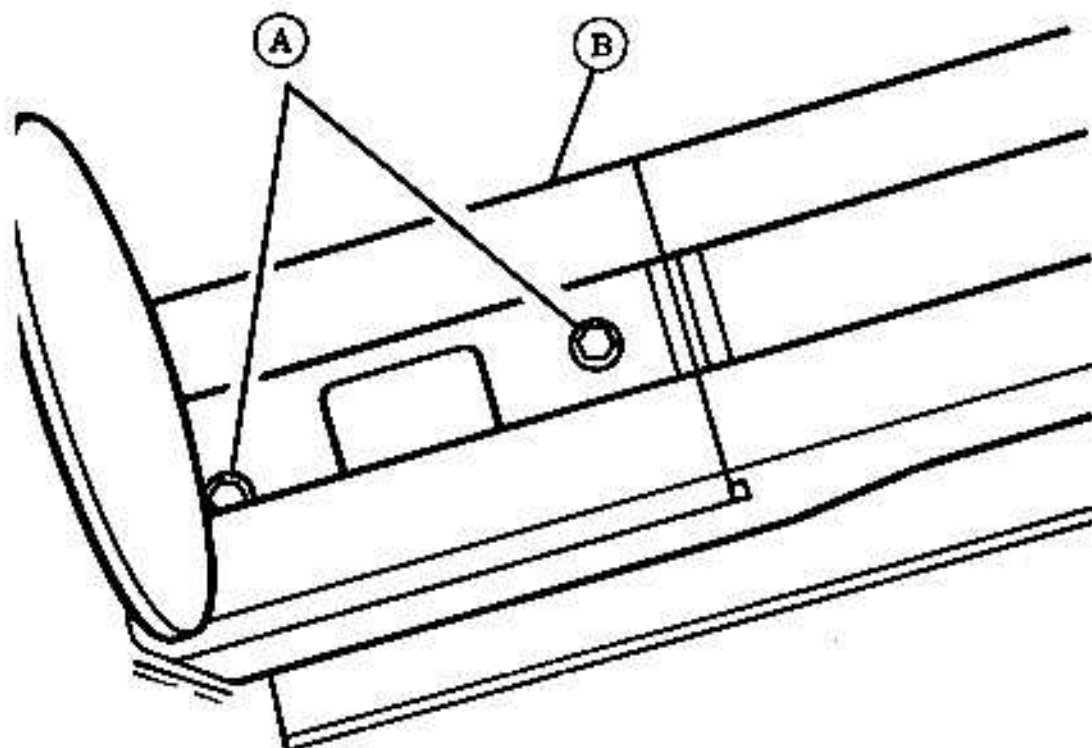
## LUBRICATION

See Fig. D. 2 for lubrications. It is advisable to keep all bright parts covered with a thin film of oil to prevent rusting.

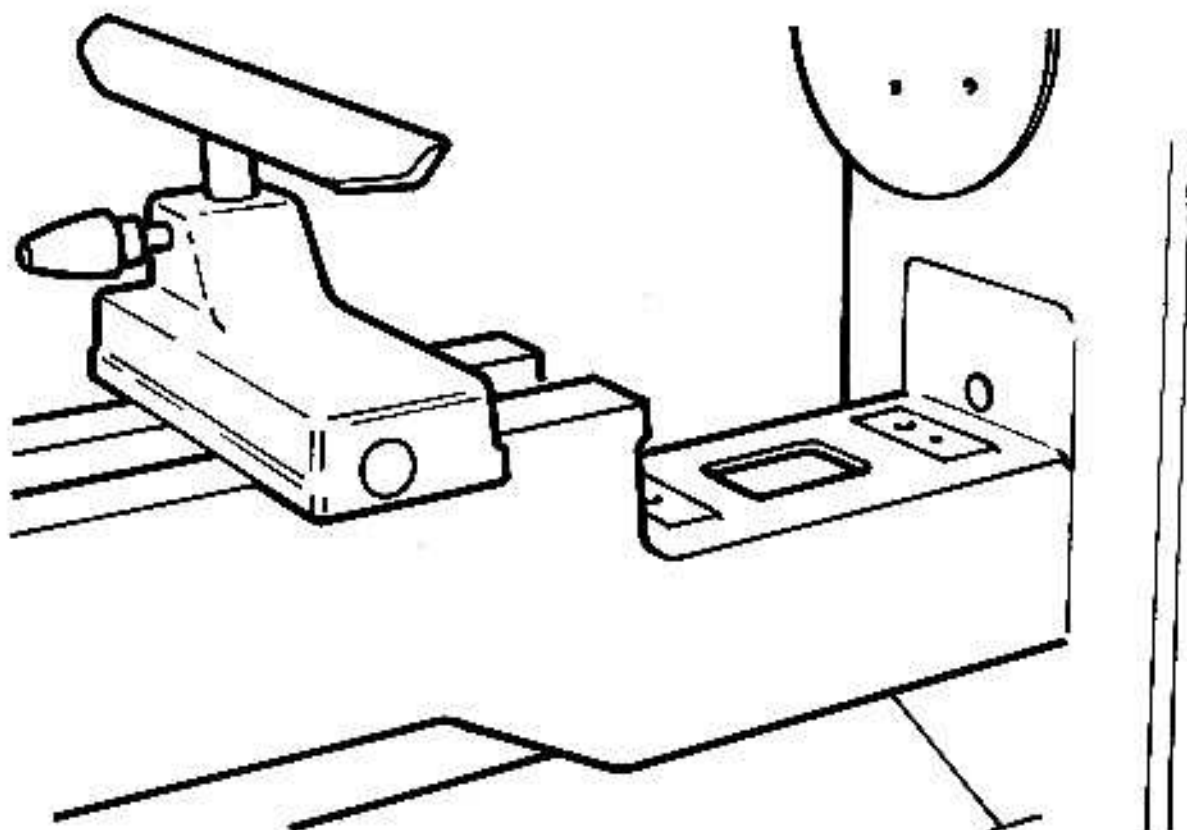
TYPE OF GREASE RECOMMENDED	-	SHELL ALVANIA 3
TYPE OF OIL RECOMMENDED	-	POWER EM 125







TOP VIEW



DIAMETER TURNED WITH GAP BED

18"

457mm

WIDTH TURNED WITH GAP BED

7 1/8"

191mm

FIG D2

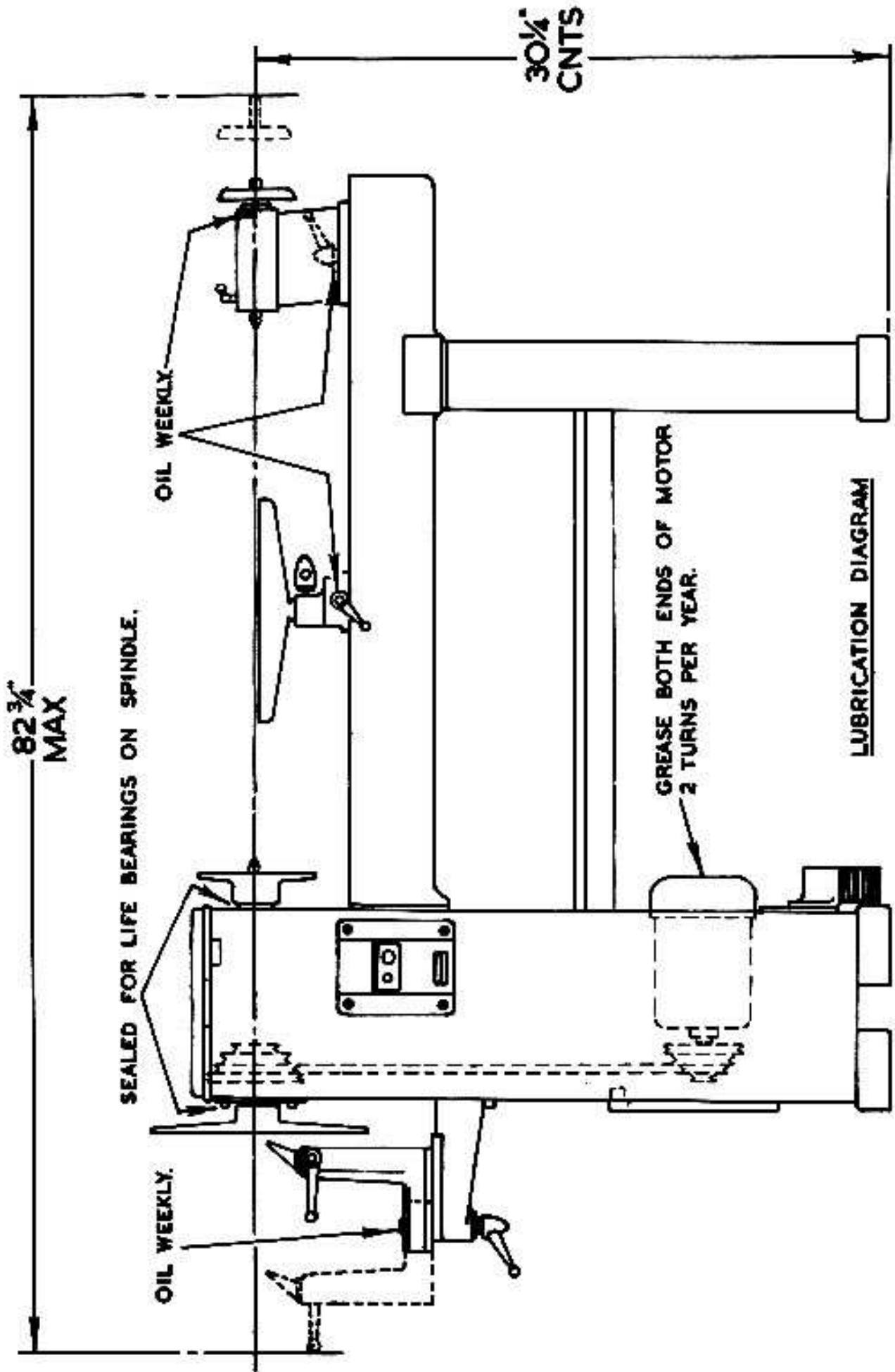


FIG D3

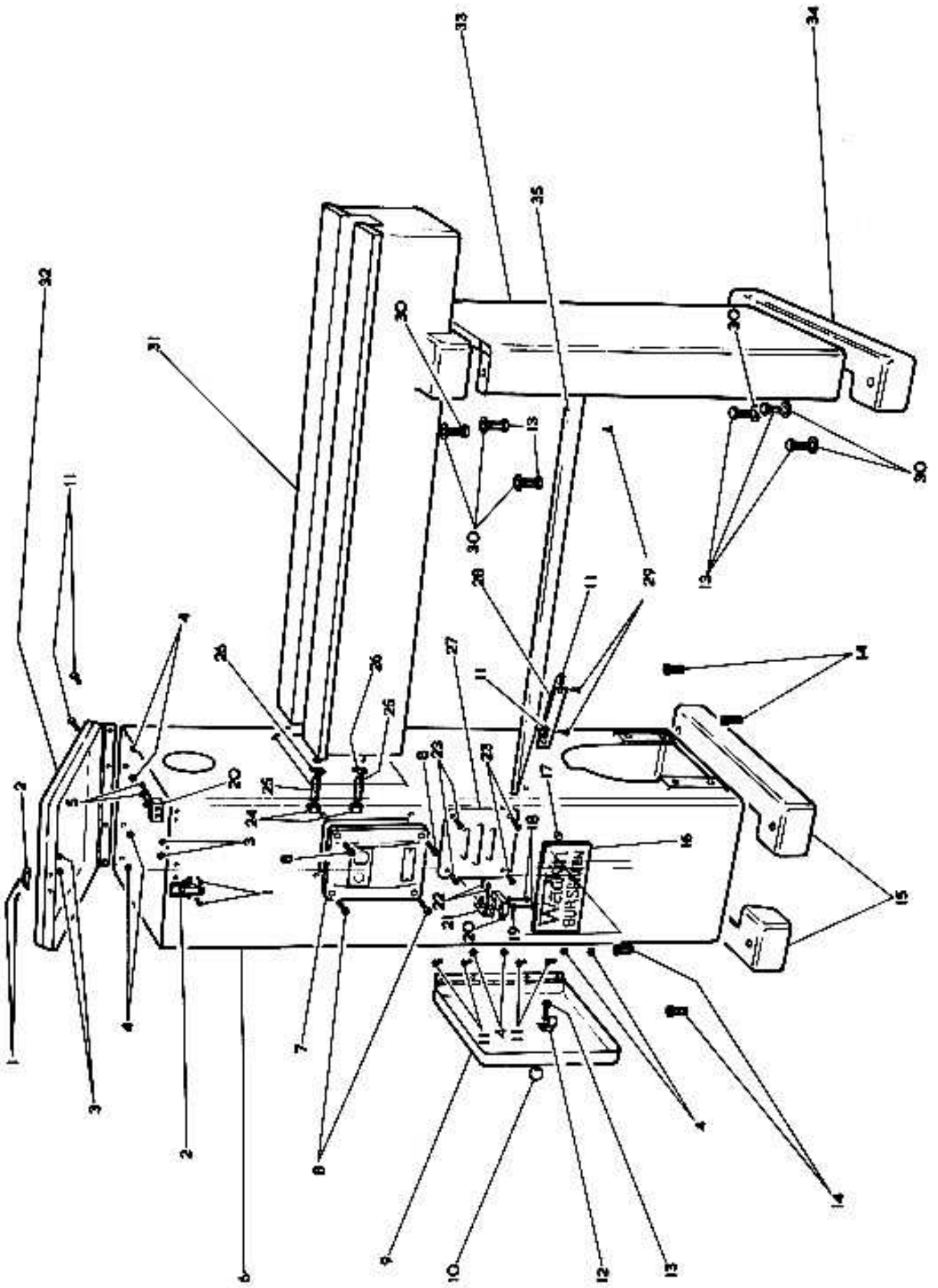
SECTION "E"  
SPARE PARTS LISTS

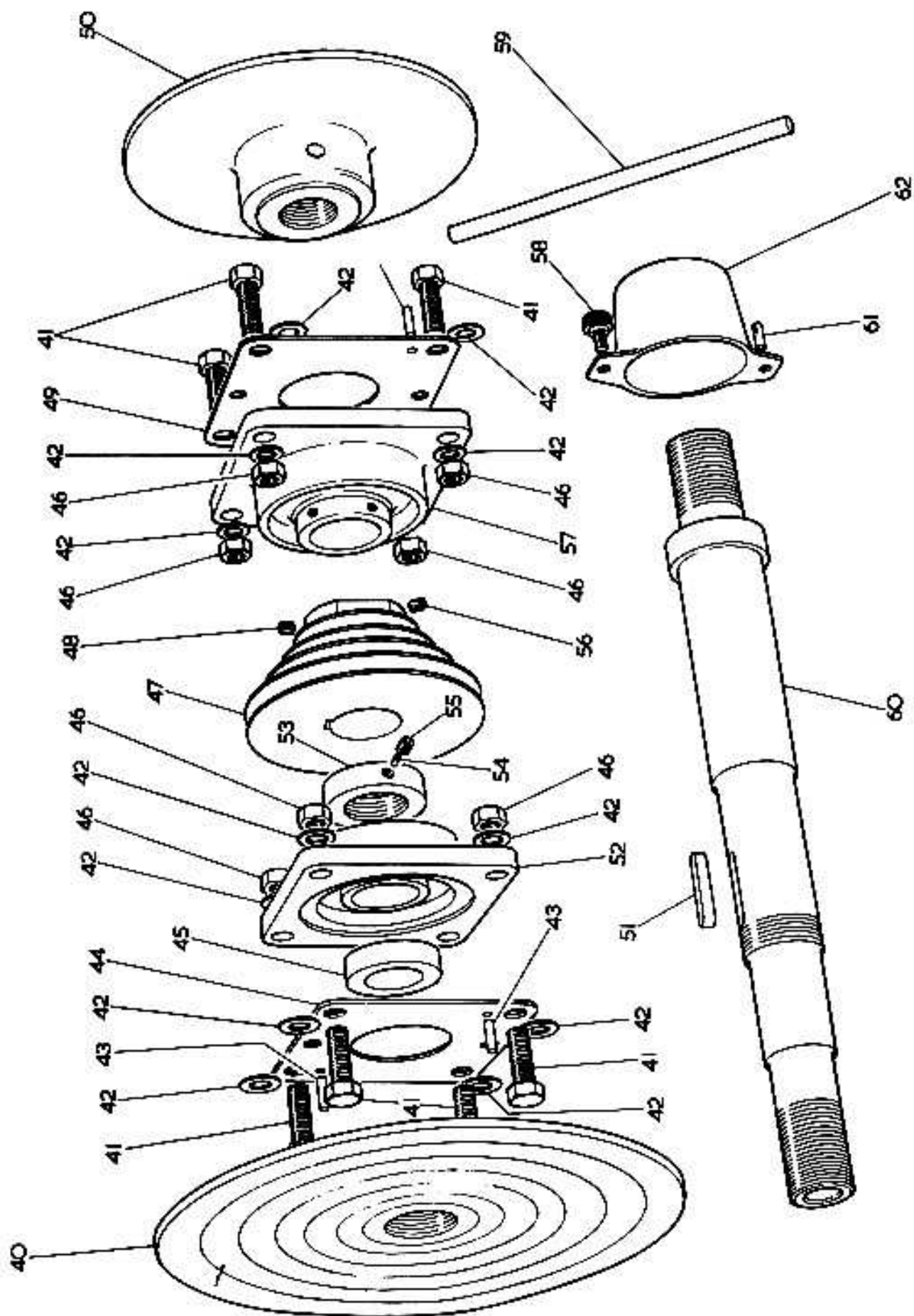


## BED ASSEMBLY

Ref. No.	Part No.	No. Off.	Description
1		4	1/8" whit. x 5/8" long round head screw
2	No. 25	1	Zest standard toggle fastener
3		4	1/8" whit. nut
4		8	3/16" whit. nut
5		2	3/16" whit. x 1" long round head screw
6	1060/2	1	Trunk
7	24 ADS/FO	1	MEM Starter
8		4	1/4" whit. x 1" long cheese head screw
9	C-1060/36	1	Door for trunk
10		1	1 1/4" dia. x 3/8" whit. bore plastic ball
11		8	3/16" whit. x 1/2" long round head screw
12	B-1060/77	1	Spring catch for door
13		7	3/8" whit. x 3/4" long hexagon head bolt
14		4	3/8" whit. x 1" long socket head capscrew
15	C-1060/15	2	Feet for trunk
16	B-S-117	1	Wadkin - Bursgreen nameplate
17	A-S-105	2	Locknuts for nameplate
18		2	1/8" whit. x 1" long round head screw
19		2	1/8" washer
20	3 BR1 B2 Base	2	Burgess micro switch
21	A-1060/69	1	Bracket for micro switch
22		2	3/16" whit. x 3/8" long round head screw
23		4	1/4" whit. x 3/8" long raised head screw
24		2	5/8" whit. nut
25		2	5/8" whit. x 2" long stud
26		2	5/8" spring washer
27	A-1031/53	1	Cover plate
28	B-1060/67	1	Shelf bracket
29		4	3/4" long No. 8 wood screw
30		6	3/8" washer
31	1060/1	1	Bed
32	C-1060/19	1	Lid for trunk
33	C-1060/3	1	Leg for bed
34	C-1060/82	1	Foot for leg
35	C-1060/66	1	Shelf for tools

**NOTE :-** When ordering replacement parts quote  
Part No. and Serial No. of the machine





# SPINDLE ASSEMBLY

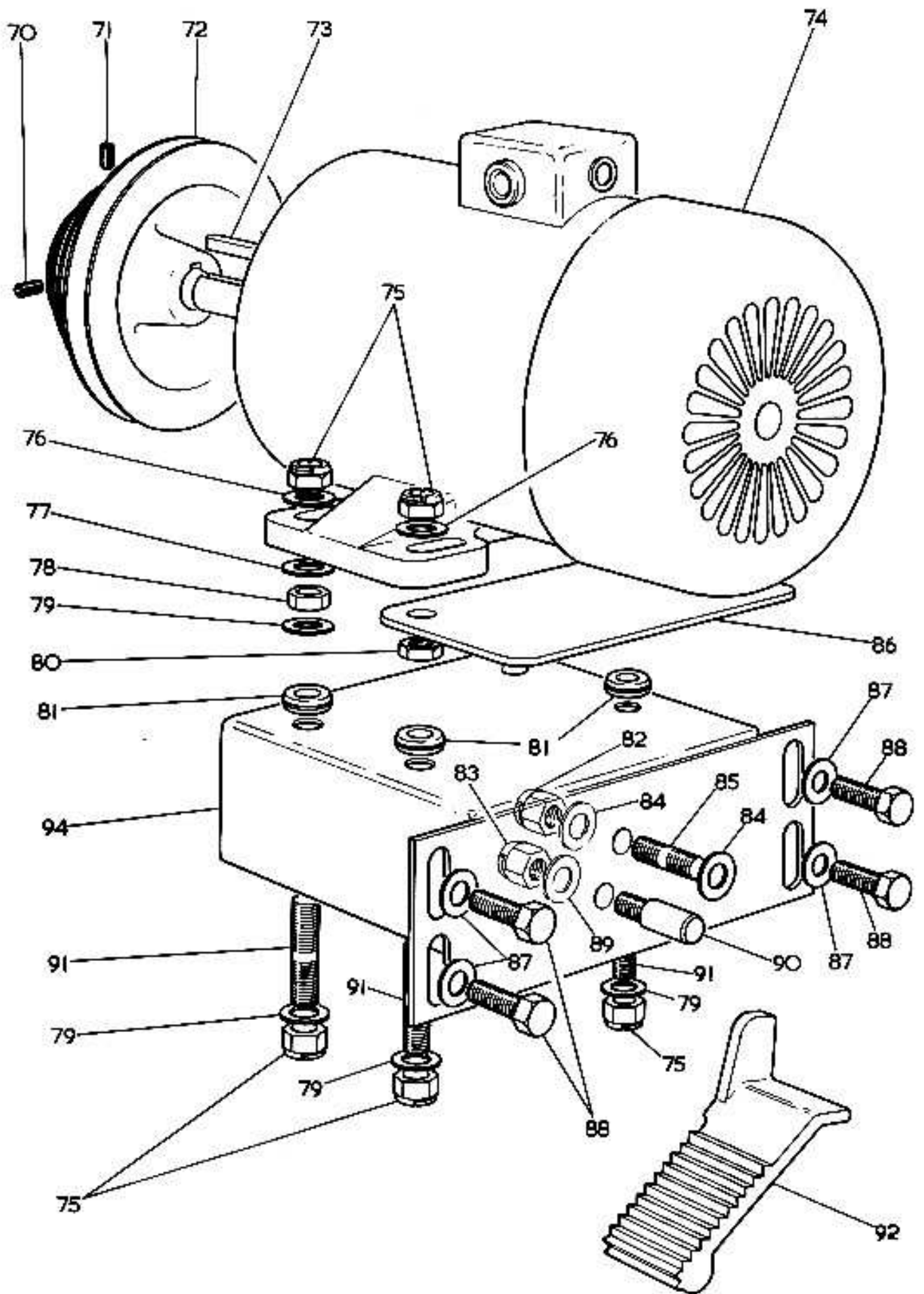
Ref. No.	Part No.	No. Off	Description
40	B-1060/33	1	14" dia. faceplate
41	A-1060/70	8	Spindle bearing clamping bolts
42		16	$\frac{1}{8}$ " washer
43		4	$\frac{3}{16}$ " dia. x $\frac{1}{2}$ " long fluted dowel
44	B-1060/13	1	Small cover for spindle end
45	A-1060/5	1	Plain collar for spindle
46		8	$\frac{1}{2}$ " Whit aerotight nuts
47	C-1060/7	1	Spindle pulley
48		1	$\frac{3}{8}$ " dia. x $\frac{3}{8}$ " long socket head screw
49	B-1060/76	1	Large cover for spindle end
50	C-1060/38	1	8" dia. faceplate (inside turning)
51		1	$\frac{1}{2}$ " wide x 2" long key
52	SLF40	1	Pollard bearing
53	A-1060/8	1	Screwed collar for spindle
54		1	.22 air gun pellet
55		1	$\frac{5}{16}$ " dia. x $\frac{1}{2}$ " long socket head grubscrew
56		1	$\frac{3}{8}$ " dia. x $\frac{1}{2}$ " long socket head grubscrew
57	SLF50	1	Pollard bearing
58	A-1060/40	1	Screw for nose cover
59	A-1060/71	2	Toggle bar
60	C-1060/4	1	Spindle
61		1	$\frac{1}{4}$ " dia. x $\frac{3}{8}$ " long fluted dowel
62	B-1060/14	1	Cover for spindle nose;

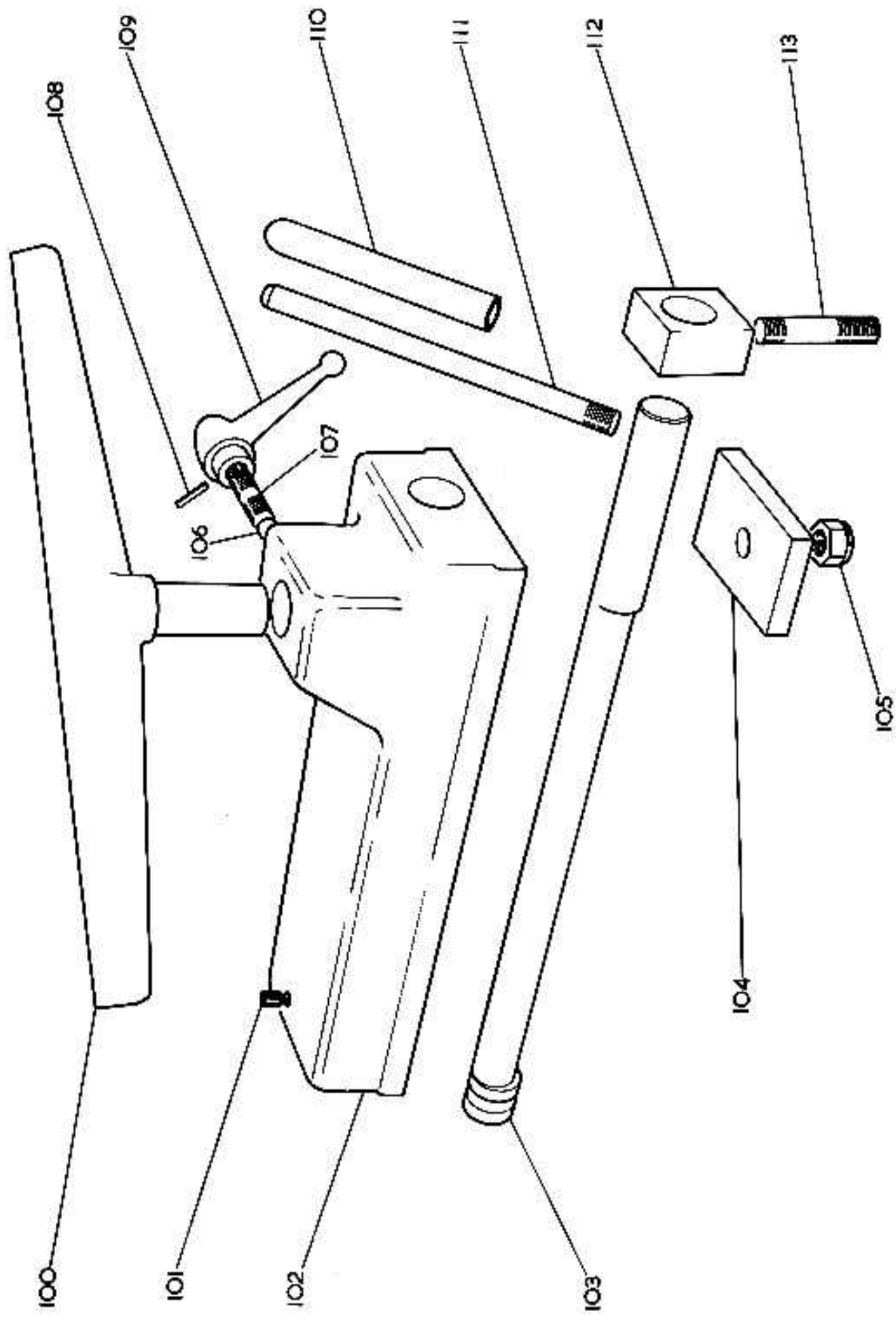
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# MOTOR MOUNTING ASSEMBLY

Ref. No.	Part No.	No. Off	Description
70		1	5/16" whit. x 3/4" long socket head grubscrew
71		1	5/16" whit. x 5/8" long socket head grubscrew
72	B-1023/11	1	Motor pulley
73		1	3/16" wide x 2" long key
74		1	Brook motor, 3 phase, 50 cycles, 1HP 1,500 rpm, T.E.F.C. continuously rated, foot mounted, terminal box at 12 o'clock, special shaft extension.
		1	Brook motor, 3 phase, 60 cycles, 1HP 1,800 rpm, T.E.F.C. continuously rated, foot mounted, terminal box at 12 o'clock, special shaft extension
		1	Brook motor, 1 phase, 50 cycles, 3/4HP 1,500 rpm, T.E.F.C. foot mounted, machine tool rated, terminal box at 1 o'clock condenser at 11 o'clock, special shaft extension.
75		8	5/16" whit. aerotight nut
76		4	5/16" washer
77	A-1060/42	2	5/16" washer (11/32" wide)
78		2	5/16" whit. nut
79	A-1060/42	6	5/16" washer (3/32" wide)
80		2	5/16" whit locknut
81	G25	4	Grommet for motor
82		1	1/2" whit. aerotight nut
83		1	3/8" whit. aerotight nut.
84		2	1/8" brass washer
85		1	1/8" whit. x 1 1/4" long stud
86	A-1060/12	1	Motor pivot plate
87		4	3/8" washer
88		4	3/8" whit. x 3/4" long hexagon head bolt
89		1	3/8" BSF washer
90	A-1060/39	1	Stop for belt tension
91	A-1060/16	4	Motor tension stud
92	C-1060/9	1	Belt tension pedal

**NOTE :-** When ordering replacement parts quote Part No. and Serial No. of the machine





# INSIDE TURNING ASSEMBLY

Ref. No.	Part No.	No. Off	Description
100	C-1080/18	1	14" toolrest
101		1	3/8" whit. x 5/8" long dogpoint nylok grubscrow
102	C-1080/28	1	Bracket for standard turning
103	A-1080/25	1	Eccentric shaft for turning bracket
104	A-1060/23	1	Turning bracket trapping plate
105		1	1/2" whit. (thin) ac-ntight nut
106 ←	A-1060/73	1	Locking boss
107 →	A-1060/34	1	2" long toolrest locking stud
108 →		1	1/8" dia. x 3/4" long groverlok spring dowel
109 ←	D-S-210	1	Bursgreen adjustable handle (1/2" whit)
110		1	"Demco" No. 4 grip handle
111	A-1060/35	1	Turning bracket locking handle
112	A-1080/27	1	Eye block
113		1	1/2" dia. x 1 3/4" long stud

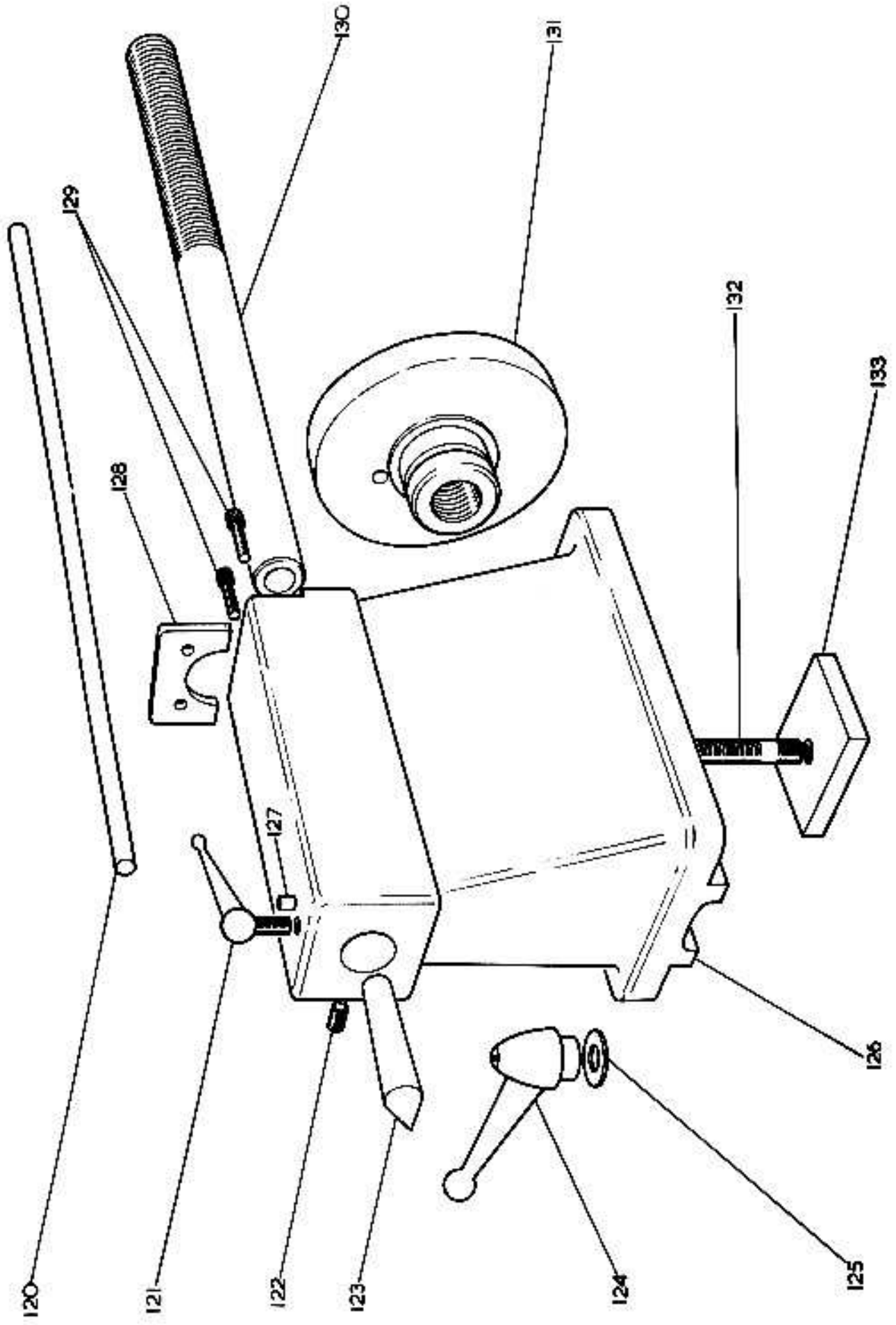
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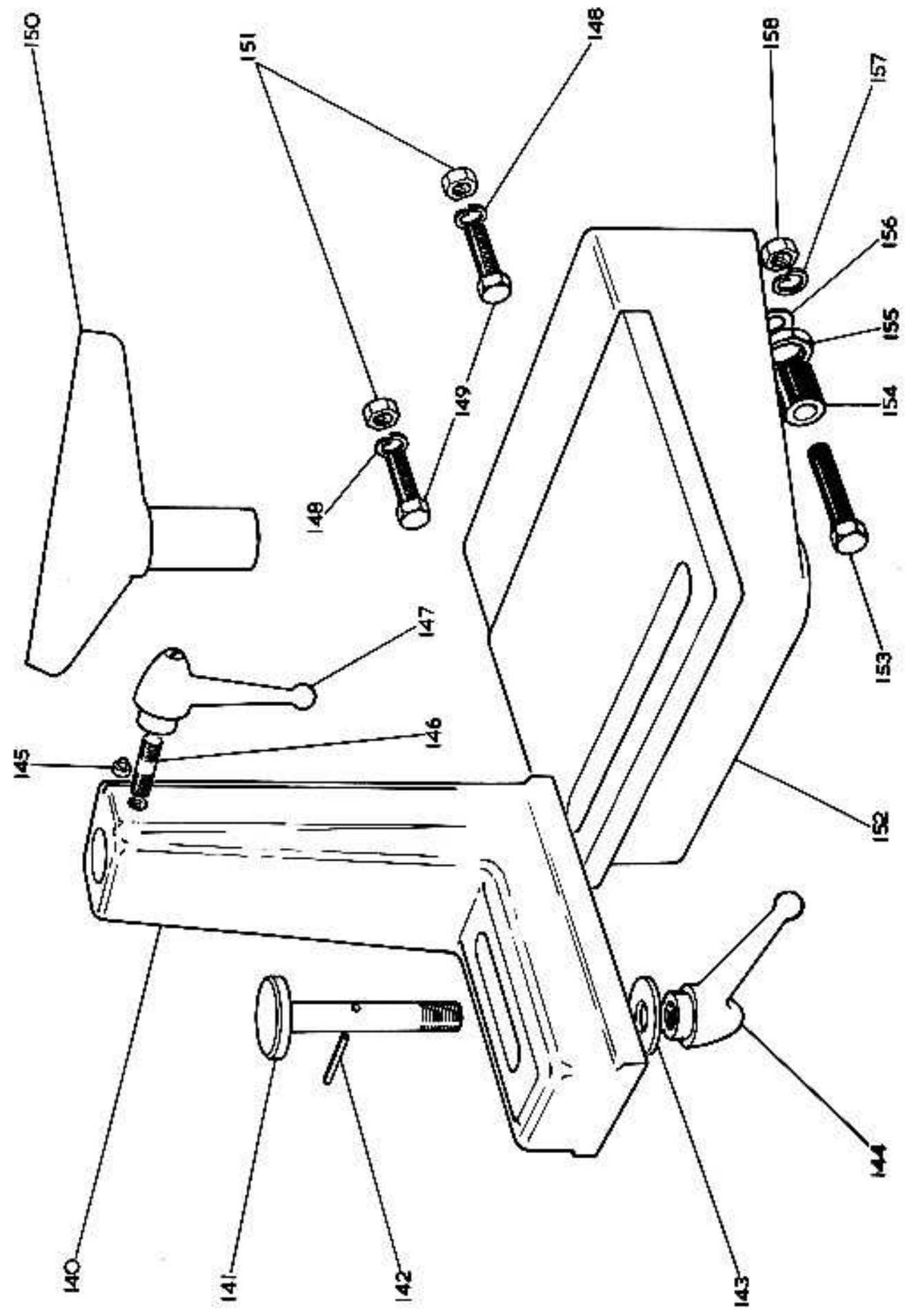


## TAILSTOCK ASSEMBLY

Ref. No.	Part No.	No. Off	Description
120	A-1060/65	1	Knockout bar
121		1	3/8" whit. x 1" long ball lever screw
122		1	3/8" whit. x 5/8" long dogpoint nylok grubscrew
123		1	Cone centre. No. 2 morse taper
124	D-S-210	1	Bursgreen adjustable handle (1/8" whit.)
125		1	1/2" brass washer
126	D-1060/21	1	Tailstock
127		1	5/16" dia. x 1/4" long brass bot
128	A-1060/24	1	Keep plate for tailstock screw
129		2	3/16" whit. x 5/8" long socket head capscrew
130	B-1060/26	1	Tailstock spindle
131	B-1060/22	1	Tailstock handwheel
132		1	1/2" dia. x 2 1/2" long stud
133	A-1060/23	1	Tailstock trapping plate

**NOTE :-** When ordering replacement parts quote Part No. and Serial No. of the machine

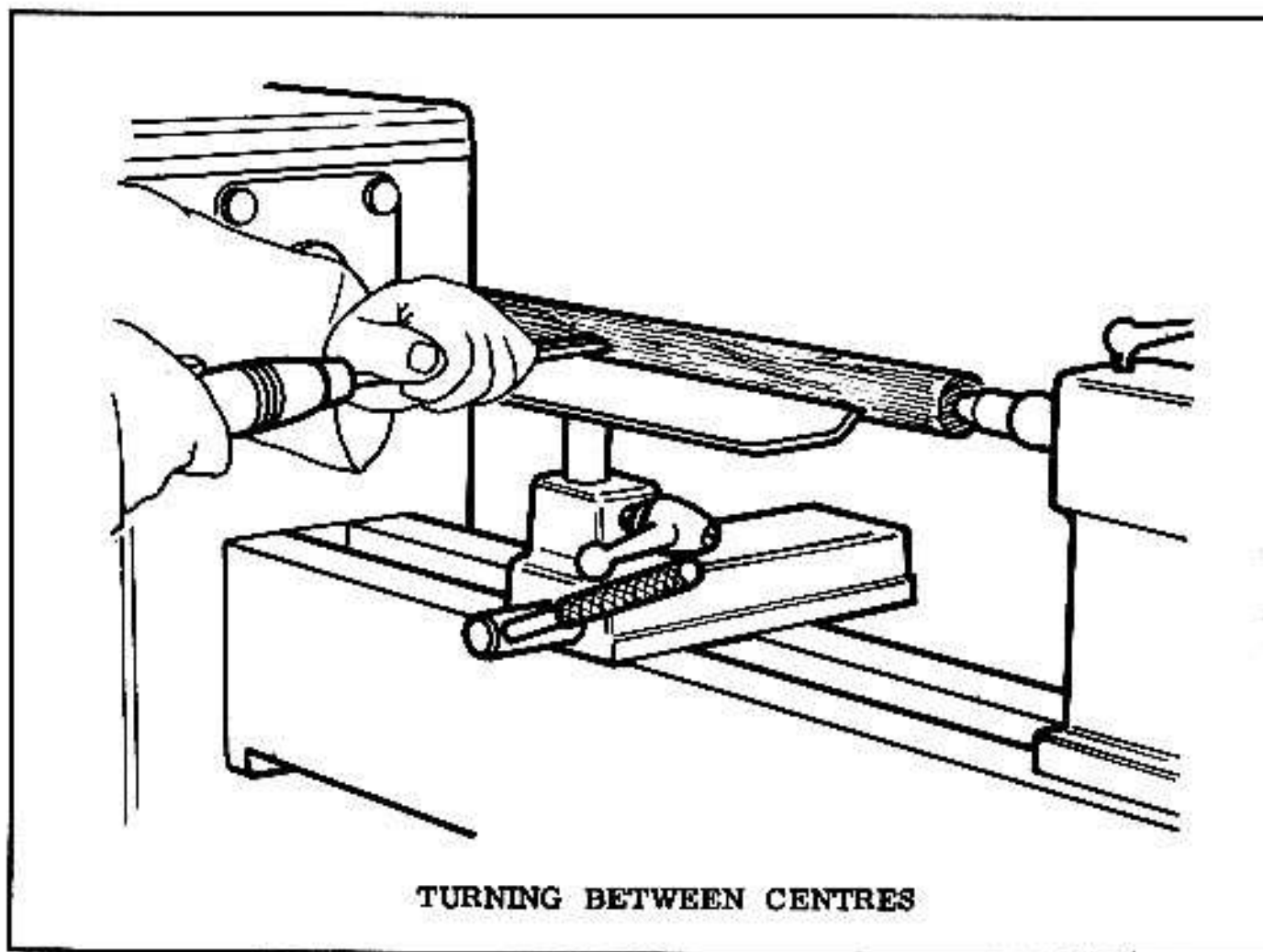
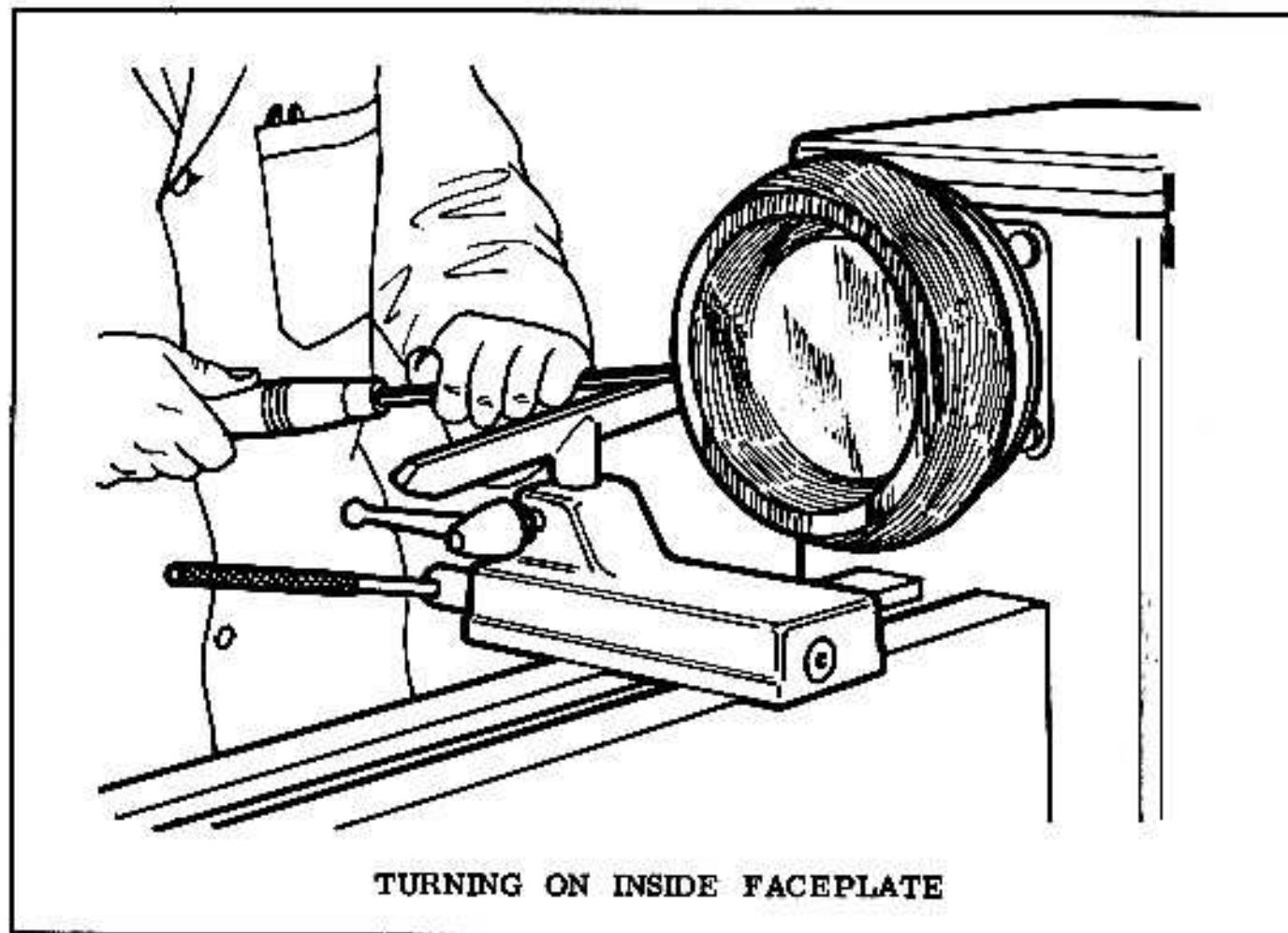


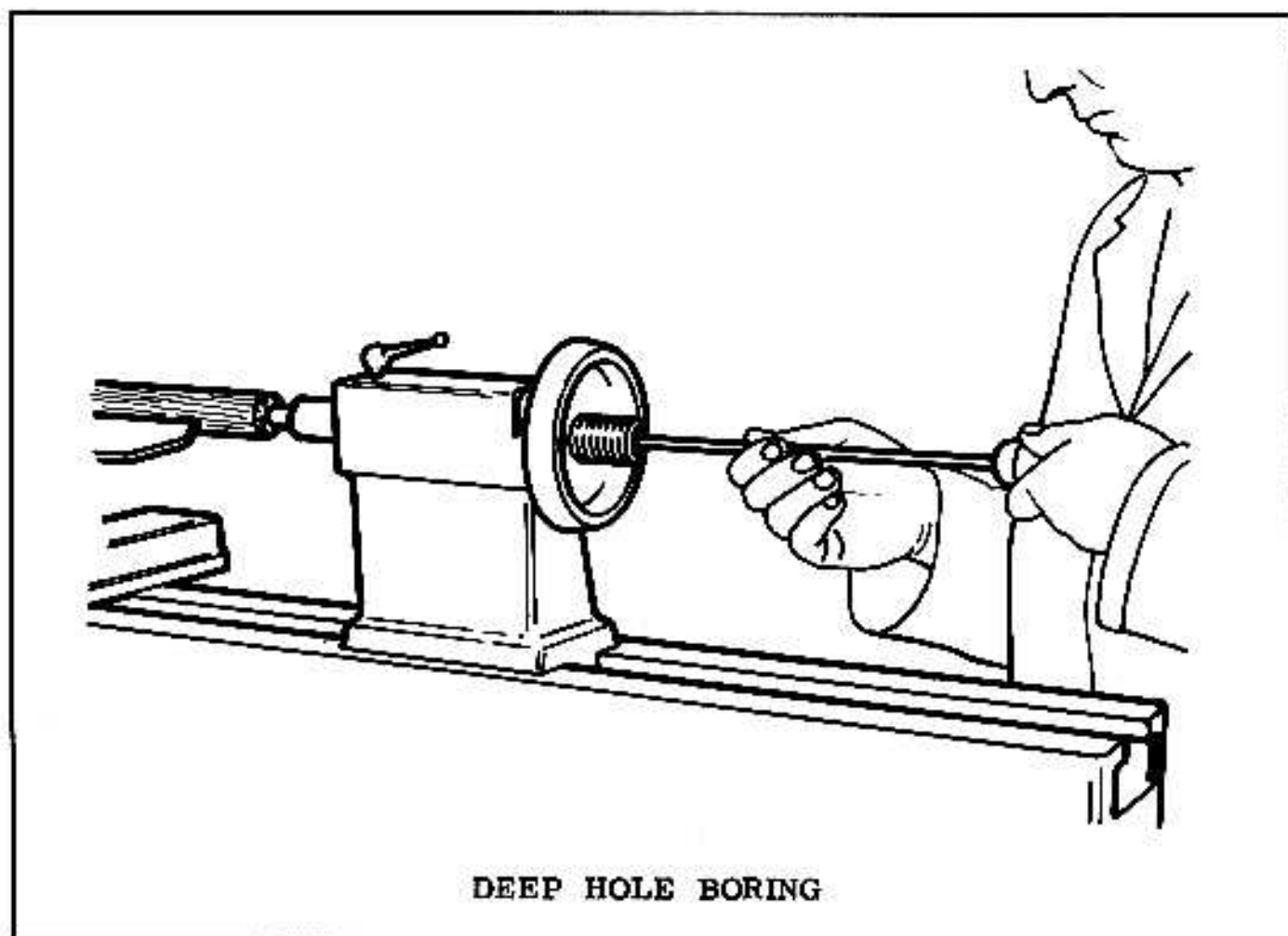
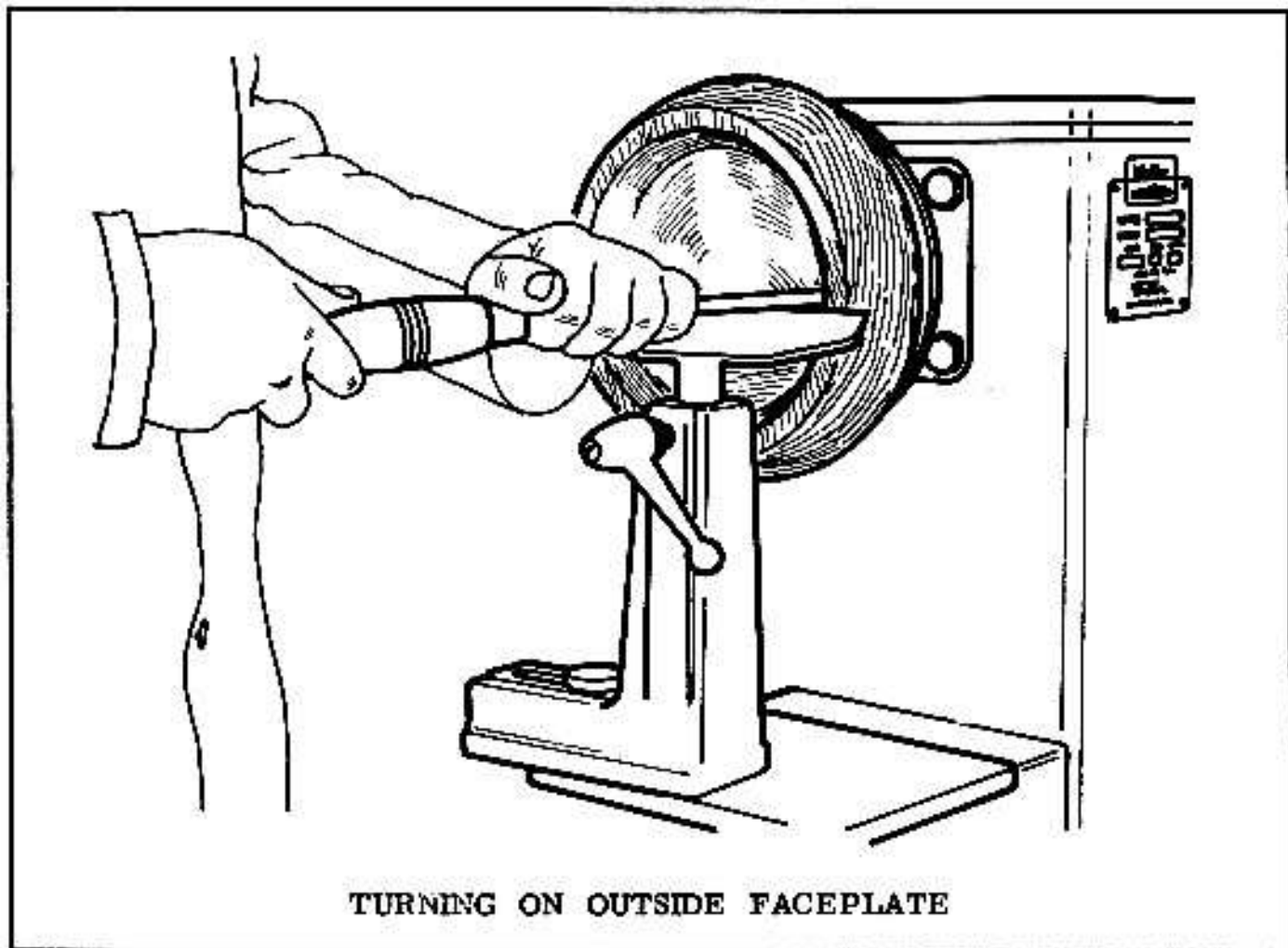


# OUTSIDE TURNING ASSEMBLY

Ref. No.	Part No.	No. Off	Description
140	C-1060/31	1	Bracket for outside turning
141 -	A-1060/29	1	Outside turning bracket locking bolt
142 -		1	$\frac{1}{4}$ " dia. x $\frac{3}{4}$ " long groverlok spring dowel
143 -	A-1060/74	1	Washer for outside turning bracket
144 -	D-S-210	1	Bursgreen adjustable handle ( $\frac{5}{8}$ " whit.)
145 -	A-1060/73	1	Locking boss
146 -	A-1060/34	1	$1\frac{3}{4}$ " long toolrest locking stud
147 -	D-S-210	1	Bursgreen adjustable handle ( $\frac{1}{2}$ " whit.)
148		2	$\frac{1}{4}$ " spring washer
149		2	$\frac{1}{2}$ " whit. x 2" long hexagon head bolt
150	C-1060/20	1	$7\frac{1}{2}$ " toolrest
151		2	$\frac{1}{2}$ " whit. nut
152	D-1060/32	1	Outside turning support
153		1	$\frac{3}{8}$ " whit. x $2\frac{1}{4}$ " long hexagon head bolt
154	A-1060/41	1	Adjusting screw for outside turning support
155	A-1031/51	1	$\frac{3}{4}$ " simplex locknut for outside turning support
156		1	$\frac{3}{8}$ " washer
157		1	$\frac{3}{8}$ " spring washer
158		1	$\frac{3}{8}$ " whit nut

**NOTE :-** When ordering replacement parts quote Part No. and Serial No. of the machine





## NOTES

ACCESSORIES FOR USE ON WOOD TURNING LATHES.

CENTRES FOR TAILSTOCK ARE NO. 2 MORSE TAPER  
CENTRES FOR HEADSTOCK ARE NO. 3 MORSE TAPER



CONICAL CENTRES  
(No. 2 or No. 3 morse taper)



CUP CENTRE  
 $\frac{1}{2}$ " DIA,  $\frac{3}{4}$ " DIA, and 1" DIA  
(No. 3 morse taper)



SCREW POINT DRIVING PLATE  
 $2\frac{1}{4}$ " and  $3\frac{1}{2}$ " DIA  
(No. 3 morse taper)



CHUCKS  
4" DIA or 6" DIA WITH 3 or 4 JAWS



BOWL TURNING REST



DEEP HOLE BORING EQUIPMENT



$\frac{1}{2}$ " CAPACITY CHUCK FOR TAILSTOCK  
(NO. 2 MORSE TAPER).



TWO SPUR DRIVING CENTRES  
 $\frac{3}{4}$ " DIA,  $1\frac{1}{4}$ " DIA, and  $1\frac{1}{2}$ " DIA.  
(No. 3 morse taper)



REVOLVING CENTRE. MODEL DB.  
(No. 2 morse taper)



SCREW POINT CHUCK  
3" DIA and 4" DIA.



HOLLOW OR BELL CHUCK  
1" DIA,  $1\frac{1}{2}$ " DIA, 2" DIA, and  $2\frac{1}{2}$ " DIA



SET OF HAND TURNING TOOLS



14" DIA FACEPLATE (OUTSIDE TURNING)  
12" DIA FACEPLATE (OUTSIDE TURNING)  
12" DIA FACEPLATE (INSIDE TURNING)  
8" DIA FACEPLATE (INSIDE TURNING)  
8" DIA FACEPLATE (OUTSIDE TURNING)