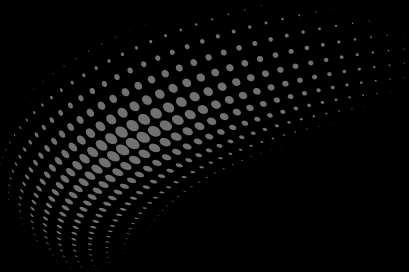


THE ULTIMATE CIRCLE AND RADIUS
GUIDE SYSTEM FOR ROUTERS™

RADCUT®



INSTRUCTION MANUAL
+
THE ULTIMATE RADIUS CUTTING GUIDE

We know how boring instruction manuals can be sometimes. We also know that many manuals read like they've been written by someone with the verbal ability of a 3-month-old goat. We realise that as a result of this, many people either never bother to read instruction manuals or struggle to understand them due to poor layout and lack of logic and clarity. We've tried to do things differently. We've deliberately designed this manual to be as concise and clear as possible, including by testing it for clarity with people unfamiliar with Radcut. This does not change the user requirements stated in this manual: inexperienced adults may use Radcut only under the direct supervision of a competent, experienced adult.

This is more than just an instruction manual; it's also a pretty comprehensive guide on how to cut radii and circles with a lot of tips and tricks that will make doing so significantly easier. Like with all tools, using the Radcut kit to its full potential is as much about user techniques as the tool's functionality; this combination will maximise your use of Radcut's functionality. Radcut has a lot of functionality and design features and we've outlined some really useful techniques in this manual. Moreover, great care has been taken to ensure this manual is presented in a specific order to maximise the concepts explained here. This is reflected in the fact that - *as any experienced carpenter will tell you* - the order in which things are done when building something matters, and the right order can make the difference between a job being easy or difficult - and cutting radii is a lot easier than people think. There's nothing worse than getting half-way through a job and realising that a step was missed which means things have to be undone ...well, maybe terminal illness is worse but you get the idea!

We've tried to keep the manual at least mildly interesting and apologise in advance for the occasional terrible joke that may be included. We understand you may be tempted to not bother reading these instructions but our stance is clear; do not use Radcut until you have read this manual in full - as much for safety as anything else. Trust us: even if you're a seasoned chippy, there will be information in here that will make using Radcut - *and radius cutting* - a lot easier and may also make end results better too.

Don't be worried by the number of pages in this guide either: there are lots of large pictures and readable-size text, and because Radcut is flexible, has lots of functionality and is designed to be used with a multitude of tool types, naturally, all this takes up more pages, but we've included prompts throughout the manual that tell you what page you can jump to next.

Golden rule: Using Radcut is easy once you know how, so if at any point you find it's a struggle to use any part of it or you don't know what a part is for, **READ THE MANUAL!** Do not skip sections unless we specifically state to 'now go to XX page' somewhere - we haven't written anything unnecessary in this manual!

We'd like to thank you for choosing Radcut and we hope it provides you with many great results!

P.S: We don't want to nag, but read these instructions fully before use ...*really!*

Contents

Overview:

- 4 What Radcut is
- 4 Who may use it
- 5 How to use this manual

Safety:

- 6 Overview, PPE, personal readiness, general set up, good practice
- 11 Radcut kit contents and specifications
- 13 Compatible tools and other required (*not supplied*) tools

Attaching tools to Radcut:

- 16 Compact routers with fixed base and edge guide knob
- 22 Routers with bases equipped with trammel sockets
- 32 Jigsaws with parallel guide slot

Radius work: (Understanding, calculating, setting measurements)

- 43 Fundamentals
- 45 Technical
- 46 Correct cutter edge: Internal or external radius cuts
- 53 Mechanically adjusting Radcut
- 65 Cutting radii larger than Radcut's track length - multiple options!
- 67 Component pin connections - the easy way

- 87 Sheet material anchoring

- 88 Pivot points
- 95 How to cut a full circle using FP1
- 101 Pre-power checks

Making cuts:

- 102 Plunge-base router-powered cuts
- 104 Fixed-base router-powered cuts
- 106 Jigsaw-powered cuts
- 108 Starter openings for fixed-base power tools

- 110 Knowing when to stop

- 111 Inspection, cleaning, storage and disposal
- 112 Trouble shooting
- 113 Product and incident record

Useful tips and tricks: (A few extras we thought might be helpful)

- 114 Approximate diameter finding
- 115 Finding the centre of a circle
- 117 Establishing the radius of a pre-existing arch

What is Radcut?

Basically it's a giant compass. However, while a standard compass guides a pencil or pen to draw a circle or radius, Radcut instead guides a compatible power tool to cut a circle or radius. For its pivot point, Radcut utilises a screw screwed through its pivot point hole into a position you choose on your sheet material. As an alternative, instead of a screw, our floating pivot FPI (included) removes the need to puncture a work surface to create a pivot point anchor and does not require a vacuum set up - but we'll get to all that shortly!

Radcut features a built-in measurement system which, for ease of maths, measures outwards from the centre (zero) point, allowing you to quickly and accurately set or alter a desired radius using a combination square (not supplied), while automatically factoring in a chosen cutter's diameter. The system also allows measurements to be easily set depending on whether you are cutting an internal or external radius - if you've never cut radii before, don't worry - all this nonsense will be explained shortly!

Radcut is a patented system created by tradespeople for tradespeople and as touched upon at the beginning of this manual, the more that correct user techniques are employed, the more versatile Radcut becomes and the quicker it is to use. We will cover the fundamental uses of Radcut and useful techniques in this manual.

Who may use Radcut

Competent professional users and experienced adult DIY users. Inexperienced adults only under the direct supervision of a competent, experienced adult. Radcut is not a toy. Keep all components, pins and clips away from children.

How to use this manual

Do not proceed with using Radcut until you have read and understood every required section of this manual. Read this manual in order. Depending on what you are doing with Radcut, throughout the manual we will prompt you as to when you can jump to a new section without missing anything important. So we're clear here, you must read all sections you are directed to in order and in full. If there is not a specific instruction that says what to read next, assume every line that follows is essential reading. Do not skip or fail to read any section which relates to any power tool you are actually intending to use with Radcut or any set up you are planning to create using Radcut. If you plan to use more than one type of power tool or set up with Radcut you must read all sections related to every type of power tool you plan to use and every set up you plan to create. In addition to this manual, you must also read all instructions that relate to the power tool and cutter/blade type you are intending to use with Radcut, and every data sheet for all materials you plan to cut - **this manual is not a replacement or substitute for any of those instruction manuals or data sheets - you must treat those as primary guidance!**

IMPORTANT

An important distinction must be made between plunge routers and fixed-base routers. Some models of trim router with a fixed base can for example be turned *into* a plunge router by replacing its fixed base with a manufacturer-approved plunge base for that specific model of router. There are large fixed-base routers and large plunge routers - these are not the same devices and should not be confused - don't assume that because you have a "router" that it is automatically designed to perform live plunges. Radcut can connect to appropriate fixed-base *and* plunge-base routers as well as jigsaws and smaller routers. With Radcut, only a compatible plunge router, or a compatible router fitted with a manufacturer-approved plunge base and a cutter expressly suitable for plunge entry, may make a face-started plunge entry. When attached to Radcut, a fixed-base router or jigsaw must never be used for a live plunge entry; start only from an accessible edge or a prepared starter opening.

This manual covers the use of fixed and plunge-base routers and jigsaws and it is important to note that the instructions you will read in the coming pages outline different procedures and guidance for each tool type. Moreover, trim routers equipped with plunge bases can, for example follow the instructions for 'Plunge routers' because the plunge base for a trim router enables it to perform live plunge actions safely, however if or when that *same* trim router is equipped with a fixed (non-plunge) base, it must *then* be treated as a non-plunge router and only follow the non-plunge router instructions despite being the same core router body.

Safety first - the tough love section!

This instruction manual and the Radcut system are the result of many years of experience. We therefore say this manual is essential reading regardless of experience level because it explains what we designed into Radcut and why, along with great user techniques. We will also offer some general good practice safety guidance on the clear understanding that it does not replace or supersede the safety instructions for a specific tool or negate the need to read and follow them - those instructions must be followed at all times for the tool you choose to use with Radcut. Moreover, those instructions must be treated as the primary instructions to follow for that tool. The information we offer in this section is offered in good faith as additional guidance and must never be treated as the only guidance to use or follow. Remember: this instruction manual is specifically for Radcut - not for any power tool associated with its use.

As outlined on an earlier page, do not confuse fixed-base and plunge-base routers - they are not the same things and the differences in their use, capabilities and limitations must be understood clearly and approached accordingly prior to use.

None of this is rocket science - if it was we wouldn't be doing it! We may like to crack the occasional terrible joke in this manual (sorry about that!), but we take what we do very seriously. Radcut was designed to make the task of cutting radii/curves easier and quicker - and believe it or not, radius work is actually simpler than square work. No job has to be so complex it becomes too difficult. It's about being methodical, planning a job/thinking it through and then following a plan in the right order.

Planning and correct technique reduce risk, but serious residual hazards remain. Stop if the setup or task cannot be controlled safely. Do not be afraid of power tools, but do not disrespect them either. Before every single use of any tool or power tool, look at the tool and the surrounding area while thinking about what you plan to do, then ask yourself some simple safety-orientated questions every single time before you touch the tool or any power switch. These questions should include:

'How could I injure myself on this tool or task; what could go wrong?',
'Where will this tool's cutter or blade be at every stage of use?'
'Where are my *and other people's* limbs and digits going to be at that time?'
'Can I *and how do I* stop the tool if anything goes wrong?'
'Do I know the tool manufacturer's normal stop control and how to isolate the tool safely?'

Asking these sorts of questions is a habit that is easy once you start doing it, it takes seconds, and, while these questions are not a conclusive list of things you should ask yourself, they can help to keep you safe.

Read all instruction manuals thoroughly. If you are struggling or something isn't fitting or working easily in the way it should, then it's likely you have missed something or there is a much easier - *and safer* - way to accomplish a task. A tool is there to make life easier - if you are straining to use it, forcing it, breaking a sweat while using it, getting poor results or worrying about what might happen, you are likely doing something wrong, or doing something you shouldn't be doing - and that can go wrong much quicker than you can react to it.

Lack of knowledge is not failure: pretending while not understanding how to do something and then going ahead anyway and messing things up is.

Do not take unnecessary risks or shortcuts to achieve something - if you're having to do that - or doing any task with an awkward, uncertain or grimacing look on your face or uncertain feeling, you've likely missed something and are taking or about to take a risk that you really shouldn't. Do things properly. Trust your instincts - if something doesn't feel right, stop and figure it out. If in doubt, ask someone who knows better.

DO NOT RUSH ANY TASK regardless of who is piling pressure on you. Rushing is the way to an accident. At Radcut, there is one speed only: safe and methodical - a safe speed often feels slower but it is actually quicker than rushing - especially when rushing makes mistakes more likely.

When working with any tool or power tool, visually and physically inspect it every time before use. When you start it up, LISTEN TO IT and pay attention to how it feels and behaves. If you are unsure or new to a task, get someone experienced to observe you working and reassure you or fine tune your techniques if need be. Perform practice runs on scrap material and familiarise yourself with how a tool and task is supposed to sound, feel and behave when it is running normally. Judgement develops through controlled practice and attention to the finer details of what the tool is doing. Remember that different materials and material thicknesses behave and react differently to being cut, and the speed at which a tool can cut differs depending on the material and cutter or blade type. However, if a tool or machine's sound, feel or behaviour changes suddenly during use, or is - *or becomes* - unpredictable, or if a tool vibrates excessively, doesn't behave as expected, sounds or feels like it is struggling or something suddenly starts to feel different PAY ATTENTION, STOP IMMEDIATELY AND FIGURE OUT THE ISSUE!

Note that even though power tools are often loud, you can often hear and feel changes in their behaviour even when those changes are subtle. Paying attention to the fine points and subtleties of a task or operation is the difference between good and excellent.

Do not drill, grind, reshape or otherwise modify Radcut or the power tool. Do not use wedges or improvised spacers.

Do not use Radcut if any part of the system obstructs a guard, switch, handle, base, lock, extraction connection, safe grip or line of sight.

Radcut guides the path.

You still control the power tool.

Radcut guides a correctly selected and attached compatible handheld router or jigsaw along a set radius. The operator must still hold, start, stop, feed and control the power tool as they would if they were using it *without* Radcut connected to it: use the same degree of care, concentration, competence and precautions required to safely operate a power tool as you would without Radcut attached to it - this includes not visiting the pub at lunch time prior to using Radcut! ...yes we have been in the game for years and we know what goes on! Do not use Radcut or the attached power tool if you are affected by alcohol, drugs, medication, illness, fatigue or any condition that may impair judgment, coordination or control.

Do not use Radcut nor any power tool with it unless you are confident and competent to operate both Radcut AND the power tool - note: feeling confident without competence is a fool's game: confidence is NO SUBSTITUTE for competence - if in doubt, get trained!

Ensure the guide system and attached router or power tool are properly secured before use to prevent accidents - follow these instructions to do that.

Do not use this guide system for any purpose other than its intended use.

Misuse may result in injury or damage.

Avoid contact with electrical sources to reduce the risk of shock or fire.

General PPE and personal readiness

Wear suitable eye protection.

Use suitable extraction and RPE where required by the tool/accessory instructions, material type, task assessment or law.

Wear suitable hearing protection. Do not use earbuds, headphones or anything that can prevent or limit your ability to hear machinery in use.

Secure hair, jewellery and loose clothing. As per HSE guidance, do not wear operating gloves near a rotating cutter.

WARNING

Radcut is a directional guide, not a safety device. It is not a guard, stabiliser, restraint or anti-kickback device. Attaching Radcut does not make a router or jigsaw safe and does not prevent loss of control, nor does it remove the normal hazards or behaviour of any power tool.

General setting up and good practice

Use a flat, level (horizontal), stable, secure and adequately sized work surface/bench in a dry, well-lit, well-ventilated, controlled area.

Use appropriate footwear, keep secure footing and a controlled stance through a complete sweep - do not lean too far or over-reach - instead reposition yourself to a safer, more controlled stance.

Sawdust can be incredibly slippery - do not be fooled by it. Painted or polished concrete or varnished timber floors are just two types of many floor surfaces that can literally behave like ice to walk on when covered even just lightly in sawdust - really! Keep your work area clean and keep the floors you walk, stand and work on free of dust.

Use proper dust extraction appropriate to the material and task and remove combustible clutter.

Inspect all material you plan to cut - look especially for deformities, protrusions that might snag on your tools, and any screws, nails, staples or other detritus that may be embedded in your material which may catch in a cutter or injure you.

Keep bystanders outside of the full tool-and-track sweep area.

Be aware of what is underneath (supporting) what you are cutting so you don't injure yourself, someone else - or cut through a table, bench or something else you shouldn't!

It sounds obvious, but don't put your hand underneath where a cutter or blade will travel—even very experienced people do it without thinking, and the result isn't pretty!

Do not allow anyone to distract or interrupt you when using any tool. Best practice is to operate a workshop or work area rule of never talking to, distracting, surprising or approaching any operator from behind when they are working with any tool. Unless it's an emergency, wait until they are finished before talking to them and even during an emergency only approach them from the front - again, never from behind.

Never work alone - think: if you injure yourself who will assist you? - if you cut off a finger, exactly how will you dial for an ambulance? ...that joke's to the memory of the great Rik Mayall!

Route power leads and extraction hoses so that they cannot snag, pull the tool, catch an extension or cross a cutter or blade's path. Stop immediately if extraction fails, blocks, disconnects, becomes ineffective or obscures the cutting path, or if the hose or lead pulls, catches or enters the sweep. Isolate the tool, restore effective extraction or re-route the lead or hose, then complete a new isolated dry sweep before restarting.

Measure twice and cut once - every time: check your measurements at least twice prior to cutting. By doing this, if something doesn't work out with a measurement you will be more likely to spot it before a cut. If something doesn't fit after you've cut it, don't dwell on the fact it went wrong - instead work out *why* it went wrong. Take the time to do some detective work and re-trace your steps or reverse engineer what you've done. When you figure out what happened (and you will) you'll feel more in control of everything and your mind will be clearer. In turn you'll be able to create better results and better ways of working. It will also be easier to repair a mistake when your mind is clear and you'll learn to identify what to look out for before something goes wrong. End results are as much about planning as they are about execution.

Protect the workpiece surface

Radcut must sweep across or over the workpiece. Radcut components, or dust/chips trapped beneath them, may scratch, scuff or mark the surface. Do not use Radcut directly on an unprotected delicate finished or easily scratched surface. Before use, clean and inspect Radcut and the workpiece.

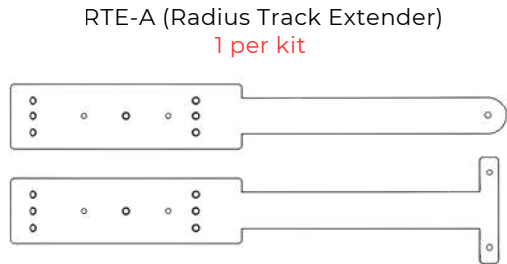
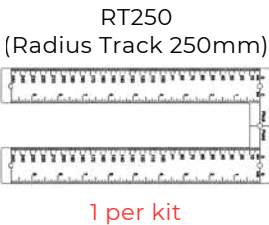
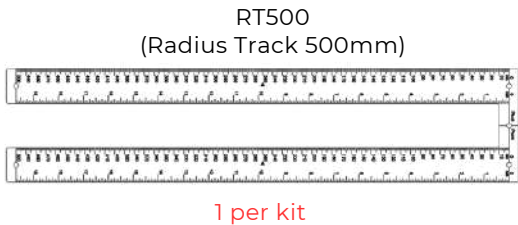
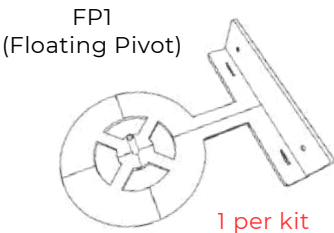
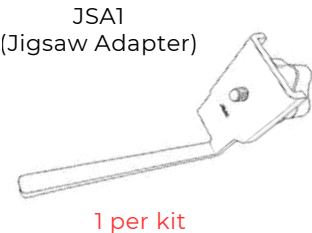
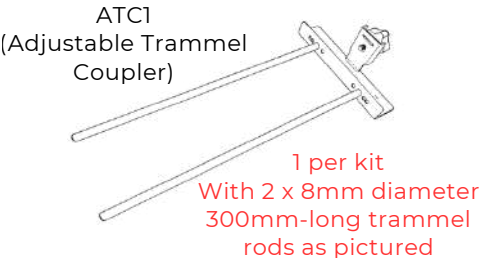
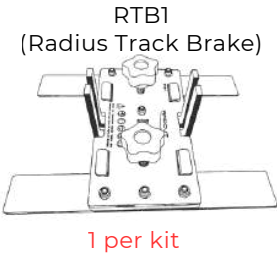
The user is responsible for assessing and protecting the finish: if there is any risk, do not use Radcut or apply suitable clean, secure, non-abrasive protection that will not affect stability, measurement, clearance or free movement. Test protection on an inconspicuous area where appropriate.

Stop if any part drags, traps debris or begins to mark the workpiece.

NOTE: Radcut is not suitable for jobs that require edge lamination after a cut unless a small router is directly attached to RTB1 - we will explain connecting these two items further in.

Radcut kit contents

Each Radcut Pro kit contains the following:



The Radcut system is modular and is designed to cater for a variety of different set-up applications. As a result not all pieces will be used at the same time. Carefully unpack all elements of the Radcut kit and inspect them to ensure there is no damage or other issues.

Remember this golden rule: If at any point it is a struggle to use or assemble the Radcut kit, or if pieces do not connect together easily (as instructed) then something is wrong. Stop: inspect kit for any damage and re-read the instructions, double checking your process / order of assembly as you go.

We also have user instruction videos for using Radcut which can be watched at www.radcut.co or via this QR code:

The videos are not a substitute for reading this instruction manual: this manual must be read in full!



Specifications

Radius capabilities:

15 mm* minimum internal radius using a screw as the pivot.

65 mm* minimum internal radius using FP1 as the pivot.

Radcut has no universal maximum radius. Use only a configuration that remains rigid, stable, fully supported and controllable throughout the complete intended sweep. Do not use any configuration if any part bends, twists, sags, strains, drags or becomes difficult to control. Cutter, blade and clearance limits depend on the connected tool, accessory and Radcut configuration.

**Minimum radius depends on the chosen setup, the type and size of cutter, and whether an internal or external cut is being performed.*

Kit weight: 4 kg.

NOTE: What we will explain throughout this manual with illustrations and pictures does not include dust extraction in the images - this is because dust extraction included in the images would potentially block your view of what we are illustrating - this does not imply that we suggest using Radcut without suitable dust extraction.

Therefore, DO NOT TAKE OUR ILLUSTRATIONS AND PICTURES AS LITERAL IN TERMS OF PPE OR EXTRACTION; follow your manufacturer's instructions at all times for all materials, tools and cutters. Treat those as primary instructions and always use dust extraction and relevant personal protective and respiratory equipment wherever advised by your tool manufacturer, cutter manufacturer and material data sheets!

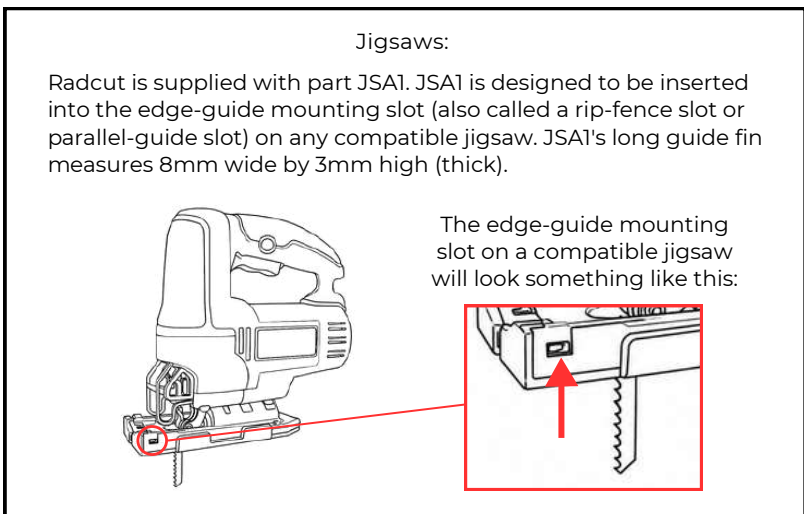
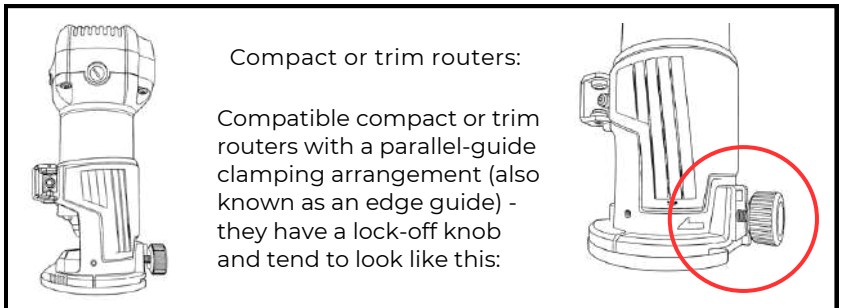
Illustrations of the Radcut tool may omit non-safety-critical cosmetic details. The supplied product must match the attachment methods, components and safety features shown. If an interface, fixing or safety-relevant feature differs, do not use Radcut and contact

radcut@protonmail.com

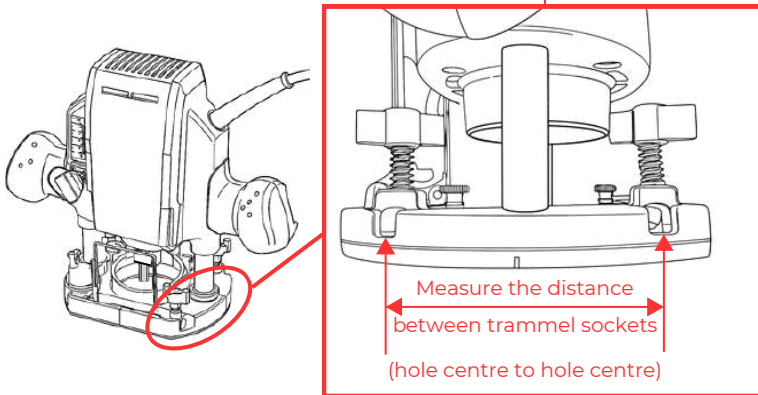
What tools may be used with Radcut?

The quickest and most versatile set up for use with Radcut is one which involves compatible handheld plunge routers and router trimmers with plunge bases. Compatible routers and router trimmers with fixed bases and compatible handheld jigsaws may also be used with Radcut, but a different use technique is employed for safe use of fixed-base tools versus plunge-base routers - we will explain all in this manual. Regardless of tool type, all tools used with Radcut must do so by employing the use of their existing factory guide interfaces. So we're clear here, if your tool does not easily, comfortably and securely connect to Radcut, do not use it with Radcut!

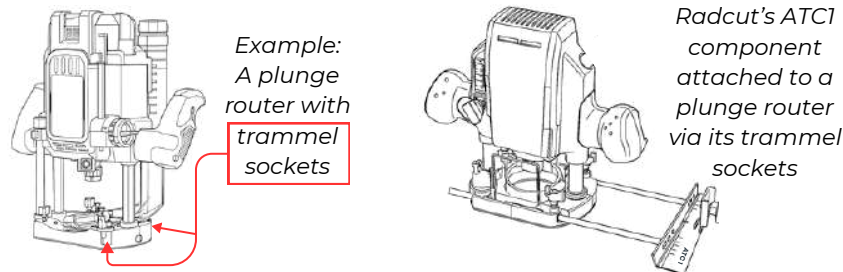
There are many models and brands of appropriate router trimmers, plunge routers, fixed-base routers and jigsaws that are compatible with Radcut. Due to the ever-increasing range of tools being made, we recommend double checking if your specific brand and model of tool will work with Radcut prior to purchasing the Radcut kit by checking if it has the following capabilities:



Plunge and fixed-base routers with trammel sockets:
Use a router only if both supplied 8 mm rods pass through its two factory guide/trammel sockets and are positively clamped by the router's factory-fitted locks. Radcut's trammel rod spacing options are 110mm, 100mm, 84mm, 80mm, 60mm. Note that nominal socket diameter or spacing alone does not establish compatibility. Complete full compatibility checks before use. A router's base equipped with **trammel sockets** tends to look like this.



Radcut is supplied with 2 x 8mm diameter trammel rods and an adjustable trammel coupler ATC1. Note that plunge routers and fixed-base routers with 10mm trammel sockets might accept 8mm diameter trammel rods but a tool is compatible only when Radcut fits its intended factory guide interface, engages and locks securely, leaves all guards, controls, handles, the baseplate, extraction connection, safe grip and line of sight unobstructed, and passes a complete isolated dry sweep without cutter/blade contact or unintended movement. Brand, nominal slot size, rod diameter or rod spacing alone does not establish compatibility. 8mm rods used in nominal 10mm sockets must pass fully through the router's trammel sockets, protrude out of the opposite side of the router's base and be positively clamped with no detectable movement.



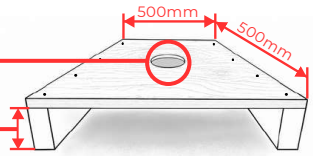
Radcut is not for hands-free use or unattended operation, nor for use with circular saws, angle grinders, drills, fixed machines or other tool types beyond what is explicitly and specifically mentioned as being intended for use with Radcut.

What other tools you need to use Radcut

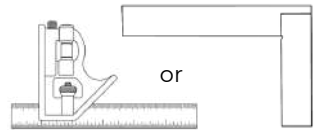
(These are not supplied with the Radcut kit)

Aside from a compatible router trimmer, plunge router or jigsaw (plus an appropriate cutter or blade), you'll need the following tools:

A stable work surface large enough to sit tool/Radcut assembly on. It'll need an opening that gives the stationary cutter or blade full clearance **around** and **beneath** during set up. You could use a piece of 18mm plywood or something of equivalent sturdiness, that's a minimum of 500mm x 500mm square, with a hole in its centre with the same attributes as described above.



Combination square or engineering square. This is essential for setting measurements. If you've never used one before, they look like this:



...and depending on your chosen set up: G clamps (or quick clamps)



Other important items include:

Screwdriver and appropriate screws, tape measure, pencil, masking tape ...and a working brain. People who should probably not use Radcut - or power tools ...or come to think of it vote, include but are not limited to people who think a lamb is a separate animal to a sheep, that sort of thing. Setups for all of the above will be explained and demonstrated in pretty comprehensive detail but we cannot compensate for an operator who refuses to think!

CHECK

Radcut does not decide what a router, jigsaw, cutter or blade may cut. Consult the instructions of your power-tool and cutter/blade manufacturers to establish the correct tool and blade type for the material you plan to cut.

Go now to the following page:

Attaching compact or trim routers with fixed bases & edge guide knob:
Page 16 onwards - read all pages as directed in this manual!

Attaching routers with bases equipped with trammel sockets:
Page 22 onwards - read all pages as directed in this manual!

Attaching jigsaws with parallel guide slots:
Page 32 onwards - read all pages as directed in this manual!

Attaching a compact or trim router with fixed base & edge guide knob to Radcut

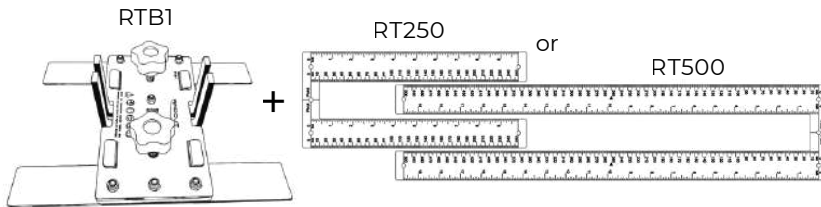
Use only your router's intended factory edge or parallel-guide clamping arrangement.

We also have user instruction videos for using Radcut which can be watched at www.radcut.co or via this QR code:

The videos are not a substitute for reading this instruction manual: this manual must be read in full!



For this process in addition to your compatible compact or trim router, you will require the following Radcut parts:



Step 1

Isolate your router: switch off, unplug or remove the battery, and ensure the cutter is stationary

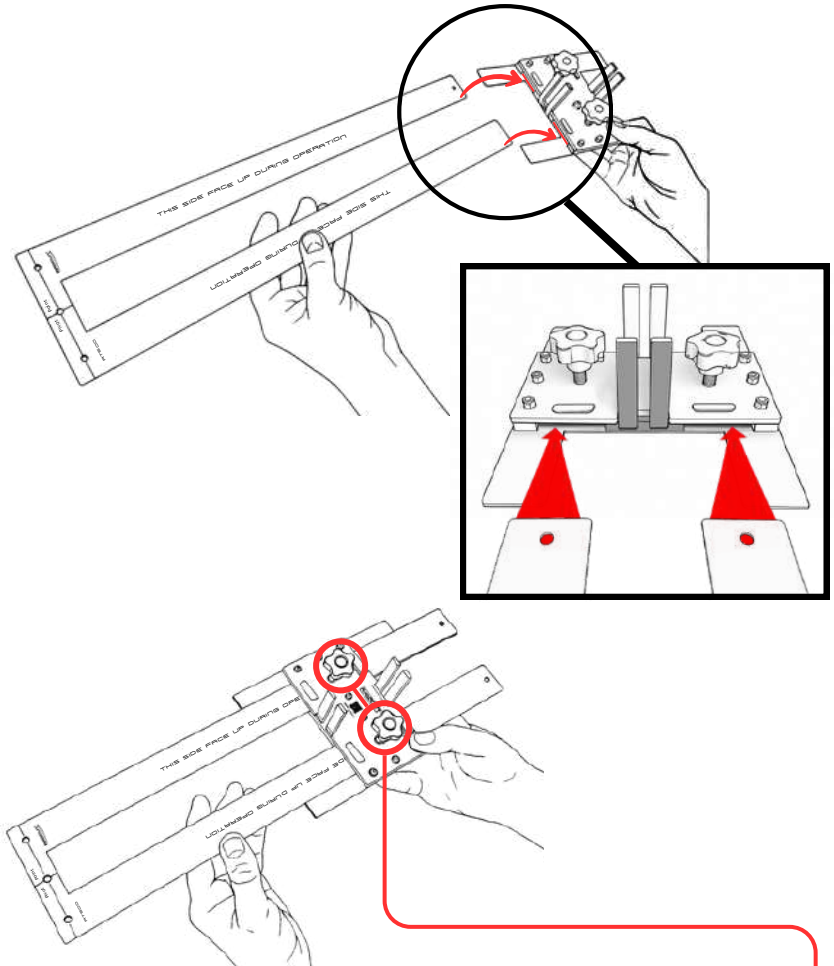
Step 2

Ensure you fit the correct cutter for the task you are going to perform using Radcut. Follow your router's instruction manual to do this, and follow the cutter manufacturer's guidance to select the correct cutter. Once you have the correct cutter attached to the router, raise the height of the router within its base so that the cutter does NOT protrude through the base.

Use only a cutter approved for the router, material and method and small enough to maintain full clearance from every Radcut component, fixing, support and obstruction throughout the complete intended sweep and at every cutting depth. Confirm this by a full isolated dry sweep before applying power.

Step 3

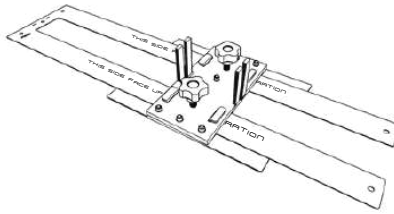
Take RTB1 and either RT250 or RT500 (depending on your desired track length). With the track measurement markings (the ruler side) of RT250 or RT500 FACE DOWN, pass the selected RT250 or RT500 track through the corresponding RTB1 brake slots as shown below - do this before attaching a router, like so:



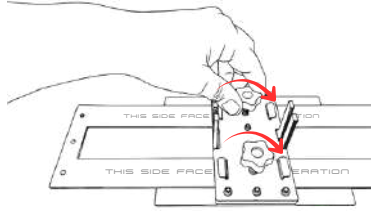
Why it matters: Doing this step first means that your router cannot obstruct track insertion or make the setup awkward. Once the track is inserted through RTB1, this now provides the true surface which your router's base will rest on. The track should pass easily through the brake slots. If you have any trouble passing the track through the brake slots, check that the brake locks are undone - turn them anti-clockwise to loosen them if needed but don't undo them to the point where they come out - you can put them back in if they do, but it's just annoying.

Step 4

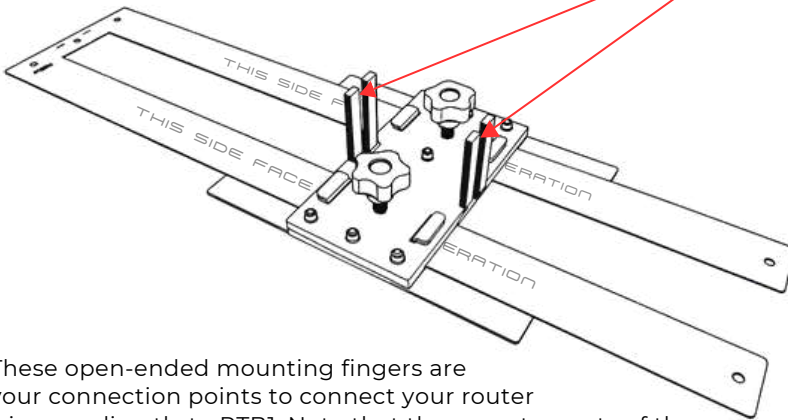
Next, place the RTB1 and radius track assembly down on the work surface. It should look something like this:



Lock off RTB1's brake knobs (by turning them clockwise) so they are hand tight and the track cannot move, like this:



Centrally positioned on the long edges of RTB1, in between the two track brake slots, are two sets of vertically projecting 'fingers' that form a fork with a long open-ended, elongated slot. As pictured [here](#)



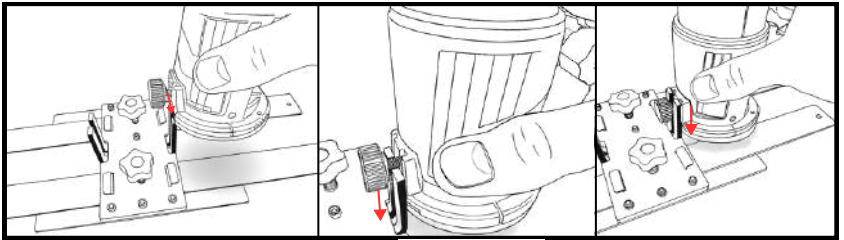
These open-ended mounting fingers are your connection points to connect your router trimmer directly to RTB1. Note that there are two sets of these mounting slots opposite each other. This is so that you can use an appropriate power tool on either side of RTB1 depending on how small you want your radius to be.

Before you attach your router, ensure it is fitted with the correct cutter that you plan to use. **Once you have the correct cutter attached to the router, raise the height of the router within its base so that the cutter does NOT protrude through the base.**

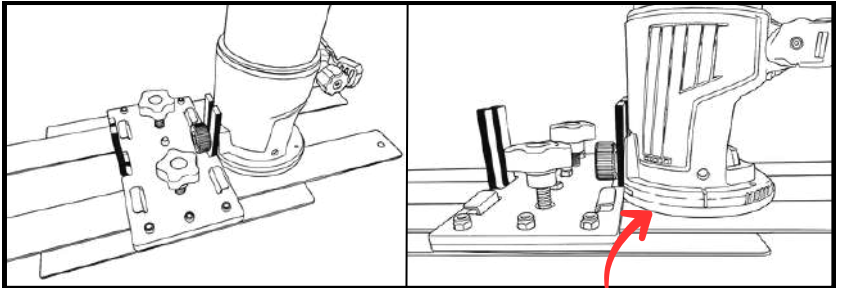
Next, you are going to attach your router trimmer to Radcut using its factory edge or parallel guide. To do this, you'll need to unscrew your router's factory edge guide knob to the point where it has approximately 5mm of screw thread exposed. Because every router's design is different, if you are unsure how to use your router's factory edge guide, consult its instruction manual. The router must connect to RTB1's open-ended mounting fingers as shown below:

Position the exposed thread of your router's guide knob over the slot in between the mounting fingers on RTB1

Slide the exposed screw thread shaft of your router's guide knob down the gap (slot) in between these two 'fingers'.



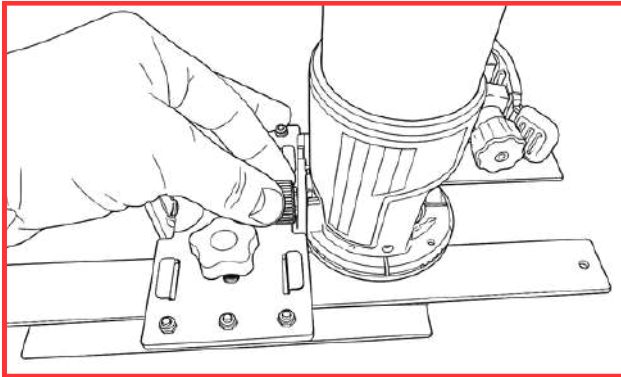
Continue until your router trimmer's base stops and is sat evenly and squarely on the surface of RT500 or RT250 which you earlier inserted into RTB1. The end result should look similar to this:



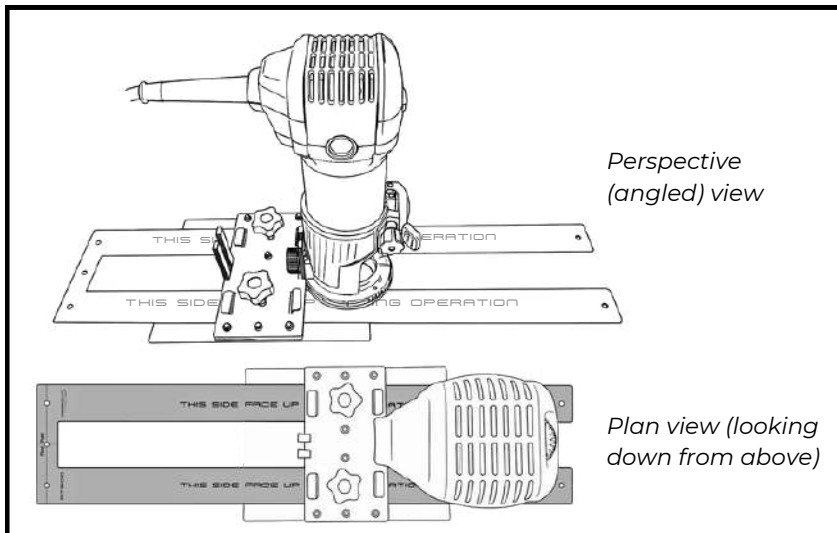
Ensure no gap between these two surfaces

Step 5

Finally, once you are satisfied that your router's base is sat at its lowest 'stop' point, turn the lock-off knob of your trim router's factory edge guide so that it tightens up. Keep going until it is hand tight and does not allow the trim router to slide up and down RTB1's mounting slot fingers. Inspect your connections to confirm that your router is parallel, stable/secure and free from unsafe play or loose connections.



Completed set up should look similar to this:



Do not modify Radcut or your router or add improvised packing. If things do not fit properly, use a different tool that is compatible, or a different configuration. One more reminder: ensure there are no loose connections.

THESE INSTRUCTIONS DO NOT OVERRIDE OR ACT AS SUBSTITUTES FOR ANY POWER TOOL INSTRUCTION MANUALS - THOSE MANUALS MUST ALWAYS BE TREATED AS PRIMARY INSTRUCTIONS!

IMPORTANT NOTE ON FIXED BASE (NON-PLUNGE) ROUTERS - READ THIS BEFORE MOVING ON.

With trim routers, there are often two base options for them. The first is a fixed base, the second is a plunge base. Radcut can connect to appropriate fixed *and* plunge-base routers, however there is an important distinction. Trim routers equipped with manufacturer-approved plunge bases can perform plunge actions safely. HOWEVER: trim routers with fixed bases cannot perform live plunges into material with their cutter or blade running. Any router with a fixed base - regardless of whether it is a small trim router or large router - and all jigsaws **MUST** use a prepared starter opening for an internal through-cut or start cutting from an entry point in the side of the material. The opening must provide adequate clearance around and beneath the stationary cutter at every intended pass depth, so that the cutter can be inserted into its starter hole while stationary (turned off), and safely started up so the cutter can build up to speed without it touching any material while it is speeding up. A starter opening may leave a small witness mark, so it must be positioned toward the waste side wherever possible. For a clean internal cut with no starter opening and no permissible witness mark, a fixed-base trim router is simply the wrong configuration if you intend to plunge-cut from a point within the sheet. A plunge-base or plunge router is required for such an action.

So we are clear here: a trim router equipped with a manufacturer-approved plunge base can be treated as a plunge router in this instruction manual, but a fixed-base trim router or fixed-base larger router cannot perform a true plunge operation and is only to be used for cuts that can be entered from an edge or a pre-prepared opening. Do not loosen a non-plunge router's base lock or adjust cutter projection while the motor is running unless the router manufacturer expressly permits this procedure.

For an internal cut with a router, use one of the following:

- a compatible manufacturer-approved plunge base or a proper plunge router, or:
- a prepared starter opening that allows the cutter to start without contacting the workpiece.

Router limits: If using a fixed-base router, start only from an accessible edge or a suitable prepared starter opening. Do not make a Radcut-attached plunge entry. In a later section, we will outline appropriate ways to use a non-plunge router with Radcut.

DO NOT USE YOUR POWER TOOL WITH RADCUT IF AT ANY POINT THE BLADE OR CUTTER IS IN CONTACT WITH OR HINDERED BY ANY PART OF THE RADCUT SYSTEM.

NOW GO TO PAGE 43 FOR THE NEXT STEP - SETTING MEASUREMENTS

Attaching a router with a base equipped with trammel sockets to Radcut

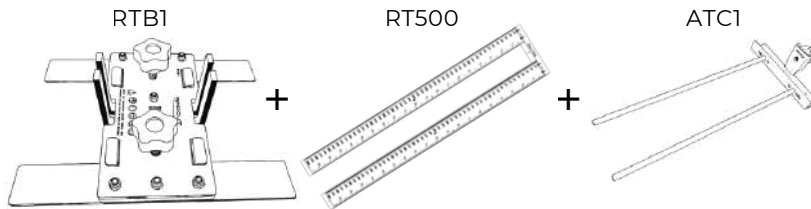
Use only your plunge router's or router's intended factory-fitted trammel sockets in its base - if it does not have trammel sockets, it cannot be used with Radcut.

We also have user instruction videos for using Radcut which can be watched at www.radcut.co or via this QR code:

The videos are not a substitute for reading this instruction manual: this manual must be read in full!



For this process in addition to your compatible plunge router, you will require the following Radcut parts:



Due to the average size of a plunge router's base, we recommend using the longer RT500 track rather than the RT250 track for the primary track section. Tracks of different lengths can be 'daisy-chained' - but more on that later in the manual!

Step 1

Isolate your plunge router: switch off, unplug or remove the battery, and ensure the cutter is stationary

Step 2

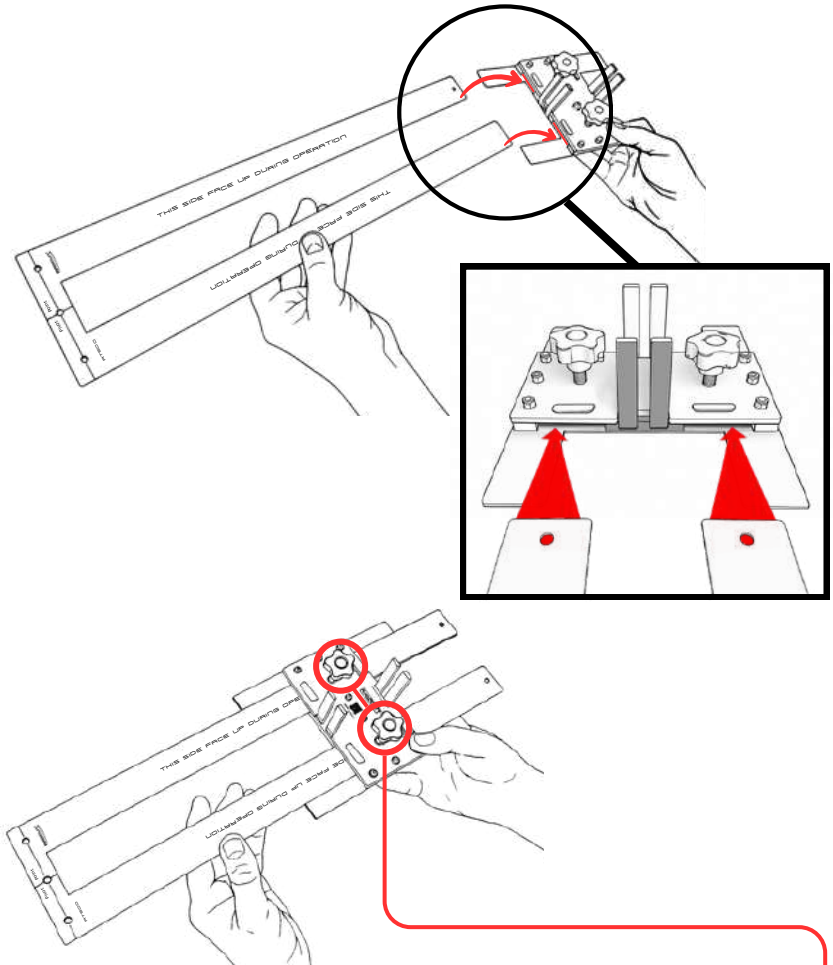
Ensure you fit the correct cutter for the task you are going to perform using Radcut. Follow your router's instruction manual to do this, and follow the cutter manufacturer's guidance to select the correct cutter for your chosen task.

Once you have the correct cutter attached to the router, raise the height of the router within its base so that the cutter does NOT protrude through the base.

Use only a cutter approved for the router, material and method and small enough to maintain full clearance from every Radcut component, fixing, support and obstruction throughout the complete intended sweep and at every cutting depth. Confirm this by a full isolated dry sweep before applying power.

Step 3

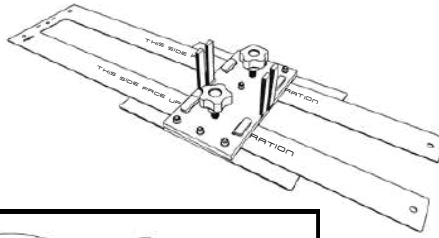
Take RTB1 and either RT250 or RT500 (depending on your desired track length). With the track measurement markings (the ruler side) of RT250 or RT500 FACE DOWN, pass the selected RT250 or RT500 track through the corresponding RTB1 brake slots as shown below - do this before attaching a router, like so:



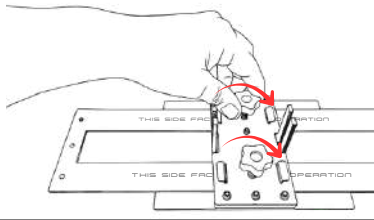
Why it matters: Doing this step first means that your router cannot obstruct track insertion or make the setup awkward. Once the track is inserted through RTB1, this now provides the true surface which your router's base will rest on. The track should pass easily through the brake slots. If you have any trouble passing the track through the brake slots, check that the brake locks are undone - turn them anti-clockwise to loosen them if needed but don't undo them to the point where they come out - you can put them back in if they do, but it's just annoying.

Step 4

Next, place the RTB1 and radius track assembly down on the work surface. It should look something like this:



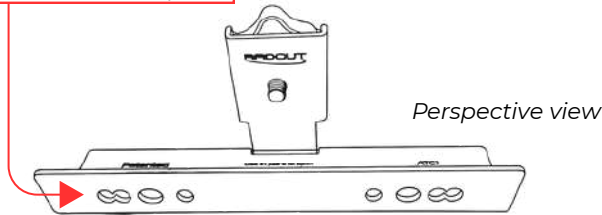
Lock off RTB1's brake knobs (by turning them clockwise) so they are hand tight and the track cannot move, like this:



Step 5

Take your router and raise the height of the router within its base so that the cutter does NOT protrude through the base. Now set the router aside for a moment.

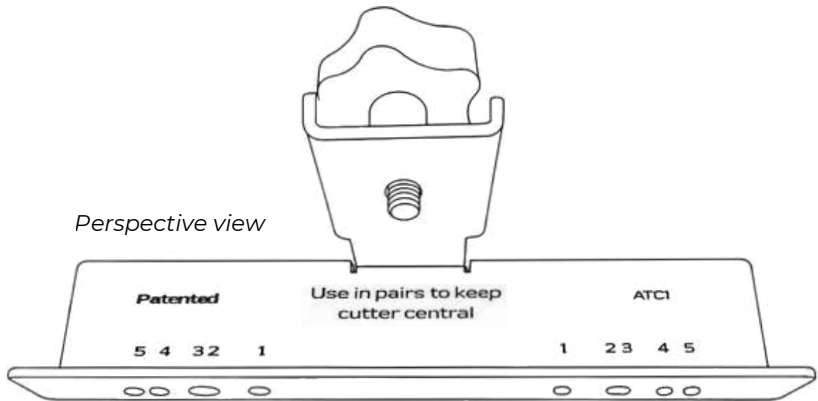
Next, take ATC1. As you look at it, you will notice that it has a series of M5 (5mm diameter) **holes in the face plate.**



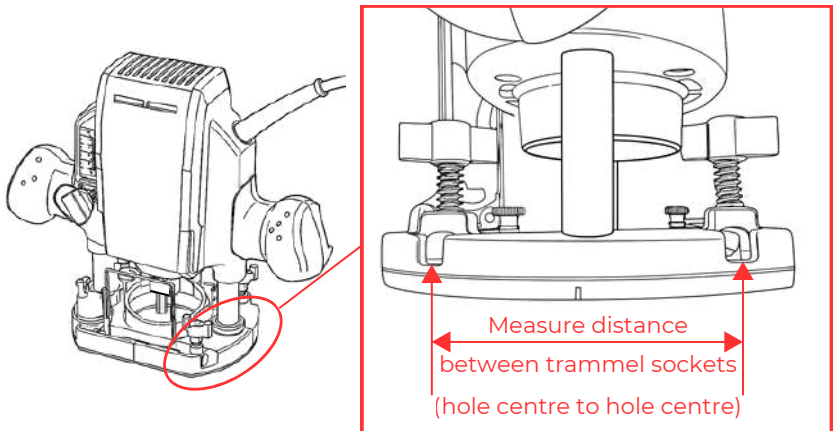
Those holes are for attaching ATC1's trammel rods at different spacings: Because different models of routers have their trammel sockets spaced apart at different distances, ATC1 is designed with a number of different 'paired' holes to accommodate the majority of standard trammel socket spacings across different router brands and models. Supported nominal centre spacings are 60, 80, 84, 100 and 110 mm, but only where the specific router securely accepts and positively clamps both 8 mm rods.

Note: nominal dimensions are not a compatibility guarantee; a router with nominal 10 mm diameter trammel sockets, a familiar brand or a matching spacing is not automatically compatible. **Some routers with 10mm diameter trammel sockets will for example, easily and securely accept trammel rods of 8mm diameter.** The bottom line is that the only acceptable connection between Radcut and any router is one where both 8mm rods are positively and securely clamped without modification, excessive clearance or interference and they are secure and cannot move once clamped - if you cannot achieve such a connection you must not use Radcut with your power tool!

Behind the face plate on ATC1, you will see there are corresponding numbers for each hole. The holes and those numbers are in matching pairs - with one hole per number positioned at equal spacing on either side of the centre point.



In order to keep your plunge router's cutter central when attached to ATC1, those holes must only be used in pairs with matching numbers - if upon opening your Radcut kit for the first time, you discover that the trammel rods have been fitted in mis-matched holes by the factory during assembly, this must be corrected by you prior to use - do not use mis-matched holes. With this in mind, take your router and measure the distance between the trammel sockets on your router's base:



Once you have that measurement you can use it to measure the distances between the pairs of number-matched holes on ATC1 to find the pair of holes that match your required measurement. Ensure you only use two holes with matching numbers - this will keep your router's cutter centrally aligned within the Radcut system.

Radcut's holes are set at the following distances apart:

Pair 1: 60mm

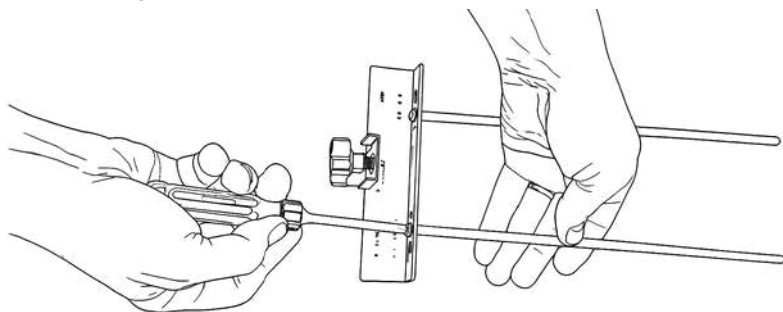
Pair 2: 80mm

Pair 3: 84mm

Pair 4: 100mm

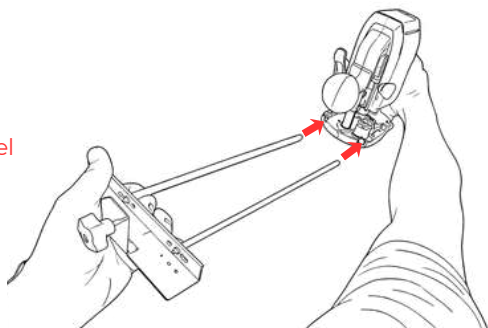
Pair 5: 110mm

It may be the case that - purely by coincidence - ATC1's trammel rods are already set at the correct width apart in a pair of number-matched holes. If not, unscrew the two trammel rods from their current mounting screws in ATC1 and re-install them in the correctly-spaced, paired holes for your router. Use a well-fitting screwdriver head for the job - failing to do this risks rounding off the screw heads.

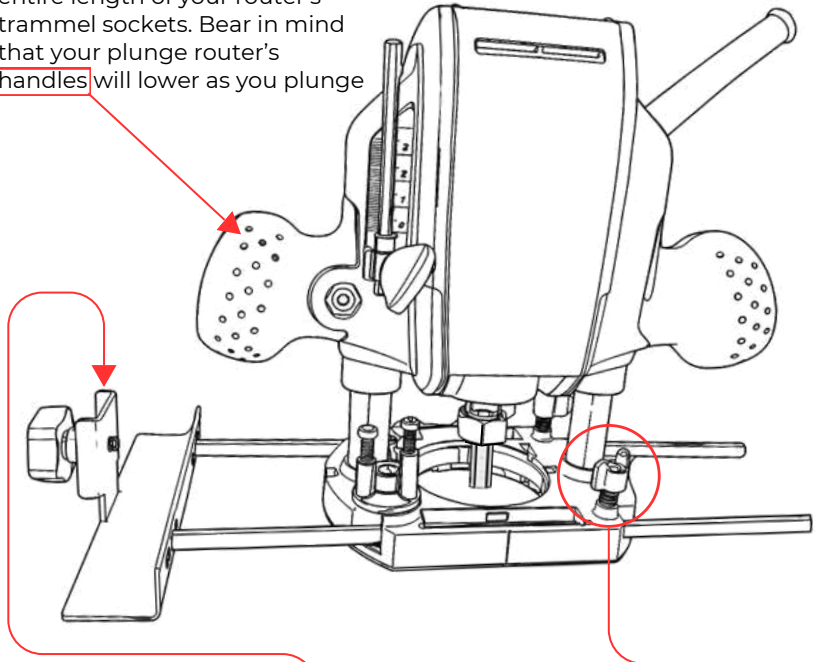


Once the rods are installed in matching holes at the correct spacing for your router, tighten the screws sufficiently that they hold the trammel rods securely and there is no movement. They should be hand tight. **DO NOT OVER-TIGHTEN THE SCREWS.** Remember that trammel rods must always be used in pairs - never use just one trammel rod! Once you have done this, while resting your router on a stable surface and holding it securely, when you are confident it cannot slip in your hand, insert the rods into the trammel sockets on the base of your router:

If you are unsure how to use your router's trammel sockets, consult its instruction manual.



The rods should be inserted so that they travel through the entire length of your router's trammel sockets. Bear in mind that your plunge router's handles will lower as you plunge



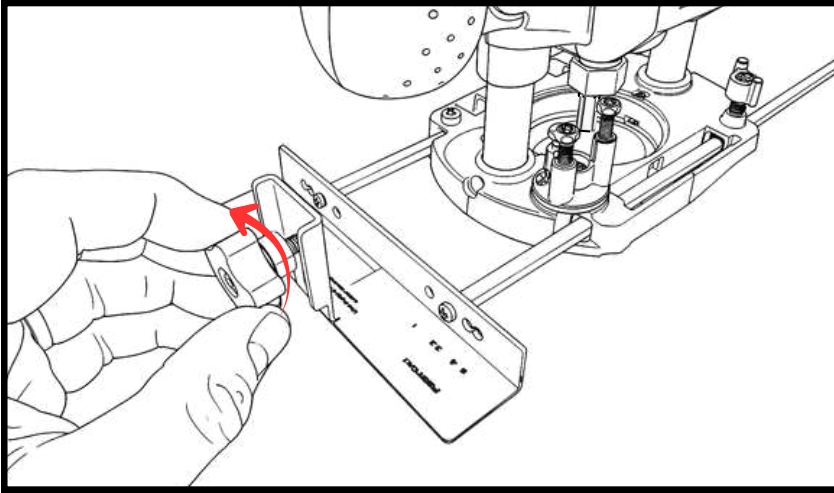
Meaning that if you position your router too close to ATC1, the top part of ATC1 may be in the way when you come to perform a plunge action unless you space the router a little bit away. The rods are long enough that you can keep your router spaced away from the body of ATC1 enough that it will not be in the way of your router's operating handles during a plunge.

Do not space the router away from ATC1 any further than necessary.

Once you have done this, clamp your plunge router securely to both rods with your plunge router's factory clamps that are installed in your router's trammel socket system. Both rods must be positively clamped so they cannot move or slip; ATC1 and the router must remain parallel and stable, and the rods must not obstruct any handle, control, guard or extraction connection.

Note: This drawing is for illustration only. Because every router's design is different, if you are unsure how to use your plunge router's lock-off trammel knobs, consult its instruction manual.

Now that your router is attached to ATC1, unscrew ATC1's star knob (turn it anti-clockwise) to the point where it has approximately 5mm length of screw thread exposed on its shaft - as shown below:

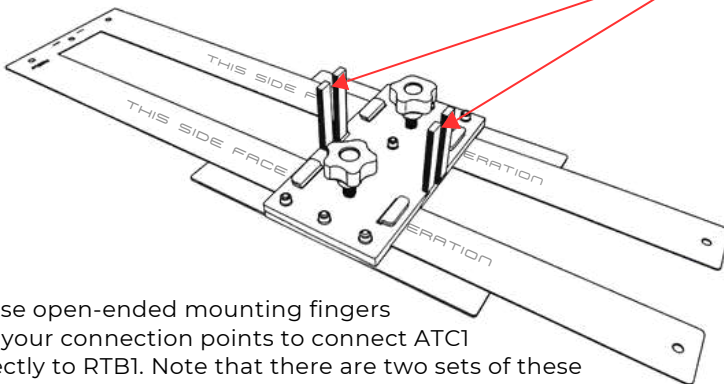


Perspective view of ATC1 attached to a plunge router

Step 6

It is time to attach that router and ATC1 assembly to RTB1. Firstly, turn your attention back to RTB1 and RT500 which you assembled earlier.

Centrally positioned on the long edges of RTB1, in between the two track brake slots, are two sets of vertically projecting 'fingers' that form a fork with a long open-ended, elongated slot. As pictured [here](#)

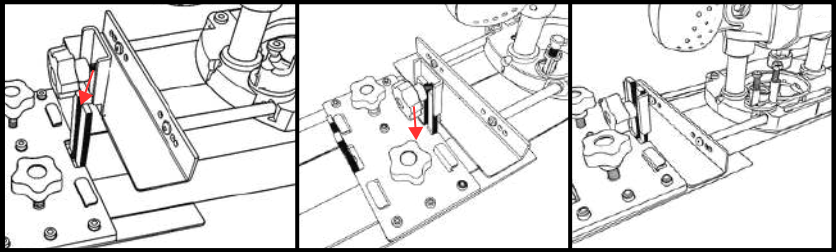


These open-ended mounting fingers are your connection points to connect ATC1 directly to RTB1. Note that there are two sets of these mounting slots opposite each other. This is so that you can use an appropriate power tool on either side of RTB1 depending on how small you want your radius to be.

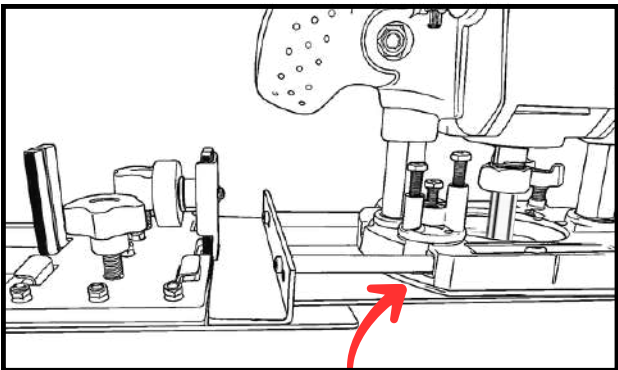
Next, attach your router or plunge router/ATC1 assembly to RTB1's 'fingers' using ATC1's star knob connection point, as shown below:

Position the exposed thread of ATC1's star knob over the slot in between the mounting fingers on RTB1

Slide the exposed screw thread shaft of ATC1's guide knob down the gap (slot) in between these two 'fingers'.



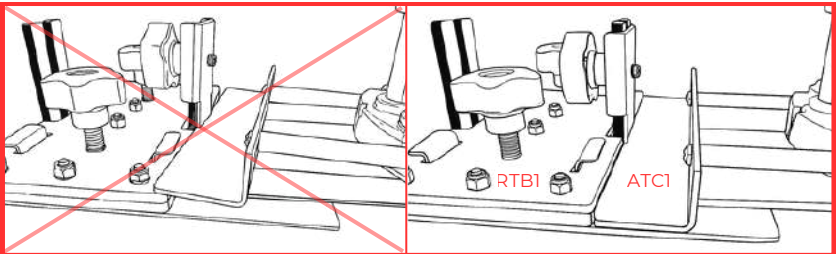
Continue until your router's base is sat evenly and comfortably on the surface of RT500. The end result should look similar to this:



Ensure no gap between these two surfaces

IMPORTANT:

Ensure that ATC1 sits flat and square below the top edge of RTB1

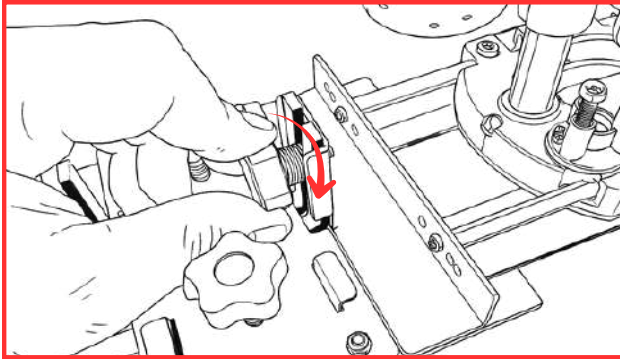


WRONG

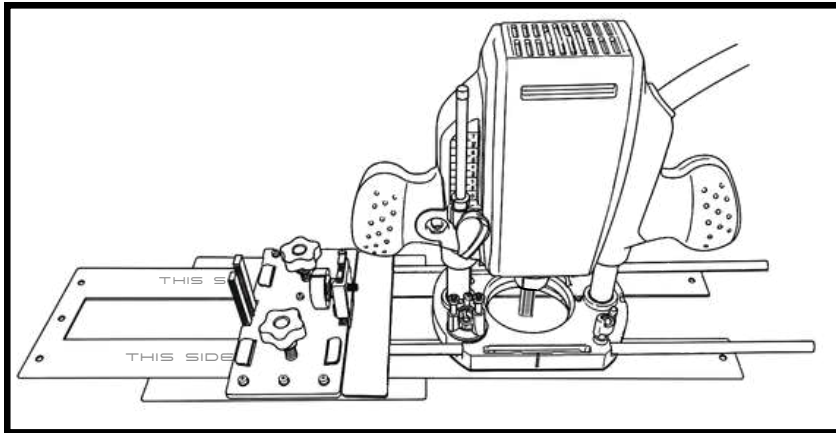
Correct

Step 7

Finally, once you are satisfied that your router's base is sat at its lowest 'stop' point, turn the star knob of ATC1 in a clockwise direction so that it tightens up. Keep going until it is hand tight and does not allow your ATC1/router assembly to slide up and down RTB1's mounting slot fingers. Inspect your connections to confirm that your router is parallel, stable/secure and free from unsafe play or loose connections.



Completed set up should look similar to this:



Perspective view of plunge router with ATC1, RTB1 and RT500 set up

THESE INSTRUCTIONS DO NOT OVERRIDE OR ACT AS SUBSTITUTES FOR ANY POWER TOOL INSTRUCTION MANUALS - THOSE MANUALS MUST ALWAYS BE TREATED AS PRIMARY INSTRUCTIONS!

One more reminder: ensure there are no loose connections.

Do not modify Radcut or your router or add improvised packing. If things do not fit properly, use a different tool that is compatible, or a different configuration.

IMPORTANT NOTE ON FIXED BASE (NON-PLUNGE) ROUTERS - READ THIS BEFORE MOVING ON.

With large routers, there are often two base options for them. The first is a fixed base, the second is a plunge base. Radcut can connect to appropriate fixed *and* plunge-base routers, however there is an important distinction. Fixed-base routers cannot perform live plunges into material with their cutter or blade running. Any router with a fixed base - regardless of whether it is a small trim router or large router - and all jigsaws **MUST** use a prepared starter opening for an internal through-cut or start cutting from an entry point in the side of the material. The opening must provide adequate clearance around and beneath the stationary cutter at every intended pass depth, so that the cutter can be inserted into its starter hole while stationary (turned off), and safely started up so the cutter can build up to speed without it touching any material while it is speeding up. A starter opening may leave a small witness mark, so it must be positioned toward the waste side wherever possible. For a clean internal cut with no starter opening and no permissible witness mark, a fixed-base router is simply the wrong configuration if you intend to plunge-cut from a point within the sheet. A plunge-base or plunge router is required for such an action.

So we are clear here: A fixed-base trim router or fixed-base larger router cannot perform a true plunge operation and is only to be used for cuts that can be entered from an edge or a pre-prepared opening. Do not loosen a *non-plunge* router's base lock or adjust its cutter projection while the motor is running unless the router manufacturer expressly permits this procedure.

For an internal cut with a router, use one of the following:

- a compatible manufacturer-approved plunge base or a proper plunge router, or:
- a prepared starter opening that allows the cutter to start without contacting the workpiece.

Router limits: If using a fixed-base router, start only from an accessible edge or a suitable prepared starter opening. Do not make a Radcut-attached plunge entry. In a later section, we will outline appropriate ways to use a non-plunge router with Radcut.

THESE INSTRUCTIONS DO NOT OVERRIDE OR ACT AS SUBSTITUTES FOR ANY POWER TOOL INSTRUCTION MANUALS - THOSE MANUALS MUST ALWAYS BE TREATED AS PRIMARY INSTRUCTIONS!

NOW GO TO PAGE 43 FOR THE NEXT STEP - SETTING MEASUREMENTS

Attaching a jigsaw with a parallel guide slot to Radcut

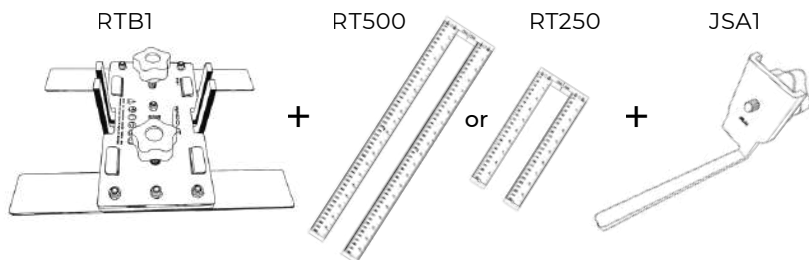
Use only your jigsaw's intended factory-fitted edge-guide / parallel-guide / rip-fence mounting slot - note: it will require its lock-off knob or screw fitted - we'll explore this more in a moment.

We also have user instruction videos for using Radcut which can be watched at www.radcut.co or via this QR code:

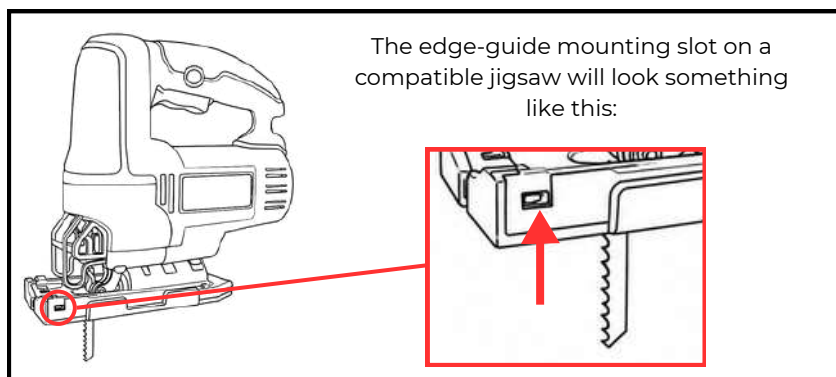
The videos are not a substitute for reading this instruction manual: this manual must be read in full!



For this process, in addition to your compatible jigsaw, you will require the following Radcut parts:



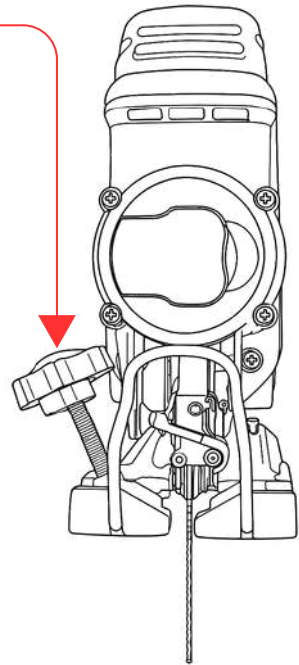
As mentioned earlier in the manual, most jigsaws have an edge-guide mounting slot (also called a rip-fence slot or parallel-guide slot); they tend to look like this:



This is the slot that we are going to use to connect JSA1 to your jigsaw. It is worth noting that part of the compatibility requirements for a jigsaw to function with Radcut, is that this slot is positioned forward of the blade on a jigsaw, as pictured above.

You will need to utilise the **lock-off knob** on your jigsaw's factory edge-guide / parallel-guide (rip-fence) mounting slot.

The jigsaw must have its original factory lock-off knob present. If its lock-off knob is missing (they often are) an exact replacement approved by the jigsaw manufacturer must be used. Either way, the lock-off knob must be capable of clamping JSA1 securely.



Step 1

Isolate your jigsaw: switch off, unplug or remove the battery, and ensure the blade is stationary.

Step 2

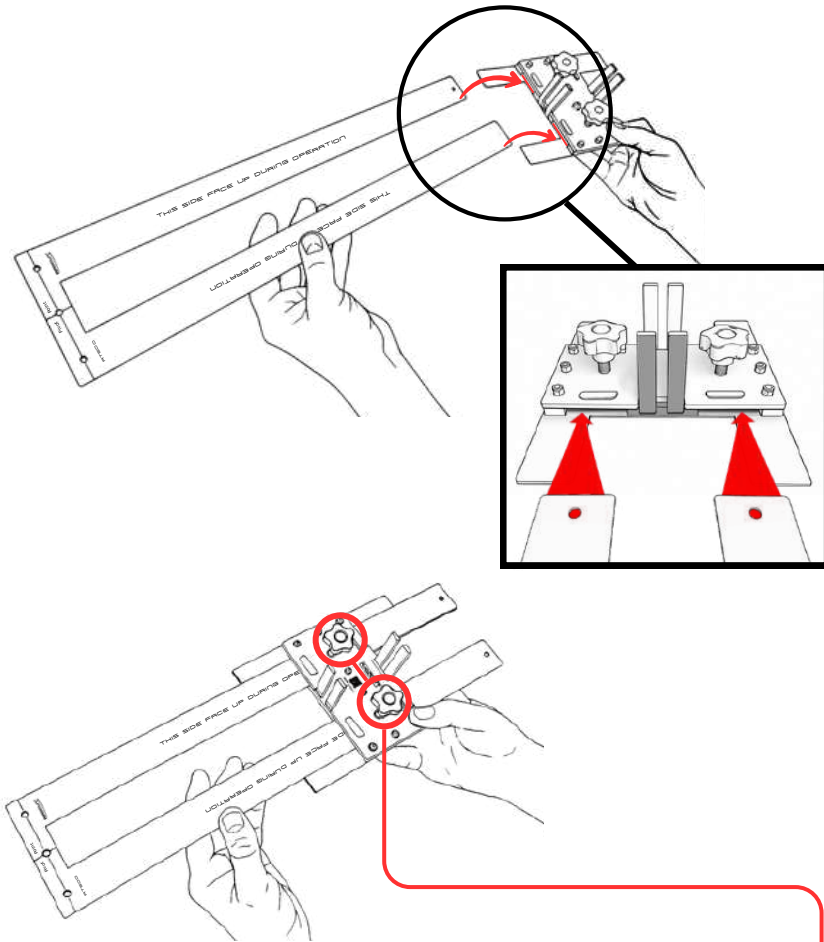
Remove the blade - this is an important step at this stage.

Step 3

Set the jigsaw shoe at 0° so that the blade is 90° to the workpiece and cuts vertically (as illustrated above), then lock the bevel adjustment.

Step 4

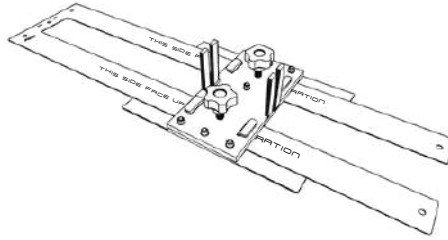
Take RTB1 and either RT250 or RT500 (depending on your desired track length). With the track measurement markings (the ruler side) of RT250 or RT500 FACE DOWN, pass the selected RT250 or RT500 track through the corresponding RTB1 brake slots as shown below - do this before attaching a jigsaw, like so:



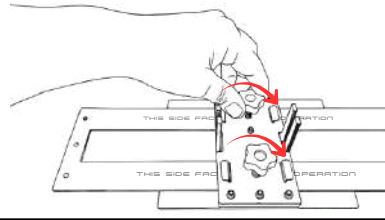
Why it matters: Doing this step first means that your jigsaw cannot obstruct track insertion or make the setup awkward. Once the track is inserted through RTB1, this now provides the true surface which your jigsaw's base will rest on. The track should pass easily through the brake slots. If you have any trouble passing the track through the brake slots, check that the brake locks are undone - turn them anti-clockwise to loosen them if needed but don't undo them to the point where they come out - you can put them back in if they do, but it's just annoying.

Step 5

Next, place the RTB1 and radius track assembly down on the work surface. It should look something like this:



Lock off RTB1's brake knobs (by turning them clockwise) so they are hand tight and the track cannot move, like this:



IMPORTANT

Jigsaw Compatibility and Baseplate Position:

Jigsaw designs vary between brands and models. Radcut is compatible only with jigsaws that have a manufacturer-provided parallel-guide mounting slot located in the front portion of the baseplate, ahead of the blade. Do not assume that a jigsaw is compatible solely because it accepts a parallel guide: the slot must accept the Radcut JSA1 mounting bar, and the jigsaw's lock-down knob must clamp the bar securely.

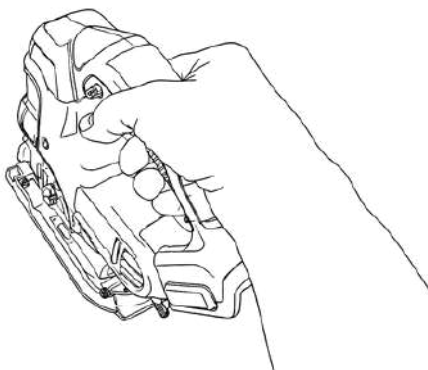
On a jigsaw, the blade mechanism remains attached to the saw body, while the baseplate on many jigsaws can be repositioned. This may seem like we are stating the obvious, but on many models, because the baseplate moves, and/or it slides backwards before it can be tilted for bevel cutting, this means that repositioning a jigsaw's baseplate can change the distance between the parallel-guide slot and the blade - this may affect your jigsaw's fit to Radcut, the blade clearances and the accuracy of a set radius.

Before cutting or even re-connecting power to your jigsaw, ensure that the baseplate is securely locked in the intended position and check that the blade remains clear of, and is not obstructed by or in direct contact with any part of the Radcut and JSA1 assembly throughout its full range of movement. Recheck the radius measurement before commencing the cut. Repeat these checks whenever the baseplate position is changed.

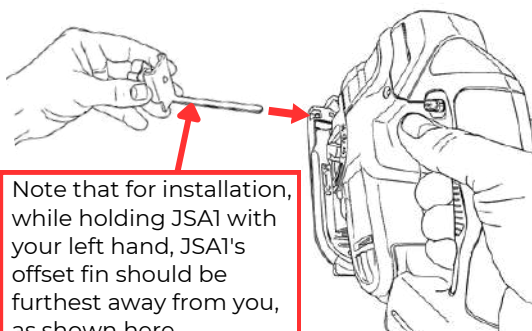
Looking from the operator's perspective.

Step 6

Take your compatible jigsaw and hold it as per normal use by its handle - do this with your right hand - not with your left hand - this is important. The jigsaw should be facing away from you as it would while using it to cut. Looking from behind the user, this entire action should look like this:

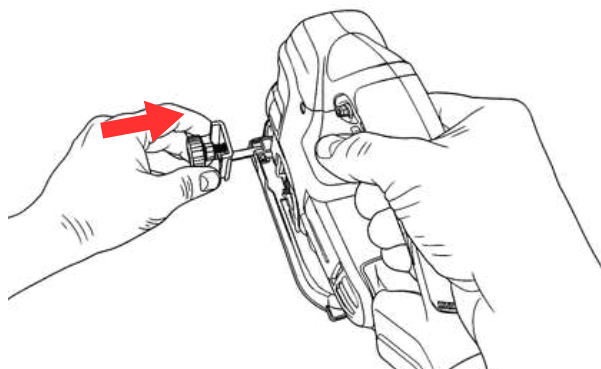


Next, take JSA1 in your left hand and, while holding it upright with the guide fin protruding towards the jigsaw, insert JSA1's guide fin into your jigsaw's factory edge-guide mounting slot from your left hand side, like this:



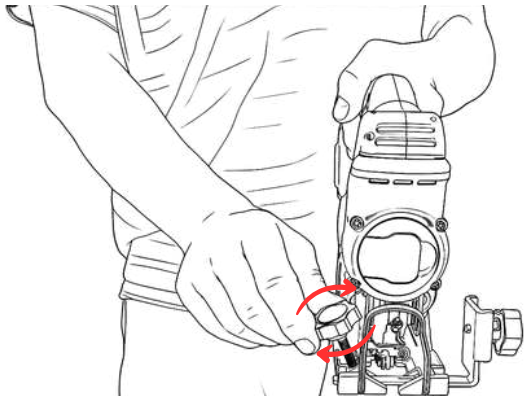
Note that for installation, while holding JSA1 with your left hand, JSA1's offset fin should be furthest away from you, as shown here

Insert JSA1's guide fin all the way through the jigsaw's shoe until it slightly protrudes from the opposite side of the jigsaw's base shoe



Perspective view: looking facing the operator.

Now put the jigsaw in your LEFT hand and, with your right hand, turn the star knob in your jigsaw's base shoe so that it tightens and clamps down onto JSA1. Tighten the star knob until it is hand tight, then pull and twist JSA1 to confirm there is no lateral movement or loose play - it should feel secure.



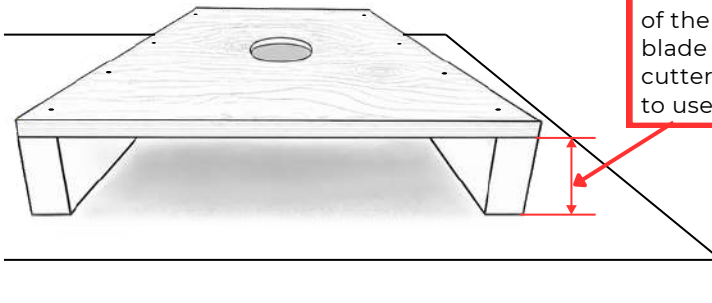
Step 7

Carefully inspect your JSA1/jigsaw assembly to ensure it will not in any way hinder you from fitting a blade. If you are satisfied it won't, then fit your required blade to your jigsaw - follow your jigsaw's instruction manual to do this, and select a blade approved by the blade and jigsaw manufacturers for the material, workpiece thickness and intended radius. A blade that is suitable for the material may still be unsuitable for a tight radius. Do not use a blade that bends, drifts, binds or cannot follow the intended radius without force.

Step 8

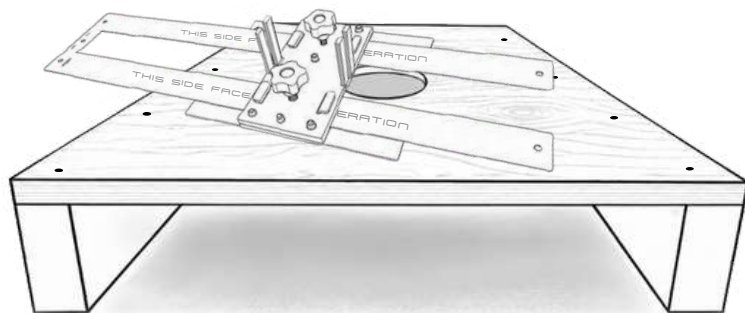
Remember that 500mm x 500mm piece of sheet material with a hole in the middle which was mentioned on page 15? - now we're going to need that - or an alternative work surface with a hole in the middle. Place it on a stable, solid, level surface, so that it is suspended above the work surface on its legs like so:

Perspective view



This distance here should be slightly more than the length of the jigsaw blade or router cutter you plan to use.

Take your RTB1 and RT500 (or RT250) which you assembled earlier and place it on top of this work surface, in a position where the hole in the work surface will be roughly between the tracks and where the blade of your jigsaw will land in the next step. It should look like this:

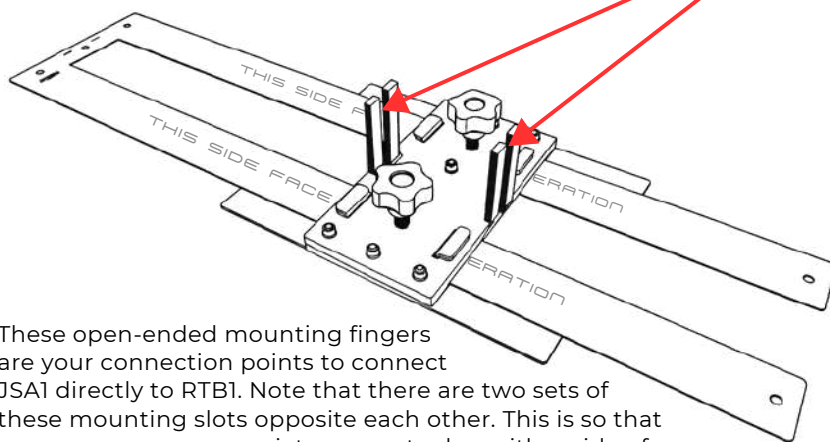


Perspective view

Step 9

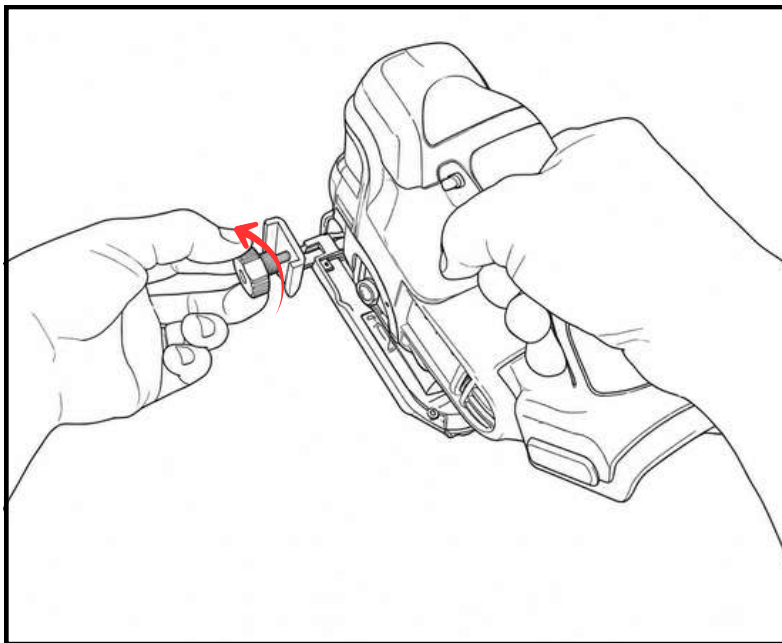
We are now going to mechanically connect your jigsaw/JSA1 to the track and brake system.

Centrally positioned on the long edges of RTB1, in between the two track brake slots, are two sets of vertically projecting 'fingers' that form a fork with a long open-ended, elongated slot. As pictured [here](#)



These open-ended mounting fingers are your connection points to connect JSA1 directly to RTB1. Note that there are two sets of these mounting slots opposite each other. This is so that you can use an appropriate power tool on either side of RTB1 depending on how small you want your radius to be.

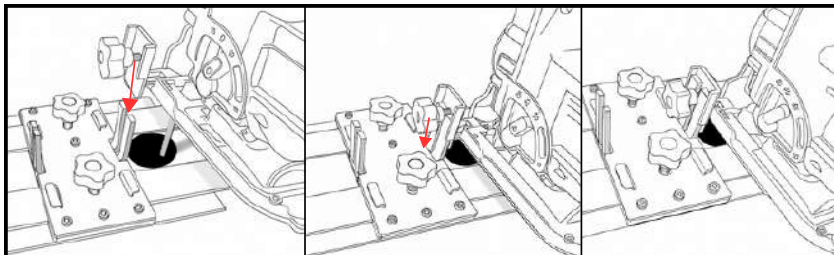
Unscrew JSA1's star knob (turn it anti-clockwise), to the point where it has approximately 5mm of screw thread exposed as shown below:



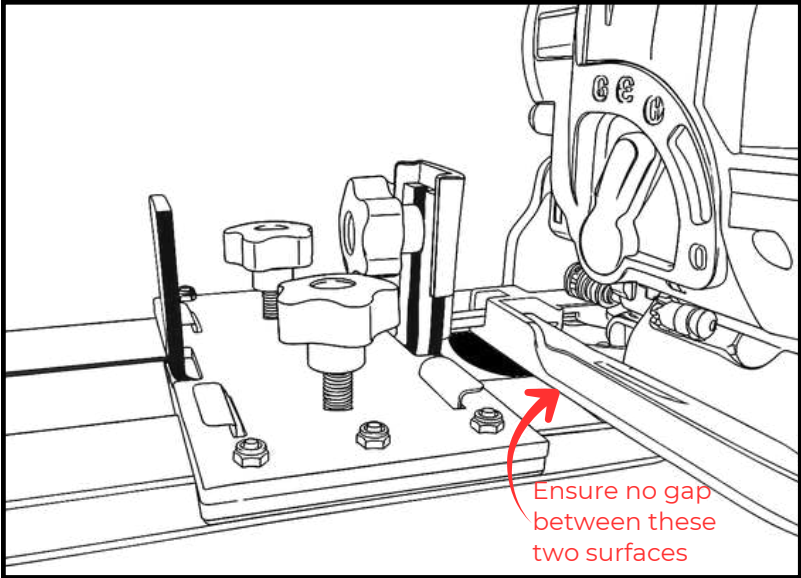
Next, attach your jigsaw/JSA1 assembly to RTB1's 'fingers' using JSA1's star knob as shown below - remember that the jigsaw blade is now protruding from the jigsaw's base - this is why we require a work surface with a hole in it of sufficient depth - so that you can pass the blade through it as part of performing this next step easily and safely.

Position the exposed thread of JSA1's star knob over the slot in between the mounting fingers on RTB1

Slide the exposed screw thread shaft of JSA1's guide knob down the gap (slot) in between these two 'fingers'. **Make sure the RTB1 and track assembly is positioned on the work surface so that your jigsaw's blade can be easily inserted into the hole in the work surface.**

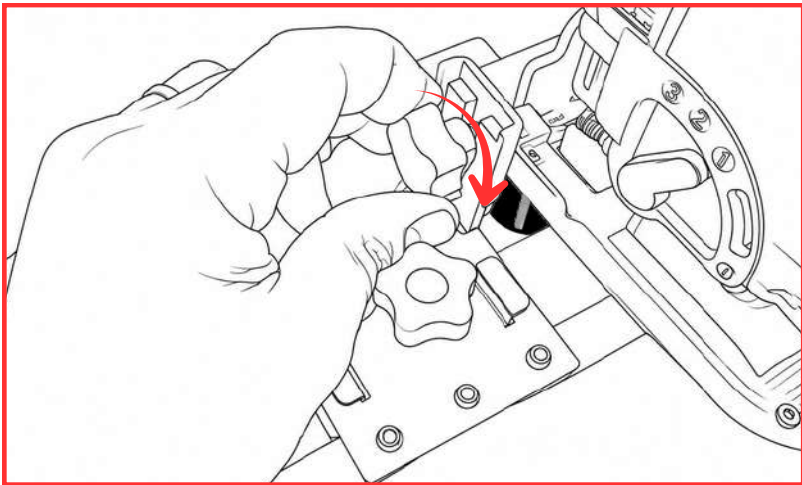


Continue until your jigsaw's base is sat evenly and comfortably on the surface of the radius track. The end result should look similar to this:

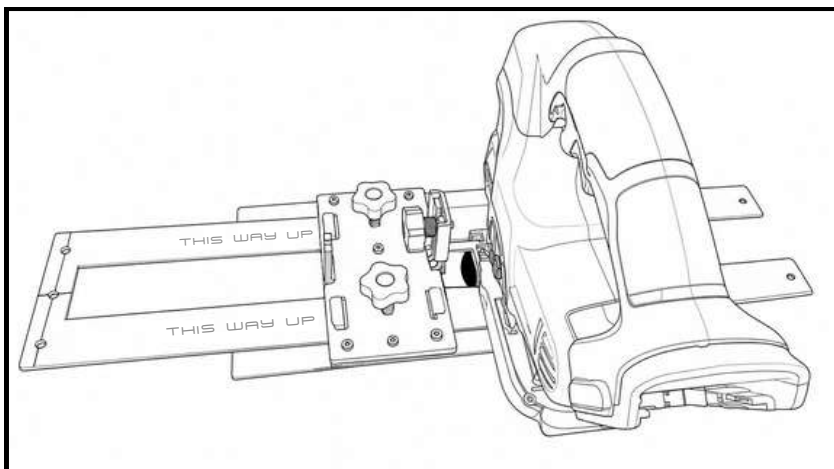


Step 10

Once you are satisfied that your jigsaw's base is sat at its lowest 'stop' point and is sat level and flat, turn the star knob of JSA1 in a clockwise direction so that it tightens up. Keep going until it is hand tight and does not allow your JSA1/jigsaw assembly to slide up and down RTB1's fingers. Inspect your connections to confirm that your jigsaw is parallel, stable/secure and free from unsafe play or loose connections.



The completed set up should look similar to this:



Perspective view of Jigsaw with RTB1, JSA1 and RT500 set up

One more reminder: ensure there are no loose connections.

Do not modify Radcut or your jigsaw or add improvised packing. If things do not fit properly, use a different tool that is compatible, or a different configuration.

Jigsaw limits: Do not bevel-cut with Radcut. Start only from an accessible edge or a suitable prepared starter opening. Do not make a Radcut-attached plunge entry.

DO NOT USE YOUR POWER TOOL WITH RADCUT IF AT ANY POINT THE BLADE OR CUTTER IS IN CONTACT WITH OR HINDERED BY ANY PART OF THE RADCUT SYSTEM.

THESE INSTRUCTIONS DO NOT OVERRIDE OR ACT AS SUBSTITUTES FOR ANY POWER TOOL INSTRUCTION MANUALS - THOSE MANUALS MUST ALWAYS BE TREATED AS PRIMARY INSTRUCTIONS!

IMPORTANT NOTE ON JIGSAWS - READ THIS BEFORE MOVING ON.

Radcut can connect to appropriate jigsaws, fixed and plunge base routers, however there is an important distinction. When attached to Radcut, a jigsaw must not make a plunge entry.

Lowering a moving Radcut-attached blade into the workpiece or a starter opening can cause kickback, blade bending or breakage, injury or damage. Start a Radcut-attached jigsaw cut only from an accessible workpiece edge or a prepared starter opening. Before inserting the blade into a starter opening, switch off the jigsaw, wait for the blade to stop completely and unplug it or remove its battery.

The opening must provide adequate clearance around and beneath the stationary blade throughout its full movement, including at its lowest position during use.

Position a starter opening towards the waste side where possible because it may leave a witness mark. If a clean internal cut cannot be made from a starter opening, do not perform that cut with a Radcut-attached jigsaw; use a compatible plunge-router setup allowed by the router and cutter manufacturers.

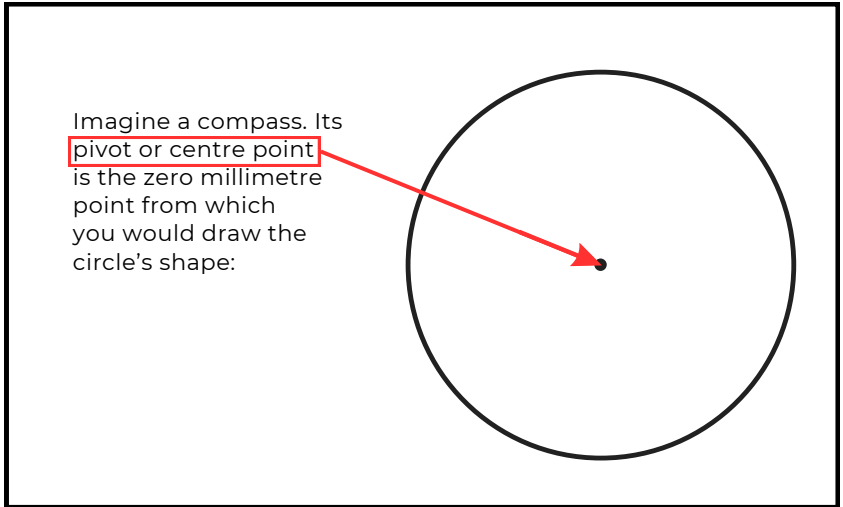
In a later section, we will outline appropriate ways to use a jigsaw with Radcut.

NOW GO TO PAGE 43 FOR THE NEXT STEP - SETTING MEASUREMENTS

Setting a radius measurement:

Fundamentals

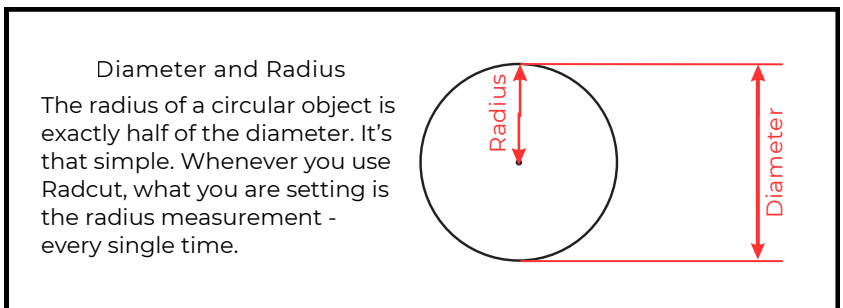
Here is the knowledge needed to set up radial cuts. If you already know how to set out radius work/understand setting for internal and external cuts, proceed to page 53: mechanically adjusting Radcut's measurement system. **If not, this entire section is essential reading!**



How big a circle becomes when drawn by a compass (its radius or diameter or circumference depending on how you decide to measure it) depends only on how far the pencil is held away from the pivot point - this specific distance is known as the radius.

Radcut's measurement system always sets *radius* measurements because it behaves as a compass.

Radcut's measurement system also always uses its pivot point as the zero starting point for measurements.



Symbols:

Here are the most commonly used symbols on drawings to denote 'circular' measurements:

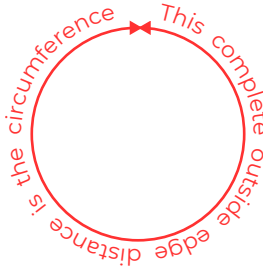
Commonly used diameter symbol: $\varnothing$ or: D:

Commonly used radius symbol: $\textcircled{R}$ or: R:

Commonly used circumference symbol: C:

Circumference

If you were to wrap a tape measure all the way around the edge (the circumference) of a circular object, this is the measurement of it. As shown below:

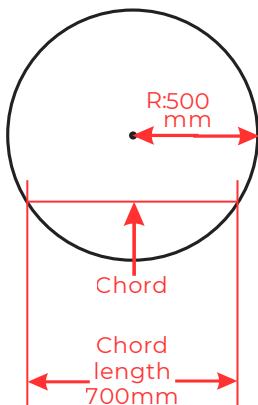


If for example you wanted to divide a circle into, say, 10 sections so that you could place 10 evenly spaced things around its edge, you'd simply divide the circumference measurement by 10 and mark it every 'that much' space until you'd gone around the full circle and reached the start point again.

Any drawing of a circle-shaped object, or an arch or a curved shape, will almost always specify the *radius* dimension. Sometimes a diameter may be specified.

Let's take this one step further. Someone may ask you to create a curved shape with a radius of 500mm and a chord length of 700mm. Here is what that means:

**DRAWING NOT TO SCALE!
FOR ILLUSTRATION PURPOSES ONLY**



This means that you'd probably cut something a bit like this shape:



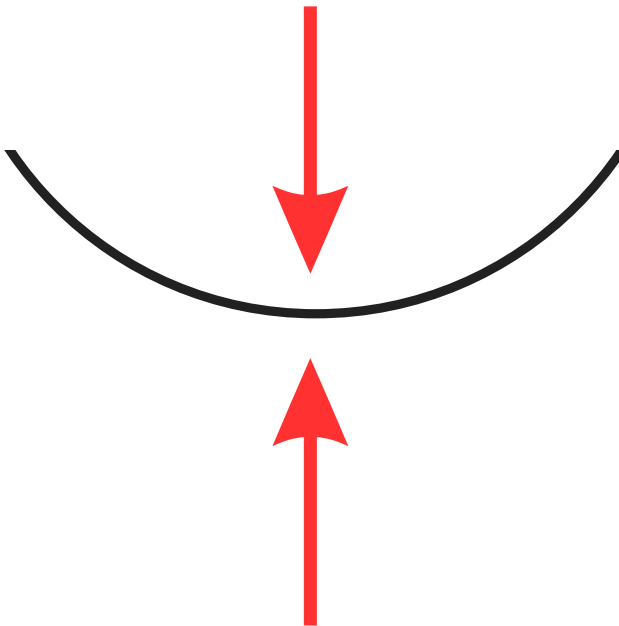
Setting a radius measurement: Technical

Now let's look at setting measurements to internal or external cutter edges - these two things are really going to make all this come together and form a whole picture and true understanding of cutting radii.

A curved structure has an inside and outside - I know this might sound like stating the obvious, but failing or forgetting to set a radius measurement to the *correct edge* of a router's cutter makes a big difference and is something that even the most experienced operator can forget to bear in mind - we've seen it happen and done it ourselves!

Whichever side is the side seen when finished is referred to as the 'face' side. It may be the case that both sides are face sides because both will be seen, or that only the inside or outside is the 'face'. Whichever side is the face should always be confirmed prior to commencing any cutting, along with any finish/cladding details etc, because as we will explain, cladding thickness will also affect the radius dimensions of any *internal frame* cut to hold cladding.

If this was the face side, it would be referred to as the inside or internal face or internal finished side



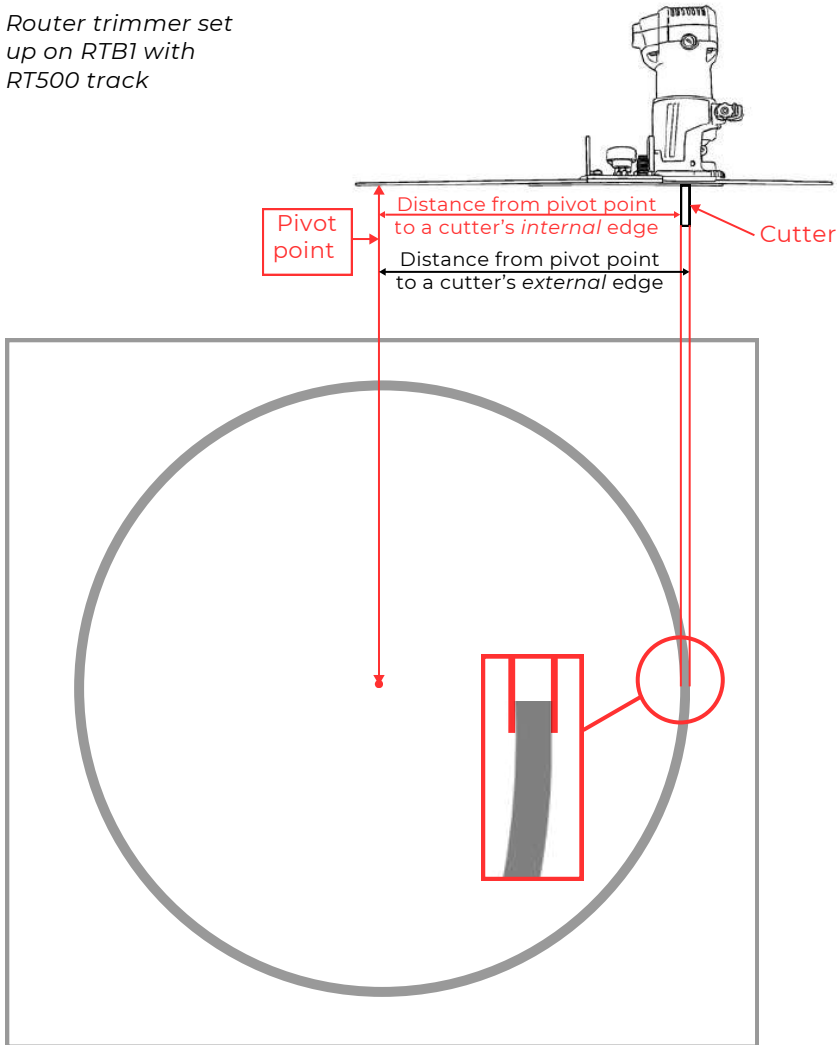
If this was the face, it would be referred to as the outside or external face or external finished side

Choosing the correct cutter edge or blade edge for internal or external radius cuts

As we have explored, there are two types of radial cut: internal and external.

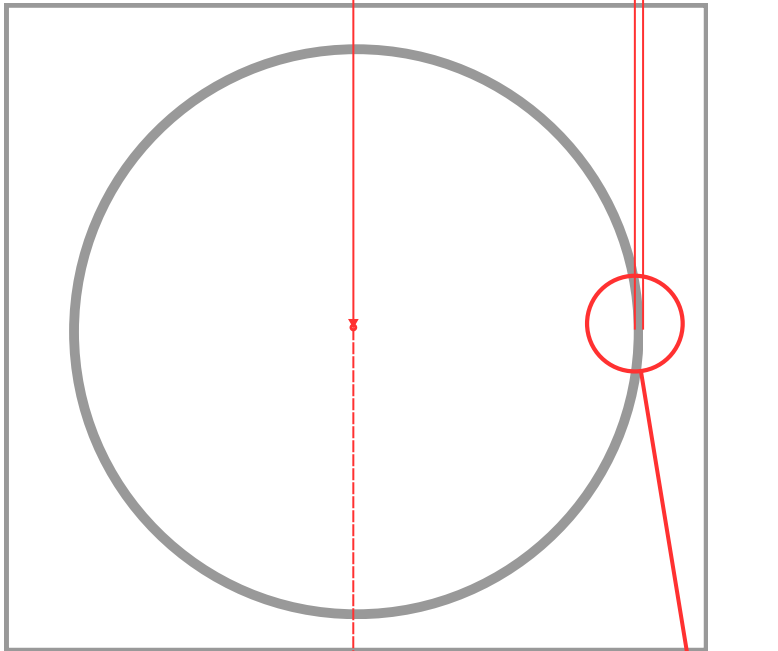
A dimension on a drawing should specify whether the dimension is for an internal or external radius. Which side of the cutter you use will change depending on which piece of the sheet material you want to keep. This means measuring to a cutter's internal or external edge during set up. Take a look at this diagram to see what we mean:

*Router trimmer set
up on RTB1 with
RT500 track*



An external radius is a *convex* radius because it curves outwards (i.e., a circle) - this means setting the dimension of that circle to the cutter's internal edge.

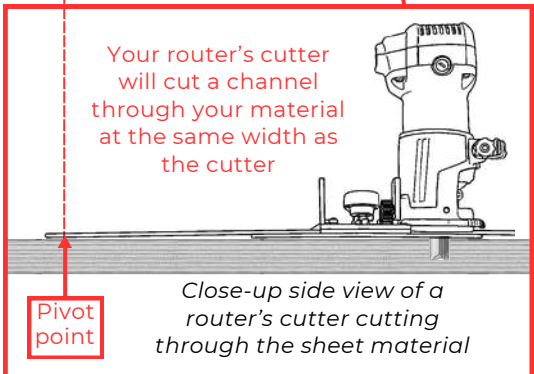
An internal radius is a *concave* radius because it curves inwards (i.e., an arch) - this means setting the dimension of that arch to the cutter's external edge.



Distance from pivot point to a cutter's internal edge

Distance from pivot point to a cutter's external edge

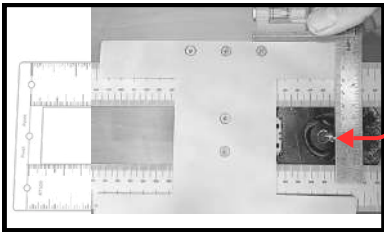
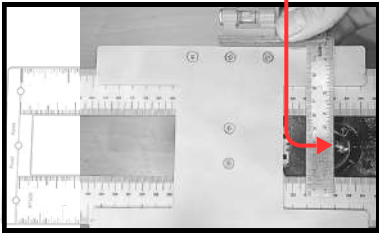
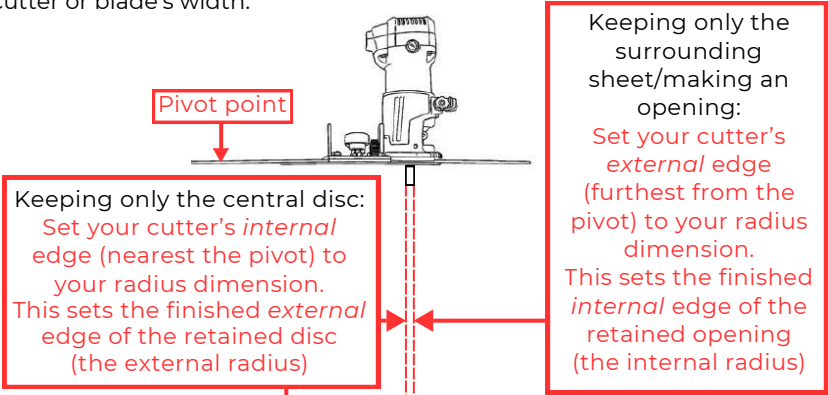
Your router's cutter will cut a channel through your material at the same width as the cutter



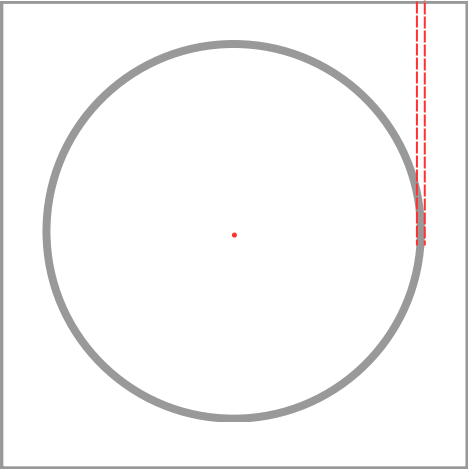
Pivot point

Close-up side view of a router's cutter cutting through the sheet material

The design of Radcut is such that when setting a measurement, you measure out from the centre (pivot) point at zero millimetres, to your required cutter edge, meaning that Radcut automatically accounts for a cutter or blade's width.

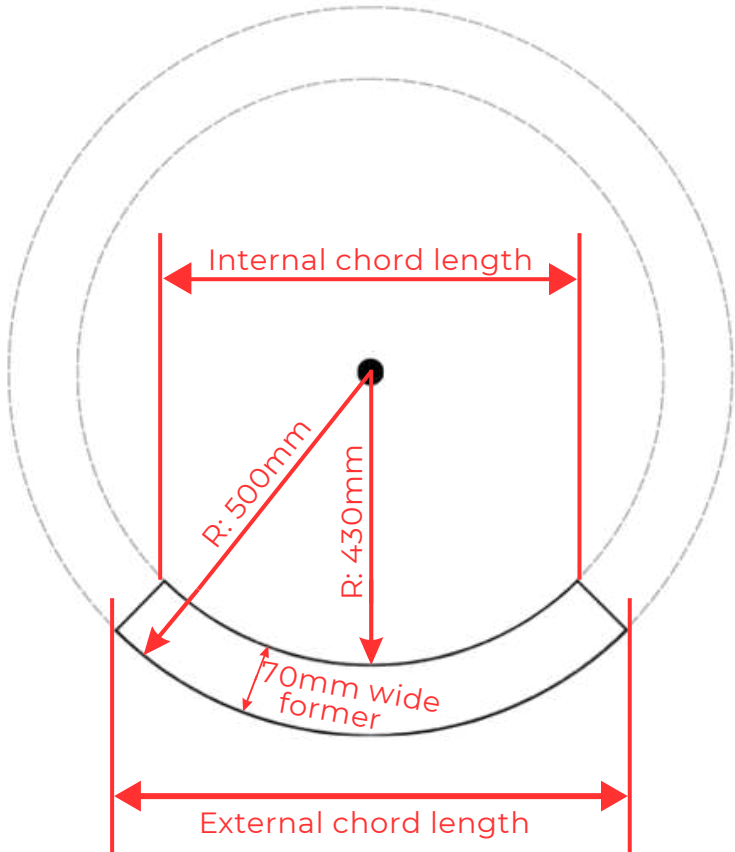


NOTE WHICH SIDE OF CUTTER EDGE IS BEING MEASURED TO IN THESE TWO IMAGES - THESE IMAGES ARE NOT THE SAME!



ANTI-COCK-UP SECTION
Bear in mind that if your cutter is 6mm in diameter, this means that whichever piece is your offcut will have a difference in its radius cut of 12mm diameter (or 6mm radius) from the piece you are keeping. This means if (for example) you wanted to cut a circular opening which then had a circular piece fitting tightly within that opening with little to no clearance, you'd need to use two fresh pieces of material because if (for example) the offcut was the central disc, it would be 12mm too small in diameter to provide only a very tiny gap between the two pieces.

What if you were creating a curved piece that didn't have a straight back edge? - for example where you might want a structure that is curved on both sides. It wouldn't just be the thickness of a single line on the drawing; it would require an inside and outside radius to create a structure thick enough to hold its shape. A chord length should always confirm whether it refers to the inside or outside chord length because either may be the face of a piece, and the overall width of the piece will be affected by this detail as demonstrated by the diagram below.



Setting up to cut the piece drawn in black would be done like so:

Your finished size is a 500mm external radius, so we will work back in towards the centre from that.

First, you'd set Radcut to a 500mm radius and cut that. Remember - when setting your measurement, this is 500mm from the pivot point to the cutter's **INSIDE** edge!

(Always set to your cutter's internal edge for an external radius). 49

Now remember that we're working in towards the centre point so each cut is reducing in diameter. For this example we chose to create a former that is 70mm wide to hold the structure's shape, so:

500mm finish size minus 70mm former width
= 430mm for our internal radius size.

So you'd now set Radcut at a 430mm internal radius and cut that on the same piece of wood.

Remember - when setting your measurement, this is 430mm from pivot point to the cutter's OUTSIDE edge! (You always set to your cutter's external edge for an internal radius).

For parallel radius cuts as in the diagram on page 49, ALWAYS use the same centre pivot point to keep the cuts parallel. That is it. Here's the maths again in short:

R: 500 (external)

R: 430 (internal)

Remember - this is all largely about technique - Radcut is there to speed up the process of setting up your required radius dimensions.

The final specifications for this piece might look something like this:

Material type: 18mm ply

Finished sizes (in millimetres):

R1: 500 (external) - face side

R2: 430 (internal)

External chord: 700mm

End cross cuts: 90°

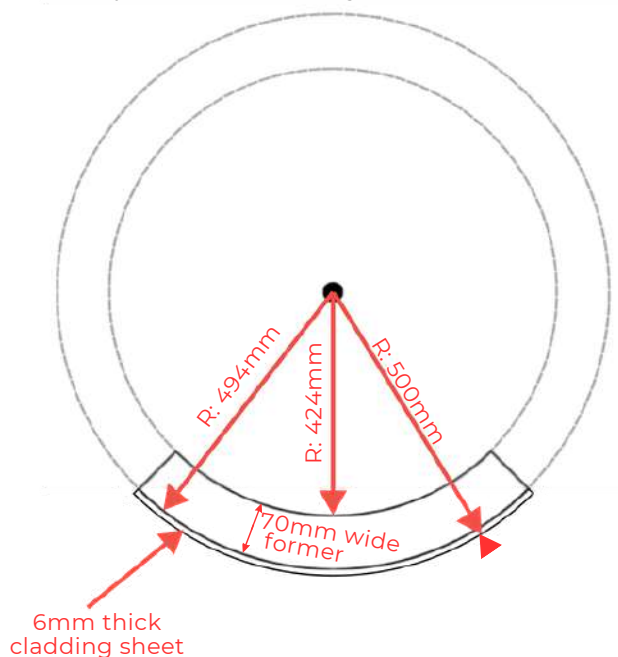
(Meaning the internal chord would be: 602mm approx.)



If you think about it, you'd only need the chord length for the face side (the side that is actually seen) along with the required degree angle of cross cut on either end. The other side's chord length would then naturally land where it lands based on these cuts.

Remember: when cross cutting on curved pieces, using a radius square will make doing a right-angle cut much easier. If you've never seen a radius square before, we have a diagram of one in the last chapter of this manual along with an explanation of how to use one.

Let's go one step further and say that the finished side was clad (lined) with some other material that had, say, a decorative finish to it, maybe 6mm thick MDF sheets as an example. This means that in order to maintain the exact same finished external radius, you'd want to cut your former's outside edge to a radius of 494mm. This would then mean that once it was clad with the 6mm-thick MDF sheet (494mm radius, plus the 6mm sheet thickness) that would bring it to a total of 500mm radius. So you'd cut something like this:



Your *finished* size is a 500mm external radius, so we will work from that:

500mm finish size minus 6mm thick MDF cladding sheet:
 $500 - 6 = 494\text{mm}$ EXTERNAL radius

So first, you'd set Radcut to a 494mm radius to your cutter's internal edge and cut that. This will give your former (hidden frame) the correct size. Remember: you always set to your cutter's internal edge for an external radius - don't memorise this line: instead visualise *why* it works that way - it's much easier to remember!

Next, you'd cut the internal radius:

494mm minus 70mm former width = 424mm

So you'd now set Radcut at a 424mm radius to your cutter's external edge and cut that out of the same sheet of material.

Remember: always use the same pivot point for both cuts!

That is it. Here's the maths again in short:

$500 - 6 = R: 494$ (external edge)

$494 - 70 = R: 424$ (internal edge)

The final specifications for the piece might look something like this:

Material types:

18mm ply former

6mm MDF clad



Finished sizes:

R1: 500 (external) - face side

R2: 424 (internal)

External chord: 700mm

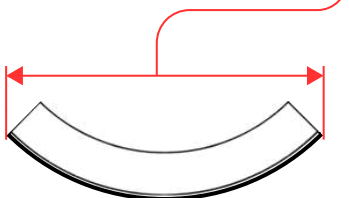
End cross cuts: 90°

ANTI-COCK-UP SECTION

Chord length will normally refer to the face or finish side (the side that is actually seen) along with the angle of cross cut on either end. The inner or rear chord length would then naturally land where it lands based on these cuts.

HOWEVER if you are cladding a former on the external face, now your external chord length would be to **these** points with the cladding

meaning to be super accurate, you'd cut your former shorter, to **these points**



so you might want to draw (set) that out on a sheet before cutting it to be sure of exactly the measurement you are cutting to ...just something to bear in mind!

If you are cutting a whole bunch of sections to make up a complete circle when they are put together, all the cross cuts will be at right angles (90°) to the circle's edge - you will need a radius square to cut these - radius squares are explained at the end of this manual.

Setting a radius measurement:

Mechanically adjusting Radcut

This is where it all comes together

Whether you are using a router trimmer, plunge router or jigsaw, by now you have your chosen power tool mechanically attached to the Radcut system. At this stage, regardless of which tool is attached to Radcut, after step 1 below, the process for setting radius measurements is the same for all tools:

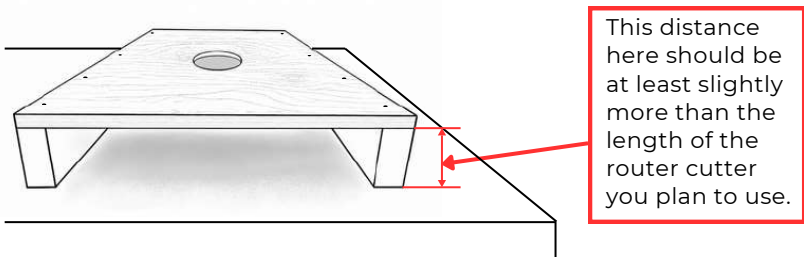
If you are using a jigsaw:

Provided you followed every step in the jigsaw set-up process and have your compatible jigsaw set up on the Radcut system, you can proceed to step 2 on page 55. **If you have not yet done this go back to page 32 and read ALL jigsaw instructions first!**

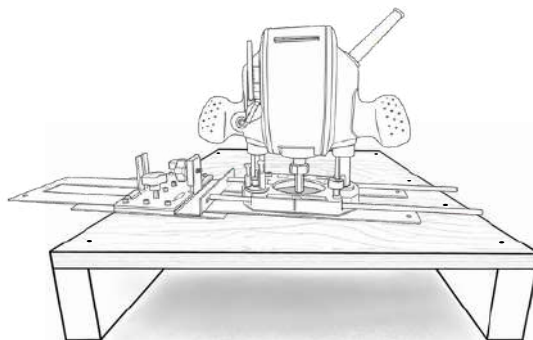
If you are using a router, step 1:

For this stage, you will require the stable work surface we mentioned on page 15 that has a hole through it. As a refresher, the hole wants to be larger than the diameter of cutter or blade attached to your power tool. The clear space (depth) beneath that hole should be slightly bigger than the length of your cutter or blade.

Place it on a stable, solid, level surface, so that it is suspended above the work surface on its legs like so:



Place your assembled router and Radcut assembly on top of this work surface, with the router's cutter directly above the hole in the work surface. The end result should look like this:



WARNING — CUTTING AND UNINTENDED START-UP HAZARD

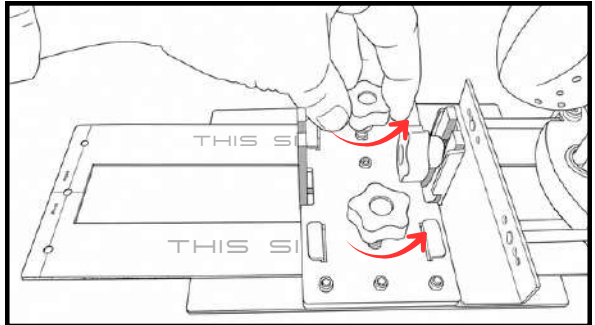
A stationary router cutter can still cause serious injury. Complete this procedure only while the router is switched off and physically disconnected from its power source. For a corded router, remove the plug from the socket. For a cordless router, remove the battery. Do not rely solely on the router's switch, electronic brake, lock-off or anti-restart feature. The router manufacturer's instructions take priority where its plunge or locking mechanism differs from the procedure below.

- 1) Switch off the router and wait until the cutter has stopped completely.
- 2) Disconnect the router from its power source:
 - Unplug a corded router.
 - Remove the battery from a cordless router.
- 3) Check that the cutter is suitable for the router, undamaged and correctly secured in the collet in accordance with the router manufacturer's instructions. Remove all spanners, keys and adjustment tools.
- 4) Place the router and RADCUT ATC1 assembly upright on a firm, level and stable support with a hole through the middle as described. Ensure the router base is fully supported and that there is clear space beneath the cutter opening. The cutter must not be able to contact the workpiece, bench or any part of RADCUT as it is lowered.
- 5) Do not hold the router in the air or balance it over the edge of a bench.
- 6) Keep both hands above the router base and away from the cutter opening when performing this procedure.
- 7) Follow the manufacturer's instructions to lower the router only until the minimum amount of cutter required for measurement is exposed beneath the base, then lock it off.

Step 2

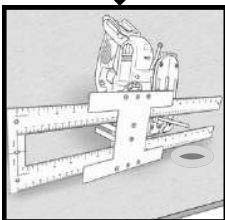
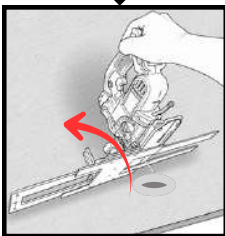
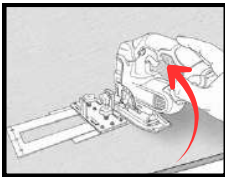
You should now have a Radcut and power tool assembly that has the cutter or blade protruding through the bottom of the Radcut system

Undo both of the lock-off star knobs on RTB1's brakes so that they are loose and the track can move - but do not completely unscrew them from RTB1. To loosen them, turn them anti-clockwise

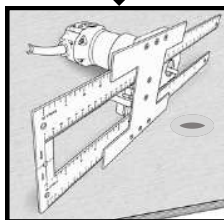
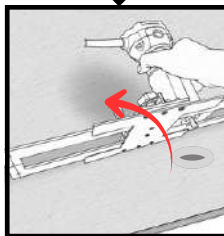
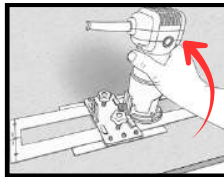


While carefully ensuring that the RT500 or RT250 track cannot slip, turn the entire assembly (consisting of RTB1, radius track and your chosen power tool - all connected together) on its side so that the power tool (while attached to the Radcut system) is lying on its side (or for a jigsaw, lying on its face/front) so that you can now see the underside of RTB1 and your power tool's protruding cutter or blade. The process will look roughly like this:

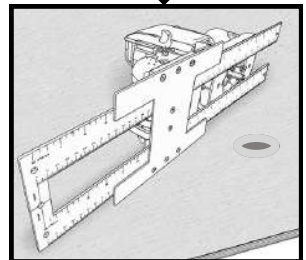
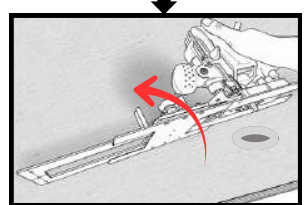
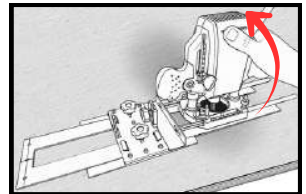
Jigsaw



Trim router



Larger router



Step 3

IMPORTANT - READ THIS BEFORE PROCEEDING ANY FURTHER:

You should not need to strain or use any degree of force beyond gentle, easy movement to move and/or adjust the radius track - if any part of this process isn't smooth and easy (requiring only gentle pressure), STOP, find out why and rectify the issue. Forcing things during any part of this process **is not necessary at all**. Forcing things can cause a slip - and slips can mean hands hit sharp blades - do not force anything!

ANTI-COCK-UP SECTION:

Using a router: Remember to measure to the cutter's cutting edge rather than a narrower part of the cutter's shaft.

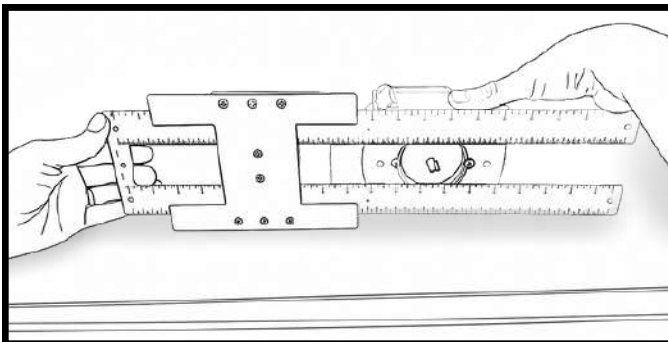
Using a jigsaw: Jigsaw blades flex which will affect measurements - so be gentle particularly when resting the combination square against the blade edge.

Using either: Remember to measure against the correct side of your cutter or blade - are you cutting for an internal or external radius?

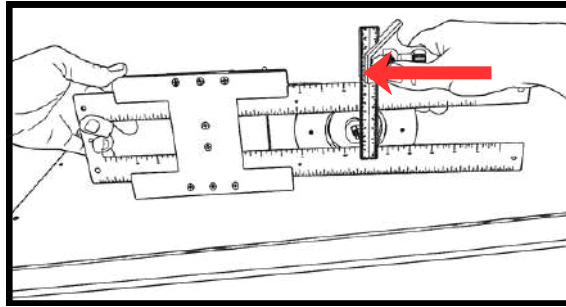
If keeping central disc: measure to cutter's edge nearest pivot point.
If keeping larger piece with round hole: measure to cutter's edge furthest from the pivot point.

In the illustrations that follow, our demonstrator will use the hand which is most comfortable to him for each action. Use your hands in the order most comfortable for you.

To set your measurement, firstly, the radius track should be able to move freely within the track brake RTB1 - if it doesn't, stop and establish why not and rectify the issue before doing anything else. Use one hand to hold the power tool and brake assembly, and with your other hand, move the radius track until the approximate measurement you require is within a few millimetres of the relevant cutting edge of the cutter or blade.

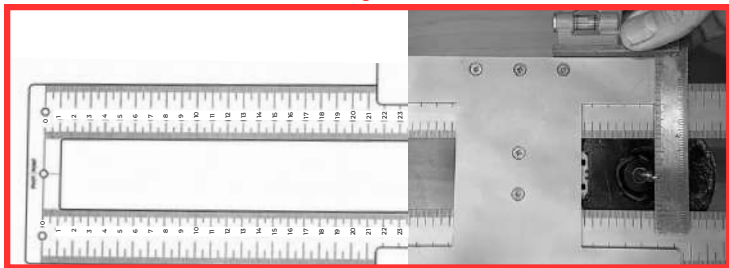


Step 4: Next take your combination square in whichever hand is most comfortable and rest the combination square's body against the long (now horizontal) edge of RTB1 (or your radius track if your large router is set a distance away from RTB1 as illustrated in the example below). Allow your combination square's steel ruler to drop vertically down. Next, gently slide the combination square's ruler edge up to the correct side of your jigsaw blade or router cutter. The process should look something like this:

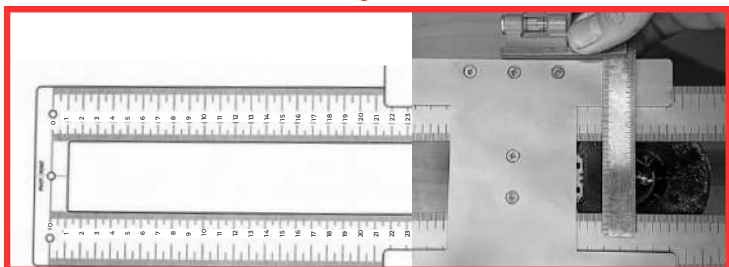


Thanks to the measurement markings on RT250/RT500, you can see how far the blade or cutter's edge is from your pivot point ...and as demonstrated, it is easy to set a radius from either side of the cutter or blade regardless of its size.

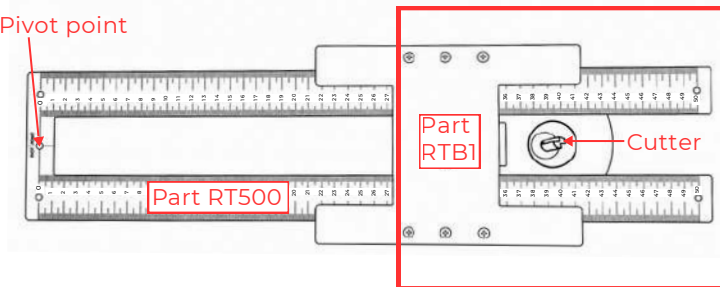
*Setting of radius from pivot point to a cutter's **external** edge*
NOTE WHICH SIDE OF THE CUTTER OR BLADE THE COMBINATION SQUARE CONTACTS!



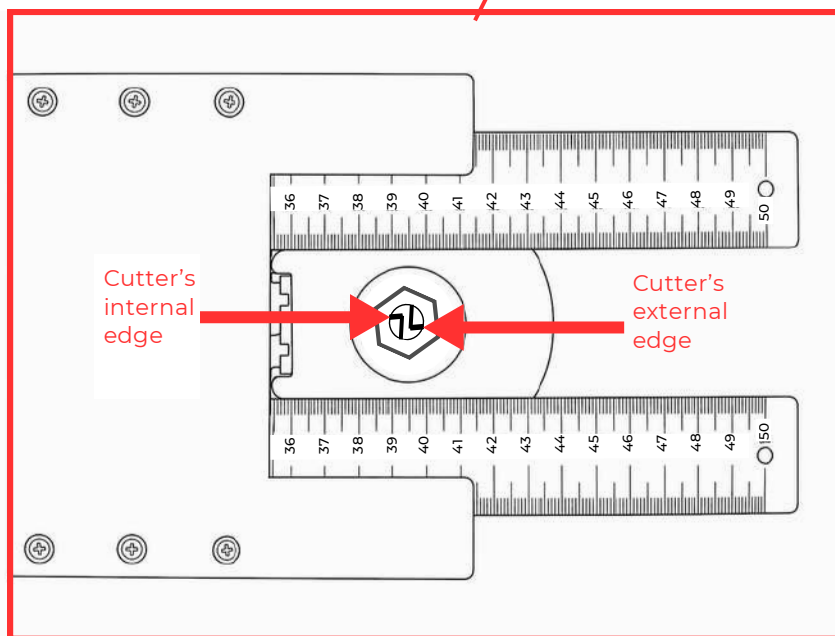
*Setting of radius from pivot point to a cutter's **internal** edge*
NOTE WHICH SIDE OF THE CUTTER OR BLADE THE COMBINATION SQUARE CONTACTS!



Pivot point

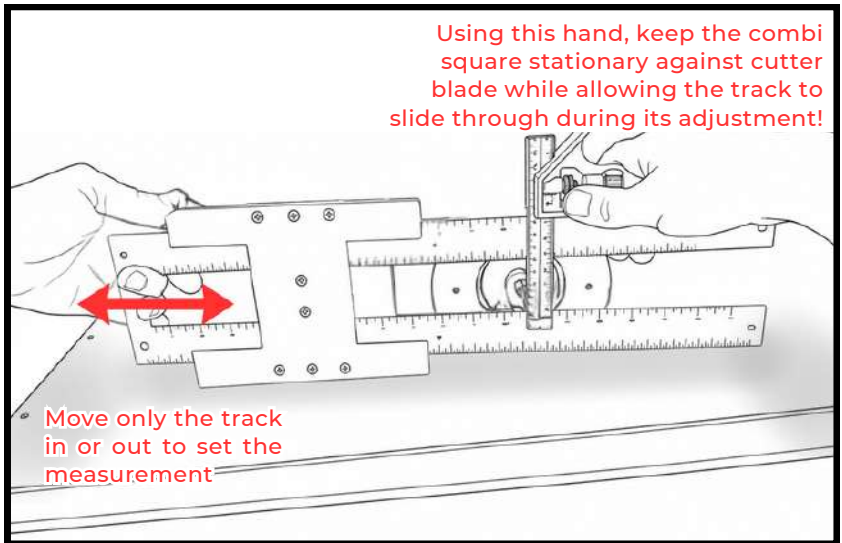


Radcut's measurement system allows a radius to be set to the cutter's cutting edge regardless of cutter size, so it's easier to set a radius measurement.

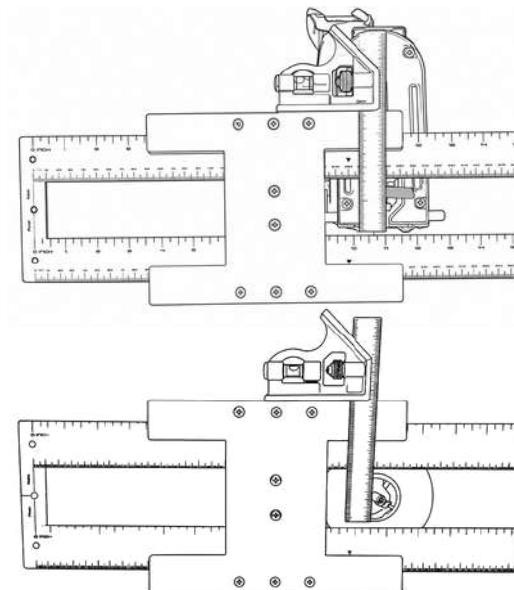


Step 5: To finely-adjust the measurement:

While using one hand to keep the combination square against the cutter or blade edge, use your other hand to adjust RT250 or RT500 gently in or out until the required measurement is reached. Keep the isolated power tool and its cutter or blade stationary during measurement, and adjust the track measurement to the cutter or blade—not the cutter or blade to the measurement. The process looks like this:

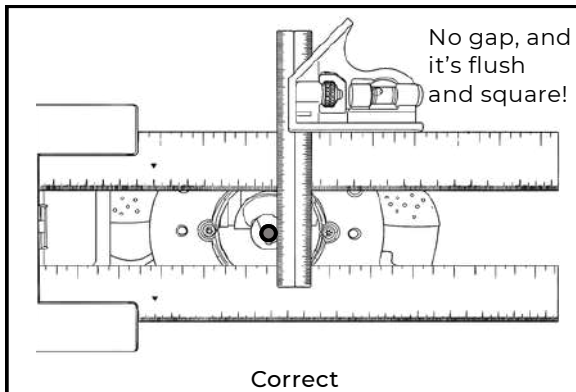
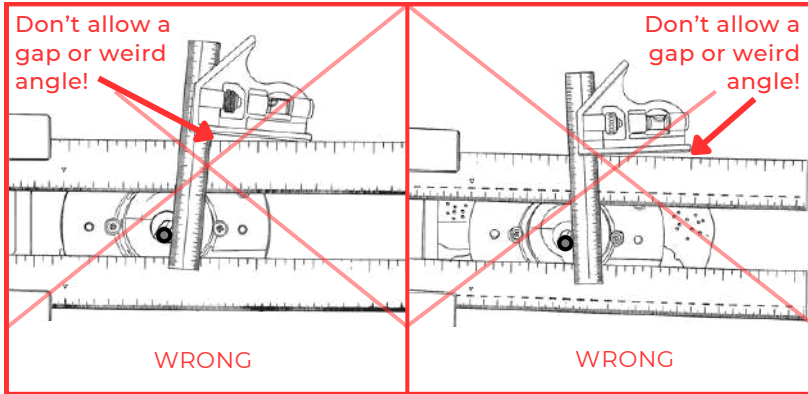


Here you can see the same combination square measuring technique done with a jigsaw and trim router:

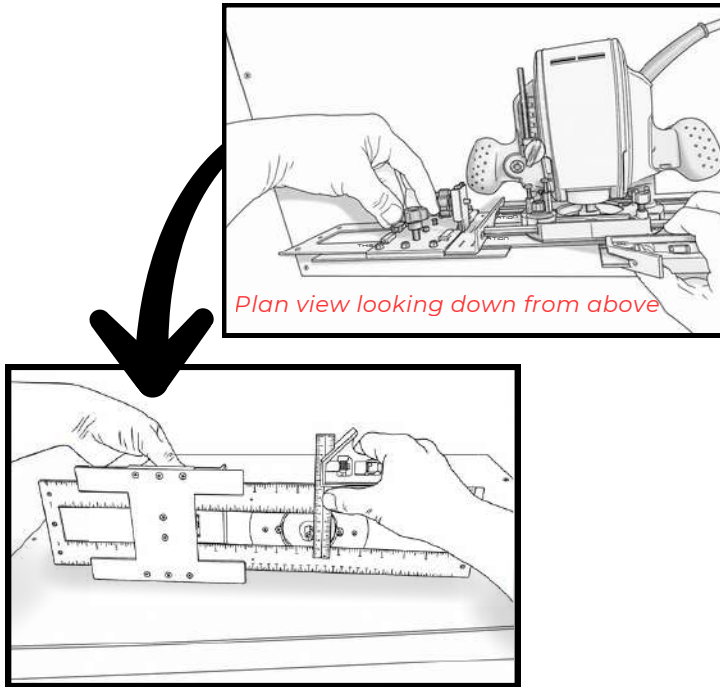


ANTI-COCK-UP SECTION:

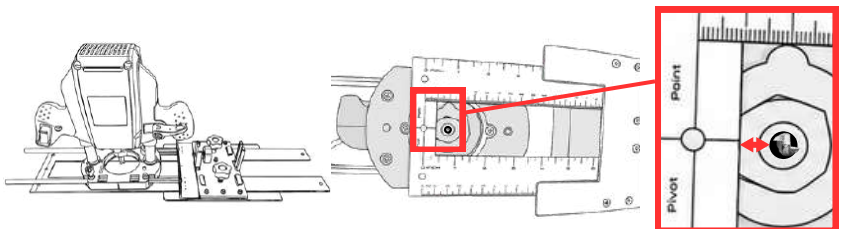
For accurate measurements, you should of course keep the combination square against the cutter or blade edge **at a true right angle**, while allowing the track to slide beneath it during measurement adjustments.



Step 6: Once your measurement is set, reach around to the brake lock-off knobs and turn them clockwise to lock the brake off at your chosen measurement. Turn them until they are hand tight: do not over-tighten, just make sure nothing is loose or easily undone.



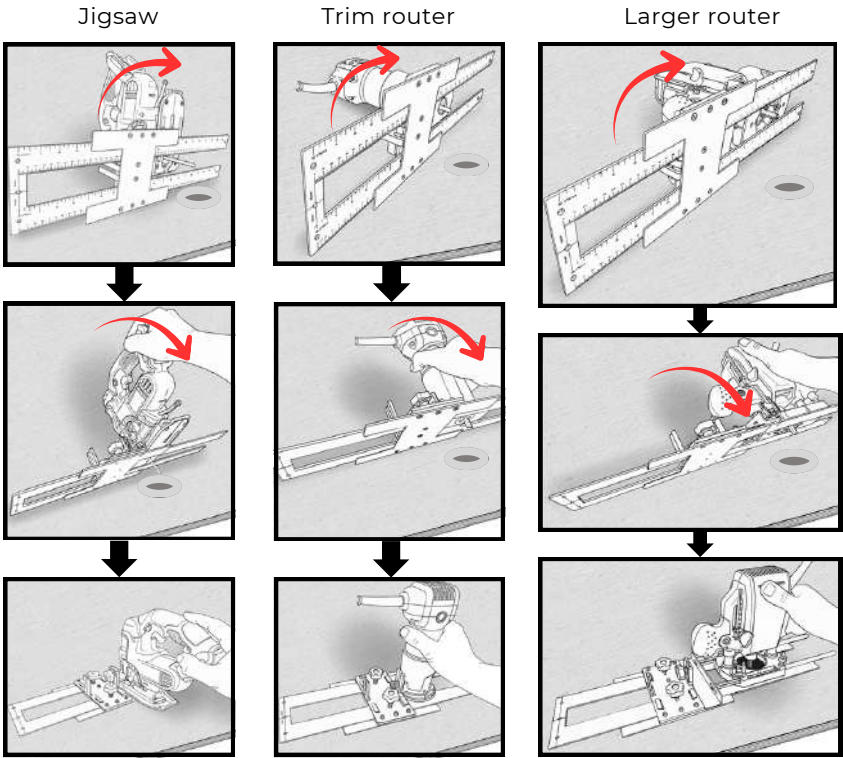
IMPORTANT: When using the RT250 or RT500 to which your power tool is attached, regardless of if you are cutting an internal or external radius, **DO NOT** set any radius that allows the cutter or blade to contact the radius track, FPI, a fixing, support or obstruction. With the tool switched off and isolated, check the complete setup, intended sweep and every cutting depth. If full clearance cannot be maintained, increase the radius or use a different approved configuration to ensure absolutely nothing can be hit by the cutter or blade.



Standard router setup on opposite side (inside) of RTB1 for minimum radius cut example.

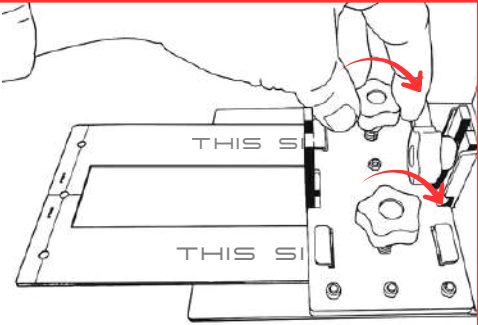
Another example: close-up looking up from underneath at a cutter very close to zero point end of a radius track

Step 7: Using your combination square as just explained, make one final check of your measurement to ensure you haven't accidentally nudged the radius track out of your chosen and set measurement position, then gently turn the whole assembly back into its intended working position, guiding the protruding cutter or blade back into the work-surface opening. The process will look roughly like this:



Step 8

Check the radius track brake star knobs on RTB1 are hand tight and then check the track for any movement to ensure that RTB1 cannot accidentally slide or shift on the track.



Quick recap:

1. Make the required measurement using a combination square or other suitable measuring tool, as described earlier - remember to measure to the correct edge of the cutter or blade for an internal or external cut. Keep fingers clear of all cutting edges and position them so that a slipping measuring tool cannot push them towards the cutter or blade.
2. Bring the measuring tool into light contact only. Do not grip or touch cutting edges. If a router cutter must be rotated for alignment, use only the method specified by the router manufacturer.
3. Once your measurement is set, reach around to the brake lock-off knobs and turn them clockwise to lock the brake off at your chosen measurement. Turn them until they are hand tight - do not over-tighten, just make sure nothing is loose or easily undone.
4. When the measurement is set and locked off, make one final check of your measurement to double check you haven't accidentally nudged the radius track out of your chosen set position.
5. Once you are satisfied everything is in order, remove the measuring tool and any other loose items from the setup area.
6. Gently turn the whole assembly back into its intended working position, guiding the protruding cutter or blade back into the work-surface opening.
7. Do not attempt to set a distance beyond a track's measurement system limits.

Remember:

1. If using a jigsaw or fixed-base router, you must start any intended cut from the side of a sheet or a properly prepared start hole.
2. If using a plunge router, now grip both handles firmly. Release the plunge lock while controlling the router's spring-assisted return. Allow the router to rise slowly to its uppermost position; do not allow it to snap back uncontrolled.
3. Confirm that the cutter has retracted as far as the router design permits. The cutter must not project beneath the base or it cannot be used for true plunges.
4. Do not reconnect the plug or battery while the router remains locked in the temporary measurement position. Reconnect the power only after the cutter has been raised, all loose items have been removed and the complete routing setup is ready for use.

For any change of or new radius, re-measure and repeat the complete dry sweep for safety before performing a live cut.

Accuracy is a system result. Pivot movement, track slip, connection play, tool-interface movement, cutter/blade deflection and operator feed can all affect the finished cut. Before use, secure and check the pivot, track locks, connections and tool interface, select a suitable cutter or blade, and use a controlled feed. Stop if there is any unintended movement, slip, excessive play or abnormal deflection. Radcut is a guide system not a safety device. It cannot compensate for, substitute nor replace the need to think!

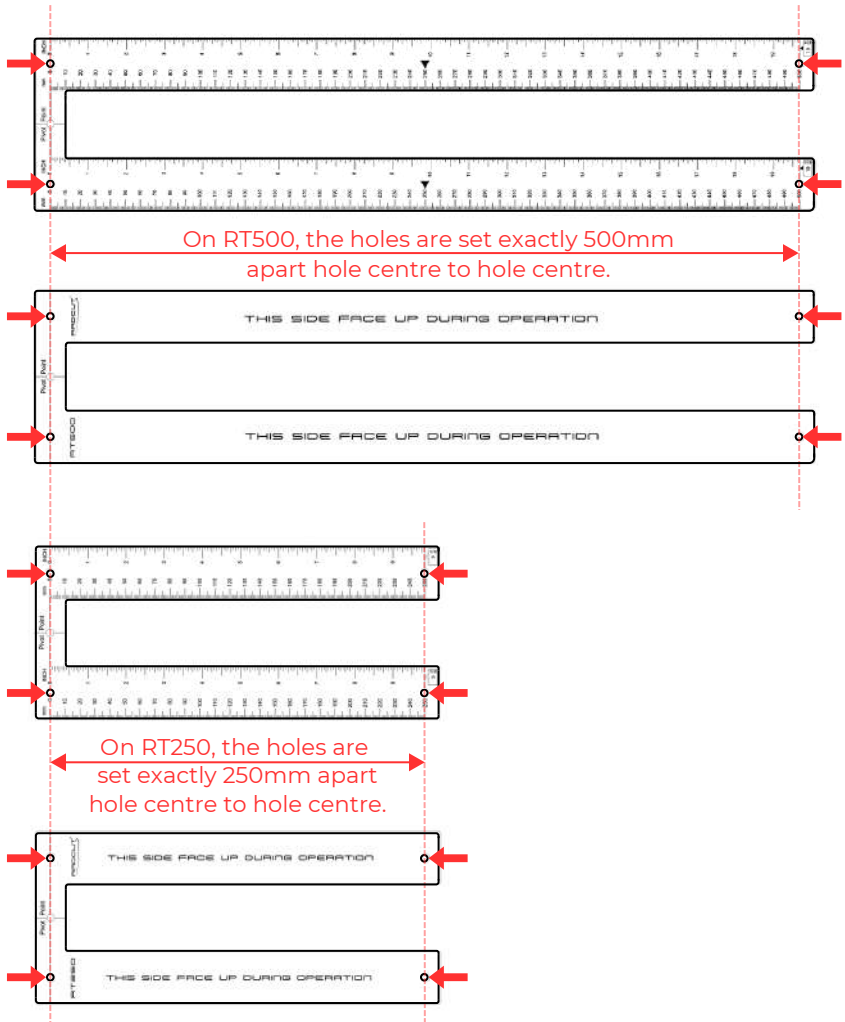
DO NOT USE YOUR POWER TOOL WITH RADCUT IF AT ANY POINT THE BLADE OR CUTTER IS IN CONTACT WITH OR HINDERED BY ANY PART OF THE RADCUT SYSTEM.

THESE INSTRUCTIONS DO NOT OVERRIDE OR ACT AS SUBSTITUTES FOR ANY POWER TOOL INSTRUCTION MANUALS - THOSE MANUALS MUST ALWAYS BE TREATED AS PRIMARY INSTRUCTIONS!

What if you want to cut a radius bigger than the 500mm radius track (RT500)? - If so, this is where Radcut's radius track extenders come into play. If you don't need to do this, proceed to page 87 - Anchoring sheet material

Cutting a larger radius

Let's say you want to cut a radius or circle that is bigger than Radcut's standard 500mm-long RT500 radius track. There are multiple ways to do this. Each Radcut kit comes with one 250mm-long radius track and one 500mm-long radius track - tracks are designed so you can 'daisy-chain' them together regardless of if they are 250mm or 500mm-long track sections. Additional tracks to what is supplied in the kit can be bought separately. Note the parallel holes at either end of each track highlighted here by the red arrows:



This means that you can extend in 250mm-long or 500mm-long increments, as shown below:

Plan view of tracks (from above, looking down)

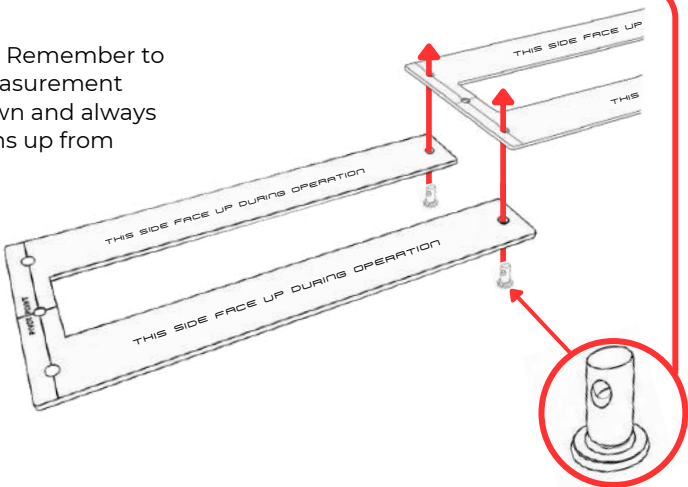


Side view of tracks

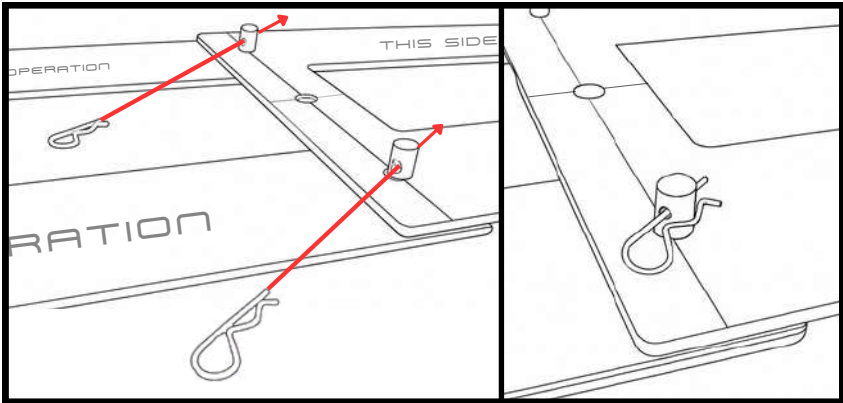


You simply join the sections together using the supplied **connection pins** and 'R' clips:

IMPORTANT: Remember to keep the measurement side face down and always insert the pins up from underneath



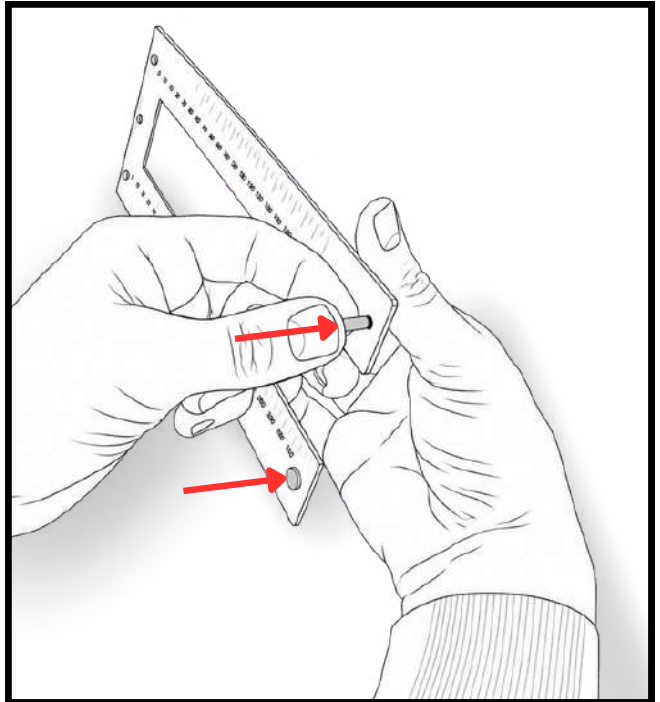
When the connection pins are through the holes, insert the 'R' clips to secure them in place:



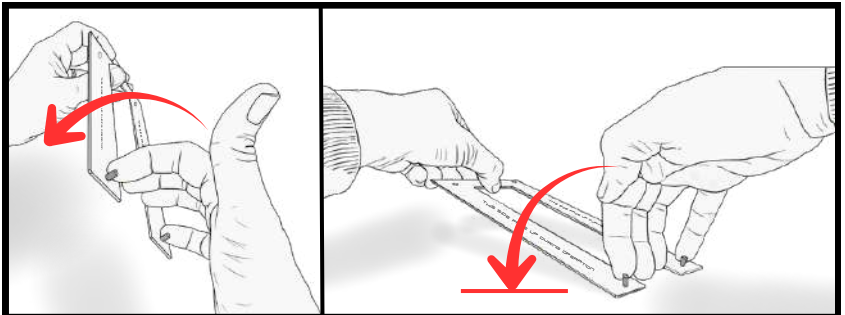
Make life easy - connection pin insertion and securing the easy way

Like everything with Radcut, it's as much about technique as utility. A really easy way to fit the connection pins and 'R' clips is as illustrated below.

First, hold the track side on like so, and insert a connection pin through each of the holes.

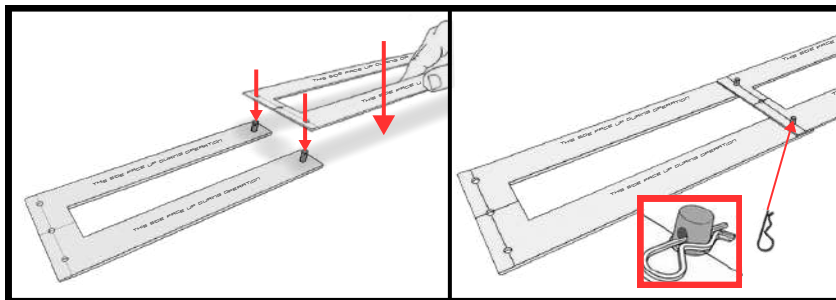


Then put a finger against each protruding pin and press them gently to one side to stop them falling back out of the holes while turning the track flat and placing it on a flat surface.



Once you've put the track down, the flat surface and track will now hold the pins nicely in place for the next step.

Then simply overlay the next track, align its holes with the protruding pins and lower it down onto the pins.



To complete the procedure simply insert the 'R' clips through the holes on the shaft of the connection pins.

THE MATHS:

If for example, you wanted a 1.6-metre (1600mm) radius, and used some RT500 tracks, you could connect (daisy-chain) 3 of them together, taking you to 1.5 metres (1500mm).

You'd then use a final RT500 track assembled with your router, RTB1 brake, etc and set this to 100mm to the (correct!) edge of your cutter, and then connect this to the other 3 tracks. This would take you up to the required 1600mm radius.

Summarised, the maths looks like this:

3 x RT500 (500mm) tracks: $3 \times 500 = 1500\text{mm}$

1 x RT500 set to 100mm: $1500 + 100 = 1600\text{mm radius}$

What if you wanted a radius of, say, 1508mm ...just to be awkward - and the final radius track only safely permits a 15mm minimum radius to ensure the cutter doesn't hit the track? - that's where RT250 comes in.

You could daisy chain in the following way:

$2 \times \text{RT500} + 1 \times \text{RT250} = 1250\text{mm total.}$

Then set a final RT500 track (with tool attached) to 258mm to cutter edge:

$1250 + 258 = 1508\text{mm}$

...in short, there's so many options if the correct setup is employed.

Due to the diverse scenarios in which the Radcut kit might be used, material types, how level and stable an operator's work bench might be and so on, there is no universal maximum extension length. Use only an extension setup that remains straight, rigid, stable, supported and controllable throughout the complete sweep. If it bends, twists, sags, strains, drags or becomes difficult to control, add suitable support, reduce the radius or do not use that setup.

Remember: no part of Radcut should be difficult to use or involve significant force or physical straining of the operator or set up - if it is not easy, safe and smooth to use the system, something is

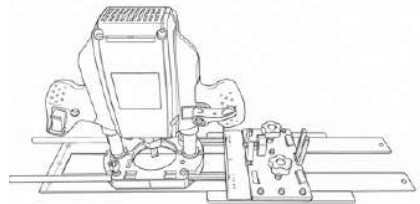
When undoing the connection pins, DO NOT push the 'R' clips back through the connection pin with your fingertips. Not a good idea and likely to hurt! The easiest way to remove the 'R' clips from the pins is to pull them out by the ring end of the clip. Never use only one connection pin and 'R' clip - two connection points are always provided where pins with 'R' clips are supposed to be used. Never force a pin. If it does not enter easily, realign the parts and inspect for burrs, bending, damage, debris or incorrect component orientation.

Fitting connection pins correctly:

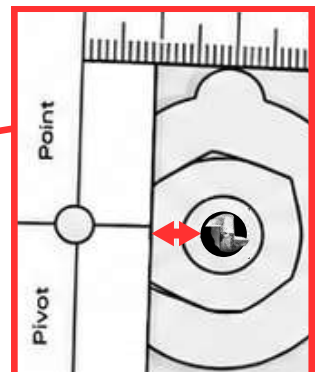
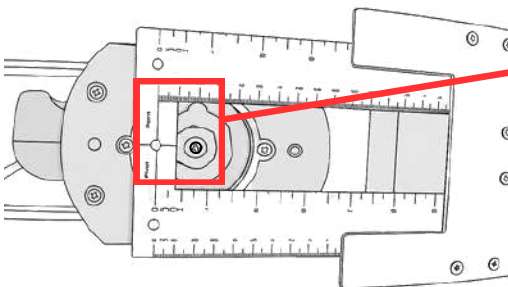
1. Align the correct component holes. The parts should meet without unusual force.
2. Insert each connection pin from underneath so its rounded head is beneath the assembly.
3. Fit the matching R-clip above the assembly. Push it through the pin cross-hole to the first formed bump in the clip. Do not add washers.
4. Fit both pins and both R-clips at every paired joint.
5. Check that play is minimal and the complete joint can sweep without the R-clips contacting the workpiece.

IMPORTANT: When using the RT250 or RT500 to which your power tool is attached, regardless of if you are cutting an internal or external radius, DO NOT set any radius that allows the cutter or blade to contact the radius track, FP1, a fixing, support or obstruction. With the tool switched off and isolated, check the complete intended sweep and every cutting depth. If full clearance cannot be maintained, increase the radius or use a different approved configuration to ensure absolutely nothing can be hit by the cutter.

Standard router setup on opposite side (inside) of RTB1 for minimum radius cut.

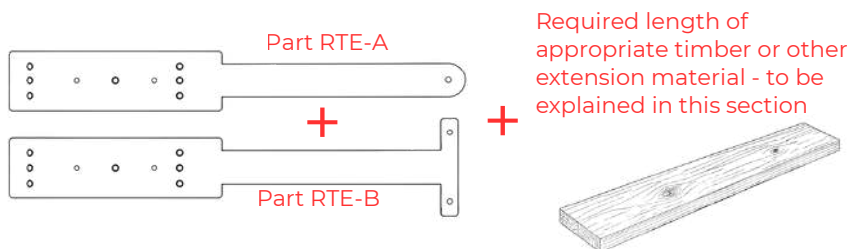


Close-up looking up from underneath at cutter very close to zero point end of radius track



Using RTE-A and RTE-B Radius Track Extenders to create a larger radius - what you'll need.

For this process, in addition to the Radcut set up you assembled earlier (your compatible router or trim router or jigsaw connected to RTB1 and a radius track), you will also require the following parts:



The idea of the RTE-A and RTE-B pieces is to provide a quick and easy way to create a much bigger radius by using a long extension piece/timber. Simply cut your timber/extension to the required length (less the Radcut parts) - we will explain all those dimensions in the coming pages, then screw down either end of your timber or other appropriate extension to parts RTE-A and RTE-B using the methods we will outline in the following pages. This timber extension can then be mechanically connected directly into the Radcut system via its RTE-A and RTE-B ends.

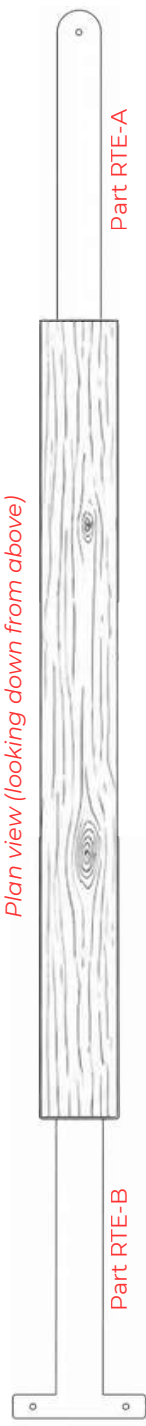
THERE ARE SOME DO'S AND DON'TS AND THINGS TO BEAR IN MIND IN THIS SECTION, SO READ AND UNDERSTAND THE FULL SECTION - IN ORDER - BEFORE CREATING YOUR CHOSEN EXTENSION LENGTH! ...trust us - it might just save you some time and hassle.

USEFUL INFORMATION



This standard drawing symbol will be within a couple of the following drawings. For those who don't know, this symbol denotes a break in a drawing's long lines - for example where a line may be too long to practically fit on a page, or an image too big. In order to fit the important info on the page, a less important section of the long line or drawing is effectively 'chopped' out (bypassed) to 'shorten' the drawing. This means that the important pieces of information can be brought closer together on one page, while (thanks to this useful symbol's existence) still acknowledging the long line's existence.

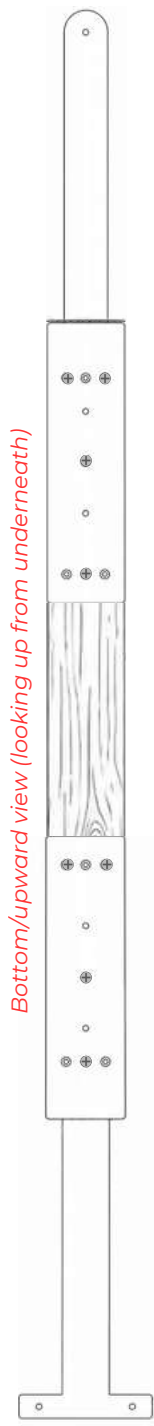
What the complete extension assembly should look like



Side view

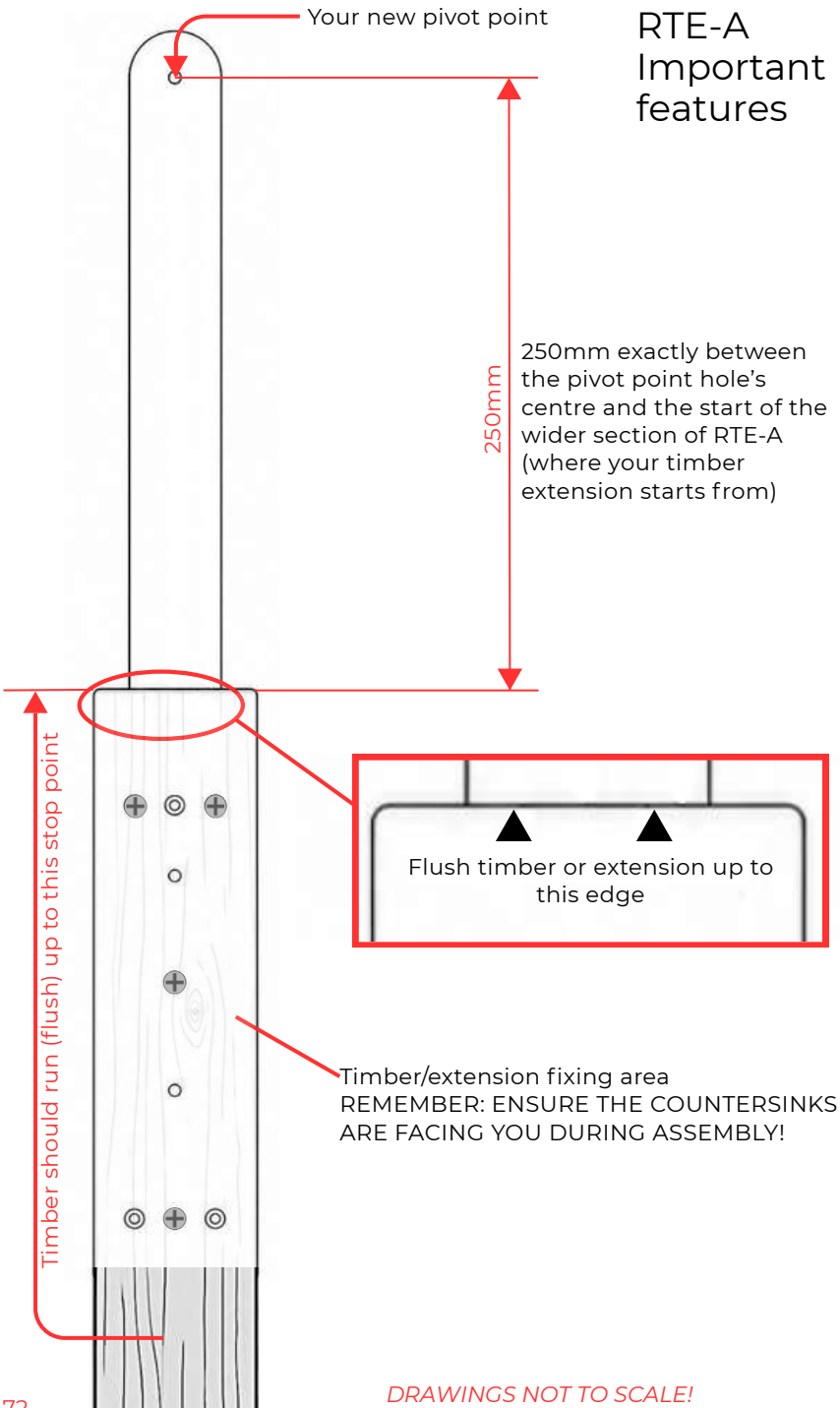


NOTE THAT RTE-A & RTE-B ARE AFFIXED TO THE **SAME SURFACE** (underside) OF THE TIMBER AT OPPOSITE ENDS

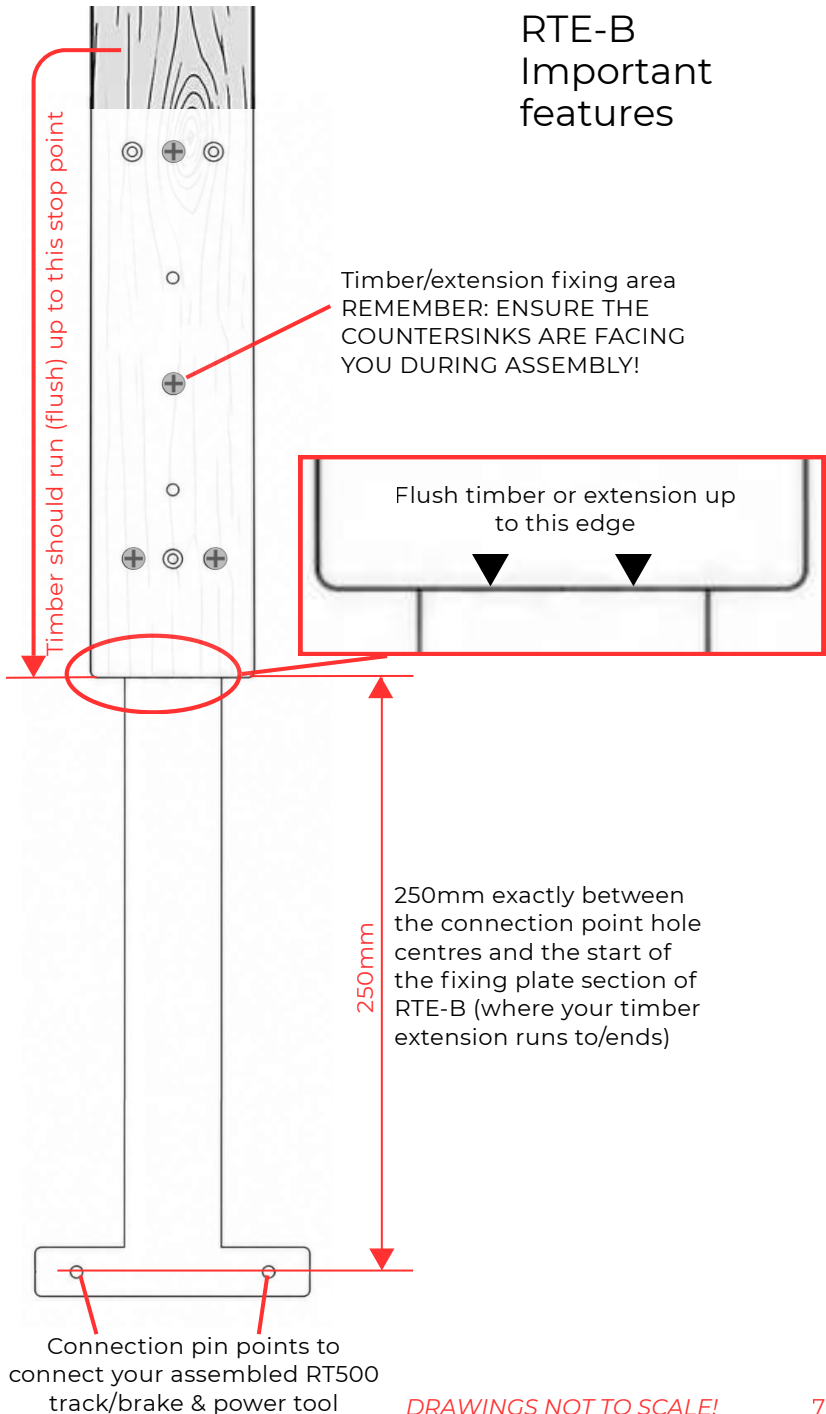


NOTE THAT THE COUNTERSINKS ON THE HOLES MUST BE FACING YOU WHEN SCREWING RTE-A & RTE-B TO THE TIMBER! - ONLY USE THE COUNTERSINK HOLES FOR SCREWING!

RTE-A Important features



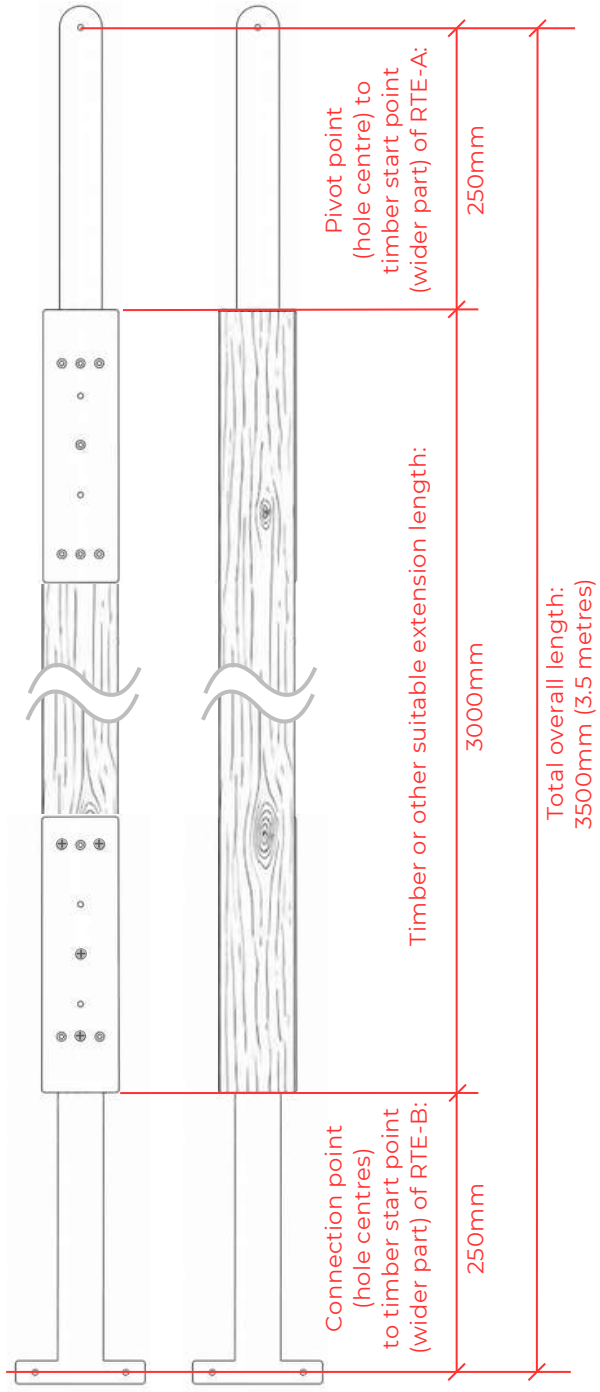
RTE-B Important features



How the maths works

Let's say you wanted to create a circle with a 3.8-metre (3800mm) radius. Here is how you'd do it using RTE-A & RTE-B:

DRAWINGS NOT TO SCALE!

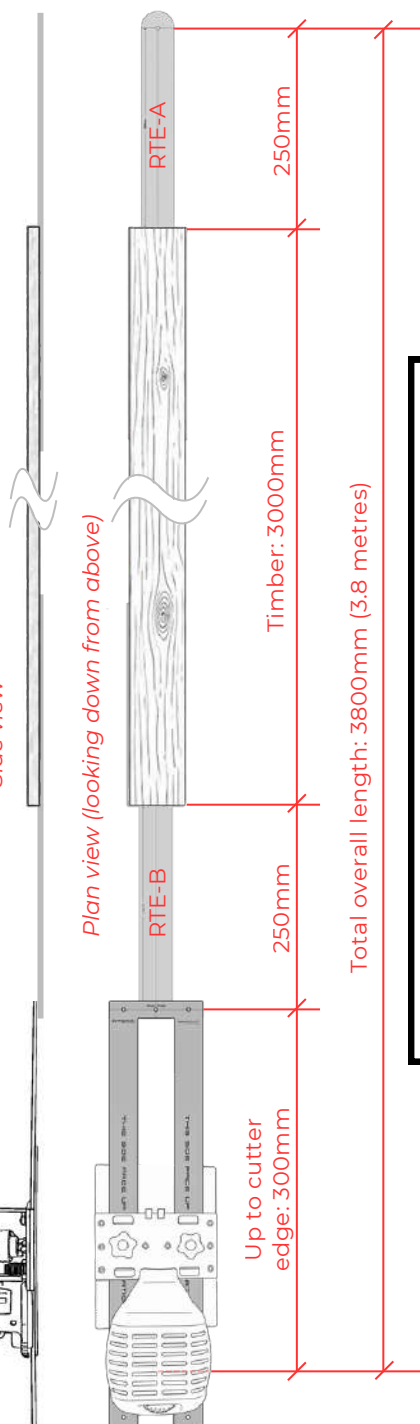


TURN TO NEXT PAGE FOR THE FINAL MATHS SUMMARY

Finally, set your earlier-assembled RT500 track, router, RTB1 brake, etc. to 300mm to the (correct) edge of your cutter (as explained earlier in the manual), then connect that RT500 to RTE-B (we'll explain how to do this in a moment). The final set up should look something like this:

DRAWINGS NOT TO SCALE!

Side view



RT500 track set up: 300mm (set to the correct cutter edge!)

RTE-B:

250mm

Timber length:

3000mm

RTE-A:

250mm

$300 + 250 + 3000 + 250 = 3800\text{mm}$ radius

General equation for a larger radius size using the RTE-A/RTE-B set up:

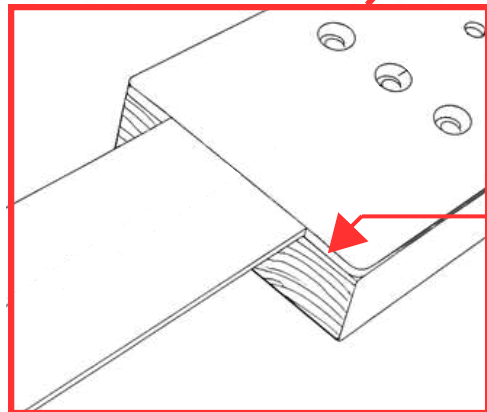
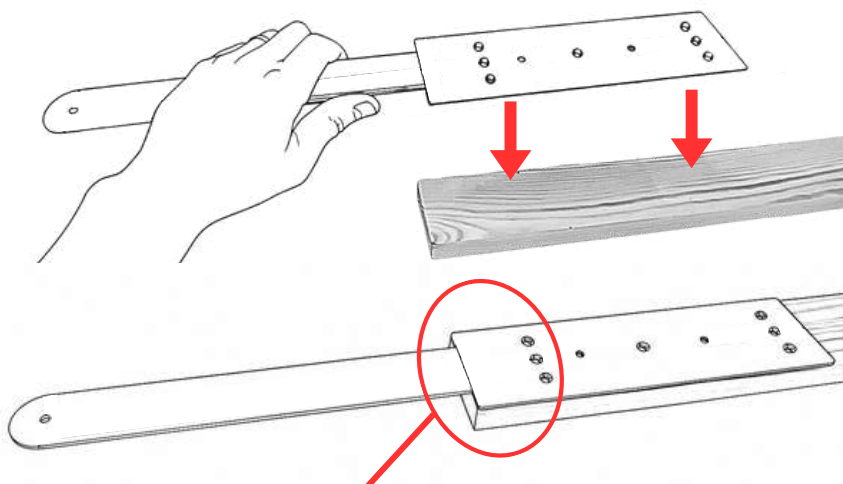
$250\text{ mm (RTE-A)} + \text{actual timber length} + 250\text{ mm (RTE-B)} + \text{selected measurement set on RT250/RT500 track} = \text{total radius.}$

How to assemble RTE-A, your chosen timber extension and RTE-B

Your timber or appropriate extension material **MUST** be cut to the exact right length you calculate, and must have square, right angle (90°) cuts at either end.

Use straight, sound, sufficiently rigid timber of adequate width, thickness and length. Nominal 3 × 1 planed timber (about 70 × 20 mm) is a useful reference, not a guaranteed minimum for every setup.

Take your timber extension and lay it on a flat, level surface so that it is fully supported and lying on its wide face. Take RTE-A and ensure that the side of RTE-A with the countersunk holes is face up. Place the wide end of RTE-A on top of the wide surface of the timber so that it is flush with one end of the timber like so:

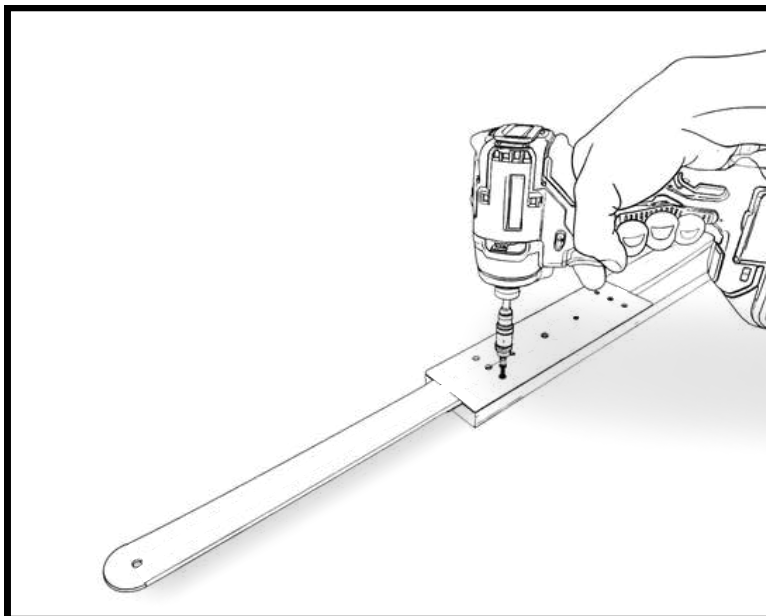


To ensure an accurate radius, your timber must be exactly flush with the wide end of RTE-A and also exactly flush with the wide end of RTE-B at the opposite end of your extension piece.

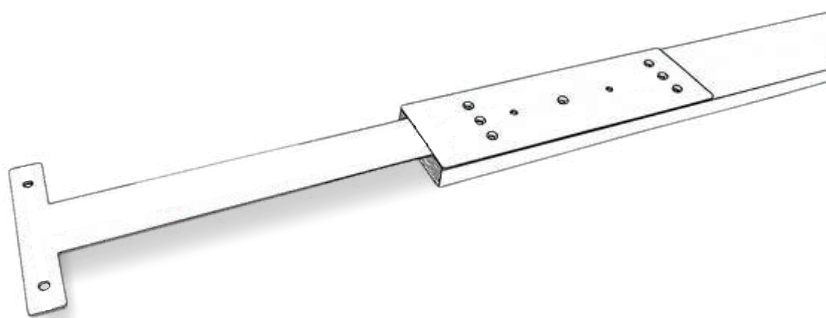
Flush your timber or other appropriate type of extension material up to this edge.

Having pilot-drilled the holes, select countersunk screws of an appropriate length and screw down RTE-A to your extension material using at least three suitable countersunk wood screws distributed along the plate's length. Three screws are the starting minimum, not a guarantee that three are sufficient. Use additional suitable holes and support where the timber, span, joints or expected cutting load require them. Every screw head must sit fully within its countersink and no screw point or sharp edge may protrude.

REMEMBER: USE ONLY THE COUNTERSUNK HOLES!

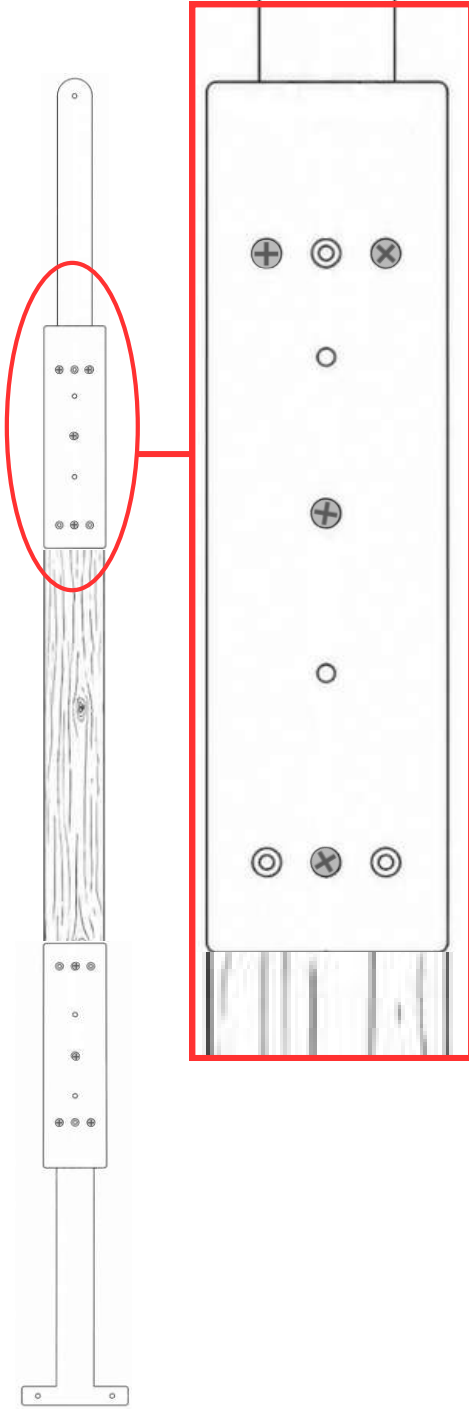


Repeat this process at the opposite end of your timber using RTE-B.



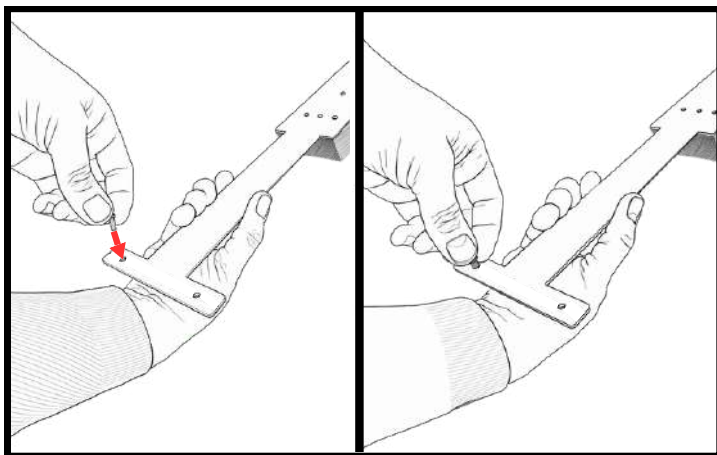
REMEMBER: ENSURE YOU FIX RTE-A AND RTE-B TO THE SAME SURFACE OF THE TIMBER AT OPPOSITE ENDS - SEE SIDE VIEW ILLUSTRATION ON PAGE 71 FOR REFERENCE IF IN ANY DOUBT!

Note: RTE-A and RTE-B feature 7 countersunk holes in each part to offer multiple fixing options (e.g., to avoid timber knots). Three screws are the starting minimum, not a guarantee that three are sufficient. Use additional suitable countersunk holes and support where the timber, span, joints or expected cutting load require them. Every screw head must sit fully within its countersink and no screw point or sharp edge may protrude.

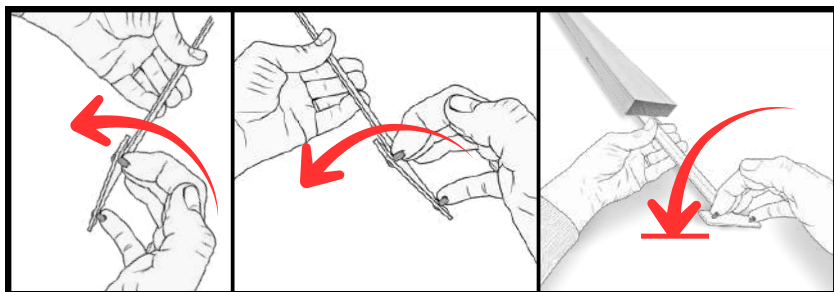


Now set your final measurement to your RT500/RTB1/power tool assembly as described in the measurement section on pages 43-64

Once you've done this, we're going to prepare to attach RTE-B to the power tool/RT500 Radcut assembly. Firstly, confirm that every screw head is fully recessed, no screw point or sharp edge protrudes, and that the RTE plates, timber and workpiece are clean. If the surface may scratch, use only clean, secure, non-abrasive protection that does not alter stability, measurement, clearance or free movement. Next, insert two connection pins through the holes in RTE-B like so:



Then, as per the 'Make life easy' process on page 67, turn the entire assembly of RTE-A, timber extension and RTE-B over onto its opposite face so that the countersunk (screw-head side) of RTE-A and RTE-B are now face down and resting on the workpiece you intend to cut, like so:



Remember: put a finger against each protruding pin and press them gently to one side to stop them falling back out of the holes while turning the entire assembled RTE-A, timber and RTE-B assembly over and placing it on a flat surface.

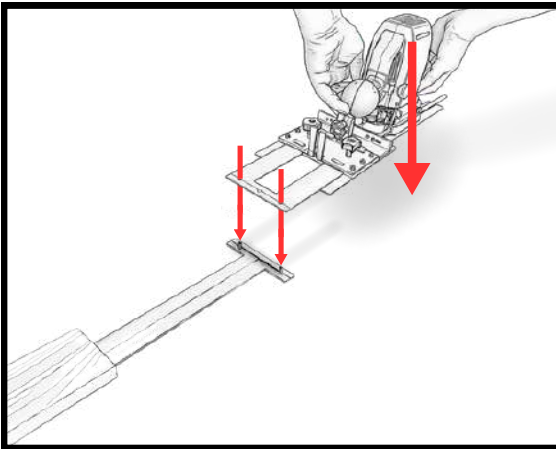
Once you've put the assembly down, the flat surface will now hold the pins nicely in place for the next step.

The RTE-B end of your extension should now look like this:



REMEMBER: Inspect the timber, RTE-A and RTE-B before use. Do not use the extension if any sharp edge, protruding screw or trapped debris could scratch the workpiece or cause injury. Correct the user-made timber or its fixings before use. If a Radcut component has a sharp edge or other defect, do not use it or attempt to modify it.

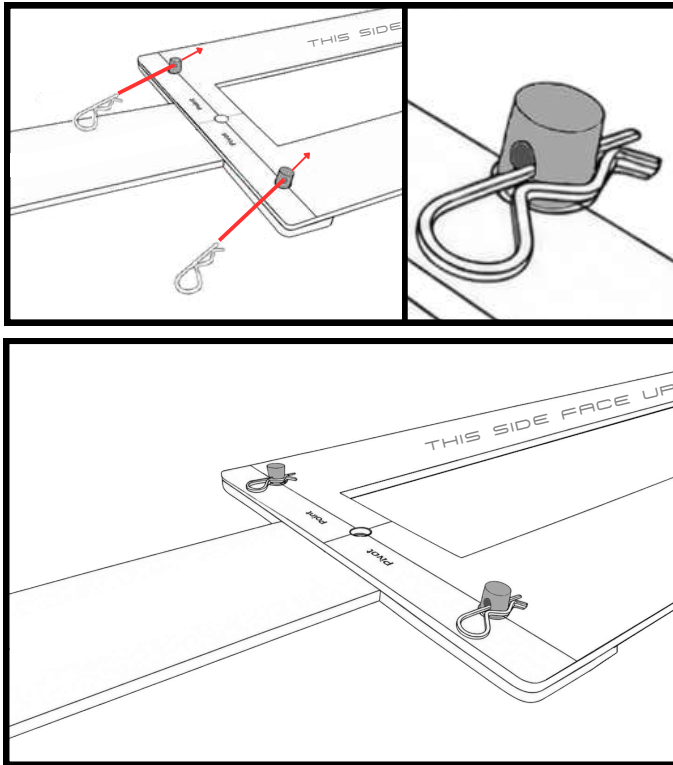
Next, take your RT500/RTB1/power tool assembly and, while holding it over the end of RTE-B, align RT500's parallel holes (either side of its pivot point hole) with the protruding pins on RTE-B and lower the whole assembly down onto the connection pins, inserting the pins like so:



Due to the diverse scenarios in which the Radcut kit might be used, material types, how level and stable an operator's work bench might be and so on, there is no universal maximum extension length. Use only an extension setup that remains straight, rigid, stable, supported and controllable throughout the complete sweep. If it bends, twists, sags, strains, drags or becomes difficult to control, add suitable support, reduce the radius or do not use that setup.

Remember: no part of Radcut should be difficult to use or involve significant force or physical straining of the operator or set up - if it is not easy, safe and smooth to use the system, something is wrong - stop and reassess and reconfigure your chosen set up!

Once RTE-B and your radius track are located and the pins inserted through both, to complete the procedure simply insert 'R' clips through the holes on the shaft of the connection pins to secure them in place:



Check you are happy with all the connections.

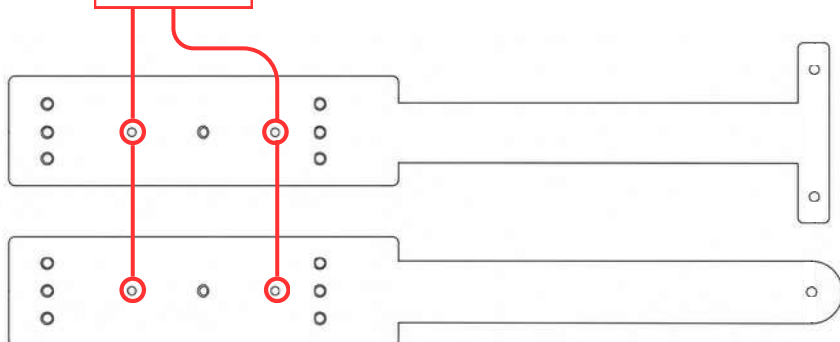
Fitting connection pins:

1. Align the correct component holes. The parts should meet without unusual force.
2. Insert each connection pin from underneath so its rounded head is beneath the assembly.
3. Fit the matching R-clip above the assembly. Push it through the pin cross-hole to the first formed bump in the clip. Do not add washers.
4. Fit both pins and both R-clips at every paired joint.
5. Check that play is minimal and the complete joint can sweep without the R-clips contacting the workpiece.

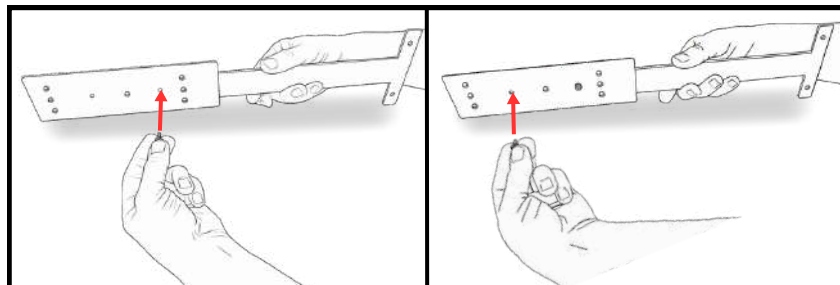
Never use only one connection pin and 'R' clip - two connection points are always provided where pins with 'R' clips are supposed to be used. Never force a pin. If it does not enter easily, realign the parts and inspect for burrs, bending, damage, debris or incorrect component orientation.

Alternative 750-mm long extension arm option - no timber required.

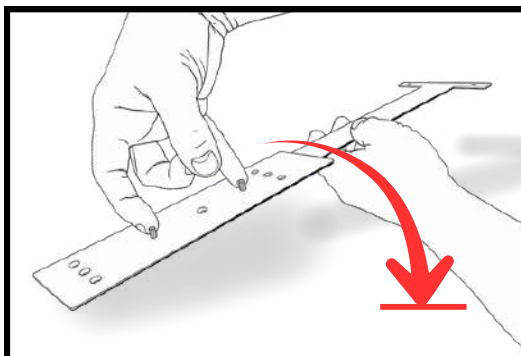
In the middle of the wider part of RTE-A and RTE-B are two centrally-aligned parallel holes that are NOT countersunk.



These are the holes you'll use - they are present specifically for this use. Firstly, while holding RTE-B side on, insert two connecting pins through those holes on RTE-B - remember to use the same insertion technique as on page 67 to make life easy:

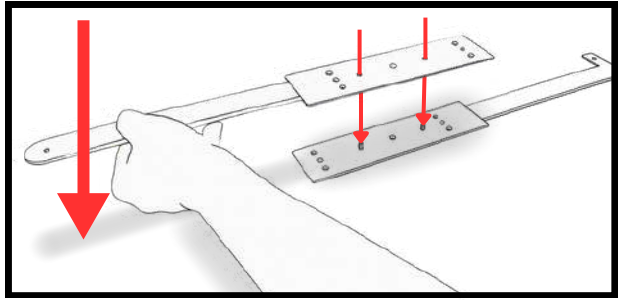


Next, as per the method shown in the making life easy section on page 67, while holding the pins gently in place with your fingertips, turn RTE-B over from side-on, so that it is now flat with the pins protruding upwards, and place it to rest down on a stable, level surface.

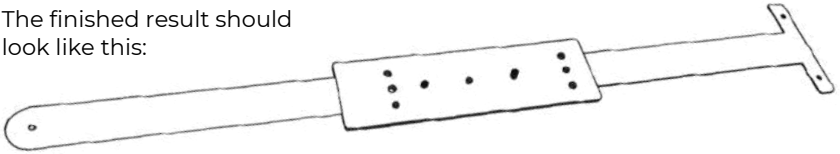


Then simply place RTE-B on a flat surface and overlay RTE-A on top of it.

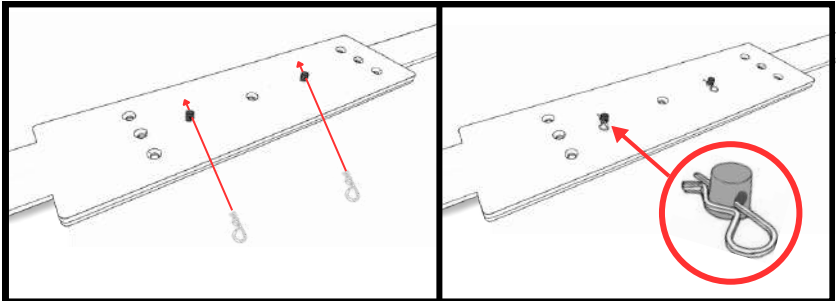
Lower RTE-A down so that the pins now also go through its corresponding holes.



The finished result should look like this:



Once located, to complete the procedure simply insert 'R' clips through the cross holes on the connection pin shafts to secure them in place:



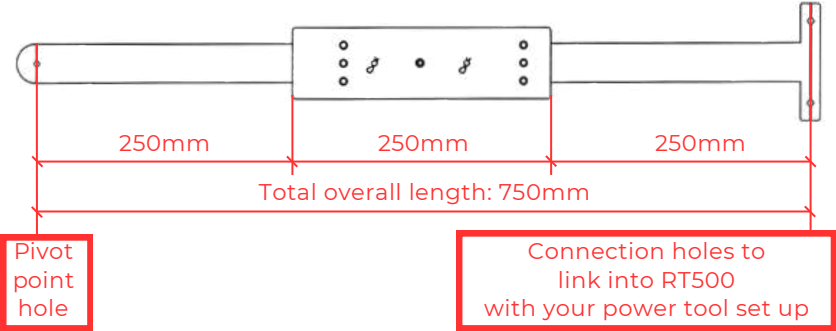
Connection-pin fitting summary:

- 1.Align the correct component holes. The parts should meet without unusual force.
- 2.Insert each connection pin from underneath so its rounded head is beneath the assembly.
- 3.Fit the matching R-clip above the assembly. Push it through the pin cross-hole to the first formed bump in each clip.
- 4.Fit both pins and both R-clips at every paired joint.
- 5.Check that play is minimal and the complete joint can sweep without the R-clips contacting the workpiece.

Never use only one connection pin and 'R' clip - two connection points are always provided where pins with 'R' clips are supposed to be used.

Never force a pin. If it does not enter easily, realign the parts and inspect for burrs, bending, damage, debris or incorrect component orientation.

Here's the finished setup complete with measurement breakdown:



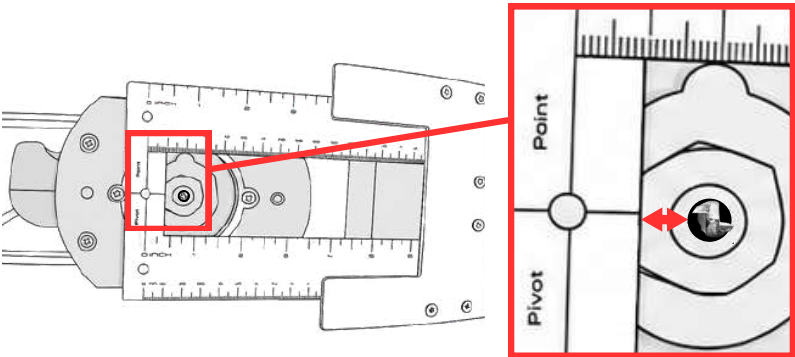
As an example, with the above setup and a connected radius track, your total maximum and minimum radius cut could be:

Using 1 of RT250:

1000mm maximum external or internal radius
765mm minimum internal radius (this allows 5mm clearance between cutter's internal edge and radius track's zero-millimetre end). Minimum external radius would depend on your chosen cutter's diameter due to how close it gets to the zero-millimetre end of the radius track before the cutter could hit the radius track - again, we recommend a minimum of 5mm clearance between cutter edge and radius track.

Using 1 of RT500:

1250mm maximum external or internal radius.
765mm minimum internal radius (this allows for 5mm clearance between cutter's internal edge and radius track's zero-millimetre end). Minimum external radius would depend on your chosen cutter's diameter due to how close it gets to the zero-millimetre end of the radius track before the cutter could hit the radius track - again, we recommend a minimum of 5mm clearance between cutter edge and radius track.



Close-up looking up from underneath at cutter very close to zero point end of radius track

ANTI-COCK-UP SECTION

If using a timber extension, your timber or appropriate extension material **MUST** be cut to the exact right length you calculated, and must have right angle (90°) cuts at either end for accurate flush-up to parts RTE-A & RTE-B.

To ensure an accurate radius, your timber must be exactly flush to the wide ends of RTE-A & RTE-B as per the instructions on page 76.

Use straight, sound, sufficiently rigid timber of adequate width, thickness and length. Nominal 3 × 1 planed timber (about 70 × 20 mm) is a useful reference but not a guaranteed minimum for every setup: the size of timber or other material you should use as an extension is really dependent on its quality and the size of radius you plan to cut - this must be decided by the end user.

Geometry says yes. Physics still gets a vote:

Secure each RTE plate with at least 3 suitable countersunk wood screws distributed along its length. 3 is the minimum, not a guarantee that 3 is sufficient!

Use extra suitable holes where the chosen timber, radius, joints, support or cutting load requires them.

Seat every screw head in its countersink; obtain secure grip in sound timber; allow no protruding screw points or sharp edges. Add stable support wherever the member sags, flexes, bounces or twists. Supports must remain clear of the full sweep.

There is no universal maximum safe span or radius. Rigidity, joints, fixings, support, tool load and the work area determine whether a particular extension setup is usable.

Every paired joint must use both connection points.

Never force a connection pin - if it does not pass through easily it means something is wrong - so stop. Check component choice, hole alignment and angle, then inspect for burrs, bending or damage. Correct the cause before use.

IMPORTANT: Remember to always insert the pins up from underneath

IMPORTANT: When using the RT250 or RT500 to which your power tool is attached, regardless of if you are cutting an internal or external radius, **DO NOT** set any radius that allows the cutter or blade to contact the radius track, FPI, a fixing, support or obstruction. With the tool switched off and isolated, check the complete intended sweep and every cutting depth. If full clearance cannot be maintained, increase the radius or use a different approved configuration to ensure absolutely nothing can be hit by the cutter.

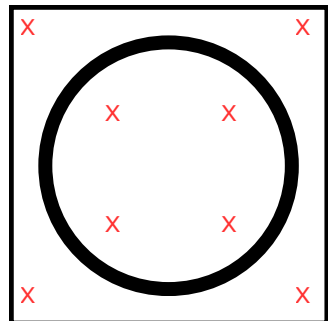
When undoing the connection pins, DO NOT push the 'R' clips back through the connection pin with your fingertips. Not a good idea and likely to hurt! The easiest way to remove the 'R' clips from the pins is to pull them out from the ring end of the clip.

Never use only one connection pin and 'R' clip - two connection points are always provided where pins with 'R' clips are supposed to be used. Never force a pin. If it does not enter easily, realign the parts and inspect for burrs, bending, damage, debris or incorrect component orientation.

IMPORTANT! Sheet material anchoring: *...don't saw the branch you are sat on!*

Don't read that silly metaphorical title as an instruction to sit on anything! Remember that old classic in the cartoons? It sounds ridiculous, but this is important. Cutting circles using a power tool anchored to a central pivot point by any means (whether using Radcut or not) relies on a pivot point that is secure and does not accidentally work loose. It is also essential to anchor down both sections of the sheet that will become separated from each other after a through cut. This requires more than one fixing point on what will become each piece. If you were to fix down your sheet in the four corners and then cut a circle all the way through the sheet, the moment you had cut all the way through the sheet, the circular piece in the middle would no longer be anchored down and would be able to move. In turn, this would result in your router and Radcut system now moving with the loose circular piece they are attached to. This would mean your cutter would be able to cut into and damage the outer piece. Moreover, the sudden movement may risk snapping your cutter or snatching your router while in motion. Similarly, if you only fixed down the sheet from the space within the circular cut, the outer piece would be loose once detached from the central piece - potentially resulting in similar issues. It is therefore essential that you employ fixings to hold down both within the intended offcut and intended 'kept' or finished piece before commencing any cutting, being sure to keep all fixings well clear of where your cutter might run.

As an example, using red 'X' markers, these would be the sorts of places where we at Radcut would fix down a sheet prior to commencing cutting. You should be able to count 8 red 'X' markers:



Regardless of the shape you intend to cut, whether it is a former, full circle or an unusual shape, you must secure and support the sheet before cutting in the areas that will become both the off-cut and the intended 'kept' finished piece (both sides of the intended cut), using an adequate number of securing points. Do not make a through-cut unless both resulting portions will remain secured and supported. Fixings must always be kept outside of the cutting path and the complete 'sweep' area - that is any area through which your power tool, Radcut or any extension or track will pass during the cut. Bear in mind that you could fix the sheet down by screwing up from underneath if you wish to avoid puncturing its surface.

NOW GO TO PAGE 88 FOR THE NEXT STEP - SETTING THE PIVOT

Choosing and securing the pivot point

There are two options for creating a pivot point:

Option 1 is simply using a screw to screw down the pivot point hole in your radius track or the end of RTE-A, to the desired point you mark onto your sheet material.

Option 2 is using the Radcut system's floating pivot FP1 - this part makes it possible to create a pivot point over a workpiece without having to puncture the surface of the sheet or screw into it - we will look at this in a moment.

Regardless of which option you use, your pivot point is of course always to be marked in the centre of your circle or radius. For material that is difficult to mark with a pencil (for example non-porous/waterproof materials) or a finished surface that you don't want to mark, we recommend using a piece of wide masking tape or (depending on your material type) something whose adhesive will not damage or stain the work surface. Position it in the approximate position of your desired centre point (within a few millimetres) - this can then have your pivot point drawn onto it. It is worth noting that drawing your pivot point using pen can risk ink bleeding/soaking into a material's surface (this can be difficult to remove/sand off afterwards), while if your material is soft and easily dented you may want to consider using something with a softer writing tip to mark your centre point.

IMPORTANT: So we're clear here, what you will be screwing down is your radius track with the assembled router or jigsaw and brake assembly, and you must have set your measurement *before* screwing down its pivot point - accurately setting your measurement *after* screwing down to the pivot is not possible - if you haven't yet performed this step, go back to page 53 and set your measurement - remember as per pages 43-64 to set measurements to the correct side of your cutter or blade for your planned cut!

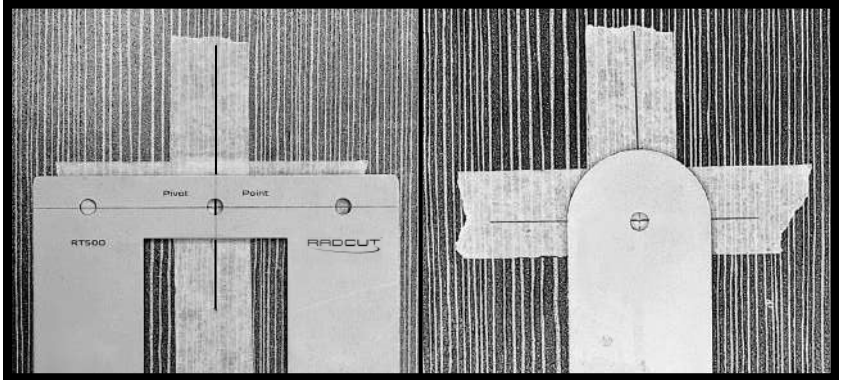
Mark your centre point with a cross (+) style marking so it has an 'X' and 'Y' line. Draw the 'X' and 'Y' lines as close to right angles (true vertical and true horizontal from each other) as you can get them.

Use a ruler to mark them and if you plan on using FP1, make these lines at least 70mm long, taking care to ensure that where they cross each other is on your required centre point.



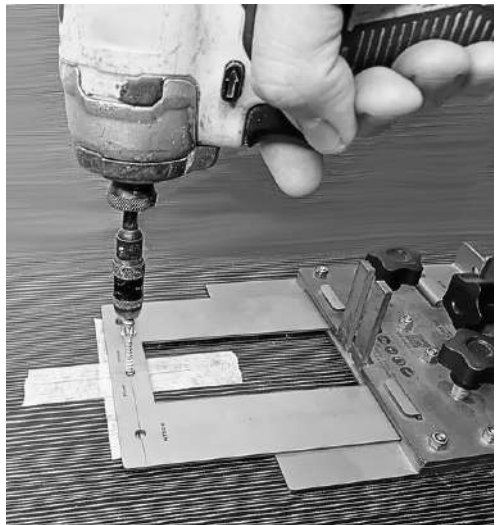
OPTION 1 - using a screw as your pivot

If you are using a screw as your pivot point, simply align your chosen setup's pivot point hole over the 'X' and 'Y' lines, like so:



Next, take a screw of the appropriate length for your material and screw through the pivot point hole into the material. If necessary (if the surface of the material is hard for example) pilot drill the hole first.

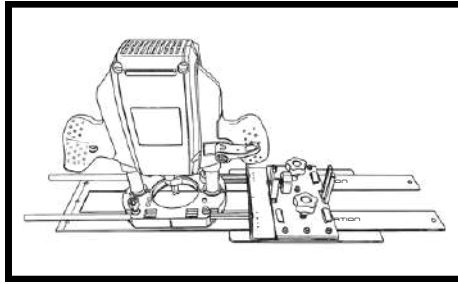
The screw must be a fully threaded countersunk wood screw with a nominal diameter of 5 mm, measured across the outermost points of the thread, to minimise play in the pivot hole. In UK metric sizing, this means 5 × the required length—for example, 5 × 25 mm or 5 × 30 mm. Select a length that anchors securely in the workpiece or a suitable supporting board without protruding beneath the supporting surface. Perform a pull-and-twist check before applying power.



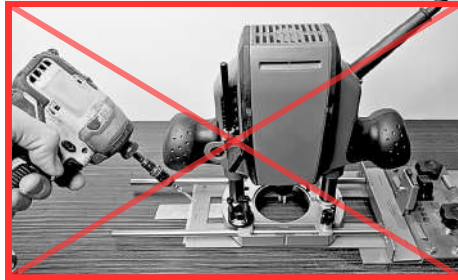
The sweet spot when fitting is to tighten the screw enough so that the track rotates freely, but does not permit loose play or side-to-side movement at the pivot. Do not use the direct pivot if the centre cannot provide a secure anchor or the resulting screw hole is unacceptable.

Make life easy tip

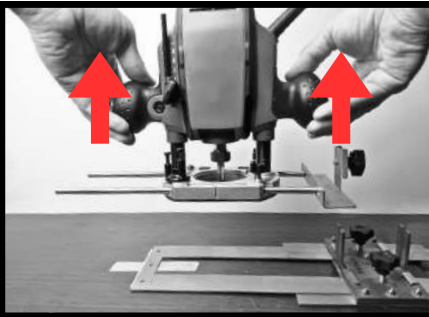
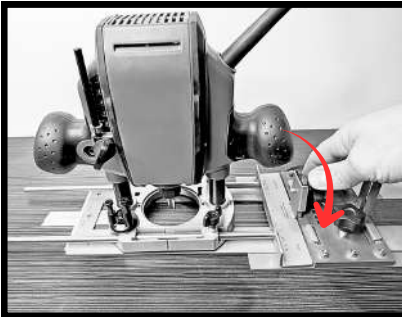
If you've set up to do a very tight radius, meaning that the router is attached to RTB1 on the inside (left hand side) as shown:



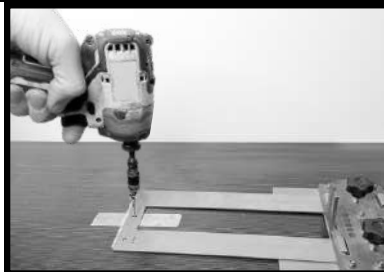
...it is likely that the router that you have now measurement-set overhangs the pivot point in some way, meaning it is difficult to put a screw through the pivot hole on the correct angle (vertical):



Provided the router is securely fastened to ATC1 by both trammel rods, neither rod can slide in the router base, and RTB1's brake knobs remain securely locked after setting the measurement, you can temporarily disconnect ATC1 from RTB1 while you screw down RT500's pivot point. Keep the router and ATC1 connected to each other throughout and do not loosen the trammel socket lock-off knobs on your router's base, or the radius measurement you set will change!

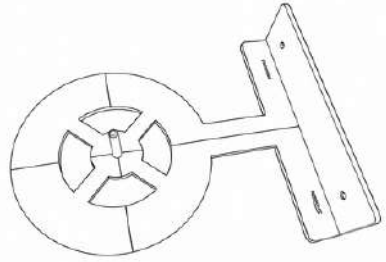


Once you have secured your pivot, simply put the router/ATC1 back onto RTB1 and lock it off using ATC1's lock-off knob. Provided you followed the previous steps and properly locked ATC1 back onto RTB1, nothing will have changed measurement-wise.

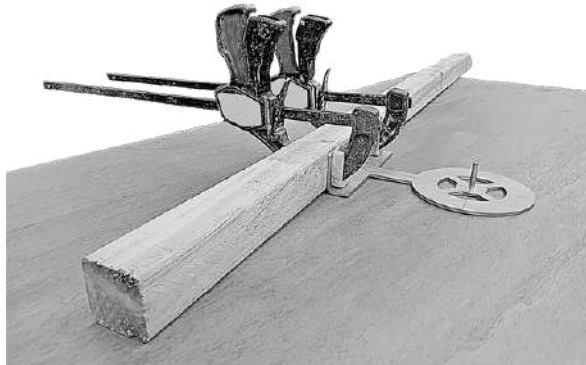


OPTION 2 - using FP1 as your pivot

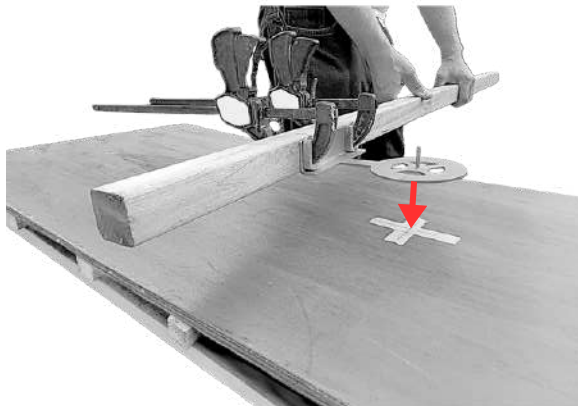
In addition to your assembled radius track, router or jigsaw and track brake, you will require part FP1 which looks like this:



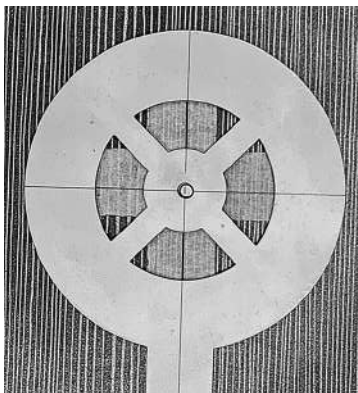
Use a straight, sound, rigid (cannot flex or bend) span of timber or other suitable equivalent material long enough to provide secure clamp engagement beyond both sides of the workpiece. Secure FP1 to the span so that its underside is flush with the underside of the timber, and ensure that FP1 is sufficiently secured to the span so that it cannot slip. You should position it around the middle of the length of the span (or wherever you intend the pivot point would land along its length once the span was laid across your sheet material).



Next, overlay the timber and FP1 so that the centre of FP1 is over your pivot point markings. It should look something like this:



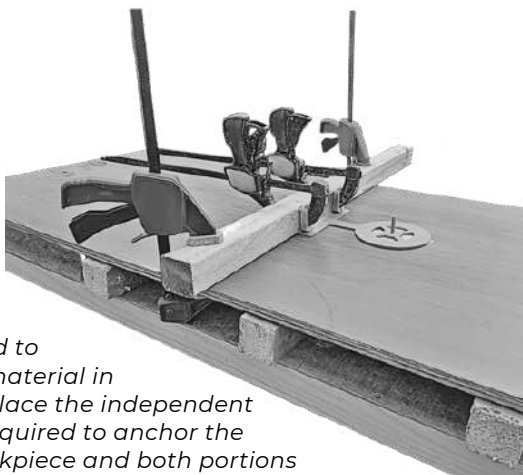
Next, using FP1's guide markings, position FP1's pivot point hole over your 'X' and 'Y' pencil lines so that FP1 exactly lines up over your centre marks, like so:



Note in this picture the masking tape and pencil markings underneath FP1

Once you are satisfied that FP1 is lined up over your centre marks, clamp both ends of the span securely to the workpiece, as shown.

Keep all clamps and supports outside of the area required for the complete Radcut sweep. Perform a pull-and-twist check; if FP1 or the span moves, improve the restraint.

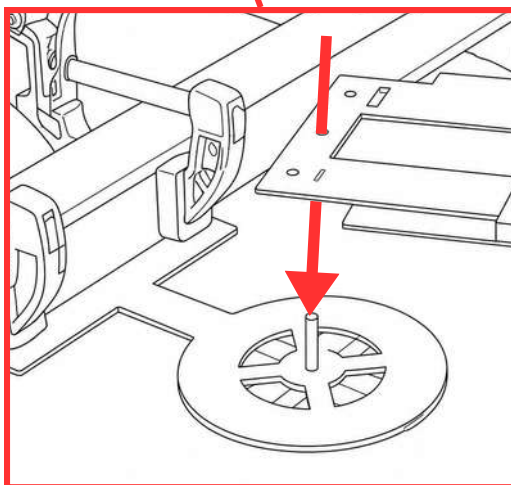
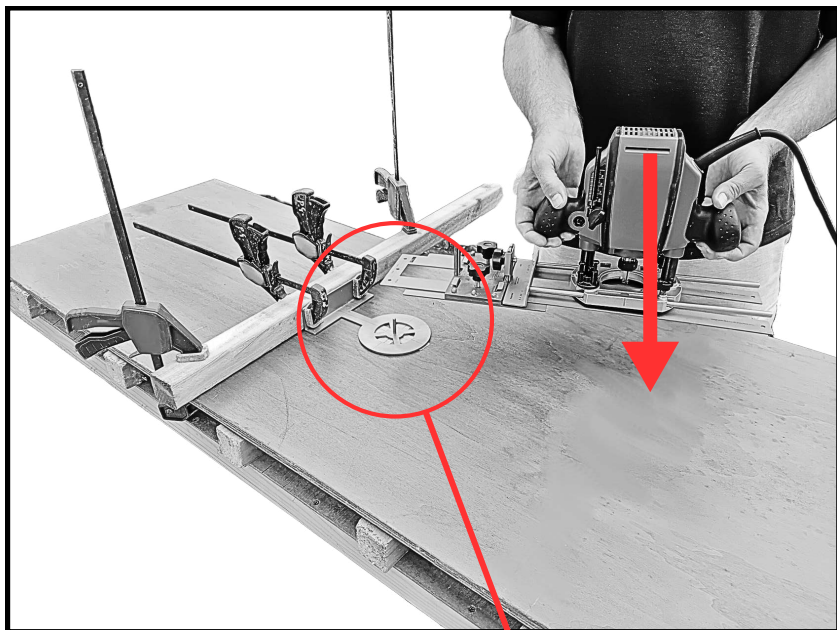


Note that the clamps used to secure FP1 to your sheet material in this illustration do not replace the independent supports and restraints required to anchor the actual sheet material workpiece and both portions of a through-cut.

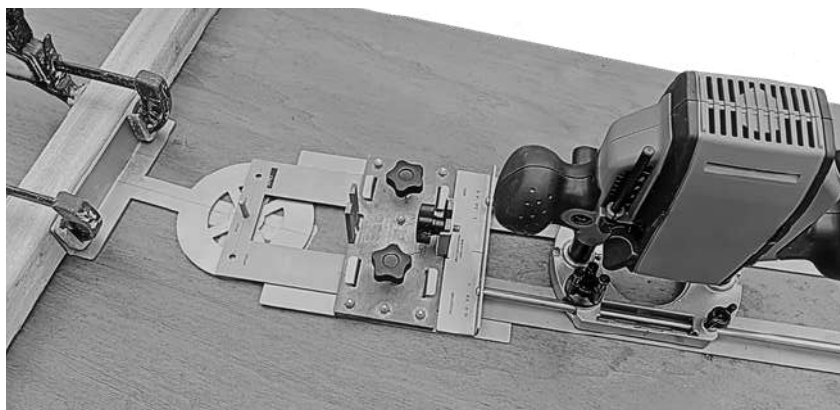
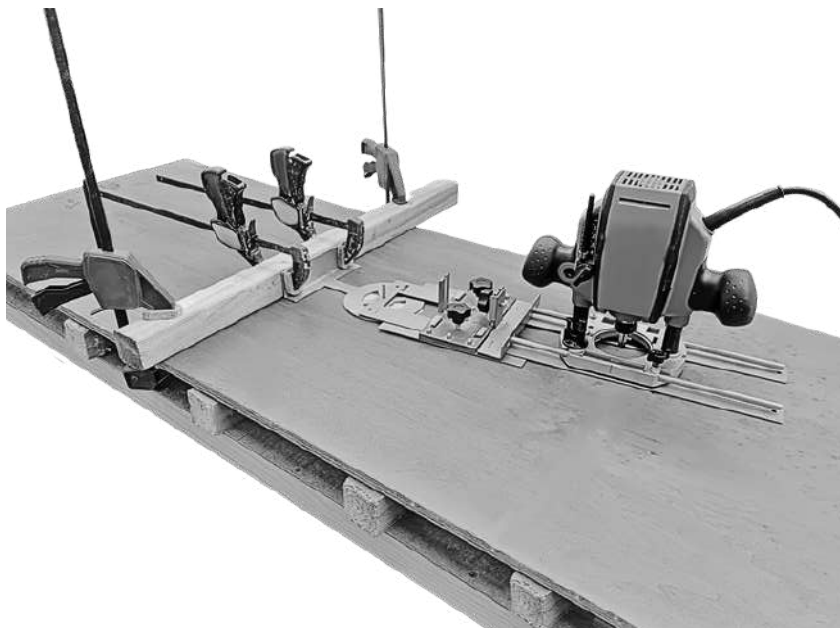
Use enough suitable clamps or screws on a supporting batten, or a suitable combination to prevent FP1 sliding, lifting or rotating. Note that if you intend to clamp down the timber spanning your sheet material which will support FP1, the clamps will need to grip from underneath your sheet material, meaning that the edges of your sheet material will either need to be overhanging your bench or you will need to elevate your sheet material up on blocks that support it fully throughout so that it doesn't flex - this is so that the 'feet' of the clamps can be accommodated within the space between the surface of your bench and the underside of your sheet material, otherwise the feet of those clamps will cause your sheet material to be lifted, causing it to rock and flex. Everything you plan to cut must be solid, stable, level and sufficiently anchored in place prior to cutting!

Ensure that FPI is suitably anchored and rigid in place: physically attempt to move FPI before use. If it moves, improve the restraint!

At this point, you can now install your power tool/radius track/track brake assembly onto the floating pivot (provided you have already set your required measurement - if not, follow the instructions in pages 43-64 and do this now), then lower the pivot point hole in your radius track onto FPI's pivot pin, like so:



The end result will look like this:

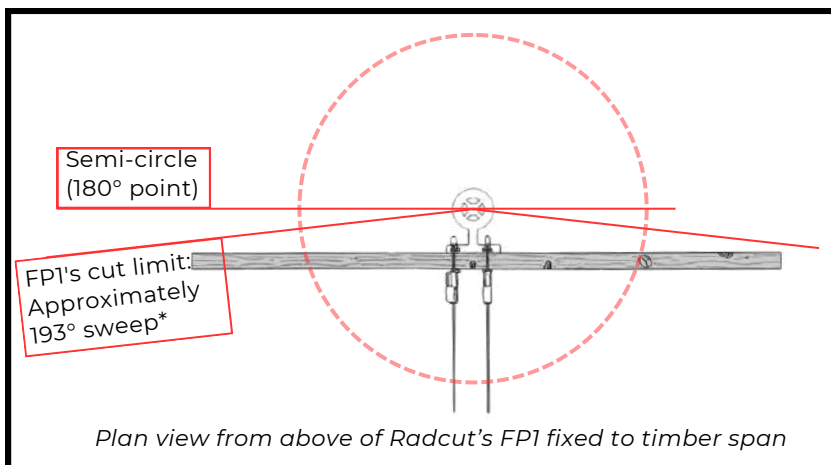


Lower the track to the base of the pin - the track should sit on the round plate of FP1. Note that the track must be able to rotate freely around the stationary pin of FP1.

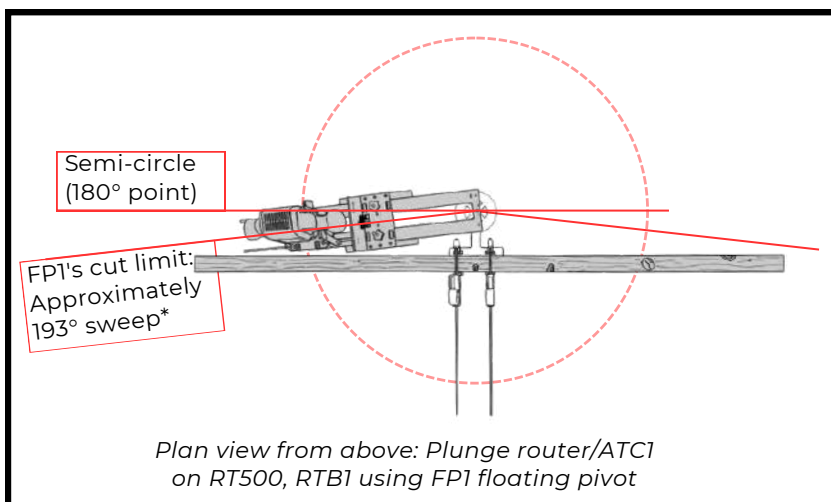
If you are using a screw as your pivot point, go now to page 101: pre-power checks. If you are using FP1 but not cutting more than 180° with it, go now to page 100. If you intend to cut a full circle or anything beyond 180° using FP1, there is a way to do this - read page 95 onwards.

How to cut a full circle using FP1 - Overview

Looking down on a plan view of a standard set up using FP1, you will notice that the pivot point protrudes beyond a half-circle (180°):

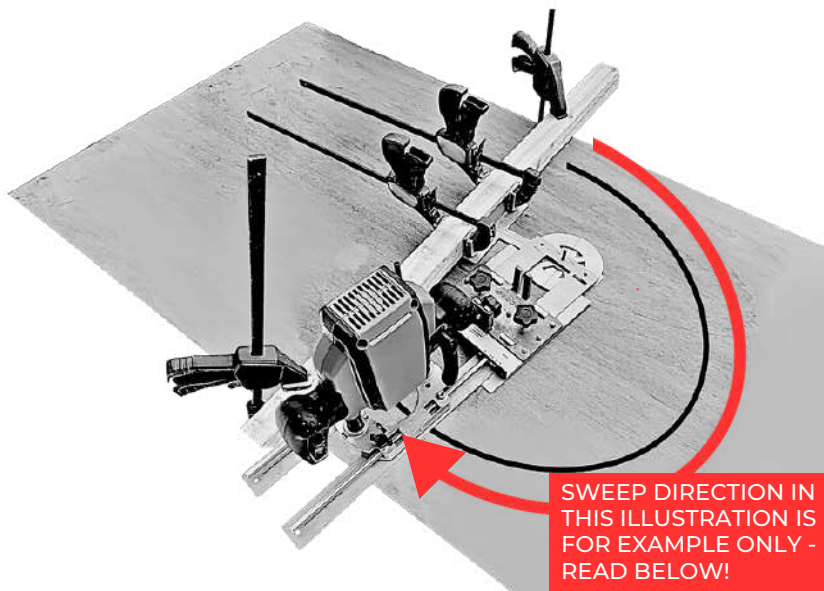
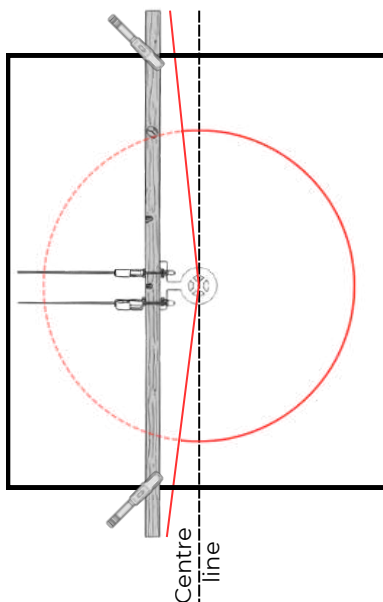


As you can see, thanks to FP1's protruding centre point, the degree of arc sweep which can be cut using Radcut can go beyond half a circle. As explained on the next page, this enables a complete circle to be cut using the FP1 floating pivot.



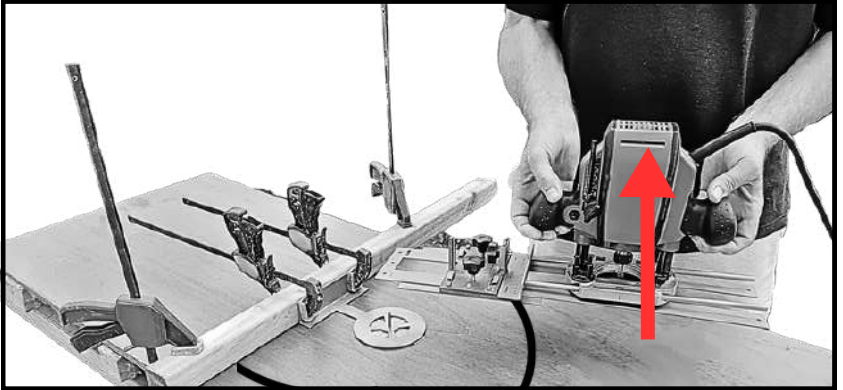
*Degree of sweep limit depends on your chosen set up. The available sweep beyond 180° depends on the verified FP1, span, clamp and Radcut configuration. With the tool switched off and isolated, establish the available sweep by a complete dry sweep. Do not assume a fixed angular limit.

As explained in previous chapters, using Radcut has a lot to do with techniques. As illustrated on the previous page, the arc/cutting sweep is over 180° . This means that you can set up and align FP1 on one side of your centre markings, then cut slightly more than a half-circle like so:

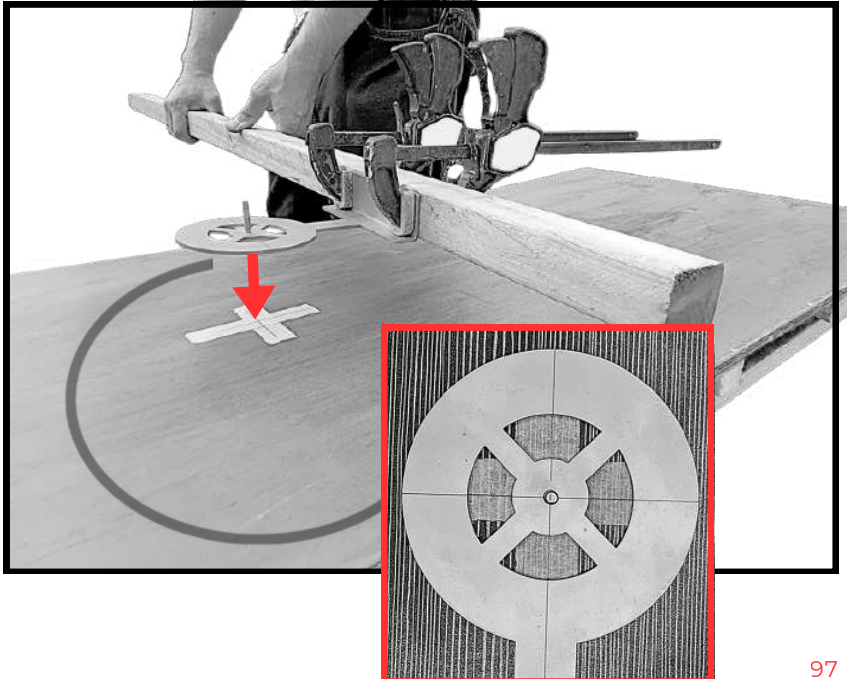


IMPORTANT: THESE PICTURES ARE AN ILLUSTRATED EXAMPLE ONLY. So we're clear here, there is no universal Radcut cutting direction - we've researched this extensively and manufacturers differ in their guidance on cutting directions for a full-width slot - this means that ordinary one-edge routing rules do not by themselves determine the correct direction. Always follow the applicable router and cutter manufacturers' instructions for the specific tool, cutter, material and method.

1. Complete the first planned pass and stop, using the tool's normal stop control.
2. Hold the tool securely until the cutter stops completely.
3. Unplug the tool or remove its battery.
4. Confirm that both workpiece portions remain secured and supported.
5. Remove the isolated assembly of tool/track and brake from FP1 -
DON'T ALTER YOUR MEASUREMENT SETTINGS OR UNDO ANY LOCK-OFF KNOBS!

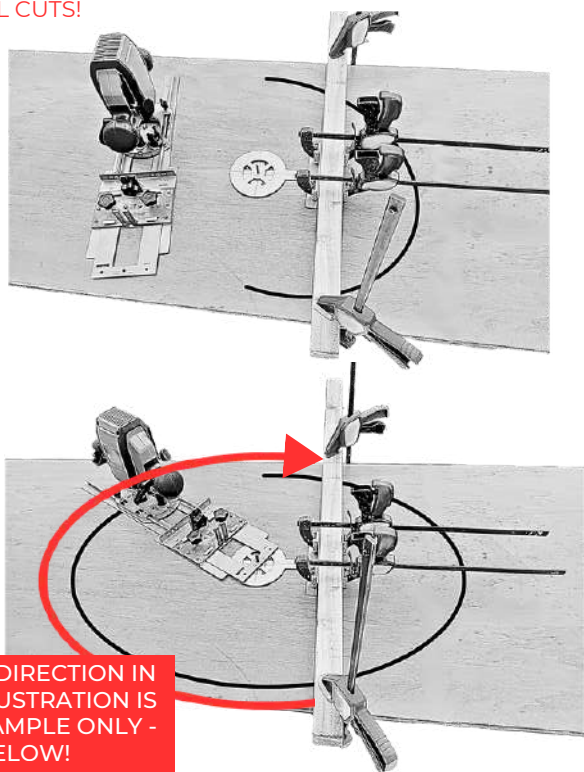


6. Unclamp the FP1 timber span, rotate or reposition it to the opposite side and align FP1 to the same confirmed centre point.



7. Once you are satisfied that FP1 is lined up over your centre marks, clamp both ends of the span securely to the workpiece, as shown.
 8. Keep all clamps and supports outside the area required for the complete Radcut sweep.
 9. Perform a pull-and-twist check; if FP1 or span moves, improve restraint.
 10. Recheck the centre point, radius measurement, tool interface, track locks, pivot, pins/clips, workpiece restraints and all clearances.
 11. Refit the isolated tool/Radcut assembly. DO NOT CHANGE RADIUS!
 12. Reconnect power only after every check passes.
- Remember - provided you haven't changed the radius measurement and you re-align FP1 accurately over the same centre markings, you should be able to continue cutting the circle smoothly but you must physically check that your cutter goes exactly back into the same cut track before continuing with the rest of the cut.

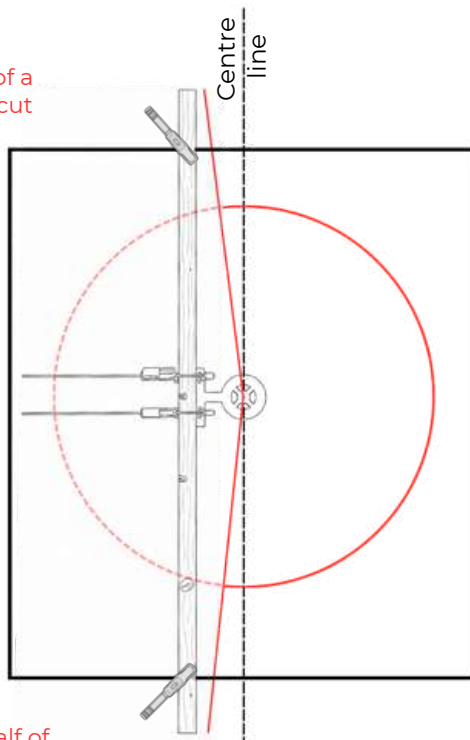
REMEMBER: IF NOT USING A PLUNGE ROUTER, WITNESS HOLES OR STARTER OPENINGS MUST FIRST BE PREPARED PRIOR TO ANY INTERNAL CUTS!



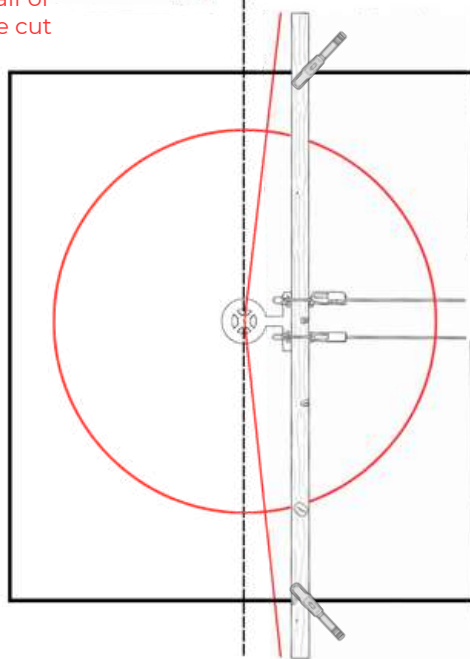
SWEEP DIRECTION IN THIS ILLUSTRATION IS FOR EXAMPLE ONLY - READ BELOW!

IMPORTANT: THESE PICTURES ARE AN ILLUSTRATED EXAMPLE ONLY. So we're clear here, there is no universal Radcut cutting direction - we've researched this extensively and manufacturers differ in their guidance on cutting directions for a full-width slot - this means that ordinary one-edge routing rules do not by themselves determine the correct direction. Always follow the applicable router and cutter manufacturers' instructions for the specific tool, cutter, material and method.

First half of a
full circle cut
using FPI

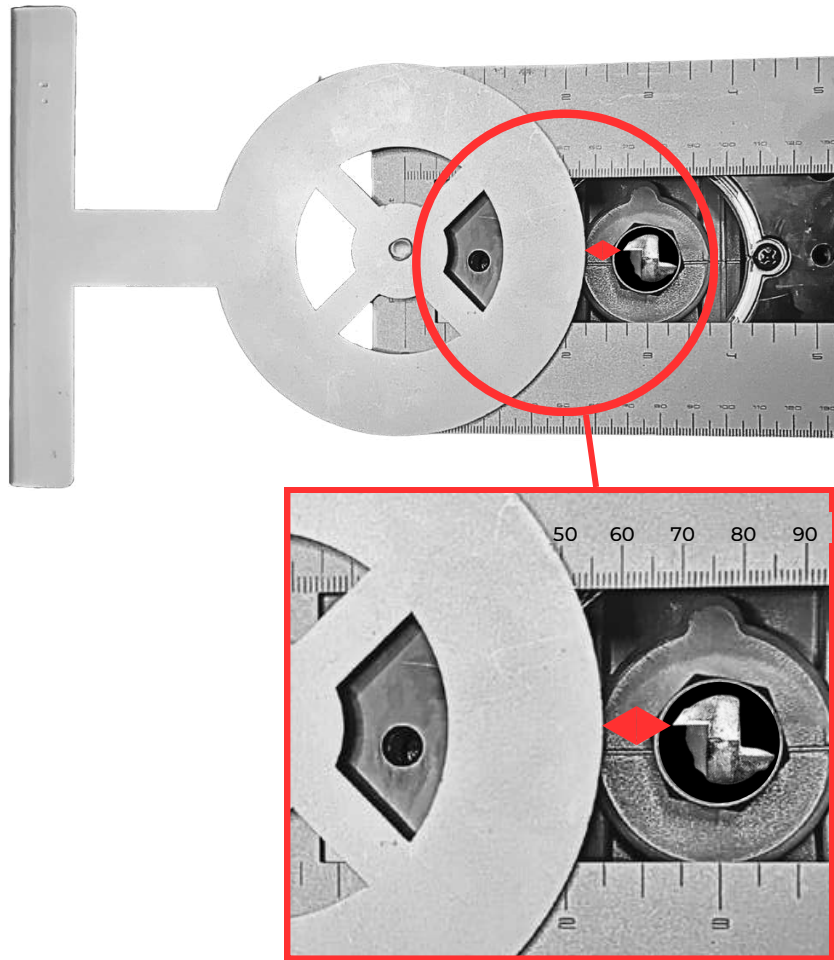


Second half of
a full circle cut
using FPI



IMPORTANT: When using the RT250 or RT500 to which your power tool is attached, regardless of if you are cutting an internal or external radius, DO NOT set any radius that allows the cutter or blade to contact the radius track, FPI, a fixing, support or obstruction. With the tool switched off and isolated, check the complete intended sweep and every cutting depth. If full clearance cannot be maintained, increase the radius or use a different approved configuration to ensure absolutely nothing can be hit by the cutter.

Bottom view (looking up from underneath)



NOW GO TO PAGE 101 FOR THE NEXT STEP - Pre-power checks.

Pre-power checks

Check your pivot point is secure and fully anchored.

Do a full manual sweep with the tool switched off and isolated:

Move the complete assembly through the full intended arc.

Check the cutter/blade/track path and underside clearance.

Remove or reposition protruding fixings, clamps, debris, steps, supports, hoses, leads and other snagging points.

Adopt a stable stance and safe two-hand control throughout.

Your sheet material workpiece must be secure and stable and sufficiently anchored.

Before use, ensure Radcut, the workpiece and any protective layer are clean and free from trapped debris. Stop if anything drags or marks the workpiece.

Inspect every part:

No cracks, distortion, sharp damage, severe burrs, corrosion, missing fasteners or loose or poorly fitted parts.

RTB1 knobs and brakes must lock and release correctly; no jammed knob or track slip.

Every tool interface, ATC1 rods, JSA1 clamp, connection pins, R-clips, pivot and extension fixing is secure.

The cutter or blade is clean, sharp, undamaged and approved for the tool, material and method.

Through-cut rule:

Before completing a full-depth circular cut, secure and support both resulting pieces with a suitable number of evenly spaced and strategically positioned restraint points on both the retained piece and on the off-cut. FPI clamps do not count towards these workpiece restraints.

If both resulting pieces cannot remain secured and supported, do not complete the through-cut with Radcut. Stop while a safe continuous layer or retained material connection remains, isolate the tool, secure both portions and use a suitable independent finishing method allowed by that tool's manufacturer.

Before use and between passes, only while the tool is switched off, completely stopped and unplugged or with its battery removed, check that all nuts, bolts, fasteners, interfaces, locks, pins and clips remain secure.

DO NOT USE A POWER TOOL WITH RADCUT IF THE CUTTER OR BLADE CONTACTS OR IS OBSTRUCTED BY ANY PART OF RADCUT.

THESE INSTRUCTIONS DO NOT OVERRIDE OR ACT AS SUBSTITUTES FOR ANY POWER TOOL INSTRUCTION MANUALS - THOSE MANUALS MUST ALWAYS BE TREATED AS PRIMARY INSTRUCTIONS!

NOW GO TO THE NEXT STEP:

PAGE 102: Making a plunge router-powered cut.

PAGE 104: Making a fixed-base router-powered cut.

PAGE 106: Making a jigsaw-powered cut.

Making a plunge-base router-powered cut

The operator controls the router, cutter speed, material, direction and entry method - Radcut only guides the radius shape! These instructions must be treated as secondary to your router's instruction manual. You must read, understand and follow all of your router's instructions prior to using Radcut in any way with your router. If you do not yet understand how to use a router or have no experience of using one, by definition you are not ready to use Radcut until you have first learned how to use your router or other intended power tool. Ensure the track and power tool assembly is stable, level, square/flat against your sheet material and secure before any use. If it isn't, take action to remedy this before use.

Choose a permitted entry method:

For a face-started cut, use a compatible plunge router or manufacturer-approved plunge base and a cutter expressly suitable for plunge entry. Do not improvise by lowering a running fixed-base router into the workpiece.

Start clear and stable:

Hold the router in the manufacturer-required grip with the cutter clear of the material. Place the router base flat and stable as required by the plunge-router manufacturer's instructions. Confirm that the power lead, if fitted, and extraction hose will remain clear. Start the router and allow it to reach the operating speed required by the router, cutter and material manufacturers before bringing the cutter into contact with the material.

Enter under control:

Use the tool's approved plunge or entry method. Maintain a stable stance and firm two-hand control.

Follow the radius without forcing

Use a smooth feed and keep the router controlled. Allow the cutter to cut; forcing can increase the risk of heating, snatching and drift.

Use progressive passes:

Make smooth, controlled passes of progressively greater depth so that the router does not work too hard. So we're clear here, this means to cut your radius to a certain depth, then make a second pass (sweep) through the same cut with the router at an increased depth. Keep repeating this process, increasing in depth with each cut and make as many passes as required until you either cut to your required depth or cut all the way through your sheet material. No universal pass depth is given: we cannot advise on the depth a cut should be performed at because cutting load depends on the tool, cutter, material, depth, feed, support and waste clearance. Each material, cutter type and router type requires different approaches and will behave differently. Make progressive passes only within the power-tool, cutter/blade and material manufacturers' limits. Do not use a universal pass depth. Remember to set the plunge depth stop of your router with the power switched off prior to commencing each live plunge. Remember: Radcut is a guide; not a power tool - you must follow your power tool and cutter/blade manufacturer's and material's instruction manuals and/or data sheets and treat them as the primary instructions for whatever task you undertake.

Do your research and take your time. If in doubt, seek advice from someone suitably experienced and make a cautious test cut on suitable scrap material, beginning with a shallow first pass, to check how the router, cutter, material and Radcut behave.

Watch and listen to the machine during operation:

Listening: your power tool should not slow down significantly during a cut or sound like it is struggling.

Watching: Stop if the cutter tracks away from the intended line, contacts an obstruction or the tool begins to labour, chatter or bind.

Keep the complete system controlled:

Maintain the direction and feed method required by the router and cutter manufacturers. Do not force the tool or use Radcut as a handle, restraint or anti-kickback device. Never reverse direction while the cutter is engaged. If the direction must be checked or changed, switch off, wait for the cutter to stop completely, then unplug the router or remove its battery before withdrawing or retracting the cutter safely in accordance with the router manufacturer's instructions. Only then check or change direction.

Finish and stop:

Complete the planned pass and follow the router manufacturer's instructions for withdrawing or retracting the cutter and stopping. Hold the router securely. Before withdrawing the cutter from the material, setting the router down or making any adjustment, switch it off, wait for the cutter to stop completely, then unplug it or remove its battery.

Safety first:

Perform regular checks of nuts and bolts/fastenings to ensure nothing is working loose!

DO NOT USE THE ROUTER WITH RADCUT IF THE CUTTER CONTACTS OR IS OBSTRUCTED BY ANY PART OF RADCUT.

THESE INSTRUCTIONS DO NOT OVERRIDE OR ACT AS SUBSTITUTES FOR ANY POWER TOOL INSTRUCTION MANUALS - THOSE MANUALS MUST ALWAYS BE TREATED AS PRIMARY INSTRUCTIONS!

IMPORTANT: There is no universal Radcut cutting direction - we've researched this extensively and manufacturers differ in their guidance on cutting directions for a full-width slot - this means that ordinary one-edge routing rules do not by themselves determine the correct direction. Always follow the applicable router and cutter manufacturers' instructions for the specific tool, cutter, material and method.

Making a fixed-base router-powered cut

The operator controls the router, cutter speed, material, direction and entry method - Radcut only guides the radius shape! These instructions must be treated as secondary to your router's instruction manual. You must read, understand and follow all your router's instructions prior to using Radcut in any way with your router. If you do not yet understand how to use a router or have no experience of using one, by definition you are not ready to use Radcut until you have first learned how to use your router or other intended power tool first. Ensure the track and power tool assembly is stable, level, square/flat against your sheet material and secure before any use. If it isn't, take action to remedy this before use.

Start from a permitted entry method

Use only an accessible workpiece edge or a suitable prepared starter opening. Do not make a Radcut-attached plunge entry.

Start clear and stable

Having set the cutter to the required depth for the first pass, place the router base flat and stable as required by the fixed-base-router manufacturer's instructions, with the stationary cutter clear of the material. Hold the router in the manufacturer-required grip. Confirm that the power lead, if fitted, and extraction hose will remain clear. Start the router and allow it to reach the operating speed required by the router, cutter and material manufacturers before bringing the cutter into contact with the material.

Enter under control

Use the tool's approved entry method. Maintain a stable stance and firm two-hand control.

Follow the radius without forcing

Use a smooth feed and keep the router controlled. Allow the cutter to cut and do the work; forcing can increase risk of heating, snatching and drift.

Use progressive passes:

Make smooth, controlled passes of progressively greater depth so that the router does not work too hard. So we're clear here, this means to cut your radius to a certain depth, then make a second pass (sweep) through the same cut with the router at an increased depth. Keep repeating this process, increasing in depth with each cut and make as many passes as required until you either cut to your required depth or cut all the way through your sheet material. No universal pass depth is given: we cannot advise on the depth a cut should be performed at because cutting load depends on the tool, cutter, material, depth, feed, support and waste clearance. Each material, cutter type and router type requires different approaches and will behave differently. Make progressive passes only within the power-tool, cutter/blade and material manufacturers' limits. Do not use a universal pass depth. Remember: Radcut is a guide; not a power tool - you must follow your power tool and cutter/blade manufacturer's and material's instruction manuals and/or data sheets and treat them as the primary instructions for whatever task you undertake.

Do your research and take your time. If in doubt, seek advice from someone suitably experienced and make a cautious test cut on suitable scrap material, beginning with a shallow first pass, to check how the router, cutter, material and Radcut behave.

Watch and listen to the machine during operation:

Listening: your power tool should not slow down significantly during a cut or sound like it is struggling.

Watching: Stop if the cutter tracks away from the intended line, contacts an obstruction or the tool begins to labour, chatter or bind.

Stop before any adjustment for progressive depth passes:

Switch off, hold the router securely, wait for the cutter to stop completely, then unplug it or remove its battery before clearing, checking, changing the setup or increasing the cutting depth. Change the depth only as instructed by the router manufacturer, lock the base and confirm cutter clearance before reconnecting.

Keep the complete system controlled

Maintain the direction and feed method required by the router and cutter manufacturers. Do not force the tool or use Radcut as a handle, restraint or anti-kickback device. Never reverse direction while the cutter is engaged. If the direction must be checked or changed, switch off, wait for the cutter to stop completely, then unplug the router or remove its battery before withdrawing or retracting the cutter safely in accordance with the router manufacturer's instructions. Only then check or change direction.

Finish and stop

Complete the planned pass and follow the router manufacturer's instructions for withdrawing or retracting the cutter and stopping. Hold the router securely. Before withdrawing the cutter from the material, setting the router down or making any adjustment, switch it off, wait for the cutter to stop completely, then unplug it or remove its battery.

Safety first:

Perform regular checks of nuts and bolts/fastenings to ensure nothing is working loose!

DO NOT USE THE ROUTER WITH RADCUT IF THE CUTTER CONTACTS OR IS OBSTRUCTED BY ANY PART OF RADCUT.

THESE INSTRUCTIONS DO NOT OVERRIDE OR ACT AS SUBSTITUTES FOR ANY POWER TOOL INSTRUCTION MANUALS - THOSE MANUALS MUST ALWAYS BE TREATED AS PRIMARY INSTRUCTIONS!

IMPORTANT: There is no universal Radcut cutting direction - we've researched this extensively and manufacturers differ in their guidance on cutting directions for a full-width slot - this means that ordinary one-edge routing rules do not by themselves determine the correct direction.

Always follow the applicable router and cutter manufacturers' instructions for the specific tool, cutter, material and method.

Making a jigsaw-powered cut

The operator controls the jigsaw and blade speed, material, direction and entry method - Radcut only guides the radius shape! These instructions must be treated as secondary to your jigsaw's instruction manual. You must read, understand and follow all your jigsaw's instructions prior to using Radcut in any way with your jigsaw. If you do not yet understand how to use a jigsaw or have no experience of using one, by definition you are not ready to use Radcut until you have first learned how to use your jigsaw or other intended power tool. Ensure the track and power tool assembly is stable, level, square/flat against your sheet material and secure before any use. If it isn't, take action to remedy this before use.

Start from a permitted entry method

Use only an accessible workpiece edge or a suitable prepared starter opening. Do not make a Radcut-attached plunge entry with a jigsaw or insert a moving jigsaw blade into an opening.

Start clear and stable

Place the jigsaw base shoe flat and stable as required by the jigsaw manufacturer's instructions, with the stationary blade clear of the material. Confirm that the power lead, if fitted, and extraction hose will remain clear. Hold the jigsaw in the manufacturer-required grip. Start jigsaw and allow it to reach the operating speed required by the jigsaw, blade and material manufacturers before bringing the blade into contact with the material.

Enter under control

Use the tool's approved entry method. Maintain a stable stance and firm control.

Follow the radius without forcing

Use a smooth feed and keep the jigsaw and its base shoe controlled. Allow the blade to cut; forcing can increase blade deflection and the risk of heating, snatching and drift.

Watch the blade and cut line

Stop if the blade visibly bends, tracks away from the intended line, deflects, contacts an obstruction or the tool begins to labour, chatter or bind.

Jigsaw radius capability varies

A blade suitable for the material may still be unsuitable for a tight radius or workpiece thickness. Follow the blade manufacturer's radius/thickness limits and use a broader radius or different approved blade where required. We cannot advise which blade type is suitable for a particular material because cutting load depends on the tool, blade, material, depth, feed, support and waste clearance. Each material, blade type and jigsaw type requires different approaches and will behave differently - this is down to the operator to decide.

Remember: Radcut is a guide; not a power tool - you must follow your power tool and cutter/blade manufacturer's and material's instruction manuals and/or data sheets and treat them as the primary instructions for whatever task you undertake. However what we would suggest is to do your research and take your time. If in doubt, seek advice from someone suitably experienced before cutting and test the setup on suitable scrap material in accordance with the jigsaw, blade and material manufacturers' instructions.

Watch and listen to the machine during operation:

Listening: your power tool should not slow down significantly during a cut or sound like it is struggling.

Watching: Stop if the blade tracks away from the intended line, contacts an obstruction or the tool begins to labour, chatter or bind.

Stop before any adjustment

Switch off, hold the tool securely, wait for the blade to stop, then unplug or remove the battery before clearing, checking or changing the setup.

Keep the complete system controlled

Feed the jigsaw forwards in the direction in which the jigsaw and blade face, keeping the shoe flat and fully supported and following the jigsaw and blade manufacturers' instructions for direction and feed. Do not force the tool or move it sideways or backwards, and do not use Radcut as a handle, restraint or anti-kickback device.

Finish and stop

Complete the planned pass and follow the jigsaw manufacturer's instructions for withdrawing the blade and stopping. Hold the jigsaw securely. Before withdrawing the blade from the material, setting the jigsaw down or making any adjustment, switch it off, wait for the blade to stop completely, then unplug it or remove its battery.

Safety first:

Perform regular checks of nuts and bolts/fastenings to ensure nothing is working loose!

DO NOT USE YOUR POWER TOOL WITH RADCUT IF AT ANY POINT THE BLADE IS IN CONTACT WITH OR HINDERED BY ANY PART OF THE RADCUT SYSTEM.

THESE INSTRUCTIONS DO NOT OVERRIDE OR ACT AS SUBSTITUTES FOR ANY POWER TOOL INSTRUCTION MANUALS - THOSE MANUALS MUST ALWAYS BE TREATED AS PRIMARY INSTRUCTIONS!

IMPORTANT: Starter openings for fixed-base power tools

When attached to Radcut, a jigsaw or fixed-base router must enter the workpiece only from an accessible edge or a prepared starter opening. Do not make a Radcut-attached plunge entry with either tool, regardless of whether the standalone tool manufacturer permits another technique.

With a compatible fixed-base router, when using a starter opening:

1. Switch off and disconnect the router from its power supply.
2. Prepare an opening that provides adequate clearance around and beneath the stationary cutter at every intended pass depth.
3. Set the first-pass depth and lock the router base firmly.
4. Position the stationary cutter inside the opening with the router base fully supported.
5. Confirm that the cutter is not touching the workpiece or anything else and that the area beneath it is clear.
6. Start the router and allow the cutter to reach the operating speed required by the router, cutter and material manufacturers.
7. Feed the cutter smoothly from the opening into the intended cutting path.
8. Before changing depth, switch off the router, wait for the cutter to stop completely and disconnect the power supply. Set and lock the next-pass depth, then confirm clearance again before reconnecting and restarting the router.

If the cut requires more than one pass, use progressively greater depths only within the router, cutter and material manufacturers' limits.

With a jigsaw, when using a starter opening:

1. Switch off and disconnect the jigsaw from its power supply.
2. Prepare an opening that provides adequate clearance around and beneath the blade throughout its full movement, including when the blade reaches its lowest position during use.
3. Position the stationary blade inside the opening with the jigsaw base fully supported.
4. Confirm that the blade is not touching the workpiece or anything else and that its complete path beneath the workpiece is clear.
5. Start the jigsaw and allow the blade to reach the operating speed required by the jigsaw, blade and material manufacturers.
6. Feed the blade smoothly from the opening into the intended cutting path.

Follow the applicable power-tool, cutter/blade and material manufacturers' instructions throughout.

Performing a cut - quick recap

Secure the sheet material on both sides of the intended cut so that both the finished piece and the offcut remain restrained. Keep all fixings and clamps outside of the cutting path and complete Radcut sweep, and ensure that supports do not obstruct the cutter or blade.

Perform safety checks

With the power tool disconnected from its power source, confirm that the complete Radcut sweep and cutting path, including the area beneath the workpiece, are clear. Ensure that any power lead or extraction hose cannot enter or pull on the sweep. Confirm that the power tool, Radcut, pivot, locks, pins, R-clips and workpiece restraints are secure, then perform a full isolated dry sweep.

Once all checks have passed and the stationary cutter or blade is clear of the material, connect the power tool to its power source and start it. Allow the tool to reach the operating speed required by the power-tool, cutter/blade and material manufacturers. Stop if any abnormal noise, behaviour or excessive vibration occurs.

Use a smooth, steady, controlled feed within the power-tool, cutter/blade and material manufacturers' limits. Do not force the tool. For router cuts requiring more than one pass, use progressively greater depths within the router, cutter and material manufacturers' limits.

Stop immediately if the tool labours, chatters, binds, drifts, overheats or smokes, or if any part of Radcut, the pivot or a workpiece restraint moves.

NOTE: Radcut is not suitable for jobs that require edge lamination after a cut unless a small router is directly attached to RTB1.

DO NOT USE THE POWER TOOL WITH RADCUT IF THE CUTTER OR BLADE CONTACTS OR IS OBSTRUCTED BY ANY PART OF RADCUT.

THE INSTRUCTIONS PROVIDED BY THE POWER-TOOL, CUTTER/BLADE AND MATERIAL MANUFACTURERS REMAIN THE PRIMARY INSTRUCTIONS AND MUST BE FOLLOWED.

Knowing when to stop

Your normal tool sound and feel are useful cues — but objective warning signs decide the action.

- **Snatch or sudden movement:**

Release the trigger / use the normal stop control while maintaining a secure grip. Do not fight through it.

- **Abnormal chatter or vibration**

Stop and inspect tool attachment, pivot, track locks, joints, cutter/blade and workpiece support.

- **Track, pivot or interface movement**

Stop immediately. Do not resume until the cause is corrected and the complete setup passes a new dry sweep.

- **Binding or rising resistance**

Stop before the cutter or blade stalls. Check restraint, kerf closure, direction, depth, waste and obstruction.

- **Heat, smoke or burning**

Stop immediately. Allow cooling, isolate and investigate cutter/blade suitability, feed, depth and waste clearance.

- **Extraction failure or lead/hose interference**

Stop immediately if extraction fails, blocks, disconnects, becomes ineffective or obscures the cutting path, or if the hose or lead pulls, catches or enters the sweep. Isolate the tool, restore effective extraction or re-route the lead or hose, then complete a new isolated dry sweep before restarting.

IF ANY OF THE ABOVE ISSUES OCCUR:

Stop & isolate: Switch off, wait for all movement to stop, then unplug or remove battery before working on any cutter/blade, machine or before clearing waste, tightening, measuring, repositioning or inspecting.

DO NOT USE RADCUT FOR ANY PURPOSE OTHER THAN ITS INTENDED USE AS OUTLINED IN THIS MANUAL

AFTER THE CUT:

1. Check both workpiece portions remain secure before removing any restraint.
2. Remove Radcut only after the tool is isolated and the cutter/blade has stopped.
3. Inspect the finished cut and the setup for evidence of movement, drift, loosening or marking.
4. If anything abnormal occurred, stop using the affected Radcut components. Keep the product, any failed or damaged parts, and any relevant photographs or records. Do not resume use if Radcut may be unsafe until the cause has been identified and a safe correction confirmed. For ordinary setup or compatibility issues, follow the troubleshooting guidance first. If an ordinary issue remains unresolved, or if Radcut may be unsafe or any part has failed or become detached, broken, bent or cracked, or has slipped or moved unexpectedly, contact us using the safety/contact route on the packaging or at www.radcute.co

Inspection, cleaning, storage and disposal

Inspection for damage, unsafe wear and malfunction

Check for bending, cracks, distortion, loose fasteners, corrosion, severe burrs and excessive joint play.

Check both RTB1 knobs, brake shoes and track locking before storage and again before use.

Check every clevis pin and R-clip for straightness, retention and damage.

Stop using any part if distortion, cracking, sharp damage, loss of fit, lock failure or excessive play is present or develops.

Do not repair, straighten, cut, drill or reshape a damaged safety-critical component. Quarantine it and obtain an approved replacement.

Use marks

Normal cosmetic marks may occur where Radcut parts slide, clamp or sweep. Cosmetic marking/scratches alone do not necessarily indicate a safety defect. Stop using any part that is cracked, distorted, corroded, excessively worn, loose or unable to lock securely. This does not affect your statutory rights.

Cleaning

Isolate the power tool and allow cutters, blades and components to cool before removing them from the Radcut system.

Remove loose dust and chips using a safe method appropriate to the material. Do not use hands near sharp waste.

Wipe Radcut clean and dry. Do not leave debris beneath brakes, around pin holes or on surfaces that sweep over the workpiece. Do not use a cleaning method or chemical that damages markings, finishes, plastics, brake surfaces or fasteners.

Storage

Store all components of the Radcut kit in a clean, cool and dry place, in the supplied packaging or another secure container to prevent corrosion and maintain performance.

Keep pins and R-clips together and prevent tracks and interfaces from being bent or crushed.

Keep the entire kit, manual and all small parts away from children.

Disposal

Dispose of worn or damaged parts responsibly in accordance with local waste regulations.

Troubleshooting

No Radcut assembly step should require unusual force and at no point should using, operating or assembling any part of Radcut be a struggle; if it is, something is wrong - double-check and follow the instructions for that part and check Radcut's website videos regarding use and assembly of the part. Website videos are not a substitute for reading this instruction manual: this manual must be read in full. Use a video only where it matches this manual issue and the supplied product configuration. If a video conflicts with this manual, stop and contact radcut@protonmail.com. If this still does not work, check part for damage. If you are struggling to use or assemble a part something is wrong - do not force, modify or adapt any Radcut part or power tool.

Issue	Likely checks	Required action
Connection pin will not enter holes or connect parts	Wrong holes; misalignment; incorrect angle; burr, bend or damage	Do not force. Realign or replace the damaged part.
Track slips in RTBI	Both knobs; brake shoes; debris; damaged thread or lock	Stop. Isolate, clean and recheck. Do not use until both locks hold.
Tool moves or fits loosely	Factory clamp; rod retention; JSA1 orientation; incompatible fit	Stop. Correct the approved interface or use another compatible tool.
Assembly drags or marks workpiece	Debris; rough protection; protrusion; misaligned joint, pins inserted wrong way up	Stop. Clean, correct, protect appropriately and repeat the full dry sweep.
Extension sags or twists	Timber condition; insufficient timber or extension thickness; joints; screws; span; supports	Add suitable support or use a more rigid member. Do not cut while unstable.
Cut drifts or becomes rough	Pivot/locks; cutter/blade; depth; feed; deflection; workpiece movement, all clamps and screws used	Stop, isolate and correct the cause. Do not force the existing pass.

REMEMBER:

Radcut is not a safety device; it merely directs the power tool, which must still be used with the same degree of caution and respect. Radcut guides a compatible handheld router or jigsaw along a selected radius. It is not a guard, restraint, stabiliser or anti-kickback device, and it does not remove the operator's responsibility to control the tool and follow tool and blade/cutter manufacturers' instructions.

Surface marking or drag: Stop and isolate. Clean Radcut and the workpiece, remove trapped debris, check for burrs or protruding fixings and repeat the full dry sweep. Use only suitable protection that does not affect stability, measurement, clearance or movement.

Product and incident record

Keep this manual with the product. Record the following before first use and retain proof of purchase:

Product / model	
Batch / date code	
Purchase date / supplier	
Owner / workplace	

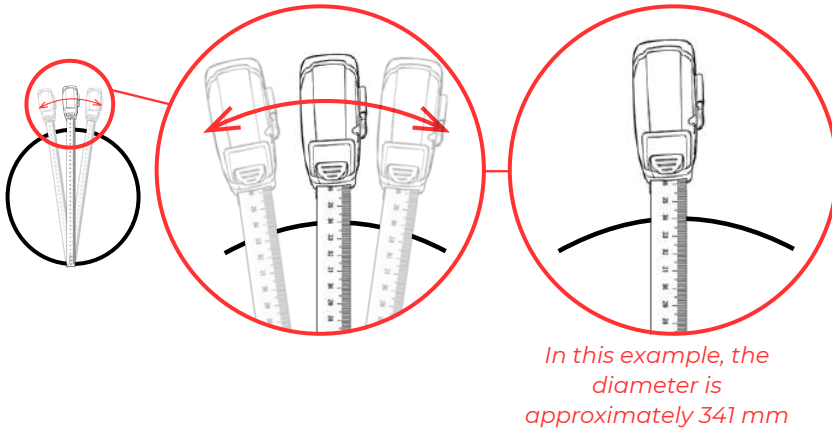
If Radcut may be unsafe

Stop using it, isolate and retain the product and evidence, and contact the producer using the safety/contact route on the packaging or at www.radcut.co

Report the product code/model, batch/date code, date of purchase, place and name of the retailer you bought Radcut from, the name of the user, the tool configuration, materials cut, what happened and any injury or damage along with the date and time of the incident.

Useful tips and tricks: Approximate diameter finding.

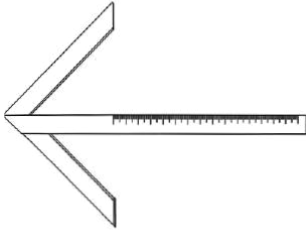
Tip: if you want to establish the *approximate* diameter of a circle that already exists so that (for example) you can build something to fit around it, an easy way to find the widest point (diameter) of the circle is to hook the end of a tape measure over the edge of the round object, then take the tape measure across the circular object to roughly where you think the opposite/widest point furthest opposite from where the tape measure end is hooked, and, while keeping the tape measure hooked on the opposite end of the circle, move the tape measure from side to side while observing the measurements; you'll find that the measurements increase as you move towards the widest point, and when you go too far, they'll start to decrease again - when they do, just move the tape measure back in the opposite direction so that the measurements increase again as you move it back towards the centre (widest) point - when you get to the maximum measurement before the measurements start to decrease again, that is the widest point and therefore the circle's approximate diameter:



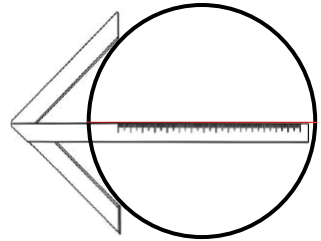
This method provides an approximate diameter only. Use an appropriate measuring method and independently verify the required radius before setting Radcut or cutting.

Useful tips and tricks: finding the centre of a circle

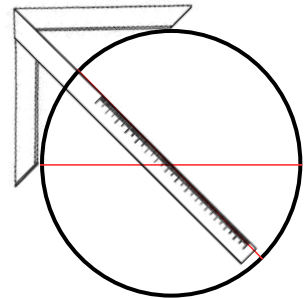
If you want to find the centre of a pre-existing circle, use a centre finder, also known as a radial square. This tool is not part of the Radcut kit and is not supplied, but, for reference and to help explain how it works, a centre finder looks like this:



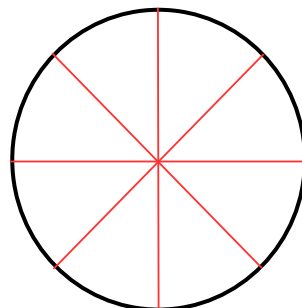
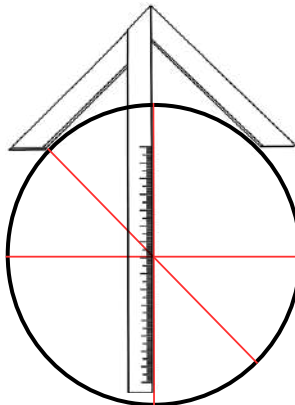
To use a centre finder, position it like so on the edge of the circle, and draw a line through the centre of the circle:



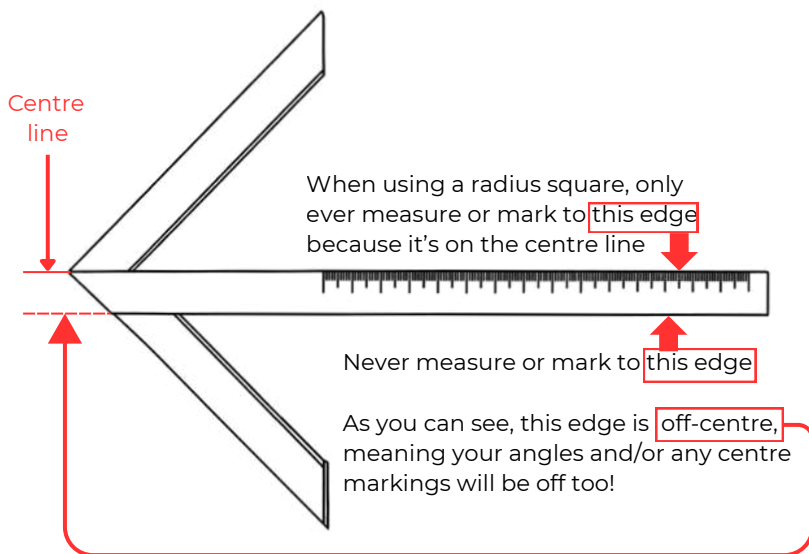
Move the centre finder around to a different point on the edge of the circle, draw another line through the centre like so:



Move and repeat the process with the centre finder at a few more points on the circle. Where these lines cross is the centre of your circle. As pictured below:



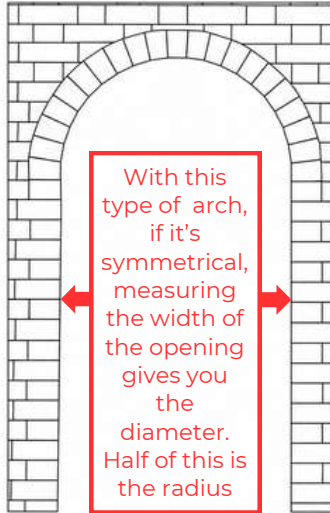
ANTI-COCK-UP SECTION



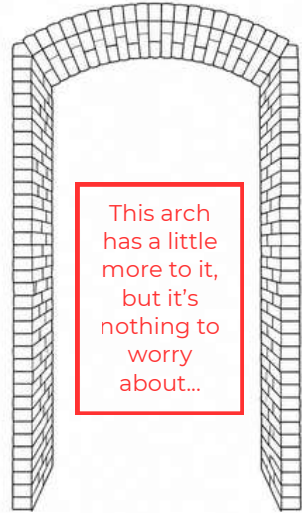
Useful tips and tricks: Establishing the radius of a pre-existing arch without having to scribe in.

Tip: if you want to establish the radius of an arch without having to hold something up against it and trace around it (how the hell does someone do that with a 10-foot-wide arch up in the air without it being difficult?), here is a much easier way:

*Semi-circular arch:
(half circle arch)*



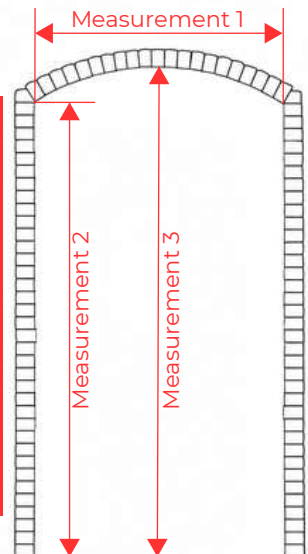
(shallow) segmental arch:



This technique applies only to a symmetrical arch measured accurately at both springing points and the crown. If the opening is not symmetrical, do not use this method. Obtain an appropriate survey or setting-out method.

Assuming this arch is symmetrical, you only need 3 measurements to recreate (draw) this type of arch and calculate the arch radius:

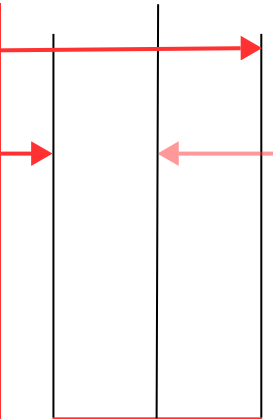
- 1: The width
- 2: Corner heights
- 3: Middle height



Set it out as follows:

Draw two parallel, vertical lines spaced apart by the width of the opening (measurement 1).

The length of these lines should be the same as measurement 2. Note they should both start at the same **base point** - level with each other, and all 'X' and 'Y' axis lines you are drawing should be at right angles to each other!

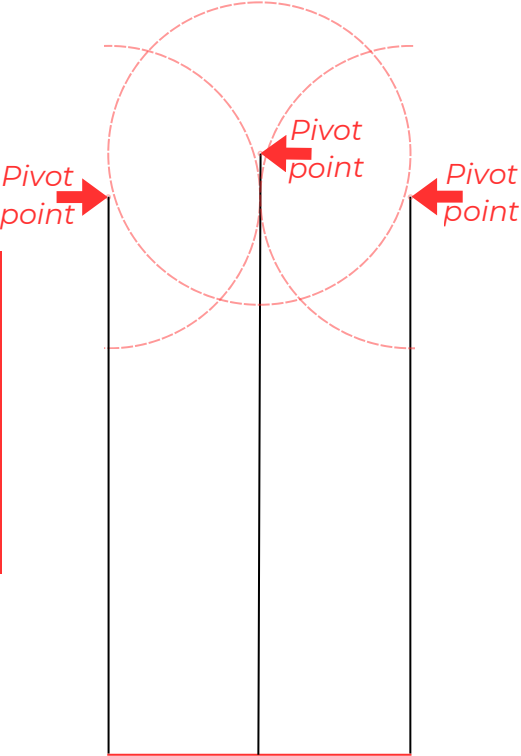


Draw a vertical line exactly in between (the middle of) the other two vertical lines that starts at the same base/floor point.

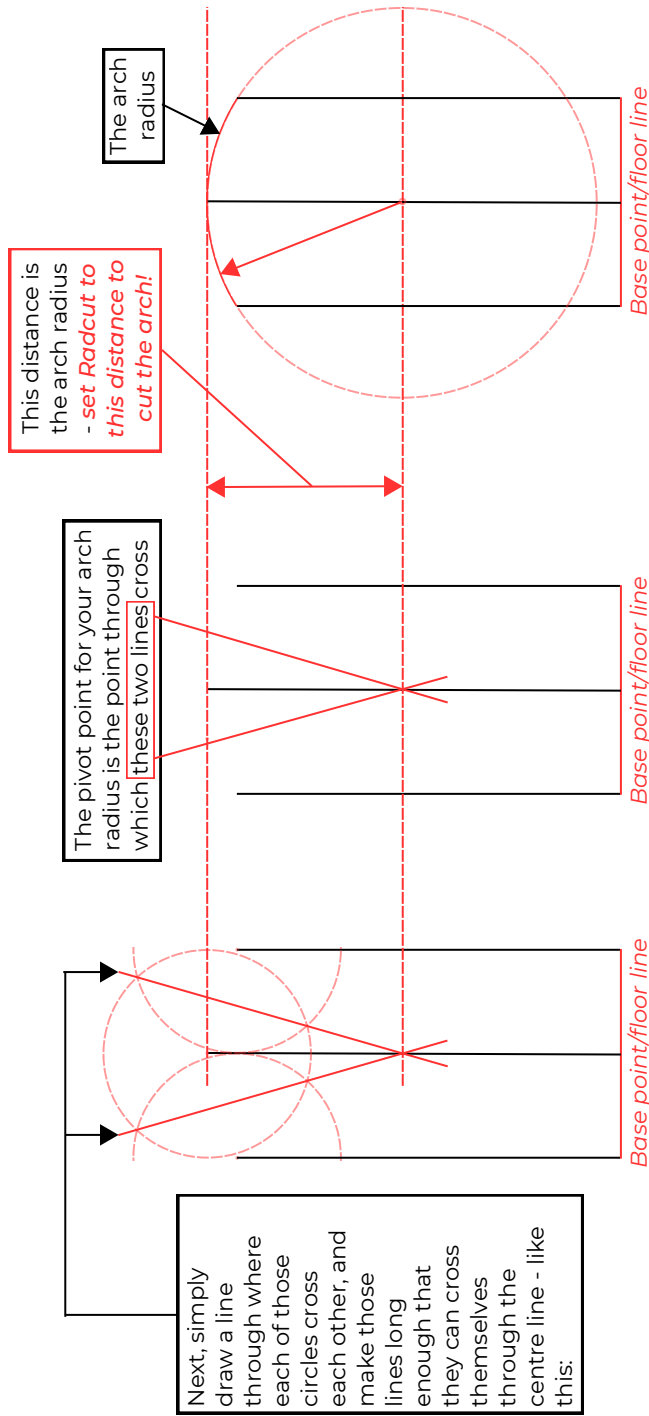
That middle line should be the same length as measurement 3

Base point/floor line

Next, set a compass's radius at half the distance of measurement 1, then draw three circles with their pivot points at the very end (top) of the three vertical lines



Base point/floor line
(This distance left to right horizontally is measurement 1)



The arch radius

This distance is the arch radius - *set Radcut to this distance to cut the arch!*

The pivot point for your arch radius is the point through which these two lines cross

Next, simply draw a line through where each of those circles cross each other, and make those lines long enough that they can cross themselves through the centre line - like this:

- READ THE COMPLETE MANUAL BEFORE USE.
- Before assembly, adjustment, cleaning or inspection: switch off, wait for all movement to stop, then unplug the tool or remove its battery.
- Before applying power: secure workpiece; check pivot, locks, interfaces, pins, clips & clearances; and complete a full isolated dry sweep.
- Use the personal protective equipment, respiratory protection, dust extraction & operating controls required by the power-tool, cutter/blade & material manufacturers.
- Keep hands & other body parts clear of the cutter or blade & its path.
- Store Radcut clean, dry & away from children.

DISCLAIMER

Greenall Technical Services Limited is not responsible for loss or damage caused solely by deliberate misuse of Radcut, unauthorised modification, or use outside the intended use described in this manual, except where liability cannot lawfully be excluded or limited.

Radcut is a directional guide, not a safety device. Use it only as described in this manual with a compatible handheld router or jigsaw attached through the tool's intended factory guide interface. Follow the power-tool, cutter/blade and material manufacturers' instructions. Stop, isolate and do not use the Radcut if any component is damaged, loose, incompatible or capable of contacting the cutter or blade. If Radcut may be unsafe, retain it and contact customer support.

The user must comply with applicable worksite rules and the power-tool, cutter/blade and material manufacturers' instructions. This does not affect your statutory rights.

CUSTOMER SUPPORT

Email: radcut@protonmail.com

For instructions, user videos, tips and safety guidelines, visit www.radcut.co or scan QR code:



PRODUCER	Greenall Technical Services Limited, 102 Bowen Court, St Asaph Business Park, St Asaph, UK, LL17 0JE
PRODUCT	Radcut modular radius and circle-cutting guide system - full kit
TERRITORY	Great Britain (excluding Northern Ireland)
VERSION	Manual RIM-GB-001 • Issue 1.0 • September 2026 • radcut.co

Manual and its contents copyright Greenall Technical Services Limited
Unauthorised copying or editing strictly prohibited



**MADE IN
CHINA**