



# Heavy Duty Mobile Metrology Stands

Manual for Models  
230, 231, 232, and 233 Series

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*Thank you for purchasing a  
Brunson Heavy Duty Mobile  
Stand. Remember that our  
customer support does not  
stop after shipment of a  
product—we are here to help  
you with any measurement  
challenges that you  
may have.*



*231 Series Heavy Duty Mobile Stands*



*233 Series Heavy Duty Mobile Stands*

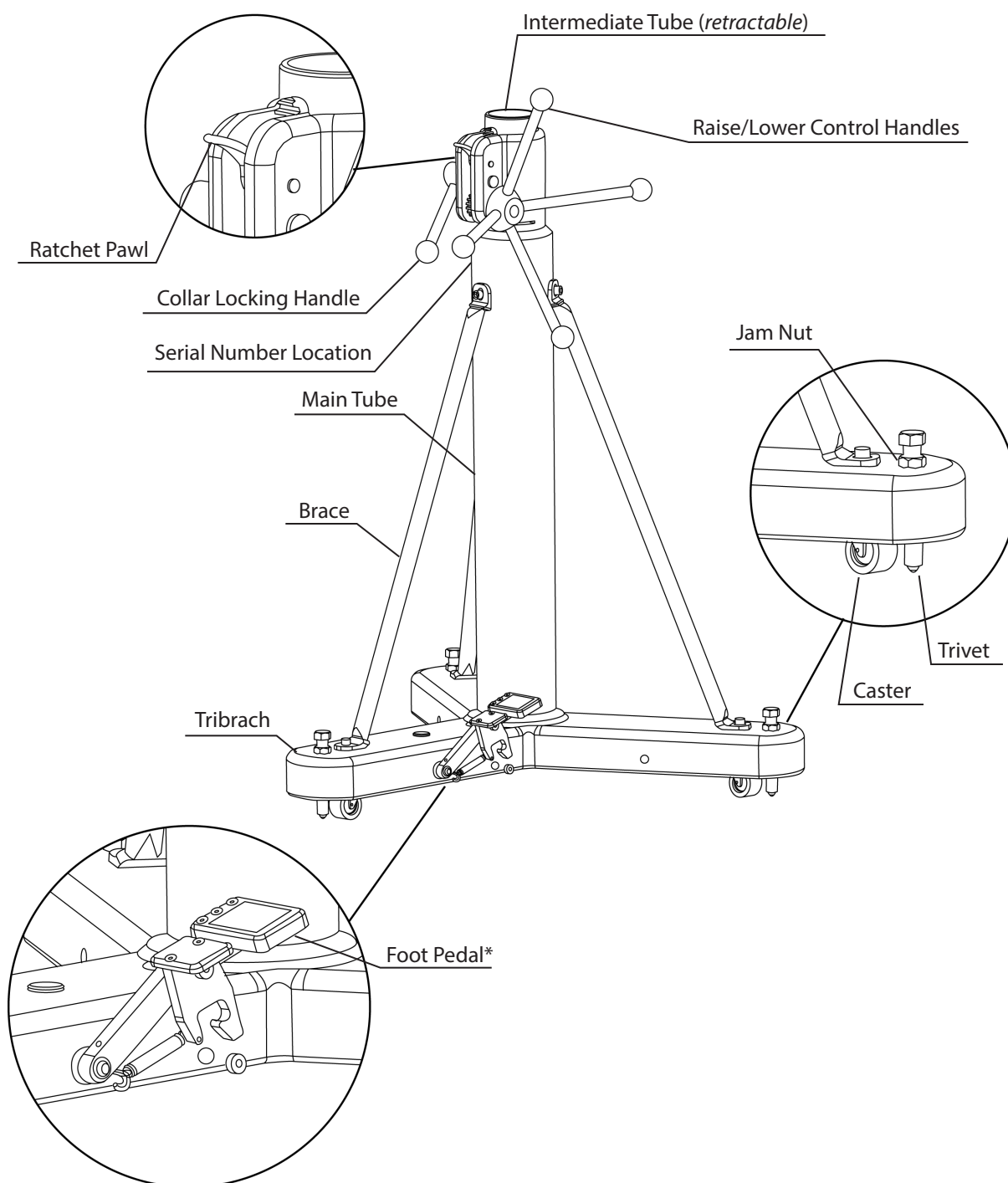


*230 Series Heavy Duty Mobile Stands*



*232 Series Heavy Duty Mobile Stands*

Figure 1



*\*232 Series models have a handwheel instead of a foot pedal.*

# General Information

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Congratulations and thank you for purchasing a Brunson heavy duty mobile stand. We believe that our stands are the finest available, providing a rock-solid base to meet all of your metrology needs. We have been in the measurement industry since 1927, so we fully understand the importance of a stable, rugged, and durable metrology platform. At Brunson, Helping The World Measure™ is more than our motto; it truly reflects our passion and dedication to the metrology world.

Please take a moment to review this manual. It contains important safety and operational information for the stand. Refer to Figure 1 for part names referenced in the instructions. Finally, for future reference, please record the model and serial number for the stand in the space provided below.

Model Number \_\_\_\_\_

Serial Number \_\_\_\_\_

## Safety Precautions

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Static (non-moving) stability:

1. These stands are designed for use on level surfaces. Operating a stand on non-level surfaces increases the tipping hazard.
2. Instrumentation / equipment used with the stand should be centered over the axis of the Intermediate Tube. Extending unbalanced loads from the centerline axis increases the tipping hazard.

Dynamic (moving) stability:

1. Stands should be moved only when no instrumentation / equipment is attached and the Intermediate Tube is in its fully retracted (lowest) position.
2. Stands should be moved by manually pushing or pulling no faster than a normal walking pace over smooth, level surfaces. Do not move a stand by pushing or pulling with a powered vehicle.
3. Avoid sudden starts and stops.

These stands are designed for indoor use only. Wind (or other external) loading was not considered when determining stability. Do not exceed the load capacity of the stand for any attached instrumentation / equipment. The maximum load capacity is listed in Table 1.

*It is the responsibility of the end user to ensure that any instrumentation/ equipment attached to the stand is safely secured.*

Table 1

Model	Stand Weight	Max Load Capacity
230 Series	185 lbs (84 kg)	150 lbs (68 kg)
231 Series	158 lbs (72 kg)	150 lbs (68 kg)
232 Series	587 lbs (267 kg)	150 lbs (68 kg)
233 Series	177 lbs (81 kg)	150 lbs (68 kg)



**CAUTION!** This is the safety alert symbol. This symbol alerts you to hazards that can hurt you and others, and/or cause damage to equipment. Additional information specific to the hazard will be included with this warning.

## Unpacking and Setup

Take off the top and sides of the crate by removing the screws. Cut the three band clamps holding the tribrach legs down. With an overhead crane (or suitable alternative), lift the stand off the crate and place on a level surface (*refer to Table 1 for stand weights*). If a foot pedal is present (Models 230, 231, and 233), ensure it is not engaged—the foot pedal should be “up” and free to move.

Adjust the trivet bolts so that the casters touch the floor but do not bear any weight from the stand. You should be able to swivel each caster easily by hand. Tighten the jam nut on each trivet bolt.

## Moving/Positioning Your Stand

Ensure that the intermediate tube is in its lowest position and no instrumentation / equipment is attached to the stand.

A foot pedal is used to extend the casters on the 230, 231, and 233 Series stands. The 232 Series uses a handwheel. To extend the casters using the foot pedal, use your body weight and step on the larger pedal. The locking latch is spring-loaded and will “click” into place when the stand is locked onto the casters. For 232 Series Models, turn the hand wheel until the casters extend to the ground.

Manually push or pull the stand into the desired position. The stand should be positioned so that the tribrach leg on which the foot pedal (or handwheel) is mounted points toward the midpoint of the work.



**TIPPING HAZARD!** Move the stand over smooth, level surfaces only, with the intermediate tube in its lowest position and no instrumentation / equipment attached. Move the stand by manually pushing or pulling (no faster than a walking pace). Do not tow or push the stand with a powered vehicle.

Lower the stand onto the three trivets. If the floor is something other than concrete (e.g. wood, tiled, etc.), you may wish to use pads under the trivets to provide protection for the floor. Lower the stand by stepping down on the larger foot pedal to take the weight of the stand and rock your foot downward using the ball of your foot to release the spring-loaded latch.

**MAINTAIN SUFFICIENT PRESSURE ON THE FOOT PEDAL TO PREVENT THE STAND FROM SUDDENLY DROPPING ONTO THE FLOOR WHEN THE LATCH IS RELEASED.**



**CRUSHING HAZARD!** *Stands are very heavy! Prior to lowering the stand, ensure area below Tribach is clear of all obstacles.*



**TRIPPING HAZARD!** *Due to the size of the footprint necessary for stand stability, the legs of the stand can create a tripping hazard.*

## Stand Operation

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With the intermediate tube fully retracted, attach the instrument / measuring equipment to the stand. Raise the collar locking handle until the intermediate tube can be raised easily by rotating the control handles.

To raise the intermediate tube, rotate the control handle counter-clockwise (when looking at the hub).



**ROTATING HAZARD!** *The stands are equipped with an air-check mechanism to prevent rapid descent of the intermediate tube. However, until sufficient air pressure has built up to slow the descent of the intermediate tube, considerable force can be exerted by the free spinning control handle. Therefore, always lower the intermediate tube by applying a resistive force to the control handle.*

To lower the intermediate tube, release pressure from the ratchet pawl by slightly raising the intermediate tube, and then retracting and holding the ratchet pawl away from the rack. Rotate the control handle clockwise to lower the intermediate tube.

When the desired height has been reached, lock the intermediate tube in place by rotating the collar locking handle down as tightly as you are able by hand.

Ensure that the trivets fully support the stand by checking to see that each caster rotates freely. If this is not the case, loosen the jam nut and adjust the trivet. After adjusting, ensure that each jam nut is tight against the tribrach.

The stand is positioned and ready to use.

Upon completion of the job, remove the instrument from the stand, raise the collar locking handle, and lower the intermediate tube to the bottom of its travel.

## Maintenance

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Although the stands were designed for minimal maintenance, two items will help maximize service life:

1. A small amount of Neats Foot oil injected through the collar opening on a yearly basis will keep the air cushion leather in good condition. This should be done with the intermediate tube in the fully extended position.
2. A periodic wiping of the intermediate tube with a lightly oiled rag followed by wiping with a dry cloth will preserve the chrome finish.

# Parts List and Diagram

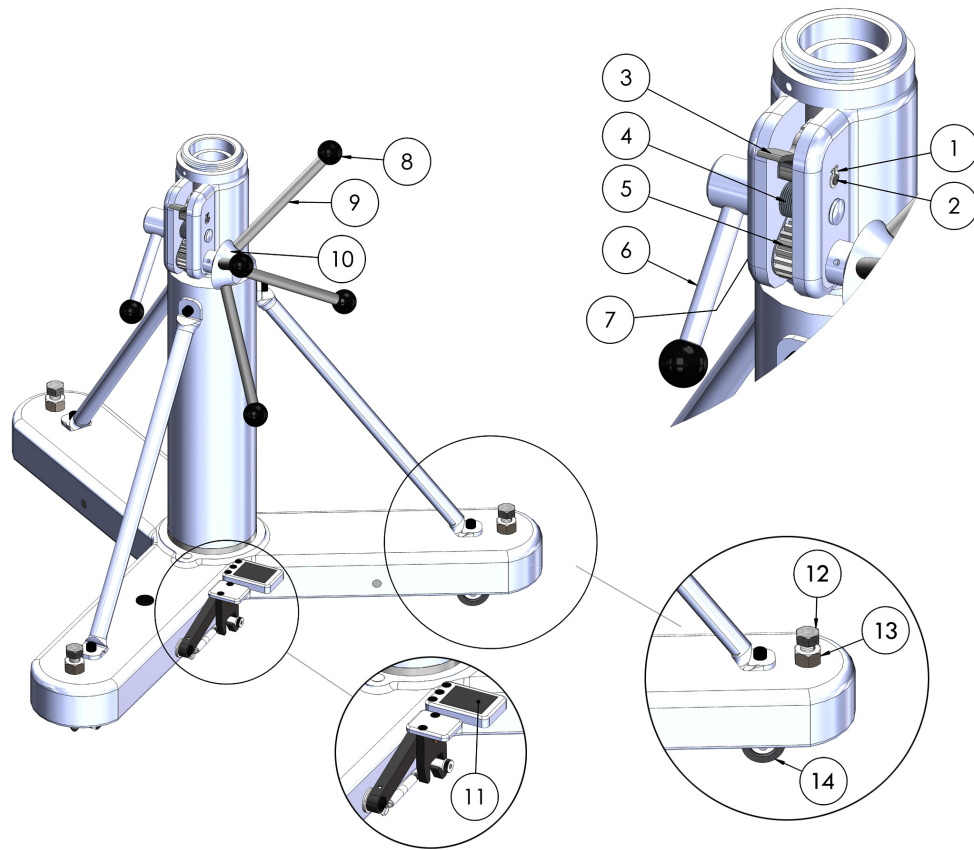


Table 2

Item	Description	Models 230, 231, 233 Part Number	Model 232 Part Number
1	Retaining Ring	12938	12938
2	Ratchet Shaft	3646	3646
3	Ratchet Pawl	3625	3625
4	Pawl Spring	3655	3655
5	Pinion	3610	3610
6	Clamping Spoke	3608	3608
7	Hub Screw ( <i>not shown</i> )	3611	3611
8	Knob	3566	3566
9	Handwheel Spoke	3568	3568
10	Handwheel Hub	1926	3653-G3
11	Foot Pedal Assembly	17680	N/A
12	Trivet	3649	3840
13	Hex Jam Nut	Comm. 5/8" - 11	Comm. 1" - 8
14	Caster	3658-1	3690

*Note: The Model 232 has a handwheel (part number 4065-G1) rather than a foot pedal to engage the casters*

EU DECLARATION OF CONFORMITY WITH COUNCIL DIRECTIVE 2006/42/EC	
Date of Issue:	3 June, 2015
Document Ref:	15190 Rev 3
Directive:	Machinery Directive 2006/42/EC
Conforming Machinery:	Manually Operated Lifting Stands - Models: 231-MOD Series: up to 26" 231 Series: up to 42" 233 Series: up to 54" 230 Series: up to 67" 232 Series: up to 112" 232-SP Series: up to 40' (480") 331 Series: up to 37" 333 Series: up to 50" 330 Series: up to 62" 332 Series: up to 112" M-Series Adjustable: up to 75" M-Series Fixed: up to 51" TetraLock: 400S and 400L Series 810-Series: up to 56" 801-1 Series: up to 51" 5030 Series: up to 52" 5035 Series: up to 17" 237 Series 'Groundhog'
Manufacturer:	<b>Brunson Instrument Company</b> 8000 E. 23rd St. Kansas City MO 64129 USA
Authorised Representative:	Carl Baines 6 Micklehead Business Village St. Michaels Road Lea Green, St. Helens WA9 4YU United Kingdom
Harmonised Standards Referenced or Applied:	EN ISO 12100:2010, EN ISO 13857:2008, ISO/TR 14121-2:2012
Specifications with which Conformity is Declared:	Essential Health and Safety Requirements of Annex 1 of the Machinery Directive
We hereby certify that the machinery described above conforms with the essential health and safety requirements of Council Directive 2006/42/EC on the approximation of the laws of the Member States relating to the safety of machinery.	
Signed:	<i>Deighton E. Brunson</i>
Signatory:	Deighton E. Brunson, President

# Warranty Information

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All goods are sold by Brunson Instrument Company without any implied warranties of merchantability or fitness for use and without any other warranties, expressed or implied, except as set forth below.

Any goods manufactured by Brunson Instrument Company, and found by Brunson Instrument Company, to be defective in material or workmanship will be repaired, or at Brunson Instrument Company's option, replaced, for the original purchaser only, provided the goods are returned with authorization to and by Brunson Instrument Company, transportation prepaid, within one year of the original shipment from Brunson Instrument Company. This warranty does not apply to goods, which have been subjected to alteration or servicing, rough handling, misuse, negligent use, fire damage, water damage, or other casualty or to ordinary wear and tear.

Repair or replacement of the defective products, as provided above, is the sole remedy of the purchaser of products covered by this warranty and is the complete statement of Brunson Instrument Company's liability with respect to such products. Brunson Instrument Company shall have no other or further liability with respect to such products, whether in tort, negligence, contract, theory of strict tort liability or other theory.

Limited life time warranty for horizontal and vertical axis ball bearings: trunnion and spindle bearings manufactured by Brunson Instrument Company, and found by Brunson Instrument Company to be defective in material or workmanship, will be repaired or replaced at Brunson Instrument Company's option for the original purchaser only, provided the instrument for which the bearings were returned, with authorization to and by Brunson Instrument Company, transportation prepaid with documentation to support that the instrument has been fully serviced by an authorized Brunson Instrument Company service representative at least at a minimum of three – and a maximum of five – year intervals from the date of original shipment at the time of purchase from Brunson Instrument Company, and the instrument has not been subjected to alteration, rough handling, misuse, negligent use, fire damage, water damage or any other casualty.

The repair or replacement of the defective products, as provided above, is the sole remedy of the purchaser of products covered by this warranty as the complete statement of Brunson Instrument Company's liability with respect to such products. Brunson Instrument Company shall have no other or further liability with respect to such products, whether in tort, negligence, contract, theory of strict tort liability, or other theory. Adjustments, calibrations, repairs, lamps, fuses, and batteries are specifically excluded from the foregoing statements.

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