

Clarke[®]

METALWORKER

16mm DRILL PRESS

Model Nos. CDP401B & CDP451F

Part No. 6505570 & 6505580



OPERATING & MAINTENANCE INSTRUCTIONS



SERIAL No.....

0307

Clarke[®]
INTERNATIONAL



DECLARATION OF CONFORMITY

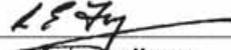
We declare that this product complies to the following standards/directives:

■ **98/37/EC**

Product Description: **DRILL PRESS**

Model Number: **CDP RANGE**

Serial Number: See Front Cover

Signed 
Engineering Manager

Clarke[®] INTERNATIONAL
Hemnal Street, Epping, Essex CM16 4LG

Clarke International is a trading style of Clarke International Limited

 When disposing of this product, do not dispose of with general waste. It must be disposed of according to law at a recognised disposal facility.

INTRODUCTION

Thank you for purchasing your CLARKE 16mm Drill Press.

Before attempting to operate the machine, please read this instruction manual thoroughly, and follow all directions carefully. By doing so you will ensure the safety of both yourself and others around you, and at the same time, you should look forward to long and trouble free service from your Clarke Drill Press.

GUARANTEE

This product is guaranteed against faults in manufacture for 12 months from date of purchase. Keep your receipt as proof of purchase. This guarantee is invalid if the product has been found to have been abused or tampered with in any way, or not used for the purpose for which it was intended. The reason for return must be clearly stated. This guarantee does not affect your statutory rights.

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GENERAL SAFETY PRECAUTIONS

WARNING

As with all machinery, there are certain hazards involved with their operation and use. Exercising respect and caution will considerably lessen the risk of personal injury. However, if normal safety precautions are overlooked, or ignored, personal injury to the operator, or damage to property may result.

1. **KNOW YOUR MACHINE.** Read the manual carefully. Learn the machines applications and limitations, as well as the specific potential hazards peculiar to it.
2. **KEEP GUARDS IN PLACE** and in working order.
3. **EARTH ALL MACHINES.** If the machine is equipped with three-pin plug, it should be plugged into a three-pin electrical socket. Never remove the earth pin.
4. **REMOVE ALL ADJUSTING KEYS AND WRENCHES.** Before starting, form the habit of checking to ensure that keys, wrenches and tools are removed from the machine.
5. **KEEP WORK AREA CLEAN.** Cluttered areas and benches invite accidents.
6. **DON'T USE IN DANGEROUS ENVIRONMENT.** Don't use machinery in damp or wet locations, or expose them to rain. Keep work area well lit.
7. **MAKE WORKSHOP CHILDPROOF** - with padlocks, master switches etc.
8. **KEEP CHILDREN AND VISITORS AWAY.** All children and visitors should be kept a safe distance from work area
9. **DON'T FORCE THE MACHINE.** It will do the job better and safer, at the rate for which it was designed.
10. **USE THE RIGHT TOOL.** Don't force a tool or attachment to do a job for which it was not designed.
11. **WEAR PROPER APPAREL.** Loose clothing, gloves, neckties, rings, bracelets, or other jewellery may get caught in moving parts. Nonslip footwear is recommended. Long hair should be contained.
12. **USE SAFETY GLASSES.** Everyday eyeglasses only have impact resistant lenses, they are NOT safety glasses.
13. **USE EAR DEFENDERS.**
14. **DON'T OVERREACH.** Keep proper footing and balance at all times.
15. **MAINTAIN TOOLS IN TOP CONDITION.** Keep tools sharp and clean for best and safest performance. Follow instructions for lubricating and changing accessories.
16. **ALWAYS DISCONNECT THE MACHINE** before servicing or changing accessories.
17. **CHECK FOR DAMAGE.** If part of the machine (eg. A cover or guard), is damaged, it should be carefully inspected to ensure that it can perform its' intended function correctly. If in doubt, the part should be renewed. Damage to moving parts or major components should be Inspected by a qualified technician before operating the machine. Contact your local dealer for advice.

19. DO NOT STAND ON THE MACHINE. Serious injury could occur if the machine is tipped over. Do not store materials above or near the machine such that it is necessary to stand on the machine to get to them.
20. NEVER operate a machine when under the influence of alcohol, drugs or medication.
21. ALWAYS ENSURE THAT ADEQUATE LIGHTING is available. A minimum intensity of 300 lux should be provided. Ensure that lighting is placed so that you will not be working in your own shadow.

ADDITIONAL SAFETY RULES FOR DRILL PRESSES

WARNING:

THIS MACHINE MUST NOT BE MODIFIED, OR USED FOR ANY PURPOSE OTHER THAN THAT FOR WHICH IT IS DESIGNED.

1. IMPORTANT: You should not operate this machine unless you are thoroughly familiar with drilling machines and drilling techniques. If there is any doubt whatsoever, you should consult a qualified person.
2. Do not operate the machine until it is completely assembled, and you have read, and understood, this entire manual
3. Ensure the proper electrical regulations are followed, and that the machine is properly earthed.
4. Before switching the machine ON, ALWAYS:-
 - a. Ensure all chuck keys, spanners and wrenches are removed from the machine.
 - b. Examine the setup carefully, ensuring that the workpiece is perfectly secure.
 - c. Ensure your clothing is properly adjusted.
5. Make all adjustments with the power OFF.
6. Always use the correct drilling speeds for the drill size, and the type of material being drilled (see page 15).
7. NEVER leave the drill unattended whilst it is running. Turn the machine OFF and do not leave until it has come to a complete stop.
8. When you have finished with the machine, always remove and store the drill bits.
9. CAUTION: This Drill Press is designed for use with Drill Bits and Morticing Attachments ONLY. The use of other cutting tools or accessories could be hazardous.
10. ALWAYS use clamps, or a drill vice bolted to the table, to hold the work. It should NEVER be held in bare hands.

ELECTRICAL CONNECTIONS

Connect the mains lead to a standard, 230 Volt (50Hz) electrical supply through an approved 13 amp BS 1363 plug, or a suitably fused isolator switch.

WARNING! THIS APPLIANCE MUST BE EARTHED

IMPORTANT: The wires in the mains lead are coloured in accordance with the following code:

Green & Yellow - Earth
Blue - Neutral
Brown - Live

As the colours of the flexible lead of this appliance may not correspond with the coloured markings identifying terminals in your plug proceed as follows:

Connect GREEN & YELLOW cord to terminal marked with a letter "E" or Earth symbol \equiv or coloured GREEN or GREEN & YELLOW.

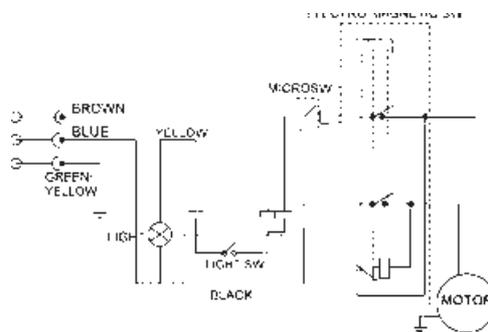
Connect BROWN cord to terminal marked with a letter "L" or coloured RED.

Connect BLUE cord to terminal marked with a letter "N" or coloured BLACK.

If this appliance is fitted with a plug which is moulded onto the electric cable (i.e. non-rewirable) please note:

1. The plug must be thrown away if it is cut from the electric cable. There is a danger of electric shock if it is subsequently inserted into a socket outlet.
2. Never use the plug without the fuse cover fitted.
3. Should you wish to replace a detachable fuse carrier, ensure that the correct replacement is used (as indicated by marking or colour code).
4. Replacement fuse covers can be obtained from your local dealer or most electrical stockists.
5. The fuse in the plug must be replaced with one of the same rating (**13 amps**) and this replacement must be ASTA approved to BS1363.

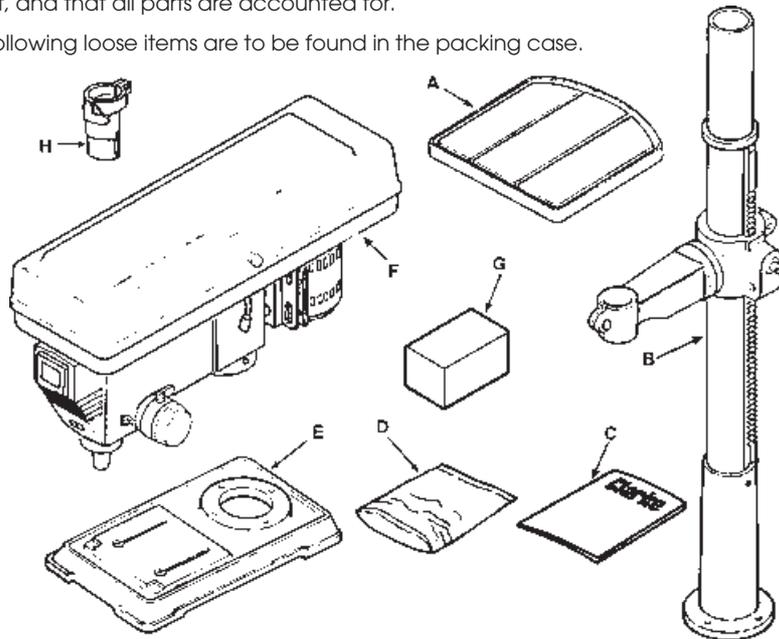
WIRING DIAGRAM



PREPARATION

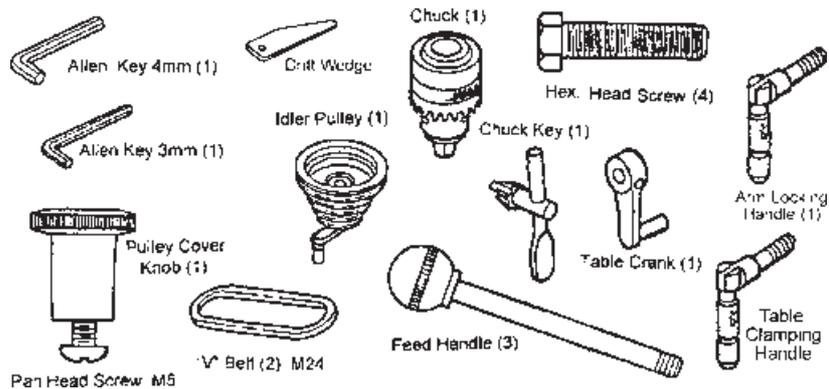
On receipt, carefully unpack the components, ensuring that no damage was suffered in transit, and that all parts are accounted for.

The following loose items are to be found in the packing case.



- | | | | |
|----|------------------------------|----|----------------------|
| A. | Table Assy. | E. | Base |
| B. | Column Assy, w/Table Support | F. | Head Assy. |
| C. | This Manual | G. | 1xBox of loose parts |
| D. | 1 xBag of loose parts | H. | Chuck Guard Assy. |

Loose Items in Box and Bag



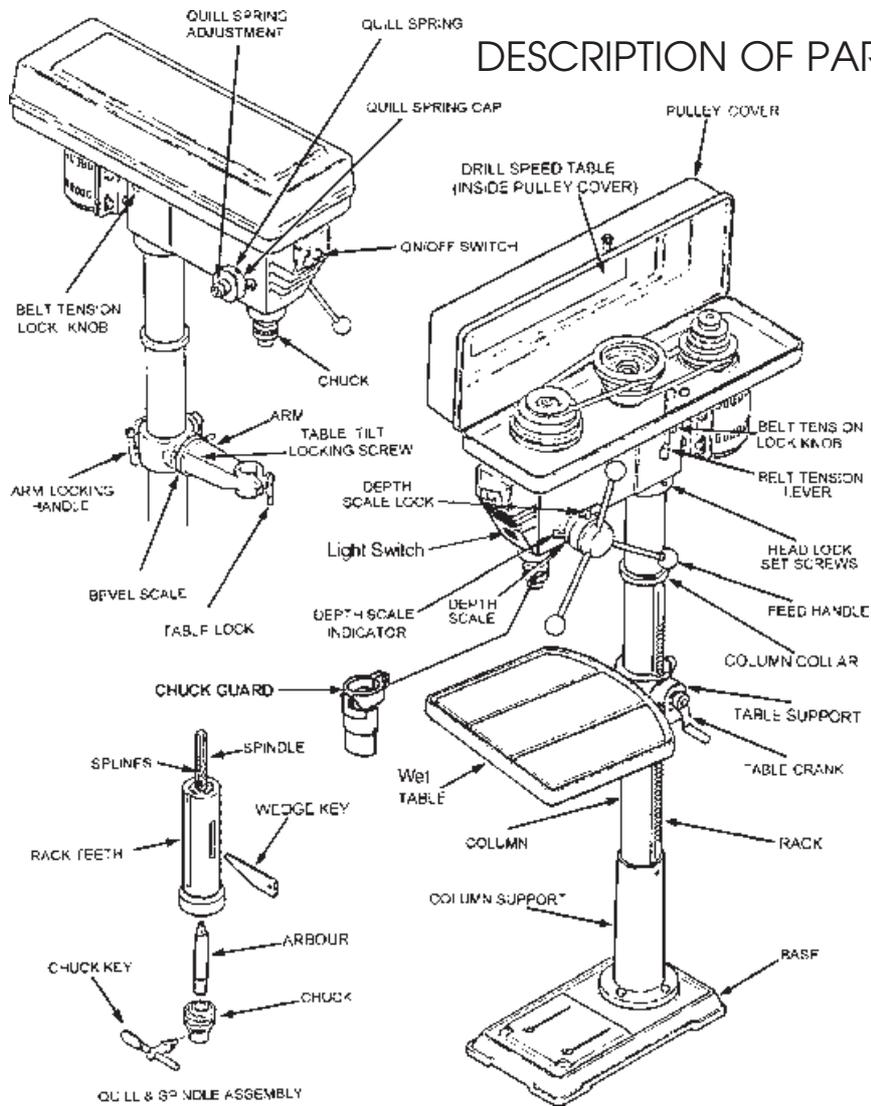
Check the parts against the above list and refer to the following diagrams. Should there be any deficiencies or damage, you should contact your CLARKE dealer immediately.

Remove all traces of preservative from the components with paraffin or a good quality solvent, and wipe all parts thoroughly with a clean dry cloth. Apply a coating of wax paste or light oil, to the table, column and base, to prevent rust.

Take the necessary precautions when lifting components, considering their weight. **Assistance will be required.**

Before use, the machine should be securely bolted to the floor or a strong, heavy workbench, of sufficient height so that you do not need to bend your back to perform normal operations.

Ensure the location is adequately lit and that you will not be working in your own shadow.



ASSEMBLY

CAUTION!

ASSISTANCE MUST BE USED WHEN ASSEMBLING THIS MACHINE.

A. Column Assembly to Base

NOTE: Ideally, the base should be firmly bolted to the floor or workbench, prior to assembly of other components. The mounting surface must be flat, level and capable of supporting the drills' weight.

1. With the Base on a flat level surface, bolt on the Column using the 4, M10 Hex head screws provided, and tighten them fully.
2. Carefully locate the table in its support and nip up with pinch bolt (Fig.1)
3. Check to ensure the set screws, securing the column to the column support, are tight.
4. Fit the table crank to the spigot (item 4 page 18).

Fig. 1



Fig. 2

B. Head to Column

NOTE: It may be necessary to unscrew the Head Lock Set Screws (A Fig. 2) slightly to ensure they do not protrude internally as this would prevent the head from sliding fully into position.

1. With assistance, raise the head and locate it on top of the Column.
2. Align the head with the base, and firmly secure with the set screws
3. Locate the three feed handles (Fig. 3) and screw them firmly into the hub of the spindle feed shaft.

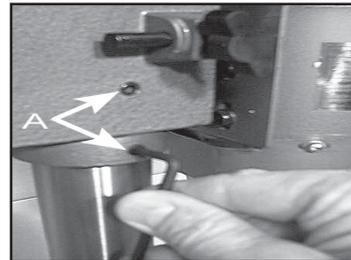


Fig. 3

C. Chuck Guard Assembly.

NOTE: This operation should be carried out before the chuck is installed.

Slide the Chuck Guard over the Quill Shaft, turn it so that the pinch bolt faces the front, then nip up the pinch bolt to temporarily secure it in this position.

IMPORTANT: Ensure the Quill Shaft/Spindle is at the top of its travel.



D. Pulley Cover Knob.

Locate the knob, with pan head screw and attach to the cover, screwing on tightly.

E. Installing the Chuck.

1. Slide the table up the column and secure it to within 6" of the spindle.
2. Open the jaws of the chuck to their maximum using the chuck key supplied.
3. Put a piece of scrap wood on to the table to protect the chuck nose.
4. Ensuring all parts are thoroughly clean, dry, and burr free, place the chuck over the end of the arbour and pull the spindle down using the feed handles, pressing the chuck jaws hard against the piece of scrap wood until the chuck is forced home. (Fig.4).
5. Turn Chuck Guard through 180° and tighten pinch bolt.

Fig. 4



F. Fitting the Drive Belts.

1. Undo the Belt Tension Locking Screws (one either side of the head - A Fig. 5), and turn the Belt Tension Lever (B - Fig. 5), clockwise to bring the Motor Pulley closer to the Spindle Pulley which will allow the belts to be slipped on with ease.
2. Lightly grease the Idler Pulley Pivot shaft and locate the Idler pulley assembly in its mounting between the Motor and spindle Pulleys.
3. Consult the chart inside the belt cover (duplicated on page 12), and fit the belts in the position corresponding to spindle/drill speed required.
4. Turn the Belt Tension Lever anti-clockwise so that tension is applied to the belts. Tension is correct when the belts deflect by approx. 1/2" at their centres of run when using reasonable thumb pressure. Lock the motor in this position with the Locking Screws - A.

Fig.5



NOTE:

1. The idler pulley will 'float' so that tension is applied equally to both belts
2. If the belt should slip whilst drilling, adjust the belt tension.

CHECKING THE OPERATION OF THE MICROSWITCH

IMPORTANT:

When closing the cover, check the operation of the Microswitch. It is important that it operates immediately the cover is pulled open, in order to prevent the machine from operating.....NOT when the cover is opened sufficiently for fingers to be inserted. If necessary, bend the actuating tab, which is attached to the cover, to ensure this.

SETTINGS and ADJUSTMENTS

1. Table.

Fig. 8



Table Support
Locking Handle

Fig. 9



Table Tilt Scale

The table may be raised, lowered or swivelled about the column, by slackening off the table support locking handle, (Fig.8), adjusting accordingly using the table crank, and re-tightening the locking handle.

If the table assembly moves stiffly when being swivelled about the column, slacken the upper collar grub screw (at the rack) to allow the collar to move very slightly, thereby providing a little more clearance between rack and collar. Tighten the grub screw when satisfied.

The table may also be turned on its axis by slackening the pinch bolt at its' mounting spigot, (Fig.1). Note that the table will only turn through an arc and will eventually come into contact with the column. Take great care not to cause damage to the column.

Tilt the table by loosening the Table Tilt Locking Screw beneath



Table shown tilted and
swivelled about the column

Fig. 7

the table, (Item 7, page 18), tilting to the required position, and re-tightening the screw.

A bevel scale is provided on the table mounting, measured in degrees, to assist in setting the required angle, (Fig.9). For all normal operations, the table should be set to 0°.

To check to ensure the table is entirely square to the drill, insert a piece of straight round bar in the chuck, place a square on the table and bring it up to the round bar. Adjust the table tilt, if necessary, so that the table is correctly aligned.

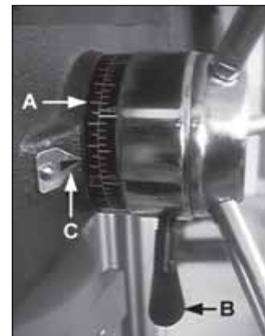
2. Spindle Depth. (Ref. Fig. 8)

Located around the spindle feed shaft is a Depth Stop Collar, carrying a graduated scale (A). The collar is capable of turning about the shaft, and may be locked in place by a Locking Screw (B). The graduations are imperial (inches) and metric (mm). To set a drilling depth:

1. With the power OFF, lower the drill bit so that it contacts the work and hold in that position.
2. Slacken off the locking screw and turn the collar so that the measurement for the depth of hole required is in line with the pointer (C). Lock the collar in this position using the locking screw.

The drill is now set to drill holes to your pre-determined depth, from that particular start point.

Fig.10



2. Changing Drill (Spindle) Speed.

Fig. 11

Before changing the speeds, ensure the machine is switched OFF, and disconnected from the mains supply.

1. Undo the Belt Tension Locking Screws (A - Fig. 5), one either side of the head, and turn lever B - Fig.5 clockwise to relieve any tension on the belts. Referring to the chart inside the belt cover (which is duplicated on page14), install the belts in the positions corresponding to the spindle speed required.



2. Lever the motor, on its bracket, away from the head, using the lever B - Fig.5, so that tension is applied to the belts.

NOTE: The idler pulley will 'float' so that tension is equally applied to both belts

Tension is correct, when the belts deflect by approx. $\frac{1}{2}$ " at their centre when using reasonable pressure with the thumb and forefinger.

Lock the motor in this position using the two Locking Screws (A - Fig. 5)..

NOTE: If the belt should slip whilst drilling, adjust the belt tension.

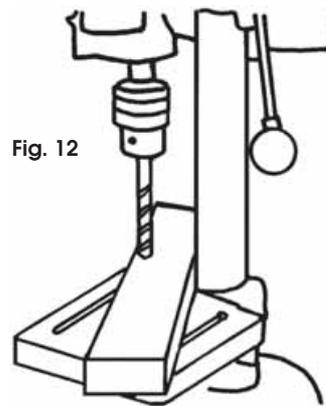
OPERATION.

1. Insert the drill bit into the jaws of the chuck by approx 1", ensuring that the jaws do not touch the flutes of the drill. Before tightening the chuck, ensure that the drill is centred within the jaws.
2. Ensure the table height and position is set so that drill travel is sufficient for the job in hand.
3. Ensure the work is securely clamped, or, held in a drill vice, bolted to the table. Never hold it with bare hands. Severe personal injury may be caused if the workpiece is whipped out of the operator's hand, and, damage to the machine incurred if the work strikes the column.

If the piece is of irregular shape and cannot be laid flat on the table, it should be securely blocked and clamped.

Any tilting, twisting or shifting, results not only in a rough hole but also increases drill breakage.

4. For small workpieces that cannot be clamped to the table, use a Drill Press Vice. The vice must be clamped or bolted to the table.
5. When drilling completely through wood, always position a piece of scrap wood between the workpiece and the table to prevent splintering on the underside of the workpiece as the drill breaks through. The scrap piece of wood must make contact with the left side of the column as shown in Fig. 12. In addition, set the depth of drill travel so that the drill cannot possibly come into contact with the table, or align the table so that the hole in its' centre is directly in line with the drill bit.



6. When completely satisfied that the setup is sound, lower the Chuck Guard into place and switch the machine ON by raising the switch cover, as shown in fig. 13, and pushing the GREEN 'I' button.

To switch OFF, hit the switch cover, which will push the RED 'O' button, turning the machine OFF.

NOTE:

- a. As a safety feature, the ON/OFF switch is a No Volt Release type. Therefore, if the power is interrupted whilst the machine is switched ON, it will not automatically start when the power is restored.
- b. A Micro switch is provided within the Pulley Cover, which prevents the machine from operating unless the Pulley Cover is firmly closed.
- c. A light is also provided which is built into the head. The lightswitch is located on the front panel, directly below the ON/OFF switch.

Fig. 13



**Drill Press Vices, Cross Vices and Clamps,
are available from your CLARKE dealer.**

MAINTENANCE

For maximum performance, it is essential that the Drill Press is properly maintained. Always inspect before use. Any damage should be repaired, and faults rectified.

If the mains lead is worn or cut, or damaged in any way, it should be replaced immediately.

Please refer to the trouble shooting chart on page 16 If you are unable to rectify any faults, please contact your local dealer or Clarke International Service Division on 020 8556 4443 for assistance.

Monthly (When in constant use)

1. Check tightness of mounting bolts, and, head and column securing set screws.
2. Check belt for wear, and replace if frayed or damaged in any way.
3. Blow out any dust that may have accumulated in the motor fan.
4. Apply a thin coat of wax paste or light oil to the table and column, for lubrication, and to help prevent corrosion.

Lubrication

All bearings are packed with grease at the factory and require no further ubrication.

After use

Remove all swarf from the machine and thoroughly clean all surfaces.

Components should be dry, with machined surfaces lightly oiled.

Always remove drill bits, and store in a safe place.

REMOVING THE CHUCK

To remove the chuck, pull the spindle down fully, using the feed handles. The slot in the side of the Quill will become visible, as shown in fig. 14. Note the position of the chuck, perhaps by placing a chalk mark, in line with the chuck, on the column, then raise the table so that it is only an inch or so below the position marked.

Place a thick cloth, or similar, on the table to catch the chuck, to prevent damage when it drops, then pull down the spindle once more, until the slot in the Quill tube is visible. Insert the drive wedge into the slot and give it a sharp tap, preferably with a copper hammer. This will break the seal between the quill tube and the arbour, allowing the chuck to fall free, on to the cloth on the table.

To disconnect the chuck from the arbour, give it a sharp tap with a soft head mallet to break the taper seal.

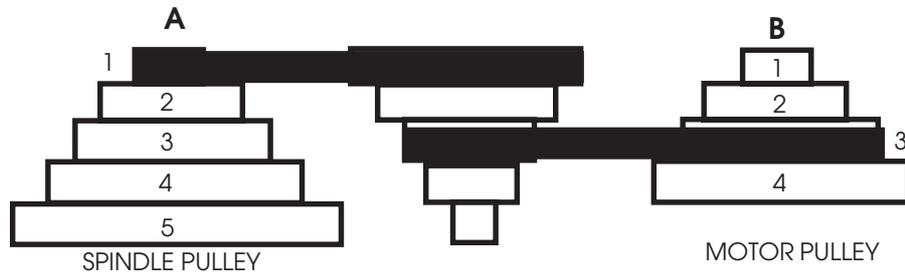
NOTE: Morse taper drills (MT2), may also be used with this machine, and are inserted into the Quill to replace the arbour. Removal is the same as that for removing the chuck.



Fig. 14

DRILL SPEED TABLE

The table below gives the belt arrangements for given drill speeds. The diagram shows the belts fitted to A1 and B3, giving a drill speed of 2350RPM. A full chart is also located on the inside of the pulley cover.



| | Spindle Pulley A | Motor Pulley B | Drill Speed RPM | | Spindle Pulley A | Motor Pulley B | Drill Speed RPM |
|---|------------------|----------------|-----------------|----|------------------|----------------|-----------------|
| 1 | 5 | 1 | 195 | 9 | 4 | 3 | 740 |
| 2 | 4 | 1 | 290 | 10 | 5 | 4 | 765 |
| 3 | 5 | 2 | 310 | 11 | 1 | 2 | 1320 |
| 4 | 3 | 1 | 420 | 12 | 2 | 3 | 1550 |
| 5 | 5 | 3 | 470 | 13 | 3 | 4 | 1660 |
| 6 | 4 | 2 | 490 | 14 | 1 | 3 | 2350 |
| 7 | 2 | 1 | 610 | 15 | 2 | 4 | 2410 |
| 8 | 3 | 2 | 680 | 16 | 1 | 4 | 3645 |

CUTTING SPEEDS

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

1. Kind of material being worked.
2. Size of hole.
3. Type of drill.
4. Quality of cut desired.

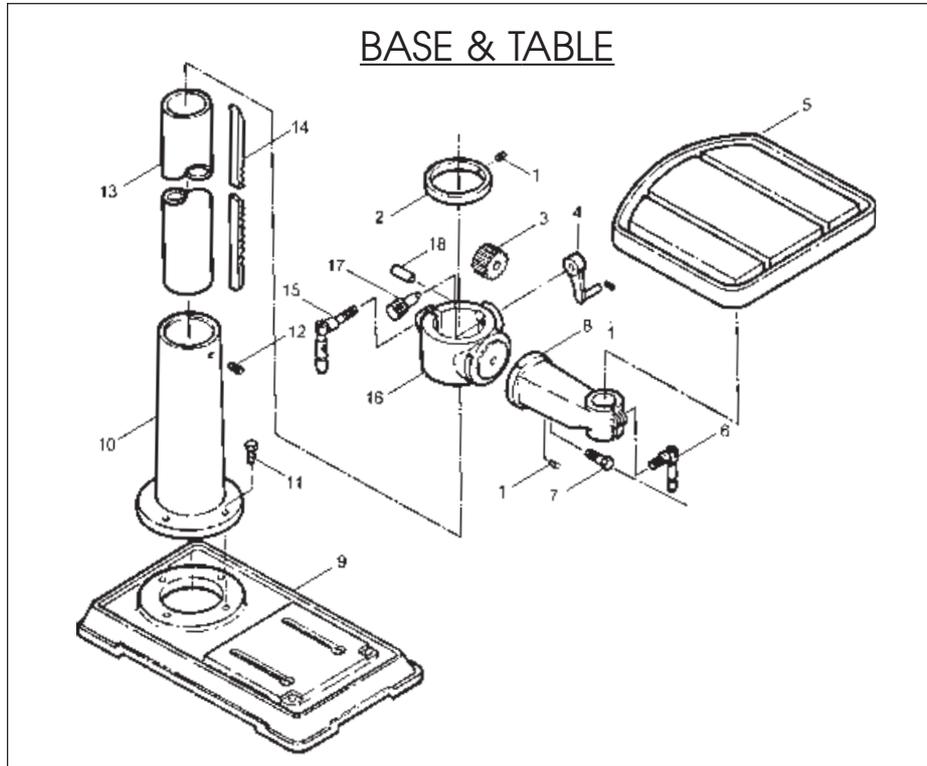
Generally, the smaller the drill, the greater the required RPM. In soft material, the speed should be higher than for hard metals.

As a guide, the drill speed for a given drill bit size, is according to the table below.

| Speed Range (RPM) | | 3645 | 2350 - 2410 | 1320 - 1660 | 740 - 765 | 490 - 680 | 290 - 470 | 195 |
|-----------------------------|----|------|----------------|----------------|--------------|--------------|--------------|------|
| Wood | in | 1/4 | 3/8 | 5/8 | - | - | - | - |
| | mm | 6.4 | 9.5 | 16 | - | - | - | - |
| Zinc Diecast | in | 3/16 | 1/4 | 3/8 | 1/2 | 5.8 | - | - |
| | mm | 4.8 | 6.4 | 9.5 | 12.5 | 16 | - | - |
| Alum & Brass | in | 1/8 | 3/16 | 3/8 | 1/2 | 11/16 | - | - |
| | mm | 3.2 | 4.8 | 9.5 | 12.5 | 17.5 | - | - |
| Plastic | in | 1/8 | 3/16 | 5/16 | 7/16 | 1/2 | 5/8 | - |
| | mm | 3.2 | 4.8 | 7.9 | 11 | 12.5 | 16 | - |
| Cast Iron & Bronze | in | 3/32 | 1/8 | 1/4 | 11/32 | 1/2 | 5/8 | - |
| | mm | 2.4 | 3.2 | 6.4 | 8.75 | 12.5 | 16 | - |
| Mild Steel & Malleable | in | 1/16 | 3/32 | 5/32 | 1/4 | 3/8 | 1/2 | - |
| | mm | 1.6 | 2.4 | 4 | 6.4 | 9.5 | 12.5 | - |
| Cast Steel & Med Carbon | in | 3/64 | 1/16 | 1/8 | 3/16 | 5/16 | 7/16 | 9/16 |
| | mm | 1.2 | 1.6 | 3.2 | 4.8 | 7.9 | 11 | 14.5 |
| Stainless and Tool Steel | in | 1/32 | 3/64 | 1/16 | 1/8 | 1/4 | 3/8 | 1/2 |
| | mm | 0.8 | 1.2 | 1.6 | 3.2 | 6.4 | 9.5 | 12.5 |

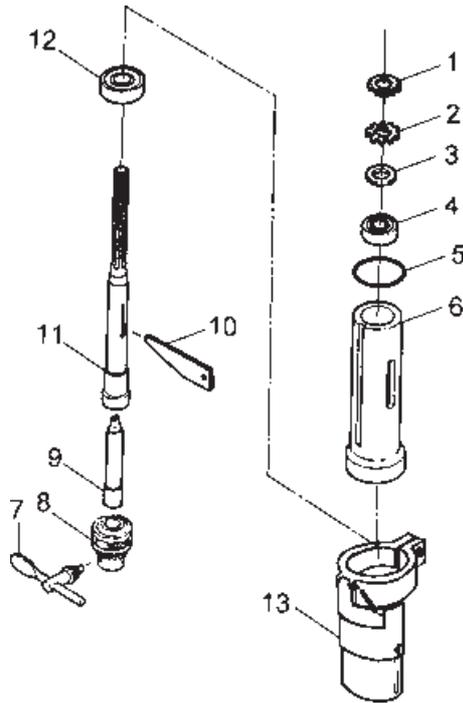
TROUBLE SHOOTING

| PROBLEM | PROBABLE CAUSE | REMEDY |
|------------------------------|--|--|
| Noisy operation (under load) | A) Incorrect belt tension B) Dry spindle C) Loose pulley D) Worn bearing | A) Adjust tension B) Remove spindle/quill assembly and lubricate C) Tighten pulley D) Replace bearing |
| Excessive drill wobble | A) Loose chuck B) Worn spindle, or bearing C) Worn chuck D) Bent drill | A) Tighten by pressing chuck down on to a block of wood against the table. B) Replace spindle shaft or bearing C) Replace chuck D) Renew Drill |
| Motor won't start | A) Power supply B) Motor connection C) NVR Switch connections D) Faulty switch E) Motor windings burned F) Pulley Cover not closed G) Micro Switch inoperative | A) Check power cord/fuse B) Check motor connections C) Check switch connections D) Replace switch E) Replace motor F) Close pulley cover. G) Check operation of micro switch, See P10 - and renew if faulty |
| Drill binds in workpiece | A) Excessive feed pressure B) Loose belt C) Loose drill D) Incorrect drill speed. E) Drill profile incorrect for type of material | A) Apply less pressure B) Check belt tension C) Tighten drill with key D) Refer to Cutting Speed chart, and adjust drill speed accordingly E) Consult an appropriate manual re. Materials, Drills and Cutting Angles, and sharpen drill accordingly. |
| Drill burns or smokes | A) Incorrect speed. B) Chips are not discharging C) Dull drill or not proper profile for material D) Lack of coolant E) Excessive feed pressure | A) Refer to Cutting Speed chart, and adjust drill speed accordingly B) Clean drill C) As 'E' above D) Use coolant whilst drilling E) Apply less pressure |
| Table difficult to raise | A) Needs lubrication B) Table lock tightened | A) Lubricate with light oil B) Loosen clamp |



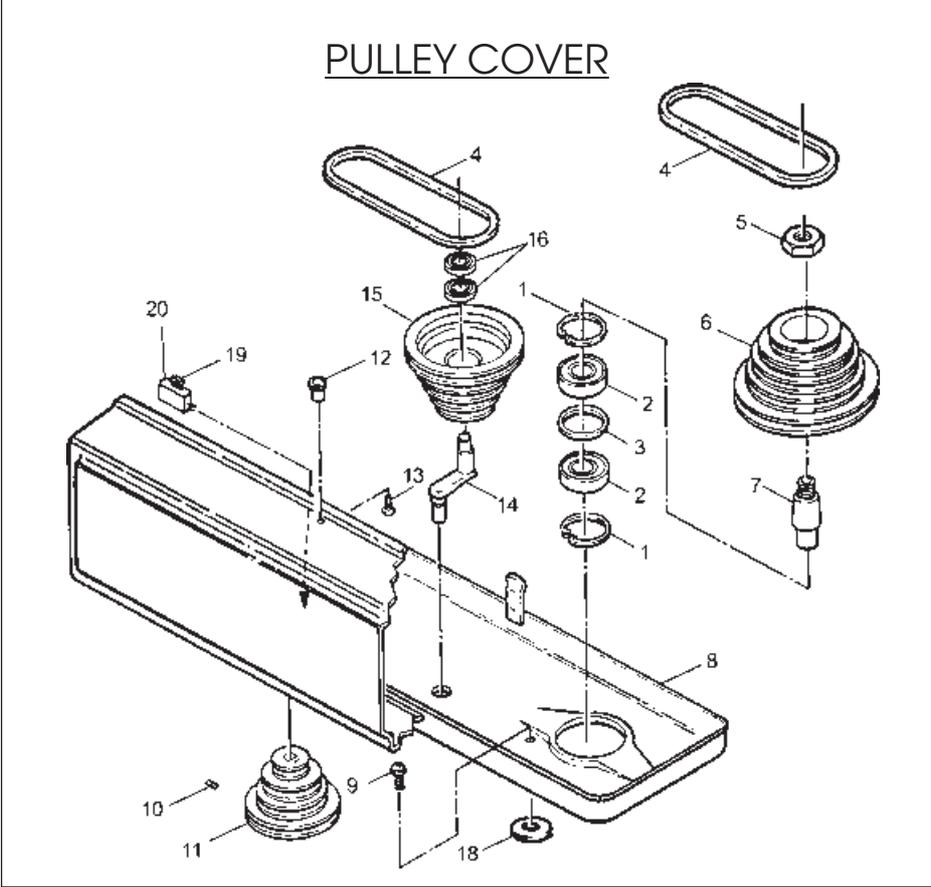
| No. | Description | Model No. CDP401B | Model No. CDP451F |
|-----|---------------------------------|----------------------|----------------------|
| 1 | Hex. Socket Screw Set | 3040487 | 3040487 |
| 2 | Rack Collar | DD16101011 | DD16101011 |
| 3 | Helical Gear | DD16101006 | DD16101006 |
| 4 | Crank | DD13201009 | DD13201009 |
| 5 | Table | DD16101014B | DD16101014B |
| 6 | Table Clamp | DD16101013 | DD16101013 |
| 7 | Table Tilt Locking Screw M16x35 | 3040440 | 3040440 |
| 8 | Arm w/Scale | DD16101005 | DD16101005 |
| 9 | Base | DD16101001 | DD16101001 |
| 10 | Column Support | DD16101002B | DD16101002 |
| 11 | Hex. Socket Screw Set M10x40 | 3040508 | 3040508 |
| 12 | Hex. Socket Screw Set M10x12 | 3040430 | 3040430 |
| 13 | Column | DDC16101003B | DD16101003 |
| 14 | Rack | DD16101010 | DD16101010 |
| 15 | Arm Locking Handle | DD16101012 | DD16101012 |
| 16 | Table Support w/indicator | DD16101004 | DD16101004 |
| 17 | Worm | DD16101008 | DD16101008 |
| 18 | Gear Pin | DD16101007 | DD16101007 |

QUILL SHAFT ASSEMBLY



PARTS LIST

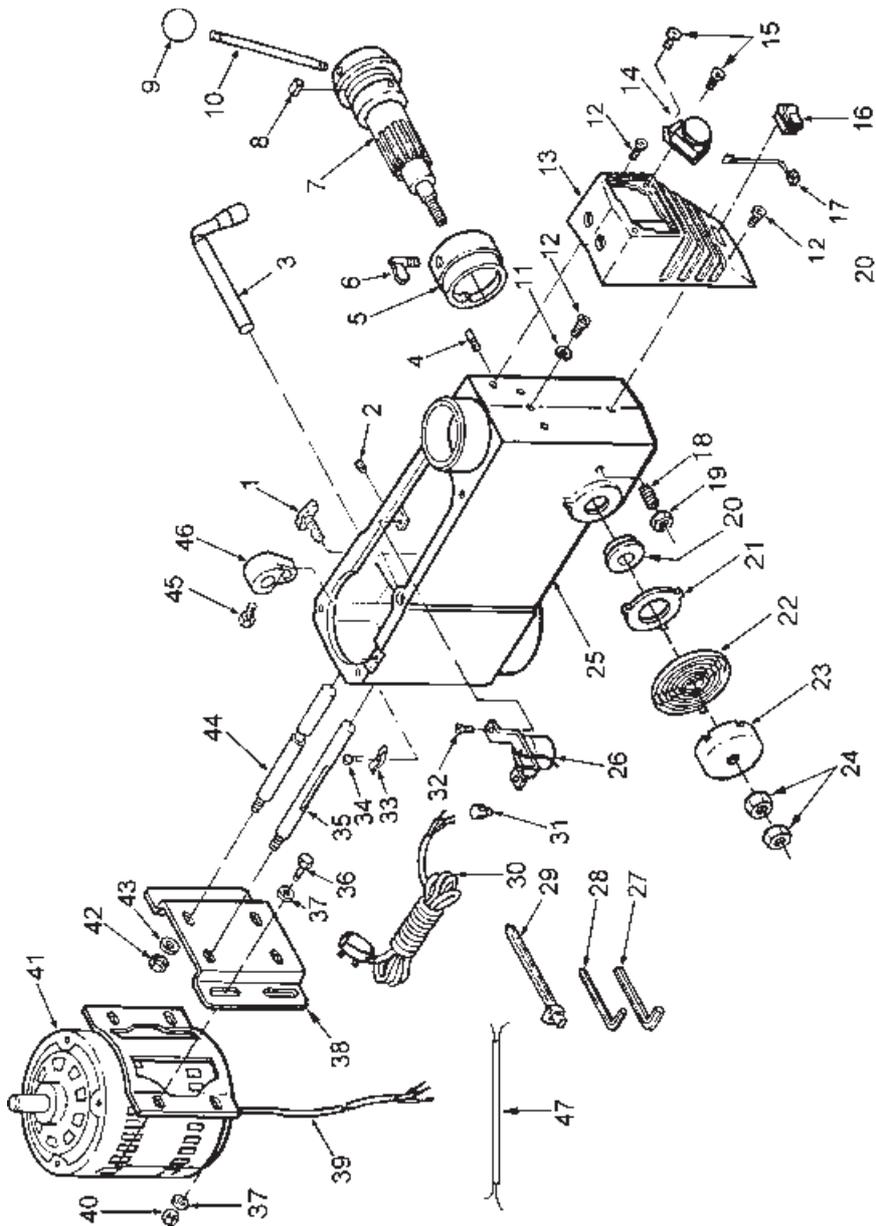
| No. | Description | Part No | No. | Description | Part No. |
|-----|---------------|------------|-----|----------------|------------|
| 1 | LockNut | DD16103005 | 8 | Chuck JT3 | DDJ2216 |
| 2 | Lockwasher | DD16103004 | 9 | Arbour MT2-JT3 | DD20120 |
| 3 | Flat Washer | DD16103003 | 10 | Wedge Drift | DD16103008 |
| 4 | Bearing 60203 | BRG60203 | 11 | Spindle | DD16103001 |
| 5 | O-Ring | DD16103006 | 12 | Bearing 80204 | BRG80204 |
| 6 | Quill | DD16103002 | 13 | Chuck Guard | DD16108001 |
| 7 | Chuck Key | DD16103010 | | | |



PARTS LIST

| No. | Description | Part No | No. | Description | Part No. |
|-----|-----------------------|-------------|-----|-------------------|------------|
| 1 | Circlip | DD16102024 | 11 | Motor Pulley | DD16205005 |
| 2 | Bearing 60204 | BRG60204 | 12 | Knob | DD16105008 |
| 3 | Bearing Spacer | DD16102023 | 13 | Pan Head Screw M5 | 3040656 |
| 4 | 'V' Belt A27 | DD16201511 | 14 | Idler Pivot | DD16205007 |
| 5 | Pulley Nut | DD16102025 | 15 | Idler Pulley | DD16205006 |
| 6 | Pulley Spindle | DD16105009B | 16 | Bearing 60202 | BRG60202 |
| 7 | Pulley Insert | DD16102022 | 18 | Foam Washer | DD13105009 |
| 8 | Pulley Cover w/Labels | DD16105000 | 19 | Microswitch | DDXN5 |
| 9 | Rd Head Screw M6 | 3040650 | 20 | Microswitch Cover | See dealer |
| 10 | Set Screw M8 | 3040528 | | | |

HEAD ASSEMBLY



HEAD ASSEMBLY PARTS LIST

| No. | Description | Part No. |
|-----|----------------------------|-------------|
| 1 | Belt Tension Locking Screw | DD1610205 |
| 2 | Screw Set M10 | 4030430 |
| 3 | Belt Tension Lever | DD16102004 |
| 4 | Stop Pin | DD16104010 |
| 5 | Depth Stop Collar w/Scale | DD16104003 |
| 6 | Depth Locking Screw | DD16104012 |
| 7 | Spindle Feed Shaft | DD16104000 |
| 8 | Scale Guide | DD16104004 |
| 9 | Knob | DD16104011 |
| 10 | Feed handle | DD16104005 |
| 11 | Lockwasher | DDGB8621-87 |
| 12 | Pan Head Screw M5 | 3040485 |
| 13 | Switch Box | DD16102008A |
| 14 | ON/OFF switch Assembly | DDKJD12A |
| 15 | Pan Head Screw | DDGB845-85 |
| 16 | Light Switch | DDRF1001 |
| 17 | Lead | DD16102018A |
| 18 | Special SL Screw | DD16102021 |
| 19 | Hex. Nut M10 | 3040602 |
| 20 | Quill Spring Seat | DD16104006 |
| 21 | Quill Spring Retainer | DD16104007 |
| 22 | Quill Spring | DD16104009 |
| 23 | Spring Cap | DD16104008 |
| 24 | Hex. Nut | DDGB6172-86 |
| 25 | Head w/Pointer and Trim | DD16102001 |
| 26 | Bulb Socket | DD16202013B |
| 27 | Hex. Wrench 5mm | DDGB5356-86 |
| 28 | Hex. Wrench 3mm | DDGB5356-86 |
| 29 | Cable Tie | DD16102017 |
| 30 | Power Cable w/Plug | DD16102015I |
| 31 | Connector Wire | DD16102019 |
| 32 | Pan Head Screw M6 | 3040420 |
| 33 | Cable Clamp | DD16102014 |
| 34 | Pan Head Screw M5 | 3040656 |
| 35 | Motor Suppprt Bracket | DD16102002 |
| 36 | Hex. Head Screw M8 | 3040502 |
| 37 | Washer | DDGB792-85 |
| 38 | Motor Mount | DD16102007A |
| 39 | Motor Cable | DD16102016B |
| 40 | Hex. Nut M8 | 3040601 |
| 41 | Motor Assembly | DDYL7124-03 |
| 42 | Hex. Nut M12 | 3040603 |
| 43 | Lock Washer | DDGB93-87 |
| 44 | Motor Support Bracket | DD16102002 |
| 45 | Hex. Head Screw M8 | 3044500 |
| 46 | Adjusting Lever | DD16102006 |
| 47 | Lead | DD16102029 |

SPECIFICATIONS

| | |
|--|-----------------|
| Motor | 230V, 50Hz, 1Ph |
| Power Rating | 510Watts |
| Current Rating | 2.3Amps |
| Speed | 1400RPM |
| Fuse Rating | 13Amp |
| Bulb Type | E27 Screw - 60W |
| No. of Speeds | 16 |
| Chuck Capacity | 16mm |
| Spindle Taper | MT2 |
| Table Type | Radius - Wet |
| Table Dimensions | 310 x 310mm |
| Table T- Slot Dimensions | 15 x 240 (x2) |
| Max. Spindle Travel | 80mm |
| Max. Dist. Chuck to Table (401B) | 335mm |
| Max. Dist. Chuck to Table (451F) | 655mm |
| Max. Dist. Chuck to Base (401B) | 600mm |
| Max. Dist. Chuck to Base (451F) | 1145mm |
| Column Dia. | 70mm |
| Quill Tube Dia. | 47mm |
| Dist. Column to Chuck Centre | 193mm |
| Overall Dimensions (401B) | 1062X375x645mm |
| Overall Dimensions (451F) | 1610X375x645mm |
| Belt Type | A27 686 |
| Weight (401B) | 67kg |
| Weight (451F) | 74kg |

OPTIONAL ACCESSORIES

**Mortising Attachments, Mortice Chisels,
Drill Press Vices, from 3" to 6", Cross Vices (Cast Iron),
and Table Clamps
are available from your CLARKE dealer**



SPARE PARTS AND SERVICING

Please contact your nearest dealer, or
CLARKE International, on one of the following numbers.

PARTS - 020 8558 6696 : SERVICE - 020 8556 4443

PARTS & SERVICE FAX - 020 8558 3622

or e-mail as follows:

PARTS: Parts@clarkeinternational.com

SERVICE: Service@clarkeinternational.com