RADIAL PILLAR DRILLS

MODEL NO: **GDM790BR.V2, GDM1630FR.V2**

Thank you for purchasing a Sealey product. Manufactured to a high standard, this product will, if used according to these instructions, and properly maintained, give you years of trouble free performance.

IMPORTANT: PLEASE READ THESE INSTRUCTIONS CAREFULLY. NOTE THE SAFE OPERATIONAL REQUIREMENTS, WARNINGS & CAUTIONS. USE THE PRODUCT CORRECTLY AND WITH CARE FOR THE PURPOSE FOR WHICH IT IS INTENDED. FAILURE TO DO SO MAY CAUSE DAMAGE AND/OR PERSONAL INJURY AND WILL INVALIDATE THE WARRANTY. KEEP THESE INSTRUCTIONS SAFE FOR FUTURE USE.

Refer to instructions | Wear eye protection | Wear safety footwear | Wear ear protection | Wear a mask | Indoor use only

1. SAFETY

1.1. ELECTRICAL SAFETY

❑ **WARNING!** It is the user's responsibility to check the following:
✓ Check all electrical equipment and appliances to ensure that they are safe before using.
✓ Inspect power supply leads, plugs and all electrical connections for wear and damage.
✓ Ensure that the insulation on all cables and on the appliance is safe before connecting it to the power supply.
× **DO NOT** use worn or damaged cables, plugs or connectors.
✓ Ensure that any faulty item is repaired or replaced immediately by a Sealey qualified technician.
✓ If the cable or plug is damaged during use, switch off the electricity supply and remove from use.
✓ Sealey recommend that an RCD (Residual Current Device) is used with all electrical products.
IMPORTANT: Ensure that the voltage rating on the appliance suits the mains power supply.
× **DO NOT** pull or carry the appliance by the power cable.
× **DO NOT** pull the plug from the socket by the cable.
× Sealey recommend that repairs are carried out by a qualified electrician.

1.2. GENERAL SAFETY

❑ **WARNING!** Disconnect drill from mains power before changing accessories, servicing or performing any maintenance.
❑ **WARNING!** Keep all guards and holding screws in place, tight and in good working order. Check regularly for damaged parts.
❑ **WARNING!** Always wear approved eye or face protection when operating this drill. Use face or dust mask if dust is generated.
❑ **WARNING!** Risk of cutting/puncturing due to working with sharp tools. Follow all safety points to reduce risk of injury.
❑ **WARNING!** Risk of entanglement. Remove ill fitting clothing. Remove ties, watches, rings and other loose jewellery and contain long hair.
❑ **WARNING!** Risk of kickback. Ensure the workpiece is securely clamped to reduce likelihood of kickback.
✓ Locate the drill in an adequate working area for its function, ensuring adequate space for operation and maintenance.
✓ A guard or any other part that is damaged should be replaced, before the tool is used, to ensure that it operates properly and perform its intended function. The safety guard is a mandatory fitting where drill is used in premises covered by the Health & Safety at Work Act.
✓ Check alignment of moving parts and check for possible broken parts.
✓ Use the pillar drill for its intended purpose only (precision drilling).
✓ Replace or repair damaged parts. Use recommended parts only. Unauthorised parts may be dangerous and will invalidate the warranty.
✓ Ensure the set screws of the head frame are screwed tight before using the drill.
✓ Secure the drill to the workbench or floor.
✓ 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 (not included; available from your Sealey stockist) to secure the workpiece.
✓ Refer to speed chart for recommended drilling speeds.
✓ 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.
✓ Permissible environmental conditions include a dry, well-ventilated area with temperatures between -10°C and 40°C. Avoid high humidity, direct sunlight, and exposure to dust or corrosive substances.
✓ Exclude children and non-essential persons from the work area.
✓ Maintain correct balance and footing. Ensure the floor is not slippery and wear non-slip shoes.
✓ Avoid unintentional starting.
✓ The centre of gravity in a pillar drill is usually near the base or motor. Knowing its position helps ensure safe lifting and stable operation.
× **DO NOT** attempt to hold the workpiece by hand.
× **DO NOT** force the drill or use it 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** use drill in an area where paint fumes, solvents or flammable liquids pose a potential hazard. Keep flammable material away from the drill when operating. Flammable waste, such as wiping or cleaning rags, must be placed in a closed metal container and disposed of correctly.
× **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.
✓ When not in use switch off the drill, remove plug from the power supply and do not leave until the drill has come to a complete stop.
✓ Restrict availability of keys or tools to skilled or instructed persons only.

2. INTRODUCTION

All pillar drills other than model No. SDM30 have Morse taper spindle housings for taking taper shank drill bits. All models offer multiple speed drives and access to drive belts is denied during operation by mechanical protection. Rise and fall height rack and pinion feed shafts with adjustable preset depth control for repetitive work. Radial pillar drill allows off-table drilling and angle drilling with a throat depth of 420mm. Mortise attachment available order model No. MA10. Capacity chuck 16mm (5/8"), MT2. Safety devices fitted include a no-voltage release switch, allowing insurance company approval for use in educational establishments.

3. SPECIFICATION

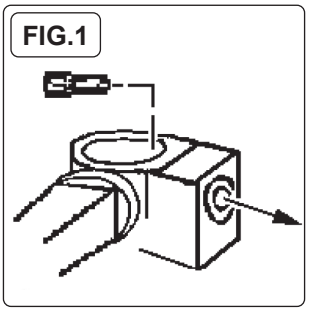
MODEL NO:	GDM790BR.V2	GDM1630FR.V2
Base Size:	345 x 215mm	420 x 250mm
Collar Diameter:	Ø60mm	Ø60mm
Column Diameter:	Ø60mm	Ø70mm
Drilling Capacity (Chuck Size):	16mm	16mm
Fuse Rating:	13A	13A
Maximum Distance Spindle to Base:	470mm	1280mm
Maximum Distance Spindle to Table:	300mm	830mm
Motor Power:	550W	550W
Nett Weight:	43kg	59kg
Number of Speeds:	5	5
Optional Keyless Chuck 16mm:	GDMX/KC	GDMX/KC
Overall Height:	820mm	1620mm
Plug Type:	3-Pin	3-Pin
Power Supply Cable Length:	1.6m	1.6m
Radial Arm Travel:	285mm	285mm
Sound Pressure (L_{WA}):	88.9 dB(A)	88.9 dB(A)
Speed Range:	500-2450rpm	500-2450rpm
Spindle Centre to Column:	420mm	420mm
Spindle Nose Taper:	MT2	MT2
Spindle Travel:	80mm	80mm
Supply:	230V, 50Hz, 1ph	230V, 50Hz, 1ph
Swing:	840mm	840mm
Working Base Surface Size:	160 x 180mm	210 x 190mm
Working Table Surface Size:	Ø310mm	Ø310mm

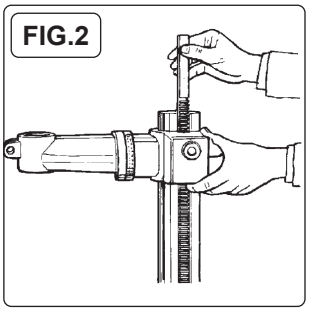
4. CONTENTS

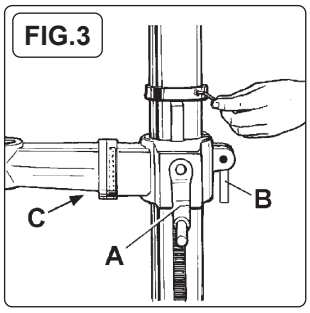
Unpack the parts listed below and check to ensure they are in good condition. Any queries must be reported to your stockist immediately.

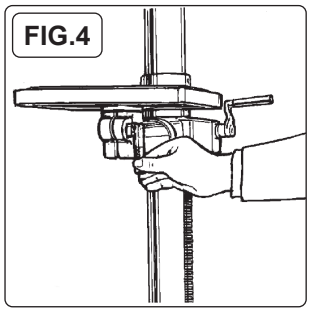
- Head Assembly
- Base
- Adjusting Handle (table)
- Chuck and Key
- Hex Keys (2) & Wedge
- Bolts (4)
- Coach Bolts & Wing Nuts
- Column with Flange
- Cable
- Feed Handles and Knobs (3)
- Safety Guard
- Belt
- Rack & Rack Ring
- Table Arm, Bracket & Worm Gear
- Pivoted Clamp Bolts (4 - GDM790BR, 5 - GDM1630FR)
- Locking Shoe

5. ASSEMBLY









NOTE: assistance is recommended due to the weight of the unit.

5.1. MOUNTING TO A WORKBENCH (MODEL GM790BR) OR FLOOR (GDM1630FR)

WARNING! For stability and safety it is imperative that the drill base is securely bolted to the workbench (GDM790BR) or floor (GDM1630FR). Ensure that the mounting surface is capable of supporting the drill together with the weight of the heaviest likely workpiece. Use the base plate as a guide to mark and drill holes. Secure the unit using appropriate fixings (not included).

5.2. REDUCING WORKBENCH VIBRATION (MODEL GM790BR)

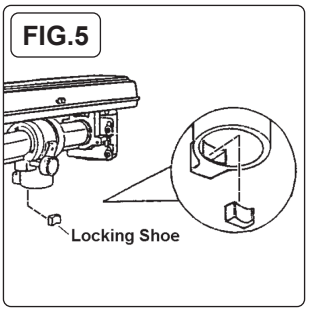
Workbench vibration can lead to machine wear, poor performance and excessive noise. The workbench must be suitable for supporting machines and workpieces. Ensure the bench is secure and joints are tight/reinforced. Consider use of an anti-vibration mat.

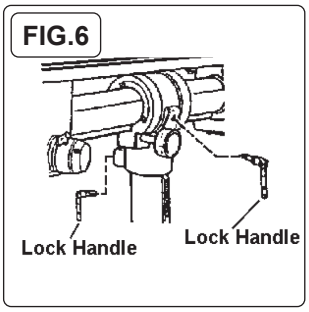
5.3. ATTACH THE COLUMN

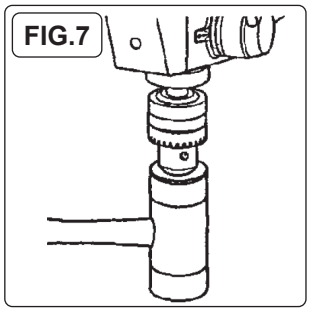
Place the column assembly on the base. Align holes and secure with the bolts provided.

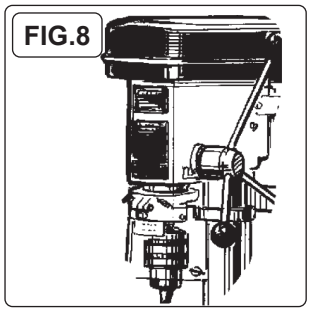
5.4. ATTACH THE TABLE

Insert worm gear into table bracket, meshing it with the lift gear (fig.1). Fit table bracket onto column together with rack (fig.2), engaging gear in bracket with rack. Install the rack collar and tighten set screw firmly (fig.3). Fit the table adjusting handle (fig.3.A) and lock handle (fig.3.B). Tighten the adjusting handle set screw onto the flat on the worm gear shaft. Install the table and table lock handle (fig.4).









5.5. ATTACH THE HEAD ASSEMBLY

Ensure that the column head assembly is approximately midway between the motor and the spindle housing and then insert locking shoe into column head (fig.5). Place the head assembly over the column and slide column head down onto column. Tighten lock handles (fig.6). **WARNING!** If the column head assembly is not positioned midway there is a risk that the whole drill assembly may become unstable when the head assembly is fitted. Screw the three feed handles and knobs into the hub of the pinion shaft.

5.6. INSTALL THE CHUCK & ARBOR

Open the chuck jaws completely by turning the chuck key counter-clockwise. Hold chuck on spindle and tap into place on taper with a hammer (fig.7).

5.7. ATTACH THE GUARD

Loosen clamp screw on safety guard mounting collar, pass guard up over chuck and fit collar round flange of quill shaft. Ensure guard pivot is central and tighten clamp screw.

5.8. FIT THE BELT

Open pulley cover, loosen butterfly set screw on motor adjustment and fit belt to pulleys. Pull motor back to tension belt and retighten screw.

5.9. CONNECTING TO POWER SUPPLY

Connect the unit to a suitable power supply as per the unit specifications. Ensure the cable is positioned away from the unit.

6. OPERATION

❑ **WARNING!** Ensure the drill is unplugged from the mains power supply before commencing.

6.1. INTENDED USE

A pillar drill (also called a drill press) is a fixed machine designed for precision drilling into materials such as wood, metal and plastic. They can be used to create accurate and consistent holes in a workpiece. Holes can be drilled at precise angles and depths. A pillar drill can also be used for sanding, polishing and mortising. **DO NOT** use the drill for a task it is not designed to perform.

6.2. METALWORKING FLUIDS

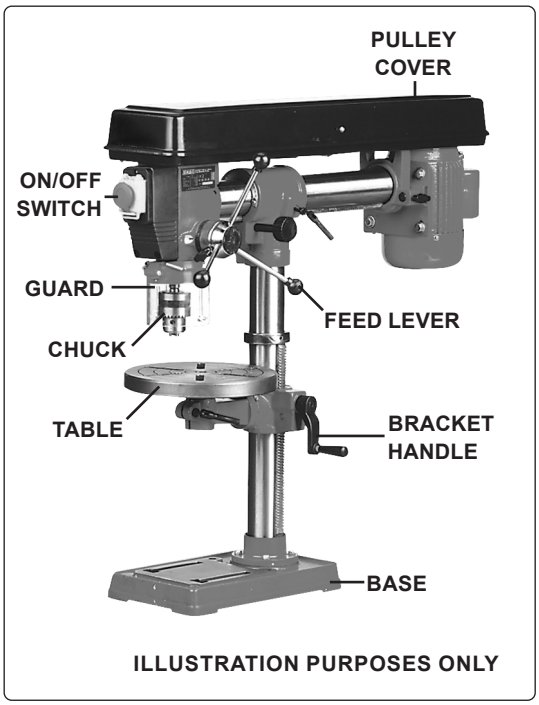
Correct selection of metalworking fluid can improve drilling performance, reduce heat, and improve the working life of tools and components in certain applications.

6.3. INSTALL DRILL BIT

Insert appropriate drill bit based on material, size and depth of hole to be drilled. Ensure the bit is 1” (25mm) into the chuck. Avoid inserting small bits too far. Ensure the bit is centred before tightening. **DO NOT** use a worn or damaged bit, or a bit that is not designed for the work material. Check the bit is square to the table using a level.

6.4. ADJUST THE TABLE

To adjust table up or down, loosen lock handle (fig.3.B) then turn bracket handle (fig.3.A). Once at correct height tighten lock handle. To adjust table tilt, loosen the work table bolt (fig.3.C), adjust table to the desired angle, then re-tighten bolt. To turn the table around the column, loosen the rack collar slightly, then loosen the lock handle (fig.3.B). Turn the table to the desired position then secure the lock handle and rack collar.



6.5. ADJUST THE SPEED

The belt cover is fitted with a micro-switch to prevent drill operation with the cover open. Open the pulley cover and loosen the motor adjustment screw. Choose the speed for the drilling operation (see drill speed chart - Section 7) and move the belt to the correct pulley grooves for that speed, as shown on the pulley chart - Section 7.

6.6. BELT TENSION

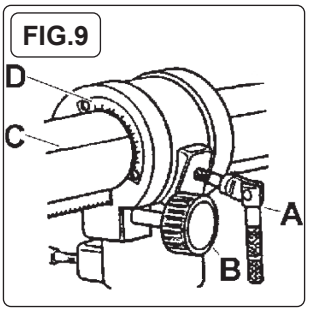
With the motor adjustment clamp screw loose and using hand pressure on the motor, set tension so that belt give is no more than 10mm each side, at centre span, under finger pressure. Tighten clamp screw.

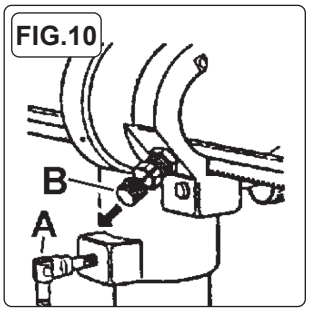
6.7. POSITIONING THE WORKPIECE

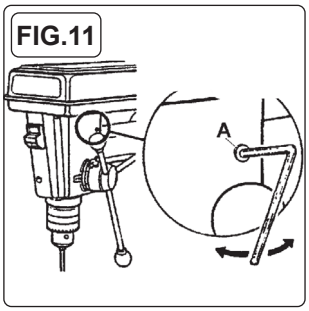
Use a piece of wood to rest the workpiece on. The drill bit may break through the workpiece and damage the table otherwise. The wood should rest on the table so that one end of it is against the left side of the column, to prevent it spinning when the drill bit breaks through the workpiece. For small workpieces that cannot be clamped to the table, use a drill vice (not included). The vice must be clamped or bolted to the table.

6.8. SETTING THE DRILL DEPTH

Use the scale on the side of the drill head near the drill handle. Loosen locking screw and set the scale to the depth desired. Tighten locking screw. When ready to drill, simply pull the feed handle. The drill will stop at the set depth.







6.9. SETTING THE DRILL HEAD

Fore and aft movement: loosen clamping lever (fig.9.A) and turn feed knob (fig.9.B) to move head to the required position. Re-tighten clamping lever. **Horizontal rotation:** loosen clamping lever (fig.10.A) and rotate head on column to required position (360° rotation is available). Re-tighten clamping lever. **Tilting:** loosen clamping lever (fig.9.A), Pull out and turn - to hold out - vertical lock (fig.10.B). Head may now be tilted up to 45° clockwise and 90° anticlockwise. Angular position is shown by line (fig.9.C) against scale (fig.9.D). When set, re-tighten clamping lever. After returning head to the vertical position always re-engage the vertical lock.

6.10. CHECKING THE HEAD IS SQUARE

Confirm that the head is in the 'vertical' position, that the vertical lock (fig.10.B) is engaged and that the clamping lever (fig.9.A) is tight. Using a spirit level check that table is horizontal and adjust if necessary. Clamp a straight rod, or a drill bit, in the chuck and use a machinist's square to check that the rod is perpendicular to the table. Adjust drill head as necessary by loosening the two set screws (fig.11.A) either side of the spindle housing and rotating the housing on the horizontal tube. When correctly positioned, re-tighten set screws.

6.11. OPERATING THE DRILL

Ensure hands, hair and clothing are clear, and the guard is in place before turning on the drill. Always clamp the workpiece to reduce likelihood of kickback. Use steady pressure on the feed lever when drilling through the workpiece. Use a centre punch to improve the accuracy of drilling. Clear chips regularly to prevent them from clogging the drill bit. **DO NOT** force the drill. Replace damaged/worn bits as required. Turn off after use. Always check that the drill is operating normally before use or after an intervention.

6.12. EMERGENCY STOP

The E-stop (Emergency Stop) is a safety switch that immediately cuts power to the pillar drill when pressed. It is used to quickly stop the machine in case of an emergency to prevent accidents or injuries. To reset the E-stop, twist or pull it back to its original position before restarting the drill.

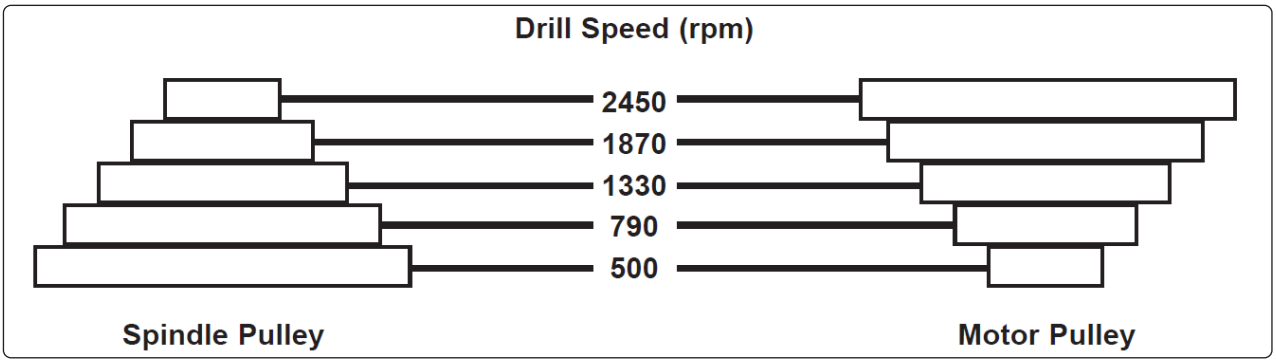
6.13. IN CASE OF ACCIDENT / BREAKDOWN

In the case of an emergency involving the drill, stop all operations and ensure the area is clear to prevent further risk. Turn off power supply if safe to do so. Where applicable, notify your supervisor and follow your workplace's emergency procedures. If there are any injuries or serious hazards, contact emergency services without delay. Clearly tag the equipment as "Out of Order" and prevent further use until it has been inspected, repaired, and confirmed safe for operation.

7. DRILL SPEEDS

DRILL DIAMETER (MM)	DRILL SPEED (RPM)			
	Steel	Cast Iron	Iron	Alum. & Copper
3	1820	2580	2580	2580
4	1350	1820	1820	2580
5	1290	1350	1350	2580
6	970	1290	1290	2580
7	830	970	970	2580
8	830	970	970	2580
9	500	970	830	1820
10	500	830	830	1820
11	500	830	830	1820
12	420	830	500	1820
13	420	500	500	1350
14	420	500	500	1350
16	320	500	500	1290
18	320	420	420	1290

20	280	320	320	970
22	210	320	280	970
25	120	280	210	830



8. MAINTENANCE

IMPORTANT: maintenance is to be performed when necessary to maintain correct and safe performance. **WARNING!** Disconnect drill from mains power before changing accessories, servicing or performing any maintenance. All maintenance must be performed by an authorised service centre. **DO NOT** use a faulty unit. Contact an authorised service centre for repair.

8.1. BEFORE EACH USE

Before each use check for broken, cracked, bent, or loose parts, or any visible damage. Check the guard is in place and in good working condition. If any suspect item is found remove the drill from service and take necessary action to remedy the problem. **DO NOT** use the drill if believed to have been subjected to abnormal load or shock. Inspect and take appropriate action. Always check that the drill is operating normally before use, after an unexpected stop, or after an intervention.

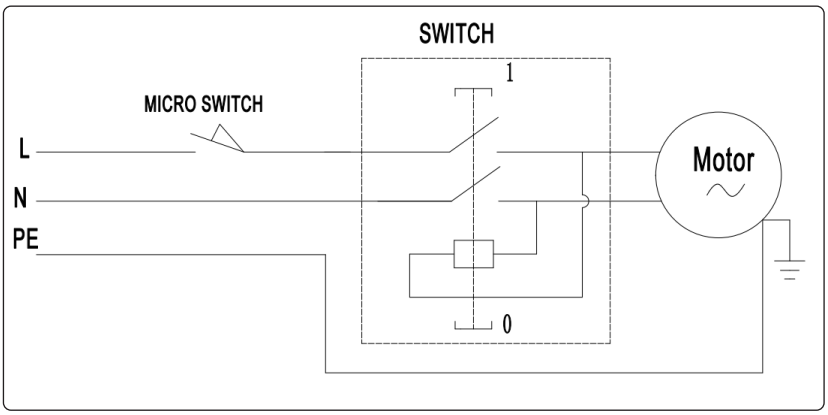
8.2. CLEANING / MAINTENANCE

Clean the tool after each use. A coat of maintenance spray applied to the table and column will help to keep the surfaces clean. Periodically lubricate table elevation rack/gear/worm mechanism and the spindle sleeve exterior. Blow out any dust that may have accumulated in the motor. Periodically check the unit for signs of corrosion. Check the drill functions as designed and that the motor, switches, cables, pulleys etc. are in good condition. Check your model parts information for spares. Replace damaged or worn parts as required for correct and safe performance. Always check that the drill is operating normally before use or after an intervention.

8.3. BELT CHANGING

Instructional video available on Sealey YouTube channel. Isolate the drill from the power supply. Open pulley cover. Remove the belt tension by loosening adjustment screw. Remove the belt(s) and replace with another of the same specification. Re-tension the belts so deflection at centre span under finger pressure is no more than 10mm each side. Close and secure the pulley case.

8.4. WIRING DIAGRAM



8.5. STORAGE / HANDLING

Store the unit in a cool, dry location. If the unit is to be transported, disassemble and place it in the original packaging. Use suitable mechanical assistance where required for lifting. Lift from the base only to avoid damage to the unit. Please note that the drill is top heavy and care must be taken to avoid tipping. Handle the item with care, using appropriate assistance if required.

8.6. DE-COMMISSIONING PRODUCT

Recycle unwanted materials instead of disposing of them as waste. All tools, accessories and packaging should be sorted, taken to a recycling centre and disposed of in a manner which is compatible with the environment. When the product becomes completely unserviceable and requires disposal, drain any fluids (if applicable) into approved containers and dispose of the product and fluids according to local regulations.

9. TROUBLESHOOTING

PROBLEM	POSSIBLE CAUSE	SOLUTION
Machine will not start.	1. Micro switch in belt cover not closed.	1. Adjust striker plate.
Excessive noise.	1. Incorrect belt tension.	1. Adjust tension.
	2. Spindle is dry.	2. Disassemble spindle/quill and lubricate.
	3. Pulley is loose.	3. Tighten pulley.
	4. Bearing damaged.	4. Replace the bearing.
Excessive drill wobble.	1. Chuck is loose.	1. Refit the chuck.
	2. Bearing or spindle shaft is worn.	2. Replace worn part.
	3. Chuck is worn.	3. Replace the chuck.
	4. Drill fitted incorrectly or faulty.	4. Fit correctly or change drill.
Drill binds in the workpiece.	1. Feed pressure is wrong.	1. Apply less pressure.
	2. Belt is loose.	2. Adjust tension.
	3. Drill bit is loose.	3. Tighten the chuck jaws with the key.
	4. Speed is too fast.	4. Reduce the speed.
Drill burns or smokes.	1. Speed is too fast.	1. Reduce the speed.
	2. Chips are not discharging.	2. Clean the drill bit.
	3. Drill bit is blunt.	3. Use a new bit.
	4. Lubrication needed.	4. Lubricate while drilling.
	5. Feed pressure is wrong.	5. Apply less pressure.
Table is difficult to raise/lower.	1. Lubrication is needed.	1. Lubricate with light oil.
	2. Rack is bent.	2. Straighten the rack.

If the above does not solve the problem contact your local Service Agent by checking www.sealey.co.uk.

ENVIRONMENT PROTECTION

Recycle unwanted materials instead of disposing of them as waste. All tools, accessories and packaging should be sorted, taken to a recycling centre and disposed of in a manner which is compatible with the environment. When the product becomes completely unserviceable and requires disposal, drain any fluids (if applicable) into approved containers and dispose of the product and fluids according to local regulations.

REGISTER YOUR PURCHASE HERE

WEEE REGULATIONS

Dispose of this product at the end of its working life in compliance with the EU Directive on Waste Electrical and Electronic Equipment (WEEE). When the product is no longer required, it must be disposed of in an environmentally protective way. Contact your local solid waste authority for recycling information.

Note: It is our policy to continually improve products and as such we reserve the right to alter data, specifications and component parts without prior notice. Please note that other versions of this product are available. If you require documentation for alternative versions, please email or call our technical team on technical@sealey.co.uk or 01284 757505.
Important: No Liability is accepted for incorrect use of this product.
Warranty: Guarantee is 12 months from purchase date, proof of which is required for any claim.

Jack Sealey Ltd t/a Sealey Group, Kempson Way, Suffolk Business Park, Bury St Edmunds, Suffolk, IP32 7AR UK
Jack Sealey (EU) Ltd t/a Sealey Group, Farney Street, Carrickmacross, Co. Monaghan, A81 PK68 Ireland
Tel: 01284 757500 • **Email:** sales@sealey.co.uk • **Web:** www.sealey.co.uk