

Clarke®

METALWORKER

5 SPEED BENCH DRILL



**Model Nos.
CDP5DD • CDP5R**

Part Nos. 6550010 • 6550015

OPERATING & MAINTENANCE INSTRUCTIONS

CE

Serial No.....

0399

Clarke[®]
INTERNATIONAL



DECLARATION OF CONFORMITY

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

- **73/23/EEC**
- **EN 60/335**
- **89/336/EEC**

Product Description: **DRILL PRESS**
Model Number: **CDP5 RANGE**
Serial Number: See Front Cover

Signed 

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

Clarke International is a trading style of Clarke International Limited

Thank you for purchasing this CLARKE - CDP5DD, 5 Speed bench mounted Drill Press which is designed for DIY and light workshop use ONLY.

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 the Press giving you long and trouble free service.

GUARANTEE

This product is guaranteed against faults in manufacture for 12 months from date of purchase. Please 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.

TABLE OF CONTENTS

	PAGE
Safety Precautions	4
Additional Safety Rules for Drill Presses	5
Electrical Connections	6
Preparation for Use	7
Assembly	8
Settings and Adjustments	10
Setting your Drill Speed	11
Operation	12
Maintenance	13
Cutting Speed Chart	13
Trouble Shooting	14
Parts Lists and Diagrams	15 - 17
Specifications	18
Spare Parts & Servicing	2 - 19

GENERAL SAFETY PRECAUTIONS

FOR OPERATING MACHINERY

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 or by removing starter keys.
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. **AVOID ACCIDENTAL STARTING.** Ensure machine is switched OFF before plugging in.
18. **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 13).
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 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  " 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.

NOTE:

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.

FUSE RATING

The fuse in the plug must be replaced with one of the same rating (13 amps) and this replacement must be ASTA approved to BS1362

PREPARATION

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

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

- A. Head and Motor Assy.
- B. Column.
- C. Base
- D. Table
- E. Chuck Guard Assy.
- F. Chuck
- G. Chuck Key
- H. Feed Handles 3-off
- J. Screws 3-off
- K. Table Locking Lever
- L. Depth Stop Assy
- M. Hex. Wrench



Check the parts off against the above list.

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 the head assembly, considering its weight. Assistance will be required.

Before use, the machine must be mounted, and securely bolted, to 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

WARNING!
IT IS STRONGLY ADVISED THAT ASSISTANCE BE USED WHEN ASSEMBLING THIS MACHINE.

A. Column to the Base.

Bolt the column assembly to the base with the three hex. screws provided.

Fig. 1

NOTE: Ideally, the base with column attached, should be firmly bolted to the workbench, prior to the assembly of other components.

B. Table to Column.

1. Thread the Table Locking Handle into the Table Support from the left hand side, and leave it loose at this stage.
2. Slide the Table Support with Table, over the Column, and allow it to rest against the base, as shown in Fig.1.



Fig. 2

C. Head to Column.

NOTE: It may be necessary to unscrew the two Head Lock Set Screws 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, ensuring it slides home fully.
2. Align the head with the base, and firmly secure to the Column with the hex. socket Head Screws as shown in Fig. 2



Fig. 3

3. Screw the three feed handles, firmly into the hub of the feed shaft. (Fig. 3)



D. Chuck Guard Assembly

Slide the Chuck Guard over the Quill Shaft and nip up the pinch bolt at the rear of the assembly. Ensure the Quill Shaft/Spindle is at the top of its travel.

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

E. Installing the Chuck.

1. With the chuck guard lifted clear of the spindle nose and turned so that the pinch bolt is facing the front, as shown in Fig.4, slide the work table up the column 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, see illustr. opposite.
4. Ensuring all parts are thoroughly clean, dry, and burr free, place the chuck over the end of the spindle, 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. (See Fig.4)
5. When the chuck is installed, turn the chuck guard around so that the shield is facing the front, and tighten the pinch bolt to secure it in position.

Fig. 4



Fig. 5



Fig. 6

F. Tensioning the Drive Belt.

The drive belt is pre-installed, but should it require tensioning or spindle speed to be changed, proceed as follows:

1. Undo the Belt Tension Locking Knob to relieve any tension on the belt, and referring to the chart inside the belt cover (which is duplicated on page 11), install the belt in the position corresponding to the spindle speed required.
2. Lever the motor, on its bracket, away from the head, so that tension is applied to the belt. Tension is correct, when the belt deflects by approx. 1/2" at its centre, when using reasonable thumb pressure. Lock the motor in this position using the Locking Knob.

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

IMPORTANT. When closing the cover, check the operation of the microswitch. It should operate IMMEDIATELY the cover is opened. Undo the microswitch fixing screws and adjust accordingly.



G. Assembling the Spindle Depth Stop Assy.

Fig. 7

Slide the end of the threaded rod through the bracket on the side of the head and through the hole in the top of the Chuck Guard. Secure with the nut provided, from beneath, thereby locking the Depth Stop to the Chuck Guard and hence the Spindle.

(Therefore, as the Spindle is moved downwards, the depth Stop will move by the same amount).

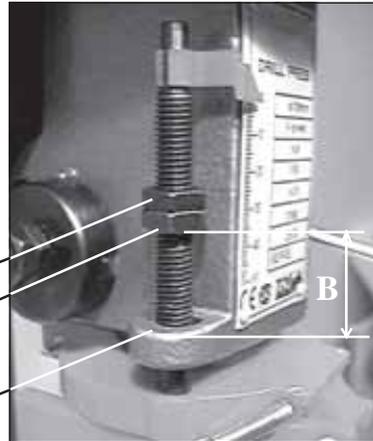
The pointer may be zeroed by sliding it up or down on its mounting.

For adjustments, see below.

Lock Nut

Adjuster Nut

Face A



SETTINGS and ADJUSTMENTS

1. Table.

The table may be raised, lowered or swivelled about the column, by slackening off the table support locking handle, adjusting accordingly, and re-tightening the handle. It may also be tilted by loosening the Set Screw beneath the table, tilting to the required position, and re-tightening the Set Screw.

A bevel scale, is provided on the table mounting, measured in degrees, to assist in setting the required angle.

For all normal operations, the table should be set to 0°.

To check to ensure the drill is entirely perpendicular to the table, 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 perfectly square.

Fig. 8



2. Spindle Depth Stop Assy (Ref Fig. 7)

To set a required depth of hole, adjust the Depth Stop as Follows:

1. Lower the Chuck with the power OFF, until the drill contacts the surface of the workpiece, and hold in that position.
2. Spin down the adjuster nut so that the gap between its underside, and face of the bracket (A fig 7) is the depth of the hole required, (shown at 'B'). Spin down the lock nut and lock it against the adjuster nut.

The drill is now set to drill holes to your predetermined depth, from that particular start point. i.e. Providing the surface of your workpiece is flat and level, you may drill a series of holes, each to the same depth.

The scale and pointer can be used to drill one off, by lowering the chuck as described above, until the drill contacts the work, setting the pointer against a set point on the scale, switching ON the drill, and proceeding to drill to the required depth, using the scale.

3. Changing Drill (Spindle) Speed.

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

1. Open the pulley cover.
2. Slacken off the Belt Tension Locking Knob, to relieve any tension on the drive belt.
3. Consult the chart inside the pulley cover, and position the belt on the pulley's, according to the spindle speed required.
4. When the belt has been correctly positioned, re-tension by levering the motor away from the head, until the belt deflects by approx. ½" at its centre when using reasonable thumb pressure. Lock the motor in this position with the Belt Tension Locking Knob.

DRILL SPEED TABLE

The table below gives the belt arrangement for given drill speeds. The diagram shows the belts fitted to step D of the Spindle Pulley, and step 4 of the Motor Pulley, giving a spindle speed of 1,980 RPM.

A full chart is also located on the inside of the pulley cover.



Spindle Speed	Belt Position
545 RPM	A1
950 RPM	B2
1470 RPM	C3
1980 RPM	D4
2530 RPM	E5

OPERATION.

1. Insert the drill 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 9 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 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 pushing the 'I' button. To switch OFF...push the 'O' button, see fig. 10.

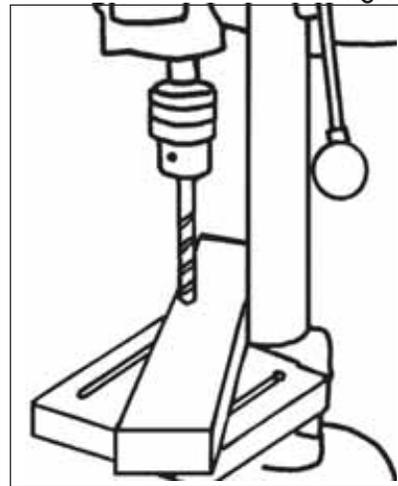


Fig. 9.

NOTE:

1. 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.
2. A Micro switch is provided within the Pulley Cover, which prevents the machine from operating unless the Pulley Cover is firmly closed.

A complete range of Drill Press vices, Cross Vices and Clamps, is available from your Clarke dealer



Fig. 10.

MAINTENANCE

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

Please refer to the trouble shooting chart on page 14 . 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.

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

Lubrication

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

Lubricate the Quill Shaft assembly with light oil, weekly.

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.

CUTTING SPEEDS

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

- Kind of material being worked
- Size of hole
- Quality of cut desired
- Type of Drill

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)		2530	1980	1470	950	545
Wood	in	3/8	(5/8)	(7/8)	(1)	(1¼)
	mm	9.5	(16)	(22)	(25.4)	(31.75)
Alum & Brass Zinc Diecast	in	7/32	11/32	15/32	1/2	(11/16)
	mm	5.6	8.75	12	12.7	(17.5)
Iron & Mild Steel	in	3/32	5/32	1/4	3/8	1/2
	mm	2.4	4	6.4	9.5	12.5

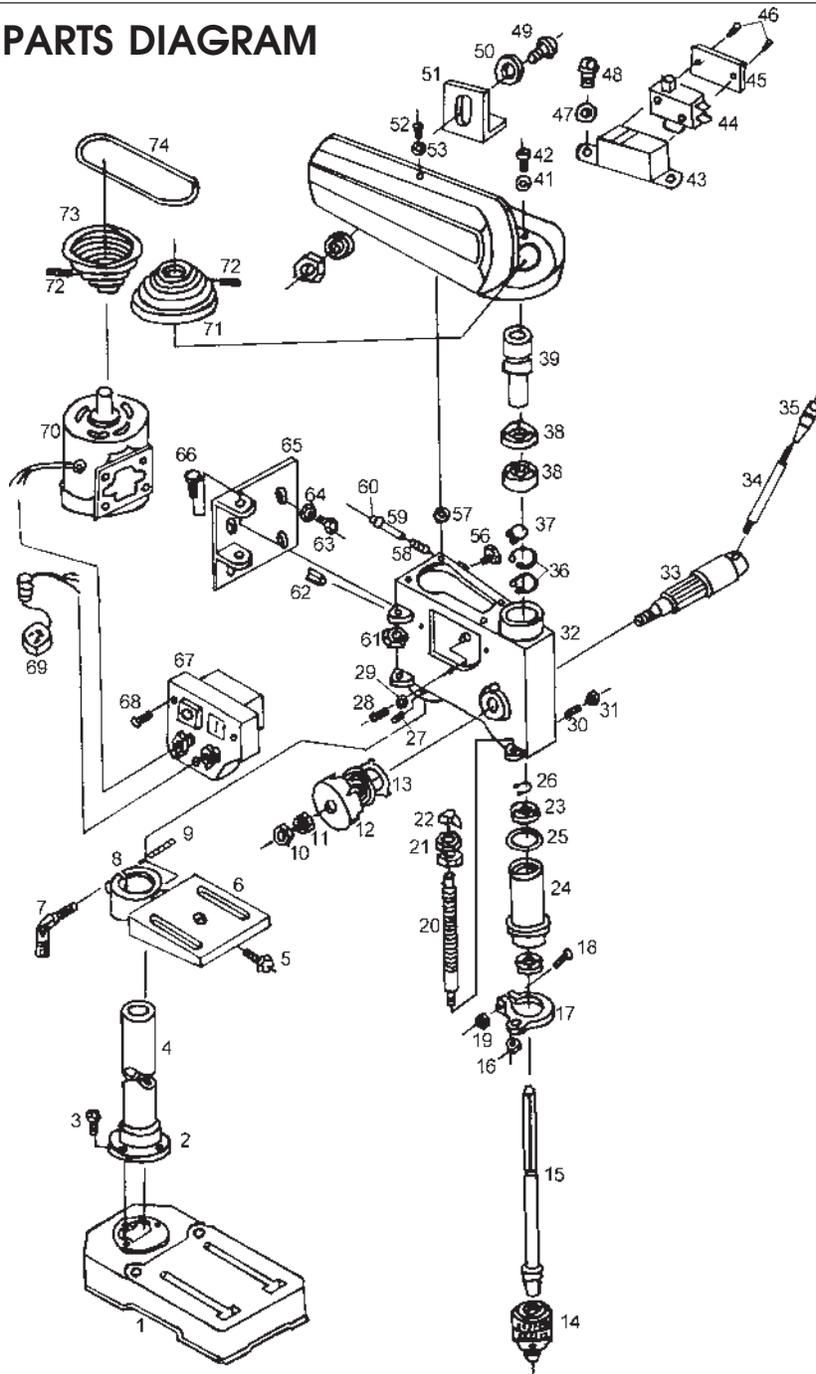
TROUBLE SHOOTING

PROBLEM	PROBABLE CAUSE	REMEDY
Noisy operation (under load)	A) Incorrect belt tension B) Dry spindle C) Loose pulley D) Loose belt E) Worn bearing	A) Adjust tension B) Remove spindle/quill assembly and lubricate C) Tighten pulley D) Adjust belt tension E) Replace bearing
Excessive drill wobble	A) Loose chuck B) Worn spindle, or bearing C) Worn chuck D) Bent drill bit	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 bit
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, and renew/adjust as necessary. (Consult your Clarke dealer for advice.)
Drill binds in workpiece	A) Excessive feed pressure B) Loose belt C) Loose drill D) Incorrect bit speed. E) Drill angles 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 bit burns or smokes	A) Incorrect speed. B) Chips are not discharging C) Dull drill or not proper clearance for material. D) Needs coolant E) Excessive feed pressure	A) Refer to Cutting Speed chart, and adjust drill speed accordingly B) Clean drill C) Check sharpness & taper 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

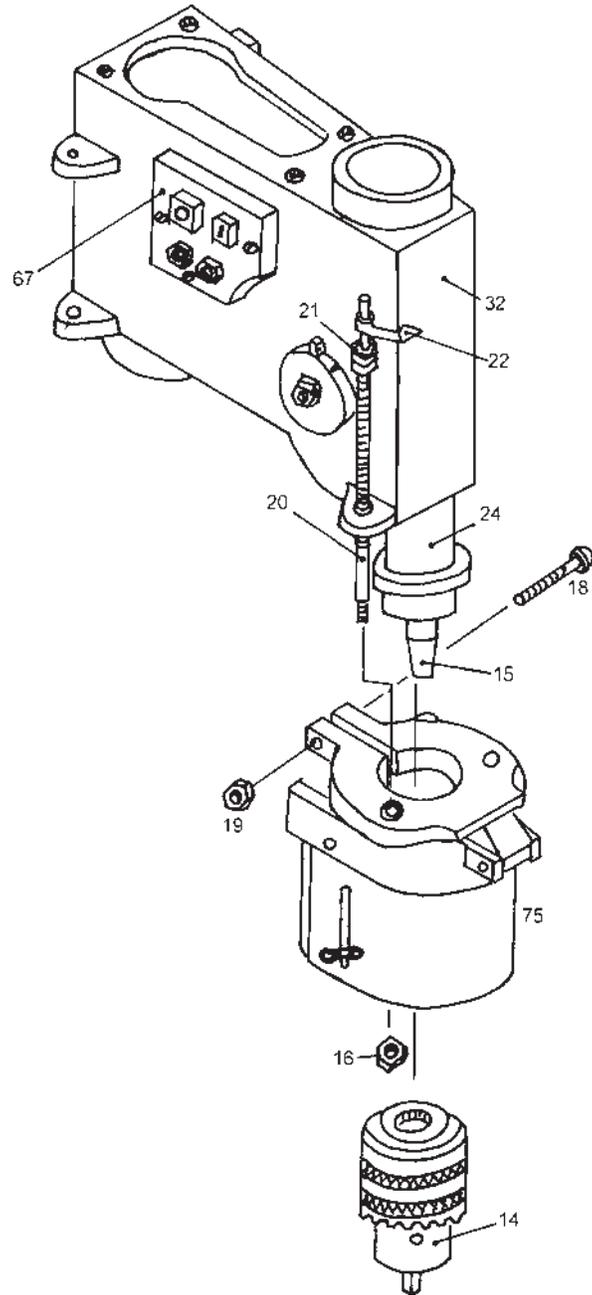
PARTS LIST

Item	Description	Part No	Item	Description	Part No.
1	Base	HC5001	40	Pulley Cover	HC5040
2	Flange	HC5002	41	Washer	HC5041
3	Hex. Bolt	HC5003	42	Set Screw	HC5042
4	Column	HC5004	43	Micr Sw. Protector	HC5043
5	Hex. Bolt	HC5005	44	Microswitch	HC5044
6	Table	HC5006	45	Protector Cover	HC5045
7	Locking Handle	HC5007	46	Screw	HC5046
8	Table Support	HC5008	47	Washer	HC5047
9	Scale	HC5009	48	Set Screw	HC5048
10	Nut	HC5010	49	Set Screw	HC5049
11	Spring Cover	HC5011	50	Washer	HC5050
12	Coil Spring	HC5012	51	Push Arm	HC5051
13	Spring seat	HC5013	52	Set Screw	HC5052
14	Chuck	HC5014	53	Washer	HC5053
15	Spindle	HC5015	54	Washer	HC5054
16	Nut	HC5016	55	Nut	HC5055
17	Plastic Ring	HC5017	56	Set Screw	HC5056
18	Set Screw	HC5018	57	Washer	HC5057
19	Nut	HC5019	58	Spring	HC5058
20	Depth Indicator Pin	HC5020	59	Rod	HC5059
21	Nut	HC5021	60	Tip	HC5060
22	Depth Indicator	HC5022	61	Nut	HC5061
23	Bearing	HC5023	62	Pin	HC5062
24	Quill	HC5024	63	Hex. Bolt	HC5063
25	Ring	HC5025	64	Washer	HC5064
26	Lock Washer	HC5026	65	Motor Mounting Plate	HC5065
27	Set Screw	HC5027	66	Hex. Bolt	HC5066
28	Earth Screw	HC5028	67	Switch	HC5067
29	Shakeproof Washer	HC5029	68	Set Screw	HC5068
30	Screw	HC5030	69	Cable	HC5069
31	Nut	HC5031	70	Motor	HC5070
32	Housing	HC5032	71	Spindle Pulley	HC5071
33	Feed Shaft	HC5033	72	Set Screw	HC5072
34	Handle	HC5034	73	Motor Pulley	HC5073
35	Handle Tip	HC5035	74	V-Belt	HC5074
36	Lock Washer	HC5036	75	Chuck Guard	HC5075
37	Lock Washer	HC5037	76	Set Screw	HC5076
38	Bearing	HC5038	77	Nut	HC5077
39	Sleeve	HC5039	-	Chuck Key	HC5078

PARTS DIAGRAM



PARTS DIAGRAM



SPECIFICATIONS

Motor	230VAC, 50Hz, 1 Phase
Power Rating	1/3 HP
Current Rating (Input)	1.5 Amps
No Load Speed	1420 RPM
No. of Speeds	5
Chuck Capacity	13mm (1/2")
Spindle Taper	B16
Table Type	Square - Dry
Table Dimensions	165X162mm
Max. Spindle Travel	50mm
Max. Dist. Chuck to Table	168mm
Max. Dist. Chuck to Base	260mm
Column Dia.	48mm
Quill Collar Dia.	40mm
Dist. Column to Chuck Centre	105mm
Overall Dimensions (WxDxH)	220x410x575mm
Base Size	180X142mm
Weight net	18kg

OPTIONAL ACCESSORIES

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

SPARE PARTS & SERVICING

For 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 8 558 3622

PARTS E-MAIL - Parts@clarkeint.co.uk

SERVICE E-MAIL - Service@clarkeint.co.uk