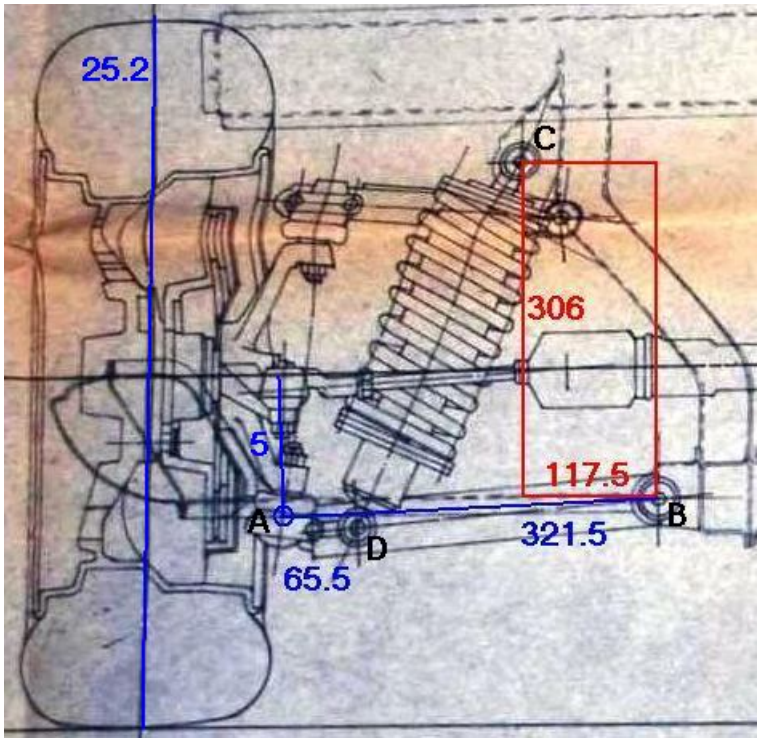
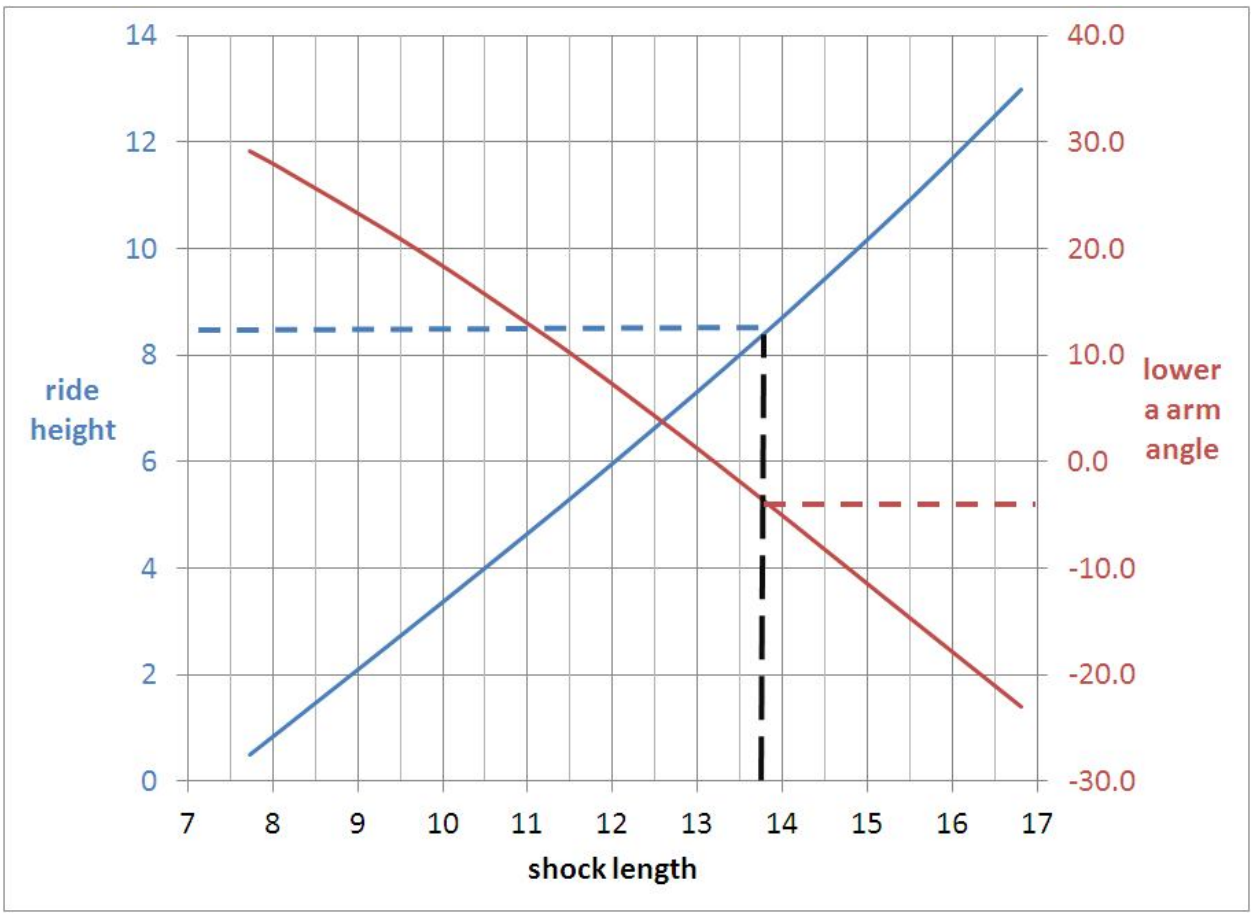
Front Shock length calculation



Point A - the lower arm connects to the spindle will be the fixed reference. The height of A is set by the tire radius and the fixed dimension from the tire center down to A. That distance is assumed to be 5".
The OEM tire diameter is 25.2"
Point B - the lower arm connects to the body is the car's ride height. Using the difference between B and A with the length of the lower arm, the angle of the lower arm is calculated.
Point C - the shock connects to the body. Its position is calculated from B and the fixed distance of 117.5/306 set by the body.
Point D - the shock connects to the lower arm. Its position can be calculated using the angle of the lower arm.
The shock length is calculated from the D to C positions.
The excel spread sheet

tire	A	B	Angle	B X	B Y	C X	C Y	D X	D Y	L
25.2	A15 /2-5	13 - 7.6 - 0.5	DEGREES(ATAN((B15-C15)/12.7))	B15-12.7*(SIN((B15-C15)/12.7))	12.7*(COS((B15-C15)/12.7))	E15+12	F15-4.6	B15-2.6*(SIN((B15-C15)/12.7))	2.6*(COS((B15-C15)/12.7))	SQRT((G15-I15)^2+(H15-J15)^2)



The factory normal ride height was a shock length between 13.5 to 14.0". The ride height on this chart is measured from the lower arm to body bolt (point B)

Factory shock minimum length was 11.6" with a maximum length of 17"