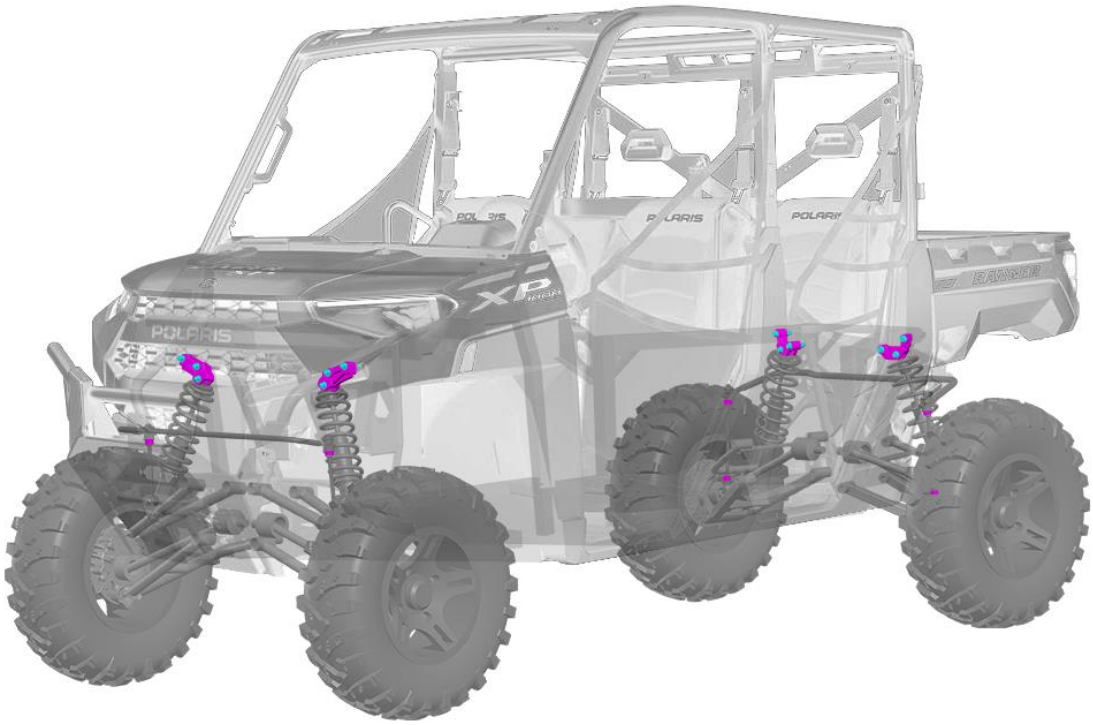
RNG21-SPBL-2
USER MANUAL
(INSTALLATION, OPERATION, & MAINTENANCE)

REV: A (5/18/2023)



http://www.dirtyteethracing.com

Congratulations on your purchase of this premium aftermarket Suspension Product!

We know you have choices and extend our sincerest appreciation for choosing our Product in your pursuit of building an ultimate Polaris Ranger.

We know this Product will help you go more places, have more fun with family and friends, and set you apart from other owners.

Welcome to the Dirty Teeth Racing family.

Go Get Dirty!

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1. Preface - About this Manual

1.1. Purpose

Dirty Teeth Racing has created this user manual as a reference tool for end-user, and/or installer to understand this Product's installation, operation, and maintenance, including special conditions and notes that may arise during its use. Please maintain a copy of this manual with the Vehicle's records for future reference.

To the best of our abilities, all written directions and graphical illustrations herein depict accurate representations of a typical installation and operation of this Product. However, this manual is to be used as reference only and no liability is expressed, or accepted due to omissions, or inaccuracies you discover while using it.

1.2. Nomenclature

Within this manual, certain words may be used interchangeably or have specific meanings, as follows:

- **Dirty Teeth Racing:** "DTR", "We", "Us", "Our"
- **End-user, and/or Installer**: "You", "Your", "Owner", "Consumer", "Dealer", "Reseller"
- **Herein**: means contained inside this document, as a whole
- **This Manual**: means this document in its entirety, whether printed, or in digital form
- **Illustration(s):** means any, and all visual content herein that has been annotated and assigned a Figure #

1.3. Intended Audience

All content herein has been written for individuals with at least a moderate level of mechanical aptitude and prior experience repairing automotive, or other similar vehicles and whom know their general way around vehicles and tools, including acknowledging inherent risks, and injuries that may occur during repair.

1.4. Manual Structure and Interactive Content

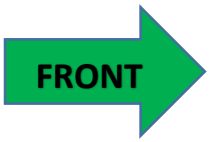
This manual is organized by sections. All primary topics are contained within individual sections and each section details that topic. A Table of Contents and List of Figures is located at front of manual to provide fast navigation throughout. **All caution, warning, and danger notes are printed in bold wording; other notes may also be bold.**

Additionally, interactive content exists when viewing manual in its digital form (i.e., PDF); such features are:

- **Hyperlinks** (blue underlined text) allow access to additional content via internet, or rapid navigation throughout this manual -> click/tap hyperlink to activate it.
- **Table of Contents** allows quick navigation -> click/tap "Go to Table of Contents" at bottom of any page.
- **Zoom IN/OUT** on illustrations -> use zoom tool in computer app, or pinch-in/out on smart devices.
- **Endnotes** may exist next to certain words as a superscript number ([1]) -> click/tap number to see note.

1.5. Understanding Illustrations (View Direction)

This manual has been assembled using illustrations that represent both Product and Vehicle(s). These illustrations may contain items, parts, or systems not found on your Vehicle, or missing parts, or systems your Vehicle has.



Green/Yellow arrows reading "FRONT" that are present over illustrations specify direction toward front of Vehicle. Where it's difficult to discern if "FRONT" points to Left-Hand (LH), or Right-Hand (RH) side of Vehicle, a note below illustration will indicate side; if no side is indicated, both sides look similar.

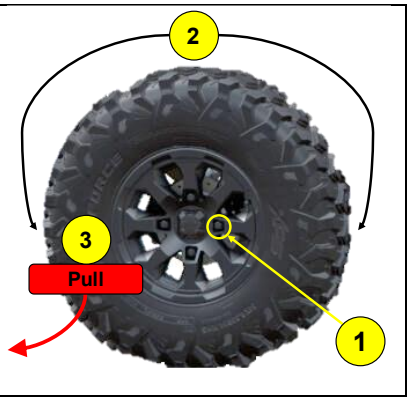
1.6. Understanding Illustrations (Annotations)

Illustrations herein have been annotated using balloons, arrows, circles, boxes, and text, to provide clarity to what items, parts, or tasks are being depicted inside the illustrations. A key for all annotations, is as follows:

ANNOTATION TYPE	EXAMPLE	COLOR	MEANING
Round Balloon	1	Yellow with Black Number	Step Number (i.e., order of completion)
Round Balloon	M1	White with Black Text	Physical part included in Bill of Materials
Rectangle Box	Remove	Yellow with Black Text	Overall action being performed during step shown. *Annotation is not always used*.
Rectangle Box	40ft-lb	Orange with Black Text	Torque specification, or other item required during fastening
Rectangle Box	Push	Red with Black text	Physical force, or work required during step. *May also indicate a restriction, or special note.*
Rectangle Box	OE Nut	White with Black text	Physical part of Vehicle being disassembled or assembled. *Annotation only used when needed*.

Also, recognize that some sections may use multi-level outlines, where balloon numbers use only last digit of outline number. See below example.

SECTION 5.1 Example *(multi-level outline)*	SECTION 5.1 Example *(single-level outline)*	BALLON NUMBER
5.1 Remove Wheel & Tire	5.1 Remove Wheel & Tire	-
5.1.1 Remove four (4) Lug Nuts	1. Remove four (4) Lug Nuts	1
5.1.2 Grasp Tire with both hands	2. Grasp Tire with both hands	2
5.1.3 Pull Wheel and Tire outward until free from wheel studs	3. Pull Wheel and Tire outward until free from wheel studs	3



1.7. Related Documents

DTR also has available a graphical illustration guide; reference it if you're having trouble seeing illustrations herein. Furthermore, some procedures discussed herein may be covered by Technical Documentation created by your Vehicle's manufacturer (OE); follow all OE Technical Documentation directions before directions we have written.

PUBLISHER	DOCUMENT (Internet Hyperlink)
DTR	**RNG21-SPBL-2 Technical Illustration Guide** - VISIT WEBSITE TO DOWNLOAD
POLARIS	Owner's Manuals (FREE) - CLICK HERE TO VISIT WEBSITE
POLARIS	Factory Service Manuals ($$$) - CLICK HERE TO VISIT WEBSITE
POLARIS	Polaris Ranger Factory Parts Online - CLICK HERE TO VISIT WEBSITE

End of Section

2. Safety First

2.1. Read Instructions

Read this manual thoroughly before installing and using Product to verify you clearly understand all procedures.

Furthermore, obtain proper tools required to perform procedures correctly, including, but not limited to adequate lighting, safe lifting jack(s) with stands/supports, plus eye protection and hand protection to guard against sharp edges and metal burrs, which may be present on new parts and Vehicle parts.

Contact us with any questions.

2.2. CAUTION, WARNING, DANGER, & IMPLIED DANGER

The above wording is used herein with bold lettering to indicate a **critical safety note**. Their meaning follows:

CAUTION: means damage could occur to Vehicle, or Product during, or after installation.
WARNING: Vehicle/Product damage, plus bodily injury to you or others, during, or after installation.
DANGER: Vehicle/Product damage, plus serious injury or death to you or others during, or after installation.
Implied DANGER: herein any non-bold phrase that says, "lift Vehicle…off ground", or "raise Vehicle…off ground'**, means raise Vehicle safely** using at minimum same technique instructed by Vehicle's Owner's Manual!

2.3. Notice about Modifying this Vehicle's Suspension

Check with your local laws to verify that this Product is legal to install and use on your public roadways.

All efforts have been taken to design and manufacture superior Suspension Lift Blocks that provide additional off-road capability and ground clearance for those who desire to venture away from the beaten path. Blocks are manufactured using high-quality, high-strength aluminum alloy with quality workmanship, and installed with high-strength Hardware/Fasteners. Installing this Product requires no modification to any part of Vehicle's OE Control Arms, Driveline, Braking, or Steering Systems. Modification to Vehicle's Body may be required, based on Tire size.

Installation of this Product may void Vehicle's original warranty for Suspension, Steering, Braking Systems and possibly others, while possibly increasing wear and tear on OE Suspension, Steering and Driveline joints/bushing. Additionally, raising your Suspension height using these Lift Blocks will modify your Vehicle's designed center of gravity, resulting at minimum in changes to Steering and Braking Dynamics (i.e., Vehicle Handling).

DANGER: Exercise extra care and awareness when making abrupt steering, or braking maneuvers at any speed with this Product installed, regardless of road surface type or condition (i.e., snow, dirt, mud, rain, etc.). Always perform U-turns at lowest possible speed to prevent roll-over. Failure to adhere to safe maneuvers increases likelihood of collision/accident, resulting in bodily injury or death from Vehicle roll-over, or other loss of control.

DANGER: Exercise extreme care when operating Vehicle in high crosswinds, or while traversing terrain on a slope (i.e., off-camber); in such cases Vehicle's now higher center of gravity increases likelihood of roll-over.

DANGER: Lifting your Vehicle changes your view ahead and around Vehicle, including aiming of Headlights, which may result in colliding with objects that otherwise would have been visible in original configuration.

The end-user, and/or installer assume all liabilities associated with usage of this aftermarket off-road Product.

End of Section

3. Product Overview

3.1. Bolt-On Vehicle List

RNG21-SPBL-2 is a direct bolt-on aftermarket Suspension Lift Product for POLARIS Vehicles listed in below chart; every effort has been made to verify correct fitment on these Vehicles in their factory, non-modified conditions.

MODEL YR	MODEL	DRIVE	ENGINE	BODY	TRIM
2017-2023	Ranger XP 1000	4WD	1000	ALL	ALL
2020-2023	Ranger 1000	4WD	1000	ALL	ALL
2013-2019	Ranger XP 900	4WD	900	ALL	ALL

3.2. Lift Amount and Type

This Product has been designed to provide a moderate Suspension Lift to gain more ground clearance and allow fitment of larger diameter tires. This Product's main characteristics, are as follows:

VEHICLE AREA	LIFT TYPE	LIFT AMOUNT	REPLACES OE PARTS
FRONT SUSPENSION	CHASSIS LIFT BLOCK	1.5"-2" **	NONE
REAR SUSPENSION	CHASSIS LIFT BLOCK	1.5"-2" **	NONE

**NOTE: Final lift height is affected by Spring Preload chosen (i.e., softer preload = less lift)

3.3. Maximum Rated Tire Size

3.3.1. This product has been designed to fit a larger tire size, using OE Wheel Backspacing, with size up to:

30" X 10" X R14/R15

3.3.2. Your wheel backspacing chosen and Spring Preload adjustment both affect tires rubbing Vehicle.
NOTE: *Slight trimming may be required to reduce tire rubbing during suspension flex, or Steering lock.*
DANGER: increasing tire size over OE changes Vehicle Dynamics (i.e., Steering, Braking, etc.)

3.4. Excluded Vehicles

3.4.1. N/A

3.5. Installing Product along other Aftermarket Products

3.5.1. This product has NOT been designed to be compatible with any of the following products:

- Aftermarket Shocks
- Aftermarket Control Arms
- Aftermarket Sway Bars/Links

NOTE: *To install this product alongside your other aftermarket product(s), modification to your aftermarket product(s), or Vehicle may be required.*

3.6. Product Layout

RNG21-SPBL-2 consists of following components, located on Vehicle, as follows:

ITEM	DESCRIPTION	VEHICLE LOCATION	MOUNTING METHOD
1	Front Lift Blocks	Front chassis, top of shocks	Brackets bolt directly to Chassis and Shocks
2	Rear Lift Blocks	Rear chassis, top of shocks	
3	Swaybar Link Spacers	Sway Bar links X4 *(if equipped)*	Spacers go below OE Link Bushings

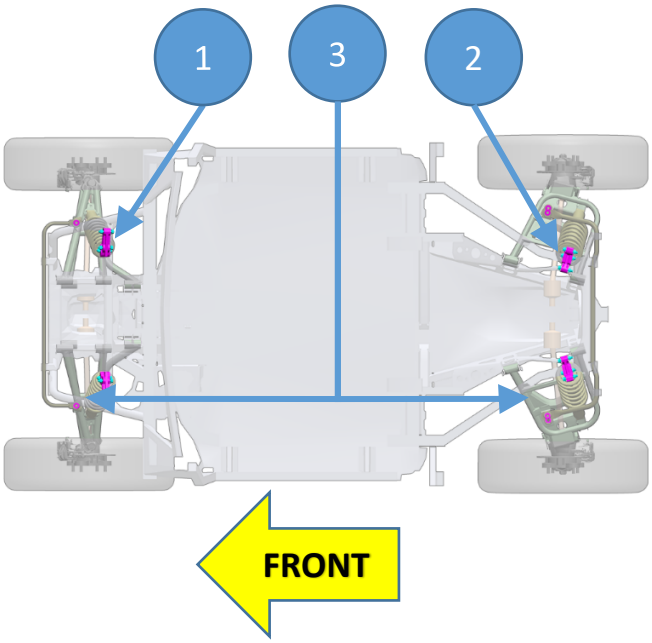


Figure 1 – Above View of Product Layout (3-Seat model shown)

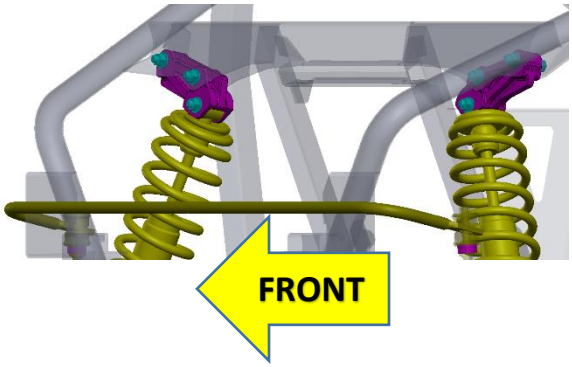


Figure 2 – Blocks Installed into Front Frame Crossmember

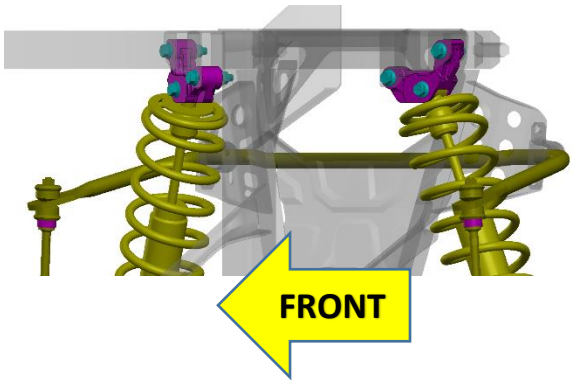


Figure 3 – Blocks Installed into Rear Frame Shock Hangers

3.7. Approximate Installation Time

For a typical home mechanic, auto enthusiast, or technician installing this product for first time, a professional installation job, is estimated to take:

- **60 minutes to 3 Hours**

4. Tools and Supplies Required

4.1.Standard Mechanic's Tool List (Required)

4.1.1. Socket wrench set with extensions.
- Metric Size Sockets (13mm, 14mm, 15mm, 17mm, 19mm)

4.1.2. Combination wrench set (box/open-end).
- Metric Size Combination Wrenches (13mm, 14mm, 15mm, 17mm)

4.1.3. Screwdriver set.
- #1, #2 Phillips
- Various Flat Heads
- Various Torx Drivers

4.1.4. Needle nose, and slip-joint pliers for removing wiring plastic rivets and electrical connectors.

4.1.5. Socket Breaker Bar, or Lug Nut Wrench.

4.2.Special Tool List (Recommended)

4.2.1. 10-100 ft-lbs. 3/8" drive (13-135nm) torque wrench.

4.2.2. Spring Compression Tool for 4" [100mm] diameter springs and larger.

4.2.3. Small Angle Grinder, or Air Die-Grinder with 2"-2.5" diameter sanding/grinding disc.

4.2.4. Two (2) Ratcheting Tie Down Straps, at least 1,500lb Strength.

4.2.5. Trim Panel Tool, for removing wiring plastic rivets, if needed/desired.

4.2.6. Dremel, or rotary cutting tool to trim any plastic, if needed/desired.

4.2.7. Floor jack with at least 18" lift height and jack stands, or Vehicle lift.

4.2.8. Tape measure at least 60" long.

4.3.Shop Consumables List (Recommended)

4.3.1. Medium-Strength Thread Locker (i.e., Blue Loctite® PN 242), or equivalent

4.3.2. Plastic zip ties > 6" long for securing electrical wiring, if needed

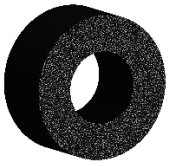
4.3.3. Flat Black epoxy spray paint, to touch up Chassis, as needed

4.3.4. Typical cleanup supplies

End of Section

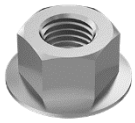
5. Parts List (BOM)

5.1. Manufactured Parts

ITEM	QTY	PART NUMBER	DESCRIPTION	PICTURE
M1	2	RNG21-SPBL-2-101	2" LIFT BLOCK, FRONT, MACHINED	
M2	2	RNG21-SPBL-2-102	2" LIFT BLOCK, REAR, MACHINED	
M3	6	RNG21-SPBL-2-103	SWAYBAR LINK SPACER, MACHINED	

5.2. Hardware, Fasteners and Soft Parts

NOTE: Pictures only indicative, not to scale and may not represent exact item

ITEM	QTY.	DESCRIPTION	WHERE USED	PICTURE
H1	12	Flanged Hex Head Screw, M10 x 1.50mm X 55mm Long, Class 10.9 Steel, Zinc Coated	BLOCK TO CHASSIS (8), SHOCK TO BLOCK (4)	
H2	12	Flange Hex Nut Standard Profile, M10 x 1.5mm Thread, Class 10 Steel, Zinc Coated	BLOCK TO CHASSIS (8), SHOCK TO BLOCK (4)	
H3[1]	6	Cable Tie (Zip Tie), Heavy Duty, 200LB X 36” Long	FRONT SHOCKS BEFORE REMOVAL (6)	

End of Section

6. Installation Outline

For Installers familiar with this Product, quickly install it following below steps. Print this outline for quick reference. See each hyperlinked section for further details.

Preparation (Section 8)

1. Layout and organize Product on bench and all necessary tools, plus consumables.
2. Set Coil Spring Stiffness adjusters to "Softest" setting.
3. Slightly Loosen Lug Nuts on all wheels before raising tires off ground.
4. Grind spot welds blocking inside holes of Rear Shock Hangers.

IF DO NOT HAVE SPRING COMPRESSOR[1]

5. Safely, and properly attach Zip-Ties to restrain Front Coil Springs.
6. Continue to next section.

IF HAVE SPRING COMPRESSOR

5. Skip to next section.

Front Installation (Section 9)

1. Raise Vehicle and remove Front Wheels.
2. If equipped with Sway Bars, remove Nuts and Bushings from Links; rotate Bar up.
3. Remove Upper Shock Bolts; lay Shocks inward.

IF DO NOT HAVE SPRING COMPRESSOR

4. Install Lift Blocks over Shocks, and **carefully handle Zip-Tied[1]** springs while sliding Blocks outward, then fasten to Chassis.
5. Continue to step 6

IF USING SPRING COMPRESSOR

4. Compress Springs until 1/2" gap is at top.
5. Install Lift Blocks over Shocks, then slide Blocks outward and fasten to Chassis.
6. Install Sway Bar Link Spacers and Lower Bushings, then rotate Sway Bar over Links.
7. Use Ratchet Straps to compress Suspension until Sway Bar is level over Links.
8. Re-assemble Sway Bar Bushings & Nuts.
9. Remove Ratchet Straps, Install Wheels and lower Vehicle. *Cut Zip-Ties, if used.*

Rear Installation (Section 10)

1. Raise Vehicle and remove Rear Wheels.
2. If equipped with Sway Bars, remove Nuts and Bushings from Links; rotate Bar up.
3. Remove Sway Bar Links from Control Arms.
4. Remove Upper Shock Bolts and lower Suspension Arms down until they stop.
5. Install Lift Blocks over Shocks and raise everything into Chassis and fasten.
6. Install Sway Bar Link Spacers onto Links and re-install Links to Lower Control Arms.
7. Use Ratchet Straps to compress Suspension until Sway Bar is level over Links.
8. Re-assemble Sway Bar Bushings & Nuts.
9. Remove Ratchet Straps, Install Wheels and lower Vehicle.

Final Steps (Section 11) **may require two people*

1. Bounce Vehicle up-down; check for issues.
2. Turn Steering left-right; check for issues.
3. Check all fasteners, and Lug Nuts are tight.
4. Adjust Headlight Aim, as Needed.
5. Adjust Steering Alignment Toe*, as needed.
6. Enjoy and Go Get Dirty!

End of Section

7. General Exploded Views & Torque Specs

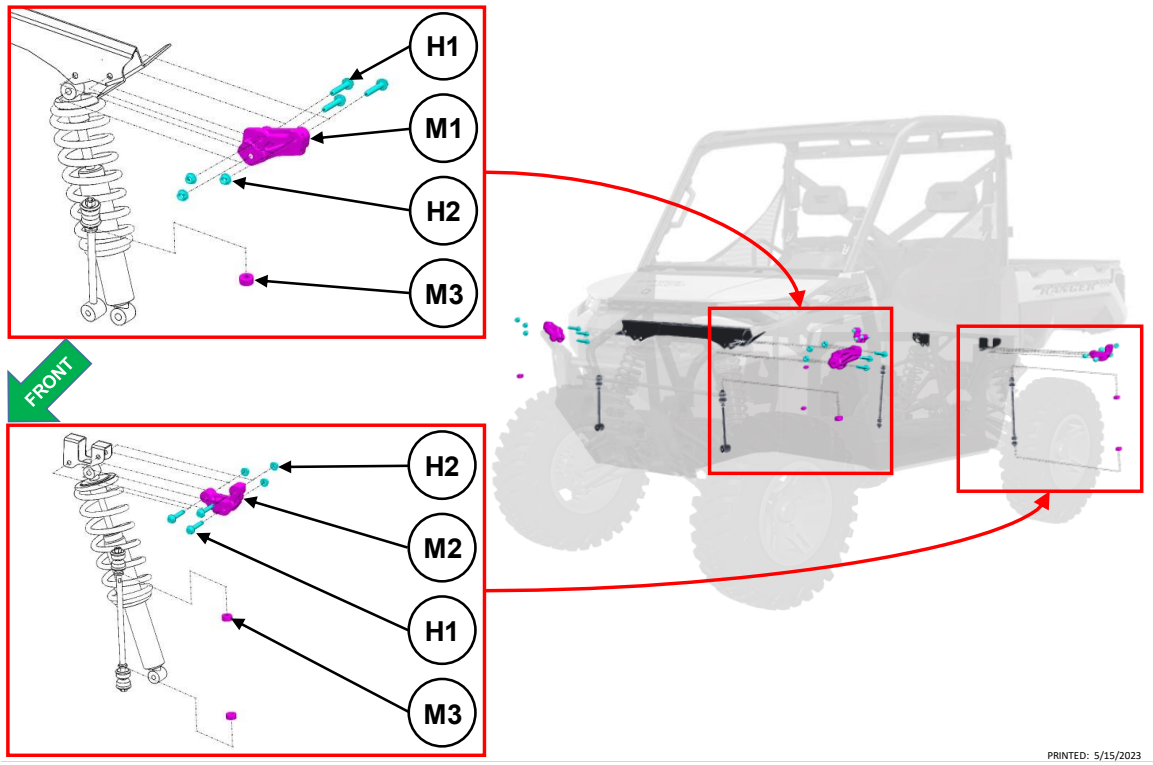


Figure 4 – TIP.3 Exploded view of Product overlaid above Vehicle (3-Seat model shown)

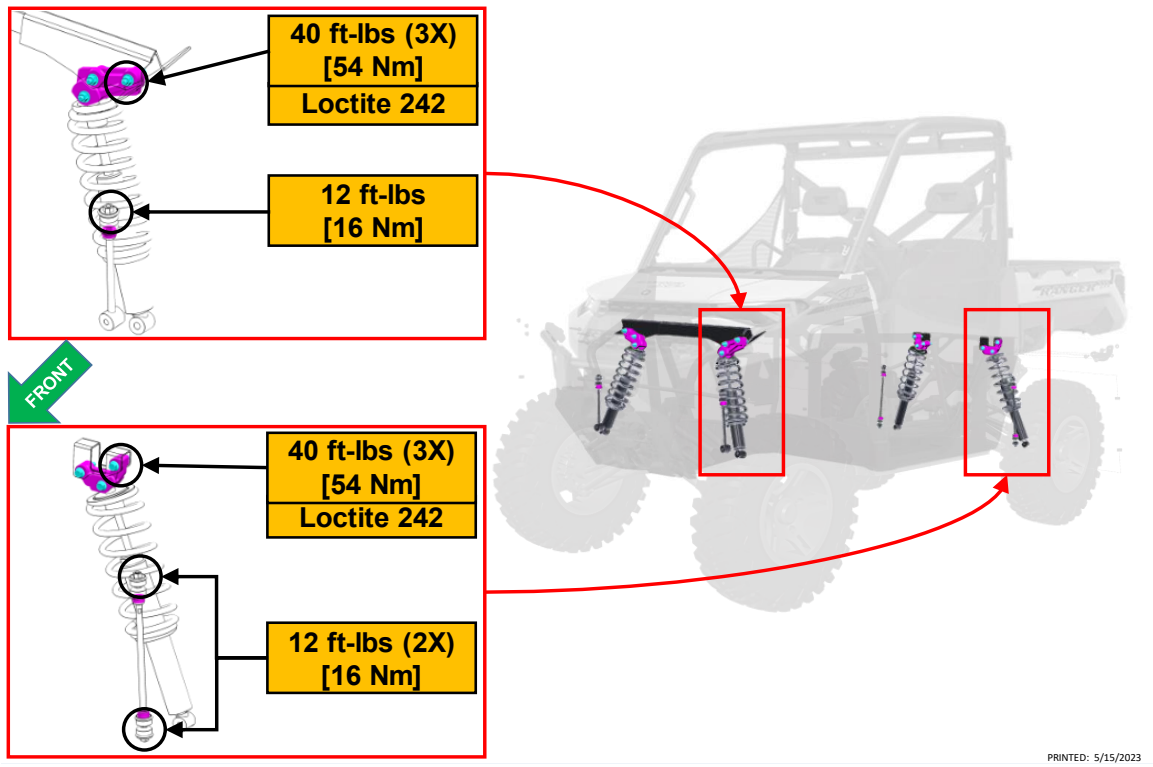


Figure 5 – TIP.4 Torque Specifications of Product overlaid above Vehicle (3-Seat model shown)

8. Preparation

8.1. Organize Product and Tools

1. Layout all Product on a clean bench, or similar and verify you have all parts, as shown in right figure.

2. Layout all tools and consumables, as listed above in Tools and Supplies Required.

3. Prepare workspace and obtain all safety gear, lights, ventilation, etc.

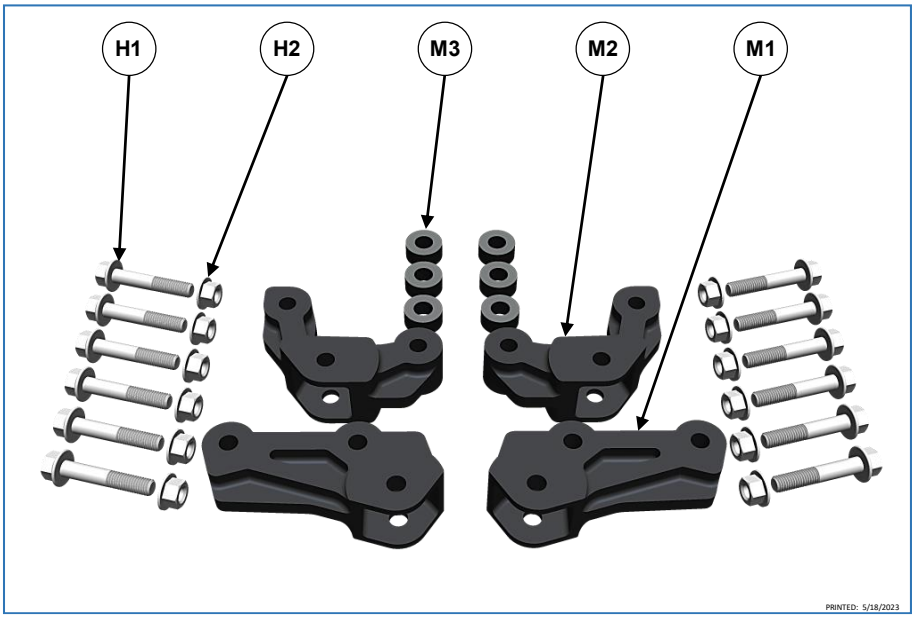


Figure 6 – TIP.2 Parts List

8.2. Set Coil Springs to Soft & Loosen Lug Nuts

1. Ensure each Coil Spring is set to “Softest” setting, as shown in right figure. Reference OE Technical Documentation for proper procedure, or if you have aftermarket shocks, contact manufacturer.

2. Break each Lug Nut loose, using a Breaker Bar, or Lug Nut wrench, to facilitate removing Wheels while Vehicle is in air.

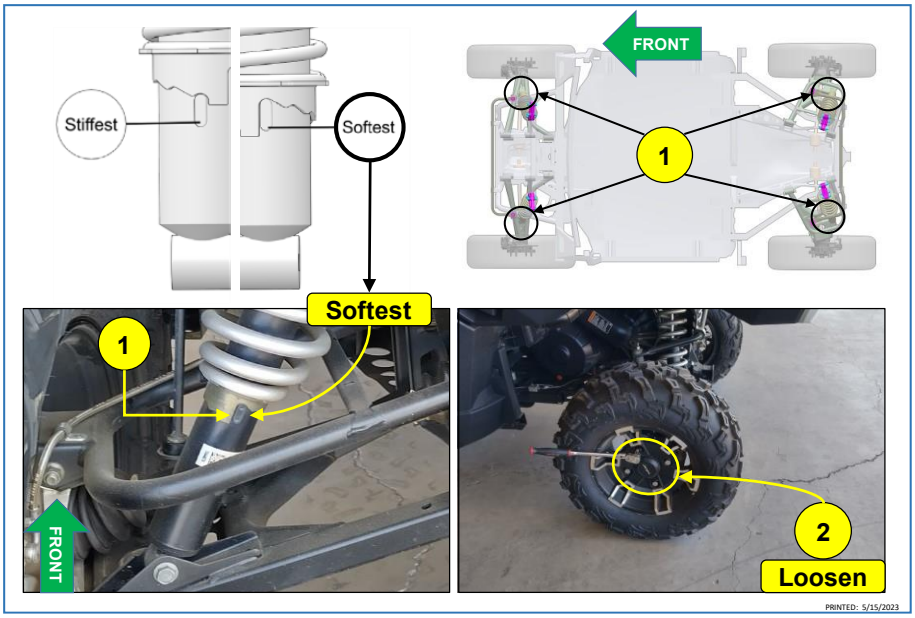


Figure 7 – TIP.5 Coil Spring Softest Setting & Lug Nuts

8.3. Grind Spot Welds on Inside Holes of Rear Shock Hangers

NOTE: on some Vehicles, Polaris has applied some extra weld near shock mounting holes supposed to be open.

1. Tilt Cargo Box/Bed to gain access to Engine area, as shown in right figure.

2. Use a rotary tool equipped with a small grinding disc less than 2.5” diameter and grind flat the spot weld that exists near inside, front hole on Driver/LH Side Shock Hanger, as shown in figure.

3. Repeat above step on Passenger/RH side Shock Hanger, as shown in figure.

4. Touch up with Paint.

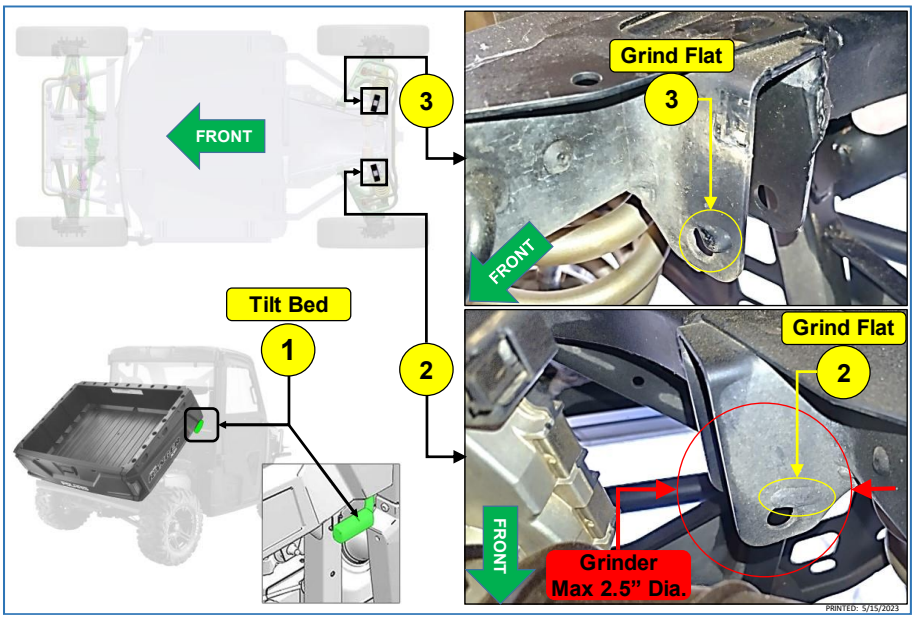


Figure 8 – TIP.6 Grinding Rear Shock Hanger holes

8.4. Restrain Front Coil Springs, Part 1 (if no Spring Compressor)

Complete sections 8.4, 8.5, 8.6 ***ONLY if you do not have a Spring Compressor tool[1].***

1. Lift Vehicle until both front tires are just touching ground, as shown in right figure. Verify each tire slightly rotates while pushing, but does not turn freely.

2. Use a Tape Measure and measure from ground to any point of Vehicle’s Front, as shown in figure. Write down value and note where point is.

3. Lower Vehicle front back down approximately 2.5”, then re-measure from ground to same point in prior step, to confirm it was lowered 2.5”.

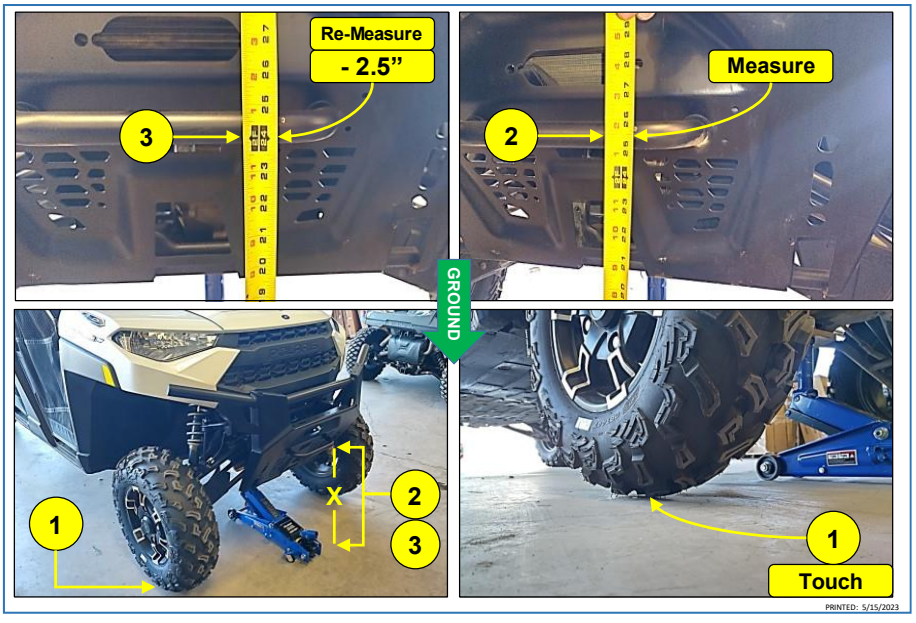


Figure 9 – TIP.7 Measuring Front Bumper to Ground for Zip-Ties

8.5. Restrain Front Coil Springs, Part 2 (if no Spring Compressor)

WARNING[1]: do not tighten zip-ties excessively; they will tighten completely when Tires are lifted off ground

1. Reach over tire and insert one of supplied Zip-Ties (H3) into top of Coil Spring, as shown in right figure.

2. Slide Zip-Tie through Coil Spring down to bottom, then extract it, as shown.

3. Repeat this 3X per Coil Spring, orienting Zip-Ties evenly around Coil, as shown. Use a total of six (6) Zip-Ties over both Coil Springs.

4. Tighten each Zip-Tie by hand until snug against Coil.

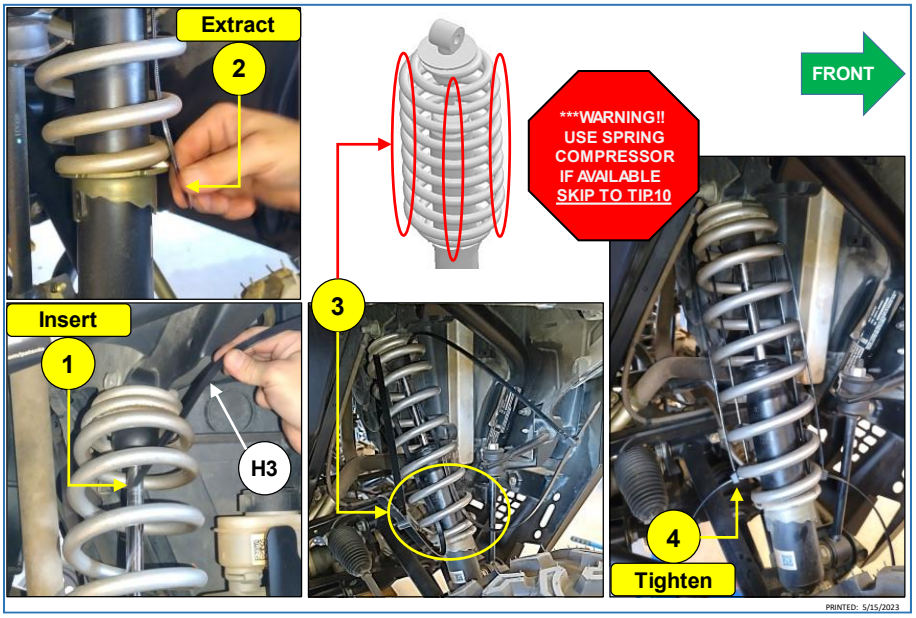


Figure 10 – TIP.8 Restraining Front Coils Springs with Zip-Ties

8.6. Restrain Front Coil Springs, Part 3 (if no Spring Compressor)

WARNING[1]: use extreme care moving Coil Springs restrained by Zip-Ties, avoid pinch points and wear glasses.

1. Lift Vehicle front until tires are completely off ground. Observe top of each front Coil Spring and verify a gap exists between top of Spring and Shock Absorber. Gap MUST be greater than 1/4", as shown in right figure.

2. If gap is smaller than 1/4", repeat Step 8.4.3, except lower Vehicle additional 1/2" (i.e., 3" from start).

3. Repeat Step 8.5.4 by further tightening each Zip-Tie.

4. Repeat Step 8.6.1.

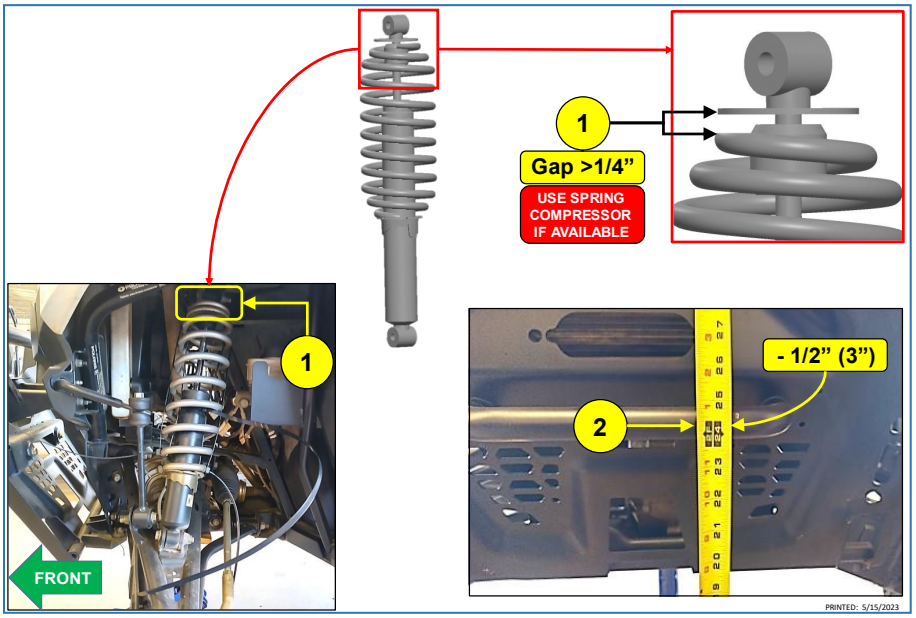


Figure 11 – TIP.9 Checking Gap at top of Front Coil Springs using Zip-Ties

End of Section

9. Front Installation

NOTE: apply Thread Locker to all Bolts/Threads prior to inserting them or attaching Nuts

9.1. Front Sway Bar & Shock Bolt Disassembly

NOTE: do not discard any OE Sway Bar Bushings, or Nuts; they will be reused.

1. Raise Vehicle front off ground and remove Wheels.
   - **If using Zip-Ties[1],** verify 1/4" gap exists, per above step 8.6 then go to next step.
   - **If using Spring Compressor**, go to next step.
2. Remove Top Nut and Bushing from Link on each side, as shown in figure below.
3. Lift/rotate Sway Bar off Links and secure it vertically.
4. Remove Upper Shock Bolt from each side, as shown to right.
   - **If using Zip-Ties[1], use extreme care handling restrained Spring**.

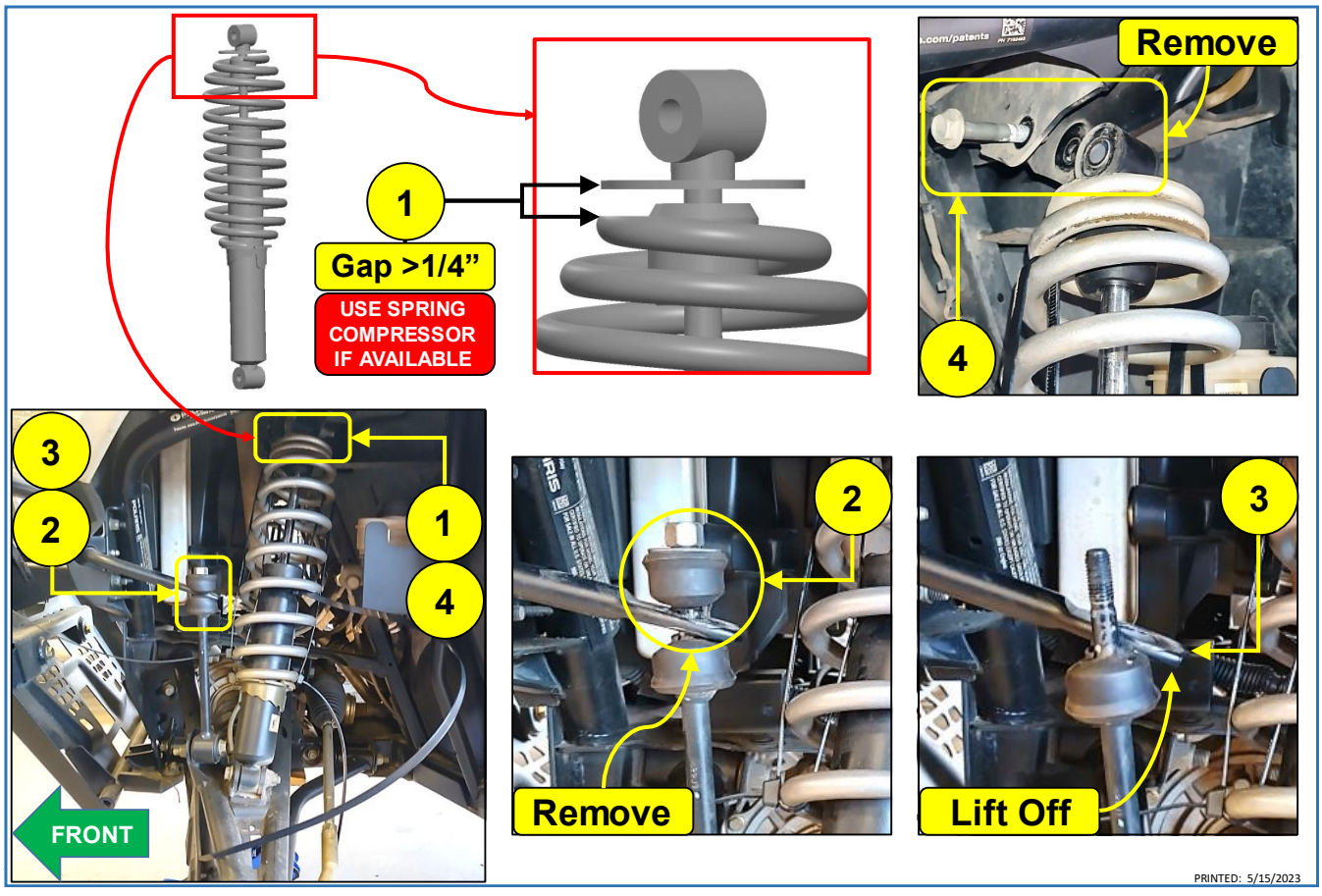


Figure 12 – TIP.10 Disassembling Front Sway Bar Links and Shock Bolts

9.2. Front Lift Block Installation

1. Lay Shock inward, as shown in figure below.
   - **If using Spring Compressor**, attach Tool to Spring and Compress until at least 1/4" gap exists at top, as shown in Figure 12 above.
   - **If using Zip-Ties[1], use extreme care handling restrained Spring**.
2. Attach Block (M1) into Chassis using two (2) Bolts (H1), as shown and verify no interference, then remove.
3. If any interference exists, as shown in figure below, then grind, sand, or file Chassis, as needed.
4. Install Block (M1) over Shock, using Bolt (H1) and Nut (H2), as shown below.
5. Slide Shock and Block up and outwards into Chassis, as shown.
6. Attach Block to Chassis, as described below:
   6.1. If needed, pull down on Shock to align inner hole. **WARNING!! Use extreme care if using Zip-Ties.**
   6.2. Insert inner Bolt (H1) through Chassis and Block, as shown.
   6.3. If needed, push up on Block to align outer hole.
   6.4. Insert outside Bolt (H1), then attach Nuts (H2), as shown.
7. Torque Nuts to 40 ft-lbs. Repeat steps on other side.

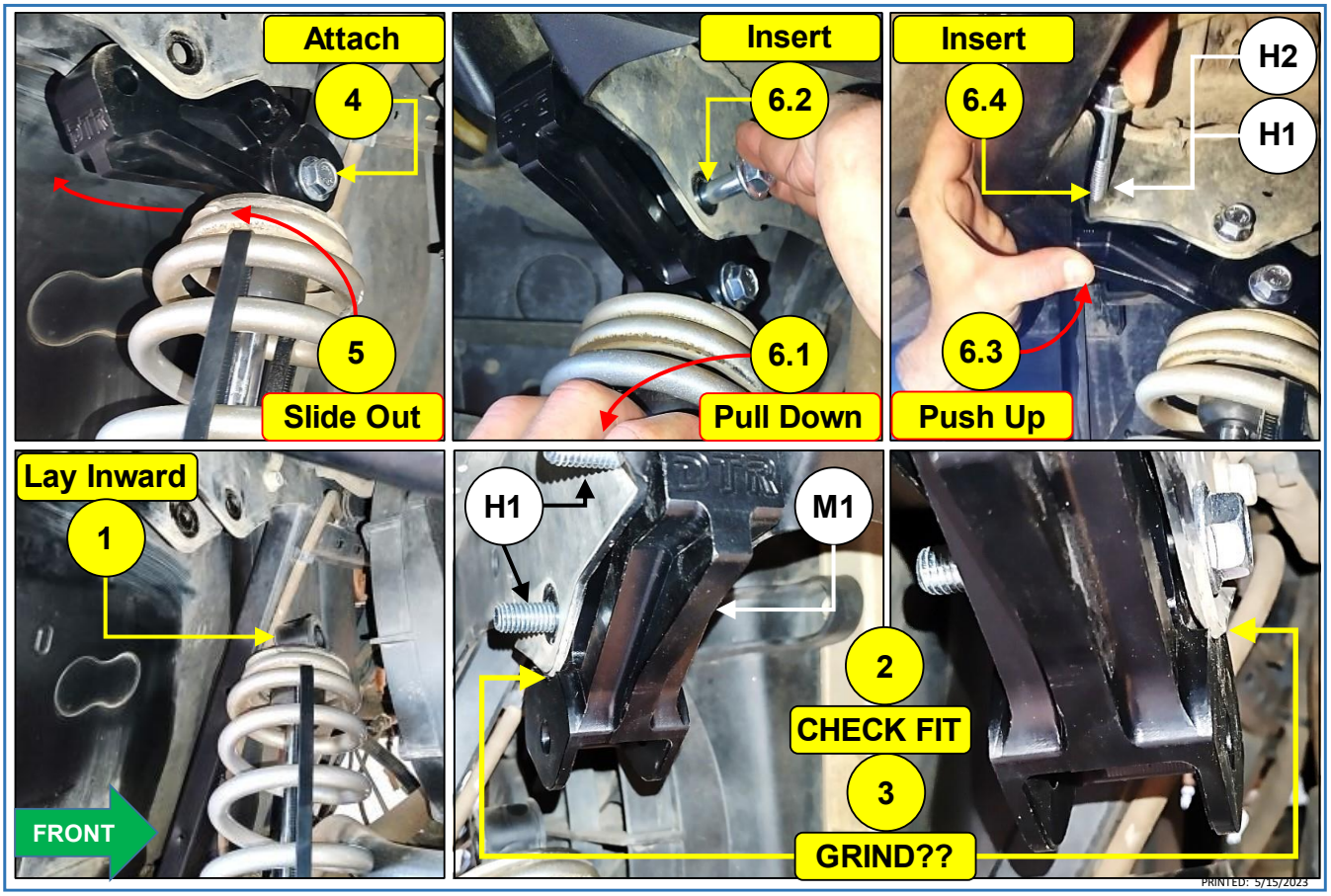


Figure 13 – TIP.11 Installing Front Lift Blocks (shown with Zip Ties)

9.3. Front Sway Bar Reassembly

1. Install Spacer (M3) over top of each Link, as shown in figure below.

2. Rotate Sway Bar down over both Links at same time.

3. Compress Suspension, as described below:
   3.1. Hook Strap into Lower Control Arm Brace, near Lower Shock Bolt.
   NOTE: if you have aftermarket Control Arms, you may need a different approach.
   3.2. Hook Strap over Chassis, or Front Bumper, as shown.
   3.3. Tighten Ratchet Strap until Sway Bar is level with ground.
   WARNING!! Use extreme caution compressing Suspension; verify Strap has proper strength, stay clear of pinch points, wear safety glasses and verify Vehicle is stable in air.

4. Re-install OE Top Bushing and Nut over Link, as shown then torque Nut to 12 ft-lbs.

5. Repeat step 3 and step 4 for other Link, then re-install Wheels and lower front of Vehicle back to ground.

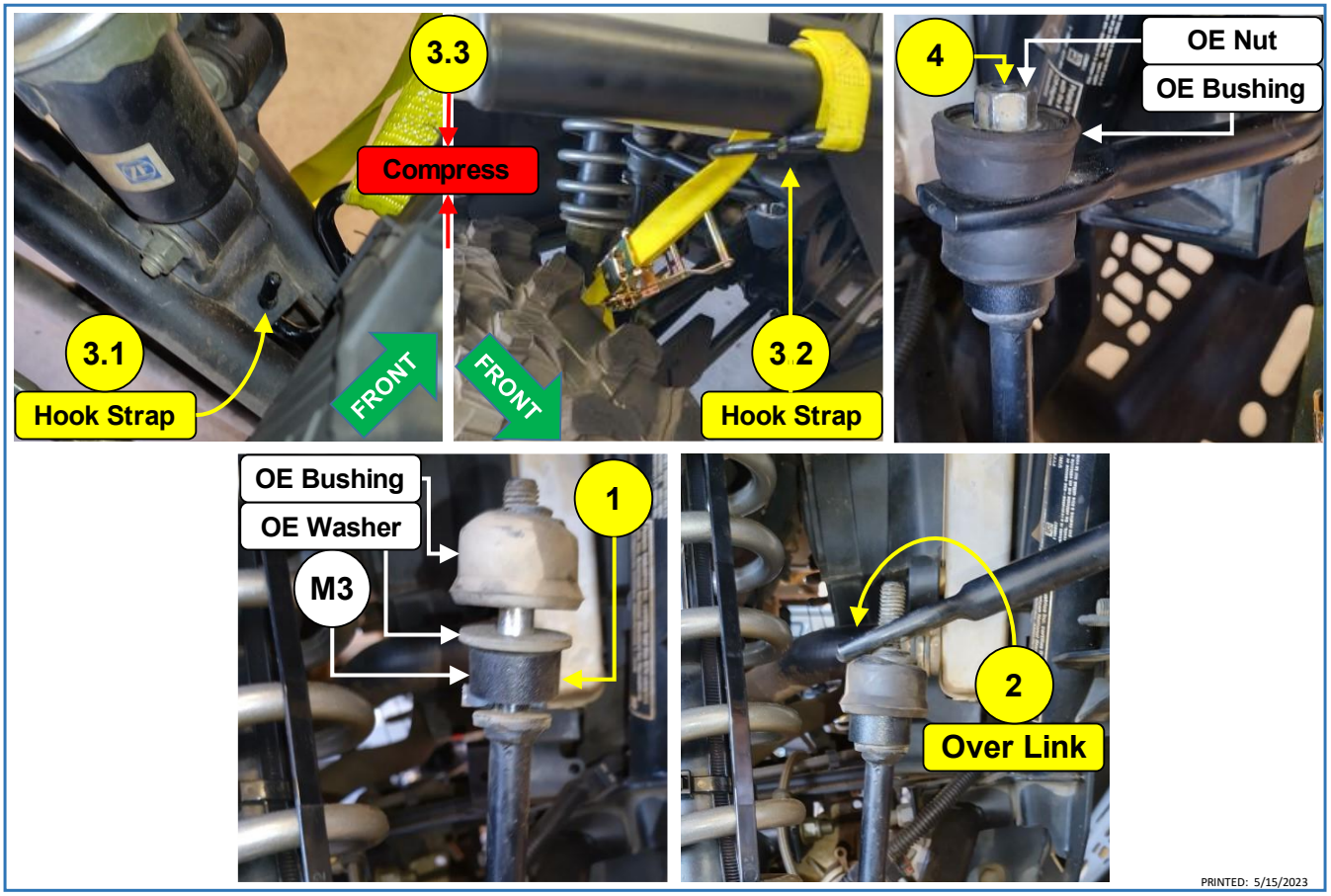


Figure 14 – TIP.12 Installing Sway Bar Links to Sway Bar

End of Section

10. Rear Installation

NOTE: apply Thread Locker to all Bolts/Threads prior to inserting them or attaching Nuts.

10.1. Rear Sway Bar & Shock Bolt Disassembly

NOTE: do not discard any OE Sway Bar Bushings, or Nuts; they will be reused.

1. Remove Top Nut and Bushing from Link on each side, as shown in figure below.
2. Lift/rotate Sway Bar off Links and secure it vertically.
3. Remove Link from Lower Control Arm:
    3.1. Use both Top Nuts previously removed and "jam" (i.e., tighten to each other) Nuts together on 1st Link.
    3.2. Hold Link Bottom Nut with wrench.
    3.3. Use socket wrench on "jam" Nuts and turn Link to remove Bottom Nut, then remove Link from Arm.
4. Remove Upper Shock Bolt. Repeat step 3 and step 4 on other side.

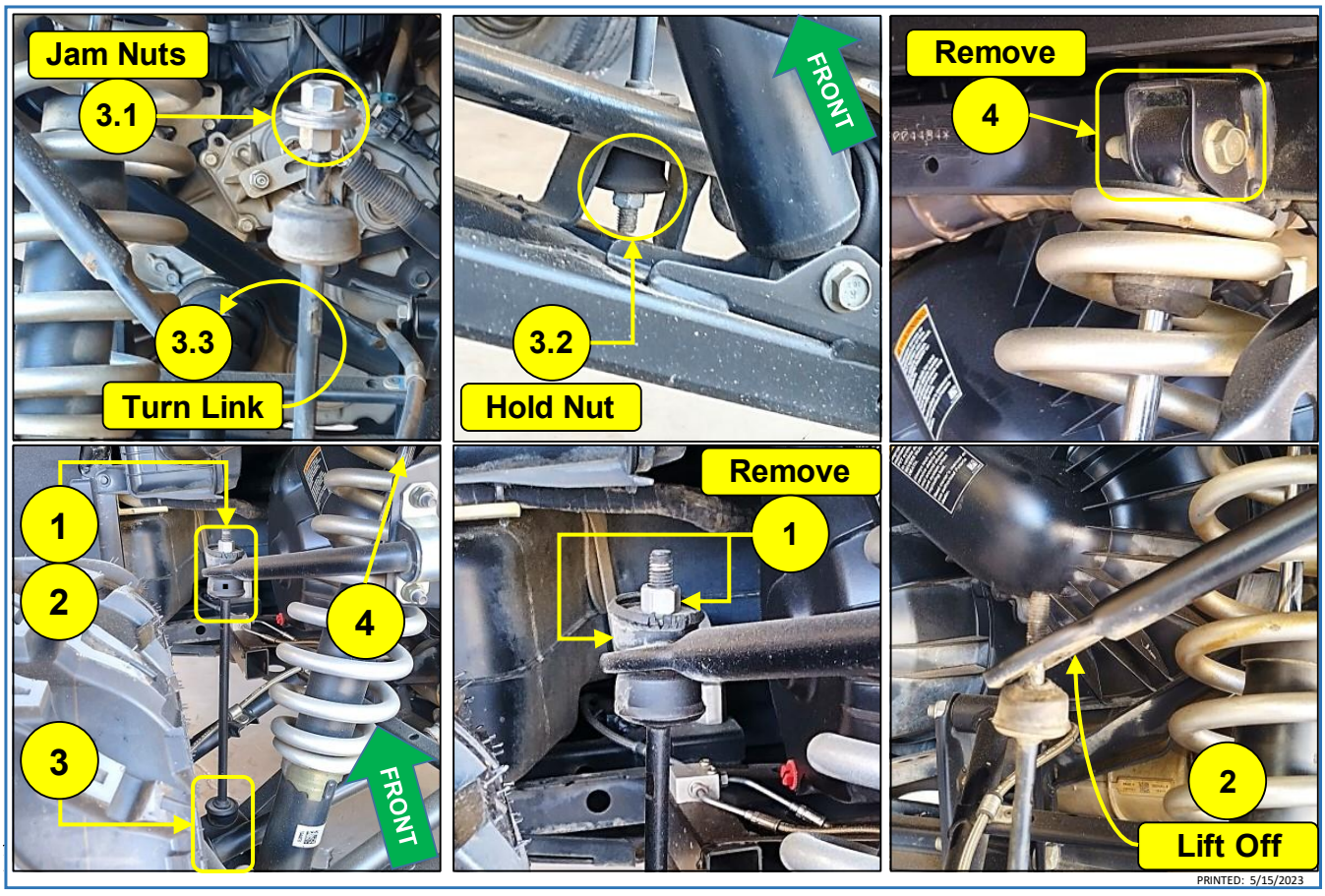


Figure 15 – TIP.13 Disassembling Rear Sway Bar Links and Shock Bolts

10.2. Rear Lift Block Installation

1. Lower Control Arms and Shock down until they stop.

2. Install Block (M2) over Shock, using Bolt (H1) and Nut (H2), as shown in figure below.

3. Lift Arms up and insert Block into Chassis, as shown.

4. Attach Block to Chassis, as described below:
   4.1. Insert outside Bolt (H1) through Chassis and Block.
   4.2. Lift Arms up, pivoting Block inward to align inside holes.
   4.3. Insert inside Bolt (H1), then attach Nuts (H2), as shown.

5. Torque Nuts to 40 ft-lbs. Repeat all steps on other side.

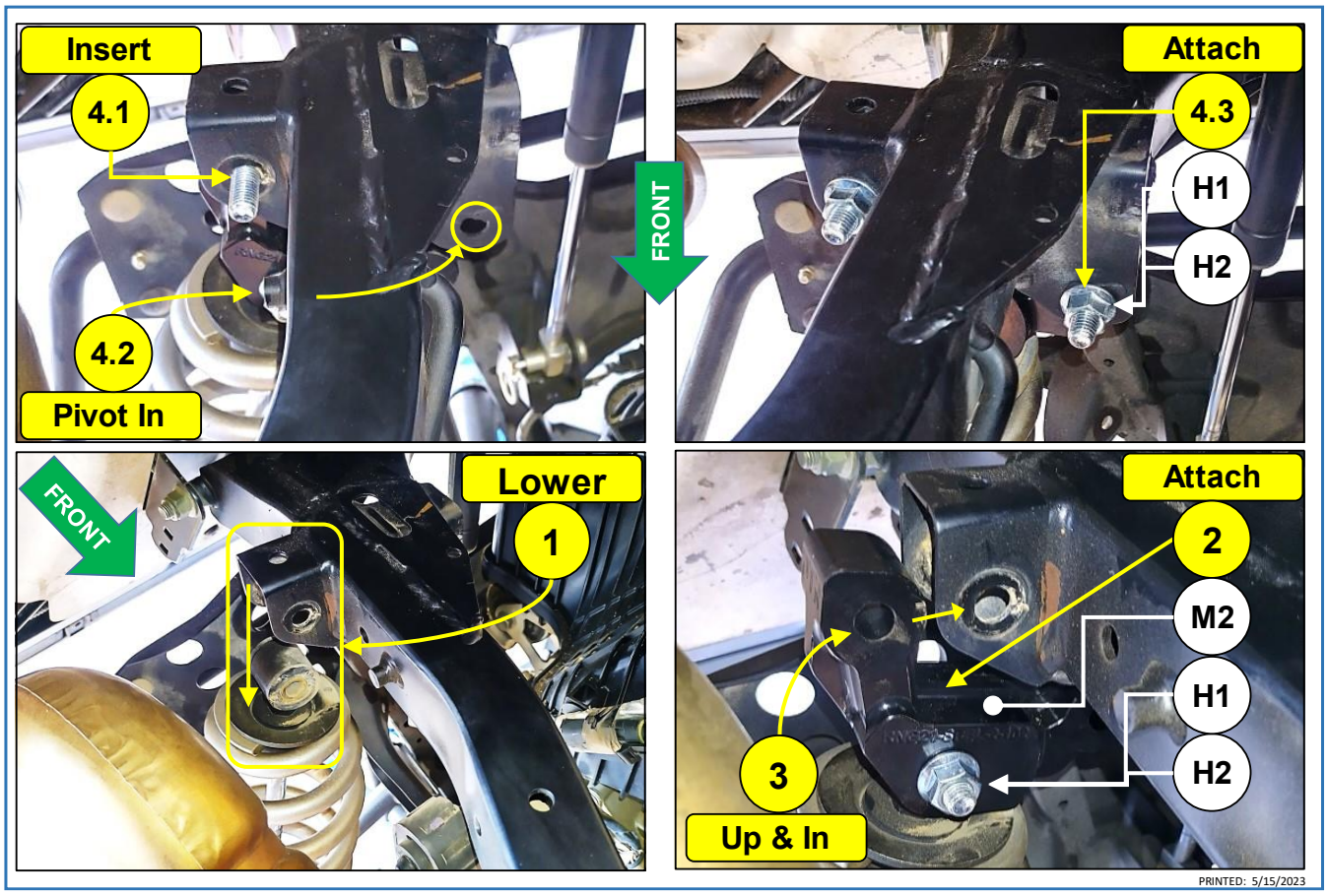


Figure 16 – TIP.14 Installing Rear Lift Blocks; Passenger/RH side shown

10.3. Rear Sway Bar Reassembly

1. Install Spacers (M3) on Links, as described below:
   1.1. Install a Spacer over top of each Link, as shown in below figure.
   1.2. Install a Spacer over bottom of each Link, as shown.
2. Re-attach both Links to Lower Control Arms using OE Bushings and Nuts, as shown.
3. Rotate Sway Bar down over both Links at same time.
4. Compress Suspension, as described below:
   4.1. Hook Strap over Chassis.
   4.2. Hook Strap over Lower Arm, near Lower Shock Bolt.
   NOTE: if you have aftermarket Control Arms, you may need a different approach.
   4.3. Tighten Ratchet Strap until Sway Bar is level with ground.
   WARNING!! Use extreme caution compressing Suspension; verify Strap has proper strength, stay clear of pinch points, wear safety glasses and verify Vehicle is stable in air.
5. Re-install OE Top Bushing and Nut over Link, as shown then torque both bottom and top Nuts to 12 ft-lbs.
6. Repeat step 4 and step 5 on other side, then re-install Wheels and lower rear of Vehicle back to ground.

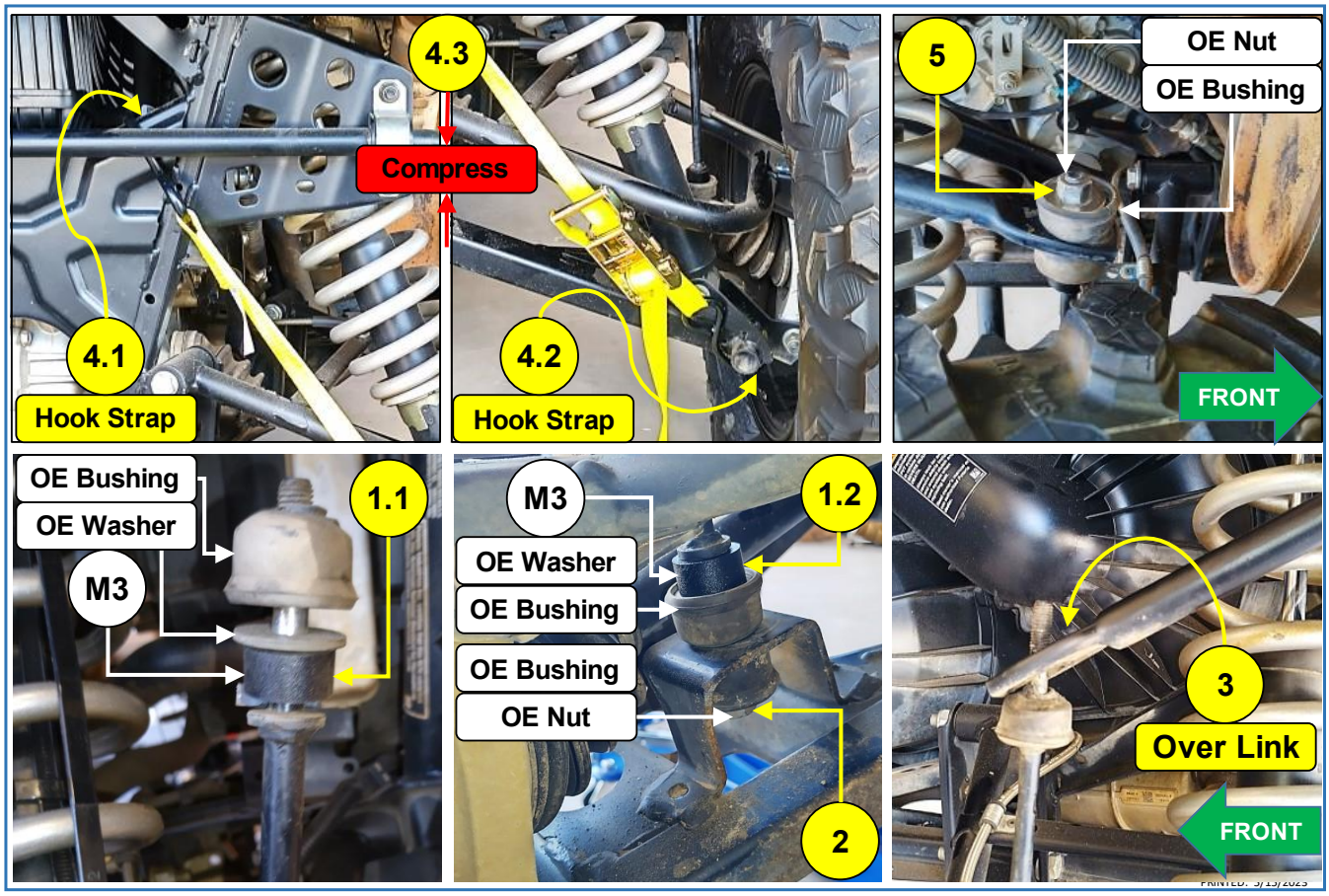


Figure 17 – TIP.15 Installing Rear Sway Bar Links to Arms and to Sway Bar

End of Section

11. Final Steps

11.1. Check Suspension

1. With Vehicle back on ground, use body weight and vigorously bounce on both Front and Rear Bumpers to cause Suspension to flex for a few moments. Investigate any abnormal sounds or vibrations.

2. Double check all Product fasteners, Suspension fasteners, and Lug Nuts to verify all are properly torqued and nothing has been forgotten.

11.2. Adjust Coil Spring Stiffness Cams

1. If desired, adjust Spring Stiffness cams back to position previously set at. See OE Technical Documentation for procedure.

11.3. Check Steering & Tire Rubbing

1. Enter Vehicle and turn Steering Wheel from Left-to-Right until Steering stops on each side. Repeat for a few moments. Investigate any abnormal sounds.

2. Turn Steering Wheel to Left stop and hold in place; exit Vehicle and scan around both Front Tires to check for any obvious signs of Tire contact. Bounce Vehicle up and down and listen for noise. If rubbing, try adjusting Coil Stiffness higher, or grind/trim body.

3. Repeat step 2 with Steering held to Right stop.

4. Place Steering Wheel straight for Pre-Alignment.

11.4. Adjust Headlight Aim

1. See OE Technical Documentation for procedure.

Continued Next Page…

11.5. Adjust Steering Alignment - Toe

NOTE: you may need a second person to help hold Tape Measure during Alignment, unless using Alignment Machine. There are also other ways to check Toe, such as this article by Mobil, or .Moss Motoring.

1. Measure Steering Toe by Measuring distance between center seams of front tires, as shown below:
   1.A. **Measure at front side of tires,** *with Tape Measure about 6" above ground and level.* Record value.
   1.B. **Measure at rear side of tires,** *with Tape Measure about 6" above ground and level.* Record value.

2. Loosen Hex Jam Nuts on outside of each Tie-Rod, as shown. Calculate Toe, as shown below, then rotate each Tie-Rod using wrench, as necessary to correct Toe. Adjust Tie-Rods EQUALLY to keep Steering Wheel centered.

3. Repeat step 1 and step 2 until Zero/Neutral Toe is achieved, as shown in figure below.

4. Re-tighten Hex Jam Nut on each Tie-Rod and torque to 15 ft-lbs.

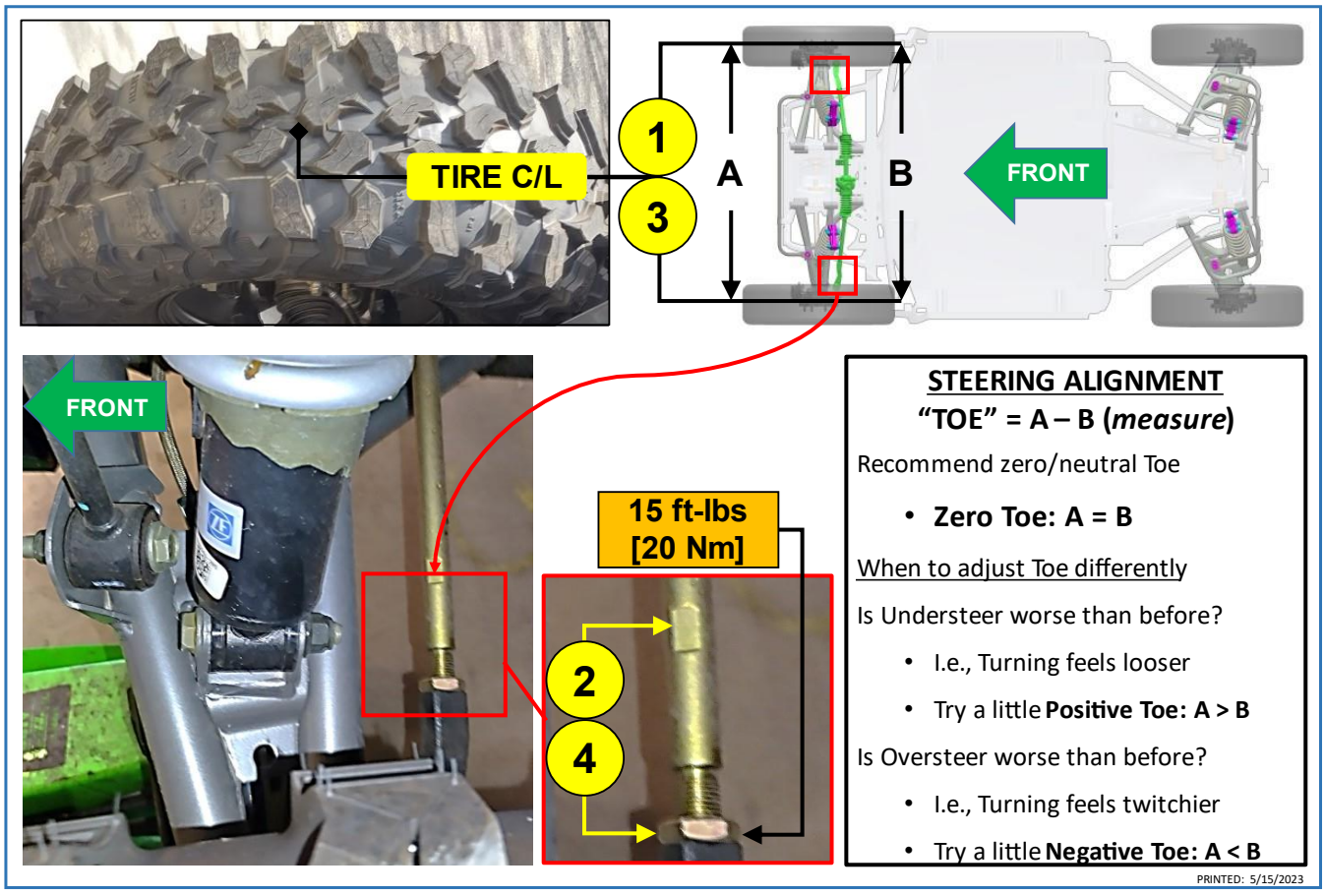


Figure 18 – TIP.16 Adjusting Steering Alignment to Zero/Neutral Toe

End of Section

12. General Operation

12.1. No change to original operation of Vehicle, as directed by Original Manufacturer, except as noted below. ***DANGER: use extra care operating your new lifted Vehicle; read Safety First section.***

End of Section

13. Routine Maintenance

Continue following all OE maintenance schedules at same interval they specify, except as noted below.

13.1. Maintenance Table

Perform following "Steps To Do" at least once during recommended "Frequency Interval"; item is due at first interval reached (i.e., when hours in operation occurs before calendar time occurs). If Vehicle is regularly operated under severe use (i.e., racing, dusty terrain, abnormal air temperatures, high humidity, etc.), increase frequency.

ITEM NO.	PART/SYSTEM NAME	FREQUENCY INTERVAL			STEPS TO DO
		HOURS	CALENDAR	DISTANCE	
1.	Axle Shafts/CV Joints	40	12 mo.	400 mi.	Visually inspect for cracked CV boots; repair, as needed
2.	Axle Shafts/CV Joints	80	-	800 mi.	Remove, inspect for wear and grease
3.	Brake Lines	20	6 mo.	200 mi.	Visually inspect for cracking, abrasion, swelling, or stretching; repair/replace, as needed
4.	Ball Joints – Front Upper & Lower	20	6 mo.	200 mi.	Visually inspect for cracked boots; replace as needed
5.	Ball Joints – Front Upper & Lower	80	-	800 mi.	Physically inspect for excessive play with wheels off ground. Replace, as needed
6.	Control Arm Bushings – Front & Rear	80	12 mo.	800 mi.	Lubricate bushings at OE Grease Zerks
7.	Control Arm Bushings – Front & Rear	80	-	800 mi.	Physically inspect for excessive play with wheels off ground. Replace, as needed
8.	Lift Block Hardware (This Product)	20	6 mo.	200 mi.	Visually inspect for loose fasteners, or rust; tighten/replace as needed
9.	Lift Blocks (This Product)	200	24 mo.	2000 mi.	Visually inspect for damage, or cracks; replace as needed
10.	Shock Bushings – Front & Rear	80	-	800 mi.	Physically inspect for excessive play with wheels off ground. Replace, as needed
11.	Shock Seals	20	6 mo.	200 mi.	Visually inspect for any leakage around rod; replace, as needed
12.	Steering Tie-Rod ends	20	6 mo.	200 mi.	Visually inspect for cracked boots; replace as needed
13.	Steering Tie-Rod ends	80	-	800 mi.	Physically inspect for excessive play. Replace, as needed
14.	Steering Toe Alignment	See right			Physically inspect/adjust each time tires, steering, or suspension parts are replaced
15.	Sway Bar Bushings	20	6 mo.	200 mi.	Visually inspect for cracking, or looseness. Replace, as needed
16.	Sway Bar Bushings	40	6 mo.	400 mi.	Lubricate bushings at OE Grease Zerks
17.	Wheel Bearings	80	-	800 mi.	Physically inspect for excessive play with wheels off ground. Replace, as needed

13.2. Washing Product

Whenever Vehicle is operated in corrosive, extremely muddy, or highly humid areas, promptly clean Lift Blocks, fasteners, and general Suspension with automotive grade exterior wash soap (i.e., not acidic/corrosive) and clean water. Exercise care when using high-pressure water on our Powder Coat Finished parts.

13.3. Removing Product

If desired to remove Product for any purpose, follow all disassembly steps herein in same order, then re-assemble Vehicle Suspension per official OE Technical Documentation. Obtain new OE hardware and parts, where needed.

End of Section

14. Warranty and Closing

We thank you for supporting us with your purchase. Your support allows us to develop more premium products that enable end-users like you to have a more exciting and purposeful experience with your vehicle. We stand behind our Product's design and build quality and therefore extend a warranty, as expressed below.

14.1. Warranty Table

To Original Purchaser[2] of this Product, we proudly offer a Limited Warranty, as described in table below:

COMPONENT(S)	COVERAGE AGAINST[3]	REPAIR, OR REPLACEMENT	COVERAGE PERIOD[4]	NOT COVERED
Lift Blocks, Spacers	Material cracking, or other material failure/defect	Replaced free of charge	Lifetime	Installation, repair costs, or vehicle damage
	Finish peeling, fading, or otherwise failing. *NOT chips*.	Replaced, or repaired free of charge	5 Years	
Hardware	Material cracking, or breaking	Replaced free of charge	5 Years	
	Finish rusting, or corroding	Replaced free of charge	2 Years	

14.2. Register your Product

To qualify for Limited Warranty, within 12 months of Product, or Vehicle equipped with NEW Product being purchased, email us a copy of your completed "Product Registration Form" (see end of this manual).

14.3. Filing a Claim

To file a warranty claim, email us explaining issue(s) and attach photographic, or video evidence of problem(s). Include Vehicle Model, Model Year, Trim package, proof of purchase, and date of Product Registration.

14.4. California Proposition 65 – Cancer Warning

As per California state law, it is required to notify a consumer purchasing our Product in that state, if it contains any chemical known in California to cause cancer. We are issuing a warning statement simply to comply with this law. Trace amounts of the chemicals listed below may exist in our Products:

- **Nickel Acetate -** very common with aluminum anodizing processes, which we may use to finish parts.
- **Hexavalent Chromate -** very common on zinc plated hardware, which we may include for installation.

However, this Product is both safe to handle and be around. Click here To learn more about Proposition 65.

14.5. Copyrights

14.6. Contact Information

Location: Desert Southwest - Tucson, AZ. USA
Email: Sales@DirtyTeethRacing.com
Web: http://www.DirtyTeethRacing.com

End of User Manual

Endnotes

[1] **WARNING!! U*se appropriate Spring Compressor Tool to restrain Coils when directed, if at all possible, and not Zip-Ties. If no Spring Compressor Tool is available, handle Zip-Tied Restrained Springs with extreme care; keep fingers away from pinch points and wear safety glasses.***

[2] Original Purchaser is defined as anyone of following:

1. Consumer (i.e., end-user) who purchased this Product directly from Dirty Teeth Racing through an official DTR store, such as DirtyTeethRacing.com, or DTR's Amazon store, AND has proof of purchase.
2. Consumer who purchased their Vehicle from a dealership, or other approved reseller where reseller installed this Product in NEW condition AND has proof Vehicle came equipped with Product in NEW condition.
3. Any dealership, vendor, or approved reseller that directly purchased this Product from Dirty Teeth Racing for purpose of installation, or direct resale to consumer.

[3] Coverage is only extended to warranty claims, which arise from normal usage, as defined herein. It does NOT cover:

1. Product that has been used, or installed in anyway other than it was designed for and described herein.
2. Product that has not been maintained, as described herein.
3. Product that was involved in any collision, accident, or otherwise abnormal usage.

[4] Coverage Period begins from Date of Purchase

www.DirtyTeethRacing.com

Dear Owner,

Please complete this form and email a copy to Dirty Teeth Racing to register your Product and qualify for warranty. We accept any copy, which was printed & scanned, photographed, or as a PDF if filled out digitally. Send email to sales@DirtyTeethRacing.com, with subject "Product Registration".

PRODUCT INFORMATION

PRODUCT TYPE	FOR MAKE & MODEL	PRODUCT NAME
Suspension Lift	Polaris Ranger	RNG21-SPBL-2

Below sections to be filled out by Installer, and/or Owner.

INSTALLATION INFORMATION

Please provide Owner's full name, Installer's name, or "Self" if same, and date Product was installed.

OWNER NAME	INSTALLER NAME	INSTALLATION DATE

VEHICLE INFORMATION

Please provide Model and Trim, Model Year and Vehicle Identification Number where Product was installed. If you are unsure of Trim package, write "Base".

MODEL & TRIM LEVEL	MODEL YEAR	VIN