DRAPER TOOLS LTD.
Hursley Road, Chandler's Ford,
Eastleigh, Hants. SO53 1YF. England.
Tel: (01703) 494344
Fax: (01703) 260784.

YOUR DRAPER STOCKIST

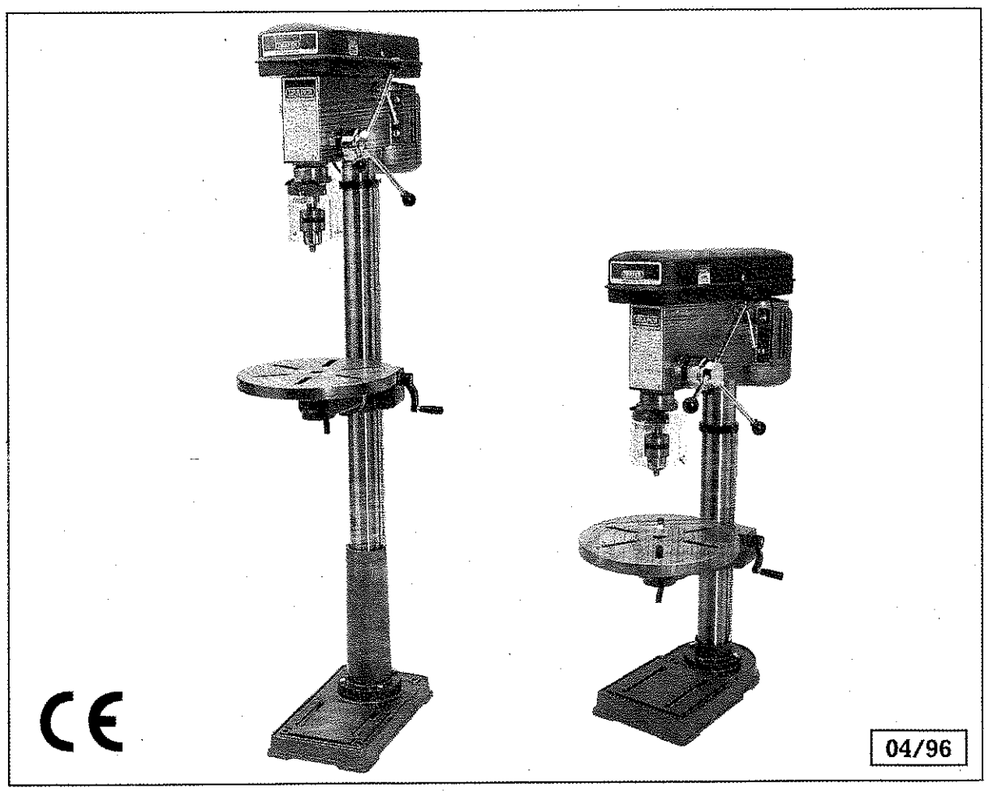
THE TOOL COMPANY

BENCH DRILL PRESS

MODEL No. HD19/16B **STOCK No. 39237**
HD19/16BF **39238**

• INSTRUCTIONS •

IMPORTANT: PLEASE READ THESE INSTRUCTIONS CAREFULLY TO ENSURE THE SAFE AND EFFECTIVE USE OF THIS TOOL.



CE

04/96

FLOOR STANDING DRILL PRESS

THE TOOL COMPANY

CONTENTS:-

DECLARATION OF CONFORMITY

THE TOOL COMPANY

We
Draper Tools Ltd. Hursley Road, Chandlers Ford, Eastleigh, Hampshire. SO53 1YF. England.

Declare under our sole responsibility that the product:

Part Number:- HD19/16B & GD19/16BF **Stock No.** 39237 & 39238

Description:- Pillar Drill

To which this declaration relates is in conformity with the following directive(s) 89/392EEC (Last amended by 93/68EEC), 89/336EEC.

J.N.Draper
Managing Director

THE TOOL COMPANY

NOTES

NOTES

SPECIFICATION

Whilst every effort has been made to ensure accuracy of information given in this manual is correct at the time of going to print, the Draper Tools policy of continuous improvement determines the right to change specification without notice.

Model No.	HD19/16B	HD19/16BF
Stock No.	39237	39238
Drilling Capacity	19mm (¾")	19mm (¾")
Chuck Capacity	16mm (⅝")	16mm (⅝")
Spindle Taper	MT3	MT3
Speeds (RPM)	16 (190 - 2640)	16 (190 - 2640)
Swing	430mm	430mm
Spindle Travel	80mm	80mm
Column Diameter	80mm	80mm
Table Size	350mmØ	350mmØ
Base Size	265 x 450mm	460 x 270mm
Motor Size	¾HP - 230v	¾HP - 230v
Height	1040mm	1625mm
Nett Weight	59kg	72kg

GUARANTEE

Draper machine tools have been carefully tested and inspected before shipment and are guaranteed to be free from defective materials and workmanship for a period of 12 months from the date of purchase except where tools are hired out when the guarantee period is reduced to ninety days from the date of purchase.

Should the drill press develop any fault, please return the complete tool to your nearest authorized warranty repair agent or contact Draper Tools Limited, Chandler's Ford, Eastleigh, Hampshire, SO53 1YF. England. Telephone: (01703) 494344.

If upon inspection it is found that the fault occurring is due to defective materials or workmanship, repairs will be carried out free of charge. This guarantee does not apply to normal wear and tear, nor does it cover any damage caused by misuse, careless or unsafe handling, alterations, accident, or repairs attempted or made by any personnel other than the authorised Draper warranty repair agent.

This guarantee applies in lieu of any other guarantee expressed or implied and variations of its terms are not authorised.

Your Draper guarantee is not effective unless you can produce upon request a dated receipt or invoice to verify your proof of purchase within the 12 month period.

Please note that this guarantee is an additional benefit and does not affect your statutory rights.

Draper Tools Limited

POWER SUPPLY

CONNECTING YOUR MACHINE TO THE POWER SUPPLY: (230V ONLY)
To eliminate the possibility of an electric shock your machine has been fitted with a BS approved, non rewireable moulded plug and cable which incorporates a fuse, the value of which is indicated on the pin face of the plug. Should the fuse need to be replaced an ASTA approved BS1362 fuse must be used of the same rating, marked thus ASTA. The fuse cover is detachable, never use the plug with the cover omitted. If a replacement fuse cover is required, ensure it is of the same colour as that visible on the pin face of the plug (i.e. red). Fuse covers are available from your Draper Tools stockist.
If the fitted plug is not suitable, it should be cut off and destroyed. *The end of the cable should now be suitably prepared and the correct type of plug fitted. See below.

***WARNING:**
A plug with bare flexible wires exposed is hazardous if engaged in a live power socket outlet.

WARNING: THIS APPLIANCE MUST BE EARTHED.
Green and Yellow - Earth, Blue - Neutral, Brown - Live.
As these colours may not correspond with the coloured markings identifying the terminals in your plug, proceed as follows.:
The wire which is coloured green and yellow must be connected to the terminal in the plug which is marked with the letter 'E' or by the earth symbol ⏚ or coloured green or green and yellow.
The wire which is coloured blue must be connected to the terminal which is marked with the letter 'N' or coloured black or blue.
The wire which is coloured brown must be connected to the terminal which is marked with the letter 'L' or coloured red or brown.
N.B. Three phase machines must be connected by a qualified electrician.

EXTENSION LEAD CHART:
Extension lead sizes shown assure a voltage drop of not more than 5% at rated load of tool.

Ampere rating (on Name plate)	3	6	10	13
Extension cable length	Wire Size mm^2			
7.5m	0.75	0.75	1.0	1.25
15m	0.75	0.75	1.0	1.5
22.5m	0.75	0.75	1.0	1.5
30m	0.75	0.75	1.25	1.5
45m	0.75	1.25	1.5	2.5

OPTIONAL ACCESSORIES

The following accessories are available from your local Draper power stockist.

DRILL PRESS VICES

PART No.DPV
Manufactured from cast iron with fully hardened jaws. Carton packed.

STOCK No.	JAW-MM WIDTH	JAW-MM OPENING
25541	63 (2½")	63 (2½")
25542	75 (3")	65 (2½")
25543	100 (4")	85 (3½")
25544	125 (5")	100 (4")
25545	150 (6")	150 (6")

STEEL JAW DRILL PRESS VICES

PART No.DPVS
These quality steel jaw vices have accurately machined prismatic faces with horizontal grooves ideal for holding. Manufactured from cast iron, they can be used when drilling, milling and various working operations. Carton packed.

STOCK No.	JAW-MM WIDTH	JAW-MM OPENING
25547	81 (3")	78 (3")
25548	103 (4")	97 (4")
25550	128 (5")	119 (4¾")

DRILL PRESS VICES

PART No.CV
Universal vices for drilling and milling which can be used on two different planes as a compound vice and also as a stationary drilling vice. Strong heavy duty cast iron construction for accuracy and strength complete with slotted base for machine mounting. Carton packed.

STOCK No.	JAW-MM WIDTH	JAW-MM OPENING
25555	76 (3")	75 (3")
25556	100 (4")	100 (4")
25558	150 (6")	150 (6")

ANGLE TILTING VICES

PART No.ATV
These two in one vices are designed to be set from 0° to 90°. In the normal 0° position they act as a straight drill press vice but for difficult angle drilling they can be adjusted to the desired angle. Carton packed.

STOCK No.	JAW-MM WIDTH	JAW-MM OPENING
25551	63 (2½")	60 (2¼")
25552	90 (3½")	90 (3½")

OPERATION

The following directions will give the inexperienced operator a start on common drill press operations. Use scrap material for practice to get the feel of the machine before attempting regular work.

CORRECT DRILLING SPEEDS

Factors which determine the best speed to use in any drill press operations are:

Type of material being worked,

Size of hole,

Type of drill or other cutter,

Quality of cut desired.

The smaller the drill, the greater the required r.p.m. In soft materials the speed should be higher than for hard materials.

DRILLING METAL

Use clamps to hold the workpiece when drilling in metal. The workpiece should never be held in the hand; the drill may snatch the workpiece at any time, especially when breaking through. If the workpiece is twisted out of the operator's hand, they may be injured.

The workpiece must be clamped firmly while drilling; any tilting, twisting or shifting results not only in a rough hole, but also increases drill breakage. For flat work, lay the workpiece on a wooden base and clamp it firmly down against the table to prevent it from moving. If the workpiece is of irregular shape and cannot be laid flat on the table, it should be securely blocked and clamped using vee-blocks, clamps or a machine vice.

TROUBLESHOOTING

WARNING: FOR YOUR OWN SAFETY ALWAYS TURN THE MAIN SWITCH ON THE MACHINE "OFF" AND REMOVE THE PLUG FROM THE POWER SUPPLY BEFORE CARRYING OUT ANY MAINTENANCE OR TROUBLESHOOTING.

Trouble	Probable Cause	Remedy
Noisy operation	1. Incorrect belt tension	1. Adjust tension
	2. Dry spindle	2. Lubricate spindle with grease (ISO VG68)
	3. Loose spindle pulley or motor pulley	3. Tighten set screws in pulleys
Bit burns or smokes	1. Incorrect speed	1. Change speed
	2. Swarf not coming out of hole	2. Retract bit frequently to clear swarf
	3. Blunt bit	3. Sharpen or replace bit
	4. Feeding too slow	4. Feed fast enough to allow drill to cut
	5. Not lubricated	5. Lubricate bit
	6. Bit running backwards	6. Check motor rotation.
Excessive drill run-out or wobble	1. Bent bit	1. Use a straight bit
	2. Worn spindle bearings	2. Replace bearings
	3. Bit not properly installed in chuck	3. Install bit centrally
	4. Chuck not properly installed	4. Refit chuck properly
Drill binds in workpiece	1. Workpiece pinching bit or excessive feed pressure	1. Support or clamp workpiece
	2. Improper belt tension	2. Adjust tension

SAFETY WARNING

WARNING
Please read the following instructions carefully, failure to do so could lead to serious personal injury.

IMPORTANT
Draper Tools Limited recommends that this machine should not be modified or used for any application other than that for which it was designed. If you are unsure of its relative applications do not hesitate to contact us in writing and we will advise you.

GENERAL SAFETY INSTRUCTIONS FOR MACHINE TOOLS

1. **KNOW YOUR MACHINE TOOL**
   Read and understand the owner's manual and labels affixed to the tool. Learn its application and limitations as well as the specific potential hazards peculiar to this tool.
2. **EARTH ALL TOOLS**
   This tool is equipped with an approved 3-core cable. The green and yellow conductor in the core is the earth wire. Never connect the green and yellow wire to a live terminal.
3. **KEEP GUARDS IN PLACE**
   and in working order.
4. **REMOVE ADJUSTING KEYS AND WRENCHES**
   Form a habit of checking to see that keys and adjusting wrenches are removed from tool before turning it on.
5. **KEEP WORK AREA CLEAN**
   Cluttered areas and benches invite accidents. Floor must not be slippery due to oil or sawdust.
6. **AVOID DANGEROUS ENVIRONMENT**
   Do not use power tools in damp or wet locations or expose them to rain. Keep work area well lit. Provide adequate surrounding work space.
7. **KEEP CHILDREN AWAY**
   All visitors should be kept a safe distance from work area.
8. **MAKE WORKSHOP CHILDPROOF**
   - with padlocks, master switches, or by removing starter keys.
9. **DO NOT FORCE TOOL**
   It will do the job better and safer at the rate for which is was designed.
10. **USE RIGHT TOOL**
    Do not force tool or attachment to do a job for which is was not designed.
11. **WEAR PROPER CLOTHING**
    Do not wear loose clothing, gloves, neckties or jewellery (rings, wristwatches) to catch in moving parts. NON SLIP footwear is recommended. Wear protective hair covering to contain long hair. Roll long sleeves above the elbow.
12. **USE SAFETY GOGGLES (Head Protection)**
    Wear safety goggles (must comply with BS 2092) at all times. Normal spectacles only have impact resistant

12. **Continued . . .**
    lenses, they are NOT safety glasses. Also, use face or dust mask if cutting operation is dusty and ear protectors (plugs or muffs) during extended periods of operation.
13. **SECURE WORK**
    Use clamps or a vice to hold work. This frees both hands to operate tool.
14. **DO NOT OVERREACH**
    Keep proper footing and balance at all times.
15. **MAINTAIN TOOLS WITH CARE**
    Keep tools sharp and clean for best and safest performance. Follow instructions for lubricating and changing accessories.
16. **DISCONNECT POWER TO THE TOOLS**
    Before servicing, when changing accessories such as cutters etc.
17. **AVOID ACCIDENTAL STARTING**
    Make sure switch is in 'OFF' position before plugging in cable to the power supply.
18. **USE RECOMMENDED ACCESSORIES**
    Consult the owner's manual for recommended accessories. Follow the instructions that accompany the accessories. The use of improper accessories may cause hazards.
19. **NEVER STAND ON TOOL**
    Serious injury could occur if the tool is tipped or if the cutting tool is accidentally contacted. Do not store materials above or near the tool such that it is necessary to stand on the tool to reach them.
20. **CHECK DAMAGED PARTS**
    Before further use of the tool, a guard or other part that is damaged should be carefully checked to ensure that it will operate properly and perform its intended function. Check for alignment of moving parts, breakage of parts, mounting and any other conditions that may affect its operation. A guard or other part that is damaged should be properly repaired or replaced.
21. **DIRECTION OF FEED**
    Feed work into a blade or cutter against the direction of rotation of the blade or cutter only.
22. **NEVER LEAVE MACHINE RUNNING UNATTENDED**
    Turn power off. Do not leave machine until it comes to a complete stop.

SAFETY RULES FOR DRILL PRESSES

1. This drill press is intended for use only with drill bits. The use of any other accessories may be hazardous.
2. **CHECK** to see that the drill bit is securely locked in the chuck.
3. **CORRECT DRILLING SPEEDS**
   Important factors which determine the best speed to use in any drill press operation are:
   (a) The smaller the drill the greater the required r.p.m. (revolutions per minute)
   (b) In soft materials the speed should be higher than for hard materials.
4. **MAKE** sure that the chuck key is removed before turning on power.
5. **CHECK** to see that the chuck is securely fastened to the spindle.
6. **CAUTION**
   When practical, use a vice or clamps to secure workpiece to avoid workpiece rotating with the drill bit.
7. **SECURE** the tool to a workbench or floor. If during operation there is any tendency for the drill press to tip over, slide or walk on the supporting surface, the drill base must be secured to the supporting surface with fasteners through the holes located in the drill press base.
8. For your safety DO NOT wear gloves when operating a drill press.

SPINDLE RETURN SPRING ADJUSTMENT

ADJUSTING SPINDLE RETURN SPRING

For the purpose of automatically returning the spindle upward after a hole has been drilled, a spindle return spring is provided in the spring housing (A) Fig.20. This spring has been properly adjusted at the factory and should not be disturbed unless absolutely necessary. To adjust the return spring, proceed as follows:

1. Disconnect the drill press from the power supply.
2. Loosen the two nuts (B) approximately ¼". Do not remove nuts (B) from shaft (C) Fig.20.

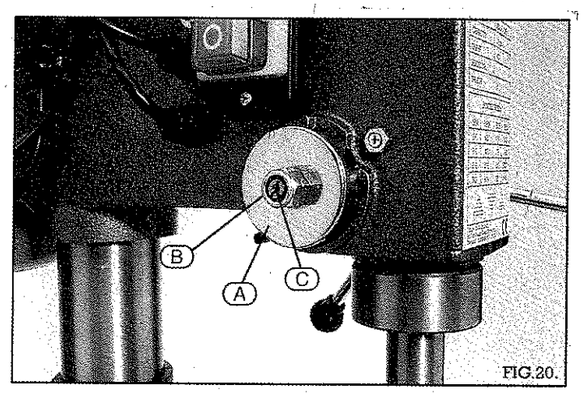


FIG.20.

3. While firmly holding spring housing (A) Fig.21, pull out housing and rotate it until the boss (D) is engaged with the next notch on the housing. Turn the housing anticlockwise to increase and clockwise to decrease spring tension. Then tighten the two nuts (B) Fig.21 to hold the housing in place.
   IMPORTANT:
   Nuts (B) Fig.21 should not contact spring housing (A) when tight.

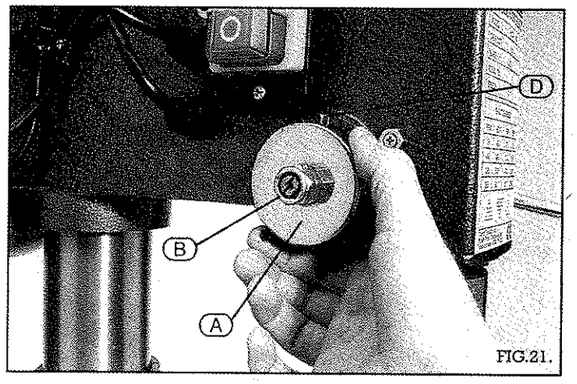


FIG.21.

DEPTH SETTING

DRILLING HOLES TO DEPTH

Where holes are to be drilled to exactly the same depth, a depth stop is provided in the pinion shaft housing (A) Fig.22 and is used as follows:

1. Loosen lock handle (B) Fig.22 and rotate housing (A) until the pointer (C) lines up with the depth you wish to drill on the scale (D). Then tighten lock handle (B).
2. All holes will then be drilled to the exact depth, as indicated on the scale, (D) Fig.22.

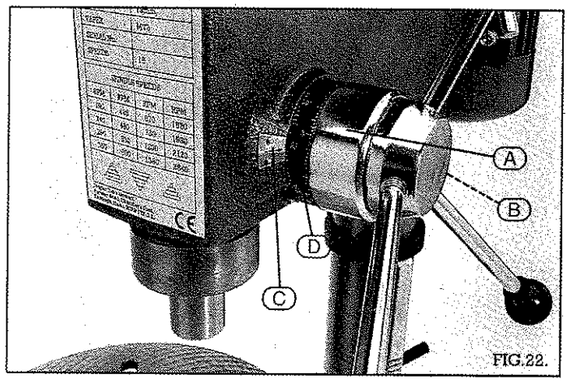
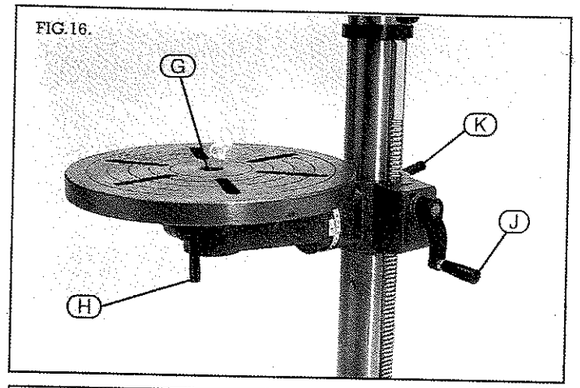


FIG.22.

TABLE ADJUSTMENT

1. The table (G) Fig. 16, can be raised or lowered on the drill press column by loosening the table clamp handle (K) and turning the table raising and lowering handle (J). After the table is at the desired height, tighten handle (K).

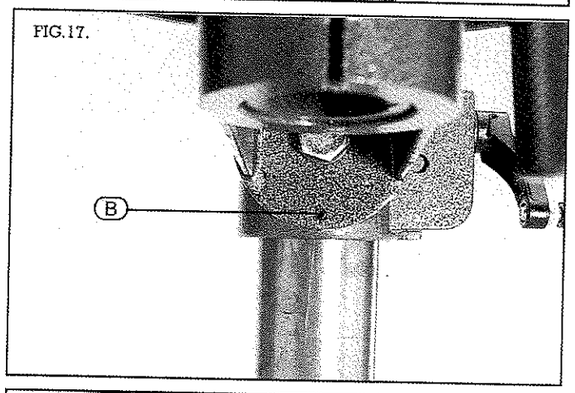
FIG.16.



2. The table (G) Fig.16 can be rotated 360° on the table bracket by loosening lock handle (H).

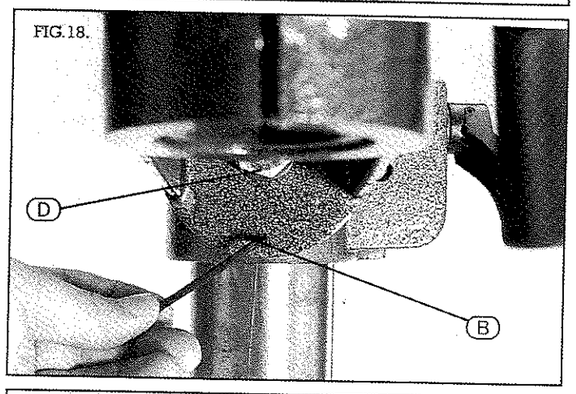
3. The table can be tilted right or left by pulling out and removing table alignment pin (B) Fig.17.
NOTE: If pin (B) is difficult to remove turn nut (C) clockwise to pull the pin out of the casting.

FIG.17.



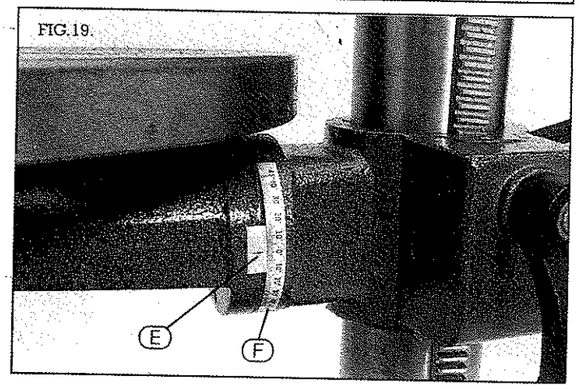
4. Fig.18 illustrates the table alignment pin (B) removed. Loosen table locking bolt (D) Fig. 18, tilt table to the desired angle and tighten bolt (D). When returning table to the level positioned, replace table alignment pin (B). This will automatically position the table surface at 90° to the spindle.

FIG.18.



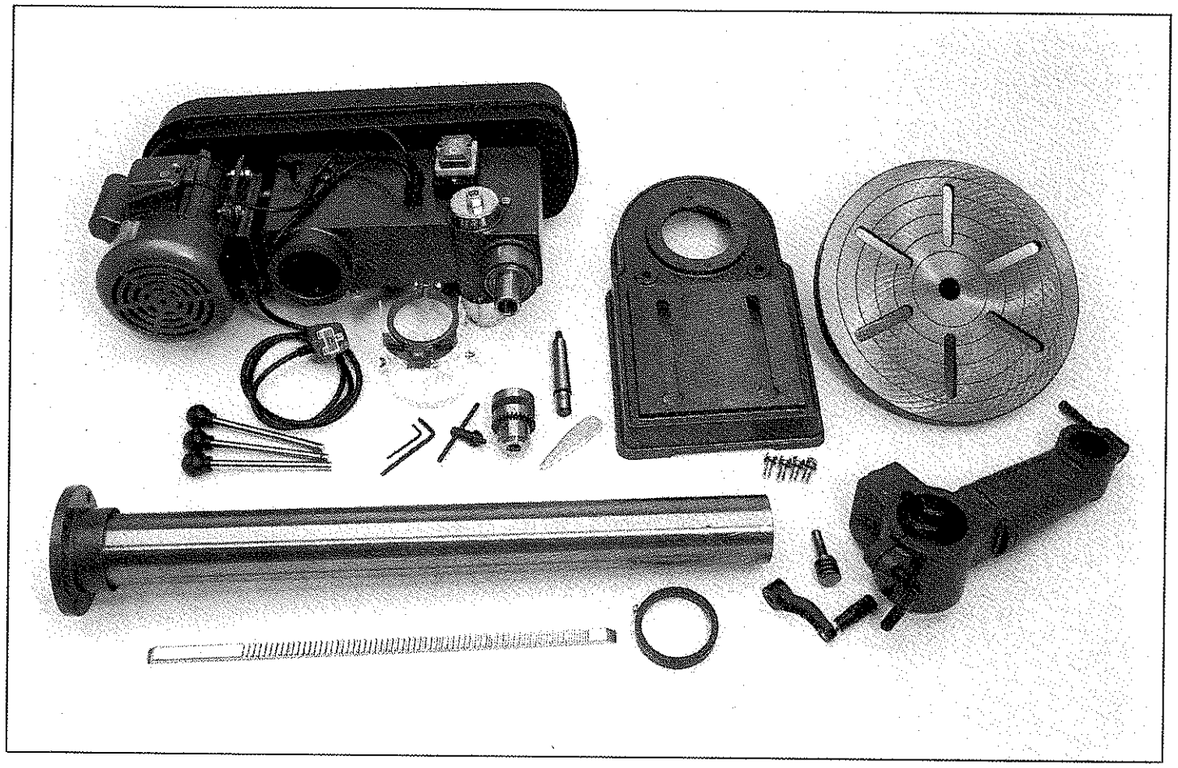
5. A tilt scale (E) Fig. 19 is provided on the table bracket casting to indicate the degree of tilt. A cursor line (F) is also provided on the table to line up with the scale (E).

FIG.19.



UNPACKING AND CHECKING CONTENTS

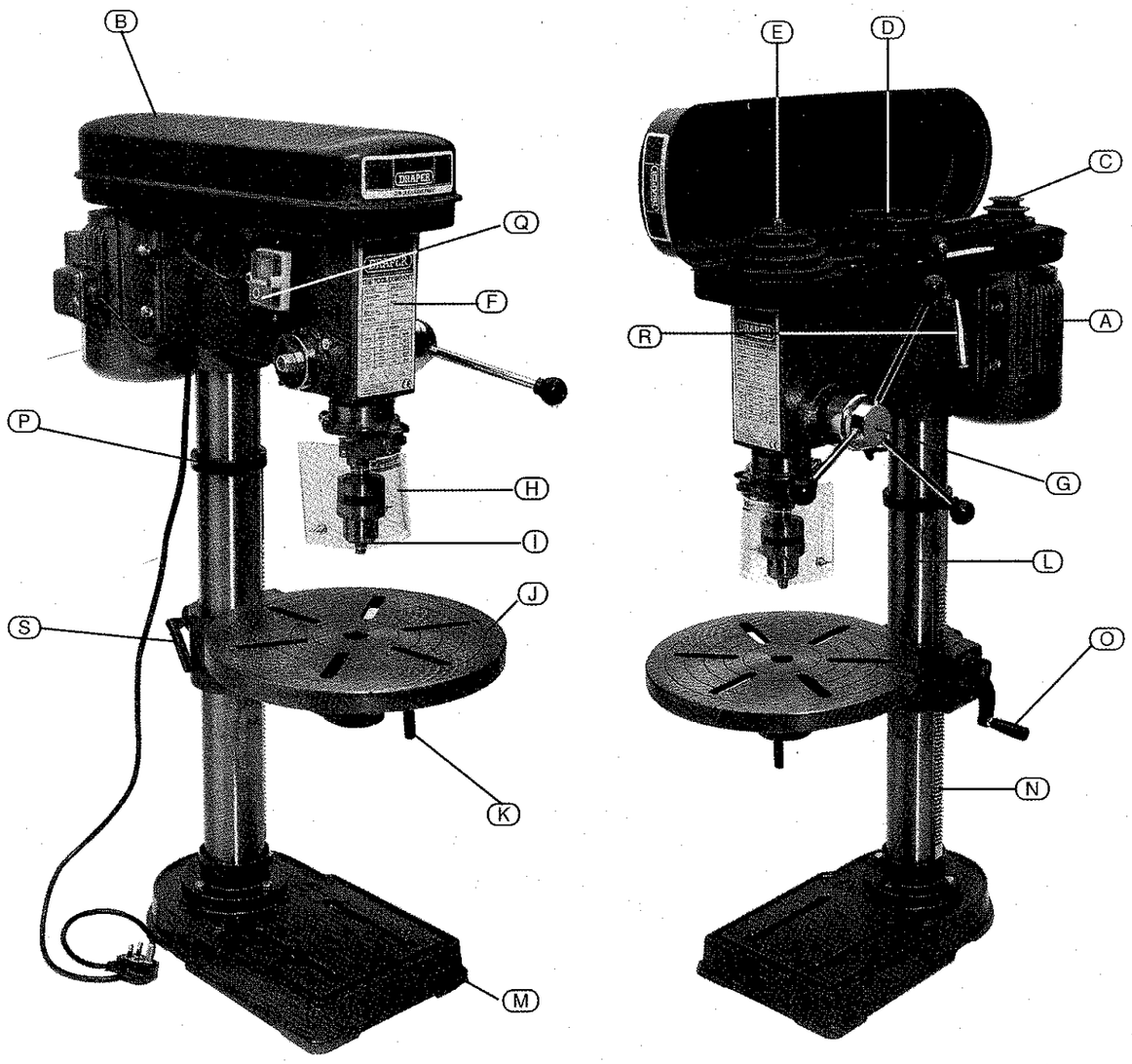
Carefully unpack the bench drill and all the loose items from the carton. Illustrated below is the bench drill and all the loose items that are packed in the carton. NOTE: Some loose parts are packed inside the pulley cover.



Now referring to the photograph carefully check that all the parts are present.

Please contact the stockist where your purchase was made if you have any enquiries, eg. problems with ssembly apparent missing/damaged parts, help with accessories available or technical advise or alternatively call the Draper Power Helpline on (01703) 494344.

KNOW YOUR BENCH DRILL

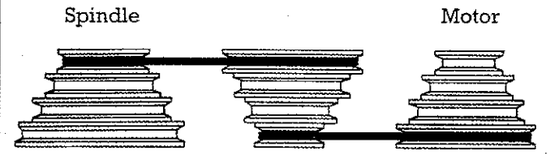


Ⓐ MOTOR
Ⓑ PULLEY COVER
Ⓒ MOTOR PULLEY
Ⓓ INTERMEDIATE PULLEY
Ⓔ SPINDLE PULLEY
Ⓕ SPECIFICATION LABEL
Ⓖ DOWN FEED ASSEMBLY
Ⓗ CHUCK GUARD
Ⓘ CHUCK
Ⓙ TABLE
Ⓚ TABLE LOCKING HANDLE
Ⓛ COLUMN
Ⓜ BASE
Ⓝ RACK
Ⓞ TABLE RISE AND FALL HANDLE
Ⓟ RACK SECURING RING
Ⓠ ON/OFF SWITCH
Ⓡ DRIVE BELT - TENSION ADJUSTER
Ⓢ RISE AND FALL LOCKING HANDLE

SPEED/BELT CHANGING

SPINDLE SPEEDS
Sixteen spindle speeds of 190, 280, 310, 390, 450, 480, 540, 630, 650, 680, 1240, 1320, 1370, 1860, 1880, 2640 r.p.m. are available with your drill press. The highest speed is obtained when the belt is on the largest step of the motor pulley and the smallest step of the spindle pulley as shown in Fig.13.

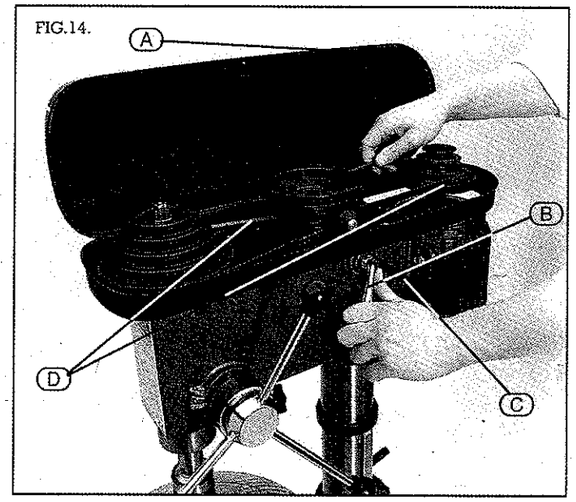
FIG.13.



CHANGING SPEEDS AND ADJUSTING BELT TENSION

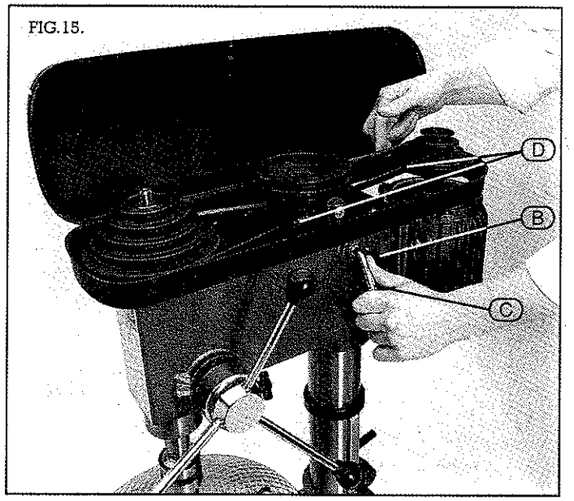
1. Disconnect the drill press from the power supply.
2. Lift up the belt and pulley guard Ⓐ Fig. 14.
3. Release belt tension by loosening tension lock knob Ⓑ Fig.14 and moving tension lever Ⓒ forward.
4. Position the two belts Ⓓ on the desired steps of the motor, centre and spindle pulleys as shown in Fig.14.

FIG.14.



5. After the belt is positioned on the desired steps of the motor and spindle pulleys, pivot motor away from the drill press head until the belt is properly tensioned and tighten tension lock knob Ⓑ Fig.15. The belt should be just tight enough to prevent slipping. Excessive tension will reduce the life of the belt, pulleys and bearings. Correct tension is obtained when the belts Ⓓ can be flexed about 1" out of line midway between the pulleys using light finger pressure.

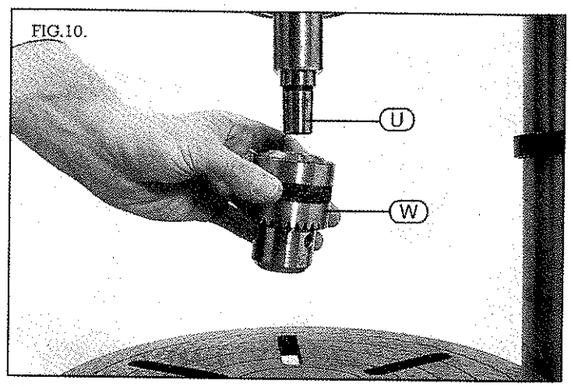
FIG.15.



ASSEMBLY INSTRUCTIONS - cont'd.

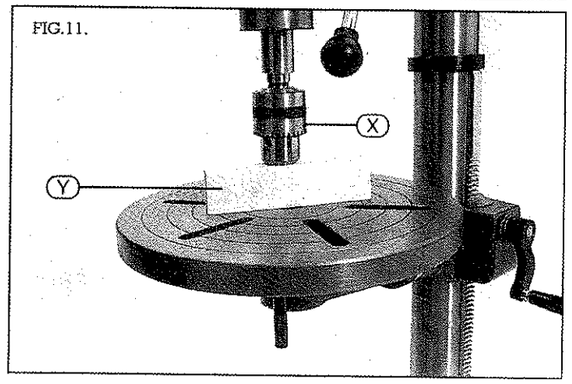
0. Make sure both arbor (U) and chuck (W) are clean and free from grease and push the chuck (W) up onto the arbor (U) as far as it will go, see Fig.10.

FIG.10.



1. Open the chuck jaws as wide as possible by turning the chuck sleeve (X) see Fig.11 to make sure that jaws do not protrude.

FIG.11.



2. Place a block of wood (Y) on the drill press table and lower the spindle until the chuck contacts the piece of wood. Apply pressure to properly seat the chuck, see Fig.11.

ASSEMBLY INSTRUCTIONS

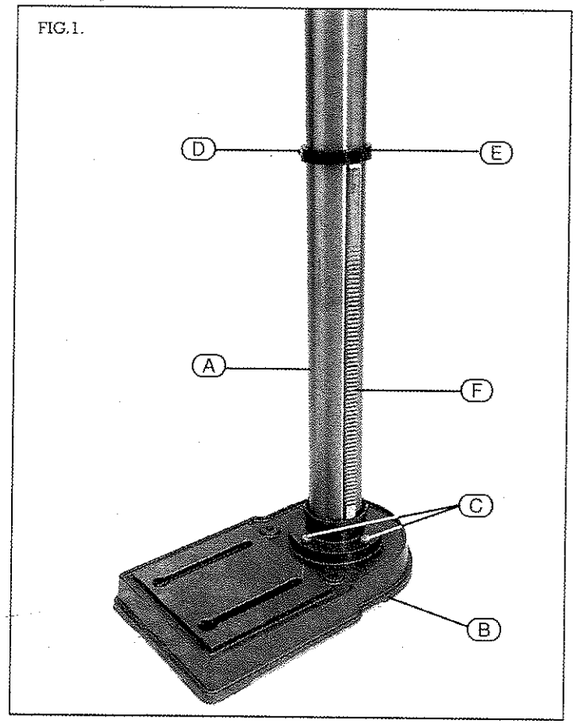
UNPACKING

Carefully unpack the drill press and spare parts from the carton.

ASSEMBLING THE DRILL PRESS

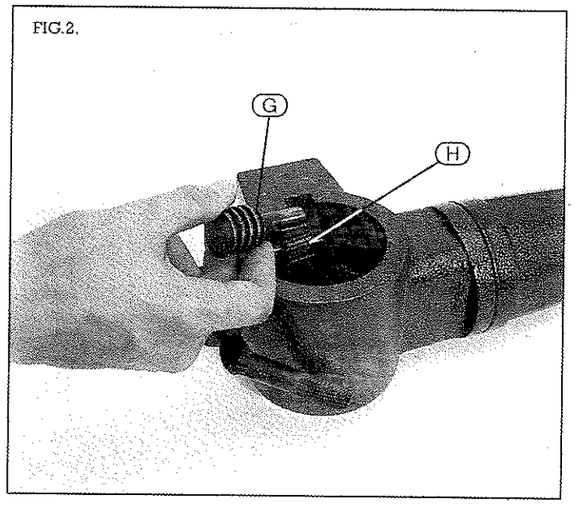
1. Secure column (A) to base (B) using the four bolts (C). Loosen set screw (D) and remove ring (E) and raising rack (F), as shown in Fig.1.

FIG.1.



2. Locate worm gear (G) into hole (H), as shown in Fig.2.

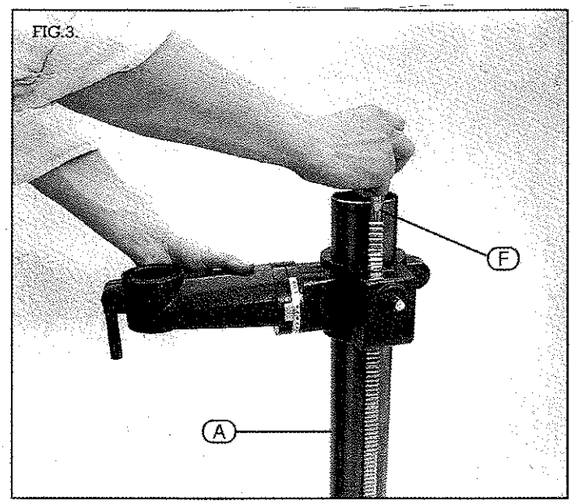
FIG.2.



ASSEMBLY INSTRUCTIONS - cont'd.

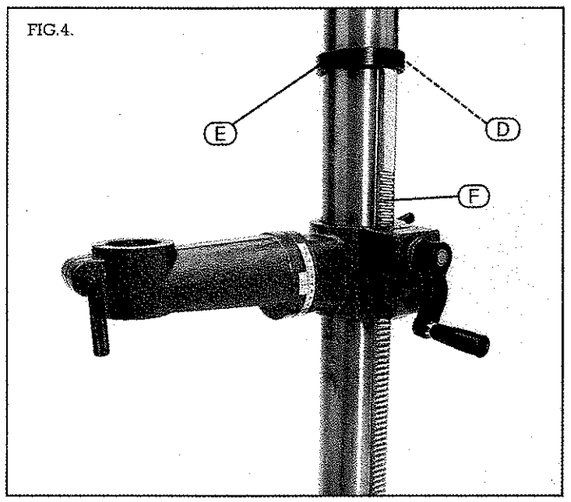
3. Place rack (F) in position in table bracket, as shown in Fig.3 and slide onto column (A).

FIG.3.



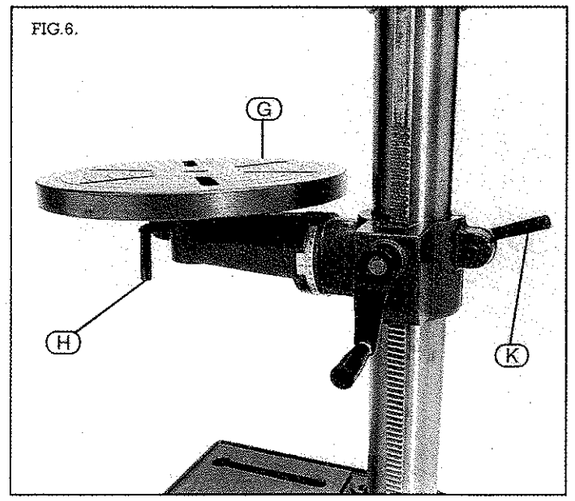
4. Ease table bracket and rack all the way down onto the column. Engage ring (E) onto rack (F) and tighten set screw (D), Fig.4.

FIG.4.



5. Assemble table (G) to table bracket, as shown in Fig. 6 and lock into place using the table locking handle (H).

FIG.6.



ASSEMBLY INSTRUCTIONS - cont'd.

6. Fix table raising handle (J) and bracket locking handle (K) as shown in Fig.6.

7. Place the drill press head (L) onto the column as far as it will go. Align the head and table to drill press base and tighten the two head locking screws (M), as shown in Fig. 7.

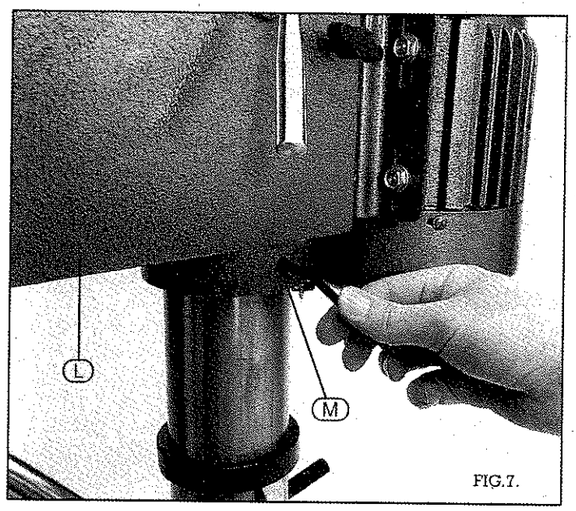
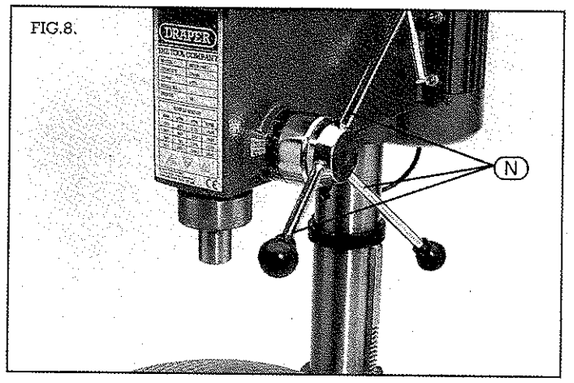


FIG.7.

8. Screw the three downfeed handles (N) into the three holes located in the pinion shaft, as shown in Fig. 8.

FIG.8.



9. Make certain that the tapered hole in the bottom of the spindle (T) Fig. 9 and the taper on the spindle adaptor (U) are free from grease. Push arbor (U) up onto the spindle (T) making certain that the tang (V) engages and locks with the mating slot in the spindle.

FIG.9.