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

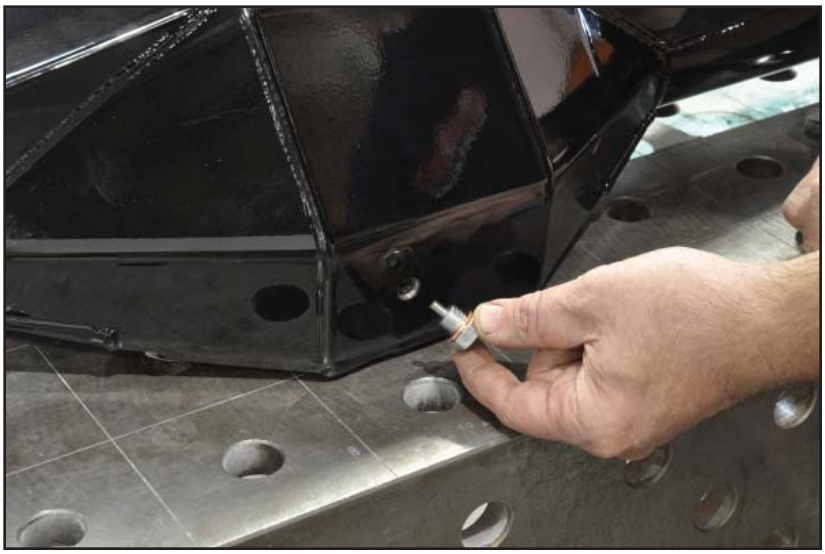
CHRIS ALSTON'S Chassisworks
THE HOME OF HIGHER TECHNOLOGY

FAB9™, AXLES, AND THIRD MEMBER INSTALLATION

Housing Preparation

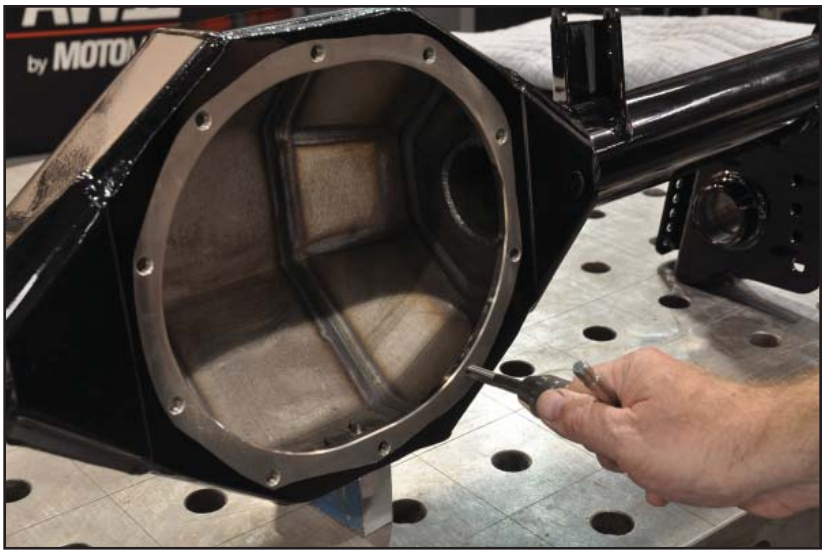
1. Chase the drain-plug threads at the bottom of the center section with a 1/2-20 NF tap.

2. Slide the copper seal over the magnetic drain plug and thread it into the housing. Tighten to 40 lb-ft.



3. Use a 3/8-24 NF tap to chase the threaded holes on the face of the housing before installing the studs.

   Deburr the backside of the hole, so the stud will seat tight against the flange when tightened.



4. Apply a small amount of red Loctite® 271 to the 12-point bolts, close to the flange.

5. Thread the 12-point bolts into the holes in the face of the housing from the inside. Tighten the bolts to 35 lb-ft. Let the Loctite® cure for 24 hours before installing the 3rd member.

6. Thoroughly clean the inside of the housing and axle tubes, using a clean shop rag. A board or broom handle can be used to push the rag through the axle tubes.

Verifying Axle Dimensions

7. You will receive packing lists with your axles and/or third-member. Verify the highlighted information shown in the sample orders to ensure you have received the correct components before beginning axle assembly or installing the thrid-member.

SAMPLE AXLE ORDER

Strange Engineering

INVOICE NO. | PAGE 1
INVOICE DATE

QTY. ORDER/B.O.	QTY. SHIP/RETURN	ITEM NO./DESCRIPTION	UNIT PRICE	UOM DISC.
1	1	P3102 S/S AXLE PACKAGE WITH BEARINGS AND 1/2" STUDS.		
	1	FS26 S/S STREET AXLE 31SPL.-26"		
	1	FS31 S/S STREET AXLE 31SPL.-31"		
	1	BC2 5 ON 4 1/2" X 1/2"		
	1	BC90 ONE BIG HOLE IN FLANGE		
	1	A1013PR TIMKEN SET 20 - 1.563x3.149 ONE PAIR		
	2	A3000B 2 7/16" B DIMENSION		
	2	A3000N 2.780" REGISTER		
	1	A1025 1/2-20 x 2" WHEEL STUD KIT		
1	1	A1004 Charge For Access Hole or Extra B.C. on SS S/T Axles		
1	1	INSTRUCTIONS AXLE LENGTHS 25 1/2& 30 1/4" ONE BIG HOLE		

Bolt Circle

Flange to Bearing

Brake Register

Axle Lengths

SAMPLE THIRD-MEMBER ORDER

Strange Engineering

INVOICE NO. | PAGE 1
INVOICE DATE

1	1	PRF120 9" PRO IRON,POSI,IRON SUPT. STD.GEAR,S-SERIES YOKE	
	1	N1922A STOCK SIZE PIN.NUT (SMALL NUT) (SMALL NUT)	EA
	1	N19621 PINION DEPTH SHIM KIT (N1962) (1=.005"(6)(7)(8)(9) & 2=.010"	EA
	1	N1940 BRG TAIL 9"FORD -1535TAV	EA
	1	N1941 TAIL BEARING RET.RING-EA.	EA
	1	N1905 Strange/Ford 3.062" Iron Case M-4141-A (PRO IRON CASE)	EA
	1	N1979 9" FORD TRU-TRAC (WORM STYLE) 31 SPLINE	EA
	1	RS07800325 3.25 STD.9"FORD 07-800325	EA
	1	D1588 SPOOL BRG.SET -3.062 / 9"FORD	EA
	1	N1917 FORGED STREET PIN.SUPPORT BODY (CUPS INSTALLED)	EA
	1	N1916 BRG.&SEAL KIT FOR N1914 &N1915	EA
	1	N1967 7/16 R.G.BOLT-1" -10PCS	EA
	1	U1603 9"FORD YOKE- 28 SPL.-1350 IC	EA
	1	N1918A .188" PIN.YOKE SPACER	EA
	1	OPRF07 UPGRADE TO CHROME-MOLY YOKE	EA
	1	OPRF09 Upgrade: Det Locker or Trutrac	EA

Posi Type

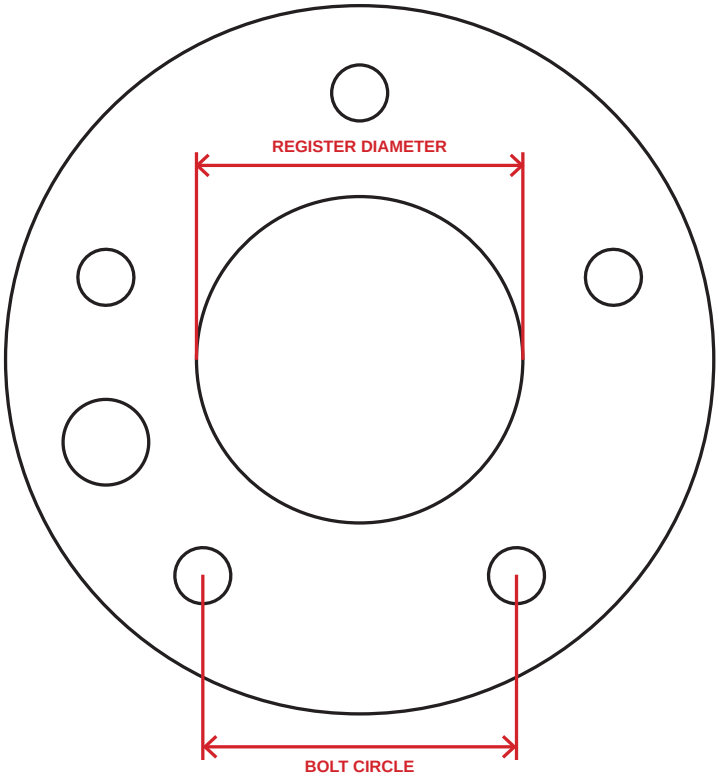
Gear Ratio

8. Measure the brake register diameter of the axles. The brake register centers the rotor and must match the diameter of the hole in the rotor.

9. Measure the distance between the centers of two adjacent wheel stud holes. Reference the measured distance in the chart to verfity the correct bolt circle.

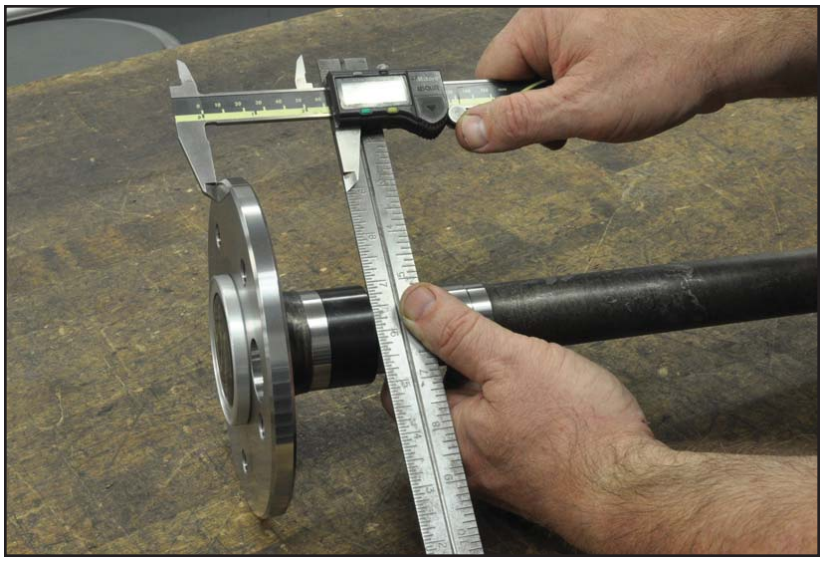
5-Lug Bolt Circles

- 2.35” = 4.00” Bolt Circle
- 2.50” = 4.25” Bolt Circle
- 2.65” = 4.50” Bolt Circle
- 2.79” = 4.75” Bolt Circle
- 2.94” = 5.00” Bolt Circle
- 3.09” = 5.25” Bolt Circle
- 3.23” = 5.50” Bolt Circle



10. Check the overall length of each axle measured from the far side of the axle flange to the end of the axle shaft.

11. Measure the distance from the far side of the axle flange to the bearing stop and verify against the packing list.



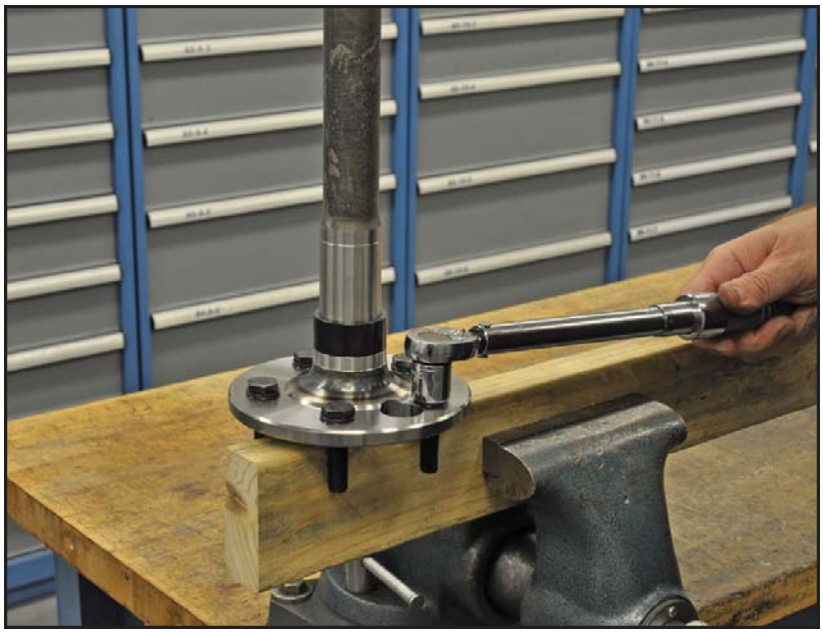
Wheel Stud Installation

12. Slide the hardened flat washers over the studs and thread the stud into the axle flange. Leave 1/2” of threads exposed between the head of the stud and axle flange.

13. Apply red Loctite® 271 to the 1/2” length of exposed threads, and then hand tighten the studs until seated against the flange.

14. Place a 2x4 board in a bench-mounted vise and set the axle studs across the board, as shown to hold the axle while tightening the studs.

15. Tighten the studs to 60 lb-ft.



Axle Bearing Installation

Closed Axle Retainers must be placed onto the axle shaft before the bearings are pressed onto the axle.

Open Axle Retainers allow the retainer to be positioned after the bearings have been pressed onto the axle.

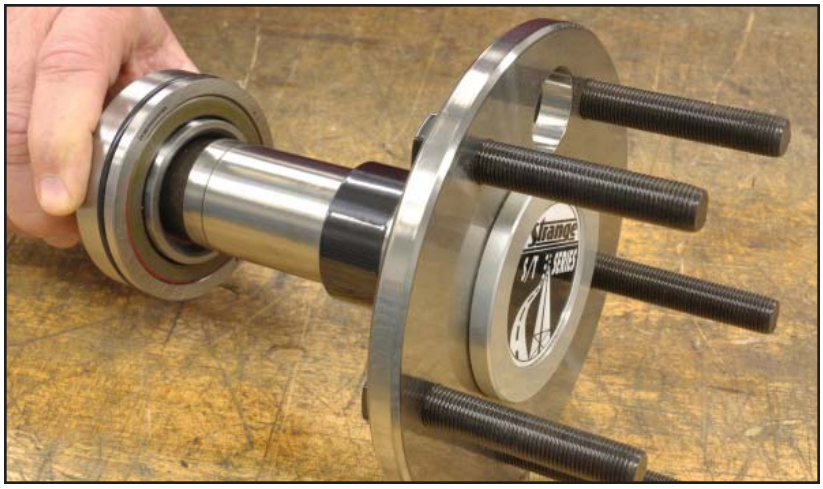
Depending upon the application one of two bearing styles will be used; seal axle bearings or externally sealed axle bearings.

Sealed Bearing

16. The O-ring and raised center race must face closest to the axle flange when installed.

17. The bearing presses over the axle as shown and is seated against the bearing stop.

    NOTE: This example assembly will be used with an open bearing retainer.



Externally Sealed Bearing
(Timken - SET 20)

18. Apply grease to the inside edge of the axle bearing seal.

19. Press the seal over the bearing until the seal snaps into the groove on the axle bearing.

20. Once the seal is installed the bearing is ready to be pressed onto the axle.

21. Slide the axle bearing assembly over the axle shaft with the seal facing toward the axle flange.

    NOTE: Closed axle retainers must be installed before pressing the bearing onto the shaft.

22. Set the axle and bearing into a hydraulic press as shown. Make sure the V-blocks are tight around the axle, so you are only putting pressure on the center bearing collar not on the outer race.

    NOTE: Pressing against the outer race will damage the bearing.

23. Apply pressure to the bearing assembly until it is completely seated against the bearing stop on the axle.

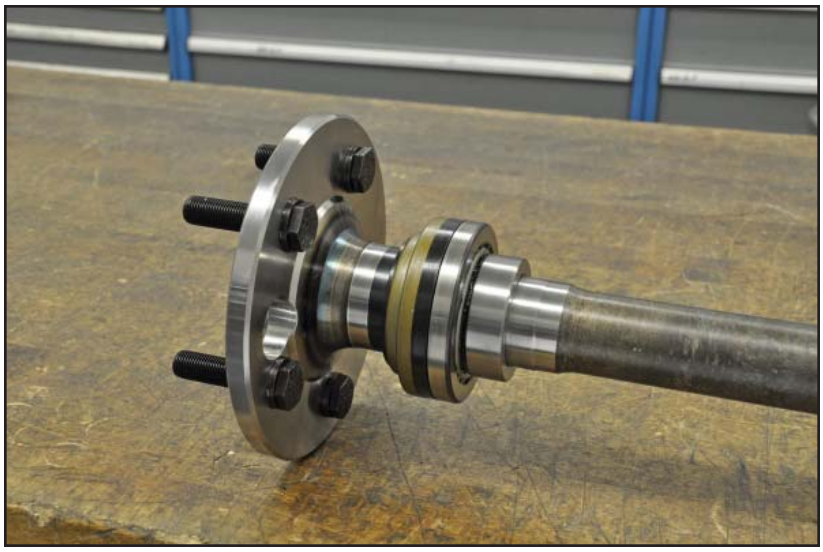
24. An additional ring referred to as the “wedding ring” is included with the axle bearing and must be pressed on after the bearing.

25. Remove the axle from the press and slide the wedding ring over the axle.

26. Reinsert the axle in the press and apply pressure to the assembly until the wedding ring is fully seated against the axle bearing.

27. The fit of the wedding ring is much tighter and will take more pressure to fully seat compared to the axle bearing.

28. The axle bearing installation is complete and the axle ready to install into the housing once the third member is in place.



Third Member Installation

29. Remove the third member from the plastic case and inspect it for any signs of damage before beginning installation.

30. Strange Engineering completely assembles and adjusts the third member prior to shipping so that it arrives ready to install.

31. Using your packing sheet, check the gear ratio and the posi type to make you have the correct parts. Also slide one of the axles into the third member to check the spline for fit.

32. Place the gasket onto the studs on the housing. The will only fit one way. If you are using a paper-type gasket we recommend applying a thin layer of RTV gasket sealant to both sides of the gasket.

33. Carefully place the third member over the studs. Due to the weight of the third member it may be difficult to slide fully into position. A rubber mallet can be used to carefully walk the third member into position.

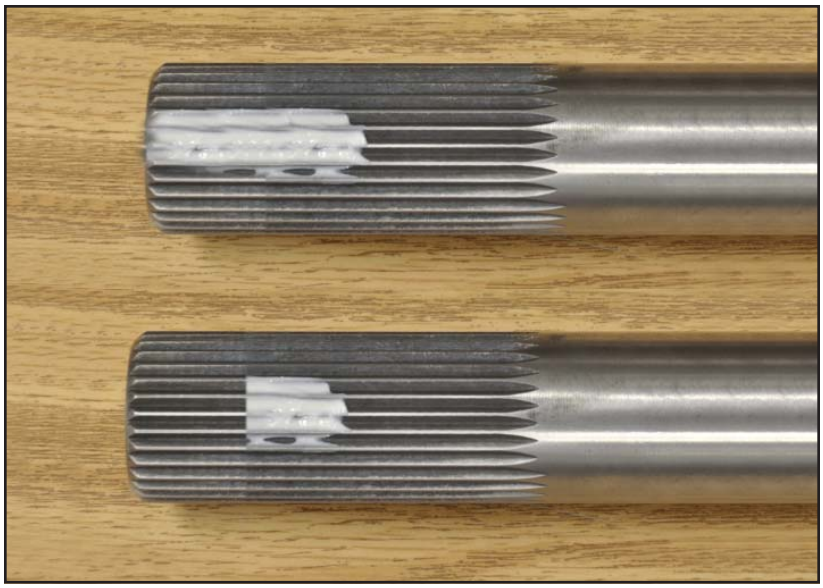
34. Slide the 3/8” aircraft washers over the studs and then the locknuts. The nuts on the two lower studs will need to be tightened with a wrench.

35. Hand tighten all of the locknuts. Once they are all seated, final tighten the locknuts to 35 lb-ft.

INSTALL TIP: Any studs that have not held their threaded position can be identified by comparing the thread engagement with the nut. To tighten the stud without removing the third member, remove the locknut and thread two 3/8-24 jam nuts onto the stud. Jam the two nuts together and tighten the stud by turning the bottom nut in the counter-clockwise direction.

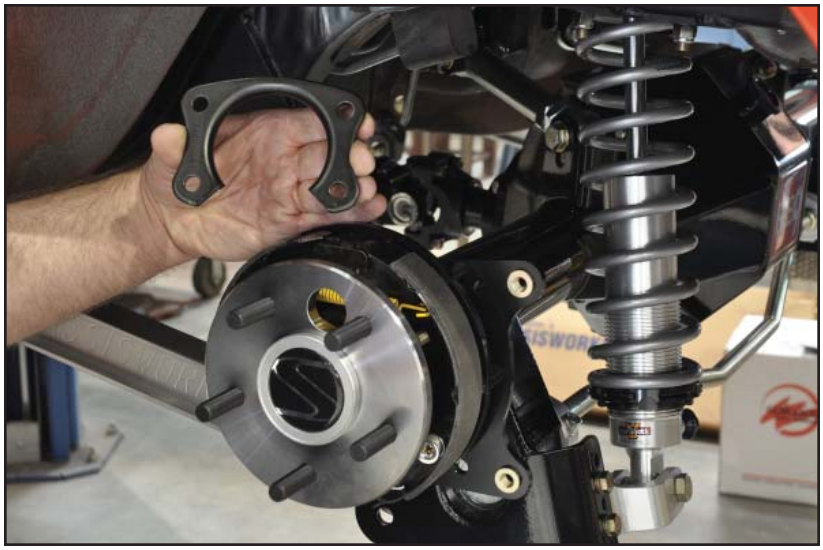
Check Axle Spline Engagement

36. You must have between .800” and 1.125” of spline engagement once the axle is installed.
37. Fill a few of the spline lengths with white lithium grease and insert the axle into the housing until the bearing is fully seated in the housing end.
38. Carefully pull the axle out and measure the length of the axle from which the grease was removed. If the axle does not have enough engagement, double check the housing and axle dimensions to find the problem.

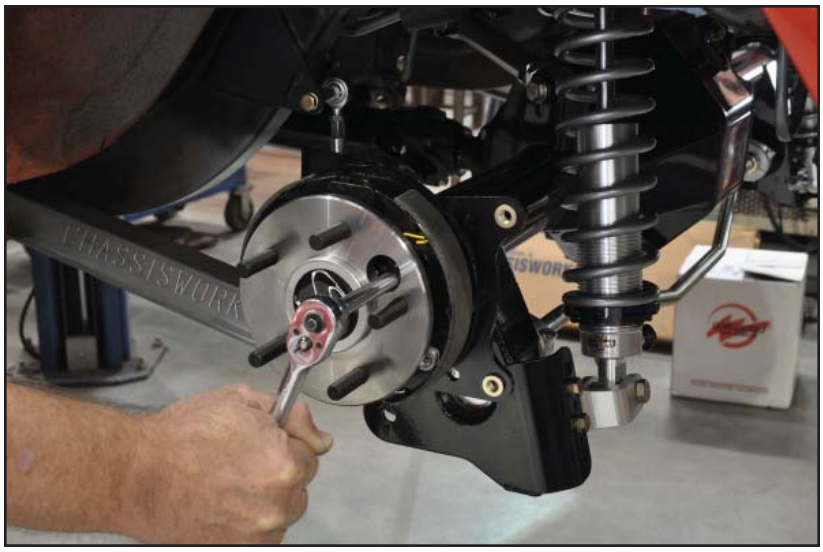


39. Once the engagement is checked you can install the axles. Normally the rear disc brakes will have to be installed at this time as the axle bearing retainer is part of the rear brake kit.

40. The axle bearing retainer sits against the axle seal and share mounting hardware with the disc-brake-caliper mounting bracket.



41. Stock-style T-bolts are inserted from the back side of the housing end and the nuts tightened through the access hole in the axle flange.



42. As a final step, the third member can now be filled with gear oil through the filler cap on the back of the housing. It will take approximately two quarts to fill to the correct level. The plug in the side of the third-member case must be removed during filling. The case is full when the fluid level has reached the height of the plug.

NOTES:

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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