



Cobra Lathe Instruction Manual



Chester UK Ltd
Clwyd Close
Hawarden Industrial Park Hawarden
Chester CH5 3PZ
Tel: 01244 531631
sales@chestermachinetools.com
www.chestermachinetools.com

Contents

1. Health & Safety	2 - 5
2. Machine Specification	6
3. Testing	7
4. Operation	8 - 16
5. Maintenance	17
6. Oiling Points	18
7. Change Gear Table	19
8. Parts List & Diagrams	20 - 25
10. Wiring Diagrams	26 - 27
11. CE Document	28

Health & Safety

As with all machinery there are certain hazards involved with the operation and use of the lathe.

Using the machine with respect and caution will considerably lessen the possibility of person injury. However, if normal safety precautions are overlooked or ignored, personal injury to the operator may result.

This machine was designed for certain applications only. We strongly recommend that the machine is not modified, and / or used for any application other than which it was designed.

If you have any questions relative to its application do not use the machine, until you have first been in contact with Chester UK.

The lathe may not arrive with a power socket or plug. In the event of this happening, please inform Chester UK on Tel: (01244) 531 631.

Safety rules for all tools

User

1. Wear correct apparel

No loose clothing, gloves, rings, bracelets or other jewellery to get caught in moving parts. Non-slip footwear is recommended. Wear protective hair covering to contain long hair.

2. Always wear eye protection

Refer to ANSLZ87.1 standard for appropriate recommendations. Also use face and / or a dust mask if the cutting operation is dusty.

3. Don't overreach

Keep a proper footing and balance at all times.

4. Never stand on a tool

Serious injury could occur if the tool is tipped or if the cutting tool is accidentally contacted.

5. Never leave the tool running unattended

Turn power off. Leave tool until it comes to a complete stop.

6. Drugs, alcohol and medication

Do not operate the tool while under the influence of drugs, alcohol or any medication.

7. Make sure the tool is disconnected from the power supply

While motor is being mounted, connected or reconnected.

8. Always

Keep hands and fingers away from any moving parts.

9. Stop

The machine before moving chips.

10. Shut-off

Power and clean the lathe and work area before leaving the machine.

Use of the machine

1. Remove adjusting keys and wrenches

Form a habit of checking to see that keys and adjusting wrenches are removed from the tool before turning it 'on'.

2. Don't force the tool

It will do the job better and be safer at the rate for which it was designed.

3. Use the right tool

Don't force the tool or attachment to do a job for which it was not designed.

4. Secure work

Use clamps or a vice to hold work when practical. It's safer than using your hands, and frees both to operate the machine.

5. Maintain tools in top condition

Keep tools sharp and clean for the best and safest performance. Follow instructions for lubricating and changing accessories.

6. Use recommended accessories

Consult Chester UK for recommended accessories. The use of improper accessories may cause hazards.

7. Avoid accidental starting

Make sure the switch is in the 'OFF' position before plugging in power cord.

8. Stop

The machine before putting material in the vice.

9. Always

Have stock firmly clamped in the vice before starting the cut.

10. Ground all tools

If the tool is equipped with a three-prong plug, it should be plugged into a three-hole electrical receptacle. If an adapter is used to accommodate a two-prong receptacle, the adapter plug must be attached to a known ground. Never remove the third prong.

Adjustment

Make all adjustments with the power off. When assembling follow the manuals instructions, this will ensure correct instruction and a safe structure.

Working environment

1. Keep the work area clean

Cluttered areas and benches invite accidents.

2. Don't use in a dangerous environment

Don't use power tools in damp or wet locations, or expose to rain. Keep the work area well lit.

3. Keep children etc at a safe distance.

All children etc should be kept at a safe distance from the work area.

4. Don't

Install & use this machine in an explosive dangerous environment.

Maintenance

1. Disconnect

Machine from the power source when making repairs.

2. Check damaged parts

Before further use of the tool, a guard or other part that is damaged should be carefully checked to ensure that it would operate properly and perform its intended function check for alignment of moving parts, binding of moving parts, breakage of parts, mounting and any other conditions that may affect its operation. A guard or other part that is damaged should be properly repaired or replaced.

3. Disconnect tools

Before servicing and when changing accessories such as blades bits, cutters, etc.

4. To prevent

The corrosion of machined surfaces when a soluble is used as coolant, pay particular attention to wiping dry the surfaces where fluid accumulates and does not evaporate quickly, such as between the machine bed and vice.

Safety Device

- 1.** Interlock switch on pulley cover. As soon as the pulley cover is open, the machine will come to a stop with the function of this switch. Do not remove this switch from the machine for any reason, and check it's function frequently.
- 2.** Interlock switch on cutting area. As soon as the pulley cover is open, the machine will come to a stop with the function of this switch. Do not remove this switch from the machine for any reason, and check it's function frequently.

Machine Specification

Center Height	70mm
Swing Over Bed	140mm
Between Centres	250mm
Toolpost Tool Size	8mm
Speed Range	100-2000rpm
Longitudinal Travel	200mm
Cross-slide Travel	50mm
Chuck Diameter	80mm
Spindle Bore	10mm
Spindle Taper	MT2
Tailstock Taper	MT1
Motor Power	150W (0.2hp)
Net Weight	23kg
Dimensions	480 x 380 x 680mm

Testing

When the lathe is mounted to your satisfaction, proceed as follows:

- a) Close the chuck jaws.
- b) Check the tailstock is 'nipped' and the barrel lock is tightened.
- c) Check all loose items are removed from the lathe.
- d) Set the saddle approximately mid-way along the bed.
- e) Press the Emergency Stop Button IN (Emergency Stop ON).
- f) Check the Autofeed / Manual Lever is set to manual (Hand logo).
- g) Close the chuck guard.
- h) Check the speed control is switched OFF (fully anti-clockwise).
- i) Check the Forward / Off / Reverse Switch is in the OFF position.
- j) Connect the machine to the mains supply and switch power ON.
- k) Turn Emergency Stop switch to the right and allow it to spring out and reset.
- l) Check the Green Power LED is illuminated.
- m) Turn the Speed Control Switch On (Clicks On).
- n) Check the Amber LED (Fault Light) is illuminated.
- o) Switch the Speed Control Switch OFF (Clicks OFF) and the Amber LED is now off.
- p) Select Forward on the Forward / Off / Reverse switch.
- q) Turn the Speed Control Switch On and advance until the Chuck starts to rotate.
- r) Lift the Chuck Guard; check the spindle stops and the Amber fault LED illuminates.
- s) Reset the Chuck Guard, check the spindle does NOT restart and the Amber fault LED remains On.
- t) Turn the Speed Control Switch OFF, and that the Amber LED goes off.
- u) Turn the Speed Control Switch ON, advance until the spindle starts to rotate.
- v) Over a period of approximately 5 minutes advance the speed in stages to maximum, run at maximum for at least 2 minutes, check that there is nothing untoward (no excessive vibration, speed progression is smooth etc).
- w) If all the above checks are correct, stop the spindle; select the Autofeed function (if necessary 'jog' the lead screw handle to enable the gears to mesh). Switch on and advance to a reasonable speed, check the saddle drives smoothly towards the chuck.
- x) Stop the spindle, select reverse, switch ON and advance to a reasonable speed, check the chuck drives smoothly towards the tailstock.
- y) If all the above checks are correct, the final check is to set the spindle running, then hit the Emergency Stop switch. Check the spindle stops and all power indications go OFF.
- z) Your lathe is now ready for use. Enjoy.

Operation

Definitions

Main Axis

This is the axis established through the spindle of the headstock. It is horizontal to and parallel with the lathe bed along its length, as described by the saddle

Work Axis

This is the axis established by the work piece; it is horizontal to, but not necessarily parallel with, the lathe bed, along its length.

Traverse Axis

This is the axis described by the traverse slide when it is being moved independently of the saddle. It is perpendicular to the main axis in the horizontal plane.

Compound Axis

This is the axis described by the compound slide, if fitted, when it is being operated independently of the traverse slide and the saddle.

Headstock

The 'engine block' of the lathe, supports the motor, the spindle, and the cover for the change gears, the drive belt and the driven end of the leadscrew. It also mounts the control panel for the motor and the selector for the leadscrew.

Change Gear Cover

Protective cover, enclosing the motor pulley, the drive pulley & drive belt and the change gear.

Motor

220V d.c. motor.

Mounting Flange

The mounting flange is integral with the spindle and mounts all the material carriers (chucks, faceplate etc), it is bored with a No.2 morse taper to accept the headstock centre. The boring is then carried through the complete length of the spindle (10.5mm clear) to allow long lengths of round bar to be machined. Your Micro-Lathe is supplied with a chuck adaptor plate and chuck already fitted to the mounting flange.

Chuck Safety Cover

A clear acetate cover mounted on a pivot bar on the rear top front face of the headstock. It can be tipped out of the way to access the chuck when it is stationary, and repositioned over the chuck during operation. It is safety interlocked, if it is not in position the motor will not run, or the motor will stop if it is moved whilst the spindle is turning.

Motor Control Panel

Power On LED

Green LED that indicates that power is available to the motor. i.e. mains is applied, fuse is intact and the Emergency Stop switch is not activated.

Fault LED (marked UNNORMAL)

Amber LED that indicates that there is a fault or an incorrect control sequence. e.g. the chuck guard interlock has been activated or the speed control is activated without forward or reverse direction being selected. The Motor will not run if the fault LED is illuminated. If the safety interlock is activated, if the safety interlock will remain in force until the interlock is reset and the start sequence is re-initiated.

Fuse Cap

Access cap for the 20mm fuse cartridge (1 Amp 250V).

Speed Control Knob

Round raised ridge knob connected to the circuit that controls the motor speed (100-2000 rpm).

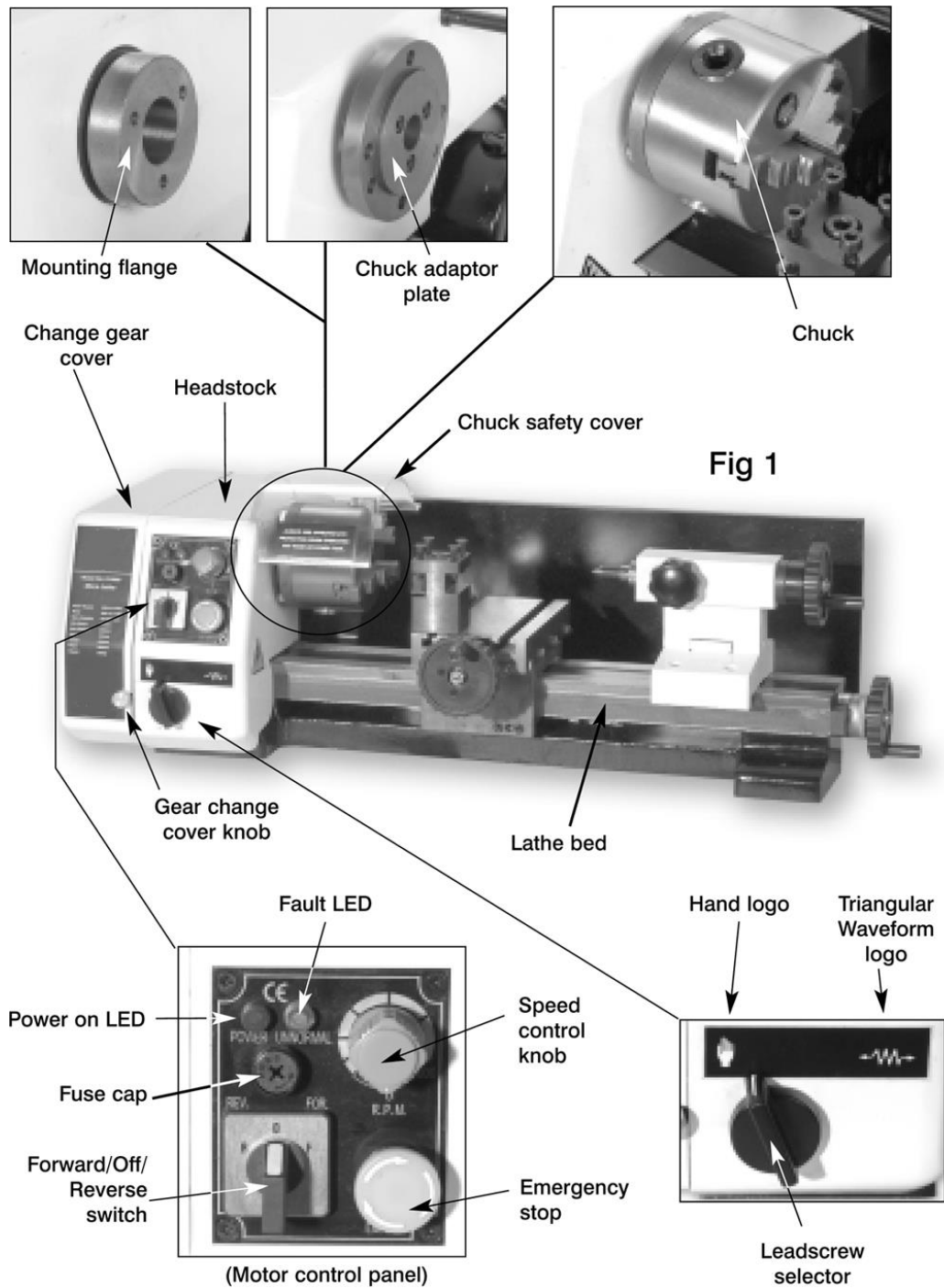
Forward / Off / Reverse Switch

Three position switch that controls the direction of the rotation of the spindle. Forward indicates that the spindle is turning toward the operator; Reverse, the spindle is turning away from the operator. The centre Off position inhibits the spindle from turning in either direction, under motor drive.

Emergency Stop Switch

Red Domed Mushroom switch; if pressed it removes all power to the machine. It is a 'knock off, stay off' switch. To reset the switch the domed head must be turned clockwise, which will allow the switch to unlatch and 'spring out' and reset itself.

(Chuck & safety cover removed for clarity)



Leadscrew Selector

A round centre rib switch/lever, which allows selection of the leadscrew to 'Auto feed', i.e. driven by the change gear train (indicated by a triangular waveform sign), or manually, i.e. driven by the handle on the end of the leadscrew (indicated by a 'hand' logo).

Lathe Bed

Solid cast, machined bed. The face machining gives two flat bearing surfaces, whilst the ancillary machining gives a dovetail form to the bed, and forms a rigid stable locating and guiding system for all the machines components.

Saddle

Main casting that is precision machined to marry with the lathe bed. It moves parallel to the main axis. It mounts the traverse slide. The 'gib' strip set in the rear of the saddle dovetail maintains the accuracy of the fit of the saddle to the bed.

Traverse Slide

Mounted on a 'dovetail' land machined onto the top of the saddle. The 'gib' strip set in the right hand side of the traverse dovetail slide maintains the accuracy of the fit of the slide. The bed of the traverse has two 'T' slots machined into it to allow the mounting of the tool post or the compound slide accessory.

Traverse Slide Control

A wheel and rod handle, mounted on a shaft that is anchored into a housing machined in the front of the traverse slide, the shaft is threaded and is engaged in a dog fixed to the saddle, enabling the traverse slide to be driven back and forth across the saddle perpendicular to the main axis. There is a graduated ring (thimble) on the neck of the handle to allow the movement of the slide to be measured.

Tool Post

A double-sided tool post. Each tool position has 2 securing bolts to clamp the tool in place. One tool mounting has a fixed 'bed' the other has a 'rocking' bed in a curved seating to allow the tool to be tilted slightly forward or back to allow precise tool heights to be achieved, without the necessity for fine shims. The tool post is secured into either one of the 'T' slot keeper. The tool post is not keyed into the 'T' slot so it can be turned to any angle before being locked in position.

Fig 2

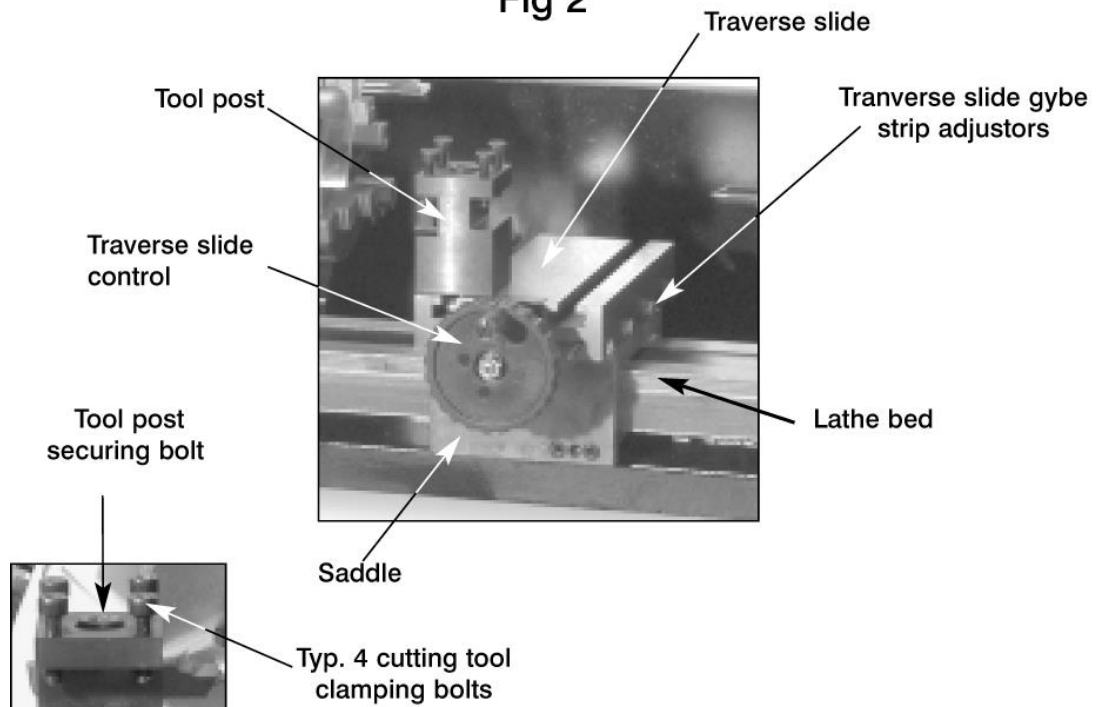
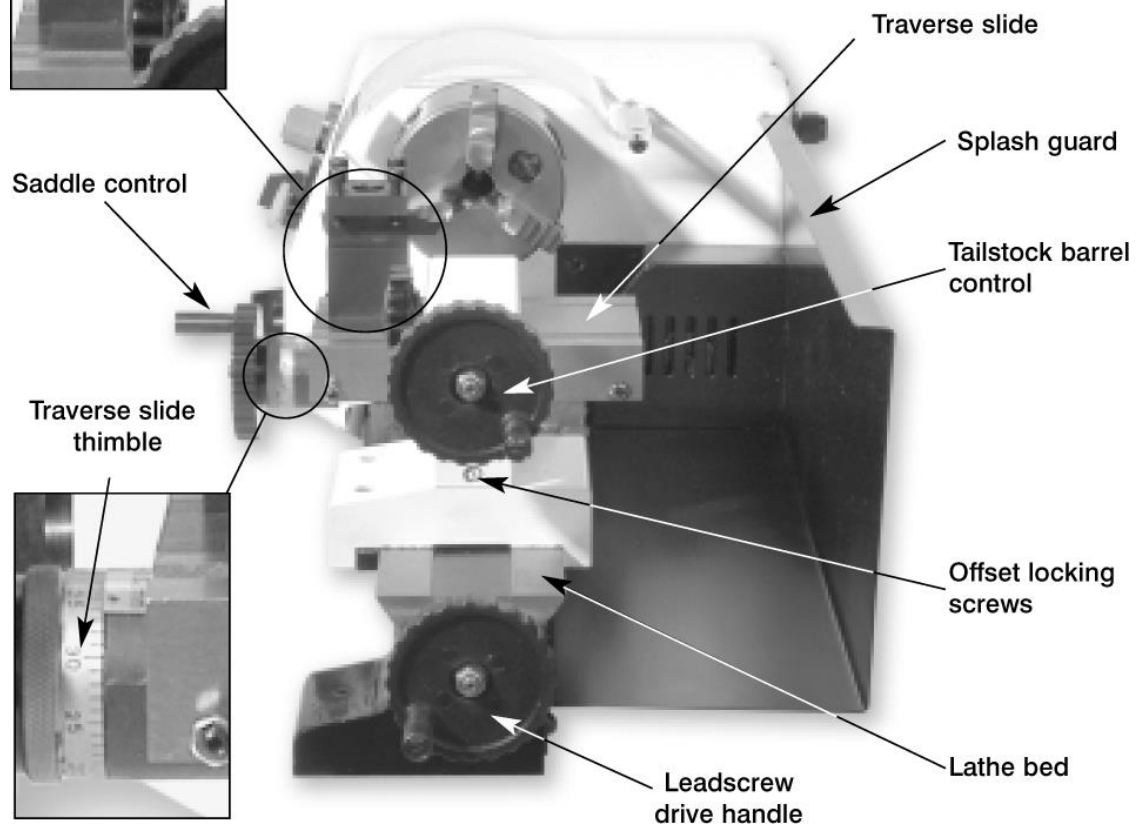


Fig 3



Gear Change Cover Knob

A reeded knob screwed into the front of the headstock, it locates in a slot in the change gear cover, and is used to secure the cover to allow it to be swung open.

Tailstock

A machined casting that accurately fits to the lathe bed. It carries the tailstock barrel. The tailstock barrel is machined with a No. 1 MT, which allows the accessories to be mounted (centres, drill chucks, reamers etc). The tailstock is positioned on the bed by a clamp mechanism at the front of the tailstock body. The two-caphead bolts in the front flange of the casting tighten the clamp. The tailstock is capable of being offset to allow for taper turning. The offset locking screw is on the right of the tailstock.

Tailstock Barrel Control

Wheel and rod handle that controls the backward and forward movement of the barrel in the tailstock. The barrel has a travel of 22mm, to allow the tailstock tooling to be brought into controlled contact with the workpiece; this is indicated on a coarse scale engraved on the barrel itself. The scale indicates –0 and then 20 plus two (x1mm) divisions. The supplied tailstock centre will self eject at –0. The tailstock control has a graduated ring (thimble) mounted on the neck of the handle so that the amount of movement can be measured.

Tailstock Barrel Lock

Small 'petal' knob that locks the barrel in place once it has been moved into the required position.

Leadscrew

The leadscrew is a threaded shaft that is anchored into a housing machined into the end of the lathe bed. The shaft runs virtually through the centre axis of the underside of the bed, and is engaged in a dog fixed to the underside of the saddle, enabling the saddle to be driven back and forth along the main axis of the bed. The fixed dog is well supported from the front apron of the saddle, and combined with effect of the centralized axis of the leadscrew, results in a very smooth 'judder' free movement. The leadscrew can be driven from either end, from the headstock end, via the change gear train, for auto feed and thread cutting, or manually by the leadscrew drive handle.

Note

The leadscrew is permanently engaged into the saddle dog. Any movement of the leadscrew is transmitted to the saddle.

Leadscrew Drive Handle

Wheel and rod handle locked onto the end of the leadscrew shaft. Turning the handle will turn the leadscrew and drive the saddle back and forth along the main axis of the lathe. There is a graduated ring (thimble) on the neck of the handle to allow the movement of the saddle to be measured.

Motor Securing Bolts

Two-caphead bolts screw through the change gear compartment bulkhead and into the motor flange. The holes through the bulkhead are elongated to allow the motor to be moved slightly to maintain the drive belt tension.

Leadscrew Oiling Point

This is a small hole situated between two caphead bolts on the lower right face of the saddle apron. The oil gallery gives direct access to the leadscrew dog, and enables oil to be spread onto the leadscrew (which is mainly obscured beneath the lathe bed.)

Motor Brush Caps

Two brush caps located top and bottom of the motor; they are accessed by removing the splash guard.

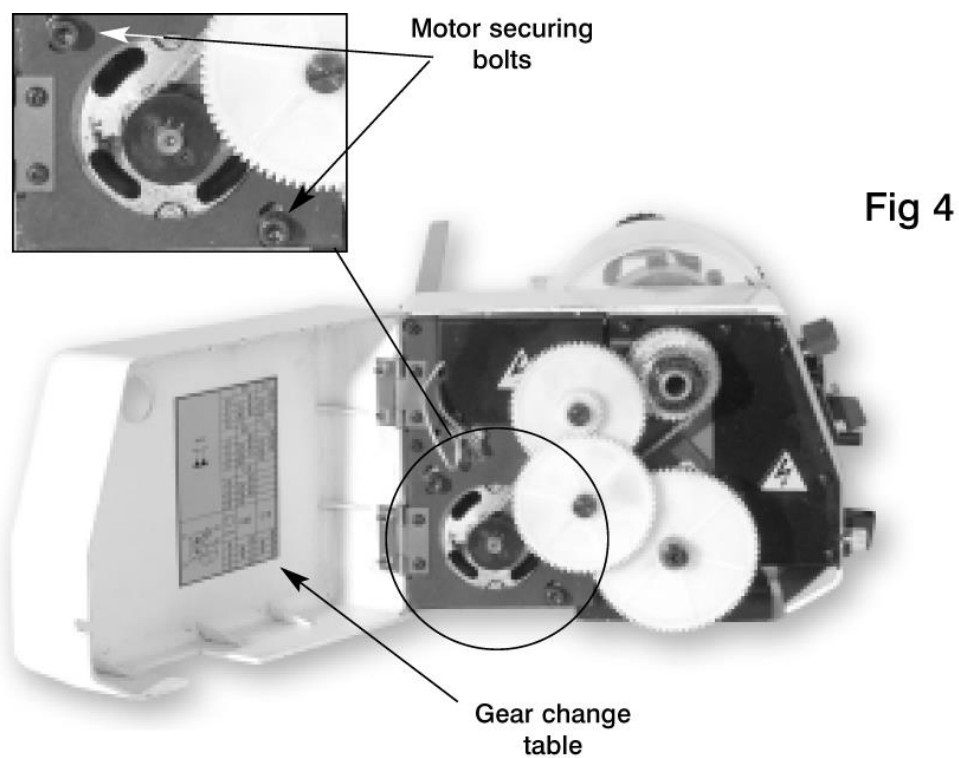


Fig 4

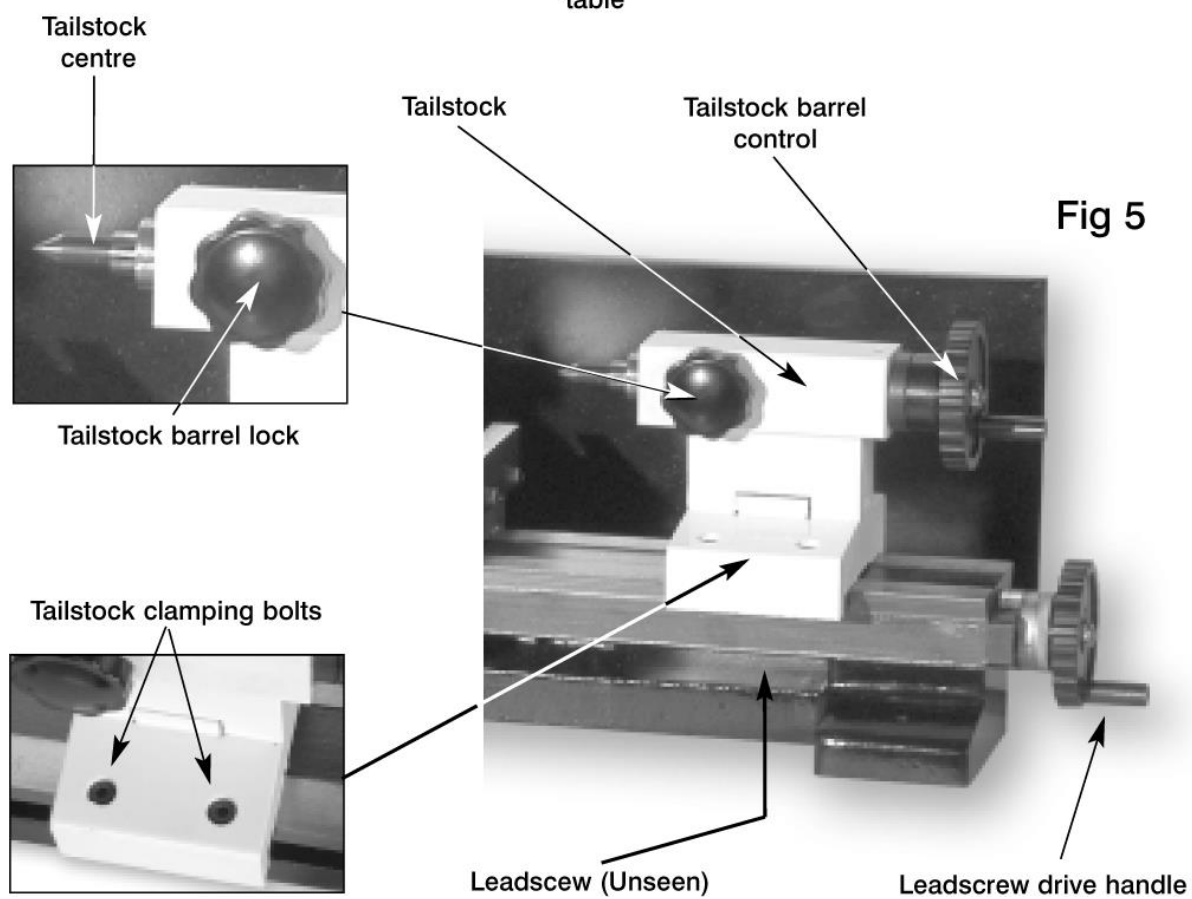
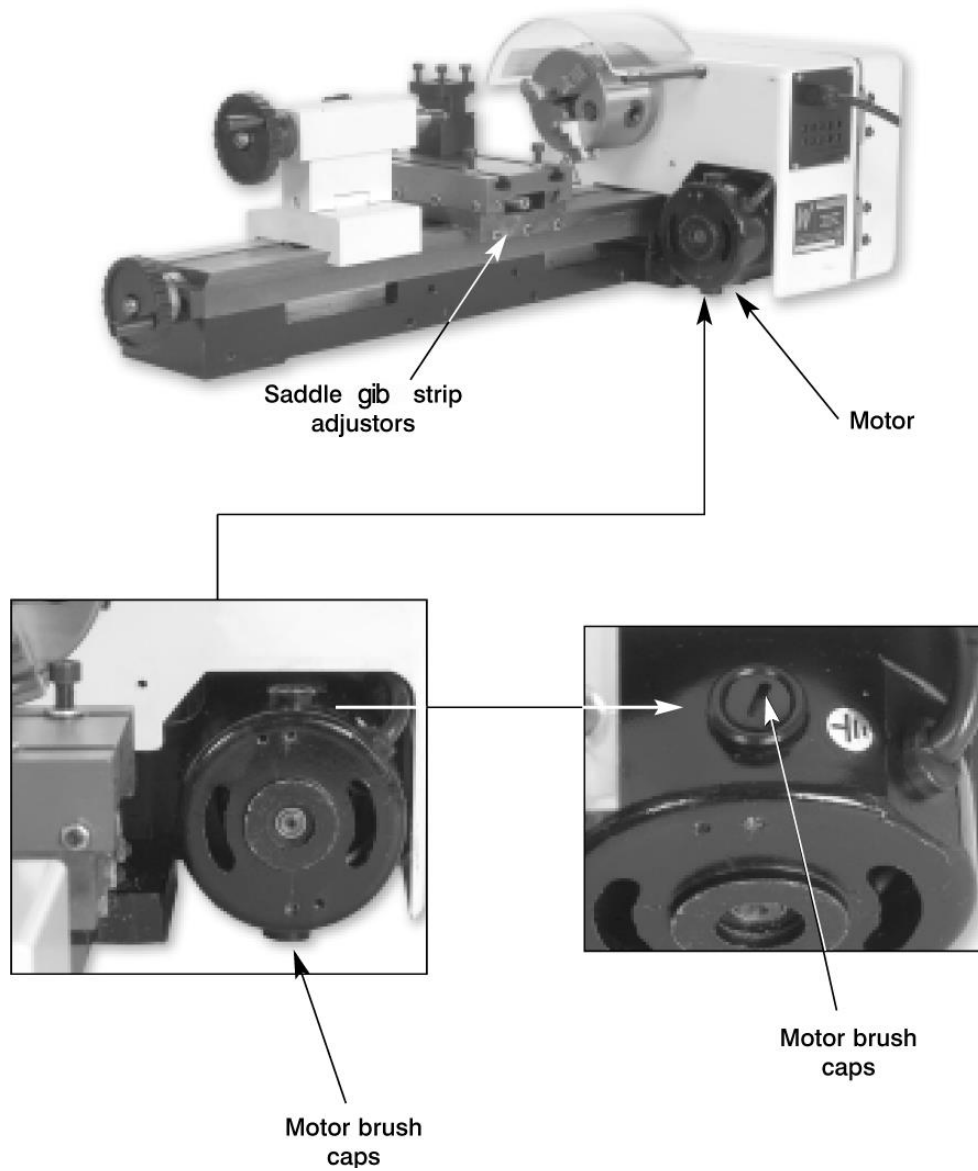


Fig 5

Fig 6

(Splash guard removed for clarity)



Your Cobra Lathe has been factory set and adjusted, however, during its lifetime you may find occasion where the lathe needs adjusting to maintain its accuracy and optimum performance. These adjustments can be made as follows:

Saddle & Traverse Slide Adjustment

The saddle and the traverse slide are mounted over dovetail sections. In order to maintain the 'tightness' of the fit; between the sloping surface of the component and its matting surface a gib strip has been inserted (At the rear of the saddle, and to the right hand side of the traverse slide).

To adjust the gib strips, loosen the lock nuts and screw the adjusting screw IN (No.4 for the traverse slide and No.3 for the saddle). 'Nipping' the component tight to its bedway. Tighten all the screws to the same torque. Check, using the feed handles, that the saddle/slide are locked in place.

Unscrew each adjusting screw by quarter turn, hold the screw (socket grub screw) in position and tighten the locknut. Check the component now moves smoothly along its bed, using the feed handles. If not, carry out the same procedure, unscrew by a third turn this time, etc, if the movement was too tight; by less than a quarter etc., if the movement became too loose.

Repeat the procedure until the movements are smooth and tight. N.B. Always tighten the locknuts before testing.

Feed Scales

The two thimbles that are mounted on the feed shafts of the leadscrew and the traverse feed should move freely with the motion of the handle and not slip. The thimbles can be turned, using more force, independently of the handle in order to set a predetermined start or finish point. If the thimbles are 'slipping' i.e. not maintaining their place relative to the handle, whilst the handle is turning; the cause is almost inevitably dirt, swarf et al., between the pressure plate and the thimble. To rectify this, undo the nut and washer securing the handle to the shaft, remove the hand wheel, and then remove the keyed collar and thimble assembly. Take care that the key does not drop out of the shaft. Gradually separate the thimble from the keyed collar; by twisting and turning, until there is sufficient space to clean the mating surfaces.

BE WARNED The friction drive between the collar and the thimble is affected by a wire spring (like part of a circlip) that is housed in a groove in the collar and rubs against the inside bore of the thimble. If the collar is separated too far, the groove and the spring are exposed. The spring can fall out and if not lost, it is awkward to re-compress the spring so that the thimble will slide completely back onto the collar.

Once the mating surfaces are clean, mate the key and the keyway and fit the collar/thimble assembly to the shaft. Refit the washer and the securing nut and tighten. Tighten until the handwheel, thimble and collar assemble are too tight to move. Undo the securing nut a quarter turn and check that the drive handle rotates freely and there is not excessive backward and forward play in the shaft (The handle etc, forms one side of the drive screw anchor into the slide).

Maintenance

The Lathe is a precision tool. In order to maintain this precision and prolong its useful life, it is advised that you follow the recommended daily and periodic maintenance tables printed below.

Daily

Carry out a visual inspection. Repair any damage immediately. Minor damage to the beds should be taken out with an oilstone.

Move the saddle and the traverse slide back and forth by hand; check that the movement is smooth.

Spread a light film of oil over the bed and the traverse slide bed.

Directly spray oil on the lead screw after every use.

If the lathe is subject to prolonged use, oil the lead screw and bearings every 3-4 hours **(The lead screw is located underneath and runs the entire length of the lathe bed).**

Daily After Use

1. Clean all swarf and chips away from the machine bed, slide surfaces, and the tool post.
2. Exercise the slides and ensure no swarf etc., is lodged in the drive shaft tunnels. If you have been using a coolant make sure the machine is thoroughly dried off.
3. Check the tool, ensure it is usable for the next time, if not re-sharpen or replace the tool tip.
4. Lightly spray oil over all the machines beds and surfaces, and the tailstock barrel.
5. Clean and lightly oil any tools you may have been using (centres, drill chucks, spanners, chuck keys etc) and put them away.
6. Switch OFF the power supply. Disconnect the plug.
7. Cover the machine over with a dust cloth.

Weekly

1. Move the traverse slide fully back to give access to the tunnel, blow out to make sure all swarf is cleared away and heavily spray oil in the tunnel, exercise the slide to work the oil into the drive thread and to lubricate the dog.
2. Spray oil the slide and the lathe bed, exercise the saddle and the slide to spread the oil to all surfaces, both hidden and visible.
3. Spray oil under the bed onto the leadscrew.
4. Check the movement of the saddle and the traverse slide, check it is smooth and 'tight', if necessary, reset the gib strips.

Monthly

Check the belt tension. If necessary, reset the belt tension by loosening the two motor securing caphead bolts, re-tension the belt and re-secure the bolts.

Every 6 Months

Because the D.C. motor has a heavy permanent magnetic field, it is advisable to dismount the lathe every 6 months, remove the splashguard and remove all the swarf that may have found its way into the motor housing.

Oiling Points

Fig 7

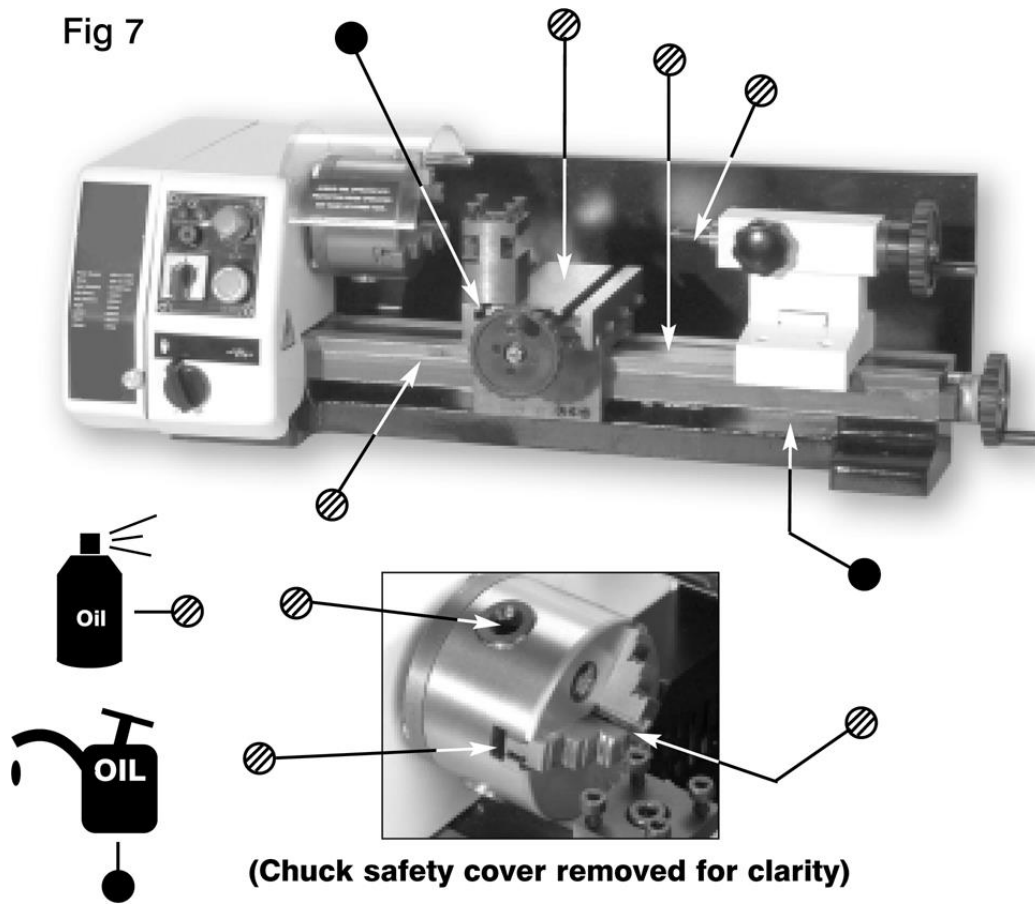

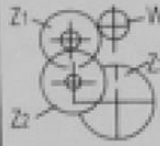


Fig 8

<div>mm</div> <div></div>		0.5	0.7
	W	36	36
	Z1	24 42	24 40
	Z2	40 60	42 45
	Z3	72	72
		0.8	1.0
	W	36	36
	Z1	24 42	24 42
	Z2	40 45	40 48
	Z3	60	45
		1.25	
	W	36	



mm/r

	0.05	0.10
W	36	36
Z1	24 72	24 54
Z2	75 19	60 19
Z3	90	75

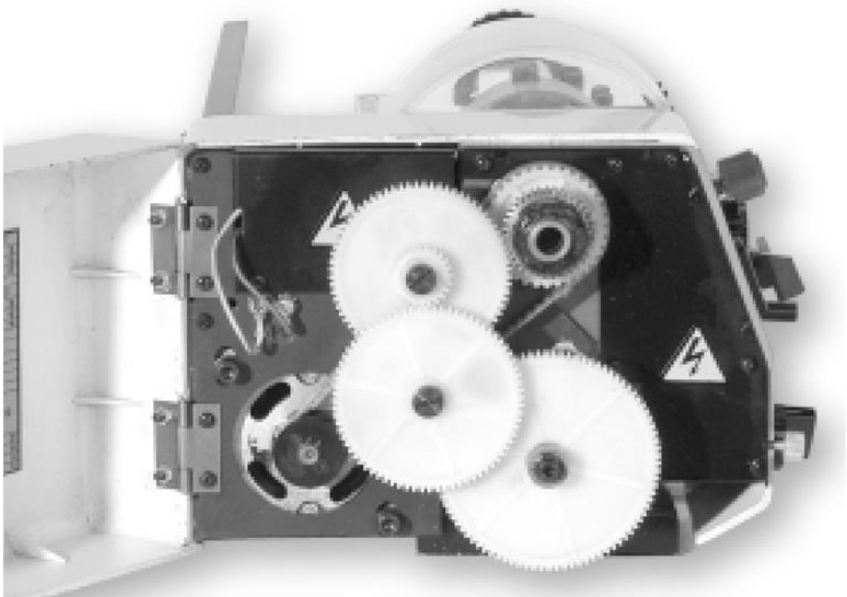
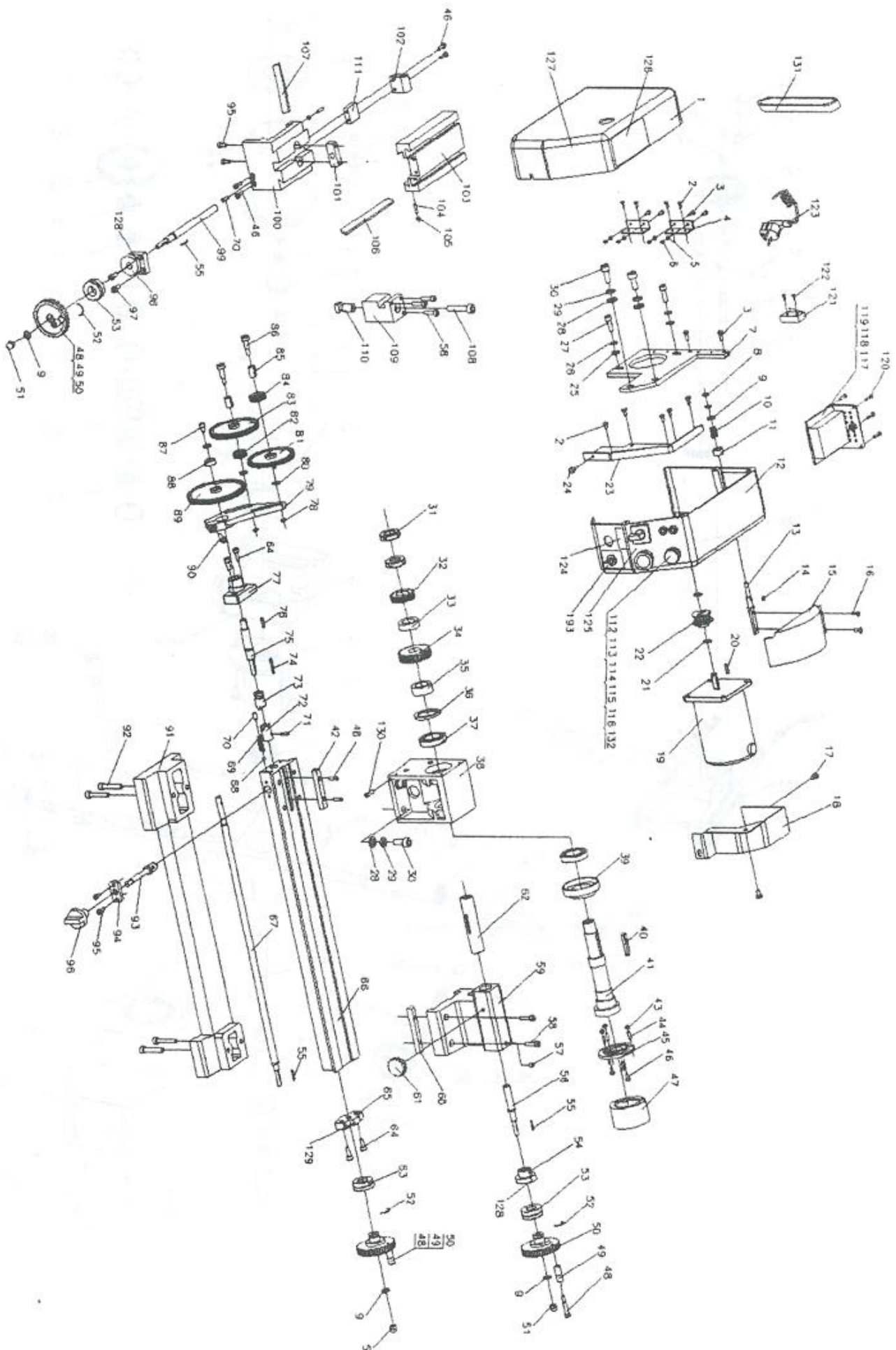


Fig 9

Parts List & Diagrams



Item	Part Name	Qty
1	Change gear cover	1
2	Cap screw GB818, M4*8	14
3	Cap screw GB818, M4*12	8
4	Hinge L*B=38*31	2
5	Washer 4	11
6	Nut M4	11
7	Cantilever	1
8	Nut M6	2
9	Washer 6	10
10	Compression spring	1
11	Spacing ring	1
12	Cover for spindle box	1
13	Rotate spindle	1
14	Key 3*6	1
15	Protect cover for chuck	1
16	Cap screw M4*8	2
17	Cap screw M5*8	2
18	Rear splash guard	1
19	Motor	2
20	Key 3*16	2
21	Check ring 8	4
22	Timing pulley	1
23	Support plate	1
24	Screw M4*8	1
25	Washer 6	6
26	Spring washer 6	3
27	Screw M6*20	2
28	Washer 8	6
29	Spring washer 8	6
30	Screw M8*20	6
31	Small round nut M18*1.5	2
32	Spindle gear	1
33	Spacing ring (I)	1
34	Spindle timing pulley	1
35	Spacing ring (II)	1
36	Behind oil seal (ring)	1
37	Bearing 30205	2
38	Spindle box	1

Item	Part Name	Qty
39	Front oil seal (ring)	1
40	Key 6*36	1
41	Spindle	1
42	Key	1
43	Nut M6	3
44	Screw M6*25	3
45	Chuck flange	1
46	Round cap screw M4*12	9
47	80mm 3 jaw chuck	1
48	Handle screw	4
49	Rotate small handle	4
50	Handwheel	4
51	Cap Nut M6	5
52	Spring steel	4
53	Dial	1
54	Screw base	1
55	Key 2*18	4
56	Tailstock screw	1
57	Screw M5*8	1
58	Screw M5*20	5
59	Tailstock casting	1
60	Wedge	1
61	Lock handle	1
62	Tailstock quill	1
63	Dial	1
64	Screw M5*14	6
65	Screw bracket	1
66	Bed lead rail	1
67	Leadscrew	1
68	Steel ball 5	1
69	Compression spring	1
70	Screw M6*10	2
71	Pin 3*14	1
72	Clutch bracket	1
73	Clutch	1
74	Key 3*22	1
75	Shaft	1
76	Key 3*14	1

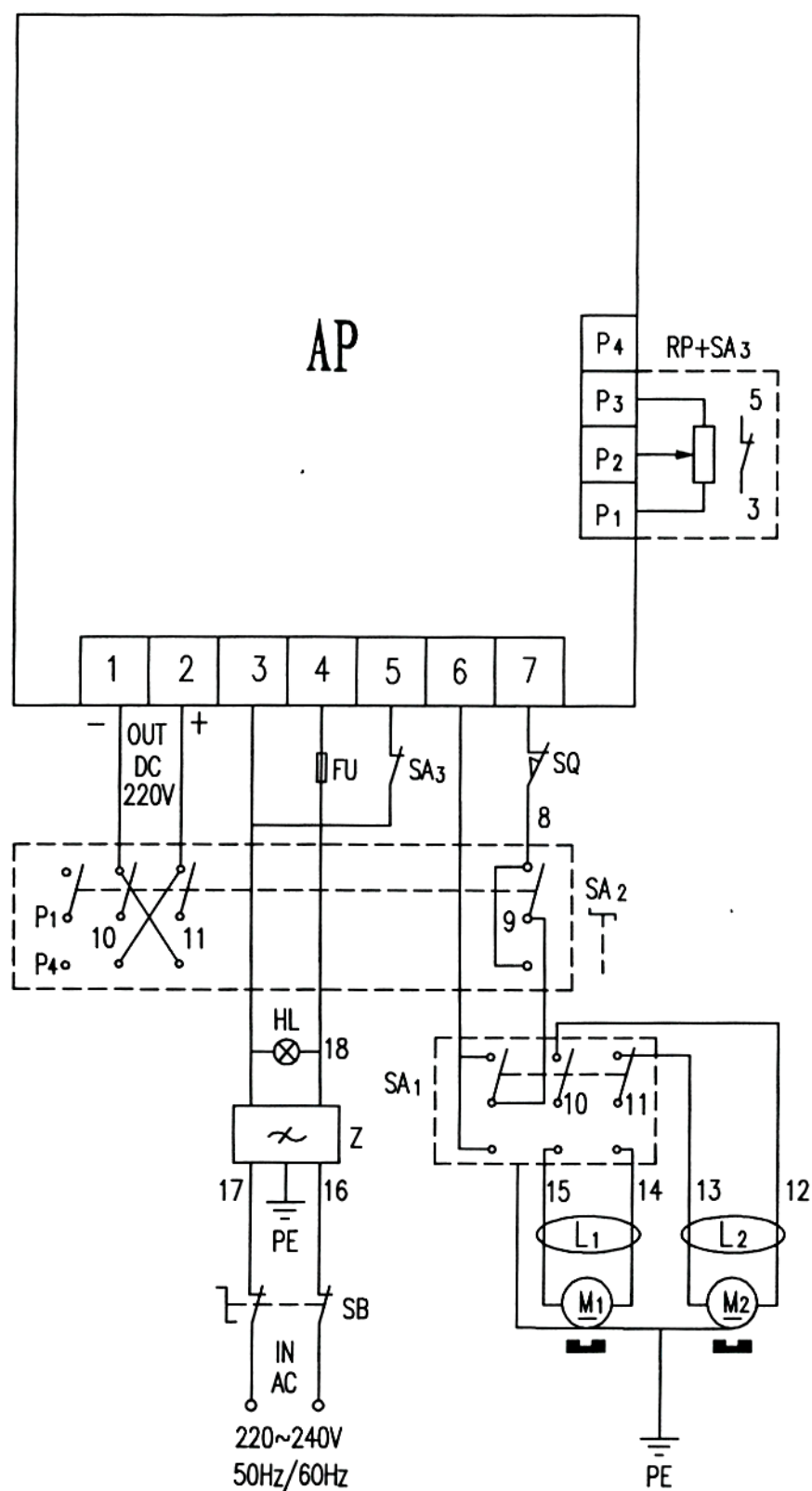
Item	Part Name	Qty
77	Gear shaft bracket	1
78	Nut M5	2
79	Support plate	1
80	Washer	3
81	Change gear Z=72	1
82	Change gear Z=19	1
83	Change gear Z=76	1
84	Change gear Z=24	1
85	Gear sleeve	2
86	Gear shaft	2
87	Screw M5*8	4
88	Spacing ring	1
89	Change gear Z=90	1
90	Screw M5*25	1
91	Bed base	1
92	Screw M6*35	4
93	Unplug shaft	1
94	Dam-board	1
95	Screw M4*10	4
96	Clutch rotate knob	1
97	Screw M5*12	2
98	Leadscrew bracket	1
99	Cross slide screw	1
100	Saddle	1
101	Cross slide nut	1
102	Leadscrew nut	1
103	Cross slide	1
104	Screw M4*16	7
105	Nut M4	7
106	Cross slide wedge	1
107	Gib strip	1
108	Screw M8*40	1
109	Tool rest	1
110	Tool rest shaft	1
111	Connect block	1
112	Potentiometer	1
113	Emergency stop switch	1
114	Forward/off/reverse switch	1

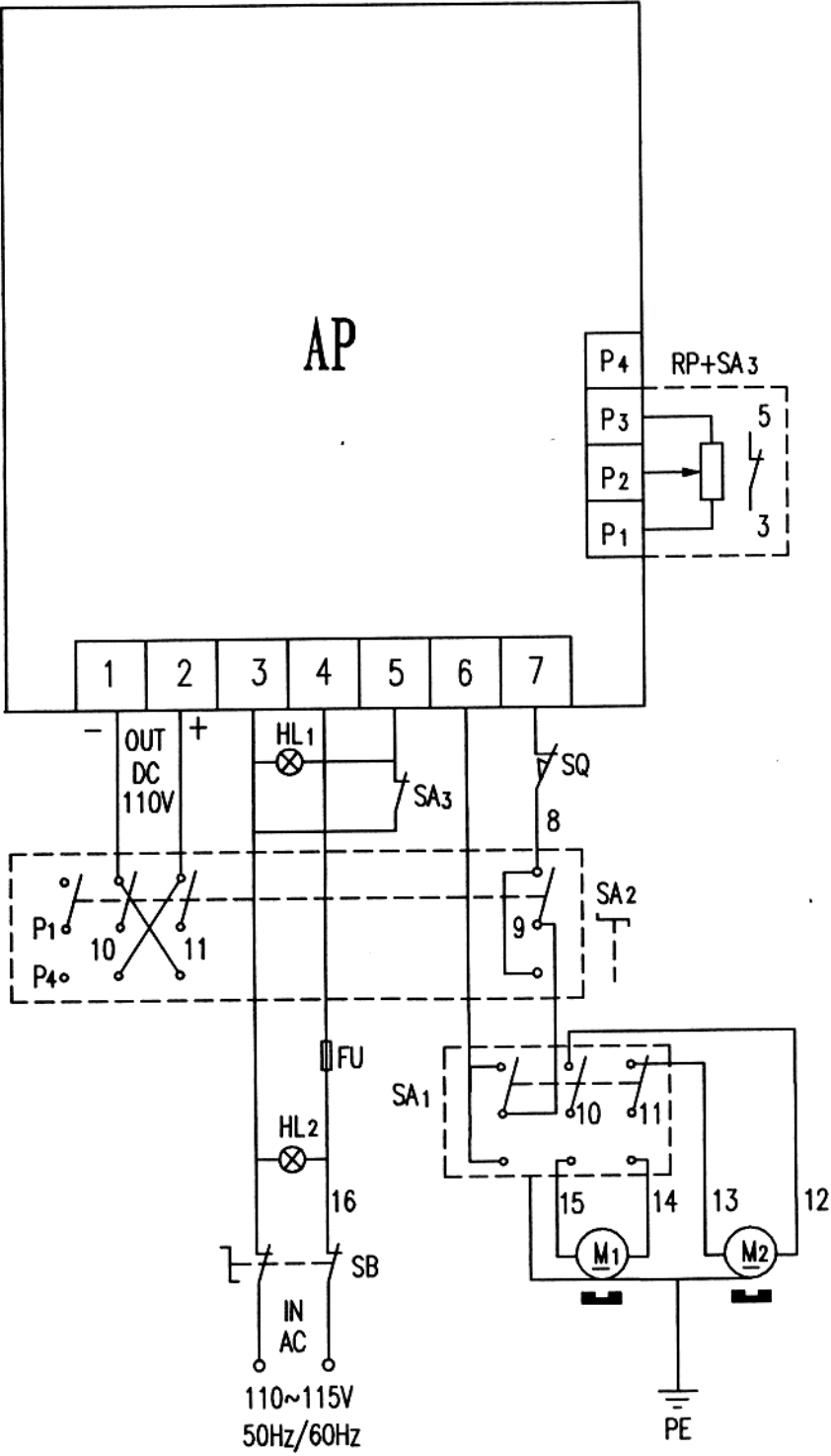
Item	Part Name	Qty
115	Power indicator light	1
116	Fuse box	1
117	PC board	1
118	Lock connect	1
119	Pc board box	1
120	Screw ST2.9*10	4
121	Micro switch	1
122	Screw ST1.9*10	2
123	Power plug	1
124	Operate change label	1
125	Switch label	1
126	Change gear label	1
127	Main label	1
128	Scale label(I)	2
129	Scale label (II)	1
130	Screw M5*12	4
131	Timing belt	1
132	Change switch	1
133	Handle bolt	1
134	Handle sleeve	1
135	Handwheel	1
136	Leadscrew bracket	1
137	Lifter	1
138	Key 3*10	1
139	Fuselage	1
140	Screw M6*18	1
141	Pin 6*24	4
142	Fuselage bracket	2
143	Screw M8*50	5
144	Protect cover for motor	1
145	Screw M6*12	4
146	Spacing ring	1
147	Motor gear	1
148	Spacing ring	1
149	Up cover plate	1
150	Quill fixed plate	1
151	Gear box	1
152	Spindle quill	1
153	Screw M6*14	2

Item	Part Name	Qty
154	Ball bearing 61905-2e	2
155	Spindle base	1
156	Safety cover	1
157	Check ring 20	1
158	Spindle gear (Z=55)	1
159	Spacing ring	1
160	Round nut M24*1.5	1
161	Washer 24	1
162	Check ring 38	2
163	Compression spring	1
164	Spring support	1
165	Hand shank	1
166	Lever cap M8*40	1
167	Read out sleeve	1
168	Spring pin 3*12	2
169	Site screw	1
170	Gear shaft	1
171	Spacing ring	1
172	Connect site screw	1
173	Bevel gear	1
174	Worm base	1
175	Screw M5*18	1
176	Pin 3*12	1
177	Connect shaft	1
178	Pin 3*18	1
179	Worm shaft	1
180	Dial	1
181	Lock bolt	1
182	Key 4*12	1
183	Drill spindle	1
184	Taper shank B10	1
185	Protect cover	1
186	Long piece	1
187	Screw M488	2
188	Washer 5	2
189	Label	1
190	Mark label	1
191	Label	1
192	Fine feeding hand label	1
193	Change showed label	1

Wiring Diagram

220-240V / 50-60Hz





Annex C: (cont.) EC Declaration of Conformity
In accordance with EN 43014:1998

We Chester UK Ltd.
of Clwyd Close, Hawarden Industrial Estate, Manor Lane,
Hawarden, Chester, CH5 3PZ, UK

declare that product: Cobra Lathe
Serial number

is in accordance with:

- | | |
|------------|---|
| 98/37/EEC | The Machinery Safety Directive and its amending directives |
| 73/23/EC | The Low Voltage Directive and its amending directives |
| 89/336/EEC | The Electromagnetic Compatibility Directive and its amending directives |

and has been designed and manufactured to the following specifications:

- | | |
|---------------------------|---|
| BS EN ISO 12100-1&2: 2003 | Safety of machinery. Basic concepts, general principles for design |
| BS EN 13128: 2001 | Safety of machine tools - Milling machines (including boring machines) |
| EN 60204-1:1998 | Safety of machinery. Electrical equipment of machines. General requirements |
| EN 61000-6-2:2001 | Electromagnetic compatibility (EMC). Generic standards. Immunity for industrial environments |
| EN 61000-6-4:2001 | Electromagnetic compatibility (EMC). Generic standards. Emission standard for industrial environments |

I hereby declare that the equipment named above has been designed to comply with the relevant sections of the above referenced specifications. The unit complies with all essential requirements of the Directives.

Signed by:

Name: Michael O'Hare
Position: Managing Director
Done at: Chester

C €05