



SC-90 OPEN GEAR SCROLL CHUCK SC-100 ENCLOSED SCROLL CHUCK INSTRUCTION MANUAL

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V1

carbatec®

10 YEAR
WARRANTY

THANK YOU FOR CHOOSING carbatec®

Carbatec has been a trusted brand for woodworking enthusiasts and professionals across Australia and New Zealand, since 1987.

Our quality woodworking products are designed and built to offer value and performance, making the latest features and technological advancements more accessible to Aussie woodworkers.

Backed by our no-fuss after-sales care and warranty support, you can trust Carbatec to keep you woodworking, as promised.

We look forward to sharing in your woodworking journey!

If you have any questions about our products or service, please call us on **1800 658 111** or email us at support@carbatec.com.au

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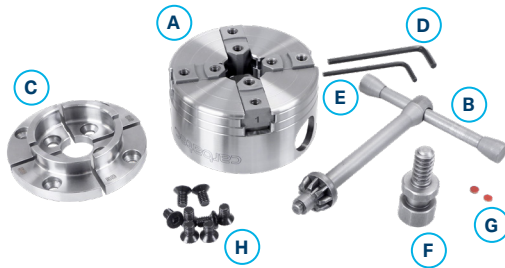
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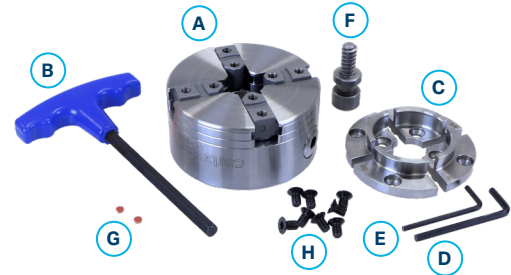
NOTE: The specifications, photographs, drawings and information in this manual represent the current model when the manual was prepared. Changes and improvements may be made at any time, with no obligation on the part of Carbatec to modify previously delivered units. Reasonable care has been taken to ensure that the information in this manual is correct, to provide you with the guidelines for the proper safety, assembly and operation of this unit.

WHAT'S IN THE BOX



SC-90 OPEN GEAR SCROLL CHUCK

- A. Chuck Body
- B. Chuck Key
- C. 50 mm 2" Jaw Set
- D. Hex Wrench 4 mm
- E. Hex Wrench 3 mm
- F. Wood Screw RH
- G. 2 x Fiber Washers
- H. 8 x Jaw Mount Screws M6 x 10



SC-100 ENGAGED SCROLL CHUCK

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These chucks will require a minimal amount of assembly.

1. Remove parts from all of the cartons and lay them on a clean work surface.
2. Remove any protective materials and coatings from the machine and from all of the parts. The protective coatings can be removed by spraying WD-40 on them and wiping it off with a soft cloth. This may need to be redone several times before all of the protective coatings are removed completely.
3. Compare the items above to verify that all items are accounted for before discarding the shipping box.



DO NOT use acetone, gasoline or lacquer thinner to remove any protective coatings.



Please ensure all parts are accounted for. Should anything be missing, please do not use, but contact our Customer Care team as soon as possible for support.

SAFETY INSTRUCTIONS

IMPORTANT! Safety is the single most important consideration in the operation of this equipment. The following instructions must be followed at all times. Failure to follow all instructions listed below may result in serious personal injury.

There are certain applications for which this tool was designed. Do not modify this tool in any way, or use for any other application other than that for which it was designed. If you have any questions about its application, do not use the tool until you have contacted us and we have advised you.

The purpose of safety symbols is to attract your attention to possible dangers. The safety symbols and the explanations with them deserve your careful attention and understanding. The symbol warnings do not, by themselves, eliminate any danger. The instructions and warnings they give are no substitutes for proper accident prevention measures.

 **WARNING**

Be sure to read and understand all safety instructions in this manual, including all safety alert symbols such as **"DANGER," "WARNING,"** and **"CAUTION"** before using this tool. Failure to following all instructions listed below may result in electric shock, fire, and/or serious personal injury.

SYMBOL MEANING



A safety alert symbol Indicates DANGER, WARNING, or CAUTION. May be used in conjunction with other symbols or pictographs.



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



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



Indicates a potentially hazardous situation, which, if not avoided, could result in minor or moderate injury.



(Without Safety Alert Symbol) Indicates a situation that may result in property damage.



Carbatec products bearing the Regulatory Compliance Mark (RCM) have been tested in accordance with applicable Australian/New Zealand Standards to ensure their compliance with all mandatory standards and regulations (applicable at time of original sale). Carbatec Pty Ltd are registered as a responsible supplier with relevant Australian government departments and our products are registered on the EESS & ACMA database.

GENERAL SAFETY

Operating powered equipment can be dangerous. The operator must be familiar with the proper use of this equipment before using it. **DO NOT USE** this equipment unless you fully understand its safe use and limitations. **DO NOT MODIFY** this unit in any way or use for purposes other than it is designed for.

BEFORE USING YOUR CHUCK



WARNING

1. **DO NOT OPERATE** this chuck until you have read all of the following instructions.
2. **DO NOT OPERATE** this chuck until it is **COMPLETELY ASSEMBLED**.
3. **DO NOT USE** the chuck if any **PIECES ARE DAMAGED OR MISSING**.



CAUTION

4. Always wear approved, **SAFETY PROTECTIVE EYEWEAR AND HEARING PROTECTION** when turning.
5. **ALWAYS WEAR A DUST MASK** and use adequate dust collection and ventilation.
6. **WEAR PROPER CLOTHING.**
Do not wear loose clothing, gloves, neckties, or jewellery. These items can get caught in the machine during operations and pull the operator into the moving parts. The user must wear a protective cover on their hair, if hair is long, to prevent it from contacting any moving parts.

7. **ALWAYS DISCONNECT THE LATHE'S POWER** when making adjustments, changing parts or performing any maintenance to the chuck.
8. **THE USE OF ANY ACCESSORIES OR ATTACHMENTS NOT RECOMMENDED MAY CAUSE INJURY** to you and damage the chuck and your machine.

NOTICE

9. **WOOD SHOULD BE SOUND WITHOUT CRACKS, KNOTS, ROT, POOR GLUE JOINTS OR WEAK AREAS.**
10. **ROUGH-CUT THE WORKPIECE** close to the finished shape before mounting on the chuck.



WARNING

11. **TIGHTEN ALL CHUCK AND JAW FASTENERS** before operating.
12. **DO NOT EXTEND THE JAW SLIDES BEYOND THE CHUCK BODY**, or if needed for a project only to a maximum 6.35mm (1/4").
13. Make sure the workpiece is **SECURE AND CENTRED** before operating.
14. **ROTATE WORKPIECE BY HAND** before starting power to check for clearance.
15. **DO NOT TOUCH THE CHUCK OR JAWS DURING USE.**
16. **EXCESSIVE LATHE SPEED IS DANGEROUS!**
Always turn at a safe and reasonable speed.

GENERAL SAFETY

- 17. LARGE OR ODD SHAPED WOOD SHOULD RUN AT THE SLOWEST SPEED FOR SAFETY.**
- 18. IF EXCESSIVE VIBRATION OCCURS**, stop the lathe to check the workpiece, the mounting in the chuck and the lathe for possible causes.
- 19. FREQUENTLY STOP WORKING** to check the chuck and workpiece for any loose parts or safety issues.
- 20. RUNNING THE CHUCK IN REVERSE COULD LOOSEN IT FROM THE LATHE SPINDLE.** If required for your project, check that all grub screws are secure before use and remember to remove grub screw before removing the chuck from the lathe, to prevent spindle damage.
- 21. INSPECT THE CHUCK AND ACCESSORIES BEFORE AND AFTER USE** for excess wear, damage, and to keep all parts clean.
- 22.** Keep these instructions for future reference.

INITIAL SETUP AND OPERATION

A. SPINDLE ADAPTORS

Before installing your insert, make sure the grub screw is removed and the threads on both the insert and chuck body are clean and free of dust and dirt.

1. Carefully thread the insert into the back of the chuck body.
2. The next step is to secure the insert with the set screw through the hole in the side of the body.
3. First, insert the fiber washer into the hole to protect the threaded adaptor from any scratches the set screw might cause.
4. Next, insert and tighten the set screw.
5. The chuck can now be mounted on the lathe.

B. ABILITY TO REVERSE TURN - SET SCREW/SAFETY

1. Both chucks and spindle adaptors include a tapped hole for a set screw to secure to the headstock spindle.
2. This set screw, once tightened, will prevent the chuck from backing off the spindle during reverse turning.

NOTICE

Make sure to loosen set screw before removing the chuck from the headstock. Failure to do so may cause damage to the Headstock Spindle threads.

C. ATTACHING THE INCLUDED JAWS

When you purchase your chuck kit, the included 50mm (2") Jaws will not be attached to the chuck.

1. Before attaching, make sure all parts are clean and dry.
2. Each jaw is attached to the chuck's Jaw Sliders with two hex drive screws.
3. Note that each jaw slider and jaw is numbered 1 through 4. Make sure that you attach the jaw to the same numbered jaw slider.
4. The jaws are positioned/located on the jaw sliders by a locating groove.
5. Once the jaw is positioned in the locating groove, insert the hex screws and hand tighten.
6. Once all eight screws are installed and hand tightened, close the jaws so that all the jaws are in contact with each other.
7. Now, fully tighten all the screws to complete the chuck set up.

D. OPENING AND CLOSING DIRECTIONS

To operate the jaws, insert the provided Chuck Key and;

1. To CLOSE and tighten the jaws, turn the chuck key clockwise.
2. To OPEN the jaws, turn the chuck key anti-clockwise.

GENERAL USE

A. DOVETAIL RECESS

1. When using the chuck in expansion mode, you will need to create a dovetail recess in the bottom of your work.
2. For the best hold, the diameter of the recess should be only slightly larger than the diameter of your chuck jaws in the closed position.
3. This will give you the most surface contact between the jaws and work piece.
4. The walls of the recess should be angled to match the outside of the chuck jaws.
5. This is best accomplished using a dovetail scraper.
6. The depth of the recess should be no less than 5mm (~3/16") for smaller work and no greater than 13mm (~1/2") for larger work.

B. WOOD SCREW

A Wood Screw is included with both the SC-90 and SC-100 chuck versions. This is a cylindrical screw with special large coarse threads that is used to secure bowl blanks for initial turning. The Wood Screw is held in the chuck by closing the sliders onto the boss of the screw. This will provide secure holding of the Wood Screw and prevent it from pulling forward during turning.

1. In use, find the centre of the work piece and drill a 14mm (~9/16") deep hole, either 8mm (~5/16") for hardwood or 7mm (~9/32") for softwood
2. The Wood Screw is not intended for large pieces or end grain orientation.
3. Maximum blank size should be 250mm (~10") diameter by 100mm (~4") and the maximum speed should not exceed 600RPM.

C. TENONS

1. When using the chuck in compression holding mode, you will need to create a tenon on the bottom of your work.
2. For the best hold, the diameter of the tenon should be only slightly larger than the diameter of your chuck jaws in the closed position.
3. This will give you the most surface contact between the jaws and work piece.
4. The tenon can be made larger but there will only be contact with the jaws on the corners.
5. The tenon length should not exceed 13mm (~1/2").
6. The tenon should not touch the inside bottom of the chuck.
7. The tenon should have a clean shoulder that registers against the top of the chuck jaws when fully inserted.

MAINTENANCE

A. GENERAL MAINTENANCE

The SC-90 and SC-100 chucks require very little maintenance, though they should be inspected regularly for any signs of wear or damage. Chucks should be regularly cleaned.

1. The gears of the open backed SC-90 should be inspected more frequently for dust and debris build up.
2. The shield on the back of the SC-100 should prevent most of the dust from getting into the gears, though it should still be inspected and cleaned regularly.
3. If any damaged or worn parts are found, discontinue use until those parts are repaired or replaced.
4. If the gears become stiff or difficult to move, there is likely a build-up of dust or debris. Cleaning the chuck should resolve the problem.

B. SC-90

TO DISMANTLE:

1. Start by removing the circlip at the back of the chuck body. Use caution removing the circlip as it is under tension.
2. Once the circlip is removed, turn the chuck over so that the back of the body is facing down.
3. Gently tap the top of the chuck so that the scroll gear drops free. Make sure to catch the gear so that it is not damaged.
4. Once the gear is removed you can slide all the jaw slides out of the body.
5. Now that the chuck is disassembled, you can remove all the grease and debris.
6. Once cleaned, apply multipurpose grease to the scroll gear.

TO REASSEMBLE:

1. Install the slides into their grooves. The slides can go into any groove, and it will not impact performance.
2. Install the slides in numerical order in a clockwise order. For example, if you insert the #1 slide in the 12 o'clock position, then the #2 slide will go in at the 3 o'clock position.
3. Make sure all the slides are slid all the way into the body and touching.
4. Turn the chuck over and install the scroll gear.
5. You may have to rotate the gear by hand to get it to mesh with the slide.
6. Once the scroll gear is correctly installed, reinstall the circlip.
7. Using the Scroll Chuck Key, make sure everything moves smoothly.

C. SC-100

TO DISMANTLE:

1. Start by removing the circlip at the back of the chuck body. Use caution removing the circlip as it is under tension.
2. Remove the backing plate by prying it out with a small flat head screwdriver.
3. Remove the two pinions from the outside of the chuck.
4. Turn the chuck over so that the back of the body is facing down. Gently tap the top of the chuck so that the scroll gear drops free.

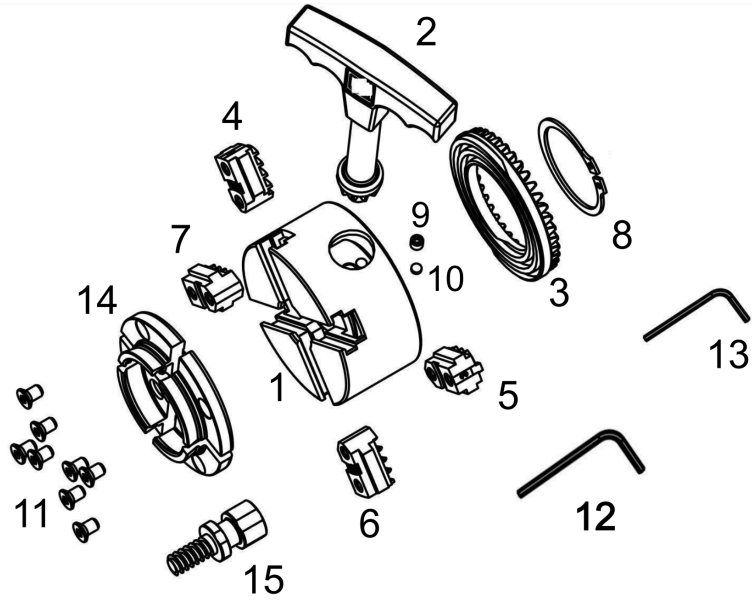
MAINTENANCE

5. Make sure to catch the gear so that it is not damaged.
6. Once the gear is removed you can slide all the jaw slides out of the body.
7. Now that the chuck is disassembled, you can remove all the grease and debris.
8. Once cleaned, apply multipurpose grease to the scroll gear.

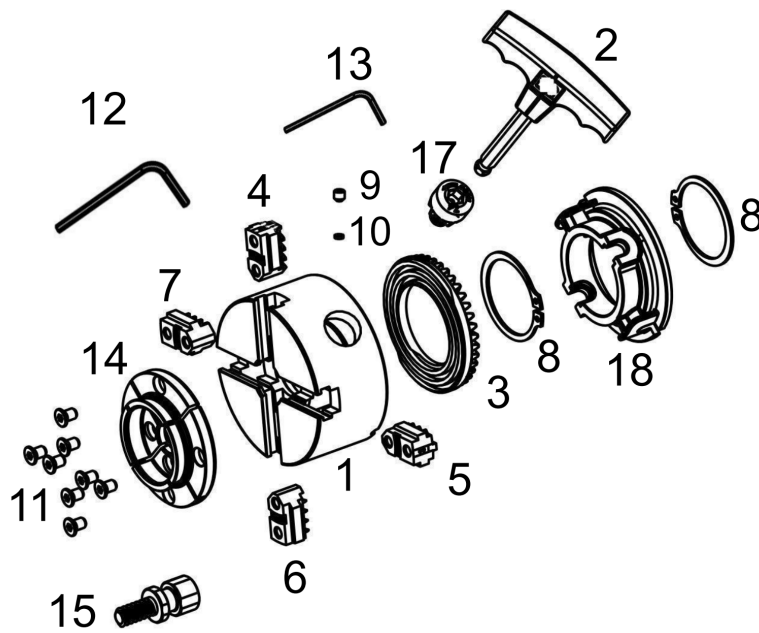
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4. Make sure all the slides are slid all the way into the body and are touching.
5. Turn the chuck over and install the scroll gear.
6. You may have to rotate the gear by hand to get it to mesh with the slides.
7. Once the scroll gear is correctly installed you can reinstall the pinions.
8. Next, install the backing plate. Before reinstalling the circlip, rotate the pinions with the chuck key to make sure there is no binding.
9. Now reinstall the circlip and your maintenance is complete.

PARTS DIAGRAM



SC-90 OPEN GEAR SCROLL CHUCK



SC-100 ENCLOSED SCROLL CHUCK

PARTS LIST

SC-90 OPEN GEAR SCROLL CHUCK

PART #	DESCRIPTION	PART #	DESCRIPTION
1	Chuck Body	9	Hex Grub Screw M6x6
2	Chuck Key	10	Fiber Washer
3	Scroll Ring	11	Jaw Mount Screws M6x10
4	Slider 1	12	Hex Wrench 4mm
5	Slider 2	13	Hex Wrench 3mm
6	Slider 3	14	50mm (2") Jaw Set
7	Slider 4	15	Wood Screw RH
8	Circlip		

SC-100 ENCLOSED SCROLL CHUCK

PART #	DESCRIPTION	PART #	DESCRIPTION
1	Chuck Body	10	Fiber Washer
2	Chuck Key	11	Jaw Mount Screws M6x10
3	Scroll Ring	12	Hex Wrench 4mm
4	Slider 1	13	Hex Wrench 3mm
5	Slider 2	14	50mm (2") Jaw Set
6	Slider 3	15	Wood Screw RH
7	Slider 4	17	Pinion
8	Circlip	18	Backing Plate
9	Hex Grub Screw M6x6		

ACCESSORIES AVAILABLE

NOTICE

The following details on accessories are intended as a guide only and should not replace formal training nor experience in safe woodturning practices.

Jaws can be replaced by following the same procedure used for installing your included 50mm Jaw set. Please ensure the number on the jaw is matched to the number on the slider.



SC-J-100 SCROLL CHUCK 100MM JAW SET

- For medium to larger turning projects and can be used at speeds up to 680RPM.
- They feature an internal clamping capacity of 56 mm to 77 mm square stock, or 78 mm to 99 mm round stock. With this setup, a foot diameter of 85 mm is best and up to 12 mm in depth for the maximum jaw contact, to allow bowls up to 310 mm in diameter to be turned.
- With an expanding grip hold, that range extends from 97 mm to 118mm, therefore the best recess diameter is 97 mm for maximum jaw contact, with the full 9 mm of recess depth. In this configuration, bowls up to 360 mm in diameter and 125 mm deep/thick can be turned.



SC-J-130 SCROLL CHUCK 130MM JAW SET

- Allows secure mounting of your largest turning projects used at a maximum of 400RPM.
- They feature an internal clamping capacity of 77 mm to 97 mm square stock or 107 mm to 128 mm round stock. With this setup, a foot diameter of 109 mm is best and up to 12 mm in depth for the maximum jaw contact, to allow bowls up to a massive 750 mm in diameter to be turned. Note that the dovetail pitch is steeper on this jaw set.
- With an expanding grip hold, that range extends from 127 mm to 147 mm, therefore the best recess diameter is 128 mm for maximum jaw contact, with the full 9 mm of recess depth. In this configuration, bowls up to 750 mm in diameter and 75 mm deep/thick can be turned.

ACCESSORIES AVAILABLE



SC-J-75S SCROLL CHUCK 75MM STEP JAW SET

- Designed for maximum versatility in project size, from a single set of jaws. Used at speeds up to 680RPM.
- The internal clamping capacity on the smallest ring is 30 mm to 51mm square stock or 41.5 mm to 62.5mm on round stock, with a 42mm foot being best practice. The middle step allows 36 mm to 57 mm square stock or 50.5 mm to 71.5mm round stock, with best practice of a 51mm foot. The largest step will allow 45 mm to 66mm square stock or 63.5 mm to 83.5 mm round stock, with a 64mm foot being optimal.
- The expanding capacity is limited to the single outer most profile, which provides a 77.5 mm to 97.5 mm capacity. A 79mm recess will provide the most contact with the jaw faces for the most secure hold. In this setup, bowls up to 360 mm and 100 mm in depth can be turned.



SC-J-LN SCROLL CHUCK LONG NOSE JAW SET

- Feature an extra-long 50 mm "nose", allowing for exceptional reach into your project. Maximum speed of 750RPM in expanding hold, or 600RPM in clamping hold.
- The internal serrations provide a sure-grip while clamping down on square stock from 29 mm to 50mm. Round stock of 40 mm to 60 mm is also catered to, but recommended for end-grain only on these jaws.
- The outer dovetail profile also allows an expanding hold capacity of 54 mm to 73mm and can be used for bowls up to 200 mm in diameter and 100 mm in depth. A 56 mm recess diameter is ideal.

ACCESSORIES AVAILABLE



SC-J-PEN SCROLL CHUCK PEN JAW SET

- For the specific need of accurately drilling pen blanks. The heavy and long profile provides a solid and secure clamping mount for your pen blank, used in conjunction with a morse taper drill chuck and drill bit in the tail stock (sold separately), to ensure a vibration-free and accurate drilling process - critical to the fine tolerances required in crafting high quality pens.
- These jaws provide a clamping capacity of 10 mm to 25.4 mm in square stock or 11 mm to 19 mm in round stock.



SC-J-PIN SCROLL CHUCK PIN JAWS

- Ideal for smaller turning projects such as finials or pepper mills. The small but long profile of the pin jaws allows the turner to fully insert them into a matching recess, for a very strong hold.
- The internal clamping capacity is 7 mm to 28 mm in square stock, or 10 mm to 31 mm in round stock. Always use the maximum spigot length possible to hold in this mode, which is 32 mm. Max stock size is 150 mm by 25 mm, at up to 1400 RPM.
- The expanding capacity is 25 mm to 46 mm. For full insertion and the strongest hold, a 26mm diameter hole should be bored. In this setup, work up to 300 mm in diameter by 75 mm deep can be turned at a maximum of 680RPM. Using just the dovetail profile on a matching recess (ideally 26 mm by 4 mm), bowls of 150 mm by 50 mm can be turned at a maximum speed of 680RPM.

ACCESSORIES AVAILABLE



SC-I-M30 SCROLL CHUCK INSERT M30 X 3.5

- Solid steel insert designed to fit our Carbatec range of chucks, for fitment to any lathe with a metric M30 x 3.5 thread spindle.



SC-I-1X8 SCROLL CHUCK INSERT 1" X 8TPI

- Solid steel insert designed to fit our Carbatec range of chucks, for fitment to any lathe with an imperial 1" x 8TPI thread spindle.



SC-I-1 1/4 X 8 SCROLL CHUCK INSERT 1-1/4" X 8TPI

- Solid steel insert designed to fit our Carbatec range of chucks, for fitment to any lathe with an imperial 1-1/4" x 8TPI thread spindle.



SC-SCREW SCROLL CHUCK WOOD SCREW

- Included with your chuck and available separately as a replacement.
- Designed to be bedded in your chuck when fitted with the standard 50mm Jaws. It provides a secure way to quickly mount your timber blank for initial turning or roughing out, such as the outside of smaller bowls or platters. You can then safely turn an external or internal foot for reverse mounting in your chucks' dovetail jaws, for turning the inside of the project.
- See page 9 for more details on the Wood Screw.

10 YEAR WARRANTY

WARRANTY

- A. We warrant that this Carbatec product will be free from defects caused by faulty workmanship or faulty materials for a period of 10 years from date of sale.
- B. This warranty is in addition to other rights and remedies you may have under a law in relation to the goods.
- C. This warranty does not apply in any of the following cases:
- i. Defects arising from:
 1. fair wear and tear;
 2. corrosive atmosphere;
 3. damage or injury caused by deliberate act, lack of care or failure to comply with the recommended care and maintenance for the goods;
 4. improper use of the goods;
 5. alterations or repairs (not made by us) to the goods;
 - ii. defects arising from an event outside of our control such as fire, flood, earthquake or other natural calamity, motor vehicle or other accident, strike, civil unrest, terrorism or war;
 - iii. to accessory items such as after-market jigs, accessories or other items which are not sold or serviced by us and which are not sold with or were not included with the main unit purchased; or
 - iv. to wearable parts such as drive belts/shafts, bearings, bandsaw tyres, motor brushes, blades or abrasive belts/discs or other cutting or machining implements.
 - v. damage caused to any electrical component, where connected to a power supply outside the country for which it was designed (namely Australia or New Zealand).
- D. If this warranty applies and you have complied with the procedure below for making a claim, we will, at our election, either repair the goods (or those parts of the goods recognised as defective) or will provide a replacement within a reasonable time at our expense.
- E. If this warranty applies, the procedure for making a claim is:
- i. you must contact us by email;
 - ii. you must include in the email the following

information:

1. a copy of the order or receipt for the goods;
 2. the serial or batch number printed on the machinery manufacturing plate; and
 3. a detailed description of the fault and how and when it arose; and
 4. If the fault is a type covered by this warranty, we will then make arrangements with you for the return of the goods to us (for repair or replacement) at our cost using our transport providers or we may decide to attend at your premises to repair or replace the goods.
- F. Our liability (and that of our resellers) under this warranty is wholly limited to repair or replacement of the goods (or those parts of the goods recognised as defective) in accordance with the procedure above and you have no right to other compensation, costs or damages under this warranty. But this does not mean that you may not have other rights under a law in relation to the goods.
- G. If following our inspection of goods returned by you under this warranty it is found that this warranty does not apply and you are not otherwise entitled to repair or replacement by us, you must, if requested by us, reimburse our costs including parts, labour and freight.
- H. This warranty is not transferable and only the person who purchased the goods may make a claim.

Where the goods have been exported outside Australia or New Zealand, the Company may not require the Purchaser to return any allegedly faulty or defective Product for evaluation. However, the Company has the right to request the return for evaluation at purchasers cost.

STATUTORY NOTICE

Our goods come with guarantees that cannot be excluded under the Australian Consumer Law. You are entitled to a replacement or refund for a major failure and for compensation for any other reasonably foreseeable loss or damage. You are also entitled to have the goods repaired or replaced if the goods fail to be of acceptable quality and the failure does not amount to a major failure.

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10 YEAR
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