

# LOOK AFTER THE IMPORTANT THINGS!



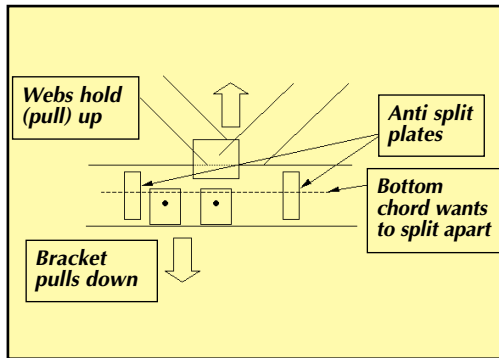
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**I**n all aspects of life we are told, or soon work out, that there are some things that are more important than others. Those important things require extra attention.

It is true in business and family life, the way we spend our money, how we deal with our peers, our clients and our suppliers. The same lesson is applicable for roof trusses - there are some things that warrant more attention than others!

Of all the trusses in a house, girder trusses obviously have the most work to do. They are made of higher quality materials and should be carefully installed.

You will find that most girder trusses have anti-split plates installed to prevent the bottom chord tearing apart.



As with all trusses it is important that they are kept straight and in line, as that is the way they are designed.

This is even more critical with highly loaded trusses, as the loads applied are conspiring to twist or buckle the truss out of shape.

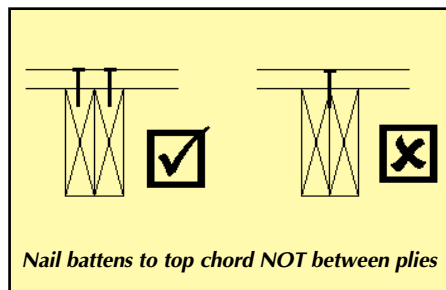
There are at least two areas where girders are prone for less than adequate treatment.

The first is the top chord bracing. This is provided through the connection of roof battens so their proper installation should ensure that the top chord does not buckle.

A common mistake is to splice the roof battens on this truss without staggering the splices. The correct practice for any truss

is to splice no more than one in three battens over any individual truss top chord.

Batten installers should watch



out for multiple ply girder trusses - the battens are to be nailed to each of the top chords not between the plies.

The second area of concern with girder trusses is the connection of the carried trusses to the bottom chord.

As with the top chord, keeping everything straight and in line is very important.

The difference being that the bottom chord is likely to twist rather than buckle if the load is high and the connection is poor.

There has been a lot of research done and much time and money spent in developing "Anti-Rotation" brackets and systems that stop this twisting.

These vary from blocking to straps to brackets with tongues and others with extra bolts.

The published capacity of any bracket relies on its proper installation and they will not perform to their full capacity if the anti-rotation systems are not installed as specified.

It is a misconception that the carried truss has to bow down dramatically to allow for the

girder bottom chord to twist.

In fact, it is the carried truss that generally keeps the girder bottom chord straight, because it won't bow down.

The reason for the rotation of brackets is usually due to a loosely fitted bracket and supported truss. The truss being carried should be tight against the face of the girder truss as this bearing plays a large role in the anti-rotation.

Things to pay attention to when fixing brackets to girders are:

1. Install all required nails and bolts as specified by the bracket manufacturer, if you are unsure ask your supplier for details. For example:

- In the case of a two bolt anti-rotation bracket the exclusion of the second bolt allows the bracket to rotate around the heel of the supported truss (See the diagram.)

- If the tongue of a bracket (where required) is not nailed to the bottom chord of the girder truss then the gap can form between the face girder and the end of the carried truss causing rotation.

2. Use the correct size bolt - if there is a 16 mm diameter hole in the bracket then use a 16 mm diameter bolt.

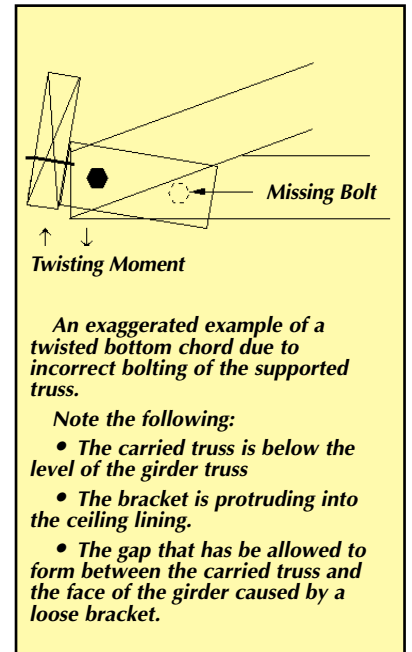
3. Do not use "cuphead" bolts, as these crush into the timber allowing for a loose fitting bracket.

4. Use the correct washer size, again a washer that is too small will allow the timber to crush.

5. Tighten all bolts fully to keep the whole unit solid.

6. Ensure the bracket is firmly against the face of the girder truss

7. When the carried truss is placed in the bracket, carry out all required connection (bolting and/or nailing) immediately. There have been cases of girder bottom chords twisting before the roof load is on, because the self weight of the carried trusses was enough of a load to force the twist.



There are many more wrong ways of fitting girder brackets than there are right ways, so check that you are not inventing another wrong one.

If in doubt, ask your supplier or the bracket manufacturer for guidance.

The extra time (if any) that is spent in ensuring that the job is right, is more than outweighed by the time and cost of coming back to fix it later.