INSTALLATION INSTRUCTIONS FOR: REV.12-04-15

- ❑ **SLAMTAIL SUSPENSION KIT** **P/No. ST3-001A-01**
- ❑ **SLAMTAIL SPRING PRE-LOAD ADJUSTER KIT** **P/No. ST3-008A-01 (OPTION)**

INSTALLATION INSTRUCTIONS INDEX

Table of Contents:

1.0 MODELS:

See packaging information or www.slamtail.com for compatible motorcycles.

2.0 TOOLS AND EQUIPMENT REQUIRED:

- ❑ Motorcycle work-bench lift or overhead crane, to elevate rear wheel whilst stabilizing and securing bike.
- ❑ Stable jacking system to enable the rear wheel to be fully bumped and drooped whilst stabilizing and securing bike.
- ❑ Workshop press.
- ❑ Bench mounted engineer vice equipped with soft jaws.
- ❑ 3/4” A/F wrench or Snap-On® part no. SRES-24 or equivalent torque adaptor.
- ❑ Loctite® 243 thread locking compound (or equivalent).
- ❑ 1” A/F socket.
- ❑ 11/16” A/F socket.
- ❑ 7/16” A/F socket.
- ❑ 1/4” A/F hex-drive (5 spd. trans models)
- ❑ 3/16” A/F hex-drive (6 spd. trans models)
- ❑ 26mm A/F open-ended wrench.
- ❑ 9/16” A/F open ended wrench.
- ❑ Mid-size phillips-head screw driver.
- ❑ Mid-size flat blade screw driver.
- ❑ Snap-on® style elbow pick.

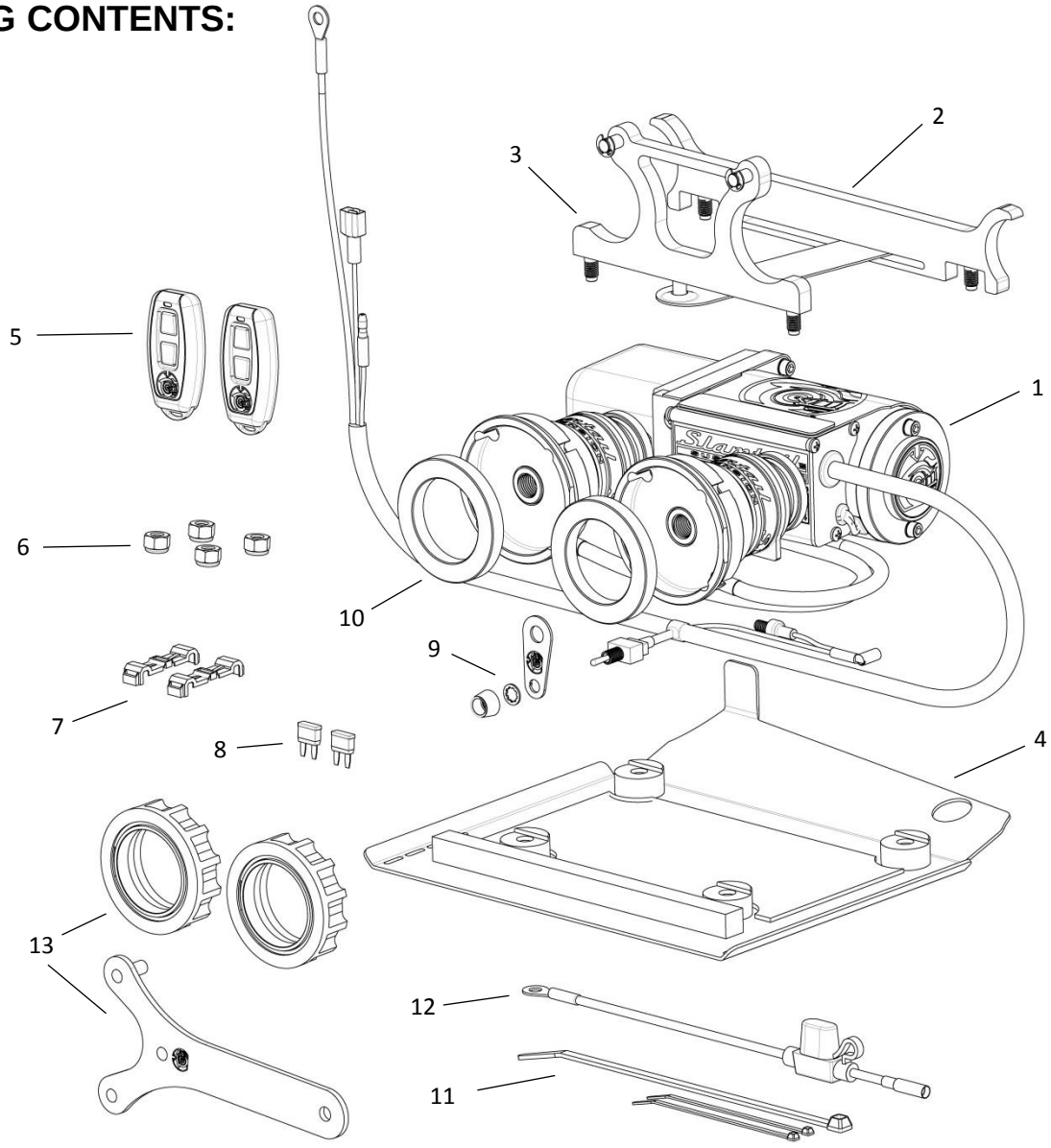
3.0 PRODUCT DISCLAIMER & INSTALLER RESPONSIBILITIES:

IMPORTANT - SLAMTAIL SUSPENSION™ RECOMMENDS THIS PRODUCT BE INSTALLED BY A QUALIFIED MOTORCYCLE MECHANIC / TECHNICIAN.

WARNING:

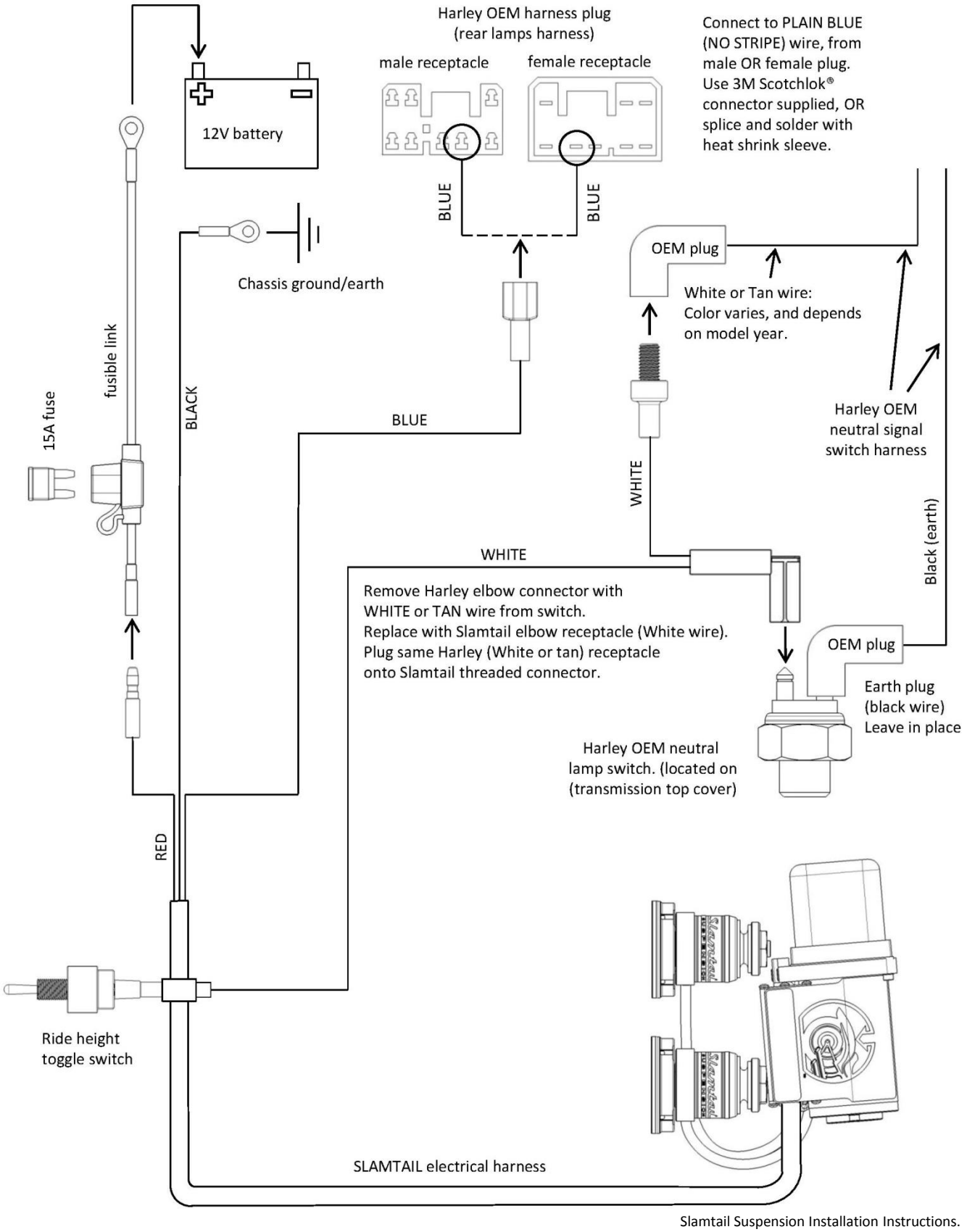
- ❑ Installer is responsible for installing this product in accordance with Slamtail Suspension™ specifications and installation instructions.
- ❑ Incorrect installation of this product will prevent it from working properly and may void the warranty.
- ❑ Incorrect installation of this product may cause injury or even death.
- ❑ Installer is responsible for ensuring the motorcycle and the rear wheel are stable and secure at all times. Incorrect securing of the motorcycle and the rear wheel could result in serious injury or death.
- ❑ No alteration of any suspension component is permitted.
- ❑ Slamtail Suspension™ is not responsible for any improper installation or operation of this product.
- ❑ Slamtail Suspension™ in its sole discretion shall determine whether any product is defective or otherwise covered by warranty.
- ❑ Installer is responsible for advising the owner of proper use of this product.

4.0 PACKAGING CONTENTS:



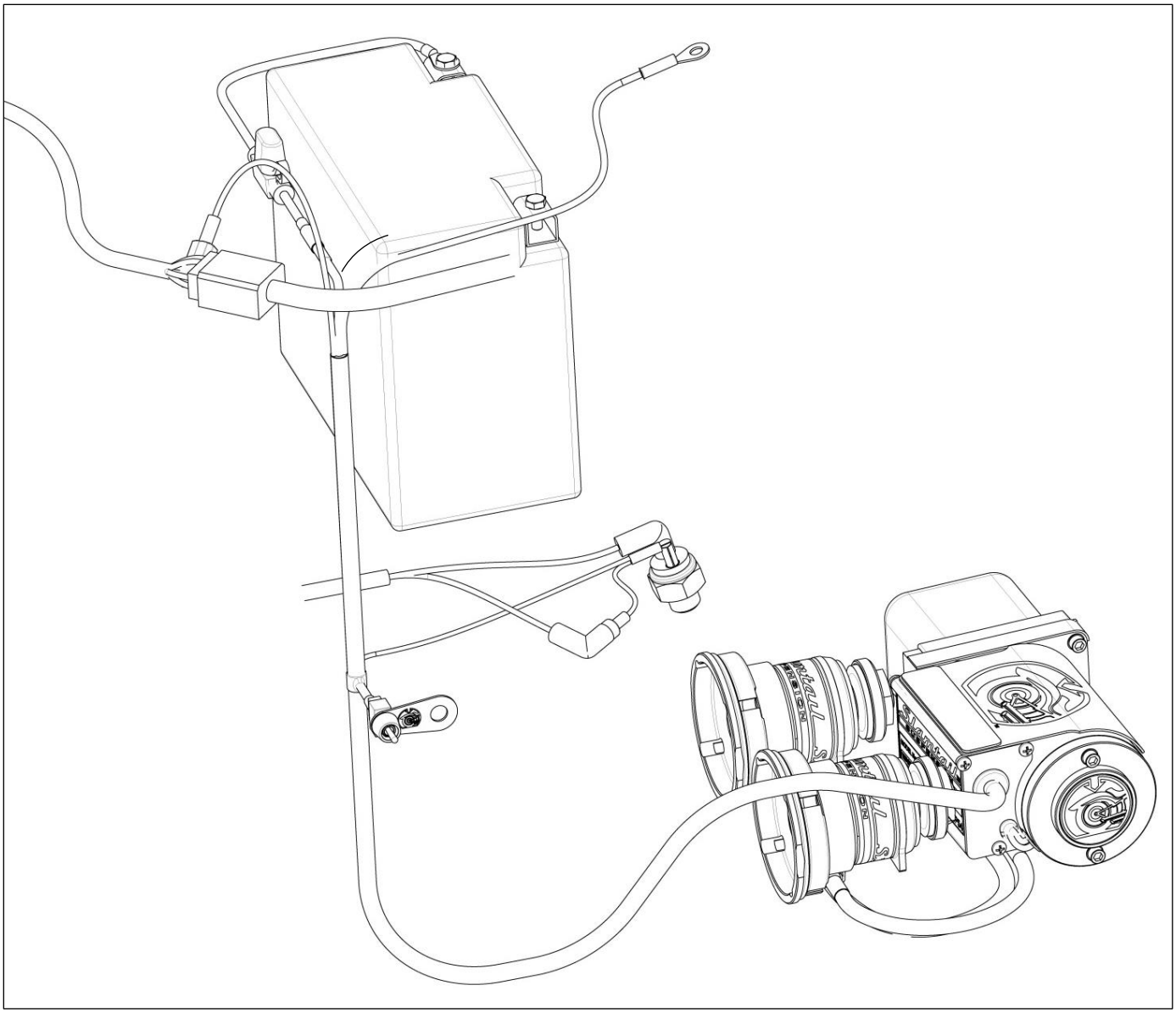
Item	Description	Qty.	Notes
1	Slamtail hydraulic power unit, rams & harness	1	Complete assembly
2	Undertray mounting bracket - forward	1	
3	Undertray mounting bracket - rearward	1	
4	Undertray assembly	1	
5	Remote control key fob	2	1 for use, 1 for spare
6	1/4" UNC Nyloc nut	4	Undertray mounting nuts
7	3M Scotchlok® connector	2	Use this, or splice, solder and heat shrink
8	Mini fuse 15A	2	1 for use, 1 for spare
9	Toggle switch mounting bracket, washer & nut	1	
10	Spring spacer	2	Standard fitment (non pre-load kit)
11	Cable tie set	1	1 x large, 2 x small
12	Fusible link	1	
13	Slamtail Spring Pre-Load adjuster kit	X	Optional kit, with adjuster wrench

5.0 WIRING HARNESS SCHEMATIC:



6.0 WIRING HARNESS INSTALLATION DIAGRAM:

General wiring harness layout as installed on motorcycle:



Important! **Before starting this installation job: Disconnect the negative (-) battery cable from the battery.**

7.0 OEM SHOCK REMOVAL:

Remove the OEM standard Softail® shock absorber units using:

- ❑ 3/4" A/F wrench or Snap-On® part no. SRES-24 or equivalent torque adaptor to loosen rear OEM shock absorber bolts (Loctite® applied when installed by factory).
- ❑ 9/16" A/F open ended wrench.
- ❑ 11/16"A/F socket & ratchet.

Snap-On® Part no.SRES-24

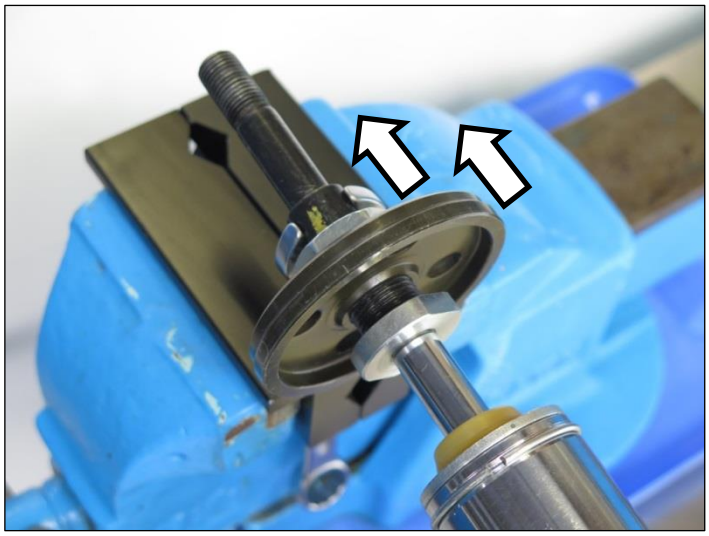
7.1 OEM Shock units disassembly:

Workshop press:

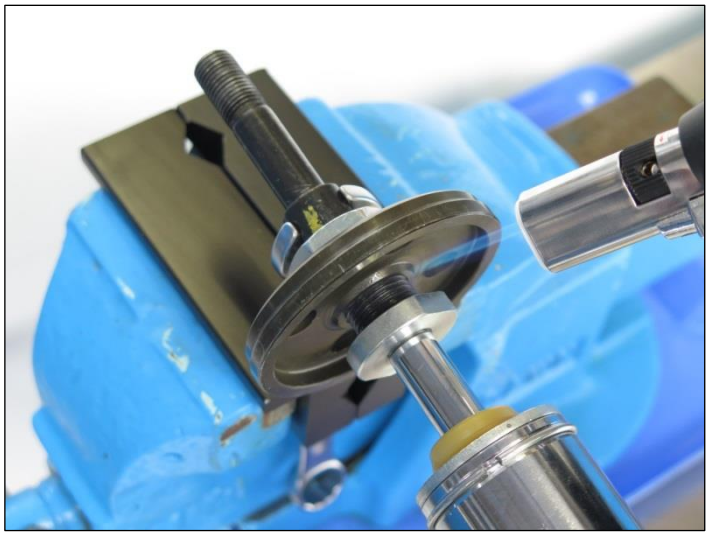
❑ Remove circlips from OEM shock units.

OEM shock units disassembled.

7.2 OEM Shock units top-eye removal:

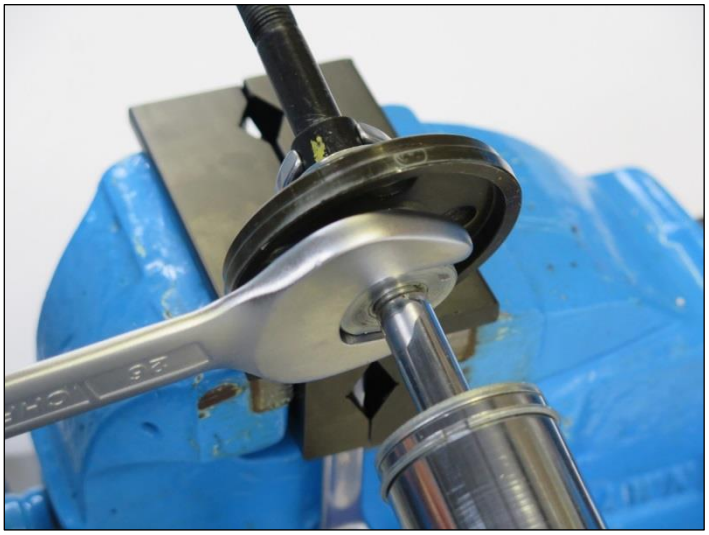


- ❑ Clamp 9/16” A/F wrench in engineering vice as shown and mount shock unit as shown.
- ❑ Chase jam nut and collar up to end of thread to expose main thread.



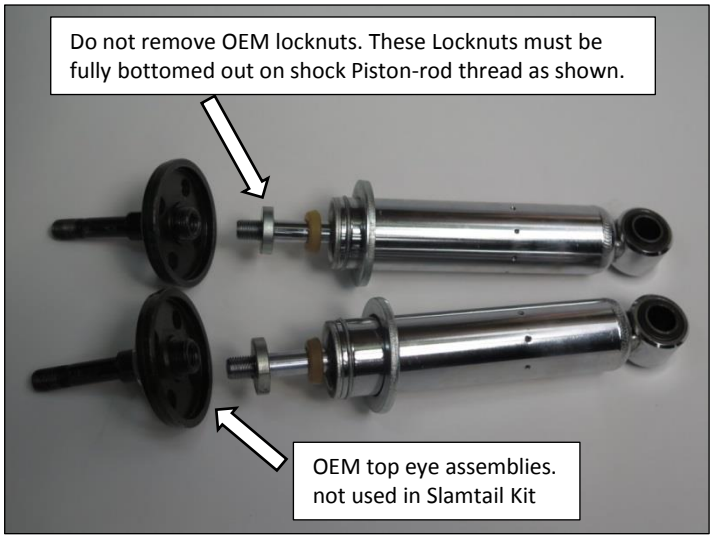
- ❑ Apply heat to threaded portion to using a butane torch or similar to loosen factory applied Loctite®

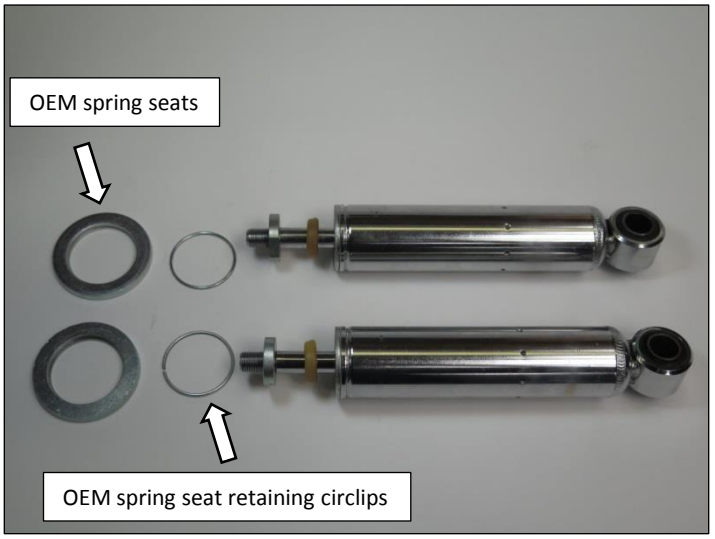
Caution: Don’t use excessive heat!
Just enough to free the thread locking.



- ❑ Unscrew the shock assembly from top-eye assembly using a 26mm A/F wrench. (x both assemblies).

7.3 OEM Shock units disassembled:



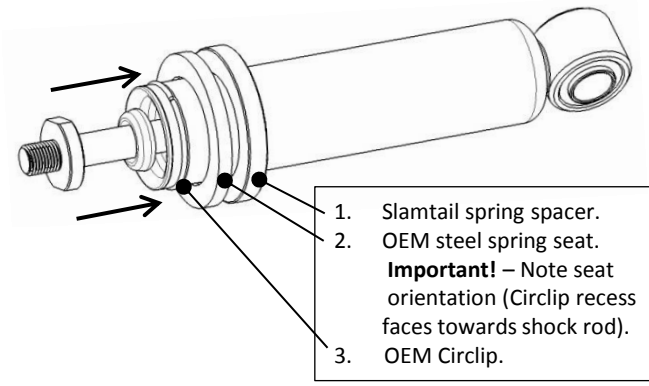


❑ Disassembled units above ready for re-assembly with Slamtail kit.

8.0 SLAMTAIL KIT ASSEMBLY:

8.1 Spring seat assembly <u>WITHOUT</u> Spring Pre-Load Adjuster Kit option.

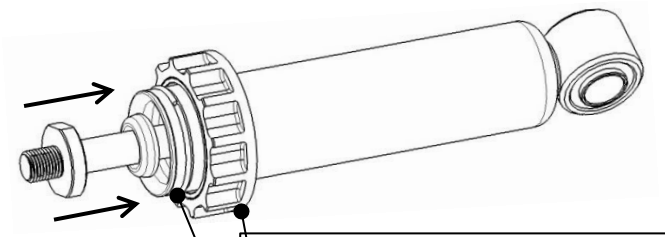
❑ Assemble parts onto shock body in this sequence:



1. Slamtail spring spacer.
2. OEM steel spring seat. **Important!** – Note seat orientation (Circlip recess faces towards shock rod).
3. OEM Circlip.

8.2 Spring seat assembly <u>WITH</u> Spring Pre-Load Adjuster Kit option.

❑ Assemble parts onto shock body in this sequence:



1. Slamtail Spring Pre-Load Adjuster seat.
   <u>Important! - Note seat orientation.</u>
2. OEM Circlip.

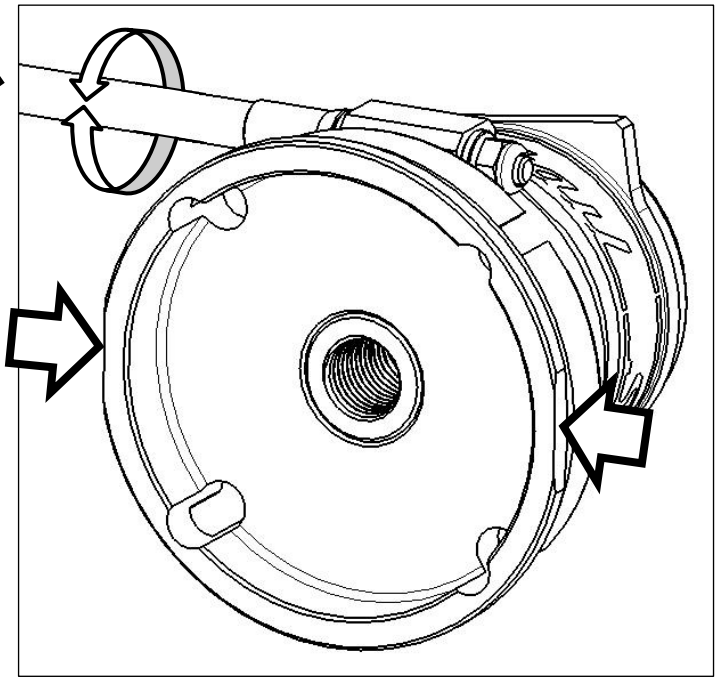
Spring Pre-Load Adjuster collar locks onto shock body circlip when spring load is applied in final assembly.

8.3 Assembling shock units to Slamtail Hydraulic rams.

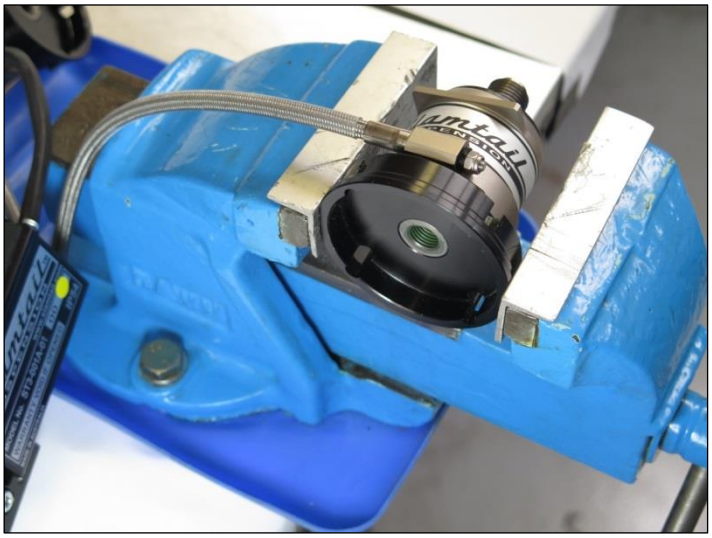
Note: Hydraulic hose connection with the ram assembly is free to rotate in the housing to ease system assembly.

Note: The integrated Top Cap on the hydraulic ram assembly has two flat portions for mounting into a vice .

These flat portions must be used to hold the ram assembly.

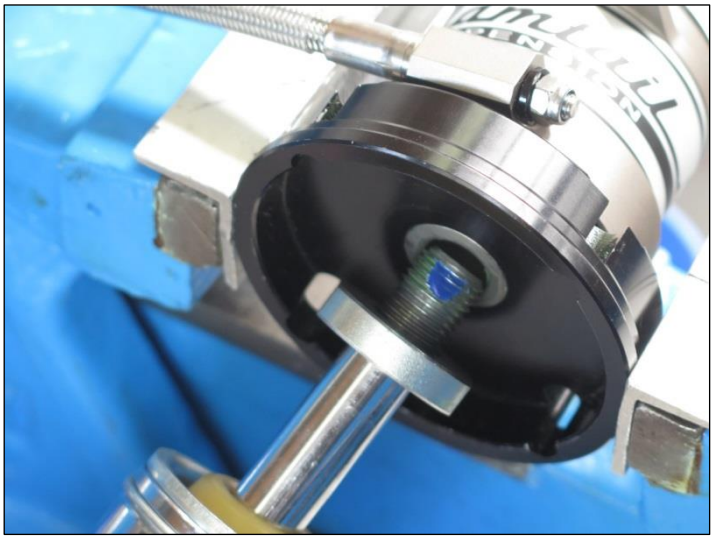


8.3 Assembling shock units to Slamtail Hydraulic rams.

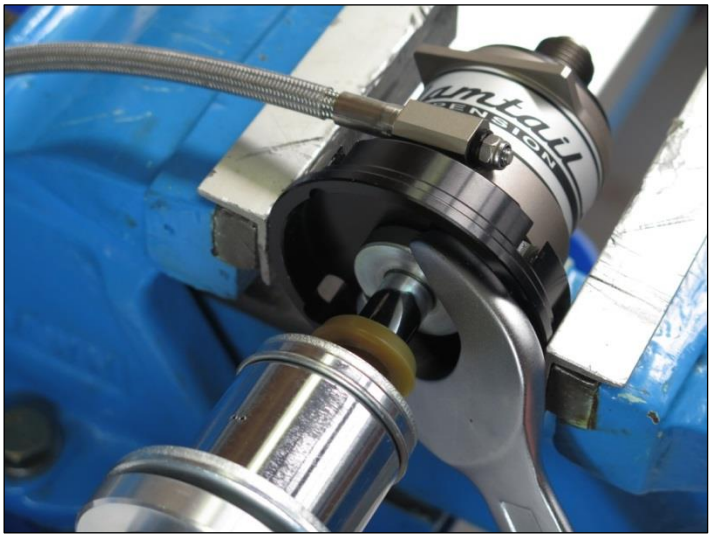


- ❑ Mount the Top Cap in an engineering vice fitted with soft jaws.

Caution! This Top Cap is made from Aluminium Alloy. Do not use excessive force to clamp it or it will distort and no longer be serviceable.



- ❑ Apply a small spot of Loctite® 243 medium strength thread locker to the shock piston rod thread as shown.



- ❑ Tighten shock lock-nut as shown on both ram and shock units.

Tightening torque:
15 -20 LBS FT.

8.4 Slamtail kit ready for assembly with spring tubes:

Slamtail Kit WITHOUT pre-Load Adjuster option ready for spring tube assembly

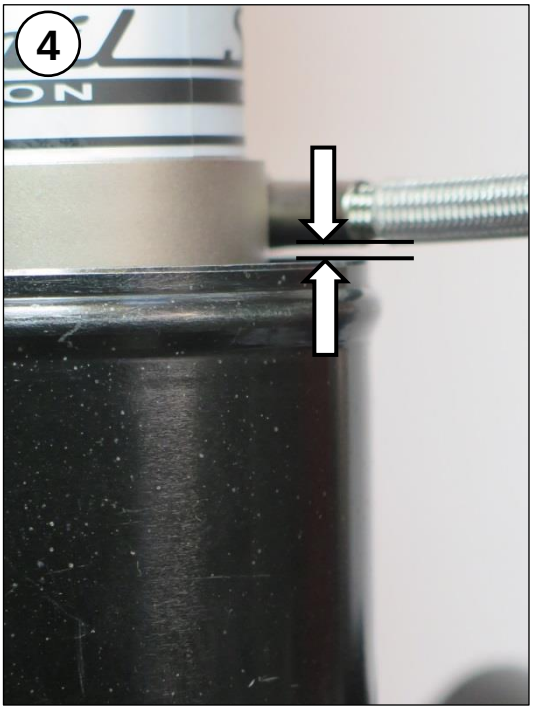
Slamtail kit WITH Pre-Load Adjuster option ready for spring tube assembly

8.5 Spring tube assembly

Mount assembly on spring tube

Compress down guiding the top collar into the spring tube.

Keep compressing down until hydraulic fitting nearly touches the spring tube



Warning!: Do not allow the hydraulic fitting to touch the spring tube as this will bend or break the fitting.

8.5 Spring tube assembly

Insert OEM circlip into groove passing under hydraulic fitting.

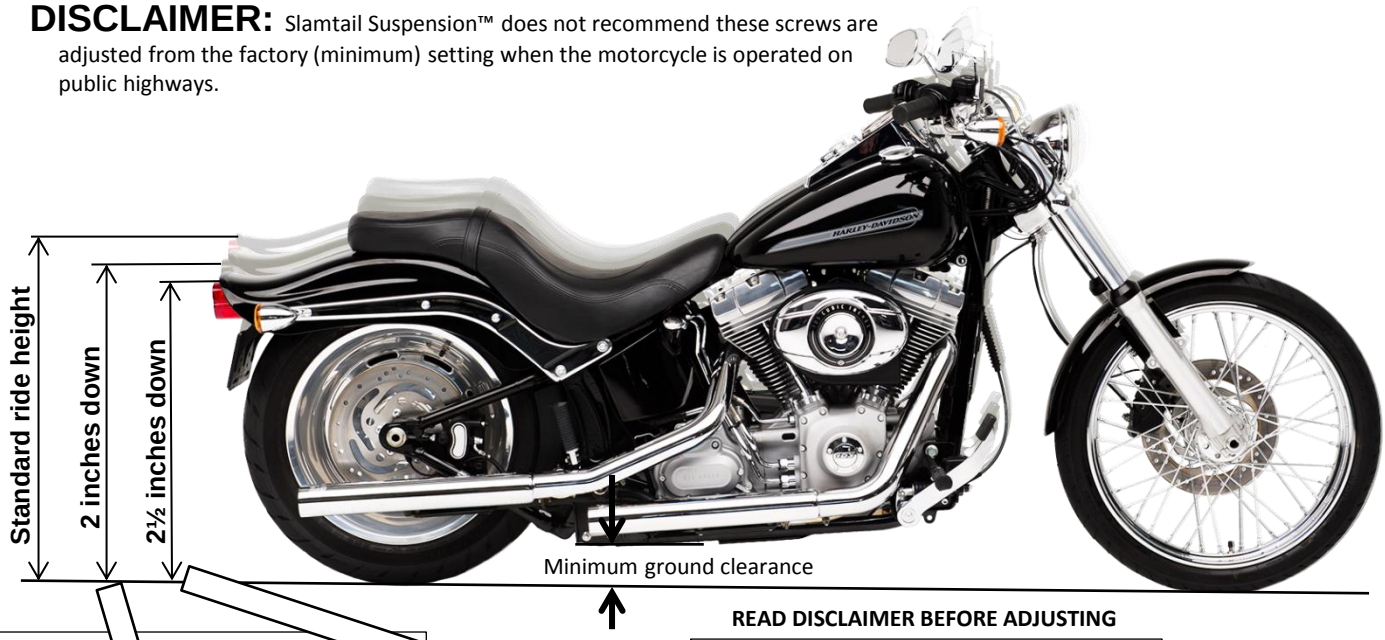
Important! Chase the circlip around inside the tube groove with a pick to ensure the ring has properly seated and engaged.

Raise the press and again visually ensure the circlip is fully engaged inside the groove.

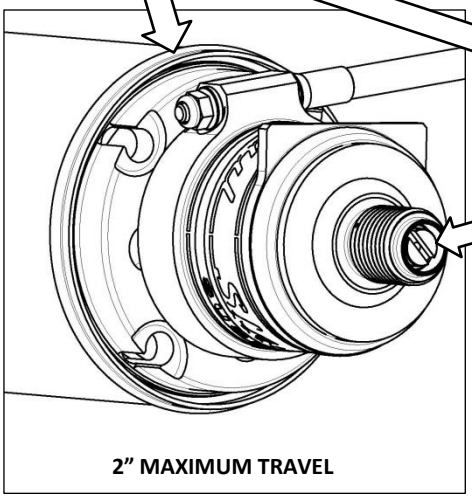
9.0 SLAMTAIL MAXIMUM RIDE HEIGHT ADJUSTMENT
READ – IMPORTANT!

The Slamtail Suspension system has an adjustable screw mechanism designed into the end of the 2 hydraulic ram assemblies.
These screws control how long the rams can extend and therefore how low the motorcycle will lower down in the lowest position.
When the Slamtail Suspension kit leaves the factory, these screw are set topped out, this results in the motorcycle being capable of being lowered approximately 2 inches down from standard ride height.
At this minimum height the clearance from the frame rails to the ground is approximately 100mm which is a internationally recognised legal minimum ride height for vehicle operated on public roads.
If the installer/owner/operator of the motorcycle wishes the motorcycle to be capable of the system maximum lowering of 2½ inches, then the adjuster screws can be screwed in all the way, which then allows the hydraulic ram to travel it's maximum length, and lower the motorcycle down from standard ride height, to 2½ inches down.
If the decision made to fully screw in the adjuster screws, then it is possible to operate the motorcycle on public highways at an illegal ride height. This will minimise ground clearance and suspension travel, which may cause the motorcycle to become unstable resulting in injury or even death. It is the motorcycle operators responsibility to ensure their bike is in a roadworthy state whilst operating on public highways.

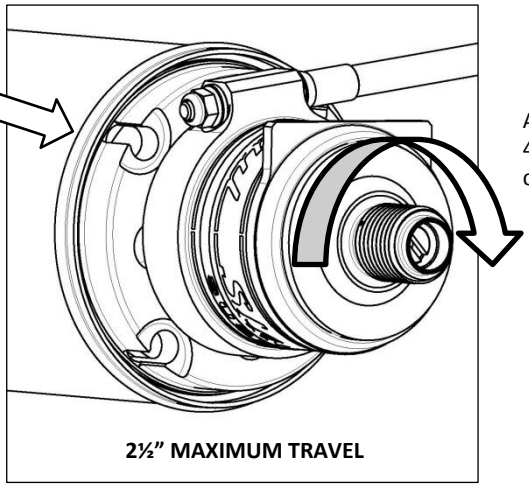
DISCLAIMER: Slamtail Suspension™ does not recommend these screws are adjusted from the factory (minimum) setting when the motorcycle is operated on public highways.



READ DISCLAIMER BEFORE ADJUSTING



Adjuster screw viewed on ram housing end.
Factory setting = fully out = 2" maximum wheel travel.



Adjuster screw shown screwed fully inward to gain maximum lowering travel of hydraulic ram/suspension system = 2½".
Approximately 4½ turns clockwise from factory setting until the crew bottoms out.
IMPORTANT: BOTH ADJUSTER SCREWS MUST BE FULLY IN, OR FULLY OUT!
DO NOT PARTIALLY ADJUST THE SCREWS.

9.0 SLAMTAIL MAXIMUM RIDE HEIGHT ADJUSTMENT

Adjuster screws at factory setting

Screw adjustment with flat blade screw driver

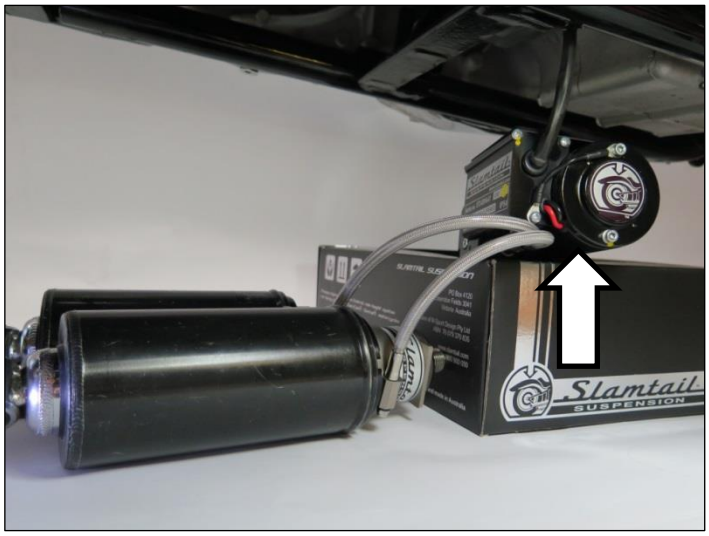
Adjuster screws at fully lowered position

9.1 How to carry the complete assembly

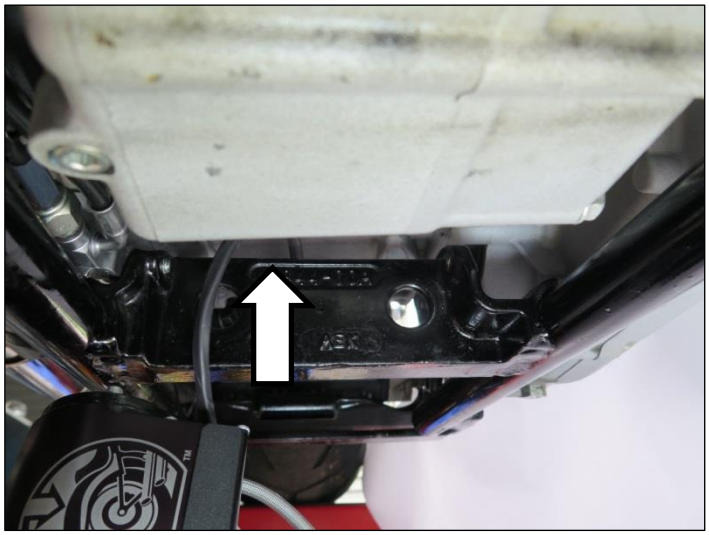
- ❑ Use a large screw driver passing it through the shock eyelets to carry this assembly.
  This will avoid any undue strain on the braided pressure hoses.

Important! - Avoid loading and straining the hydraulic pressure hoses whilst handling this assembly.

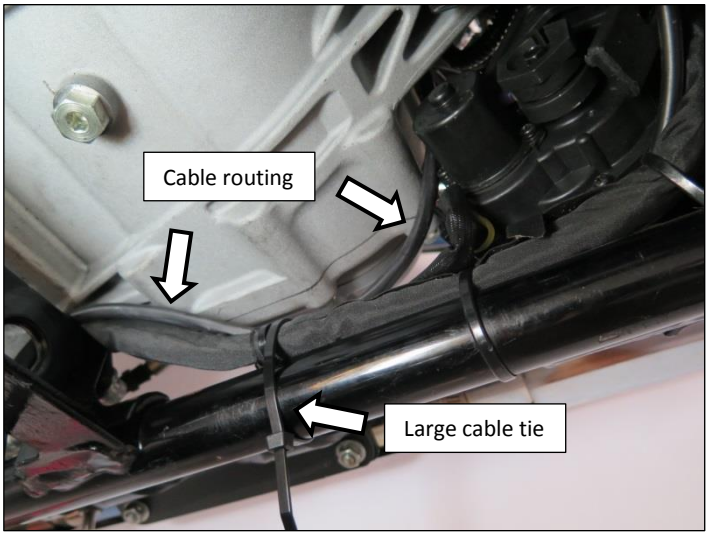
10.0 INSTALLING SLAMTAIL KIT INTO MOTORCYCLE:



- ❑ Place assembly under motorcycle as shown. Elevate the Hydraulic power unit upwards by placing it on a box as shown.
- ❑ Place the shock assembly with the **long hose** on the **left-hand** side of the bike.
- ❑ Place the shock assembly with the **short hose** on the **right-hand** side.



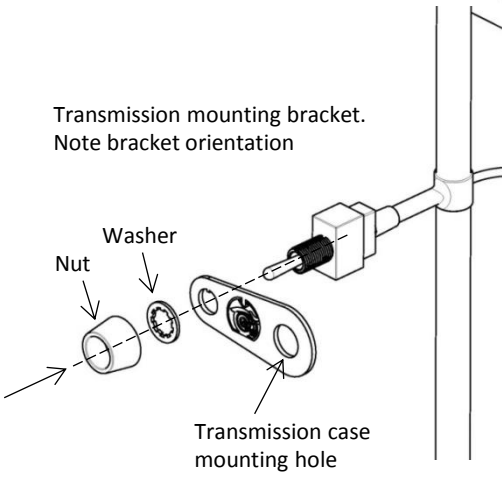
- ❑ Pass the wiring harness up and over the shock mounting beam as shown.



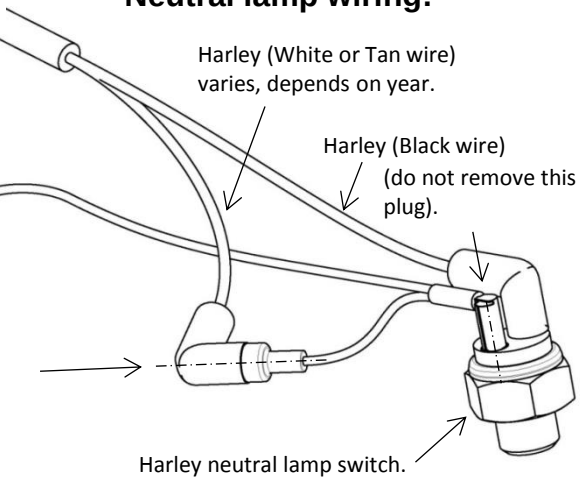
- ❑ Pass harness under transmission and up through to the right hand side .
- ❑ Using large cable tie (supplied in kit), fasten harness above Harley chassis harness as shown.
- ❑ Leave cable tie loose until the harness mounted toggle switch is attached properly.

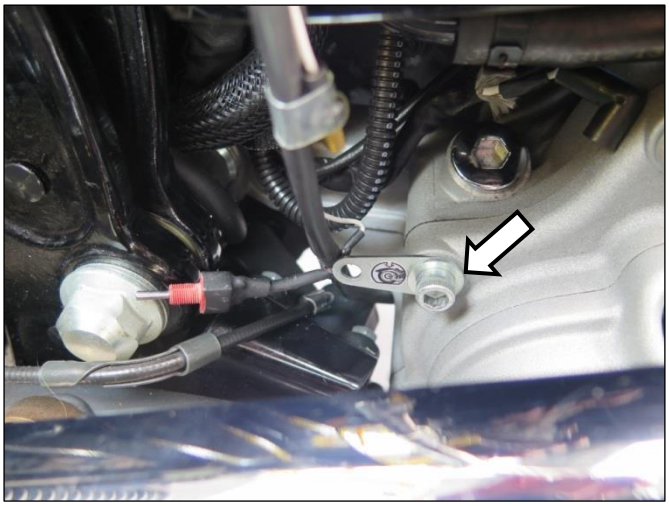
10.1 Wiring harness installation

Toggle switch mounting:



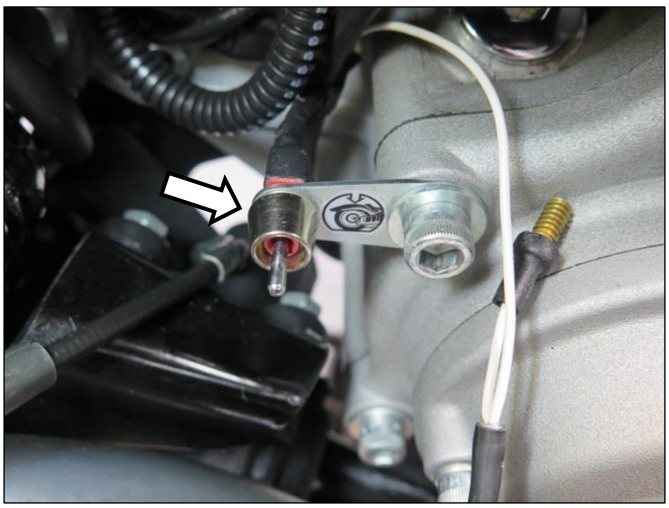
Neutral lamp wiring:



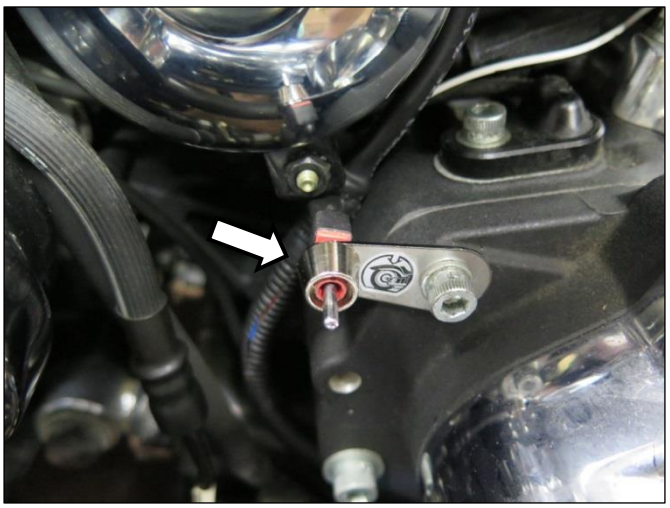


- ❑ Connect Slamtail harness to transmission neutral switch as shown above. (Also see **5.0 WIRING SCHEMATIC**).
- ❑ **NOTE: Do not remove the OEM connector with the Black wire.**

- ❑ Remove rear & uppermost upper transmission side case cap screw, and fit toggle switch mounting bracket as shown.
- ❑ Pass toggle switch housing through bracket as shown.
- ❑ Apply a small amount of thread retainer on thread. (don't use high strength retainer as the fitting will be impossible to undo at a later date if necessary).
- ❑ Screw on threaded nut as shown.



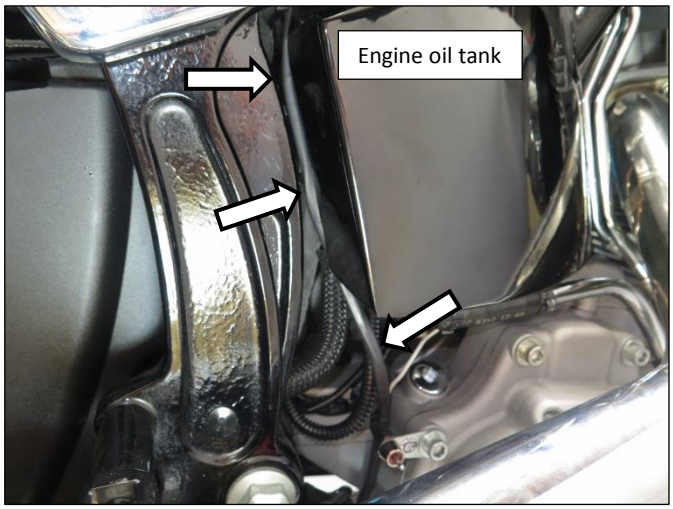
6 speed transmission installation



5 speed transmission installation

10.2 Wiring harness routing:

6 Speed transmission motorcycles:



- 6 speed transmission wiring harness routing shown heading straight up and tucking behind engine oil tank.

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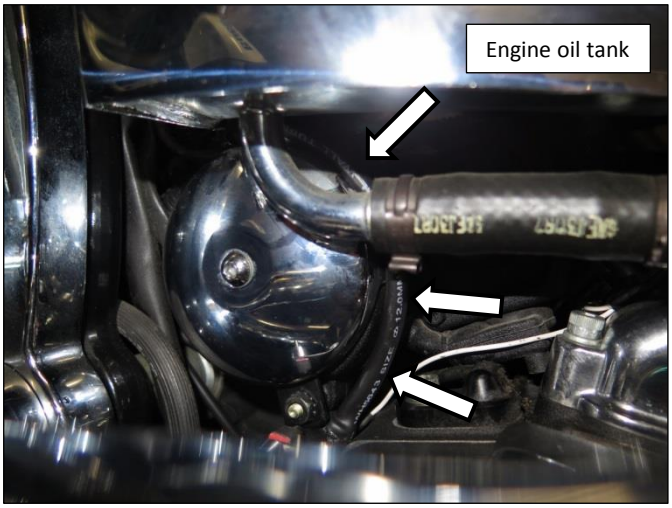
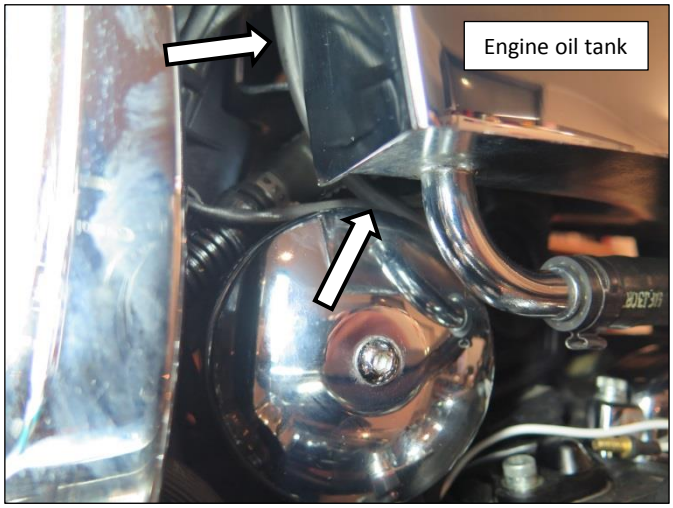
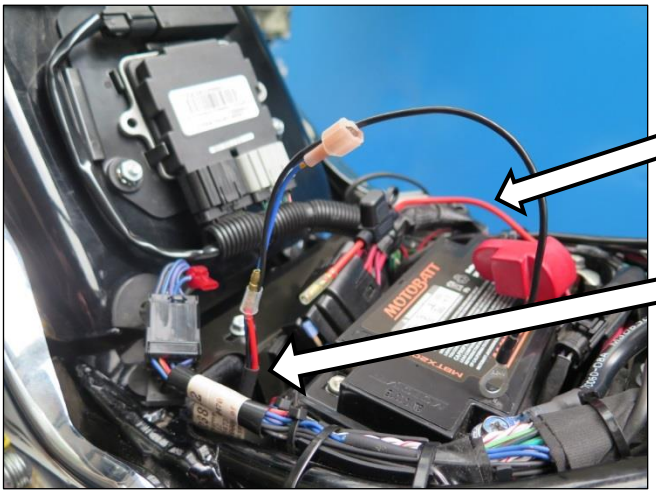
5 Speed transmission motorcycles:

- 5 speed transmission wiring harness routing shown travelling around the starter motor housing and then heading straight up and tucking behind oil tank.

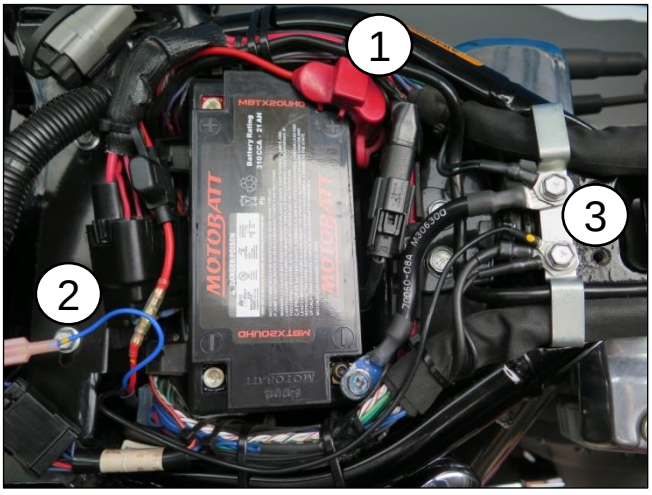




10.3 Ignition signal, fusible link & chassis earth connections:

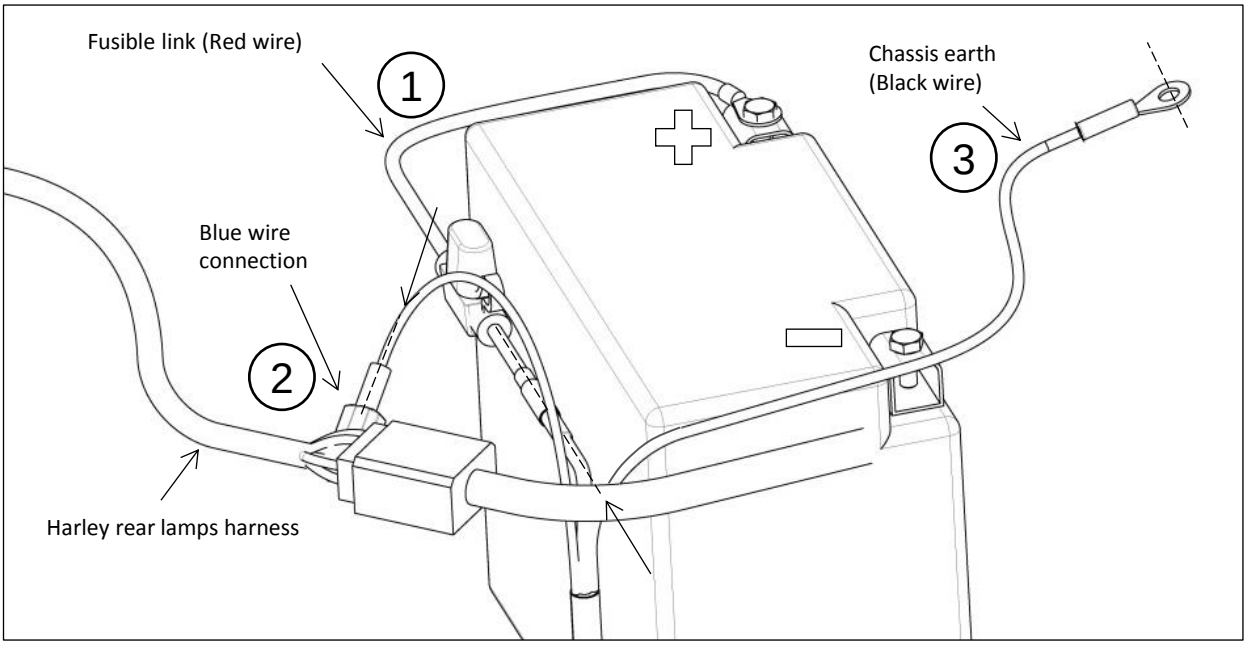


- ❑ First, fit fusible link to the battery positive connection.
  WARNING! DO NOT FIT THE 15A FUSE YET.
  This will make the link and system live, and could result in failure of the Slamtail electronics module.
  (Fitting the fuse is done as a final operation).
- ❑ Pass the wiring harness with the Black, Blue and red connectors up between the motorcycle frame and the OEM harness bundle as shown. (The gap is small and requires some patience!).



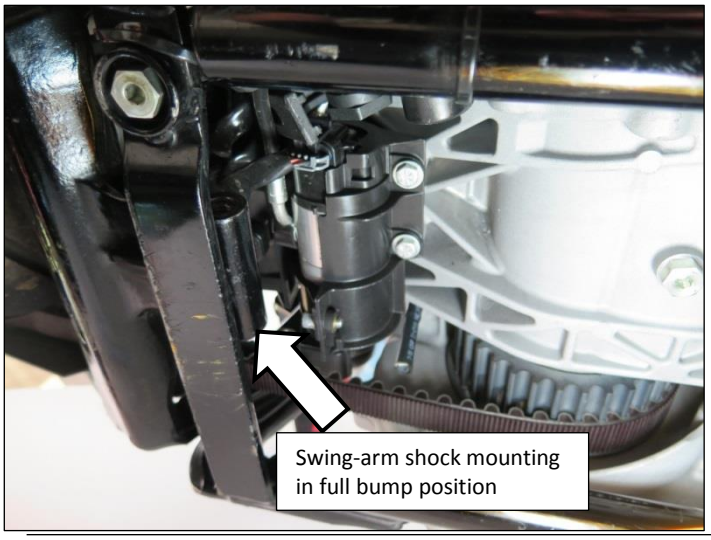
- ❑ **Harness connection sequence:**

  1. Install fusible link to battery positive.
  2. Connect Blue (ignition signal wire).
  3. Connect Black earth wire to chassis.

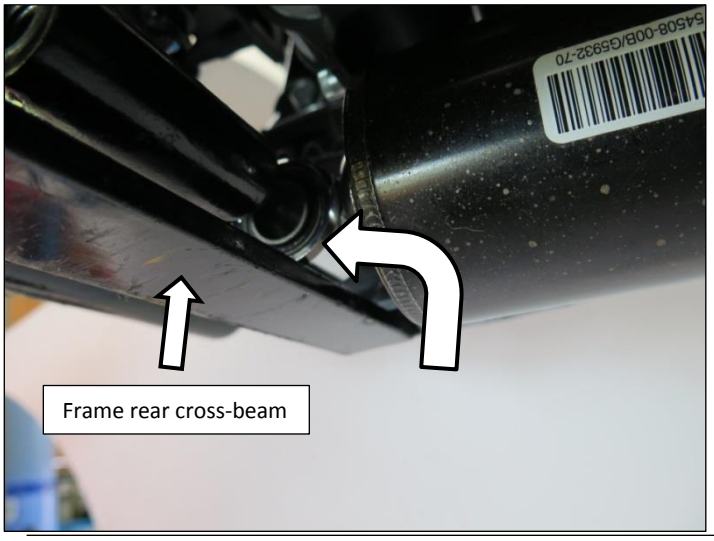


11.0 INSTALLING SHOCK ASSEMBLIES:

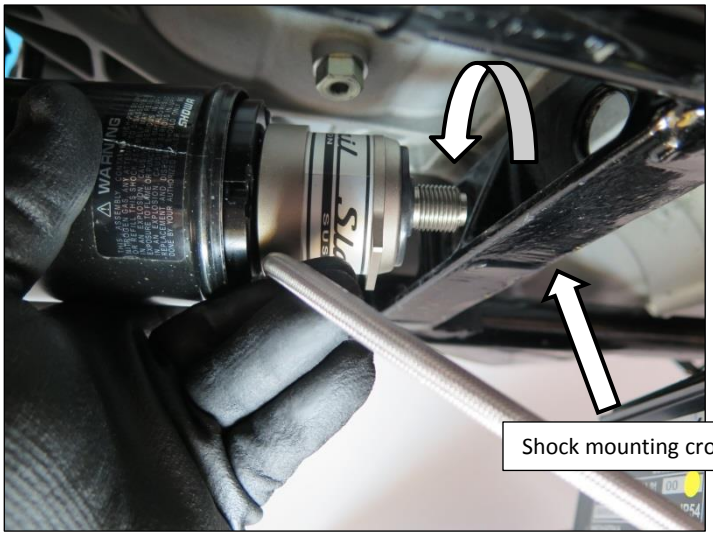
Note: The motorcycle in the photos is a worst-case example as it is still fitted the original exhaust flapper valve assembly, and ABS system.
(earlier models without these parts will be easier to install the shock assemblies as there is more room).



- ❑ With the motorcycle elevated and stable, place a jack under the rear wheel raising the rear wheel and swing arm assemblies into full bump position, when the swing-arm bump-stop contacts the frame cross beam.
  This must be done to allow enough room to install the shock/ hydraulic ram assemblies.

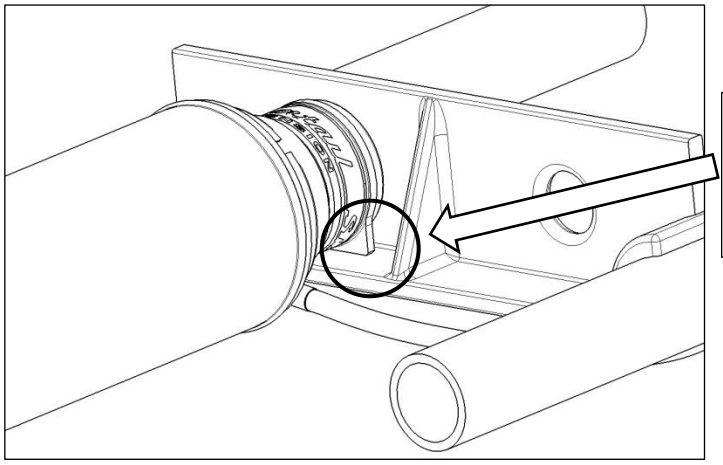


- ❑ Working from the right-hand side of the bike, install the left-hand side shock assembly first, by swinging the shock eyelet over the rear frame cross-beam as shown.

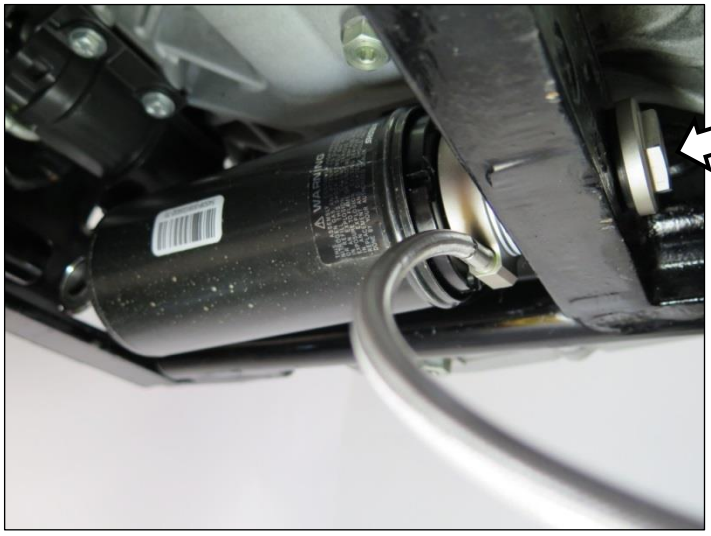


- ❑ Now, with the rear eyelet resting on the rear cross-beam, swing the front ram assembly up and over inside the front shock mounting cross-beam with its middle stiffening web.

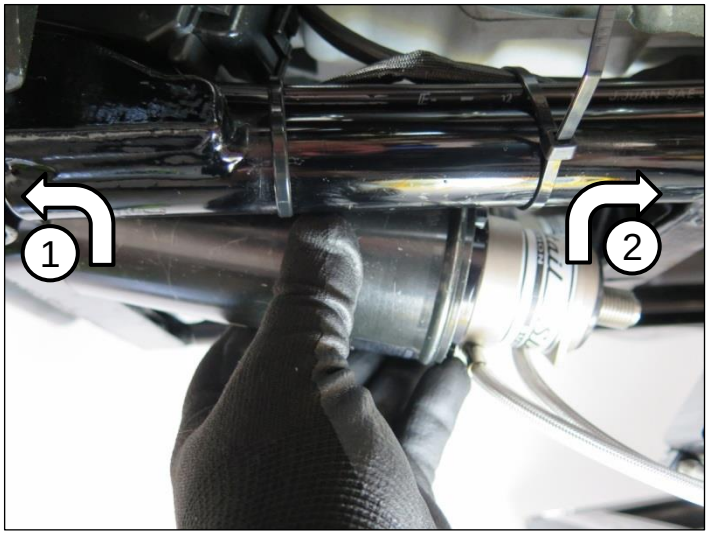
11.1 Ram installation into frame cross-beam:



Note: The anti-rotation lugs on the ram housing and how they install parallel to the frame beam. These lugs prevent the ram housing rotating when the front lock nut are torqued up, or loosened.

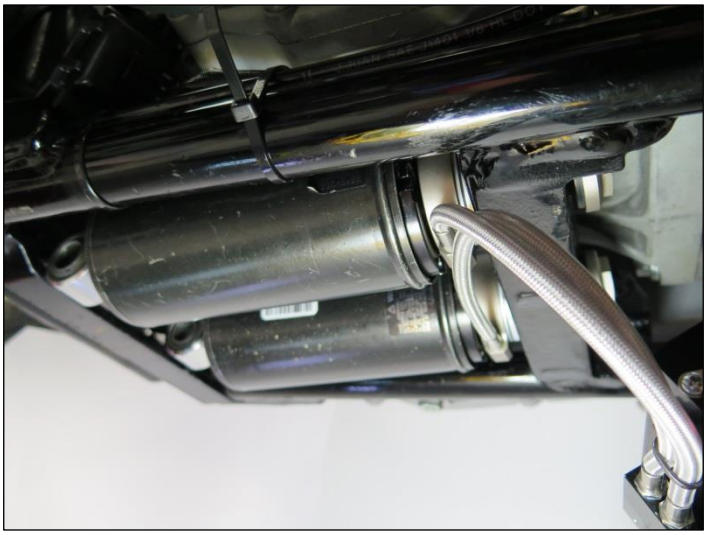


❑ Install the locknut/rubber assembly for the left-hand side shock assembly **finger-tight only**.

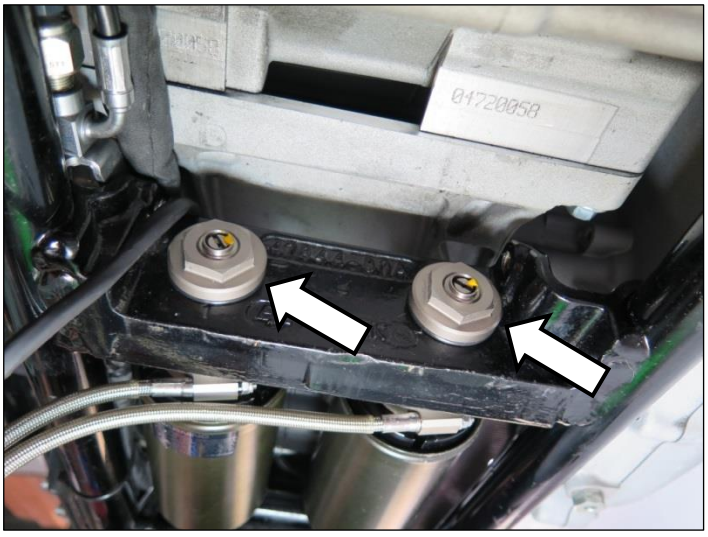


❑ Install the right-hand side shock assembly using the same process:

1. Swing the rear eyelet over the rear frame cross-beam.
2. Swing the ram front over the frame beam on through the mounting hole.



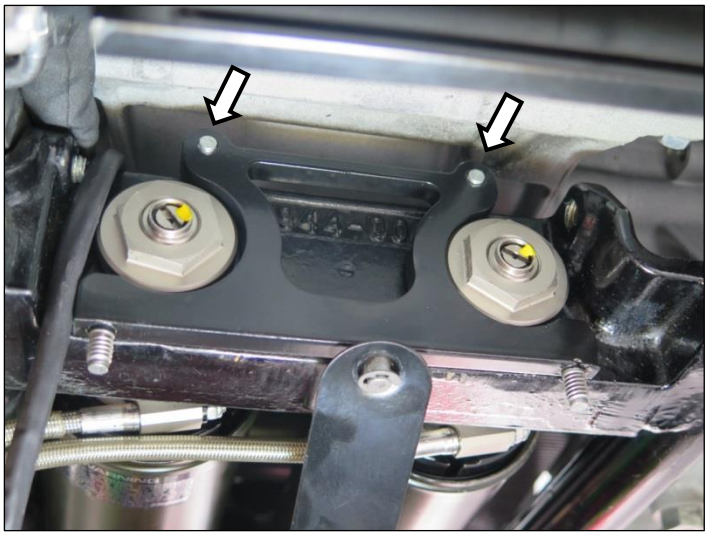
Both shock/ram assemblies installed with front locknuts installed - **finger-tight.**



❑ Tighten lock-nuts as shown on both ram and shock units using 1" A/F socket and torque wrench.

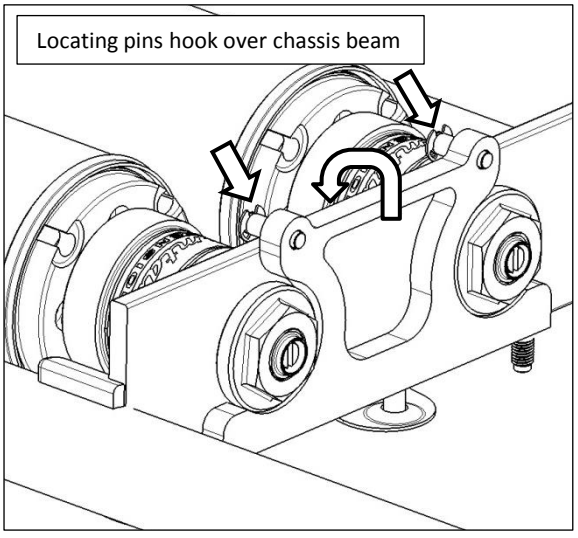
Tightening torque: = **35-40 LBS FT.**

WARNING: DO NOT EXCEED 40 LBS FT.



❑ Install and tighten rear OEM shock bolts using ¾" A/F wrench.

11.2 Fitting under-tray mounting bracket - rear:

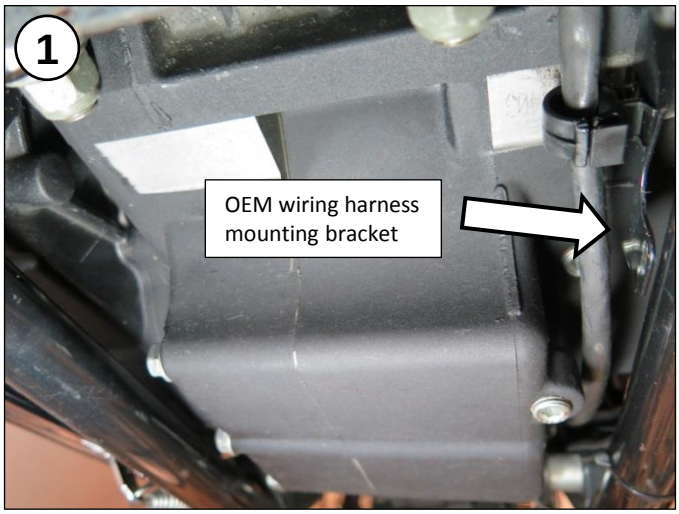


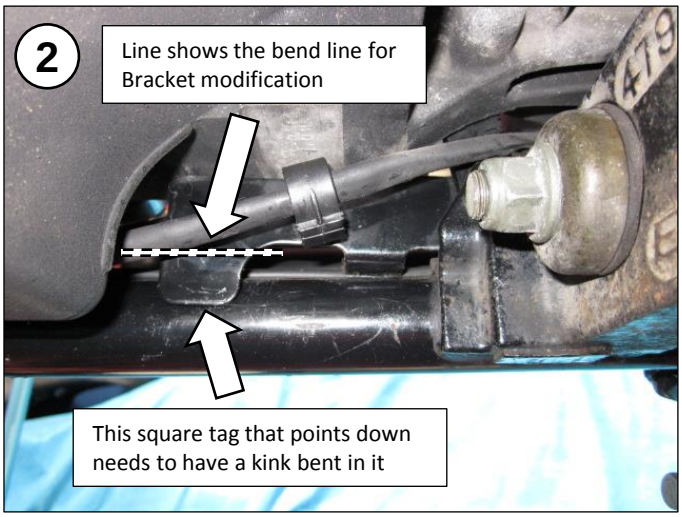
❑ Install under-tray rear mounting beam as shown. Note: orientation

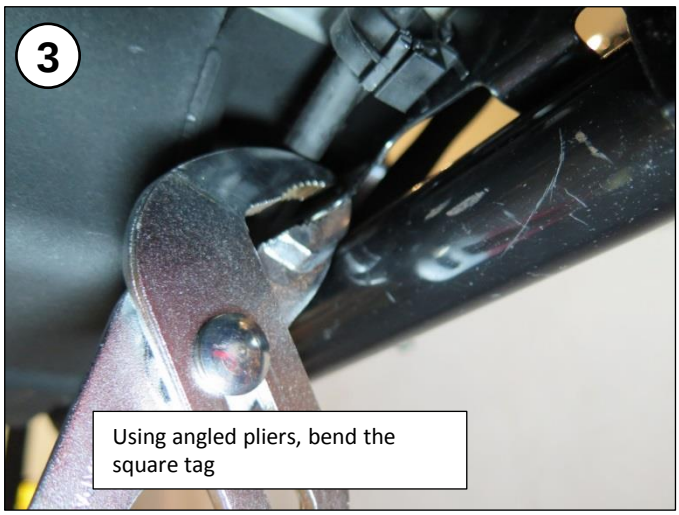
11.3 Fitting under-tray mounting bracket - front

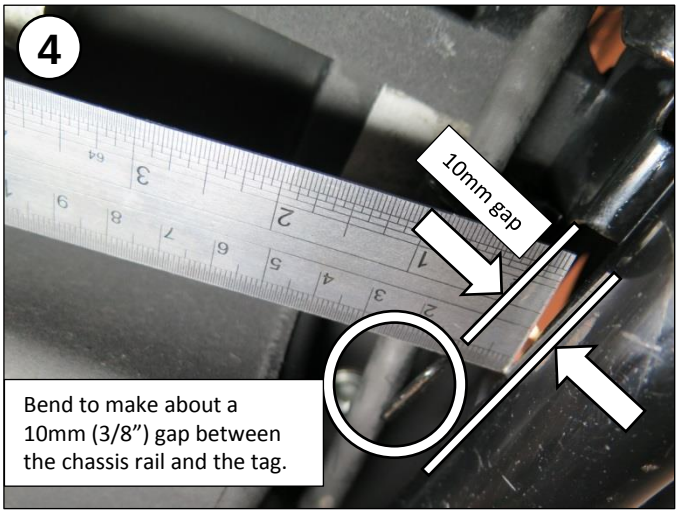
Modify OEM harness bracket for front under-tray mounting.
5 speed transmission bikes only.

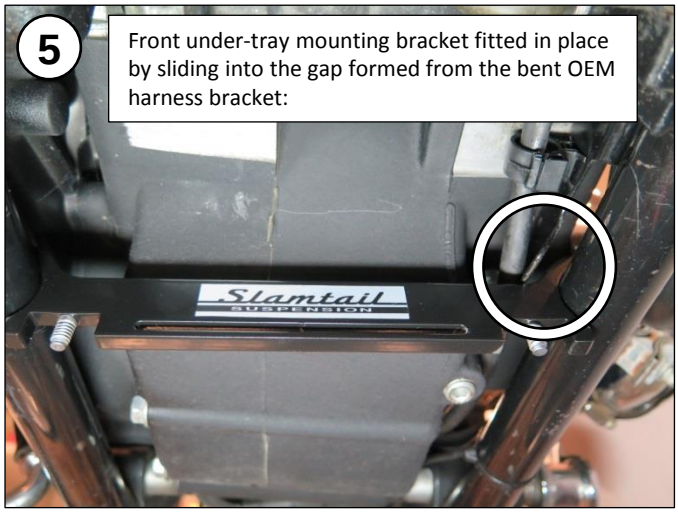
Underside view of 5 speed models.
Right –hand side has a metal wiring harness bracket that needs to be bent to allow the Slamtail front under-tray mounting bracket to be fitted.











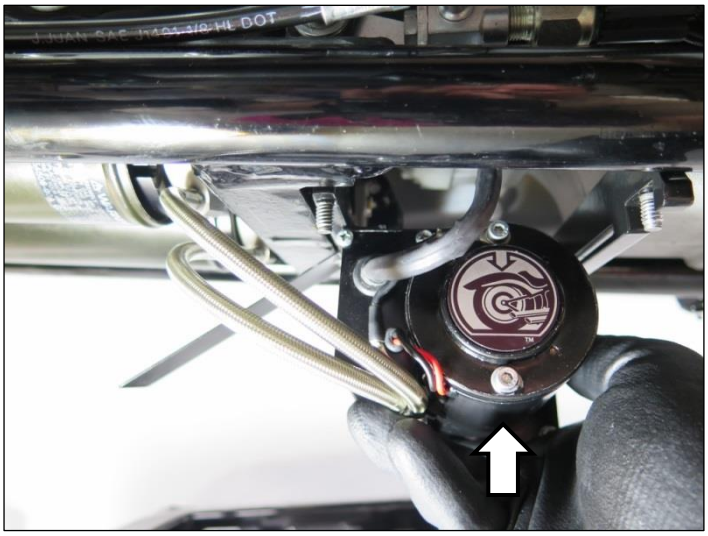
11.3 Fitting under-tray mounting bracket - front

5 & 6 speed transmission bikes.

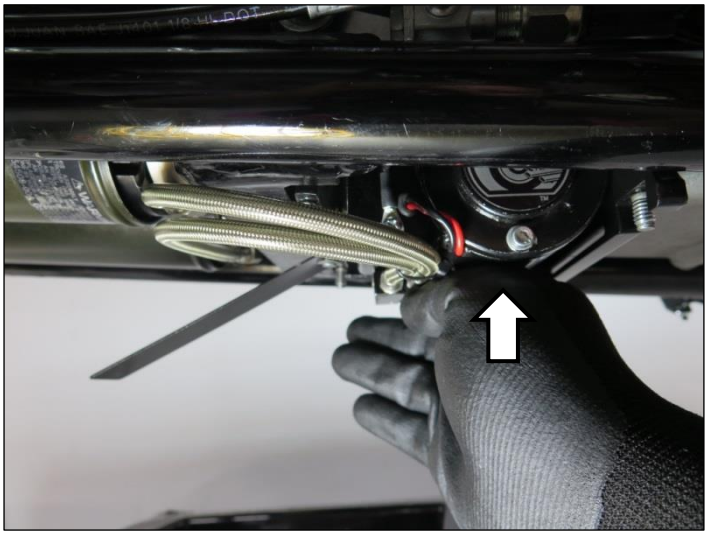
- ❑ Install under-tray front mounting bracket as shown, by swinging over the far chassis rail, then swinging over the near chassis rail.

- ❑ Push bracket fully forward as shown.

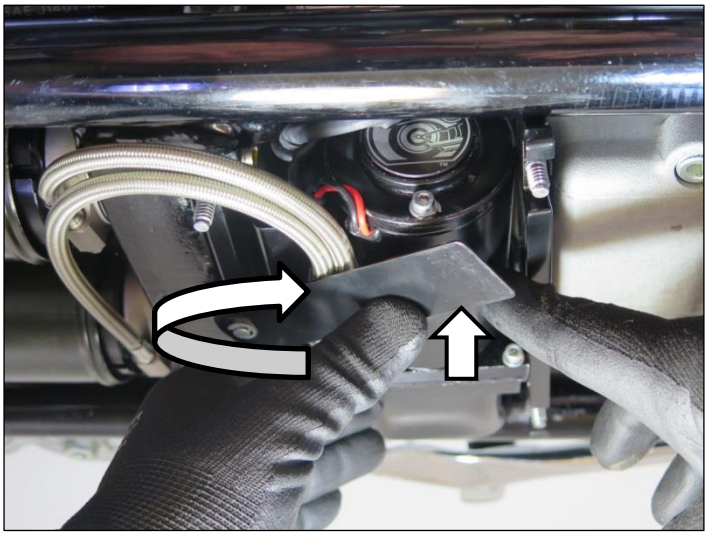
12.0 INSTALLING HYDRAULIC POWER UNIT:



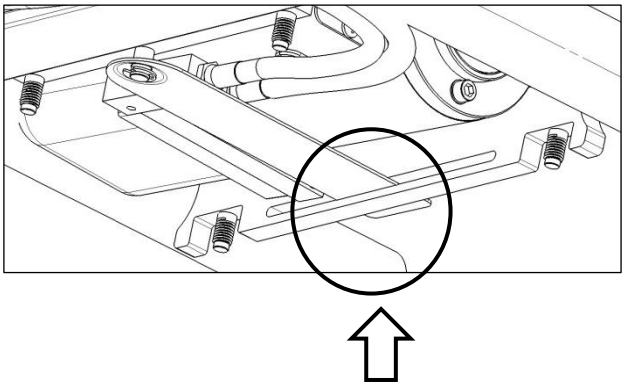
- ❑ Raise the hydraulic power unit vertically into the pocket between the 2 under-tray mounting brackets and the chassis rails.



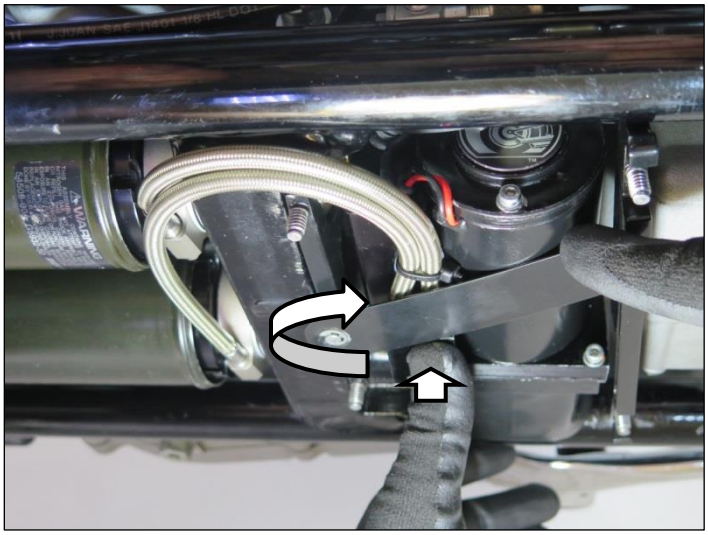
- ❑ **This is a tight fit and requires patience and care if the unit is to settle into the pocket correctly.**
- ❑ As the hydraulic power unit touches the transmission case, ensure the wiring harness cable isn't restricting the motor body from seating against the transmission.



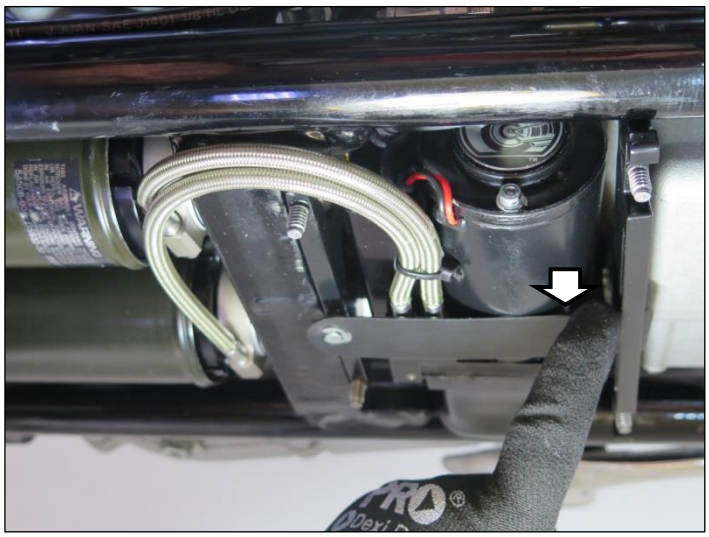
- ❑ Rotate the spring steel retainer strap around as shown and insert it into the front mounting bracket slot.



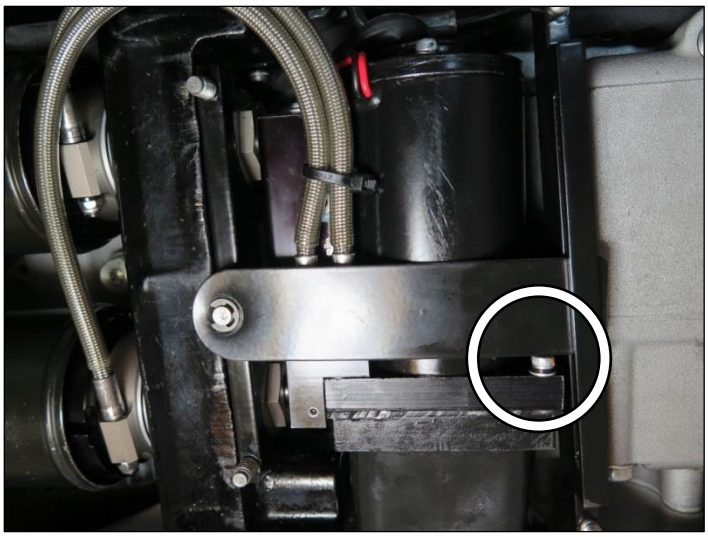
12.0 INSTALLING HYDRAULIC POWER UNIT:



- ❑ As the retainer strap slides along the slot, using your thumb, push upward on the hydraulic manifold block as shown.

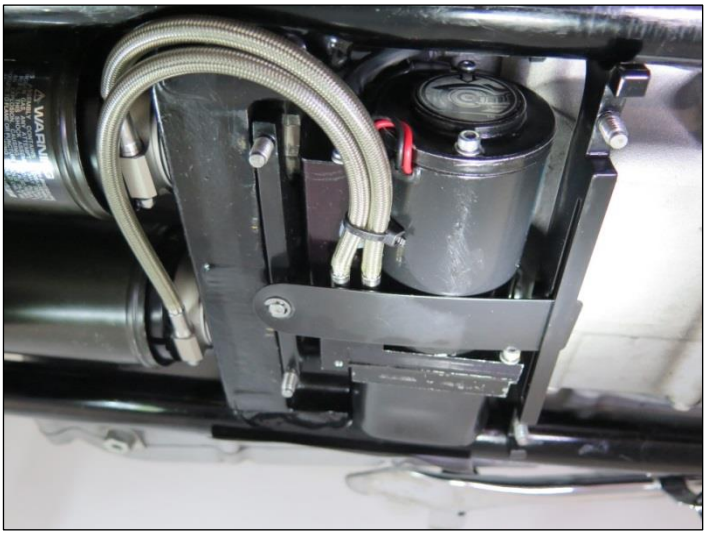


- ❑ Keep rotating the strap until it is parallel with the chassis rails.



- ❑ The strap will stop when it hits the silver cap-screw head on the bottom edge of the hydraulic power unit as shown.

12.0 INSTALLING HYDRAULIC POWER UNIT:



- ❑ Hydraulic power unit correctly installed, ready for the under-tray to be fitted.

  Note: Hydraulic hose layout.

13.0 INSTALLING UNDER-TRAY:

- ❑ Install the under-tray as shown.
  (The large angles flap points forward).
- ❑ Install 4 off ¼"UNC Nyloc nuts onto the threaded studs as shown.
  (NOTE: No washers are supplied or required).

Tightening torque: = **5.0-8.0 LBS FT.**

WARNING: DO NOT EXCEED 8.0 LBS FT.

In this installation, high/excessive torque is not required with these fasteners, and may snap off the steel threaded studs.

14.0 CONNECT POWER TO SYSTEM:

- ❑ Final operations to make the system live is to reconnect the battery negative terminal.
- ❑ Install one of the 15A mini fuses supplied into the fusible link housing. Press the fuse in firmly, and close the housing lid. The system is now live.
- ❑ Read **"OPERATING INSTRUCTIONS"** document available on Slamtail website for instructions on system testing.

SLAMTAIL SUSPENSION

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