

COMPOSITE

S T A N D S

Get your gear off the ground.

The WORLD'S LIGHTEST JACK STANDS
that address personal injury risk and improve functionality,
increasing productivity and operational savings.

OPERATING MANUAL



Read this manual before using this product and
follow all the Operating Instructions and Safety Rules



Composite Stands Pty Ltd @ 2023
PO Box 450, East Maitland, NSW 2323 Australia
e sales@compositestands.com.au
w compositestands.com.au





1 | PRODUCT DESCRIPTION

COMPOSITE STANDS produce robust yet extremely light weight jack stands and accessories to safely support vehicles, machinery, equipment and vessels typically for maintenance, repair and storage purposes. Our goal has been to design products that address some of the long-term human safety and ergonomic risks associated with the use of jack stands in higher capacity devices. We utilise a secret composite layup that places the fibres under tension when the column is compressed, this unique method enables the column to hold a tremendous load to weight ratio.

Our primary objective has been to address the risk of personal injury from manually handling jack stand which have traditionally been made from steel. Secondly, after considerable research, we identified the adjustable mechanism as being a contributor to many jacking stand incidents, so we have removed the adjustable height function to eliminate that risk to end users.

Additionally, our research found that large capacity stands are used in most cases, greater than 90% of the time set at the lowest setting, permitting the wheels to be removed from the machine while still allowing easy access for service and repairs. The other most common position was in the highest position to allow access under a machine. Given the fixed height design of our stands, we can offer customised height products and can make our Stands to any height between 140mm and 2200mm depending on the rated capacity, with height adjusting inserts in 25mm increments up to 100mm. Our jack stands are made from a high-density composite upright column with a cast steel engagement head and handle plus an aluminium or steel base. Each column contains hundreds of thousands of individual fibres, when a force is placed on the column, the majority of the fibres are stretched to the point that they come into tension, this is when the stand holds the load being applied.

All of our jack stands are independently tested at the University of Newcastle University NSW or The University of Southern Queensland in Australia for compliance with the Australian Standard AS 2538:2016 Vehicle jack stands to ensure safety, strength and stability.

TABLE OF CONTENTS

1 Product Description	2	5 Failure Mode & Warning Signals	8
2 Pre-Operating Instructions	3	6 Maintenance	9
3 Safety Instructions - Prior to use	4	7 Inspection Guide	10
4 Operation	6	8 Warranty	12



2 | PRE-OPERATING INSTRUCTIONS

For the safety of you and or your employees, **you should read, understand and follow the information contained within this manual.** The owner and user shall have a clear understanding of this product and should develop their own safe operating procedures before attempting to use the jack stands.

All users shall thoroughly understand the inherent dangers associated with the use and misuse of jack stands. If any doubt exists as to the safe and proper use of the jack stands as outlined in this manual, remove them from service. Stands are used at the risk of the owner/user/operator.

In accordance with AS 2538:2016 Clause 8(a) always conduct a pre-operational check/inspection of each jack stand prior to each use.

Stands are not to be used if they are damaged, broken, bent, cracked or if they otherwise incorporate damaged parts (including composite column, base and/or label). If the jack stands have been, or are suspected to have been, subjected to a dynamic or shock load (i.e. a load dropped suddenly and unexpectedly upon a jack stand, or where it may have been struck by a hammer), the jack stand should be removed from service to have it inspected by a COMPOSITE STANDS (or other suitably qualified) representative.

Owners and Users of this equipment shall be aware that the use of this equipment may require special training and knowledge. It is recommended that an annual inspection be carried out by qualified personnel and that any missing or damaged decals, warning / safety labels or signs be replaced with genuine COMPOSITE STANDS labels.

Note: NEVER use a jack stand that appears to be damaged in any way, or one that has a bent base. Instead, remove it from service and have it destroyed immediately.



3 | SAFETY INSTRUCTIONS - PRIOR TO USE

We recommend the following instructions (as a minimum) should be incorporated into the owner/operator's own safe operating instructions or into product or task specific safe work procedure(s) for this product.

3.1 a) Verify the load to be applied does not exceed the Working Load Limit (WLL) of the vehicle support jack stand being used. AS 2538:2106 Clause 8(a).


b) When determining the required WLL capacity jack stand for a job, consideration should be given to the total weight of load being supported. You should not split the total load between two jack stands. For example, if the portion of the equipment to be supported weighs 30,000kgs you should select a pair of jack stands that has a WLL of 25,000kg not a pair of jack stands that has a WLL of 15,000kgs.

3.2 Conduct a pre-operational inspection of each jack stand AS 2538:2016 Clause 8(b), **confirming it is free of damage**, defects and is suitable for use.

Note: NEVER use a jack stand if there are broken, bent, cracked or otherwise damaged parts (including composite column, base and/or label).

3.3 Read the operator's manual completely and familiarize yourself thoroughly with the product and the hazards associated with its improper use before using this product.

3.4 Always refer to the vehicle owners or service manual for location of proper lift and support points.



WARNING

To avoid crushing and related injuries:
NEVER work on, under or around a load supported only by a jack stand. **ALWAYS** use adequately rated jack stands. Be sure all tools and personnel are clear before lowering load. Lift only on areas of the vehicle as specified by the vehicle manufacturer.



3 | SAFETY INSTRUCTIONS - PRIOR TO USE (CONT.)

- 3.5** Study, understand, and follow all instructions provided with and on the jack stands prior to placing them into service and or using the jack stands in any application.
 - 3.6** Do not exceed the Working Load Limit (WLL) detailed on the base of the jack stand in kilograms (kg), you must verify the load to be supported prior to using the jack stands. Refer to 3.1 b) to assist with selecting the appropriate WLL capacity jack stand.
 - 3.7** Use only on flat hard level surfaces capable of sustaining rated capacity loads e.g. concrete that is of a suitable strength to hold the overall load AS 2538:2016 Clause 8(c).
 - 3.8** If the jack stand is being placed on an axle, centre the load in the saddle of the engagement head of the jack stand.
- WARNING:** The FJ-001 Forklift Jack Stand does not have a “V” top and shall not be used on any round connection point i.e. an Axle.
- 3.9** Use vehicle support jack stands in pairs when supporting loads in accordance with AS 2538:2016 Clause 8(d).
 - 3.10** No alterations shall be made to this device AS 2538:2016 Clause 6, nor should any attempt be made to undertake or effect any repairs to this device.
 - 3.11** Do not use adapters or accessories AS 2538:2016 Clause 8 (j) that are not provided by COMPOSITE STANDS.
 - 3.12** Failure to heed these markings or these instructions may result in personal injury, death and/or property damage.



4 | OPERATION

- 4.1** The owner and the user shall select the appropriate height stand for the load that is to be supported. Do not extend the height of the stand beyond its maximum working height, nor use any items such as bricks or timber to support the vehicle AS 2538:2016 Clause 8(i) No modifications or alterations shall be made to this device AS 2538:2016 Clause 8(j). Do not use non-genuine adapters or accessories on the mount or base frame when supporting loads.
- 4.2** Ensure the work area selected to jack and support the load is a flat level surface and that it can sustain the overall load. e.g. suitable strength reinforced concrete. AS 2538:2016 Clause 8(c).
- 4.3** The owner and the user is to ensure that each jack stand is securely located at stand mounting point(s) on the vehicle / machine / vessel, strong enough to support the load, consult the manufacturer's manual for guidance as required prior to commencing the lift and support process. AS 2538:2016 Clause 8(f).

WARNING: Consideration should be given to any pivot points of items being supported, for example the pivot point/pin between the boom and bucket of a loading tool, the tandem drive of a grader, various track driven machines and many other examples. Ensure both sides of any pivot points are adequately supported to prevent any potential for load shifting and unsupported areas or rotational loads being applied to stands.

- 4.4** Raise the vehicle / machine / vessel in accordance with the manufacturer's method, guideline and or procedure.
- 4.5** Check that no part of the underbody of the vehicle will foul as the stands are positioned AS 2538:2016 Clause 8(e). Carefully position jack stands, so that the load is positioned to abut the correct mounting point in step 4.3.

Note: NEVER position personnel under a ****lifted, non-supported*** load! All personnel are advised to utilise the COMPOSITE STANDS positioning attachment to position and retrieve the jack stands from under ****lifted, non-supported*** loads.

- 4.6** Ensure all tooling, equipment and personnel have been removed from the line of fire, that is from under the suspended load, then slowly lower the load onto the jack stands.

4 | OPERATION (CONT.)

WARNING: Take care to avoid ROTATIONAL FORCES being applied to jack stands, especially when using equipment hydraulics to raise, lower or manoeuvre the equipment whilst being supported on any jack stands. Brakes &/or park brakes may need to be released as part of the jacking process to minimise rotational forces.

4.7 Ensure the vehicle/equipment is secure prior to commencing working on, around or under the supported load. When used to support a vehicle or mobile machine, use wheel chocks on any wheels still in contact with the ground as an added measure to prevent inadvertent movement. AS 2538:2016 Clause 8(h).

Note: No alterations shall be made to this device. Do not use non-OEM adapters or accessories on the mount, column nor base.



Hard Level Surface
e.g. concrete



TO LIFT – Maintain
natural curves of the back
and bend knees



CHOCK ONLY
Non Elevated Wheels



DO NOT Exceed Maximum
Height of Stand

4.8 To lower load - **and or remove the jack stands**, raise the load until it is clear of jack stands.

4.9 Utilising the COMPOSITE STANDS positioning attachment, carefully remove the jack stands from under the lifted, non-supported load.

Note: NEVER permit personnel to enter under a lifted, non-supported load.

4.10 Ensure that all tools, equipment and personnel are clear before lowering load.

4.11 Carefully lower the load.



5 | FAILURE MODE & WARNING SIGNALS

ALL users should be aware of the following description for their understanding of composite materials.

It should be noted that composite materials do not generally 'yield' or develop plastic properties prior to their structural failure. The structural failure of composite materials is very different to the failure of steel or other metal products. When composite materials structurally fail, they generally fail destructively, dependent upon the type and extent of structural overload. Upon structural failure, composite materials are generally rendered incapable of supporting any meaningful loads at all, especially when those loads are in compression.

Users should be aware that the ultimate load bearing capability of the COMPOSITE STANDS products vastly exceed their rated capacity, for these reasons. However, as noted herein, the rated load capacity should never be exceeded. Composite materials also exhibit very few warning signs before structural failure. However, when they are near or at their ultimate threshold for structural failure there may be sounds of cracking or splitting from within the composite elements. Note that these are the only Audible Warnings that may occur.

These sounds generally represent delamination or separation of the composite fibre elements from within the body of the composite structure. This is the product undergoing primary structural failure! Users should be aware that there is a very small margin of incremental load between the commencement of these failure sounds and the complete destruction of the composite material. If any sounds of any nature are heard when the jack stands are being loaded, then the operator shall immediately unload the devices and remove the product from use.

It is essential that users understand the difference between composite materials and steel or metal materials in relation to this.

6 | MAINTENANCE

The composite column and the aluminium base will not rust or corrode like steel but should be kept clean and undergo a pre-operational check/inspection **prior to each use** AS 2538:2016 Clause 8(b).

It is recommended that an annual inspection be carried out by qualified personnel and that any missing or damaged decals, warning/safety labels or signs shall be replaced with genuine COMPOSITE STANDS labels.

Jack stands without the proper labels are not compliant with AS 2538:2016 Clause 9 and place the owner and operator at risk of personal injury, death and/or property damage. The label also provides the composite column vital protection from UV rays, which may cause the composite material to breakdown.

Owners and/or users shall never attempt to carry out repairs or modifications to the stands AS 2538:2016 Clause 8(j). The upright column of the jack stand is a composite material, neither it nor the connection points should not be drilled, heated by a flame, flame cut, penetrated by any sharp object or point, or hit with a hammer.



**DO NOT Use
Welding Rods**



**DO NOT Drill, Modify
or Attempt Repairs**



**DO NOT Strike
Composite Upright**



**DO NOT Use
Oxy Torch**

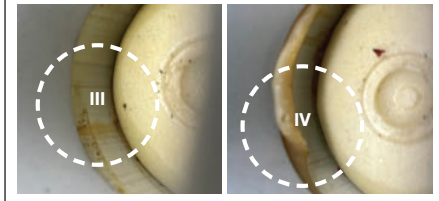
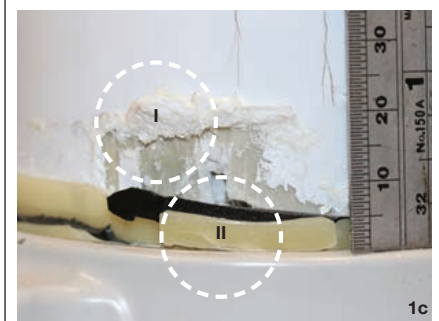
To help preserve the components, wipe clean and/or blow dry after each use. Due to the continued modifications to additives in oils by oil companies, we cannot guarantee that a particular oil or additive will not react with the bonding material used to assemble the jack stands. Therefore, we recommend maintaining the jack stands in a clean condition when stored, and when in use if the bottom connection point will be exposed to oils, that personnel should conduct regular inspections to ensure the integrity of the bonding agent. If prolonged use in oily environments is intended, it is recommended that steps be taken to protect the bonding agent. e.g. by application of a liquid proof tape, for a temporary barrier, or Sikaflex type product for a more permanent solution. If in doubt, then remove the product from service until it can be tested and verified safe for use.

Note: There are no replacement parts for COMPOSITE STANDS.

7 | INSPECTION GUIDE

WARNING

Should delamination be identified the jack stand shall be taken out of service and is no longer able to be used.



1 | IMPACT DAMAGE

◀ **WARNING** - Upon identifying any of the below mentioned indicators, the stand shall be removed from service and is no longer able to be used. Impact damage can cause delamination of the fibre and layers. Delamination occurs when composite is taken beyond its elastic yield point, see following 3 examples. Upon visual inspection of the upright column in photo:

◀ **(1a)** It is clear that the jack stand has been impacted. As you can see, the vinyl label has been damaged and delamination has occurred in the area. While the damaged specimen passed a WLL test, ANY JACK STAND with this type of damage SHALL NOT be used.

◀ **(1b)** Indicates visual signs of impact damage on the corner of the column, note the patch of vinyl missing in the impact area, and the splitting in the vinyl where the column has delaminated. Any stand displaying this type of damage SHALL NOT be used.

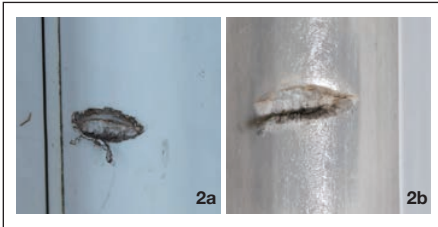
◀ **(1c)** Offers three (3) different examples that users should be trained to look for during pre-use inspections:

- I. Ruffling of the vinyl label at the base of the stand where the composite column connects to the stand base. This is a sign of improper use in the form of overloading, excessive side loading or having applied excessive rotational forces to the column or dynamic (shock) load the stand.
- II. Note the damage to the black plastic boot. This can also be a sign of improper use in the form of overloading, excessive side loading or having applied excessive rotational forces to the column or shock loading the stand.
- III. The inner surface of the 15-tonne composite column should be visually inspected. Invert the stand to inspect the column inner surface between the filled section of column and the base of the stand for any signs of delamination.

N.B. Resin may be observed on the edges of the inner area of the base, see image IV. This is residual material from the assembly process. This is normal and not a reason for concern.

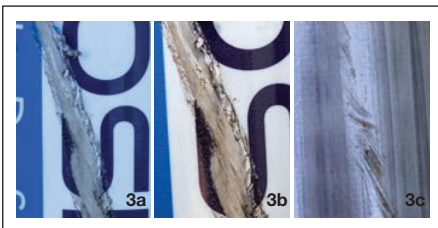


7 | INSPECTION GUIDE (CONT.)



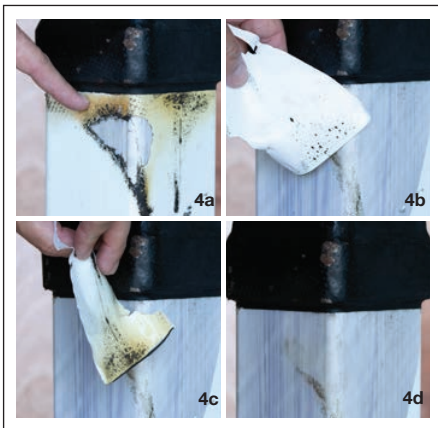
2 | CONCENTRATED DAMAGE

- Photos **(2a and 2b)** are examples of concentrated damage to a composite column that is greater than 1mm deep. Even though there are no signs of delamination, this level of damage should be referred to your local distributor prior to using the jack stand.



3 | ASSESS THE DAMAGE

- Should damage to the composite column be identified, the vinyl label can be removed to assess the damage to the composite material properly. In this example, visual damage appears significant **(3a and 3b)** however, with the label removed **(3c)**, there was only minor damage to the column (less than 0.5mm) with no signs of delamination. This unit passed a WLL test.



4 | HEAT DAMAGE

- COMPOSITE STANDS are not ideally suited to hot work and have an operating temperature range of between -15°C and 75°C. Visible signs of heat damage **(4a)** will appear in the vinyl label long before the composite material is compromised.



8 | WARRANTY

For a period of one (1) year from the date of purchase, COMPOSITE STANDS will repair or replace, at its option, without charge, any of its products which fail due to a defect in material or workmanship, or which fail to conform to any implied warranty not excluded hereby.

Performance of any obligation under this warranty may be obtained by returning the warranted product, freight prepaid, to COMPOSITE STANDS. Except where such limitations and exclusions are specifically prohibited by applicable law:

- 8.1** The consumer's sole and exclusive remedy shall be the repair or replacement of defective products as described above.
- 8.2** COMPOSITE STANDS shall not be liable for any consequential or incidental damage or loss whatsoever.
- 8.3** The duration of any and all expressed and implied warranties, including without limitation, any warranties of merchantability and fitness for a particular purpose, is limited to a period of one (1) year from the date of purchase.

Some states or jurisdictions do not allow limitations on how long an implied warranty lasts, so the above limitation may not apply to you. Some states or jurisdictions do not allow the exclusion or limitation of incidental or consequential damages, so the above limitation or exclusion may not apply to you. This warranty gives you specific legal rights, and you may also have other rights which vary from one location to another.



'Designed and Certified in Australia'

Independently tested by University of Southern Queensland (USQ), compliant with Australian Standards: AS 2538:2016 | AS 2693:2007 and Patented.

e sales@compositestands.com.au

w compositestands.com.au

m +61 427 902 259

PO Box 450, East Maitland, NSW 2323 Australia

COMPOSITE
S T A N D S