Clarke®

Airless Spray Gun

Model No: CAS110

PART NO: 2310050

OPERATING & MAINTENANCE INSTRUCTIONS

GC02/12

INTRODUCTION

Thank you for purchasing this CLARKE Airless Spray Gun.

Before attempting to use this product, please read this manual throughout and follow the instructions carefully. Thoroughly familiarise yourself with this product & its operation in order to ensure the safety of yourself and others around you. In so doing, you can look forward to the product 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 it's intended purpose.

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.

TECHNICAL DATA

CAS110	
Part Number	2310050
Weight	1.6 kg
Dimensions (L x W x H)	210 x 115 x 240 mm
Container capacity	800 ml
Maximum nozzle flow rate	320 ml/min (water)
Rated power input	110 W
Voltage	220 - 240V / 50 Hz
Insulation Class	Class II

Please note that 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.

CONTENTS

GENERAL SAFETY PRECAUTIONS

WORK AREA

1. **Keep the work area clean and well lit.** Cluttered and dark areas invite accidents.
2. **Keep children and bystanders away while operating a power tool**. Distractions can cause you to lose control.

ELECTRICAL SAFETY

1. **Power tools must match the power outlet. Never modify the plug in any way. Do not use adaptor plugs with earthed (grounded) power tools.** Correct plugs and outlets will reduce the risk of electric shock.
2. **Do not expose power tools to rain or wet conditions.** Any water entering power tools will increase the risk of electric shock.
3. **Do not abuse the electrical cable. Never use the cable for pulling or unplugging the power tool. Keep the cable away from sources of heat, oil, sharp edges or moving parts**. Damaged or tangled cables increase the risk of electric shock.
4. **When operating a power tool outdoors, use an extension cable suitable for outdoor use.** Using the correct cable reduces the risk of electric shock.

PERSONAL SAFETY

1. **Stay alert, watch what you are doing and use common sense when you are operating a power tool.** Do not operate a power tool when you are tired, ill or under the influence of alcohol, drugs or medication.
2. **Wear personal protective equipment including eye protection.** Safety equipment such as a dust mask, non-skid shoes or hearing protection used for appropriate conditions will reduce personal injuries. Use a face or dust mask if necessary. Wear ear protectors/defenders as the noise level of this machine can exceed 85dB (A).
3. **Do not over-reach.** Keep your proper footing and balance at all times. This enables better control of the power tool in unexpected situations.
4. **Dress properly.** Wear protective hair covering to contain long hair. For best footing, wear rubber soled footwear. Keep floor clear of oil, scrap wood, etc.
5. **Concentrate on the job in hand, no matter how trivial it may seem.** Be aware that accidents are caused by carelessness due to familiarity.

POWER TOOL USE AND CARE

1. **Do not use the power tool if the switch does not turn it on and off.** Any power tool that cannot be controlled with the switch is dangerous and must be repaired.
2. **Store power tools out of the reach of children and do not allow persons unfamiliar with these instructions to operate the tool**. Power tools are potentially dangerous in the hands of untrained users.
3. **Maintain power tools in top condition**. Check for any condition that may affect the power tool's operation. Many accidents are caused by poorly maintained power tools.
4. **Use recommended accessories.** The use of improper accessories could be hazardous.
5. **Machine cleanliness.** Clean the spray gun routinely as described under MAINTENANCE. Do not allow the ventilation slots in the housing to become blocked with dust.
6. **Check for damage before using the tool.** Any damaged part should be inspected to ensure that it will operate properly and perform its intended function. Check for any condition that may affect the machine's operation. Any damage should be properly repaired or the part replaced. If in doubt, **DO NOT** use. Consult your local dealer.

SERVICING

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

FURTHER PRECAUTIONS FOR PAINT SPRAYING

1. Never spray in the direction of persons or animals. Never allow the paint to come into contact with the skin. In the case of injury, seek expert medical advice immediately.
2. Always make sure there is adequate ventilation. Do not spray in confined or enclosed areas.
3. Always wear a suitable approved breathing mask when spraying, to protect against inhalation of paint spray or fumes. An air feed mask may be required when spraying some types of paint. If in doubt, check with the paint manufacturer.
4. Always disconnect the spray gun from the electrical supply when it is not in use, and before cleaning or any disassembly.
5. Always keep the spray nozzle in place when spraying.
6. Always adhere to the paint manufacturers instructions when thinning paint.

7. Always disconnect from the mains supply when filling the paint container.
8. Always thoroughly clean the spray gun after use and lubricate the piston. See 'Maintenance'.
9. Never smoke while spraying or preparing paints, or spray near a naked flame or heat source. Many paints are flammable.
10. Never use the spray gun outdoors when it is raining.

ELECTRICAL CONNECTIONS

WARNING! Read these electrical safety instructions thoroughly before connecting the product to the mains supply.

Before switching the product on, make sure that the voltage of your electricity supply is the same as that indicated on the rating plate. This product is designed to operate on 220-240VAC 50Hz. Do not connect it to any other power source.

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

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

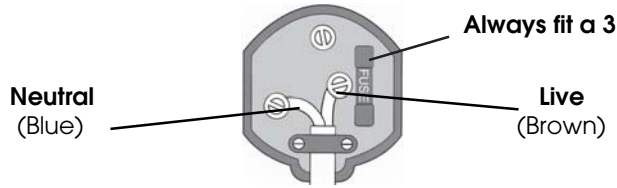
WARNING! The wires in the power cable of this product are coloured in accordance with the following code:

Blue = Neutral Brown = Live

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

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

Plug must be BS1363/A approved.



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

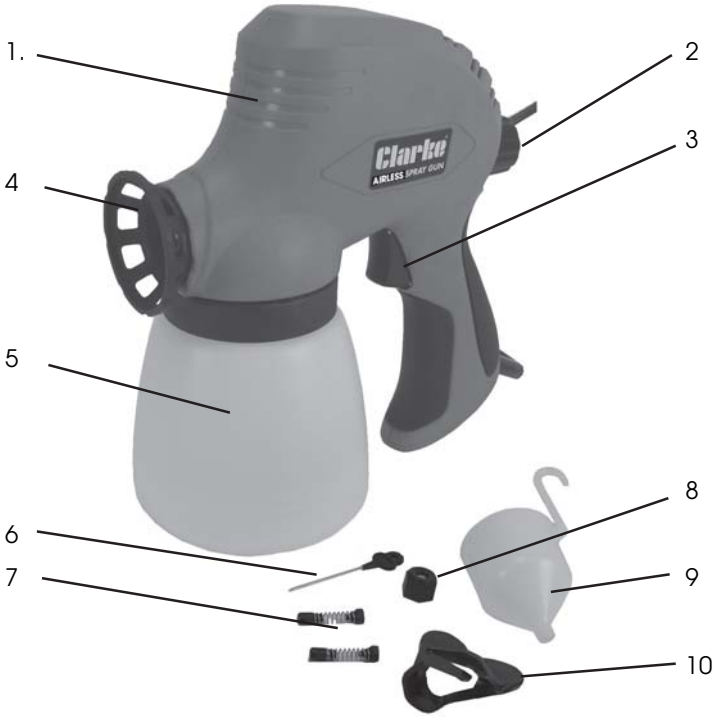
We strongly recommend that this product is connected to the mains supply via a Residual Current Device (RCD).

If in doubt, consult a qualified electrician. DO NOT attempt repairs yourself.

This symbol indicates that this is a Class II product and does not require an earth connection.

OVERVIEW

Airless spraying reduces the mist associated with compressed air spraying and therefore reduces paint loss. Your sprayer may be used with various spray mediums, including varnishes, wood preservatives, masonry paints, enamel paints, and oil and water based paints.



1	Motor Housing	6	Nozzle Unblocking Tool
2	Output Control	7	Spare Valves (2)
3	Trigger	8	Spare Nozzle
4	Spray Basket	9	Viscosity Cup
5	Paint Container	10	Nozzle Release Wrench

OPERATING INSTRUCTIONS

PREPARATION

To obtain the best results, it is important that you prepare the surface to be sprayed and thin the paint to the correct viscosity before you operate your spray gun.

Always ensure that the surfaces to be sprayed are free from dust, dirt and grease. Make sure that you have masked the areas that should not be sprayed, using a good quality masking tape.

The paint or fluid to be sprayed should be thoroughly mixed and free from lumps or other particles. Many substances can be sprayed with your spray gun, but always check the manufacturer's recommendations before purchasing your paint. Do not use textured wall paints or coatings as this will block the nozzle.

THINNING

ALWAYS REMEMBER TO DISCONNECT FROM THE POWER SUPPLY BEFORE FILLING THE PAINT CONTAINER.

Most paints are supplied ready for brush application and will need to be thinned before they are suitable to be sprayed. Follow the manufacturer's advice on thinning the paint when used with a spray gun. The viscosity cup will help you to determine the correct viscosity of paint to be used. To do this, fill the cup to the brim with the paint and measure the time it takes for the cup to empty back into the can. The table below shows recommended times for different types of material.

Plastic & latex paint	24 - 28 seconds
Water based paint	20 - 25 seconds
Primers	24 - 28 seconds
Varnishes	20 - 25 seconds
Oil based paints	18 - 22 seconds
Enamel paints	18 - 22 seconds
Aluminum paints	22 - 25 seconds
Car underseal	25 - 35 seconds
Wood sealers	28 - 35 seconds
Wood preservatives	No thinning required
Wood stains	No thinning required

If the paint takes longer than the recommended time to empty, then further thinning is required. Mix in a small quantity of the appropriate thinner and use the viscosity test until the correct consistancy is achieved. Some sprayable materials contain particles and lumps. These materials should be strained before filling the paint container.

OPERATING THE SPRAY GUN

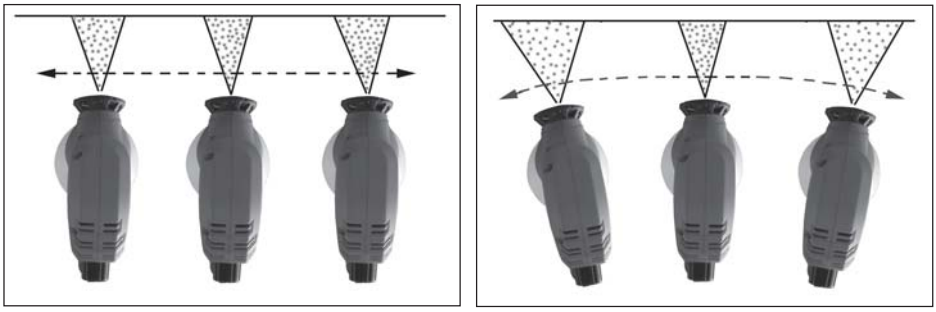
1. Fill the paint container with the correctly thinned and strained paint and connect the spray gun to the mains supply.
2. Aim the spray gun at a piece of scrap material and operate the trigger switch until paint is spraying.
3. Adjust the output control until the required volume of paint is spraying. Turn the output control in a clockwise direction (B) to reduce the flow and anti-clockwise (A) to increase the flow.

Fig. A

- Adjustment of the output control will affect the pattern. A poor spray pattern will concentrate the paint in the centre of the spray and give a blotchy finish. A good spray pattern will give even distribution of paint throughout the pattern.

SPRAYING TECHNIQUES

To obtain the best results, keep your spray gun level and parallel to the surface at all times. Keep the nozzle 25 - 30 cm from the surface and spray evenly from side to side or up and down. Do not spray at an angle as this will lead to paint runs on the surface. Use smooth and even strokes.



RIGHT WRONG FIG B

Parts & Service: 020 8988 7400/E-mail:Parts@clarkeinternational.com or Service@clarkeinternational.com

When spraying large areas, using a criss-cross pattern as shown in Fig C.

Never start or stop the spray gun while it is aimed at the surface to be sprayed. Evenly control the speed of movement of the spray gun.

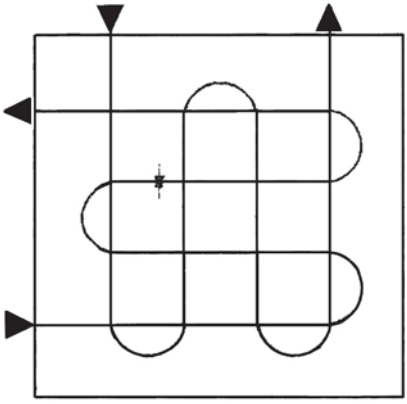


Fig C

- Moving quickly over the surface will give a thin coat and slow movement will give a heavy coat.
- Apply one coat at a time. If a further coat is required, make sure you observe the manufacturers drying time recommendations before applying a second coat.
- When spraying small areas, keep the output control on a low setting. This will avoid using too much paint and prevent overspray.
- Where possible, avoid stopping and starting when spraying an object. This can lead to too much, or not enough paint being applied. Do not tip the spray gun to more than 45°.

CLEANING AND MAINTENANCE

ROUTINE CLEANING

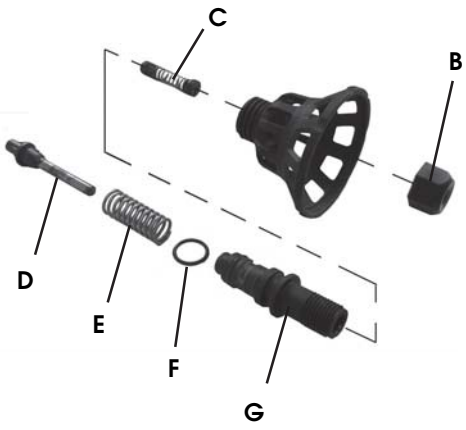
ALWAYS REMEMBER TO DISCONNECT FROM THE MAINS SUPPLY BEFORE CLEANING THE SPRAY GUN OR PAINT CONTAINER.

Continuous satisfactory operation depends upon proper care and regular cleaning. It is essential that the spray gun is cleaned thoroughly after every use. Failure to clean it will almost certainly result in blockages and it may not operate when you next come to use it! The guarantee does not cover cleaning a sprayer that has not been properly cleaned by the user. The following action must be taken after every use:

1. Empty any remaining material from the paint container.
2. Clean the paint container thoroughly with the thinner that was used.
3. Pour some thinner into the paint container and spray through the spray gun until only clean thinner is coming out of the nozzle.
4. Thoroughly clean the paint pick up pipe and filter with thinner.
5. Clean the spray basket and nozzle and remove paint that remains.
6. Turn the spray gun upside down and apply a few drops of light oil to the two apertures (A). This will lubricate the piston and cylinder.

INTERNAL CLEANING

If your spray gun should require extra internal cleaning, it may be necessary to dismantle it. If so, the following action should be taken:



1. Remove the plug from the mains socket.
2. Remove paint container, pick up pipe and filter.
3. Take off the pump assembly.
4. Release the nozzle (B), valve (C), piston rod (D) and spring (E).
5. Clean the O-ring (F), and cylinder (G) and all parts thoroughly with solvent.
6. Apply a few drops of light lubricating oil to the piston, spring and cylinder.
7. Reassemble the spray gun.

LONG TERM MAINTENANCE

Please be aware that certain parts of this spray gun may wear with long term use, requiring replacement and that these parts are not covered by your guarantee.

These parts include the valve, spray nozzle, piston and spring. The wear on these parts depends on the abrasiveness of the materials being sprayed. More abrasive materials, such as emulsions, will cause these parts to wear much faster.

Worn valves and nozzles will have larger holes and scratches on the internal surfaces. This is likely to cause a poor spray pattern and will eventually require replacing. Replacement valves are available from your dealer or the Clarke International Parts Department.

Check the power cable to ensure it is sound and free from cracks, bare wires etc before use.

STORAGE

1. For long term storage, always store in a well ventilated area and keep the spray gun dry and dust free.

ENVIRONMENTAL PROTECTION

If disposing of this product or any damaged component, do not dispose of it with general waste. This product contains valuable raw materials which should be taken to your local civic amenity site for recycling.

TROUBLESHOOTING

PROBLEM	CAUSE	SOLUTION
Motor hums but does not spray or spray is irregular.	Pick-up pipe not in the right position.	Adjust pick-up pipe.
	Blocked pick-up pipe	Clean pick-up pipe with thinners
	Blocked nozzle	Clean nozzle with thinners.
	Blocked filter	Clean filter with thinners.
	Output control needs adjustment.	Adjust output control to suit as on page 10.
Atomisation is poor	Volume adjustment not correct.	Adjust the output control.
	Paint too thick	Check viscosity of paint.
Over painting.	Gun not clean or not lubricated resulting in piston sticking in cylinder	Dismantle spray gun and clean with thinner.
	Too much paint.	Adjust the volume clockwise to reduce spraying. Apply two thin coats of paint.
	Paint too thin.	Check viscosity.
Motor louder than normal.	Gun not clean or not lubricated, causing piston to stick in cylinder.	Dismantle spray gun and clean with thinner.
No spray or sound	No electrical power	Check power supply.
Operating sound not normal.	Poor output adjustment	Re-adjust output control.
	Not enough paint in container resulting in air being sucked in.	Refill with paint.
	Paint not properly diluted or not passing pick-up pipe completely.	Check cleanliness of pick-up pipe and viscosity of paint.
Orange peel or excessive fogging.	Incorrect solvent used.	Use different solvent.
	Spray gun too far from surface.	Hold spray gun closer to the surface.
	Paint too thick.	Thin the paint.

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, and a second figure 'K', which represents the uncertainty factor, i.e. a value in excess of 'a', to which the tool could vibrate under normal conditions. These values appear in the specification panel below.

MODEL No:	**CAS110**
DESCRIPTION:	**AIRLESS SPRAY GUN**

Declared vibration emission value in accordance with EN12096.

Measured vibration emission value - *a:* 11.53m/s^2

Uncertainty value - *K:* 1.5m/s^2

Values determined according to EN28622-1

You will note that a third value is given in the specification - the highest measured reading in a single plane. This is the maximum level of vibration measured during testing in one of the axes, and this should also be taken into account when making a risk assessment.

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

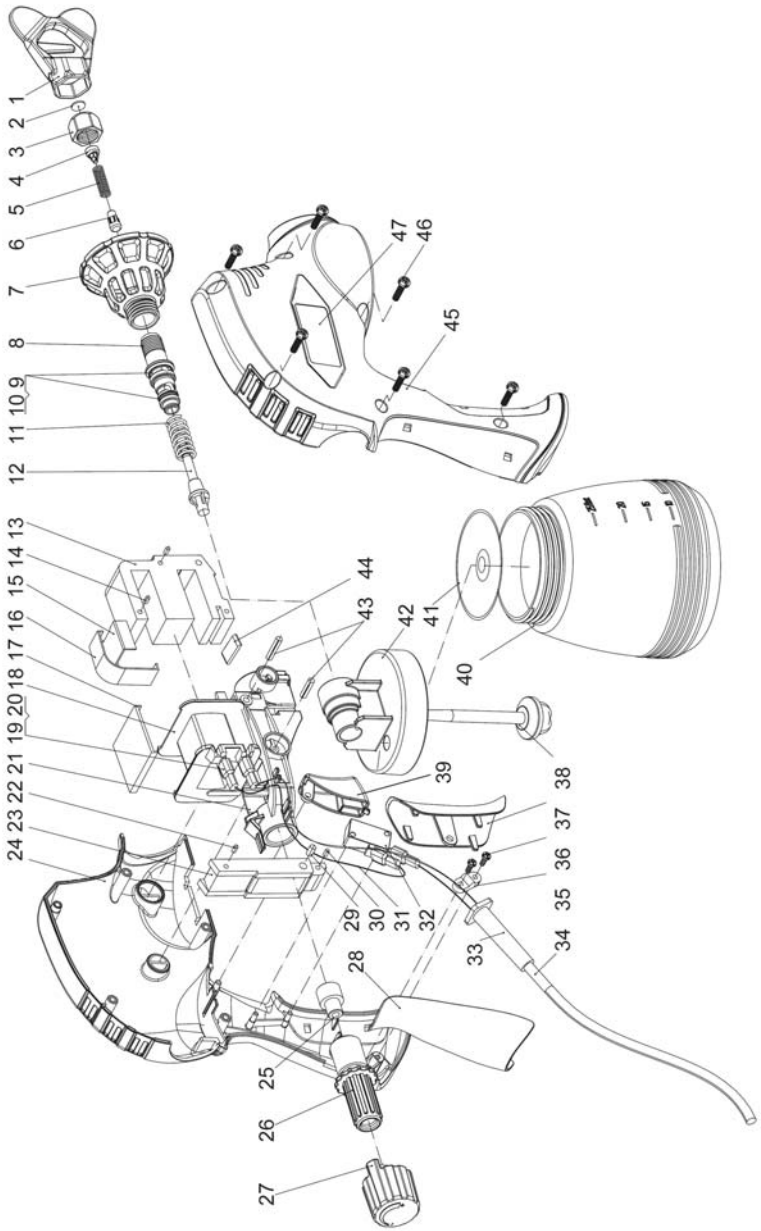
The graph below shows the vibration value against the maximum time the respective tool may be used, per day.

The uncertainty factor should also be taken into account when assessing a risk. The two figures `*a*' and `*K*' may be added together and the resultant value used to assess the risk.

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.

COMPONENT PARTS DIAGRAM



COMPONENTS PARTS LIST

No	Description	Part No
1	Spray Nozzle Wrench	JJCAS11001
2	Nozzle Plate	JJCAS11002
3	Spray Nozzle	JJCAS11003
4	Atomisation Head	JJCAS11004
5	Spring	JJCAS11005
6	Valve Head	JJCAS11006
7	Spray Basket	JJCAS11007
8	Cylinder	JJCAS11008
9	O - Ring	JJCAS11009
10	O - Ring	JJCAS11010
11	Spring	JJCAS11011
12	Piston Rod	JJCAS11012
13	Electro-magnet Outer	JJCAS11013
14	Screw	JJCAS11014
15	Clip Seat	JJCAS11015
16	Leaf Spring	JJCAS11016
17	Frame Press Plate	JJCAS11017
18	Inner Coil Assembly	JJCAS11018
19	Sleeve	JJCAS11019
20	Switch Plug	JJCAS11020
21	Pump Frame	JJCAS11021
22	Friction Pin	JJCAS11022
23	Electromagnetic Drive	JJCAS11023
24	Housing (L/H)	JJCAS11024

No	Description	Part No
25	Rubber Head	JJCAS11025
26	Adjuster Body	JJCAS11026
27	Adjustment Knob	JJCAS11027
28	Rear Grip Pad	JJCAS11028
29	Friction Pin	JJCAS11029
30	Friction Pin	JJCAS11030
31	Connecting Wire	JJCAS11031
32	Switch	JJCAS11032
33	Cable Sleeve	JJCAS11033
34	Cable Gland	JJCAS11034
35	Wire Grip	JJCAS11035
36	Screw	JJCAS11036
37	Front Grip Pad	JJCAS11037
38	Pickup Tube	JJCAS11038
39	Trigger	JJCAS11039
40	Paint Container	JJCAS11040
41	Sealing Washer	JJCAS11041
42	Container Base	JJCAS11042
43	Roll Pin	JJCAS11043
44	Damping Fin	JJCAS11044
45	Housing (R/H)	JJCAS11045
46	Screw	JJCAS11046
47	Label	JJCAS11047

DECLARATION OF CONFORMITY

CE

Clarke® INTERNATIONAL

Hemnall Street, Epping, Essex CM16 4LG

DECLARATION OF CONFORMITY

This is an important document and should be retained.

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

2004/108/EC	*Electromagnetic Compatibility Directive.*
2006/42/EC	*Machinery Directive.*
2006/95EC	*Low Voltage Equipment Directive.*
2002/95/EC	*Restriction of Hazardous substances.*

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

EN 50144-1:1998+A1+A2:2003, EN 50144-2-7:2000, EN 61000-3-2:2006+A1:2009+A2:2009

EN 55014-1:2006+A1:2009, EN 61000-3-3:2008, EN 55014-2:1997+A1:2001+A2:2008,

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

The CE mark was first applied in: 2009

Product Description:	Electric spray gun
Model number(s):	CAS110
Serial / batch Number:	N/A
Date of Issue:	06/02/2012

Signed:

J.A. Clarke
Director

10-0152 Electric spray gun D O C (rv2)

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A SELECTION FROM THE VAST RANGE OF

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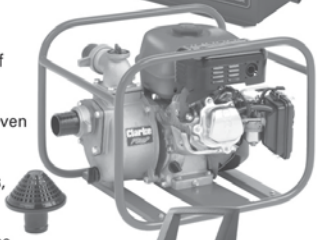

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