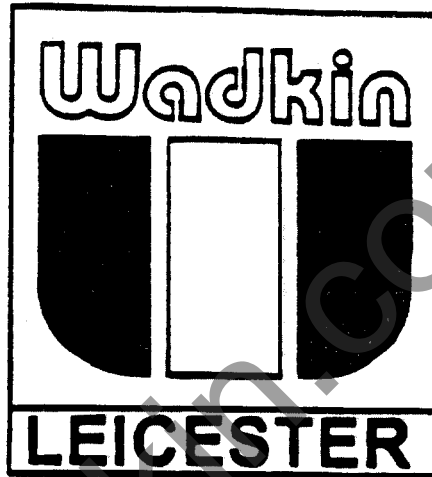




# UX ROUTERS

**INSTRUCTION MANUAL**



# UX ROUTERS

M/C No.
TEST No.

**INSTRUCTION MANUAL**

**MANUFACTURERS E.C. DECLARATION OF CONFORMITY**

The following machine has undergone "Conformity Assessment" and is "self" certificated in accordance with:-

Supply of Machinery (Safety) Regulations 1992  
and Amendment No. 2063

**COMPANY**

WADKIN PLC  
Green Lane Road  
Leicester LE5 4PF

**RESPONSIBLE PERSON**

Mr R T Perks (Managing Director)

**MACHINE DESCRIPTION**

**TYPE** LIGHT/MEDIUM DUTY ROUTER

**MODEL** UX

**DIRECTIVES COMPLIED WITH**

Supply of Machinery (Safety) Regulations 1992  
Amendment No. 2063 1994  
Draught Proposal CEN/TC 142  
ISO 9001 Part 1

**SIGNED ON BEHALF OF WADKIN PLC**

.....

INTRODUCTION

The machines described in this manual have been designed and manufactured for safe operation in the manner prescribed by this publication.

In addition, considerable care has been taken to identify and recommend maintenance and fault finding procedures, which will ensure that high standards of safety apply under maintenance conditions.

It is essential that the advice given will become an integral part of any Instruction Sheet issued by the user Company and that the information will always be readily available throughout the whole life of the machine to all potential operatives.

In order to ensure trouble free service and safety to all persons using the machine, the manual should be passed immediately to the personnel responsible for installation, operation, safety and maintenance for the machine supplied.

This Manual covers the whole range of 'UX ROUTERS' and certain information will not appertain to certain parts of the particular machine supplied.

Should any damage have been incurred during transit, both Wadkin Leicester and the Carrier MUST BE NOTIFIED within two or three days from receipt of the machine.

When ordering spares and requesting service, please quote the following information:

Machine Serial Number  
Electrical Wiring Diagram Numbers  
Air Diagram Number.

Note: Wadkin Leicester reserve the right to make improvements or modifications to their standard machines without previous notification.

continued.../...

This Instruction Manual has been published to assist Operator and Servicing Personnel to run and maintain the machine.

The Manual is made up of Sections 1 to 9 with main headings to each Section for ease of reference, then paragraphs and sub-paragraphs, for example:

2.1.1 = Section 2 (Health and Safety at Work)  
Paragraph 1 (Safety for Woodworking)  
Sub-paragraph 1 (Warning)

List of Sections contained in the Manual are as follows:

Section 1	GENERAL DESCRIPTION
Section 2	HEALTH AND SAFETY
Section 3	INSTALLATION
Section 4	MACHINE PREPARATION
Section 5	OPERATING INSTRUCTIONS
Section 6	MAINTENANCE
Section 7	FAULT FINDING CHECK LISTS
Section 8	PARTS LISTS
Section 9	RECOMMENDED SPARES

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- 1.4 Extra Equipment
- 1.5 Vacuum Clamping
  
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- 9.2            Model UX/B/1,2 & 3 Machine Spares

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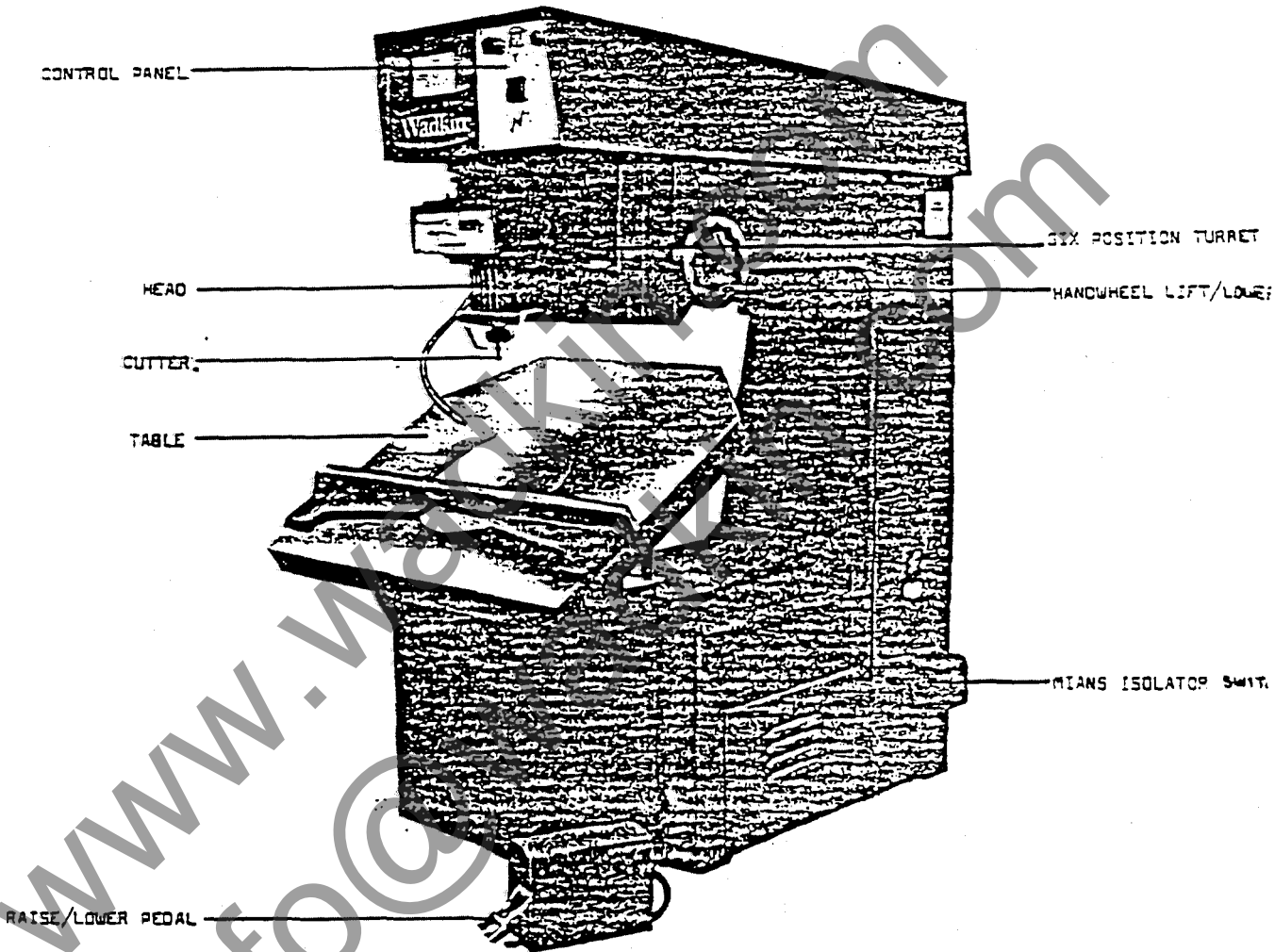
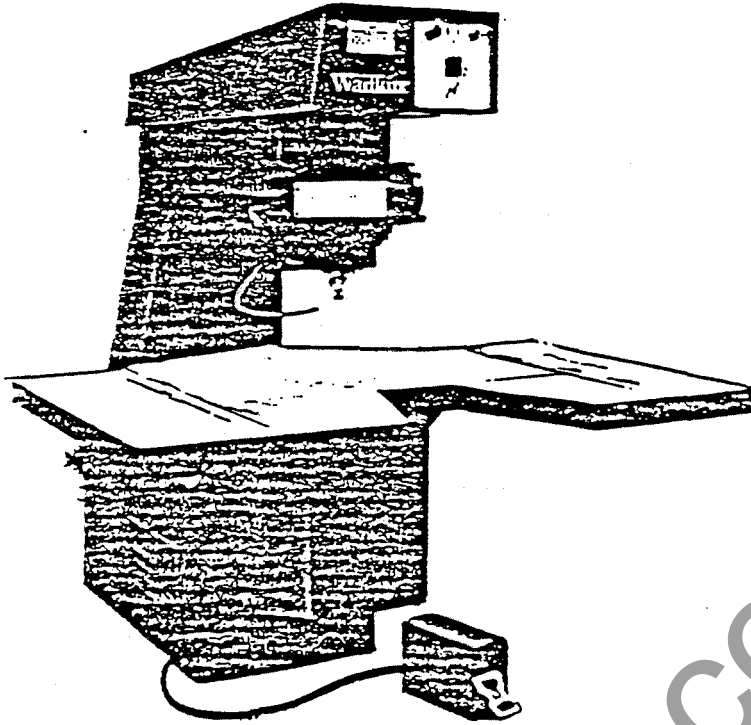
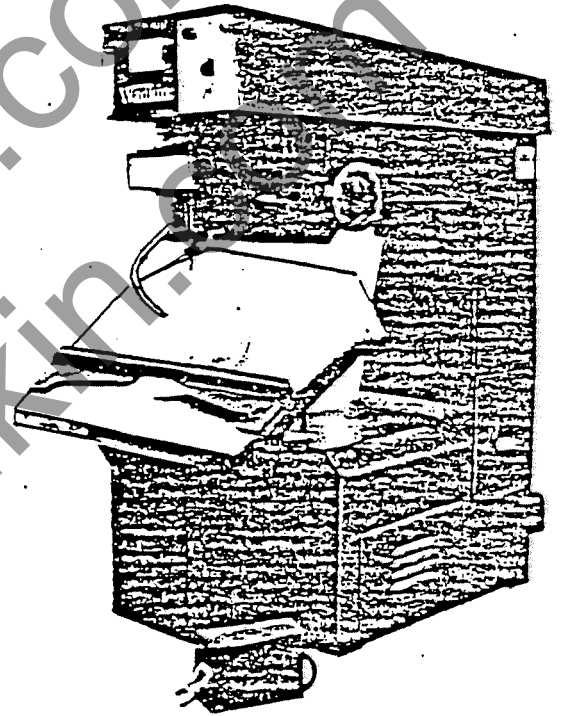


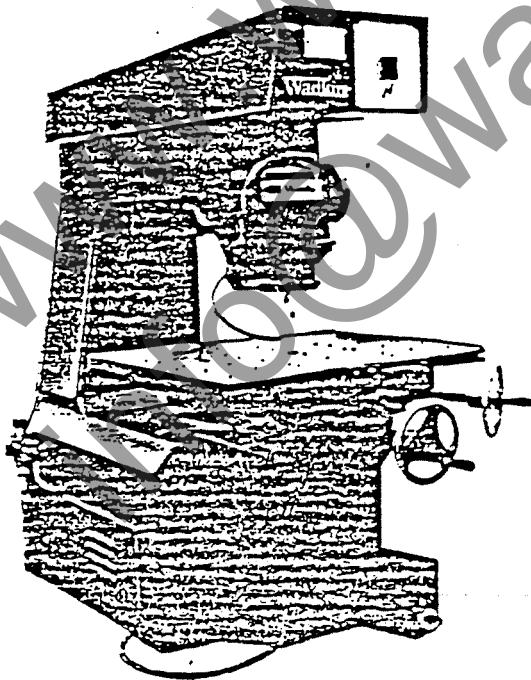
FIG. 1 ARRANGEMENT AND LAYOUT OF 'UX' ROUTERS



MODEL UX1

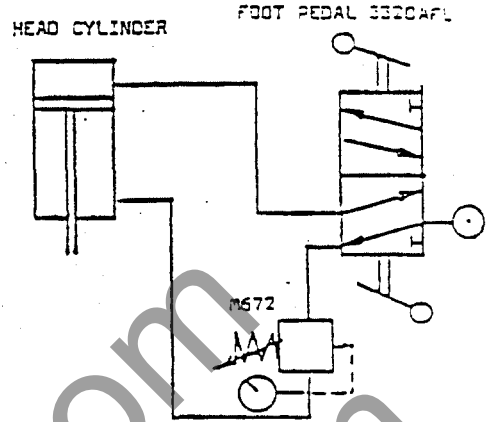
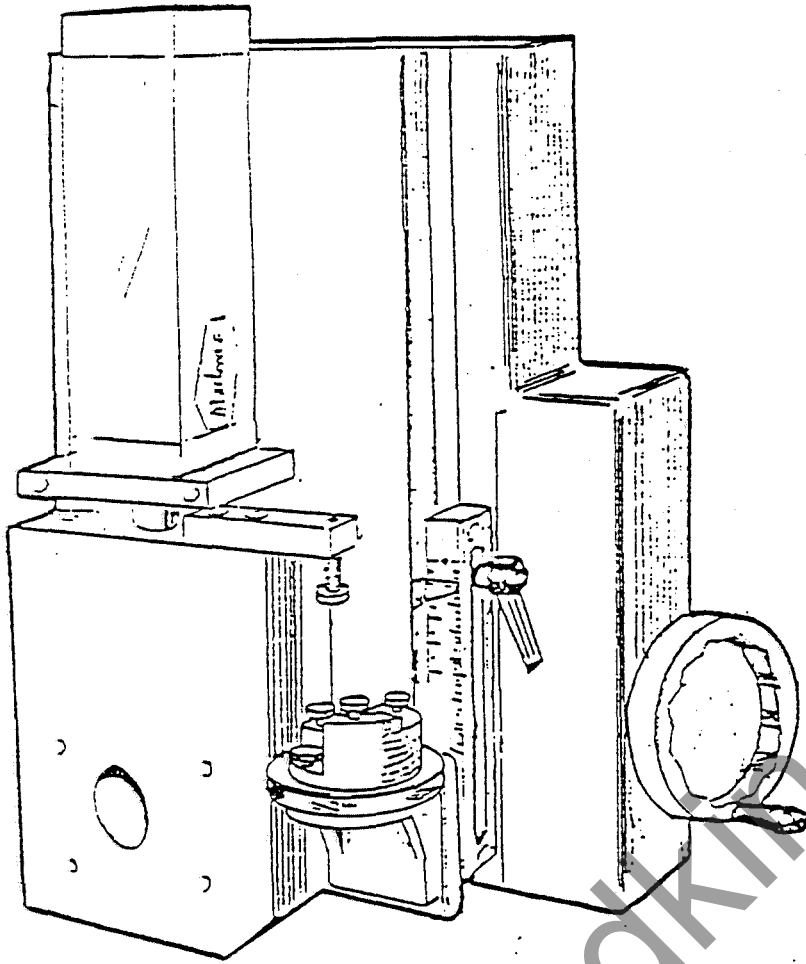


MODEL UX2



MODEL UX3

FIG. 2 TYPES OF 'UX' ROUTERS



RISE AND FALL ASSEMBLY

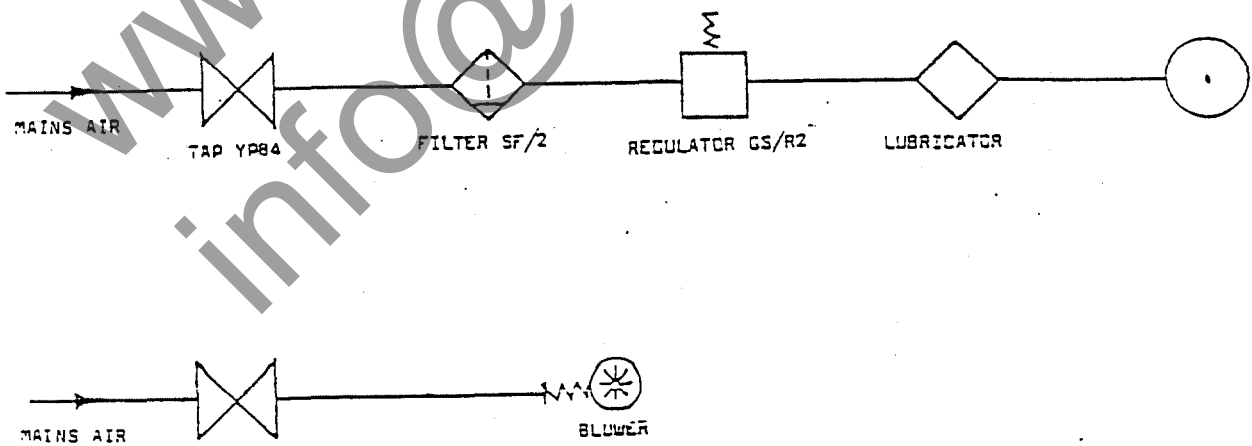


FIG. 3 PNEUMATIC SCHEMATIC FOR BASIC MACHINE RISE AND FALL ASSEMBLY

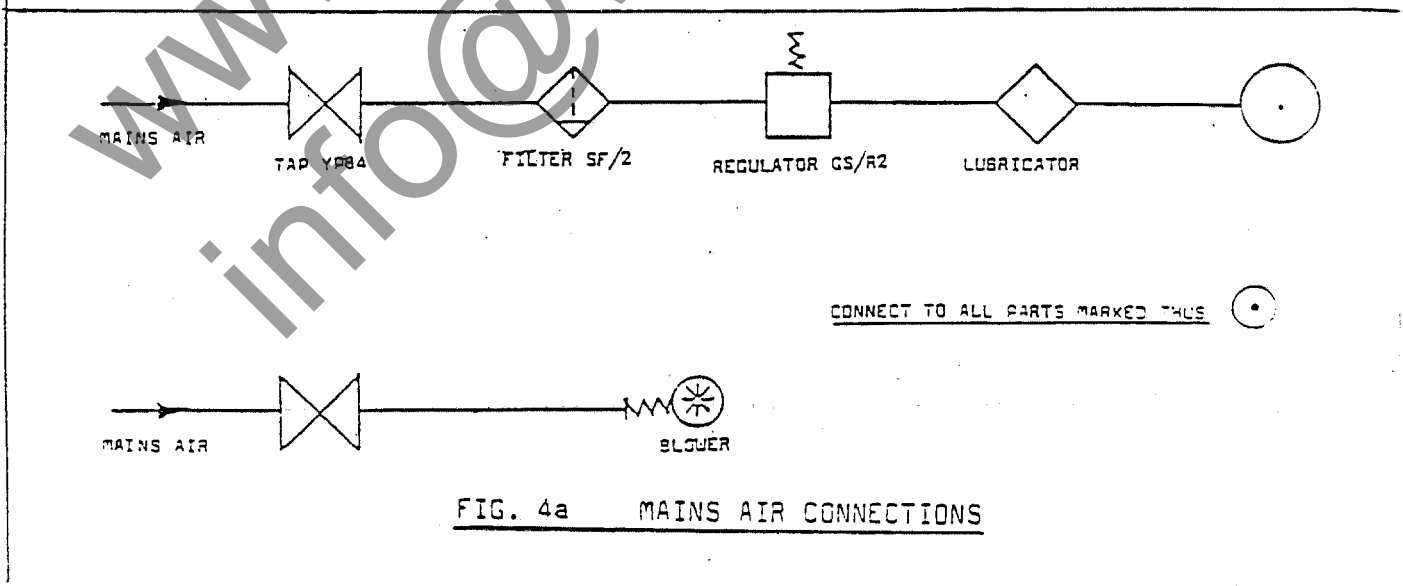
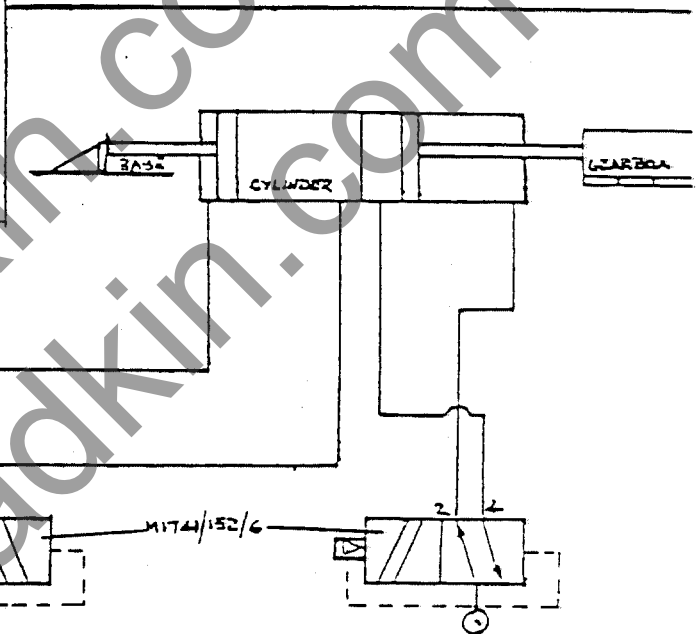
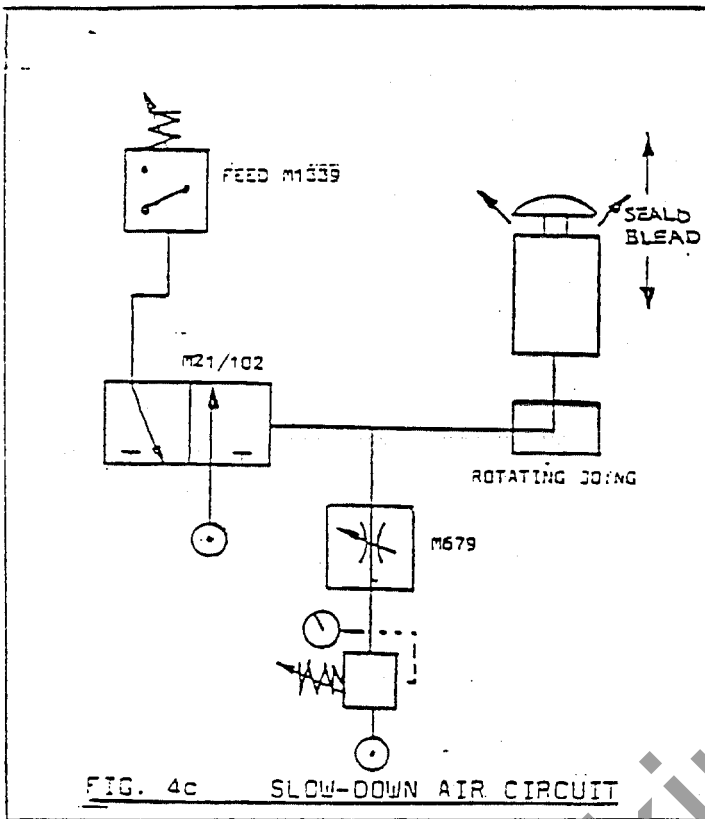


FIG. 4 PNEUMATIC SCHEMATIC FOR 'UX/B' OR 'F/1A' MACHINES WITH FLOATING HEAD

## 1.0 GENERAL DESCRIPTION

This instruction manual is issued for 'UX Routers' shown at Fig. 1 to 4 for guide pin type and automatic feed machines. The machine supplied will be covered under certain sections applicable to the type of Head or Table, and built in the following range of Models UX1 to UX3. The model of machines manufactured are as follows:

- (i) UX/B/1 & UX/F/1 High Speed Router (Hand Feed Only)
- (ii) UX/B/1A & UX/F/1A High Speed Router with Auto Feed
- (iii) UX/B/2 & UX/F/2 High Speed Router with Canting Table  
(Manual Feed)
- (iv) UX/B.3 & UX/F/3 High Speed Router with Compound Table

Range of driving heads which are shown by suffix 'B' are belt drive and the ones with suffix 'F' are 2 speed high frequency head, with a third type of 4 speed high frequency head 'LC'.

Each of the four machines manufactured are supplied with different types of machine tables shown at Fig. 2 are used for specific work as follows:

- (i) Model UX1 table is used for the hand routing of internal or external shaping.
- (ii) Model UX2 is the canting table for hand routing machining, particularly chamfered work and angled holes.
- (iii) Model UX3 is a compound table for pattern work, recessing and stair housing.

All these Routers have pneumatic rise and fall heads, a fixed table height. Adjustable turret stops are provided so that head depth can be set by handwheel in the six position adjustable turret stops. The drive head spindle bearings are greased for life, with spindle speeds changed by the flick of the rotary switch situated at main control panel.

The main machine base is a solid robust heavy iron casting which supports the headslides and the different types of driving heads and tables previously mentioned.

The headslide is fixed and mounted on the front machined face of the cast iron base upper extension. This assembly comprises of two dovetail slideways giving two independent methods of controlling the head vertical movement.

Movement of the rear slide is used to set the cutting spindle height in relation to the workpiece. This slide is raised and lowered by means of the handwheel situated on the right hand side of the main base viewed from operating side. The handwheel drives a screw via the worm and wheel arrangement mounted at the rear of the headslide assembly.

continued.../...

1.0 GENERAL DESCRIPTION continued.../...

A manually operated slidelock prevents the rear slide movement once the correct height position has been set.

The front slide is automatically raised and lowered by means of a pneumatic cylinder controlled by a foot pedal control valve. A manually adjustable six-position turret stop is mounted and positioned at the right hand side of the front slide, to set the head depth with a total head movement of 250mm (10").

This turret stop is positioned manually to the stop required, each of the six height positions are fitted with hexagon head screws and locknuts for fine adjustment settings. A ball and spring mechanism locates the turret stop at each of the six positions.

A free standing floor mounted pneumatic footpedal is provided to control the head rise and fall. When pressing the pedal forwards it diverts the air to the top of the pneumatic cylinder, causing the head to lower; depressing the pedal backwards diverts the pneumatic air to the bottom of cylinder causing the head to raise.

## 1.1 SPECIFICATIONS

APPLICABLE TO ALL MODELS

Spindle vertical pneumatic stroke	100mm	4"
Spindle vertical screw stroke	150mm	6"
Total spindle vertical travel	250mm	10"
Max. capacity table to spindle nose	275mm	11"
Min. capacity table to spindle nose	25mm	1"
Spindle bore, standard	20° included	
Spindle bore, alternative	No. 2 morse Taper	
Throat capacity	915mm	36"
Air Supply	80 p.s.i.	
Electrical Supply	400/440 volts, 3 phase, 50 cycle.	

MODELS UX/B/1 and UX/F/1 HIGH SPEED ROUTER (HAND FEED ONLY)

Table size	900 x 770mm	35½ x 30"
Table height	900mm	35½"
Spindle speeds (Model B)	10000 & 20000 rev/min	
Max. intermittent power rating ±	6kW	8hp
Spindle speeds (Model F)	18000 & 24000 rev/min	
Overall height	1780mm	70"
Floor space	915 x 1625mm	36 x 64"
Shipping dimensions (UXB1)	2.69m³	96ft³
Shipping dimensions (UXF1)	3.83m³	136ft³
Net Weight (Model B)	1020kg*	2244lb
Gross Weight (Model B)	1070kg*	2354lb
	* Add 200kg for Model F	

MODELS UX/B/1A & UX/F/1A HIGH SPEED ROUTER WITH AUTO FEED

Table size	900 x 770mm	35½ x 30"
Table height	900mm	35½"
Fast speed, infinitely variable	0 to 15m/min	0 to 50ft/min
Slow speed, infinitely variable	0 to 10m/min	0 to 33ft/min
Drive, auto feed	Differential	
Motor power, auto feed	0.36kW	0.5hp
Spindle speeds (Model B)	10000 & 20000 rev/min	
Max. intermittent power rating	6kW	8hp
Spindle speeds (Model F)	18000 & 24000 rev/min	
Overall height	1780mm	70"
Floor space	915 x 1625mm	36 x 64"
Shipping dimensions (UXB1A)	3.33m³	118ft³
Shipping dimensions (UXF1A)	4.56m³	162ft³
Net weight (Model B)	1250kg*	2750lb
Gross weight (Model B)	1300kg*	2860lb
	* Add 200kg for Model F	

continued.../...



## 1.1 SPECIFICATION continued.../...

MODELS UX/B/2 and UX/F/2 HIGH SPEED ROUTER WITH CANTING TABLE

Table size	900 x 770mm	35½ x 30"
Table cants	45°	
Table height	900mm	35½"
Spindle speeds (Model B)	10000 & 20000 rev/min	
Max. intermittent power rating	6kW	8hp
Spindle speeds (Model F)	18000 & 24000 rev/min	
Overall height	1780mm	70"
Floor space	915 x 1625mm	36 x 64"
Shipping dimensions (UXB2)	2.69m <sup>3</sup>	96ft <sup>3</sup>
Shipping dimensions (UXF2)	3.83m <sup>3</sup>	136ft <sup>3</sup>
Net weight (Model B)	1020kg*	2244lb
Gross weight (Model B)	1070kg*	2354lb
	* Add 200kg for Model F	

MODELS UX/B/3 & UX/F/3 HIGH SPEED ROUTER WITH COMPOUND TABLE

Compound table size	840 x 690mm	33 x 27"
Table height	900mm	35½"
Table traverse, longitudinal	725mm	28½"
Table traverse, transversal	470mm	18½"
Table rotation	360°	
Spindle speeds (Model B)	10000 and 20000 rev/min	
Max. intermittent power rating	6kW	8hp
Spindle speeds (Model F)	18000 and 24000 rev/min	
Overall height	1780mm	70"
Floor space	915 x 1625mm	36 x 64"
Shipping dimensions (UXB3)	3.89m <sup>3</sup>	138ft <sup>3</sup>
Shipping dimensions (UXF3)	5.33m <sup>3</sup>	189ft <sup>3</sup>
Net weight (Model B)	1025kg*	2255lb
Gross weight (Model B)	1140kg*	2508lb
	* Add 200kg for Model F	

The main machine base is a solid robust heavy iron casting which supports the headslides and the different types of driving heads and tables previously mentioned.

The headslide is fixed and mounted on the front machined face of the cast iron base upper extension. This assembly comprises of two dovetail slideways giving two independent methods of controlling the head vertical movement.

Movement of the rear slide is used to set the cutting spindle height in relation to the workpiece. This slide is raised and lowered by means of the handwheel situated on the right hand side of the main base viewed from operating side. The handwheel drives a screw via the worm and wheel arrangement mounted at the rear of the headslide assembly.

continued.../...

## 1.2 RANGE OF ROUTER HEADS

This section of the manual describes the different types of heads used on the machine which are Series 'B', 'F' and 'LC'. The letter 'B' designates belt drive; letter 'F' designates free standing frequency changer unit; and 'LC' denoting 4 speed high frequency changer head. All these heads are shown at Fig. 5.

### 1.2.1 Belt Driven Head Series 'B' (See Fig. 5a)

The head is driven by a pole changing A.C. motor through a two stage poly-vee belt speed increasing unit, with spindle speed of 10000 and 20000 r.p.m.

### 1.2.2 High Frequency Head Series 'F' (See Fig. 5b)

This type 'F' Router Head has speeds of 18000 and 24000 r.p.m. and is driven by a free standing frequency changer unit situated at floor level at the rear of the machine. The main spindle is carried on two super precision high speed ball bearings which are lubricated by an internal oil mist system.

### 1.2.3 High Frequency Head Series 'LC' (See Fig. 5c)

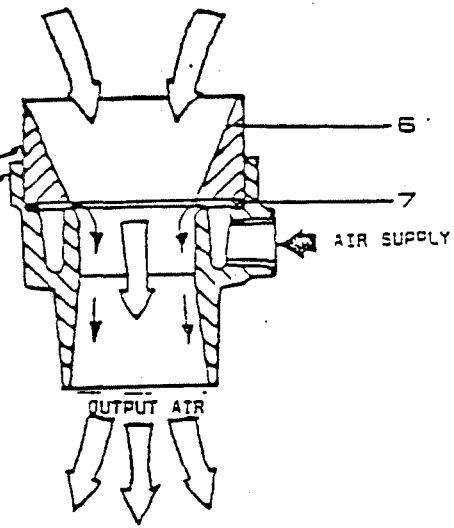
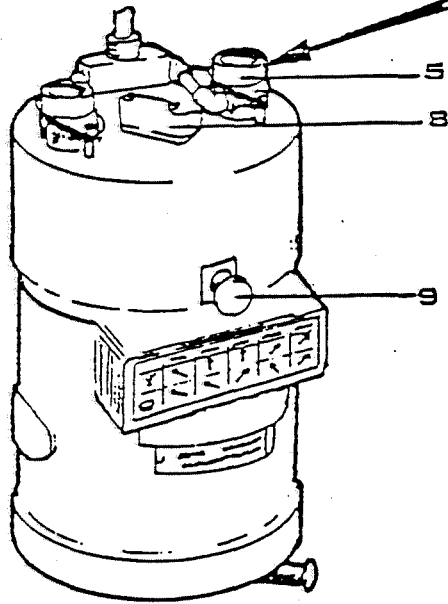
The type 'LC' Router Head obtains speeds of 6000, 9000, 12000 and 18000 r.p.m. and is driven by a free standing frequency changer unit situated at floor level at the rear of the machine. This type of head is air cooled to ensure that maximum power is generated at the cutter. This type LC head is serviced with none lubricated air at  $0.788-0.845\text{m}^3$  (28-30 ft<sup>3</sup>/min) of free air at 4.2 - 5.6 kilos/cm<sup>2</sup> (60-80 p.s.i.).

### 1.2.4 UX Router Floating Head

The purposes of this type of floating head movement enables three dimensional profiling work to be carried out by means of the hydraulic power pack unit situated in the top head of the machine situated under removable top cover. This unit comprises a pump motor, filter, reservoir tank, check valve assembly, pressure gauge and oil level sight glass shown at Fig. 6.

Where the floating head movement is not required, the straight profile and hand operating work can be carried out by simply removing the stylus from the machine which isolates the floating motion using the foot pedal to raise and lower the head.

continued.../...



SECTION THROUGH AIRMOVER

FIG. 5c HIGH FREQUENCY HEAD SERIES 'LC'

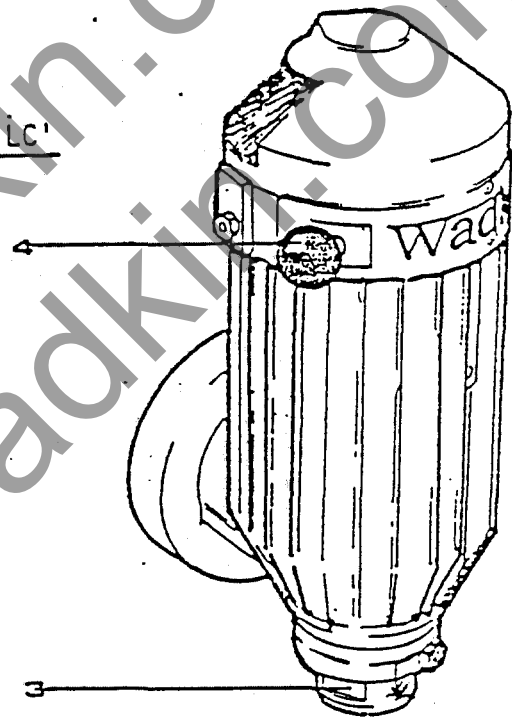


FIG. 5b HIGH FREQUENCY HEAD SERIES 'F'

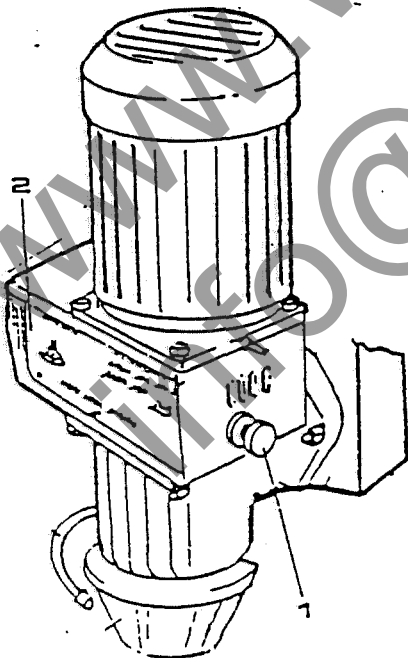


FIG. 5a BELT DRIVEN HEAD SERIES 'B'

FIG. 5 TYPES OF 'UX' ROUTER HEADS

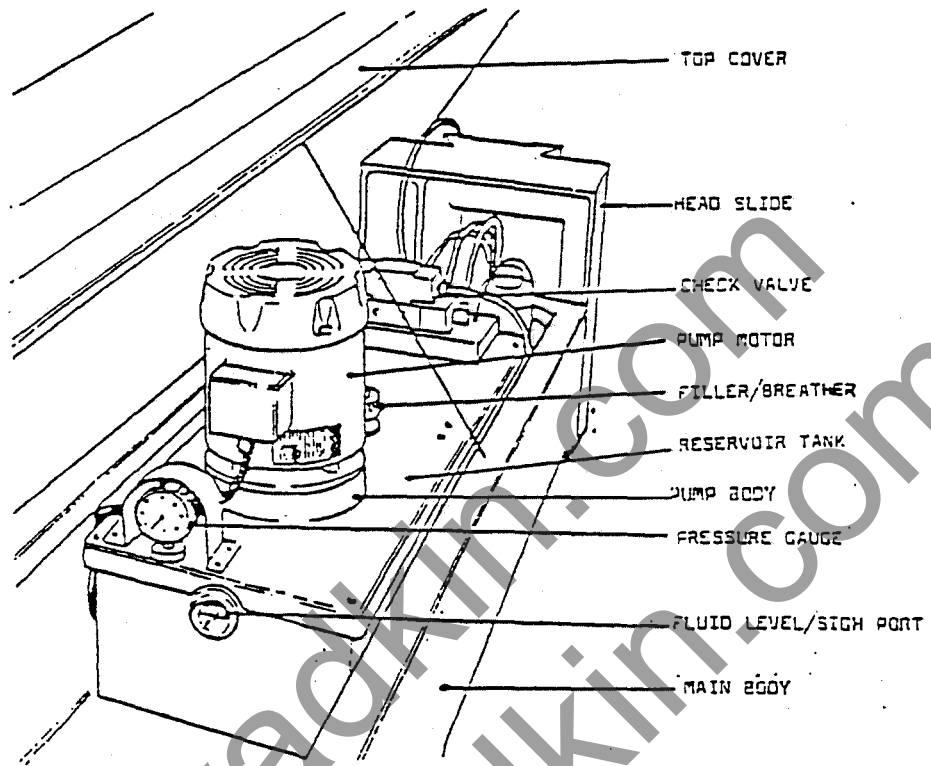


FIG. 6b HYDRAULIC POWER PACK

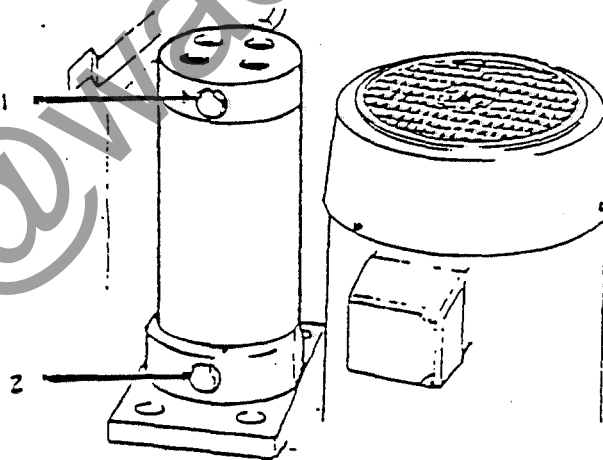


FIG. 6a FLOATING HEAD

FIG. 6 HYDRAULIC POWER PACK AND FLOATING HEAD

### 1.2.3 High Frequency Head Series 'LC' (See Fig. 5c)

The type 'LC' Router Head obtains speeds of 6000, 9000, 12000 and 18000 r.p.m. and is driven by a free standing frequency changer unit situated at floor level at the rear of the machine. This type of head is air cooled to ensure that maximum power is generated at the cutter.

### 1.2.4 UX Router Floating Head

The purpose of this type of floating head movement enables three dimensional profiling work to be carried out by means of the hydraulic power pack unit situated in the top head of the machine situated under removable top cover. This unit comprises a pump motor, filter, reservoir tank, check valve assembly, pressure gauge and oil level sight glass shown at Fig. 6.

Where the floating head movement is not required, the straight profile and hand operating work can be carried out by simply removing the stylus from the machine which isolates the floating motion using the foot pedal to raise and lower the head.

## 1.3 BUILT-IN OPTIONS

Each type of machine mentioned has the undermentioned options and could be supplied on the respective type of machine.

- (i) Vacuum clamping
- (ii) Floating head
- (iii) Internal and external undercut

## 1.4 EXTRA EQUIPMENT

Extra Equipment may also have been supplied with the machine from the following list of extras:

- |   |                                |
|---|--------------------------------|
| 1. Straight fence for main or extension table | 9. Hydro check units           |
| 2. Horse shoe fence                           | 10. Hour voltage spotlight     |
| 3. Vacuum rubber strip                        | 11. Show guard                 |
| 4. Vacuum nylon hose                          | 12. Routex hoods               |
| 5. Vacuum hose connection                     | 13. Dust extraction fan unit   |
| 6. Vacuum rotary joint                        | 14. Dust extraction 500/0 unit |
| 7. Toggle clamps                              | 15. Roller stand               |
| 8. Spring pressure clamps                     | 16. Clamp JP8                  |

continued.../...

### 1.5 VACUUM CLAMPING (When fitted See Fig.18a)

The vacuum pump used for vacuum clamping is a rotary vane vacuum pump with outer endplate, body, rotor and mounting bracket manufactured from close grained cast-iron. Internal rotary vanes are manufactured from carbon, precision ground to provide the pumping action.

When the correct and safe vacuum clamping conditions are obtained the vacuum sensing switch operates to allow the machine feed to start.

The vacuum pump relief valve is set at 90% of vacuum working condition so that the pump is capable of pulling down. When the correct vacuum condition is obtained a valve opens and allows air to enter.

At the intake filter, air created by vacuum enters the jar then passes through filter unit into pump. At exhaust filter/muffler the air from vacuum pump passes through filter element into jar and is then exhausted to atmosphere. Exhaust air from the pump is lubricated and oil droplets will be collected in the jar. (See Figure 18b)

## 2.0 HEALTH AND SAFETY AT WORK

Under the 'Health and Safety at Work Act' we make available certain information on the woodworking machines supplied. The information specified must be brought to the attention of all personnel involved with this equipment as required by the Act 1974. All users should be aware of all hazards present and act accordingly.

The machine is electrically powered at main supply voltage and MUST be earthed and electrical supply regulations complied with. All guards electrical or mechanical safety interlocks and other safety devices fitted when the machine is delivered, MUST be kept in place and never bypassed. These safety devices must be inspected for effective operation at regular intervals by qualified personnel.

The electrical equipment must be completely isolated from the electrical supply before any terminal covers are removed. This machine must not be tampered with nor changes incorporated, or used in a non-standard manner without first seeking advice from Wadkin Leicester

All pneumatic pipework, valves, hoses and other pneumatic equipment should have regular inspection by qualified personnel and the machine taken out of service whenever maintenance is carried out.

The design of all machines is under constant review and changes may be made to improve their quality and safety. If any other information is required or if there is ANY DOUBT regarding the safe application when installing or using the machine, please contact the service department at the undermentioned address.

Wadkin Leicester  
Green Lane Works  
Leicester. LE5 4PF  
England  
Telephone: 0533 769111  
Telex: 34646 Wadkin G  
Fax: 0533 742310

### 2.1 Safety for 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.

continued.../...

## 2.1 Safety for Woodworking Machines continued.../...

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

Wadkin Bursgreen 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:

### WARNINGS

- 2.1.1 The operation of the machine should conform to the requirements of the Woodworking Machines Regulations 1974. All guards should be used and adjusted correctly.
- 2.1.2 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 Bursgreen Limited.
- 2.1.3 Only personnel trained in the safe use of a machine should operate it.
- 2.1.4 Before making adjustments or clearing chips, etc., the machine should be stopped and all movement should have ceased.
- 2.1.5 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.

## 2.2 SAFETY INTERLOCKS MECHANICAL/ELECTRICAL

### 2.2.1 High Frequency Head Series 'F'

1. The Router Head will not 'START' when lock knob is 'ON'.
2. If the brake is applied then the head will 'STOP'.

### 2.2.2 High Frequency Head Series 'LC'

1. The head will not run unless a minimum pressure of 40 p.s.i. is passing through Filter/Lubricator bottle.
2. The head will also not start under the following conditions:
  - (i) The spindle lock is at the 'ON' position.
  - (ii) The drawbar cover is at the 'OPEN' position.
  - (iii) The frequency changer speed selector switch is not in zero position.



### 3.2 FOUNDATION AND MACHINE ADJUSTMENT Continued.../...

NOTE: Any other jacking screws such as the knee brackets supporting the table are for support purposes only and should NOT be used for any other form of adjustment.

### 3.3 ROUTER HEAD DUST EXTRACTION POINTS

#### 3.3.1 Series 'B' or 'F' Heads

The extraction point is situated at the back of the machine approximately 1.33m from the base of machine. At this connection point use a 4½" dia extraction pipe with an air volume of 850m<sup>3</sup>/hr (500 c.f.m.) at 254mm (10" W.g.) is required to obtain efficient dust extraction.

#### 3.3.2 Series 'LC' Head

The extraction point on the L.C. Head is situated on the right hand side of the head. This type of head requires a 4½" dia flexible extraction pipe for an air volume of 1450m<sup>3</sup>/hr (850 c.f.m.) at 254mm (10" W.g.) is required to obtain efficient extraction.

### 3.0 INSTALLATION

The information described in this section of the manual must be brought to the attention of all personnel involved with the installation of the machine. All personnel installing the machine should be aware of the hazards present and act accordingly.

**IMPORTANT:** Only fully accredited personnel should carry out interconnection of wiring on any line electrical equipment. All electrical equipment should be switched OFF at the mains isolator switch before any adjustment or connections are made to ANY ELECTRICAL components situated at the machine.

The machine is electrically powered at mains supply voltage and must be earthed with electrical supply connected to standard regulations. All guards electrical and mechanical interlocks, safety devices fitted to the machine must be kept in place. These devices must be inspected for effective operation at regular intervals by component maintenance personnel.

**WARNING:** FREQUENCY UNIT MUST NOT BE BOLTED TO THE FLOOR

All pneumatic/electrical services connected to the machine should be suitable to withstand operating conditions specified in the manual specification sheet section 1.1.

The machine must be completely isolated from the electrical mains supply before any terminal covers or guards are removed. It should not be tampered with nor changes incorporated, or used in a non-standard manner.

**DANGER:** WARNING SIGNS ARE STATED ON THE MACHINE. FAILURE TO OBSERVE PRECAUTIONS COULD RESULT IN INJURY OR DEATH.

### 3.1 LIFTING MACHINE

When lifting the machine a wooden insert must be placed at the position shown at Fig. 7b to prevent lifting straps damaging the machine hood.

The wooden inserts shown should be of dimensions 50mm (Min) x 400mm x 660mm and supplied by the customer.

### 3.2 FOUNDATION AND MACHINE ADJUSTMENT

The foundation bolt holes are shown at Fig. 7a for bolting down when required. Next to the bolting down holes at the base of the machine are four jacking screws for the purpose of ensuring the table is level by use of a spirit level placed on the machine table before bolting down the machine.

continued.../...

### 3.4 AIR SERVICE UNIT (See Fig. 8a)

The air service unit supplied on Router Heads for all machines are supplied to accept the factory main pneumatic supply which should be clean, dry and at a pressure of 80-100 p.s.i.

On certain machines the air service unit is removed from its mounting and packed under the top cover for safe transportation. When replacing the unit use the four screws provided by screwing up unit to base and reconnect nylon pipe to output connections by simply pushing pipe firmly into fitting.

The input part of the unit is 1/4" B.S.P. into which is fitted the male part of a 'Schrader' manufactured standard check unit (part no. 8050-11). The female part of the unit is supplied by the user.

<u>Part No.</u>	<u>Inlet Thread</u>
8952C-12	1/4" B.S.P. Taper Female
9792C-12	3/8" B.S.P. Taper Male
9793C-12	1/4" B.S.P. Taper Male

If other types of connections are to be used, remove the male fitting and screw alternative equipment directly into the 1/4" B.S.P. port.

To obtain air flow to the machine, turn the tap in line with the pipe. To close off the supply, turn the tap 90° across the inlet pipe.

When adjusting the regulator unit to the correct working pressure of 80 p.s.i. lift the locking ring and turn the regulator knob clockwise to increase the pressure; anti-clockwise direction of the knob will cause the pressure to reduce. Lock by pushing ring downwards into ring-location.

To fill the lubricator bottle, first turn off air supply then unscrew the fitting ring on top of the block and fill with SHELL TELLUS 37 Oil to maximum level.

Replace filling ring ensuring the seal is correctly replaced and a perfect seal is created.

To adjust flow of oil, remove cover on top of lubricator bottle then screw small adjusting screw clockwise until seated.

NOTE: The screw will continue to turn; turn screw back one quarter of a turn then replace cover.

continued.../...

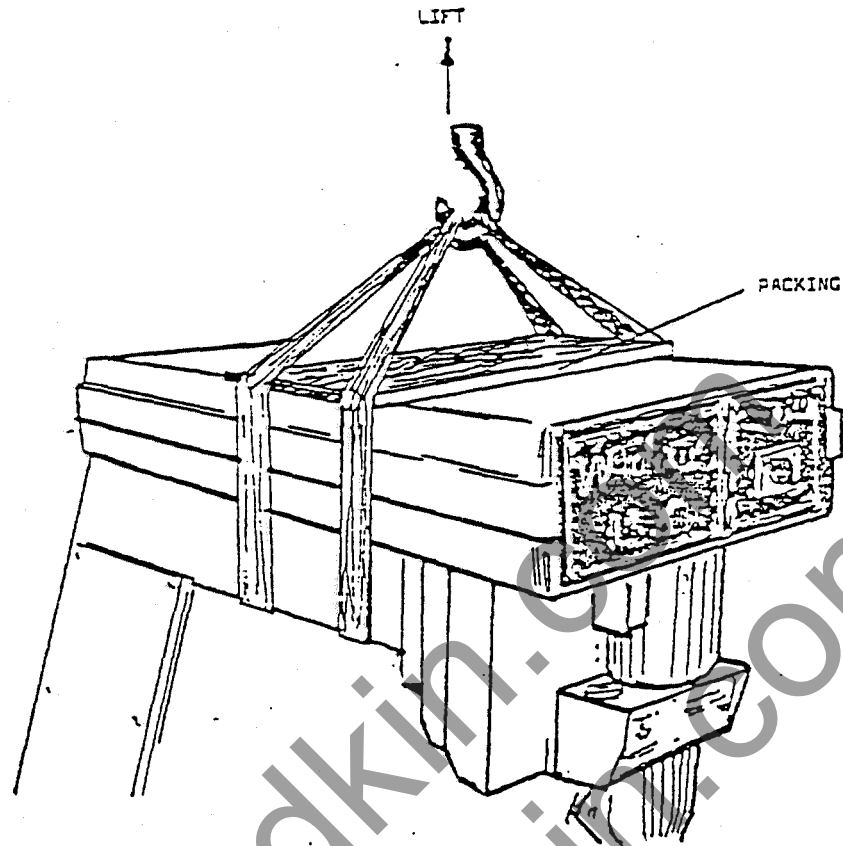


FIG. 7b MACHINE LIFTING DETAILS

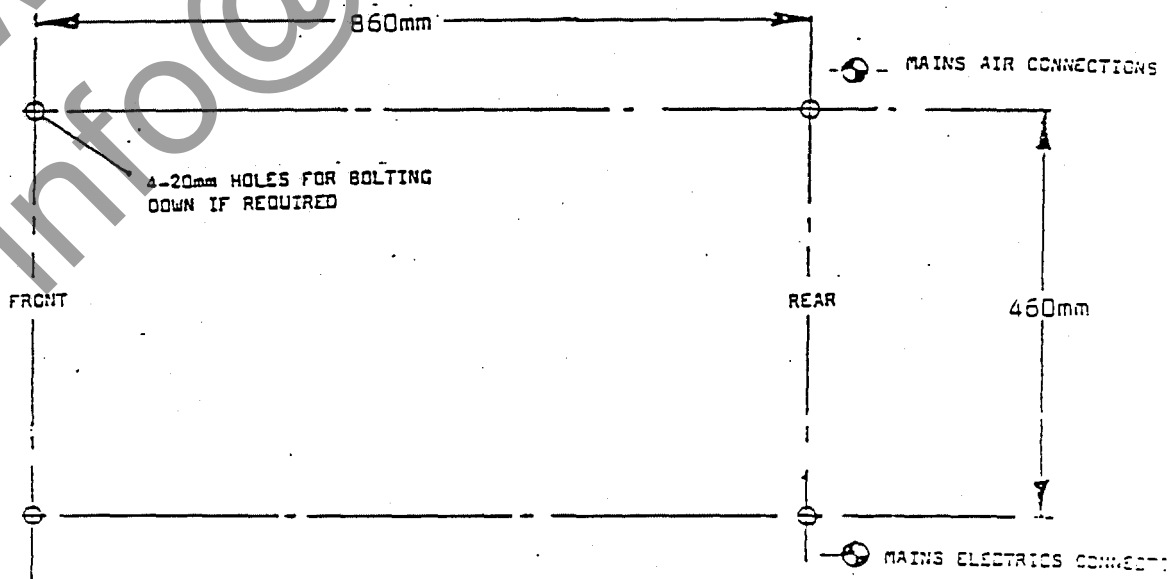


FIG. 7a FOUNDATION DETAILS

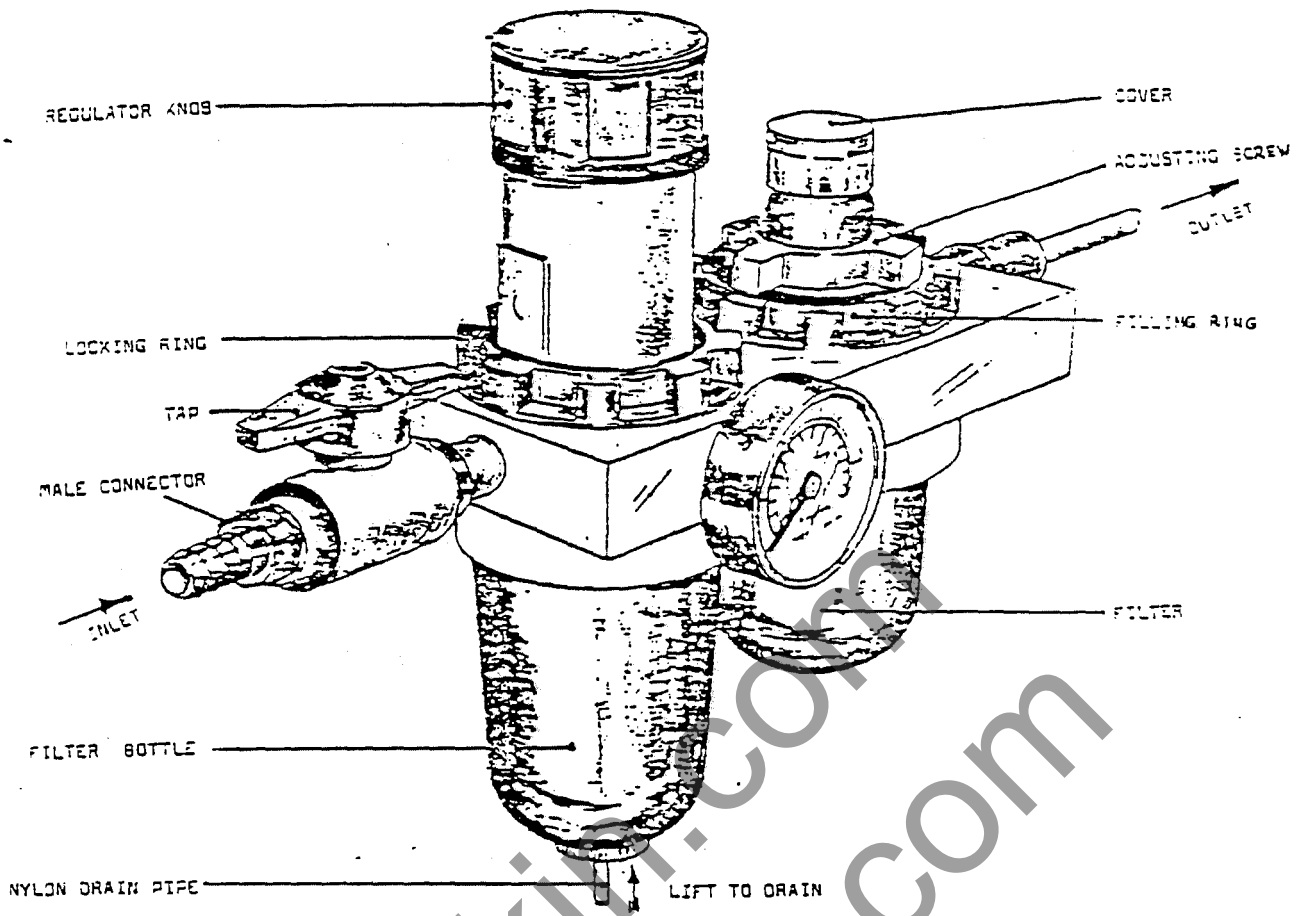


FIG. 8a AIR FILTER/LUBRICATOR. TYPE 8-10-53/L-10-MF

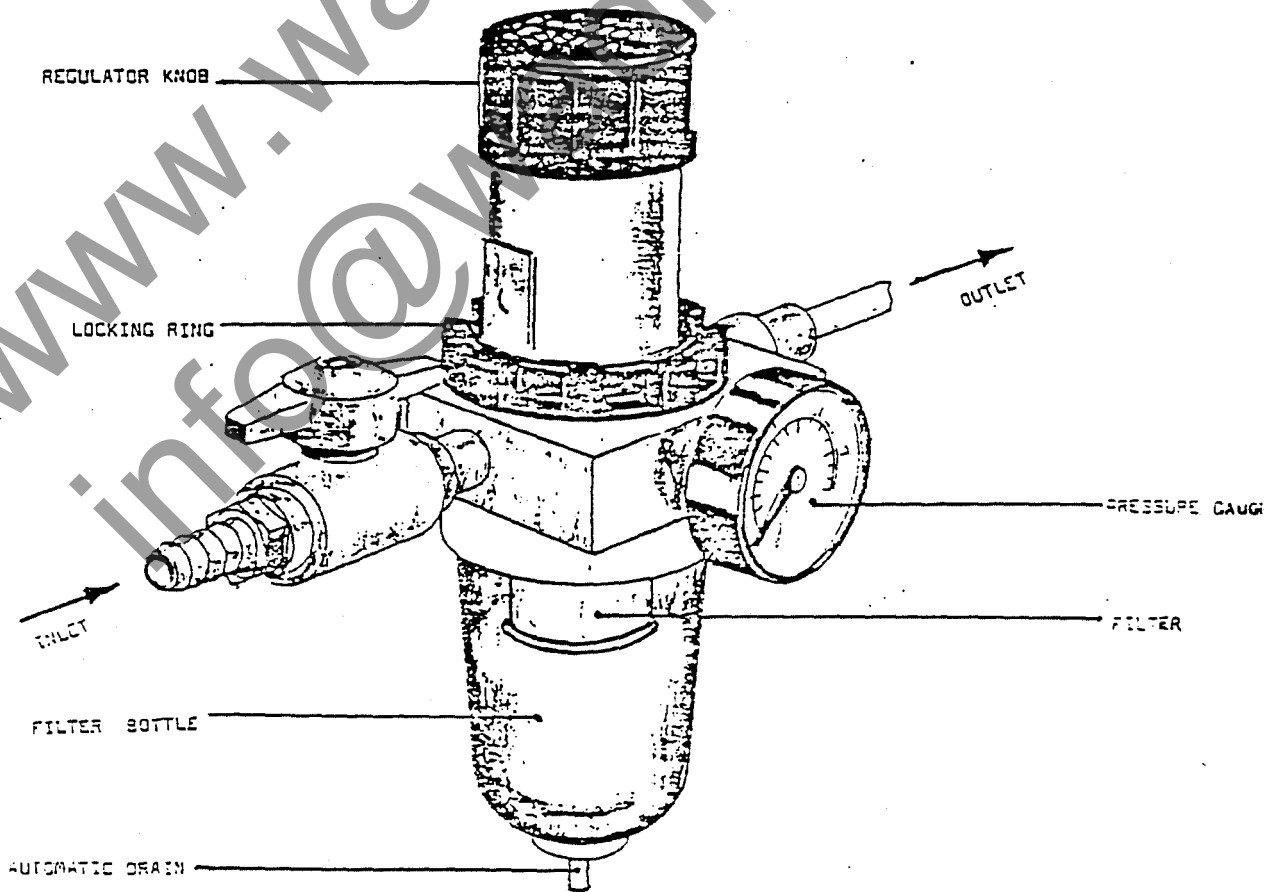


FIG. 8b AIR FILTER UNIT FOR LC ROUTER HEADS TYPE 813-A3

### 3.5 AIR SERVICE UNITS FOR ROUTER HEADS SERIES 'LC'

On UX Router with a Series 'LC' head is fitted a second air service unit supplied purely for the cooling air for this type of router head which has to be clean and dry but NOT lubricated.

The air filter/lubricator unit described under Section 3.4 type 8-10-53/L-10-MF is also provided and both units are piped into one connection point with the fitting provided accepting  $\frac{3}{8}$ " minimum bore hose.

The air services pass through the ON/OFF tap and is then split into one supply to supply pneumatic air for machine control previously described under Section 3.3 and the other supply for LC Router Head comprising filter/regulator type B13-A3 shown at Fig. 8b.

This filter B13-A3 collects water and dirt from the air supply with the unit provided with automatic drain when the water in the bowl reaches a predetermined level, the drain valve automatically opens. Air then passes through the regulator unit with a pressure gauge to indicate the working pressure which should be set at 80 p.s.i.

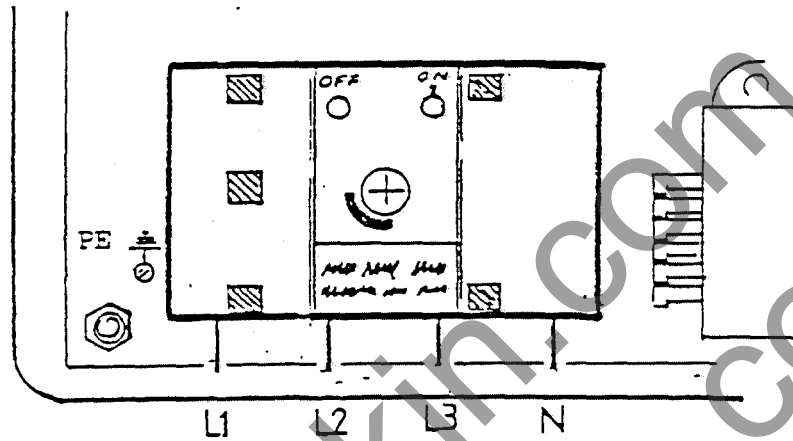
To adjust the pressure, lift the locking ring then turn the regulator knob clockwise to increase the pressure. When reducing pressure, turn knob anti-clockwise. Lock the knob by pushing downwards into female location.

The air passes through the filter/regulator outlet connection to a pressure switch mounted in the top of the machine base under the top cover to provide an electrical interlock to switch OFF the router head, should the air supply fail or fall below 40 p.s.i.

Note: Failure to supply the correct air pressure to machine will automatically lock-out the whole machine.

**3.6 ELECTRICAL MAINS CONNECTION**

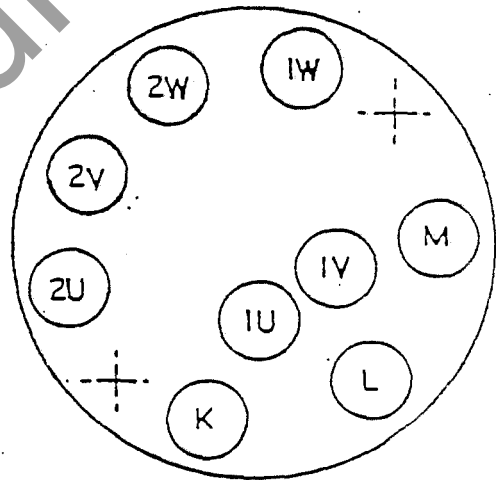
The mains isolator shown below is situated at the bottom left hand corner of electrical cabinet. Each diagram below under 3.6.1 and 3.6.2 refer to terminal connections for the frequency changer and will be found inside the frequency changer.



All connecting wires are labelled with identical references and should be connected to respective identification reference.

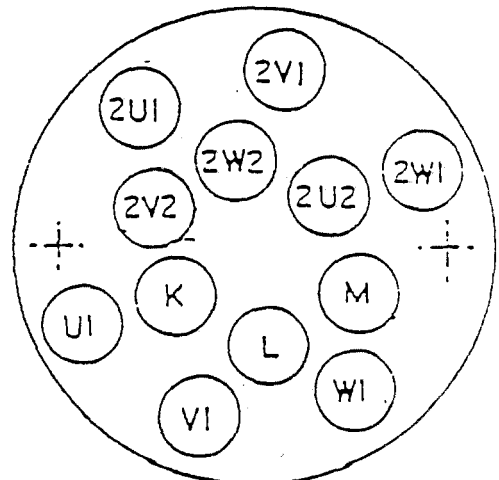
**3.6.1 HIGH FREQUENCY HEAD CONNECTIONS**

Frame Size D132  
 105/140 Volt  
 300/400 Hz  
 D.O.L.



**3.6.2 SERIES L.C. HEAD**

Frame Size D160  
 260/390 Volt  
 200/300 Hz  
 STAR-DELTA



### 3.7 VACUUM CLAMPING

The component to be machined is secured to the jig by creating a vacuum between the component and the jig which are sealed by means of a rubber sealing strip.

A rotary vane vacuum pump shown at Fig. 18 is used to create the vacuum conditions required. When the safe vacuum conditions are obtained the vacuum sensing switch is operated to indicate to operator by means of the green illuminated panel warning light. Should the red light remain illuminated this indicates insufficient vacuum is created and is NOT SAFE to operate.

Note: The machine feed will not start until the green light at control panel is illuminated GREEN.

#### 3.7.1 Vacuum Pump Installation

Should the vacuum pump fail to start follow the following procedure;

1. Check vacuum pump motor is running in correct direction shown by arrow.
2. Check electrical supply rating which should be as specified on motor nameplate.
3. If the pump is running in extremely cold conditions, run the pump to room temperature before starting to pump down.

WARNING: THE MOTOR MAY BE THERMALLY PROTECTED AND CAN BE AUTOMATICALLY RESTARTED WHEN THE PROTECTOR RESETS. ALWAYS SWITCH OFF MAINS POWER SUPPLY BEFORE SERVICING OR CORRECTING ELECTRICAL FAULTS.

DANGER: DO NOT PUMP COMBUSTIBLE LIQUIDS OR VAPOURS WITH THIS PUMP.



### 3.8 HEPWORTH FLOATING HEAD

For transportation the hydraulic power pack system is drained of oil and the hydraulic oil is supplied in a separate cannister. Therefore, before commissioning the machine the power pack will require FILLING and PRIMING.

IMPORTANT: WHEN TOPPING UP SYSTEM OR REFILLING ALWAYS USE NEW OIL. NEVER RETURN USED OR RECYCLED OIL TO THE SYSTEM. THE OIL USED IS TO SPECIFICATION HLP68 AND THIS GRADE OR EQUIVALENT MUST ALWAYS BE USED.

### 3.9 PRIMING AND BLEEDING FLOATING HEAD (See Fig. 6a and 6b)

To prime the hydraulic system fill with hydraulic oil to correct level shown at fluid level sight glass on reservoir tank, then start pumping checking pump motor is running in correct direction. Leave pump running for several minutes to warm up the system.

#### 3.9.1 Priming System

Operate the head stroke up and down several times which should under most circumstances dispell any air from the system.

#### 3.9.2 Bleeding System (See Fig. 6a)

When bleeding the system, send the head to bottom of cylinder stroke then remove top plug (1) at the cylinder. Then send the head in an upwards direction to eject any small amount of air/oil out of the cylinder. Keep the head at the top position and remove bottom plug (2). Replace top plug (1). Now send the head downwards to eject air/oil once more, then replace plug (2) when the system will be primed and bled ready for use.

#### 4.0 MACHINE PREPARATION

This section of the Instruction Manual describes the preparation of the main various specified parts of each type of Router Heads and Machine Tables before the machine is put into use.

It is assumed that the machine has been correctly installed and is connected to all services ready for operation.

**WARNING:** THE MAINS ISOLATOR SWITCH MUST BE SWITCHED OFF BEFORE ANY ADJUSTMENTS ARE MADE.

#### 4.1 BELT DRIVEN HEAD SERIES B

The poly-vee belts require to be correctly tensioned to ensure the available speed and power is transmitted to the spindle. To check for correct tension follow the procedure making reference to Fig. 17.

1. A lock (1) is provided for the cutter spindle which must engage.
2. Switch OFF power supply at isolating switch.
3. Push spindle lock (1) inwards to lock.
4. Slowly rotate driven spindle by hand when unit lock will engage.
5. Turn spindle-knob (1) clockwise to maintain locked position.
6. Check belt tension for top and bottom belts by removing belt cover gaurd (2) then check each belt deflection of 3mm as shown at Fig. 17.

Should the belts need replacing see Section 6.1 for procedure making reference to Fig. 17a.

#### 4.2 LOADING TOOLS AT ROUTER HEAD (See Fig. 5)

Cutting tools are held in the router spindle by means of a chuck nut (3). Before changing or loading tool the spindle MUST BE STOPPED then locked using the mechanical lock (1) provided and described under Section 4.1.

1. The chuck nut can now be released using the spanner provided and is designed to give the correct torque for tightening the chuck nut (3).

**IMPORTANT:** DO NOT MODIFY THE SPANNER OR USE AN EXTENSION

continued.../...

#### 4.2 LOADING TOOLS AT ROUTER HEAD continued..../...

2. Ensure collets and nuts are clean and in good condition.
3. Make sure that parallel section of cutter shank has sufficient length held in the collet, and that collet-bore is identical to the shank diameter.
4. Unlock the spindle at lock (1).

WARNING: NEVER LEAVE THE SPANNER ON THE CHUCK NUT AFTER CHANGING THE TOOL.

#### 4.3 TWO SPEED ROUTER HEAD SERIES F

The standard router head has a Wadkin 20° taper bore with the cutter being retained in the spindle by means of a chuck nut (3) and collet shown at Fig.5b.

An electrically interlocked brake/lock control knob (4) is fitted and by pushing the knob will act as a stop-button and brake. By pulling this knob and turning the spindle slowly by hand engages the spindle lock. The knob (4) has to be returned to a centre position before the spindle can be started.

IMPORTANT: SHOULD ANY PROBLEMS BE EXPERIENCED WITH THE HEAD PLEASE CONTACT BURSGREEN LIMITED. DO NOT STRIP DOWN THE HEAD.

#### 4.4 FOUR SPEED ROUTER HEAD SERIES LC

This type of Router Head is a high frequency head which is air cooled ensuring quick operation and low running temperatures. A check should be made by the user to ensure the air movers (5) are working correctly shown at Fig. 5c and scrap sectional illustration.

1. Check the airmover (5) by placing the palm of one hand at the top of the airmover. When working correctly the action of the airmover will suck the hand into the unit.

If little or no suction is felt then the airmover needs cleaning. To clean, follow the following procedure:

- a. Unscrew top ring (6) (R.H. thread) and then remove shims (7) and clean bottom of top ring mating face, shims, and inside of airmover.
- b. Carefully replace shims (7) and top ring (6).
- c. Check procedure 1 again making sure that air is flowing through airmover.

#### 4.5 LOADING TOOLS AT ROUTER HEAD SERIES LC

The standard LC head has a Wadkin 1½" diameter 20° taper bore with the cutter or tool adaptors being retained in the spindle by means of a drawbolt shown at Fig. 9.

Parallel bore collets and special cutters as supplied by Wadkin can also be used on this type of head.

It is assumed that the head spindle is 'STOPPED' in a stationary position, as described under Section 4.0.

On the top cover for the drawbolt the sliding cover (8) Fig. 5c is electrically interlocked to ensure that spindle cannot be started with the drawbolt box spanner still in position at the drawbolt access hole.

1. Ensure router head spindle is stationary and switched OFF.
2. Engage the spindle lock (9) and pull out, rotating the spindle until the lock engages.
3. Slide open the router head top cover (8) for access to the drawbar.
4. Offer the tool/collet into the main spindle nose then rotate the tool/collet until engaged with spindle dogs and is correctly aligned in the spindle nose taper.
5. Screw the appropriate drawbar used into the tool/collet using the spanner provided, ensuring that the collet faces and drawbar threads are clean before screwing them to spindle.

IMPORTANT: Under NO circumstances should a longer spanner or extension tube be used to tighten the drawbar.

6. Tighten the drawbar by double handed pressure, this will be sufficient.
7. Slide close the router head top cover(8).

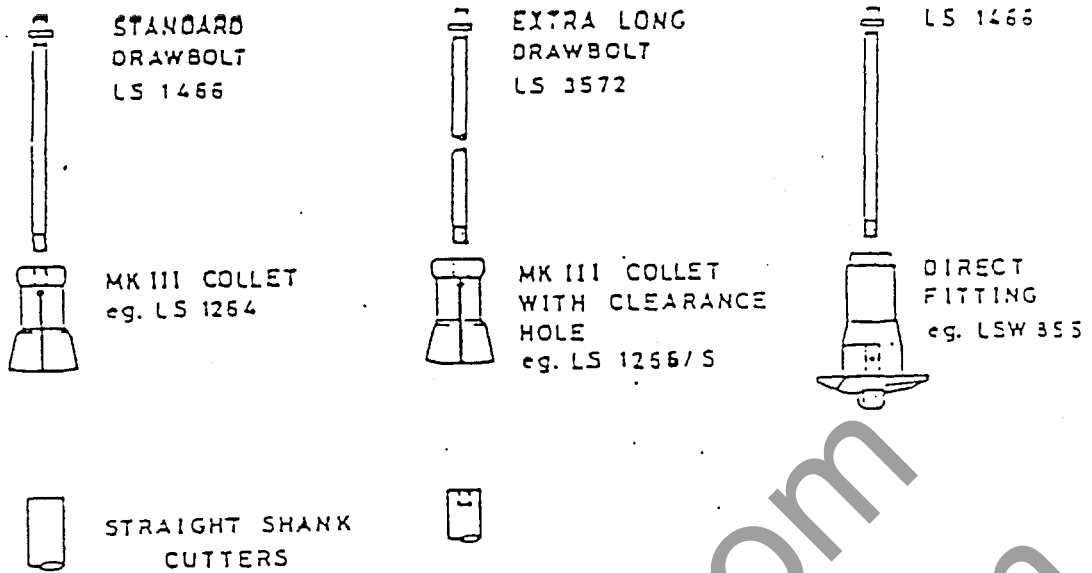
NOTE: The spindle will not run due to safety interlocks when the cover is OPEN.

8. Unlock the spindle by depressing Spindle Locks (9).
9. Check spindle is rotating freely.

##### 4.5.1 Drawbars (see Fig. 9)

The standard drawbar LS 1466 is 12" long shown at Fig. 9 and must be used with standard collets and tools which mount directly into head.

continued.../...



SUITABLE CUTTER SHANK SIZES 1/4" inch (6mm)  
UP TO 7/8 inch (22.5mm) DIA

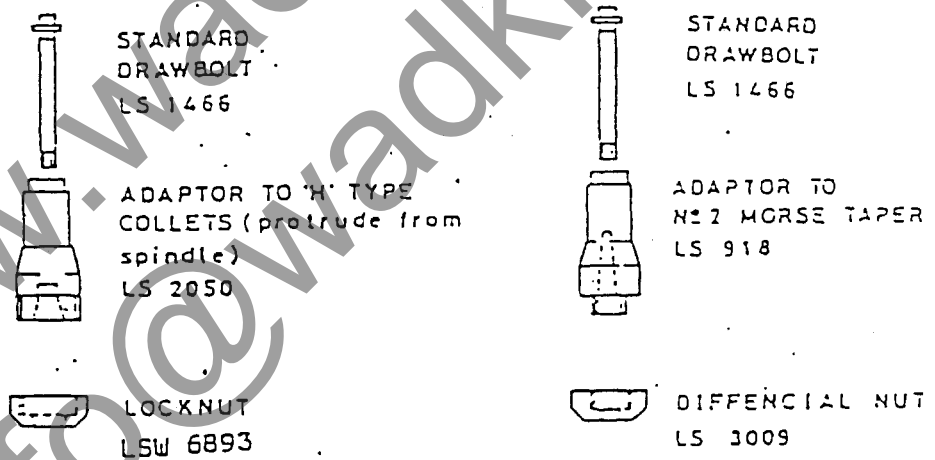


FIG. 9b CUTTER SHANK SIZES

CUTTER FIXINGS LC HEAD  
(see tooling catalogue for part N°s to different sizes)



FIG 9a STANDARD DRAWBARS

FIG. 9 STANDARD DRAWBOLTS AND CUTTER FIXINGS

#### 4.5.1 Drawbars continued.../...

Extra long drawbar LS 3572 must only be used with collets provided with clearance holes allowing the drawbar to pass through the collet top and screw into the shank of the cutter.

**WARNING:** ALWAYS USE THE CORRECT DRAWBAR. FAILURE TO DO SO MAY CAUSE DAMAGE TO MACHINE AND PERSONAL INJURY.

#### 4.6 PLAIN TABLE MODEL UX 1 (See Fig. 10)

A single ended guide pin (1) located on a flat machined on on the guide pin and grub screw at guide pin bore in machine table.

1. Pin (1) can be set at three different heights by selecting Raise/Lower Handle (3).
2. A test bar is provided to check table alignment, replace cutter with test bar then remove guide pin and lower router head until test bar enters collet.
3. Should alignment be incorrect, loosen four screws (4) under table and reset as necessary.

#### 4.7 CANTING TABLE MODEL UX 2 (See Fig. 11)

The canting table is constructed identically to the plain table but is allowed to cant by unlocking the Table Lock Handle (4). To operate guide-pin follow section 4.6 procedures 1 and 2.

A test bar is provided to check table alignment then replace cutter with test-bar and set table at 0° position..

1. Remove guide-pin and lower head until test bar enters the guide-pin bore in machine table.
2. Should alignment be incorrect loosen four screws (3) which secure canting unit to knee bracket and reset as necessary.
3. Fences can be adjusted to suit, either in front of pin as shown in Fig. 11 or behind pin when table is in 0° to-10° position.

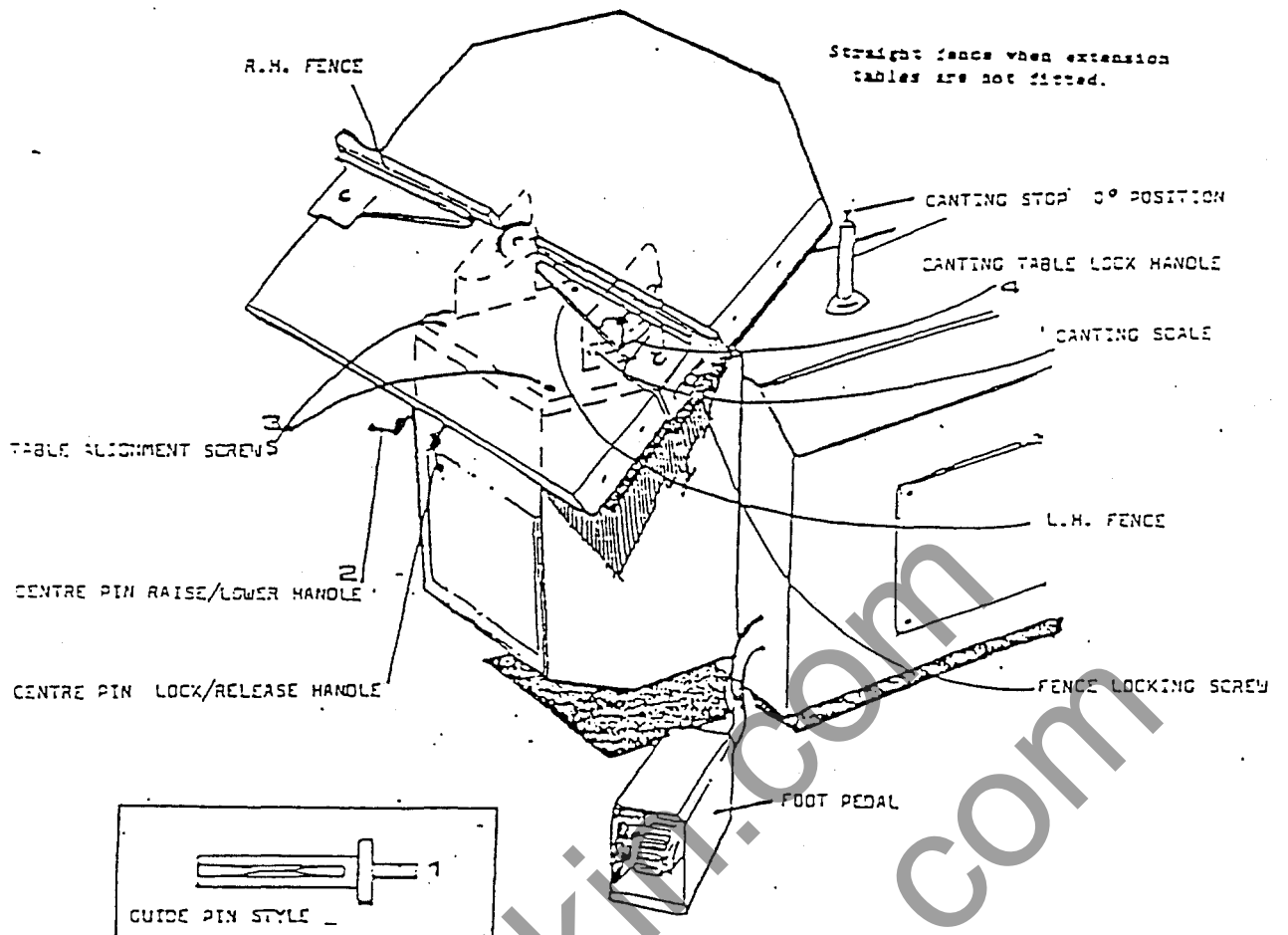


FIG. 11 LAYOUT OF CANTING TABLE MODEL UX2

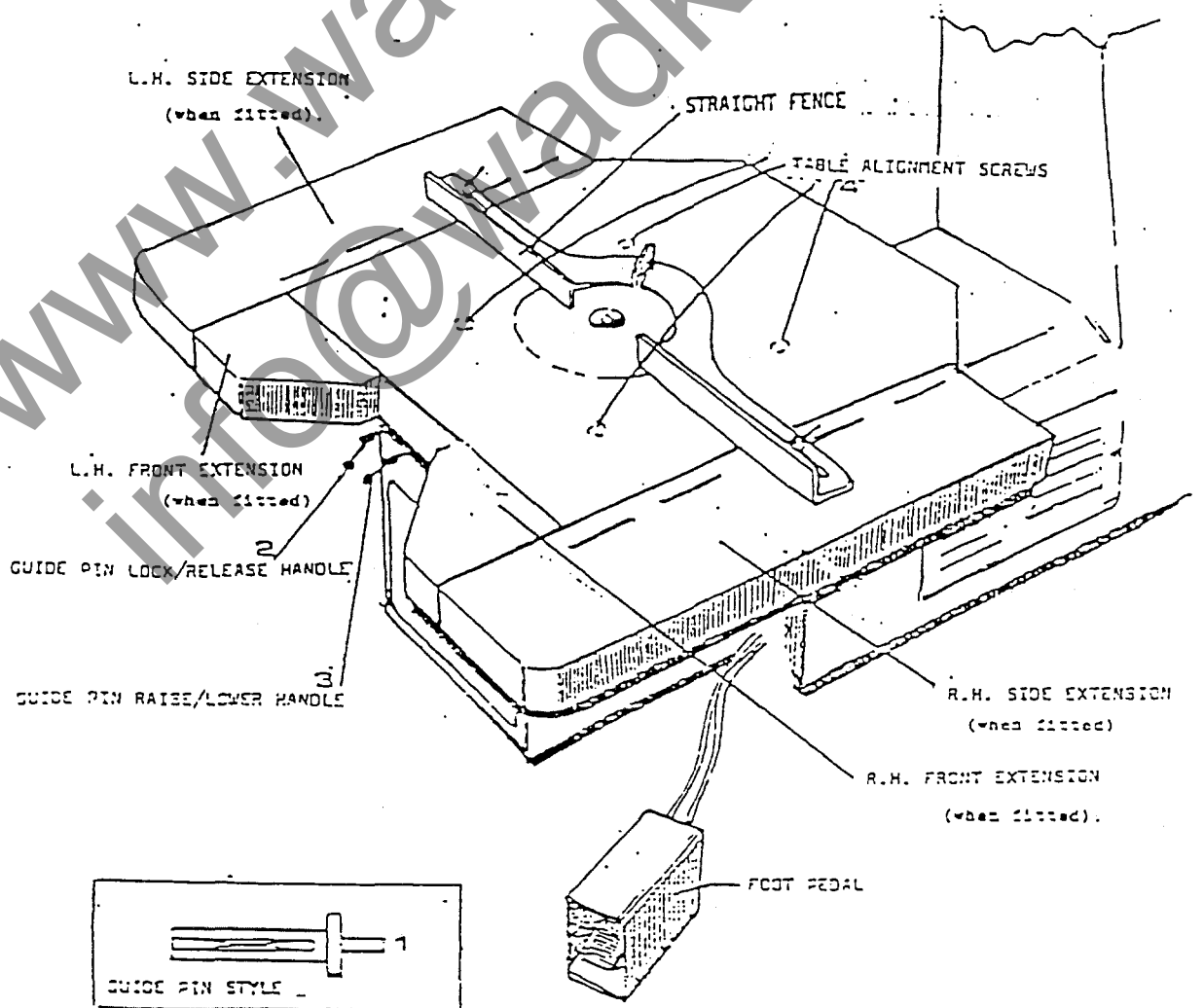


FIG. 10 LAYOUT OF PLAIN TABLE UX 1

#### 4.8 COMPOUND TABLE MODEL UX 3 (See Fig. 12)

This table has both axis moved by handwheels (2) and (3) by means of a rack and pinions, with a longitudinal movement of 28½" (725mm) and traversing 18½" (470mm). Two adjustable stops (4) are provided on each axis and a locating stop with plunger locked away when required are provided on the longitudinal axis, both axis can be locked in any position.

The shouldered guide-pins push into the holder, which has three pre-set height positions, by turning by hand the adjusting handle.

1. To rotate the centre table through 360° loosen the four securing screws (4) under the table by half a turn.
2. The table can be centralised by replacing cutter with test bar provided, then remove guide-pin (1).
3. Adjust table and lower head until test bar enters guide-pin holder then lock both axis.

The table surface is drilled and tapped with a series of holes to accept work-clamps and fences.

#### 4.9 AUTOMATIC FEED COPY TABLE ATTACHMENT (See Fig. 13)

The jig wall is nipped between the fixed centre roller (1) and the moving outer roller (2) which is controlled by an air cylinder. By operating the feed roller opening switch (3) the rollers are opened to allow the jig to be entered.

1. Operate the feed roller switch (3) and the moving outer roller (2) will nip the jig wall.
2. To control the amount of pressure on the air cylinder, adjust the feed roller pressure/gauge control (4). It is recommended the pressure is kept to a minimum to ensure a smooth feed of the jig.

NOTE: For full detailed information for application and limitations for automatic feed, see Bursgreen Limited Instruction Manual titled 'UX JIG BOOK'

3. Use the Raise/Lower handle (6) to adjust the height of the fixed centre roller.

The centre roller is made of a hard rubber with the outer roller manufactured from a softer rubber to give positive gripping at the jig wall.



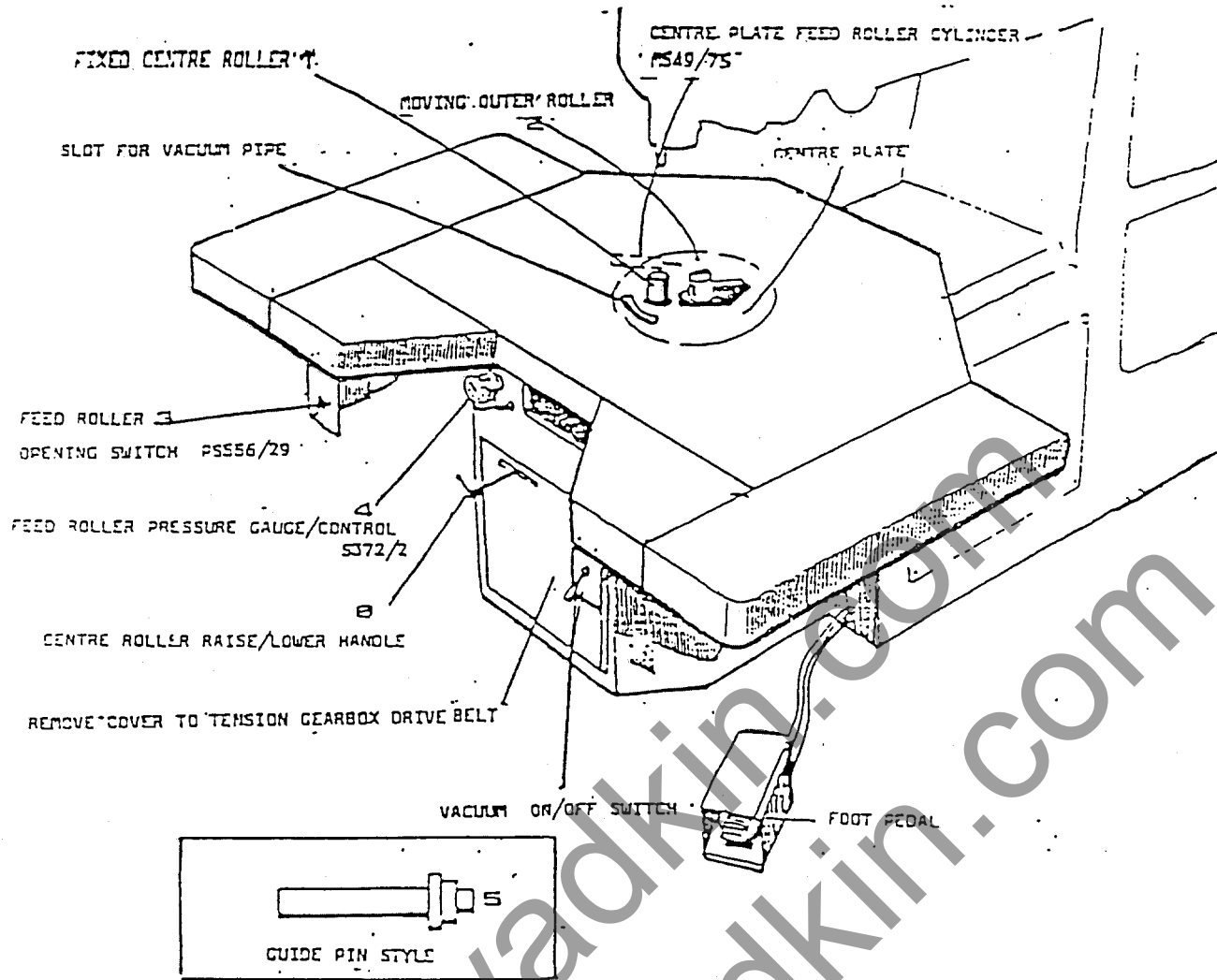


FIG. 13 LAYOUT OF AUTOMATIC FEED COPY TABLE UX/1

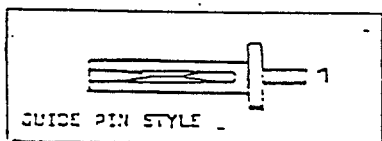
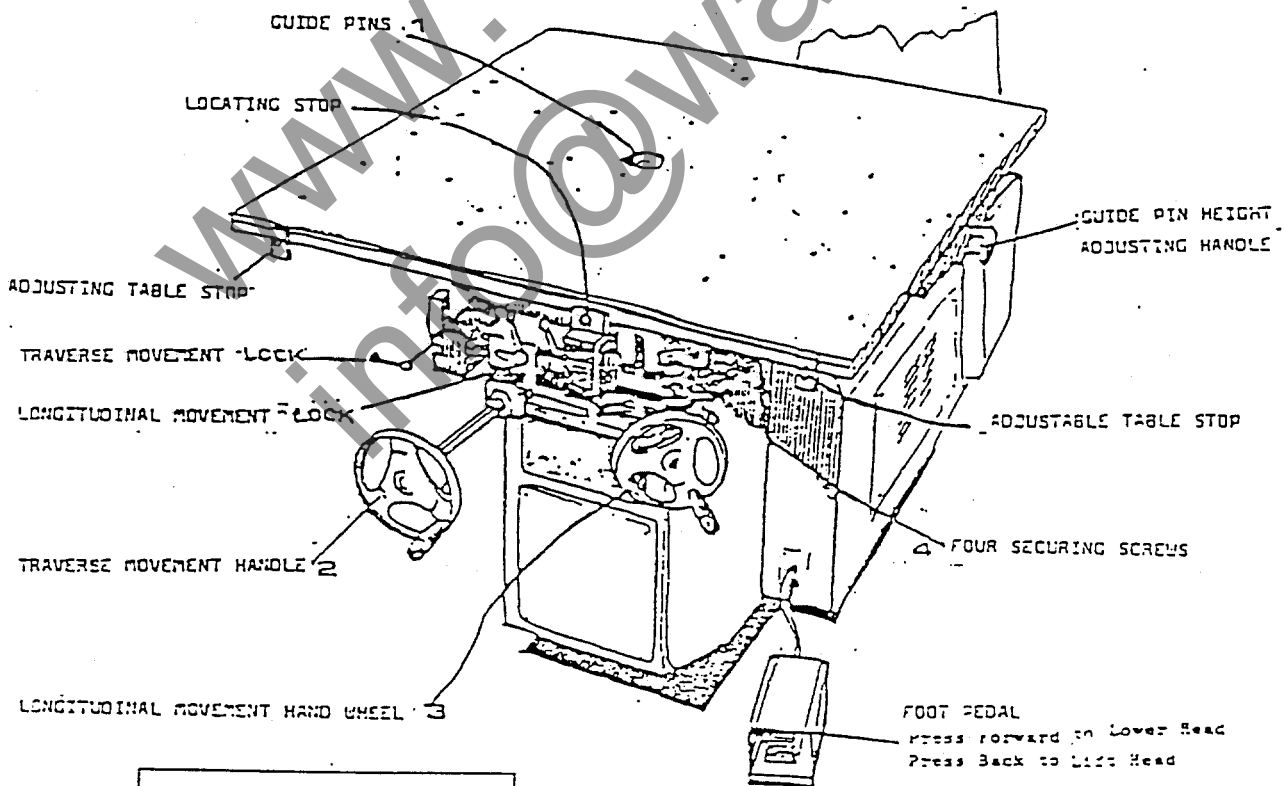


FIG. 12 LAYOUT OF COMPOUND TABLE MODEL UX 3

#### 4.10 STYLUS SETTING OF FLOATING HEAD (See Fig. 14a)

After checking follower motion setting checks should now be made as follows:

1. Fit a small follower onto the post ensuring that the follower is central around cutter, which should be placed in the collet.
2. Check that the stylus stop screw (D) has enough motion to allow the stylus to sense movement, but will RESTRICT the stylus from moving up into the cutter and collet.

IMPORTANT: THE FOLLOWER MECHANISM MUST BE KEPT CLEAN ESPECIALLY UNDER THE CONTACT POINT AND DAMPER SPRINGS.

#### 4.11 SETTING DEPTH OF CUT

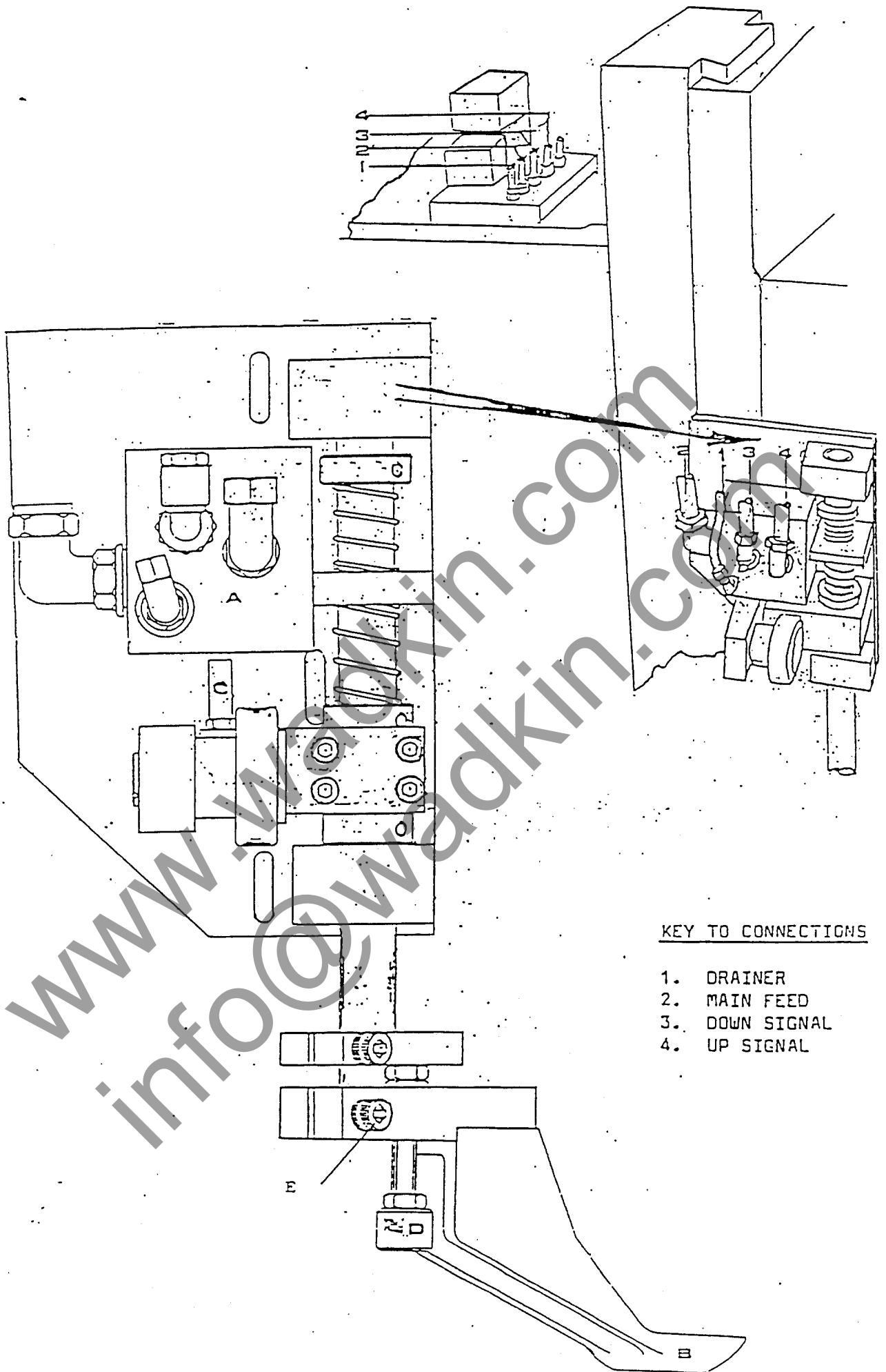
To set the depth of cut place a block of wood underneath the rear half of the follower as shown at Fig. 14c NOT UNDER THE CUTTER. Press the foot pedal to lower the head until the follower rests on top of the wood and comes to rest. When the follower is in this position the head has attained the NULL position, i.e. working position which is the amount of cutter protruding below the follower equals the depth of cut as shown at Fig. 14b.

After ascertaining the follower position, it may be required to increase or decrease the cutter protrusion in order to arrive at the required finished cutter depth.

To alter the position raise the head to the top position, unlock screw (E) shown at Fig. 14a and turn screw (D) as required to raise or lower the follower position. Re-lock screw (C) and lower head back down onto test block and measure cutter protrusion/depth of cut. i.e. If a slot was to be cut in a component at 12mm depth the amount of protrusion below the follower of the cutter should be 12mm.

A lower stop screw is provided which should be set so that the stylus will not drop onto the cutter when in the free bottom position.

continued.../...



KEY TO CONNECTIONS

1. DRAINER
2. MAIN FEED
3. DOWN SIGNAL
4. UP SIGNAL

FIG. 14a FLOATING HEAD

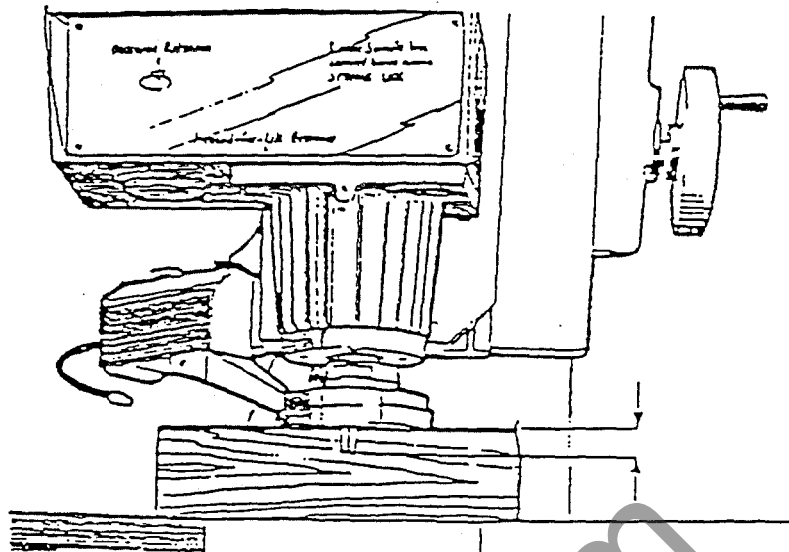


FIG 14b SETTING CUTTER DEPTH

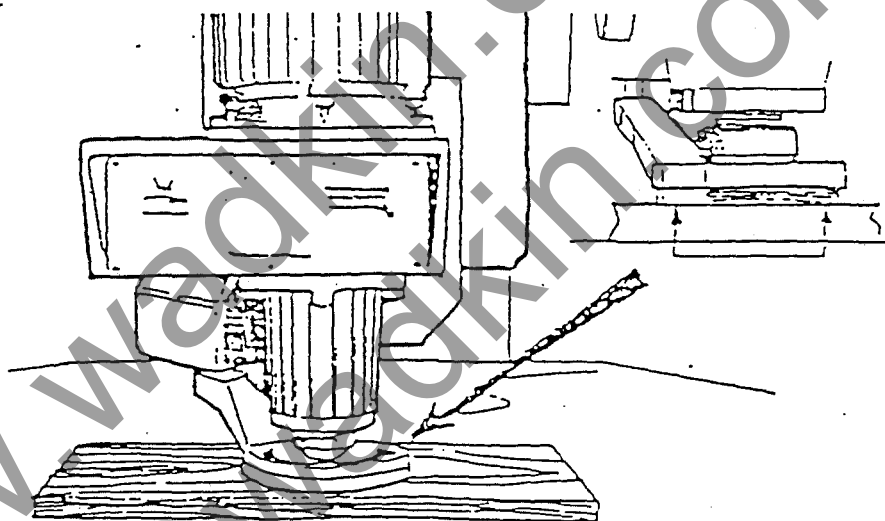
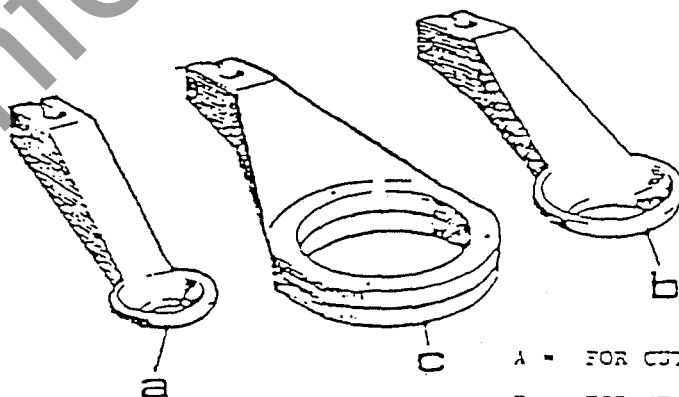


FIG. 14c SETTING WOOD BLOCK



- A - FOR CUTTERS UP TO 3MM DIA.
- B - FOR CUTTERS UP TO 22MM DIA.
- C - FOR LARGER DIA. EQUIPMENT.

FIG. 14d CUTTER FOLLOWERS

4.11 SETTING DEPTH OF CUT Continued.../...

When machining components at an angle the depth of cut on the angle will vary from the depth of cut on the flat. This condition is caused by the follower sensing the contour slightly off the cutter centre line. As the angle increases the error increases and in this state it is important to always use the follower which fits as close as possible around the cutter, keeping the sensing point as near to the cutter centre as practicable.

[www.wadkin.com](http://www.wadkin.com)  
[info@wadkin.com](mailto:info@wadkin.com)

## 5.0 OPERATING INSTRUCTIONS

After final installation of the machine and all initial settings and adjustments performed the UX Router should be operated by trained personnel and in accordance with the instructions laid down in this section of the manual. It is strongly recommended that operators initially review and read the entire contents of this instruction manual to assure safe and efficient utilisation of the machine.

### 5.1 CONTROL PANEL STANDARD MACHINES

The layout of the control stations at the machine control panel is shown at Fig. 15.

Control Stations Reference Numbers Fig. 15	Type of Control	Function		
1	Push-button	Head START Switch		
2	Push-button	Head STOP Switch		
3	3 position Selector switch	Position	'B'Head	'F'Head
		0	0	0
		1	10000 rpm	18000 r
		2	18000 rpm	24000 r

### 5.2 CONTROL PANEL WITH FULL RANGE OF EXTRAS

See layout of all central stations at machine control panel shown at Fig. 16.

Control Stations Reference Numbers Fig. 16	Type of Control	Function
1	Illuminated push-button	Frequency Changer STOP Switch
2	Illuminated push-button	Frequency Changer START Switch
3	Illuminated push-button	Head STOP Switch
4	Illuminated push-button	Head START Switch
5	Illuminated push-button	Feed REVERSE Switch
6	Illuminated push-button	Feed FORWARD Switch
7	Illuminated push-button	Feed STOP Switch
8	Illuminated push-button	Head BY-PASS Switch
9	Illuminated push-button	Vacuum pump UN-CLAMP switch
10	Illuminated push-button	Vacuum pump CLAMP switch

continued.../...

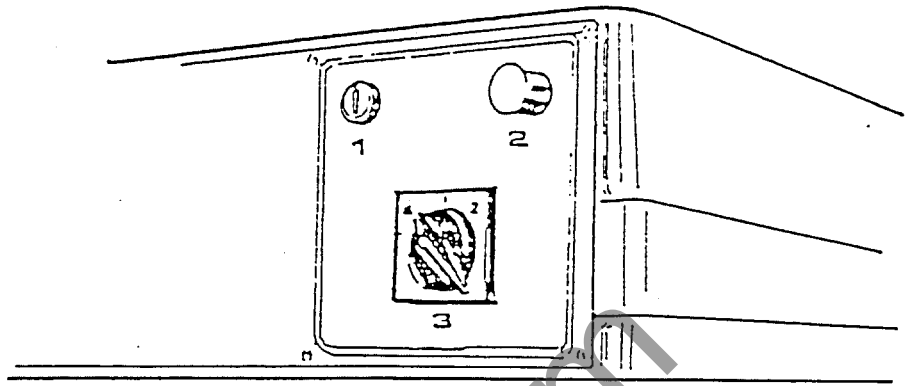


FIG. 15 · STANDARD MACHINE CONTROL PANEL

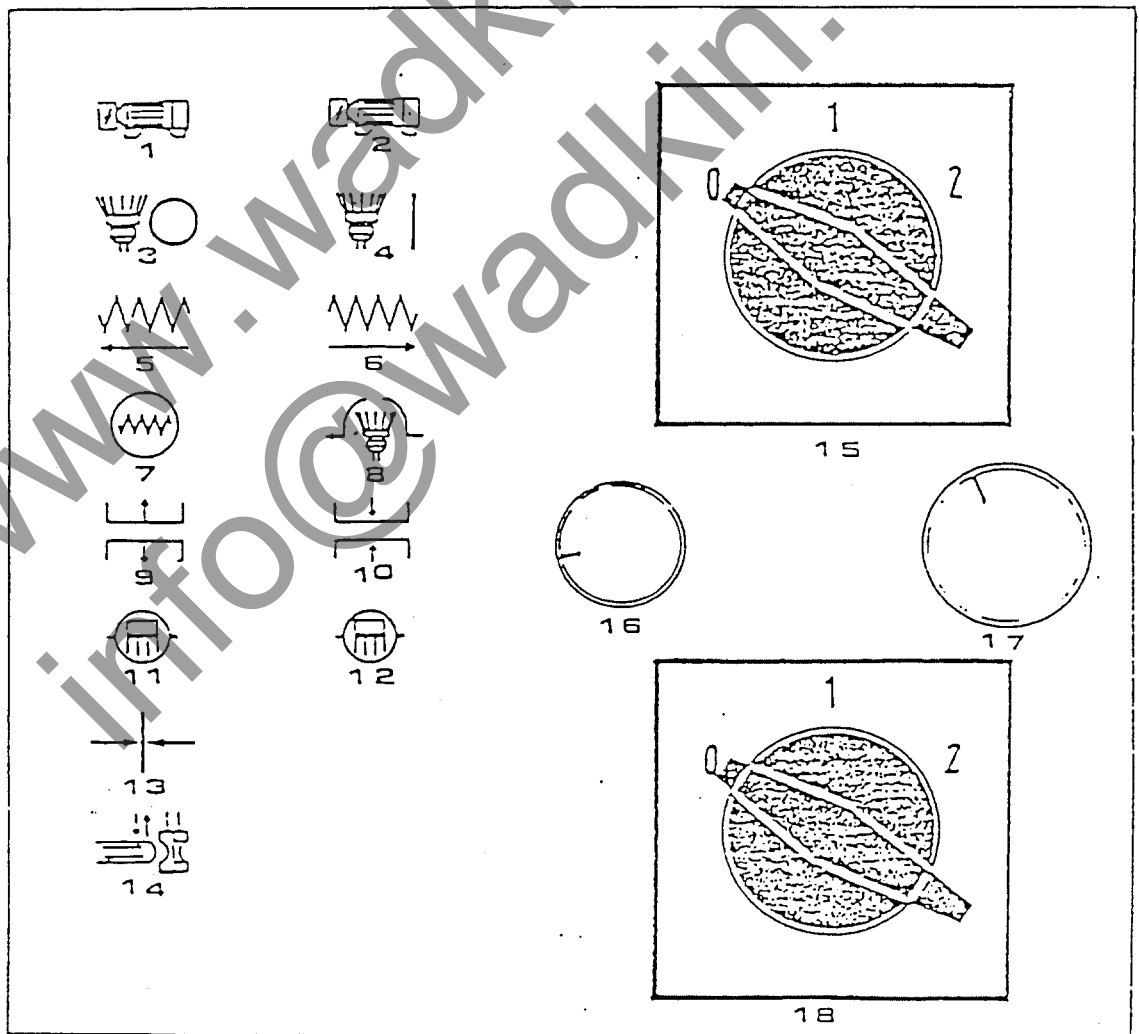


FIG. 15' CONTROL PANEL WITH MACHINE CONTAINING ALL EXTRA CONTROLS

5.2 CONTROL PANEL WITH FULL RANGE OF EXTRAS (Continued.../...)

Control Stations Reference Numbers Fig. 16	Type of Control Control	Function
11.	Illuminated push-button	Hydraulic Pump STOP switch
12.	Illuminated push-button	Hydraulic Pump START switch
13.	Illuminated push-button	DATUM RETURN switch
14.	Illuminated push-button	UNDER-CUT switch
15.	3-position selector switches	See Selector Switch diagram Fig.5.2.1 below
16.	Control knob	Slow down SPEED control
17.	Control knob	Feed SPEED control
18.	3-position selector switch	Frequency changer SELECTOR switch

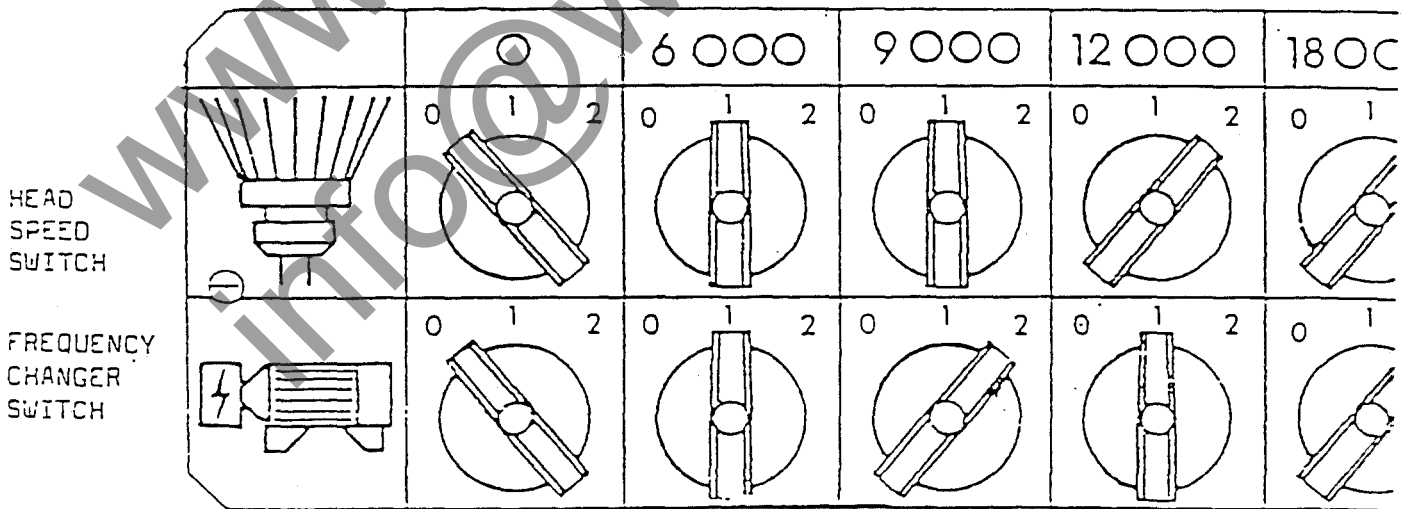


FIG. 5.2.1 SPEED SELECTION SEQUENCES FOR L.C. HEAD



### 5.3 BELT DRIVEN HEAD SERIES 'B'

Use the operating instructions for Model UX1/B machines.

#### 5.3.1 Starting the Series B Router Head

1. Switch on all services to machine.
2. Ensure cutter is correctly secured and held into spindle.
3. Check the spindle is free and spindle lock disengaged.
4. Turn speed Control Switch at Main Control Panel to '0' position.
5. Pull master stop to release lock (when fitted).
6. Press green 'START' push button station (Contactors pull in).
7. Turn speed control switch to position '1' for 10,000 r.p.m.
8. Allow 5 second period for head to reach full speed at position '1' then turn switch to position '2' for 20,000 r.p.m. speed.

#### 5.3.2 Stopping the Head

1. Press the head stop button.

WARNING: IT IS NOT RECOMMENDED TO USE THE SPEED CONTROL SWITCH TO STOP THE HEAD. DAMAGE TO EITHER THE SWITCH OR DRIVE BELTS COULD OCCUR.

### 5.4 TWO SPEED ROUTER HEAD SERIES 'F'

Use the operating instructions for Model UX2/F machines.

#### 5.4.1 Starting the Series F Router Head

1. Switch ON all services to machine.
2. Ensure cutter is correctly secured and held into spindle.
3. Ensure control knob on head is at centre position.
4. Turn speed control switch on main control panel to '0' position.
5. Pull master 'STOP' to release lock (when fitted).
6. Press green 'START' button (contactor pulls in and frequency changer starts).

continued.../...

#### 5.4.1 Starting the Series F Router Head Continued.../...

7. Turn speed control switch to position 1 for 18000 r.p.m. speed.
8. When 24000 r.p.m. speed is required let the head obtain full speed in position 1 then turn switch to position 2.

#### 5.4.2 Stopping the Head

This type of router head can be stopped by two alternative methods:

1. Press the STOP pushbutton station.
2. Push spindle brake which both acts as a STOP button and also brakes the head while pressure is maintained on the knob.

#### 5.5 FOUR SPEED ROUTER HEAD SERIES 'LC'

Use the operating instructions for Model UX/LC machines.

##### 5.5.1 Starting the Series LC Router Head

1. Switch ON all services to machine.
2. Ensure the work cutter is correctly secured and held into spindle.
3. Check cooling pneumatic air is available at 60 p.s.i. at the LC head pressure regulator situated at machine.
4. Check spindle lock is disengaged fully with micro switch operative.
5. Check drawbolt box spanner is removed and that slide cover is CLOSED.
6. Switch frequency changer speed selector switch at main control panel to '0' position.
7. Press START frequency change START pushbutton station.
8. Allow 10 seconds for frequency change to build up speed then press head START pushbutton station. (Contactor pulls in and cooling air is switched 'ON')
9. Select speed required by switching frequency change switch to position 1 or 2 then allow speed to build up in 1 before switching to position 2.

5.5.2 Stopping the Series LC Head

1. Press the head STOP pushbutton station when the head contactor will drop out, then switch OFF the cooling air, but leave the frequency changer unit running.

ALTERNATIVELY:

2. Press the frequency STOP pushbutton station when the head and changer contactors and will switch OFF the cooling air to head.
3. Head speed selector switch to be in "0" position.

NOTE: After either method it is advisable to press the brake pushbutton station to bring the spindle to HALT quickly.

5.6 PNEUMATIC FOOT CONTROL PEDAL

To raise and lower the Router Head use foot control pedal as follows:

FOOT POSITION

Forwards  
Backwards

HEAD POSITION

Lowering  
Raising

5.7 HEPWORTH FLOATING HEAD

To operate the floating head use the following sequence:

1. Start the hydraulic power pack and ensure turret stop screw and hydro check (where fitted) are clear of turret.
2. Raise head into top position and fit required cutter into spindle nose.
3. LOCK CUTTER
4. From the three size of followers provided, select the one to be used. These followers are shown at Fig. 14d Sized A, B and C.
5. Set depth of cut as specified under Section 4.11.

## 5.0 MAINTENANCE

For reliable operation and good performance the machine must be properly maintained. The need for maintenance will be indicated either by the periodic inspection or by variation in machine performance.

The operator should become thoroughly familiar with the specified operating instructions and maintenance recommendations specified in this manual.

### WARNINGS

When maintenance is carried out to any part of the machine any rotating part should be brought to a stationary NON OPERATIVE condition before any mechanical or electrical maintenance is carried out to the plant.

Overhaul of the machine must ONLY be carried out by authorised personnel who are fully conversant with all mechanical and electrical SAFETY INTERLOCK devices.

When carrying out maintenance, all drawings enclosed under separate cover should be used as terms of reference at all times.

WARNING: SWITCH OFF MAINS ISOLATOR SWITCH BEFORE WORKING ON ANY ELECTRICAL OR MECHANICAL PARTS.

## 6.1 PNEUMATIC SYSTEM

All pneumatic operated valves must be serviced with clean, dry and lubricated air through Filter/Lubricator unit to maintain valves are in correct operating condition. Water in the air-lines is a common cause for operation failure. Should a leak develop in a valve or any part of the system, it must be repaired and rectified promptly.

## 6.2 HYDRAULIC SYSTEM (See Fig. 6b)

Very little or no maintenance is required on the hydraulic power pack unit other than replenishing with clean light mineral based oil, Specification HLP 68.

The hydraulic power pack unit is supplied as a self contained unit with pump/motor housed on the reservoir tank with enclosed internal mesh filter and fitted with relief and non return valves.

The oil returning from the circuit is discharged directly into the tank and is then drawn through a mesh filter into the pump, thus ensuring continuous filtration.

continued..../...

## 6.2 HYDRAULIC SYSTEM Continued.../...

Common cause for operational failure is incorrect type of oil.

IMPORTANT: WHEN REFILLING WITH OIL NEVER USE RECYCLED OIL.  
ALWAYS USE OIL TO SPECIFICATION HLP 68 OR EQUIVALENT  
WHEN TOPPING UP OR REFILLING TANK.

## 6.3 BELT DRIVEN HEADS SERIES 8 STRIPDOWN (See Fig.47)

To replace worn poly-vee belts follow the following stripdown procedure.

1. Switch OFF mains power supply.
2. Remove 5 securing screws (3) and inspection cover (2).
3. Remove 4 motor nuts and washers (4).
4. Loosen adjusting screw locknuts (5) and screws (6) top and bottom.
5. Slide the motor body as far as possible towards intermediate pulley after removing the cable securing clip.
6. Tilt motor approximately 15° from vertical mounting position.
7. Ease the top vee-belt OFF and under motor pulley.
8. Lift motor clear of head supporting motor on box or suitable support near head. It is not necessary to disconnect electrical wires.
9. Remove 5 cuphead screws (3) from belt box lid and 2 location dowels.

IMPORTANT: The intermediate spindle unit stays in position as the end cap is a light push fit in the lid.

10. Remove top vee-belt.
11. Loosen four head flange nuts one turn.
12. Loosen adjusting screw locknut (5) and adjusting screw (6).
13. Slide box unit towards spindle.
14. Remove bottom vee-belt.
15. Fit replacement bottom belt spares reference 180 J10.

continued.../...

5.3 BELT DRIVEN HEADS SERIES B STRIPDOWN. Continued.../...

16. Using allen screw to adjust bottom belt to required tension. Ensure that belt is correctly positioned in both pulley grooves.
17. Fit replacement top belt in position around intermediate pulley spares reference 190 J16.  
  
NOTE: Belt used on 60 cycle machine has spares ref. 18 J16.
18. Replace belt box lid (2).
19. Lift motor and return back into correct position. When feeding belt by hand rest motor flange on top of four fixing studs and feed belt part way onto pulley before the motor is lowered into correct position. To assist vee-belt on, turn main spindle slowly by hand.
20. Replace four motor flange nuts and washers (4) but do NOT lock up.
21. Using allen screw provided to adjust top belt to required tension. Ensure vee-belt is correctly positioned in both pulley grooves.
22. Check both vee-belts are correctly tensioned. See Section 4.1 for correct belt tension procedure.
23. Lock-up the locknut (5) on both adjusting screws.
24. Lock-up four head flange nuts (4).
25. Re-check belt tension at each belt.
26. Replace inspection cover (2) and 5 screws (3).
27. After approximately one hour running, re-check the belt tension. Adjust if necessary as specified in Section 4.1.

6.4 VACUUM PUMP (See Fig. 18)

Should excessive dirt or foreign particles, moisture, or oil be permitted to enter the pump, the rotor vanes will act sluggishly or even break. By flushing the pump it should take care of these situations. In order to flush the pump follow the undermentioned procedure.

1. Remove the filter and muffler assemblies 8 and 9.

continued.../...

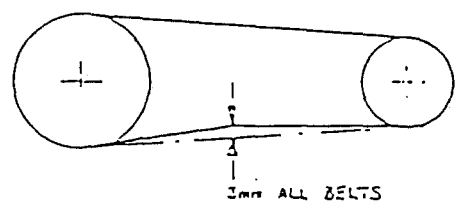
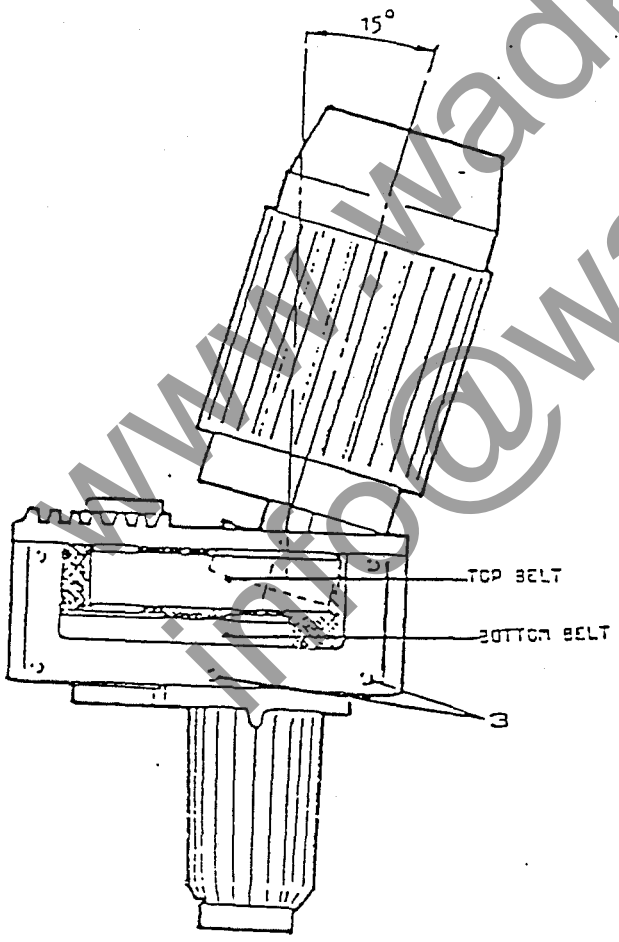
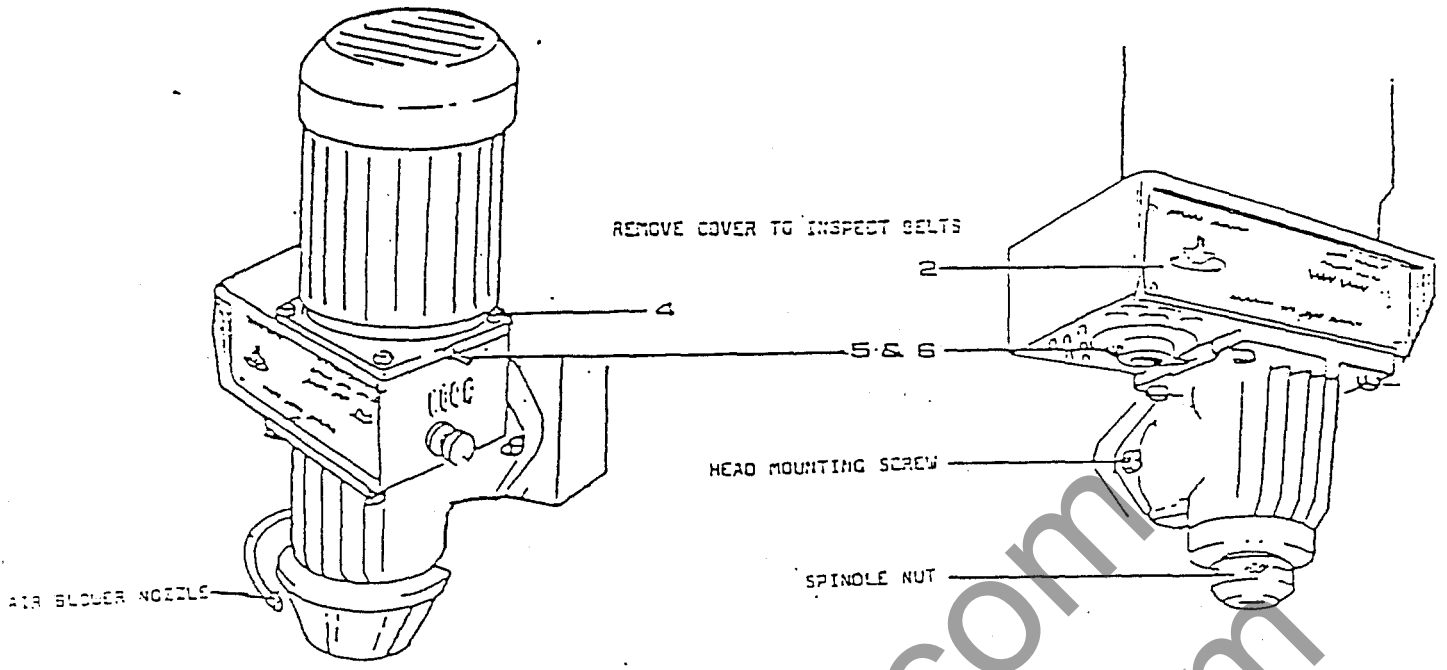


FIG. 17a BELT ADJUSTMENT

FIG. 17 REPLACING WORN BELTS ON SERIES 'B' ROUTER HEAD

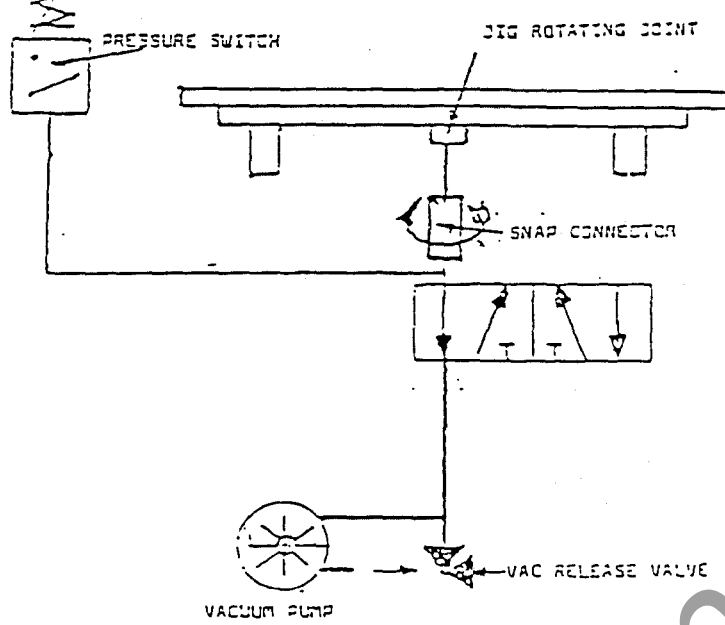


FIG. 18a VACUUM CLAMPING SCHEMATIC

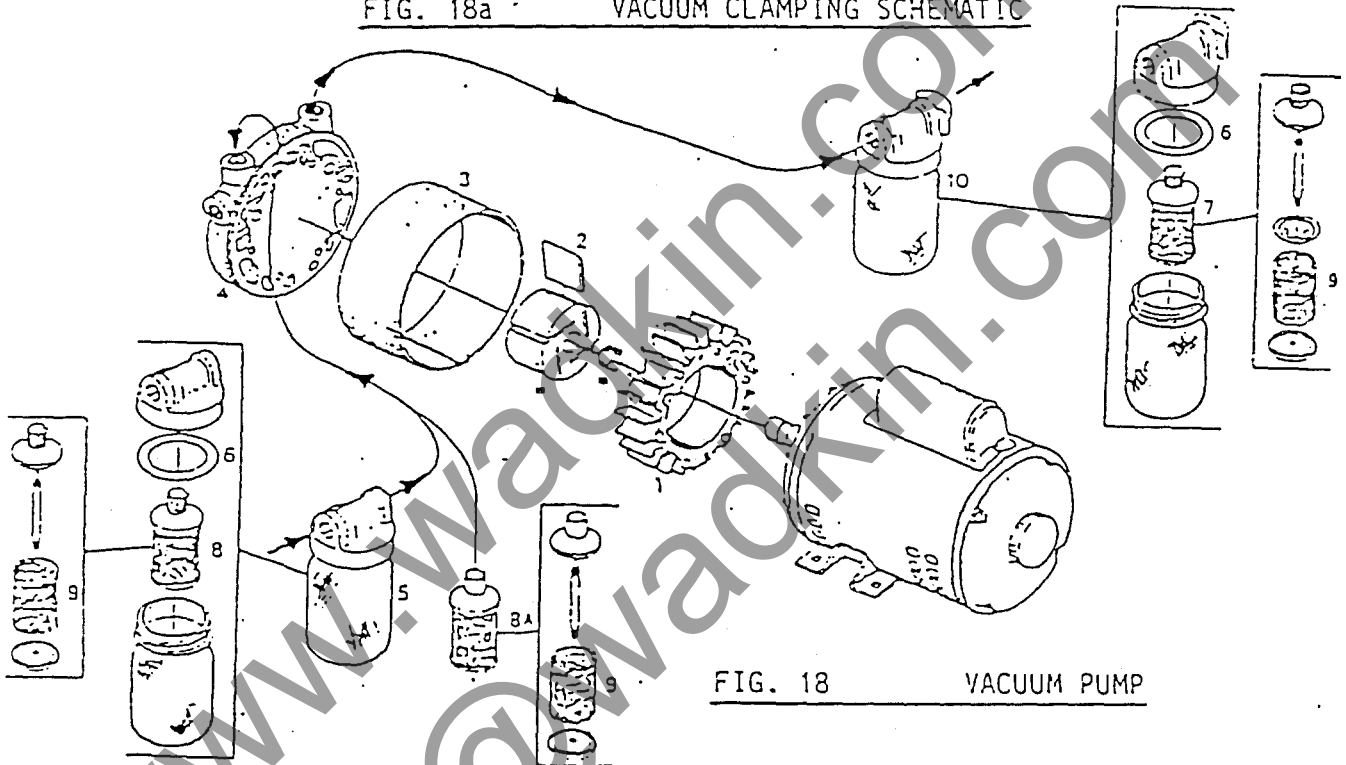


FIG. 18 VACUUM PUMP

Ref. No.	Description	Part Qty.	Vac. Pumo 0822-V103	Compressor 0822-P102	Vac. Pumo 1022-V103	Compressor 1022-P102
1	Body	1	A8978	A8978	A8987	A8337
2	Vane	4	A8992B	A8992B	A8992B	A8992B
3	Shroud	1	A8991	A8991	A8921	A8951
4	End Plate	1	A8982C	A8982C	A8952C	A8953C
5	Intake Filter Assembly	1	A8500		A8500	
7	Muffler Assembly	1			AC434-1	
8	Filtering Element	1	AC433-1		AC433-1	
8A	Filter Assembly	1		AC437		AC437
9	Cartridge	1	AC293	AC293	AC297	AC293
10	Exhaust Muffler	1	A8599B		A8599B	

\* Denotes parts included in Service Kit: K223 for both 0822 & 1022 oil-less models.  
 \* Under most circumstances rotor and tolerance ring should not be replaced in the field.



#### 6.4 VACUUM PUMP (See Fig.18) continued..../...

2. Add several teaspoons of solvent(part AH 255) into the pump through intake side WHILE PUMP IS RUNNING.

WARNING: FLUSH UNIT IN A WELL VENTILATED AREA WITH EYE PROTECTION AND KEEP FACE WELL AWAY FROM EXHAUST PORT.

DANGER: DO NOT FLUSH WITH FLAMMABLE SOLVENT

#### 6.4.1 Pump Internal Check

If flushing does not eliminate the problem carry out the following stripdown.

1. Remove the six bolts holding the end plate (4) to the pump body.
2. Now remove the end plate and four vanes (2).
3. Check for vane damage.

WARNING: DO NOT REMOVE THE ROTOR OR LOOSEN ANY ELECTRIC MOTOR THRO-BOLTS

#### 6.4.2 Pump Failure

When the pump fails to produce the correct vacuum pressure the vanes could be worn. A metallic clanging noise could mean the rotor and body are touching. Correct as follows:

1. Adjust top clearance by LIGHTLY tapping on the pump body, either top or bottom depending on whether clearance is too large or small.
2. The rotor should be turned whilst setting clearance to ensure that all points on the rotor clear the pump body.
3. End clearance settings for the drive end is 0.0015" and 0.003" for the dead end.

DANGER: DO NOT PUMP COMBUSTIBLE LIQUIDS OR VAPOURS

6.5 MECHANICAL MAINTENANCE CHECK LIST

This check list gives quick terms of reference for the major points of maintenance on various parts of the machine.

<u>MACHINE PART</u>	<u>ACTION</u>
<u>6.5.1 Belt Driven Head</u>	
Vee-belts:	1. Check belt tension <u>weekly</u> . <u>NOTE</u> : Bearings are sealed for life.
<u>6.5.2 LC Heads</u>	
Air motors:	1. Check air motors are passing cooling air through head <u>weekly</u> . <u>NOTE</u> : Bearings are sealed for life.
<u>6.5.3 Frequency Changer:</u>	1. Ensure frequency changer is not buried under waste material <u>weekly</u> as this will effect cooling.
<u>6.5.4 Feed Unit</u>	
Chain and gears:	1. Clean waste material from chain and gears below feed rollers <u>weekly</u> . 2. Clean out rack and pinion of waste material below gearbox <u>weekly</u> .
<u>6.5.5 Floating Head</u>	
Hydraulic Filter:	1. Change hydraulic reservoir filter element every <u>year</u> .
<u>6.5.6 Vacuum Unit</u>	
Vacuum Pump:	1. Check condition of pump vanes <u>half yearly</u> .
Input and Output Filters:	1. Empty jar and clean filter element <u>weekly</u> .

6.5 ELECTRICAL MAINTENANCE CHECK LIST

This second check list gives quick terms of reference for the major points required for various electrical parts of the machine.

<u>MACHINE PART</u>	<u>ACTION</u>
<u>6.6.1 Frequency Changer</u>	
Brush Gear:	1. Check condition of brush gear and sliprings ever <u>four months</u>
<u>6.6.2 Feed Unit</u>	
D.C. Motor:	1. Check D.C. motor brush gear condition every <u>four months</u> .
<u>6.6.3 Machine Inoperative:</u>	1. Check all mains fuses at 3 phase and single phase supply. Also check all overload contacts at switching. 2. Check pressure switch is operative.

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6.7

Lubricating List

MACHINE PART	LOCATION	APPLICATION	GRADE	FREQUENCY
High Frequency Head	Spindle Bearings	One shot	Tellus 27	Daily
LC Head Air Motors	Bearings	Sealed for life	Kluber NBU 15	-
Head Rise/Fall Assembly	Back Slide	2 point shots	Tonna T68	Weekly
Head Rise/Fall Assembly	Front Slide	3 point shots	Tonna T68	Weekly
Head Rise/Fall Assembly	Raising screw and nut	Oil can	Alvania R3	4 monthly
Compound Table Longitudinal	Screw bearings	2 point shots	Tonna T68	Weekly
Compound Table	Screw Nut	Oil Can	Tonna T68	Weekly
Compound Table	Slides	Oil Can	Tonna T68	Weekly
Traverse Slides (all tables)	Table	Oil Can	Tonna T68	Weekly
Traverse Slides	Rack and Pinion	Oil Can	Tonna T68	Weekly
Air Filter/Lubricator	Air System	Fill Bowl	Tellus 37	Fill as necessary
Hydraulic Pump (Floating Head)	Power Pack	Reservoir	HPL 68	Weekly

7.0 FAULT FINDING CHECK LISTS

The undermentioned lists cover quick fault finding checks for all machines under respective Sections 7.1 to 7.10.

- 7.1 Belt Driven Head Series 'B'
- 7.2 Two Speed Head Series 'F'
- 7.3 Four Speed Head Series 'LC'
- 7.4 Hepworth Floating Head
- 7.5 Head Rise and Fall Assembly
- 7.6 Compressed Air Filter/Lubricator Unit
- 7.7 Table Pin Arrangement Model UX1/2
- 7.8 Table Pin Arrangement Model UX3
- 7.9 Feed Unit Model UX1/A
- 7.10 Undercut Feature
- 7.11 Vacuum Clamping Unit

7.1 BELT DRIVEN HEAD SERIES B

<u>TROUBLE</u>	<u>CAUSE</u>	<u>REMEDY</u>
Machine Cutter runs slow	1. Belt Tension	Belt requires tensioning
Motor runs with spindle stopped	1. Belt Broken 2. Spindle lock engaged	Fit new belt Unlock spindle
Head does not start	1. Switching sequence. 2. Overload tripped	Check switching Check overload
Head runs noisily	1. Mechanical fault	Contact Wadkin before attempting repair.

7.2 TWO SPEED HEAD SERIES 'F'

<u>TROUBLE</u>	<u>CAUSE</u>	<u>REMEDY</u>
Head does not start	1. Switching sequence	Check switching
	2. Overload tripped	Check overload
	3. Brake still engaged	Check for fault
Head runs noisily	1. Mechanical fault	Contact Wadkin before attempting repair.

7.3 FOUR SPEED HEAD SERIES 'LC'

Head does not start	1. Draw bar spanner left in position with cover open	Remove spanner and close cover
	2. Spindle lock engaged	Unlock spindle
	3. Not sufficient compressed air	Check pneumatic air pressure
	4. Start sequence	Check for fault.
Head runs noisily	1. Mechanical fault	Contact Wadkin
Head stops during cut	1. Spindle lock limit switch contact not correctly made	Check limit switch contacts.
	2. Air pressure delays	Check air system
	3. Overload trips head or frequency changer	Check overload and frequency changer
Head runs very hot	1. Incorrect air cooling at head	Check air coolers.

#### 7.4 HEPWORTH FLOATING HEAD

<u>TROUBLE</u>	<u>CAUSE</u>	<u>REMEDY</u>
Excessive pump noise	1. Wrong direction of pump rotation	Observe arrow shown on pump motor case. Direction of rotation must correspond.
	2. Low oil level	Fill tank to oil level on sight.
	3. Restricted strainer	Clean strainer.
	4. Reservoir breather blocked	Clean breather.
System excessively hot	1. Pump operating at higher pressure than required	Set pressure to 350 p.s.i.
	2. Excessive pump slippage	Replace with new pump.
Sluggish operation	1. External equipment not adjusted correctly	Refer to manual sections. When starting from cold conditioning operation will be sluggish. Run pump for 20 minutes to warm up.
	2. Dirt particles in oil or incorrect type of hydraulic oil	Flush out and replace with correct new fluid.
Electric motor overload	1. Low voltage or one phase faulty	Check electrical supply.
	2. Motor terminals incorrectly connected	Check motor terminal connections.

#### 7.5 HEAD RISE AND FALL ASSEMBLY

Head does not lower	1. No compressed air	Check air available at top of cylinder.
---------------------	----------------------	---

continued..../...

7.5 HEAD RISE AND FALL ASSEMBLY Continued.../...

<u>TROUBLE</u>	<u>CAUSE</u>	<u>REMEDY</u>
Head does not lower	2. Tight slides	Slides need freeing and lubricating.
	3. Already on turret stop or hydro check	Check turret stops
Head lowers too quickly	1. Incorrect air supply	Adjust pneumatic system at restrictor.
Head raises and bumps at top	1. Incorrect cushioning of cylinder	Adjust cushioning at top of cylinder.
Movement in Router Head	1. Slide adjustment	Check and adjust wear strips.

7.6 COMPRESSED AIR FILTER/LUBRICATOR UNITS

Pneumatic Service	1. Lack of supply	Check unit is set correctly at 80 p.s.i.
	2. Water in pneumatics	Check filter unit and drain.
	3. Oiling-up	Too much lubrication, adjust lubricator unit.
	4. Parts rusting	Too little lubrication, adjust lubricator unit.

7.7 TABLE PIN ARRANGEMENT MODEL UX1/2

Pin misalignment	1. Damaged pin	Use test bar and adjust table as necessary.
Selected heights not available	1. Damaged pin or spring arrangement	Check ball and spring arrangement.

7.8 TABLE PIN ARRANGEMENT MODEL UX3 (COMPOUND TABLE)

Traverse movement stiff (left to right)	1. Traverse locked	Check traverse locks are free and lubricate rack and pinion gears.
Longitudinal movement stiff (back to front)	1. Traverse locked	Check traverse locks are free and lubricate traverse screw and nut.

continued.../...



7.8 TABLE PIN ARRANGEMENT MODEL UX3 (COMPOUND TABLE) continued

<u>TROUBLE</u>	<u>CAUSE</u>	<u>REMEDY</u>
Three pin heights cannot be selected	1. Damaged ball or spring	Check ball and spring arrangement.

7.9 FEED UNIT MODEL UX1/A

Centre spindle difficult to raise and lower	1. Damaged chain rack or pinion	a. Check chain drive at rear of gearbox, b. Check rack and pinion under gearbox for damage.
Roller will not open and close	1. Air supply to cylinder 2. Fault at gear unit	Check air supply to cylinder. Check gear and chain unit and clean all round gear assembly.
Feed will not change speed when slowdown button is depressed	1. Work-jig not contacting button 2. Pot incorrectly set	a. Pneumatic valve needs trimming, b. Slowdown button needs cleaning, c. Check slow down speed control Reset pot
No automatic feed	1. Zenamic blown on control panel 2. Pot set at zero 3. Drive belt motor to gearbox broken	Check starting sequence. Replace Zenamic Reset pot Clean all around gear and chain unit to remove build-up of woodchips.

7.10 UNDERCUT FEATURE

Unit will not select	1. Air supply	Check air to switches and pneumatic cylinder.
Unit does not return to centre position in correct sequency when head lowers	1. Turret stop not working 2. Faulty bleed/seal	Check turret limit switch a. Check screw for bleed/seal, b. Valve may need trimming.

## 7.11 VACUUM CLAMPING UNIT

<u>TROUBLE</u>	<u>CAUSE</u>	<u>REMEDY</u>
Component is clamped to jig but does not run. Warning light does not change from red to green.	1. Incorrect setting at vacuum switch	Adjust vacuum switch  <u>NOTE:-</u> The vacuum switch is set at standard figure at our works. Provided component is securely clamped this switch can be adjusted.
Component will not clamp	1. Porous material  2. Blocked pipes  3. Faulty vacuum pump  4. Relief valve setting	Check for porous material by using a plywood sample.  a. Check for vacuum leaks through jig seal or system. b. Check filters are clean.  a. Check vacuum pump is producing vacuum. b. Check condition of vanes inside vacuum pump.  a. Check relief valve is correctly set, b. Check pipes are not blocked.

IMPORTANT : DO NOT BLOW THROUGH PIPES TO CLEAN WITHOUT DISCONNECTING YELLOW PIPE TO VACUUM SWITCH, OR SWITCH WILL BE DAMAGED.

SECTION 8

MACHINE  
PARTS  
LISTS

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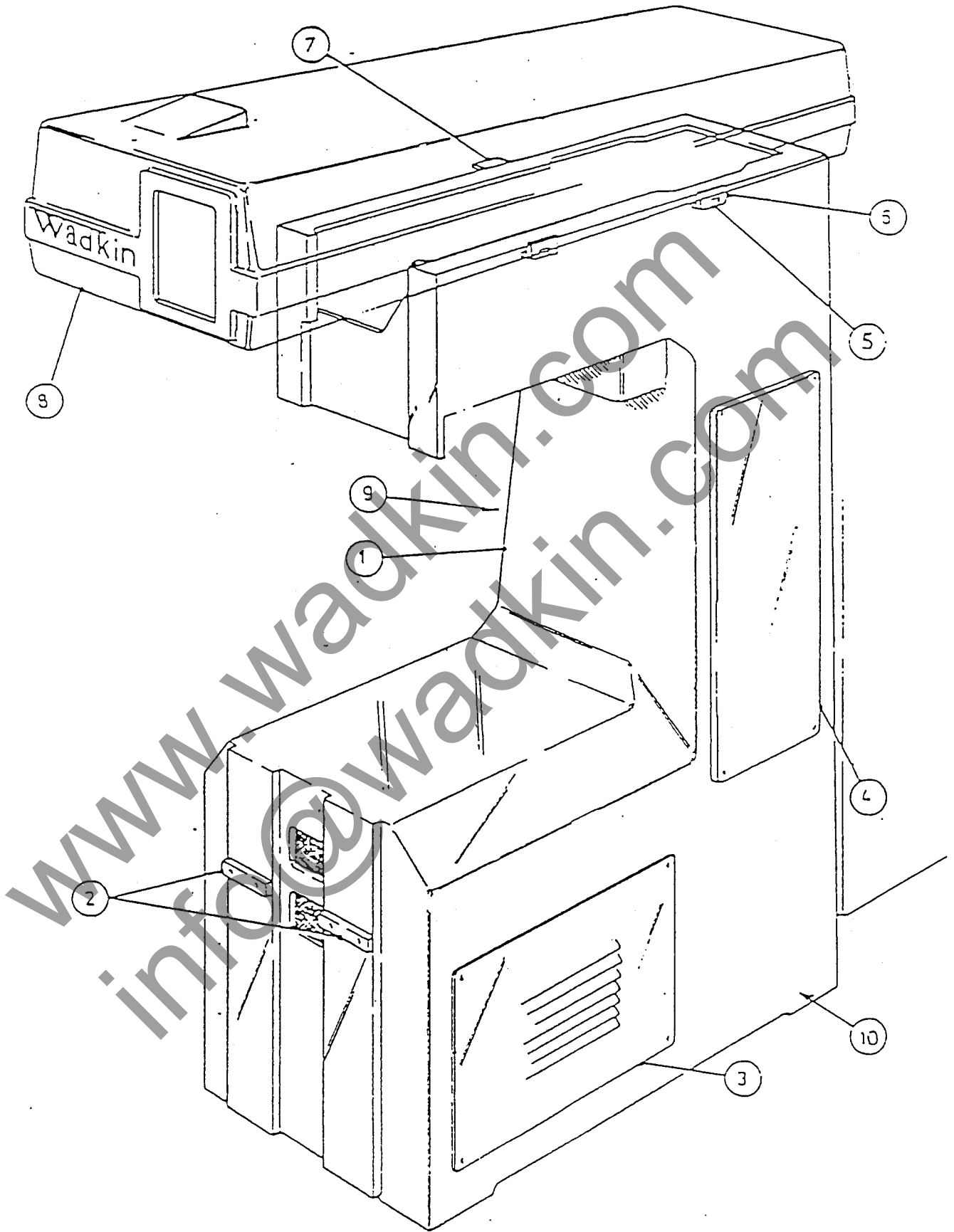


FIG. 19 MACHINE BODY

## 3.0 PARTS LISTS

This section of the manual specifies in detail all component parts for UX Routers stating Part Number and Description of each machine part.

### 3.1 MACHINE BODY (See Fig. 19)

<u>Item Figure 19</u>	<u>Description</u>	<u>Part No.</u>
1	Main Base	UX 1000
2	Table Base Key	UX 3171
3	Cover	UX 1038
4	Electrical Box Door	UX 1350
5	Hinge (Base)	UX 1396
6	Hinge (Hood)	UX 1395
7	Guard Clamp Bracket	UX 1051
8	Top Guard	UX 1381
9	Panel Cover	UX 1042
10	16mm Jacking Bolts and Locknuts - 4 off (Not shown)	

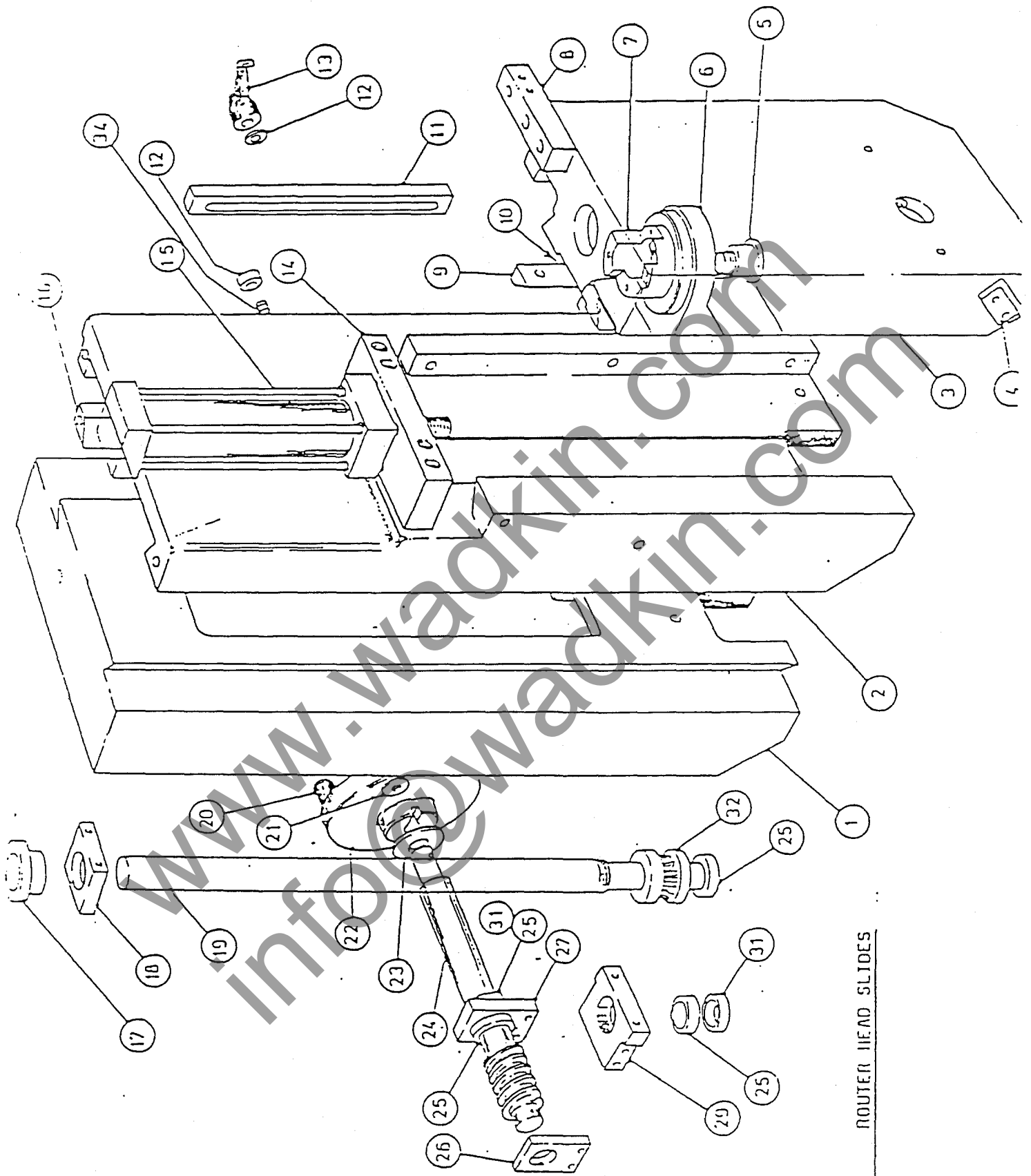


FIG. 20 ROUTER HEAD SLIDES

8.2 UX ROUTER HEAD SLIDES PARTS LISTS (SEE Fig. 20)

<u>ITEM</u>	<u>FIGURE 20</u>	<u>DESCRIPTION</u>	<u>PART NO.</u>
1		Frame Slide	UX 1001
2		Intermediate Slide	UX 1002
3		Motor Head Slide	UX 1003
4		Hose Bracket	UX 1093
5		Turret Stop Swivel Pin	UX 1018
6		Turret Stop Bracket	UX 1020
7		Turret Stop	UX 1019
8		Turret Stop Screw Bracket	UX 1087
9		Slide Trapping Strip	UX 1011
10		Head Cylinder Adaptor Piece	
11		Slide Locking Strip	UX 1338
12		Slide Locking Collar	UX 1337
13		Locking Handle	
14		Head Cylinder Support Bracket	UX 1389
15		Head Cylinder	
16		Slide Trapping Strip	UX 1031
17		Head Raising Nut	UX 1006
18		Head Raising Nut Bracket	UX 1005
19		Head Raising Screw	UX 1011
20		Handle	
21		Bearing Retaining Washer	UX 1112
22		Head Rise and Fall Handwheel	UX 1045
23		Handwheel shaft Bearing	UX 1040
24		Head Raising Worm Shaft	UX 1010
25		Bearings (4 off)	
26		Wormshaft Bracket LH	UX 1088
27		Wormshaft Bracket RH	UX 1008
28		Pin	
29		Head Rise and Fall Block	UX 1007
30		Oilite Brush	
31		Locking Collar	UX 1262
32		Worm Wheel	UX 1009
33		12mm Washer	
34		12mm Stud	

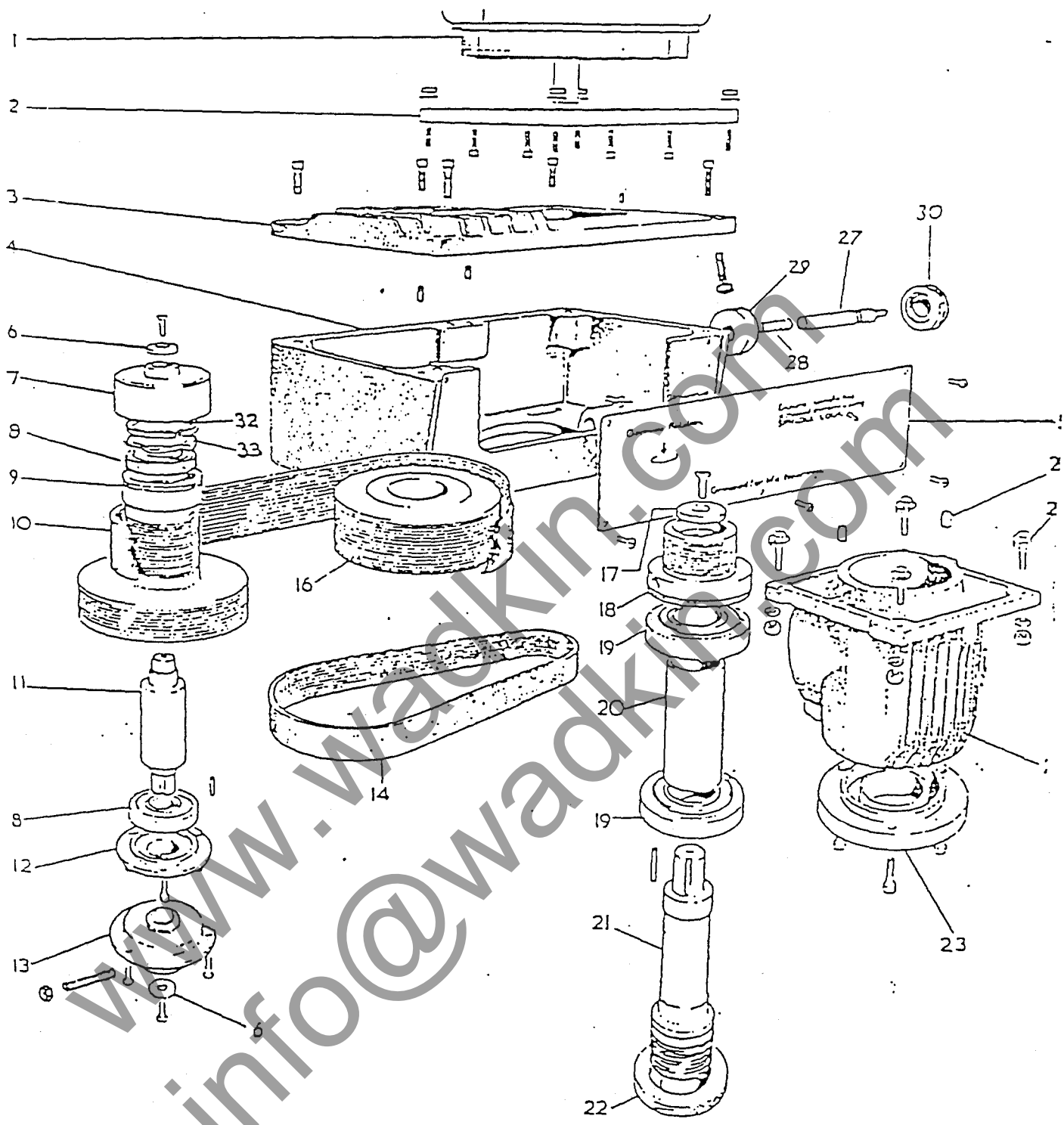


FIG. 21 SELF DRIVEN HEAD



## 8.3 BELT DRIVEN HEAD PARTS LIST (See Fig. 21)

ITEM, FIG.21	DESCRIPTION	PART NUMBER
1	Brook Motor	K13 08 009
1a	Brook 380V 3PH 50Hz 3000/1500rpm	K13 08 321
1b	D100LBC 415V 3PH 50Hz 3000/1500rpm	K13 08 322 *
1c	Motors 230V 3PH 60Hz 3600/1800rpm	K13 08 323 *
1d	Class 'F' 460V 3PH 60Hz 3600/1800rpm	K13 08 324 *
1e	Insulation 550/600V 3PH 60Hz 3600/1800rpm	K13 08 325 *
2	Motor Mounting Plate	UX 1103
3	Router Body Lid	UX 1102
4	Router Head Body	UX 1100
5	Cover Plate	UX 1732
6	Bearing Retainer Washers	UX 1116
7	Layshaft End Support Cap	UX 1143
8	Layshaft Bearings - SKF 6203 2RS	K06 01 192
9	Layshaft Pulley	UX 1108
10	Polyvee Belt 190 J 16	K30 78 143
10a	Polyvee Belt 180 J 16	K30 78 318
11	Layshaft	UX 1142
12	Endcap for Layshaft Pulley	UX 1107
13	Endcap for Layshaft	UX 1106
14	Polyvee Belt 180 J 16	K30 78 318
14a	Polyvee Belt 180 J 10	K30 78 144
15	Not required	-
16	Polyvee Pulley 16 J 4.50	UX 1075
16a	Polyvee Pulley 16 J 4.50	UX 1076
17	Spindle Pulley Retainer Washer	UX 1116
18	Main Spindle Pulley	UX 1111
19	Main Soindle Bearings - RHP 1/P6206	K06 20 102
20	Spacing Sleeve	UX 1114
21	Cutter Spindle	UX 1109
22	Cutter Spindle Nut	LS 139
23	Endcap for Bottom Main Spindle Housing	UX 1115
24	Main Spindle Housing	UX 1101
25	Adjuster Bolt	UX 1121
26	Pegs	K05 29 156
27	Plunger Pin	UX 1133
28	Plunger Spring - ENTEx 51	K30 73 836
29	Endcap for Plunger Pin	UX 1134
30	Plunger Bar knob for UX 1117	UX 1122
31	Knob for Plunger	UX 1686
32	Circlip Ø40 internal	Ø40 internal
33	Waved Washer ELP 34	ELP34
34	Screwed dowel	UX 1091 *
35	Screwed dowel	UX 1315 *
36	Nylon Dust Shield	UX 1312 *

NOTE: FOR ROUTER CUTTERS AND  
ACCESSORIES REFER TO WADKIN  
TOOLING BROCHURE SECTION 'J'  
REF. NO. 1269 3M/C/2/77

\* Not shown

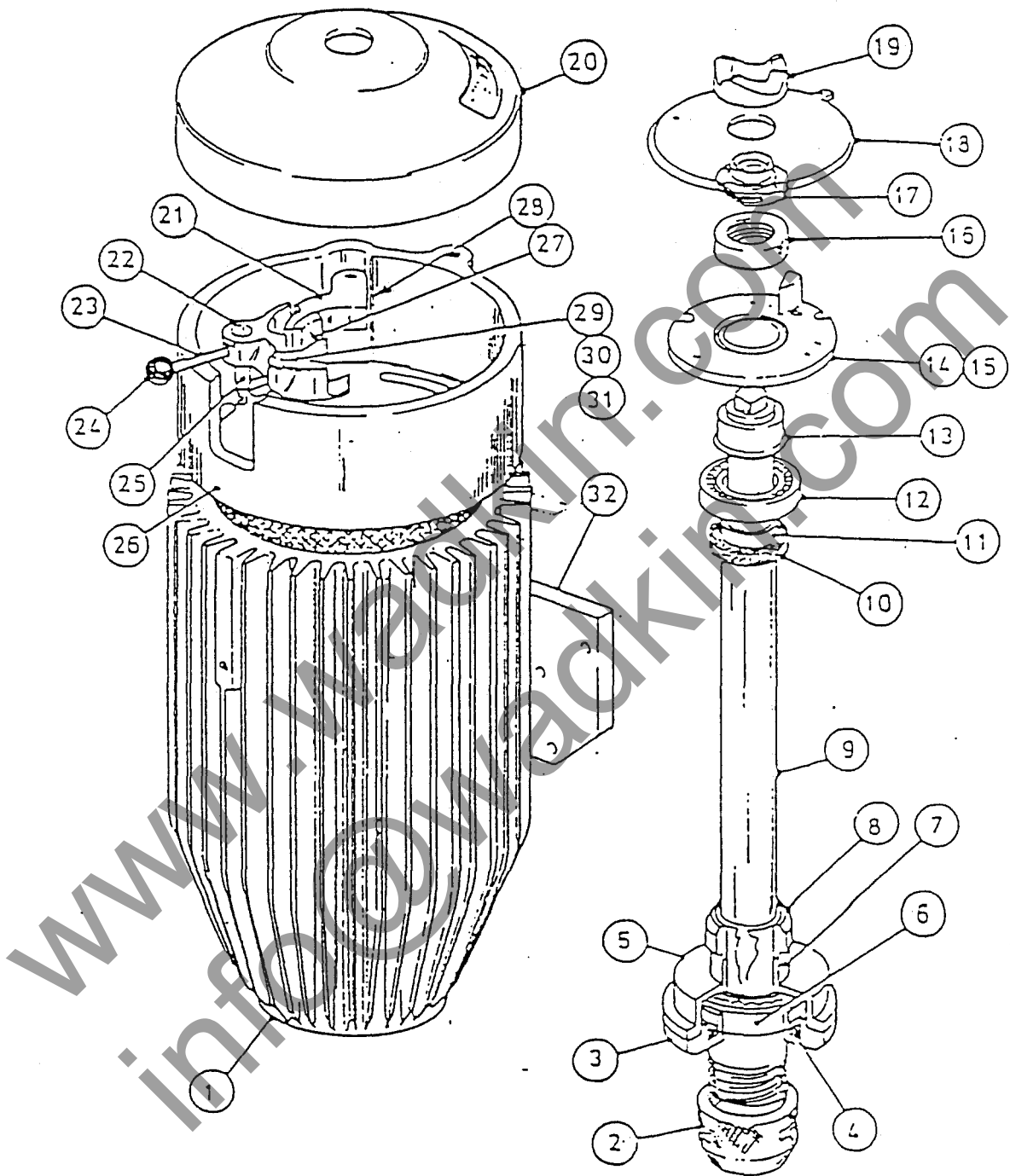


FIG. 22 HIGH FREQUENCY HEAD SERIES 'F'

8.4 UX ROUTER HIGH FREQUENCY HEAD SERIES 'F' PARTS LIST (See Fig. 22)

<u>ITEM</u>	<u>FIGURE 22</u>	<u>DESCRIPTION</u>	<u>PART NO.</u>
1		Stator Frame	UE 401
2		Chuck Nut Assembly	LS 6893
3		Bearing Retaining Plate	UR 213
4		Felt Ring	LS 881
5		Bearing Housing	UR 212
5		Bearing	K06-01-299
7		Spacing Sleeve	UR 215
8		Locknut	LS 399
9		Rotor Shaft	LS 948
10		Felt Ring	LS 880
11		Bearing Oil Seal	LS 872
12		Bearing	K06-01-293
13		Bearing Spacing Sleeve	UR 209
14		Felt Ring Housing Labyrinth	UR 118
15		Felt	K30-21-101
16		Brake Drum	UR 206
17		Bearing Locknut	UR 221
18		Baffle	UR 224
19		Fan	UR 119
20		Cover	UR 116
21		Brake Shoe	UR 114
22		Arm Carrying Locking Pin	UR 117A
23		Brake Operating Lever	UR 219
24		Knob	K05-21-464
25		Brake Shoe Pivot Pin	UR 218
26		Top Bearing Housing	UR 121
27		Brake Lining	UR 232
28		Spring	LS 863
29		Plunger	EQ 181
30		Spring	LS 1038
31		Retaining Cap	UR 220/A
32		Head Fastening Plate	UX 1714

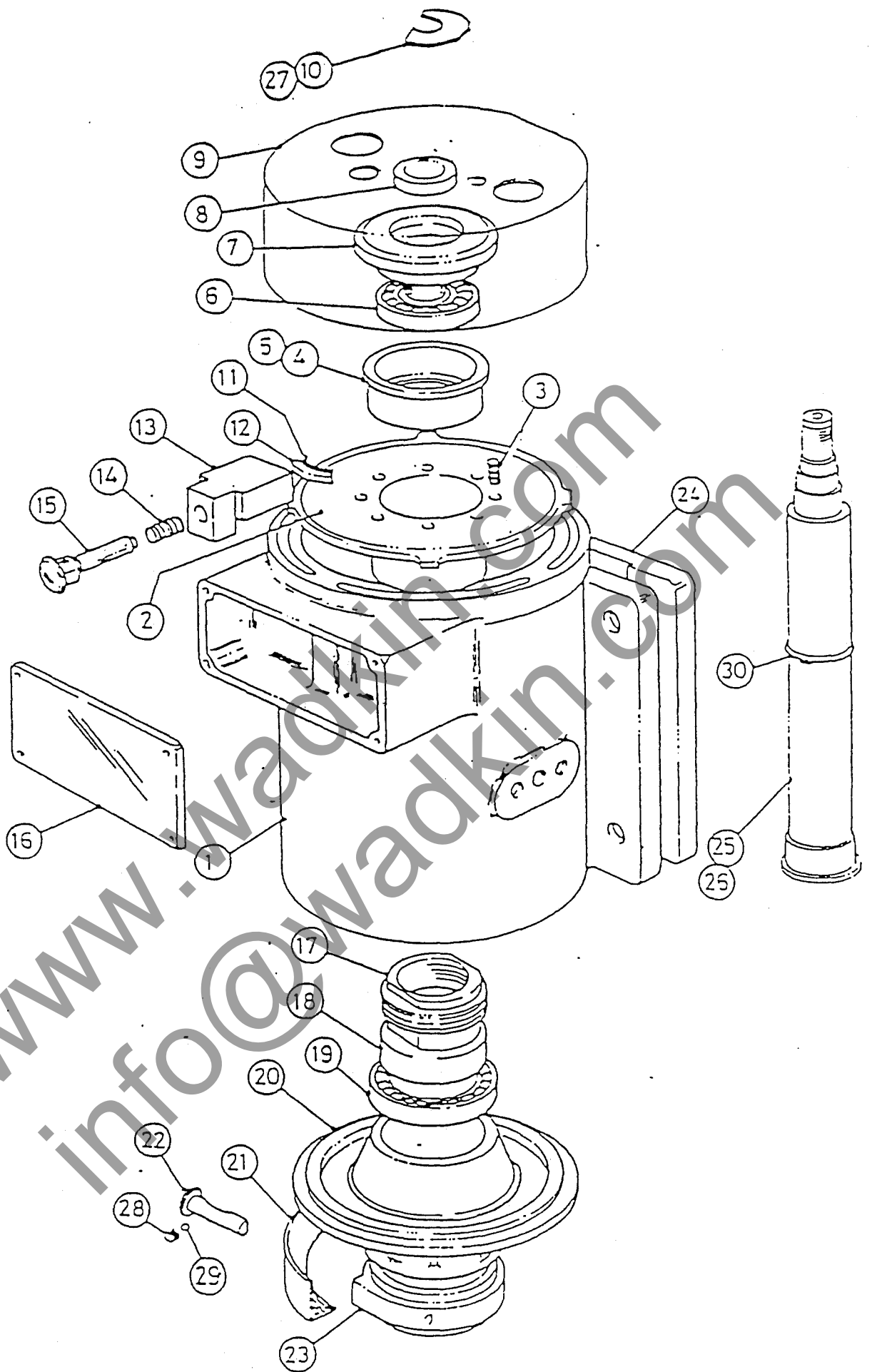


FIG. 23 HIGH FREQUENCY HEAD SERIES 'LC'

8.5 UX ROUTER HIGH FREQUENCY HEAD SERIES 'LC' PARTS LIST (See Fig.23)

<u>ITEM</u>	<u>FIGURE 23</u>	<u>DESCRIPTION</u>	<u>PART NO.</u>
1		Statur Frame	LS 1499/A
2		Top End Shield	LS 1667
3		Spring	LS 1098
4		Top Bearing Sleeve	LS 1648
5		'O' Ring	K30-69-163
6		Bearing	K06-18-141
7		Upper Bearing Grease Retainer	LS 1631
8		Locknut	K05-19-162
9		Cowl for Router	LS 1681
10		Cover for Drawbolt	LS 1671
11		Brake Lining	LS 1092
12		Brake Shoe	LS 1033
13		Brake Plunger Housing	LS 1665
14		Brake Spring	LS 1094
15		Brake Plunger	LS 1093
16		Cover Plate (blank)	LS 1483
17		Bottom Bearing Locknut	LS 1460
18		Inner Bearing Spacer	LS 1673
19		Bearing	K06-18-144
20		Bottom Bearing Housing	LS 1668
21		Air Deflector	LS 1684
22		Spindle Locking Pin	LS 1031/A
23		Bottom Bearing Cap	LS 1647
24		Motor Backplate	UX 1384
25		Rotor Spindle	LS 1455/A
26		Drawbolt	LS 1466
27		Stud for Drawbolt Cover	LS 1526
28		Spring for Spindle	LS 1038
29		Steel Ball	K30-05-501
30		Circlip	K30-09-189

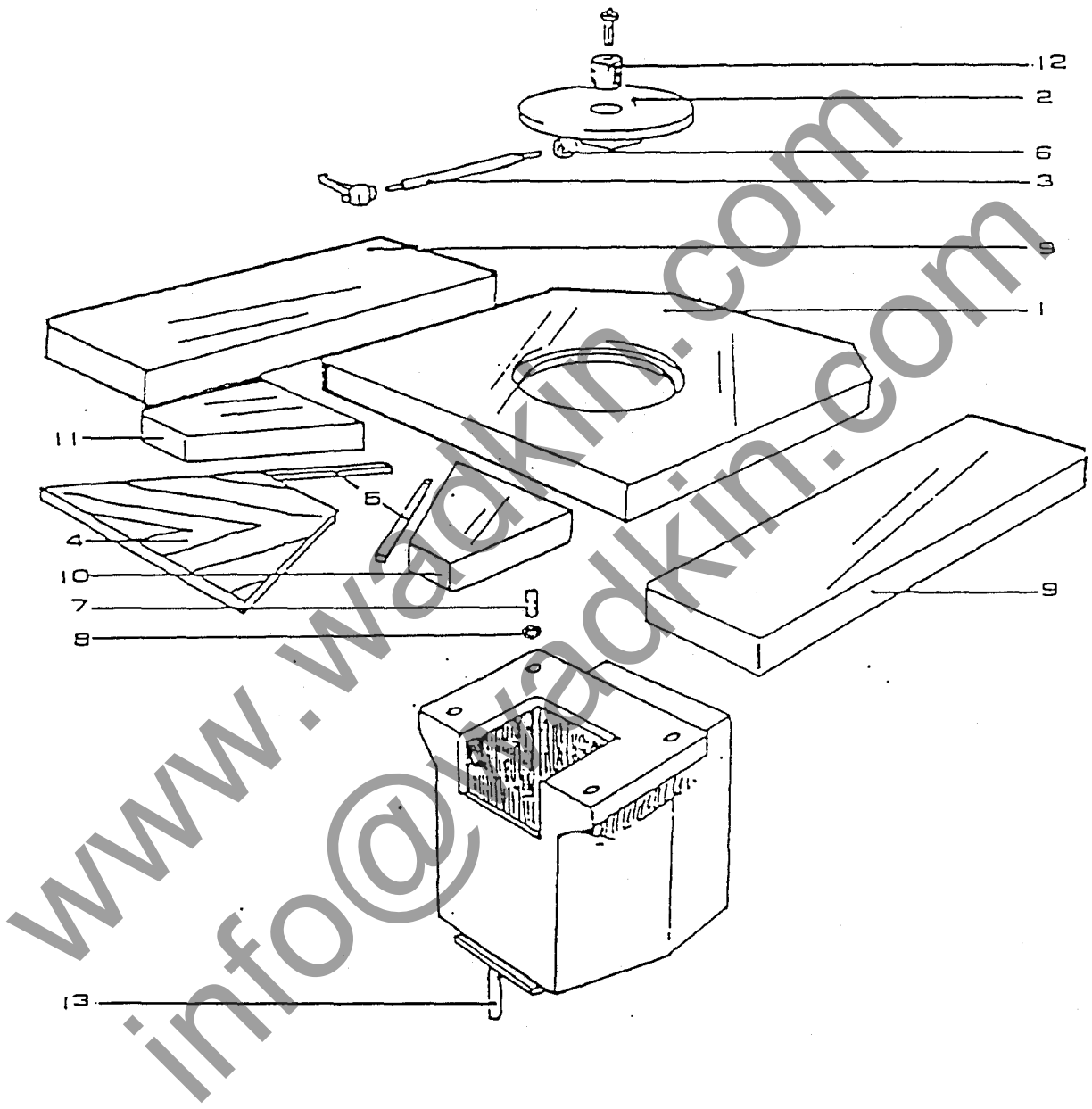


FIG. 25 PLAIN TABLE MACHINE UX/1

8.6 PLAIN TABLE BASIC PARTS LIST MACHINE UX/1 (See Figure 25)

<u>ITEM</u> <u>FIG. 25</u>	<u>DESCRIPTION</u>	<u>PART NUMBER</u>
1	Plain Table	UX 1054
2	Table Centre Pin Support	UX 1055
3	Centre Pin Rise and Fall Pinion	UX 1058
4	Auxiliary Wood Table	UX 1089
5	Auxiliary Wood Table Support	UX 1090
6	Centre Pin Positional Collar	UX 1099
7	Bush for Knee Bracket	UX 1320
8	Nut for Bush	UX 1321
9	Side Table	UX 1342
10	Front Table Right Hand	UX 1343
11	Front Table Left Hand	UX 1344
12	Centre Pin Rise and Fall Boss	UX 1324
13	Support Bracket (Plain)	UX 1682

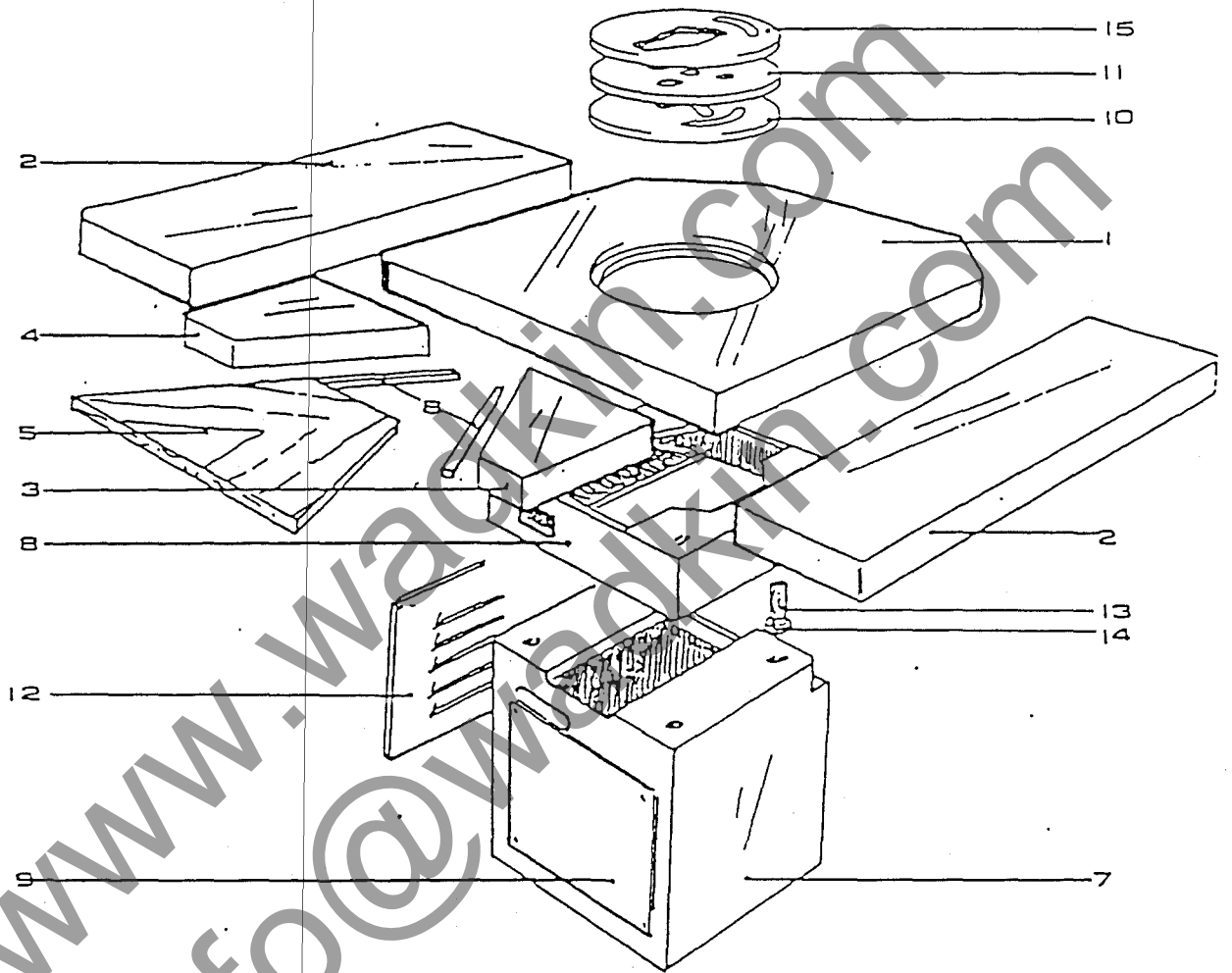


FIG. 28

AUTO FEED TABLE MACHINE UX1/A



8.7 AUTOMATIC FEED TABLE PARTS LIST MACHINE UX/1/A (See Figure 28)

<u>ITEM FIG. 28</u>	<u>DESCRIPTION</u>	<u>PART NUMBER</u>
1	Plain Table	UX 1054
2	Side Table	UX 1072
3	Front Table Right Hand	UX 1073
4	Front Table Left Hand	UX 1074
5	Auxiliary Wood Table	UX 1089
6	Auxiliary Wood Table Support	UX 1090
7	Knee Bracket	UX 1248
8	Support Casting	UX 1249
9	Knee Bracket Front Cover	UX 1251/A
10	Table Insert (Auto Feed)	UX 1250
11	Table Insert (Hand Pin)	UX 1260
12	Differential Motor Cover	UX 1278
13	Bush for Knee Bracket	UX 1320
14	Nut for Bush	UX 1321
15	Table Centre Plate	UX 1671

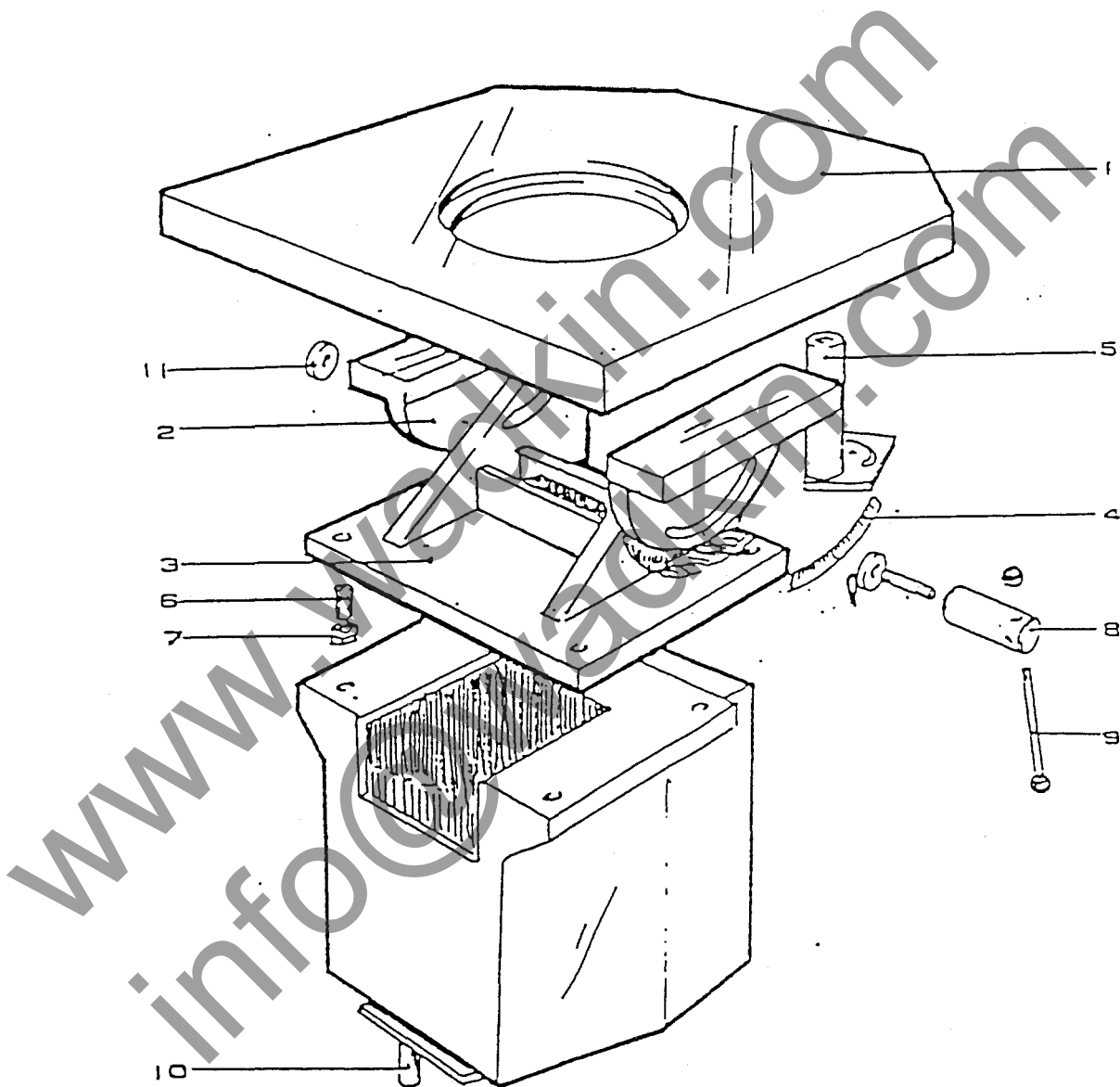


FIG. 25 CANTING TABLE MACHINE UX/2

## 8.8 CANTING TABLE PARTS LIST MACHINE UX/2 (See Figure 26)

<u>ITEM FIG. 26</u>	<u>DESCRIPTION</u>	<u>PART NUMBER</u>
1	Plain Table	UX 1054
2	Table Canting Quadrant	UX 1064
3	Table Quadrant Seating	UX 1065
4	Table Quadrant Scale	UX 1081
5	Canting Table Stop	UX 1082
6	Bush for Knee Bracket	UX 1320
7	Nut for Bush	UX 1321
8	Locking Boss	UX 1339
9	Locking Handle	UX 1340
10	Support Bracket (Short)	UX 1681
11	Locking Washer	5400-18

Listed below are extras which may be added on request.  
Also See SECTION 8.6 Plain Table (Basic UX/1)

Table Centre Pin Support	UX 1055
Centre Pin Rise and Fall Pinion	UX 1058
Auxiliary Wood Table	UX 1089
Auxiliary Wood Table Support	UX 1099
Centre Pin Positional Collar	UX 1099
Side Table	UX 1342
Front Table Right Hand	UX 1343
Front Table Left Hand	UX 1344
Centre Pin Ref. Boss	US 1624

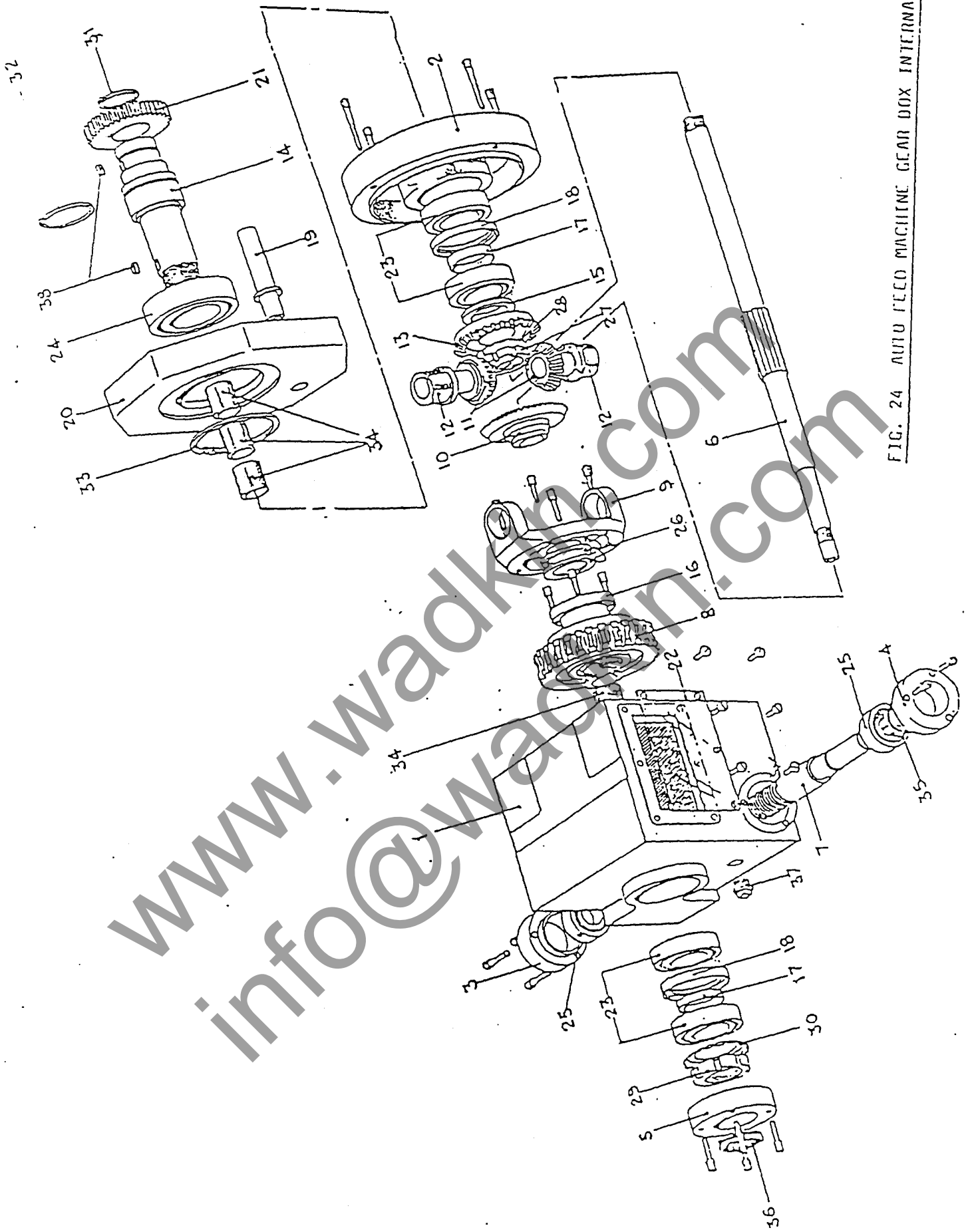


FIG. 24 AUTO FEED MACHINE GEAR BOX INTERNAL.

## 8.9 AUTO FEED MACHINE INTERNAL GEAR BOX (See Fig. 24)

ITEM FIGURE 24	DESCRIPTION	PART NO.
1	Main Housing	UX 1200
2	Main Housing Top Cover	UX 1201
3	Wormshaft Dustcap	UX 1205
4	Wormshaft Oilseal Endcap	UX 1206
5	Gear Box Bottom Oil Cover	UX 1207
6	Differential Centre Shaft	UX 1209
7	Differential Wormshaft	UX 1210
8	Differential Wormwheel	UX 1211
9	Differential Yoke	UX 1212
10	Bottom Bevel Gear	UX 1213
11	Pinion Gear	UX 1214
12	Bearing for Pinion	UX 1215
13	Top Bevel Gear	UX 1216
14	Top Bearing Sleeve	UX 1217
15	Bevel Gear Spacer	UX 1218
16	Bottom Bearing Sleeve	UX 1219
17	Bearing Spacer Inner	UX 1221
18	Outer Bearing Spacer	UX 1222
19	Outer Drive Spindle Pivot Pin	UX 1223
20	Gear Support Plate	UX 1224
21	Outer Drive Gear	UX 1226
22	Gear Box Window Gasket	UX 1282
23	Bearing	32009 X
24	Bearing	6212
25	Bearing	6205
26	Thrust Rack	AX 40 60 CP3 40 60
27	Bearing Locknut	KM8
28	Bearing Tab Washer	MB 8
29	Bearing Locknut	KM9
30	Bearing Tab Washer	MB 9
31	Circlip External	ø 45
32	Circlip External	ø 60
33	Circlip Internal	ø 110
34	Oilite Bush	BM1 x35
35	Oilseal	W 15708639 R4
36	Oilseal	W 20509839 R4
37	Drain Plug	½" B.S.P.
38	Key	6 x 6 x 10 Key Steel

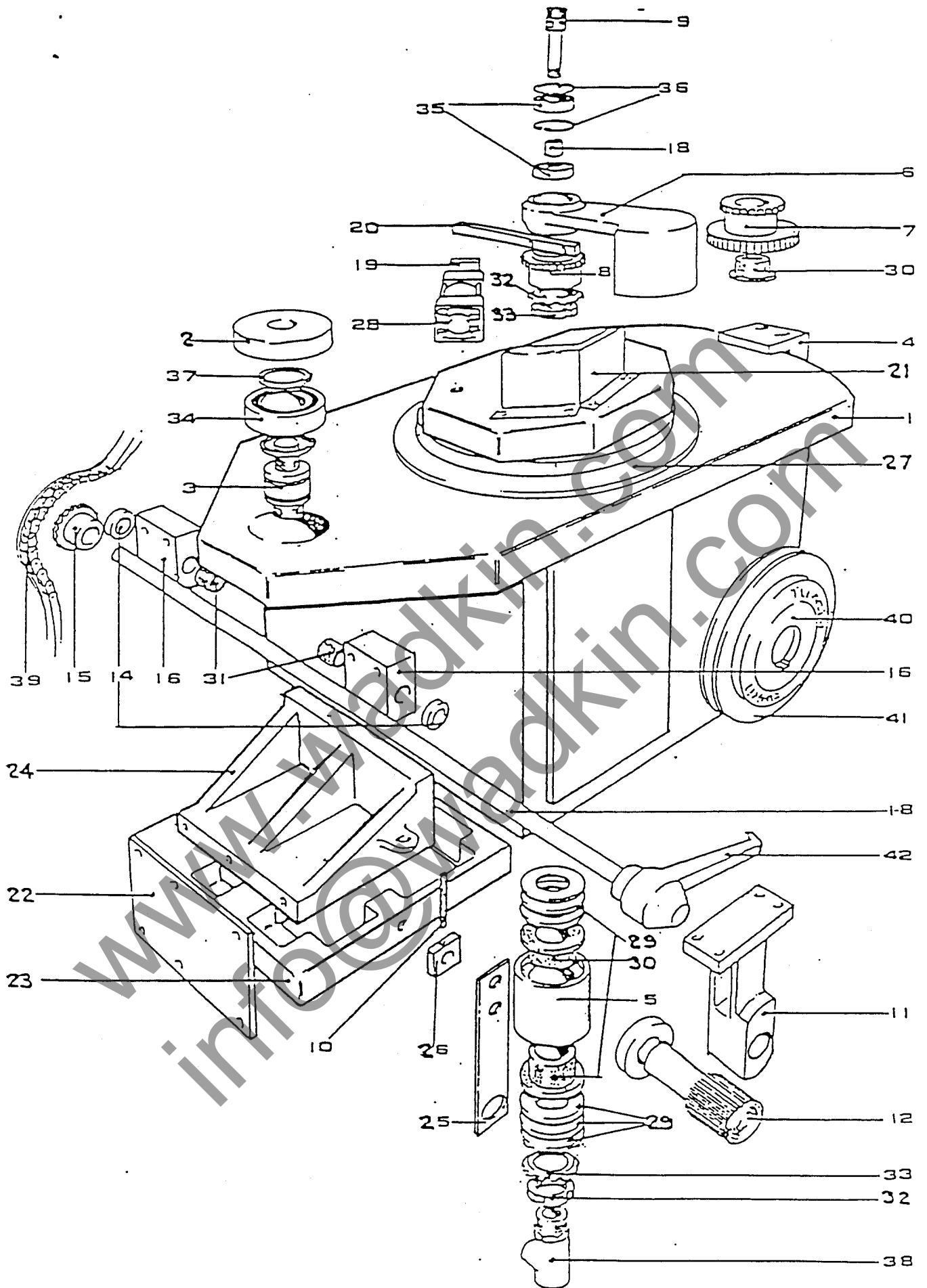


FIG. 27 AUTO FEED MACHINE GEAR BOX EXTERNAL

## 8.10 AUTO FEED TABLE MACHINE UX/4 EXTERNAL GEARBOX

ITEM FIGURE 27	DESCRIPTION	PART NO.
1	Main Housing Mounting Plate	UX 1202
2	Differential Pivot Washer	UX 1204
3	Differential Pivot Pin	UX 1203
4	Differential Trapping Box	UX 1208
5	Main Shaft Rack	UX 1220
6	Outer Drive Support Casting	UX 1225
7	Top Gear and Sprocket Wheel	UX 1227
8	Outdrive Sprocket	UX 1228
9	Lower Outer Spindle	UX 1229
10	Motor Tension Screw	UX 1237
11	Support Block for R&F Pinion	UX 1239
12	Centre Shaft R&F Pinion	UX 1240
13	R & F Postional Collar	UX 1241
14	R & F Shaft Collar	UX 1242
15	R & F Sprocket	UX 1243
16	R & F Handwheel Bracket	UX 1244
17	R & F Handwheel Shaft	UX 1245
18	Drive Spindle Bearing Spacer	UX 1247
19	Roller Cylinder Pivot	UX 1270
20	Roller Cylinder Strip	UX 1272
21	Support Plate Guard	UX 1273
22	Spring for Motor Pivot	UX 1274
23	Motor Mounting Plate	UX 1275
24	Motor Support Bracket	UX 1276
25	Swivel Anchor Plate	UX 1280
26	Motor Tension Collar	UX 1284
27	Top Dustcap for Gear Box	UX 1289
28	Air Cylinder	M/549/75
29	Thrust Race-Nadella	AX 20 35 CP 20 35
30	Flanged Oilite Bush	FMB 18x30
31	Oilite Bush	CM 27x25
32	Locknut	SKF KM4
33	Tab Washer	MB 4
34	Bearing	SKF 6025 2RS
35	Bearings	SKF 6004 2RS
36	Internal Circlip	∅ 42
37	External Circlip	∅ 25
38	Rotating Adaptor	M 36 0110 00
39	Simplex Chain	3/8" pitch x 29 links
40	Taper Lock Bush	1610 x 22mm
41	Taper Lock Pulley	125 x 1 SPZ
42	Kipp Handle	I.D. 16
43	* Drive Belt	SPZ 900
44	* Oil Seal for UX 1239	G x 50 x 65 R4

NOTE: ITEMS MARKET THUS \* NOT SHOWN ON FIG. 27

## 9.0 RECOMMENDED SPARES

The following lists of spares are recommended to be carried in stock for the respective machine model in case of emergency breakdown for 2 years operation.

### 9.1 MACHINE MODELS UX/F/1, 2 and 3

<u>PART REF.</u>	<u>DESCRIPTION</u>	<u>QTY. PER MACHINE</u>
RHP 1/P 6206	Cutter Spindle Bearing	1
RHP 6205 TB EP7	Cutter Spindle Bearing	1
VLR 1 BURGESS	Limit Switch	1
QM/13063/00	'O' Rings for Head R & F Cylinder	1 set

#### PARTS REQUIRED FOR UX/F/1A & UX/F/4 (in addition to above)

UX 1698 & 1700	Outer Drive Spindle Assembly Complete	1 each
UX 1263, 1264 1699, 1700	Inner Drive Spindle Assembly Complete	1 each
UX 1310 (Red)	Feed Roller Outer (Soft RED)	1
UX 1310 (Black)	Feed Roller Inner (Hard BLACK)	1
$\frac{3}{8}$ " PITCH - 29 LINKS	Drive Chain	1
$\frac{3}{8}$ " PITCH - 56 LINKS	Drive Chain	1
SPZ 900 (ALPHA 355)	Drive Belt	1

#### WHEN VACUUM PUMP IS FITTED

SERVICE KIT K222	Pump Ref. 1022	1 set
SERVICE KIT K297	Pump Ref. 1065	1 set
SERVICE KIT K 296	Pump Ref. 2565	1 set

#### WHEN FLOATING HEAD IS FITTED

HLP 68	Hydraulic Oil	20 litres
AA CONTROLS BJOOS C 1081	Coil for Check Valve	1
MF/AP308A/2	Filter Element for Pump	1
	Seals and Rings for Valve and Cylinder	1 set
UCFE/1319	Suction Strainer	1



9.2 MACHINE MODELS UX/B/1, 2 and 3

<u>PART REF.</u>	<u>DESCRIPTION</u>	<u>QTY. PER MACHINE</u>
RHP 1/p 6202	Cutter Spindle Bearings	2
RHP 6203-2RS	Intermediate Spindle Bearings	2
180 J 10	Poly Vee Drive Belts (for Cutter Spindle)	1
190 J 16	Poly Vee Drive Belts (for Motor Spindle)	1
180 J 16	Poly Vee Drive Belts (60 Hz)	1
QM 13063/00	'O' Rings for Head R & F Cylinder	1
C 17 A444E	Two Speed Switch	1
K 16	Contacto	1
<u>PARTS REQUIRED FOR UX/B/1A and UX/B/4 (In addition to above)</u>		
UX 1698 & 1700	Outer Drive Spindle Assembly Complete	1 Each
UX 1263, 1264 1699, 1700	Inner Drive Spindle Assembly Complete	1 Each
UX 1310 (RED)	Feed Roller Outer (Soft RED)	1
UX 1310 (BLACK)	Feed Roller Inner (Hard BLACK)	1
$\frac{1}{2}$ " Pitch - 29 LINKS	Drive Chain	1
$\frac{3}{8}$ " Pitch - 56 LINKS	Drive Chain	1
SPZ 900 (ALPHA 355)	Drive Belt	1
<u>WHEN VACUUM PUMP IS FITTED</u>		
SERVICE KIT - K222	Pump Ref. 1022	1 Set
SERVICE KIT - K297	Pump Ref. 1065	1 Set
SERVICE KIT - K296	Pump Ref. 2565	1 Set
<u>WHEN FLOATING HEAD IS FITTED (HEPWORTH)</u>		
HLP 68	Hydraulic Oil	20 Litres
AA CONTROLS BJ00S C 10B1	Coil for Check Valve	1
MF/AP308A/2	Filter Element for Pump	1
	Seals and Rings for Valve and Cylinder	1 Set
UCFE/1319	Suction Strainer	1