

# Clarke<sup>®</sup>

## CONTRACTOR<sup>®</sup>



## **RANDOM ORBITAL SANDER**

**MODEL No. CROS2**

Part No. 6462011

OPERATING & MAINTENANCE  
INSTRUCTIONS



0307

Thank you for purchasing this CLARKE Variable Speed Random Orbital Sander, which is designed for DIY and light workshop use only.

Before attempting to use the sander, please read this manual thoroughly and follow the instructions carefully. In doing so you will ensure the safety of yourself and that of others around you, and you can look forward to the Sander giving you long and satisfactory service.

## GUARANTEE

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

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

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

This guarantee does not effect your statutory rights.

## SPECIFICATIONS

Model .....	CROS2
Part No .....	6462011
Electrical Supply .....	230V 50Hz 1 ph
Power Rating .....	750 Watt Motor
Fuse Rating .....	13 Amp
No Load Speed (Variable) .....	4,000-7,000 RPM
Net Weight .....	2.97kg
Pad Size .....	150mm
Vibration Emissions .....	Refer to notes on pages 11 & 12
This Product Conforms To 98/37/EEC Regulations	



**When disposing of this product, ensure it is disposed of according to all local ordinances. It must not be disposed of with general household waste.**

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

## SAFETY PRECAUTIONS



### WARNING:

*As with all machinery, there are certain hazards involved with their operation and use. Exercising respect and caution will considerably lessen the risk of personal injury. However, if normal safety precautions are overlooked or ignored, personal injury to the operator or damage to property, may result.*

1. **ALWAYS** Learn the machines applications, limitations and the specific potential hazards peculiar to it. Read and become familiar with the entire operating manual.
2. **ALWAYS** use a face or dust mask when sanding.
3. **ALWAYS** check for damage, before using the machine. Any damage should be properly repaired or replaced. If in doubt, **DO NOT** use the machine. Consult your local dealer.
4. **ALWAYS** disconnect the machine from the power supply before servicing and when changing the belt.
5. **ALWAYS** wear safety goggles, manufactured to the latest European Safety Standards. Everyday eyeglasses do not have impact resistant lenses, they are not safety glasses.
6. **ALWAYS** keep work area clean. Cluttered areas and benches invite accidents.
7. **ALWAYS** ensure that sufficient lighting is available. Position lighting in a way that you will not be working in your own shadow.
8. **ALWAYS** keep children away. All visitors should be kept at a safe distance from the work area.
9. **ALWAYS** maintain the machine in top condition. Keep tools/ machines clean for the best and safest performance. Follow maintenance instructions.
10. **ALWAYS** handle with care do not carry the machine by its electric cable, or yank the cable to disconnect it from the power supply.
11. **ALWAYS** ensure the switch is off before connecting to the mains to avoid accidental starting.
12. **ALWAYS** concentrate on the job in hand, no matter how trivial it may seem. Most accidents are caused by carelessness due to familiarity.
13. **ALWAYS** keep your footing and balance at all times do not overreach. Wear rubber soled footwear and keep floor clear of oil, scrap wood, etc.
14. **ALWAYS** wear proper clothing. Loose clothing or jewellery may get caught in moving parts. Wear protective hair covering to contain long hair.
15. **ALWAYS** use recommended accessories. The use of improper accessories could be hazardous.



16. **ALWAYS** have your power tool serviced by a qualified repair person using only identical replacement parts. This will ensure that the safety of the power tool is maintained.
17. **NEVER** operate machine while under the influence of drugs, alcohol or any medication.
18. **NEVER** leave machine running unattended.
19. **NEVER** force the machine. It will do a better and safer job at the rate for which it was designed.
20. **NEVER** use power tools in damp or wet locations or expose them to rain.
21. **NEVER** operate power tools in explosive atmospheres, such as in the presence of flammable liquids, gases or dust. Power tools create sparks which may ignite the dust or fumes.



## ADDITIONAL PRECAUTIONS FOR POWER TOOLS

1. **ALWAYS** wear ear protectors/defenders as the noise level of this machine can exceed 85dB (A).
2. **ALWAYS** use the appropriate sanding sheet for the material being worked.
3. **ALWAYS** keep the mains cable well away from the machine and ensure an adequate electrical supply is close at hand so that the operation is not restricted by the length of the cable.
4. **ALWAYS** use extreme caution when using power tools, avoid contact with earthed or grounded surfaces (e.g. pipes radiators etc).
5. **ALWAYS** switch the machine OFF immediately the task is completed.
6. **ALWAYS** use secure the workpiece using clamps or vice etc.
7. **ALWAYS** store idle tools safely out of the reach of children in a dry location, preferably locked away in a cupboard etc.
8. **NEVER** allow the ventilation slots in the machine to become blocked.
9. **DO NOT** exert pressure on sander to stop it quickly, allow it to stop normally.
10. **DO NOT** use the machine if the electric cable, plug or motor is in poor condition.

**Additionally, please keep these instructions in a safe place for future reference.**

### Dust extraction

The sander is provided with a dust extraction facility, Please note however, that this does not preclude the user from wearing a face mask to prevent the inhalation of dust particles.

It is an EEC requirement that a dust extraction facility be provided on power tools, however, due to the nature of the tool, some of the dust produced will be forced into the surrounding atmosphere, and will not be collected.

## ELECTRICAL CONNECTIONS



This product is provided with a standard 13 amp, 230 volt (50Hz), BS 1363 plug, for connection to a standard, domestic electrical supply. Should the plug need changing at any time, ensure that a plug of identical specification is used.

### WARNING

*This appliance is Double Insulated, and the two wires in the mains lead should be wired up in accordance with the following colour code:*

**BLUE - NEUTRAL**  
**BROWN - LIVE**

- Connect the BLUE coloured wire to the plug terminal marked with a letter "N"
- Connect the BROWN coloured wire to the plug terminal marked with a letter "L"

If this appliance is fitted with a plug which is moulded on to the electric cable (i.e. non-rewireable) please note:

1. The plug must be thrown away if it is cut from the electric cable. There is a danger of electric shock if it is subsequently inserted into a socket outlet.
2. Never use the plug without the fuse cover fitted.
3. Should you wish to replace a detachable fuse carrier, ensure that the correct replacement is used (as indicated by marking or colour code).
4. Replacement fuse covers can be obtained from your local Clarke dealer or most electrical stockists.



### Fuse Rating

The fuse in the plug must be replaced with one of the same rating (**13 amps**) and this replacement must be ASTA approved to BS1362.

If in doubt, consult a qualified electrician. Do not attempt any electrical repairs yourself.

### Cable Extension

Always use an approved cable extension suitable for the power rating of this tool (see specifications), the conductor size should also be at least the same size as that on the machine, or larger. When using a cable reel, always unwind the cable completely. If using tool outdoors, only use extension cables intended for outdoor use.

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## PREPARATION

### Fitting Sanding Disk

**Note :**

**Only use disks which have a velcro fixing capacity on the rear.**

- Ensure sander is switched OFF and plug is removed from mains socket.
- Line up holes in disk with those on the machine pad. (This is necessary for dust extraction), press disk firmly on to pad to secure it.

### Handgrips

Your sander is fitted with two handgrips to ensure full control of the machine.

- Main handgrip (handle) with ON/OFF switch and power cable.
- Support grip.

### Dust Collection

To fit the dust bag to your sander, slide the dust bag assembly, firmly over the dust outlet, on the sander.



**Note :**

**Dust bag must be emptied regularly, do not wait until it is completely full.**

### To Empty The Dust Bag

- Ensure the sander is switched OFF and the plug has been removed from socket.
- Remove dust bag assembly from sander by gently pulling it off of the dust outlet.
- Take dust bag assembly to dustbin and slip bag off, (bag has elasticated top), empty bag into bin.
- Reassemble dust bag assembly and reattach it back on to the sander.

## OPERATION

Insert the plug into the mains socket and switch on.

Hold the sander firmly with both hands and squeeze the trigger switch.

To switch the sander off, release the trigger switch.

### Lock On Button

The trigger switch can be locked for continuous sanding.

Press the Lock On button whilst squeezing the trigger switch. To switch the sander 'OFF' when in continuous operation mode, press the trigger switch fully and then release it.



### Variable Speed

Variable speed is achieved in two ways:

- By depressing the switch fully for maximum speed or less for slower speed.
- To control the maximum speed, turn the knob located on the trigger switch from A(lower) - F(Faster).

### Using The Sander

- a) Before switching the sander ON, make sure that there are no nails or other objects in the area to be sanded.
- b) Switch the sander ON before applying it to the work surface. Move the sander evenly over the work area. Never allow the sander to stay in one place for too long as this will give an uneven finish.
- c) Hold the sander with both hands, using both handles.
- d) Replace worn sanding paper. The performance of your sander is dependant on the quality of the sanding paper being used. Remove the sander from the work area before switching it OFF, (wait until motor has stopped fully before putting tool down).

### Sanding Hints

- Do not apply excessive pressure to the sander. The weight of the sander alone is sufficient for normal use
- Always start your sander before it comes into contact with the workpiece, and do not switch off until it has been lifted off the workpiece.
- Always use both hands to hold the sander and clamp the workpiece for added stability and safety.
- When sanding wood, always sand in the direction of the grain, if you sand across the grain the sander will leave swirl marks.

## TROUBLE SHOOTING

### Sander Is Overheating

This indicates the machine is dirty. Clean the ventilation holes, and blow out with compressed air or clean with a dry cloth.

Overloading the machine will also cause overheating. Do not use for heavy duty work, and do not apply excessive pressure.

### Excessive Sparking Occurs

This indicates worn brushes. This problem is quickly remedied but you should consult your CLARKE dealer for parts and advice.

### Sander Does Not Operate When Switched ON

Check to ensure the fuse is sound and replace if necessary. If the fuse is sound or blows repeatedly, consult your CLARKE dealer.

### The Dust Is Not Extracted

Dust bag is full (empty waste bag), dust extractor flue is blocked, this is usually caused by allowing bag to become too full, (remove and empty bag, also clear blockage).

**Note :**

**Ensure sander is switched OFF and isolated from the mains by removing plug from socket.**

## MAINTENANCE

**WARNING!**

**Make sure that the sander is switched off and disconnected from the mains supply before starting any cleaning or maintenance procedures.**

After use clean out any accumulated dust or chippings etc. Keep the cooling vents clear. If the sander should become too hot, run it for 2 minutes without load.

Clean the housing with a soft cloth. Any worn or damaged parts should be replaced by qualified personnel. Keep the handles clean and free from oil and grease. There are no user serviceable parts inside this sander. Refer to qualified service personnel if internal maintenance is required.

## ACCESSORIES

A wide range of accessories is available from your nearest CLARKE dealer, for further information, contact your nearest dealer, or telephone CLARKE International Sales department on 01992 565300

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## PARTS LIST

Item	Part No	Description	Qty	Item	Part No	Description	Qty
1	HTCROS2001	Dust collection bag	1	34	HTCROS2034	Handle	1
2	HTCROS2002	O-Ring 3.55X38.7	1	35	HTCROS2035	Pin cap	1
3	HTCROS2003	Upper cover	1	36	HTCROS2036	Pin spring	1
4	HTCROS2004	Screw ST4X20	4	37	HTCROS2037	O-Ring	1
5	HTCROS2005	Buffering ring	1	38	HTCROS2038	Guide	1
6	HTCROS2006	Sand pad	1	39	HTCROS2039	Pinion	1
7	HTCROS2007	Plain washer	4	40	HTCROS2040	Ball bearing 608-2Z	1
8	HTCROS2008	Screw M4X10	4	41	HTCROS2041	Armature	1
9	HTCROS2009	Screw M5X8	1	42	HTCROS2042	Ball bearing 607-2Z	1
10	HTCROS2010	Plain washer	1	43	HTCROS2043	Rubber bearing seat	1
11	HTCROS2011	Ball bearing 6004	1	44	HTCROS2044	Fan baffle	1
12	HTCROS2012	Bearing seat	1	45	HTCROS2045	Screw ST4.2X65	2
13	HTCROS2013	Fan	1	46	HTCROS2046	Stator	1
14	HTCROS2014	Screw M4X10	4	47	HTCROS2047	Label	1
15	HTCROS2015	Spring washer	3	48	HTCROS2048	Stator case	1
16	HTCROS2016	Bearing clamp	1	49	HTCROS2049	Screw ST2.9X8	2
17	HTCROS2017	Lower cover	1	50	HTCROS2050	Brush	2
18	HTCROS2018	Screw M4X14	4	51	HTCROS2051	Brush holder	2
19	HTCROS2019	Plain washer 4	4	52	HTCROS2052	Name Label	1
20	HTCROS2020	Spring washer 4	4	53	HTCROS2053	Disk spring	2
21	HTCROS2021	Key	2	54	HTCROS2054	Screw ST4.2X20	4
22	HTCROS2022	Output shaft	1	55	HTCROS2055	Left handle	1
23	HTCROS2023	Ball bearing 6001	1	56	HTCROS2056	Switch	1
24	HTCROS2024	Gear case cover	1	57	HTCROS2057	Right handle	1
25	HTCROS2025	Gear washer	1	58	HTCROS2058	Capacitor	1
26	HTCROS2026	Gear	1	59	HTCROS2059	Screw ST4.2X14	2
27	HTCROS2027	Wave spring washer	1	60	HTCROS2060	Cord clamp	1
28	HTCROS2028	Retaining Ring 10	1	61	HTCROS2061	Cord & plug	1
29	HTCROS2029	Oil-impregnated bearings	1	62	HTCROS2062	Cord protector	1
30	HTCROS2030	Lock pin	1	63	HTCROS2063	Nut M6	1
31	HTCROS2031	Screw ST4.2X25	4	64	HTCROS2064	Inductance	1
32	HTCROS2032	Gear case	1				
33	HTCROS2033	Screw M10X16	2				

Replacement sanding discs are available from your CLARKE dealer.

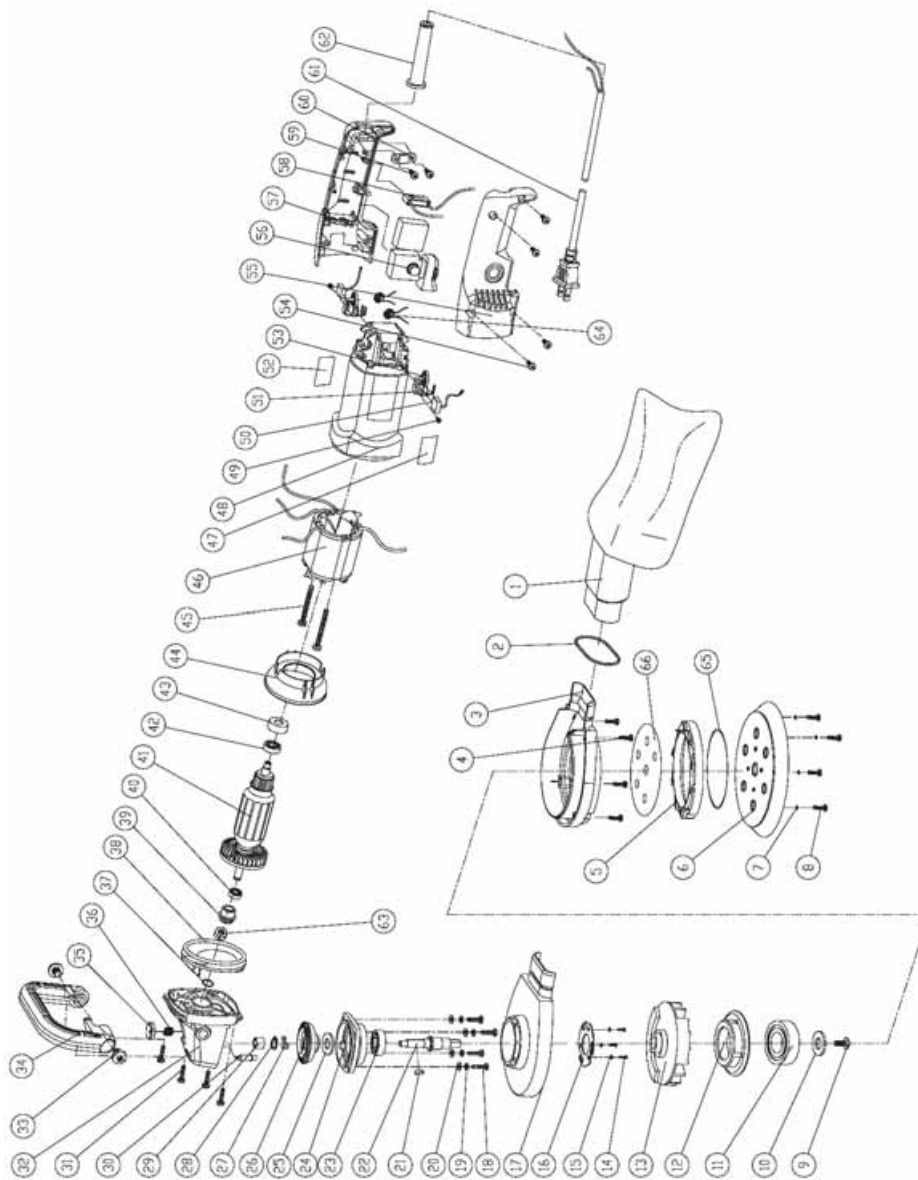
**PARTS & SERVICE TEL: 020 8988 7400**

**or e-mail as follows:**

**PARTS: [Parts@clarkeinternational.com](mailto:Parts@clarkeinternational.com)**

**SERVICE: [Service@clarkeinternational.com](mailto:Service@clarkeinternational.com)**

# PARTS DIAGRAM



# VIBRATION EMISSIONS

## HAND-ARM VIBRATION

*Employers are advised to refer to the HSE publication "Guide for Employers".*

All hand held power tools vibrate to some extent, and this vibration is transmitted to the operator via the handle, or hand used to steady the tool. Vibration from about 2 to 1500 hertz is potentially damaging and is most hazardous in the range from about 5 to 20 hertz.

Operators who are regularly exposed to vibration may suffer from Hand Arm Vibration Syndrome (HAVS), which includes 'dead hand', 'dead finger', and 'white finger'. These are painful conditions and are widespread in industries where vibrating tools are used.

The health risk depends upon the vibration level and the length of time of exposure to it.....in effect, a daily vibration dose.

Tools are tested using specialised equipment, to approximate the vibration level generated under normal, acceptable operating conditions for the tool in question. For example, a grinder used at 45° on mild steel plate, or a sander on softwood in a horizontal plane etc.

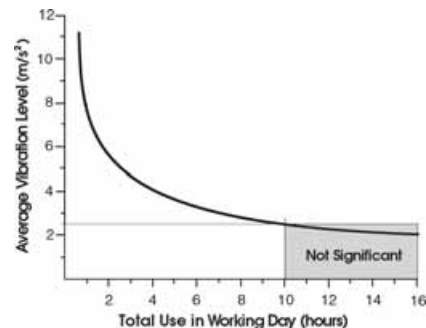
These tests produce a value 'a', expressed in metres per second per second, which represents the average vibration level of all tests taken, in three axes where necessary. This value appears in the panel below.

'a' values in excess of 2.5 m/s<sup>2</sup> are considered hazardous when used for prolonged periods. A tool with a vibration value of 2.8 m/s<sup>2</sup> may be used for up to 8 hours (cumulative) per day, whereas a tool with a value of 11.2 m/s<sup>2</sup> may be used for ½ hour per day only.

The graph shows the vibration value against the maximum time the respective tool may be used, per day.

It should be noted that if a tool is used under abnormal, or unusual conditions, then the vibration level could possibly increase significantly. Users must always take this into account and make their own risk assessment, using the graph above as a reference.

Some tools with a high vibration value, such as impact wrenches, are generally used for a few seconds at a time, therefore the cumulative time may only be in the order of a few minutes per day. Nevertheless, the cumulative effect, particularly when added to that of other hand held power tools that may be used, must always be taken into account when the total daily dose rate is determined.



Declared vibration emission value in accordance with EN12096

Measured vibration emission value -  $a$ : 4.46m/s<sup>2</sup>

Values determined according to EN28622-1