

ARBORTECH^{TM/MC}

SPHEROPLANE^{TM/MC}

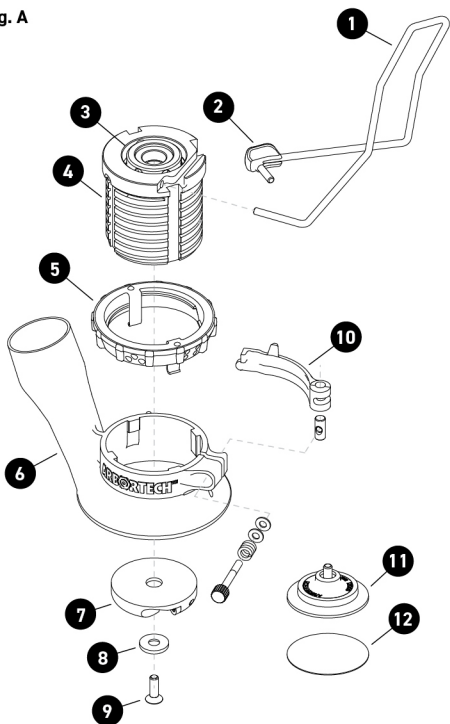
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INSTRUCTION MANUAL



www.arbortechtools.com

Fig. A



ITEM	DESCRIPTION	ITEM	DESCRIPTION
1	Torque Arm	7	Cutting Disc
2	Shaft Lock Button	8	Washer
3	Shaft	9	Screw
4	Sleeve	10	Locking Clamp
5	Adjustment	11	Sanding Pad
6	Guide Base	12	Sanding Disc

Fig. B

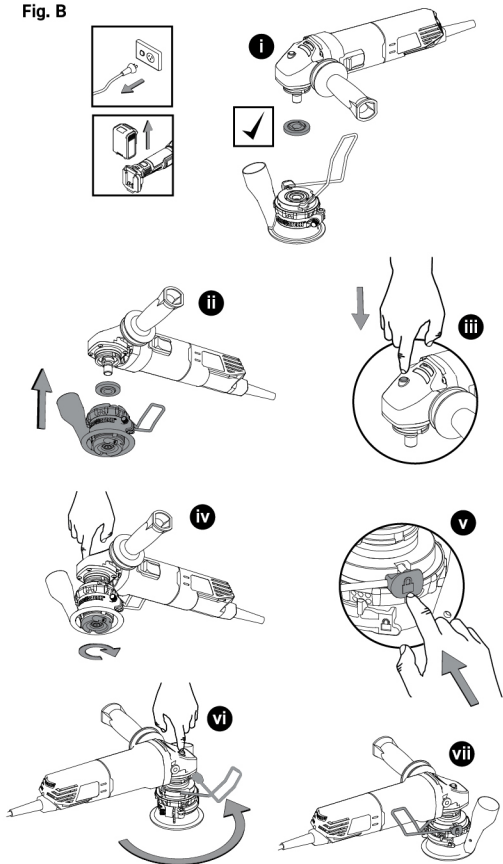


Fig. C

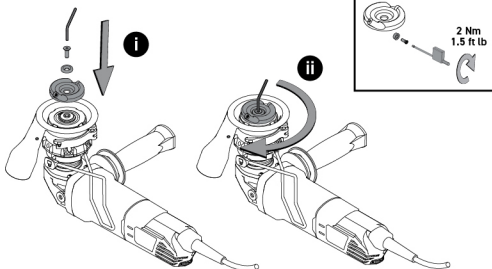


Fig. D

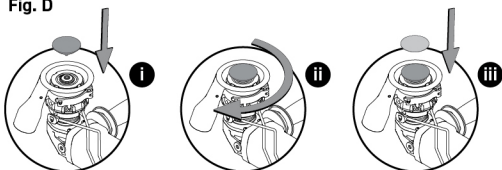


Fig. E

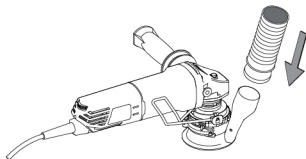


Fig. F

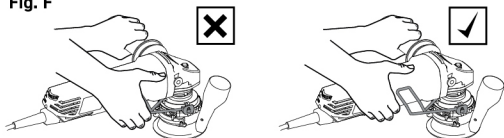


Fig. G

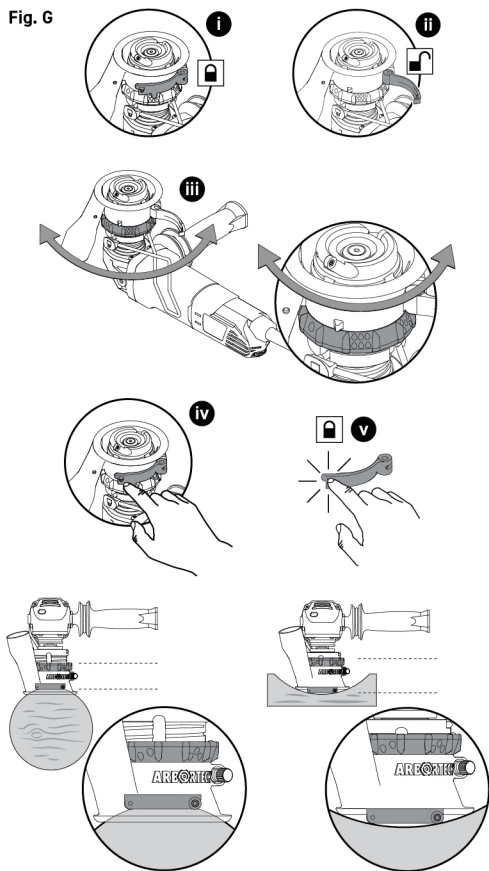


Fig. H

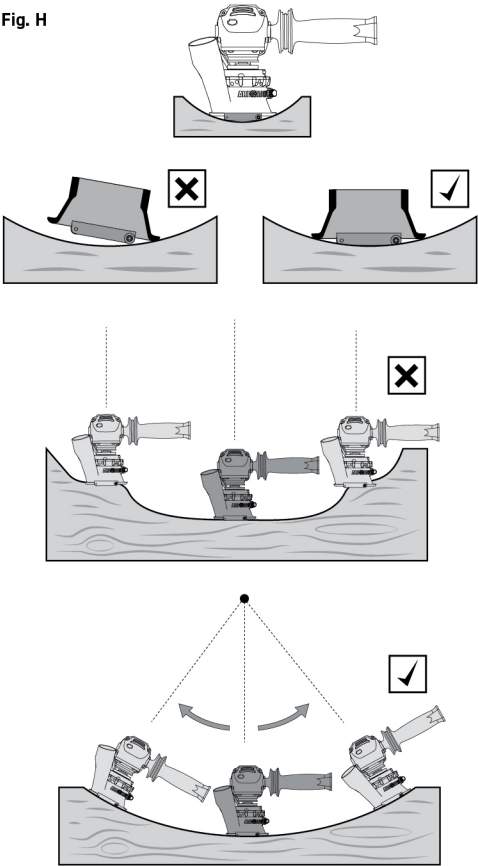


Fig. H Cont.

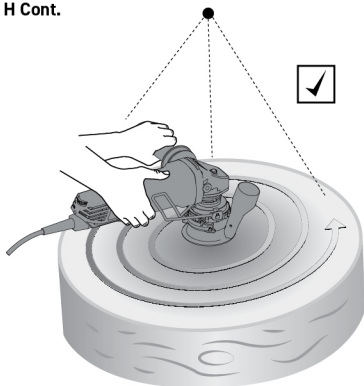


Fig. I

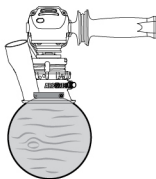
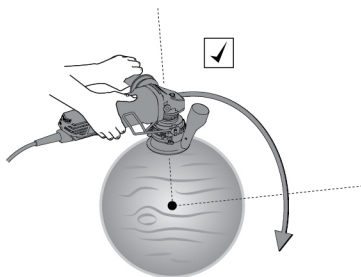
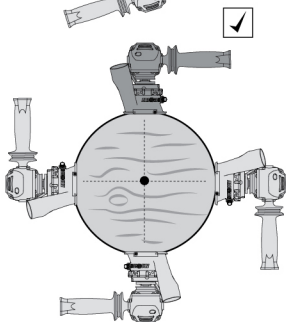
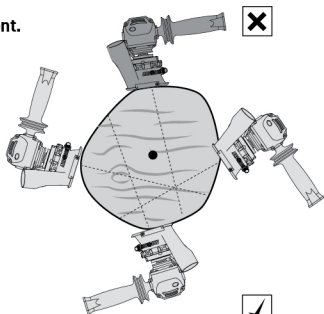


Fig. I Cont.



INTRODUCTION

The Arbortech SpheroPlane™ is a revolutionary power carving tool, which allows users to freehand carve spherical objects and shapes such as balls (convex spheres) and bowls (concave spheres). The SpheroPlane™ attaches to a standard angle grinder. The appropriate size angle grinder for this tool is:

- **115-125 mm angle grinder with M14 spindle and a maximum speed of 12,000 rpm or less.**

A variable speed angle grinder is recommended for sanding functions to prevent burning, but not essential.

The SpheroPlane™ patent-pending technology uses an adjustable guide that controls the cutting disc or sanding disc along spherical arcs. By adjusting the height of the Guide Base, the radius of sphere is altered. This allows the user to freehand carve spherical shapes and create completely unique and aesthetically pleasing spherical pieces of wood, without the need for large and complex tools. It is recommended that users of the SpheroPlane™ learn the appropriate user technique of the tool. Please refer to the 'User Instructions' section of this manual and the Arbortech website for directions on the use of the SpheroPlane™.

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Always ensure that users have read the Instruction Manual for the SpheroPlane™ and the angle grinder used in combination with the SpheroPlane™. Failure to read both Instruction Manuals may result in death or serious injury.

Definitions: Safety Guidelines

The definitions below describe the level of severity for each signal word. Please read the manual and pay attention to these symbols.

⚠ DANGER: Indicates an imminently hazardous situation which, if not avoided, will result in **death or serious injury**.

⚠ WARNING: Indicates a potentially hazardous situation which, if not avoided, could result in **death or serious injury**.

⚠ CAUTION: Indicates a potentially hazardous situation which, if not avoided, may result in **minor or moderate injury**.

CAUTION: Used without the safety alert symbol indicates a potentially hazardous situation which, if not avoided, may result in **property damage**.

⚡ Denotes risk of electric shock.

GENERAL POWER TOOL SAFETY WARNINGS

⚠ WARNING Read all safety warnings, instructions, illustrations and specifications provided with this tool. Failure to follow all instructions listed below may result in electric shock, fire and/or serious injury.

Save all warnings and instructions for future reference.

The term "power tool" in the warnings refers to your mains-operated (corded) power tool or battery operated (cordless) power tool used in combination with the SpheroPlane™.

Work Area Safety

- Keep the work area clean and well lit. Cluttered and dark areas invite accidents.**
- Do not 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.
- Keep children and bystanders away while operating a power tool.** Distractions can cause you to lose control.

Electrical Safety

⚡⚠ DANGER: Refer to the electrical safety warnings specific to the power tool used in combination with the SpheroPlane™.

Personal Safety

- a) **Stay alert, watch what you are doing and use common sense when operating a power tool. Do not use a power tool while you are tired or under the influence of drugs, alcohol or medication.** A moment of inattention while operating power tools may result in serious personal injury.
- b) **Use personal protective equipment. Always wear eye protection.** Protective equipment such as a dust mask, non-skid safety shoes, hard hat or hearing protection used for appropriate conditions will reduce personal injuries.
- c) **Prevent unintentional starting. Ensure the switch is in the off-position before connecting to power source and/or battery pack, picking up or carrying the tool.** Carrying power tools with your finger on the switch or energising power tools that have the switch on invites accidents.
- d) **Remove any adjusting key or wrench before turning the power tool on.** A wrench or a key left attached to a rotating part of the power tool may result in personal injury.
- e) **Do not overreach. Keep proper footing and balance at all times.** This enables better control of the power tool in unexpected situations.
- f) **Dress properly. Do not wear loose clothing or jewellery. Keep your hair, clothing and gloves away from moving parts.** Loose clothes, jewellery or long hair can be caught in moving parts.
- g) **If devices are provided for the connection of dust extraction and collection facilities, ensure these are connected and properly used.** Use of these devices can reduce dust-related hazards.
- h) **Do not let familiarity gained from frequent use of tools allow you to become complacent and ignore tool safety.** A careless action can cause severe injuries within a fraction of a second.

Power Tool Use and Care

- a) **Do not force the power tool. Use the correct power tool for your application.** The correct power tool will do the job better and safer at the rate for which it was designed.
- b) **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.
- c) **Disconnect the plug from the power source and/or the battery pack from the power tool before making any adjustments, changing accessories, or storing power tools.** Such preventive safety measures reduce the risk of starting the power tool accidentally.
- d) **Store idle power tools out of the reach of children and do not allow persons unfamiliar with the power tool or these instructions to operate the power tool.** Power tools are dangerous in the hands of untrained users.
- e) **Maintain power tools and accessories. Check for misalignment or binding of moving parts, breakage of parts and any other condition that may affect the power tools operation.** If damaged, have the power tool repaired before use. Many accidents are caused by poorly maintained power tools.
- f) **Keep cutting tools sharp and clean.** Properly maintained cutting tools with sharp cutting edges are less likely to bind and are easier to control.
- g) **Use the power tool, accessories and tool bits etc. in accordance with these instructions, taking into account the working conditions and the work to be performed.** Use of the power tool for operations different from those intended could result in a hazardous situation.
- h) **Keep handles and grasping surfaces dry, clean and free from oil and grease.** Slippery handles and grasping surfaces do not allow for safe handling and control of the tool in unexpected situations.

Service

- a) 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.

Safety Instructions for Angle Grinders

⚠ DANGER: Always read and understand the instruction manual and safety warning specific to the angle grinder used in combination with the SpheroPlane™.

Safety Instructions for Use of the SpheroPlane™

- a) This power tool is intended to function for carving and sanding of wood. Read all safety warnings, instructions, illustrations and specifications provided with this power tool. Failure to follow all instructions listed below may result in serious injury.
- b) Before operating the tool, read the Operation instructions in this Instruction Manual for setup and user instructions.
- c) Always inspect the tool, and the installation of the tool before use.
- d) Use clamps or another practical way to secure and support the workpiece to a stable platform. Holding the workpiece by hand or against your body leaves it unstable and may lead to loss of control or accidental contact with moving parts.
- e) Do not operate the tool with any attachment other than those recommended in this instruction manual.
- f) Never start a tool under load. Start the tool before engaging the work piece.
- g) Never start or operate the tool with fingers or other objects in contact with the cutting disc.
- h) Use care when handling cutting discs during and after use. The cutting discs and some areas of the tool become hot in use.
- i) Always ensure that before starting the tool that there are no hazards, such as electrical wiring, in the working vicinity.
- j) Allow for resting periods to ease the effect of the vibration of the tool.
- k) Ensure the dust extraction equipment is connected and properly used.
- l) The use of any accessory or attachment other than those recommended in this instruction manual may present a risk of personal injury.
- m) Do not force the tool. It is designed to operate with moderate effort. Overheating of the drive system and motor can occur if the tool is overloaded.
- n) Always operate the angle grinder by holding it with both hands.
- o) Do not use the tool with any spindle adapter on the angle grinder. The tool is specifically designed for the angle grinder size stated and any additional adaptor may cause premature failure and injury.

SYMBOLS The following symbols are used in this manual and marking of this tool

	Read instruction manual
	Wear hearing protection
	Wear eye protection
	Wear breathing protection
	Wear gloves
rpm	Revolutions per minute
mm	Millimetres

FUNCTIONAL DESCRIPTION

SpheroPlane™ Tool Description

The SpheroPlane™ is a tool designed to power carve and sand spherical objects in wood. The SpheroPlane™ is designed to carve convex and concave spheres, such as balls and bowls. The radius of curvature can be controlled by adjustment to the height of the Guide Base (see Figure G for detailed instructions).

The SpheroPlane™ is designed for attachment to an angle grinder with the following specifications:

- 115-125 mm angle grinder with M14 spindle and a maximum speed of 12,000 rpm or less.

An angle grinder with variable speed is also recommended for sanding performance, but not essential.

The SpheroPlane™ comes fitted with several functional components to be familiar with:

1. The Guide Base – which moves up and down relative to the cutting or sanding disc fitted.
2. Locking Clamp – designed to rigidly affix the Guide Base after height adjustments are made.
3. Adjustment Collar – rotated by the user to adjust the height of the Guide Base.
4. Torque Arm, designed to rest against the body of the angle grinder and prevent rotation of the tool. The torque arm also includes a shaft rotation lock, to allow the installation and removal of the tool (see Figure B).

The SpheroPlane™ comes fitted with a purpose built 50 mm diameter Tungsten Carbide carving disc, intended for bulk carving and fine carving work. The SpheroPlane™ is also packaged with a 50 mm sanding pad and a range of sanding grit discs, for finishing work.

SPECIFICATIONS

ITEM	SPECIFICATION
Cutting Disc	Ø 50 mm x 8 mm, Ø9.53 mm arbor
Blade construction	Tungsten Carbide (MAN-HW)
Required spindle thread	M14
Required backing flange dia.	Ø 22.2 mm
Maximum rotational speed	12,000 rpm
Minimum sphere diameter	Ø 90 mm
Dust extraction vacuum hose interface	Suits vacuum hose with 35mm diameter internal taper fitting, or 38mm diameter external taper fitting.
Weight	0.72 kg
Dimensions	250 mm x 210 mm x 120 mm

OPERATION

Setup

⚠ WARNING: Before installing the SpheroPlane™ onto an angle grinder or changing discs, disconnect the power plug or remove the battery from the angle grinder.

Ensure that the angle grinder is fitted with a backing flange.

Thread the shaft of the SpheroPlane™ on to the spindle of the angle grinder until the shaft is seated level and centrally on the backing flange.

If necessary, use the Torque Arm and locking button to apply a tightening torque to the SpheroPlane™ shaft (see Figure B).

⚠ WARNING: Before connecting power to the angle grinder and using the SpheroPlane™, conduct the following pre-start safety checks:

1. Ensure that the SpheroPlane™ shaft (3) spins freely within the SpheroPlane™ sleeve (4). Damage due to improper storage or handling may

cause the seizure of bearings.

If the shaft does not spin freely, do not use the SpheroPlane™ and seek maintenance to prevent injury.

2. **Ensure that the SpheroPlane™ shaft is seated firmly on the backing flange for the angle grinder.**
3. Rotate the SpheroPlane™ cutting disc by hand, and **ensure that the tool has no runout or wobble when rotated.** If runout or wobble is present, the SpheroPlane™ is not installed correctly, **Do not use the tool in this condition.**
4. Ensure that the Torque Arm is seated against the body of the angle grinder and that it does not interfere with hand positions on the angle grinder (see Figure F).
5. Always ensure that the angle grinder is fitted with an auxiliary handle.

User instructions

⚠ WARNING: Always ensure that both hands are holding the angle grinder in the designated handhold positions and hands are clear of the Torque Arm.

⚠ WARNING: Always ensure that the workpiece is firmly held in a work holder. Do not use hands to move, support or rotate the workpiece while operating the tool, as this may result in serious injury from contact with the cutting disc.

⚠ WARNING:    Always wear protective hearing and eye protection when using the SpheroPlane™. It is recommended that the SpheroPlane™ is used with suitable dust extraction system to prevent excessive wood dust from becoming airborne. If no dust extraction system is used, breathing protection should be worn.

⚠ WARNING: Ensure that long hair, loose clothing and jewellery are away from the tool. These items can be caught in moving parts and cause serious injury.

⚠ WARNING:  Cutting discs will become hot during/after use and may causing burning. Gloves are recommended for changing of cutting discs to prevent burns.

Follow the directions shown in Figure H-I, for instruction on the correct use of the SpheroPlane™. It is recommended that practise is performed to learn the correct technique.

For carving of bowls (concave spheres)

Begin with an approximately flat workpiece firmly held in a work holder. Expose the cutting disc by adjusting the Guide Base up to the desired carving radius. Mark the centre location of the desired bowl on the workpiece, and sketch the approximate diameter as a guide.

Carve from the centre of the bowl, moving outwards in a spiral pattern. Once a rough bowl shape is formed, use the full surface of the Guide Base to guide the carving into a spherical shape (see Figure H).

Only small incremental adjustments are required to the height of the Guide Base to adjust the depth or diameter of the bowl.

Once the desired bowl shape is created, disconnect the power/battery, and change the carving disc for the sanding disc. If possible, use a lower speed setting to prevent the wood from burning. Adjust the height of the Guide Base to match the radius of the bowl. Begin sanding using a low grit number (coarse) and progressively change to higher grit numbers (finer grits) as the surface finish improves.

For carving of balls (convex spheres)

Begin with the workpiece pre-prepared into an approximate cube or cylinder of the desired proportions and firmly hold the workpiece in a work holder. Set the Guide Base below the height of the cutting disc and to the desired sphere radius (see Figure I). Begin carving the sphere from the edges and working inwards. Rotate the workpiece in the work holder as needed to expose un-carved regions.

Once the desired ball shape is created, disconnect the power/battery, and change the carving disc for the sanding disc. If possible, use a lower speed setting to prevent the wood from burning. Adjust the height of the Guide Base to match the radius of the sphere. Begin sanding using a low grit number (coarse) and progressively change to higher grit numbers (finer grits) as the surface finish improves.

Dust extraction

The SpheroPlane™ is provided with a dust extraction guard (see Figure E), suitable for connection to common vacuum hoses with 35 mm diameter internal taper fittings, or 38 mm diameter external taper fittings.

It is recommended that a dust extraction system, suitable for wood dust, is used to prevent airborne dust when using the tool.

MAINTENANCE

⚠ WARNING: To reduce the risk of serious personal injury, turn the tool off and disconnect the power plug or battery pack from the angle grinder before making any adjustments or removing/installing attachments or accessories.

Cleaning

⚠ CAUTION: Blow dust and wood chips off the SpheroPlane™ after each use. Use only dry compressed air or a clean dry cloth to clean the tool.

⚠ CAUTION: Always wear safety glasses and a mask when cleaning this tool. Never use solvents or other harsh chemicals for cleaning the tool.

Inspection

Inspect the tool before and after every use. Inspect the tool for the following:

- Free rotation of the shaft relative to the Guide Base and bearings. If the shaft does not rotate freely, the tool is damaged and will require repair or replacement.
- Excessive wear of the Guide Base. If the Guide Base has worn significantly, it may affect the behaviour of the SpheroPlane™. A replacement Guide Base may be sourced from Arbortech or an authorised service centre.

Accessories

To reduce the risk of injury, only Arbortech accessories should be used with this product. Recommended accessories for use with your tool are available from your local dealer or authorised service centre.

Repairs

If the SpheroPlane™ is damaged, or excessively worn, then repair or replacement may be necessary. Replacement parts may be sourced from Arbortech or an authorised service centre.

If you need any assistance in locating any accessory, or general tool query please contact Arbortech: www.arbortechtools.com

STORAGE

The SpheroPlane™ is supplied with a permanent carry case that is recommended for storage. Store the SpheroPlane™ in temperatures between 0°C and 40°C in a dry location, away from water and excessive humidity.

WARRANTY AND SERVICE

Arbortech provides a 12-month limited warranty for defects from workmanship or faulty materials on the motor and/or mechanism of our products from the date of original purchase.

For specific warranty details for your region, please consult the Arbortech website:

www.arbortechtools.com

For warranty repair, inspection, service and spare parts, please contact your place of purchase, or contact us directly at:

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UK- Declaration of Conformity

Arbortech declares that the product described in this manual under "Technical Specifications" is manufactured in compliance with standardised documents and following UK regulations:

Supply of Machinery (Safety) Regulations 2008 -The Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment Regulations 2012

Technical file at: Arbortech Pty Ltd, 67 Westchester Road, Malaga, WA 6090, Australia



Sven Blinks

Chief Executive Officer

Arbortech Pty Ltd

EC - Declaration of Conformity

Arbortech declares that the product described in this manual under "Technical Specifications" is manufactured in compliance with standardised documents and in conformity with Machinery Directives: 2006/42/EC; 2011/65/EU.

Technical file at: Arbortech Pty. Ltd, 67 Westchester Road, Malaga, WA



Sven Blinks

Chief Executive Officer

Arbortech Pty Ltd

Disposal

The machine, accessories and packaging should be sorted for environmental-friendly recycling. Only for EC countries: Do not dispose of power tools into household waste! According to the European Directive 2012/19/EU for Waste Electrical and Electronic Equipment and its implementation into national law, power tools that are no longer usable must be collected separately and disposed of in an environmentally correct manner.





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