

Chassisworks FAB9 Custom Rear End Worksheet Instructions

This rear end worksheet is designed to collect the information we need to build your rear end housing and/or order your custom axles. To order the correct housing for your vehicle, use our measuring methods and accurately fill in all requested information. **No returns on custom housing or axles.**

Before measuring your vehicle, it needs to be positioned. Raise the car off the shop floor and level it front to rear and right to left at the rocker panels. Removing the stock rear end housing and suspension is not necessary but will make measuring easier. Use a carpenter's square to transfer the dimensions to the floor where it is easier to measure from point to point.

The following are EXAMPLES of how to fill in the top five rows.

SO#: Please leave this blank, we will fill in your sales order number.

DATE : Use today's date.

CUSTOMER: Your Name

CAR YEAR/MODEL: 1992 Camaro

HOUSING PART NUMBER: 8250 (see Chart "A" on page 4)

TIRE SIZE & MAKE: 14 X 32 X 15 Goodyear Slick

WHEEL SIZE & MAKE: 15 X 14 Weld Wheel

BACK SPACING: (refers to wheel back spacing) 4 1/2"

HOUSING END: Circle one (see Chart "B" on page 5)

DIFFERENTIAL: Strange spool

SPLINE: 35

STUD SIZE: Circle one

BOLT CIRCLE: Circle one

AXLE BEARING: Circle one (see Chart "C" on page 5)

BRAKE TYPE: Wilwood Disc Brakes

SHOCK MOUNT PART #: 6216 (see Chart "D" on page 5)

WHEELIE BAR BRACKET: Do you want wheelie bar brackets installed, circle YES or NO.

AXLE VENT: Do you want an axle vent installed, circle YES or NO.

BACK BRACE: Do you want a back brace installed, circle YES or NO.

The following are descriptions of the lettered blanks.

“A” Width of the car from inside quarter panel lip to inside quarter panel lip.

“B” Outside width of frame rails. NOTE: When using a Chassisworks Eliminator II chassis or rear frame kit this is the outside width of the 4-link brackets.

“C” Distance from wheel mounting surface to inside tire sidewall.

“D” Overall width of tire mounted on the wheel from sidewall to sidewall.

“E” Pinion offset is the relationship of the pinion centerline to the centerline of the chassis. Available offsets to the passenger side are 0, 1/2", 1".

“F” Axle flange offset is the distance from the housing end to the axle flange. Refer to Chart “B” on page 5.

“G” Tire clearance from inside sidewall to frame rail. Should be 1" to 1-1/2" for a race car, or 1-1/2" to 2" for a street car.

“H” Wheel well width from frame rail to inner quarter panel lip.

“I” Tire clearance from outside sidewall to quarter panel. Should be 1" to 1-1/2" for a race car, or 1-1/2" to 2" for a street car. Additional clearance may be required to remove the tires. Also, check the clearance at the top of the quarter panel and rear window.

“J” This is the thickness of the disc brake hat or brake drum. Most steel brake drums are 1/8" thick. Most aftermarket disc brake hats are 1/4" thick. Wilwood Early Big Ford hats are 1/2" thick.

“K” Rear end width from axle flange to axle flange without disc brake hat or brake drum installed.

“L” Rear end width from housing end to housing end. **Available in 1/4 inch increments from 23" to 62"**.

“M” Width of the housing end can be found in Chart “B” on page 5. Chassisworks race style housing ends without factory seal (Part nos. 8002, 8003, 8005, 8007, 8008) are 1" thick. Part no. 8004 and Strange floater spindle are 1-1/8" thick. All ends with factory seal provision (Part nos. 8000, 8001, 8006) are 2" thick. Any other housing ends will need to be measured.

“N” Length of passenger side axle tube from pinion centerline to end of tube, not including the housing end.

“O” Length of driver side axle tube from pinion centerline to end of tube, not including the housing end.

“P” Outside width of suspension brackets. For Chassisworks rear frame kits this will be the same as the “B” dimension. All other frames will need to be measured. **Bracket widths are only available in 1/2 inch increments from 17" to 42"**.

For Chassisworks billet canted 4-bar frame kits #7154, the “P” dimension will be the outside width of the lower control arm brackets. This will always be the “B” dimension plus 1" for this frame.

“T” Outside width of the lower shock mount brackets. For Chassisworks 2x3” or 1-5/8” rear frames and chassis kits this will be the “P” dimension minus 8-1/4”. For Eliminator II 4-link suspensions this dimension is not necessary because the shock mount is part of the 4-link bracket. For Chassisworks billet canted 4-bar frame kit, the “T” dimension will be the inside width measured to the inner edge of the shock brackets. This will always be “B” dimension minus 10”.

“U” Diameter of the axle pilot for your brake drum or disc brake rotor hat.

Note: For housings with leaf spring mounting pads installed the two dimensions below “V” and “W”) will be needed.

“V” Center to center dimension of the leaf spring mounting pads.

“W” Angle formed by the housing face and the bottom of the leaf spring mounting pad. Looking at the housing from drivers side, an angle of less than 90 degrees indicates the front of the leaf spring pad is down. An angle greater than 90 degrees indicates the front of the leaf spring pad is up. Leaf spring mounting pad is welded below the axle tube.

CALCULATE THE REMAINING INFORMATION USING THESE FORMULAS.

Symbol Key: + plus - minus x multiply ÷ divide

After measuring the body for the “A” dimension, measure the tire for “C” and “D” dimensions. Decide how much tire clearance you need and enter “G” and “I” dimensions.

1. Determine the “B” dimension by using this formula: $A - (2 \times (D + G + I)) = B$

2. Calculate for “H” using the formula: $(A - B) \div 2 = H$.

To double check the above, $H - D$ should equal $G + I$. If all of these are correct, continue on. If not, go back and check all the above before going any further.

3. Calculate the axle flange to flange “K” dimension using this formula: $(2 \times C) + (2 \times G) + B - (2 \times J) = K$

4. Calculate “L” using the formula: $K - (2 \times F) = L$.

Once you have determined the “L” dimension it must be rounded up or down to the nearest 1/4 inch. This slight change in the overall rear end width is less than the decreased clearance caused by the tire side wall run out, this change will not cause a problem.

5. The “F” dimension is determined by the type of housing ends used. Chart “B” shows some of the more common housing end dimensions. If you are using something other than the ones listed, you will need to measure for “F” using your stock rear end with the axle installed.

6. Calculate “N” using the formula: $(L \div 2) - E - M = N$

7. Calculate “O” using the formula: $(L \div 2) + E - M = O$ If the pinion is centered, “N” and “O” will be equal.

Your rear end worksheet should now be complete. Sign it and fax it to us at (916) 388-0295 or mail it to Chassisworks at 8661 Younger Creek Drive, Sacramento, CA 95828.

If you have any additional questions, contact Chassisworks’ Technical Department at (916) 388-0288.

Chris Alston’s Chassisworks, Inc.
8661 Younger Creek Drive
Sacramento, CA 95828

Technical Assistance: 916-388-0288
Ordering: 800-722-2269
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e-mail: sales@cachassisworks.com

Housing Part Number Chart

Chart "A"

Part #	Description
8250	Fab9 Assembly no brackets, mild steel construction, 3" tubes
8251	Fab9 Assembly no brackets, 4130 steel construction, 3" tubes
8252	Fab9 Assembly standard 4-link for spherical rod ends, 7/8" inside width with 3/4" holes, mild steel construction, 3" tubes
8253	Fab9 Assembly standard 4-link for spherical rod ends, 7/8" inside with 3/4" holes, 4130 steel construction, 3" tubes and 4130 brackets
8254	Fab9 Assembly standard 4-link for spherical rod ends, 7/8" inside with 3/4" holes, 4130 steel construction, 3-1/4" tubes and 4130 brackets
8255	Fab9 Assembly pro street 4-link for urethane rod ends, 1-5/8" inside width with 1/2" holes, mild steel construction, 3" tubes
8256	Fab9 Assembly pro street 4-link for urethane rod ends, 1-5/8" inside width with 1/2" holes, 4130 steel construction, 3" tubes and 4130 brackets
8257	Fab9 Assembly standard ladder bars, 7/8" inside width with 1/2" holes, mild steel construction, 3" tubes
8258	Fab9 Assembly standard ladder bars, 7/8" inside width with 1/2" holes, 4130 steel construction, 3" tubes, and 4130 brackets
8259	Fab9 Assembly standard ladder bars, 7/8" inside width with 1/2" holes, 4130 steel construction, 3-1/4" tubes, and 4130 brackets
8260	Fab9 Assembly pro street ladder bars, 1-1/4" inside width with 1/2" holes, mild steel construction, 3" tubes
8261	Fab9 Assembly Eliminator II 4-link for spherical rod ends, 7/8" inside width with 1/2" holes, includes integral adjustable shock mount, mild steel construction, 3" tubes
8262	Fab9 Assembly Eliminator II 4-link for spherical rod ends, 7/8" inside width with 1/2" holes, includes integral adjustable shock mount, 4130 steel construction, 3" tubes, and 4130 brackets
8263	Fab9 Assembly Avenger 4-link for spherical rod ends, 7/8" inside width with 1/2" holes, includes integral adjustable shock mount, 4130 steel construction, 3-1/4" tubes, and 4130 brackets
8264	Fab9 Assembly pro street Eliminator II 4-link for urethane rod ends, 1-5/8" inside width with 1/2" holes, includes integral adjustable shock mount, mild steel construction, 3" tubes
8265	Fab9 Assembly pro street Eliminator II 4-link for urethane rod ends, 1-5/8" inside width with 1/2" holes, includes integral adjustable shock mount, 4130 steel construction, 3" tubes and 4130 brackets
8266	Fab9 Assembly with leaf spring pads (Chrysler style) 2-1/2" pad width and 1-7/32" hole, mild steel construction, 3" tubes
8267	Fab9 Assembly with leaf spring pads (Chrysler style) 2-1/2" pad width and 1-7/32" hole, 4130 steel construction, 3" tubes, and mild steel spring pads
8268	Fab9 Assembly with 4-bar and integral shock mount for urethane rod ends, 1-5/8" inside width with 1/2" holes, mild steel construction, 3" tubes, mild steel brackets
8269	Fab9 Assembly no brackets, 4130 steel construction, 3-1/4" tubes
8270	Fab9 Assembly billet aluminum parallel 4-link with swivel eyes, 2-1/8" inside width with 1/2" holes includes adjustable shock mount, mild steel construction, 3" tubes
8271	Fab9 Assembly billet aluminum parallel 4-link with swivel eyes, 2-1/8" inside width with 1/2" holes includes adjustable shock mount, 4130 steel construction, 3" tubes
8272	Fab9 Assembly billet canted 4-bar with swivel eyes, 2-1/8" inside width with 1/2" holes, includes adjustable shock mount, mild steel construction, 3" tubes
8273	Fab9 Assembly billet canted 4-bar with swivel eyes, 2-1/8" inside width with 1/2" holes, includes adjustable shock mount, 4130 steel construction, 3" tubes

Housing End Chart Chart "B"

Part #	Housing End Type	F Dimension	M Dimension
8000	Early Big Ford With Seal	2-3/8"	2"
8001	Late Big Ford With Seal	2-1/2"	2"
8002	Early Big Ford - Drag Race Style	2-3/8"	1"
8003	Olds - Drag Race Style	2-3/4"	1"
8004	Mopar/Dana - Drag Race Style	2-1/2"	1-1/8"
8005	Small Ford - Drag Race Style	2-5/8"	1"
8006	12-Bolt Chevy Style With Seal	2-3/4"	2"
8007	Late Big Ford - Drag Race Style	2-1/2"	1"
8008	Symmetrical 3" Lamb - Drag Race Style	2-3/4"	1"
8009	Big GM - Seal Style For 3.150 Bearing	2-3/4"	2"
8010	Ford 8.8 - Drag Race Style For 3.150 Bearing	2-1/2"	1"
Strange	Strange Floater Spindle, * J = 0 on Floater Spindle	3-7/8"	1-1/8"
7963-208	Chassisworks Pro-Touring Floater	1-3/4"	2-1/2"

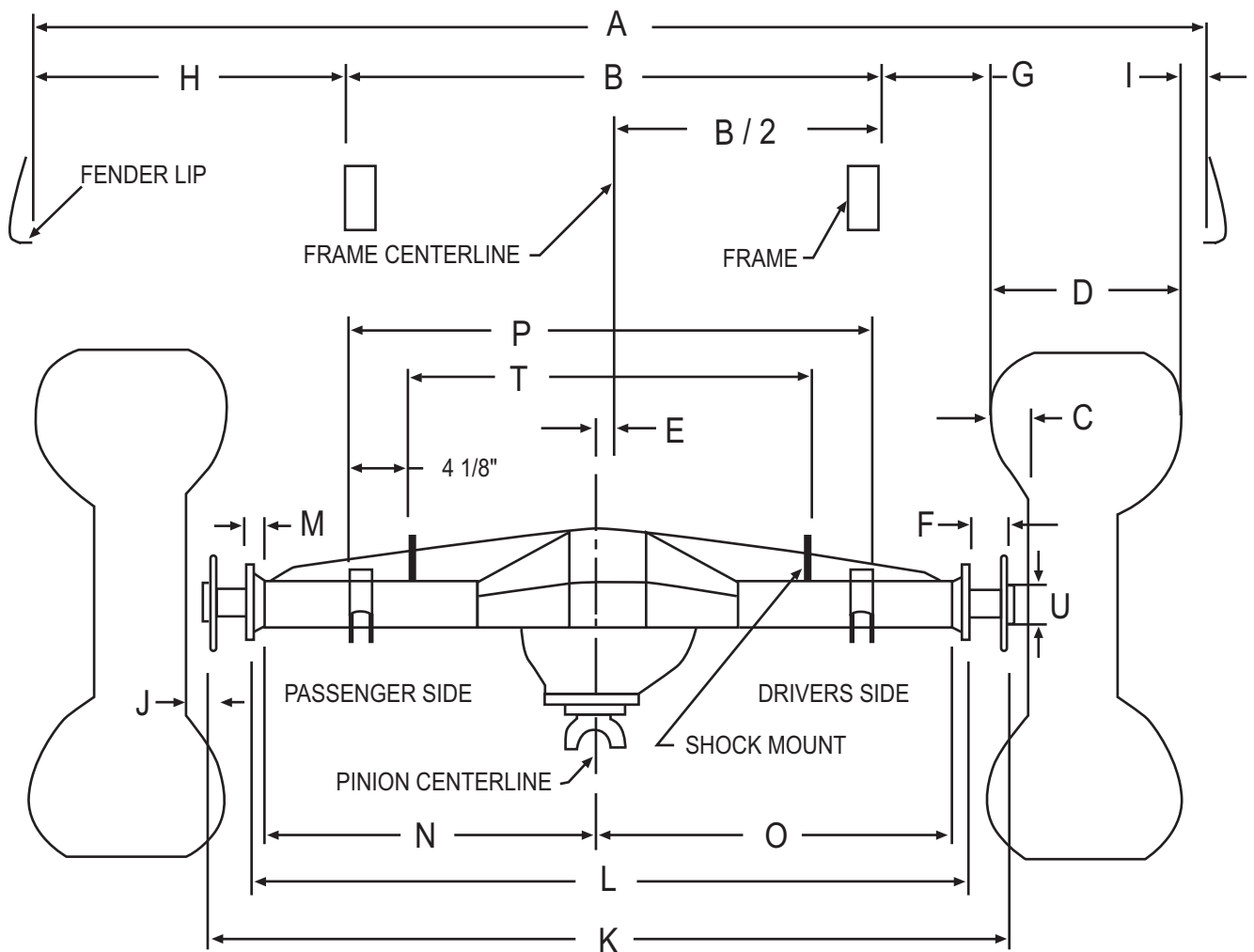
Axle Bearing Chart Chart "C"

Part #	Bearing Description	Bearing OD	Bearing ID
A1013	Timken Unit Axle Bearing With External Seal	3.150	1.562
A1019	Race Axle Bearing With O-Ring	3.150	1.772
A1021	Race Axle Bearing With O-Ring	3.150	1.562
A1022	Race Mopar Axle Bearing (Non-Adjustable)	2.875	1.562
A1023	Mustang Axle Bearing	2.835	1.562

Shock Mount Part Number Chart Chart "D"

Part #	Description
6216	Adjustable Lower Coil Over Mount With Backbrace
6224	Adjustable Lower Coil Over Mount No Backbrace
6225	Adjustable Coil Spring Assembly With Backbrace
6223	Adjustable Coil Spring Assembly No Backbrace
6227	Eliminator II Straight Shock Mount
6247	Eliminator II 6 Degree Shock Mount
6281	Adjustable Lower Coil Over Mount For 4-Link Bracket Mount
6284	Adjustable Coil Spring Assembly For 4-Link Bracket Mount

S/O #		DATE		CUSTOMER				CAR YEAR / MODEL				
HOUSING PART NUMBER			TIRE SIZE			WHEEL SIZE			BACK SPACING			
HOUSING ENDS										DIFFERENTIAL		SPLINE
8000	8001	8002	8003	8004	8005	8006	8007	8008	8009	8010		
STUD SIZE		BOLT CIRCLE				AXLE BEARING						
1/2"	5/8"	5 on 4-1/2"		5 on 4-3/4"		5 on 5"		A1013	A1019	A1021	A1022	A1023
BRAKE TYPE		SHOCK MOUNT PART #		WHEELIE BAR BRACKETS		AXLE VENT		BACK BRACE				
				YES NO		YES NO		YES NO				
A		B		C		D		E				
F		G		H		I		J				
K		L		M		N		O				
P		T		U		V		W				



I HAVE PROVIDED THE ABOVE SPECIFICATIONS FOR MY CUSTOM REAR END AND I ACCEPT FULL RESPONSIBILITY FOR THEM.

SIGNATURE REQUIRED