

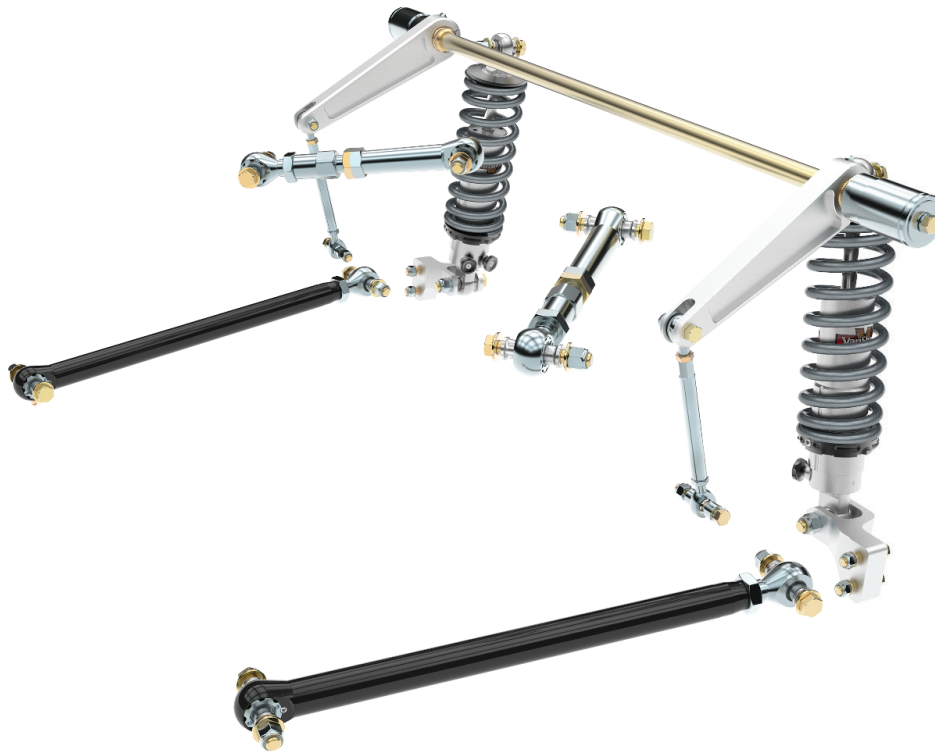
READ ALL INSTRUCTIONS COMPLETELY AND THOROUGHLY UNDERSTAND THEM BEFORE DOING ANYTHING.
CALL CHASSISWORKS TECH SUPPORT (916) 388-0288 IF YOU NEED ASSISTANCE.

INSTALLATION GUIDE



5852-U01

Canted 4-Link Suspension for Custom-Fit Frame



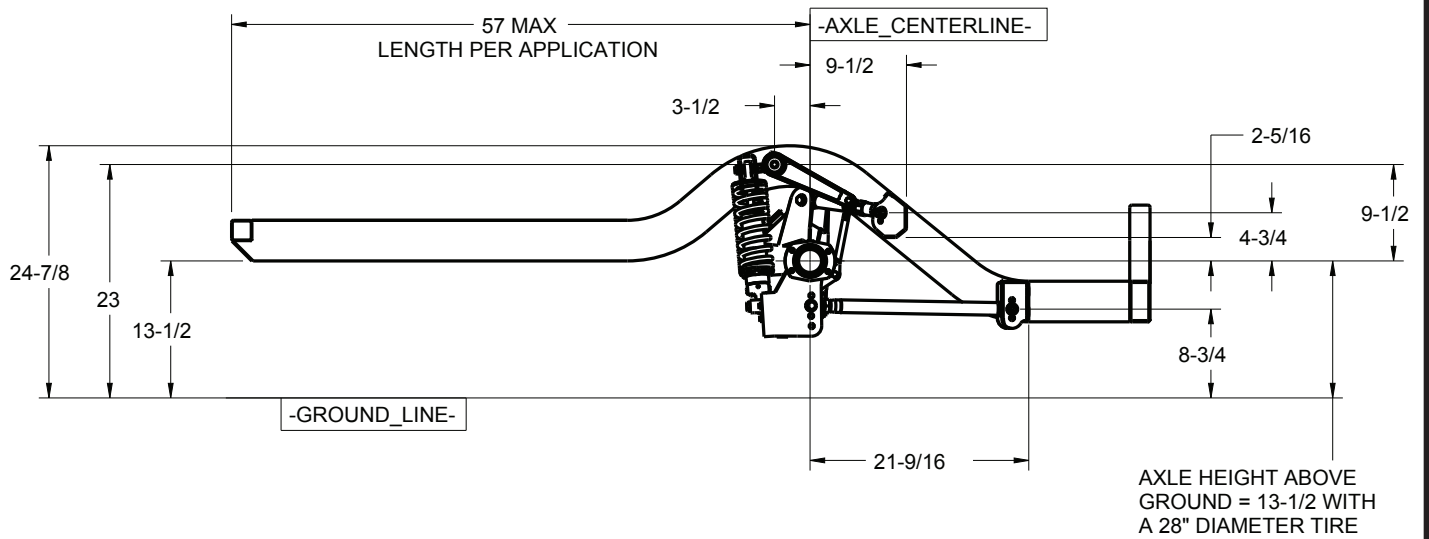
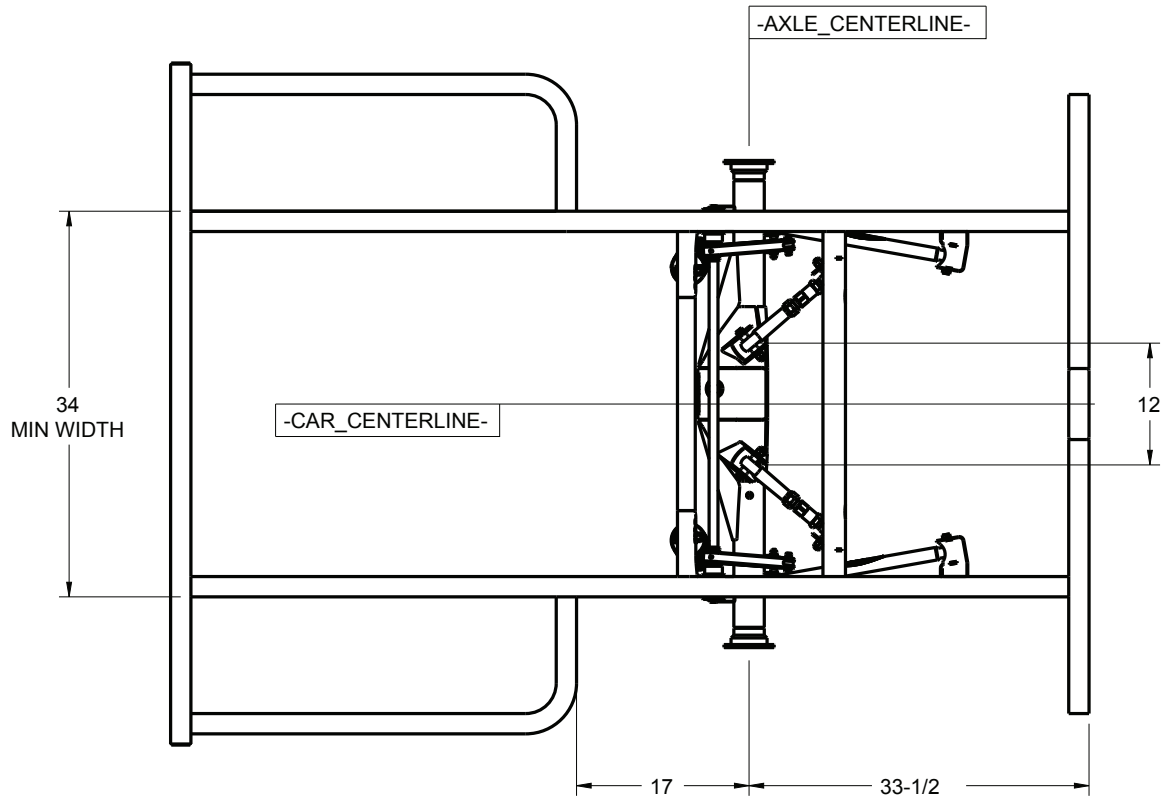
Description: Canted 4-Link suspension for custom installation.

Includes: Upper and lower control arms, anti-roll bar, lower shock mounts, shocks and springs.

Options: Control arm style, coil-over or air-spring shocks, shock valving, control arm mounts.

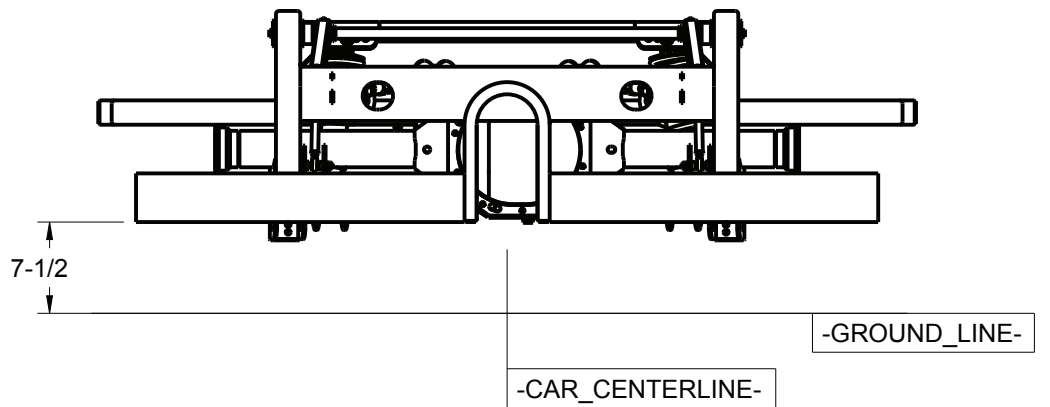
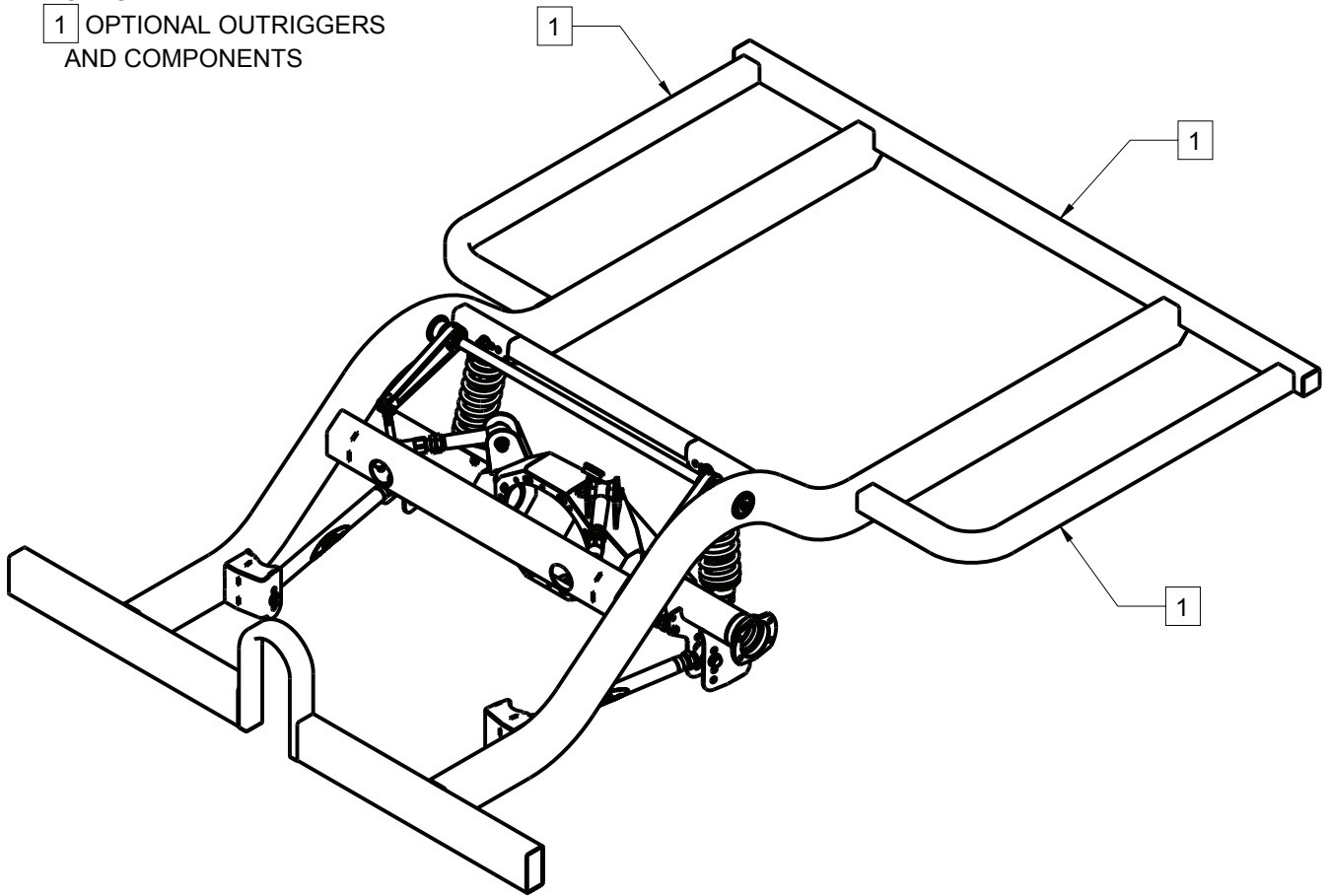
Notes: Not for use with 10- or 12-bolt Chevy housings. Requires FAB9 rear end housing (84U01-N01 or 84U01-N11), or Ford 9" housing (requires welding brackets) for operation.

- SPECIAL ORDER PART NOT RETURNABLE FOR ANY REASON -



NOTES:

1 OPTIONAL OUTRIGGERS
AND COMPONENTS



PARTS LIST

Prior to installation use the following parts lists to verify that you have received all components.

5852-U01 - Canted 4-Link Suspension

1	300-0106	Billet-aluminum lower shock mount set
1	300-2010	Ball-end anti-roll bar components
1	300-2011-0.875	Ball-end anti-roll bar tube, 7/8" diameter

Control Arm - OPTION *(You will receive one combination of upper and lower arms listed.)*

1	300-2039	Tubular steel lower control arm set
1	300-2040	Billet-steel upper control arm set, single adjustable
1	300-2041	Billet-steel upper control arm set, double adjustable
1	300-2002	Billet-aluminum lower control arm set
1	300-2003	Billet-aluminum upper control arm set (without pivot-ball end)
1	300-2005	Pivot-ball eye bolt set for billet-aluminum upper control arms

Axle Brackets - OPTION *(Brackets may come preinstalled on FAB9 rear end housing.)*

1	300-2006	Upper and lower axle bracket set
1	6715	Weld fixture for upper axle brackets

WITHOUT FAB9 - If your suspension system was ordered without a factory-welded FAB9 housing, the lower control arm axle brackets and fixture will be selected options. If ordered with FAB9 housing brackets will come factory welded to housing.

Chassis Brackets - OPTION *(Brackets may come preinstalled on rear frame clip.)*

1	300-2007	Upper arm crossmember and lower arm chassis bracket set
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Shock Absorber Components *NOTE: You will receive only one of the options listed below.*

1	VAS 11011-515	Coil-over shocks, 5" travel, bearing eyes, factory-valved (SS)
1	VAS 11111-515	Coil-over shocks, 5" travel, bearing eyes, single-adjustable (Q1)
1	VAS 11211-515	Coil-over shocks, 5" travel, bearing eyes, double-adjustable (Q2)
1	VAS 11411-50	Coil-over shocks, 5" travel, bearing eyes, 4-way remote reservoir (Q4R)
1	VAS 131K1-515	Air-spring shocks, 5" travel, COM-8 eyes, single-adjustable (Q1)
1	VAS 132K1-515	Air-spring shocks, 5" travel, COM-8 eyes, double-adjustable (Q2)

Components for Coil-Over Shocks

1	VAS 508-105	Spacer set for bearing mount shocks
1	VAS 517-RD-A41	Dual silo mount for remote shock reservoirs
1	VAS 21-12175	Coil springs, 12" length, 175 lb/in rate
1	VAS 21-12200	Coil springs, 12" length, 200 lb/in rate
1	VAS 21-12250	Coil springs, 12" length, 250 lb/in rate
1	VAS 21-10200	Coil springs, 10" length, 200 lb/in rate (for Q4R shocks only)

INSTALLATION

If you are using our #6241 4-bar with our #7154 frame kit, skip to number 5 below. When installing the #6241 4-bar into your existing frame start with number 1.

1. To position the lower front 4-bar mount, measure from the rear axle centerline forward 21-9/16" this is the location of the front side of the lower front mount. The center holes in the front mount should be 8-7/8" off the ground at ride height (refer to the drawing for more details).
2. The upper 4-bar link front crossmember is pre-welded and needs to be trimmed to length. Be sure to trim equal amounts off each end so the link mount positions remain centered in the frame. There are laser etched lines every 1/2" to assist in cutting. The front side of the upper link cross-member is 9-1/2" forward of the axle centerline and the upper hole link mount is 18-7/16" off the ground (refer to the drawing for more details). Align the top of the crossmember with the top of the frame rail. The front face of the crossmember should just cover the small 1/8" alignment hole in the frame rail.
3. In most cases, you will use a crossmember with a driveline loop 6" forward of the front lower bracket. This can be made out of 2x4" tubing and two of our 1x2" driveshaft loops (#6040). The driveshaft loop in the crossmember will usually be offset from the center of the car to the passenger side about 1/2". This is because most cars have an offset pinion. Measure your stock rear end to determine the amount of offset. After you have determined the crossmember offset, you can build the driveshaft crossmember. Cut the straight legs off both 1x2" driveshaft loops so each one is 5-1/2" tall. Weld the loops together to form an oval. This will create a driveshaft oval loop that is 9" tall inside with a 7" outside width. Fit one end of each 2x4" tube to the driveshaft oval so the bottom of the oval is 1-1/2" below the 2x4" tube. Cut the 2x4" driveshaft loop crossmember to length so it fits between the rocker panels (or stock frame in a full frame car). If your inner rocker panel is not straight, you will have to contour the crossmember. Make sure you have a good fit to the rocker panel or it will be difficult to weld.
4. Also, our exhaust ports (part #1070) can be added. Position the exhaust ports in the crossmember about 2 inches inside of the frame. Make sure your exhaust will fit before you install them. A 4-1/2 inch hole saw works best to cut the holes. The center of the holes should be 2-1/4 inches down from the top of the crossmember.
5. Level your chassis front to rear and right to left.
6. Use jack stands to position your rear axle housing at the correct height and rearward location according to your assembly drawing. Make sure the pinion is at the correct location before starting to install the rear 4-bar brackets. Set the face of the housing 1-1/2 degrees down at the front, this is your installed pinion angle. All of the suspension brackets will be welded on before installing the housing ends on the axle tubes. It is important that the housing is the correct length before installing the axle brackets. The housing ends should be centered on the frame rails.
7. Use the lower billet control arms to position the lower axle mounts. Mount the lower control arms to the driver side front frame brackets with the bolts supplied. Slide the driver side lower axle bracket (#230169) over the control arms and attach with the bolts supplied. The rear of the bracket will be parallel to the housing face and the inside edge of the bracket is 2-5/16" in from the outside of the frame rail. Tack the bracket in place. Repeat this for the passenger side.
8. Next, use the upper link assemblies to locate the upper axle housing brackets. Slide adjustable end of the link assemblies into the upper front mount and secure with the bolts supplied. Slide the driver side outside upper rear mount over the link assembly and secure with the bolts supplied. The upper axle brackets are made long, so you can fit them to the housing. For cutting reference, use the etched lines on the bracket. First fit the outside bracket and then the inside one to match. Refer to the charts on page 5 for details on trimming the 2195 upper link mount brackets. It is always best to cut the bracket long and final grind for proper fit.
9. Refer to the drawing dimensions for the center of the pivot ball assemblies. From the chassis centerline, the center of the pivot ball assemblies are 6" to the driver and passenger side and 6" above and 3/32" behind the axle tube centerline. Once they are in the correct locations, tack them in place. Chassisworks sells a fixture (part no. 6715) to correctly locate the upper control arm brackets to a Ford 9" or Fab 9™ housing.

10. Check all brackets for square ness and to be sure there is no binding in pivot-ball assemblies or jam nuts. Also, check the rear-end housing to make sure it is in the correct location.

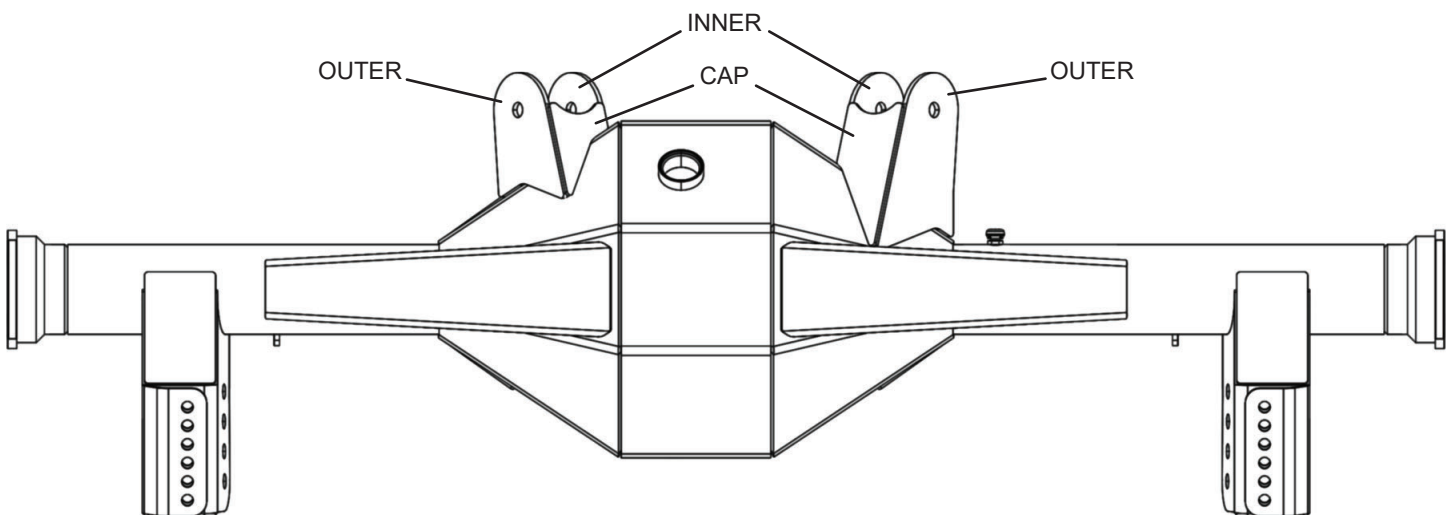
Use the following method to verify your housing location:

Set the axle centerline 22-1/2" behind the 4-bar front mount bracket. Drop a plumb bob from the center of the frame in the front and the rear of the chassis. Mark the garage floor where the plumb bob point touches the floor. Place a string centerline under the car between the points. A 20' piece of string tied to two bricks will work fine. This string will represent the center of the chassis. Next, attach a plumb bob to the center of each axle tube. To adjust the rear-end to be centered in the chassis, lengthen or shorten the upper control arms until each plumb bob is an equal distance from the string centerline. Next, adjust the rear end to be exactly 90° to the string centerline. Measure forward from the rear axle 6 feet and draw an "X" on the floor where 6 feet and the centerline meet. This is just to establish an arbitrary reference for the next step. Now, measure from the plumb bobs attached to each axle tube up to the "X" on the floor. These measurements should be within 1/8" side to side. If everything checks out, remove the links.

11. Once the axle housing is in its correct location, you can put additional tack welds on the bracket before removing it for final welding.
12. We suggest you make four spacers 2.140" long out of a piece of tubing with a 1/2" center hole. These will be used to space the 4-bar axle brackets during the welding process. Install these spacers in the brackets and then weld the axle brackets in place. Note the upper brackets will need the cap (part no. 2192) welded to the rear side of each bracket. Refer to the chart on page 5 for details on trimming the 2192 cap rear upper link mount brackets. It is always best to cut the bracket long and final grind for proper fit.
13. The billet adjustable lower shock mount plates weld along the inside edge of the lower link axle mount. These should be installed parallel to the housing face. Place gusset (part no. 2193) along the inside edge of the billet mount and under the axle tube.
14. Use the dimensions on the drawing to install the upper shock mount (not provided).

FAB9 Upper Arm Axle Housing Bracket Cut Lines - 2195 (Qty 4), 2192 (Qty 2)

PINION OFFSET TO PASSENGER SIDE	DRIVER SIDE BRACKETS			PASSENGER SIDE BRACKETS		
	OUTER	CAP	INNER	INNER	CAP	OUTER
0 inches	5	5	10	6	1	1
1/2 inch	4	4	9	7	2	2
1 inch	3	3	8	8	3	3



ADJUSTMENTS

Adjusting your 4-Bar is not difficult but, it must be done carefully. You must adjust for two separate things, instant center location in the chassis and preload. I will explain each one in detail.

ADJUSTING THE PINION ANGLE: Remove the rear tires and place jack stands under the axle housing to hold it at the correct ride height and level right to left. At this point the pinion angle should be set to 1° to 2° negative and the rear-end should be in the correct location for the wheel base.

ADJUSTING PRELOAD: The best method to adjust preload is to adjust your chassis for no preload then add preload if necessary. This can only be determined by test launching the car for 60 to 100 foot passes. With no preload in the chassis, it should be very easy to twist the top right (passenger side) link bar. With the jam nut loose you should be able to feel it rotate in the threads and a 1/2 turn in either direction should make the link bar tighter. (NOTE: Raising or lowering an adjustable coil spring seat will also preload the chassis. This is not the preferred method.) To determine if you need preload, test launch the car. If it does not initially drive straight off the line, you can add preload in the top right (passenger side) bar. If your car continually drives to the right, shorten the upper right link bar. If it continually drives to the left, lengthen the upper right link bar. If you need over 1-1/2 turns of preload, it's a good indicator that something else is wrong.

ADJUSTING INTERSECTION POINTS: This is one of the most misunderstood adjustments. The first thing to do is to map all possible intersection point locations.

Unfortunately, there is no way to tell exactly what intersect point your chassis will like without experimenting. There are no rules of thumb that apply because there are lots of things that affect the ideal intersect point. A brief list would include gear ratio, converter, ignition timing, cam shaft, tire size, track condition, shock absorbers, torque curve, vehicle weight, weight distribution, center of gravity, height, plus many more. Therefore, any attempt to over simplify the determination of the intersection point is not going to be valid. The racer must test to determine the correct intersection point. By providing you with some guide-lines to help you select locations, we hope to get you started in the right direction. The amount of time and energy you are willing to put into testing will definitely determine your success. To help you get going, we suggest you start with the bottom bar in the center hole front and rear. Set the upper bar in the top hole. To adjust from there you need to know that as the intersection gets shorter and higher, the chassis will tend to shock the tire slower. As the intersection gets longer and lower, the chassis will tend to shock the tire faster. You need to move slowly from the start point. Large changes will just get you lost. The object is to shock the tires as hard and as fast as possible without causing too much tire spin. The intersection point will have a considerable affect on your elapsed time through the first gear change on high horsepower cars. Therefore, you can get a lot of good testing in on only 100 feet or so. Remember that the intersection point adjustment is only part of the combination. You will have to also adjust other things to optimize your combination.

MAINTENANCE

Pivot-swivel-ball assemblies must be inspected frequently. The ends should be greased with multipurpose grease every 6 months. There is a grease zerk included in your kit. Remove the tension-ring set screw, insert the grease zerk, and apply the grease with a grease gun. You only need a very small amount. Remove the grease zerk and reinstall the set screw before use. **DO NOT LEAVE THE GREASE ZERK IN THE TENSION RING.**

WARRANTY NOTICE:

There are NO WARRANTIES, either expressed or implied. Neither the seller nor manufacturer will be liable for any loss, damage or injury, direct or indirect, arising from the use or inability to determine the appropriate use of any products. Before any attempt at installation, all drawings and/or instruction sheets should be completely reviewed to determine the suitability of the product for its intended use. In this connection, the user assumes all responsibility and risk. We reserve the right to change specification without notice. Further, Chris Alston's Chassisworks, Inc., makes **NO GUARANTEE** in reference to any specific class legality of any component. **ALL PRODUCTS ARE INTENDED FOR RACING AND OFF-ROAD USE AND MAY NOT BE LEGALLY USED ON THE HIGHWAY.** The products offered for sale are true race-car components and, in all cases, require some fabrication skill. **NO PRODUCT OR SERVICE IS DESIGNED OR INTENDED TO PREVENT INJURY OR DEATH.**

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