

INSTALLATION INSTRUCTIONS

pn 20S1C-290A-A - Align-Lock kit

KIT PURPOSE:

The Align-Lock kit provides an additional restraining mechanism to the factory alignment adjustment to improve the robustness of the alignment setting during vehicle usage in rough/harsh conditions. The kit is designed to provide a mechanical lock for the friction based locking of alignment adjustment but does not increase the structural capability of the vehicle's chassis components.

FITMENT:

Chevrolet	2019+ Silverado 1500	2021+ Tahoe, Suburban
GMC	2019+ Sierra 1500	2021+ Yukon, Yukon XL
Cadillac		2021+ Escalade, Escalade ESV

CONTENTS:

PLEASE VERIFY ALL PARTS ARE INCLUDED AND UNDAMAGED BEFORE BEGINNING INSTALLATION

ITEM	PART NUMBER	QUANTITY	DESCRIPTION	REPRESENTATIVE IMAGE
1	20S1C-291A-A	2	Locking Ring FRONT	
2	20S1C-292A-A	2	Locking Ring REAR	
3	20S1C-293A-A	4	Adjustment Cam	

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TOOLS REQUIRED:

18mm Box end wrenches
24mm Box end wrenches
27mm Box end wrenches

Cutting tool (Abrasive wheel, reciprocating saw, etc)

Breaker Bar if desired (Steering gear mounting bolts can be tight)

18mm Socket (prefer 6-point)
24mm Socket (prefer 6-point)
27mm Socket (prefer 6-point)

Torque wrench

130 Ft-lb / 175 N-m max for GM Spec torques

210 Ft-lb / 285 N-m max for Blacklake Sever Duty
Spec torques

TORQUE / DIMENSIONAL SPECS:

<u>Component</u>	<u>GM Spec</u>	<u>Blacklake Severe Duty Spec</u>
Front control arm pivot bolt	- 118 ft-lbs / 160 N-m	- 210 Ft-lbs / 285 N-m
Steering rack mounting bolts	- 129 ft-lbs / 175 N-m (1 st) + 30° - 45° (2 nd)	
Rear control arm pivot bolt	- 118 ft-lbs / 160 N-m	- 210 Ft-lbs / 285 N-m
Differential crossmember mounting bolts	- 122 ft-lbs / 165 N-m	

WE RECOMMEND BLUE (242) LOCTITE ON ALL BOLTS BEFORE ASSEMBLY

NOTES / CAUTIONS:

When installing without an alignment: It is recommended to install the Align-Lock kit with the vehicle stationary on a 4-post lift or alignment rack sitting on its wheels and the parking brake set. When placing the vehicle on the lift or work area, the vehicle should be driven into the work position with the steering wheel straight and stationary for the last 10' of vehicle motion. This will allow the suspension to not shift during installation.

Install the adjustment cam with the multiple through holes above the suspension pivot bolt nut to maximize vehicle ground clearance. Installing below can cause the assembly to extend below the vehicle crossmember and create a risk of damage due to dragging in the event of traversing an uneven surface.

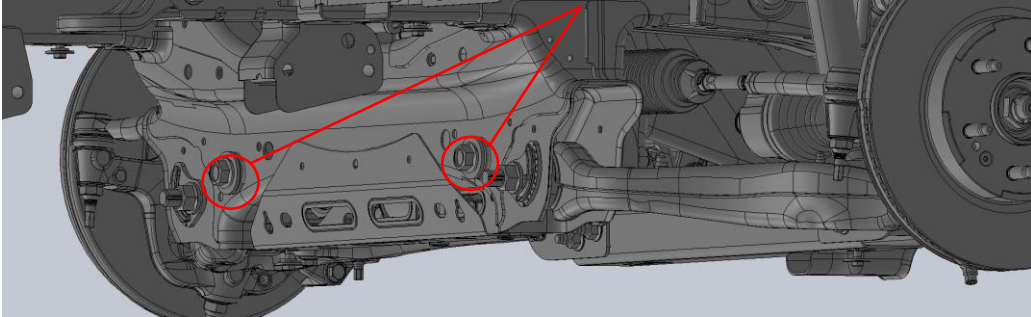
ONLY REMOVE ONE SUSPENSION BOLT NUT AT A TIME TO PREVENT ALIGNMENT SHIFTING DURING INSTALLATION

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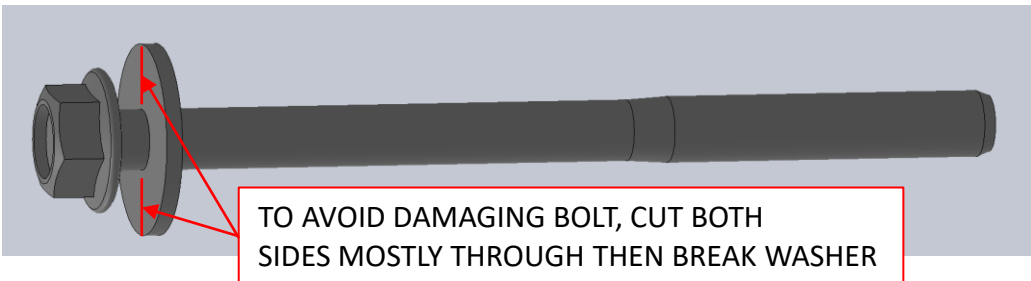
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Procedure

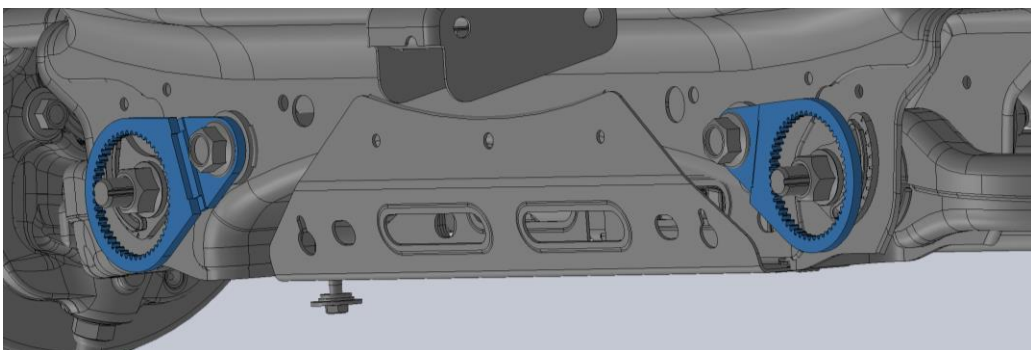
1. Remove lower steering rack mounting bolts (2).



2. Remove (Cut off) washer from steering rack mounting bolts.
(Locking Ring will replace the function of the flat washer)



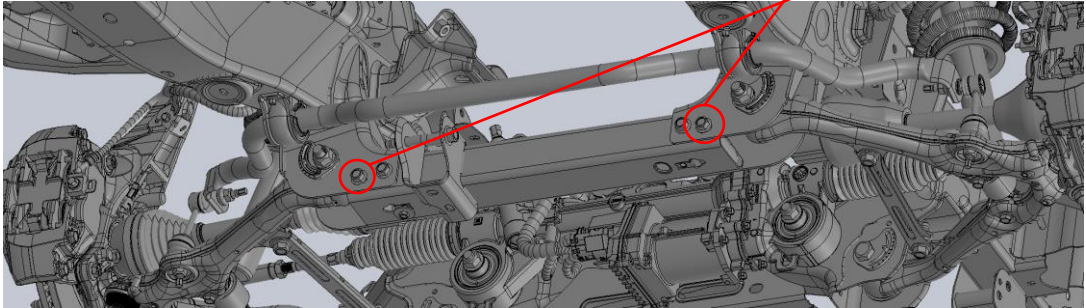
3. Reinstall lower steering rack mounting bolts with front locking rings in place of the washer. Ensure that the internal gear opening is over the suspension pivot bolt nut. Only tighten to the point that the lock ring can still be rotated for cam installation.



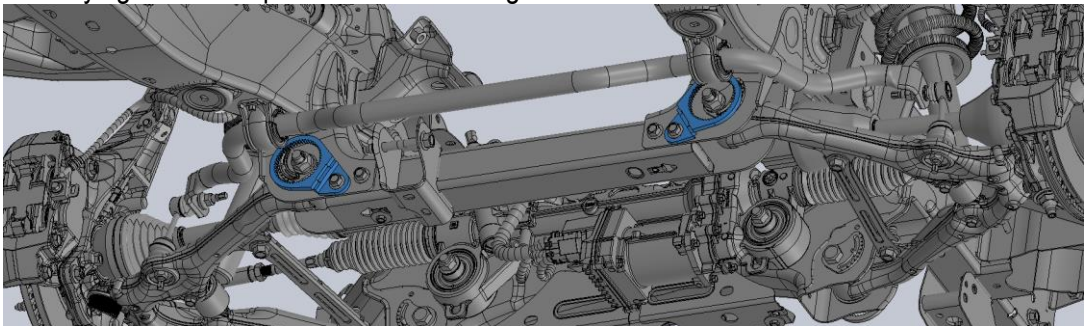
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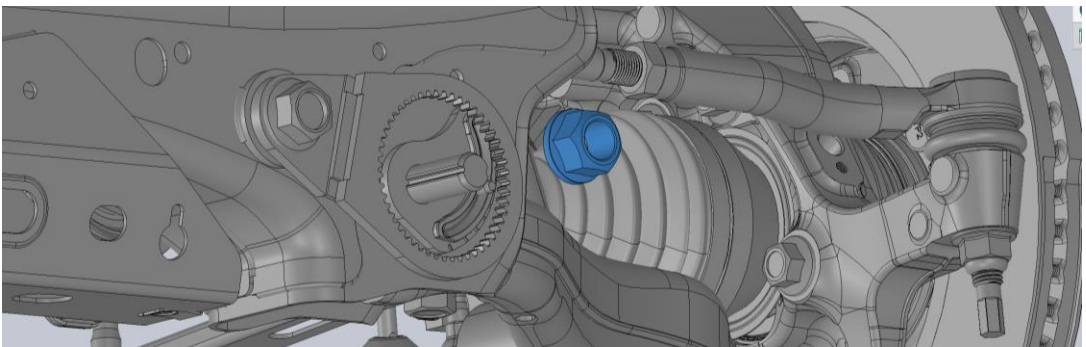
4. Remove outboard differential crossmember mounting bolts (2).



5. Reinstall outboard differential crossmember mounting bolts with rear locking rings in place of the washer. Ensure that the internal gear opening is over the suspension pivot bolt nut. Only tighten to the point that the lock ring can still be rotated for cam installation.



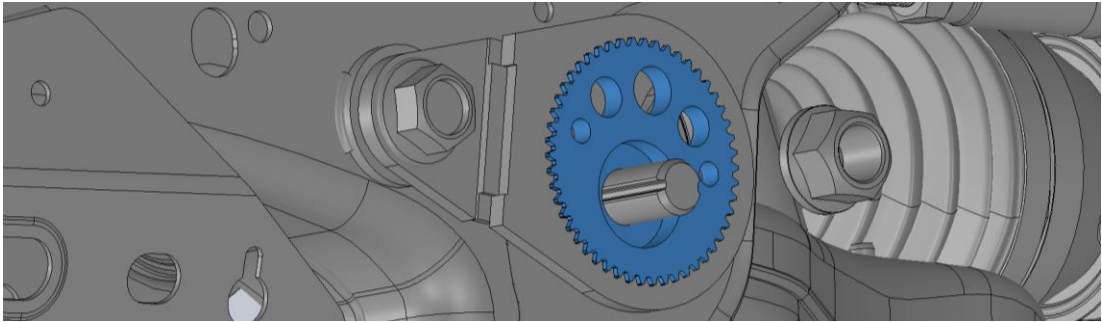
6. Starting with one front lower control arm pivot bolt, hold the bolt in place with wrench and remove **ONLY** the nut on the other end. **DO NOT ROTATE OR REMOVE PIVOT BOLT.**



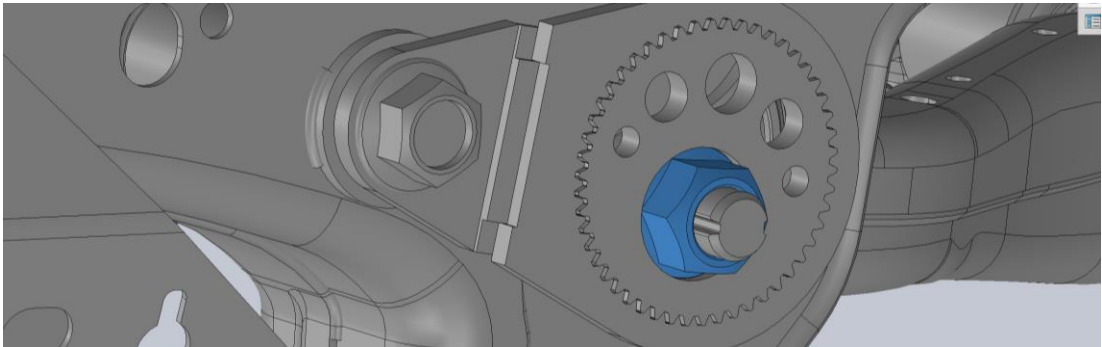
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7. Install Adjustment Cam over pivot bolt end and rotate Cam and Lock Ring until the Cam slides into the lock ring and is contacting the OEM adjustment cam. The Lock Ring and Cam may not be flush with each other or parallel, this is fine as it is designed to be able to accommodate the production tolerances as well as potential non-parallel surfaces. Remember to install the adjustment cam with the multiple through holes above the suspension pivot bolt nut (As shown) to maximize vehicle ground clearance.



8. Reinstall and torque lower control arm pivot bolt nut to 118 ft-lbs / 160 N-m (GM Spec) or 210 ft-lbs / 285 N-m (BLACKLAKE SEVERE DUTY Spec).



9. Repeat steps 6 – 8 for other side.
10. Retorque steering gear mounting bolts to (Torque-Angle Method) 1st step - 129 ft-lbs / 175 N-m then 2nd step – add 30 -45° additional rotation.
11. Repeat steps 6 – 9 on rear lower control arm pivot bolts to install rear Cams.
12. Retorque crossmember mounting bolts to 122 ft-lbs / 165 N-m