

Laser Measuring

from

Mo-Clamp



Mo-Clamp Laser Measuring System

**Follow along and learn
the easy setup and
simple designs of
this valuable new
tool.**



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We will explore two uses of the system.

First to measure using the lasers as a centerline.

Next using the laser light fans as an outer perimeter to compare side-to-side measurements of any point on the vehicle including under body and outer sheet metal.



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Open the box and look at the hardware and make certain it is all there. The following is a list of items that should be there.

6 ea. 4 ft. long bars

2 ea. 5 ft. long bars

4 ea. 6 ft. long bars

1 ea. Fast Stick

1 ea. pointer for Fast Stick with 1 screw

1 ea. Cone for pointer

1 ea. Set of sockets for pointer

5 ea. U-shaped couplers with 4 screws

8 ea. vertical hanger blocks with 3 screws

4 ea. short vertical hangers

4 ea. Long vertical hangers

2 ea. Upper body T-blocks with 3 screws

2 ea. Laser head assemblies with 3 screws

6 ea. 90-degree coupler blocks with 2 screws

2 ea. Laser centerline shims

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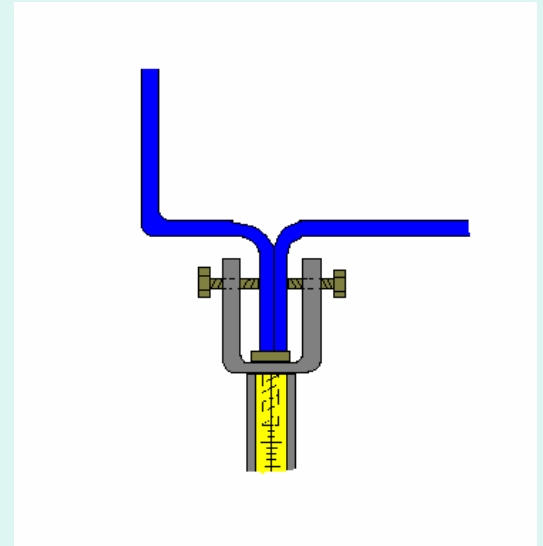
We offer three ways to hang the vertical legs from a vehicle. Pinch weld adapters, hole adapters and the roll pins for side holes on some full frame vehicles.

Since there will often be several different ways to attach the measuring system to the vehicle you need to decide which will be the fastest and most secure points to hang from.

Warning: Be sure to use the exact same point on the opposite side of the vehicle. If none is available, choose a different point. You must have symmetric points to establish a good centerline with. This is a very important rule to follow.

Attach the hole adapter or pinch weld adapter to the vertical hanger by screwing them into the top of the hanger in the hole provided. Once the adapter is secure put it on or in the point you have chosen and proceed to tighten to that point. If you are using a pinch weld adapter adjust both inner and outer screws so the adapter is centered directly under the pinch weld.

Warning: Never use the adapters to bend the pinch weld or hole so the hanger is straight. Use conventional tools for adjustments of pinch welds and holes to allow our equipment to hang straight and true.



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It is suggested you set the 4 points under the passenger section of the vehicle if possible. Be sure the front two hangers are as close to the same as possible and then attach the rear two. Use either hole, pinch weld or roll pins again, keeping in mind the end result is to have the front and rear centerline bars hanging so the outer support bars will be as level as possible when they tie the centerline bars together.

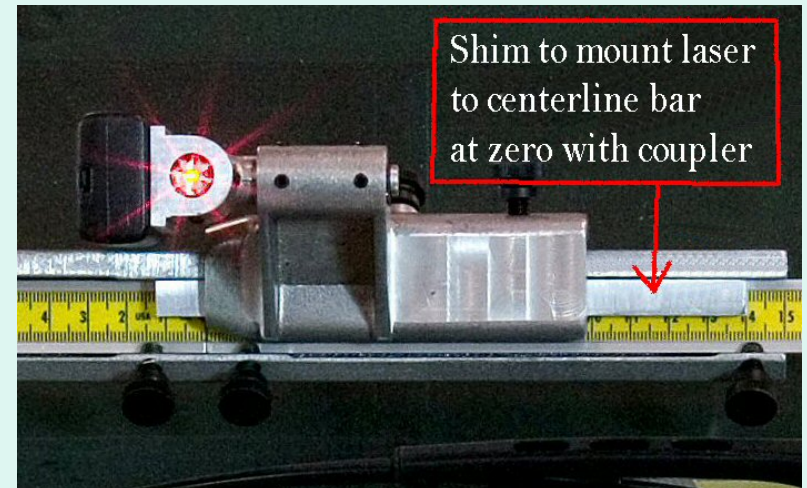
Hanging the centerline bars from the vertical scales is next. Use the vertical hanger blocks and secure the blocks to the vertical legs. Adjust the top or bottom to the scale so both sides of the vehicle read the same measurements. Use the u-shaped coupler and connect a left and right side so the numbers read progressively larger from centerline out to the ends.

Warning: Now is a critical time to place a laser head if you are wanting to shoot a centerline under the vehicle.



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Laser head placement for centerline requires attaching the head before you hang the centerline bar. It is not necessary to determine whether you want to measure front or rear of the vehicle first as the head will swivel around for opposite end measurements. You just need to be sure there is ample room above the laser for it to make the swing. Use the shim to take up the space on the bar so the laser will tighten up properly. Once secure, place the centerline bar into the 90 degree blocks, determine the numbers read the same on the outer edge of the blocks against the centerline bar and tighten. You now have the first centerline bar and laser in place. Attachment of the second centerline bar and the outer 6 foot support bars are primarily for support of the centerline bars holding the laser heads. They actually do not perform any real measurement operations. They are part of a solid foundation for the lasers to operate from.



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Setting up the upper body area is a simple process. Begin by adding the two upper body T-blocks at a point on the outer support bars that will allow the centerline bar to be across the upper engine compartment as close to the windshield as possible.

Stand the two 5 foot bars in the T-blocks so the lowest numbers are at the bottom.

As with the lower centerline setup, attach the two centerline bars to the coupler.

Attach the laser and shim to the coupler at the zero point on the centerline bar.

Attach the centerline bar to the vertical bars across the engine compartment and be sure the tape numbers agree on both sides of the vehicle.

Get out the Fast Stick, turn on the laser and measure!

The upper body centerline laser is tied directly with the underbody laser so your coordination of the two areas is made very easy to control in the correction process.



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Fast Stick

The Fast Stick is a measuring bar with a hole in one end for a thumb screw and a flat handle like end on the other.

The hole accommodates a pointer that has two ends. One end is a point and the other is a turned down end with an 'O' ring on it. That end is designed to use the Delrin plastic white cone or the sockets furnished in the kit with the system.

The cone will allow the technician to center the cone in any sized hole on both full frame and unibody vehicles.

The sockets will fit the most important sized bolts and rivets on vehicles to again aid in the centering of the stick for easy and accurate measurements.



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Helpful Pointers

Here are a few pointers to make your experience even easier with the system.

First, take the time to be sure of your readings and review them one more time before taking final measurements.

Then, after a section is assembled, be sure to recheck it for tightness and be sure the blocks are all properly seated against the bars they are supporting.

Take a minute to just look at a section and see if it looks right from outer appearances. Sometimes the most obvious problems can be easily avoided with a thoughtful re-inspection for a minute or two.

Finally look at the system hanging under the vehicle and see if it shows any twist or sway that is not a part of the damaged vehicle. The system should be plumb and square for accurate readings.



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Extreme Warnings

- Do NOT: Look directly into the laser light as it can be harmful to your vision. There are additional cautions on the laser head.
- Do NOT: Use any part of this measuring system as a lever or tool to adjust an area of the vehicle you are wanting to measure. It is very tempting to try to align the gauges so they hang straight by tweaking them while in place. Remove them and use real tools to effect repairs on damaged areas.
- Do NOT: Make any attempt at recalibrating the laser heads with the measuring system. If you suspect a laser head is out of calibration, call us immediately and we will send a replacement and recalibrate yours. Turnaround time will be held to an absolute minimum for your convenience.
- DO: Replace broken screws as needed from time to time. The easiest way to remove a broken screw is to use a very small headed sewing machine screw driver or tip of a pocket knife and heat it. Then let the tip melt into the broken part and after it cools a little, carefully unscrew the broken piece.
- DO: Clean the lens on the laser heads with a damp cloth using a mild windshield cleaner or plain water. Use only a soft, clean rag and NO TOOLS of any kind. The outer surface is all that is needed to be clean.
- DO: Clean the surfaces of the gauges from time to time. A regular paint cleaner or enamel reducer will work. After a good cleaning wipe the surfaces down with a piece of wax paper and you will have a smooth surface that allows sliding pieces to their final destination much easier than when dry and dirty.
- DO NOT: Use any form of paint thinner to clean gauges with. The thinner will immediately remove the numbers and marks on the tapes.

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For more information you can
contact us at:

800.678.5548

503.644.9167

Fax 503.644.2733

Or on the Web at www.moclamp.com

