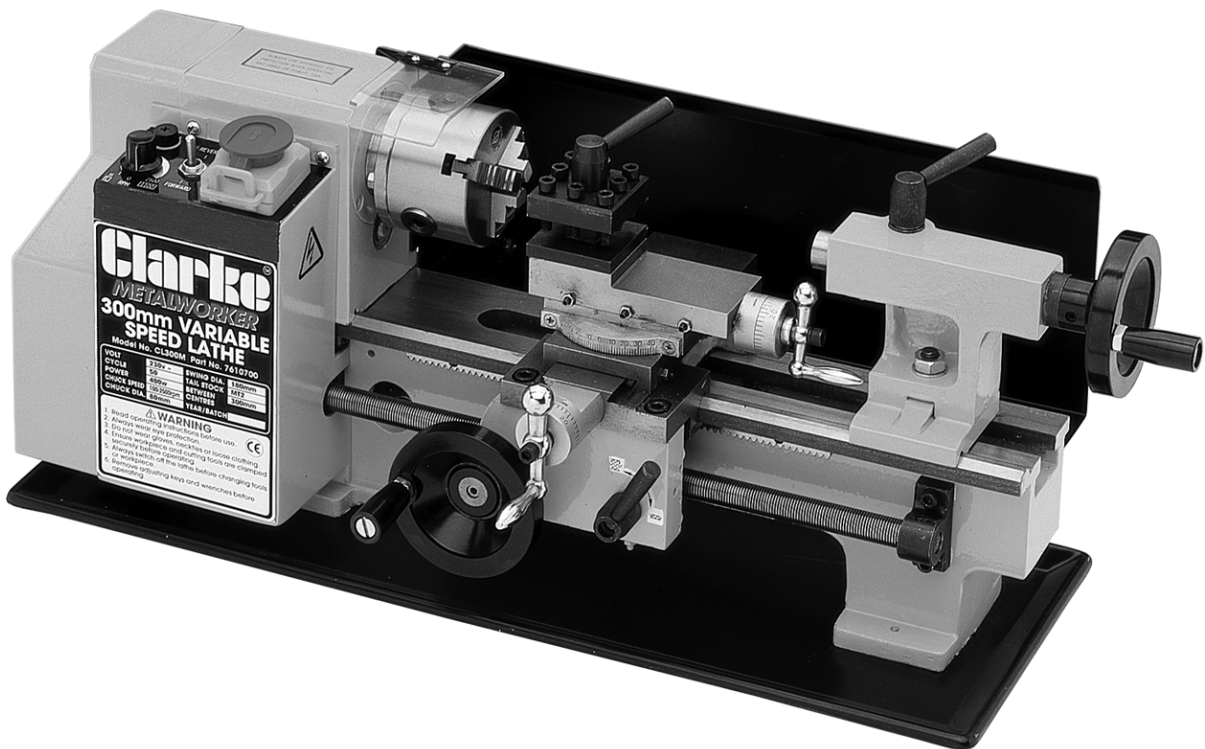


# CLARKE®

## METALWORKER



### VARIABLE SPEED METAL LATHE

MODEL NO: CL300M

PART NO: 7610700

## OPERATION & MAINTENANCE INSTRUCTIONS

UK  
CA | CE



ORIGINAL INSTRUCTIONS

DL0723 - rev 10

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## INTRODUCTION

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Thank you for purchasing this CLARKE 300mm Metal Lathe.

The compact rugged construction and screw cutting capabilities, makes the CL300M ideal for model makers etc, both professional and DIY alike.

The machine is capable of turning up to a maximum diameter of 180mm and an overall length of 300mm. It is further capable of producing short tapers and Imperial threads, both left and right hand. Metric threads may also be cut with the addition of a Metric Conversion Kit, available from your Clarke dealer (see 'Accessories' for details).

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

***IMPORTANT: This manual is intended to instruct the user on the operations peculiar to the CL300M lathe ONLY. Although some reference is made and advice given, regarding various metal turning techniques, it should not be regarded as a general tutorial on the subject.***

***IMPORTANT: It is assumed that the user has some knowledge of machinery of this type and is familiar with metal turning. If this is not the case, we strongly advise that he/she enrol in a course at a local education centre where possible, or seek advice from a qualified person.***

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## GUARANTEE

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This CLARKE product is guaranteed against faulty manufacture for a period of 12 months from the date of purchase. Please keep your receipt as proof of purchase.

This guarantee is invalid if the product is found to have been abused or tampered with in any way, or not used for the purpose for which it was intended.

Faulty goods should be returned to their place of purchase, no product can be returned to us without prior permission.

This guarantee does not effect your statutory rights.

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# SAFETY WARNINGS

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**WARNING: FAILURE TO FOLLOW THESE PRECAUTIONS COULD RESULT IN PERSONAL INJURY AND/OR DAMAGE TO PROPERTY.**

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## WORK ENVIRONMENT

1. **Keep the work area clean and well lit.** Cluttered and dark areas invite accidents.
2. **Do not operate power tools in explosive atmospheres, such as in the presence of flammable liquids, gases or dust.** Power tools create sparks which may ignite the dust or fumes.
3. **Keep children and bystanders away while operating a power tool. Anyone entering the work area must wear personal protective equipment.** Distractions can cause you to lose control and fragments of work may fly away and cause injury.
4. **Store power tools properly when not in use.** Sharp tools should be stored in a dry, secure place out of the reach of children.
5. Please read these instructions carefully and retain for future reference.

## ELECTRICAL SAFETY

1. **Power tool plugs must match the outlet. Never modify the plug in any way. Do not use adaptor plugs with earthed (grounded) power tools.** Unmodified plugs and matching outlets will reduce the risk of electric shock.
2. **Do not expose power tools to rain or wet conditions.** Water entering a power tool will increase the risk of electric shock.
3. **Do not abuse the power cable. Keep the cable away from heat, oil, sharp edges or moving parts.** Damaged or entangled cables increase the risk of electric shock.

## PERSONAL SAFETY

1. **Stay alert, watch what you are doing and use common sense when operating a power tool.** Do not use a power tool while you are tired or under the influence of drugs, alcohol or medication. A moment of inattention while operating power tools may result in personal injury.

2. **Use personal protective equipment.** Always wear eye protection. Safety equipment such as non-skid safety shoes, hearing protection and a workshop apron capable of stopping small abrasive or workpiece fragments.
3. **Avoid accidental starting.** Ensure the switch is in the off position before plugging in. Plugging in power tools that have the switch on, invites accidents.
4. **Remove any adjusting key or wrench before turning the power tool on.** A wrench or a key left attached to a rotating part of the lathe may result in personal injury.
5. **Do not overreach.** Keep proper footing and balance at all times. This enables better control of the power tool in unexpected situations. Dress properly. Do not wear loose clothing or jewellery.
6. **Keep your hair, clothing and gloves away from moving parts.** Loose clothes, jewellery or long hair can be caught in moving parts. Keep the work area clean and tidy.
7. **Regularly clean the air vents.** The motor fan will draw dust inside the housing and accumulation of material could cause electrical hazards.
8. **Avoid operator fatigue.** Stop the lathe at regular intervals for a short break to rest hands and arms.
9. **Maintain your tools.** Keep all handles dry and clean. Keep chisels sharp.

## ELECTRICAL SAFETY

1. Position the power cable so that it cannot be inadvertently pulled or pinched and where it does not cause a trip hazard.
2. This lathe is designed for indoor environments and must not be used for other purposes.
3. If the lathe requires repair, always contact your Clarke dealer. Always insist on original spare parts. Repairs carried out by unauthorized persons may be dangerous and invalidate the guarantee.
4. This lathe must only be used by adults. Children should not be allowed to play with the lathe.
5. Do not use extension power cables.
6. Before cleaning or maintenance operations, always unplug the lathe from the power supply.

## POWER TOOL USE AND CARE

1. **Do not force the machine.** Use the correct tool for your task. It will do a better and safer job at the rate for which it was designed.

2. **Do not use the power tool if the switch does not turn it on and off.** Any power tool that cannot be controlled with the switch is dangerous and must be repaired.
3. **Disconnect the power tool from the power supply before making any adjustments, changing accessories, or storing the tool.** These measures will reduce the risk of the power tool starting accidentally.
4. **Store power tools out of the reach of children and do not allow persons unfamiliar with these instructions to operate the power tool.** Power tools are potentially dangerous in the hands of untrained users.
5. **Maintain tools in top condition.** Keep tools/ machines clean for the best and safest performance. Check for misalignment or binding of moving parts, broken parts, or any condition that may affect the power tool's operation. If damaged, have the power tool repaired before use. Many accidents are caused by poorly maintained power tools.
6. **Use recommended accessories.** The use of improper accessories could be hazardous.
7. **Check the power tool for damage before using the machine.** Any damaged part should be inspected to ensure that it will operate properly and perform its intended function. Check for alignment of moving parts, breakage of parts, mountings, and any other condition that may affect the machine's operation. Any damage should be properly repaired or the part replaced. If in doubt, DO NOT use the machine. Consult your local dealer.

## SERVICING

1. **When necessary, have your power tools serviced or repaired by a qualified person using identical replacement parts.** This will ensure that the safety of the power tool is maintained.

## ADDITIONAL PRECAUTIONS FOR LATHES

1. You should not operate this machine unless you are thoroughly familiar with metal turning lathes and turning techniques. If there is any doubt whatsoever, you should consult a qualified person.
2. NEVER attempt to turn a workpiece unless a suitable support is used. ALWAYS stop the lathe before removing workpieces, work supports or swarf from the table.
3. ALWAYS be sure that the workpiece is securely locked in position.
4. ALWAYS keep hands and fingers away from the moving workpiece.
5. Ensure all chuck keys, spanners and wrenches are removed from the lathe.
6. Examine the setup carefully, ensuring that nothing could possibly interfere with the rotating workpiece.

7. Ensure the tool post is secure and the cutting tool is adjusted to the correct height.
8. Ensure the workpiece is properly secured.
9. Make all adjustments with the power OFF.
10. ALWAYS cut at correct speed for the size and type of material being worked. Refer to a suitable turning manual for cutting speeds).
11. NEVER leave the lathe unattended whilst it is running.
12. When you have finished with machine always remove and store the cutting tools.
13. When using a coolant in conjunction with the tray, on no account must suds be allowed to enter the electrical system.

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## **SAFETY SYMBOLS**

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The following safety symbols may be found on the machine.



Wear eye protection



Read instruction manual before use

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## **ENVIRONMENTAL PROTECTION**

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Recycle unwanted materials instead of disposing of them as waste. All unwanted accessories and packaging should be sorted and taken to a recycling centre for disposal in a manner which is compatible with the environment.

### **ENVIRONMENTAL RECYCLING POLICY**



Through purchase of this product, the customer is taking on the obligation to deal with the WEEE in accordance with the WEEE regulations in relation to the treatment, recycling & recovery and environmentally sound disposal of the WEEE.

In effect, this means that this product must not be disposed of with general household waste but according to the laws governing Waste Electrical and Electronic Equipment (WEEE) at a recognised disposal facility.

# ELECTRICAL CONNECTIONS



**WARNING: READ THESE ELECTRICAL SAFETY INSTRUCTIONS THOROUGHLY BEFORE CONNECTING THE PRODUCT TO THE MAINS SUPPLY.**

Before switching the product on, make sure that the voltage of your electricity supply is the same as that indicated on the rating plate. This product is designed to operate on 230VAC 50Hz. Connecting it to any other power source may cause damage.


This product may be fitted with a non-rewireable plug. If it is necessary to change the fuse in the plug, the fuse cover must be refitted. If the fuse cover becomes lost or damaged, the plug must not be used until a suitable replacement is obtained.

If the plug has to be changed because it is not suitable for your socket, or due to damage, it should be cut off and a replacement fitted, following the wiring instructions shown below. The old plug must be disposed of safely, as insertion into a mains socket could cause an electrical hazard.

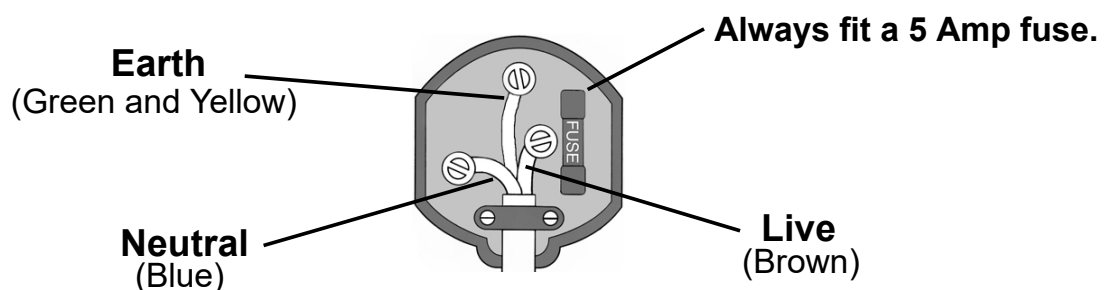


**WARNING: THE WIRES IN THE POWER CABLE OF THIS PRODUCT ARE COLOURED IN ACCORDANCE WITH THE FOLLOWING CODE:  
BLUE = NEUTRAL    BROWN = LIVE    YELLOW AND GREEN = EARTH**

If the colours of the wires in the power cable of this product do not correspond with the markings on the terminals of your plug, proceed as follows.

- The wire which is coloured **Blue** must be connected to the terminal which is marked **N** or coloured **Black**.
- The wire which is coloured **Brown** must be connected to the terminal which is marked **L** or coloured **Red**.
- The wire which is coloured **Yellow and Green** must be connected to the terminal which is marked **E** or  or coloured **Green**.

**Plug must be BS1363/A approved.**



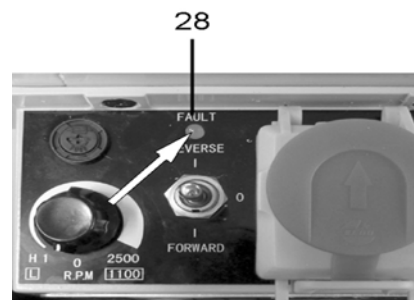
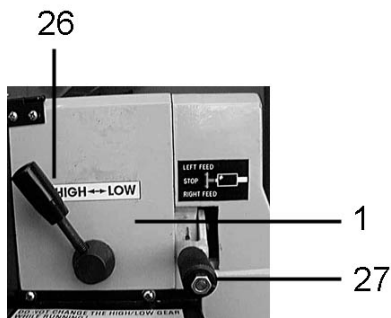
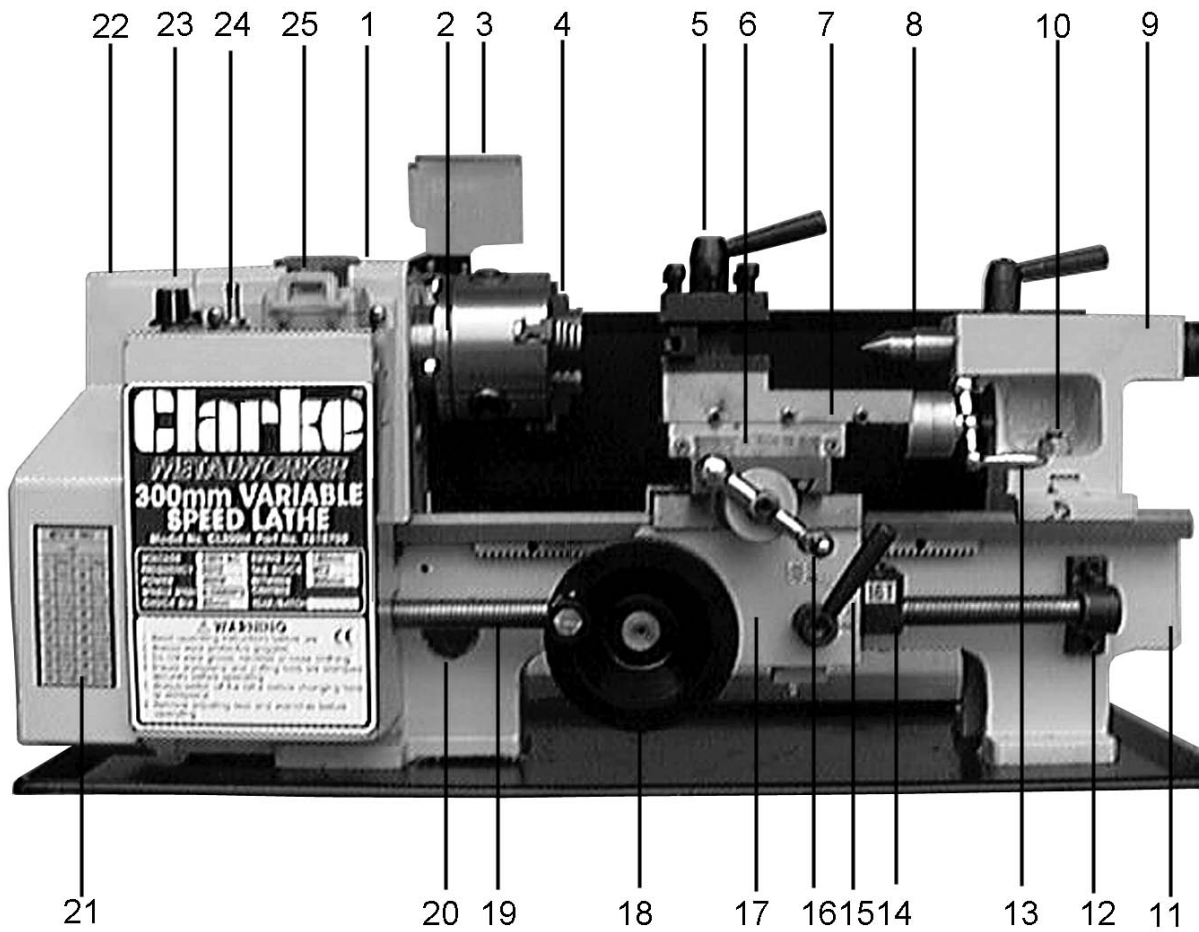
**Ensure that the outer sheath of the cable is firmly held by the clamp**

We strongly recommend that this machine is connected to the mains supply via a Residual Current Device (RCD)

If in any doubt, consult a qualified electrician.



# OVERVIEW



# PARTS IDENTIFICATION

1	Headstock	15	Automatic Feed Lever
2	Spindle Flange	16	Cross-Slide Feed Handle
3	Chuck Guard	17	Apron
4	3-Jaw Chuck	18	Manual (Saddle) Feed Handle
5	Tool Post	19	Leadscrew
6	Cross-Slide	20	Motor Brush Cap
7	Compound Slide	21	Thread Dial Indicator Table
8	Tailstock Centre	22	Running Gear Cover
9	Tailstock	23	Variable Speed Control Knob
10	Tailstock Securing Nut	24	Forward/Off/Reverse Switch
11	Bed	25	Emergency Stop Switch
12	R.H. Leadscrew Bearing	26	High/Low Speed Range Lever
13	Compound Slide Feed Handle	27	Leadscrew Fwd/Neutral/Reverse Lever
14	Thread Dial Indicator	28	Overload indicator

## THE HEADSTOCK

The motor provides a direct drive to the Spindle via an internal tooth type belt. Spindle speed is variable and is regulated by the Speed Control Knob (23), located on the main control panel.

The spindle is provided with an internal No.3 Morse taper to accommodate a centre for use with a face plate or turning clamp, (See 'Accessories' on page 30).

The Chuck Guard (3), is an essential component and is mounted on a pin which is secured to the headstock. The guard is connected to a safety switch. when lifted the guard will cut the power to the lathe. The lathe will only start again if the guard is in the lowered position. This should always be in place when using a chuck.

The 3-Jaw, Self Centering Chuck (4) is mounted on the Spindle Flange (2). To remove the chuck, simply remove the three securing nuts to the rear of the flange allowing it to be pulled free together with the three mounting studs.

Three external jaws are also supplied which extend the capacity of the chuck. Their uses and method of assembly is described under 'Accessories' on page 30.

The spindle has 6 holes drilled in its flange to accommodate a range of fixtures such as a Face Plate, 4-Jaw chuck etc, (See 'Accessories' on page 30).

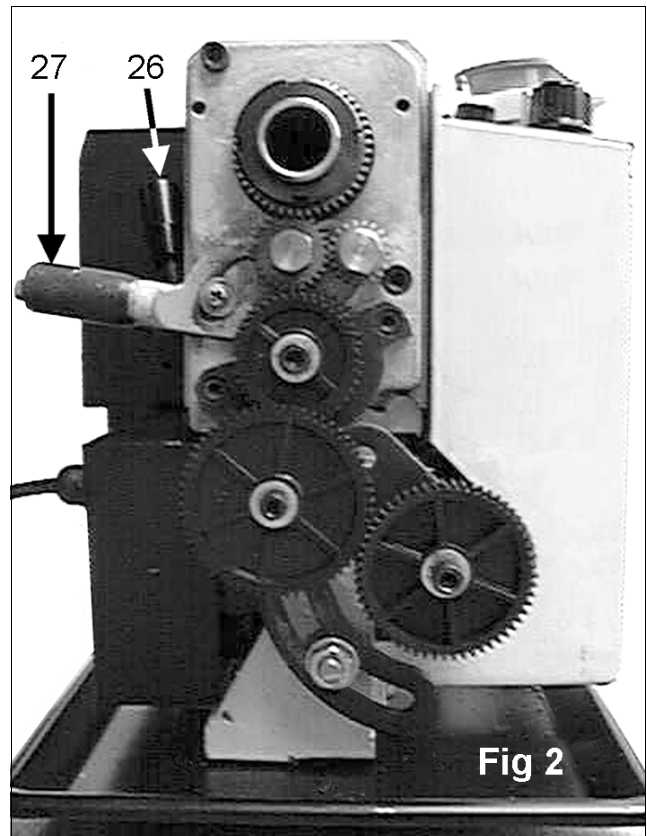
## THE RUNNING GEAR

The Running Gear is protected by a cover (22), which is removed by unscrewing the two securing hex screws.

The gear train is shown in Fig. 2. It transmits drive to the lead screw which acts as a worm gear and by operating the Auto Feed Lever (15), which engages a nut with the lead screw (worm), drive is transmitted to the saddle and consequently the cutting tool. This provides a power feed for screw cutting or general turning operations.

The rotational speed of the lead screw and hence the rate of feed of the cutting tool, is determined by the gear configuration. This is explained in greater detail under 'Screwcutting' on page 20.

The drive to the leadscrew may be disconnected by operating the lever (27), which is also used to drive the leadscrew in a forward or reverse direction. (These actions are described in greater detail under 'Screwcutting' on page 20).



## THE TAILSTOCK

The Tailstock (9), may be moved along the bed to any desired position and is secured in position by a single nut (10), at its base. The Tailstock Spindle carries an internal No.2 Morse taper for use with the Centre (8) provided.

A Revolving Centre and Drill Chuck are also available from your Clarke dealer. (See Accessories on page 30).

## THE SADDLE

The Saddle carries the Cross-Slide (6), on to which is mounted the Compound Slide (7) with Tool Post (5), allowing intricate and delicate operations to be performed. It may be driven by the Leadscrew, via a Drive Nut, to provide automatic feed when the Auto Feed lever (15), mounted on the Apron (17), is operated.

The position of the tool is effected by turning the cross-slide feed handle (16), which moves it across the lathe and the saddle or manual feed handle (18), which moves it longitudinally.

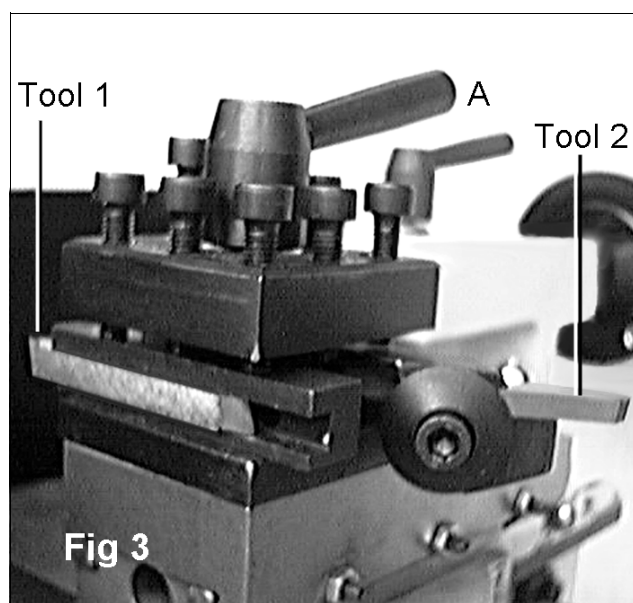
Additionally, the compound slide feed handle (13) may be used to move the tool by small amounts at right angles to the cross-slide, or the slide may be set at an angle to the cross-slide so that short tapers or bevels may be cut. This is described in greater detail under 'Bevel Cutting' on page 20.

The cross-slide and compound slide feeds are provided with a scale. These are used to move the tool by precise amounts - one division being equivalent to 0.001" (0.025mm). As the feed handle is turned, so does the scale. The scale on the cross-slide feed may also be held stationary whilst the handle is turned, allowing the scale to be 'zeroed'. The manner in which this is put to use is discussed in greater detail under 'Operation'.

The tool post carries 8 hex socket head screws which are used to secure a cutting tool in any desired position. Four may be mounted for convenience and to speed up your operation. Two are shown mounted in fig.3.

The tool post is rotated by slackening the lever (A) on its top, sufficient for the post to be lifted slightly and then turned to the desired position.

Always ensure the post and hence the tool, is secured by screwing down the lever firmly before attempting to cut.



## THE MOTOR

It is not recommended that you dis-assemble the motor. Brushes may be replaced as described under 'Maintenance'. For all other servicing and repairs, please contact your Clarke dealer.

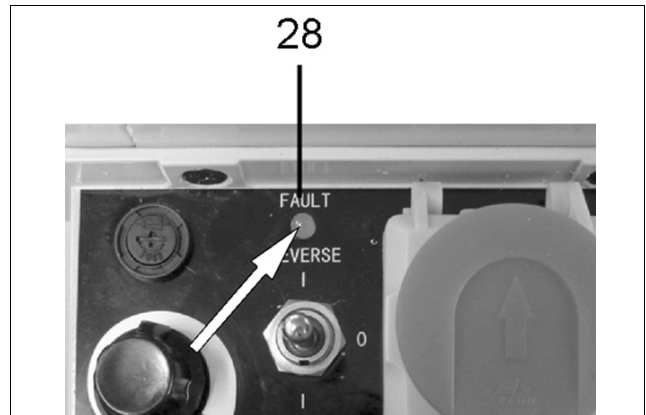
## CHUCK GUARD

The guard has a built in safety switch. In the up/open position, the power will be cut to the chuck motor. To reengage the power to the chuck motor the guard should be in the down/closed position.

## THE OVERLOAD INDICATOR

The overload indicator will light up when excessive strain is placed on the motor.

If the overload indicator lights up you should, decrease the amount of material you are trying to remove.

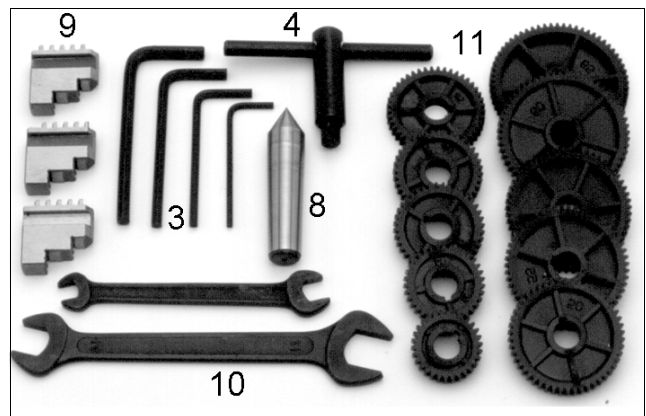


## UNPACKING AND ASSEMBLY

On receipt, carefully unpack the lathe. Inspect to ensure that no damage was suffered in transit and all parts are accounted for. Should any damage be apparent or parts are missing, please contact your Clarke dealer immediately.

The following loose items are to be found in the crate.

1. 4 x Rubber Feet\*
2. 4 x M6 Pan Head Screws\*
3. 4 x Hex. Keys
4. 1 x Chuck Key
5. 1x Plastic Oil Container\*
6. 1 x Spare Fuse - 2 amp, glass type.\*
7. 2 x Plastic Handles w/Nuts and Bolts.\*
8. No.2 Morse Taper Centre (for Tailstock)
9. 3 x External Jaws (for 3-Jaw Chuck)
10. 2 x Double Open Ended Spanners 8x10mm and 14x17mm
11. 1 x Gear Set. Sizes: 30, 35, 40, 40, 45, 50, 55, 57, 60, 65 Teeth



\* denotes not illustrated

With assistance, considering the weight of the lathe, raise it on to a robust surface or workbench. Proceed to remove all traces of preservative with paraffin or good quality solvent and lightly oil all machined surfaces.

You will notice that for transit purposes, the cross slide feed handle has been mounted in reverse. Remove it, by unscrewing the hex. socket head screw securing it and mount it the correct way round. Then turn all feed handles to ensure they are free and move evenly and smoothly.

Attach the plastic handles to the rims of the manual feed and tailstock feed handwheels respectively, ensuring the nuts are tight and the handles spin freely about the bolts, without excessive end play.

The saddle, cross-slide and compound slide adjustments are all factory set to ensure smooth movement in both directions. If however, the adjustments have been upset during transit, indicated by stiff or erratic movement, refer to 'Settings and Adjustments' on page 28 for the methods of adjustment.

All hex. keys and spanners necessary to carry out various adjustments are supplied, together with a chuck key for the 3-Jaw chuck and a spare 2 Amp fuse. The fuse holder is located on the main control panel.

The hinged transparent chuck guard is supplied loose and must be fitted to the headstock body using the screws provided.

The four rubber feet are attached to the underside of the bed using the four M6 pan head screws in the tapped holes provided. These screws are also used to secure the collecting tray. We strongly recommend however, that to provide maximum stability and additional safety, you secure the lathe to a firm foundation as described under 'Mounting the Lathe'.

The three external jaws for the 3-jaw self centering chuck, extend the capacity of the chuck and are discussed in greater detail under 'Accessories' on page 30.

## **MOUNTING THE LATHE**

The lathe should be mounted on a strong, heavy workbench of sufficient height so that you do not need to bend your back to perform normal operations. Take the necessary precautions when moving the lathe considering its' weight. **Assistance will be required.**

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

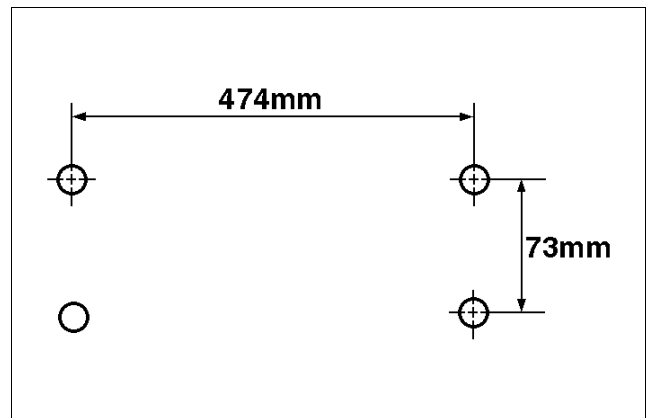
We strongly recommend that the machine is bolted firmly to a strong workbench using the tapped holes used to secure the feet to the lathe. This is to provide added stability and therefore additional safety.

To do this, remove the four M6 screws which secure the rubber feet and collection tray to the machine (if already fitted) and discard the feet.

Drill four M6 clearance holes in a worktop, at the dimensions shown in the diagram, and with appropriate length M6 bolts, or screws with flat washers, (not supplied), secure the lathe to the worktop ensuring the collection tray is in place.

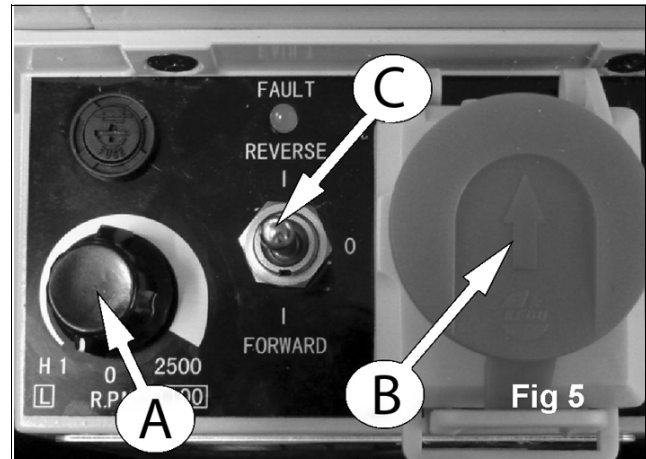
Alternatively, if you do not want a permanent installation, you may secure the lathe to a 5/8" thick plywood board with a minimum recommended dimension of 800 x 300mm, the mounting holes being centralised on the board.

When the lathe is in use the board should be clamped to workbench using 'G' clamps.



## DURING INSTALLATION - INITIAL START

1. Taking all precautions previously stated, set the High - Low range lever (item 26 page 10)' to LOW.
2. Ensuring the cross-slide is well away from the chuck and the automatic feed lever is in its dis-engaged position, (i.e. lever is UP). Insert the electric plug into it socket.
3. Select O, using the Forward/O/ Reverse (F/O/R) switch (C) on the main control panel.
4. Turn the Speed Control (A) fully anti-clockwise to the 0 R.P.M. position.
5. Release the Emergency Stop switch by pushing down on the red knob slightly and pushing it in towards the headstock as indicated by the arrow on the top of the red knob (B).
6. Select Forward on the F/O/R switch and GENTLY rotate the variable speed knob (A) clockwise. Speed will increase progressively the further the knob is turned.
7. Run for a total of 5 minutes during which time gradually increase spindle speed to its maximum. Run for at least 2 minutes at this speed before stopping the machine and disconnecting from the mains supply.
8. Check that all components are still secure and working freely and correctly.
9. Check also to ensure the mountings are secure.
10. Repeat the procedure at the HIGH range setting



Should any adjustments be necessary refer to the appropriate section under Settings and Adjustments.

**NOTE:** *When changing from HIGH to LOW range, it may be necessary to turn the spindle by hand, in order for the gears to mesh correctly.*



CAUTION: NEVER ATTEMPT TO CHANGE FROM HIGH TO LOW RANGE WITH THE MACHINE RUNNING.

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## STARTING UNDER NORMAL CONDITIONS

1. Take all necessary precautions previously stated, and ensure the workpiece can rotate fully without obstruction.
2. Set the Speed Range control lever to HIGH or LOW as required.
3. Set the Forward/O/Reverse (F/O/R) switch (C), on the main control panel, to the O (OFF) position.
4. Engage or ensure the Auto Feed lever is dis-engaged depending upon whether or not automatic feed is required.
5. Ensure the Chuck Guard is in the down position.

**IMPORTANT:** *This should ALWAYS be a deliberate, conscious action.*

**NOTE:** *If Auto feed is required, the Leadscrew Forward/Neutral/Reverse Lever should be set to FORWARD. If Auto feed is not required the lever may be set to Neutral. To do this, grasp the knurled handle and pull out against spring pressure. Holding the handle in this position, move the lever until the point on its end, locates in the middle pit mark in the casing.*

6. Proceed to start the machine as described previously.
7. To stop the machine, turn the Variable Speed Control knob (A) to the 0 RPM position and the F/O/R switch (C) to O (OFF).



CAUTION: ALWAYS TURN THE VARIABLE SPEED CONTROL KNOB TO 0 RPM AND THE FORWARD/OFF/REVERSE SWITCH TO O (OFF) BEFORE ATTEMPTING TO CHANGE ANY SETTINGS OR MAKE ANY ADJUSTMENTS. THIS INCLUDES CHANGING FROM HIGH TO LOW OR LOW TO HIGH RANGE.

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# OPERATION

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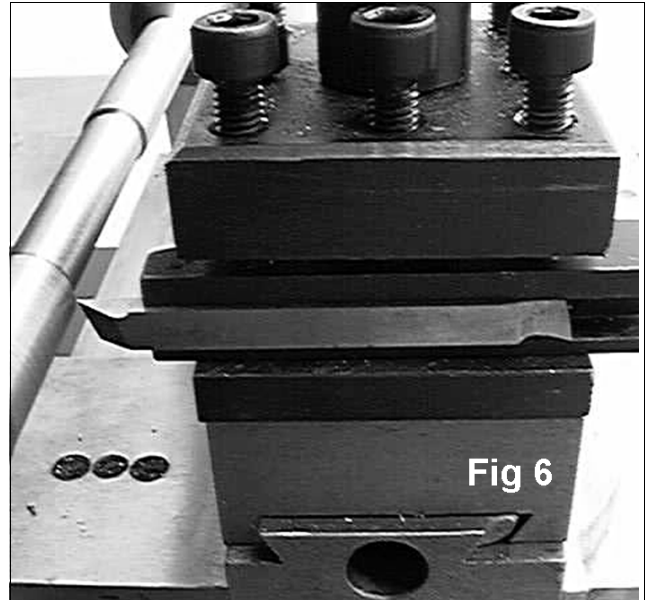
## SIMPLE TURNING

Before starting the machine, it is imperative that the setup for the type of work to be carried out is fully checked.

The following notes are guidelines as to how to set up the lathe in order to carry out a simple turning operation.

ALWAYS plan your work. Have drawings or a plan on hand together with any measuring instruments you may require, such as micrometers/ verniers/calipers etc.

Select a cutting tool that will produce the desired cut and mount it in the Tool Rest, with as little overhang as possible, securing it using three hex socket head screws as shown in FIG. 6.



(Ideally, the overhang should be approx. 10 mm but not more than 15mm for a straight tool).

It is essential that the tip of the cutting tool is on the centre line of the work or very slightly below it. On no account should it be above the centre line. Where necessary, shims should be used beneath the tool in order to achieve the correct height, or, if the tip is too high, the only recourse is to select another tool or grind down the tip.

To check to ensure the tip is at the correct height, position the tool so that the tip is almost touching the point of the tailstock centre. They should coincide. If necessary make adjustments using shims, grind down the cutting tool tip or select another tool.

When satisfied, mount the work, either in the chuck or on a faceplate, and if necessary, use the tailstock centre for additional support (If the work cannot be adequately secured by the chuck, or if it is a long piece, or of small diameter). Additionally, 'Steadies' may be used which are described in greater detail under 'Accessories'.

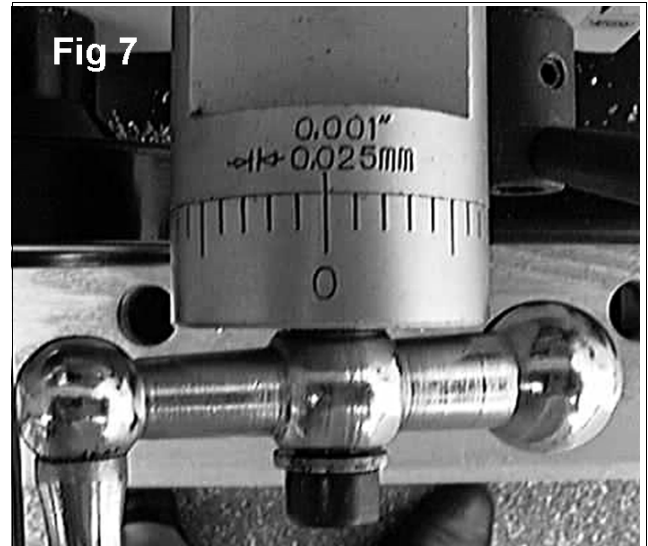
If the tailstock is not to be used you may remove it completely by slackening off the securing nut at its base and sliding it free of the bed.

Mark the surface of the work at the point where the cut is to end, i.e. the shoulder, using a scribe or similar means, and move the saddle so that the cutting tool is directly opposite the mark, then wind in the cross-slide so that the tool touches the surface of the work.

Whilst carrying out these manoeuvres, rotate the chuck by hand to ensure that nothing will come into contact with it when turning takes place, i.e. there is adequate clearance between the saddle, cross-slide, tool post or cutting tool, and the chuck.

It may be necessary to adjust the position of the compound slide or reposition the work in the chuck to guarantee that there is adequate clearance.

When satisfied, retract the cutting tool and wind the saddle away from the headstock. Wind the cutting tool up to the work, somewhere along the length to be cut, whilst rotating the work by hand using the chuck. Continue to advance the cutting tool slowly until it just touches the surface. Record this position by zeroing the scale on the cross-slide, i.e. turn the moveable scale until the zero marks coincide, (see diagram).



Once zeroed, retract the cross-slide one complete turn, then move the saddle until the tool is a short distance from the right hand edge of the work.

Wind in the cross-slide again one full turn until the zero marks again coincide.

***IMPORTANT: If you go past the zero marks, back off again at least one half of a turn, then slowly bring the marks back together.***

Whenever you use the scale, as an indicator, to advance the cross-slide or compound slide, ALWAYS use this procedure to align the marks. This is to take into account backlash and other clearances in the gearing and slides etc.

Continue to turn the handle an amount equivalent to your desired depth of cut.

***NOTE: We recommend that for rough cutting, you do not exceed 0.010" as your depth of cut.***

The setup is now complete to begin your cutting operation, but before starting, check the position of:

- Auto feed lever. Ensure it is in the UP position for manual feed.
- Forward/Neutral/Reverse leadscrew lever. If Auto feed is not required, set to Neutral'.
- HIGH/LOW lever. Select required speed range.

Switch the machine ON as described under 'Starting Procedure' and slowly feed the cutting tool into the work using the Manual Feed Handle. Proceed

until you reach the previously marked line on the work, then retract the tool one or two complete turns on the Cross-Slide feed handle.

Wind the saddle back to the beginning then wind the tool the same number of turns 'IN', plus the depth of desired cut, and proceed to cut once more.

**NOTE:** *This describes the procedure for general rough cutting. For other types of cuts - finishing, cutting shoulders etc, you should consult a suitable handbook.*

## **SIMPLE TURNING WITH POWER FEED**

The same basic setup is used as described above except that before starting, the Leadscrew F/N/R Lever (25) is set to the 'Forward' position and the Auto Feed Lever (15), is operated in order to drive the saddle.

As mentioned previously, the rotational speed of the leadscrew and hence the rate of feed of the tool, is dependant upon the gear configuration of the gear train.

The feed rate for normal turning is considerably less than that used for screw cutting. The lathe is factory configured for normal turning, however, if you have been screw cutting, always remember to reset the gear configuration to that for normal turning. Please refer to the chart on page 24 which shows the gear configuration and the explanation of how to change the gears on the same page.

1. Taking all precautions previously mentioned, position the cutting tool a short distance to the right of the workpiece with the appropriate depth of cut set on the cross-slide.
2. Ensure the leadscrew F/N/R lever is set to 'Forward' and select 'Forward' on the Forward/Off/Reverse switch on the main control panel. Release the Emergency Stop and switch 'ON' the speed control knob.
3. Turn the knob to achieve your desired spindle speed, and with your right hand, push down on the auto feed lever until the nut becomes firmly engaged with the leadscrew.

**IMPORTANT:** *Your left hand should always be free in order to hit the emergency stop should it become necessary.*

4. Carefully observe the movement of the tool and as it approaches the mark on the surface, denoting the end of cut, pull the Auto Lever UP sharply and ensure it stays UP. If a degree of accuracy is required it is recommended that you finish the cut by hand.

**NOTE:** *If you require a shoulder with perfectly clean corners, then you need to use an appropriately shaped tool.*

5. Retract the tool one or two complete turns on the cross-slide feed, then wind the saddle so that the tool is at the start point once again. Advance

the tool the same number of turns, plus the depth of cut and when ready, push down the auto feed lever and proceed to take another cut.

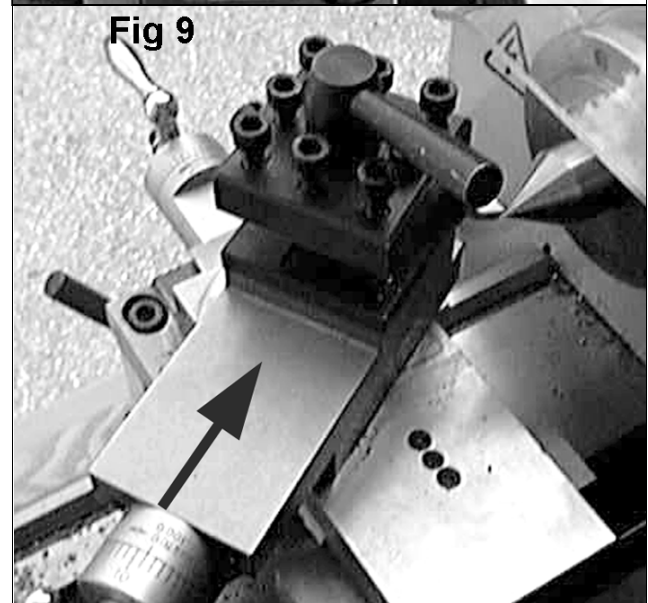
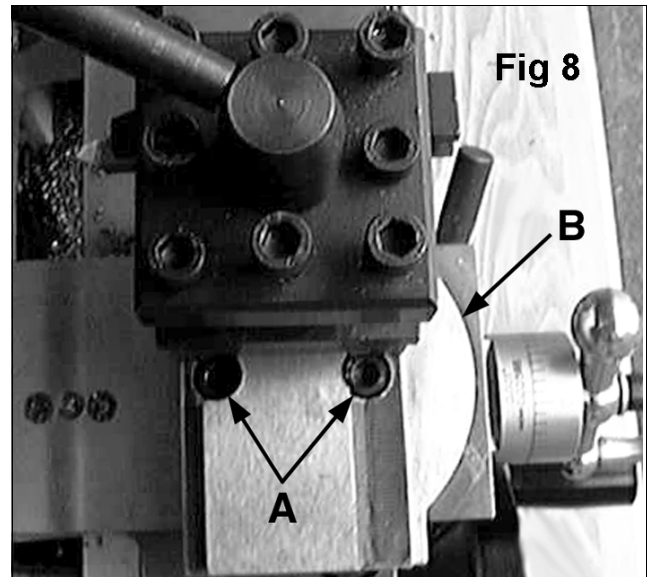
## BEVEL CUTTING

Bevel cutting involves the use of the compound slide. This is mounted on the cross-slide and set at right angles to it for all normal cutting operations. This is indicated by the zero mark on the scale, (B, Fig. 8), lining up with the mark etched on the body of the cross-slide.

To set the compound slide so that the cutting tool will cut a bevel, first retract the slide until the two hex. socket head screws (A), are revealed as shown in Fig 8.

Slacken the screws sufficient to allow the compound slide to be turned to the desired angle as indicated on the scale and secure the slide in this position by re-tightening the hex. socket head screws.

The taper, or bevel, is cut by setting the cross slide appropriately then using the compound slide feed handle to advance the cutting tool in the direction of the arrow as shown in Fig 9.



## SCREWCUTTING

This operation requires a degree of skill and accuracy and should not be attempted unless you are completely familiar with all aspects of the lathe.

Essentially, the saddle will move towards the headstock under power, the same as cutting using auto feed, except the rate of feed is greater as determined by the gear configuration. The cutting tool therefore, is moving ever closer to the rotating chuck. Great care and concentration must be exercised to ensure that the two do not meet when the machine is operating as the possible damage caused could be disastrous.

The lathe is supplied with a leadscrew that will produce Imperial Threads in a range from 12 to 104 threads per inch. It is important to remember that the type of thread you need to cut, i.e. UNF, BA, BSP, BSW etc, will be totally

dependant upon the cutting tool profile, as profiles differ from thread to thread.

For detailed information regarding screwcutting techniques, cutting tools etc., you should consult a suitable handbook or obtain advice from a qualified person.

A leadscrew, with corresponding half nuts and thread dial indicator, for the production of Metric threads is available from your Clarke dealer, see 'Accessories' on page 30.

The general procedure for screwcutting is as follows:

1. Try to get as much distance from the chuck to the end of the proposed screw thread as possible and if your design allows, cut a 'run-off' into the work which is of a smaller diameter than the root diameter of the proposed screw thread. Note that for long threads it may be necessary to use 'steady's' (see Accessories' on page 30).
2. Install the appropriate gears for the thread required and correctly mount the cutting tool.
3. Set your required depth of cut and position the tool ready to begin cutting.

**NOTE: *Depth of cut is vitally important and may be calculated or obtained from an appropriate reference manual.***

4. Take all necessary precautions previously stated and start the lathe with the automatic feed lever in its disengaged position (UP).

**NOTE:** Mounted on the Apron, adjacent to the Auto Feed Lever is the Thread Dial Indicator, shown in fig. 10. This is permanently connected to the leadscrew and as the leadscrew turns, the 'dial' rotates. Eight radial marks are etched on the dial and these are used to determine the exact position of the leadscrew thread in relation to the saddle.

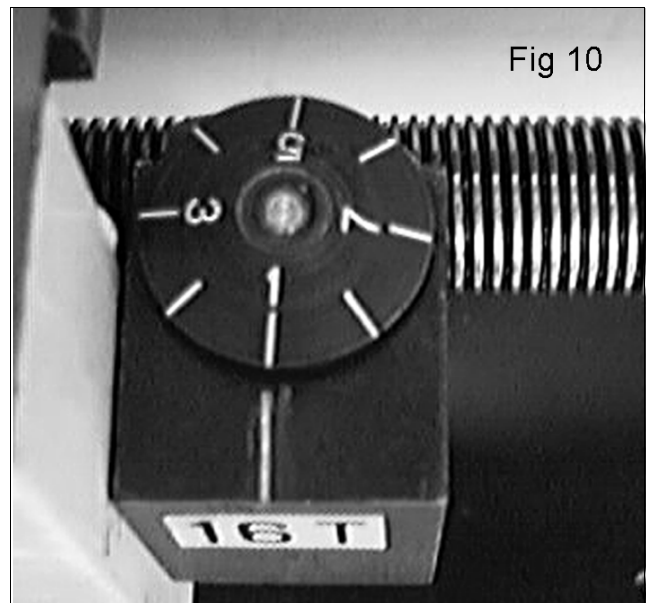


Fig 10

- Mounted on the front of the gear train cover is the Indicator Table, which is duplicated on page 25. The numbers in the 'SCALE' column refer to the numbers on the radial lines on the Indicator Dial. Therefore, if a 20TPI thread is to be cut for example, the marks 1,3,5 or 7 may be used. You should now proceed as follows:

5. Observe the rotating Dial. In particular, concentrate on one of the numbered marks etched on the dial which corresponds to the scale number given in the Indicator Table.
  - (In our example, this could be 1,3, 5 or 7)
  - As your line passes the mark on the body of the dial indicator, engage the auto lever sharply and thread cutting will commence.
6. As the tool approaches the end of the desired thread, DISENGAGE THE AUTO FEED LEVER. Do not switch the machine OFF.
7. Retract the tool, using the cross-slide feed handle, noting the exact position on the scale and the exact number of turns.

Wind the saddle back to the beginning and reset the tool by winding IN the cross-slide the exact number of turns previously wound OUT and then continue to wind IN to the desired depth of cut.

8. With the lathe still running, observe the dial indicator and as the same numbered line passes the mark on the body, engage the auto feed lever once again. Proceed in this manner until the thread is completed.
  - Engaging the auto feed lever as your predetermined line on the dial passes the mark on the body ensures the half nuts of the auto feed mechanism engage in the same thread on the leadscrew each time. This ensures the cutting tool is in the same place for each pass which in turn produces a perfect thread.

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## CHANGING GEARS FOR SCREWCUTTING

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The leadscrew is driven via a gear train and by a gear on the spindle. The gear ratio will therefore determine the rotational speed of the leadscrew with relation to the spindle. i.e. one turn of the spindle will turn the leadscrew an amount determined by the gear ratio.

By setting the gears to a known ratio, we can therefore produce threads to a known size, and as the leadscrew supplied produces Imperial threads, the known values will be in Threads Per Inch (TPI).

A leadscrew for Metric thread cutting complete with half nuts is available from your Clarke dealer.

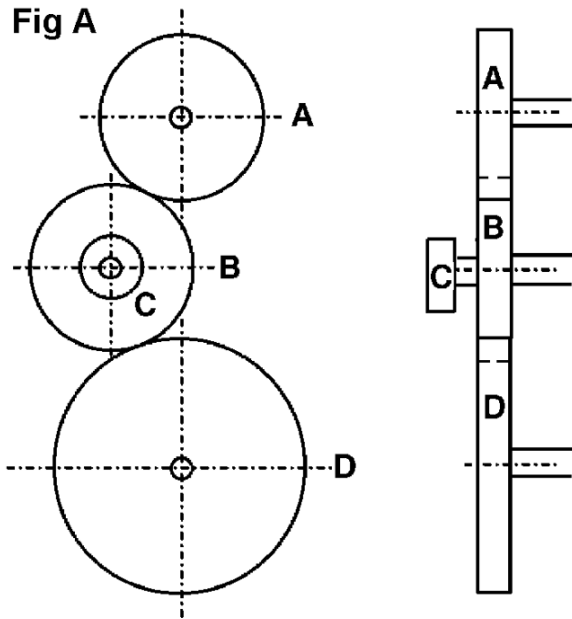
As previously mentioned, the actual thread produced will be totally dependant upon the profile of the cutting tool. It is not within the scope of this manual to provide detailed information regarding types of cutting tool, cutting speeds and working with various types of material etc, and it is strongly advised that you consult appropriate handbooks or seek advice from a qualified person.

The chart overleaf, shows the thread sizes that may be cut using the gear configuration shown in the corresponding columns.

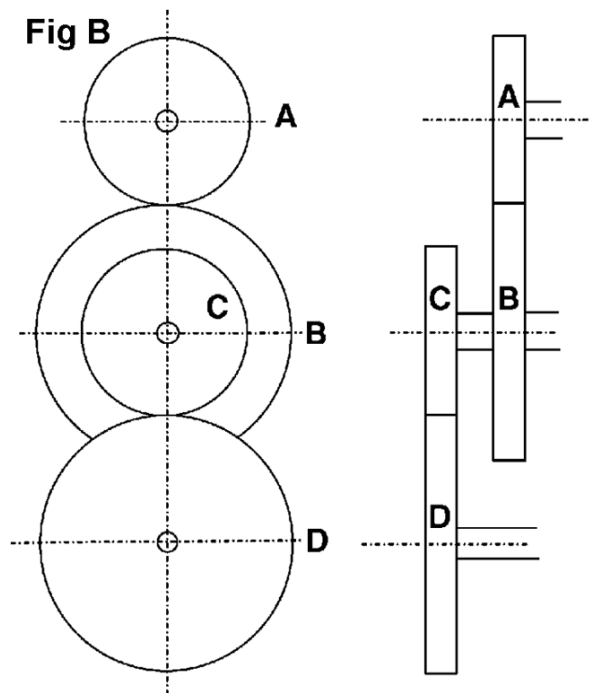
The factory setup for the lathe provides for normal turning using the power or auto feed, and the gear configuration is as follows:

<b>Gear A</b>	.....	<b>20T</b>
<b>Gear B</b>	.....	<b>80T</b>
<b>Gear C</b>	.....	<b>20T</b>
<b>Gear D</b>	.....	<b>80T</b>

**Fig A**



**Fig B**





# GEAR CHART FOR CUTTING IMPERIAL THREADS

THREADS PER INCH	GEAR			
	A	B	C	D
12	40	65		30
13	40	65	60	30
14	40	65		35
16	40	65		40
18	40	65		45
19	40	50	60	57
20	40	65		50
22	40	65		55
24	40	65		60
26	40	60		65
28	20	65		35
32	20	65		40
36	20	65		45
38	20	50	60	57
40	20	65		50
44	20	65		55
48	20	65		60
52	20	60		65

INDICATOR TABLE	
TPI	SCALE
12	1,3,5,7
13	1
14	1,5
16	1-8
18	1,5
19	1
20	1,3,5,7
22	1,5
24	1-8
26	1,5
28	1,3,5,7
32	1-8
36	1,3,5,7
38	1,5
40	1-8
44	1,3,5,7
48	1-8
52	1,3,5,7

1-8 indicates that any of the 8 lines may be used.

### Examples

#### Refer to Fig A on page 24

To cut 12TPI use 40T in position A

30T in position D

Use the 65 tooth gear in position B to connect A and D

#### Refer to Fig B on page 24

To cut 38TPI use 20T in position A

50T in position B

60T in position C

57T in position D

**WARNING: NEVER RUN THE MACHINE WITH THE COVER REMOVED.**



In order to change the gears ensure the machine is switched OFF and disconnected from the mains supply.

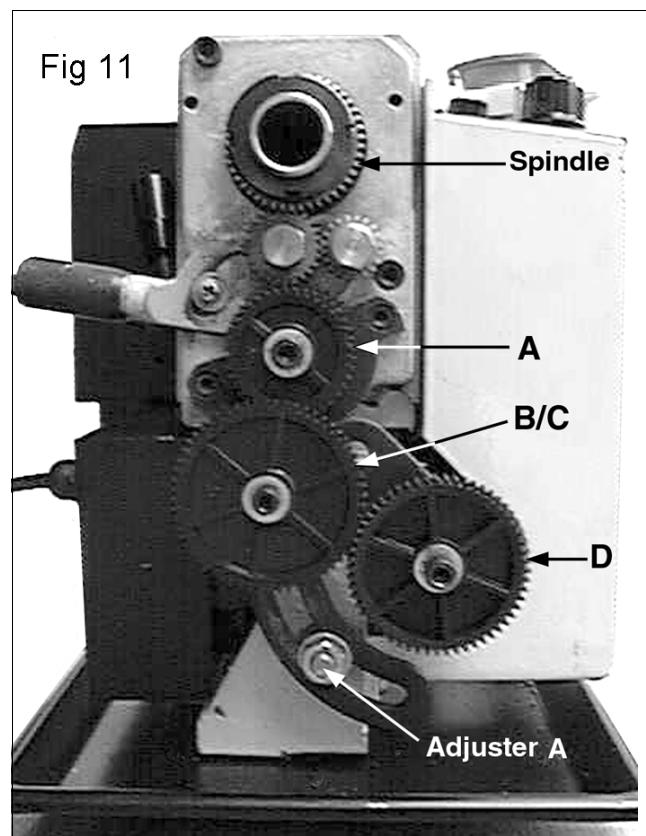
Remove the gear train cover which is secured with two socket head screws.

Gear A may be considered as the driver and Gear D as the driven gear.

When a Simple gear train is configured as illustrated in Fig. A, page 24, the gear at B acts as an Idler and its size is therefore irrelevant - any convenient gear will suffice to connect A and D. This is denoted by a blank space in the column in the gear chart.

The positions of the shafts carrying gears A and D are fixed, therefore all adjustments are carried out on the shaft carrying gears B and C and the Adjuster 'A', shown in fig. 11.

1. Unscrew the hex socket head screws securing gears A and D, followed by the screw securing gears B and C.
2. To allow the gears B and C to disengage completely and to provide for easier reassembly, unscrew the nut securing the shaft carrying B and C and the nut securing the adjuster A.
3. Remove the gears, taking care to retain the small keys on each shaft, and replace with those necessary to produce your screw thread. They may be mounted either way round.
  - The number of teeth on each gear is clearly marked.



Replace the securing screws, ensuring the flat washer bears up against the gear hub in each case.

**NOTE: If a compound gear train is required, as shown in Fig. B on page 18, ensure the spacer, which is keyed to the shaft carrying gear D, is located on the shaft, BEFORE the gear, in order to align gear D with gear C.**

4. Proceed to move the shaft carrying B and C and the adjuster 'A' so that all gears mesh correctly, then tighten the adjuster securing nuts. This may take one or two attempts but make sure there is as little backlash as possible without being overtight. (Turn the spindle by hand to test for backlash).
5. Replace the cover and secure with the two hex socket head bolts.

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## MAINTENANCE

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For maximum performance it is essential that the lathe is properly maintained.

### BEFORE USE

Always inspect before use. Any damage should be repaired and maladjustments rectified. Damage to machined surfaces should be repaired with an oil stone. Test by hand to ensure smooth operation of all parts before use.

Inject a few drops of oil to the oilways at both leadscrew bearings (each end bracket) and once or twice during the day if used continuously. It will be necessary to remove the gear train cover in order to oil the left hand bearing.

Inject a few drops also to the compound slide oilway, located on the slides' top surface, between the two hex socket head screws.

### AFTER USE

Remove all swarf from the machine and thoroughly clean all surfaces. If coolant has been used, ensure it has completely drained from the tray.

Components should be dry, and all machined surfaces should be lightly oiled.

Always remove cutting tools and store in a safe place.

### MOTOR BRUSHES

The motor brushes may be changed by unscrewing the caps visible at the front and rear of the machine beneath the headstock as shown in Fig 12.

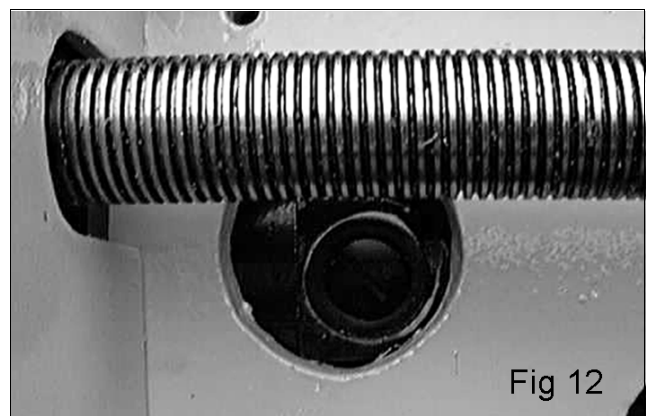


Fig 12

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## SETTINGS AND ADJUSTMENTS

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Occasionally, it may be necessary to readjust various components in order to maintain optimum performance. The adjustments that may be performed are as follows.

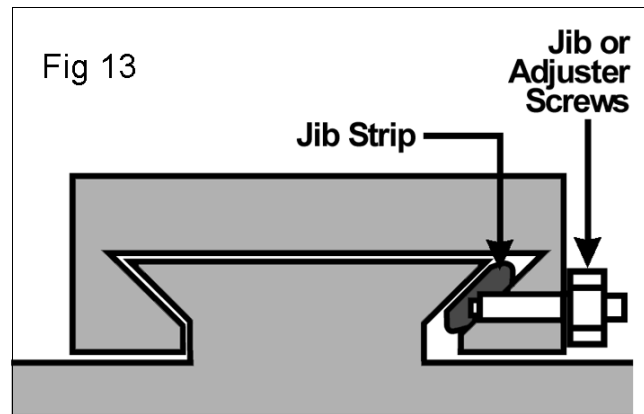
### CROSS-SLIDE ADJUSTMENTS

The cross-slide is mounted on a dovetail slide, as shown in fig. 13. Between the sloping surfaces on one side of the dovetail a 'jib strip' is inserted, which may be tightened against the dovetail under the influence of three adjuster, or 'jib' screws, mounted along its length.

The jib screws are to be found on the right hand side of the slide, directly beneath the compound slide handle. In time, wear will occur on the mating surfaces resulting in a 'sloppiness' of action.

To adjust the jib strip so as to account for wear, and ensure the slide moves evenly and smoothly, proceed as follows:

1. Slacken off all lock nuts and screw in the jib screws evenly, i.e. use the same torque for each screw. The slide should be held firmly. Test by trying to turn the handle but do not force it.
2. Screw out each jib screw by one quarter of a turn **ONLY** and nip up the lock nuts.
3. Test again by turning the handle. The movement should be even and smooth along its complete length.
4. If the movement is too slack, screw all adjusters 'in' by one eighth of a turn, and re-try. Similarly, if the movement is too stiff, screw 'out' the adjusters by one eighth of a turn until the correct adjustment is attained.
5. Tighten all lock nuts taking care to ensure you do not move the jib screws whilst doing so.
6. When completed, retract the slide fully and apply oil to all mating surfaces and the feed screw thread, then wind the slide back to its normal position.



### CROSS-SLIDE FEED HANDLE

The cross slide feed should run smoothly and the scale must rotate with the handle.

If any stiffness occurs it is probably the result of swarf lodging between the mating surfaces. Undo the securing hex socket head screw securing the

handle. Remove the handle and pull off the collar with the scale taking great care to retain the small spring plate which sits in a groove beneath the collar.

Clean the assembly and reassemble in reverse order. It will be necessary to hold the spring plate in place with a small screwdriver, or similar tool, and pushing down on it to allow the collar to be correctly located on to the shaft.

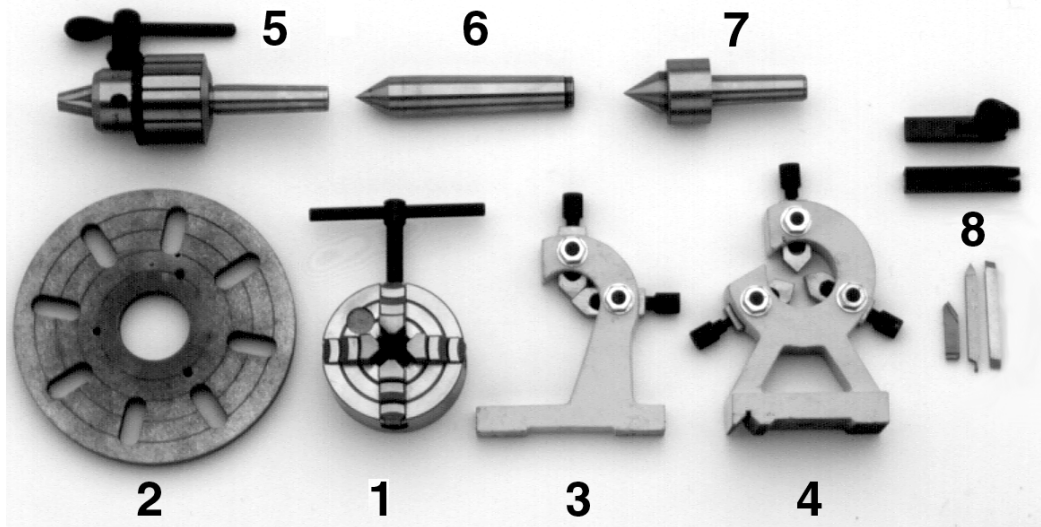
## **COMPOUND SLIDE ADJUSTMENTS**

Compound slide adjustments are made in the same way as those for the cross-slide. The jib screws are to be found on the left hand side of the slide, i.e. facing the front of the lathe.

**NOTE:** *It is important that the cross-slide and compound slide adjustments are correctly carried out and that there is no 'sloppiness' of action. Any maladjustments will have a serious effect on the quality of your work, as they will all be transferred to the tool tip. It is vital that there is as little movement of the tool as possible.*

## ACCESSORIES AVAILABLE

A range of accessories is available from your Clarke dealer which extends the versatility of your machine. These are as follows:



1	Independent 4-Jaw Chuck 80mm dia	7610721
2	Face Plate - 160mm dia	7610723
3	Moving Steady	7610724
4	Fixed Steady	7610722
5	Tailstock Drilling Chuck with a 30mm capacity	7610725
6	Headstock Centre (MT3)	7610726
7	Revolving Centre (Tailstock - MT2)	7610727
8	6 Piece Cutting Tool Set Comprising tools for 60° thread cutting, parting/grooving, facing and general turning work. Hex. wrench not shown)	7610728
9	Metric Thread Cutting Kit ( <b>not shown</b> ) Comprising Leadscrew, Half Nuts and Dial Indicator	7610720

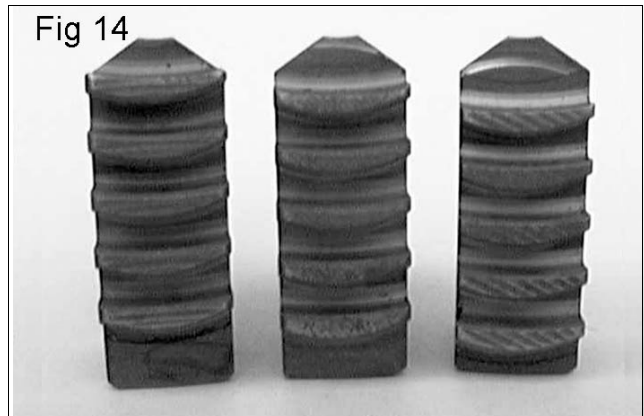
### EXTERNAL JAWS - 3-JAW CHUCK

To change the jaws, insert the chuck key and open the jaws to their fullest extent. It will then be possible to remove each jaw in turn.

Replace them with the external jaws, noting the following.

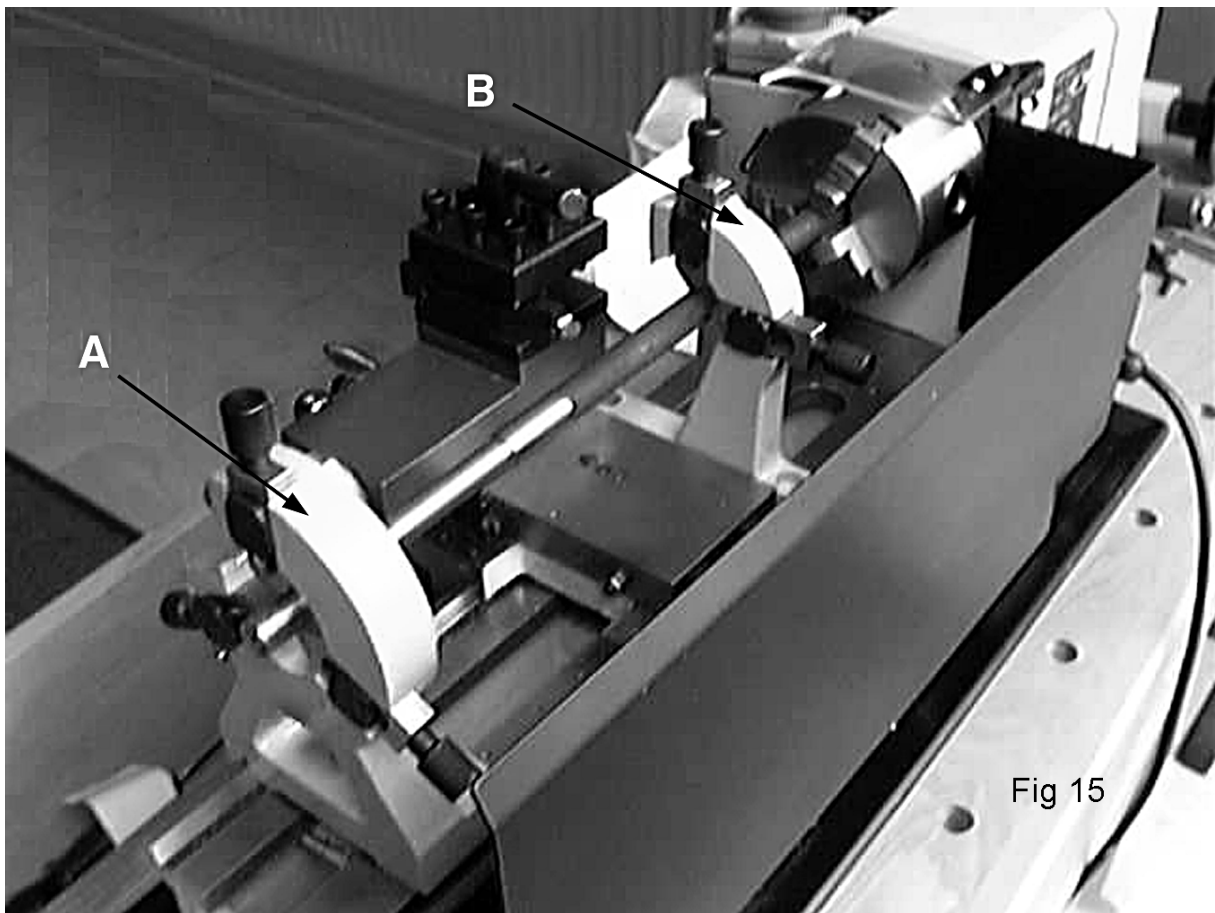
The thread segments of the jaws are progressively 'stepped' as shown in fig 14. They are also numbered 1 to 3. This is to take into account the lead of the screw thread within the chuck. It is therefore necessary to assemble the jaws in the correct order.

Place them as shown in fig 14 and assemble in the same order, clockwise in the slots in the chuck, turning the chuck key as you insert them. Close the jaws fully and check to ensure they all meet at the centre. If a jaw is out, open the jaws fully and retain pressure on the jaw in question whilst turning the chuck key until it snaps down into position. Re-check to ensure all jaws meet at the centre.



## FIXED AND MOVING STEADIES

Fig 15, illustrates the Fixed Steady (A) and Moving Steady (B) assembled to the lathe, used to support a long workpiece.



## PARTS LIST

No	DESCRIPTION	QTY
1	Lathe Bed	1
2	Chuck	1
3	Spindle	1
4	Screw M6x30	3
5	Washer M6	3
6	Nut M6	5
7	Key M5x 35	1
8	Key M4x8	2
9	Screw M5x10	6
10	Cover	2
11	Ball Bearing	2
12	Spacer	2
13	Headstock Casting	1
14	H/l gear	1
15	Spacer	1
16	Spur Gear 45T	1
17	Nut	1
18	Set screw M5x8	3
19	Steel Ball	2
20	Compression Spring	3
21	Set Screw M6x6	3
22	Circlip M12	2
23	Ball Bearing 6201ZZ	2
24	H/L Gear 12T/20T	1
25	Parallel Key M4x45	1
26	H/L Gear Shaft	1
27	Pulley	1
28	Circlip M10	2
29	Timing Belt L=136	1
30	Shifting Fork	1

No	DESCRIPTION	QTY
31	Shifting Arm	1
32	Shifting KNOB	1
33	Shifting Lever	1
34	Shifting Grip	1
35	Handle	1
36	Handle Mount	1
37	Spring	1
38	Indicator	1
39	Pinion 25T	1
40	Support Screw	2
41	Pinion 20T	1
42	Fixed Cover	1
43	Screw M6x20	2
44	Screw M5x10	1
45	Gear 45T	1
46	Shaft	1
47	Parallel Key 3x8	1
48	Mount	1
49	Screw M5x16	2
50	Gearwheel 20T	2
51	Washer M6	6
52	Screw M6x6	4
53	Cover	1
54	Screw M6x45	2
55	Thread Cutting Chart	1
56	Screw M5x8	12
57	Washer M4	2
58	Bush w/Key	1
59	Gearwheel 80T	2
60	Shaft	1



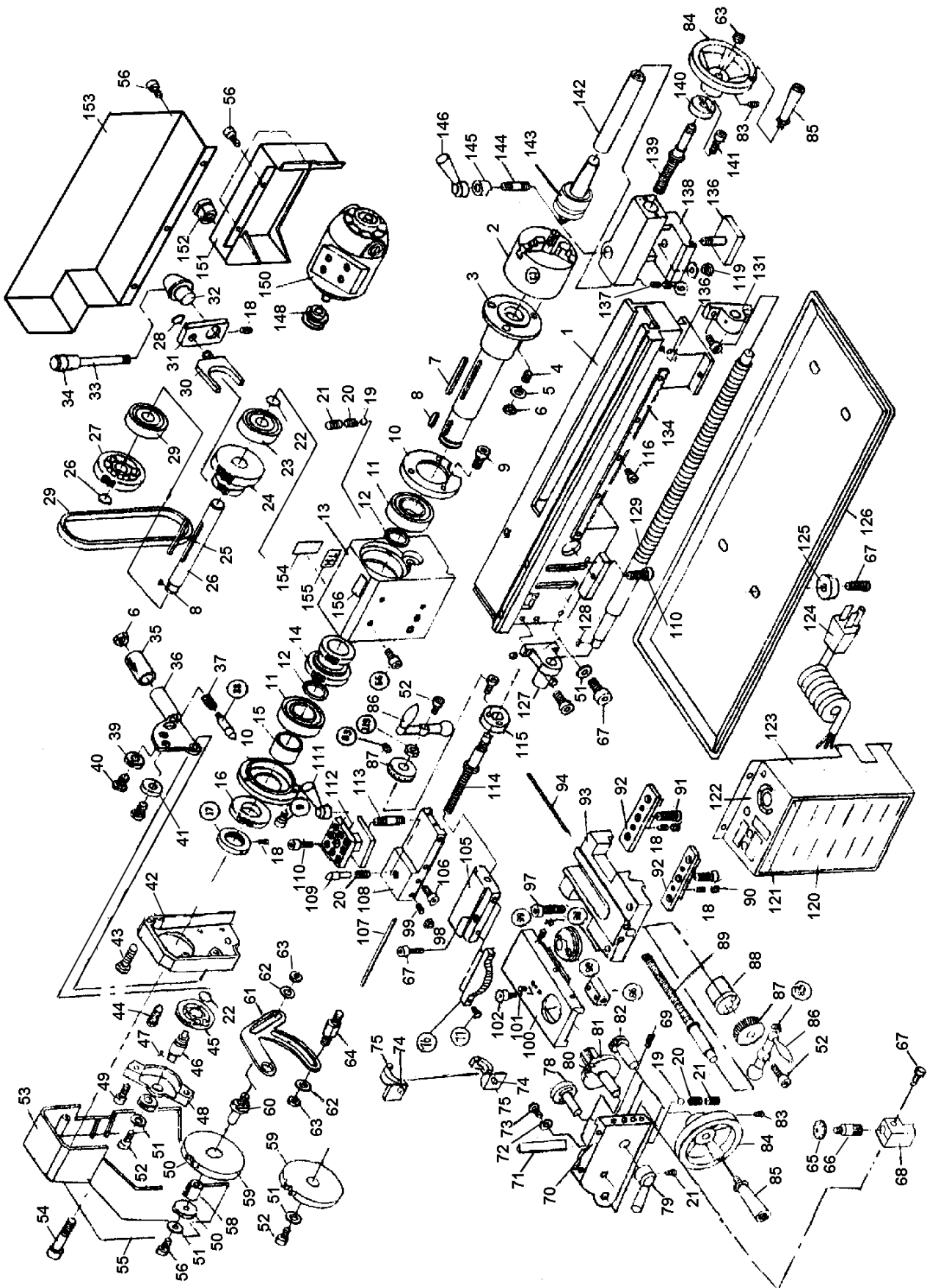
No	DESCRIPTION	QTY
61	Support Plate	1
62	Washer M8	3
63	Nut M8	3
64	Shaft	1
65	Dial 16T	1
66	Shaft	1
67	Screw M6x16	10
68	Dial Indicator Body	1
69	Set Screw M4x10	3
70	Apron	1
71	Gib Strip	1
72	Washer	2
73	Screw M4	2
74	Shaft	1
75	Half Nut Base	2
76	N/a	/
77	N/a	/
78	Groove Cam	1
79	Handle	1
80	Shaft	1
81	Feeding Gear 11T/54T	1
82	Feeding Gear 24T	1
83	Screw M6x12	4
84	Wheel	2
85	Knob	2
86	Handle	2
87	Dial	2
88	Bracket	1
89	Feeding Screw	1
90	Nut M5	4
91	Screw M6x12	6
92	Slide Plate	2
93	Saddle	1

No	DESCRIPTION	QTY
94	Gib Strip	1
95	Feeding Nut Imperial	1
96	Swivel Disc	1
97	Screw M8x20	6
98	Nut M4	6
99	Screw M4x16	6
100	Cross Slide	1
101	Screw M5x10	2
102	Screw M5x10	2
103	N/a	/
104	N/a	/
105	Compound Rest (B)	1
106	Screw M4x16	1
107	Gib Strip	1
108	Compound Rest (A)	1
109	Position Pin	1
110	Tailstock Lead Screw	1
111	Clamping Lever	1
112	Tool Rest	1
113	Stud M10x65	1
114	Cross Feed Screw	1
115	Bracket	1
116	Screw M4x114	2
117	N/a	/
118	N/a	/
119	Nut M18	2
120	Model Label	1
121	Indicator Table Label	1
122	Switch Label	1
123	Control Box	1
124	Power Cable/Plug	1
125	Rubber Foot	4
126	Collection Tray	1

No	DESCRIPTION	QTY
127	Bracket	1
128	Key M3x16	1
129	Lead Screw Imperial	1
130	N/a	/
131	Bracket	1
132	Plastic Plug	1
133	Screw M4x10	5
134	Rack	1
135	Clamp Plate	1
136	Washer M10	1
137	Screw M6x16	1
138	Tailstock Casting	1
139	Tailstock Screw	1
140	Bracket	1
141	Screw M4x12	1
142	Tailstock Quill	1
143	Centre	1
144	Stud M8x35	2
145	Clamp	1
146	Handle	1
147	N/a	/
148	Pulley	1

No	DESCRIPTION	QTY
149	N/a	/
150	Motor	1
151	Cover	1
152	Cable Gland	1
153	Rear Splash Guard	1
154	F/N/R Label	1
155	High - Low Label	1
156	Top Warning Label	1
157	Gearwheel 30T	1
158	Gearwheel 35T	1
159	Gearwheel 40T	1
160	Gearwheel 45T	1
161	Gearwheel 50T	1
162	Gearwheel 55T	1
163	Gearwheel 57T	1
164	Gearwheel 60T	1
165	Gearwheel 65T	1
166	External Jaws (set)	1
167	3-Jaw Chuck Key	1
168	Variable Speed Control Knob	1
169	Fwd/OFF/Rev. Switch	1
170	Emergency Stop Switch	1

# COMPONENT PARTS

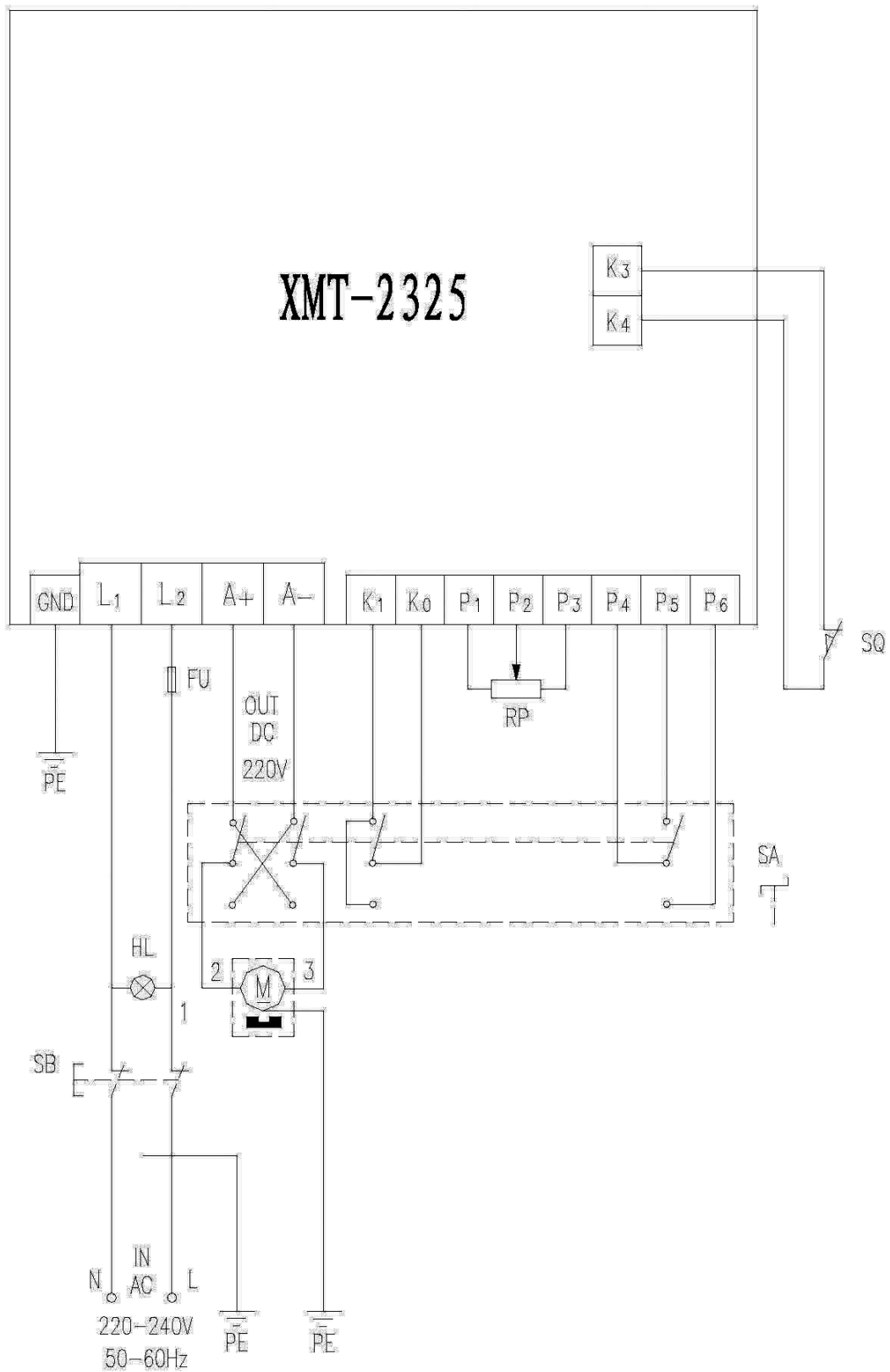


## SPECIFICATIONS

Mains supply voltage	220-240V, 50Hz,
Motor voltage	230V DC
Input power	370Watts
Input current	1.6 Amps
RPM	5000 rpm
Distance between Dead Centres	300 mm
Centre Height	90 mm
Maximum Work Diameter	180 mm
Spindle Bore	20mm
Spindle Taper	No.3 Morse Taper
Tailstock Taper	No.2 Morse Taper
Cross Slide Travel	65mm
Compound Slide Travel	55 mm (effective)
Spindle Speeds	100 to 2500 RPM
Overall Dimensions (D x W x H)	820 x 295 x 300 mm
Weight	40 kg
Screw Threads - Imperial	12 - 104 TPI in 26 steps
Metric	0.4 - 2.0 mm pitch in 10 steps

Please note that the details and specifications contained herein, are correct at the time of going to print. However, CLARKE International reserve the right to change specifications at any time without prior notice.

# WIRING DIAGRAM



# DECLARATION OF CONFORMITY - UKCA



Hemnal Street, Epping, Essex, CM16 4LG

## DECLARATION OF CONFORMITY

This is an important document and should be retained.

We hereby declare that this product(s) complies with the following legislation:

*The Electromagnetic Compatibility Regulations 2016*

*The Supply of Machinery (Safety) Regulations 2008*

*The Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment Regulations 2012*

The following standards have been applied to the product(s):

*IEC 62321-3-1 Edition 1.0:2013, IEC 62321-4 Edition 1.1:2017, IEC 62321-5 Edition 1.0:2013,  
IEC 62321-6 Edition 1.0:2015, IEC 62321-7-1 Edition 1.0:2015, IEC 62321-7-2 Edition 1.0:2017,  
IEC 62321-8 Edition 1.0:2017, EN 55014-1:2017, EN 55014-2:2015, EN 61000-3-2:2014,  
EN 61000-3-3:2013, EN 60204-1:2018, EN ISO 23125:2015*

The technical documentation required to demonstrate that the product(s) meet(s) the requirement(s) of the aforementioned legislation has been compiled and is available for inspection by the relevant enforcement authorities.

The UKCA mark was first applied in: 2021

**Product Description:** Metalworking Lathe  
**Model Number(s):** CL300M  
**Serial/Batch Number:** Refer to product/packageing label  
**Date of Issue:** 03/07/2023

Signed:

J.A Clarke

Director

# DECLARATION OF CONFORMITY - CE



**Clarke**<sup>®</sup>  
**INTERNATIONAL**

Fitzwilliam Hall, Fitzwilliam Place, Dublin 2

## DECLARATION OF CONFORMITY

**This is an important document and should be retained.**

**We hereby declare that this product(s) complies with the following legislation:**

2014/30/EU	<i>Electromagnetic Compatibility Directive</i>
2006/42/EC	<i>Machinery Directive</i>
2011/65/EU	<i>Restriction of Hazardous Substances (RoHS) Directive</i>

**The following standards have been applied to the product(s):**

*IEC 62321-3-1 Edition 1.0:2013, IEC 62321-4 Edition 1.1:2017, IEC 62321-5 Edition 1.0:2013,  
IEC 62321-6 Edition 1.0:2015, IEC 62321-7-1 Edition 1.0:2015, IEC 62321-7-2 Edition 1.0:2017,  
IEC 62321-8 Edition 1.0:2017, EN 55014-1:2017, EN 55014-2:2015, EN 61000-3-2:2014,  
EN 61000-3-3:2013, EN 60204-1:2018, EN ISO 23125:2015*

The technical documentation required to demonstrate that the product(s) meet(s) the requirement(s) of the aforementioned legislation has been compiled and is available for inspection by the relevant enforcement authorities.

**The CE mark was first applied in: 2009**

<b>Product Description:</b>	Metalworking Lathe
<b>Model Number(s):</b>	CL300M
<b>Serial/Batch Number:</b>	Refer to product/package label
<b>Date of Issue:</b>	03/07/2023

**Signed:**

**J.A Clarke**

**Director**

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