A FEW WORDS FROM THE MANUFACTURERS...

You are about to assemble your Workcentre. There's a right way of doing it and there are very many wrong ways. If you follow these instructions STEP BY STEP as you assemble the Workcentre, you should have it properly set up within an hour or two. It is important you observe safety warnings throughout this manual & use safety guards wherever possible. They are for your protection.

If you ignore or skim through this manual, you could spend a whole day putting it together, and still not get it right. The choice is yours.

Proper safety glasses should be worn at all times & a dust mask & ear protection used if operating for extended periods.

After you've finished the assembly, set aside some scrap timber and work your way through the Test Cuts section, and the operating sections, until you are fully familiar with the machine.

If you have fitted good quality tools and cutters, you should find that the Triton Workcentre is capable of a vast range of functions, and great precision. With some occasional maintenance, you should get years of trouble-free service.

Make sure we can keep in touch with you by getting onto the mailing list. Details on the back page.
WORKCENTRE PARTS LIST

1. Worktable
2. Front Panel
3. Rear Panel
4. Bearing Channels
5. Base Channels
6. Protractor (Mitre Guage)
7. Plain Work Stop
8. Notched Work Stop
9. Rip Guard & Riving Knife
10. Rip Fence & Clamp Set
11. Side Blade Guard (Hinged)
12. Saw Slide Chassis
13. Fasteners Bag (including bag of saw clamps)
14. Table Support Rails & Bag of Tee Handles

TERMINOLOGY USED IN THIS MANUAL:
1. "Front of the workcentre" means the end which has the switchbox.
2. "Left-hand and right-hand side" are when viewed from the front.
3. Most dimensions are given in millimetres (25.4 mm = 1"). A simple conversion table is on the back page.
4. Safety warnings are generally given in bold type.
5. Letters stamped on workable: R = Rip Mode 0-270 mm (0-10\(\frac{1}{2}\)"), WR = Wide Rip 200-455 mm (8"-18"), C = Crosscut mode
(Formerly called Docking & labelled "D").

ASSEMBLING THE WORKCENTRE

Tools required: 100-150 mm (4-6") adjustable wrench or equivalent, Pliers (Preferably long nose), Phillips screw driver.

STEP 1
Assemble the basic frame as shown in Figs. 1 & 1(a) but do not yet tighten up any of the bolts.

Note from Fig. 1(a) where the flat washers are used, and note how the 8 star washers are used under the heads of the ¼" nuts.
If you have trouble fitting the ¼" nut near the switchbox, either reverse the bolt and nut, or fit the bolt, lay the frame on its side, and fit the star washer and nut from above.
STEP 2
FITTING TABLE SUPPORT RAILS

Fit the Table Support Rails (Part No. 14) to the end panels as shown in Figs. 2 and 2(a). The rail with the holes fits inside the Front Panel. The rail with the studs into the Rear Panel.

Use the chart, Fig. 2(b), to determine the approximate table height setting for your power saw. Each of the graduations printed on the end panels is 2 mm.

Set the rail heights as shown in Fig. 2(c). The top edge of the rail, as visible through the slot, is your reference point. In the photographs, the rails are set at 78 mm, for a 205 mm (8 1/4") saw blade.

The black T-handles (shown elsewhere in this manual as small triangular knobs) should be approximately horizontal on the front panel. This is to give clear access for the two Locking Keys from the fasteners bag. If a handle is angled when fully tight — as in Fig. 2(d) — simply loosen it a few turns, give the coach bolt a quarter-turn, and re-tighten.

Check the fit of the Locking Keys, through both keyholes of the front table support rail. You may have to move the rail side-ways slightly. If removing any excess epoxy coating, use a scraper or round file — NOT A DRILL.

Now partially withdraw the keys to allow access for the table.

STEP 3
TIGHTENING THE BASE

Check that the basic frame is resting on a flat and level surface. Measure between the diagonal corners at the top of the frame as in Fig. 3(a). The measurement should be between 1040 and 1045 mm.

Square up the frame if necessary so the measurements are the same (±2 mm).

Slide the Table in from the side as shown in 3(a) until the locking keys are lined up with the holes labeled “C” — for crosscut. Push the table home onto the rear panel studs, and fit the locking keys as shown in Fig. 3.

Both locking keys should be a similar fit, and the whole table should be snugly held between the end panels.

Now you can begin tightening the base nuts and bolts. Start with the ¥¾" nuts on the bottom, then the ¥¼" bolts. Note that in tightening the ¥¼" bolts, the star washers under the nuts dig in and prevent them from slipping while you tighten. DO NOT OVERTIGHTEN.

STEP 4
TIGHTENING THE BEARING CHANNELS

Unlock the table and gently slide it out. Turn it around through 180 degrees and place it on top of the aluminium bearing channels. Line up the holes labeled “WR” with the studs on top of the rear panel, and push the table home onto the studs. The four T-shaped holes should now be nearest the front of the workcentre (switchbox end).

Re-locate the locking keys in the top key-holes of the front panel, into the holes labeled “R” — for Ripping, as shown in Fig. 4. Again, the keys and table should be a snug fit.

Tighten the four ¥¼" bolts as shown in Fig. 4. DO NOT OVERTIGHTEN.

(To assist the star washers in holding the nuts, you may have to use pliers or a screwdriver point as a wedge).

Now tip the Workcentre on its side, and fit the four rubber feet as shown in Fig. 4 (a). The hexagon nuts under the rubber feet must remain visible. Firmly hand-tighten them.

If you have obtained the optional Folding Stand, assemble it now and check the fit of the rubber feet. They should be a very firm fit. If they are too loose in the stand, tighten them further, swelling them slightly. If too tight, check the tube openings for burrs or dents.
STEP 5  
FITTING THE SLIDE CHASSIS
Re-fit the table in the crosscut mode as in Fig. 3(a). Place the Slide Chassis on the bearing channels. Slide it to the end of its travel and two bearings will drop into the channels. Slide the chassis along to the other end, and the two remaining bearings will drop in. Check the slide action of the chassis, and spray some lubricant such as RP 7 or WD 40 or silicon spray to ensure a smooth, easy slide. Do not use oil, grease or graphite as these form a messy paste when mixed with sawdust. Practice flipping the chassis over, as in Fig. 5. (If a bearing does not sit down flat on dropping into the channel, either bring the chassis down a little more firmly, or perhaps slightly loosen the bearings' Nyloc nut.)

STEP 6  
FITTING THE SAW
Take your portable saw, and with the power disconnected, check that the blade is set at full depth and the angle adjuster is set at 0 degrees. The spring-loaded safety guard is not used on the Workcentre, so tie it back with some cord or a rubber band as shown in Fig. 6(a). Do not leave the guard permanently tied back, or the spring will fatigue. Release the guard after you finish work for the day. DO NOT REMOVE THE GUARD ALTOGETHER.
Measure the overall length of the saw's base-plate. Lengthen the chassis (if necessary) as in Fig. 6 so that the saw can fit snugly between the walls of the chassis. The chassis can be extended to 425 mm for the longest saws. With smaller saws, it is all right if there is a gap at the front or back, as shown in Fig. 7(b). Place the saw in the chassis, with the front of the saw facing the rear panel. The tip of the blade should be just entering the central slot in the table. Adjust the four T-knobs if necessary until the teeth are no more than 1-2 mm below the table surface at both ends of the chassis travel.
There are two alignment notches in the chassis directly above the central slot in the table. The blade should be roughly lined up with these notches, but must not enter them. See Fig. 7(b). Turn the blade by hand to make sure it is free to spin.

STEP 7  
FITTING THE CLAMPING BRACKETS
Take the separate packet of saw clamps. Fit the four L-shaped location brackets (Fig. 7) at or near the four corners of the saw, and finger-tighten the nuts only. (One of the brackets has a bevelled corner. It is for wide-based saws as shown in Fig. 7(d)).

Fit the four U-shaped top clamps as in Fig. 7(a), fit a flat washer and spring washer, and lightly do up the wingnuts.

Angle the saw blade to 45 degrees using the saw's own adjuster. (Raise the blade slightly first to clear the slot in the table). If the saw's top guard hits one of the U-shaped clamps, replace both clamps with the shallow hook-over clamp and shorter bolt as in Fig. 7(b).
Fig. 7(b) shows a popular 165mm saw which has a very short base-plate. A gap at the back of the base-plate is all right if it prevents the blade from hitting the slide chassis. Glue or screw a packing spacer in as shown for additional security.

The shallow hook-over clamp and the short coachbolt are used at the right-hand rear corner of this saw, because the normal clamp would prevent the saw tilting to 45 degrees for bevel cutting.

Fig. 7(c) shows a saw with a deep lip, and a step at the front of the base-plate. The saw clamps are mounted on packing pieces. To cope with the step in the base-plate, one front clamp is angled against the corner of the saw. The upper saw clamp has been modified to suit the corner of the base-plate.

Fig. 7(d) shows a saw with a wide base-plate. The locating bracket with the bevelled corner is used at the right-hand front of this saw, to avoid fouling the raised section of the slide chassis.

**STEP 8**

CONVERTING TO A TABLE SAW

Remove the table and turn the saw upside down. With the slide bearings inside the aluminium channels, move the chassis until it is roughly mid-way between the front and rear panels.

Place the table on top, in the table saw position, and locate the rear panel studs in the holes labeled “WR”. As you lower the table at the front, make sure the rear position lug (Fig. 8) under the table engages in the slot in the slide chassis. Lower the table fully and insert the locking keys in the “R” holes. Check that the chassis is locked firmly. Now remove the table without moving the slide chassis and make a mark(s) on the bearing tunnel with a scriber or marker pen, to show you where to position the chassis for future conversions.

Unlock the table, lift it at the front, and slide the chassis towards you so that you can lock it in the forward position. Make another mark(s) on the bearing channel for future reference.

*Note: Some tables have a spring latch instead of the lug shown. The latch is engaged in the detent at the end of the chassis. The procedure is the same as above.*

ALWAYS USE THE REAR POSITION FOR RIPPING AND CROSSCUTTING.

The forward position is only used for cutting angle mitres and short tapers as described in Page 22.

**STEP 9**

ADJUSTING THE SAW BLADE ANGLE

Use the adjuster(s) on your portable saw to set the angle of the blade exactly square to the table, as in Fig. 9.

If the blade won’t adjust far enough to be square, you can mount saws file a little out of the end of the curved adjustment slot of the saw. Or you can put some thin packing material between the right-hand side of the saw’s base-plate and the chassis, if your blade reaches the square position and then "slumps" off-square, see Page 11).
STEP 10
CENTERING THE SAW
Now you should approximately centralise your saw blade in the slot. To do so, slightly loosen the four wingnuts holding the U-shaped top clamps, and push, pull or twist the saw body until the blade is roughly central as in 10(b). If you have a fairly thick saw blade, favour the left of centre — away from the calibration scales. Final trueing up is in Step 12.

STEP 11
FITTING THE RIVING KNIFE
Make sure your saw chassis is securely locked in the rear position. Make sure the saw blade is fully extended upwards, at maximum depth of cut. Remove the moulded Rip Guard (Part No. 9) from the Riving Knife, and fit the knife directly behind the blade as shown in Fig. 11. The knife should be no more than 12 mm behind the saw blade. If you have a very long saw, or a very short saw, you may have to reposition the bolt in the riving knife body.
After passing the U-shaped clamp and wingnut through the table slot, turn the clamp sideways and lock the knife in position, as in Fig. 11(a). If any part of the die-cast body of the knife is slightly above table level, file it down.
Raise the blade to full height and spin it by hand to check that it can’t hit the body of the riving knife. Get into the habit of checking this every time you fit the knife during later operations, and always check that the slide chassis is locked securely in position.

STEP 12
TRUEING UP THE SAW
Fit the clamping feet and triangular knobs to the Rip Fence (Part No. 10) as shown in Fig. 12. Place the fence in the short table slots with the high side of the fence closest to the blade.
Practise locking the fence in various positions, by turning the clamping feet through 90 degrees and locking the tri-knobs. Check that the fence locks positively in both slots. Set the fence towards the blade so that the "O" marks on both scales are directly in line with the reference lines stamped next to the windows in the rip fence, as shown opposite. Lock the fence in the "O" position.
Slightly loosen the four wingnuts holding the saw clamps and push, pull or twist the saw body until the saw blade is lightly touching against the rip fence.
Tighten the wingnuts and then try to spin the blade by hand. The teeth should be very lightly scratching the fence, equally at the front and back of the blade. If not, loosen the wingnuts and slightly re-position the saw on the chassis. Tighten the wingnuts before re-checking.

STEP 13
CHECKING THE RIVING KNIFE
Now you have to check the alignment of the blade and the riving knife. First check that both blade and knife are square to the table. The knife can be bent over slightly by hand if necessary.
Place two straight pieces of wood against the blade as shown in Fig. 13. They should be touching the teeth front and back, and should be clear of the riving knife on both sides.
Your saw is now in its final position, so firmly tighten the four wingnuts prior to final clamping of the saw.
(If the above check shows that the riving knife is not fully behind the blade, you will have to move the saw sideways slightly, making sure that the blade remains exactly parallel to the fence. This may cause a slight error in the calibration scales. Allow for it in future fence settings).
STEP 14
FINAL CLAMPING OF SAW

Remove the table and invert the chassis so that the saw is right-way up. Take care not to bump the saw. Now you have to finally position and tighten the four location brackets, which will ensure that you can in future remove and re-fit your saw for hand held use in about 30 seconds, without repeating Steps 12 and 13.

Do one corner at a time. Undo the wingnut, remove the top clamp and push the L-shaped bracket hard up against the edge of the saw's base-plate. Fully tighten the hexagon nut, as in Fig. 14.

DO NOT OVERTIGHTEN.

Replace the top clamp, flat washer, spring washer and wingnut, and fully tighten the wingnut.

Repeat at the other three corners of the saw, adjusting the brackets and tightening them down one at a time.

STEP 15
FITTING THE BLADE GUARD

Fit the Blade Guard (Part No. 11) to the two lugs on the underside of the chassis (Fig. 15) covering the exposed upper face of the blade.

Nyloc nuts are used so you will have to hold them while tightening the screws.

The blade guard is designed to protect you from the blade and arbor nut, and to help contain sawdust. Flip it aside for sighting up crosscuts.

STEP 16
FITTING THE TRIGGER STRAP

The black plastic Trigger Strap should be the last item in the fasteners bag. With the saw unplugged, pass the strap around the trigger as shown in Fig. 16 and zip it up. To release the strap, press the rib as shown. If your saw has a safety button, push it first and then zip up the strap.

With most power saws, the strap can be adjusted so that it can be slipped on and off the point of the trigger, as in Fig. 16(a), without having to be undone each time. DO NOT LEAVE YOUR TRIGGER PERMANENTLY LOCKED ON. When you have finished work for the day, release the trigger strap and allow the spring in the saw's trigger to relax. Otherwise it could fatigue if left locked on for long periods.

If the trigger strap tends to slide off the hand-grip of the saw, attach some sandpaper or friction tape to the hand-grip as shown in Fig. 16(a). A strip of Velcro tape is another alternative, or you may wish to shape a block of wood to wedge in against the trigger.

STEP 17
FITTING THE RIP GUARD

Convert the workcentre to the table saw mode, locking the chassis in the rear position. Double check with the rip fence set at 0 that the saw didn't shift slightly during clamping.

Fit the Rip Guard to the rising knife as in Fig. 17. Re-fit the bolt, washer and tri-knob.

If the guard is difficult to adjust up and down, spray the rising knife with some lubricant, such as RP 7, WD 40 or silicone spray lubricant.
STEP 18
CHECKING THE PROTRACTOR
Check that the Protractor slides freely in the slot which is parallel to the saw blade. It should be a snug fit, yet slide smoothly from end to end. Spray the aluminium strip underneath the protractor, with some lubricant as above.

IF THE STRIP IS TOO TIGHT:
First check the ends of the strip for burrs, and file them off if necessary. Remove the strip from the protractor, and squeeze it in slightly in the jaws of a vice. You can also cure a slight tightness problem by filing or scraping some of the epoxy coating off the walls of the slot in the table.

IF THE STRIP IS TOO LOOSE:
Remove the strip from the protractor and lay it face-down on a hard, flat surface. Use some steel rod or tubing between 10 mm and 19 mm in diameter, and hammering quite firmly at various points along the rod, slightly widen the strip, as in Fig. 18(b). Re-lubricate and re-fit the strip to the protractor for testing.

STEP 19
OPERATING THE SWITCH
Before connecting the power, practise switching on and off. You do not have to raise the Stop Plate. Press the switch toggle with your index finger to switch the power "ON", Tap the Stop Plate with your hand or knee to switch "OFF".
GET INTO THE HABIT NOW OF ALWAYS PUSHING THE STOP PLATE BEFORE PLUGGING IN THE SAW OR FITTING THE TRIGGER STRAP.
Plug the saw into the switch box, and bring power to the switchbox via an extension cord. Before switching on the power, make sure that:
1. the slide chassis is locked from sliding by one of the lugs welded underneath the table;
2. both locking keys are properly fitted;
3. nothing is touching the saw blade, or is likely to vibrate into it;
4. your hands are well clear of the blade.
Switch the power on and off a few times, and watch the saw blade. If it tends to lurch sideways slightly when the power comes on, your saw could have arbor float, or some slack in the mountings(s) between saw body and saw base. See Page 11. If the blade vibrates significantly at full speed, it could be buckled or not seated properly on the saw's arbor. Remove the blade and check it for flatness with a straight edge at various points across the centre hole. Check the fit of arbor reducing spacers (if fitted to your blade) and make sure you have cleaned all sawdust and resin from the arbor and the arbor washers before re-fitting the blade.
If the blade quivers briefly while slowing to a stop, it could be slightly buckled. This should not lead to poor cuts. However, a pronounced wobble as it slows down indicates a need for straightening or replacing the blade.
TEST CUTS — TABLE SAW MODE

CROSSCUTTING
If you haven't obtained the optional Folding Stand, set up the Workcentre on a stable and rigid base, approximately 570 mm high.

Fit and adjust the safety guard as in Fig. 20, and put on safety glasses. Make sure clothing, long hair and jewellery cannot become entangled in the blade.

Take a straight dressed piece of wood and arrow the straightest edge as shown opposite. Set the protractor at 90 degrees, and hold the workpiece with the arrowed edge against the protractor, as in Fig. 20.

Push down on the protractor with your other hand.

MAKE SURE YOU DO NOT CREATE A SMALL OFF-CUT WHICH WILL JAM IN THE SLOT BESIDE THE BLADE.

Either make the off-cut less than 1 mm wide (a paper-thin shaving), or more than 6 mm wide.

Make the cut and push the protractor as far as it will go, so that the workpiece is past the back of the blade.

If the back of the blade re-cuts, or burns or rubs against the workpiece, your saw is mounted slightly askew, and its clamping brackets will have to be adjusted slightly as in Step 12.

CHECKING YOUR TRY SQUARE
Before checking the cut first check your try square for accuracy. Find a wide board which has an absolutely straight edge. Press the handle of the square firmly against it, and use a sharp pencil to trace the upper edge of the blade of the square as in Fig. 21. Flip the square over and press it against the edge again as in Fig. 22. Compare the blade of the square to the traced line. Any error in your square is seen as doubled, and therefore clearly visible.

CHECKING THE CUT
Remove any uncut fibres from the edge of the cut before taking a reading. Always take the reading off the face which was resting against the protractor, i.e. the arrowed face.

If you have an error ALONG the cut as in Fig. 23, re-adjust the protractor angle slightly and repeat the cut.

Now take a reading ACROSS the cut as in Fig. 24 (off the face which was resting on the table). If you have an error, re-adjust the wingnut or knob on the front of your saw, as in Step 9 on Page 5.

RIPPING TEST
Take a straight piece of wood at least 75 mm wide.
Set the rip fence exactly parallel to the blade. The readings in both windows must be the same.
Set the fence so that you will create a substantial off-cut, which will not fall down between the blade and the slot. (The off-cut should be no less than 6 mm wide).
Keep your fingers well away from the blade (Fig. 25), and hold the arrowed (straight) edge against the fence during the cut. Keep pushing the workpiece until it is behind the back of the blade and the riving knife.

If the back of the blade re-cuts, burns or rubs against the workpiece, either your fence was set slightly askew, or your saw needs slight adjustment on the slide chassis.

If the workpiece hits the riving knife and jams, bump the power with your knee and wait until the blade stops before withdrawing the piece. Then re-check Step 13, Page 6.

If the workpiece was a tight fit between the fence and the riving knife, you can generally ease the rear setting of the fence outwards by no more than 1 mm without losing accuracy.
CONVERTING TO A CROSSCUT SAW

Clear the table of all fittings. Remove the table and place it to one side. Invert the slide chassis, so that the saw is right-way up and facing the rear panel. Turn the table around so that the T-shaped holes are closest to the rear panel. Slide the table in under the blade, and insert the locking keys in the “C” holes.

NOTE: The saw blade will have to be raised slightly during this operation, to prevent the tip of the blade scratching the table surface. Either use the height adjuster on the saw itself, or leave the two freed bearings lying on top of the bearing channels (Fig. 26) while you fit the table.

If using this second method now and in future conversions, MAKE SURE ALL FOUR BEARINGS ARE PLACED BACK INSIDE THE CHANNELS BEFORE MAKING A CUT.

FITTING THE WORK STOPS

The Notched Work Stop fits on the left hand side of the table. (The notch is for the saw blade to pass through when the blade is angled.) The work stops are meant to be a snug fit. Apply pressure low down on the work stops with both thumbs, or try tapping them into position with a piece of wood. They should click into place positively against the back of the T-shaped holes in the table.

If one of your work stops is too tight, you may have to slightly loosen the screws holding the nylon lugs in position. Do not undo the screws more than one turn or so, because the nylon lugs are very difficult to reseat properly if completely removed.

TEST CUTS — CROSSCUT MODE

Position a piece of wood with its straight face against the plain work stop. Hold the workpiece with your right hand, and push the saw with your left hand. Hold the workpiece firmly, pushing it down on the table and against the work stop, as shown in Fig. 28, and keep fingers well out of the path of the blade. Squeeze the saw trigger and gently make the cut, trimming a small amount off. Do not force the saw to cut too fast, and do not jerk the saw into the cut.

DO NOT PULL THE SAW BACK TOWARDS YOU UNTIL THE BLADE HAS STOPPED SPINNING. The blade may hit the small offcut which you've created, causing possible damage or even injury. If you find that the back of the blade re-cuts the workpiece while the blade is slowing to a halt, you can move the workpiece sideways away from the blade as soon as you have cut through. If your saw has a very long base-plate, it may stop you from completing the cut. The remedy is to screw two identical straight wooden packers to the work stops.

Check for square along the cut, and across it as shown in Figs. 23 & 24. You may find an error across the cut, caused by “slump” (or flex) in the saw. Read about Fig. 29 for the remedy. If you have an error along the cut, see Figs. 30 to 35.

If you do have significant slump you may be aggravating the problem by unconsciously twisting the saw hand-grip while pushing the saw. Try leaving the trigger strap on, and pushing the back of the slide chassis rather than pushing the saw itself. This is called the “locked on” trigger technique. Use the switch on the workcentre.
ELIMINATING SAW SLUMP

Most portable saws have some "slump" in the motor and blade, caused by flexing or slack in the mountings between the saw motor and its base plate. This slump should be dealt with to ensure squareness across the cut in both table saw and crosscut modes, without having to adjust the wing nut or knob on the front of the saw each time you convert.

If you have an error caused by saw slump, you have several options:
1. Tighten up the saw as described below; or
2. Obtain a saw Stabiliser Bracket from us (or through your Triton dealer). The bracket fits over the motor of all saws, as in Fig. 29(a) and provides good support for the saw even when raised for rebating (dadoing) or angled for bevelling; or
3. Adjust both table support rails, so there is a slight compensating slope in the table as in Fig. 29. The amount of slope depends on the amount of slump in your saw, but if more than 6 mm of compensating slope is required, we suggest you obtain the stabiliser bracket. Make several test cuts, checking for square after each cut. Always check after adjusting the table or the blade that there is no chance of the blade hitting the walls of the slot, or of cutting into the sub-frame bars underneath the table.

TIGHTENING UP YOUR SAW

Have the saw right-way up and disconnect the power. Take hold of the saw motor, and see how much movement there is up and down. The two most common trouble spots are at the front and rear pivots of the saw motor. The rear pivot point is usually riveted. Either find a way of tightening the rivet, or drill it out and replace it with a snug-fitting bolt and lock nut as in Fig. 30. If the saw is sloppy at the front pivot, either try tightening the bolt, or put some shim packing between the saw body and the pivot bracket, as shown in Fig. 31.

ARBOR FLOAT & POOR BLADES

Arbor float in the saw — movement of the shaft in and out — is the major cause of inaccuracy along the cut. It can show up as a high spot (possibly burnt by the side of the blade), a re-cut, or a slight step in the cut. Try the remedies shown in Figs. 34 & 35. A fine-toothed tungsten tipped blade will help minimise the problem. If you intend to keep the saw for some time, go for a better quality blade.

Arbor float can sometimes be eliminated by a qualified power tool serviceman. If your saw is not repairable or not worth repairing, you should consider upgrading to a better saw. Please feel free to contact us or our area distributor for our current brand recommendations.

If you have extensive burning or re-cut problems along the cut, it is possible your saw is mounted slightly askew on the slide chassis. Check it as explained in Step 12 of the Assembly section.

The high spot shown in Fig. 33 will have a corresponding low spot on the off-cut. The curved ridge on the lower piece of wood is caused either by arbor float, or by the saw being mounted slightly askew.

Fig. 34 shows how to put some straight packers between the workpiece and the work stops. This may help reduce the effects of arbor float. Fig. 35 shows a method of cutting a little to one side of the marked line, and then making a finishing cut in which the blade is removing less wood then in a full cut, and is therefore under less load.
CROSSCUT SAW

RECOMMENDED OPERATING POSITION

Stand on the right hand side of the Workcentre, as in Fig. 36. Hold the workpiece with your right hand and push the saw with the left. The operating position shown in Fig. 37 gives limited hand access for holding the workpiece, and should be avoided unless the recommended position is uncomfortable.

Before positioning a workpiece always slide the chassis the full length of its travel to make sure that the blade is not in danger of hitting the walls of the slot, or the sub-frame bars underneath the slots.

Push the saw smoothly and gently until you have cut all the way through the workpiece. DO NOT PULL THE SAW BACK ONTO AN OFF-CUT. A small off-cut such as shown in Fig. 38, can easily fall behind the blade. If hit, it will shatter and cause blade damage, table damage and possible injury. Allow the blade to stop spinning before pulling the saw back, but you may remove the workpiece sideways once you have cut right through.

To sight up your cuts, flip aside the blade guard and sight down through the gap in the saw base-plate. Make a test nick as shown in Fig. 39 if you want to cut very accurately to a line. If you're not happy about the position of the nick in relation to your line, move the workpiece slightly.

Test your cuts for squareness. If you are not happy with the results, check through the Test Cuts section, especially Page 11.

ALWAYS WEAR EYE PROTECTION WHEN OPERATING, AND KEEP HANDS WELL CLEAR OF THE BLADE.

MULTIPLE CROSSCUTTING

If cutting two or four pieces to the same length, cut them simultaneously. Line up the dressed ends as in Fig. 40 and perhaps tape the pieces together. Trim off the excess at the rough-cut ends with one cut. All four pieces should then be identical.

MAKE A LENGTH GAUGE

A length of straight wood (such as 42x19 mm for a 185 mm saw or 70x19 mm for a 235 mm saw) can be screwed to both work stops. The first cut through it will give you a permanent sighting mark for future cuts. Glue a polyester or fibreglass taillors measure to the top edge as shown in Fig. 41, and you can quickly set a stop for accurate repetition cutting. 0 mm on the tape is right on the edge of the first cut. Fig. 41 shows a block of wood being used as a stop. You can improve on this by making a proper stop to slide along the top of the gauge, with a perpendicular downward leg.
REBATING (DADOING)

Use the adjuster on the back of your saw to raise the blade. You do not have to drop the table. Raising the blade is much faster.

If rebating several pieces identically, it’s a good idea to tape them together as shown.

Move the piece(s) sideways by one blade-width after each cut.

If you are rebating many pieces, and all the rebates start and finish the same distance from the ends, you can reverse the rip fence and lock it in its slots as a stop. It is all right to do so in this instance because you are not trapping a solid off-cut between the blade and the fence.

Try putting a parallel-sided packing spacer between the workpiece and the work stops. It will bring the work closer to you and you’ll avoid backstrain, while keeping the work square to the blade. If you have a saw with a very long base-plate, you’ll need a packing spacer anyway to complete the rebate. See Fig. 34.

Figs. 43 and 44 show two ways of setting saw blade height. In Fig. 43, the blade is raised or lowered until its lowest tooth is just level with a line drawn on a piece of scrap. Use this method, rather than a ruler, for setting the height of the blade/cutter in all modes of operation. It allows you to use hands for adjusting the router.

Fig. 44 shows a way of finding the exact half-way point for a halving joint. Make one cut, flip the workpiece over and make another cut about 3 mm away. Keep adjusting the blade and making fresh cuts until you have two cuts which would just meet if they were in line.

DOUBLE CUTTING

For cutting wood thicker than your saw can handle, you have to lower the table. Use a marker pen to identify the normal table position, as in Fig. 45. (Undo the locking keys, or remove the table to make adjustment easier). The table should be lowered equally at all four corners. Re-fit the locking keys.

Cut the workpiece a little more than half-way through.

Then turn it over and make the second cut.

Fig. 45 shows the fence being used as a stop to ensure the two cuts are in line. DO NOT PULL THE SPINNING BLADE BACK ON AN OFF-CUT.

If the workpiece is too long to use the fence as a stop, draw a line around the workpiece a little way back from your desired cut line. Make a pencil mark on the table as in Fig. 45 and use it as a reference mark when you turn the workpiece over for the second cut. Make shaving cuts if necessary to dress off any remaining step.

PLUNGE CUTTING

If you have a board between 450 and 700 mm wide you may not be able to fit it between the blade and the work stops. You can crosscut such wide boards by making a plunge cut, provided you have a saw with a smooth and firm action when the blade is raised and lowered. If you have such a saw, raise the blade to admit the wide board.

After sighting up the cut, pull the trigger and plunge the saw down into the work. Push the saw to the end of its travel.

With a very wide board (600-700 mm), plunge in about half-way along as in Fig. 46. At the end of the cut, raise the blade and remove the board. Turn the board over, feed it back into the workcentre, and insert the stationary blade in the cut you’ve just made. Fine tune the position of the board, pull the trigger and complete the cut. (The edges which rest against the work stops have to be exactly parallel for the two cuts to meet up perfectly).
MITRE CUTTING
Remove the work stops. Fit the Protractor in the slot as shown in Fig. 47, and lock it in position by loosening the longer tri-knob several turns and twisting the locking head (Fig. 48) underneath the table. Check that it is properly locked.
Sight up cuts by flipping aside the blade guard and touching the stationary saw blade to your cutting mark.

HOLD THE WOOD FIRMLY. IT WILL TEND TO CREEP DURING A MITRE CUT.
Let the blade stop spinning before you pull the saw back.

FINDING TRUE 45 DEGREES
Take a straight piece of scrap wood. Loosen the short tri-knob to set the protractor at 45 degrees according to the scale. Cut 75-100 mm off the workpiece and place the off-cut against the main piece. This doubles any error in your scale setting. If the resulting joint gaps at the top (Fig. 49) you need to increase your protractor setting, i.e., it was probably set at 44 or 44½ degrees. If the joint gaps at the bottom (Fig. 50) you need to decrease the setting.
If the protractor is set correctly, the result will be as in Fig. 51. In Fig. 52, the workpiece moved slightly during the cut, causing a slight curve. A curve or gapping can also be due to arbor float in the saw, or to a poor saw blade. A good quality tungsten tipped blade is essential for perfect mitres.
The protractor has two faces, A & B. Two pieces, one cut against face A and the other cut against face B will always add up to exactly 90 degrees. This novel feature is very useful for making picture frames. (More details on Page 22).

When cutting picture frame moulding or architrave in the crosscut mode, you may notice some splintering on the moulded face. Eliminate this by climb cutting the mitres. First read about climb cutting on page 15.

Generally speaking, mitres are more comfortably cut in the table saw mode. The crosscut mode should generally be used when cutting long, unmanageable pieces, such as lengths of architrave or wall lining board.

BEVEL MITRES (COMPOUND CUTS)
A bevel mitre (or compound cut) is necessary in some types of roof construction, and for shadow boxes, splayed legs etc.
Remove the work stops and lock the protractor in its slot. Tilt the saw blade to the desired angle, and hold the workpiece against the angled protractor. Use some packing under the workpiece as shown in Fig. 53.

This cut puts a lot of load on the workpiece and on the saw. Make sure the workpiece doesn’t creep during the cut. If you have arbor float in your saw, or a poor blade, try making a second shaving cut as in Fig. 55. Because of the load on the saw, don’t aggravate the problem by twisting the saw’s hand-grip. Lock the trigger on and push the rear of the slide chassis.
BEVEL CUTTING

Use the adjuster on your saw to angle the blade to 45 degrees. You will have to raise the blade out of the slot, either using the blade height adjuster or the method shown in Fig. 26, of removing two of the slide chassis bearings from the channels. If using the second method, MAKE SURE ALL FOUR BEARINGS ARE PLACED BACK IN THE CHANNELS BEFORE MAKING A CUT.

You will notice that at 45 degrees, the saw blade no longer reaches the table. DO NOT RAISE THE TABLE. Instead, put some flat packing, such as particleboard or plywood, under the workpiece to raise it up to the blade. The tip of the blade will make a score line across the packing in your first cut, as seen in Fig. 54.

Before making a cut, CHECK THAT THE SAW BLADE WILL NOT HIT THE NOTCHED WORK STOP. Remove the notched work stop if necessary, or insert some wide backers as in Fig. 34 and stop pushing the saw as soon as you have cut through the workpiece.

Bevel cuts put maximum load on the workpiece and the saw. Hold the workpiece very firmly. If you have a step, re-cut or slight burn along the cut, try making a shaving cut as in Fig. 35. Use the "locked on" trigger technique.

The angle scales on portable saws are rarely accurate. Cut two straight pieces of scrap at 45 degrees, and see if they form a right angle. Adjust the blade angle until they do, and make an appropriate scribe mark on the saw's calibration scale.

Fig. 54 shows a permanent platform which you can make for bevel sawing and for overhead routing (see Fig. 103). It has vertical fences at both ends, and they have sandpaper strips glued on to prevent the workpiece creeping during sawing/routing. The platform should be a very snug fit on the table, with no sideways movement. Glue shallow strips or blocks along both sides of the platform. If it is a snug fit, then the score line in the platform, the 45 degree bevel cut in the front fence, and the notch in the rear router fence will all serve as excellent reference marks for lining up future cuts.

For cutting a reverse angle bevel — such as for wall lining or for spline grooves — simply feed the workpiece in from the left-hand side as in Fig. 55. You can achieve any bevel up to 45 degrees by turning the workpiece onto its opposite face, or by feeding from the opposite side.

Cut bevels (and spline grooves) two or four at a time for length accuracy.

CLIMB CUTTING

Screw two identical parallel-sided packing pieces to the work stop as in Fig. 56 so you can start off with the blade behind the work. Cut with the back of the blade by pulling the saw slowly towards you.

YOU MUST KEEP YOUR ARM AND WRIST RIGID.
YOU MUST TIGHTLY LOCK THE SAW BLADE HEIGHT ADJUSTER.

The saw will want to "climb up" on the work. You must control it firmly. A climb cut should give a smoother finish on the top face of the wood, and is useful for cutting architrave or moulding.

A tungsten tipped blade is essential for clean climb cutting.
KERFING (BENDING WOOD)

Spectacular effects can be created by kerfing a solid piece of wood. Make a series of cuts—evently spaced—almost all the way through the wood. How much to leave uncut is a matter for experiment, but it should generally not be less than 1 mm or not more than 5 mm.

Kerfing can be done in the crosscut or table saw modes. Fig. 57 shows a simple jig which is clamped to the table in the crosscut mode. It has an adjustable "finger" which is the width of the blade. After making the first cut against some packing the finger fits into each successive cut to give even spacing.

A similar result can be achieved more simply by replacing the finger with a pencil mark, the width of the blade, on a work stop packer. The packer must be taller than the workpiece, and screwed or clamped to the work stops (Fig. 58).

You line up the cut you've just made with the pencil mark, and make the next cut. If you want to change the spacing between cuts, simply move the pencil mark.

When making kerfing cuts, use the locked on trigger technique. Feed the saw evenly and slowly. Make sure the workpiece has plenty of back-up at the exit of the cut to minimise splitting.

The two top pieces in Fig. 59 are the same thickness, so each requires the same number of cuts to form a right angle. You will notice that the closer the cuts are together, the tighter the radius of the bend.

The number of cuts required varies with the thickness of the wood, the width of the saw blade, and the amount left uncut. Experiment on an off-cut of the material you'll be using.

If you find that say 14 cuts gives you less than a right-angle, and 15 cuts gives you more than a right-angle, try making the first and fourteenth cuts a little wider than the rest.

A complete half-circle should take exactly twice as many cuts as a right-angle.

After cutting, use extreme care and patience in bending the wood. If using dry or hard or short-grained material, try using steam, or rub the uncut face with hot water as you gently flex the piece more and more into the desired radius.

Strengthen a kerf by filling the cuts with body filler, tinted to a similar or contrasting colour. You can also try mixing the sawdust with PVA glue. Fill the cuts with the kerf open, so that closure will force the filler into the corners, or use a putty knife to force it in.

GENERAL OPERATING HINTS

SAFETY

* Keep hands outside the bearing channels and well out of the path of the blade. Hold the workpiece firmly, or use clamps if necessary.
* Never pull the spinning blade back on an off-cut. Allow it to stop spinning before pulling back.
* Before making a cut, make a test traverse with the saw without switching on the power, and without the workpiece in position. This ensures that the blade won’t cut anything except the wood.
* Wear eye protection. Work in a well-lit, uncluttered environment.
* Always disable the workcentre when finished for the day.

In Fig. 59, the safety guard, remove the trigger strip and unplug the saw. Keep children out of the workshop except when supervised.

QUALITY OF CUTS

* Eliminate arbor float or saw sloppiness, and use a fine toothed TCT blade. (50—60 teeth as a general rule).
* Feed the saw gently. Use the "locked on" trigger technique, as described on Page 10.
* Test each cut on some scrap first. Make finishing or shaving cuts.

When planning crosscuts, mitres and rebates, consider whether they’re best cut in the crosscut mode, or in the table saw mode as on Pages 21 and 22.

If the workpiece is manageable (not too long, heavy or wide) you may find it more comfortable and easier in the table saw mode.

Page 16
TABLE SAW

TEN IMPORTANT RULES FOR TABLE SAW OPERATION
Follow them at all times for safe, accurate work.

RULE #1 Always keep fingers clear of the blade. Note from Fig. 60 that the right hand is holding the workpiece down on the table and against the fence; the left hand has the fingers bunched together, out of line with the blade. Never trail fingers behind the work.

RULE #2 Never reach over or behind a spinning blade. You must keep the table (and floor) clear of scraps but switch off the power and wait until the blade stops before removing scraps or before removing a workpiece.

RULE #3 Always use the safety guard when through ripping. Lower it to just allow the workpiece to pass under (Fig. 60). Make sure when fitting the blade/ripping knife assembly that the blade at full height will not hit it. Make sure that one of the two lugs underneath the table is locking the chassis from sliding.

RULE #4 Always use the rip fence when ripping. Never rip freehand, and never feed into the back of the blade.

RULE #5 Always set the fence exactly parallel to the blade, and lock it securely in both slots. There is one exception to this rule. If the workpiece tends to jam between the fence and the riving knife, you may increase the rear fence setting by up to 1mm. Fig. 61 shows (exaggerated) an extremely dangerous misalignment of the blade and fence. The workpiece will jam and be flung out towards you at high speed. Make it a habit never to stand in line with the blade.

RULE #6 Always use a push-stick or jig when ripping narrow pieces. Use a notched push-stick (Fig. 62) and keep pushing the piece between the blade and the fence until it is clear of the blade. Use the other hand, or a piece of scrap, in front of the blade, to press the workpiece firmly against the fence. Do not apply pressure against the side of the blade.

For extra safety and accuracy, make a "hold-down" jig (Fig. 63) or a repetition ripping jig (Fig. 77).

RULE #7 Always keep control of the piece between the blade and the fence. Best control is achieved if the wider part of the workpiece is next to the fence, as in Figs. 60 and 65. Also, you don't have to allow for blade thickness in fence setting.

RULE #8 Always prevent narrow off-cuts jamming in the blade slot. When ripping a small amount (1-6mm) off a short piece (Fig. 65) switch off the power just before finishing the cut. Wait until the blade stops, and break off the off-cut. Or make two cuts, resetting the fence, creating two loads of sawdust rather than a narrow off-cut.

RULE #9 Always make sure the workpiece is well supported before, during and after the cut. Avoid situations where the workpiece may become jammed in the blade slot, as in Tongue & Grooving, edge work on thin material, and in end grain work (p. 19 & 26).

RULE #10 Always wear eye protection. Keep long hair, loose clothing, jewellery etc. from becoming entangled in the blade.

QUALITY OF CUTS
Work with a lowered saw blade (Fig. 64). It is safer and gives a smoother, less splintered cut. Improve the quality of your cuts by ripping slightly oversized, then setting the fence slightly closer to the blade and making a finishing cut of less than one blade-width.
RIPPING LONG PIECES
When ripping a long piece which will overhang the rear of the table by more than half its length, either have a friend help you, or rig up a "tail-cut" support. In Fig. 66 the Triton Extension Table is being used for support. Try to keep the workpiece moving, even slowly, during a long rip. Pauses can cause slight steps in the cut. A finishing cut may help (Fig. 64).

RIPPING LARGER SHEETS
For ripping in the range 260 — 455 mm, turn the table around so that the locking keys fit into the holes labeled "WR" — Wide Ripping. Make sure that the lug underneath the table is locking the slide chassis in the rear position.
Refit the riving knife/rip guard assembly behind the blade, as in Fig. 67. Remove and refit the rip fence so the low side of the fence is closest to the blade. The scales from 185 to 455 mm will now be visible in the windows.
Note the hand positions in Fig. 67. The left hand is pushing the work against the fence; the right hand is merely supporting the off-cut.
For ripping wider than 455 mm, the Triton Extension Table attaches to the Workcentre to enable accurate fence setting to 1225 mm from the blade. As well, it provides excellent support for long beams in the crosscut or overhead router modes.
Alternatively, for ripping very large sheets, remove the power saw from the chassis. Remove the trigger strap, release and check the saw’s guard, and use it handheld against a guide.

RIPPING THICK WOOD
You can double your maximum depth of cut by turning the wood over, end for end, making a second cut. If the blade was square to the table, and if the wood was dressed square, the two cuts should be in line.
The riving knife/guard cannot be fitted for the first cut, but the riving knife alone must be fitted for the second cut. When double ripping short or narrow pieces, use a push-stick and a piece of scrap to form a tunnel as in Fig. 68, or use the hold-down jig shown in Fig. 63.

PLANING A FACE
A tungsten tipped blade, or a planer blade, can give an excellent finish on poorly dressed, weather-stained or painted material. It can also remove a slight step left after double ripping.

Put the workpiece between the stationary blade and the unlocked fence so it is lightly touching both blade and fence. Adjust the workpiece and fence (if necessary) until the readings in both fence windows are the same. Remove the workpiece and move the fence 1 or 2 mm closer to the blade. Lock it off securely.

Hold the workpiece against the fence and push it past the blade. Use a piece of scrap and/or a push-stick to control the workpiece, especially with narrow pieces.

After the first cut, turn the workpiece over end for end and make a second cut. Fig. 69

PLANING AN EDGE
When planing an edge, keep the blade as low as possible (Fig. 70) and try not to pause during the cut. Each piece treated this way will be dressed to the same width.
For planing bowed lengths of wood, screw a long, straight wooden extension to the rip fence. Plane the convex edge first, and then the concave edge. Or tack a straight piece to the bowed piece, and run the straight piece along the fence. After dressing one edge, remove the straight piece and dress the other edge.
PLANING A WIDE SHEET

To remove a small amount from a wide sheet (up to 1225 mm wide), use the optional extension table and set the sheet between the blade and the fence, with a rip fence on either side of the blade (Fig. 71). Put some thin packing between the fence and the rear fence liner. The thickness of packing will determine how much you plane off with each pass, but the packing must be no thicker than the saw blade.

Line up the back fence liner with the outside face of the blade (left-hand side) and lock the rip fence in position.

Note the hand positions in Fig. 71. Because you have support directly behind the blade, apply pressure against the back fence liner as soon as the workpiece reaches it.

EDGE REBATING

By lowering the saw blade and adjusting the fence, you can make a wide variety of rebates. In setting blade height, mark the desired depth of cut on a piece of wood. Lay the piece alongside the blade, to leave both hands free for adjusting the saw blade height. Refer to Fig. 43.

Always make the first cut with the wood on edge (Fig. 72) and the second cut on the flat (Fig. 73).

Alternatively, a narrow workpiece could jam in the blade slot just as you finish the second cut, causing an accident.

The safest method of making the second cut is shown in Fig. 73. The off-cut will fall harmlessly aside.

The second cut could also have been made with the fence set in close to the blade. However, the small off-cut would have become trapped between the blade and fence, and would have been flung out at high speed. If using this method, DO NOT STAND DIRECTLY IN LINE WITH THE BLADE, and switch off the power just before completing the second cut. Finish off with the blade coating to a half.

TONGUE & GROOVING

Study the section above, and make two identical rebates from opposite faces. This will leave you with a perfectly central tongue.

Take safety provisions for edge rebating doubly apply to tongue & grooving.

DO NOT MAKE THE FINAL CUTS WITH THE WORKPIECE ON EDGE.

The cuts must be made as per Figs. 74 & 75. The tongue could jam in the blade slot as you make the final cuts, causing a serious accident.

To make a matching, centralised groove, move the fence outwards by one blade thickness, and make two cuts from opposite faces. If you have any waste left in the groove, move the fence cut again and make two more cuts.

Hint: Test tongue & grooving settings on small spare pieces of the wood you'll be using. If you are joining long pieces, make the test pieces a loose fit. Otherwise, you'll have difficulty clamping the long pieces together.

EDGE WORK ON THIN MATERIAL

If you want to rebate or tongue & groove thin boards, the workpiece could fall down into the blade slot. Attach a high fence liner to the rip fence (Fig. 76) to provide vertical support to the workpiece, and use a piece of ply or hardboard with a thin slot in it for the blade. Securely tape it to the table.

A more permanent "mask" can be made to fit underneath the fence, and allow for fence adjustments. Use ply or hardboard and cut a narrow blade slot and slots for the clamping feet and windows for the calibration scales.
MAKING A REPETITION RIPPING JIG
For ripping narrow pieces safely, either make a hold-down jig (Fig. 63) or a repetition ripping jig (Figs. 77 & 78).
For the latter, use a thick piece to give good support on the table. A thinner piece will tend to rock against the fence. Rebate it as shown in Fig. 78, and attach a handle and an angled push block. The angle on the push block will help hold the workpiece down on the table. You will probably at some stage cut into the push block, so keep screws or nails above the line of the blade. Use the jig to push the work well past the back of the blade.

WORKING ON END GRAIN
Screw a straight, wide board onto the rip fence, and use packing if necessary to get the board exactly square to the table. Make up a “nudger” as shown in Fig. 73 to snugly slide along the top of the board. Use it to hold the workpiece square to the table as you slide it past the blade.
If making splined joints or joining end-grain (Fig. 80) cut all pieces from opposite faces, without changing the fence setting. This will ensure the grooves line up. Use contrasting or matching material for the splines. If making the spline material yourself, see Fig. 65.
Make sure the workpiece cannot jam in the blade slot during or after the cut. Such an accident is possible if making a through-tension in thin material. Use a “mask” (Fig. 76) or better still, the correct tenoning method (Fig. 87).

BEVEL RIPPING
Bevels up to about 450 mm wide are best cut in the crosscut mode (Fig. 54). For longer bevels, use a router (Fig. 115) or make up a jig as shown in Fig. 81.
Cut four blocks to the angle you want. Trim them to exactly the same length using a backstop (Fig. 89) and attach them to a straight board, which is screwed to the rip fence. Fix a parallel-sided piece of rigid ply or hardboard to the angled faces, a little taller than the blocks.
For supporting the bottom edge of the workpiece use the method shown in Fig. 82 to bevel one long edge of a board at least 200 mm wide. File a shallow recess in the bevelled edge for the blade. Adjust the fence so the angled face is just touching the side of the blade. Tuck the bevelled edge under the angled face and fix the board to the table using clamps, or a cleat or bolts through the spare table slot.
Fig. 82 shows how to bevel narrow pieces where you cannot use the bottom edge for support. Clamp a straight piece of scrap exactly square to the back face of the workpiece. Slide the scrap along the top edge of the angled face, which is a little taller than the four angled blocks.
Before using this jig for a job, practise the hand positions and techniques on some scrap wood.

RIPPING A TAPER
Never angle the fence to the blade for taper ripping.
Make up an adjustable jig to angle the workpiece to the blade. It can be a separate jig, but Fig. 83 shows a combined repetition and taper ripping jig. The two pieces are hinged at the front and can be locked open at any angle, or locked fully closed. The angled push block holds the workpiece down. Set the fence exactly parallel to the blade, and slide the jig and angled workpiece through.
CROSSCUTTING

Make sure the protractor slides freely in the slot. If not, see Page 8. Lubricate the slider strip.

Hold the timber firmly against Face A of the protractor as shown in Fig. 84, and move it smoothly past the blade. The back of the blade should not re-cut or burn the timber. If it does, see Page 9.

AVOID SMALL OFF-CUTS. They could fall down the blade slot, causing serious damage if they jam. If you have to remove say 5 mm from a piece, remove it in two cuts, each of one blade width. This way (shown in Fig. 85) you reduce the solid off-cut to sawdust. Also by making one or two shaving cuts you can "creep up" on your line, ensuring great length accuracy.

NEVER SET THE FENCE AS A STOP AS SHOWN IN FIG. 86. If the off-cut caught between the spinning blade and the fence twists even slightly, the blade will fling it out towards you, causing possible injury and damage. Two correct ways of setting a stop are shown in Fig. 88 and Fig. 89.

TENONING

The fence may be used as a stop for tenoning (Fig. 87) only because the blade is lowered and is not cutting all the way through the workpiece, i.e. there is no solid off-cut.

Butt a square-dressed end of the workpiece against the fence, and make a series of cuts on all four faces, moving the workpiece away from the fence by one blade width after each cut.

Before cutting your tenons, it's a good idea to decide what diameter router bit you will use for the mortises. Make the tenons to suit the bit, so that the mortises require only one cut of the router.

If your timber was dressed square, the resulting tenons must all be identical, and must be central and square on the end of the workpiece.

REPEETITION CROSSCUTTING

If you have to crosscut a number of short pieces to the same length, you may set the fence as a stop, but you must have a spacer block (Fig. 88) screwed or clamped to the fence. The spacer block gives the off-cuts room to move, so there is very little chance of them being jammed and fling out as described above. Try to make the block a standard thickness, say 20 mm. It will make fence setting easier.

If you are cutting short pieces, you may find that they tend to dance along the side of the blade, suffering slight re-cut damage. Cut them against a backstop as described below, so you can keep firm hand control over the pieces.

CROSSCUTTING AGAINST A BACKSTOP

Screw a straight extension piece to Face A of the protractor (Fig. 89) and make the piece high enough so that it is still strong after a cut or two at full blade height. You can clamp a length stop to the extension on either side of the blade, and so keep firm hand control over both pieces.

The first cuts through the backstop — generally at 0 degrees and 45 degrees — will provide excellent sighting marks for future cuts.
MITRE CUTTING

Set the protractor at 45 degrees, and lubricate the slide strip. Hold a straight piece of wood against Face A of the protractor as shown in Fig. 90, and cut about 100 mm off the end of it. Place the off-cut against the main piece and see if they form a perfect right-angle. Adjust the angle if necessary, as per Figs. 49-52.

If the wood you are cutting is flat on both faces, you can easily cut the opposite mitre by turning the piece over, end for end, for the second cut (Fig. 91). If you have a small saw, you may have to lock the slide chassis in the forward position (Fig. 8, P. 5).

Fig. 90

Fig. 91

MITRE CUTTING MOULDING

If the workpiece cannot be turned over, (picture framing or deeply contoured architrave) the way to cut the opposite mitre is shown in Figs. 92 and 93. Make the first cut with the workpiece held against Face A, and the second cut with it held against Face B.

You will find that any piece cut on Face A, when placed against a piece cut on Face B, will always form a perfect right-angle, whatever the angle of the protractor. For example, if the protractor was accidentally set at 44 degrees, Face B would give you 46 degrees. Similarly, 26 degrees off Face A will give you 56 degrees off Face B. For cutting wide pieces against Face B, lock the slide chassis in the forward position.

Fig. 92

Fig. 93

CUTTING TO A LENGTH STOP

The way to ensure perfect length accuracy when mitre cutting is to fit an extension fence to Face B of the protractor, as in Fig. 94, and to use a length stop.

Say you are making a square picture frame. Crosscut the four pieces roughly to length. Set the protractor at 45 degrees, and test with some scrap as described above. When satisfied with the angle setting, mitre-cut one end of each of the four pieces, holding them against Face A. Then butt each of the ends you have just cut into the mitred stop which is clamped to Face B. Make the second cut. All four sides will be exactly the same length, and the corners should be perfect.

If you are making a rectangular frame, cut the two long pieces against the length stop, then reset the stop for the two short pieces. If making a hexagonal frame, set the protractor at 30 degrees. If making an octagonal frame, set it at 22½ degrees.

Fig. 94

CUTTING MORE THAN 45 DEGREES

Hold the workpiece against Face B for cutting angles greater than 45 degrees, or for cutting short tapers.

You may have to lock the slide chassis in the forward position.

If you have fitted an extension fence as shown in Fig. 95, you should glue sandpaper to it for improved grip.

Note the use of the stop block which can be used if the workpiece is relatively short. The stop helps you hold the workpiece, and also ensures that both cuts (from opposite faces) are exactly opposite each other, without any need for measuring or marking.

If making a number of symmetrical fence pickets for example, the pieces may be too long to use a stop block. Square a line around the workpieces, say 100 mm back from the ends, and establish by trial and error the correct starting position for the first picket. When you have found it, translate the squared line onto the extension fence (Fig. 96) and use it to line up succeeding pickets.

Fig. 95
USING DISCS

FACEPLATE SANDING

Specially fabricated aluminium discs and self-adhesive abrasive pads are available from us, or possibly through your Triton dealer. They are available in three sizes, 180 mm (7½), 200 mm (8¼) and 230 mm (9″) diameter. Arbor size must be specified when ordering.

If you wish to make your own disc, glue coarse and fine sandpaper to a metal or stone cutting disc available from your hardware store. Use it as shown in Fig. 96. Home-made discs will flex a little, so after roughing out the shape, apply only light pressure to true up the cut and remove burn marks.

You can use many different types of glue, but Disc Cement enables you to readily peel off sandpaper which has become worn or clogged.

METAL CUTTING

If using a metal cutting disc on your saw, generally use it in the crosscut mode. Protect the table surface from being burnt by sparks or hot metal. Preferably clamp your work to the table or to the work stops. IT IS ESSENTIAL THAT YOU WEAR SAFETY GLASSES.

TILE CUTTING

Fit a stone or ceramic disc to your saw. Because of the many different tile types, you should experiment in either the table saw or crosscut mode to see which method is more reliable and/or gives the cleanest edge.

In the rip mode (Fig. 98) a slotted sheet of hardboard is taped down to the table to protect the paint-work. The disc just shows above the hardboard. Slide the tiles face downwards against the fence, to score the glaze. In the crosscut mode (Fig. 99) the blade height adjuster is loosened, and the disc moved backwards and forwards across the tile, cutting a little deeper with each pass. This is an excellent way of cutting slate or quarry tiles, but should only be attempted with certain saws. The saw must have a firm and smooth action when the blade is adjusted up and down.

IT IS ESSENTIAL THAT YOU WEAR SAFETY GLASSES. You should also wear a dust mask, or at least a handkerchief over your nose and mouth.

FITTING A JIG-SAW (SABRE SAW)

Fit the jig-saw to the slide plate of the optional Router & Jig-Saw Table, following the separate instructions (Fig. 100). If you don't wish to disturb the router clamping brackets (if fitted) you can obtain an extra slide plate from us or your dealer.

Use the jig-saw upside-down in conjunction with the separate table top (Fig. 101). In use, don't try to cut a tight radius in thick material. Rather edge up to the marked line in a series of shallower cuts, if necessary whittling away the waste. Keep watching the blade to see if you are pushing it off-line on corners.

Feed the workpiece slowly, particularly when cutting along the grain, or when using fine-toothed blades. Smoking or burn marks on the cut edges indicate the corners were too tight, or cut too quickly. Overheating a blade can often dull it rapidly.
OVERHEAD ROUTER

Remove your saw and saw chassis, and replace it with the router clamped to its sliding steel plate. The optional Router & Jig-saw Table now has its own work table for use in the shaper mode, and dark grey steel fences have replaced the aluminium fences shown in this manual. The operating techniques are the same.

CROSS-TRENCHING (DADOING)

When working with long, wide or heavy pieces (such as shelving, cupboard sides etc.) cross-trench as shown in Fig. 102 or 103. If angle-trenching (such as for louveres, staircases etc.) remove the work stops and clamp a straight wooden guide across the table at the desired angle.

The router cutter will probably not reach the workpiece even at full cutter depth. DO NOT RAISE THE TABLE. Rather put some flat packing under the workpiece, or build a platform as in Fig. 103.

If you ever do raise the table, make sure you lower it again when re-fitting your saw, or you may cut into the sub-frame bars under the blade slot.

Check that the cutter cannot hit the notched work stop. Always do a full traverse of the router slide plate, with the workpiece removed and with the power switched off.

The router cutter will exert strong sideways thrust on the workpiece. Preferably clamp it in position as in Fig. 102.

If the resulting trench is not exactly square to the edge which was against the work stops, or if it is slightly curved, the workpiece probably moved during the cut. Try using a sandpaper faced fence, or make the trench in two shallow cuts rather than one deep cut.

A block of wood can be clamped to the channel (Fig. 103) for "blind" or "stopped" trenches. Visibility is obstructed in this mode, so the way to accurately position your cuts is as follows:

If the trench is to be the same width as the router cutter, make a test "nick" on the back edge of the workpiece, and use trial and error to find the correct workpiece position.

If the trench is wider than the router cutter, use the technique shown in Figs. 105 and 106 of "creeping up" to the lines.

We strongly recommend that you make up a platform as in Fig. 103. If it is a snug fit sideways on the table, the cutter notch in the fence will provide an excellent sighting mark for future cuts. To check that the platform is dead flat and in exactly the right plane to the router cutter, adjust the cutter downwards until it is just touching the workpiece. Without switching on the power, slide the router backwards and forwards and see whether the cutter scrapes evenly over the top of the workpiece.

If the wood you want to use is bowed, use carpenters clamps through the centre slot in the table to flatten and clamp it down (Fig. 104). The small protrusion at the base of the clamp will have to be filed off to allow the clamp to be dismantled for fitting through the slot. Make sure the clamp(s) does not foul the path of the router.

If making a trench which is wider than the cutter, the first cut should be just inside the right-hand line; as in Fig. 105. Then move the workpiece over slightly and make a finishing cut.

You can take wider cuts as you work your way over to the left-hand line, as shown in Fig. 106. When making fairly deep trenches, make them as shown in Fig. 107. By making two shallow passes rather than one deep pass, the cut will be more accurate, smoother, and the cutter will stay sharp longer.
SHAPER TABLE

Turn the router upside-down, and place the separate cutter/jig-saw table on top. Fit the extension fences to the rip fence of your workcentre, as per the separate instruction sheet with the Router & Jig-saw/Table. Always wear eye protection when operating.

TRENCHING/REBATING (DADOING)

For making a longitudinal groove (Fig. 108), or an edge rebate (Fig. 109), set the two fences exactly in line, and tighten the four wing-nuts. Fit the safety guard. Keep both hands visibly on top of the workpiece, and press it down on the table and against the fences during the cut. Always feed from the front of the workcentre, and make the cut in one smooth pass if possible. Never trail your fingers behind the workpiece in the vicinity of the cutter.

PLANING WITH A ROUTER

Use a sharp straight cutter, preferably tungsten tipped. The rear extension fence is adjustable outwards from the rip fence for planing operations. To set the gap (which will equal the amount you remove with each pass) loosen the two rear fence wing-nuts, screw in the thumb-screws equally, and nip up the wing-nuts. Make a visual check, using a straight edge, that the fences are still exactly parallel.

Use a straight edge to adjust the position of the rip fence, so that the rear fence is exactly in line with the arc of the cutter. Make this adjustment every time you set or change the gap at the rear fence.

If the workpiece can be planed in one pass, set a gap at the rear fence as in Fig. 111. If a wide face requires two passes, make the first pass Fig. 110 with the fences in line, and make the second pass with the rear fence gapped (Fig. 111) and the rip fence reset. If using a cutter taller than the extension fences, make all cuts with a gapped rear fence. Both front and rear fences are slotted where they attach to the rip fence, and should be adjusted in as close to the cutter as possible.

DIRECTION OF ROTATION

The direction of rotation of the cutter must be carefully considered. Use a marker pen to draw arrows on the table to remind you which way the cutter spins. You must always feed against the direction of rotation, never with it.

In Fig. 112, the work is being fed on the wrong side of the cutter. The cutter will flex aside, "climb up" on the work, and rip it out of your hands. The workpiece would become a dangerous projectile. Planing cuts should be made as shown above, with the cutter mostly between the extension fences.
MORTICING
Have the two fences exactly in line.
Set the rip fence so that the workpiece is in approximately the right position above the cutter. Take a scrap of the wood you'll be using, and plunge it onto the cutter as shown in Fig. 113. 
Do not set the cutter too high. If you want to make a mortice say 15 mm deep, make it in three cuts of 5 mm each.
Slide the piece forwards along the fences for a short distance and inspect the mortice. Re-adjust the rip fence, if necessary, and repeat the test elsewhere on the scrap until you are happy with the positioning.
To determine the beginning and the end of the mortice, it is best to work between two stop blocks clamped to the fences.
If the workpiece are too long to permit stop blocks front and back, attach a long straight wooden liner to the extension fences.
Don't bother chiselling your mortices square at the ends. Round off the tenons instead.

PLANING VENEERED BOARD
When working with veneered board for a table-top or cupboards, your saw blade may have left a splintered edge on the underside of the cut. You can achieve a razor-sharp edge by planing off a small amount as shown in Fig. 114.
Loosen the rear fence wingnuts and screw in the thumbscrews equally, until you have a parallel gap of say 2 mm between the rear fence and the rip fence.
Lock off the wingnuts.
Adjust the position of the rip fence so that the rear fence is exactly level with the arc of the cutter.

Apply pressure equally to the front and rear fences, but as you finish the cut, transfer all the pressure to the rear fence, and pull the workpiece through. If you set the gap at 2 mm, you will plane off 2 mm with each pass.

BEVELLING WITH A ROUTER
By fitting a 45 degree bevelling bit, you can achieve extremely smooth bevels on long pieces, especially veneered particleboard. Have the two extension fences in line, i.e. no gap at the rear fence.
Adjust the rip fence position so that no more than half the cutter is protruding from the fences.

By test cutting on an off-cut of the same thickness material, raise or lower the height of the cutter until you are achieving a perfect bevel with a sharp, clean edge.
If you wish to bevel 19 mm thick material, you will need a cutter at least 40 mm across the base. If such a cutter is unavailable locally, we can supply you with a T1230 cutter, which has a 1/2" shank and a base diameter of 40 mm. It can bevel material up to 20 mm thick.

SHAPING WITH THE FENCES
Decorative cutters generally have a ball-bearing (or high speed steel) pilot, which is normally used instead of the fence.
If your workpiece has an uneven edge, or if the support for the pilot suddenly disappears — as in the bevel cut piece shown in Fig. 116 — you should use the rip fence and extensions rather than the pilot.
The two extensions must be in line, and the rip fence adjusted so that the pilot is just behind the line of the fences.
When using a decorative cutter against and across the grain, the wood sometimes shatters or splits. Readjust the rip fence so that less of the cutter is showing, and make two or three shallow passes rather than one deep pass.
FOLLOWING A PILOT

When edge moulding curved, shaped or angled workpieces, you sometimes cannot use the safety guard. In this case, have the fence on either side of the cutter adjusted in as close to the cutter as possible for maximum protection, and keep fingers well clear of the cutter. Hold the workpiece firmly.

Fig. 117 shows the correct way of feeding the workpiece. It is being fed against the direction of rotation of the cutter.

Fig. 118 shows the wrong way of feeding the workpiece. It is being fed with the direction of rotation of the cutter. It could snatch the workpiece out of your hands.

If you want to rout a decorative edge around all four edges of a workpiece, try to do so in one continuous operation, rather than starting and stopping. You will have to keep the workpiece in contact with the pilot at all times. Just take a little care when rounding the corners, to make sure the workpiece doesn't move around to the wrong side of the cutter. To start off, plunge the workpiece into the cutter, mid-way along any edge.

If you want to decorate only one edge, plunge the workpiece onto the cutter a little way back from the end of the wood. By forcefully restraining the workpiece, you can inch it back towards you (moving with the direction of rotation for a moment) until the pilot is right on the leading corner of the workpiece. Then make the main cut, feeding the workpiece correctly against the direction of rotation until you reach the other end of the workpiece.

USING A TEMPLATE GUIDE

If you have a template guide supplied with your router, extend it by push-fitting a short length of tubing onto the raised lip. Preferably use aluminium or copper tubing of the correct inner diameter. If you extend the lip to say 5 mm above the table top, use 6 mm thick ply or hardboard to make your templates.

Unless you have a very sharp, narrow cutter (to remove less material) the router should not be used to actually cut out the shape. Use a jigsaw to rough out the shape. Then attach the template to the workpiece, (using brads or double sided tape) and run the template face down along the extended lip of the template guide, for the router to accurately dress the edge. Fig. 119

SHORT SHANKED CUTTERS

In mounting the router upside-down, you are losing about 8 mm of depth of cut. Partially withdrawing the bit from the router chuck is dangerous. You increase the risk of the cutter snapping, and you could damage your router chuck. If depth of cut is a problem with a particular bit, rather remove the router from the slide plate and use it hand-held. You may also consider upgrading your router and cutters to 1/2" shank size. Shanks are generally longer, and 1/2" cutters can offer longer cutting flutes.

GENERAL ROUTER HINTS

SAFETY

* Always ensure the router bit fitted has adequate clearance between its outer edge & the table before turning router on.
* Always wear eye protection, for extended use wear a dust mask & ear protection.
* Never work free-hand. Always use the fences, or a pilot to support and guide the workpiece.
* Never trail fingers behind the workpiece when using the router in the shaper mode.
* Always consider the direction of rotation of the cutter, and feed from the correct side.
* Use the safety guard wherever possible.

QUALITY OF CUTS

* Always keep cutters sharp. If removing a fairly large amount of material, do so in two or more passes, rather than in one deep pass.
* Make sure the workpiece is clamped or firmly held when using the router in the overhead mode for cross-trenching or angle-trenching.
* Always test your proposed cut on an off-cut of the wood you'll be using.
IMPORTANT AMENDMENT  In July 1987 the Router Hole in the Work Table (as shown throughout this manual) was deleted from production (after Serial No. 59000). A Router & Jig-Saw Table accessory is required to fill either of these tools into the Work Centre. Some photos in this manual show the previous configuration of the Router Hole, however general operating instructions for the Router or Jig-Saw remain as shown. Fitting instructions are provided with the accessory.

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If you want us to inform you of new developments make sure that you fill in and return the enclosed Warranty Registration Coupon. Please print clearly & ensure your Serial No. (on back panel) and Post Code are shown. That automatically puts you on the mailing list.

Among the planned developments are: a project book, project and training videos, new accessories, and companion products.

Send the coupon to the address shown on it within 28 days of purchase.

All specifications are subject to change without prior notice.

WARRANTY

The Triton Workcentre and accessories are fully warranted to be free from factory imperfections in workmanship or materials for a period of TWELVE MONTHS from purchase.

The bearings and bearing channels are similarly warranted for a period of FIVE YEARS.

This warranty does not extend to servicing which becomes necessary as a result of accident or abuse.

We will repair or replace any defective parts(s) returned by pre-paid freight to the address below. Return freight will be paid by us. Any warranty claims should be referred to us through our distributors in each state (for speediest service) or through the dealer/retailer from whom you bought the product. Ensure your Phone No. & Serial No. accompanies any query or claim.

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