

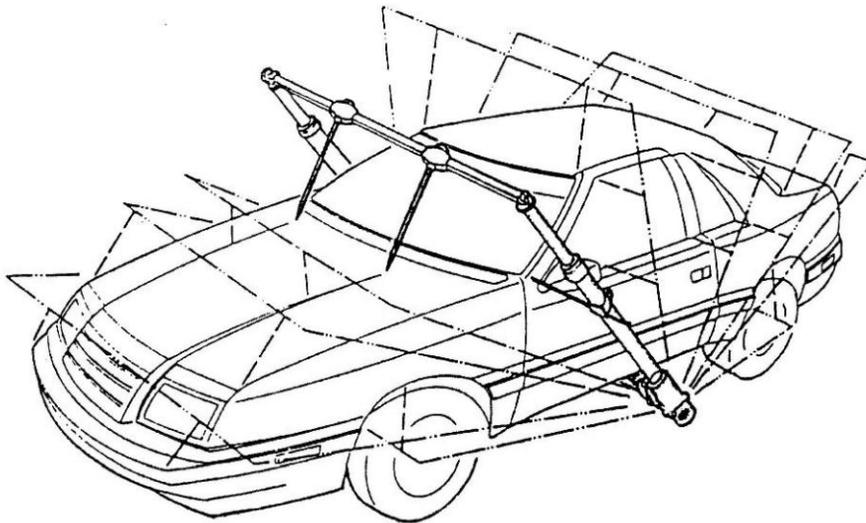


3D PIVOT MEASURING SYSTEM

User Manual

PART NO. 19000 & 19100

Introduction.....	1-2
Components.....	3-4
Set Up procedure.....	5-17
Measuring Examples.....	18-21
Important Information.....	22
Using Vehicle Specs.....	23-25
Replacement Parts List.....	26



Revised October 2008

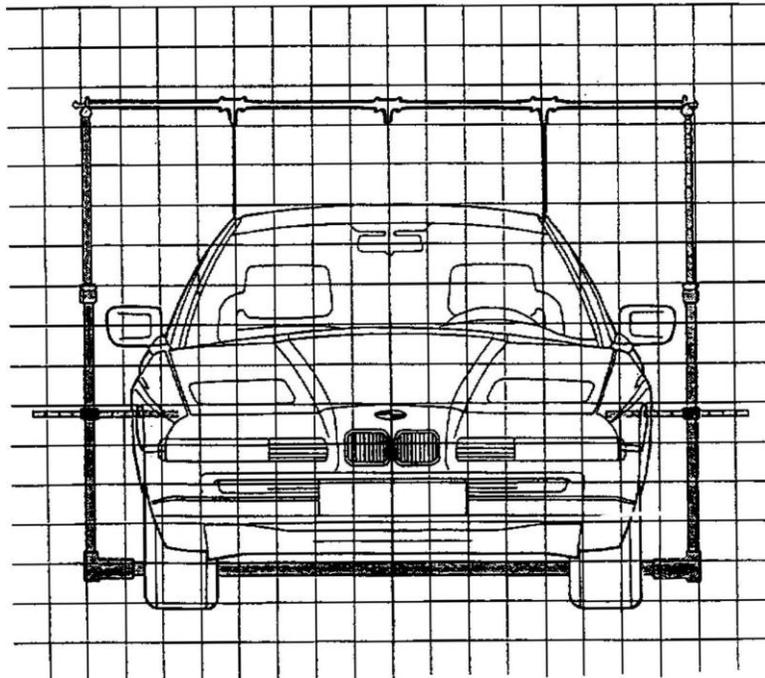


INTRODUCTION

19000 & 19100 Pivot Measuring System

This measuring system was carefully designed to give you maximum performance in restoring total vehicle symmetry in the fastest time possible time. The more you use it, the more uses you will find for it. Because of the pivoting action, there are fewer pieces required to reach any point you wish to check for misalignment - whether it is for damage analysis or to have accurate targets to pull to.

The system works with any standard 3D vehicle measuring specification. Use with the Wedge Clamp Eclipse electronic measuring system #E1000 for full upper and lower body measuring.





INTRODUCTION

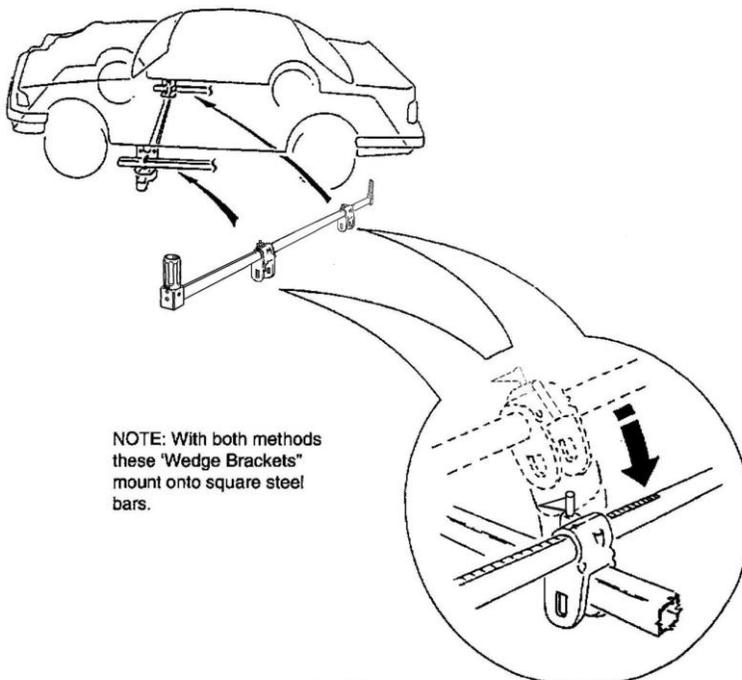
There are **two** methods for mounting the 19000 and 19100 onto a vehicle:

1. Mount directly on to Wedge Clamp's anchoring system bars.



OR

2. Use the 24000 Pivot Quick Mount Kit. This kit allows you to mount the System independently for damage analysis, or with any other rack or bench system.



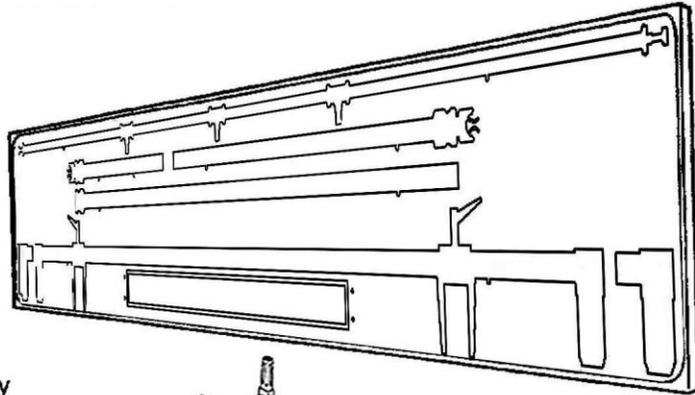
NOTE: With both methods these "Wedge Brackets" mount onto square steel bars.



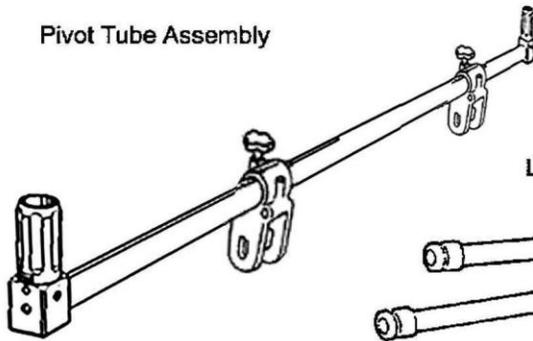
COMPONENTS

19000 & 19100 Pivot Measuring System

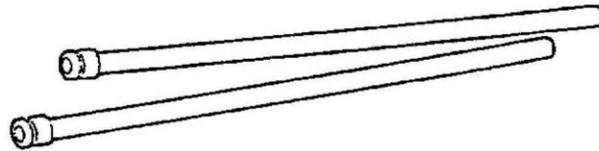
Storage Tool Board



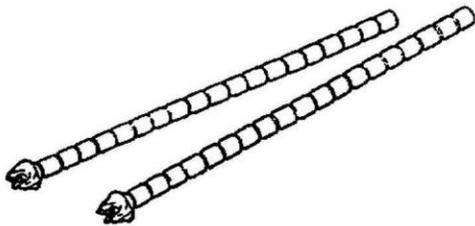
Pivot Tube Assembly



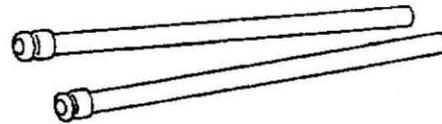
Long side Tubes (outer)



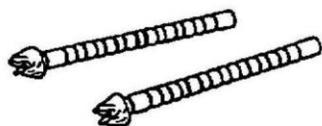
Medium side Tubes (inner)



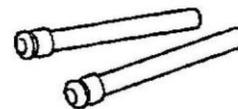
Medium side Tubes (outer)



Short side Tubes (outer)



Short side Tubes (inner)

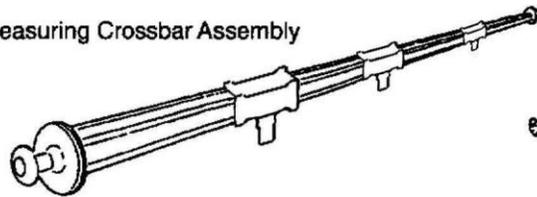




COMPONENTS

19000 & 19100 Pivot Measuring System

Measuring Crossbar Assembly



Side Measuring Tapes

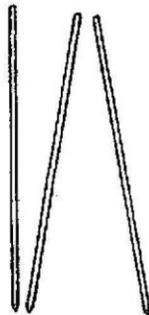


Tape Collars

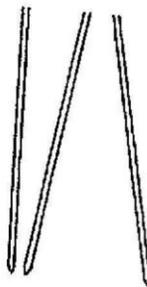


Measuring Pins

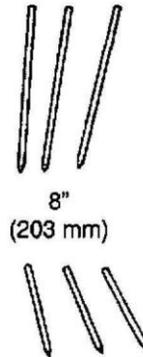
27"
(685 mm)



21 1/2"
(546 mm)



14"
(355 mm)



11"
(279 mm)



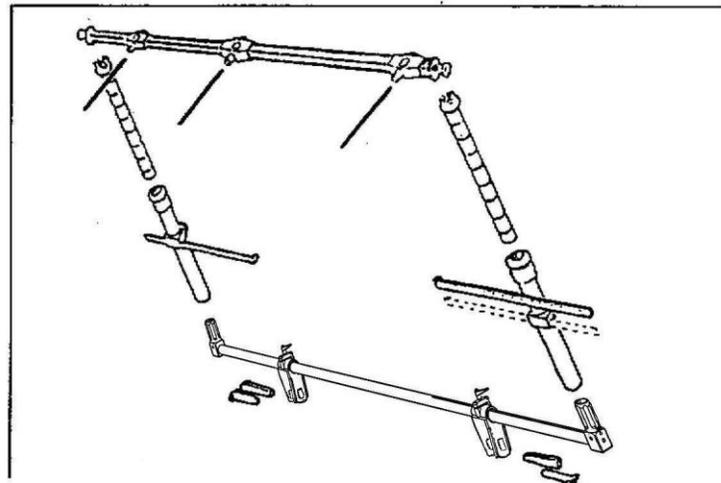
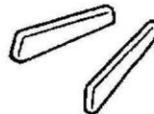
8"
(203 mm)



5 1/2"
(140 mm)



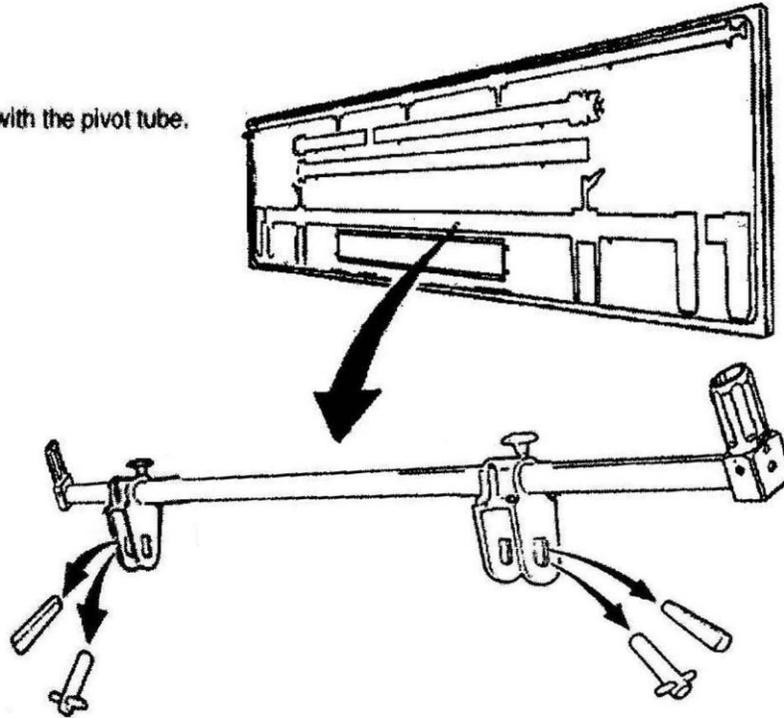
Plastic Wedges



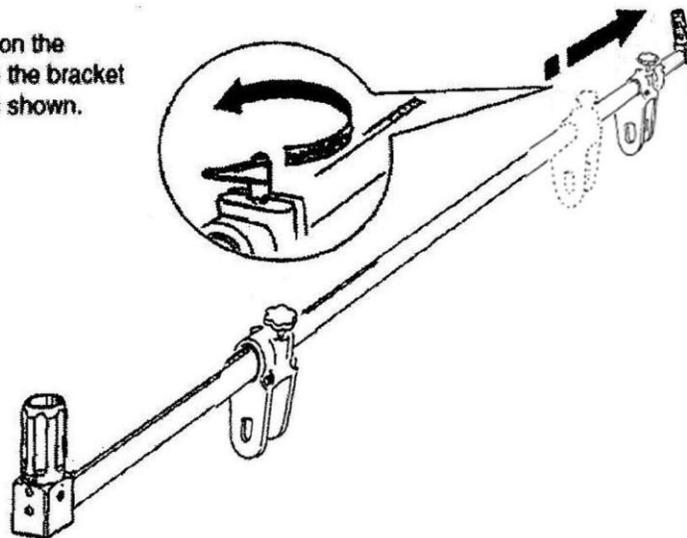


SET UP PROCEDURE

1 Start with the pivot tube.



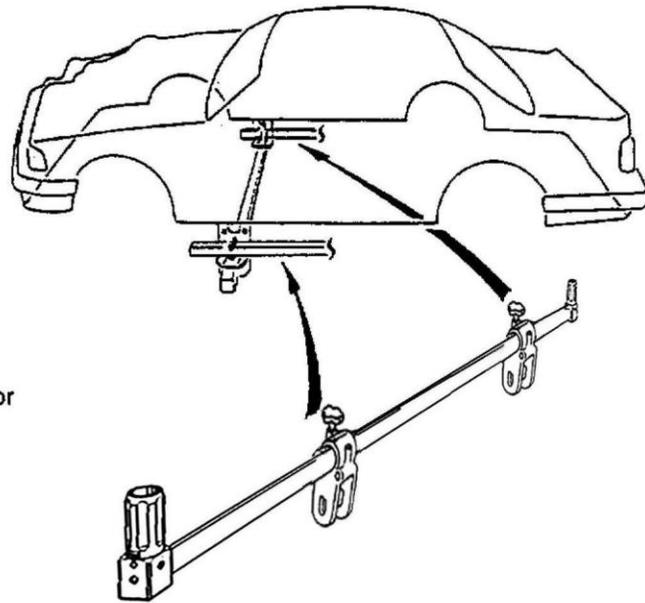
2 Loosen the hand knobs on the wedge bracket and slide the bracket to the end of the tube as shown.



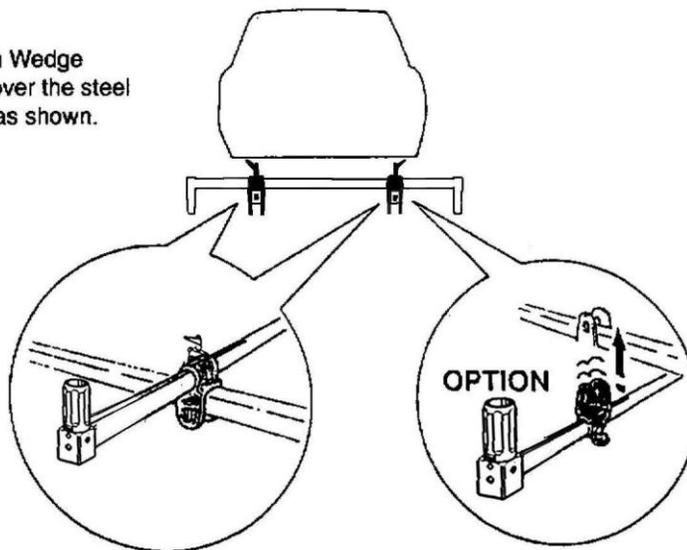


SET UP PROCEDURE

- 3** Install the Pivot Tube **between** the vehicle floor and the steel bars.



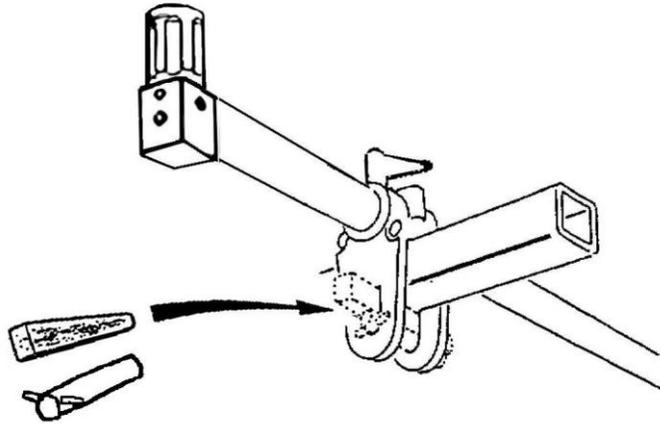
- 4** Place both Wedge Brackets over the steel side bars as shown.





SET UP PROCEDURE

- 5** Install plastic wedges as shown, by hand only

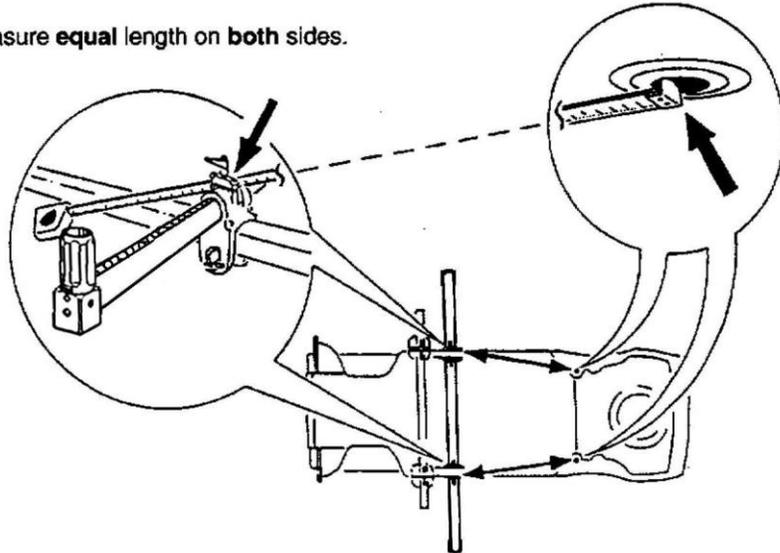


NOTE: Before we can begin to measure, the Pivot Tube must be installed square and centered to the vehicle. Follow Steps 6 to 23 carefully.

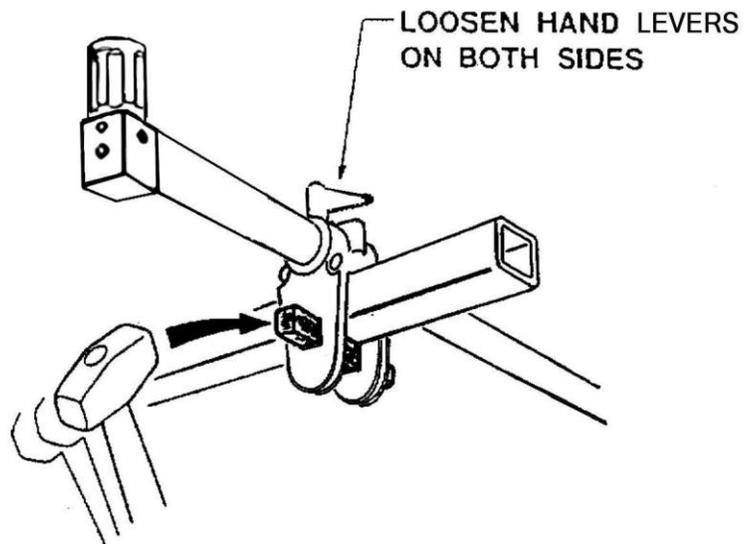


SQUARE PIVOT TUBE TO VEHICLE CENTERLINE

6 Measure equal length on both sides.



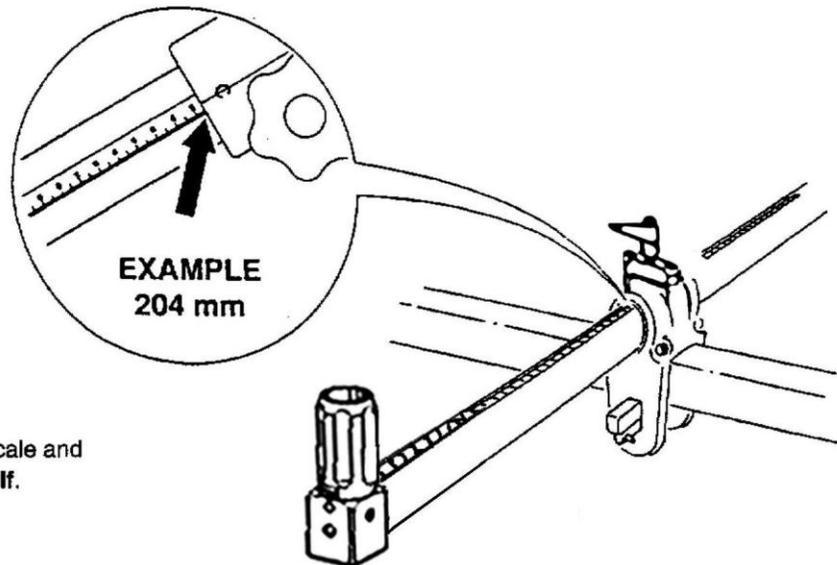
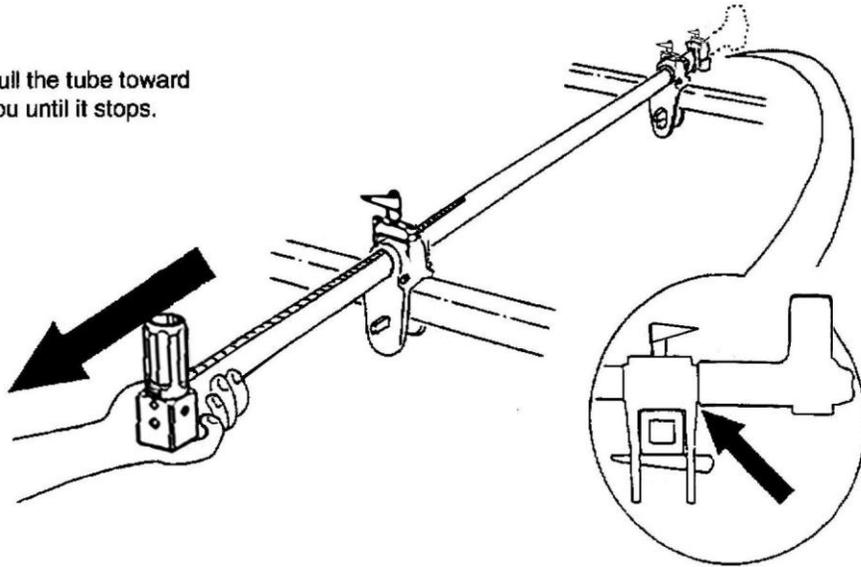
7 Tap the wedges in gently.





CENTER PIVOT TUBE TO VEHICLE CENTERLINE

- 8** Pull the tube toward you until it stops.

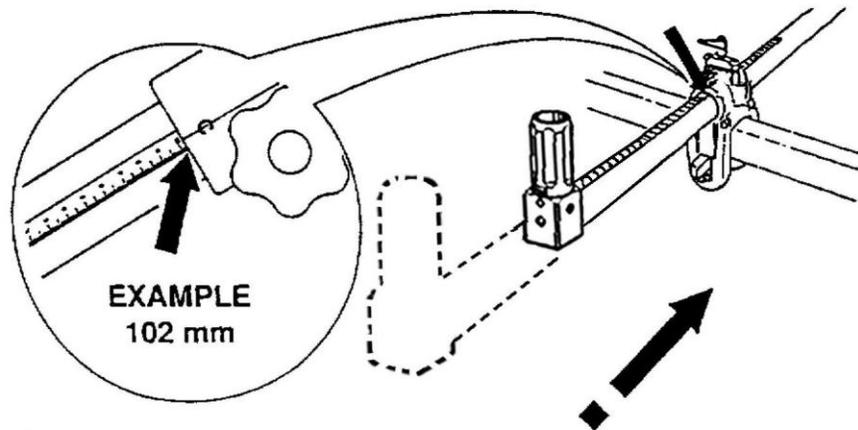


- 9** Read the scale and divide in half.

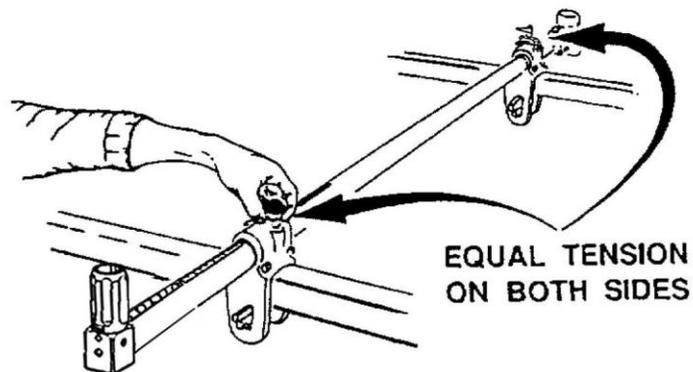


CENTER PIVOT TUBE TO VEHICLE CENTERLINE

10 Push the tube back in exactly half way.



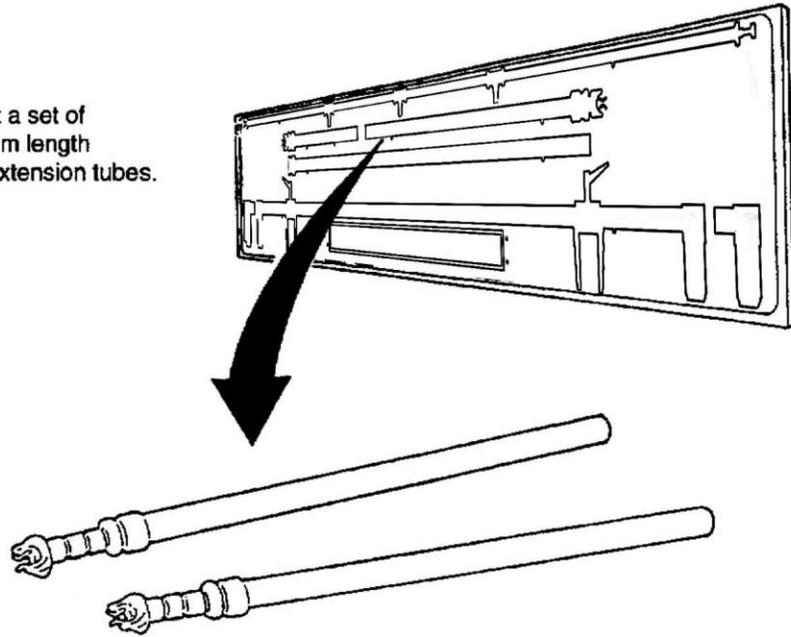
11 Tighten the hand levers on both sides to the same tension.



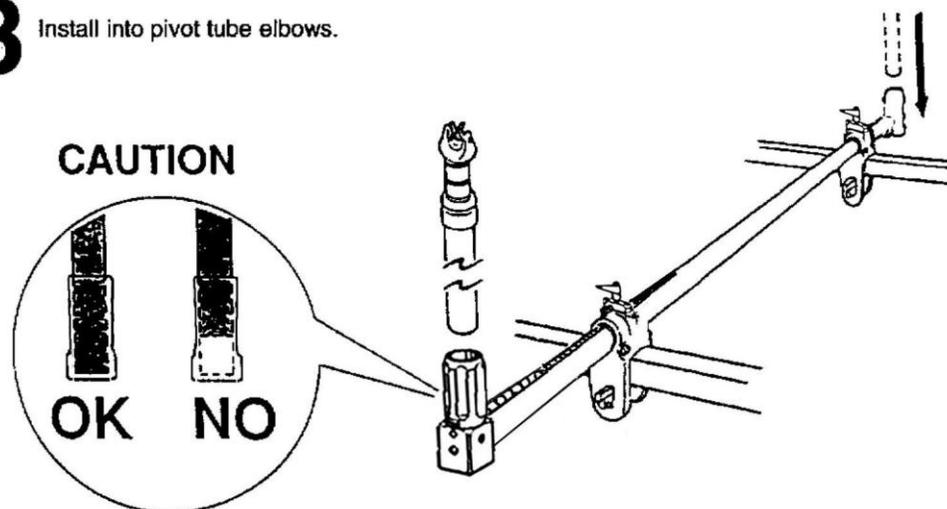


SET UP (CONTINUED)

- 12** Select a set of medium length side extension tubes.



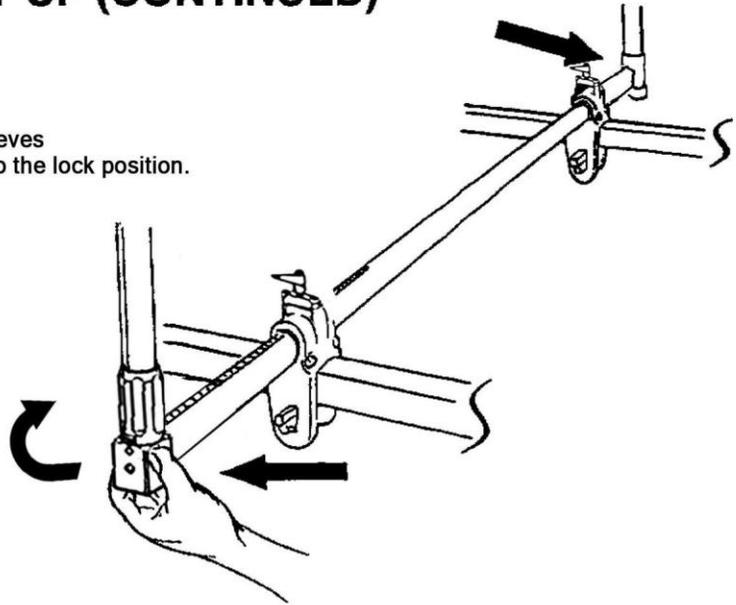
- 13** Install into pivot tube elbows.



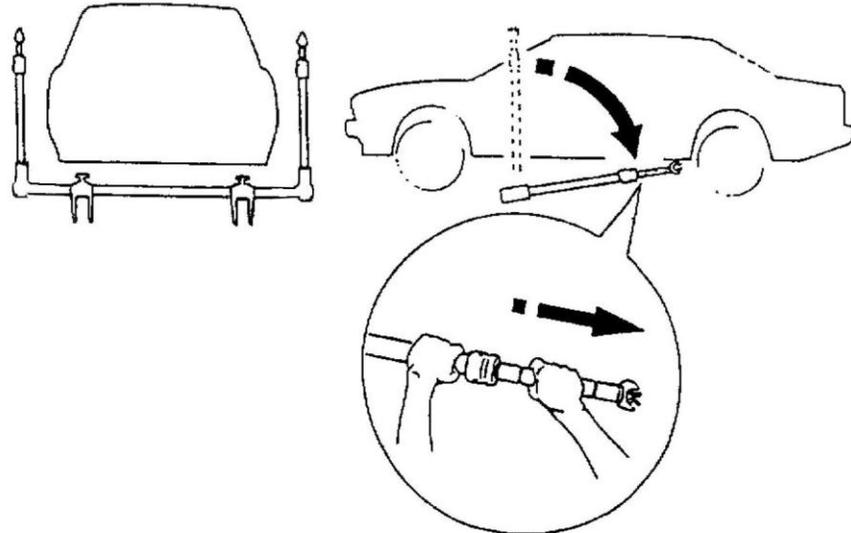


SET UP (CONTINUED)

- 14** Tighten **both** sleeves by turning them to the lock position.



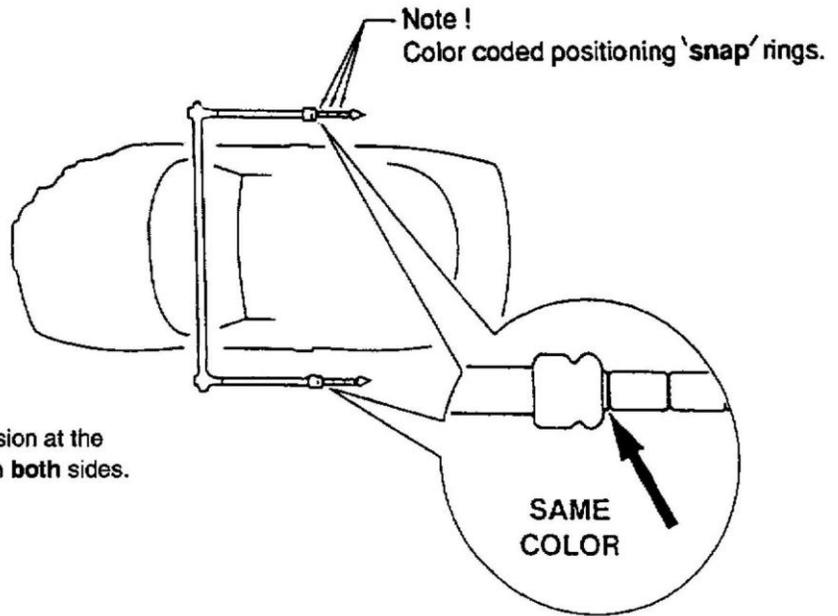
- 15** Pivot the side extension tube from vertical to horizontal as shown below.



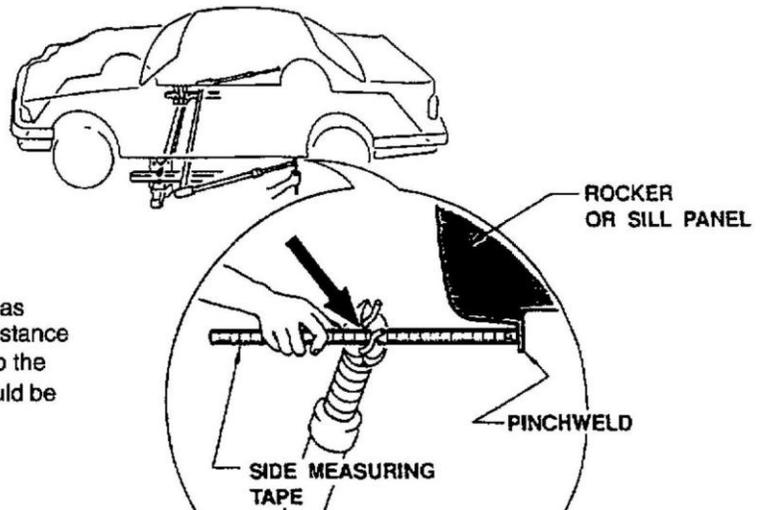


FINAL CALIBRATION, 'SQUARE' PIVOT TUBE

16 Set the extension at the same color on **both** sides.



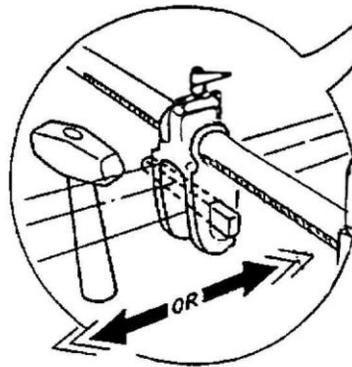
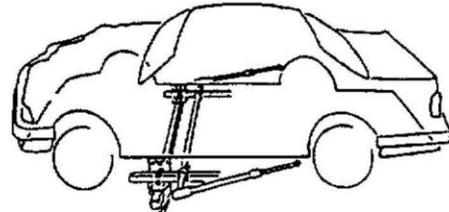
17 Measure **both** sides as shown below. This distance from the pinchweld to the extension tubes should be **equal** on both sides.



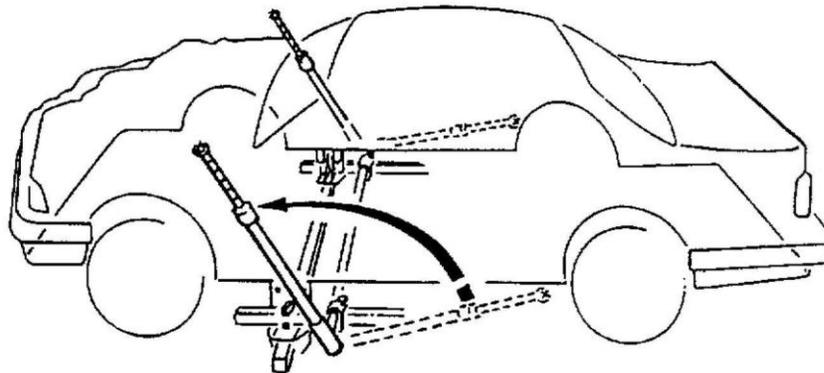


FINAL CALIBRATION, (CONTINUED)

- 18** If both sides are **not** equal loosen the wedge bracket on **one** side only as shown below. Move it forward or back until those dimensions (see step 17) are the same.



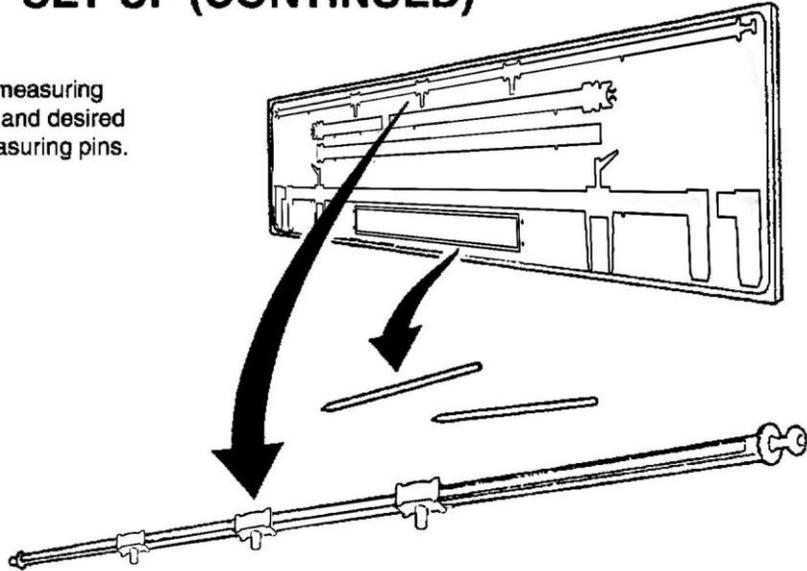
-
- 19** Swing the side tube to the desired area you wish to begin at.



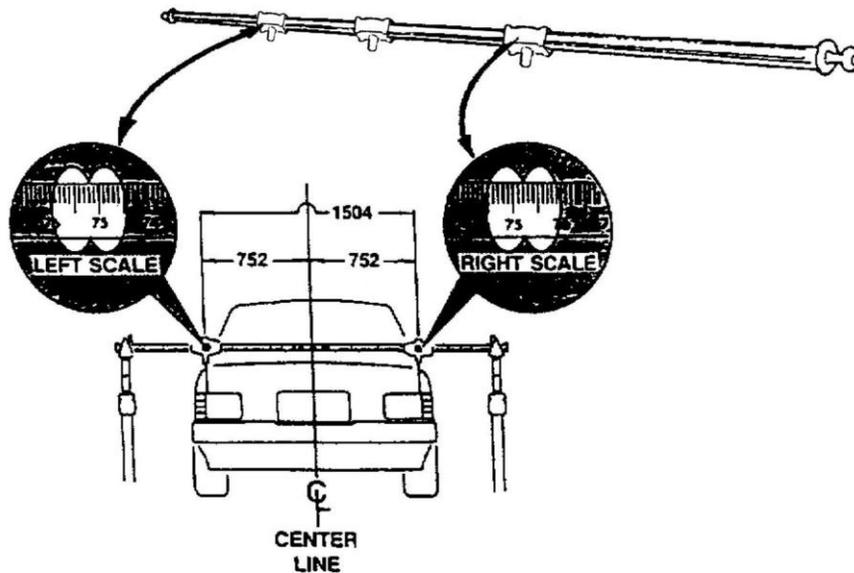


SET UP (CONTINUED)

- 20** Take the measuring cross bar and desired set of measuring pins.



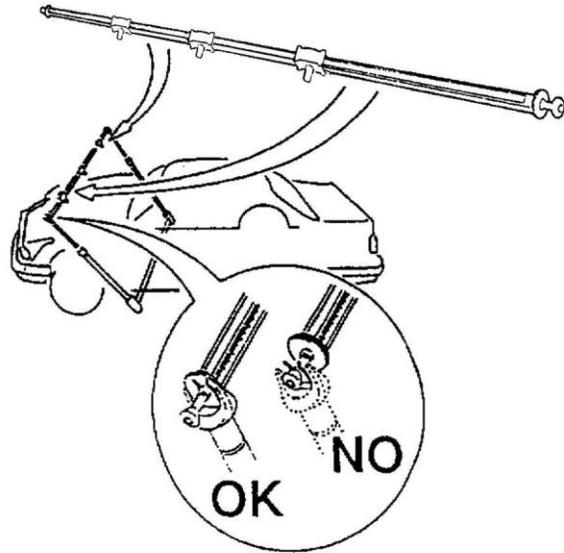
- 21** Notice how the metric scales read outward from the center **Left** and **Right**. Example below shows 752 millimeters.



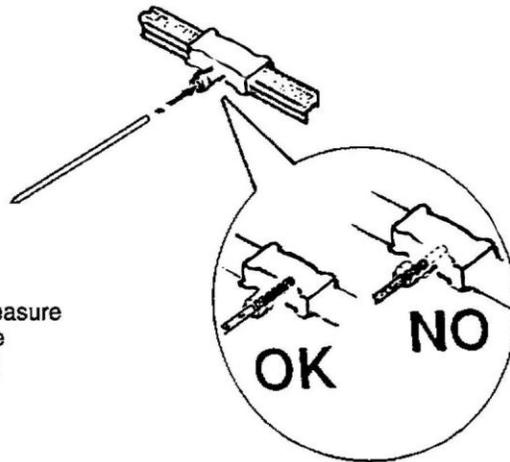


BASIC SET UP COMPLETED

- 22** Install the measuring cross bar.
Check that both ends are snapped in correctly.



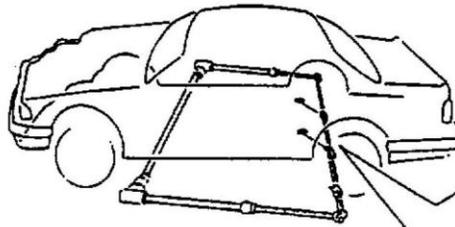
- 23** Insert the pointer pins so that they are "bottomed out" correctly.



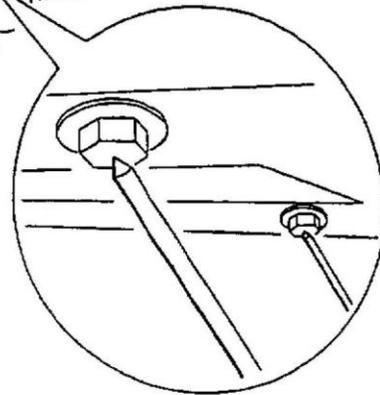
Now you are ready to begin to check and measure the vehicle. It will take a little extra time in the beginning to become familiar with the almost unlimited uses for the system.



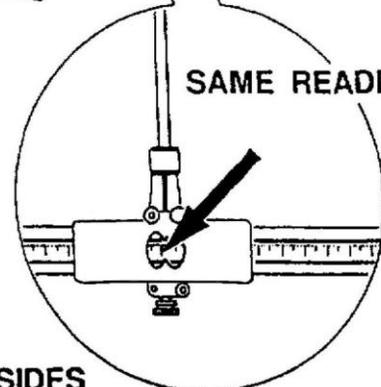
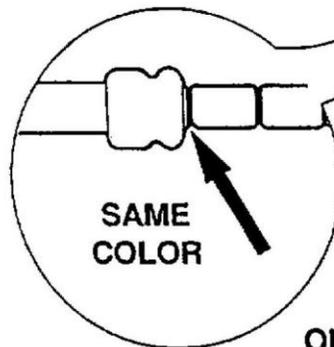
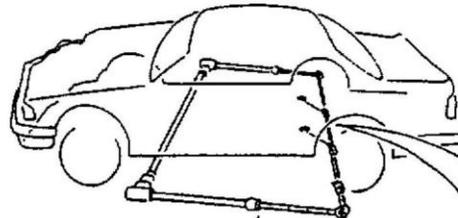
OPTION: CALIBRATE SQUARE TO CONTROL POINTS



- 1** Select two symmetrical control points, such as rear suspension parts. This step can also be done to the pinchweld and readily show twist in the body.



- 2** Be sure that the left and right extension settings are the same and that the left and right width readings are the same. Follow step 18 on Page 14 if adjustment is needed.

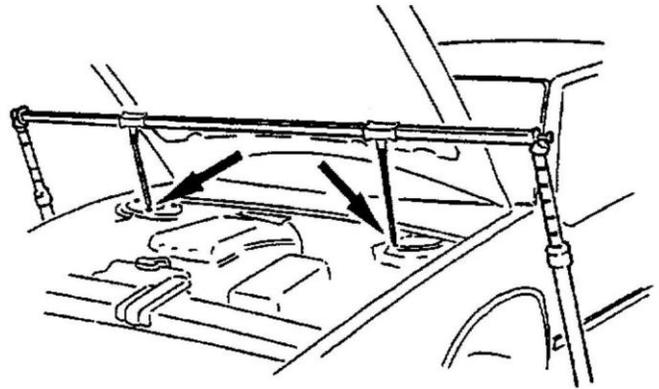


ON BOTH SIDES

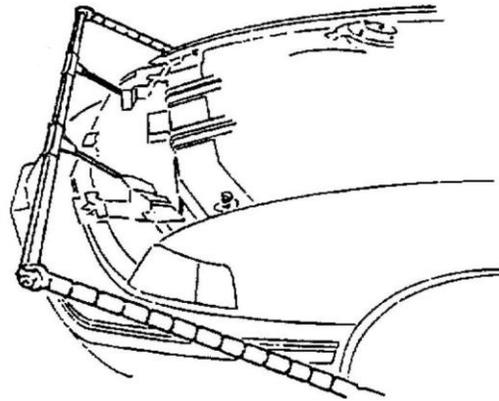


MEASURING EXAMPLES

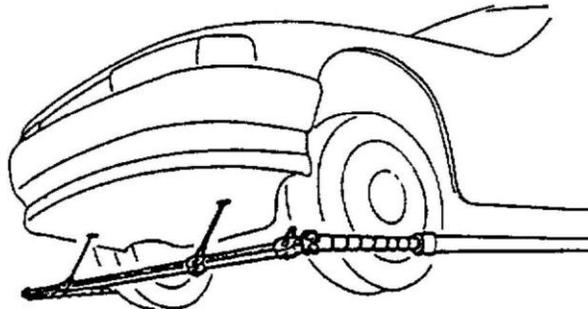
Measuring strut towers.
Remember that the measuring pins are three dimensional showing exactly the same point left and right from centerline.



Measure headlight mounting points.



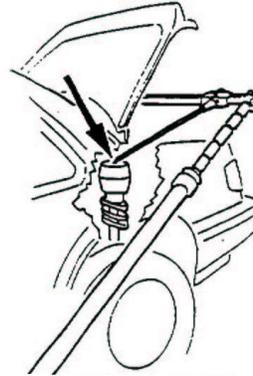
Measure front rails, cross members, and core support.
Choose symmetrical points.



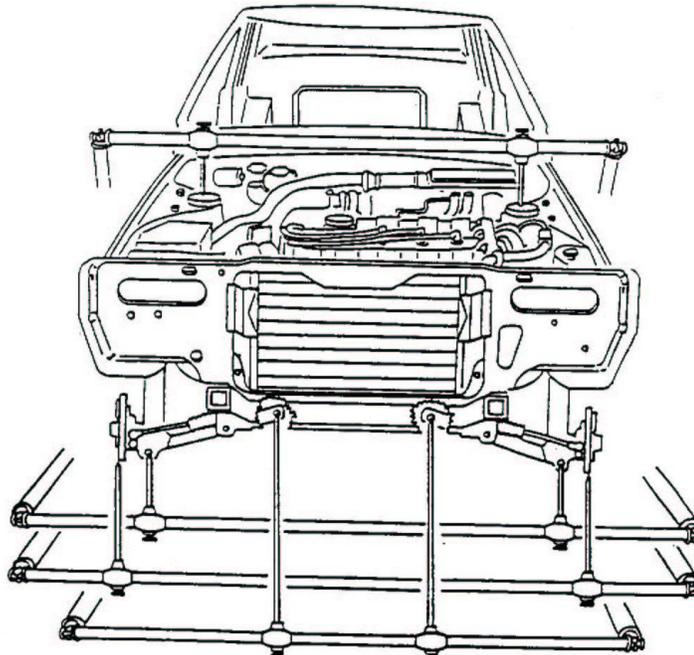


MEASURING EXAMPLES (cont'd)

Measure rear strut locations by reaching in through the trunk opening with long pointer pins.



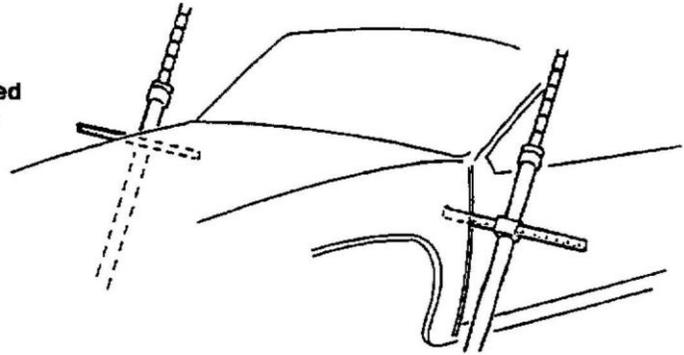
Measure different suspension points for any misalignment, even the rack and pinion.



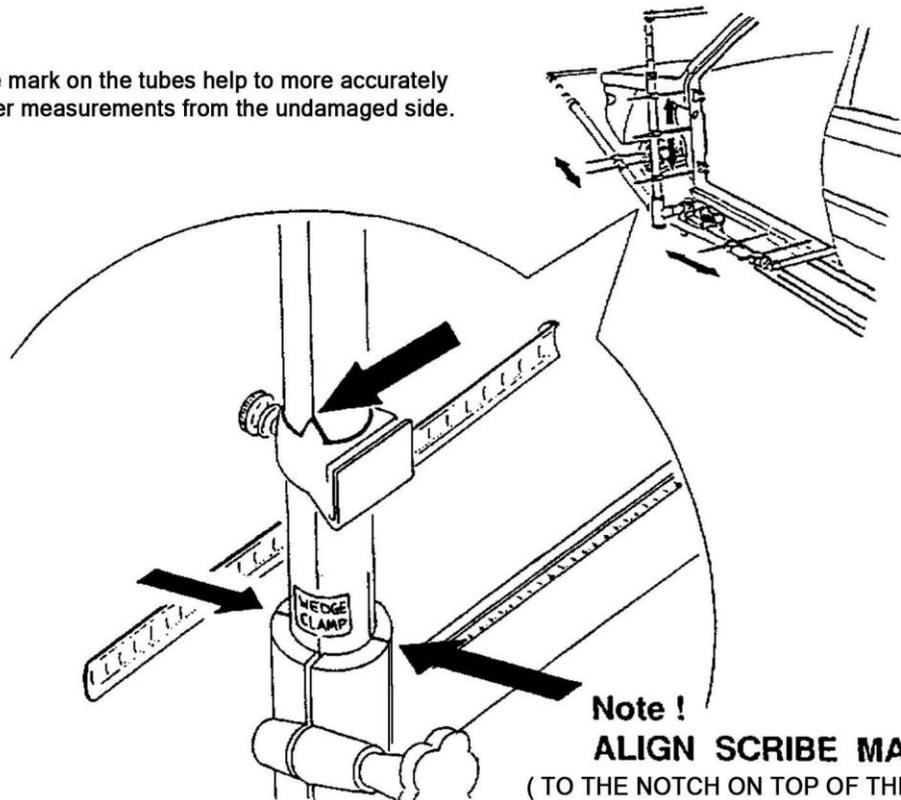


MEASURING EXAMPLES (CONTINUED)

Take measurements from the **undamaged** side and use them on the damaged side to have exact targets to pull to. The side tapes can fit through the door gap on the undamaged side to reach the post and hinge locations.



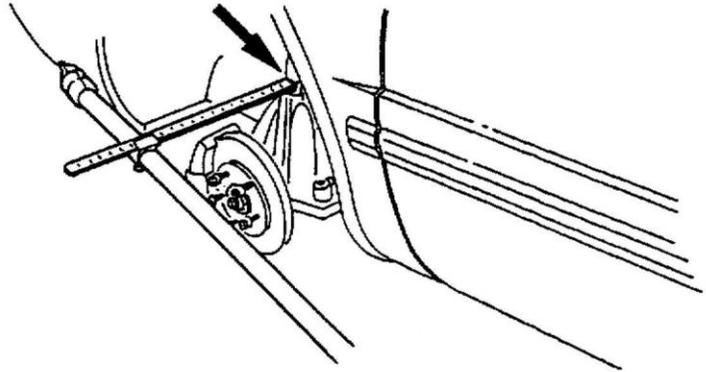
Scribe mark on the tubes help to more accurately transfer measurements from the undamaged side.



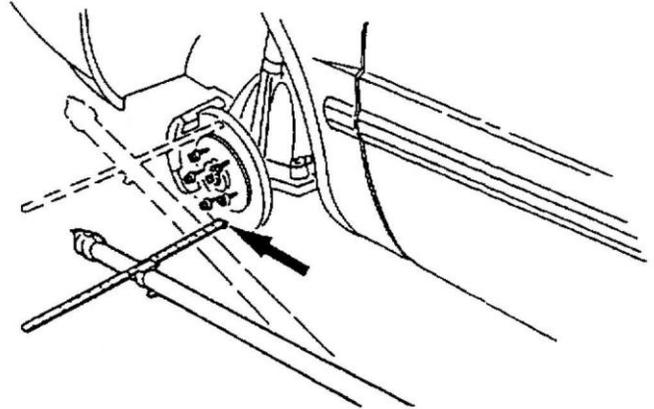


MEASURING EXAMPLES (CONTINUED)

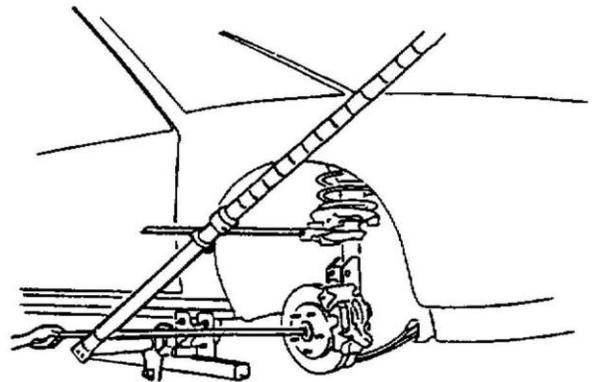
Compare strut base on both sides.



Compare camber on both sides.



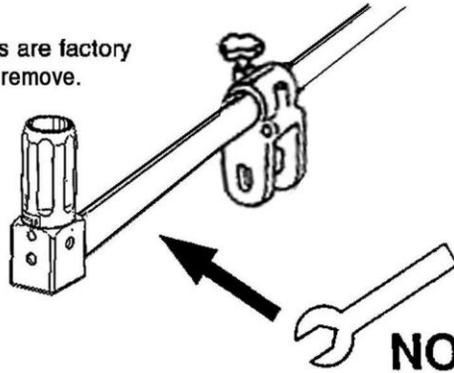
Compare spindle to steering arm relationship.



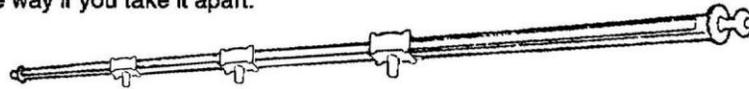


IMPORTANT INFORMATION

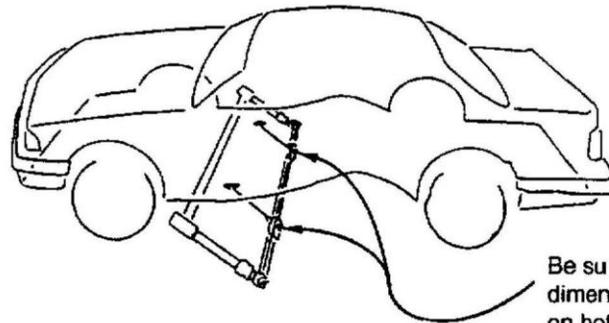
These pivot tube elbows are factory calibrated. Do not try to remove.



Measuring pin slides are factory calibrated and machined. Put it back the **same** way if you take it apart.



If the pinchwelds are damaged always check CENTERING and SQUARENESS to symmetrical control points. Use the short side extension tubes.

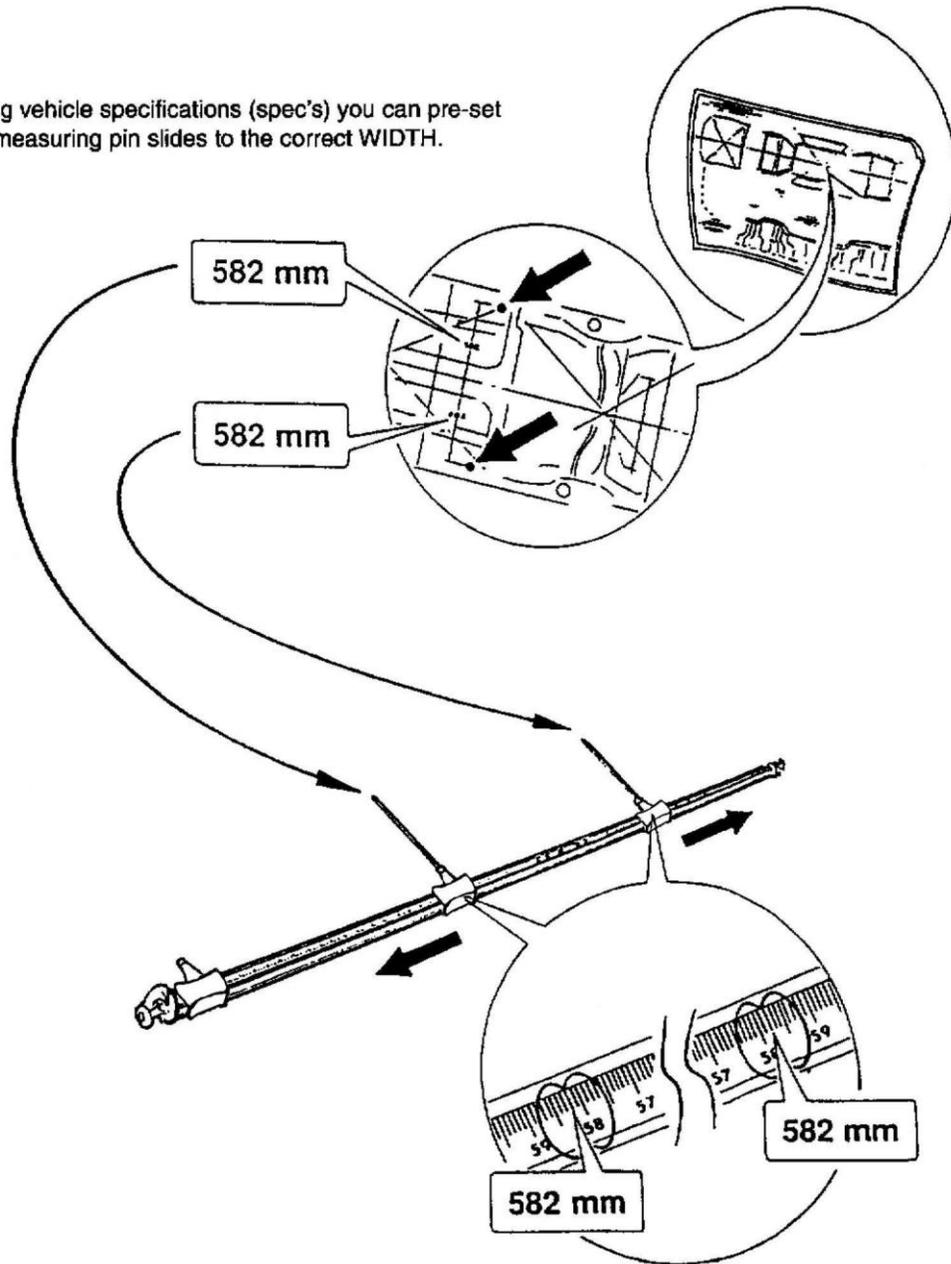


Be sure that the **WIDTH** dimensions are the same on both sides.



USING WIDTH DIMENSIONS

Using vehicle specifications (spec's) you can pre-set the measuring pin slides to the correct WIDTH.

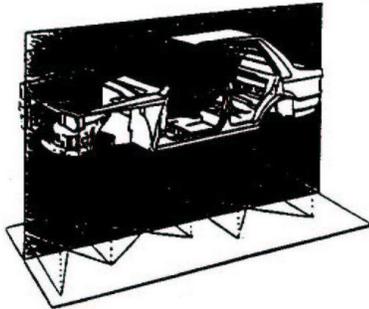




USING VEHICLE SPEC'S (THREE DIMENSIONAL)

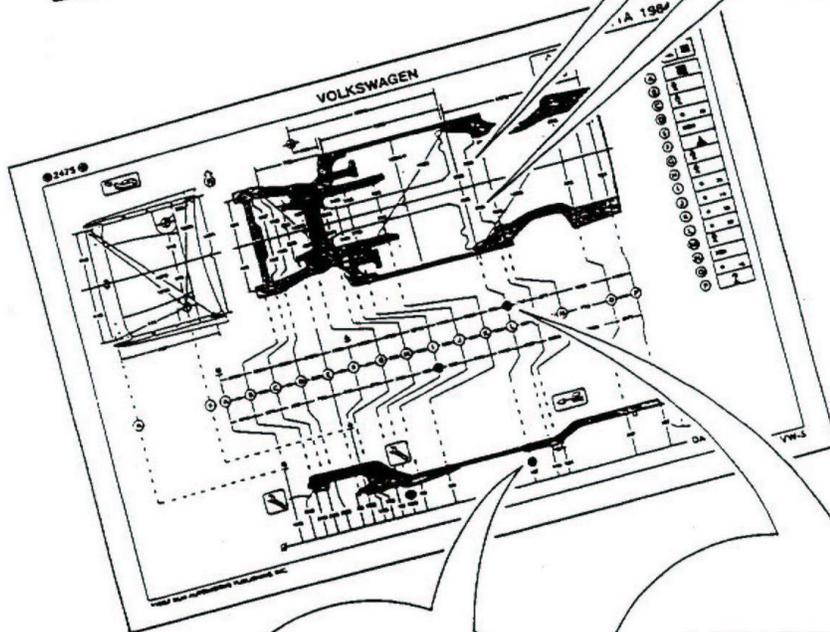
"3D" DIMENSIONS

Example



WIDTH

From centerline
(center plane)
Example 582 mm



HEIGHT

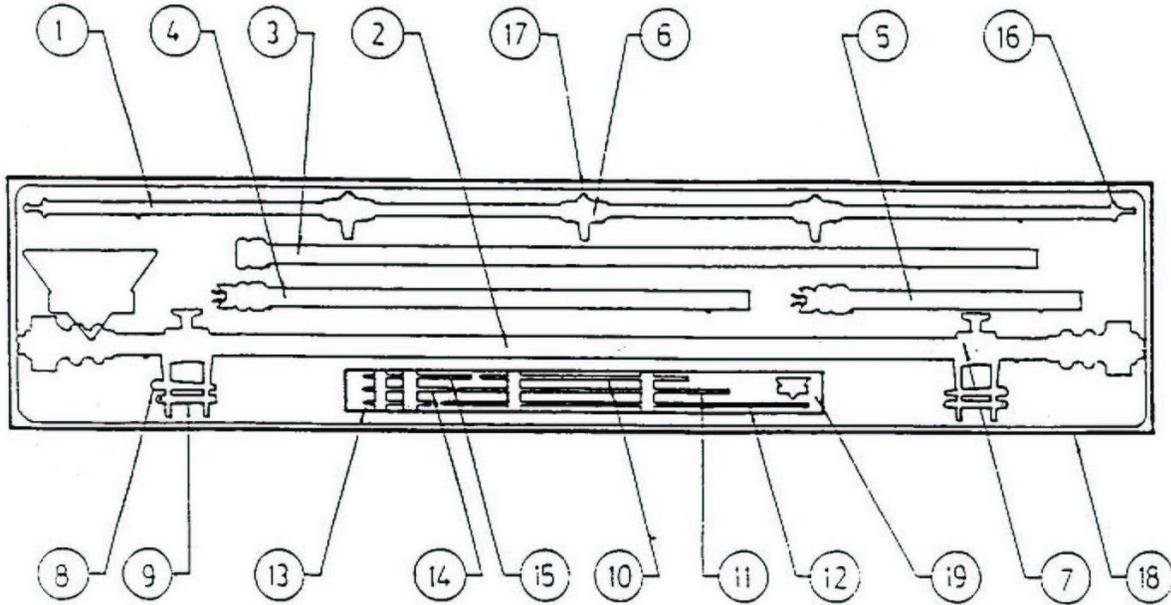
From baseline
(datum plane)
Example 137 mm

LENGTH

From "ZERO"
starting control
point.



REPLACEMENT PARTS LIST



PART NO	DESCRIPTION
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1.	15308	Measuring Crossbar Assembly
2.	19050	Pivot Tube Assembly (19150 - Extended)
3.	15306	Long Side Tube (outer)
4.	11026	Medium Side Tube (inner)
	11027	Medium Side Tube (outer)
5.	15323	Short Side Tube (outer)
	15324	Short Side Tube (inner)
6.	11015	Pin Slide Assembly
7.	11019	Wedge Bracket Assembly
8.	11031	Aluminum Wedge
9.	11032	Plastic Pin
10.	15321	(355mm) 14" Measuring Pin
11.	15322	(546mm) 21 ½" Measuring Pin
12.	11028	(685mm) 27" Measuring Pin
13.	11030	(140mm) 5 ½" Measuring Pin
14.	15320	(203mm) 8" Measuring Pin
15.	11029	(279mm) 11" Measuring Pin
16.	11056	"O" Ring
17.	16031	Plastic Thumb Screw
18.	19001	Tool Board
19.	15311	Pin Holder Board