INSTRUCTIONS FOR:

MULTI FUNCTION MACHINE

MODEL NO: **SM2503**

Thank you for purchasing a Sealey product. Manufactured to a high standard, this product will, if used according to these instructions and maintained properly, 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 instruction manual


Wear eye protection


Wear ear protection


Wear protective clothing

1. SAFETY

1.1. ELECTRICAL SAFETY

❒ **WARNING!** It is the responsibility of the owner and the operator to read, understand and comply with the following: You must check all electrical products, before use, to ensure that they are safe. You must inspect power cables, plugs, sockets and any other connectors for wear or damage. You must ensure that the risk of electric shock is minimised by the installation of appropriate safety devices. A Residual Current Circuit Breaker (RCCB) should be incorporated in the main distribution board. We also recommend that a Residual Current Device (RCD) is used. It is particularly important to use an RCD with portable products that are plugged into a supply which is not protected by an RCCB. If in any doubt consult a qualified electrician. You may obtain a Residual Current Device by contacting your Sealey 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 business premises, to be tested by a qualified electrician, using a Portable Appliance Tester (PAT), at least once a year.

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

1.1.3. Ensure that the insulation on all cables and on the appliance is safe before connecting it to the power supply. See 1.1.1. and 1.1.2. and use a Portable Appliance Tester.

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

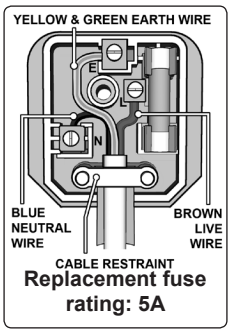
1.1.5. Regularly inspect power supply cables and plugs for wear or damage and check all connections to ensure that none is loose.

1.1.6. **Important:** Ensure that the voltage marked on the appliance matches the power supply to be used and that the

1.1.7. **DO NOT** pull or carry the appliance by the power cable.

1.1.8. **DO NOT** pull the plug from the socket by the cable.

1.1.9. **DO NOT** use worn or damaged cables, plugs or connectors. Immediately have any faulty item repaired or replaced by a qualified electrician.
When a BS 1363/A UK 3 pin plug is damaged, cut the cable just above the plug and **dispose of the plug safely.**
Fit a new plug according to the following instructions (UK only).
a) Connect the GREEN/YELLOW earth wire to the earth terminal 'E'.
b) Connect the BROWN live wire to the live terminal 'L'.
c) Connect the BLUE neutral wire to the neutral terminal 'N'.
d) After wiring, check that there are no bare wires, that all wires have been correctly connected, that the cable outer insulation extends beyond the cable restraint and that the restraint is tight.



Replacement fuse rating: 5A

1.1.10. If an extension reel is used it should be fully unwound before connection. A reel with an RCD fitted is preferred since any appliance plugged into it will be protected. The cable core section is important and should be at least 1.5mm², but to be absolutely sure that the capacity of the reel is suitable for this product and for others which may be used in the other output sockets, we recommend the use of 2.5mm² section cable.

1.2 GENERAL SAFETY

❒ **WARNING!** Disconnect the multi function machine from the mains power, and ensure the cutting tool or chuck is at a complete standstill before attempting to change accessories, service or perform any maintenance.

✓ Maintain the multi function machine in good condition (use an authorised service agent).

✓ Replace or repair damaged parts. *Use recommended parts only. Unauthorised parts may be dangerous and will invalidate the warranty.*

✓ Locate the multi function machine in a suitable area. Ensure the surface is flat and firm. Keep area clean and tidy and free from unrelated materials, and ensure there is adequate lighting.

✓ Keep the multi function machine clean for best and safest performance and check moving parts alignment regularly.

❒ ***WARNING!*** *Before each use check that drill/chuck/cutting tool is secure and that it is not worn or damaged. If worn or damaged replace immediately.*

❒ **WARNING!** Keep guard and holding fixings in place, tight and in good working order. Check regularly for damaged parts.
A guard, or any other part, that is damaged must be replaced with a new one, to ensure that it operates properly and performs its intended function, before the tool is used. The safety guard is a mandatory fitting where multi function machine is used in premises covered by the Health & Safety at Work Act.

✓ Remove adjusting keys and wrenches from the machine and its vicinity before turning it on.

❒ **WARNING!** Wear approved safety eye protection and, if oil mist is generated, respiratory protection.

✓ Remove ill fitting clothing. Remove ties, watches, rings and other loose jewellery and contain long hair.

✓ Keep hands and body clear of the work table when operating the multi function machine.

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

✓ Always clamp workpiece securely to the table or hold securely in a vice which is firmly mounted to the table. NEVER hold a workpiece by hand. Ensure that workpieces to be turned are held securely in the chuck. Long workpieces should be held at both ends and along their length with suitable steady rests.

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

❒ **WARNING!** DO NOT switch the multi function machine on whilst the drill or cutting tool is in contact with the workpiece. Bring the drill or cutting tool gradually to the workpiece. Avoid un-intentional starting of the multi function machine.

✗ DO NOT force the multi function machine to achieve a task it was not designed to perform.

✗ DO NOT allow untrained persons to operate the multi function machine.

✗ DO NOT get the multi function machine wet or use in damp or wet locations or areas where there is condensation.

❒ **WARNING!** DO NOT use multi function machine where there are flammable liquids, solids or gases such as petrol, paint solvents, waste wiping rags etc.

✗ DO NOT operate the multi function machine if any parts are missing or damaged as this may cause failure and/or possible personal injury.

✗ DO NOT remove the safety guard whilst in use.

✗ DO NOT attempt to remove a workpiece until the drill, cutting tool or chuck has stopped rotating.

✗ DO NOT touch the workpiece close to the cut as it will be very hot. Allow to cool.

✗ DO NOT leave the drill or cutting tool operating unattended.

✗ DO NOT operate the drill or cutting tool when you are tired or under the influence of alcohol, drugs or intoxicating medication.

✓ When not in use switch the drilling/milling machine off and isolate from the power supply.

2. INTRODUCTION & SPECIFICATION

Bench mounting, multifunction mini drill, mill and lathe with variable speed giving flexibility to handle most materials. Features two 150W motors, one to operate the drill/mill and the other to power the lathe. The lathe cutting feed can be power driven or advanced manually. Thread cutting may also be undertaken with the optional thread cutting kit. Supplied with Metric graduated scales and all necessary tools required for setting and adjusting. An optional stand is available, order Model No. SM3002ST.

Specification (Cutting)

Swing over bed	140mm
Distance between centres	250mm
Spindle hole taper	MT2
Cross slide travel	61mm
Tailstock taper	MT1
Spindle speed (variable)	100 to 2000rpm
Range of metric threads	5 pitches (0.5 to 1.25mm)

Specification (Drilling)

Max drilling/milling capacity	10mm
Travel of drilling/milling spindle	30mm
Drilling/milling spindle speed	100 to 1300rpm
T-slot	8mm
Output power	150W
Net/gross weight	40/50kg
Distance from spindle to table	180mm
Distance from spindle centre to column front	100mm

3. CONTENTS & ASSEMBLY

❒ **WARNING! At least two people will be required to move the machine. Observe good lifting practice.**

3.1. Unpack the product and check that all components and tools are present and undamaged. If any problem is noted contact your supplier immediately.

3.2 The machine has been coated with heavy grease to protect it in shipping. Remove the coating with commercial degreaser, kerosene or similar solvent before operating. Avoid getting the solvent on rubber parts. After degreasing coat the machined surfaces with a medium consistency machine oil.

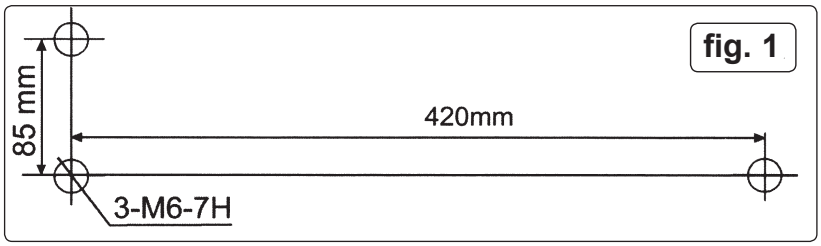


fig. 1

3.3 Mounting the machine. Locate the machine on a flat, level and strong work surface. Do not locate in direct sunlight or where heavy dust or moisture is present.

3.4 Drill the location holes in accordance with the dimensions shown in fig.2 and bolt the machine to the bench using three M6 nuts and bolts. (Not provided.)

- **Contents: (Not illustrated)**
- Mini drilling/milling/cutting machine.

1. 'C' Wrench (28/32mm)
2. Drill chuck and taper shank
3. Drill chuck key
4. 3 Hex keys (3,4,6mm)
5. Double ended spanner 8-10
6. Lathe chuck key.
7. 3 External chuck jaws
8. 8mm 'T' nuts
9. Fuse
10. Tailstock centre

fig. 2

4. OPTIONAL ACCESSORIES

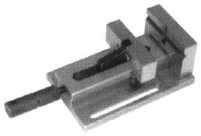
STEADY REST

SM2503SR

FOLLOW REST

SM2503FR

QUICK VICE (50mm)



SM2503QV

MILL CHUCK SET (MT2)

SM2503MCSET (3,4,5,6,8,10diam.)

2 FLUTE HSS END MILL SET

SM2503EMSET (3,4,5,6,8,10 diam.)

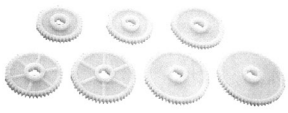
COLLET SET (MT2)

SM2503CSET (3,4,5,6,8,10 diam.)

INDEXABLE CARBIDE END MILL

SM2503ICEM(16mm MT2)

METRIC THREAD CUTTING KIT



SM2503TCK (40,42,45,48,50,54,60)

TAILSTOCK CHUCK+SHANK

SM2503TC (MT1 10mm)

ROLLING CENTRE

SM2503RC (MT1)

HEADSTOCK CENTRE

SM2503HC (MT2)

TOOL HOLDER SET(Cut off type, 70 x 2 x 10mm)

SM2503THSET (Boring cutter, diam.10mm)

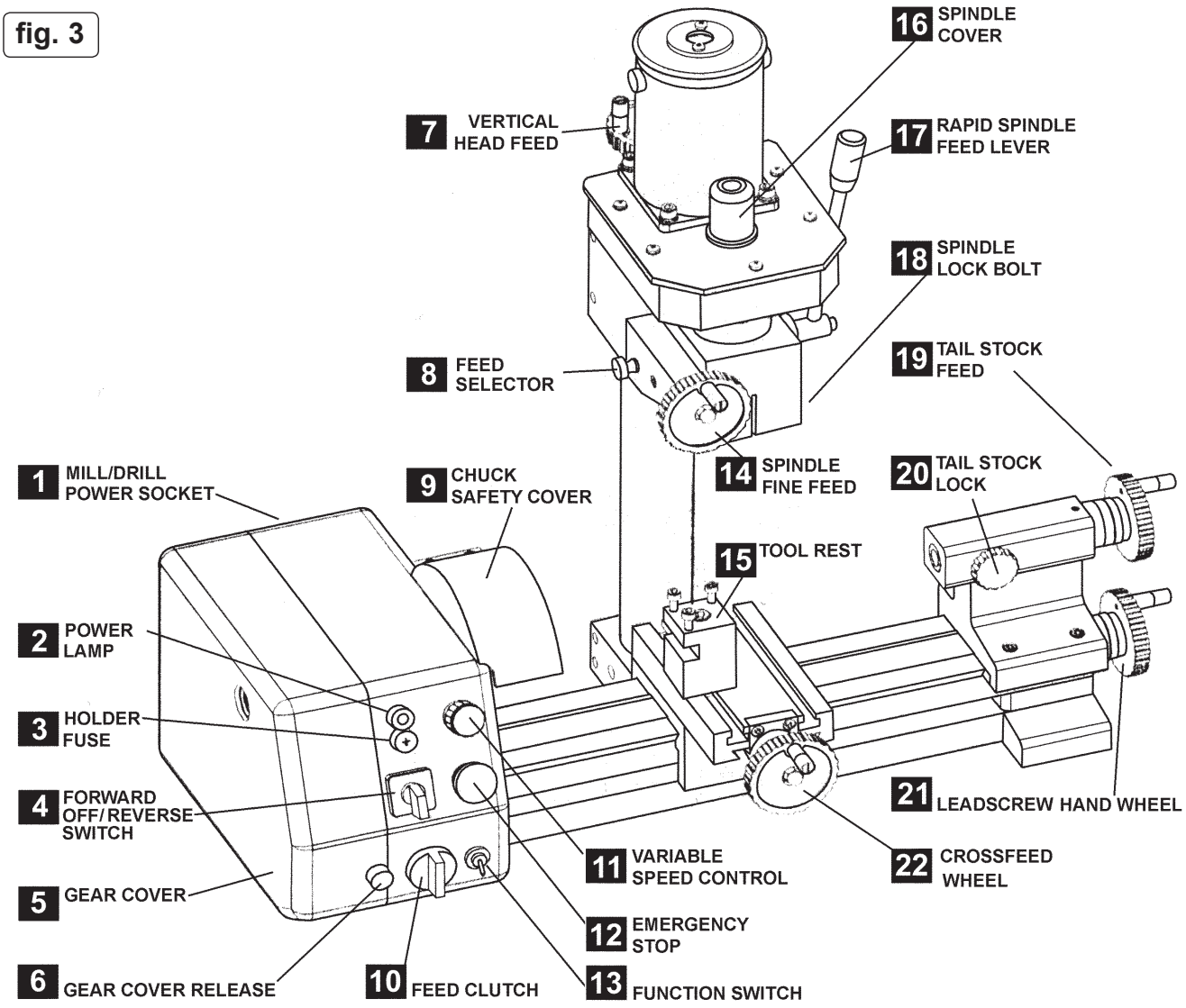
CUT OFF TOOL & BORING TOOL

SM2503COBT

FACEPLATE (Diam.112mm)

SM2503FP ('T' slot 8mm)

fig. 3



5. SET- UP AND OPERATION

It is assumed that the operator has some experience of machining practice and therefore these instructions are intended only to describe the features of the machine. If you have no experience of machining it is recommended that you undertake a training course or seek advice from an experienced source.

❒ **WARNING!** ***Before operating the drilling/milling machine ensure you are wearing approved safety goggles and gloves to protect you from swarf and metal particles. If using cutting oil or coolant a face mask may be necessary to avoid breathing any vapour generated. Ensure that all other safety instructions in chapter 1 are followed carefully.***

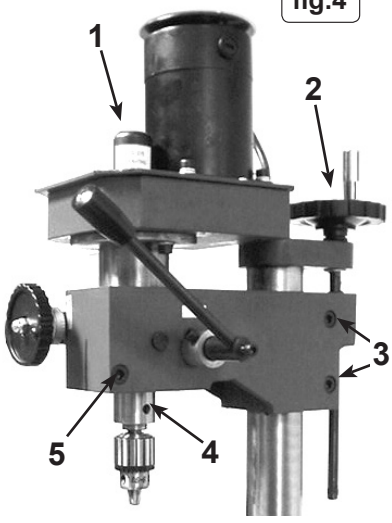
5.1 **SETTING UP FOR MILLING. (Disconnect the machine from the power supply whilst setting up.)** The machine is supplied <u>without</u> milling attachments. Contact your local Sealey dealer for a full range of accessories.

5.2 **Mounting the Cutting Tool.** If the drill chuck and arbor are currently mounted, remove them by the following method. Access the arbor bolt by pulling off the plastic cap (See fig.4-1) which covers the top of the spindle shaft and place an 8mm spanner onto the flats at the top of the shaft. Insert a rod into the hole in the side of the spindle shaft (See fig.4-4) to prevent it turning and loosen the arbor bolt by two turns. Give the arbor bolt a sharp tap with a rubber mallet in order to release the arbor from the internal taper. Continue to unscrew the arbor bolt by hand whilst supporting the drill chuck and arbor until they become loose and can be removed.

5.2.1 Select the cutting tool for the work in hand and the appropriate arbor or collet. **Wear protective gloves at all times especially when handling the cutter**. Introduce the cutter assembly into the spindle sleeve and hold it in place whilst the arbor bolt is tightened by hand. Insert a rod into the hole in the side of the spindle shaft to prevent the spindle rotating and tighten the arbor bolt with a spanner (do not overtighten). Remove the rod and replace the plastic cap.

5.3 **Attaching the workpiece**. The workpiece will be mounted to the crossfeed table utilising the 8mm 'T' slots provided for the tool rest.

fig.4



5.4 **Setting and locking the cutter height**. Once the workpiece and cutter are mounted, the cutter can be lowered to the correct position to achieve the desired cut. The spindle shaft vertical movement is 30mm. If this does not bring the cutter into the vicinity of the workpiece the whole head can be moved down the column to achieve the desired cutter position. Adjust cutter and head height as described below. To ensure accuracy during milling the cutter height setting must then be locked as described below.

5.5 **Setting the head height.** The overall height of the head on the column can be altered by using the head vertical feed wheel (see fig.4-2). To alter the head height first loosen the two socket cap bolts adjacent to the vertical leadscrew (see fig.4-3). Use the handwheel to move the head to the desired height and tighten the socket cap screws to lock the head in position.

5.6 **Engaging vertical fine feed.** The drilling/milling spindle travel is controlled for milling purposes by the fine feed wheel (see fig.3-14). To engage the fine feed wheel push the feed selector knob (see fig.3-8) inwards. This action automatically disengages the rapid spindle feed lever (see fig.3-17). Once the spindle/cutting tool has been moved to the correct height it can be locked in this position by tightening the socket cap bolt on the right hand side of the head (see fig.4-5).

5.7 **Calibrated feed.** Each feed wheel has an adjustable calibration ring situated on the feed shaft immediately behind the wheel. The rings can be rotated by hand and set to an adjacent mark in order to execute a cut of a specific depth.

5.7.1 The longitudinal feed ring has 31 divisions to one full rotation of the wheel. One segment represents a movement of 0.05mm.
The cross feed ring has 50 divisions to one full rotation of the wheel. One segment represents a movement of 0.025mm.
The longitudinal feed ring has 36 divisions to one full rotation of the wheel. One segment represents a movement of 0.05mm.

5.8 **Main ON/OFF switch with speed control and emergency shut off.**

5.8.1 The function switch (see fig.3-13) allows you to select either **milling/drilling** or **cutting** on the lathe. The switch has a central OFF position. Set the switch to milling/drilling.

5.8.2 Select the direction of rotation (forward for milling/drilling) using the forward/OFF/reverse switch (see fig.3-4).

5.8.3 Ensure that the variable speed control (see fig.3-11) is set at '0' otherwise the machine will not start.

5.8.4 Connect the machine to the mains power supply. The green power lamp (see fig.3-2) will illuminate.

5.8.5 If the light does not illuminate release the emergency off switch by twisting the button clockwise until it jumps up.

5.8.6 Rotate the rotary speed switch slowly clockwise. As the knob is turned a click will be heard and the motor will start. As the knob is turned further the speed will increase. Set the knob to the desired speed.

5.8.7 **Stop modes.** There are three 'stop' modes as described below.
(A). To stop the machine for a short while and then restart, simply return the rotary speed switch to the '0' position. When you are ready to restart, rotate the switch clockwise to the desired speed.
(B) If the machine is to be left unattended for any length of time, switch the forward/reverse switch to 'OFF' as well as returning the speed switch to '0'.
(C) In an emergency hit the large red emergency button which automatically cuts the electrical supply to the machine. Before the machine will start again the rotary speed switch must be returned to the '0' position and the emergency switch must be released.

6.1 SETTING UP FOR DRILLING.(Disconnect the machine from the power supply while setting up.)

6.2 **Engaging rapid drill feed.** The rapid drill feed is controlled with the lever on the right hand side of the head. (See fig.3-17) The rapid drill feed will not operate if the vertical fine feed wheel used for milling is still engaged. To make the rapid drill feed operative pull the feed selector knob outwards. (See fig.3-8)

6.3 **Mounting the chuck and arbor.** If the milling cutter and arbor are currently mounted, remove them by loosening the arbor bolt by two turns and giving it a tap with a rubber mallet. Access the arbor bolt by pulling off the plastic cap which covers the top of the spindle shaft and place an 8mm spanner onto the flats at the top of the shaft. Insert a rod into the hole in the side of the spindle shaft (See fig.4-4) to prevent it turning and loosen the arbor bolt by two turns. Give the arbor bolt a sharp tap with a rubber mallet in order to release the arbor from the internal taper. Continue to unscrew the arbor bolt by hand whilst supporting the milling cutter and arbor until they become loose and can be removed. (**Wear protective gloves**.) Insert the chuck arbor into the bottom of the spindle shaft and retain it with the arbor bolt. Do not over tighten. The drill chuck is a shallow taper fit onto the end of the drilling arbor. Using the chuck key open the jaws of the chuck until they withdraw inside the chuck body. Place a piece of wood onto the cross feed bed and position the chuck on it below the spindle shaft. Using the drill feed, wind the spindle shaft down until the arbor enters the chuck. Exert firm but not excessive downward pressure on the chuck to retain it on the arbor.

6.4 **Drill bits.** Insert an appropriate drill bit into the chuck and tighten the chuck with the chuck key. Remove the chuck key.

6.5 **Attaching the workpiece**. The cross feed bed of the machine has 2 inverted 8mm 'T' slots in it for fixing the workpiece or any vice/clamping arrangement used to hold the workpiece.

6.6 **Altering the height of the head.** If the tip of the drill bit is not close enough to the workpiece alter the height of the head on the column as described in section 5.4.

6.7 **Speed control and ON/OFF operation.** Refer to Section 5.7 for the operation of the main ON/OFF switch and speed setting.

6.8 Avoid subjecting drills and cutting tools to excessive strain. Do not apply undue force on the handle in order to cut the workpiece. Maintain a controlled cutting speed through the workpiece.

7.1 SETTING UP FOR CUTTING ON THE LATHE. (Disconnect the machine from the power supply while setting up.)

7.2 **The chuck.** The chuck is attached to the faceplate with 3 studs and nuts. Check that these fixings are secure before proceeding. The chuck is provided with two sets of jaws for either external or internal holding of objects to be turned. Select and fit the appropriate jaws. Using the chuck key wind out the jaws to their maximum extent at which point they can be pulled out by hand. The thread segments are staggered differently on each jaw and therefore the jaws are numbered 1 to 3. Insert the jaws in sequence beginning with No1 and in an anti clockwise direction as you face the chuck. Hold them under pressure whilst turning the key until they are picked up by the mechanism and start to move towards the centre of the chuck. Check that the three jaws come together correctly at the centre of the chuck. If not, wind the jaws out again and press on the misaligned jaw until it drops into place.

7.3 **Tailstock/centre.** Material/stock that is too long to be held in the chuck alone can be steadied by a centre fitted into the tailstock. Once one end of the workpiece is fixed into the chuck loosen the two socket cap screws holding the tailstock and slide it up to the unsupported end of the workpiece so that the centre is close to it. Tighten the tailstock socket cap screws. Now wind the tailstock wheel so that the centre makes contact with the end of the workpiece and lock its position by tightening the tailstock lock.(See fig.3-20)

7.4 **Toolrest.** Mount the toolrest utilising the 'T' slots in the cross feed table. Insert an appropriate cutting tool into the split carrier and mount the tool and carrier into one side of the toolrest. Now make any necessary adjustments to the position of the toolrest and carrier to allow the cutting edge of the tool to be correctly presented to the workpiece. The tool should be cutting in a plane that passes through the centre axis of the workpiece or just below it.

7.4.1 The angle of the tool when viewed from above may be changed by loosening the central holding bolt on the toolrest and twisting the whole rest on the bed to obtain the desired angle.

7.4.2 One side of the toolrest will clamp the tool and carrier parallel to the bed of the machine. On the other side of the toolrest the tool and carrier rests on a contoured block which allows the tool to be inclined upwards or downwards by a few degrees. The angle of tilt is controlled by adjusting the two socket cap bolts which bear on the tool carrier.

7.5 Adjust the crossfeed wheel and longitudinal feed so that the tip of the tool is in the correct position to commence cutting when the machine is turned on. Before turning on check that all fixings holding the tool are tight.

8.1 **Starting the machine.** Lower the guard over the chuck. (The machine will not start with the guard in the up position.) Check that the function switch is set to 'cutting'.

8.2 Select either manual cutting or automatic feed using the clutch knob. See fig.3-10. (When selecting autofeed it may be necessary to rotate the leadscrew hand wheel slightly before the clutch will engage.)

8.3 Select the direction of cut using the forward/reverse switch. When using autofeed ensure that the saddle/cross feed/toolrest are positioned at the intended start of the cut and that the correct direction has been selected. In general the cut will usually start from the tailstock direction and progress towards the chuck.

8.4 Turn the machine on using the variable speed control. Rotate the knob clockwise until the desired speed is reached. Refer to section 5.7 for a full description of the on/off operation.

❒ **WARNING!** The machine should never be left unattended whilst switched on during manual or automatic operation. In particular when a cut is in progress using autofeed the operator must observe the entire cut and be on hand to switch the machine off as the cutting tool approaches the chuck or other holding devices. Failure to do this may result in damage to the machine and will invalidate the warranty.

9.1 **Autofeed rate/thread cutting.** The machine is supplied with a gear set which gives a cutting rate of 0.05mm per single chuck rotation when autofeed is selected. (See fig.7 and the standard gear set up highlighted in the gear ratio table below.) By purchasing the optional metric thread cutting kit (Part No.SM2503TCK) the machine becomes capable of an additional autofeed rate of 0.01mm and will cut metric thread pitches 0.5/0.7/0.8/0.1&1.25mm as indicated in the gear ratio table.

9.2 **Changing gear sets.** To set up the machine for a particular thread pitch or feed rate refer to the gear ratio chart for the sizes of Z1,Z2 & Z3 and then identify the actual gears. (The number of teeth on each gear is moulded into the face of the gear.) Gears Z1 and Z2 are pairs of gears which are a push fit onto a splined sleeve. Ensure that the correct pairs are on the sleeve together according to the chart.

9.3 Remove the existing gear set. Use a large screwdriver to remove Z1 and then Z2. Use a 4mm hex key to remove Z3. The mountings for Z1 and Z2 are slotted (See fig.6) to allow the centres of the gears to move to accommodate the differing sizes.

9.4 To assemble the new gear set attach Z3 first and tighten the fixing. As gears Z1 & Z2 overlap attach the 'hidden' gear first. The attachment slots have a sliding nut positioned at the rear of the plate. Slide the nut into the approximate position required. Screw the gear into place but leave it loose enough to slide. Attach the final gear to the sliding nut in the other slot and allow the gears to settle into position. When you are satisfied that the gears are fully meshed tighten the fixings for Z1 and Z2. Close and secure the gear cover and test run the machine to ensure that the drive train is fully functional.

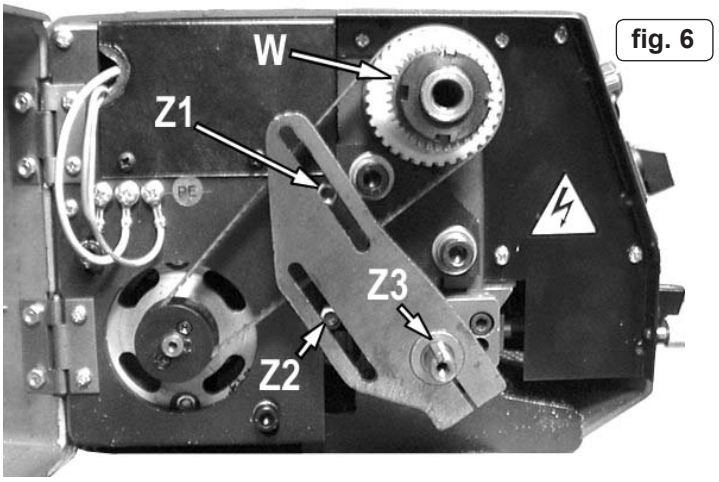


fig. 6

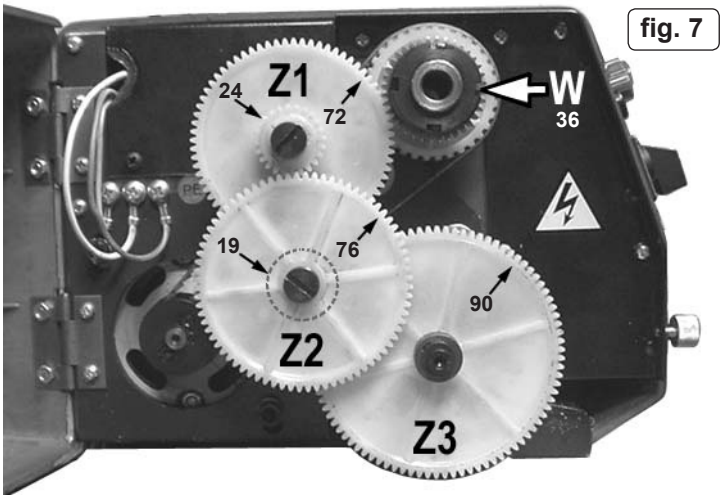
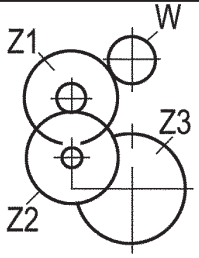


fig. 7

THREAD PITCH		0.5		0.7	
fig. 5	W		36		36
	Z1	24	42	24	40
	Z2	40	60	42	45
	Z3	72		72	
THREAD PITCH		**0.8**		**1.0**	
mm	W		36		36
	Z1	24	42	24	42
	Z2	40	45	40	48
	Z3	60		45	
THREAD PITCH		**1.25**			
	W		36		
	Z1	24	42		
	Z2	50	48		
	Z3	45			
	mm /r	FEED RATE 0.05		FEED RATE 0.10	
	W		36		36
	Z1	24	72	24	54
	Z2	76	19	60	19
	Z3		90		76

Standard gear set up (see fig.7)

10. MAINTENANCE

❒ Ensure the machine is unplugged from the mains power supply before attempting any maintenance.
For maximum performance it is essential that the lathe is properly maintained.

10.1. Lubricate the machine before every use. Lubricate the bearings at either end of the leadscrew once or twice during the day if used continuously. Open the gear train cover to gain access to the left hand bearing. Inject oil into the compound s slide oilway located on the slide front surface between the two hex socket cap screws.

10.2. After each use remove all swarf from the machine and thoroughly clean all sufaces. If coolant has been used ensure it is all cleaned from the machine and any collection tray is completely drained. Lightly oil all machined surfaces.

10.3 Clean and coat the leadscrews with oil weekly.

10.4 **Cross slide and saddle adjustment.** Adjust the accuracy of the cross feed and saddle on a monthly basis. Any wear or slack can be taken up by adjusting the position of the appropriate gib strip. To do this use a hex key and spanner as shown in fig.8. Adjust the cross feed using the adjusters marked 'A' in fig.9.

10.5 Loosen the locking nuts on all four adjusters and screw them in evenly using the same torque. The slide should now be held firmly. Test by trying to turn the handle but do not force it to turn.

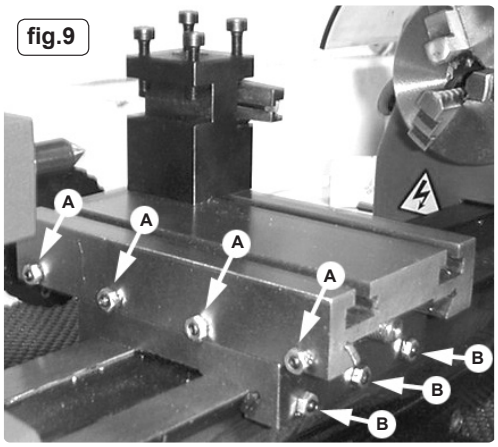
10.6 Now back off each gib screw by a quarter of a turn and tighten the lock nuts. Test again by turning the handle. The movement should be even and smooth along its whole travel.

10.7 If the movement is too slack, screw all the adjusters in by one eighth of a turn until the correct adjustment is attained. Tighten the lock nuts.

10.8 Adjust the saddle in the same way using the three adjusters marked 'B' in fig.9.

10.9 **Cross slide feed handle.** If any stiffness occurs in the operation of the handle it is usually as a result of swarf lodging between the mating surfaces. Remove the handwheel by undoing the securing screw and pull off the calibrated collar taking care to retain the small spring plate which sits in a groove beneath the collar. Clean the parts and reassemble in the reverse order taking care to correctly reposition the spring.

fig.9



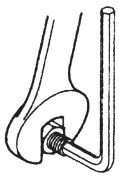


fig. 8

Parts support is available for this product. To obtain a parts listing and/or diagram, please log on to www.sealey.co.uk, email sales@sealey.co.uk or telephone 01284 757500

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.

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.

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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.

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01284 757500 **01284 703534** **sales@sealey.co.uk** **www.sealey.co.uk**

EC DECLARATION OF CONFORMITY

Description and Function: **Mini Lathe & Drilling Machine**

Model/Type: **SM2503 v1**

Manufacturing Date/Serial Number where applicable: .....

2014/35/EU Low Voltage Directive

2006/42/EC Machinery Directive

2014/30/EU EMC Directive

2012/19/EU WEEE Directive

2011/65/EU RoHS Directive

This declaration of conformity is issued under the sole responsibility of the manufacturer:

Jack Sealey Ltd, Kempson Way, Suffolk Business Park, Bury St Edmunds, Suffolk. IP32 7AR

Declaration of Conformity in accordance with the above Directive(s).

References to harmonised standard(s)

EN 60204-1:2006+AC:2010 .....

EN 23125:2010+A1:2012 .....

EN 61000-6-2:2005 .....

EN 61000-6-4:2007+A11:2011 .....

.....

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Technical file compiled by: **Jack Sealey Ltd**

Being the responsible person appointed by the manufacturer.

Signed .....

Date 17 July 2017

Name Steve Buckle.

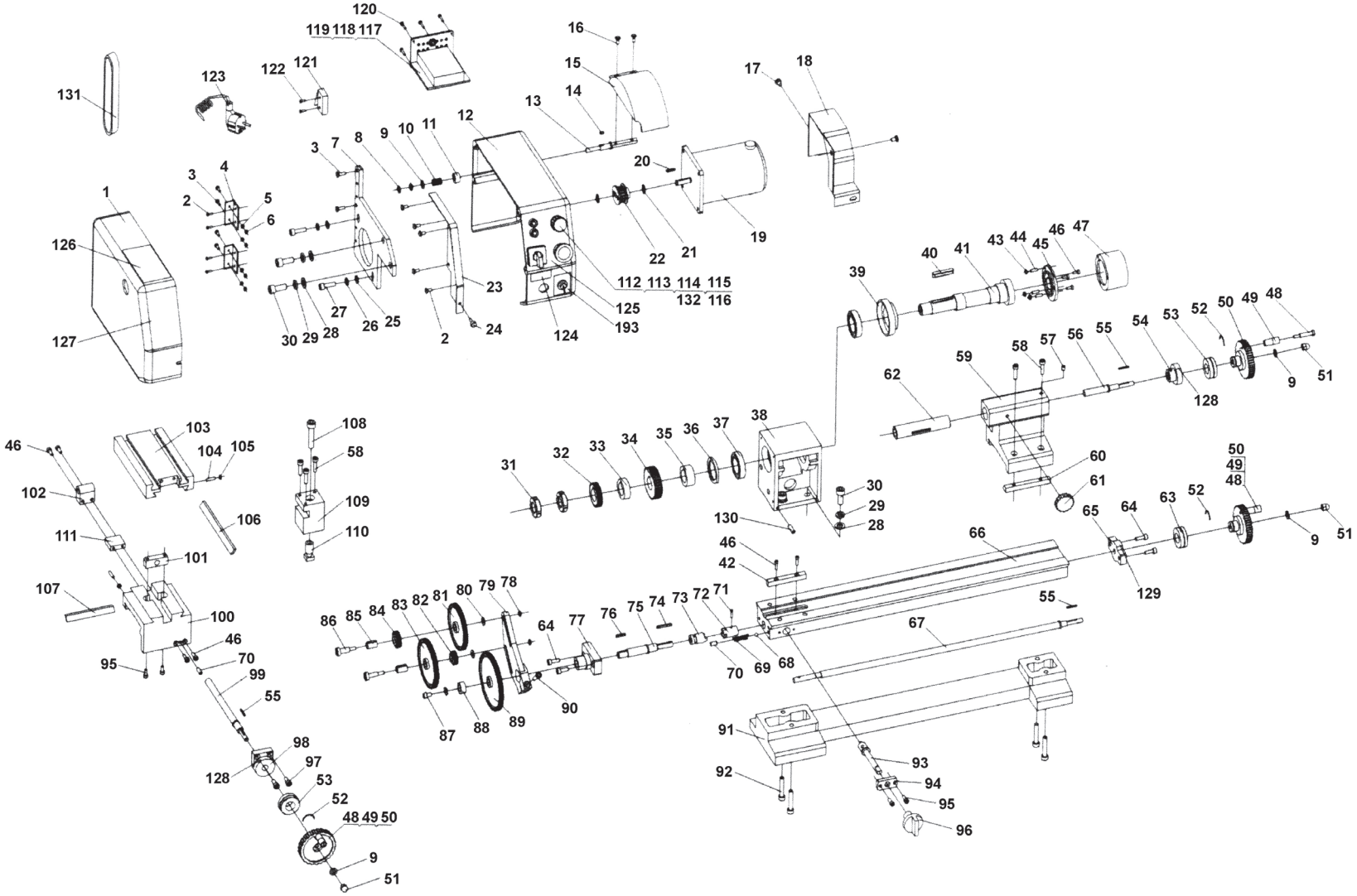
Position Marketing Director.

Place: Bury St Edmunds

Sealey Group, Kempson Way, Suffolk Business Park, Bury St Edmunds, Suffolk. IP32 7AR

01284 757500 **01284 703534** **sales@sealey.co.uk** **www.sealey.co.uk**

Parts Information:
Mini Lathe & Drilling Machine
Model No: SM2503



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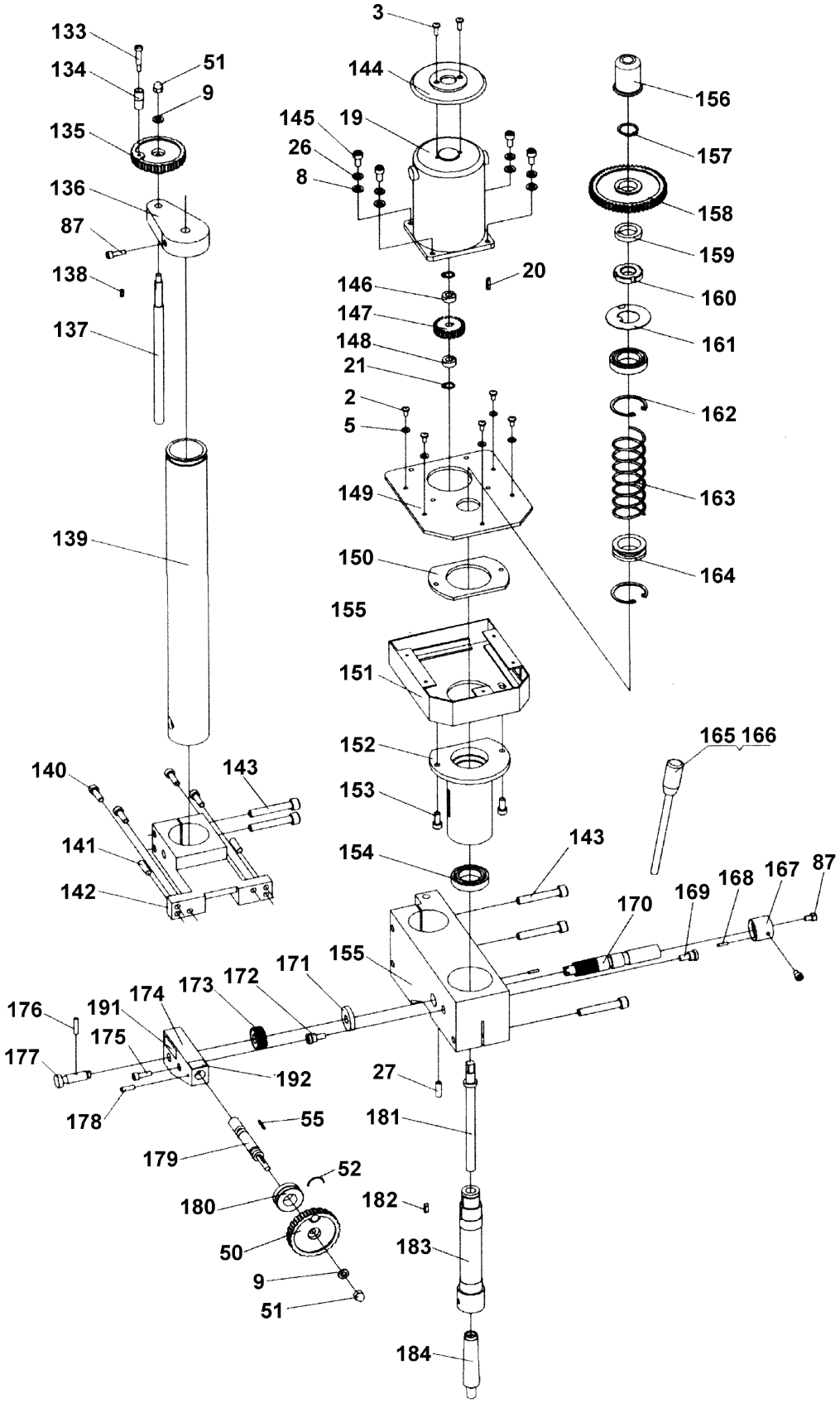
Parts Information:
Mini Lathe & Drilling Machine
Model No: SM2503



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Parts Information:
Mini Lathe & Drilling Machine
Model No: SM2503

Item	Part No.	Description
1	SM2503.001	CHANGE GEAR COVER
2	SM2503.002	CAP SCREW M4x8
3	SM2503.003	CAP SCREW M4x12
4	SM2503.004	HINGE L*B=38*31
5	SM2503.005	WASHER 4
6	SN4.S	STEEL NUT M4 ZINC DIN934 (SINGLE)
7	SM2503.007	CANTILEVER
8	SM2503.008	M6 HALF NUT S/C
9	FWM6.SB	FLAT WASHER M6 BLACK (SINGLE)
10	SM2503.010	COMPRESSION SPRING
11	SM2503.011	SPACING RING
12	SM2503.012	COVER FOR SPINDLE BOX
--	SM2503.012-01	VARIABLE SPEED CONTROL
--	SM2503.012-02	FEED CLUTCH KNOB
13	SM2503.013	ROTATE SPINDLE
14	SM2503.014	KEY 3x6
15	SM2503.015	PROTECT COVER FOR CHUCK
16	SM2503.016	CAP SCREW M4x8
17	SM2503.017	CAP SCREW M5x8
18	SM2503.018	REAR SPLASH GUARD
19	SM2503.019	MOTOR
20	SM2503.020	KEY 3x16
21	SM2503.021	CHECK RING 8
22	SM2503.022	TIMING PULLEY
23	SM2503.023	SUPPORT PLATE
24	SM2503.024	SCREW M4x8
25	SM2503.025	WASHER 6
26	SM2503.026	SPRING WASHER 6
27	SM2503.027	SCREW M6x20
28	SM2503.028	WASHER 8
29	SM2503.029	SPRING WASHER 8
30	SM2503.030	SCREW M8x20
31	SN18.S	STEEL NUT M18 ZINC DIN934(SINGLE)
32	SM2503.032	SPINDLE GEAR
33	SM2503.033	SPACING RING (I)
34	SM2503.034	SPINDLE TIMING PULLEY
35	SM2503.035	SPACING RING (II)
36	SM2503.036	BEHIND OIL SEAL (RING)
37	B/30205	BEARING 30205
38	SM2503.038	SPINDLE BOX
39	SM2503.039	FRONT OIL SEAL (RING)
40	SM2503.040	KEY 6x36
41	SM2503.041	SPINDLE
42	SM2503.042	KEY
43	SN6.S	STEEL NUT M6 ZINC DIN934 (SINGLE)
44	SM2503.044	SCREW M6x25

Item	Part No.	Description
45	SM2503.045	CHUCK FLANGE
46	SM2503.046	ROUND CAP SCREW M4x12
47	SM2503.047	80mm 3-JAW CHUCK
48	SM2503.048	HANDLE SCREW (SET OF 3)
49	SM2503.049	SMALL HANDLE
50	SM2503.050	HANDWHEEL
51	SN6.SD	STEEL NUT M6 DOMED (SINGLE)
52	SM2503.052	SPRING STEEL
53	SM2503.053	DIAL
54	SM2503.054	SCREW BASE
55	SM2503.055	KEY 2x18
56	SM2503.056	TAILSTOCK SCREW
57	SM2503.057	SCREW M5x8
58	SCB520.SB	SOCKET HEAD CAP SCREW M5x20 BLACK
59	SM2503.059	TAILSTOCK CASTING
60	SM2503.060	WEDGE
61	SM2503.061	LOCK HANDLE
62	SM2503.062	TAILSTOCK QUILL
63	SM2503.063	DIAL
64	SM2503.064	SCREW M5x14
65	SM2503.065	SCREW BRACKET
66	SM2503.066	BED LEAD RAIL
67	SM2503.067	LEADSCREW
68	SB-6.4	STEEL BALL 6.4mm
69	SM2503.069	COMPRESSION SPRING
70	SM2503.070	SCREW M6x10
71	SM2503.071	PIN 3x14
72	SM2503.072	CLUTCH BRACKET
73	SM2503.073	CLUTCH
74	SM2503.074	KEY 3x22
75	SM2503.075	SHAFT
76	SM2503.076	KEY 3x14
77	SM2503.077	GEAR SHAFT BRACKET
78	SN5.S	STEEL NUT M5 ZINC DIN934 (SINGLE)
79	SM2503.079	SUPPORT PLATE
80	SM2503.080	WASHER
81	SM2503.081	CHANGE GEAR Z=72
82	SM2503.082	CHANGE GEAR Z=19
83	SM2503.083	CHANGE GEAR Z=76
84	SM2503.084	CHANGE GEAR Z=24
85	SM2503.085	GEAR SLEEVE
86	SM2503.086	GEAR SHAFT
87	SM2503.087	SCREW M5x8
88	SM2503.088	SPACING RING
89	SM2503.089	CHANGE GEAR Z=90
90	SM2503.090	SCREW M5x25

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Parts Information:
Mini Lathe & Drilling Machine
Model No: SM2503

Item	Part No.	Description
91	SM2503.091	BED BASE
92	SM2503.092	SCREW M6x35
93	SM2503.093	UNPLUG SHAFT
94	SM2503.094	DAM BOARD
95	SM2503.095	SCREW M4x10
96	SM2503.096	CLUTCH ROTATE KNOB
97	SM2503.097	SCREW M5x12
98	SM2503.098	LEADSCREW BRACKET
99	SM2503.099	CROSS SLIDE SCREW M4x16
100	SM2503.100	SADDLE
101	SM2503.101	CROSS SLIDE NUT
102	SM2503.102	LEADSCREW NUT
103	SM2503.103	CROSS SLIDE
104	SM2503.104	SCREW M4x16
105	SN4.S	STEEL NUT M4 ZINC DIN934 (SINGLE)
106	SM2503.106	CROSS SLIDE WEDGE
107	SM2503.107	GIB STRIP
108	SCB840.SB	SOCKET HEAD CAP SCREW M8x40 BLACK
109	SM2503.109	TOOL REST
110	SM2503.110	TOOL REST SHAFT
111	SM2503.111	CONNECT BLOCK
112	SM2503.112	POTENTIOMETER
113	SM2503.113	EMERGENCY STOP SWITCH
114	SM2503.114	FORWARD/OFF/REVERSE SWITCH
115	SM2503.115	POWER INDICATOR LIGHT, 220V
116	SM2503.116	FUSE BOX
117	SM2503.117	PC BOARD
--	SM2503.117N	PC BOARD
118	SM2503.118	LOCK CONNECT
119	SM2503.119	PC BOARD BOX
120	SM2503.120	SCREW ST2.9x10
121	SM2503.121	MICRO SWITCH
122	SM2503.122	SCREW ST1.9x10
123	SM2503.123	POWER CORD WITH PLUG
130	SM2503.130	SCREW M5x12
131	SM2503.131	TIMING BELT
132	SM2503.114	FORWARD/OFF/REVERSE SWITCH
133	SM2503.133	BOLT M6x55
134	SM2503.134	HANDLE SLEEVE
135	SM2503.135	HANDWHEEL
136	SM2503.136	LEADSCREW BRACKET
137	SM2503.137	LIFTER
138	SM2503.138	KEY 3x10
139	SM2503.139	COLUMN
140	SM2503.140	SCREW M6x18

Item	Part No.	Description
141	SM2503.141	PIN 6x24
142	SM2503.142	COLUMN BRACKET
143	SM2503.143	SCREW M8x50
144	SM2503.144	PROTECTING COVER FOR MOTOR
145	SM2503.145	SCREW M6x12
146	SM2503.146	SPACING RING
147	SM2503.147	MOTOR GEAR
148	SM2503.148	SPACING RING
149	SM2503.149	COVER UP PLATE
150	SM2503.150	QUILL FIXED PLATE
151	SM2503.151	GEAR BOX
152	SM2503.152	SPINDLE QUILL
153	SM2503.153	SCREW M6x14
154	SM2503.154	BEARING
155	SM2503.155	SPINDLE BASE
156	SM2503.156	SAFETY COVER
157	SM2503.157	CHECK RING 20
158	SM2503.158	SPINDLE GEAR (Z=55)
159	SM2503.159	SPACING RING
160	SM2503.160	ROUND NUT M24x1.5
161	SM2503.161	WASHER 24
162	SM2503.162	CHECK RING 38
163	SM2503.163	COMPRESSION SPRING
164	SM2503.164	SPRING SUPPORT
165	SM2503.165	HAND SHANK
166	SM2503.166	LEVER CAP M8x40
167	SM2503.167	READ OUT SLEEVE
168	SM2503.168	SPRING PIN 3x12
169	SM2503.169	SITE SCREW
170	SM2503.170	GEAR SHAFT
171	SM2503.171	SPACING RING
172	SM2503.172	CONNECT SITE SCREW
173	SM2503.173	BEVEL GEAR
174	SM2503.174	WORM BASE
175	SM2503.175	SCREW M5x18
176	SM2503.176	PIN 3x12
177	SM2503.177	CONNECT SHAFT
178	SM2503.178	PIN 3x18
179	SM2503.179	WORM SHAFT
180	SM2503.180	DIAL
181	SM2503.181	LOCK BOLT
182	SM2503.182	KEY 4c12
183	SM2503.183	DRILL SPINDLE
184	SM2503.184	TAPER SHANK B12
193	SM2503.193	POWER SUPPLY SWITCH

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Parts Information:
Mini Lathe & Drilling Machine
Model No: SM2503

Lathe Tools & Accessories

Item	Part No.	Description
A	SM2503CSET	COLLET SET MT2-M10 3-10mm dia
B	SM2503EMSET	HSS END MILL SET MT2 3-10mm dia
C	SM2503MCSET	MILL CHUCK SET MT2-M10 3-10mm dia
--	SM2503MCSET.1	"C" SPANNER
D	SM2503ICEM	INDEXABLE CARBIDE END MILL MT2-M10 16mm dia
E	SM2503QV	QUICK VICE 50mm
F	SM2503RC	REVOLVING CENTRE MT1
G	SM2503HC	LIVE CENTRE MT2
H	SM2503TC	TAILSTOCK CHUCK MT1 10mm
I	SM2503THSET	TOOL HOLDER (PARTING & BORE) SET 2pc

Item	Part No.	Description
J	SM2503COBT	PARTING TOOL & BORE CUTTER SET 2pc
M	SM2503FP	FACE PLATE 112mm dia
N	SM2503SR	STEADY REST
O	SM2503TCK	THREAD CUTTING GEAR KIT METRIC
P	SM2503FR	FOLLOW REST
V	SM3002ST	STAND for SM3002, SM2502, SM2503
--	SM2503.AT	ADJUSTING TOOLS (**not shown**)
--	SM2503.ST	SETTING TOOLS (**not shown**)
--	SM2503.DCK	DRILL CHUCK KEY (**not shown**)
--	SM2503.LCK	LATHE CHUCK KEY (**not shown**)

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