

DRAPER

EN

Original Instructions
Version 2
July 2025

12 SPEED **BENCH DRILL**

02016



UK
CA CE

1. Preface

1.1 Product Reference

User Manual for: 12 Speed Bench Drill

Stock No: 02016

Part No: GD20/12E

1.2 Revisions

Version 1: March 2018

First release

Version 2 : July 2025

As our manuals are continually updated, always ensure that the latest version is used.

Please visit drapertools.com/manuals for the latest version of this manual and the associated parts list, if applicable.

1.3 Understanding the Safety Content of This Manual



WARNING! – Situations or actions that may result in personal injury or death.



CAUTION! – Situations or actions that may result in damage to the product or surroundings.

Important: – Information or instructions of particular importance.

1.4 Copyright © Notice

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3. Product Introduction

3.1 Intended Use

This product is designed as a general duty bench drill for most drilling application in a home and workshop environment. Suitable for drilling hard and soft wood, ceramics, plastics, metals and various composite materials.

Any other application beyond the conditions established for use will be considered misuse. Draper Tools accepts no responsibility for improper use of this product.

Read this manual in full before attempting to assemble, operate or maintain the product, and retain it for later use.

3.2 Specification

Stock No.	02016
Part No.	GD20/12E
Rated voltage:	230V/50Hz
Rated input:	600W
Number of speed settings:	12
Speed (no load):	180 – 2740rpm
Drilling capacity:	20mm
Chuck capacity:	3 – 16mm
Spindle travel:	80mm
Throat depth:	185mm
Column diameter:	73mm
Chuck to table length:	430mm
Chuck to base length:	630mm
Table tilt:	+45°
Head rotation:	360°
Table rotation:	360°
Dimensions:	
Table	305 X 305mm
Base:	485 X 280mm
Height:	1050mm
Noise emissions	
Sound pressure level:	78.2dB (A)
Sound power level:	89.8dB (A)
Cord length (approx.):	3M
Net weight:	58kg

Important: The noise emissions values have been measured in accordance with a standard test method and may be used for comparing one tool with another. These values may also be used in a preliminary assessment of exposure.



WARNING! The noise emissions during actual use of the product can differ from the declared values depending on the type of work and the area upon which it is used. Before each use, estimate the likely exposure resulting from the actual conditions of use. Take into account all parts of the operation cycle in order to identify any safety measures required to protect the operator.

4. Health and Safety Information

Important: Read all the Health and Safety instructions before attempting to operate, maintain or repair this product. Failure to follow these instructions may result in injury or damage to the user, the product or the workpiece.

4.1 General Health and Safety Precautions



- WARNING!**
- **ALWAYS disconnect the drill from the mains supply before changing accessories, servicing or performing any maintenance.**
 - **Keep all guards and fixings in place, tight and in good working order. Check regularly for damaged parts and replace before using the tool.**
 - **The headstock and assembled drill are extremely heavy, take care when moving and lifting.** Use a hoist to ensure safety when lifting and positioning the drill.
 - The drill must be securely bolted down to a suitable and level surface to prevent the machine from overturning leading to injury.
 - This drill is designed for use with drill bits only.
 - Ensure the chuck is securely fastened to the spindle.
 - Remove adjusting keys, chuck key and wrenches from the machine and working area before switching on.
 - Use clamps or a vice to secure the workpiece. **DO NOT** attempt to hold the workpiece by hand.

- The safety guard must be correctly fitted and in place at all times.



WARNING! ALWAYS wear appropriate PPE (personal protective equipment) including suitable eye or face protection when operating this drill.

- To avoid entanglement with moving parts **DO NOT** wear loose fitting clothing and tie long hair back.
- Maintain correct balance and footing. Ensure the floor is not slippery and wear non-slip shoes.
- Avoid unintentional starting.
- Keep drill bits clean and sharp for best and safest performance. Follow the instructions for lubrication and changing accessories.
- Locate the drill in a suitable work area, keep area clean and tidy and free from unrelated materials. Ensure there is adequate lighting.
- Keep bystanders away. Children, onlookers and passersby must be restricted from entering the work area for their own protection.
- **DO NOT** use the drill for a task it is not designed to perform.
- **DO NOT** allow untrained persons to operate the drill.
- **DO NOT** get the drill wet or use in damp or wet locations or areas where there is condensation.
- **DO NOT** operate the drill if damaged or parts are missing.
- **DO NOT** exceed the rated capacity of the drill.
- **DO NOT** leave the drill operating unattended.
- **DO NOT** operate the drill when you are tired, under the influence of alcohol, drugs or intoxicating medication.
- **DO NOT** drill or use the drill in the vicinity of flammable or combustible materials.
- When not in use switch off the drill, unplug from the power supply and **DO NOT** leave until the drill has come to a complete stop.
- **DO NOT** pull the plug from the socket by the cord.
- Have this tool repaired by a qualified person only as this will ensure the tool remains safe to use.

4.2 Connection to the Power Supply



CAUTION! Risk of electric shock. DO NOT OPEN

This appliance is supplied with an approved plug and cord for your safety.

If the power supply cord is damaged, it must be replaced by Draper Tools, an authorised service agent or similarly qualified personnel in order to avoid a hazard.

The damaged or incomplete plug, when cut from the cord, shall be disabled to prevent connection to a live electrical outlet.

This appliance is Class I† and is designed for connection to a power supply matching that detailed on the rating label and compatible with the plug fitted.

The value of the fuse fitted is marked on the pin face of the plug. Should the fuse need replacing, use a small plain-slot screwdriver to remove the fuse cover. Ensure the substitute is of the correct rating, approved to BS1362 and ASTA or BS Kite marked. This should only be performed by suitably qualified personnel.

ASTA



BSI



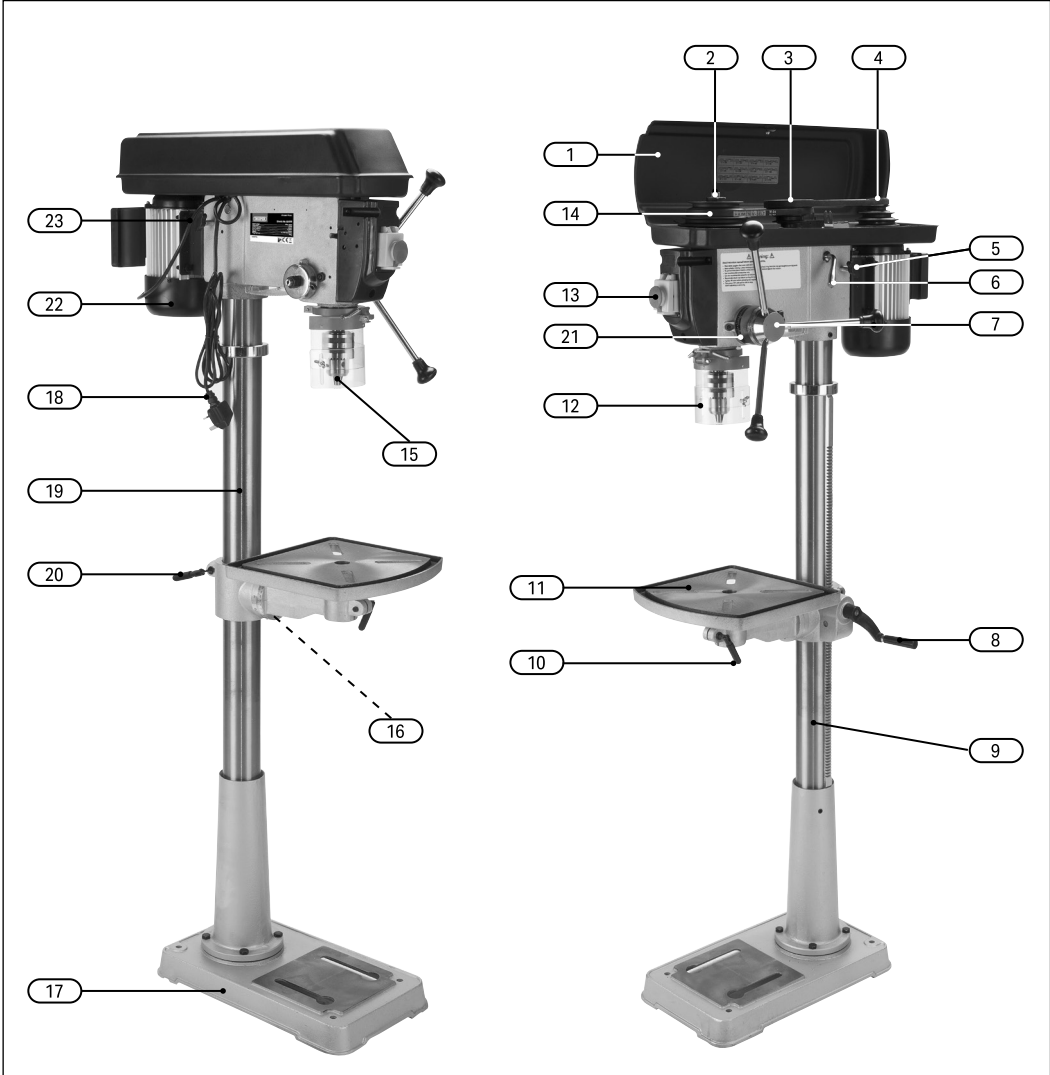
Important: If an extension lead is required, use an approved and compatible lead rated for this appliance. Unwind the entire cable and follow all the instructions supplied with the extension lead.

*Earthed ⚡: This product requires an earth connection to protect against electric shock from accessible conductive parts in the event of a failure of the basic insulation.

4.3 Residual Risk

The safety instructions in this manual cannot account for all possible conditions and situations that may occur. Exercise common sense and caution when using this product and protect against any additional conceivable risks.

5.1 Product Overview



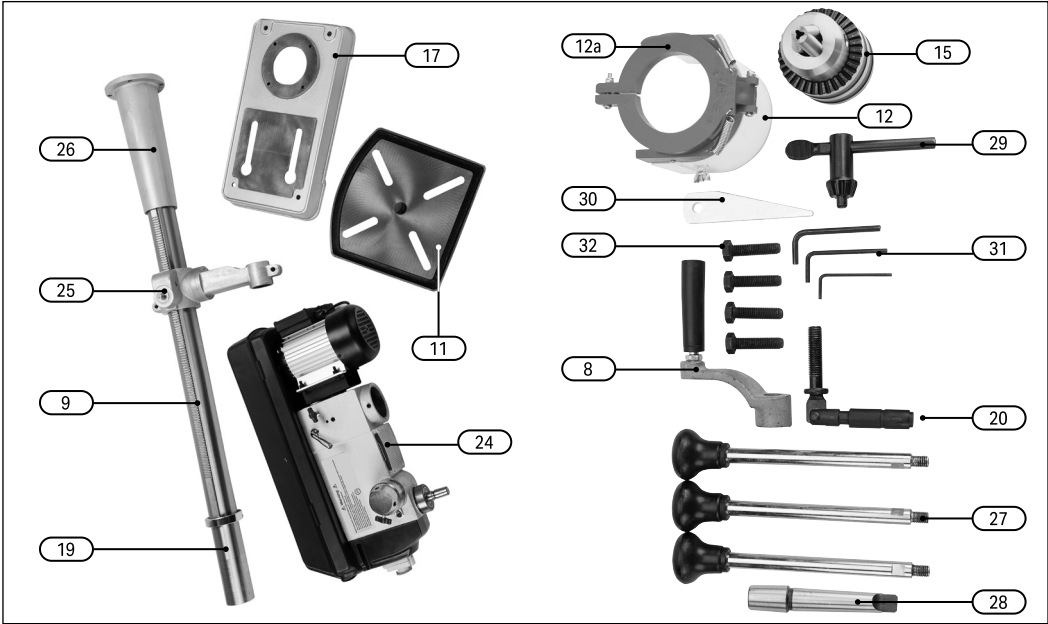
- | | | | | | |
|----|----------------------------|-----|------------------------------|-----|--|
| 1. | Pulley cover | 10. | Table locking handle | 19. | Column |
| 2. | Spindle | 11. | Worktable | 20. | Worktable height/rotation locking handle |
| 3. | Intermediate pulley | 12. | Chuck guard assembly | 21. | Depth stop |
| 4. | Motor pulley | 13. | No-Volt/ON/OFF switch | 22. | Motor |
| 5. | Motor tension locking knob | 14. | Spindle pulley | 23. | Motor tension locking knob |
| 6. | Motor tension lever | 15. | Geared chuck | | |
| 7. | Plunge handle hub | 16. | Worktable tilt locking bolt | | |
| 8. | Table height crank handle | 17. | Base | | |
| 9. | Rack | 18. | Plug and cord | | |

5. Identification and Unpacking

5.2 What's in the Box?

Carefully remove the product from the packaging and examine it for any signs of damage that may have occurred during shipment.

Before assembling the product, lay the contents out and check them against the parts shown below. If any part is damaged or missing, do not attempt to use the product. Please contact the Draper Helpline; contact details can be found at the back of this manual.



- | | | |
|------------------------------|--|------------------------------|
| 8. Table height crank handle | 20. Worktable height/rotating locking handle | 30. Drift key |
| 9. Rack | 24. Head stock | 31. Hex keys (3mm, 4mm, 5mm) |
| 11. Worktable | 25. Table bracket | 32. 4 X 16mm Bolts |
| 12. Guard assembly | 26. Column base | 30. Drift key |
| 12a. Collar | 27. 3 X Plunge handle | 31. Hex keys (3mm, 4mm, 5mm) |
| 15. Geared chuck | 28. Arbor | 32. 4 X 16mm Bolts |
| 17. Base | 29. Chuck key | |
| 19. Column | | |

5.3 Packaging

Keep the product packaging for the duration of the warranty period for reference should the product need to be returned for repair.

WARNING! Keep packaging materials out of reach of children. Dispose of packaging correctly and responsibly and in accordance with local regulations.

Please visit drapertools.com for our full range of accessories and consumables.

6. Assembly Instructions

Important: Before preparing or adjusting this product, read and understand all the safety instructions listed in this manual.

6.1 Assembling Base to Column (Fig.1 – Fig.3)

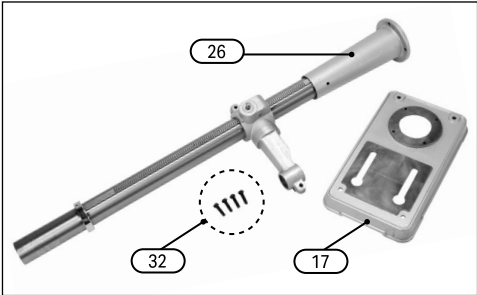


Fig. 1

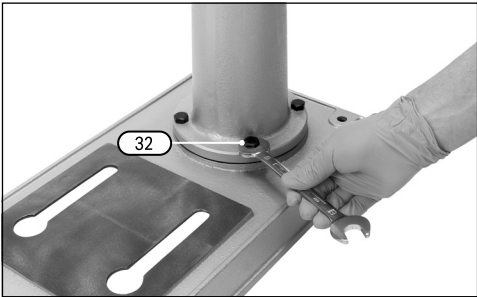


Fig. 2

- Align the column base (26) with the base (17) and secure using the four 16mm bolts (32).

Note: **DO NOT** overtighten the bolts as this may crack the casting.

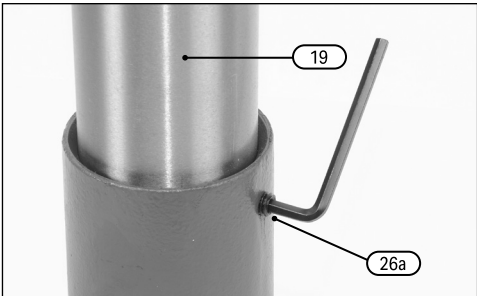


Fig. 3

- Lock the column (19) to the column base (26) with the grub screws (26a).

6.2 Assembling the Table (Fig.4)

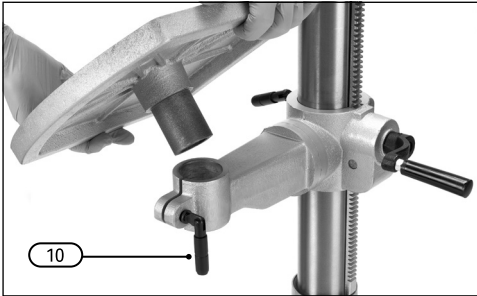


Fig. 4

- Slot the table (11) into the table bracket and tighten the locking handle (10).

6.3 Headstock Assembly

WARNING! The headstock (24) is extremely heavy take care when lifting or moving. For safety use a hoist and seek assistance.



Fig. 5

- Lift the headstock (24) onto the top of the column.
- When aligned and located down fully, tighten the grub screws (24a) with the hex key supplied.

Note: Adjust the drill head over the table and base before securing.

6.4 Fitting Plunge Handles (Fig.6)

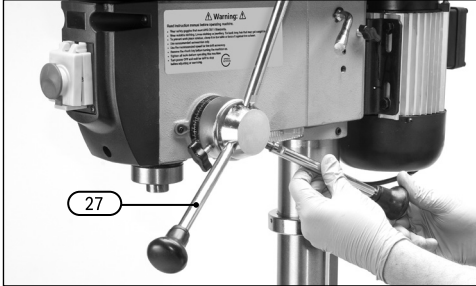


Fig. 6

- Screw the plunge handles (27) onto the hub and hand tighten.

6.5 Fitting Chuck and Arbor (Fig.7 – Fig.8)

- The drill chuck, arbor and headstock spindle join together with an interference fit formed by the matched tapers of the mating surfaces.
- Ensure all mating surfaces are clean as any debris will cause the taper to misalign possibly resulting in the chuck or arbor coming loose creating a potential hazard.

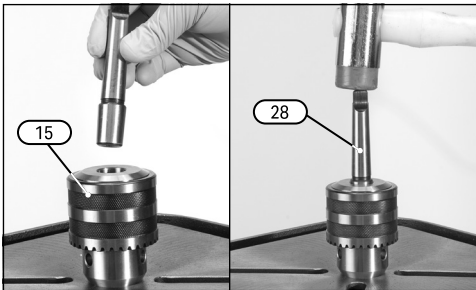


Fig. 7

1. Use the chuck key (29) provided to open the chuck until the jaws are completely recessed.
2. Insert the short taper end of the arbor (28) into the back of chuck (15). Use a sharp tap with a soft blow mallet to secure.

Note: Ensure the chuck is on a surface that will not absorb the force of the mallet. If the chuck does not mate securely, repeat the process.

3. Insert the long tapered end of the arbor into the spindle (2).
4. Rotate the chuck assembly until the arbor locates and allows complete insertion.



Fig. 8

5. Tap the chuck securely in place.

6.6 Fitting the Chuck Guard

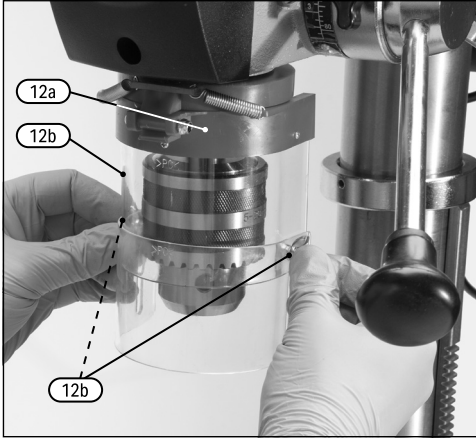


Fig. 9

1. Loosen the cross slot machine screw and nut.
2. Then pass the chuck guard (12) over the chuck onto the collar (12a). When located fully and aligned on the collar, tighten the machine screw and nuts to secure.

NOTE: DO NOT over tighten as it may damage the guard.

3. Loosen the locking nuts (12b) and adjust the lower guard section down until it fully covers the chuck and drill bits. Once correctly adjusted, tighten the locking nuts.

NOTE:

- The chuck guard should be inspected before each use to determine effectiveness and correct functionality.
- The chuck guard should be adjusted and positioned between the chuck and operator for all processes.
- Replace a damaged or missing chuck guard before continuing to use the drilling machine.

6.7 Bench/Floor Mounting

- Secure the drilling machine to a suitable work surface or bench using the various points in the base (fixings are not supplied).
- Ensure there is enough clear space around the drilling machine to accommodate larger items which may be drilled.
- Ensure the load created by the bench drill, operator and workpiece will not compromise the integrity of the intended mounting surface/floor space.

7. Setting Up the Bench Drill

Important: Before operating this product, read and understand all the safety instructions listed in this manual. Ensure that the product is fully assembled and correctly prepared for use.

7.1 Spindle Speed Adjustment (Fig.10 – Fig.13)

SPINDLE PULLEY	INTERMEDIATE PULLEY	MOTOR PULLEY
E	5	
D	4	4
C	3	3
B	2	2
A	1	1

Fig. 10

Slow1Fast12			
Setting	Speed	Drive Belt Position	
		Spindle	Motor
1	180 min ⁻¹	A - 1	4 - 4
2	250 min ⁻¹	A - 1	3 - 3
3	300 min ⁻¹	B - 2	4 - 4
4	400 min ⁻¹	B - 2	3 - 3
5	480 min ⁻¹	C - 3	4 - 4
6	580 min ⁻¹	A - 1	2 - 2
7	970 min ⁻¹	E - 5	4 - 4
8	1,280 min ⁻¹	D - 4	3 - 3
9	1,410 min ⁻¹	E - 5	3 - 3
10	1,540 min ⁻¹	C - 3	2 - 2
11	2,270 min ⁻¹	B - 2	1 - 1
12	2,740 min ⁻¹	D - 4	2 - 2

Fig. 11

1. Remove the pulley cover (1) screws.
2. Then select the speed most suitable for the intended application.

Notes:

- Material with a softer composition can be drilled faster and cut more easily.
 - Use a slower speed for harder materials.
 - Drilling wood too slowly can cause splintering.
3. Loosen the locking knob (5) and adjust the motor tension lever (6) to release the tension across the drive belt.

4. Move the belt to the corresponding sections of the motor and spindle pulleys. Ensure the belts remains horizontal.



Fig. 12

5. Apply pressure to the motor tension lever (6) to tension the drive belt. Once the correct tension is achieved tighten locking knob (5) to lock in position.

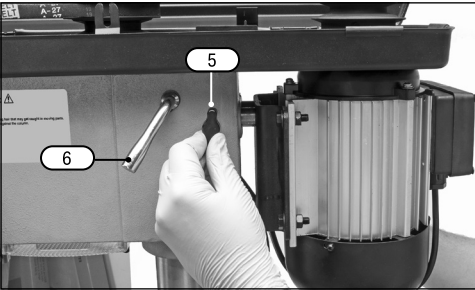


Fig. 13

6. Gently lower the pulley cover before tightening the screw.
- **NEVER** operate the drilling machine with the pulley cover open or not fully secured.

CAUTION!

- Over tensioning the drive belt will accelerate belt wear and increase the load on the drive bearings and may lead to the motor failing.
- Under tensioning the belt will cause the drive belt to slip and increase the noise level.

7.2 Drill Bit Installation/Replacement (Fig.14)

The drilling machine is equipped with a geared chuck and a separate key to secure the bit in the chuck jaws.

- Select the correct accessory depending on the material type and the intended application.
- Ensure the selected accessory is suitable and speed compatible with the drilling machine.



Fig. 14

1. Place the bit into the chuck(15) .
 2. Insert the chuck key (29) into the apertures to engage the teeth.
 3. Rotate the key clockwise to grip. All three apertures should be tightened to ensure a firm grip.
- Always use a good quality sharp drill bit/cutter.



WARNING! The drill bit will be hot after use.

7.3 No-Volt Switch Operation (Fig.15)

- In the event of a power supply disruption the machine will require manually restarting once power has been returned.



Fig. 15

- To switch the machine on, press the green '**ON**' (I) button.
- To switch the machine off, press the red '**OFF**' (O) button.
- During operation the yellow cover with the emergency red stop button must be left covering the **ON/OFF** buttons. In the event of an accident or emergency, striking the stop button will activate the **OFF** switch.
- Prior to starting visually inspect the drilling machine – check that the guards are in place and correctly functioning, the bit is correctly installed with the chuck key removed and no other parts are damaged.
- Ensure all locking handles are tight prior to starting the drilling machine.

7.4 Worktable Adjustment (Fig.16 – Fig.19)

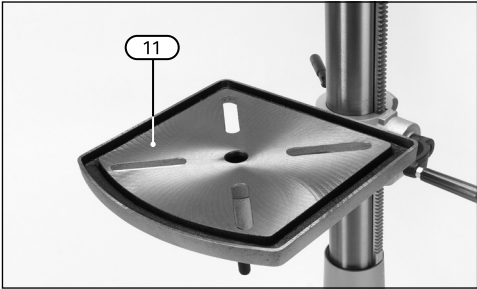


Fig. 16

- The worktable (11) can be raised or lowered, tilted $\pm 45^\circ$ or rotated 360° around the column.

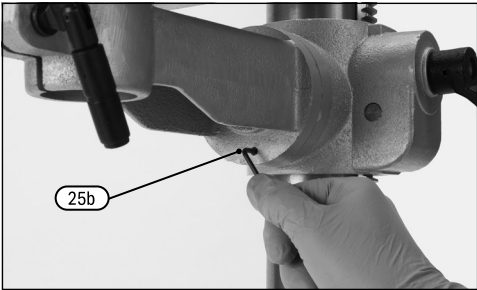


Fig. 17

1. To tilt the table, loosen off the table bracket bolt (25a) and unscrew the set screw (25b) with a hex. key until the table can be rotated.

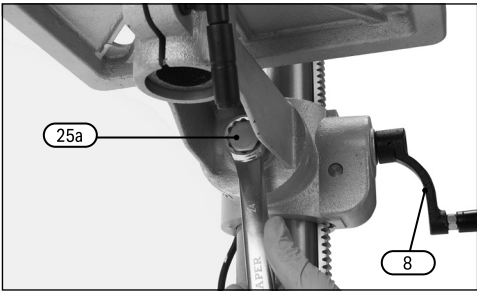


Fig. 18

2. Adjust the table's degree of tilt and re-secure with the locking bolt (25a). Use the scale as a guide. Alternatively use a protractor off the table to the drill bit for more accuracy.

3. When the table is back in a level position, screw the set screw back in and re-tighten bolt.

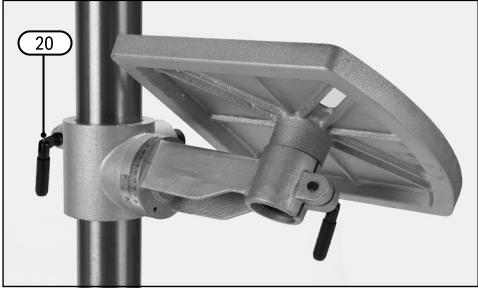


Fig. 19

4. To raise/lower the table working height, loosen the locking handle (20) and turn the height adjustment crank handle (8) to raise or lower the table. Alternatively, while the locking handle (20) is loose the table can be rotated 180° to further increase the distance between the chuck and workpiece.
- The slots in the worktable and base can accommodate locking bolts to secure a small vice enabling safe clamping of the workpiece.

CAUTION! A drill bit snagging on a piece of work will violently grab the piece of material, whipping it round and is likely to result in personal injury. Always ensure the workpiece is securely clamped.

7.5 General Drilling (Fig.20)

Where holes are to be drilled too exactly the same depth, a depth stop (21) is provided.

Use as follows:

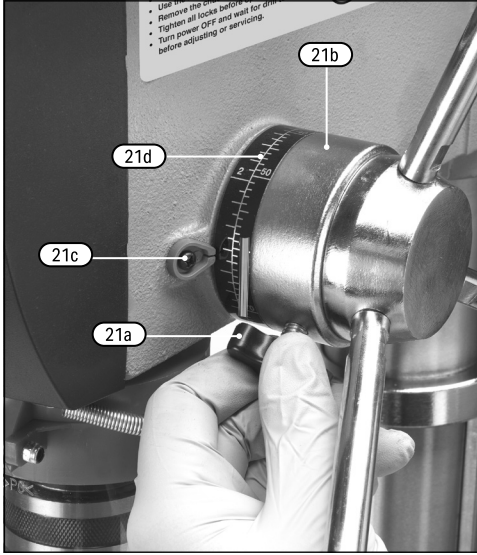


Fig. 20

1. Loosen the lock handle (21a) and rotate the housing (21b) until the pointer (21c) aligns with the depth required on the scale (21d). Then tighten the lock handle (21a).
2. All holes will then be drilled to the exact depth, as indicated on the scale.

7.6 Dust and Swarf

- All wood dust (including dust from composites like chipboards and fibre boards etc) is hazardous to health: For example: MDF (medium density fibreboard) which contains formaldehyde is a known carcinogen.
- A correctly fitted dust mask, suitable for the application must be worn.
- For work activities involving exposure to fine wood dust a mask rated to at least FFP2 should be used.
- Swarf produced by metal cutting is extremely sharp.

8. Maintenance and Troubleshooting

 **WARNING! ALWAYS switch off the machine and unplug from the power socket before carrying out any adjustments, cleaning or maintenance.**

8.1 General Maintenance

- Regular inspection and cleaning will keep your machine in good working condition.
- Avoid blocking the air vents in the machine and vacuum the ventilation slots regularly.

8.2 Lubrication

- To prolong the life of the drill bits, lubricate with a suitable oil when drilling.
- Remove any swarf or dust after each operation.
- Lubricate the spindle and motor pulley drives with a medium purpose grease regularly.
- Spray a general-purpose lubricating agent/rust inhibitor on the other moving parts and machined surfaces.
- Periodically check the fixings are secure.

8.3 Arbor Removal (Fig.21 – Fig.22)

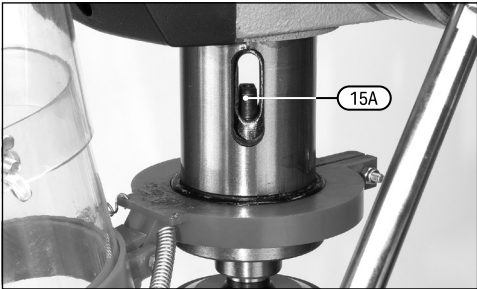


Fig. 21

- To remove the arbor (28) from the spindle use the drift key (30) supplied.



Fig. 22

- Lower the spindle with the plunge handles to expose slot (15a). Rotate the spindle to align the inner and outer slots.
- Insert the drift key and allow the spindle to raise. Tap the drift key while supporting the chuck.

8.4 Troubleshooting

Problem	Possible Cause	Remedy
Machine will not start.	Fuse blown.	Check and replace fuse or circuit breaker.
	Unknown.	Contact Draper Tools for advice.
Noisy operation .	Incorrect belt tension.	Adjust tension.
	Dry spindle.	Lubricate spindle with grease.
	Loose spindle pulley or motor pulley.	Tighten pulley's set screws.
Bit burning or smoking.	Incorrect speed used.	Adjust speed.
	Swarf not coming out of hole.	Retract bit frequently to clear swarf.
	Bit blunt/feeding too slowly.	Sharpen or replace bit.
Excessive drill run out or wobble.	Bit bent .	Replace bit.
	Worn spindle bearings.	Contact Draper Tools for advice.
	Bit not properly installed in chuck.	Install bit centrally.
	Chuck not properly installed.	Refit chuck correctly.
Drill binds in workpiece.	Workpiece pinching bit Excessive feed pressure.	Support or re-clamp work-piece.
	Incorrect belt tension.	Adjust tension.

9. Spares, Returns and Disposal

For spare parts, servicing, and repair and replacement options, please contact the Draper Tools Product Helpline for details of your nearest authorised agent.

Draper Tools will endeavour to hold any spare parts, if applicable, for seven years from the date that it sells the final matching stock item.

Any servicing or repairs carried out by unauthorised personnel or installation of spare parts not supplied by Draper Tools will invalidate your warranty.

At the end of its working life, dispose of the product responsibly and in line with local regulations. Recycle where possible.

- **DO NOT** dispose of this product with domestic waste; most local authorities provide appropriate recycling facilities.



10. Warranty

12 months from date of purchase – Visit [draper.com/warranty](https://www.draper.com/warranty) for full details.

However, if the tools are hired out, the warranty period is 90 days from the date of purchase

11. Explanation of Symbols



Read the instruction manual



Warning!



Wear face mask and safety glasses



Wear ear defenders



Wear protective gloves



Warning! Keep hands away from blade.



Warning! Disable the machine before attempting to maintain it.



Earthed



WEEE –
Waste Electrical & Electronic Equipment
Do not dispose of Waste Electrical & Electronic Equipment in with domestic rubbish



Continuous A-weighted sound power level



European conformity



UK Conformity Assessed

Contact Details

Draper Tools

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Please contact the Draper Tools Product Helpline for repair and servicing enquiries.