

ASSEMBLY INSTRUCTIONS



TUF 400

BASE SIZE 1.980m x 1.355m



CHECK OUT OUR ASSEMBLY VIDEO

Let Keith and Justin show you how to build your Fortress shed like a professional.

When used in conjunction with these assembly instructions, Keith's practical tips and tricks will make your assembly experience that much simpler, giving you visual guidance through sections that seem tricky on paper, and help you achieve a flawless end result.

To view the video visit www.duratuf.co.nz/fortress-assembly



Note: Assembly video features a TUF400. But can be used for reference for any other Fortress model.



ASSEMBLY INSTRUCTIONS

Tools Required: • Drill

- Drill Bit 3.5mm
- Drill Bit 6mm (Only required if installing an optional Clear Roof Panel)
- Masonry Drill and 10mm Masonry Bit (Only required if installing a Bolt Down Kit)
- Riveter
- Hammer
- Nail Punch
- Tape Measure
- Ladder or Saw stool
- String Line
- Hex Bit 8mm
- Skill Saw or Jig Saw (for floor only)

Before you start:



- Read all instructions carefully.
 - Identify all parts and check the quantities against checklist.
- If you are pouring your own raised concrete floor, please refer to Raised Base Plate section now to familiarise yourself with the procedure prior to starting.
- Before assembly, remove protective film where present from all flashings and coloured steel components.

Safety:



Beware of sharp edges. For safety wear protective gloves—preferably rubber coated)

• Do not attempt to build your shed in high winds.

- Protect your eyes and ears with the appropriate safety gear
- Use electric tools with care. Use a Safety Trip Switch.
- It is easier and quicker if this shed is erected by two people.

Select your site:

- Your shed must be level. You can achieve this by either levelling and compacting the ground or by using blocks or piles to create a level platform for the shed framing to sit on.
- If you shed is to be positioned on wet or damp ground, we recommend that your shed is raised up off the ground slightly to avoid moisture and mould in the shed. A Damp Proof Course (DPC) membrane can also be used. This is available form your local hardware store.

IMPORTANT

SUNSCREEN WARNING: Prevent contact of the painted surface with sunscreens containing titanium dioxide (TiO2) or zinc oxide (ZnO). It has been proven to discolour and degrade the paint finish. The use of gloves is recommended.

Damage to prepainted steel caused by contact with sunscreen is not covered by your Duratuf warranty.

TUF 400 PARTS LIST

COLOUR: _____ INV #:_____

ROOF SIZE: 2.010 x 1.570

BASE SIZE: 1.980 x 1.355

QTY	LENGTH	DESCRIPTION	CHECKED OUT	CHECKED IN
4	1.890	Corner Wall Sheets		
2	1.890	Wall Sheets		
1	1.570	Roof Sheet Or		
1	1.570	Clear Roof Panel		
1	1.890	3/4 Front Wall Sheet		
2	1.570	Folded Roof Sheets		
1	1.860	Door		
		TIMBER		
		BASE PLATES		
2	1.980	Front & Back - Green 45 x 45 H4		
2	1.355	Ends - Green 45 x 45 H4		
		TOP PLATES		
1	1.980	Back - Red 45 x 45 H1		
1	1.980	Front - Red 90 x 45 H1		
2	1.355	Ends - Red 45 x 45 H1		
4	1.810	Studs - Yellow 45 x 45 H1		
2	1.833	Studs - Blue 45 x 45 H1		
2	1 265	End Wall Noge 45 x 45 H1		
2 1	0.106	Front Left Nog 45 x 45 H1		
1	0.100	Front Right Nog 45 x 45 H1		
1	1 890	Back Wall Nog 45 x 45 H1		
	1.000			
		PLASHINGS		
2	1.890	Door Jambs		
1	2.000	Top Plate Flashing		
1	2.010	Roof Flashing		
1		Hardware Pack		
1		Duratuf Riveter		
		SECURITY		
2		Latches		
1		Assembly Instructions		
1		Touch-up Paint & Brush		
PACKED BY: DATE: / /				

TUF 400 TIMBER FRAME



UNDERSTANDING THE TIMBER FRAMING STRUCTURE.

1. The **Corner Studs** are marked in yellow and are a different length to the **Door Studs** (marked blue).

2. The **Door Studs** marked blue sit either side of the door.



BEFORE YOU START!

If you have poured a **raised concrete pad** for the floor and you would like the wall cladding to overlap the sides of the floor pad, now is the time to make the change to the frame.

Simply trim 30mm off the length of each of the 6 studs. This will allow the wall cladding to protrude below the bottom plate once attached and the overhang will provide excellent waterproofing. SEE PAGE 15 FOR MORE DETAILS

ASSEMBLING THE FRAME

Step 1: Assembling the end wall frames.

- 1.1 Select 1 x End Bottom Plate (1.355m Green) and 1 x End Top Plate (1.355m Red) and two Studs (Yellow).
- 1.2 Lay them out on a flat surface *(fig.1)* with the studs connecting the plates at the corners. The top and bottom plates should have the rebates at the ends **FACING OUT** *(fig.2)*
- 1.3 Nail together as shown using two 75mm nails per join (fig. 2).
- 1.4 Repeat with the other end frame.







TUF 400 TIMBER FRAME

Step 2: Connecting the end frames together

- 2.1 Lie one completed end frame on a flat surface—preferably concrete.
- 2.2 Select 1 x Bottom Plate (1.980m Green) and holding it vertical, fit one end to the matching green rebate on the end frame. *(in green fig.3)* and nail in place with 2 x 75mm nails
- 2.3 Repeat with the remaining Bottom Plate. (in green fig.3)
- 2.4 Select the remaining rebated top plate (red) and repeat step 2.2 (*in red fig.3*)
- 2.5 The final top plate is not rebated as it is intended to sit higher than the frame to create the slope of the roof. Fit this plate into the remaining rebate on the top plate and nail as per *fig.4*

Step 3: Fitting the last end frame and End Nog

3.1 The remaining end frame needs to be lifted into place on to the upright timber fames. It is far easier with 2 people at this point. Lift and position the remaining End Frame up onto the upright framing, fitting the corners into the rebated ends. *(red in fig.5)*

Note: The front top plate has no rebate, so it is easier to tack this corner in first as the others will sit into the rebates.

- 3.2 While someone supports the frame, nail each corner in place using two 75mm nails per join.
- 3.3 Select 1 x End wall nog and nail in place, centrally between the top and the bottom plate (*blue in fig.5*)

Step 4: Finishing the remaining framing

- 4.1 Carefully roll frame over onto the front wall. (The side with the 90 x 45mm non-rebated top plate is the front wall).
- 4.2 Select the 2 front wall nogs (106mm and 823mm) and the 2 door studs (marked blue). Use the left nog (106mm) to position the left door stud (first at the top & then at the bottom) and nail the studs in place using 2 x 75mm nails at each end. *(in green fig.6)*
- 4.3 Then position the LH Nog in the centre, between the top and the bottom plate and nail in place using 2 x 75mm nails.
- 4.4 Repeat with the RH door stud and nog (823mm) (*in blue fig.6*)
- 4.5 Finish inserting the 2 nogs to the remaining end walls by rolling the frame carefully over and repeating step 3.3
- 4.6 Once all nogs are in place, carefully roll the framing onto its base *(fig.7).* If you are fitting a Duratuf Timber Floor Kit, now is the time to fit the floor joists.
- 4.7 Evenly space floor joists and nail them in place using three 75mm nails per end. *(in red fig.7)*

CONGRATULATIONS YOUR FRAMING IS NOW COMPLETE











TUF 400 WALL CLADDING

Step 5: Fitting the front Top Plate Flashing

5.1 The top front plate flashing is positioned centrally on the top plate at the front of the shed (the wide lip is on top). It will overhang slightly at each end. Nail down from the top with 1 x 30mm Clout at each end and 2 x more evenly spaced in the middle.

BEFORE YOU START FIXING THE CLADDING

To avoid corrosion, where at all possible try not to trap metal filings between the steel sheets. Remove all metal filings before riveting. Only use a ballpoint pen to mark the steel as the carbon in pencils reacts with the Zinc/Aluminium coating.

Step 6: Fixing the Door Jambs in position (fig.9)

6.1 Position the left hand Door Jamb Flashing at the correct measurement from left *(fig.11)* and nail to the Top Plate using a 30mm clout *(see fig.10 for detail).* Pre-drill holes to make nailing easier.

Flashing measurement is taken from protruding face of flashing.

6.2 Repeat with the bottom of the door Jamb

50mm CLOUT

6.3 Position the right hand Door Jamb using the door opening measurement of 903mm *(fig.11)* and nail this in place top and bottom with 2 x 30mm clouts.

TIMBER PLATE

30mm CLOUT

STUD







fig. 8

TUF 400 WALL CLADDING

Step 7: Fitting the wall cladding

It is very important that the Wall Sheets are positioned exactly as shown in the *cladding detail* diagram on the previous page.

- 7.1 Position the corner wall sheets as per *(fig.13)* Check that the lip is on the correct side of the sheet.
- 7.2 While holding the first corner Wall Sheet flush with the top of the Top Plate (push hard up under the Top Plate Flashing on the front wall), nail to the Top and Bottom Plates using only 1 x 30mm clout at the top and 1 x at the bottom.
- 7.4 Repeat with all 4 corner sheets, remembering to ensure the side with the lip is correct as per *(fig.13)*

You should now have your cladding attached as per (*fig.14*)

- 7.5 Now, overlap the end wall sheets together in the centre. Square the wall of the shed by pushing sideways as necessary until the cladding sheets are flush with the top plate and line up together, then rivet them together top and bottom through the rib (*figs.12 & 15*)
- 7.6 Take the 2 x back wall sheets, lay them out and overlap them together. Rivet them together top and bottom through the rib.
- 7.7 Now that the back wall sheets are joined, place them in position against the framing on the back wall (ensuring that they overlap the corner sheets correctly, and rivet them top and bottom to the corner sheets (*fig 15*).
- 7.8 Select the 3/4 Front Wall Sheet. Position it to the right of the doorway, overlap the rib with the corner sheet and rivet top and bottom . *(fig 15).*

All your wall sheets should now be joined together and tacked loosely to the framing.

- 7.9 While holding the Front Wall Sheets hard up under the Top Plate Flashing, nail to the top and bottom plates using 30mm clouts. Use 1 clout either side of each rib as per (*fig.12*)
- 7.10 Now work your way around the shed and complete nailing your cladding on. Start with the middle of the wall and work out, putting one 30mm clout either side of the rib, into the top and bottom plates. *(fig.12)*
- 7.11 Once the cladding is secured to the top and bottom plates, mark where the centre nogs are positioned (half way up the shed), and put 1 x 30mm clout into each pan, positioned next to the rib.





TUF 400 DOOR JAMBS

Step 8: Finishing The Door Jamb Flashings

The wall cladding should now be sitting in behind the Door Jamb flashings either side of the door.

- 8.1 Right Door Jamb—Drill a hole through the front face of the Right Hand Door Jamb Flashing (including the rib of the cladding beneath) in line with the top plate. Using a 50mm nail, secure into the top plate. (*fig. 16*).
- 8.2 Repeat at the bottom into the bottom plate.
- 8.3 Using three 30mm Clouts at equal spacings nail the door jamb to the stud on the inside lip of the door jamb. *(fig. 17).*
- 8.4 Next to each of the 3 evenly spaced clouts, drill a hole on the front face of the door jamb through into the cladding rib beneath and fix with a rivet.
- 8.5 Repeat steps 8.1 to 8.4 with the left door jamb.



(fig. 16).



(fig. 17).

TUF 400 ROOF

BEFORE YOU START FITTING THE ROOF

Condensation can form on the under side of shed roof. If building paper is required, now is the time to fit it. Building paper will need to be supported underneath by stretching wire netting across the shed to support it from sagging over time. A large mesh wire netting is ideal for this and is available at most DIY stores.

Please note that there is a slightly different layout to the roof sheets if you are fitting an optional Clear Roof Panel



Step 9: Fitting a standard steel roof (Note-if fitting a Clear Roof Panel see Steps 9.1A & 9.8A)

- Use a 3.5mm drill bit for all rivets and roofing screws on a standard steel roof. Use 6mm drill bit for the roofing screws when drilling into the Clear Roof Panels
- 9.1 Place the roof sheets onto the roof. The biggest bevel on the end sheets faces to the front. Make sure that the overlap is correct see (*fig.18*).
- 9.1A If using a Clear Roof Panel, position the 2 x side sheets in place first, and then place the Clear Roof Panel so that it laps over the top of **both** steel roof sheets.



- 9.2 For the standard steel roof, align all the sheets at the front and back and rivet through the overlapping ribs, 300mm from the front and 300mm from the back. When drilling and riveting a clear roof panel, take care as they are brittle and can crack if not fitted correctly.
- 9.3 Once the roof sheets are joined together, position the roof so that the front overhang measures 150mm (*fig.19*).
- 9.4 With the front overhang at 150mm, drill a 3.5mm hole through the side of the roof sheet into the corner rib of the wall *(fig.19)* and rivet. Do the same at the back, and on every second rib.
- 9.5 Repeat at the other end of the roof, ensuring that the front overhang measures 150mm.

Screwing the roof on

- 9.6 Make sure that the shed is square and that the walls are sitting straight. Check that the walls are not bowed in our out, as once the roof has been screwed on you will not be able to change this.
- 9.7 Line up the ribs on the roof with the ribs on the wall cladding (*fig.20*).
- 9.8 Starting from the front of the roof, while someone holds the Front wall straight, pre -drill the roof (through the top of the rib) in line with the top plate. Use a 3.5mm drill bit for a standard roof.
- 9.8A When fixing a Clear Roof Panel, use a 6mm drill bit when drilling into the clear roof material to stop the roofing screws splitting the material.
- 9.9 Screw the roof to the Top Plate using one 55mm Roofing Screw on each rib. (Outside ribs do not need to be fastened).
- 9.10 Repeat at the back. Note: a string line can be used to make this easier.



TUF 400 FRONT ROOF FLASHING

Step 10: Fitting the Front Roof Flashing

To finish the roof, the only thing left to do is fit the Front Roof Flashing as shown. When positioned correctly rivet through Roof Flashing into Roof Sheet joins.

- 10.1 Select the front roof flashing and with the long edge at the top, place it over the front of the roof sheet in between the barges. *(fig.21)*
- 10.2 Using the 3.5mm drill bit, drill down from the top of the flashing into the 2 x end ribs of the roof (one at each end) and rivet each one.
- 10.3 Repeat with every second rib in between.

YOUR ROOF IS NOW FINISHED



TUF 400 POSITIONING SHED

Step 11: Positioning your shed and ensuring it is square and level.

- 11.1 It is important to make sure that your shed is now square and level so that the door will open correctly. Place your shed into it's final position.
- 11.2 Measure across from corner to corner one way (using the inside of the timber framing is the easiest way) and note down the measurement. Then measure the opposite diagonal and note this down. Your shed will be square when both of these measurements are the same.
- 11.3 Adjust your shed by pushing the corners in or out until both diagonal measurements are equal.
- 11.4 Using a level, ensure that the shed is flat and level.
- 11.5 If shed has a floor, ensure timber joists are adequately supported, at each end and approx. 600mm spacings.





TUF 400 FITTING THE DOOR (STANDARD)

BEFORE YOU START, PLEASE NOTE THAT IF YOUR SHED HAS AN OPTIONAL SECURITY DOOR UPGRADE, PLEASE GO TO THE NEXT PAGE FOR FITTING INSTRUCTIONS.

Step 12: Hanging the door. (Standard Door). See next page for Security door instructions.

- 12.1 Hold the door in the open position with the hinges against the right hand door jamb. Hold or prop it with a wedge or wooden block, approximately 5mm down from Top Plate Flashing.
- 12.2 Drill one hole through the top hinge into the door jamb and fit the rivet *(fig.23).* This is to hold the door in place while you can check that it is swinging true. Repeat with one rivet into the bottom hinge.
- 12.3 Close the door and check that the door is sitting square and is not binding on the right hand door jamb.
- 12.4 If the door is binding, drill out the rivet on one hinge at a time and adjust the position of the hinge so that it fixes the issue. Once the door is swinging freely and sitting square within the frame, move to step 12.5.
- 12.5 Drill and place rivets into the remaining holes on all 3 door hinges.



fig. 23

Step 13: Fitting the Padbolt

- 13.1 Position the padbolt on the door as shown in *(fig.24).* The padbolt should be nearly flush with the edge of the door.
- 13.2 Drill and rivet the padbolt onto door using all 4 holes provided.
- 13.3 Fit the padbolt keeper as shown.





TUF 400 SECURITY DOOR (Optional)

IF YOU HAVE PURCHASED THE OPTIONAL SECURITY DOOR, IT WILL COME FITTED WITH 2 X KEY-LOCKING DOOR HANDLES AND EXTRA STRUCTURAL FRAMING.

Step 14: Fitting the locking mechanism onto the locking door handles.

- 14.1 Starting with the top handle, slide the latch onto the handle shaft.
- 14.2 Enter the shed, close the door and turn the latch so that it is in the locked position. Adjust the latch so it is firmly against the back of the timber door stud as this will stop the door from opening when locked.
- 14.3 Tighten up the bolt on the latch so that it wont come loose when the door is tampered with.
- 14.4 Repeat for second door handle.



TUF 400 TIMBER FLOOR KIT (Optional)

BEFORE YOU START, IF YOU ARE ANCHORING YOUR SHED TO THE GROUND USING A DURATUF TIMBER PEG DOWN KIT, PLEASE DO THIS NOW.

YOU SHOULD HAVE FITTED THE FLOOR JOISTS IN STEP 4.7. IF YOU HAVENT FINISHED STEP 4.7, RETURN TO PAGE 6 AND DO SO.

Step 15: Marking and cutting the floor to fit.

- 15.1 Select a Floor Board and lay it across the floor joists and bottom plates and push up against the front wall. Mark out where Studs are as the floor board will need to be cut out to fit in correctly. *(fig.25)*
- 15.2 Complete marking the square cut out that will be required to be removed and cut these with a Jigsaw.
- 15.3 Repeat with the back Floor board.
- 15.4 Once these boards are cut so that they fit snugly in place, nail them in.



- 15.5 Lay out the remaining floor boards and cut around any other studs as required.
- 15.6 When the boards are tightly in place, you will likely need to mark the final board and cut this down lengthwise to the correct width.

HANDY TIP

Cut the final floorboard slightly wide for the gap. Place the final 2 floorboards with their outside edges in place, and their touching edges up in an A shape position. When you step on these boards to flatten them out, they will wedge the rest of the floorboards in tight. Make sure they are accurately placed lengthwise prior to wedging them in (*fig.26*)

15.7 Nail in each Floor Board, two 50mm nails each end and two into each Floor Joist.(*fig.27*)

YOUR OPTIONAL FLOOR KIT IS NOW FULLY INSTALLED!





PURPOSE BUILT FLOOR

i.e. CONCRETE / PLYWOOD

For sheds being placed on a purpose built floor, we recommend that the studs are shortened by 30mm. The Wall Sheets will then protrude 20mm below the Base Plate. This will stop water flowing in between the Base Plate and Floor.

If you choose this option, the Floor should be made 15mm smaller than Base Size.

Note: Although it is not essential, fitting Damp Proof Course in between the Base Plate and the Floor will give added protection against moisture.



CLEAN UP

- Remove all metal filings with a soft brush or rag.
- Hose down roof and walls thoroughly.

PAINTING

- Painting Zinc/Aluminium coated steel will extend its life in most environments
- The surface must be dry and free of dirt, oil, grease and other contaminants prior to painting, but no weathering of the surface is required
- Zinc rich primers are recommended for use, along with a two coat finishing system. Paint suppliers should be consulted for the most suitable paint system to ensure compatibility of primers and topcoats.







DURATUF PREMIUM SHED WARRANTY

GUARANTEE TO CUSTOMER

Congratulations on purchasing a Duratuf Storage Shed. With proper care and attention, this product will last many years.

For your benefit PLEASE READ THE FOLLOWING INFORMATION CAREFULLY.

WARRANTY ON METAL CLADDING

Riverlea Group Ltd guarantee that the metal roofing and wall cladding on Kiwi and Fortress Garden Sheds may be used in moderate and inland corrosion zones or areas where the first year mild steel corrosion rate is less than 200g/m2, and that in these conditions, they will not perforate due to corrosion within 30 years of date of manufacture.

TERMS AND CONDITIONS

٠

- 1. Damage or corrosion due to the following circumstances is not covered by this warranty.
 - Mechanical, chemical or other damage sustained during or after installation.

NOTE: Clean swarf off shed IMMEDIATELY after assembly

- Do NOT mark cladding with pencil
- Do NOT allow manures, chemicals or other corrosive materials to have direct contact with cladding
- Chemical damage will result if these instructions are not carried out
- Force majeure or other causes beyond the control of Riverlea Group Ltd.

IMPORTANT

SUNSCREEN WARNING: Prevent contact of the painted surface with sunscreens containing titanium dioxide (TiO2) or zinc oxide (ZnO). It has been proven to discolour and degrade the paint finish. The use of gloves is recommended.

Damage to prepainted steel caused by contact with sunscreen is not covered by your Duratuf warranty.

- 2. This warranty does not cover material installed in severe and very severe environmental situations, or in any area where the mild steel corrosion rate (as published by BRANZ) exceeds 200g/m2.
- 3. Minimum maintenance must be carried out in accordance with instructions below.

Should the cladding fail to perform as specified above, the liability of Riverlea Group Ltd shall in all cases be limited to replacing or repairing the defective product. The balance of the original warranty will cover any repaired or replaced material. Riverlea Group Ltd will not be liable for any consequential loss or damage, labour or transport charges. All claims made in writing within 21 days of discovery, quoting the reference number at the top right hand corner of this page.

MAINTENANCE

Following are the minimum maintenance requirements for cladding used in Kiwi Garden Sheds and Fortress Sheds.

- Washing all surfaces by rain, and annual hosing of sheltered areas using a hose and soft nylon brush.
- Within 2km of coast—wash every 3 months as above. After a storm, wash the cladding and the gutters as soon as possible to remove any highly corrosive salt deposits.
- Volcanic Ash Fallout—wash as soon as possible, removing fallout from roof and gutters
- Gutters to be kept clean of leaves and dirt.

Should you require additional technical information please contact us at the details below.

WARRANTY REGISTRATION

Please visit www.duratuf.co.nz/warranty to validate the Warranty on your shed.

Click on the Warranty Registration Link and complete all details.

If you are unable to access the computer, please phone us on 0800 438 274 and one of the customer services team will help you to activate the warranty on your garden shed.

Many thanks, from the Team at Riverlea Group.





COMPLETE OUR CUSTOMER SURVEY

Thank you for investing in a Duratuf Garden Shed.

We are sure that it will provide excellent long-term storage and add value to your property. To continually improve our products and service, we would love to hear about your Duratuf experience and why you chose us.

Further to that, we would also love to see a picture or a short video of your shed installed and doing its job so that we can share this with others for their inspiration. Thank you in advance and we look forward to receiving your feedback!

To complete the survey please visit www.duratuf.co.nz/customer-survey