



**Model 801-1
Model 810
Portable Instrument
Stands**

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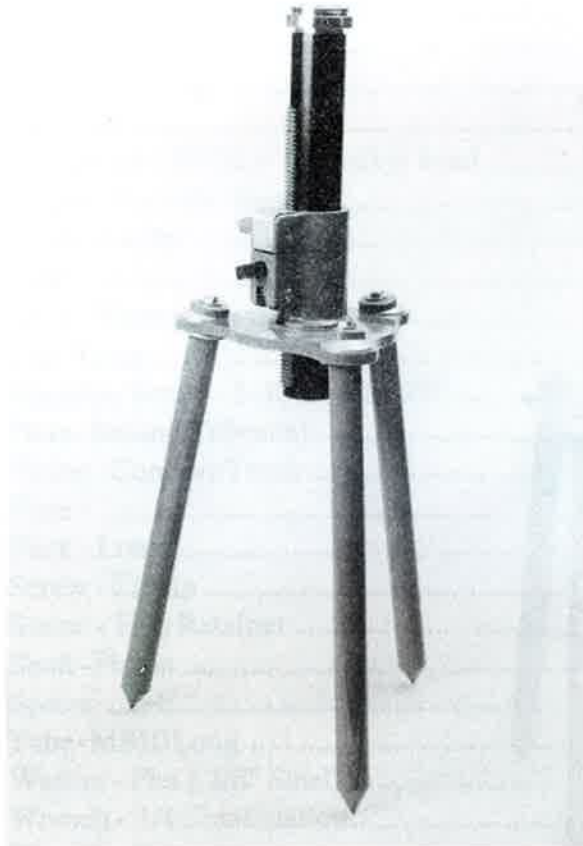
Models 801-1 and 810

Portable and Versatile Instrument Stands

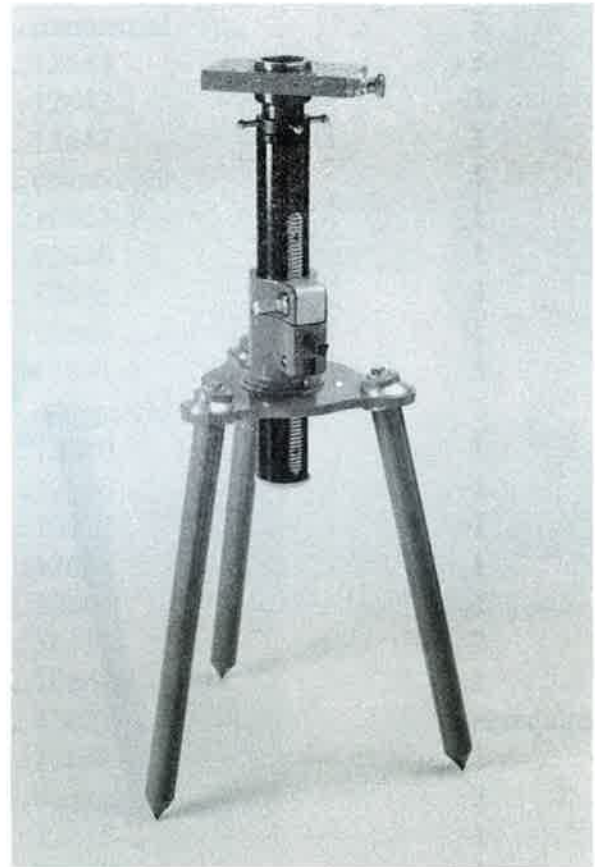
The Brunson model 801-1 and 810 instrument stands are both designed to combine portability and stability. They provide a flexible solution to instrument support problems encountered in the field. They are useful when workspace is limited, when transportation of larger stands is a problem due to expense or size, and when instruments must be located on upper decks or in other places which make larger stands an impractical choice.

The model 801-1 is a basic, floor mounted stand used for standard-height instrument mountings when portability is a major factor. It is used extensively with theodolite systems. This stand does not include a precision lift or slide. Note that the 801-1 does not include a carrying case. If desired, it is available as an option under part number 12667-G1.

The model 810 is an advanced instrument mounting system which can be configured in a variety of ways to meet the job requirements. It includes a precision lift and slide, two sets of legs (short and long), one set of trivet mounts, and two intermediate tubes (short and long). Several options may be purchased for this stand to provide additional flexibility. These include an instrument saddle for offset instrument mountings, as well as 6" and 12" paddle legs for clamping the stand to nearby fixtures, rails, channels, etc.



The model 801-1 provides portability and basic instrument support requirements.



The model 810 is a flexible, portable mounting system which accommodates a number of different workspace configurations.

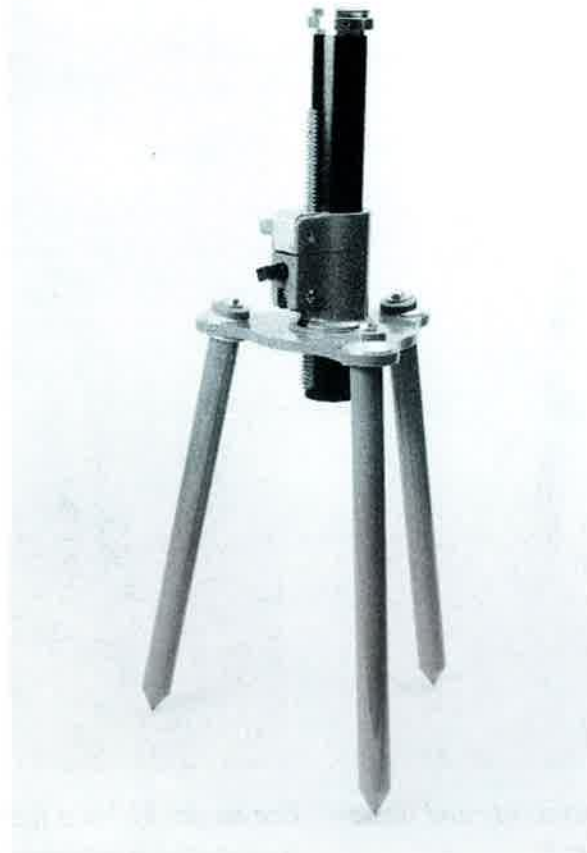
MODEL 801-1 PORTABLE INSTRUMENT STAND

The model 801-1 portable instrument stand is a basic unit used largely with theodolite systems or in other instances where a precision lift and lateral slide are not required. It comes equipped with a set of 26" legs, a 21" intermediate tube, and a model 235-3 adapter having a standard 3 1/2" x 8 thread. It is lightweight and portable, and allows the instrument to be positioned in awkward areas, locations lacking sufficient space for a larger stand, on upper decks, or in other unusual places. It is also an excellent choice for those doing service work where the ability to disassemble the stand for easier handling and shipping is an advantage.

The stand provides for an instrument mounting height from 37 1/2" to 50 1/2", as measured from the floor to the bottom plate of the instrument.

Note that similar to the model 810 stand, it is possible to invert the collar and/or intermediate tube on the 801-1 in order to mount the instrument in an inverted position. **HOWEVER, THE 801-1 SHOULD NOT BE USED IN THIS MANNER.** There is no tube stop ring to prevent the intermediate tube from falling out of the collar if the worm gear is driven too far. This can cause serious instrument damage.

The 801-1 is not supplied with a carrying case. One may be ordered as an option under part number 12667-G1.



Model 801-1 portable instrument stand.

Model 801-1 Specifications

The model 801-1 allows instrument mounting heights from 37 1/2" to 50 1/2" from the floor. Stand weighs approximately 29 pounds.

STANDARD COMPONENTS

- 1 - Cast aluminum tribrach and collar with worm gear height adjustment
- 1 - Model 235-3 instrument mount
- 1 - Spanner wrench
- 1 - 21" hard anodized aluminum intermediate tube with rack
- 1 - 3/4" Combination wrench
- 3 - 26" tubular aluminum legs with steel tips and pivot mounts

OPTIONAL COMPONENTS

- 1 - Case, high-density polyethylene with pre-cut foam, (PN 12667-G1).

PARTS LIST

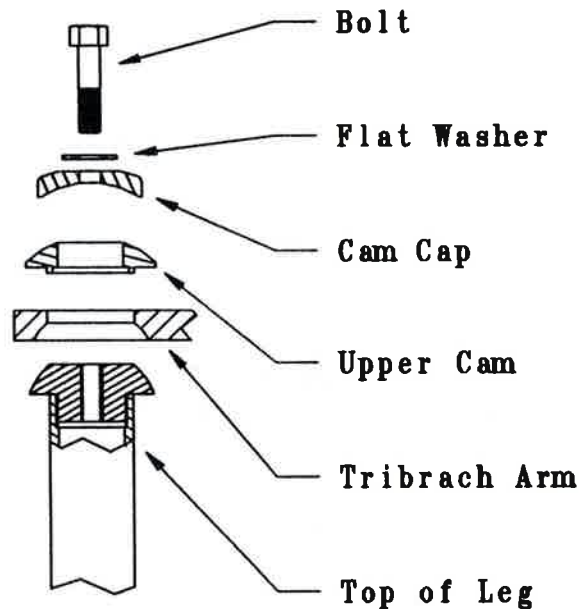
DESCRIPTION	PARTNUMBER	QTY
Adapter - Foot	12643	3
Bolt - 1/2 - 13X2 Hex Head	commercial	3
Cam-Leg	12644	3
Cam-Upper Leg	12642	3
Cap-Cam	12647	3
Cap Screw - 10-32 x 1/2 socket head	commercial	4
Collar - Portable Stand	10663-1	1
Cover - Collar	12648	1
Foot	12646	3
Gear - Worm	10666	1
Leg - Long	12641-1	3
Machine Screw - 5-40 x 3/16 SST	commercial	3
Plate - Mount (Tribrach)	12640	1
Pinion - Concave Tooth	12668	1
Plate -	10662	1
Rack - Long	12653	1
Screw - Clamp	10665	1
Screw - Hub Retainer	3611	2
Shaft - Pinion	10664	1
Spacer	12621	as required
Tube-M810 Long	12651	1
Washer - Flat 1 3/8" Steel	commercial	3
Wrench - 3/4 Combination	12618-2	1
Wrench - Spanner	12618	1

NOTE: The intermediate tube and rack must be ordered as a complete assembly. The manufacturer suggests when ordering the collar that it be ordered complete with the gear drive already assembled in the unit.

ASSEMBLY OF MODEL 801-1 PORTABLE INSTRUMENT STAND

INSTALLING LEGS

- Place bolt, flat washer cam cap, and upper cam assemblies (leg mount assembly) through holes in tribrach arms, from the flat side (see illustration).
- Screw legs onto bolts from bottom side of tribrach until snug.
- Tighten bolts with 3/4" wrench after setting angle desired.



INSTALLING INTERMEDIATE TUBE

- Loosen collar locking screw.
- Insert intermediate tube into collar with rack in guide slot. Tube should be inserted so that the end of the tube with the gear rack closest is pointing downward.
- Turn lift drive screw with 3/4" wrench to feed intermediate tube into collar to desired height.
- Lock collar locking screw.

OPERATION OF MODEL 801-1 PORTABLE INSTRUMENT STAND

Loosen the locking screw on the collar with a 3/4" wrench and adjust instrument to the desired height by turning the lift drive screw with the 3/4" wrench. **Re-tighten the locking screw when desired height is attained.**

CARE OF 801-1 STAND ASSEMBLY

Wipe with clean cloth to remove dust, dirt, grease, etc. Periodically spray intermediate tube or collar with WD 40 type lubricant. Check lubrication of gear shafts as they pass through the aluminum and grease with multi-purpose grease on a regular basis as required. If the collar is to be removed and then screwed to the plate again, some grease needs to be applied to the threads to prevent galling.

Model 810

Portable Instrument Stand

The model 810 is lightweight and disassembles for mobility, yet is extremely rigid for stable instrument setups. The stand comes equipped with a Precision Lift (model 800) and a Precision Lateral Slide (model 802).

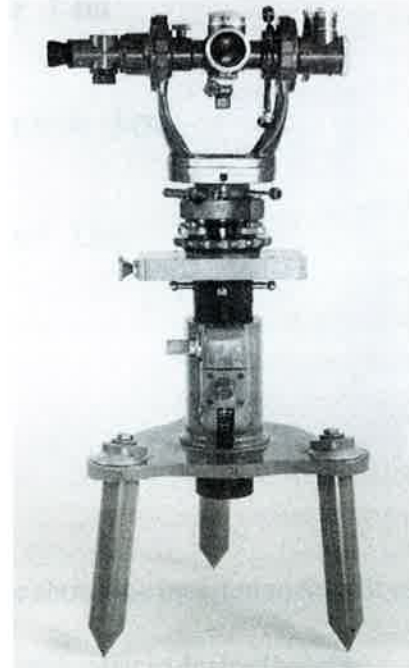
Various combinations of the 810's components allow instrument mounting heights from below floor level (when the 810 is situated over an opening in the floor) to a maximum of 55 1/2" above, as measured from the floor to the bottom plate of the instrument. This is possible because the tribrach (triangular plate) can be held at three different heights from the floor, and the hardware mounted on the tribrach (collar and intermediate tubes) can be configured to hold the instrument above or below the tribrach in a number of different ways.

First, the tribrach may be virtually set down on the floor using the included trivet "legs" in place of the tubular ones. Alternately, either the 10" or 26" legs may be used to hold the tribrach at those heights from floor level. The optional 6" or 12" paddle legs may be used to clamp the tribrach in between rails, channels, or other fixtures, effectively holding it anywhere in any position.

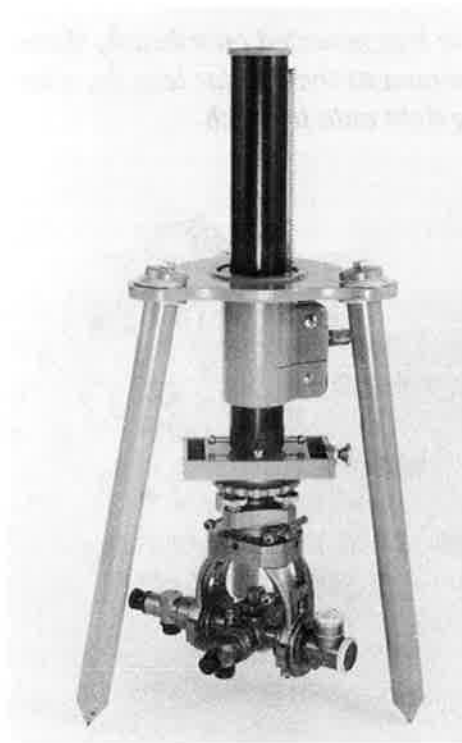
Then, the collar can be mounted on the tribrach in either an upright or inverted position. Regardless of the collar's position, the intermediate tubes (10.5" or 21") can then be inserted into the collar from above or below. Brunson transits are designed to operate in both upright and inverted positions. If you have to get your instrument into an unusual or awkward location, the 810 is a good bet.



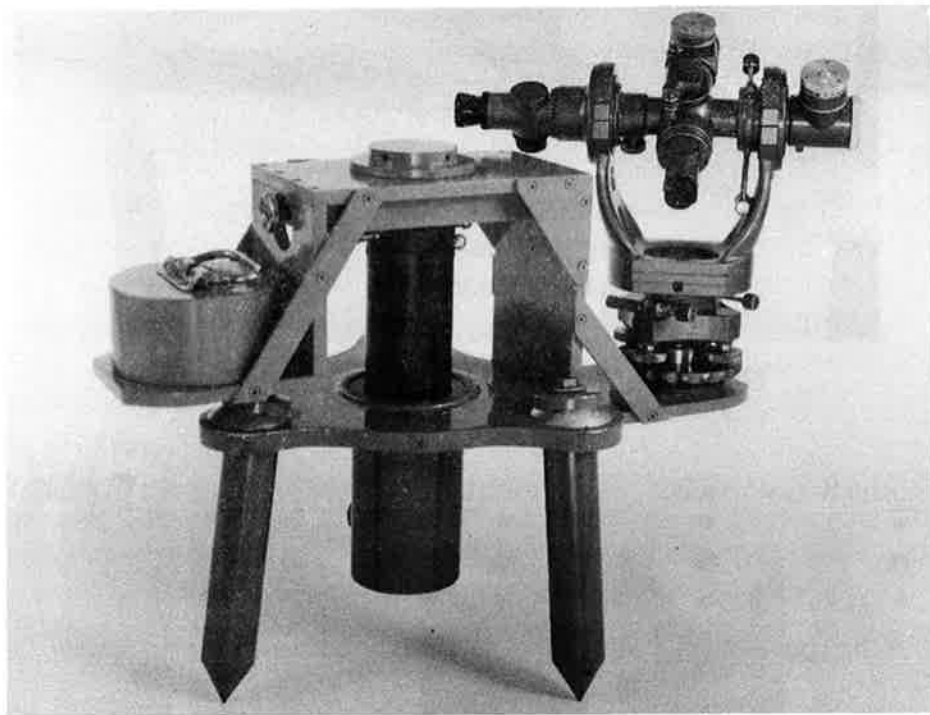
Model 810 shown with collar in upright position on tribrach, long legs (26"), and long intermediate tube (21"). Instrument is a Brunson model 376-RHN.



Model 810 shown with collar in upright position on tribrach, short legs (10"), and short intermediate tube (10.5").

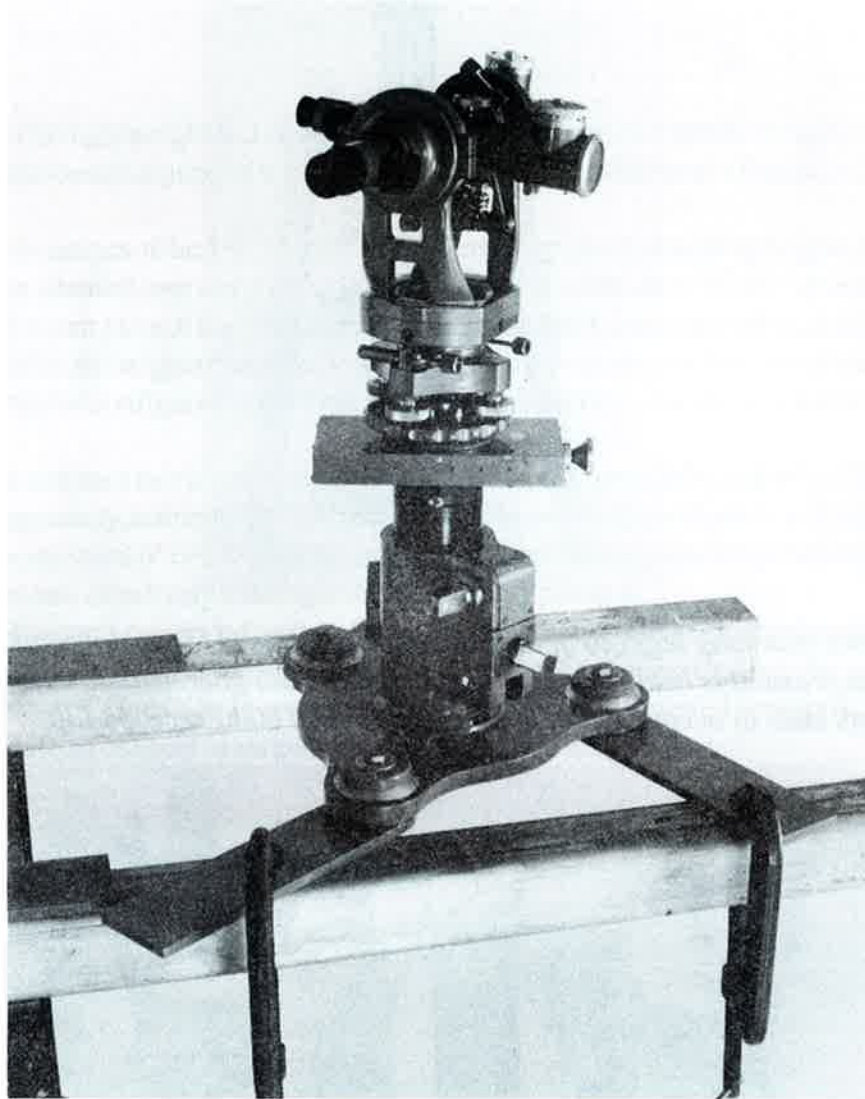


Model 810 shown with long legs (26"), long intermediate tube (21"), and the collar inverted on the tribrach. The instrument is held in an inverted position. Both intermediate tubes supplied are threaded on both ends to accommodate the included model 800 Precision Lift.

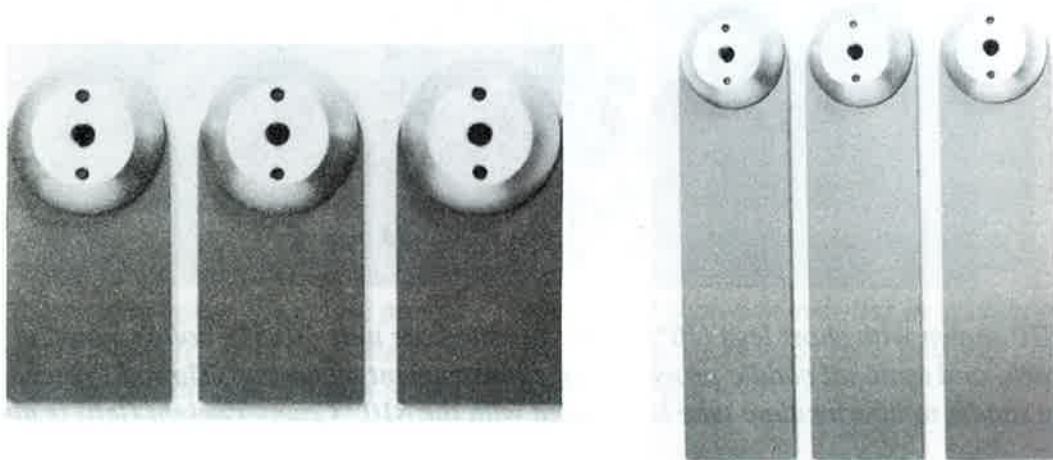


Model 810 shown with short legs (10"), short intermediate tube (10.5"), collar mounted upside down on tribrach, and optional saddle providing offset instrument mounting. Thread Protector Nut securing saddle to intermediate tube is included with the 810. Counterweight (left) is also optional.

Model 810 with optional 12" paddle legs mounted on tribrach, shown clamped to channels. Paddle legs have the same hemispherical mount as the tubular legs do, allowing some freedom of adjustment to odd angles prior to bolting tight onto tribrach.



Optional 6" (left) and 12" (right) paddle legs.



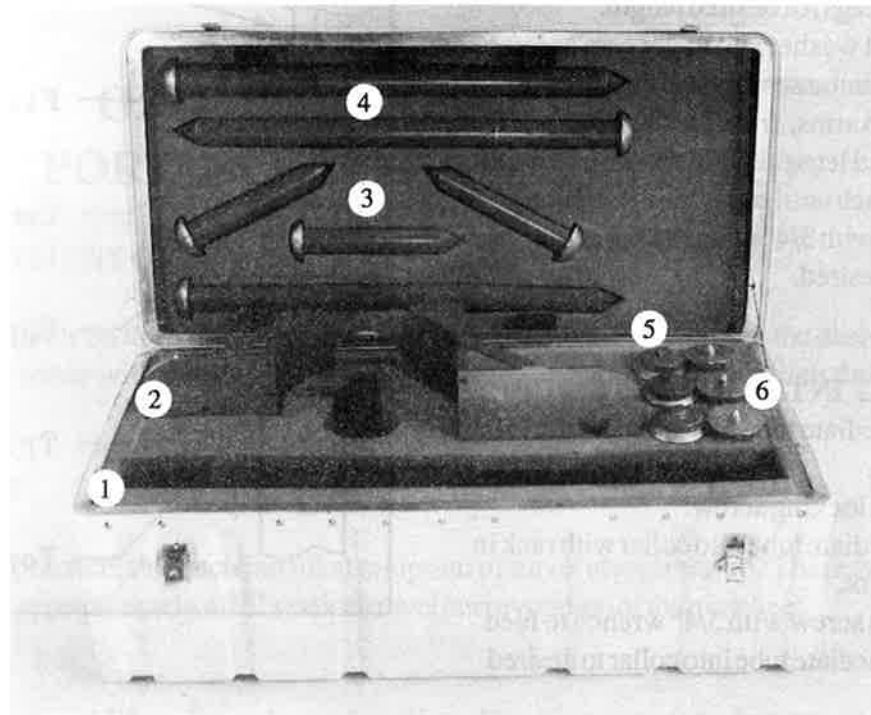
④
26" Legs

⑤
Leg Mount
Assembly

③
10" Legs

②
Optional
Transit
Saddle

⑥
Trivets



①
Intermediate
Tubes

Tribrach and
Collar Position
(components not shown)

Model 810 shown in plastic case with foam inserts tailored for all components.

* If purchased, the paddle legs are stored below the intermediate tubes, separated by 1 1/2" of foam to avoid interference.

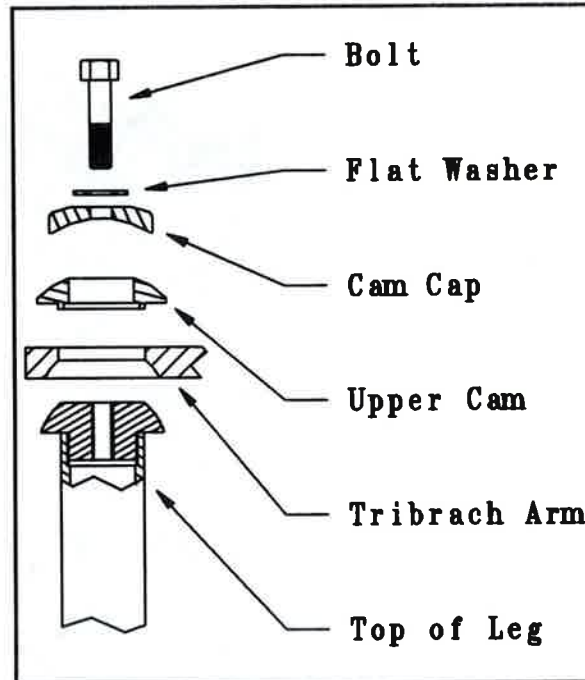
ASSEMBLY OF MODEL 810 PORTABLE INSTRUMENT STAND

INSTALLING LEGS

- Select legs (10", 26", trivet points or optional paddle legs) of desired length.
- Place bolt, flat washer and upper cam assemblies (leg mount assembly) through holes in tribrach arms, from the flat side.
- Screw selected legs onto bolts from bottom side of tribrach until snug (see illustration).
- Tighten bolts with 3/4" wrench after setting leg angle desired.

INSTALLING INTERMEDIATE TUBE

- Select intermediate tube of desired length (10.5" or 21").
- Loosen collar locking screw.
- Insert intermediate tube into collar with rack in guide slot.
- Turn lift drive screw with 3/4" wrench to feed intermediate tube into collar to desired height.
- Lock collar locking screw.



* Install intermediate tube stop ring on the end of the intermediate tube, opposite the end on which the precision lift and lateral slide assembly will be mounted. This helps to protect the threads and prevent the intermediate tube from being turned out of the collar. **WARNING: The lift mechanism has no stop to prevent an intermediate tube from being driven out of the collar in either direction. WITHOUT THIS TUBE STOP RING, it is possible to DROP the intermediate tube entirely out of the collar inadvertently, causing serious instrument damage, when using the 810 to hold an instrument in the inverted position.**

INSTALLING PRECISION LIFT AND SLIDE ASSEMBLY

- Thread precision lift into installed intermediate tube (either end) until snug.
- Use spanner wrench to tighten.
- **WARNING: Do not grab precision slide and use to tighten lift in intermediate tube as severe damage to slide may occur.**
- Set precision lift at midpoint of travel.
- Set precision slide at midpoint of travel.

INSTALLING TRANSIT SADDLE (OPTIONAL)

- Set the large diameter hole of the transit saddle over the 3 1/2" x 8 thread mount of the lateral slide. Make sure the slide's adjusting knob sticks through the hole in the saddle's side plate on the counter weight end of the saddle.
- Install the thread protector nut onto the 3 1/2" x 8 thread mount and tighten with spanner wrench to secure transit saddle to the precision slide.

OPERATION OF MODEL 810 PORTABLE INSTRUMENT STAND

HEIGHT ADJUSTMENT OF STAND

Loosen the locking screw on the collar with a 3/4" wrench and adjust instrument to the desired height by turning the lift drive screw with the 3/4" wrench. **Re-tighten the locking screw when desired height is attained.**

PRECISION LIFT

As a matter of good practice, set precision lift at midpoint of travel at each set-up. There is 1/2" of total travel on the lift with approximately .025" vertical travel per revolution of the pinwheel.

CAUTION:

Do not jam the precision lift to the extreme in either direction as severe damage to the unit may occur.

The precision lift will not require field lubrication.

PRECISION LATERAL SLIDE

As a matter of good practice, set the slide at midpoint of its travel at each set-up by turning the adjusting knob. There is a full 2" of travel on the slide (1" each direction from its midpoint).

CAUTION:

Do not force the slide to the extreme in either direction as severe damage to the unit may occur.

PRECISION LIFT AND SLIDE ASSEMBLY

The slide can be horizontally rotated on the lift by loosening the two 5/16 - 18" set screws radially mounted in the adapter between the lift and slide, and rotating to the desired position. Re-tighten the set screws when slide is properly oriented. To correct excess axial play in the lateral slide, loosen the 4-40 set screw located on the bottom of the slide (at the adjusting knob end) and tighten the "V" notched pre-loading nut one notch. Re-tighten the set screw. If this does not correct the problem return the unit to Brunson Instrument Company for repair.

CARE OF 810 STAND AND ACCESSORIES

Wipe assembly with clean cloth to remove dust, dirt, grease, etc. Periodically spray intermediate tube or collar with WD 40 type lubricant. Check lubrication of gear shafts as they pass through the aluminum and grease with multi-purpose grease on a regular basis as required. If the collar is to be removed and then screwed to the plate again, some grease needs to be applied to the threads to prevent galling.

No care and maintenance other than routine caution is required for the 800 precision lift. Removing the dust cap for a long period of time will allow dust and dirt to enter the unit which will require cleaning by the factory. Do not tighten the pinwheel against the mount adapter as they might jam together requiring factory assistance in separating them.

On the 802 precision slide, everything is pre-lubricated and adjusted at the factory. Periodically inspect the lubrication of the leadscrew and apply multi-purpose grease as required. Tensioning of the slide can be accomplished by tightening the lead screw nut held in place by set screws (underneath the slide). Keep instrument mounting ring and mounting surface clean from dirt and grease with a soft clean cloth and **minimal** amount of all purpose cleaner.

MODEL 810 SPECIFICATIONS

Various combinations of the components allow instrument mounting heights to a maximum of 55 1/2" from the floor. Stand and case weight approximately 89 pounds.

STANDARD COMPONENTS

- 1 - Model 802 Precision Lateral Slide
- 1 - Model 800 Precision Lift
- 1 - Cast aluminum tribrach and collar with worm gear height adjustment
- 1 - 21" hard anodized aluminum intermediate tube with rack
- 1 - 10 1/2" hard anodized aluminum intermediate tube with rack
- 3 - 26" tubular aluminum legs with steel tips and pivot mounts
- 3 - 10" tubular aluminum legs with steel tips and pivot mounts
- 3 - 1" trivet point legs with pivot mounts
- 1 - High density polyethylene container
- 1 - Spanner wrench
- 1 - 3/4 Combination wrench

OPTIONAL COMPONENTS

- 3 - 6" Paddle Legs (PN 12650-G1) with pivot mounts for attaching stand to beams, etc.
- 3 - 12" Paddle Legs (PN 12650-G2) with pivot mounts for attaching stand to beams, etc.
- 1 - Saddle (PN 12662-G1) for offset mounting of instrument, (requires 25 lb counterweight)
- 1 - 25 lb. counterweight (PN 12638)

MODEL 810

PARTS LIST

DESCRIPTION	PART NUMBER	QTY
Adapter - Foot	12643	6
Bolt - 13 x 2 1/2 Hex Head	commercial	3
Cam - Leg	12644	6
Cam - Plate	12645-1	3
Cam - Upper Leg	12642	3
Cap - Cam	12647	3
Cap Screw - 10-32 x 1/2 socket head	commercial	4
Case M810 Carrying	12667-G1	1
Collar - Portable Stand	10663-1	1
Cover - Collar	12648	1
Foot	12646	6
Gear - Worm	10666	1
Leg - Short	12541	3
Leg - Long	12641-1	3
Machine Screw - 5-40 x 3/16 Brass	commercial	3
Model 800 Precision Lift (assy)	12604-G1	1
Model 802 Precision Slide (lateral)	12450-G2	1
Nut - 3 1/2 -8 Protector	12663	1
Pinion - Concave Tooth	12668	1
Plate - Mount	12640	1
Plate	10662	1
Rack - Short	12654	1
Rack - Long	12653	1
Screw - Clamp	10665	1
Screw - Hub Retainer	3611	2
Screw - Leg Trivet	12664	3
Shaft - Pinion	10664	1
Spacer	12621	as required
Stop	12799	1
Tube-M810 Short	12652	1
Tube - M810 Long	12651	1
Washer - 1 3/8 OD x 9/16 ID	commercial	3
Wrench - 3/4 Combination	12618-1	1
Wrench - Spanner	12618-2	1

NOTE: The intermediate tube and rack must be ordered as a complete assembly. The manufacturer suggests when ordering the collar that it be ordered complete with the gear drive already assembled in the