



INSTRUCTION MANUAL

L1330 / L1340

High Speed Precision Lathe



Instruction and Spare Parts Manual

Contents

1 Safety	2
1.1 General safety precautions	2
1.2 Clothing, hair and jewellery	2
1.3 Hand protection	2
1.4 Electrical safety	3
1.5 Turning machine safety	3
2 Specifications	5
2.1 Machine specifications	5
2.2 Standard accessories	7
2.3 Optional accessories	7
2.4 General layout of the lathe	8
3 Installation	9
3.1 Lifting the machine with a crane	9
3.2 Foundation plan	9
3.3 Installing the machine	11
3.4 Cleaning the machine	11
4 Electrical	13
4.1 Electrical supply connection	14
4.2 Electrical box layout and components: 3HP 4P motor	15
4.3 Electrical box layout and components: 5HP 4P motor (optional)	16
4.4 Electrical circuit diagrams	17
5 Spare Parts	19
5.1 Micrometer bed stop (ERL-13-15)	19
5.2 Stationary steady (ERL-13-16)	20
5.3 Travelling steady (ERL-13-17)	22
5.4 Chip cover (ERL-13-18)	24

1 Safety

1.1 General safety precautions

Before you operate the machine, think through what you are going to do. Work through this safety checklist every time:

- Do I know how to operate this machine?
- What are the potential hazards involved?
- Are all guards in place?
- Are my procedures safe?
- Am I doing something that I probably should not do?
- Have I made all the proper adjustments and tightened all locking bolts and clamps?
- Is the workpiece secured properly?
- Do I have the proper safety equipment?
- Do I know where the stop switch is?
- Do I think about safety in everything I do?

1.2 Clothing, hair and jewellery

- Wear a short-sleeved shirt, or roll long sleeves up above the elbow.
- Keep your shirt tucked in and remove your necktie.
- A shop apron is recommended. You may wear a shop coat as long as you roll up long sleeves.
- Do not wear fuzzy sweaters.
- If you have long hair, secure it properly so that it cannot become entangled in a moving machine.
- Remove your wristwatch and rings before operating the machine.

■ WARNING

A wristwatch or ring caught in a moving part can cause serious injury.

1.3 Hand protection

Use a brush to remove chips. Do not use your hands, and resist the temptation to grab chips as they come from a cut. Do not remove chips with a rag: metal particles become embedded in the cloth and can cut you.

■ WARNING

Gloves must not be worn. A glove caught in a moving part will be pulled in, along with the hand inside it.

Cutting oils, coolants and solvents can affect your skin and may cause a rash or infection. Avoid direct contact with these products as much as possible, and wash your hands as soon as possible after contact.

■ WARNING

Do not blow chips from the machine with compressed air. The air propels metal particles at high velocity, which can injure you or someone on the other side of the machine. Do not blow compressed air on your clothing or skin: the air can be dirty, and the force can implant dirt and germs into your skin.

1.4 Electrical safety

■ WARNING

Before you adjust the machine or carry out maintenance, unplug it from the electrical supply. If the machine is permanently wired, switch off the circuit breaker and tag it with an appropriate warning.

1.5 Turning machine safety

A lathe is only safe if the machinist is aware of the hazards involved in operating it. Develop safe work habits in the use of set-ups, chip breakers, guards and other protective devices. Safety standards exist as guidelines to help you eliminate unsafe practice. The main hazards are as follows.

- Pinch points due to movement: keep your hands away from dangerous positions such as gears, the chuck or rotating cutters.
- Falling components: heavy chucks, workpieces, vices and similar items are dangerous if dropped accidentally. Handle them with care. A chuck wrench left in the chuck can become a missile when the machine is switched on. Always remove the chuck wrench immediately after use.
- High-temperature components: burns usually result from handling hot chips or a hot workpiece. You may wear gloves to handle a hot workpiece, but never wear them while the machine is running.
- Sharp edges, corners and projections: use shields, usually made of clear plastic, for protection from flying chips and coolant. Do not remove stringy chips with bare hands; wear heavy gloves and use hook tools or pliers, and always switch off the machine before you remove chips. Chips should be broken rather than left in a stringy mass or long wire; chip breakers on tools and correct feeds help to produce safe, easily handled chips. Remove burred edges before you take the workpiece off the machine. Always remove the tool bit when setting up or removing workpieces, to avoid cutting yourself.
- Workholding devices: when workpieces are clamped, their components often extend beyond the outside diameter of the holding device. Guards, barriers and warnings such as signs or verbal instructions are used to make you aware of these hazards. Never run a geared scroll chuck without something gripped in the jaws: centrifugal force on the jaws can cause the scroll to unwind and the jaws to come out of the chuck. Keep tools, files and micrometers off the machine; they may vibrate off into the revolving chuck, workpiece or cutter.
- Spindle braking: never slow or stop the spindle or workpiece by hand gripping or by any other means. Always use the machine controls to stop or slow it.
- Workpieces extending out of the lathe: support them with a stock tube. A slender workpiece that extends a foot or so beyond the headstock spindle without support can fly outward under centrifugal force. It will not only bend, but will present a very great danger to anyone standing nearby.
- Other safety considerations: when polishing rotating work, hold one end of the abrasive cloth strip in each hand, and do not let either hand get closer than a few inches to the work. Keep rags, brushes and

fingers away from rotating work, especially when knurling: roughing cuts tend to drag in and wrap up rags, clothing, neckties, emery cloth and hair.

■ **WARNING**

When checking boring work, move the carriage back out of the way and cover the tool with a cloth.

■ **WARNING**

When removing or installing chucks or heavy workpieces, place a board on the ways. To lift a heavy chuck or workpiece (larger than an 8-inch diameter chuck), get help or use a crane. Remove the tool, or turn it out of the way, during this operation.

■ **WARNING**

Do not shift gears or try to take measurements while the lathe is running and the workpiece is in motion.

■ **WARNING**

Never use a file without a handle: the file tang can quickly cut your hand or wrist if the file is struck by a spinning chuck jaw or lathe dog. Left-hand filing is considered safest on the lathe: the left hand grips the handle while the right hand holds the tip end of the file.

2 Specifications

2.1 Machine specifications

Table 2-1 gives the specifications of the L-1330 and L-1340. Where the same value appears in both columns, it applies to both models.

Table 2-1: Machine specifications

Group	Item	L-1330	L-1340
Capacity	Height of centres	171mm (6.73")	171mm (6.73")
Capacity	Swing over bed	ø340mm (13.38")	ø340mm (13.38")
Capacity	Swing in gap	ø512mm (20")	ø512mm (20")
Capacity	Swing over cross slide	ø210mm (8.26")	ø210mm (8.26")
Capacity	Distance between centres	760mm (30")	1000mm (40")
Capacity	Width of bed	230mm (9")	230mm (9")
Capacity	Gap width in front of faceplate	150mm (5")	150mm (5")
Headstock & main spindle	Spindle nose, internal taper	D1-4, MT. No.5	D1-4, MT. No.5
Headstock & main spindle	Spindle centre sleeve	MT. No.5 x MT. No.3	MT. No.5 x MT. No.3
Headstock & main spindle	Spindle bore	ø40mm (1.57")	ø40mm (1.57")
Headstock & main spindle	Spindle speed, gear steps / range (standard)	8 steps 4P / 80 ~ 2000 R.P.M.	8 steps 4P / 80 ~ 2000 R.P.M.
Headstock & main spindle	Spindle speed, gear steps / range (optional)	16 steps 2P/4P: 4P 50 ~ 1305 R.P.M.; 2P 100 ~ 2570 R.P.M.	16 steps 2P/4P: 4P 50 ~ 1305 R.P.M.; 2P 100 ~ 2570 R.P.M.
Carriage	Length on bed / width of carriage	400mm (15.748") / 384mm (15.118")	400mm (15.748") / 384mm (15.118")
Carriage	Cross slide travel	180mm (7")	180mm (7")
Carriage	Top slide travel	100mm (4")	100mm (4")
Threads & feeds	Whitworth threads, kinds / range	45 kinds / 2 ~ 72 T.P.I.	45 kinds / 2 ~ 72 T.P.I.
Threads & feeds	Metric threads, kinds / range	39 kinds / 0.2 ~ 14mm	39 kinds / 0.2 ~ 14mm
Threads & feeds	Diametral pitch (D.P.) worm gear, kinds / range	21 kinds / 8 ~ 44 D.P.	21 kinds / 8 ~ 44 D.P.
Threads & feeds	Module pitch (M.P.) worm gear, kinds / range	18 kinds / 0.3 ~ 3.5 M.P.	18 kinds / 0.3 ~ 3.5 M.P.
Threads & feeds	Longitudinal feeds	0.05 ~ 1.7mm (0.002" ~ 0.067")	0.05 ~ 1.7mm (0.002" ~ 0.067")
Threads & feeds	Cross feeds	0.025 ~ 0.85mm (0.001" ~ 0.034")	0.025 ~ 0.85mm (0.001" ~ 0.034")
Tailstock	Quill diameter	ø50mm (1.968")	ø50mm (1.968")
Tailstock	Quill travel	112mm (4.5")	112mm (4.5")
Tailstock	Taper of centre	MT. No.3	MT. No.3
Motor	Main spindle	3HP 4P (optional 5HP 2P/2.5HP 4P)	3HP 4P (optional 5HP 2P/2.5HP 4P)
Motor	Coolant pump	1/8 HP	1/8 HP
Measurement	Weight (net / gross), approx.	850kgs / 1000kgs	1000kgs / 1200kgs
Measurement	Packing size, length	2000mm (78.8")	2270mm (89.4")
Measurement	Packing size, width x height	Width 965mm (38") x Height 1745mm (68.7")	Width 965mm (38") x Height 1745mm (68.7")

NOTE Specification subject to change without notice.

2.2 Standard accessories

- Backplate for 7" chuck
- Dead centre MT.3 made of carbon steel
- Dead centre MT.3 with carbide tip
- Spindle centre sleeve MT.5 x MT.3
- Level pads: 6pcs
- Toolset & box
- Operation manual & parts list

2.3 Optional accessories

- 3-jaw scroll 7" chuck
- 4-jaw independent 8" chuck
- 5C collet closer attachment
- 5C collets (metric or inch)
- Driving plate with dog
- Chuck safety guard
- Hydraulic copying attachment
- Tool post grinder attachment
- Taper turning attachment
- Electrical system for CE
- Protect cover on leadscrew for CE
- Steady rest with ball bearing
- Follow rest with bronze tip
- Faceplate 10"
- Drill chuck & arbor
- Rotating centre MT.3
- Halogen lamp
- Quick change tool post
- Carriage micro stop set
- Digital read-out system
- Full-length splash guard

3 Installation

3.1 Lifting the machine with a crane

Approximate machine weight for lifting:

- L-1330: about 980kgs.
- L-1340: about 1150kgs.

■ WARNING

Only an authorised crane operator may lift the machine. Use a crane with a minimum capacity of more than 2 tons, for security.

- 1 Check that the crane capacity is more than 2 tons.
- 2 Make sure that the two hexagon nuts are fixed.
- 3 Keep the machine's centre of gravity at the centre of the crane.
- 4 Lift with two people working together, an operator and a watchman, so that nothing projecting from the machine perimeter is damaged.

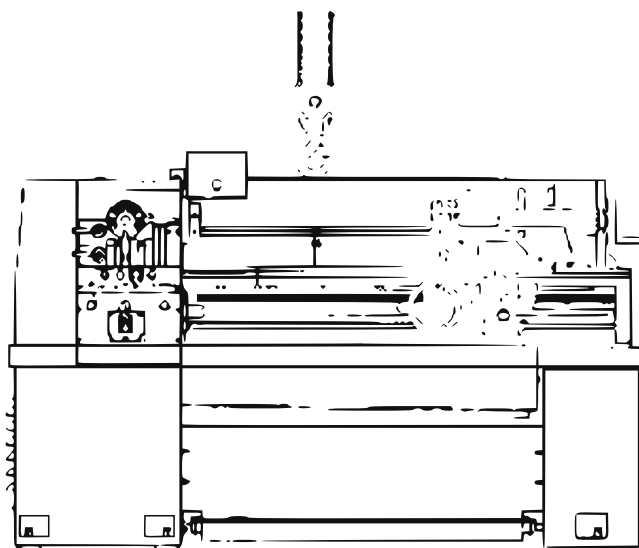


Figure 3-1: Lifting the machine with a crane

3.2 Foundation plan

Figure 3-2 shows the overall machine dimensions and Figure 3-3 the foundation plan. Table 3-1 gives the dimensions for each model with the one-piece solid stand, which is equipped with a front moveable chip tray (optional).

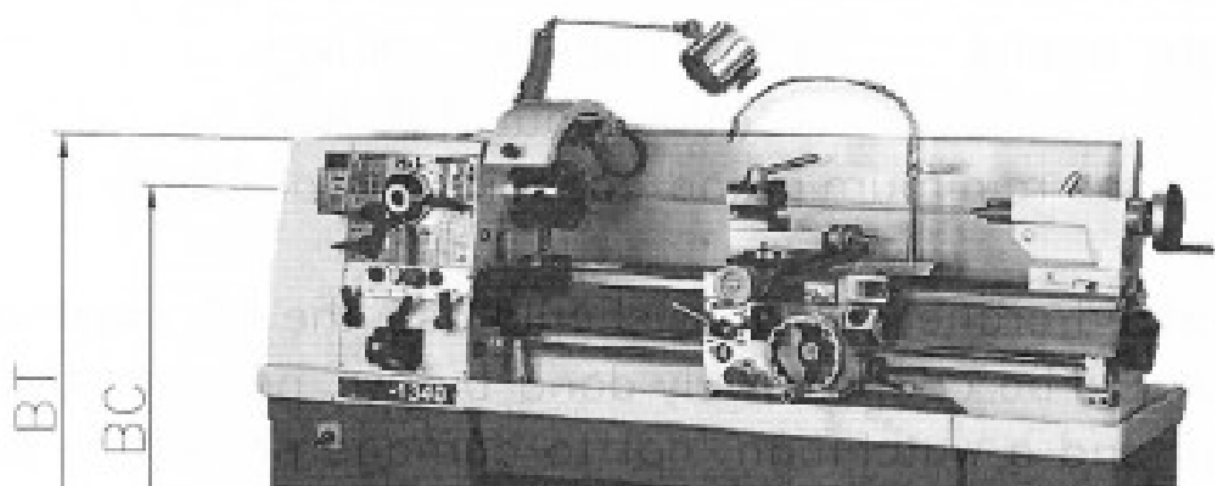


Figure 3-2: Overall machine dimensions

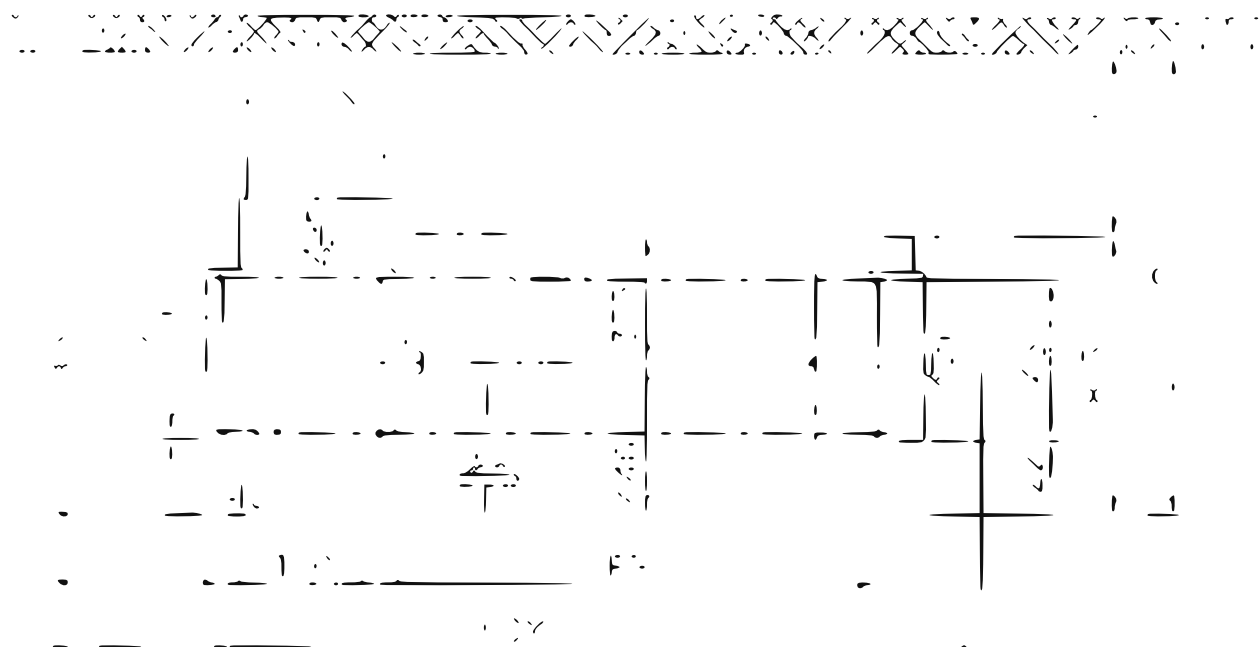


Figure 3-3: Foundation plan (dimensions in mm)

Table 3-1: Foundation dimensions, one-piece solid stand with front moveable chip tray (optional)

Model	LCY	FB	BC	BT	FW
L-1330	2360mm	1118mm	1072mm	1203mm	1750mm
L-1340	2660mm	1418mm	1072mm	1203mm	2050mm

3.3 Installing the machine

- 1 Locate the machine on a solid foundation, according to the foundation plan (see 3.2 and Figure 3-3).
- 2 Make sure there is sufficient power capacity.
- 3 Do not place the machine in direct sunlight.
- 4 Keep the floor around the machine clear and dry. Do not pile things up on it.
- 5 Leave enough space to open the electrical box door for maintenance and to access the machine for operation.
- 6 Position the lathe on the foundation and adjust each of the six mounting plinths to take an equal share of the load.
- 7 Using an engineer's precision level on the bedways, adjust the plinths to level the machine.
- 8 Check the bed level periodically to ensure continued lathe accuracy.

3.4 Cleaning the machine

■ CAUTION

Do not use an air compressor for cleaning.

- 1 Before you operate any controls, remove the anti-rust coating from all slideways and other places.
- 2 Clean with spirit or kerosene. Do not use cellulose solvents: they can damage the paint finish.
- 3 Oil all brightly machined surfaces immediately after cleaning. Apply machine oil to the slideways, and heavy oil or grease to the end gears.
- 4 Clean all slideways, the leadscrew and the feed shaft (a bristle paint brush is useful for this) and lightly oil them.

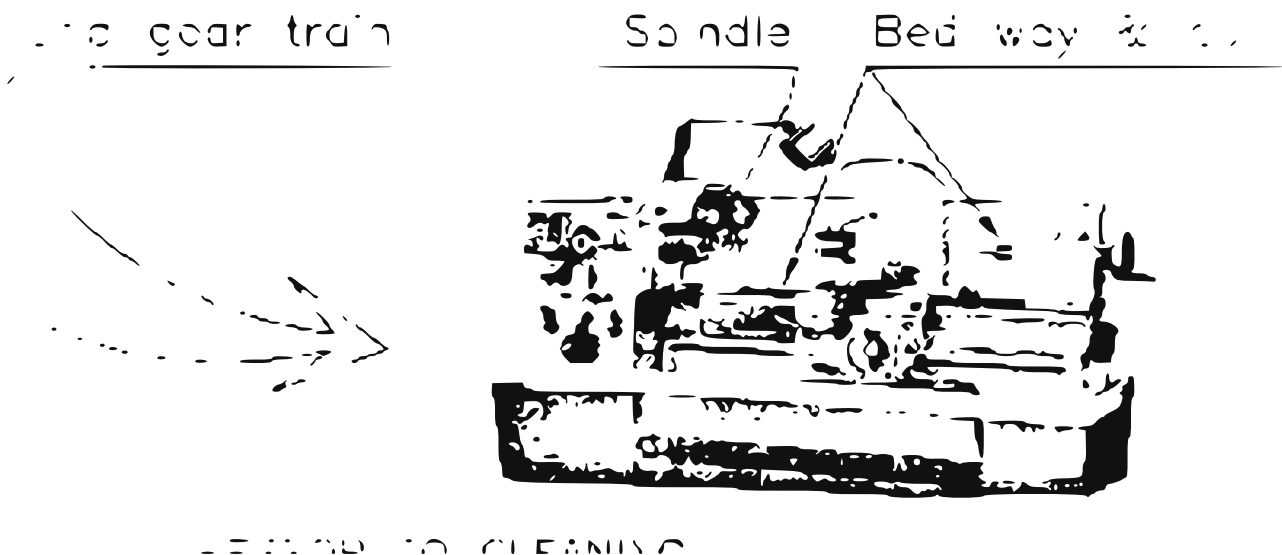


Figure 3-4: Cleaning points



Figure 3-5: End gear train

4 Electrical

■ WARNING

Isolate the machine from the electrical supply before you open the electrical box or work on any wiring (see 1.4).

4.1 Electrical supply connection

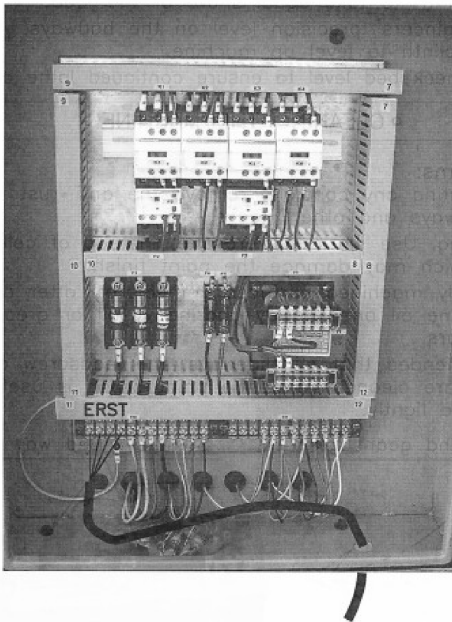


Figure 4-1: Electrical box and supply terminals (R, S, T, E)

The lathe is wired to the importer's required electrical specification. If the wiring needs to be changed, refer to the layouts, component lists and circuit diagrams in this chapter: 4.2 and Figure 4-3 for the standard 3HP 4P motor, and 4.3 and Figure 4-4 for the optional 5HP 4P motor.

To connect the machine, connect R, S, T and E of your supply lines to terminals R, S, T and E at the bottom left of the electrical box.

Input power cable	3.5mm² x 4C
Voltage	3-phase 220VAC

4.2 Electrical box layout and components: 3HP 4P motor

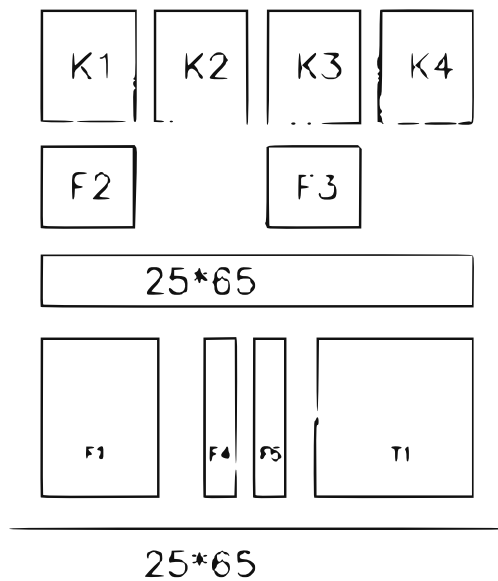


Figure 4-1: Electrical box layout, 3HP 4P motor

Table 4-1: Electrical component list, 3HP 4P 220V motor

Model	Description	Specification	Qty	Symbol
L-1330	AC Magnetic switch	TENLC1D126B7	2	K1, K2
L-1340	AC Magnetic switch	TENLC1D096B7	2	K3, K4
	Over relay	TENLR3D216	1	F2
3HP 4P 220V	Over relay	TENLR3D05	1	F3
	Main fuse base	TFU-303 3P50A	1	F1
	Fuse base	TFBR-102 2P10A	1	F4, F5
	Terminal board	TBR-20	7	T.B
	Terminal board	TBR-10	13	T.B
	Transformer	140VA	1	T1
	Micro switch	TM-1307	1	LS1
	Micro switch	TM-1704	1	LS2
	Micro switch	TM-1308	2	LS3, LS4
	E-Stop	ALEPB-22-1B	1	E-STOP
	Spindle motor jog	APB-22-1A-G	1	PB1
	Pump change over switch	ASS-22-2P-1A-G	1	PB2
	Power lamp	ALPL-22-30V-W	1	POWER LAMP

4.3 Electrical box layout and components: 5HP 4P motor (optional)

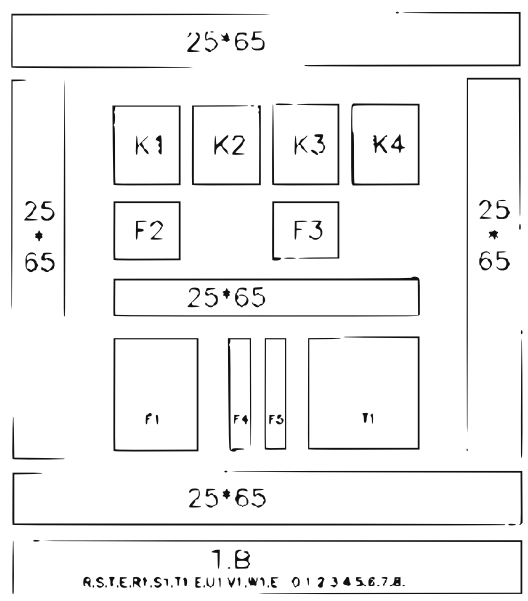


Figure 4-2: Electrical box layout, 5HP 4P motor (optional)

Table 4-2: Electrical component list, 5HP 4P 220V motor (optional)

Model	Description	Specification	Qty	Symbol
L-1330	AC Magnetic switch	TENLC1D186B7	2	K1, K2
L-1340	AC Magnetic switch	TENLC1D096B7	2	K3, K4
	Over relay	TENLR3D226	1	F2
5HP 4P 220V	Over relay	TENLR3D036	1	F3
	Main fuse base	TFU-303 3P50A	1	F1
	Fuse base	TFBR-102 2P10A	1	F4, F5
	Terminal board	TBR-20A	7	T.B
	Terminal board	TBR-10A	13	T.B
	Transformer	140VA	1	T1
	Micro switch	TM-1307	1	LS1
	Micro switch	TM-1704	1	LS2
	Micro switch	TM-1308	2	LS3, LS4
	E-Stop	ALEPB-22-1B	1	E-STOP
	Spindle motor jog	APB-22-1A-G	1	PB1
	Pump change over switch	ASS-22-2P-1A-G	1	PB2
	Power lamp	ALPL-22-30V-W	1	POWER LAMP
	Hi & low switch	3PH 4P/6P 25A	1	HI & LOW SWITCH

4.4 Electrical circuit diagrams

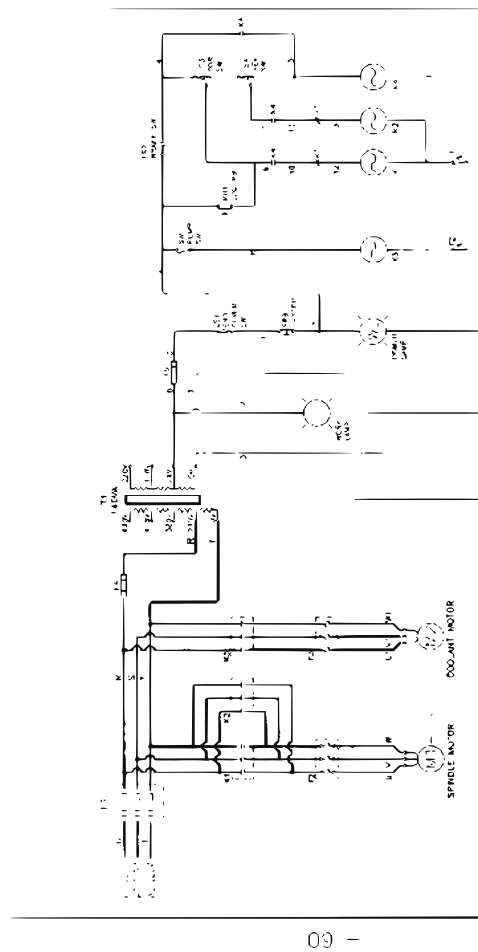


Figure 4-3: Electrical circuit diagram, 3HP 4P motor

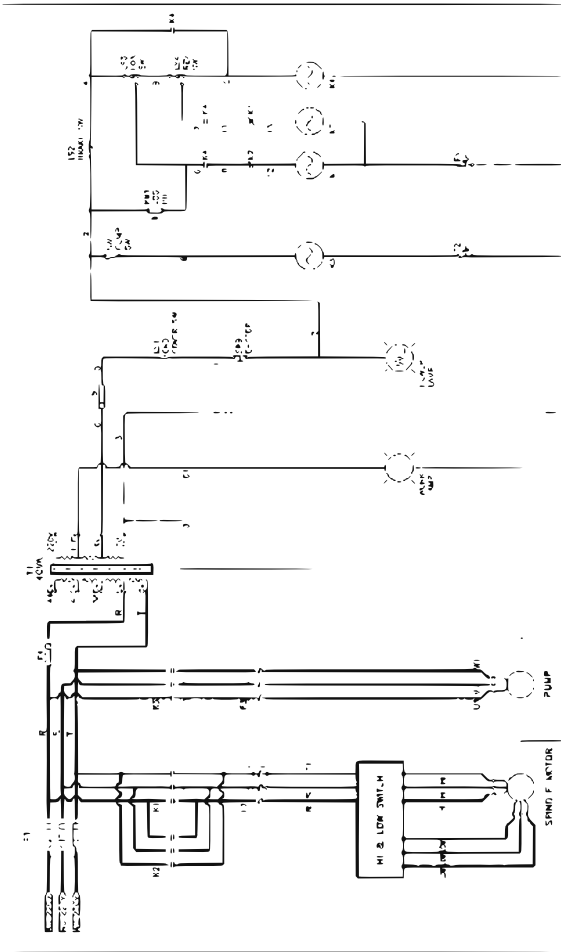


Figure 4-4: Electrical circuit diagram, 5HP 4P motor (optional)

5 Spare Parts

This chapter lists the spare parts for the accessory assemblies. When you order parts, quote the assembly reference, key number, part number and part name. Where a part has separate metric and imperial versions, both part numbers are listed against the same key number. Items with no part number are standard fasteners or bought-in components: order them by the size in the Remark column.

5.1 Micrometer bed stop (ERL-13-15)

Table 5-1: Micrometer bed stop, ERL-13-15

Key No.	Part No.	Part Name	Qty	Remark
1		Hex. socket head bolt	2	M10x60
2		Rivet	2	ø2
3	18-70060-M	Name plate	1	for METRIC
3	18-70060-I	Name plate	1	for IMPERIAL
4	18-70057-M	Micro dial	1	for METRIC
4	18-70057-I	Micro dial	1	for IMPERIAL
5	70048-13	Body	1	
6	18-70056-M	Rod	1	for METRIC
6	18-70056-I	Rod	1	for IMPERIAL
7	18-70059	Clamp plate	1	
8		Set screw	2	M10x20
9	18-70083	Copper pin	2	
10		Set screw	2	M8x16
11	OOST12M8	Set screw	1	M8x12
12		Set screw	1	M8x12

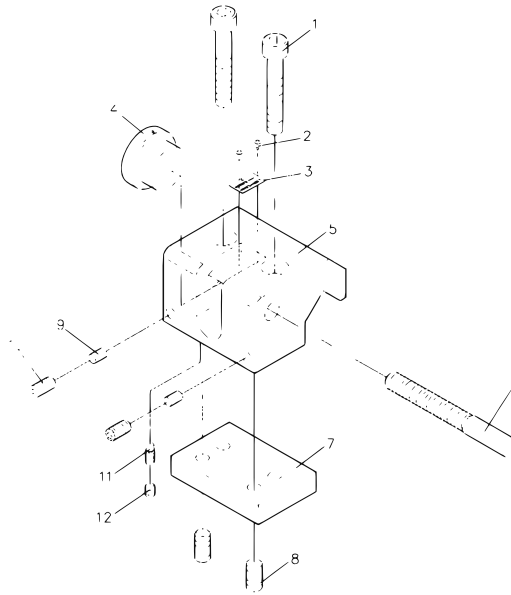


Figure 5-1: Micrometer bed stop, exploded view

5.2 Stationary steady (ERL-13-16)

Table 5-2: Stationary steady, ERL-13-16

Key No.	Part No.	Part Name	Qty	Remark
1	70038	Adjusting knob	3	
2		Spring pin	3	ø4x40L
3	70062	Collar	3	
4	70035	Screw	3	
5	70037	Finger	3	
6	70040	Pin	3	
7		Ball bearing	2	627
8		Set screw	3	M8x8L
9	70064	Knob nut	1	
10	70033	Clamp screw	1	
11	70031	Pin	1	
12	70029	Top casting	1	
13	70030	Base casting	1	
14	70032	Hinge pin	1	
15	70063	Single wing bolt	3	
16		Nut	1	M12xP1.75
17		Spring washer	1	M12
18		Hexagon head bolt	1	M12xP1.75x75L
19	70039	Clamp plate	1	

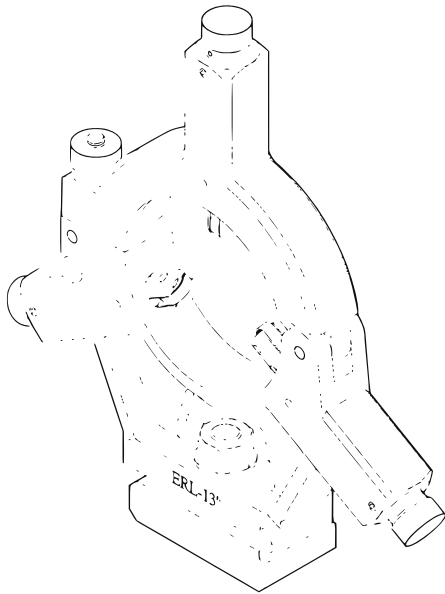


Figure 5-2: Stationary steady, assembled

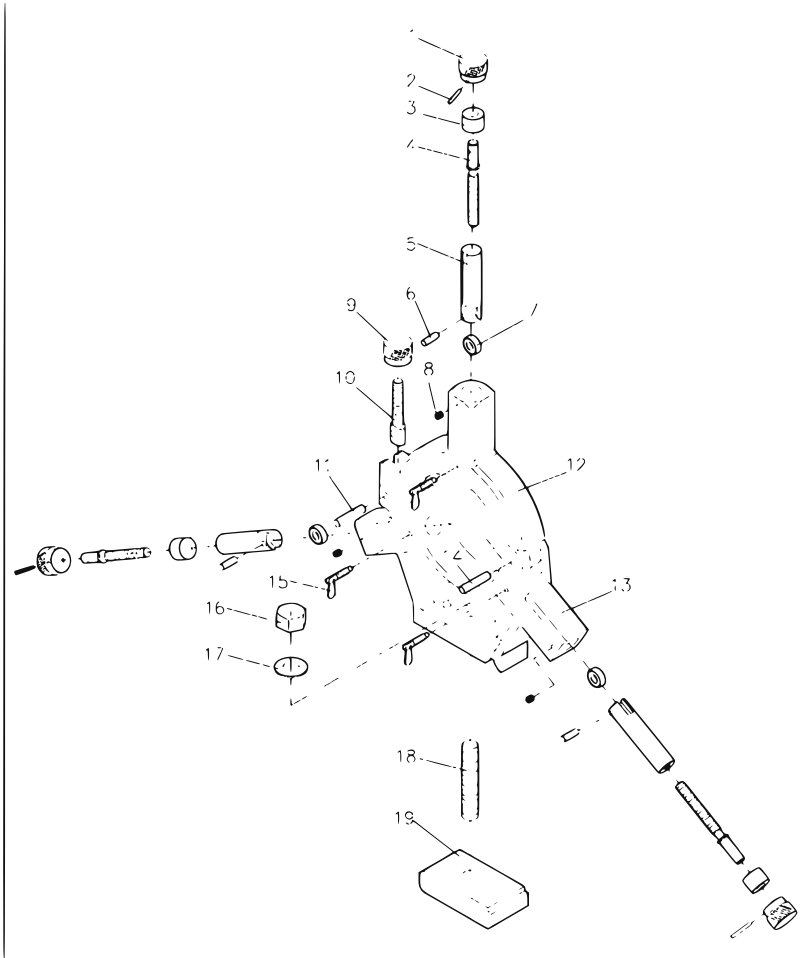


Figure 5-3: Stationary steady, exploded view

5.3 Travelling steady (ERL-13-17)

Table 5-3: Travelling steady, ERL-13-17

Key No.	Part No.	Part Name	Qty	Remark
1	70038	Adjusting screw	2	
2		Spring pin	3	ø4x40L
3	70062	Collar	3	
4	70045	Screw	2	
5	70044	Finger	2	
6	70047	Bracket	2	
7		Set screw	2	M8x8L
8	70041	Casting	1	

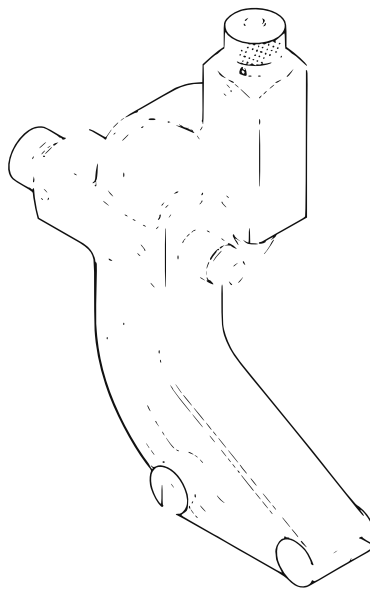


Figure 5-4: Travelling steady, assembled

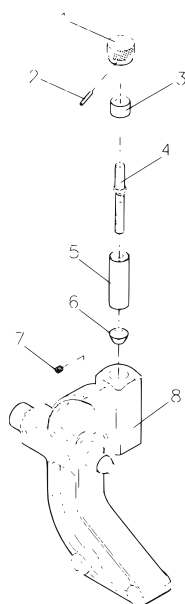


Figure 5-5: Travelling steady, exploded view

5.4 Chip cover (ERL-13-18)

Table 5-4: Chip cover, ERL-13-18

Key No.	Part No.	Part Name	Qty	Remark
1		Dome hexagon screw	10	M6x10L
2	18-68001	Chip frame	1	
3	18-68004	Plate - down	1	199x175xt4.5
4	18-68003	Plate - up	1	199x144xt4.5
5		Hex. socket head bolt	1	M6x12L
6		Hex. socket head bolt	2	M6x60L
7	18-68002		1	

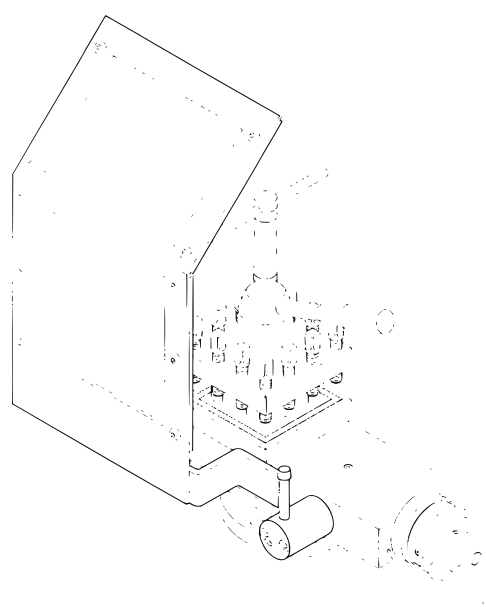
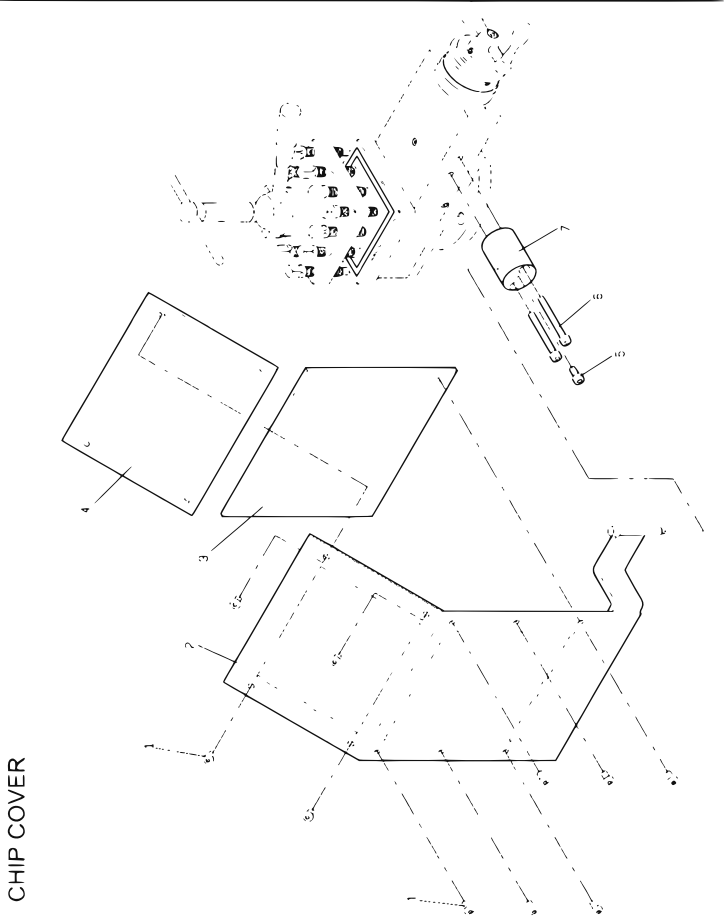


Figure 5-6: Chip cover, assembled



CHIP COVER

Figure 5-7: Chip cover, exploded view



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