

BOOK NO.

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IMPORTANT

It is our policy and that of our suppliers to review constantly the design and capacity of our products. With this in mind we would remind our customers that whilst the dimensions and performance data contained herein are current at the time of going to press, it is possible that, due to the incorporation of latest developments to enhance performance, dimensions and supplies may vary from those illustrated.

PLEASE INSERT SERIAL NUMBER OF MACHINE

Instruction Manual For

BEX 5 Speed Medium Duty Spindle Moulder

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HEALTH & SAFETY

SAFETY OF WOODWORKING MACHINES

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

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

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

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

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

SAFETY

CAREFULLY READ INSTRUCTION MANUAL WITH PARTICULAR REFERENCE TO THE FOLLOWING INSTRUCTIONS:-

- 1 SLINGING, ie SAFE LIFTING LIMITS FOR SLINGS ETC.
- 2 INSTALLATION AND FOUNDATION, ie SAFE WORKING AREA OF MACHINE AND BOLT POSITIONS, ETC.
- 3 WIRING DETAILS, ie WIRING DIAGRAM AND INSTRUCTIONS FOR SAFE WIRING OF MACHINE.
- 4 MACHINE CONTROLS AND OPERATING INSTRUCTIONS.
- 5 SELECT CORRECT SPEED FOR CUTTER EQUIPMENT AND ENSURE CUTTERS ARE SECURELY LOCKED IN POSITION.
- 6 SET GUARDS CORRECTLY TO COVER CUTTER EQUIPMENT AS MUCH AS POSSIBLE.
- 7 NOTE: START/STOP CONTROL POSITION AND ISOLATOR SWITCH POSITION (IF FITTED) BEFORE OPERATING MACHINE.
- 8 USE FEEDING DEVICES WHERE POSSIBLE.

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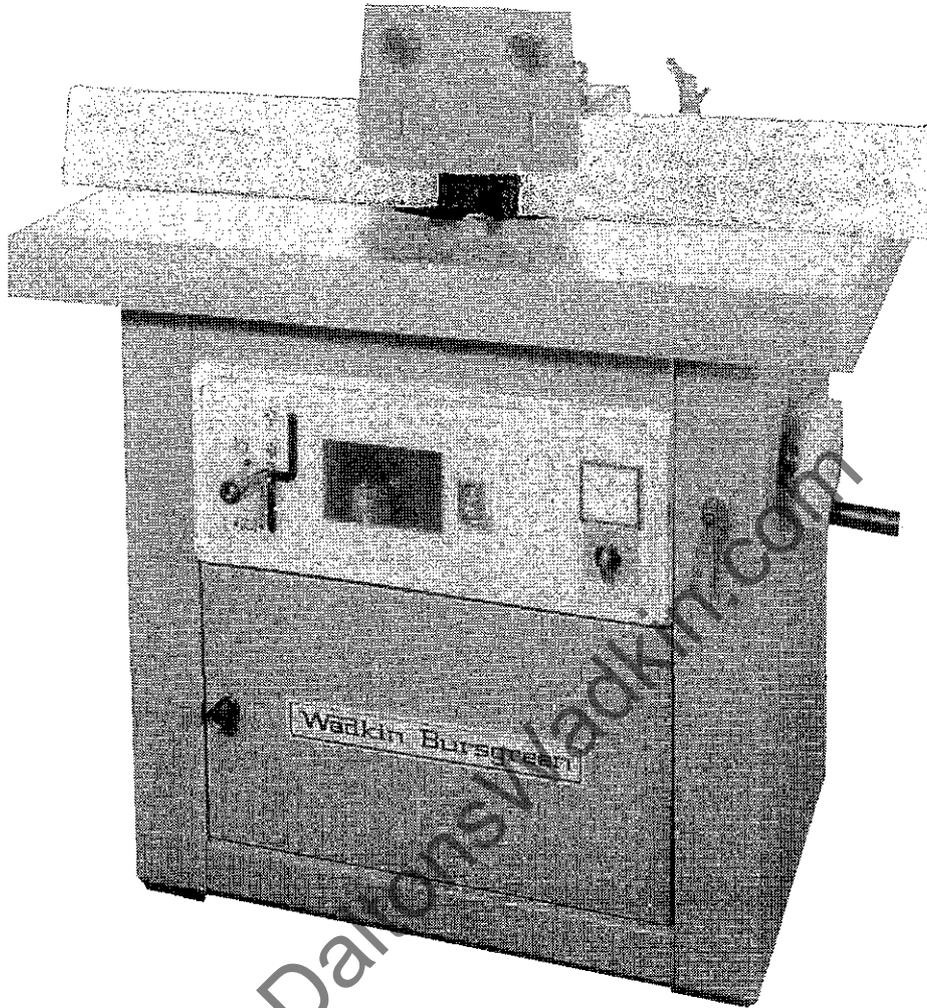
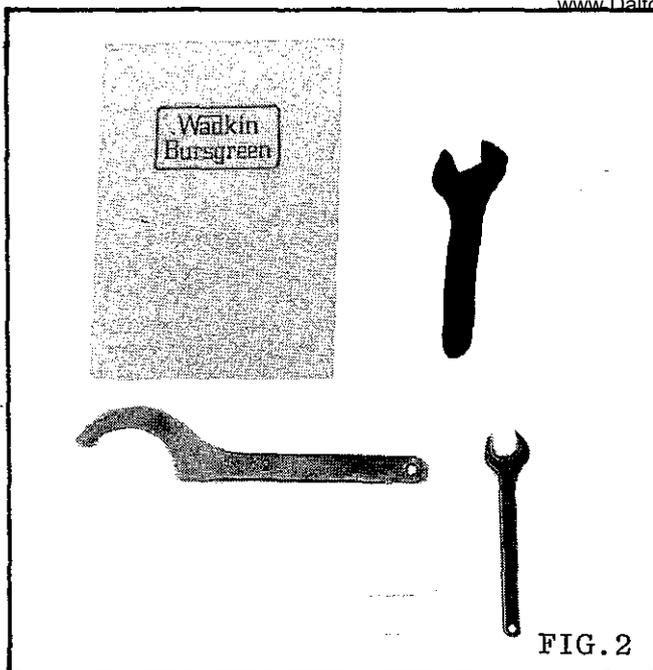


FIG.1

SPECIFICATIONBEL

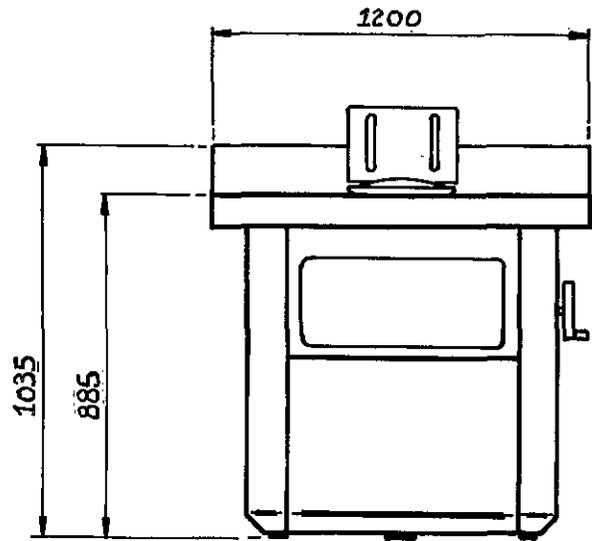
Diameter of loose top piece (Std)	30mm
Diameter of loose top piece (Opt)	35mm 1" or 1 1/4"
Table size	1200mm x 750mm
Table height	885mm
Spindle rise and fall	127mm
Power of motor	5.5 Kw
Spindle Speed	3000, 4500, 6000, 8000 & 10000 rpm
Approximate floor space	1200mm x 750mm
Approximate net weight	365 Kgs
Approximate gross weight	425 Kgs
Shipping dimensions	1.35 x 0.86 x 1.14



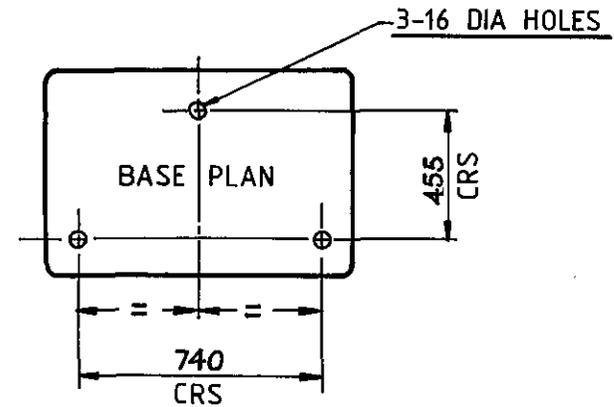
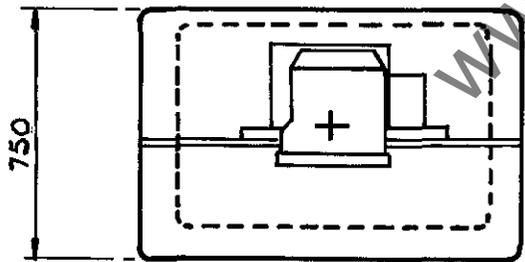
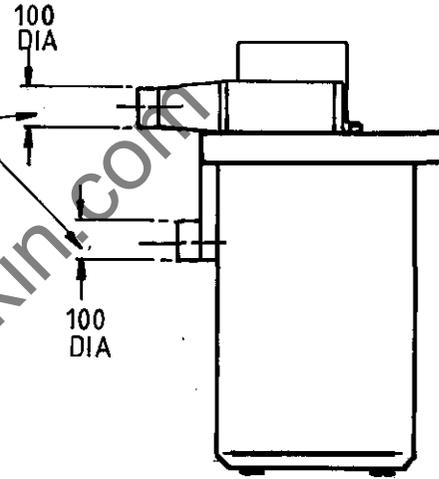
STANDARD ITEMS DESPATCHED
WITH MACHINE

- 1 - Instruction Manual
- 1 - HN12 'C' Spanner
- 1 - 19mm A/F S.E. Spanner
- 1 - Spanners

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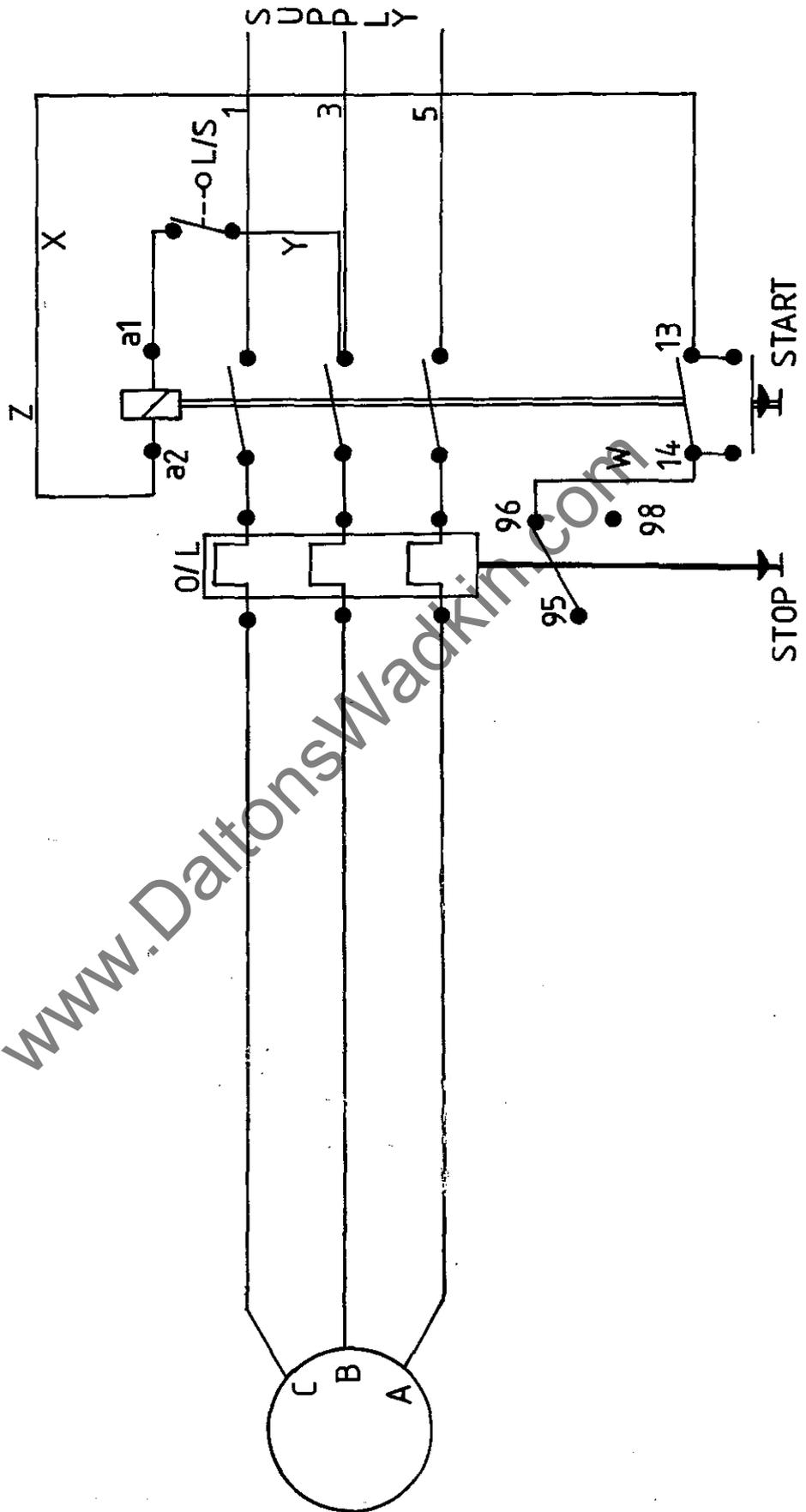
DUST OUTLETS (EXTRA)
VOLUME OF AIR TO BE
EXTRACTED = 375 CFM.



FOUNDATION PLAN FOR BEX

FIG.3

FIG. 4



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SLINGING

Always use a sling with in safe working load of machine weight.

BEX - Approximate net weight of machine 365 kgs, 803 lbs.

BEX - Approximate gross weight of machine 425 kgs, 935 lbs.

To sling machine, position sling under table overhang at left and right hand of machine. Slowly lift machine, ensuring machine is not tilting at an angle and that sling is not slipping.

IMPORTANT: DO NOT WALK OR STAND UNDER MACHINE DURING SLINGING OPERATION.

INSTALLATION

Remove protective coating from bright parts by applying a cloth soaked in paraffin, turpentine or other solvent. Machine should be so placed that the traffic of men and materials to and from it fits smoothly into the general scheme of traffic. Machine should be so placed that it will not be necessary for the operator to stand in or near an aisle as to cause a hazard. The minimum clearance on each working side of machine should be at least 750mm greater than the length of the largest material worked on the machine.

FOUNDATION

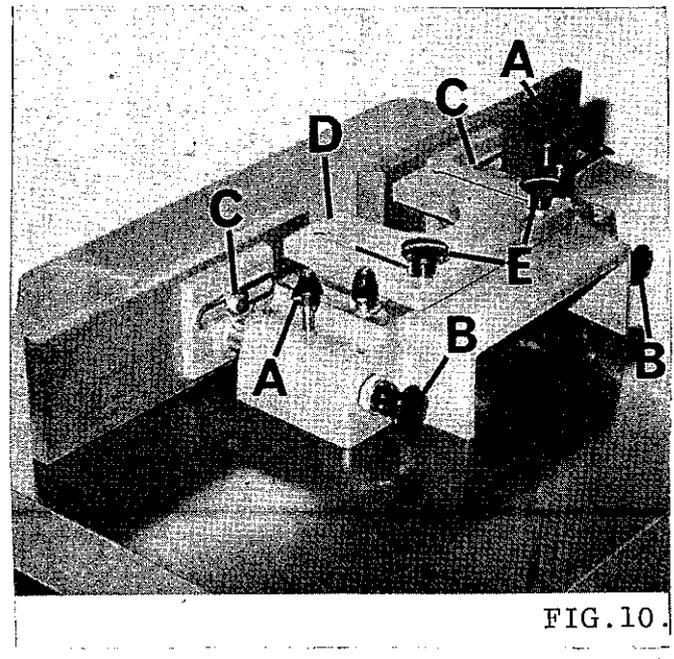
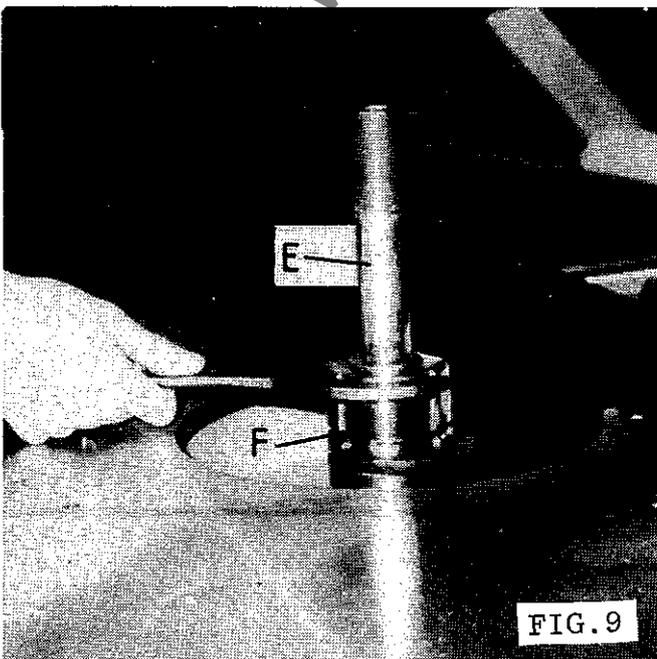
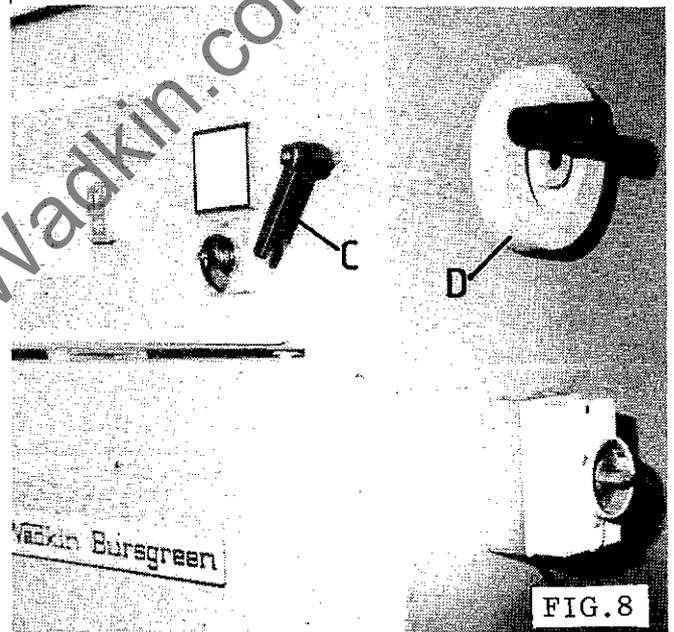
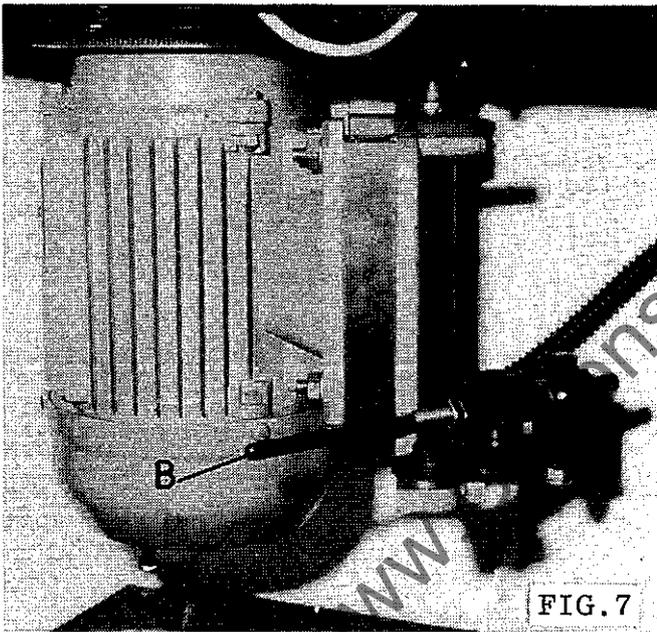
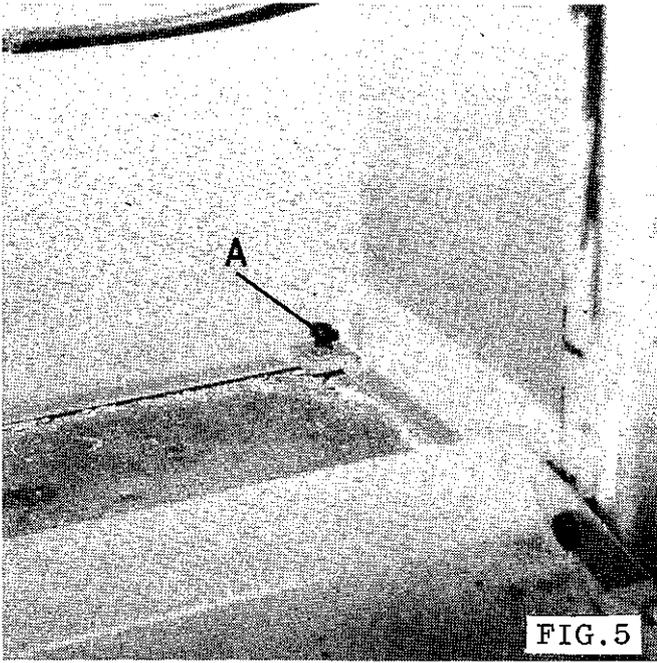
Ensure floor is level, then mark to suit 3 - M12 rawbolts, refer to foundation plan FIG.3. Drill floor to suit rawbolts. These bolts are not supplied with the machine, but can be supplied at an additional charge. To obtain access to foundation bolts and stabilizing bolts, open front access door. Release 2 stabilizing bolts "A" FIG.5 bolt to floor, jack bolts "A" until they touch the floor, lock in position with locknuts. Close front access door.

WIRING DETAILS

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

Points to note when connecting to power supply:-

- 1) Check that the voltage, phase and frequency correspond to those on the motor plate, also that the correct coils and heaters are fitted to the starter.
- 2) It is important that the correct cable is used to give the correct voltage to the starter as running on a low voltage will damage the motor.
- 3) Check main line fuses are correct capacity. See fuse list inside starter cover or isolator if fitted.
- 4) Connect the line leads to the appropriate terminals. See wiring diagrams FIG.4.
- 5) Check all connections are sound.
- 6) Check the rotation of the motor for the correct direction. If this is incorrect, reverse any two of the line lead connections for 3 phase supply



LUBRICATION

It is advisable to keep all bright parts covered with a thin film of oil to prevent rusting. All bearings are sealed for life and require no lubrication.

CONTROL POSITIONS - REFER TO FIG.6

Position 1

This is symbolized 'run' and is the only control lever position where the machine can be started.

Position 2

This position is symbolized 'free' when the control lever is in this position. The motor is isolated and the work spindle can be rotated by hand. The control lever should be in this position at all times when the machine is not required for operation to ensure the machine cannot be started up accidentally. This position should also be used when setting cutter equipment.

Position 3

This position is symbolized 'brake'. Movement of the control lever from the 'run' to this brake position automatically switches off the motor and light pressure on the lever operates a very efficient brake to the spindle.

Position 4

This position is symbolized 'lock'. When the control lever is in this position the motor is isolated and the main spindle is locked to facilitate the removal of the work spindle or cutter equipment as required. The spindle may require rotating by hand to ensure the lock is fully engaged. Before attempting to change cutter equipment or the work spindle, always ensure spindle has stopped rotating before engaging lock position.

SPINDLE SPEED CHANGE AND BELT TENSION

The spindle is fitted with a 5 speed drive facility. To change spindle speed, proceed as follows:-

- 1) Isolate machine electrically.
- 2) Position control lever to spindle 'free' position.
- 3) Open door in base for access to drive arrangement.
- 4) Release belt tension by pulling lever "B" FIG.7.
- 5) Position drive belt on pulley for required spindle speed. See FIG.12, for pulley layout and speeds.
- 6) Re-tension belt by pushing lever "B" FIG.7, forward.
- 7) Close access door.

SAFETY WARNING: SELECT CORRECT SPEED FOR CUTTER EQUIPMENT (MAXIMUM RECOMMENDED SPEED IS STAMPED ON CUTTERBLOCK)

RAISE AND LOWER OF SPINDLE

Maximum spindle travel is 127mm. To rise and fall spindle loosen locking handle "C" FIG.8 and turn handwheel "D" to required height. Whilst rise and fall movement of the spindle provides an immediate adjustment of cutter height, further adjustment outside range can be affected by re-positioning collars on work spindle.

NOTE: 1 Full turn of handwheel = 2mm vertical adjustment

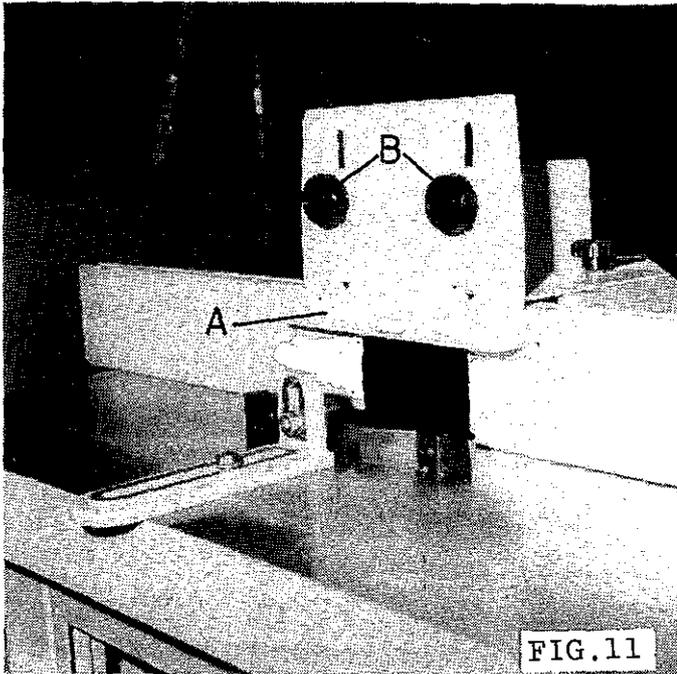


FIG.11

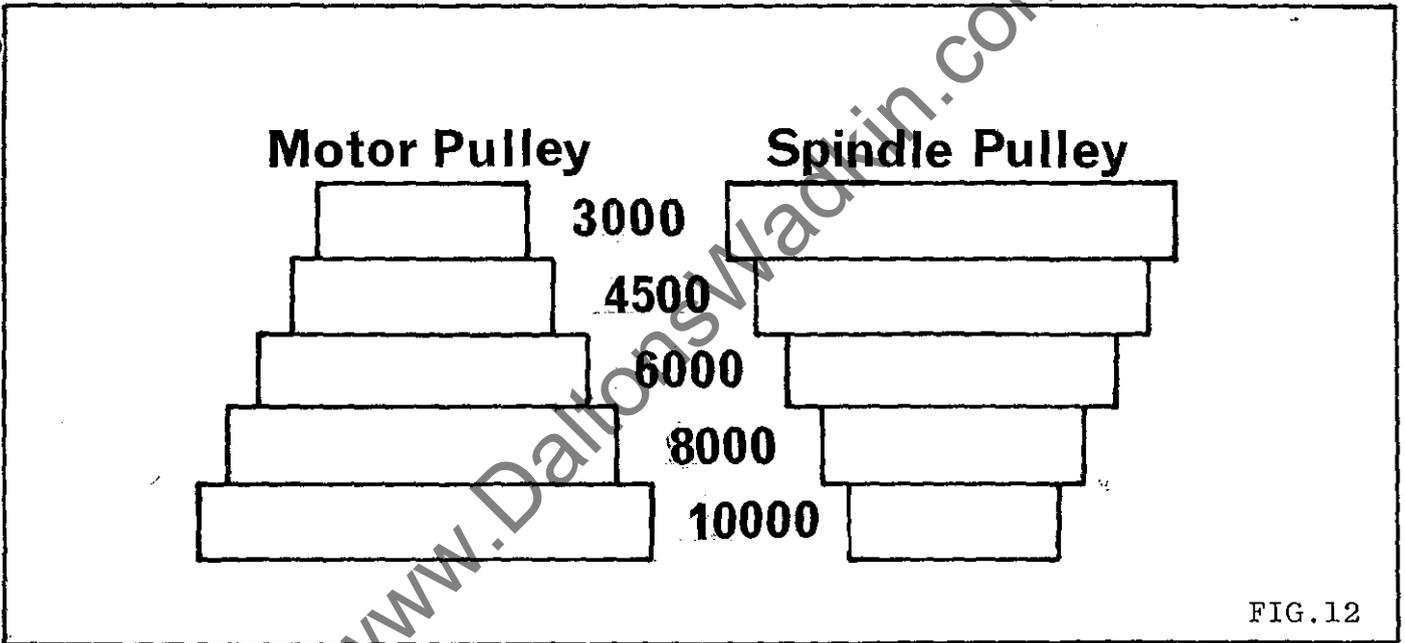


FIG.12

WORK SPINDLE INSTALLATIONS

The 4 removable table rings give 5 table openings, 340, 260, 190, 150, and 80mm dia. Insert work spindle following undermentioned procedure and then select required table opening.

Locate work spindle "E" FIG.9, into main spindle through table opening taking care to ensure that work and main spindle seatings are completely free from all burrs, dirt and rust. Smear a thin film of oil on work spindle seating before inserting, then align peg in work spindle with slot in main spindle and press onto seating. Replace spindle locknut "F" FIG.9 on main spindle, firmly locking the work spindle in position.

WARNING: ALWAYS ENSURE AT ALL TIMES THAT THE WORK SPINDLE IS SECURELY HELD BY THE SPINDLE LOCKNUT BEFORE STARTING MACHINE.

FENCE ADJUSTMENT.

Each fence plate can be independently adjusted by loosening the required locking handle "A", FIG.10, and turning the appropriate handwheel "B". When set re-lock handle "A".

For lengthwise movement of fence plates, loosen locknut "C", position fence plate as required then tighten locknut "C".

NOTE: The fence plates must be locked in all positions when machine is in use.

A safety guard "D" is fitted to fence and is adjustable to protect the operator from the rotating cutters. To adjust guard loosen the 2 handwheels "E", position guard to cover cutters as much as possible then re-lock handwheels "E".

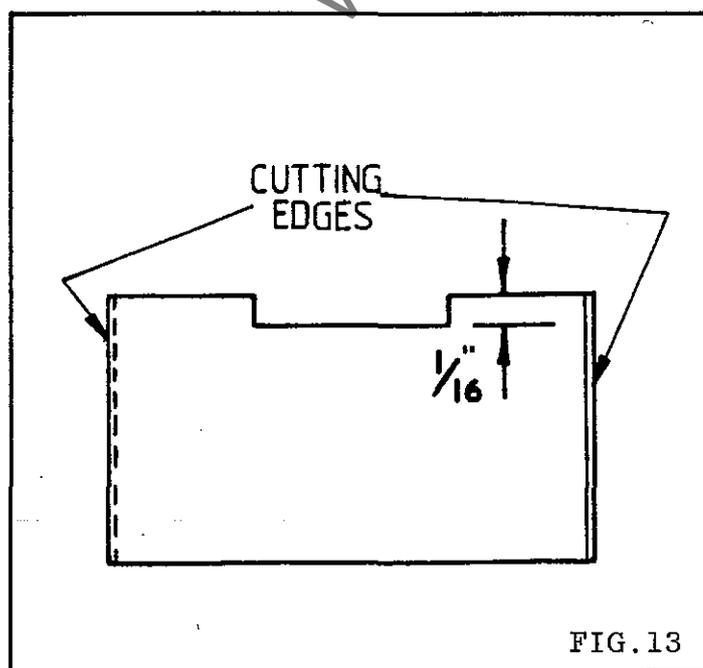
To adjust front guard "A" FIG.11 loosen handwheels "B".

ISOLATOR SWITCH (EXTRA)

An electrical isolator switch, FIG.8 can be supplied with machine as an optional extra.

GENERAL HINTS

- 1) Always select the correct speed for the cutter equipment being used. WADKIN BURSGREEN cutterblocks are normally stamped with the maximum permissible speed, but this may need to be reduced dependent on shape and general condition of cutters being used.
- 2) Use sharp cutters which should be reasonably well balanced.
- 3) Ensure the cutters are tight on the blocks before starting machine. Use spanners provided and never a piece of piping to obtain greater leverage. This will strain the nuts and bolts and ultimately make them unsafe.
- 4) Never pack the cutters with sandpaper. This is most dangerous as the grit collapses when the cutter is working and the cutter works loose. For packing use one thickness only of brown paper.
- 5) Keep nuts and bolts clean and keep oil on the threads.
- 6) Never run the cutter equipment at higher than the recommended speed.
- 7) Always use the guards available to ensure maximum protection.
- 8) Make good robust jigs and ensure that the parts are located securely on the jig.
- 9) Always isolate the machine electrically when changing cutter equipment or performing maintenance, etc.
- 10) Always notch cutters for french spindles as shown in FIG.13 for the Spindle locking bolts to locate the cutter.



Application	APPROVED LUBRICANTS					
	Castrol	B.P.	Shell	Esso	Texaco/Caltex	Wadkin
Worm Boxes	ZN220	Energol CS320	Vitrea 320	Spartan EP220	Regal Oil 320	L2
General Lubrication	Magna 68	Energol HP68	Vitrea 68	Nuray	Ursa Oil P68	L4
Pneumatic Lubricators	Hyspin AWS32	Energol HL32	Tellus 37	Nuto H32	Rando Oil HD32	
Grease	Spheerol AP3	Energrease L53	Alvania R3	Beacon 3	Regal Starfak Premium 3	L6
Brake Cables	Brake Cable Grease	Energrease L21M	Alvania R3	Esso Multi-purpose grease		

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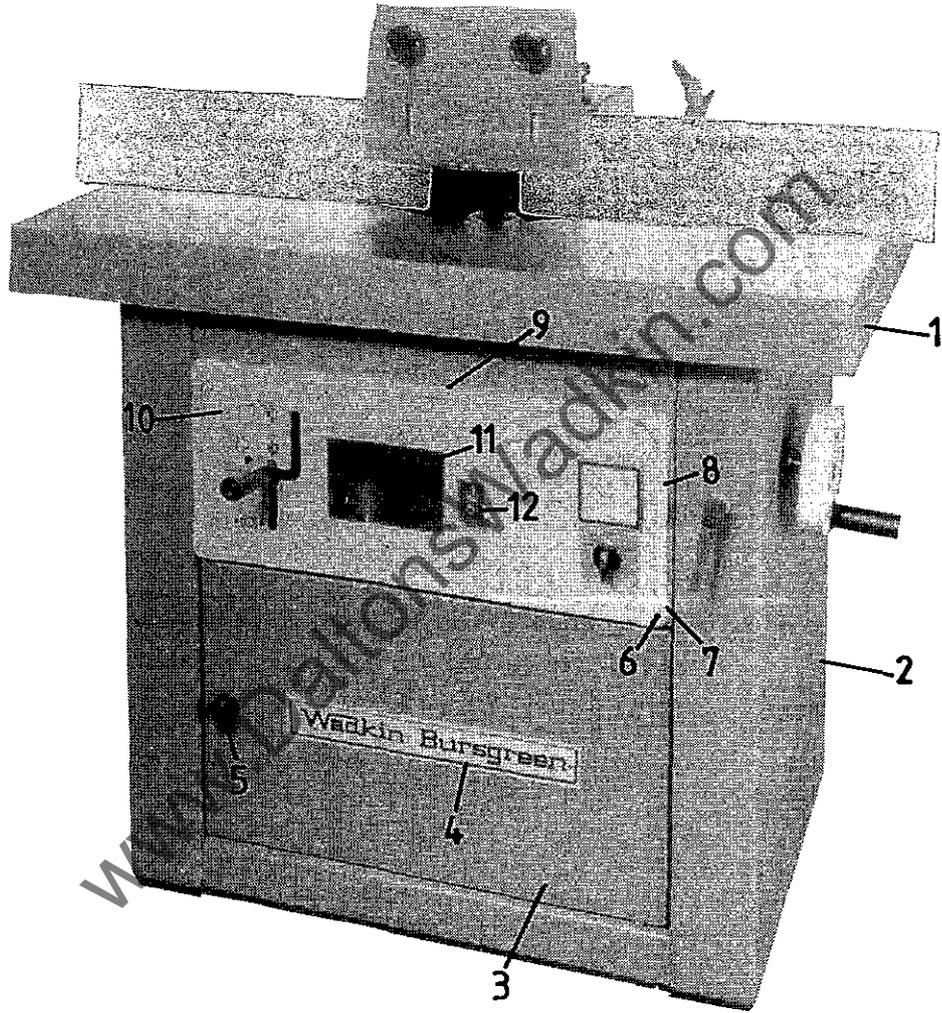
ILLUSTRATED PARTS LIST

ASSEMBLY:- BASE			
FIG ITEM	PART NO. *	UNITS PER ASSEMBLY	DESCRIPTION
1	BEX /1	1	Main Table
2	BEX /2	1	Base
3	BEL/158	1	Belt Change Door
4	C-S-348	1	Nameplate
5	EM/560	1	Door Handle
	BEL/160	1	Door Pivot Bar
	BEL/212	1	Washer
	EM/108	1	Door Cam
6	BEL/52	4	Cap for Corner Moulding
7	BEL/51	4	Corner Moulding
8	BEL/107	2	Extrusion for Control Plate
9	BEL/108	2	Extrusion for Control Plate
10	BEX /4	1	Control Plate
11	BEX /5	1	Window for Control Plate
12	MEM 847	1	Starter

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ILLUSTRATED PARTS LIST

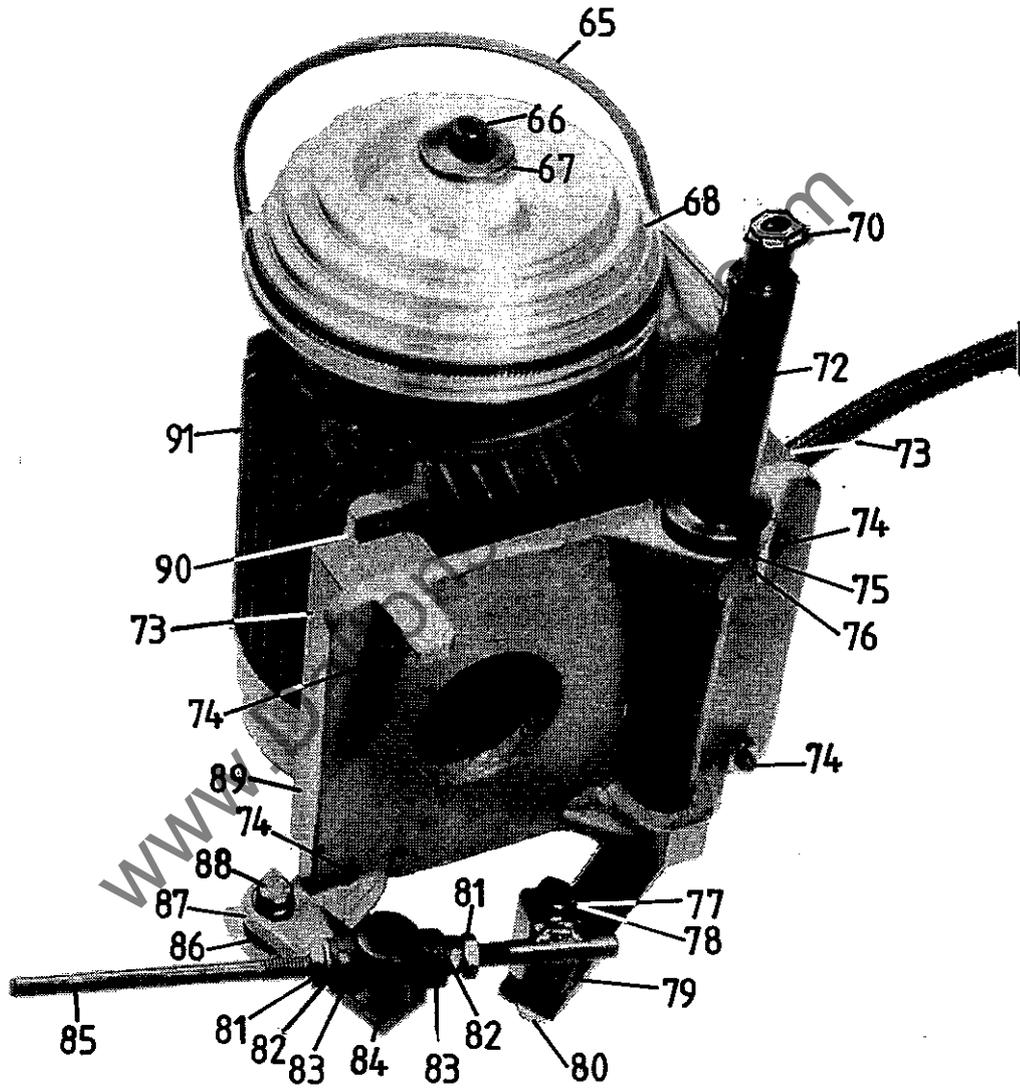
ASSEMBLY:- MAIN SPINDLE AND RISE AND FALL			
FIG ITEM	PART NO. *	UNITS PER ASSEMBLY	DESCRIPTION
17	BEL/15	1	Main Spindle Nut
18	BEL/14	1	Spindle Adaptor Nut
19	K05-26-572	2	M8 x 20 Long Nylok Socket Set Screws
20	K51-10-210	1	7000 068 Internal Circlip
21	K51-88-809	3	EPL50 Pre-Load Washers
22	BEL/16	1	Top Bearing Spacer
23	K06-20-532	2	6008 2Z C3 Bearings. NOTE: These bearings are specially filled with Kluber Grease.
24	BEL/192	1	Main Spindle
25	K06-01-951	1	6305-2Z Bearing
26	BEL/17	1	Bottom Bearing Spacer
27	K51-10-207	1	7000-062 Internal Circlip
28	BEL/191	1	Spindle Pulley
29	K51-20-113	1	8 x 7 x 40 Long Feather Key
30		1	M24 Washer
31		2	M24 Locknuts
32	BEL/20	1	Rise and Fall Screw
33		2	M8 x 20 Long Nylok Socket Capscrews
34	BEL/154	1	Quill Base Plate
35	K05-25-210	2	M10 x 30 Long Socket Capscrews
36		4	M8 x 16 Long Socket Capscrews
37	BEL/180	1	Thrust Plate
38	K06-04-134	1	51105 Thrust Race
39	BEL/36	1	Rise and Fall Gear
40	BEL/3	1	Rise and Fall Housing
41	K05-28-155	4	10mm Spring Washers
42		4	M10 x 30 Long Nylok Socket Capscrews
43	K51-10-204	1	7000-042 Internal Circlip
44	K06-01- 952	1	6302-E Ball Bearing
45		1	M10 x 16 Long Socket Button Head Screw
46	P32-289	1	Washer
47	K05-27-111	2	M12 Locknuts
48	BEL/194	1	Rise and Fall Stop Rod
49	BEL/6	1	Rise and Fall Quill
50	BEX/3	1	Rise and Fall Shaft
53	K51-27-208	1	HANDWHEEL
54	BEL/73	1	Collar
55	BEX/7	1	Stud
56	K51-66-153	1	18 Dia Rubber Grommet
57	K51-27-191	1	M10 Locking Handle
58	K05-28-101	2	M6 Nuts
59	K05-28-102	2	6mm Washers
60	K05-25-502	2	M6 x 16 Long Hexagon Set Screws
61	K06-30-405	1	SLFL 16 "SELF-LUBE" Pressed Flange Bearing Unit
62	BEL/24	1	Tapered Bush for Handwheel
63	K05-25-340	1	M10 x 20 Long Countersunk Socket Screw



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ILLUSTRATED PARTS LIST

ASSEMBLY:- SPEED CHANGE AND DRIVE			
FIG ITEM	PART NO. *	UNITS PER ASSEMBLY	DESCRIPTION
65		1	Gates Polyflex 'V' Belt 7M800
66		1	M8 x 25 Long Nylok Socket Capscrew
67	BEL/189	1	Motor Spindle Washer
68	BEL/113	1	Motor Pulley
69	K05-25-210	1	M10 x 30 Long Socket Capscrew
70	EM-171	1	Washer
71		1	6 Dia x 20 Long Groverlok Dowel
72	BEL/145	1	Motor Pivot Bar Assembly
73	EM-134	1	Packing Piece - Right Hand - 6.6hp
	EM-135	1	Packing Piece - Left Hand - 6.6hp
	EM-173	1	Packing Piece - Right Hand - 9hp
	EM-174	1	Packing Piece - Left Hand - 9hp
74	K05-25-210	4	M10 x 30 Long Socket Capscrews
75	K05-26-115	2	M6 x 12 Long Socket Set Screws
76	K05-28-299	1	Locking Collar
77		1	M10 x 80 Long Hexagon Screw
78	K05-28-104	2	10mm Washers
79	BEL/153	1	Belt Tension Bush (Fitted inside Belt Tension Pivot)
80	K05-27-152	1	M10 Aerotight Nut
81		4	M12 Locknuts
82	K05-28-105	2	12mm Washers
83	1085-61	2	Belt Tension Buffer
84	BEL/148	1	Belt Tension Pivot Boss
85	BEL/152	1	Belt Tension Pivot and Stop Assembly
86	1079-711	1	Washer
87	EM-168	1	Belt Tension Link
88	K05-25-531	1	M10 x 30 Long Hexagon Set Screw
89	EM-72	1	Motor Pivot Plate
90		4	M10 x 35 Long Studs complete with M10 Nuts and Washers
91		1	Brook TEFC Motor 100L Frame 6.6hp, 220/440v 3ph, 60 cycle, 3600rpm, Terminal Box at 9 'o'clock
		1	Brook TEFC Motor 112L Frame 9hp, 220/440v, 3ph, 60 cycle, 3600rpm, Terminal Box at 9 'o'clock
—			8 x 7 x 40-Long Feather Key (Fitted to Spindle end of Motor Shaft)
—	EM163	1	Spacer (Used in conjunction with items 87 and 88).



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ILLUSTRATED PARTS LIST

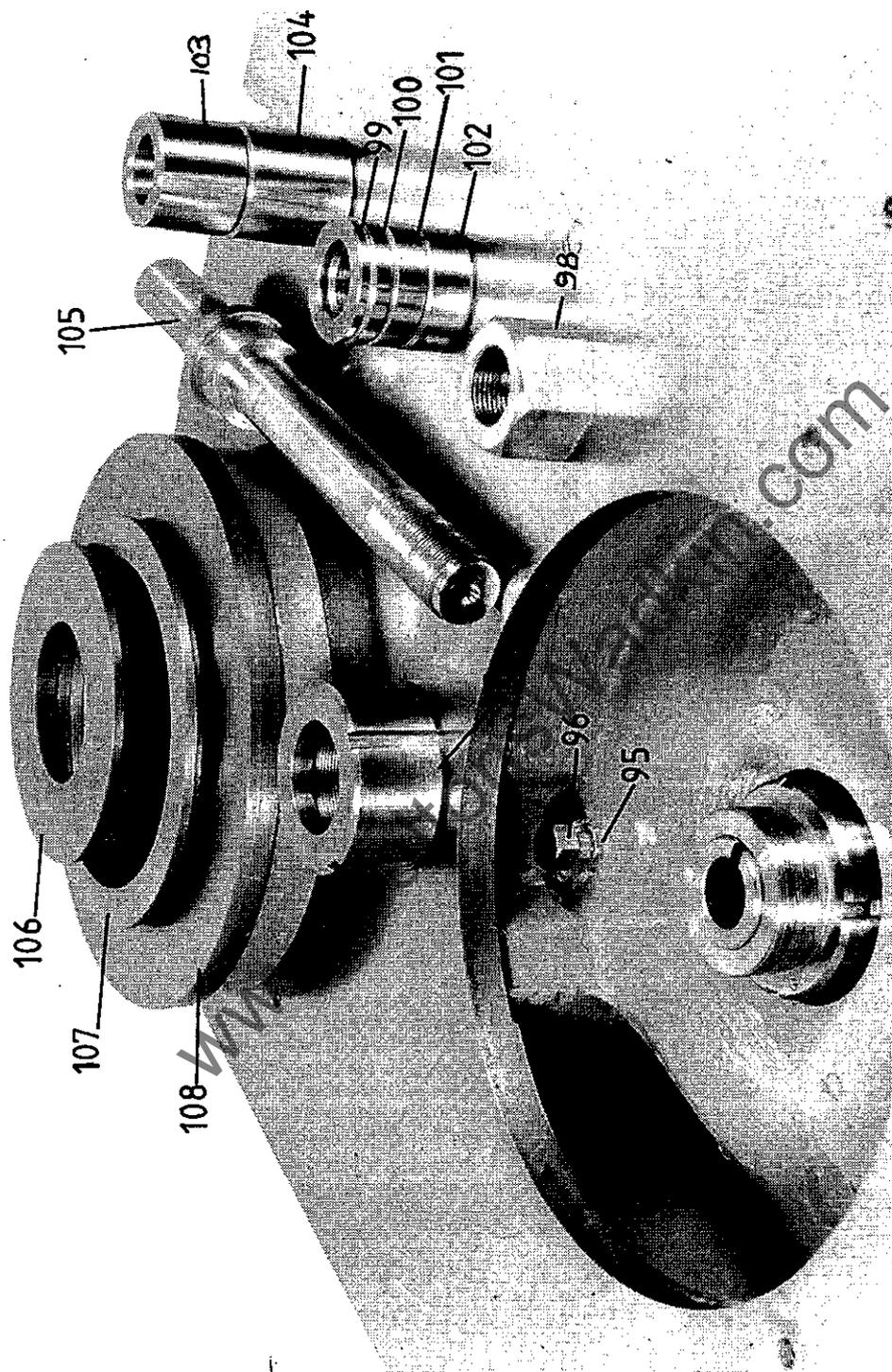
ASSEMBLY:- TABLE RINGS AND WORK SPINDLE

FIG ITEM	PART NO. *	UNITS PER ASSEMBLY	DESCRIPTION
95	K05-27-103	3	M10 Nuts
96	BEL/34	3	Jacking Bolts for Table Ring
97	BEL/15	1	Main Spindle Nut
98	BEL/133	1	30mmDia Work Spindle Nut
99	1057/139	1	30mmDia Spacing Collar - 5mm Long
100	1057/515	1	30mmDia Spacing Collar - 10mm Long
101	1057/516	1	30mm Dia Spacing Collar - 15mm Long
102	1057/517	1	30mm Dia Spacing Collar - 20mm Long
103	1057/518	1	30mm Dia Spacing Collar - 40mm Long
104	1057/519	1	30mm Dia Spacing Collar - 50mm Long
105	BEX/11	1	30mmDia Work Spindle
106	EM-453	1	Small Table Ring
107	EM-454	1	Medium Table Ring
108	EM-455	1	Large Table Ring
-	EM-126	1	OUTER TABLE RING.

- ITEM NOT ILLUSTRATED

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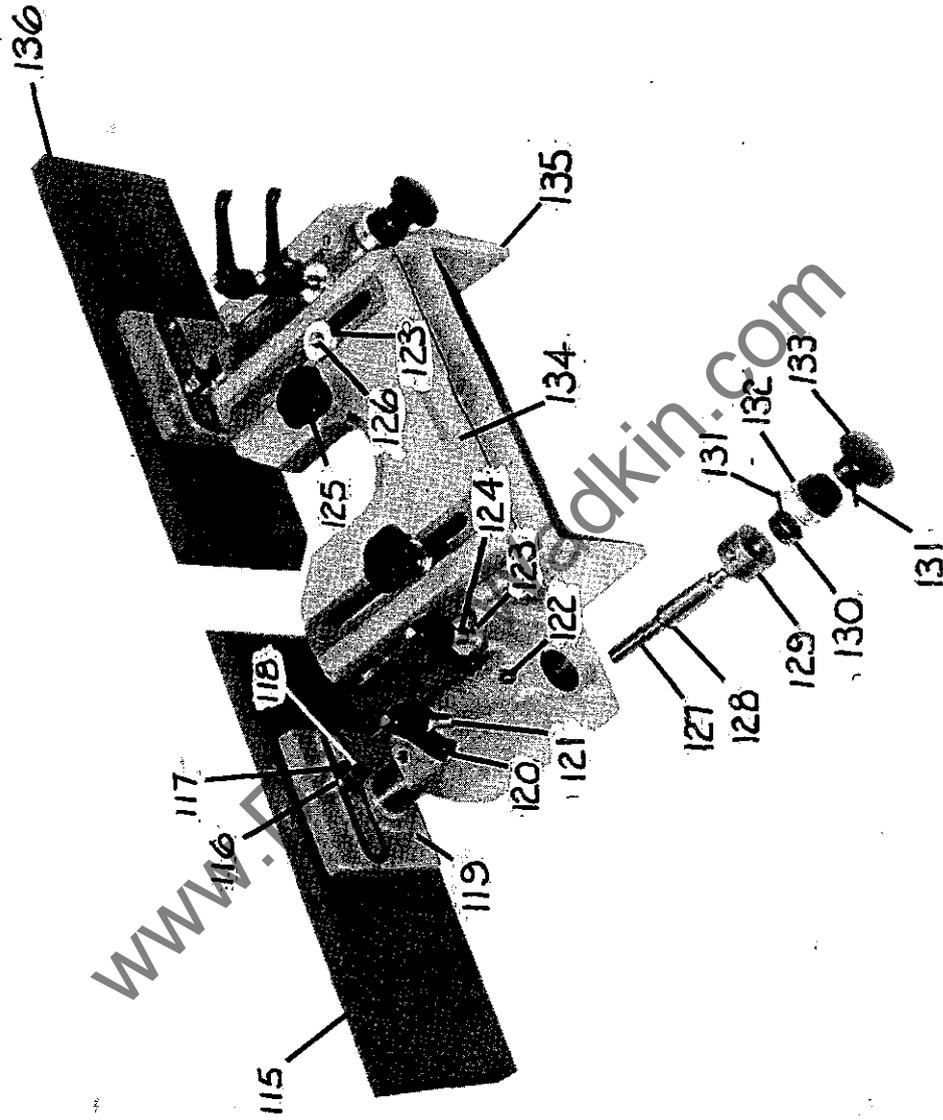
* PLEASE QUOTE PART & MACHINE
NUMBER WHEN ORDERING SPARES



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ILLUSTRATED PARTS LIST

ASSEMBLY:- FENCE			
FIG ITEM	PART NO. *	UNITS PER ASSEMBLY	DESCRIPTION
115	EM/87	1	Right hand fence plate.
116	1026-396	2	Washer.
117		2	M12 nut.
118		2	M12 x 40 long hexagon head bolt.
119	EM/66	2	Fence plate bracket.
120		4	Adjustable handle, M12 tap.
121		2	M12 x 50 long stud.
122		2	M12 x 12 long socket head grubscrew.
123	1026/22	4	Washer.
124		2	M12 x 170 long stud.
125		2	Plastic handwheel M12 tap.
126		2	M12 x 45 long stud.
127	EM/62	2	Fence adjusting screw.
128	7100-020	2	External circlip.
129	EM/64	2	Bush for adjusting screw.
130	EM/63	2	Collar for fence adjusting screw.
131		4	3 dia x 30 long groverlok spring dowel.
132	1079/949	2	Graduated collar.
133		2	Plastic handwheel, 12mm plain bore.
134	EM/93	1	Top cover.
135	EM/65	1	Fence.
136	EM/86	1	Left hand fence plate.



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ILLUSTRATED PARTS LIST

ASSEMBLY:- BRAKE			
FIG ITEM	PART NO. *	UNITS PER ASSEMBLY	DESCRIPTION
155		5	M6 x 16 Long Socket Button Head Screws
156		1	6mm Washer
157	BEL/37	1	Handle
158	BEL/179	1	Brake Bar
159		1	CYWR Burgess Micro Switch
160	BEL/182	1	Cover for Control Box
161	1046/75	1	Cable Assembly
162	K05-27-1A7	1	M12 Aerotight Nut
163		1	12mm Washer
164	BEL/163	1	Brake Swivel Pin
165	BEL/166	1	Brake Pivot Pin
166		1	M5 x 20 Long Socket Set Screw
167	BEL/169	1	Yoke for Brake
168		2	M6 x 10 Long Socket Set Screw
169	BEL/168	1	Brake Top Anchor Plate
170		1	M12 x 40 Long Hexagon Set Screw
171	BEL/170	1	Control Box
172		1	M6 x 20 Long Socket Set Screw
173	K51-73-143	1	ETS115 Compression Spring
174		1	M6 x 25 Long Hexagon Set Screw
175	BEL/165	1	Link for Spindle Lock
176	BEL/150	1	Brake Housing for Quill
177	1046/21	1	Band Brake
178		2	M8 x 12 Long Hexagon Set Screws
179	BEL/164	1	Pin for Spindle Lock
180	K51-05-107	2	12 Bore x 16 OD x 25 Long Oilite Bush
181		3	M6 x 16 Long Countersunk Socket Screw
182		2	1/4" B.S.F. Nut
183	BEL/167	1	Nipple for Brake

