



**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 OR PERSONAL INJURY, AND WILL INVALIDATE THE WARRANTY. PLEASE KEEP INSTRUCTIONS SAFE FOR FUTURE USE.**

Thank you for purchasing this product. Your drill is designed only for drilling suitable materials with the proper drill bits. If used for any other purpose, or with incorrect drill bits, your warranty will be invalidated.

## 1. SAFETY INSTRUCTIONS

### 1.1. ELECTRICAL SAFETY. **WARNING! It is the user's responsibility to read, understand and comply with the following:**

You must check all electrical equipment and appliances to ensure they are safe before using. You must inspect power supply leads, plugs and all electrical connections for wear and damage. You must ensure the risk of electric shock is minimised by the installation of appropriate safety devices. An RCCB (Residual Current Circuit Breaker) should be incorporated in the main distribution board. We also recommend that an RCD (Residual Current Device) is used with all electrical products. It is particularly important to use an RCD together with portable products that are plugged into an electrical supply not protected by an RCCB. If in doubt consult a professional electrician. You may obtain a Residual Current Device by contacting your dealer. **You must** also read and understand the following instructions concerning electrical safety.

1.1.1. The **Electricity At Work Act 1989** requires all portable electrical appliances, if used on a business premises, to be tested by a qualified Electrician at least once a year by using a Portable Appliance Tester (PAT).

1.1.2. The **Health & Safety at Work Act 1974** makes owners of electrical appliances responsible for the safe condition of the appliance, and the safety of the appliance operator. **If in any doubt about electrical safety, contact a qualified electrician.**

1.1.3. Ensure the insulation on all cables and the product itself is safe before connecting to the mains power supply. See 1.1.1. & 1.1.2. above and use a Portable Appliance Tester (PAT).

1.1.4. Ensure that cables are always protected against short circuit and overload.

1.1.5. Regularly inspect power supply, leads, plugs and all electrical connections for wear and damage, especially power connections, to ensure that none are loose.

1.1.6. **Important:** Ensure the voltage marked on the product is the same as the electrical power supply to be used, and check that plugs are fitted with the correct capacity fuse. A 13Amp plug may require a fuse smaller than 13Amps for certain products (*subject to 1.1.10. below*) see fuse rating at right.

1.1.7. DO NOT pull or carry the powered appliance by its power supply lead. Products such as welders must not be pulled or carried by their output cables.

1.1.8. DO NOT pull power plugs from sockets by the power cable.

1.1.9. DO NOT use worn or damage leads, plugs or connections. Immediately replace or have repaired by a qualified Electrician. A U.K. 3 pin plug with ASTA/BS approval is fitted. In case of damage, cut off and fit a new plug according to the following instructions (discard old plug safely).


(UK only - see diagram at right). **Ensure the unit is correctly earthed via a three-pin plug.**

a) **Connect the GREEN/YELLOW earth wire to the earth terminal 'E'.**

b) **Connect the BROWN live wire to live terminal 'L'.**

c) **Connect the BLUE neutral wire to the neutral terminal 'N'.**

**After wiring, check there are no bare wires, that all wires have been correctly connected and that the wire restraint is tight.**

Double insulated products are often fitted with live (BROWN) and neutral (BLUE) wires only. Double insulated products are always marked with this symbol.  **To re-wire, connect the brown & blue wires as indicated above. DO NOT connect the brown or blue to the earth terminal.**

1.1.10. Some products require more than a 13Amp electrical supply. In such a case, NO plug will be fitted. **You must** contact a qualified Electrician to ensure a 30 amp fused supply is available. We recommend you discuss the installation of a industrial round pin plug & socket with your electrician.

1.1.11. **Cable extension reels.** When a cable extension reel is used it should be fully unwound before connection. A cable reel with an RCD fitted is recommended since any product which is plugged into the cable reel will be protected. The section of the cable on the cable reel is important. We recommend that at least 1.5mm<sup>2</sup> section cable but to be absolutely sure that the capacity of the cable reel is suitable for this product and for others that may be used in the other output sockets, we recommend the use of 2.5mm<sup>2</sup> section cable.

### 1.2. GENERAL SAFETY

**WARNING!** Disconnect the pillar drill from the mains power before changing accessories, servicing or performing any maintenance.

3 Always be sure the switch is OFF before connecting the drill to the power supply.

3 When moving the drill between locations, exercise extreme caution and lift correctly. The use of a forklift is recommended.

3 Maintain the pillar drill in good condition (use an authorised service agent). Keep drill clean, & check moving parts alignment regularly.

**WARNING!** Keep all guards and holding screws in place, tight and in good working order. Check regularly for damaged parts. A guard or any other part that is damaged should be checked to ensure that it will operate properly and perform its intended function before the tool is used. The safety guard is a mandatory fitting where pillar drill is used in premises covered by the Health & Safety at Work Act. Tighten the set screws of the head frame securely and be sure the chuck is securely fastened to the spindle so that it will not separate during use.

Check regularly for damaged parts. A guard or any other part that is damaged should be checked to ensure that it will operate properly and perform its intended function before the tool is used further. Check also for proper alignment of moving parts and for possible broken parts, loose mountings, or any condition that could affect the tool's operation. A guard or other damaged part must be replaced or repaired.

3 Locate pillar drill in adequate working area for its function, keep area clean & tidy and free from unrelated materials. Ensure there is adequate lighting.

3 Secure the drill to a solid and stable surface to prevent shifting or sliding during use.

3 Ensure workpiece is correctly secured before operating drill. If workpiece is too small use a press vice. Vice must be clamped or bolted to table.

3 Remove adjusting keys and wrenches from the vicinity of the tool before turning it on. Always remove the key from chuck after adjustment.

3 Keep tool bits clean and sharp for best and safest performance. Follow the instructions for lubrication and changing accessories.

**WARNING!** Always wear approved eye or face protection when operating the pillar drill. Use a face or dust mask if dust is generated.

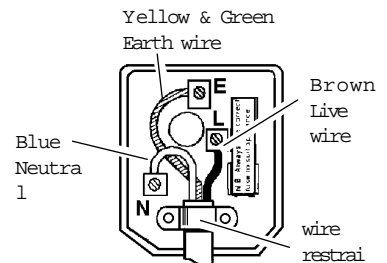
3 Maintain correct balance and footing. Ensure the floor is not slippery and wear non slip shoes.

3 Remove ill fitting clothing. Remove ties, watches, rings, and other loose jewellery, and contain and/ or tie back long hair.

3 Keep children and unauthorised persons away from the working area.

3 Avoid unintentional starting.

7 DO NOT force the pillar drill to achieve a task it was not designed to perform, and DO NOT exceed the rated capacity of the pillar drill.



### FUSE RATING

THIS PRODUCT MUST BE FITTED  
WITH A:

**5 Amp FUSE**

- 7 DO NOT operate the pillar drill if any parts are damaged or missing as this may cause failure or possible personal injury.
- 7 DO NOT switch the pillar drill on whilst the drill bit is in contact with the work piece.
- 7 DO NOT hold the workpiece by hand. Use clamps or a vice (not included) to secure the workpiece.
- 7 DO NOT get the pillar drill wet or use in damp or wet locations or areas where there is condensation.
- 7 DO NOT operate the pillar drill when you are tired, under the influence of alcohol, drugs or intoxicating medication.
- 7 DO NOT use pillar drill where there is flammable liquids, solids or gases such as paint solvents, including waste wiping or cleaning rags etc.
- 7 DO NOT touch the workpiece close to the drilled hole as it will be very hot. Allow to cool. The workpiece may also be very sharp.
- 7 DO NOT leave the pillar drill operating whilst unattended. Turn power switch OFF and do not leave until tool has come to a complete stop.
- 3 When not in use switch the pillar drill off, remove plug from the power supply.

## 1. SPECIFICATIONS

Chuck Size.....16 mm  
 Spindle Nose Taper .....MT2  
 Swing .....420mm  
 Distance, Chuck to Upright Face .....170mm  
 Spindle Travel.....80mm

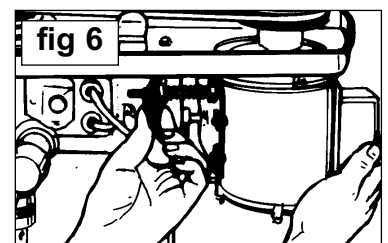
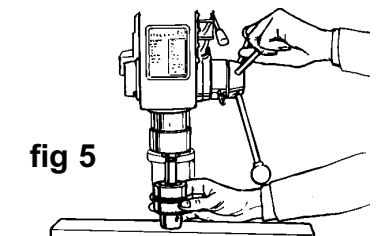
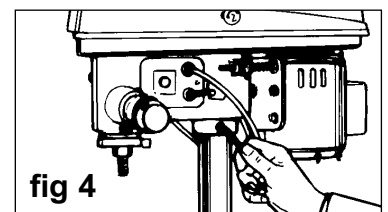
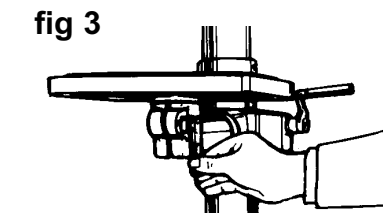
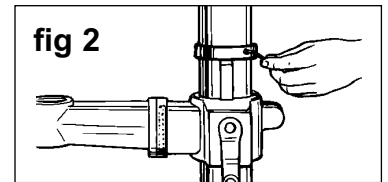
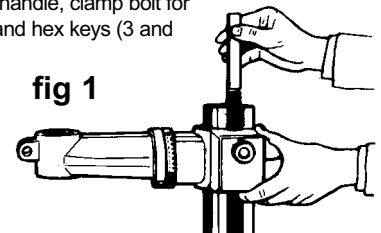
No. of Speeds .....12  
 Speed Range.....220-2670 rpm  
 Max Dist. Spindle to Table .....458mm  
 Max Dist. Spindle to Base .....640mm  
 Table Surface Size Ø .....287mm  
 Base Surface Size .....198 x 200mm

Column Ø .....80mm  
 Height .....1000mm  
 Motor.....230V, 450 Watts  
 Collar Size.....55mm  
 Noise Emission .....<70 dB

## 3. ASSEMBLY

3.1. Unpack the carton and check that the following items are included: head assembly, column with flange, table arm & bracket, table and base. A separate box of accessories should include: chuck & chuck key set, 3 feeding handles and knobs, adjusting handle, clamp bolt for table bracket, clamp bolt for table arm, knob & screw for upper pulley cover, bolts & washers for column base and hex keys (3 and 5 mm). Check inside the belt cover for some items. If any parts are missing, contact your dealer.

- 3.2. Assemble the column:
  - 3.2.1. Place the column on the base and align the holes in the column support with the corresponding holes in the base.
  - 3.2.2. Secure the column with the four bolts and washers provided.
- 3.3. Install the table bracket:
  - 3.3.1. Remove the collar and rack from the column.
  - 3.3.2. Install the bracket and rack together over the column, re-attach the collar and tighten with a hex key (fig. 1 & 2).
- 3.4. Install the bracket handle (fig. 2 'A') and tighten the set screw with a hex key.
- 3.5. Attach the clamp bolt (fig. 2 'B') to secure the bracket.
- 3.6. Install the table arm and secure it with the clamp bolt (fig. 3).
- 3.7. Attach the head assembly by sliding it onto the column and aligning it with the table and base (fig. 4).
- 3.8. Fix the set screws in the side of the head to lock it into position and tighten with a hex key.
- 3.9. Install the feeding handles into the hub of the pinion shaft and screw the handle knobs onto the ends of the handles.
- 3.10. Insert the arbor into the spindle and pull the feed handle down to press the arbor into place (use a piece of wood beneath the arbor as illustrated in fig. 5).
- 3.11. Open the chuck jaws by turning the chuck key counter-clockwise.
- 3.12. Place a piece of scrap wood on the table to protect the chuck nose.
- 3.13. Install the chuck arbor (fig. 5).
- 3.14. Install the knob and screw of the upper pulley cover.
- 3.15. Secure the drill to the floor or other solid, stable surface once assembled.



## 4. OPERATION



**READ AND UNDERSTAND THE SAFETY INSTRUCTIONS BEFORE YOU PROCEED!**

- 4.1 Adjust the table.
  - 4.1.1. Adjust the height of the table by loosening the clamp bolt (fig. 2 'B'), then cranking the bracket handle (fig. 3 'C') to move the table up or down.
  - 4.1.2. Adjust the table tilt by loosening the bevel lock bolt (under the table arm) with an adjustable spanner. Tilt the table to the desired angle and re-tighten the bolt to secure it.
  - 4.1.3. Adjust the table swing by loosening the bracket clamp bolt (fig. 2 'B') and swinging the table to the desired position. Re-tighten the bolt to secure it.
- 4.2. Adjust the feed depth by setting the desired depth at the controls scale sleeve (fig. 5 'D').
- 4.3. Adjust the speed (see fig 6).
  - 4.3.1. Open the pulley case and loosen the belt tension lock handle.
  - 4.3.2. Choose the desired speed and adjust the pulley belt accordingly (see the recommended drill speed chart on the next page and the label printed on the front of the machine).
  - 4.3.3. Push the motor backward until moderate belt tension is acquired then re-tighten the lock handle.
- 4.4. Quill spring adjustment.
  - 4.4.1. Move the stop nuts to the lowest position possible and lock them into place with a spanner to prevent the quill from dropping while adjusting the spring.
  - 4.4.2. Place a screwdriver in the lower front notch of the spring cap and hold it in place while loosening and removing the nuts.
  - 4.4.3. Carefully turn the screwdriver counter-clockwise and engage the next notch.
  - 4.4.4. Tighten inner nut with a spanner. Do not over-tighten as this will restrict quill movement.
  - 4.4.5. Move the stop nuts to the highest position and check the tension by turning the feed handle. If there is not enough tension on the spring, repeat steps 4.4.2 through 4.4.4.
  - 4.4.6. Check the quill for smooth and unrestricted movement. If movement is too light, loosen the nuts slightly.

- 4.5. Install the drill - insert the drill into the chuck jaws about 25mm (1"). When using a small drill, be sure not to insert it so far that the jaws touch the flutes of the drill. Make sure that the drill is centred in the chuck before tightening the chuck.
- 4.6. Position the workpiece. Always use a piece of wood placed on the table to prevent splintering or burrs on the underside of the workpiece when the drill bit breaks through. The wood should contact the column on the left side to keep it from spinning. Always use a vice to hold the workpiece.
- 4.7. Connect the drill to the power supply and begin work.

## RECOMMENDED DRILL SPEED CHART

**WARNING** - Some sizes in some materials are not recommended for this machine. Compare these recommendations with speeds printed on the front panel of the machine.

Diameter (mm)	Cast Steel	Tool Steel	Cast Iron	Mild Steel	Alum. & Copper					
	12 m/min	18 m/min	24 m/min	30 m/min	60 m/min					
Cutting Speed rpm										
2	1910	2445	2865	3665	3820	4890	4775	6110	9550	12225
3	1275	1220	1910	1835	2545	2445	3185	3055	6365	6110
5	765	815	1145	1220	1530	1630	1910	2035	3820	4075
6	610	610	955	915	1275	1220	1590	1530	3180	3055
8	480	490	715	735	955	980	1195	1220	2390	2445
10	380	405	570	610	765	815	955	1020	1910	2035
11	350	350	520	525	700	700	870	870	1740	1745
13	300	305	440	460	590	610	735	765	1470	1530
16	240	245	360	365	480	490	600	610	1200	1220
19	190	205	285	305	380	405	480	510	955	1020

## 5. MAINTENANCE

Before performing any maintenance, be sure to disconnect the drill from the power supply. Maintenance and troubleshooting must only be carried out by qualified persons.

- 5.1. Regularly blow out dust that may accumulate inside the motor.
- 5.2. Coat the machine with automobile wax to help keep the surface clean.
- 5.3. Periodically lubricate the gear and rack table elevation mechanism, the splines in the spindle and the rack.
- 5.4. Regularly check all electrical connections. Follow the instructions given in section 2.1 of this manual.

## 6. TROUBLESHOOTING

Excessive noise.	<ol style="list-style-type: none"> <li>1. Incorrect belt tension, belt is loose.</li> <li>2. Spindle is dry.</li> <li>3. Pulley is loose.</li> <li>4. Bearing is worn.</li> </ol>	<ol style="list-style-type: none"> <li>1. Adjust the belt tension.</li> <li>2. Disassemble the spindle/quill and lubricate.</li> <li>3. Tighten the pulley.</li> <li>4. Replace the bearing.</li> </ol>
Excessive drill wobble.	<ol style="list-style-type: none"> <li>1. Chuck is loose.</li> <li>2. Bearing or spindle shaft is worn.</li> <li>3. Chuck is worn.</li> </ol>	<ol style="list-style-type: none"> <li>1. Tighten the chuck.</li> <li>2. Replace the worn part.</li> <li>3. Replace the chuck.</li> </ol>
Drill binds in the workpiece.	<ol style="list-style-type: none"> <li>1. Feed pressure is too high.</li> <li>2. Belt is loose.</li> <li>3. Drill is loose.</li> <li>4. Speed is too fast.</li> </ol>	<ol style="list-style-type: none"> <li>1. Apply less pressure.</li> <li>2. Adjust the belt tension.</li> <li>3. Tighten the drill with the key.</li> <li>4. Reduce speed.</li> </ol>
Drill burns or smokes.	<ol style="list-style-type: none"> <li>1. Speed is too fast.</li> <li>2. Chips are not discharging.</li> <li>3. Drill bit is dull.</li> <li>4. Lubrication required.</li> <li>5. Feed pressure is too high.</li> </ol>	<ol style="list-style-type: none"> <li>1. Reduce the speed.</li> <li>2. Clean the drill.</li> <li>3. Use a new drill bit.</li> <li>4. Lubricate while drilling with a coolant solution.</li> <li>5. Apply less pressure.</li> </ol>
Table is difficult to raise.	<ol style="list-style-type: none"> <li>1. Lubrication required.</li> <li>2. Rack is bent.</li> </ol>	<ol style="list-style-type: none"> <li>1. Lubricate with light oil.</li> <li>2. Straighten or replace the rack.</li> </ol>

### IMPORTANT

NO RESPONSIBILITY IS ACCEPTED FOR INCORRECT USE OF THIS EQUIPMENT.

### WARRANTY

GUARANTEE IS 12 MONTHS FROM PURCHASE DATE. PROOF OF PURCHASE WILL BE REQUIRED FOR ANY CLAIM.

## Declaration of Conformity

We, the sole importer into the UK, declare that the product listed below is in conformity with the following EEC standards and directives.

### Pillar Drill Model No: NC18

89/392/EEC  
Machinery Directive (SI 1992 No. 3073)  
73/23/EEC  
Low Voltage Directive (SI 1994 No. 3260)  
89/336/EEC  
EMC Directive (SI 1994 No. 2372)

Model No:   
Serial No:   
Batch No:



The construction file for this product is held by the Manufacturer and may be inspected on request by contacting your supplier.

Signed by

Date 10 January 1998

For National Automotive Machinery Ltd.