



**DRAPER**<sup>®</sup>

**STORMFORCE**

# 20V ANGLE GRINDER

89521



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 these 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

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## 1.1 INTRODUCTION:

**USER MANUAL FOR: 20V Angle Grinder**

**Stock No: 89521**

**Part No: CAG20SF**

## 1.2 REVISIONS:

**Date first published June 2018.**

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

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

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## 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:

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## 3. GUARANTEE

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### 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 Help Line (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 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. The guarantee is extended to 24 months for parts only. This guarantee does not apply to any consumable parts, any type of battery or 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

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## 4.1 SCOPE

This hand held power tool uses abrasive disks to grind metals or masonry. It is intended for domestic and light commercial use only. Any other application is considered misuse.

This power product is supplied “naked” without battery pack or charger. Draper 20V Power Interchange tools all use universal 2.0 and 4.0Ah batteries and chargers, enabling each battery pack to fit all tools within the range (see the table on page 13 for the batteries and chargers available).

## 4.2 SPECIFICATION

Stock No. ....	89521
Part No. ....	CAG20SF
Revolutions per minute (no load): .....	10,000r/min
Disc Diameter: .....	115mm
Spindle thread:.....	M14
Bore:.....	7/8"/22.2mm
Vibration level: .....	6.15m/s2
Sound pressure level*:.....	85dB(A)
Sound power level**: .....	96dB(A)
Weight: .....	1.7kg

### Battery packs (sold separately):

Stock No. ....	89437	89433
Part No.....	B202LISF.....	B20LISF
Type .....	Li-ion .....	Li-ion
Rated Voltage .....	20V .....	20V
Rating .....	2.0Ah.....	4.0Ah

### Chargers (sold separately):

Stock No. ....	89425	23793
Part No.....	CB20 .....	CB203.5
Rated Voltage .....	230V~.....	230V~
Rated Frequency .....	50Hz.....	50Hz
Rated D.C. output voltage .....	21.5V .....	21.5V
Rated D.C. output current .....	2.4A .....	3.5A
Protective device rated current.....	8A.....	8A
Construction .....	Class II .....	Class II

\* *Continuous A-Weighted Sound Pressure Level at the workstation in accordance to prEN ISO 15744:1999 and declared according to EN ISO 4871.*

\*\* *A-Weighted Sound Power Level in accordance to prEN ISO 15744:1999 and declared according to EN ISO 4871.*

## 4.3 HANDLING & STORAGE

- Care must be taken when handling this product.
  - Dropping this power tool could have an effect on its accuracy and could also result in personal injury. This product is not a toy and must be respected.
- Environmental conditions can have a detrimental effect on this product if neglected.
  - Exposure to damp air can gradually corrode components.
  - If the product is unprotected from dust and debris, components will become clogged.
  - If not cleaned and maintained correctly or regularly, the machine will not perform at its best.

## 5. HEALTH AND SAFETY INFORMATION

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### 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 important 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 spilt 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.

**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. This includes battery chargers.

**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 non-slip 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.

**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.

## 5. HEALTH AND SAFETY INFORMATION

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**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 GRINDER USE

Have this tool repaired by a qualified person. This tool is designed to conform to the relevant international and local standards. As such, it 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.

- Check that 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 must 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 the abrasive product is correctly mounted and tightened before use.
  - 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.
- Never use the angle grinder without the safety guard.
- Do not use separate reducing bushings or adapters to adapt large hole abrasive wheels.
- Check that the work piece is properly supported.
- Do not use cutting wheel for side grinding.
- Ensure that sparks resulting from use do not create a hazard e.g. do not hit persons, to ignite flammable substances.
- 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. HEALTH AND SAFETY INFORMATION

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**Warning!** Prior to mounting an abrasive wheel ensure the expiry date has not exceeded rendering it potentially hazardous.

**Secure work.** Use clamps or a vice to hold the work. It is safer than using your hands and it frees both hands to operate the tool.

**Stay alert.** Watch what you are doing. Use common sense. Do not operate tool when you are tired.

**Wear proper clothing.** Do not wear loose clothing, neckties or jewellery (ring, wristwatches etc.) to catch in moving parts. Non-slip footwear is recommended. Wear protective covering to contain long hair. Roll long sleeves above the elbow.

**Use safety goggles (Head protection).** Wear goggles approved to the relevant standards at all times. Normal spectacles only have impact resistant lenses, they are NOT safety glasses. Also, use face or dust mask if application is dusty and ear protectors during all operations.

**Sound levels.** Some types of machines may have high sound levels when working. In such cases ear protection must be worn.

**Vibration levels.** Hand held power tools produce different vibration levels. You should always refer to the specifications and the relevant Health and Safety guidelines.

**Dust extraction.** If your tool is fitted with a dust extraction facility, always ensure that it is connected and being used with a dust extractor. Vacuum cleaners can be used if suitable for the material being extracted.

**Check damaged parts.** Before use, any blade guard or other part that is damaged should be carefully checked to determine that it will operate properly and perform its intended function. Check for alignment of moving parts, free running of moving parts, breakage of parts, mounting and any other conditions that may affect its operation. A guard or other part that is damaged should be properly repaired or replaced by an authorised service centre unless otherwise indicated in this instruction manual. Have defective switches replaced by an authorised service centre. Do not use the tool if the switch does not turn it on and off.

**Have your tool repaired by a qualified person.** Use of this electric tool is in accordance with the relevant safety requirements. Repairs should only be carried out by qualified persons using original spare parts, otherwise this may result in considerable danger to the user.

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

**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.

**Delivery, handling and storage.** Abrasive products must be handled and transported with care. Abrasive products must be stored in such a manner that they are not subjected to mechanical damaged and harmful environmental influences.

**Selection of the abrasive product.** Information on the label or the abrasive product stating restrictions of use, safety indications or any other instructions must be followed. In case of doubt concerning the selection of abrasive products, the user shall request information from the manufacturer or supplier.

**Visual inspection and ring test.** Abrasive products must 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.

**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 must be carried out by a qualified trained person. After initial mounting, the wheel must be test run for a reasonable time – the specified maximum operating speed of the wheel shall not be exceeded.



## 5. HEALTH AND SAFETY INFORMATION

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**Further information.** The following instructions must 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 mounting to the machine and shall be secured.
- No grinding operations without protection by safety devices.
- 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 SAFETY RECOMMENDATIONS FOR THE CORRECT USE OF SUPERABRASIVES

**General.** Superabrasives are breakable and shall therefore be handled with utmost care! The use of damaged or improperly mounted or used superabrasives is dangerous and can cause serious injuries.

**Delivery, handling and storage.** Superabrasives shall be handled and transported with care. Superabrasives shall be stored in such a manner that they are not subjected to mechanical damages and harmful environmental influences.

**Selection of superabrasives.** Information on the label or the superabrasive as well as restrictions of use, safety indications or any other instruction shall be followed. In case of doubt concerning the selection of superabrasives, the user shall request information from the manufacturer or supplier.

**Visual inspection and ring test.** Superabrasives shall be subjected to a visual inspection as received before mounting. In a addition, a ring test shall be executed for superabrasives with vitrified core and abrasive section and  $D > 80\text{mm}$ . Damaged superabrasives shall not be used.

**Mounting, before starting and information for grinding.** The mounting of superabrasive shall be carried out according to the instructions provided by both, the superabrasive and the machine manufacturer. Special attention shall be drawn to the fact that mounting of superabrasives is to be carried out by a qualified trained person. Each time after mounting, the superabrasive shall be test run for a reasonable time - the specified maximum operating speed of the superabrasive shall not be exceeded.

**Further information.** The following instructions shall be observed, supplementary to the information of the grinding machine:

- Observance of the user's information of grinding machine manufacturer.
- Before starting, safety devices shall be mounted to the machine.
- No grinding operations without protection by safety devices.
- Use of personal protective equipment according to the type of machine and type of application, e.g. eye and face protection, ear protection, respiratory protection devices, protective footwear, protective gloves and other protective clothing.
- Only grinding operations for which the superabrasive is suitable shall be carried out (taking into account restrictions of use, safety indications or other information).
- In the case of cutting-off with hand-held grinding machines, the superabrasive shall be placed in the cutting gap in a straight position. Jamming of the hand-held grinding machine shall be prevented.

## 5. HEALTH AND SAFETY INFORMATION

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- 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.

### 5.5 RESIDUAL RISK

**Important note:** Although the safety instructions and operating manuals for our tools contain extensive instructions for safe working with power tools, every power tool involves a certain residual risk which can not be completely excluded by safety mechanisms. Power tools must therefore always be operated with caution!

### 5.6 SAFETY INSTRUCTIONS FOR MAINS POWERED BATTERY PACKS AND CHARGERS (sold separately)

#### Chargers

- The charger is for indoor use only.
- Prior to plugging the charger in to the supply, check that the plug and the cable are in good repair. If either are damaged, have the defective item replaced immediately by a suitably qualified person. If the casing of the battery charger is damaged, it is good policy to have the charger checked over by a suitably qualified person.
- Only use a correctly rated mains outlet to provide power, do not plug into site generators, attach to engine generators or D.C. sources. Do not use a mains socket outlet that is not switched.
- Use the correct Draper charger in conjunction with it's corresponding battery pack (see the table on page 11 for information).
- Do not charge any other batteries with Draper chargers. Any other application is considered misuse.
- Do not attempt to charge battery packs that are too hot (over 30°C) or too cold (under 5°C), if these conditions apply set the battery pack aside to “normalise” before proceeding with the charging operation.
- Set up the charger and cable in a safe place where it won't be knocked, tripped over, stepped on, etc. and where it is well ventilated. Make sure the ventilation slots in the charger case are not obstructed, plug the charger into the socket outlet.
- Inspect the battery pack for damage, if it is undamaged, plug it into the charger, ensuring the correct orientation. (Most chargers and batteries have 'keys' etc., to make sure the battery pack is not inserted incorrectly, if you are having to 'force' the battery pack into the charger, the chances are you have it the wrong way round, check and try again.)
- Switch the charger on and check that the correct indicators illuminate, allow the battery pack to charge (see the specific instructions for your charger). Once charging is complete, switch the charger off, remove the battery pack and store, repeat the procedure if you have more than one battery pack to charge.

**Caution:** When the battery charger has been continuously used, the battery charger will be hot. Once the charging has been completed, give 15 minutes rest until the next charge.

- After charging is complete, unplug the charger from the socket outlet by pulling on the plug. Do not pull on the cable. Store the charger in a dry secure place.
- If, when the charger was switched on, the correct indications did not occur, leave for two or three minutes to allow the charger to stabilise, if the correct indications occur, allow the charging cycle to proceed as normal. If no indication appears at all, switch off, remove the battery pack, unplug the charger, check that the charger contacts and the battery contacts are clean and repeat the process. If there is still no indication, switch off, remove the battery pack, unplug the charger and check the fuse. If the fuse is blown, replace and repeat the process. If the fuse blows again, or if the fuse was intact, attempt no further action. Refer the charger to a suitably qualified person for repair.

## 5. HEALTH AND SAFETY INFORMATION

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### Battery packs

- Before charging, read the instructions.
- For indoor use. Do not expose to rain.
- Only use Draper battery packs with stock numbers 89437 and 89433 in conjunction with this product.
- Do not charge any other manufacturer's battery packs using Draper chargers. Any other application is considered misuse.
- The battery must be removed from the appliance before it is recycled.

### 5.7 CONNECTION TO THE POWER SUPPLY (CHARGER (sold separately))


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

This charger comes supplied with a UK standard 3 pin plug. It is designed for connection to a domestic power supply rated at 230V AC.

This charger is Class II† 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 instructions supplied with the extension lead. If using an extension lead, follow the instructions that came with your lead regarding maximum load while cable is wound, if in doubt ensure that the entire cable is unwound. Using a coiled extension lead will generate heat which could melt the lead and cause a fire.

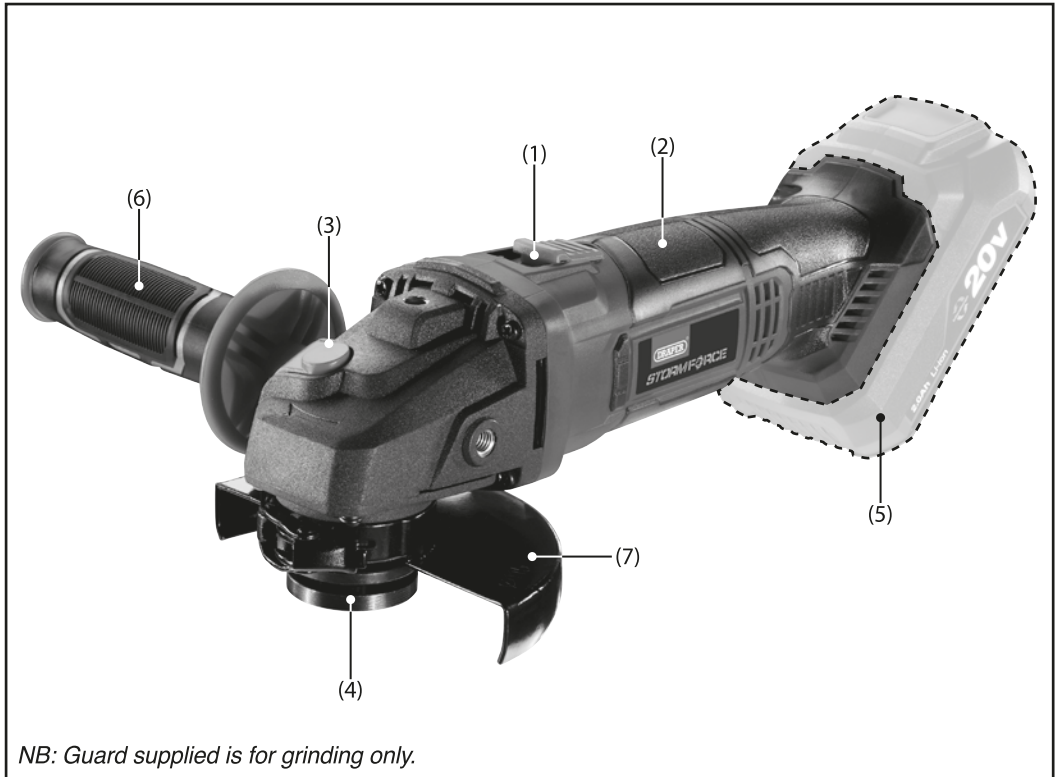
†Double insulated : This product requires no earth connection as supplementary insulation is applied to the basic insulation to protect against electric shock in the event of failure of the basic insulation.

This product requires no earth connection as supplementary insulation is applied to the basic insulation to protect against electric shock in the event of failure of the basic insulation.

Apart from replacing the fuse in the plug, no other electrical work is recommended on this product.

## 6. TECHNICAL DESCRIPTION

### 6.1 IDENTIFICATION



- (1) On/Off switch.
- (2) Rear hand grip.
- (3) Spindle lock button.
- (4) Locking flange.
- (5) 20V Li-ion battery pack (sold separately).
- (6) Auxiliary handle.
- (7) Safety guard.

# 7. UNPACKING AND 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 Help Line (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.

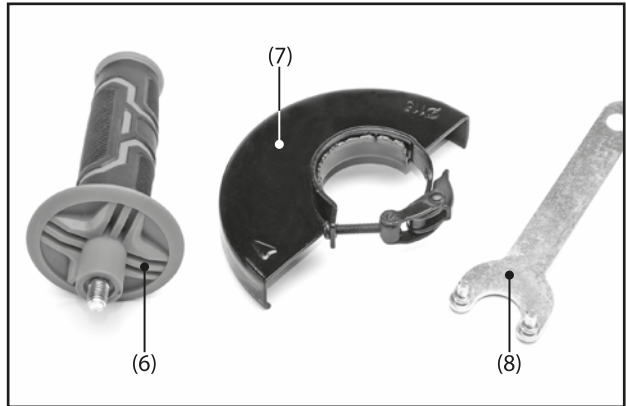
### Warning!

- Some of the packaging materials used may be harmful to children. Do not leave any of these materials in the reach of children.
- If any of the packaging is to be thrown away, make sure they are disposed of correctly, according to local regulations.

## 7.2 WHAT'S IN THE BOX

As well as the main product, there are also several other parts not fitted or attached to it:

- (6) Auxiliary handle.
- (7) Safety guard.
- (8) Disc changing spanner.



## 7.3 20V POWER INTERCHANGE BATTERY PACKS/CHARGERS (sold separately)

This power product is supplied “naked” without battery pack or charger.

The table below shows the Draper 20V Power Interchange compatible batteries and chargers available for this product.

20V Power Interchange tools all use universal 2.0 and 4.0Ah battery packs and chargers, enabling each battery pack to fit all tools within the range.



Item	Stock No.	Part No.	Voltage
Battery pack.	89437	B202LISF	20V/2.0Ah
Battery pack.	89433	B20LISF	20V/4.0Ah
Charger (for Stock No.89437).	89425	CB20	20V/2.4A
Charger (for Stock No.89433).	23793	CB203.5	20V/3.5A

## 8. PREPARING THE ANGLE GRINDER

### 8.1 BATTERY PACK CHARGING – FIGS. 1 – 2

This power product is supplied “naked” without battery pack or charger. Compatible batteries, chargers and accessories are available through Draper Tools stockists.

- Consult the table on page 13 of these instructions for a guide to the available battery packs and chargers compatible with this product.

**Important:** Only Draper designated battery packs and chargers can be used in conjunction with this product. Use of any other third party battery packs/chargers with this product is considered misuse and will invalidate the product’s warranty.

Once connected to the mains supply recharging of the battery pack can be left generally unsupervised requiring minimal attention. Complex circuit construction monitors the battery pack condition adjusting the recharge current to suit. When the recharge cycle is complete and to maintain the full capacity a low output current will continue as required.

#### Warning!

- Check the condition of the charger and battery prior to each charge. If there is any sign of damage then do not commence charging, seek advice from Draper Tools.

To charge the battery pack (5), it must first be removed from the tool.

To release the battery pack:

- Press the battery pack release button (5.1) and gently slide the battery pack off (Fig.1).
- Plug the battery charger unit (9) into a 230V/AC 13amp, three pin socket.
- The green LED (9.1) will illuminate to show the charger has power.
- Slide the battery pack into place ensuring the battery terminals and the charger terminals make a good connection Fig.2.
- After a few seconds delay the red LED (9.2) will light to show the battery pack is being charged and the green LED will go out.

#### Warning!

- Ensure battery pack is connected correctly. (Fig.2). Sliding the battery pack on incorrectly may cause damage to the battery/charger.
- When the battery pack is fully charged, the green LED (9.1) will light.

#### Warning!

- If the indicator lights fail to illuminate during the charging cycle, unplug the charger from the power supply socket outlet and replace the battery pack.

#### Completing the charging cycle:

- Disconnect battery charger from the power supply.

**Caution:** Do not pull the plug out of the power supply by pulling on the cord.

- Make sure to grasp the plug when removing from power supply to avoid damaging the cord.

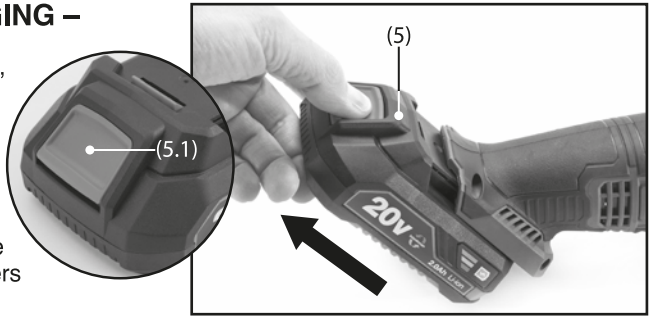


FIG.1



FIG.2

## 8. PREPARING THE ANGLE GRINDER

- Remove the battery pack from the battery charger.
  - Supporting the battery charger with hand, pull out the battery pack from the battery charger.
  - Make sure to grasp the plug when removing from power supply to avoid damaging the cord.

**Caution:** When the battery charger has been continuously used, the battery charger will be hot. Once the charging has been completed, give 15 minutes rest until the next charge.

If the battery pack is charged when it is warm due to battery use or exposure to sunlight, the battery pack will not be recharged. In such a case, let the battery pack cool before charge.

If the red indicator flickers rapidly at 0.2 - second intervals, check for and take out any foreign objects in the charger's battery slot. If there are no foreign objects, it is probable that the battery pack or charger is malfunctioning. Allow battery/charger to normalise and try again. If a fault remains after trying this then contact Draper Tools.

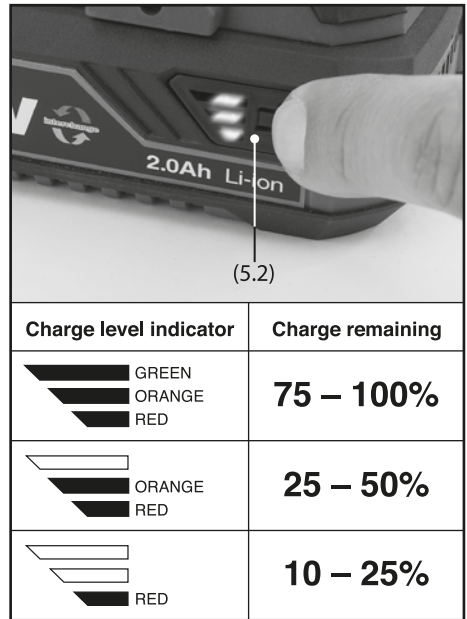


FIG.3

### 8.2 BATTERY PACK CHARGE STATUS

#### - FIG.3

To display the amount of charge left in the battery pack press the charge level indicator button (5.2).

### 8.3 BATTERY PACK EFFICIENCY AND CHARGING ADVICE

- Recharge the battery packs before they become completely exhausted.
- When you feel that the power of the tool becomes weaker, stop using the tool and recharge the battery packs. If you continue to use the tool and exhaust the electric current, the battery pack may become damaged.
- Avoid recharging at high temperatures. A rechargeable battery pack will be hot immediately after use. If such a battery pack is recharged immediately after use, its internal chemical substance will deteriorate, and the battery life will be shortened. Leave the battery pack and recharge it after it has cooled for a while.
- The battery pack should only be used and/or charged when battery pack temperature is between 5°C and 30°C.
- The battery pack needs to be warmed-up or cooled down in order to prevent damage to the batteries internal components.

**Note:** Failure to warm up or cool down a battery pack could result in serious damage to the battery, charger and user.

## 8. PREPARING THE ANGLE GRINDER

### 8.4 FITTING THE AUXILIARY HANDLE – FIG.4

For reasons of safety, when working with this type of electric power tool, the operator must always use the auxiliary handle (6).

- Screw the handle clockwise, into one of the three threaded apertures best suited to the application and user comfort.

**Warning!** This machine must never be operated (cutting off/grinding processes) without the correct guard placed correctly and operating fully.

### 8.5 FITTING THE GUARD – FIGS.5 – 6

The guard supplied is designed for grinding only, it is not intended to be used for cutting operations. If you intend to perform cutting operations with this machine, you need to purchase the additional cutting guard, which has a more enclosed design to contain any fragments if the cutting disc fails.

- Position the guard onto the grinder collar with the quick release lever in the open position.
- Rotate the guard until it is in the correct position and then close the quick release lever to lock the guard.

**Warning!** Never attempt to operate this machine without the guard securely fitted and correctly positioned\*.

*\* With the exception of wire cup brushes etc. which negate the guards effectiveness.*

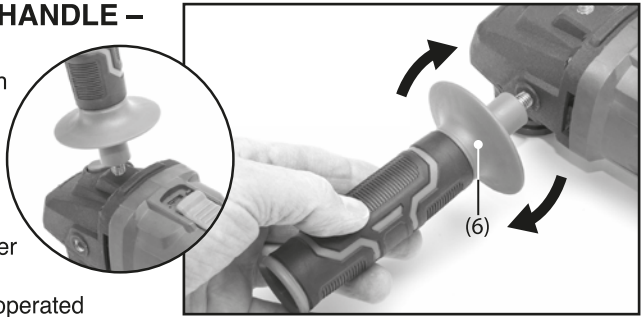


FIG.4

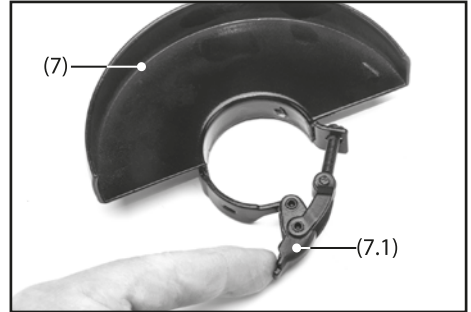


FIG.5

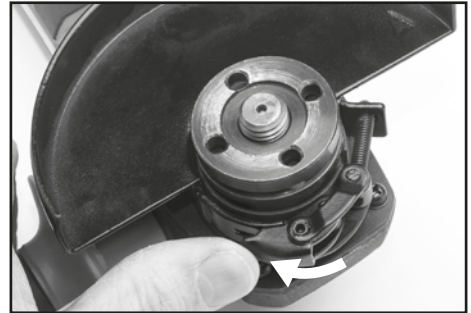


FIG.6



# 8. PREPARING THE ANGLE GRINDER

## 8.6 FITTING/REPLACING ACCESSORIES (sold separately) – FIGS. 7 – 9

**Warning!** Prior to mounting an abrasive wheel ensure the expiry date has not expired, rendering it potentially hazardous.

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

**Warning!** The rated (no load) revolutions per minute of the tool must not exceed the speed capacity of the accessory. Please refer to the accessory manufacturers instructions for information.

### Visual Inspection:

- Prior to fitting, abrasive/superabrasive wheels shall be subject to a visual inspection.

### Inspection:

- Each time after mounting, the abrasive/superabrasive wheel shall be test run for a reasonable time.
- The specified maximum operating speed of the wheel shall not be exceeded.
- Damaged abrasives shall be destroyed.
- Always wear approved safety goggles.



### Important information:

#### B, C, D (FIG.6):

- For cutting applications, and to comply to current legislation, it is necessary to replace the “grinding” guard supplied with this machine with a “cutting” guard.

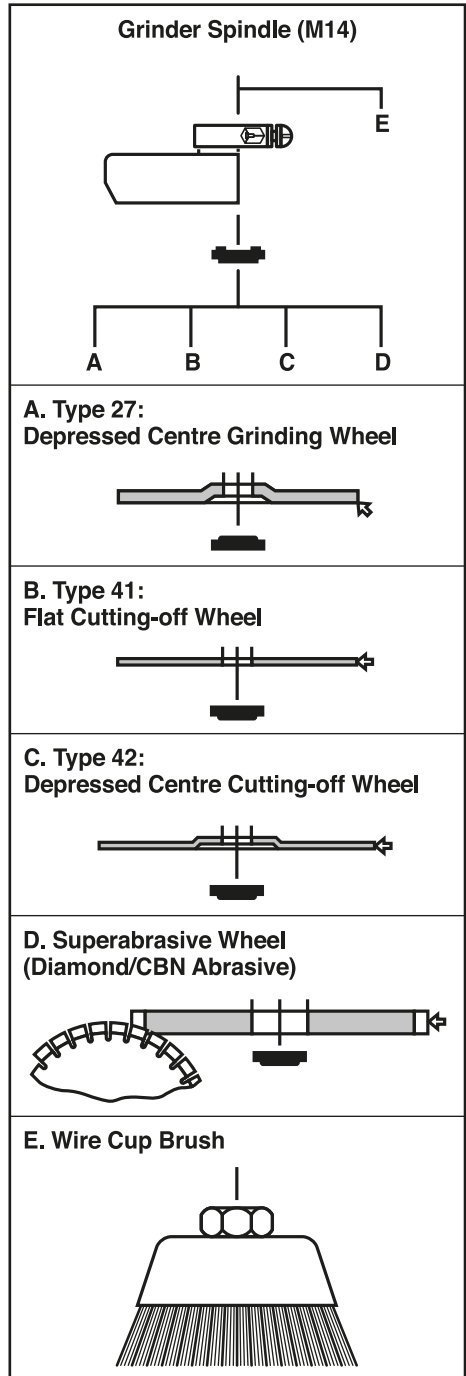


FIG.7

## 8. PREPARING THE ANGLE GRINDER

- Press and hold the spindle lock button (3).
- Loosen the locking flange (4) anti-clockwise using the pin spanner (8) supplied.
- The spindle may rotate slightly before the spindle lock fully engages.
- Remove the locking flange only.
- Clean the flanges and spindle prior to fitting any accessory.
  - If the rear flange (4.1) is removed for cleaning, ensure it locates correctly on the spindle flats when refitting and does not spin freely.
- When fitting the appropriate accessory please refer to (FIG.7, on page 17) for specific details on the locking flange correct orientation as applicable.
- Securely tighten the locking flange clockwise using the pin spanner while holding down the spindle lock (4).

**Note:** When using wire cup brushes the locking flange is not required due to the design of the brushes. When fitted check the accessory is correct and, importantly fully secure on the spindle.

**Warning!** Never press the spindle lock button (4) while the spindle is in motion.

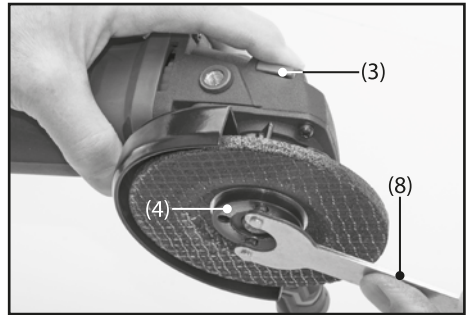


FIG.8

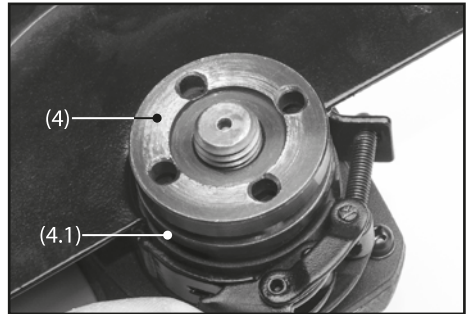


FIG.9

# 9. BASIC ANGLE GRINDER OPERATIONS

## 9.1 ON/OFF SWITCH – FIG.10

- Push the switch (1) forward to start the grinder.
- Push the switch further forwards and down to lock it in the 'ON' position.
- To stop the grinder, release the switch by pushing down on the back of the switch (1).

**Note:** To prevent accidental starting in a situation of power failure to the grinder, the 'ON/OFF' switch (1) is fitted with a protective device that prevents the angle grinder from starting up automatically when the power is re-established. In this case, and with the power re-established, release the switch to the 'OFF' position, then switch to 'ON' as normal.

**Warning!** Do not set the machine down until the spindle has completely stopped.

**Note:** During use, keep clothing out of the line of any sparks formed. Sparks from metal grinding can set fire to many types of clothing in a short time. The risk is less if your outer clothing is made of wool, or flame retardant treated cotton.

### Dust

A correctly fitted dust mask, suitable for the activity and in accordance to the relevant standard, must be worn.

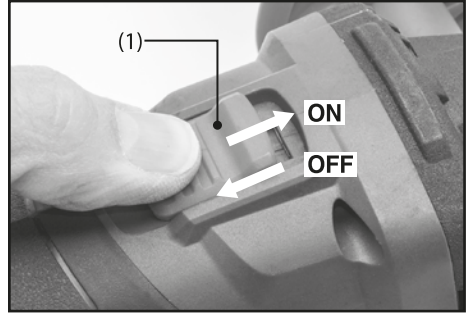


FIG.10



FIG.11

## 9.2 GRINDING – FIG.11

When performing grinding operations maintain an angle of approximately 30° between the work surface and the disc face.

Only use abrasives specifically designed for this task.

## 9.3 CUTTING



### Important legal information:

- Cutting operations should only be attempted with the "cutting" guard fitted to this grinder.
- Please contact Draper Tools for further information on how to purchase this optional accessory.
- This guard must be fitted for your safety.
- When performing cutting-off operations do not incline the machine as this can lead to the abrasive wheel becoming jammed, damaged or excessively and abnormally worn.
- Only use abrasives specifically designed for this task.

**Warning!** As the abrasive wheel wears during use, its diameter reduces. This reduces the peripheral speed and the machine's efficiency. This results in increased load on the grinding machine which if continued will damage the motor. Ensure that the diameter of the wheel is within 25% of its original size.

**Important:** Excessive pressure on the machine does not result in a higher abrasive efficiency. Excessive pressure increases wear and tear on the accessory and will damage the angle grinder which is not covered under the guarantee.

# 10. MAINTENANCE AND TROUBLESHOOTING

## 10.1 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. Avoid blocking the air inlets and vacuum the ventilation slots regularly.

## 10.2 TROUBLESHOOTING

Problem	Possible Cause	Remedy
Motor does not start.	1. Battery no charge.	1. Re-charge battery.
	2. Battery faulty or damaged.	2. Replace battery.
	3. Blown fuse in charger plug.	3. Replace fuse.
Motor runs, but slowly/ losing power.	1. Battery no charge.	1. Re-charge battery.
	2. Battery faulty or damaged.	2. Replace battery.
Machine vibrates.	1. Wheel damaged or out of balance.	1. Replace wheel.
	2. Wheel loose.	2. Stop machine immediately – when stopped, refit accessory.
Wheel will not cut/grind.	Incorrect disc fitted.	Fit correct disc for material/application.

**Important:** Please note, all repairs/service should be carried out by a qualified person.

# 11. DISPOSAL

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## 11.1 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 dispose of WEEE\* as unsorted municipal waste.



\* Waste Electrical & Electronic Equipment.

## 11.2 BATTERY PACK DISPOSAL INFORMATION

### Warning!

- Do not put battery pack in fire or mutilate – cells may burst or release toxic materials.
- Do not short circuit cells, may cause burns.
- The battery pack must be removed from the appliance before it is scrapped.
- The battery pack is to be disposed of safely.
- Do not mutilate batteries, corrosive electrolyte will be released.
- Do not dispose of batteries or cells in a charged condition.

Expired batteries must be recycled/disposed of in accordance with the appropriate regulation or legislation. They should be returned to your local warranty agent/stockist.

# 12. EXPLANATION OF SYMBOLS

## 12.1 EXPLANATION OF SYMBOLS



Read the instruction manual.



Wear face mask and safety glasses.



Wear ear defenders.



Wear protective gloves.



Do not abandon into the environment.



Keep out of the reach of children.



**Warning!**



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



Class II construction  
*(Double insulated).*



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



Lithium-ion product.

**Li-ion**



Do not incinerate or  
throw onto fire.



For indoor use only.  
Do not expose to rain.



Short-circuit-proof safety  
isolating transformer



Fuse.



Polarity indication.



Rated voltage.



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For aftersales servicing or warranty repairs, please contact the  
Draper Tools Helpline for details of an agent in your local area.

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