



INSTRUCTIONS FOR  
**230V 150W**  
**75mm Bench Grinder**  
**with Flexible Drive Shaft**

Stock No.27628

Part No.LD75

**IMPORTANT:** PLEASE READ THESE INSTRUCTIONS CAREFULLY TO ENSURE THE SAFE AND EFFECTIVE USE OF THIS PRODUCT.



## GENERAL INFORMATION

These instructions accompanying the product are the original instructions. This document is part of the product, keep it for the life of the product passing it on to any subsequent holder of the product. Read all instructions before assembling, operating or maintaining this product.

This manual has been compiled by Draper Tools describing the purpose for which the product has been designed, and contains all the necessary information to ensure its correct and safe use. By following all the general safety instructions contained in this manual, it will ensure both product and operator safety, together with longer life of the product itself. All photographs and drawings in this manual are supplied by Draper Tools to help illustrate the operation of the product. Whilst every effort has been made to ensure the accuracy of information contained in this manual, the Draper Tools policy of continuous improvement determines the right to make modifications without prior warning.

# 1. TITLE PAGE

---

## **1.1 INTRODUCTION:**

USER MANUAL FOR:

### **230V 150W 75mm BENCH GRINDER WITH FLEXIBLE DRIVE SHAFT**

Stock No's. 27628

Part No. LD75

## **1.2 REVISIONS:**

Date first published December 2016

Date first revised March 2017

---

---

As our user manuals are continually updated, users should make sure that they use the very latest version.

Downloads are available from: <http://www.drapertools.com/manuals>

DRAPER TOOLS LIMITED  
HURSLEY ROAD  
CHANDLER'S FORD  
EASTLEIGH  
HAMPSHIRE  
SO53 1YF UK

WEBSITE: [www.drapertools.com](http://www.drapertools.com)  
PRODUCT HELPLINE: +44 (0) 23 8049 4344  
GENERAL FAX: +44 (0) 23 8026 0784

## **1.3 UNDERSTANDING THIS MANUALS SAFETY CONTENT:**

**WARNING!** Information that draws attention to the risk of injury or death.

**CAUTION!** Information that draws attention to the risk of damage to the product or surroundings.

## **1.4 COPYRIGHT © NOTICE:**

Copyright © Draper Tools Limited.

Permission is granted to reproduce this publication for personal & educational use only. Commercial copying, redistribution, hiring or lending is prohibited.

No part of this publication may be stored in a retrieval system or transmitted in any other form or means without written permission from Draper Tools Limited.

In all cases this copyright notice must remain intact.

---

# 2. CONTENTS

---

## 2.1 CONTENTS

	<b>PAGE CONTENT</b>	<b>PAGE</b>
1	TITLE PAGE	
	1.1 INTRODUCTION .....	2
	1.2 REVISION HISTORY .....	2
	1.3 UNDERSTANDING THIS MANUAL .....	2
	1.4 COPYRIGHT NOTICE .....	2
2	CONTENTS	
	2.1 CONTENTS .....	3
3	GUARANTEE	
	3.1 GUARANTEE .....	4
4	INTRODUCTION	
	4.1 SCOPE .....	5
	4.2 SPECIFICATION .....	5
	4.3 HANDLING & STORAGE .....	5
5	HEALTH & SAFETY INFORMATION	
	5.1 GENERAL SAFETY INSTRUCTIONS FOR POWER TOOL USE .....	6
	5.2 SPECIFIC SAFETY INSTRUCTIONS FOR BENCH GRINDERS .....	7
	5.3 SAFETY RECOMMENDATIONS FOR THE CORRECT USE OF ABRASIVE PRODUCTS .....	8
	5.4 CONNECTION TO THE POWER SUPPLY .....	9
6	TECHNICAL DESCRIPTION	
	6.1 IDENTIFICATION .....	10
7	UNPACKING & CHECKING	
	7.1 PACKAGING .....	11
	7.2 WHAT'S IN THE BOX? .....	11
8	ACCESSORY KIT	
	8.1 GETTING TO KNOW YOUR ACCESSORIES .....	12
9	ASSEMBLY	
	9.1 SPARK DEFLECTORS & EYESHIELDS .....	15
	9.2 TOOL RESTS .....	15
	9.3 BENCH MOUNTING YOUR GRINDER .....	15
	9.4 FITTING/REPLACING THE GRINDING & POLISHING WHEELS .....	16
	9.5 FITTING THE FLEXIBLE DRIVE SHAFT .....	17
	9.6 FLEXIBLE DRIVE SHAFT ACCESSORY INSTALLATION .....	17
	9.7 FITTING A SANDING DRUM ACCESSORY .....	18
	9.8 FITTING A CUTTING/SANDING DISC ACCESSORY .....	18
	9.9 FITTING A POLISHING DISC ACCESSORY .....	18
10	OPERATION & USE	
	10.1 USING THE GRINDING WHEEL .....	19
	– <b>Adjusting the wheel speed</b> .....	19
	– <b>Grinding</b> .....	19
	10.2 USING THE POLISHING WHEEL .....	20
	– <b>Polishing tips</b> .....	20
	10.3 USING THE FLEXIBLE DRIVE SHAFT & ACCESSORIES .....	20
11	TROUBLESHOOTING & MAINTENANCE	
	11.1 TROUBLESHOOTING .....	21
	11.2 MAINTENANCE .....	21
	– <b>Wheel dressing</b> .....	21
12	OPTIONAL ACCESSORIES	
	12.1 OPTIONAL ACCESSORIES .....	22
13	DISPOSAL	
	13.1 DISPOSAL .....	23
14	EXPLANATION OF SYMBOLS	
	14.1 EXPLANATION OF SYMBOLS .....	23
	DECLARATION OF CONFORMITY .....	ENCLOSED

## 3. GUARANTEE

---

### 3.1 GUARANTEE

Draper tools have been carefully tested and inspected before shipment and are guaranteed to be free from defective materials and workmanship.

Should the tool develop a fault, please return the complete tool to your nearest distributor or contact Draper Tools Limited, Chandler's Ford, Eastleigh, Hampshire, SO53 1YF. England. Telephone Sales Desk: (023) 8049 4333 or Product Helpline (023) 8049 4344.

A proof of purchase must be provided with the tool.

If upon inspection it is found that the fault occurring is due to defective materials or workmanship, repairs will be carried out free of charge. This guarantee period covering parts/labour is 12 months from the date of purchase except where tools are hired out when the guarantee period is 90 days from the date of purchase. This guarantee does not apply to normal wear and tear, nor does it cover any damage caused by misuse, careless or unsafe handling, alterations, accidents, or repairs attempted or made by any personnel other than the authorised Draper warranty repair agent.

Note: If the tool is found not to be within the terms of warranty, repairs and carriage charges will be quoted and made accordingly.

This guarantee applies in lieu of any other guarantee expressed or implied and variations of its terms are not authorised.

Your Draper guarantee is not effective unless you can produce upon request a dated receipt or invoice to verify your proof of purchase within the guarantee period.

Please note that this guarantee is an additional benefit and does not affect your statutory rights.

**Draper Tools Limited.**

## 4. INTRODUCTION

---

### 4.1 SCOPE

This bench grinder with flexible drive shaft is intended for light grinding, cutting and polishing duties – ideally suited for the home hobbyist. Any other applications are considered misuse.

### 4.2 SPECIFICATION

Stock No. ....	27628
Part No. ....	LD75
Motor:	
Rated voltage .....	230V
Rated frequency .....	50Hz
Rated input .....	150W
Revolutions per minute (no load) .....	Variable 0 – 10000r/min
Wheels (supplied):	
Abrasive.....	75 × 20mm × 10mm bore – fine grade/80grit
Polishing.....	75 × 20mm × 10mm bore – fibrous
Wheel dimensions:	
Max. diameter.....	75mmØ
Max. thickness.....	20mm
Bore diameter .....	10mmØ
Flexible shaft	
Length .....	1.1M
Collet sizes .....	2.0, 2.4, 3.2mmØ
Shaft bit.....	1/8"
Sound power level .....	85dB(A)
Sound pressure level .....	76dB(A)
*Single value noise level.....	88dB(A)
Weight (machine only) .....	3.0kg
Weight (gross) .....	3.4kg

### 4.3 HANDLING & STORAGE

Environmental conditions can have a negative effect on the condition and operation of this product. Damp conditions can cause components to rust and corrode. Without regular cleaning and maintenance, dust and debris can clog the machine resulting in poor performance.

\*A-Weighed sound power level in accordance to 2000/14/EC

## 5. HEALTH & SAFETY INFORMATION

---

### 5.1 GENERAL SAFETY INSTRUCTIONS FOR POWER TOOL USE

When using any type of power tool there are steps that should be taken to make sure that you, as the user, remain safe.

Common sense and a respect for the tool will help reduce the risk of injury.

**Read the instruction manual fully.** Do not attempt any operation until you have read and understood this manual.

**Most importantly, you must know how to safely start and stop this machine, especially in an emergency.**

**Keep the work area tidy and clean.** Attempting to clear clutter from around the machine during use will reduce your concentration. Mess on the floor creates a trip hazard. Any liquid spilled on the floor could result in you slipping.

**Find a suitable location.** If the machine is bench mounted; the location should provide good natural light or artificial lighting as a replacement. Avoid damp and dust locations as it will have a negative effect on the machine's performance. If the machine is portable; do not expose the tool to rain. In all cases do not operate power tools near any flammable materials.

**Beware of electric shock.** Avoid contact with earthed surfaces; because they can conduct electricity if there is an electrical fault with the power tool. Always protect the power cable and route it away from danger.

**Keep bystanders away.** Children, onlookers and passers by must be restricted from entering the work area for their own protection. The barrier must extend a suitable distance from the tool user.

**Unplug and house all power tools that are not in use.** A power tool should never be left unattended while connected to the power supply. They must be housed in a suitable location, away locked up and from children.

**Do not overload or misuse the tool.** All tools are designed for a purpose and are limited to what they are capable of doing. Do not attempt to use a power tool (or adapt it in any way) for an application it is not designed for. Select a tool appropriate for the size of the job. Overloading a tool will result in tool failure and user injury: This covers the use of accessories.

**Dress properly.** Loose clothing, long hair and jewellery are all dangerous because they can become entangled in moving machinery: This can also result in parts of body being pulled into the machine. Clothing should be close fitted, with any long hair tied back and jewellery and neck ties removed. Footwear must be fully enclosed and have a nonslip sole.

**Wear personal protective equipment (PPE).** Dust, noise, vibration and swarf can all be dangerous if not suitably protected against. If the work involving the power tool creates dust or fumes; wear a dust mask. Vibration to the hand, caused by operating some tools for longer periods must be protected against. Wear vibration reducing gloves and allow long breaks between uses. Protect against dust and swarf by wearing approved safety goggles or a face shield. These are some of the more common hazards and preventions; however, always find out what hazards are associated with the machine/work process and wear the most suitable protective equipment available.

**Do not breathe contaminated air.** If the work creates dust or fumes; connect the machine (if possible) to an extraction system either locally or remotely. Working outdoors can also help if possible.

**Move the machine as instructed.** If the machine is hand held, do not carry it by the power supply cable. If the product is heavy; employ a second or third person to help move it safely or use a mechanical device. Always refer to the instructions for the correct method.

## 5. HEALTH & SAFETY INFORMATION

---

**Do not overreach.** Extending your body too far can result in a loss of balance and you falling. This could be from a height or onto a machine and will result in injury.

**Maintain your tools correctly.** A well maintained tool will do the job safely. Replace any damaged or missing parts immediately with original parts from the manufacturer. As applicable; keep blades sharp; moving parts clean, oiled or greased; handles clean; and emergency devices working.

**Wait for the machine to stop.** Unless the machine is fitted with a safety brake; some parts may continue to move due to momentum. Wait for all parts to stop; then unplug it from the power supply before making any adjustments, carrying out maintenance operations or just finishing using the tool.

**Remove and check setting tools.** Some machinery requires the use of additional tools or keys to set, load or adjust the power tool. Before starting the power tool always check to make certain they have been removed and are safely away from the machine.

**Prevent unintentional starting.** Before plugging any machine in to the power supply, make sure the switch is in the OFF position. If the machine is portable; do not hold the machine near the switch and take care when putting the machine down; that nothing can operate the switch.

**Carefully select an extension lead.** Some machines are not suitable for use with extension leads. If the tool is designed for use outdoors; use an extension lead also suitable for that environment. When using an extended lead, select one capable of handling the current (amps) drawn by the machine in use. Fully extend the lead regardless of the distance between the power supply and the tool. Excess current (amps) and a coiled extension lead will both cause the cable to heat up and can result in fire.

**Concentrate and stay alert.** Distractions are likely to cause an accident. Never operate a power tool if you are under the influence of drugs (prescription or otherwise), including alcohol or if you are feeling tired. Being disorientated will result in an accident.

**Have this tool repaired by a qualified person.** This tool is designed to conform to the relevant international and local standards and as such should be maintained and repaired by someone qualified; using only original parts supplied by the manufacturer: This will ensure the tool remains safe to use.

### ***5.2 SPECIFIC SAFETY INSTRUCTIONS FOR BENCH GRINDERS***

- Check the speed marked on the wheel is equal to or greater than the rated speed of the grinder.
- Ensure that the wheel dimensions are compatible with the grinder.
- Abrasive wheels shall be stored and handled with care in accordance with manufacturer's instructions.
- Inspect the grinding wheel before use, do not use chipped, cracked or otherwise defective products.
- Ensure that mounted wheels and points are fitted in accordance with the manufacturer's instructions.
- Ensure that blotters are used when they are provided with the bonded abrasive product and when they are required.
- Ensure that the abrasive product is correctly mounted and tightened before use and run the tool at no-load for 30 seconds in a safe position, stop immediately if there is considerable vibration or if other defects are detected.
- If this condition occurs, check the machine to determine the cause.

## 5. HEALTH & SAFETY INFORMATION

---

- Never use the tool without a guard.
- Do not use separate reducing bushings or adapters to adapt large hole abrasive wheels.
- For tools intended to be fitted with threaded hole wheel, ensure that the thread in the wheel is long enough to accept the spindle length.
- Check that the work piece is properly supported.
- Ensure that sparks resulting from use do not create a hazard e.g. do not hit persons, to ignite flammable substances.
- Ensure that ventilation openings are kept clear when working in dusty conditions. If it should become necessary to clear dust, first disconnect the tool from the mains supply (use non metallic objects) and avoid damaging internal parts.
- Always use eye and ear protection.
- Personal protective equipment such as dust mask, gloves, helmet and apron should be worn.
- The wheel continues to rotate after the tool is switched off.

### **5.3 SAFETY RECOMMENDATIONS FOR THE CORRECT USE OF ABRASIVE PRODUCTS**

- a). General. Bonded abrasive products are breakable and shall therefore be handled with utmost care. The use of damaged or improperly mounted or used abrasive products is dangerous and can cause serious injuries.
- b). Delivery, handling and storage. Abrasive products shall be handled and transported with care. Abrasive products shall be stored in such a manner that they are not subjected to mechanical damaged and harmful environmental influences.
- c). Selection of the abrasive product. Information on the label or the abrasive product as well as restrictions of use, safety indications or any other instructions shall be followed. In case of doubt concerning the selection of abrasive products, the user shall request information from the manufacturer or supplier.
- d). Visual inspection and ring test. Abrasive products shall be subjected to a visual inspection as received before mounting. In addition, a ring test shall be executed for vitrified wheels with  $D > 80\text{mm}$ . Damaged abrasive products shall be destroyed.
- e). Mounting before starting and information for grinding. The mounting of abrasive products shall be carried out according to the instructions provided by both the wheel and the machine manufacturer. Mounting of abrasive products shall be carried out by a qualified trained person. Each time after mounting, the wheel shall be test run for a reasonable time - the specified maximum operating speed of the wheel shall not be exceeded.
- f). Further information. The following instructions shall be observed, supplementary to the information contained in the instruction for use of the grinding machine:
  - Observance of the user's information from the grinding machine manufacturer.
  - Safety devices shall be mounted to the machine and shall be secured.
  - No grinding operations without protection by safety devices (use guard when grinding).



## 5. HEALTH & SAFETY INFORMATION

---

- Use of personal protective equipment according to the type of machine and type of application, e.g. eye and face protection, ear protection, respiratory protective devices, protective footwear, protective gloves and other protective clothing.
- Only grinding operations for which the abrasive product is suitable shall be carried out (taking into account restrictions of use, safety indications or other information).
- Jamming of the hand-held grinding machine shall be prevented. In the case of cutting-off with hand-held grinding machines, the abrasive product shall be placed in the cutting gap in a straight position.
- Before placing the hand-held grinding machine on the workbench or on the floor it shall be turned off and it shall be ensured that the abrasive product has stopped.

### **5.4 CONNECTION TO THE POWER SUPPLY**

**Caution:** Risk of electric shock. Do not open.

Make sure the power supply information on the machine's rating plate are compatible with the power supply you intend to connect it to.

If a replacement plug is to be fitted this must be carried out by a qualified electrician.

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

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

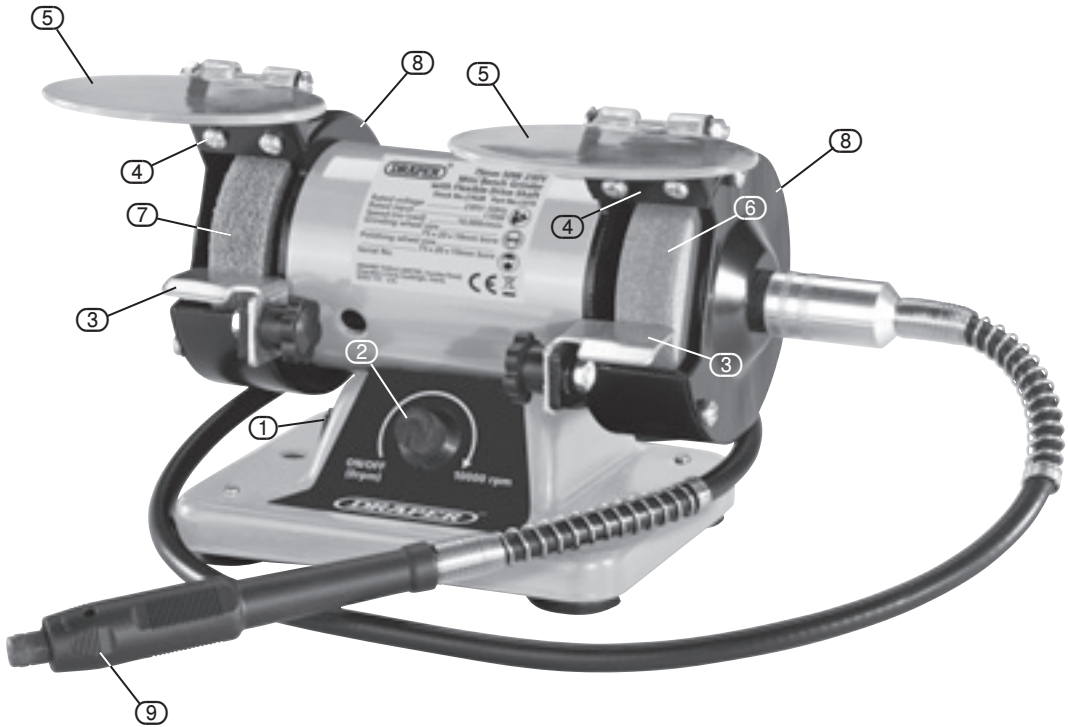
If an extension lead is required, use an approved and compatible lead rated for this appliance. Follow all the instruction supplied with the extension lead.

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

## 6. TECHNICAL DESCRIPTION

---

### 6.1 IDENTIFICATION



- ① Power On/Off switch.
- ② On/Off/variable speed dial.
- ③ Adjustable tool rest.
- ④ Spark deflector.
- ⑤ Eyeshield.

- ⑥ Abrasive wheel.
- ⑦ Polishing wheel.
- ⑧ Wheel guard.
- ⑨ Flexible shaft.

## 7. UNPACKING & CHECKING

### 7.1 PACKAGING

Carefully remove the product from the packaging and examine it for any sign of damage that may have happened during shipping. Lay the contents out and check them against the parts shown below. If any part is damaged or missing; please contact the Draper Helpline (the telephone number appears on the Title page) and do not attempt to use the product.

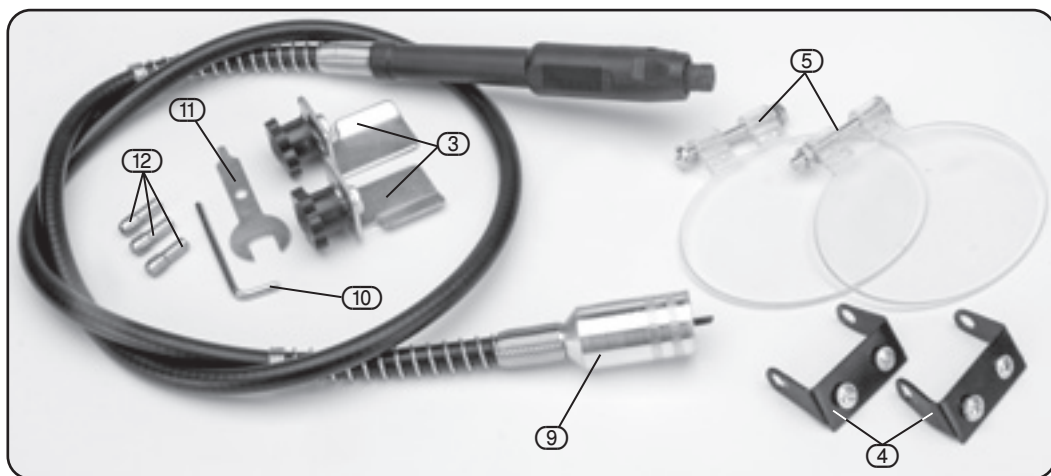
The packaging material should be retained at least during the guarantee period: in case the machine needs to be returned for repair.

**Warning!** Some of the packaging materials used may be harmful to children. Do not leave any of these materials in their reach.

If any of the packaging is to be thrown away, make sure it is disposed of correctly; according to local regulations.

### 7.2 WHAT'S IN THE BOX?

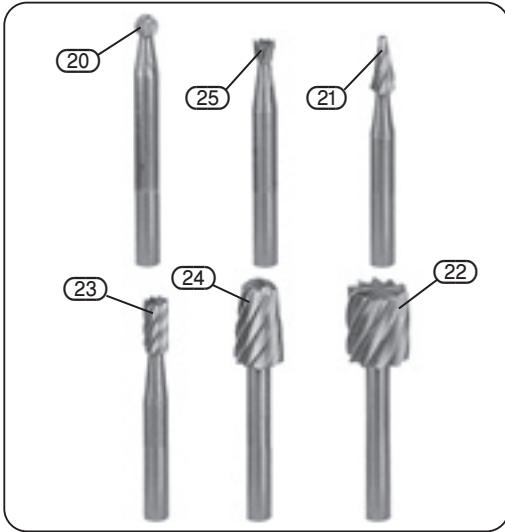
As well as the bench grinder, there are several parts not fitted or attached to it.



- ③ Adjustable tool rest × 2.
- ④ Spark deflector (with fittings) × 2.
- ⑤ Eyeshield (with fittings) × 2.
- ⑨ Flexible shaft.
- ⑩ Spindle locking key.
- ⑪ Spanner/plain slot mandrel screwdriver.
- ⑫ Collets × 3 (2.0, 2.4, 3.2mmØ).

# 8. ACCESSORY KIT

## 8.1 GETTING TO KNOW YOUR ACCESSORIES



### HSS Cutting Burrs:

Key	Description	Qty
20	HSS cutting burr – ball.	1
21	HSS cutting burr – point.	1
22	HSS cutting burr – large cylindrical.	1
23	HSS cutting burr – small cylindrical.	1
24	HSS cutting burr – large conical.	1
25	HSS cutting burr – small conical.	1

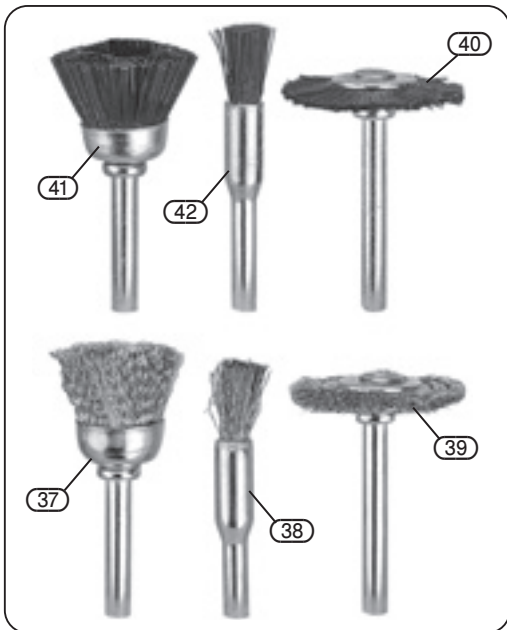


### Grinding Stones:

Key	Description	Qty
26	Triangular grinding stone (pink) 120 grit.	1
27	Rounded grinding stone (pink) 120 grit.	1
28	Cylindrical grinding stone (pink) 120 grit.	1
29	Long cylindrical grinding stone (green) 120 grit.	1

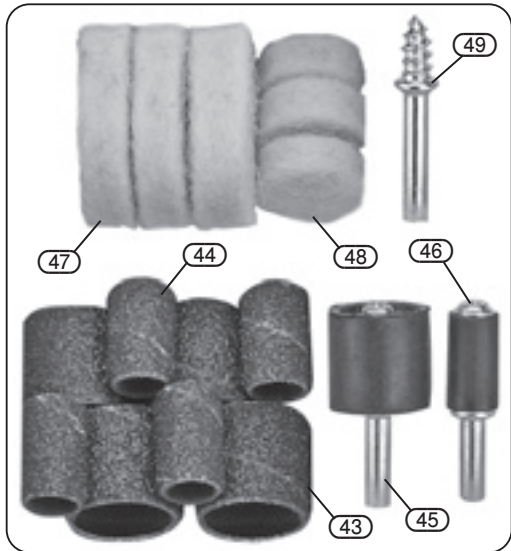
# 8. ACCESSORY KIT

- (30) Small cylindrical grinding stone (green) 120 grit. 1
- (31) Medium flat grinding stone (green) 120 grit. 1
- (32) Small flat grinding stone (blue) 120 grit. 1
- (33) Large flat grinding stone (blue) 120 grit. 1
- (34) Conical grinding stone (blue) 120 grit. 1
- (35) Large cylindrical grinding stone (white) 80 grit. 1
- (36) Spherical grinding stone (white) 80 grit. 1



### Brushes:

Key	Description	Qty
(37)	Large conical wire brush.	1
(38)	Small conical wire brush.	1
(39)	Wire wheel brush.	1
(40)	Bristle wheel brush.	1
(41)	Large conical bristle brush.	1
(42)	Small conical bristle brush.	1

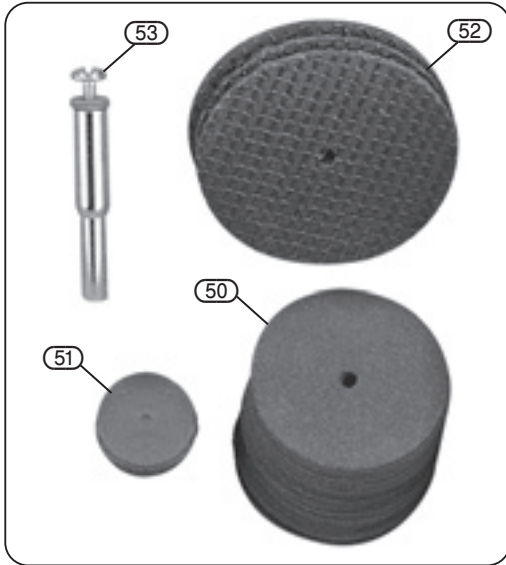


### Polishing Wheels\* and Sanding Drums:

Key	Description	Qty
(43)	Large sanding drum (120grit).	4
(44)	Small sanding drum (120grit).	4
(45)	Large sanding drum mandrel.	1
(46)	Small sanding drum mandrel.	1
(47)	Large polishing wheel.	3
(48)	Small polishing wheel.	3
(49)	Polishing wheel mandrel.	1

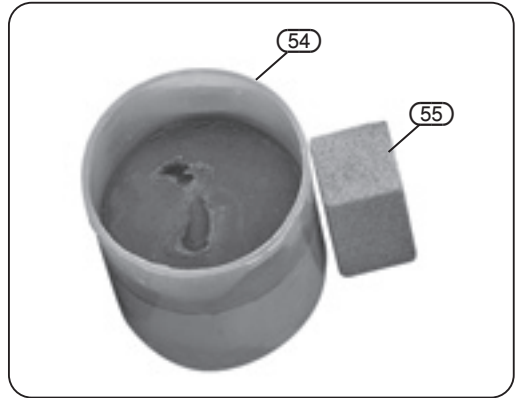
**\*Note:** To ensure safe operation, do not use the polishing wheels faster than 25,000rpm (speed 2):

## 8. ACCESSORY KIT



### Sanding and Cutting Discs:

Key	Description	Qty
50	Large sanding discs (120grit).	36
51	Small sanding discs (120grit).	25
52	Fibreglass cutting discs.	3
53	Sanding/cutting disc mandrel.	1



### Miscellaneous:

Key	Description	Qty
54	Pot of polishing compound.	1
55	Sharpening stone.	1

## 9. ASSEMBLY

**Note:** Remove the plug from the socket before carrying out adjustment, servicing or maintenance.

### 9.1 SPARK DEFLECTORS & EYESHIELDS – FIG.1:

- As also shown in section 9.7, using the plain slot screwdriver end of the spanner (11):
- Fit both the spark deflectors (4) to the wheel guards using the supplied screws (4.1) and washers (4.2).
- Fit each of the clear plastic eye shields (5) to the brackets located on the spark deflectors, using the locking nuts and screws provided.
- Select the required position and tighten all the fixings.

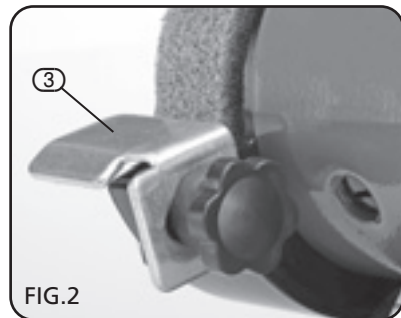
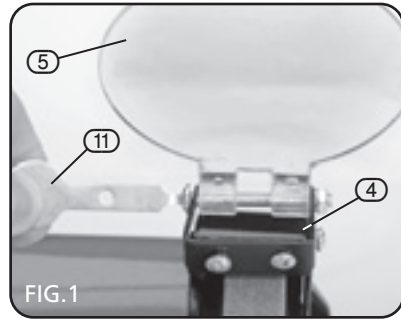
**Note:** Do not over tighten the fixings holding the shield as this may cause it to crack. Never attempt to use the bench grinder with the eyeshields cracked, missing or incorrectly positioned. The eyeshield must remain between the user and abrasive wheel.

### 9.2 TOOL RESTS – FIG.2:

Fit both tool rests (3) to the brackets, located on each of the wheel guards, using the bolts (3.1) and locking nuts (3.2) provided.

Adjust them so there is approximately 1.5mm between the grinding wheel face and the tool rest.

**Note:** Ensure the tool rest sits over the guard securing bolt.



### 9.3 BENCH MOUNTING YOUR GRINDER:

Securely bolt the bench grinder to a work bench or other secure surface through the two points in the base (fixings are not supplied). Ensure there is enough clear space around the grinder to accommodate large items which may be ground, i.e. garden tools, etc.

To reduce any vibration, mount the grinder on a vibration absorption mat, Draper Stock No.30743.

## 9. ASSEMBLY

### 9.4 FITTING/REPLACING THE GRINDING & POLISHING WHEELS – FIG.3:

**Note:** Remove the plug from the socket before carrying out adjustment, servicing or maintenance.

**Warning!** Do not use damaged grinding wheels.

- Switch the grinder off and disconnect the power supply. Remove the screws, spring clips and washers holding the wheel guard (8), and remove the cover (8.1).
- Holding the other wheel by hand, remove the locking nut (6.1) and flange (6.2). Slide off the old grinding wheel.

Use only grinding wheels recommended by the manufacturer which has a marked speed equal or greater than the speed marked on the nameplate of the tool and have a maximum dimension no greater than:

- 75mm diameter, 20mm thickness with a corresponding bore size of 10mm.

Abrasive products shall be subjected to a visual inspection as received before mounting.

In addition, a ring test shall be executed for vitrified wheels with  $D > 80\text{mm}$ .

Damaged abrasive products should be destroyed.

**Note:** The left hand grinding wheel locking nut has a left handed thread. When fitting a new grinding wheel, always check that the stated max. RPM on the wheel exceeds the RPM of the bench grinder. Also, inspect the new wheel for any damage, such as flaws or cracks. If the wheel appears satisfactory, fit it to the grinder.

- Replace the flange and locking nut securely. Do not overtighten to avoid damage to the wheel. Re-assemble the guard fully prior to carrying out testing.
- Each time after mounting, the wheel should be test run for a reasonable time.

**Warning!** The specified maximum operating speed of the wheel must not be exceeded.

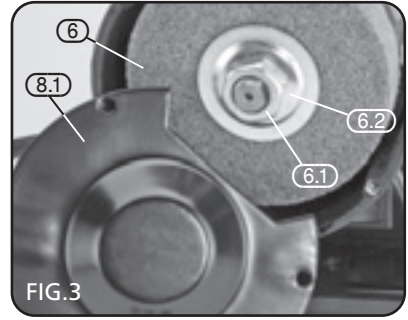
A bench grinder is designed for hand grinding operations only, such as sharpening drill bits, chisels and screwdrivers or removing excess metal from work pieces.

A coarse grit abrasive wheel could be used for rough metals, to remove large amounts of metal or where a smooth finish is not important.

A fine grit abrasive wheel could be used for sharpening tools or grinding close to size. A fine grit wheel removes metal more slowly and therefore gives the work piece a smooth finish and does not generate enough heat to anneal the cutting edges.

**Note:** Remove the plug from the socket before carrying out adjustment, servicing or maintenance.

- Check that the eyeshields have been secured in the correct position and that the grinding wheel lock nuts are tight.
- When grinding, always keep the work piece moving across the face of the wheel. Grinding against the same part of the wheel will cause uneven wear of the wheel face.
- When necessary, dress the abrasive wheels using a wheel dressing tool. After dressing, adjust the tool rests and spark deflectors as necessary to maintain a 1.5mm clearance from the wheel.



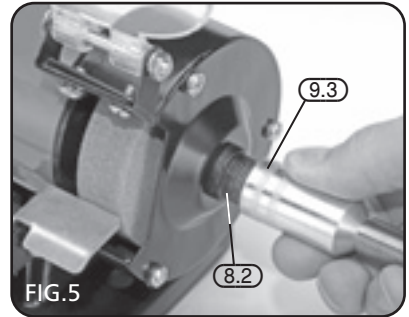
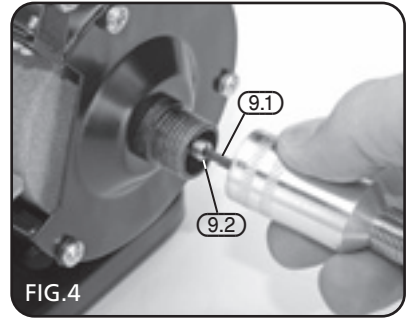


## 9. ASSEMBLY

### 9.5 FITTING THE FLEXIBLE DRIVE SHAFT – FIGS.4 – 5:

**Note:** Remove the plug from the socket before carrying out adjustment, servicing or maintenance.

- Thread the inner flexible drive shaft (9.1) into the square profiled recess on the drive spindle (9.2).
- Screw the threaded shaft cover (9.3) onto the drive housing located on the right-hand wheel cover (8.2).



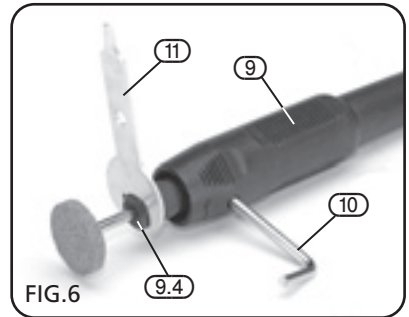
### 9.6 FLEXIBLE DRIVE SHAFT ACCESSORY INSTALLATION – FIGS.6 – 7:

The flexible drive shaft attachment (9) of the bench grinder is designed for use with 1.9, 2.3 & 3.0mm shank accessories only.

**Warning:** Use bits of the correct shank diameter suitable for the speed of the tool.

Selection of the correct accessory, suitable for the intended application is vital. Seek guidance if uncertain of selection.

- Using the spindle locking key (10), slot the key into the aperture located on the the hand grip of the flexible drive shaft (9).
- When the key is correctly slotted in place the driveshaft is locked, enabling the chuck cover to be removed.
- Use the spanner (11) provided to unscrew the chuck cover.
- Insert a correctly sized collet into the spindle. The collet which offers a machine fit to the shank is the correct one to use
- loosely replace the chuck cover (9.4).



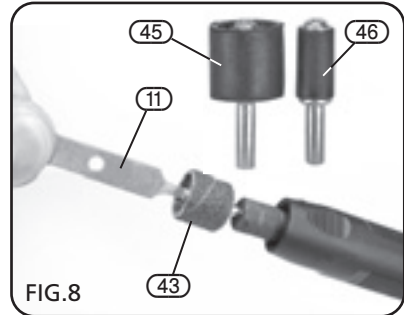
## 9. ASSEMBLY

- Insert the mandrel or accessory. Do not force.
- Using the spindle locking key (10), slot the key into the aperture located on the hand grip of the flexible drive shaft.
- Using the spanner (11), tighten the chuck cover (9.4). If the accessory seems loose, reduce the collet size to ensure the bit is secured correctly.

**Note:** Do not overtighten the chuck cover.

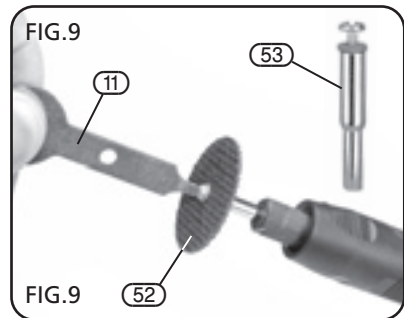
### 9.7 FITTING A SANDING DRUM ACCESSORY – FIG. 8:

- Following the steps outlined above in section 9.6, fit either of the large (45) or small (46) sanding drum mandrels into the flexible drive shaft.
- Remove the screw using the plain slot screwdriver incorporated in the spanner handle tip (11), this helps the rubber to relax.
- Slide a sanding disc (43) onto the mandrel.
- To secure, tighten the screw and the rubber drum will swell, gripping the drum (do not overtighten).



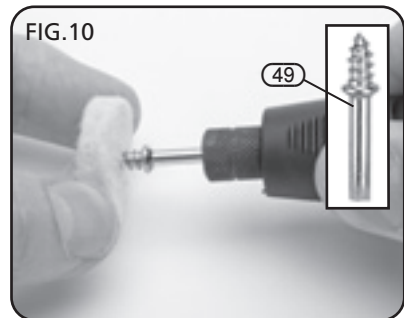
### 9.8 FITTING A CUTTING/SANDING DISC ACCESSORY – FIG.9:

- Following the steps outlined in section 9.6, fit the sanding/cutting disc mandrel (53) into the chuck of the flexible drive shaft.
- Remove the screw using the plain slot screwdriver incorporated in the spanner handle tip (11).
- Remove one of the spacing washers from the end.
- Insert the screw through the cutting disc, the washer and secure into the holder (do not overtighten).



### 9.9 FITTING A POLISHING DISC ACCESSORY – FIG.10:

- Following the steps outlined in section 9.6, fit the polishing disc mandrel (49) into the flexible drive shaft.
- Using either the large (47) or small (48) polishing discs, attach the disc to the mandrel by simply screwing it centrally onto the mandrel.
- The thread of the mandrel (49) will securely bind into the fibrous body of the disc.




# 10. OPERATION & USE

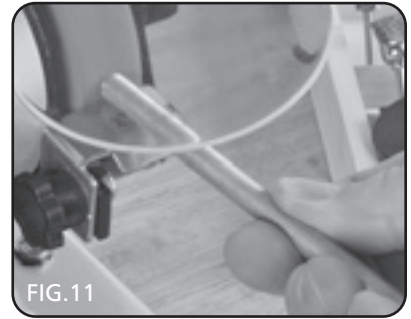
## 10.1 USING THE GRINDING WHEEL – FIG. 11

**Warning!** Always wear appropriate personal protective equipment, including eye, hearing and respiratory protection, when using this machine.

**Note:** Remove the plug from the socket before carrying out adjustment, servicing or maintenance.

**Warning!** Never fit any attachment with a rated maximum speed that is lower than the 'no load' speed of the grinder.

- If necessary, follow the instructions outlined in section 9.4 on page 16 for attaching the grinding wheel to the machine.
- Press the switch  at the side of the machine to turn on power to the machine.



### Adjusting wheel speed

- The variable speed control dial also acts as an "on/off" switch (switching off when the dial is turned to its furthest position anticlockwise).
- Turning the dial clockwise from the "off" position, the dial will initially click to "on" and the machine will run at minimum speed – increasing incrementally turning clockwise, until a maximum rotational speed of 10,000 rpm is reached with the dial at its furthest point.

### Grinding

- Adjust tool rest to correct angle.
- Present the workpiece smoothly on to the grinding wheel face with a light and even pressure without causing the wheel to slow.
- Best results are achieved if the grinder is allowed to rotate at its maximum speed. Excess pressure from the workpiece can damage the wheel and overload the motor.
- Always hold the workpiece against the tool rest with both hands.
- Grind against the edge of the workpiece to avoid burrs.
- Never grind on the sides of the wheels.
- Never try to grind material that is too small to grip safely.
- When grinding metal, ensure that you are properly protected against the production of sparks and that any flammable materials are stored away from the work area .
- During metal grinding operations, the workpiece can swiftly become hot. It is advisable to quench the workpiece in a cold water bath to prevent heat damage. A finer graded grinding wheel will generate less heat and may prevent heat damage.
- Check grinding wheels regularly for wear or damage. Replace wheels that are worn more than 25%. Damaged wheels should be discarded immediately as they are dangerous and can cause the grinder to vibrate.
- After grinding fine edge tools, they should be honed by hand on a fine slip stone.

# 10. OPERATION & USE

## 10.2 USING THE POLISHING WHEEL – FIG. 12:

- If necessary, follow the instructions outlined in section 9.4 on page 16 for attaching the polishing wheel to the machine.
- The polishing wheel can be used for polishing and buffing applications in conjunction with the supplied polishing compound and polishing discs used with the flexible drive shaft.

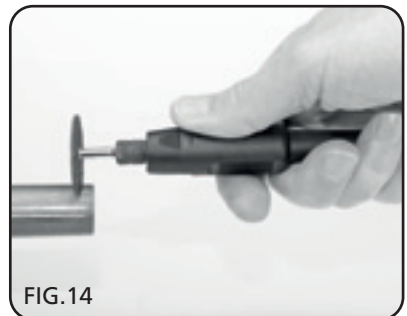
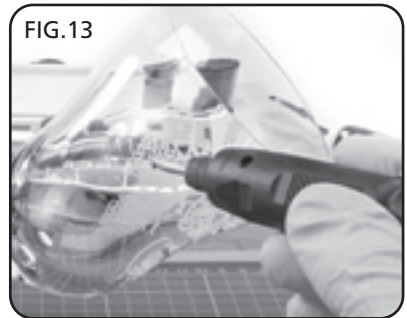
### Polishing tips

- Constantly vary the direction of polishing.
- Use metal polishing compounds sparingly to avoid smudges of black grease.
- If possible, always polish across marks or scratches and not along them.
- Before polishing, remove any lacquered surfaces from the workpiece with paint remover.
- Don't mix different polishing compounds on the same wheel.
- A slight coating of grease and finger marks can often be seen on the workpiece after polishing. This can be removed using Vienna Lime Powder and a soft polishing cloth.
- Protect the final polished workpieces with a coat of good quality wax polish.



## 10.3 USING THE FLEXIBLE DRIVESHAFT & ATTACHMENTS – FIGS. 13 – 14:

- For jobs such as milling or engraving where precision is required, hold the multi-tool like a pen.
- For heavier work like cutting or grinding hold the multi-tool in the palm of your hand.



# 11. TROUBLESHOOTING & MAINTENANCE

## 11.1 TROUBLESHOOTING

**Warning:** For your own safety, turn the switch off and remove the plug from the power supply socket before carrying out any maintenance or troubleshooting.

Problem	Probable Cause	Remedy
Machine will not start.	1. Fuse blown or circuit breaker tripped. 2. Cable damaged.	1. Replace fuse or reset circuit breaker. 2. Have cable replaced by authorised service agent.
Machine vibrates.	1. Wheel out of balance. 2. Wheel loose.	1. Dress wheels. 2. Stop machine immediately. Tighten wheel. 3. Replace wheel <sup>†</sup> .
Accessory not turning in flexible drive shaft.	1. Flexible drive shaft, not correctly fitted to the machine. 2. Collet loose.	1. Check and re-fit connection, as described in section 9.6 on pg.16. 2. Check collet size is correct to the size of the mandrel and re-tighten.

<sup>†</sup> Replacement abrasive wheels and other accessories can be obtained from your local Draper stockist

## 11.2 MAINTENANCE

Regular inspection and cleaning reduces the necessity for maintenance operations and will keep your tool in good working condition.

- The motor must be correctly ventilated during tool operation. For this reason avoid blocking the air inlets with hands. After use disconnect the tool from the power supply and vacuum the ventilation slots.
- If the replacement of the supply cord is necessary, this has to be done by the manufacturer or his agent in order to avoid a safety hazard.

### Wheel dressing

New grinding wheels are often out of true and over time can become grooved, misshapen or glazed. Use of a grinding wheel dresser will re-cut the surface of the wheel, providing a true, sharp cutting surface. A Grinding wheel dresser (stock No.30479 can be obtained from your local Draper stockist).

## 12. OPTIONAL ACCESSORIES

---

### **12.1 OPTIONAL ACCESSORIES**

The following accessories are available from your local Draper stockist.

<b>Stock No.</b>	<b>Part No.</b>	<b>Description</b>
30479	AG100	150mm Grinding wheel dresser.

# 13. DISPOSAL

---

## 13.1 DISPOSAL

- At the end of the machine's working life, or when it can no longer be repaired, ensure that it is disposed of according to national regulations.
- Contact your local authority for details of collection schemes in your area.

In all circumstances:

- Do not dispose of power tools with domestic waste.
- Do not incinerate.
- Do not abandon in the environment.
- Do not dispose of WEEE\* as unsorted municipal waste.



\* Waste Electrical & Electronic Equipment.

# 14. EXPLANATION OF SYMBOLS

---

## 14.1 EXPLANATION OF SYMBOLS



Warning!  
Wear dust mask.



Single value noise marking.  
(maximum declared  
A-Weighted sound power  
level in decibels).



Warning!  
Wear goggles.



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



Warning!  
Read the instruction  
manual



- **DRAPER TOOLS LIMITED,**  
Hursley Road, Chandler's Ford,  
Eastleigh, Hampshire. SO53 1YF. U.K.
- **Helpline:** (023) 8049 4344
- **Sales Desk:** (023) 8049 4333
- **General Enquiries:** (023) 8026 6355
- **Service/Warranty Repair Agent**  
For aftersales servicing or warranty repairs, please  
contact the Draper Tools Helpline for details of an  
agent in your local area.

YOUR DRAPER STOCKIST

RDCH1216

