PLUNGE CUT RAIL SAW

TSPCRS

www.thetoolshed.co.nz

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PRODUCT DETAILS

Product Model ToolShed Plunge Cut Rail Circular Saw

Product Code TSPCRS

Distributed By

Note:

This manual is only for your reference. Due to the continuous improvement of the ToolShed products, changes may be made at any time without obligation or notice.

Warranty

This product may be covered under The ToolShed warranty. For more information, see our Terms & Conditions at www.thetoolshed.co.nz

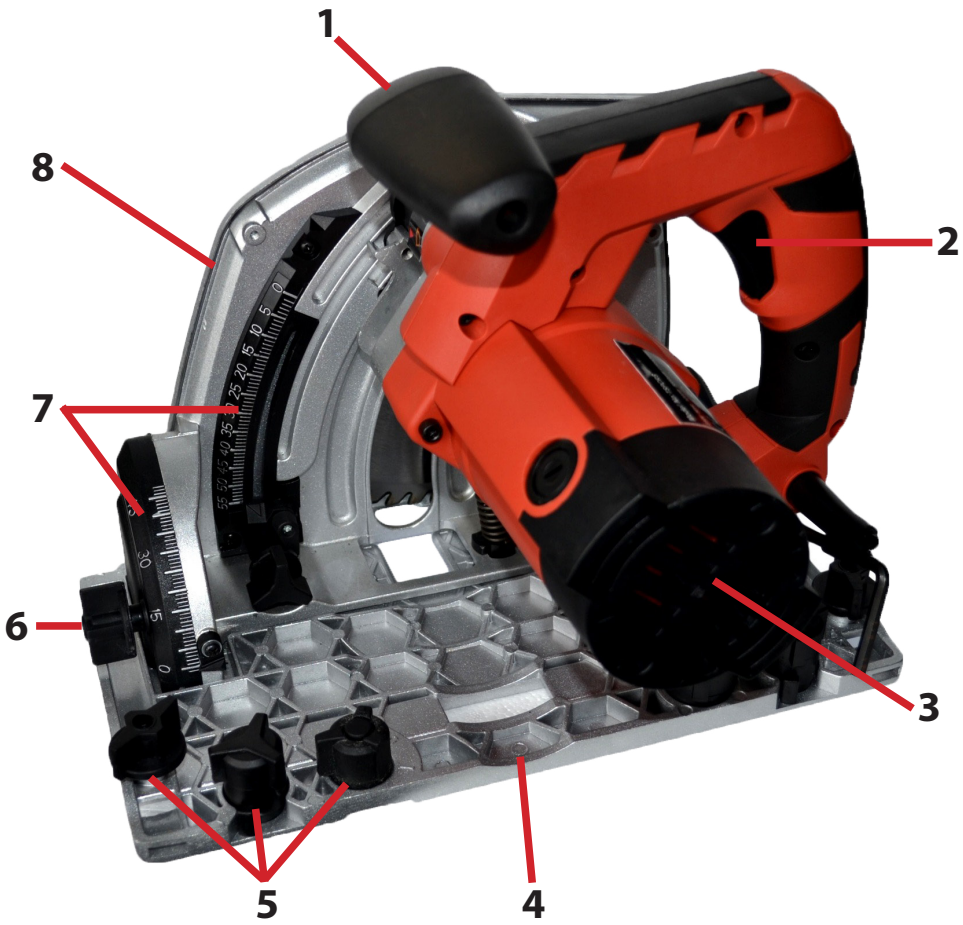
SPECIFICATIONS

Power	1200W
No Load Speed	2000 - 6000/min
Mitre Settings	0° - 45°
Blade Size	165mm
Max. Cutting Depth at 90°	54mm
Max. Cutting Depth at 45°	38mm (on rail) / 42mm (without rail)
Weight	5kg

Service

Have your tools and machinery serviced at The ToolShed with ToolShed replacement parts. This will ensure that the safety of the power tool or machine is maintained.

PRODUCT IDENTIFICATION



1. Handle
2. ON/OFF Trigger
3. Motor
4. Base Plate
5. Guide Adjustment Knobs
6. Bevel Adjustment
7. Gauges
8. Blade Guard / Housing

SAFETY GUIDELINES

WARNING

READ ALL SAFETY WARNINGS & INSTRUCTIONS. Failure to follow instructions and warnings could lead to serious injury, electric shock, or fire.

Work Area Safety

- **Ensure that your work area is kept well lit and clean.** Lack of visibility and clutter greatly increase the risk of accident.
- **Keep bystanders and children clear when operating a power tool or machine.** They can cause distraction or risk injury themselves.
- **Ensure you are not operating the power tool or machinery in the presence of flammable gases, dust, liquids, or anything that creates an explosive atmosphere.** Power tools and machinery can create sparks which can lead to ignition in these environments.

Personal Safety

- **Always wear personal protective equipment.** Eye protection, ear protection, dust masks, and other protective equipment will help to reduce the risk of personal injury.
- **Dress appropriately. DO NOT wear or loose clothing that can get caught in moving parts.** Keep hair, loose clothing, jewelery, and anything else that could be of risk away from moving parts or they could be caught.
- **Always remain alert and DO NOT operate the power tool or machinery under the influence of any substances (drugs, medications, alcohol).** Losing focus could lead to injury while operating power tools and machinery.
- **Always keep proper footing and balance.** Overreaching can lead to slipping and falling which can result in injury.
- **Ensure the power switch is in the off position before connecting any batter or power source to the power tool or machinery.** This can lead to accidents as tools and machinery can suddenly fire when it is not expected, leading to accident.
- **Use all provided dust collection and extraction attachments if included.** This, with the use of dust masks, can help keep you safe from dust and keep your work site clear while working.
- **Ensure loose parts such as a wrench or adjusting key are removed before starting the power tool or machinery.** Failure to remove these can result in serious injury.

Electrical Safety

- DO NOT use the power tool or machinery in raining conditions or wet areas where the power tool or machinery could get wet. Water in the power tool or machinery can lead to electric shock.

- Only use the power tool or machinery when the plug correctly matches the power outlet. Modifying plugs greatly increases the risk of electric shock.

- **Keep the power cord away from anything that could damage it such as sharp edges, moving parts or heat.** A damaged power cord increases the risk of electric shock.

- **Only operate outdoors with the use of an outdoor extension lead.** Not all extension leads are suited to outdoor use and using one which is not can greatly increase the risk of electric shock.

- **Avoid body contact with grounded or earthed surfaces.** Surfaces such as radiators, ranges, pipes, and refrigerators can increase the risk of electric shock due to your body being earthed or grounded.

WARNING

Electric shock can cause serious injury or, in some cases be fatal.

Power Tool & Machinery Use and Care

- **Use the correct tool for the job.** Forcing a tool to do a job it was not designed for increases the risk of accident or injury.

- Disconnect power tools and machinery from power or remove batteries before storing tools and machinery or making any changes or adjustments to them. This reduces or removes the risk of the power tool or machinery accidentally firing which can help prevent injury or accident.

- Check the power tool for damage or any condition that could affect the way the tool or machine works. An unrepaired tool or machine can lead to accident an injury.

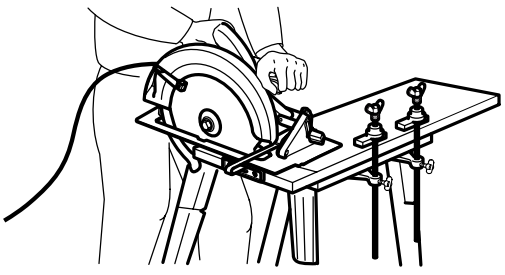
- Only use the power tool or machinery with genuine parts or accessories that are designed to be used with the power tool or machinery. Failure to do so could result in accident, injury, or damage to your tool or machinery.

- Store you tool or machinery out of reach of children and away from untrained personnel when not in use. Use by somebody untrained or a child could lead to accident or serious injury.

SAFETY GUIDELINES

Specific Safety

- Keep hands away from cutting area and the blade. Keep your second hand on the auxiliary handle or motor housing. If both hands are holding the saw, they cannot be cut by the blade.
- Do not reach underneath the workpiece. The guard cannot protect you from the blade below the workpiece.
- Adjust the cutting depth to the thickness of the workpiece. Less than a full tooth of the blade teeth should be visible below the workpiece.
- Never hold the piece being cut in your hands or across your leg. Secure the workpiece to a stable platform. It is important to support the work properly to minimize body exposure, blade binding, or loss of control.



A typical illustration of proper hand support, workpiece support, and supply cord routing (if applicable).

- Hold the power tool by insulated gripping surfaces only, when performing an operation where the cutting tool may contact hidden wiring or it's own cord. Contact with a "live" wire will also make exposed metal parts of the power tool "live" and could give the operator and electric shock.
- When ripping, always use a rip fence or straight edge guide. This improves the accuracy of cut and reduces the chance of blade binding.
- Always use blades with correct size and shape (diamond versus round) of arbour holes. Blades that do not match the mounting hardware of the saw will run eccentrically, causing loss of control.
- Never use damaged or incorrect blade washers or bolt. The blade washers and bolt were specifically designed for your saw, for optimum performance and safety of operation.

Kickback Causes and Related Warnings

- Kickback is a sudden reaction to a pinched, bound, or misaligned saw blade, causing an uncontrolled saw to lift up and out of the workpiece towards the operator.
- When the blade is pinched or bound tightly by the kerf closing down, the blade stalls and the motor reaction drives the unit rapidly back towards the operator.
- If the blade becomes twisted or misaligned in the cut, the teeth at the back edge of the blade can dig into the top surface of the wood causing the blade

to climb out of the kerf and jump back towards the operator.

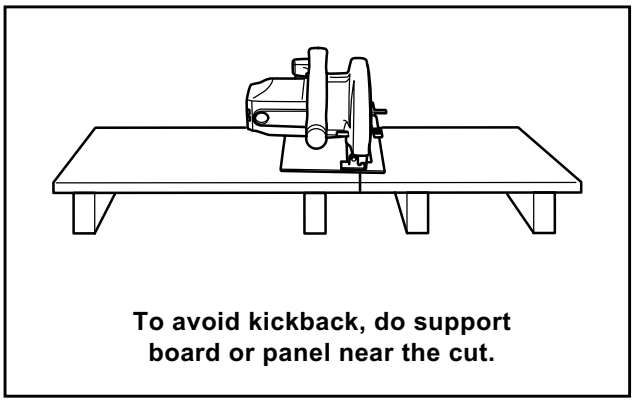
Kickback is the result of saw misuse and/ or incorrect operating procedures or conditions and can be avoided by taking proper precautions as given below:

- Maintain a firm grip with both hands on the saw and position your arms to resist kickback forces. Position your body to either side of the blade, but not in line with the blade. Kickback could cause the saw to jump backwards, but kickback forces can be controlled by the operator if proper precautions are taken.

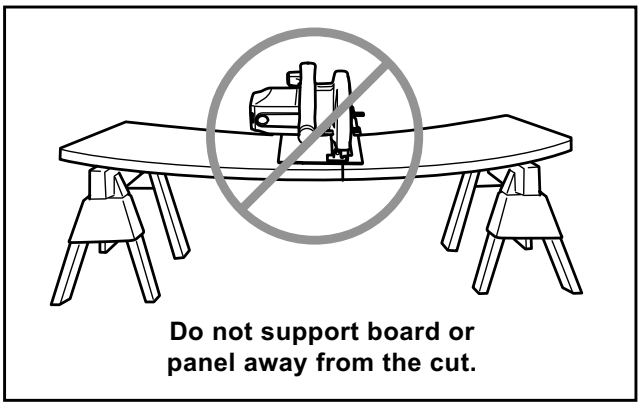
- When blade is binding, or when interrupting a cut for any reason, release the trigger and hold the saw motionless in the material until the blade comes to a complete stop. Never attempt to remove the saw from the work or pull the saw backward while the blade is in motion or kickback may occur. Investigate and take corrective actions to eliminate the cause of blade binding.

- When restarting the saw in the workpiece, centre the saw blade in the kerf and check that saw teeth are not engaged into the material. If saw blade is binding, it may walk up or kickback from the workpiece as the saw is restarted.

- Support large panels to minimise the risk of blade pinching and kickback. Large panels tend to sag under their own weight. Supports must be placed under the panel on both sides, near the line of cut and near the edge of the panel.



To avoid kickback, do support board or panel near the cut.



Do not support board or panel away from the cut.

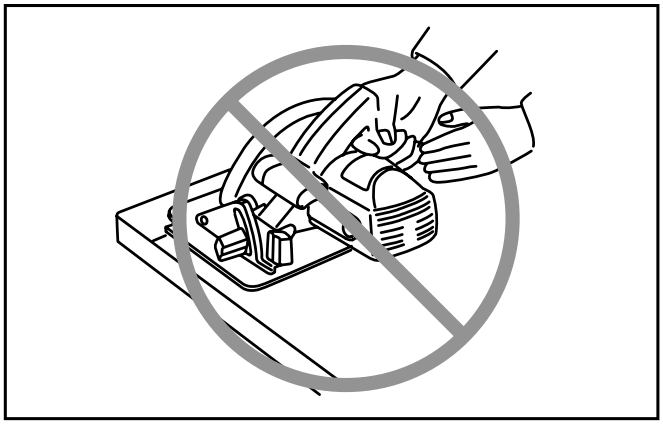
- Do not use dull or damaged blades. Unsharpened or improperly set blades produce narrow kerf causing excessive friction, blade binding, and kickback.

- Blade depth and bevel adjusting locking levers must be tight and secure before making a cut. If blade adjustment shifts while cutting, it may cause binding and kickback.

- Use extra caution when sawing into existing walls or other blind areas. The

protruding blade may cut objects that can cause kickback.

- Always hold the tool firmly with both hands. Never place your hand, leg, or any part of your body under the tool base or behind the saw, especially when making cross-cuts. If kickback occurs, the saw could easily jump backwards over your hand, leading to serious personal injury.



- Never force the saw. Push the saw forward at speed so that the blade cuts without slowing. Forcing the saw can cause uneven cuts, loss of accuracy, and possible kickback.

Guard Function

- Check guard for proper closing before each use. Do not operate the saw if guard does not move freely and enclose the blade instantly. Never clamp or tie the guard so that the blade is exposed. If saw is accidentally dropped, guard may be bent. Check to make sure that guard moves freely and does not touch the blade or any other part, in all angles and depths of cut.

- Check the operation and condition of the guard return spring. If the guard and the spring are not operating properly, they must be serviced before use. Guard may operate sluggishly due to damaged parts, gummy deposits, or a build-up of debris.

- Assure that the base plate of the saw will not shift while performing the "plunge cut" when the blade bevel setting is not at 90°. Blade shifting sideways will cause binding and likely kickback.

- Always observe that the guard is covering the blade before placing saw down on bench or floor. An unprotected, coasting blade will cause the saw to walk backwards, cutting whatever is in its path. Be aware of the time it takes for the blade to stop after switch is released.

Additional Safety Warnings

- Use extra caution when cutting damp wood, pressure treated lumber, or wood containing knots. Maintain smooth advancement of tool without decrease in blade speed to avoid overheating the blade tips.

- Do not attempt to remove cut material when the blade is moving. Wait until blade stops before grasping cut material. Blades coast after turn off.

- Avoid cutting nails. Inspect for and remove all nails from lumber before cutting.

- Place the wider portion of the saw base on that part of the workpiece which is solidly supported, not on the section that will fall off when the cut is made. As examples, Fig.1 illustrates the RIGHT way to cut off the end of a board, and Fig.2 the WRONG way. If the workpiece is short or small, clamp it down. **DO NOT TRY AND HOLD SHORT PIECES BY HAND.**

Fig. 1

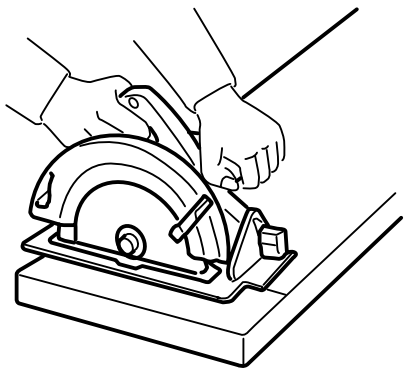
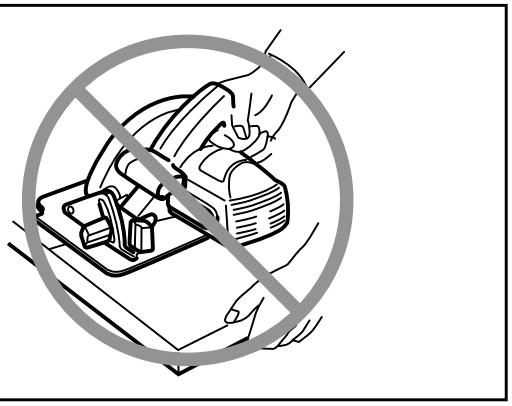
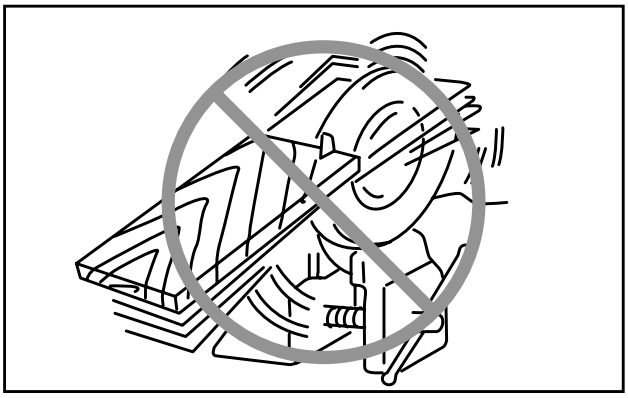


Fig. 2



- Before setting the tool down after completing a cut, be sure that the lower guard has closed and the blade has come to a complete stop.

- Never attempt to saw with the circular saw held upside down in a vice. This is extremely dangerous and can lead to serious accidents.



- Some material contains chemicals which may be toxic. Take caution to prevent dust inhalation and skin contact. Follow material supplier safety data.

- Do not stop the blades by lateral pressure on the saw blade.

- Always use recommended blades and do not use any abrasive wheels.

- Keep blade sharp and clean. Gum and wood pitch hardened on blades slows saw and increases potential for kickback. Keep blade clean by first removing it from the tool, then cleaning it with gum and pitch remover, hot water, or kerosene. Never use gasoline.

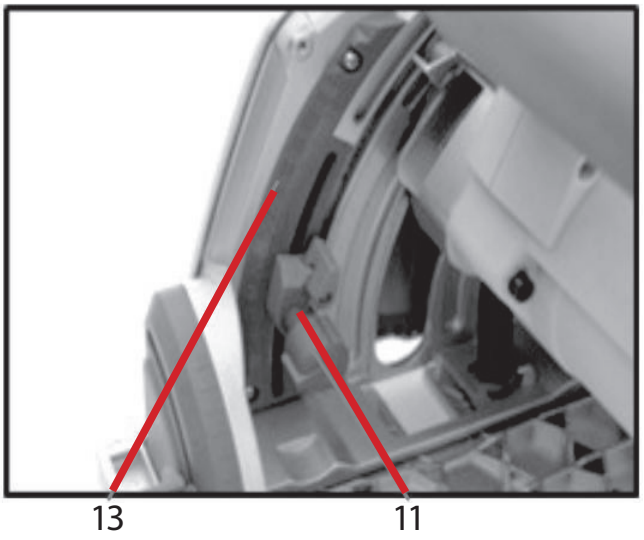
- Wear a dust mask and hearing protection while using the tool.

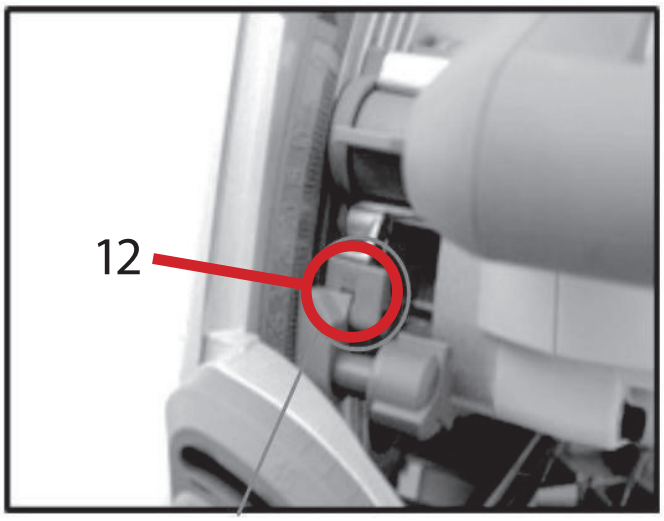
OPERATION

Set Cutting Depth

The cutting depth can be set between 0-54mm:

1. Loosen the cutting depth limit stop knob (11) and slide it to the desired cutting depth according to the graduated scale (13) to set the cutting depth.





? NOTE

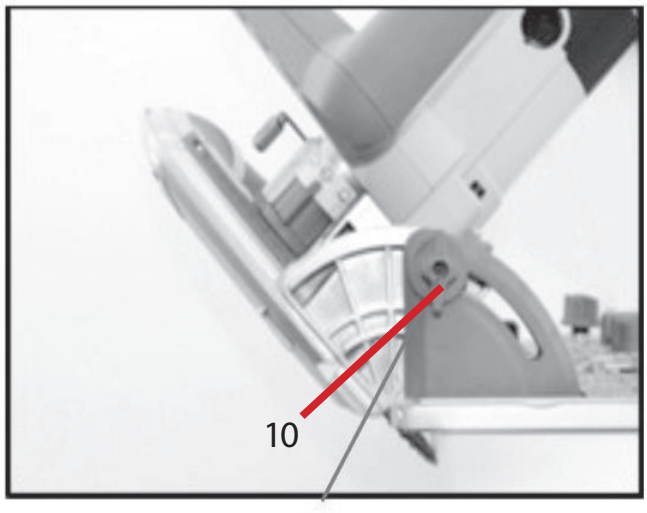
The graduated values on the scale (13) apply for straight cuts (90°). The guide rail track compensation (12) must be tilted up when using the plunge saw without guide rail.

2. Tighten the cutting depth limit stop knob (11). The saw blade can now be pushed down to set the cutting depth. For a clean, safe cut set the cutting depth so that only a max. of one saw blade tooth protrudes under the workpiece.

Set Cutting Angle

The plunge saw can be swiveled between 0° and 48°.

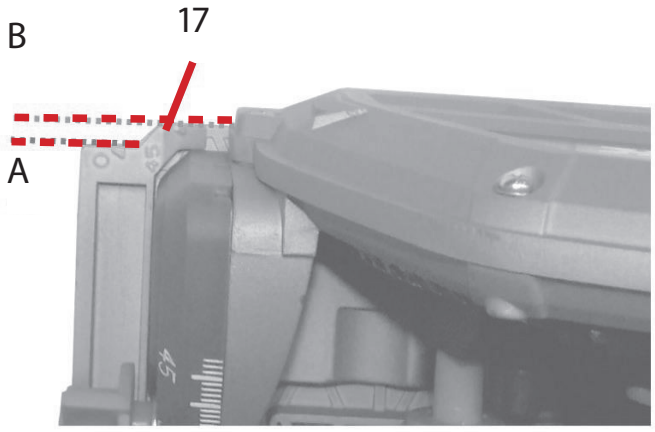
1. Loosen both rotary knobs (10). Swivel the motor to the desired cutting angle on the cutting angle scale.
2. Tighten the rotary knobs (10) again.



Determine Cutting Line

Two cutting lines are marked on the base plate of the plunge saw.

1. Alight position A (0 mark on base plate) at the front of the base plate with your marked cutting line when using the plunge saw without guide rail for straight cuts.



2. For 45° mitre cuts, align position B (45 mark on base plate) at the front of the base plate with your marked cutting line.

Straight Cuts (90° Cut)

1. Loosen both rotary knobs (10) and swivel the saw to the 0° position on the scale. Tighten the rotary knobs again.
2. Turn the selector switch to the plunge cut function.
3. Set the desired plunge depth. Ensure that the guide rail track compensation (12) is up when using the saw without a guide rail.
4. To switch on the saw, press the switch lock and the ON/OFF switch and push the motor down. Guide the saw forward to cut.

Mitre Cuts (Up to 48°)

1. First, loosen both rotary knobs (10) and swivel the plunge saw to the desired graduation. Tighten the rotary knobs again.

2. Switch the plunge saw on.
3. Turn the selector switch to the plunge cut function.
4. Set the desired plunge depth. Ensure that the guide rail track compensation is in the up position when using the saw without a guide rail.
5. To switch the saw on, press the switch lock and the ON/OFF switch and push the motor down. Guide the saw forward to cut.

OPERATION

Marked Cutting

1. Turn the selector switch to the marked cut function.
2. Press the switch lock and push the motor down. The casing stops in a 2mm cutting depth position.

Note: The marking line should be aligned with cutting line A.

Plunge Cuts

1. For a straight cut, first loosen both rotary knobs and swivel the plunge saw to the 0° position on the scale. Tighten the rotary knobs again.
2. Turn the selector switch to the plunge cut function.
3. Set the desired plunge depth. Ensure that the guide rail track compensation is up if not using a guide rail.
4. Press the switch lock and the ON/OFF switch and push the motor down. Guide the saw forward to cut.

The cutting width marks show the most foremost and rearmost cutting points of the saw blade (Ø165mm) at maximum cutting depth and when using the guide rail.

Change the Saw Blade

WARNING

Before any maintenance work, always switch off the plunge saw and disconnect from the mains power.

1. Loosen both rotary knobs and swivel the plunge saw to the 0° position before changing the saw blade. Tighten the rotary knobs again.
2. Set the selector switch to the change saw blade icon.
3. Press the switch lock down and push the motor down.
4. Press and hold the shaft lock down.
5. Use a 5mm hex key to turn the screw at the saw blade slightly clockwise or counterclockwise until the spindle clicks into place.
6. Use the hex key to loosen the screw counterclockwise. Remove the outer flange and the saw blade.
7. Clean both flanges and replace the saw blade.

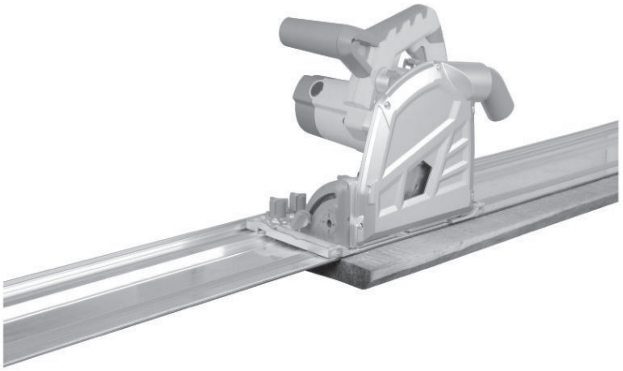
NOTE: The rotation direction arrows of the blade and the saw must be aligned.

8. Replace the outer flange in such a way that the slaving pins sit in the recesses of the inner flange.
9. Press and hold the shaft lock and tighten the screw. Press the switch lock for the casing to swivel up again.

Guide Rails & Clamps (Sold Separately)

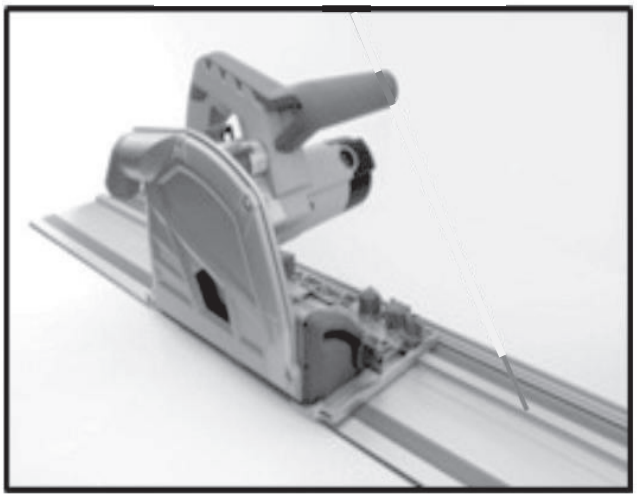
The guide rails allows precise, clean, and straight cuts, mitre cuts, and fitting. The rails also protect the workpiece surface from damages.

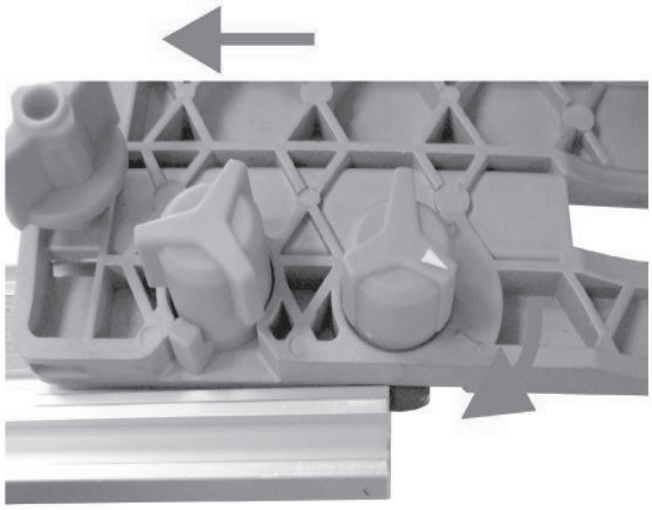
Fixing with clamps ensures a solid grip and safe work.



1. Unlock the clamps by pressing the unlock buttons. Open the clamps according to the thickness of your workpiece.
2. Place the guide rail on the workpiece and fix the guide rail with the clamps. Slide the bar into groove of the guide tail and tighten the clamp with the lever.

3. Place the plunge saw on the guide rail. The base plate has a groove which exactly fits into the guide ridge of the rail.





4. Guide the plunge saw from the edge of the guide rail and turn the guide rail lock to connect the plunge saw to the rail. Connecting the base plate to the guide rail is important when doing mitre cuts. This prevents the plunge saw from tilting over.
5. Disconnect the plunge saw by turning the locking mechanism back towards 0 and take the saw off guide rail.

OPERATION

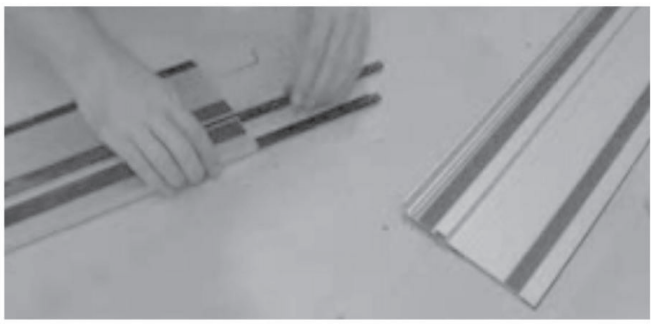
Fine Adjustment of Plunge Saw Play on Rail Guide

The play of the base plate on the guide rail can be reduced to minimum with the fine adjustment screws.

1. Loosen the fine adjustment screws counterclockwise.
2. Turn both fine adjustment screws clockwise to minimize the play between base plate and guide rail if necessary.
3. Fasten the fine adjustment screws clockwise.

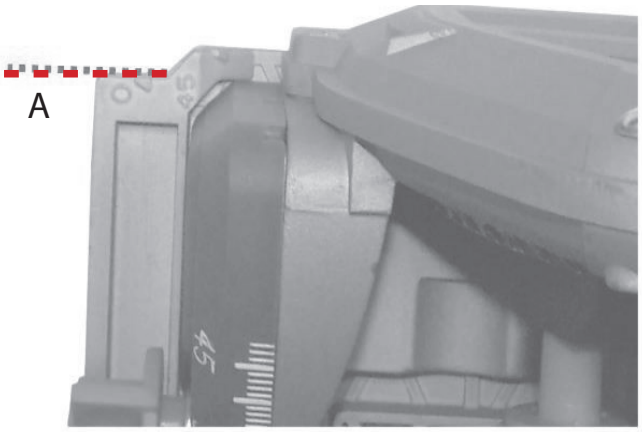
Connecting Rods for Guide Rails (Optional)

1. To connect both guide rails slide the first connecting rod from the bottom into the groove of the guide rail.
2. Slide the other connecting rod into the second groove.
3. Use the 3mm hex key to tighten the stud screws to the limit stop to connect the rails.



Determine Cutting Line

When using the saw with a guide rail, always align position A (0 mark on base plate) at the front of the base plate with your marked cutting line for straight cuts and 45° mitre cuts.



Guide Rail Splinter Guards

The guide rails (not included) come with a splinter guard (black protruding rubber lip). The splinter guard should be cut to size before first use. The splinter guard ensures a tear-free cut, since the wood fibers at the top of the workpiece are torn without the guard. This is due to the saw blade teeth being directed upward.

After cutting the splinter guard size it also show the precise cutting path of the saw blade.

1. Mark a cutting line on the workpiece and align the guide rail exactly with this cutting line.
2. Fix the guide rail with clamps on the workpiece.

3. Set the selector switch to the marked cut function. Set the plunge saw speed to 6.
4. Place the plunge saw at the rear end of the guide rail.
5. Switch the plunge saw on and push the saw down. Cut the splinter guard continuously over the entire length. The edge of the splinter guard will now exactly match the cutting edge.

Kickback Stop

The kickback stop is designed to prevent operator injuries due to kickback. When working with the guide rail, the kickback stop automatically clicks into place on the base plate as soon as the base plate is placed on the guide rail. The kickback stop counteracts movement if you try to guide the plunge saw on the rail guide back or if the saw kicks back.

1. Turn the spring loaded screw of the kickback stop towards 0 to manually unlock. Now the saw can be moved forward and back.
2. Release the spring loaded screw for the kickback stop to click into place on the guide rail again.

After a kickback, always check the guide rail for damaged and dispose of a damaged guide rail to prevent accidents.

Plunge Cut with Guide Rail

1. Hold the plunge saw with both hands at the handles.
2. Switch the plunge saw on and wait until it is running at full speed.
3. Push the saw slowly down and guide the saw towards the plunge position.

NOTE: The cutting width markings at the side of the protective cover show the foremost and rearmost cutting points of the saw blade at maximum cutting depth when using the guide rail and a 165mm diameter saw blade.

90° Limit Stop for Guide Rail (Optional)

When using the 90° limit stop, precise cuts are possible.

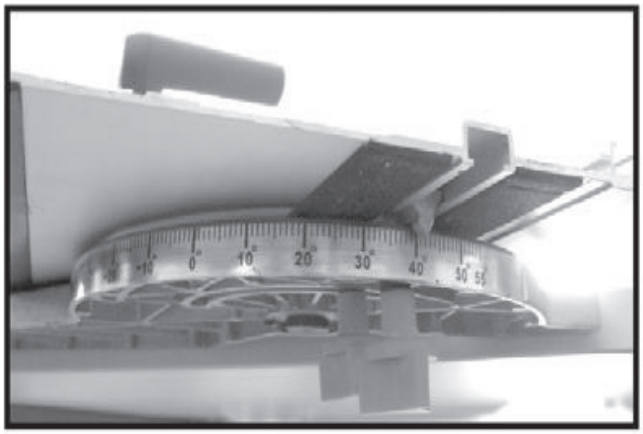
1. Attach the 90° limit stop from the bottom to the guide rail and tighten the clamping screw to fix the 90° limit stop in place.
2. Place the 90° limit stop at the straight side of the workpiece as shown in the illustration.

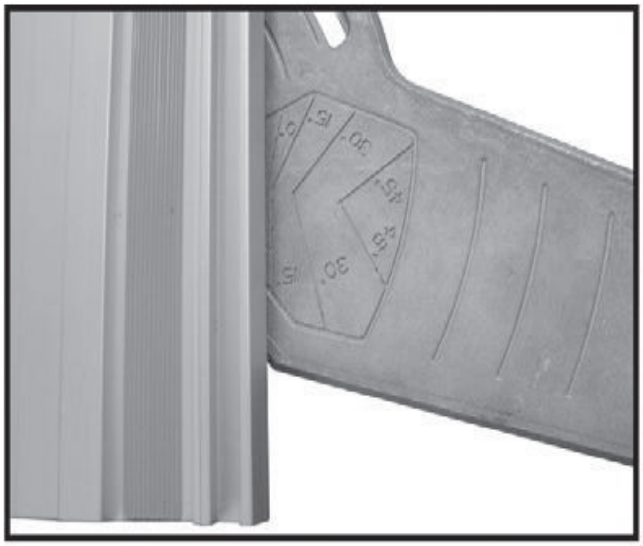
Mitre Limit Stop for Guide Rail (Optional)

When using the mitre limit stop, precise mitre cuts with angles and fitting are possible. You can use the mitre limit stop in such a way that either the angle is set from -55° over 0° to 55° by means of the curved

OPERATION

angle scale. Alternatively, the mitre angle limit stop can be installed on the guide rail in such a way that the pre-punched angle settings 0°, 15°, 30°. and 45° can be used.





1. When installing the mitre limit stop on the guide rail first set the desired angle and slide the mitre limit stop into the groove of the guide rail.
2. Tighten the front clamping screw to fix the angle setting.

3. Place the mitre limit stop at the straight side of the workpiece.
4. Tighten the second clamping screw to fix the mitre limit stop tightly on the guide rail.
5. Slide the mitre limit stop into the groove of the guide rail and set the angle by means of the notches from 0° to 45° when installing the mitre limit stop on the guide rail.
6. Tighten the second clamping screw to fix the mitre limit stop tightly on the guide rail.

NOTE: The pre-punched notches match the curved angle scale.

Parallel Limit Stop and/or Table Expansion (Optional)

For cut-off widths up to 180mm a parallel limit stop can be used. The parallel limit stop can also be used as a table expansion.

1. Slide the parallel limit stop into the respective guides at the front and rear of the base plate.
2. Measure the desired distance and fix the parallel limit stop with the clamping screws.

Saw Blades

Compatible saw blades are necessary for the plunge saw to cut different materials quickly and cleanly.

Saw blades with fewer teeth (approx. 12-18) are suitable for longitudinal cuts.

For cross cuts, blades with 32-48 teeth are recommended.

For cutting other materials such as aluminium, special saw blades are required.

CLEANING & MAINTENANCE

WARNING

Disconnect from mains power before carrying out any maintenance work on the plunge saw.

All maintenance and repair work involving opening the motor casing must be carried out by an authorised service center.

Always keep the plunge saw clean. Clean the plunge saw after every use with a dry cloth or compressed air. Do not use any aggressive chemicals for cleaning.

Changing Carbon Brushes

The saw is equipped with self-isolating special brushes. They are automatically isolated when worn, and the tool stops. Check the carbon brushes regularly. Replace the carbon brushes with genuine spare parts if they are worn to the wear limit (approx. 50% of the block). Always replace the carbon brushes in pairs.

Fine Adjustment of Cutting Precision

The cutting precision for straight cuts (90°) is factory set. Use a 3mm hex key to adjust the cutting precision at the bottom of the base plate.

1. Use a set square to adjust the saw blade to a 90° angle.
2. Swivel the plunge saw to the side and set the cutting precision by means of the stud screws.

The cutting precision for straight 45° mitre cuts is factory set.

1. Swivel the plunge saw to a 45° position.
2. Use a set square to check the angle.
3. Swivel the plunge saw to the side and set the cutting precision by means of the stud screws.

PARTS DIAGRAM