Arnott™
Motorcycle Suspension

INSTALLATION MANUAL

MC-3905/3906
Arnott Ultimate Ride Kit
20-Current Indian Challenger

ELEVATE YOUR RIDE.®

CONGRATULATIONS ON YOUR PURCHASE OF AN ARNOTT® MOTORCYCLE SUSPENSION SYSTEM

This system provides you with the ability to maintain your bike at a constant level regardless of load, resulting in enhanced vehicle ride, handling, and performance. We at Arnott LLC are proud to offer a high quality product with all the technical support you need. Thank you for your confidence in us and our product.

GENERAL INFORMATION

Proper installation is essential to experience and appreciate the benefits of this system. Please take a moment to review these installation instructions before you begin to install these components on your motorcycle. The removal and installation of air suspension products should only be performed by a fully qualified, certified motorcycle professional.

It is equally important to be aware of all necessary safety measures while installing your new Air Suspension System. This includes proper lifting and immobilizing of the motorcycle and isolation of any stored energy to prevent personal injury or property damage.

Reading this manual signifies your agreement to the terms of the general release, waiver of liability, and hold harmless agreement, the full text of which is available at www.arnottcycles.com and www.arnottcycles.eu.

WARNING:

DO NOT inflate the air suspension system until it is installed. Inflation of the air suspension system before both ends are supported by the motorcycle's frame and/or appropriate suspension components may result in serious personal injury and/or damage to the air suspension system. The maximum recommended air spring inflation pressure is 200 psi.

- Avoid damage to air lines and electrical components.
- Removal and installation is only to be performed by fully qualified personnel.

CAUTION:

This manual is meant to provide basic installation guidelines which can help prevent damage to the motorcycle and air suspension system. Each owner or installer is unique, therefore installation of this system can be done many different ways. The mounting locations of the compressor and inflation switch are suggestions by our engineers. If proper wiring guidelines and instructions are followed, relocation of the compressor or switch will neither affect the system operation nor void your warranty.

To avoid the possibility of short circuits while working with electric components consult your owner's manual on how to disconnect your battery.

Refer to the Owner's Manual for the bike and instructions for the motorcycle lift for all correct lifting procedures. It is also recommended that you protect any chrome or painted surfaces that may be damaged during lifting, removal or installation process.

Adjust air shock pressure as required for desired ride quality to maximize the benefits of your system. Excess pressure will result in a firmer ride, too little pressure will allow the suspension to bottom out.

COMPONENTS

20-17892 INFLATION KIT		
MC-3905/MC-3906		
PART NO.	**DESCRIPTION**	**QTY**
21-17468	INDIAN CHALLENGER COMPRESSOR ASSEMBLY	1
21-11617	90 DEGREE PUSH CONNECT MANIFOLD ASSY	1
29-13435	POTTED RELAY	1
21-7267	1/4” NYLON TUBING ACCESSORY KIT	1
21-7268	4MM AIRLINE X 6FT ACCESSORY KIT	1
21-7715	4MM VOSS FITTING ACCESSORY KIT	1
21-7271	HARNESS CABLE TIES ACCESSORY KIT	2
21-7272	SPLIT LOOM - 1FT LENGTHS ACCESSORY KIT	2
21-2698	UNIVERSAL FUSE HOLDER ASSEMBLY KIT	1
21-7282	COMPRESSOR WIRE EXTENSION ACCESSORY KIT	2
11-MC-CHAL	11-MC-CHALLENGER INSTALL MANUAL	1
20-17560	INDIAN CHALLENGER MOUNTING KIT, BLACK	1

SHOCK KIT		
MC-3905/MC-3906		
PART NO.	**DESCRIPTION**	**QTY**
21-17936	SHOCK ASSY, BLACK	1

HANDLE BAR SWITCH				
MC-3905		**MC-3906**		**QTY**
PART NO.	**DESCRIPTION**	**PART NO.**	**DESCRIPTION**	
29-9749	HANDLE BAR SWITCH, BLACK	29-9750	HANDLE BAR SWITCH, CHROME	1

To avoid the possibility of short circuits while working with electric components consult your owner's manual on how to disconnect your battery.

Refer to the owner's manual for the bike and instructions for the motorcycle lift for all correct lifting procedures. It is also recommended that you protect any chrome or painted surfaces that may be damaged during lifting, removal, or installation process.

Use a solid, level surface to position the bike on a motorcycle lift and use all recommended safety techniques. Lift the bike so the rear wheel is just slightly off the ground.

1. Use a scissor jack to lift and support the bike so the rear wheel is just slightly off the ground to aid in ease of shock removal and install. (Figure 1)

FIGURE 1

2. Remove the left and right side covers, then remove both saddle bags. Ensure that all electrical connections to the bags are disconnected if applicable. (Figures 2, 3, 4, 5, 6)

FIGURE 2

FIGURE 3

FIGURE 4

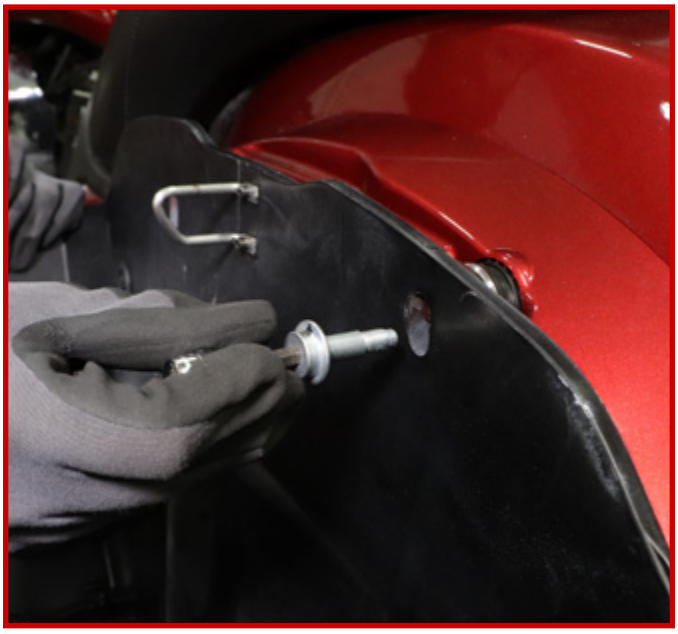


FIGURE 5

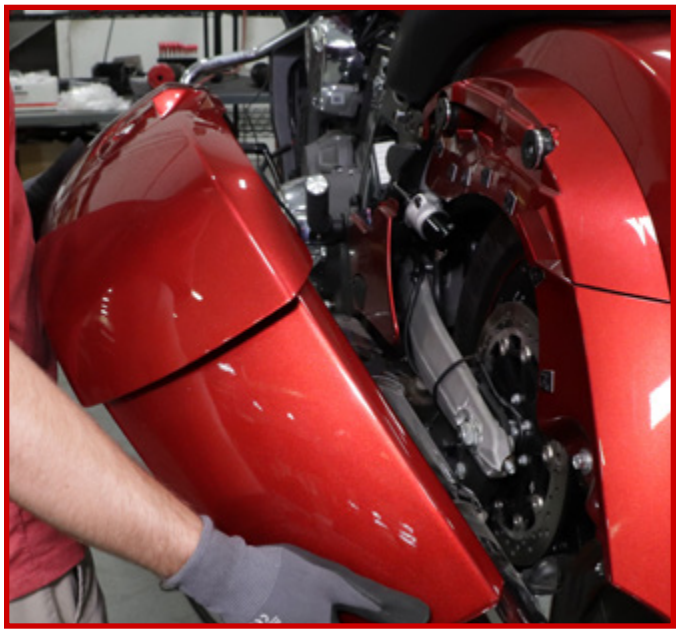


FIGURE 6

3. Remove the seat bracket bolts on both sides and remove the seat. (Figures 7, 8)

FIGURE 7

FIGURE 8

4. Remove the left passenger foot peg and lower left side cover. (Figures 9, 10, 11, 12)

FIGURE 9

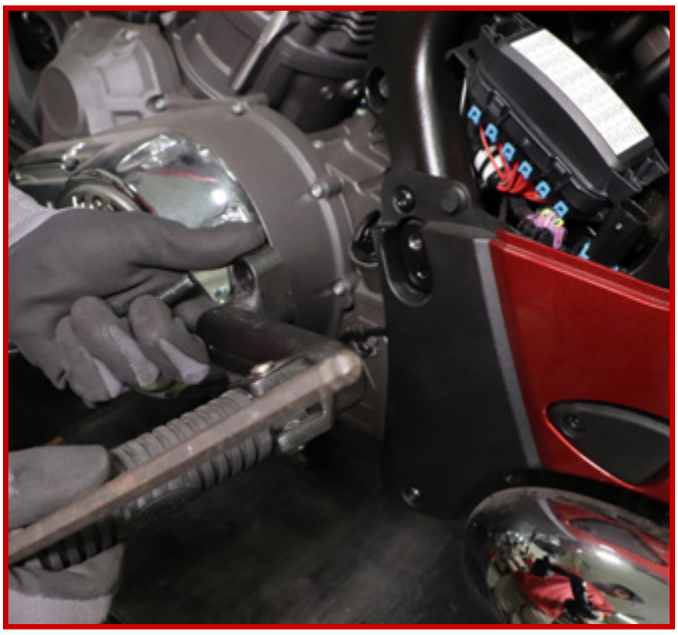


FIGURE 10

FIGURE 11

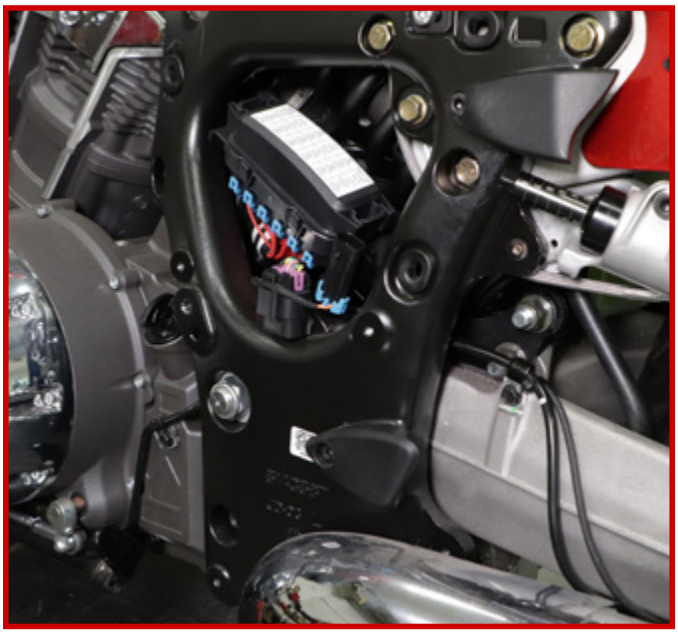


FIGURE 12

5. Remove the three (3) coolant reservoir bolts in order to move the reservoir out of the way to access and remove the lower shock mounting bolt. (Figures 13, 14, 15, 16)

FIGURE 13

FIGURE 14

FIGURE 15

FIGURE 16

6. Remove the two (2) mounting bolts holding the shock preload adjuster. (Figures 17, 18, 19, 20)

FIGURE 17

FIGURE 18

FIGURE 19

FIGURE 20

7. Remove the upper linkage snap ring and pull out the linkage pin. (Figures 21, 22, 23, 24)

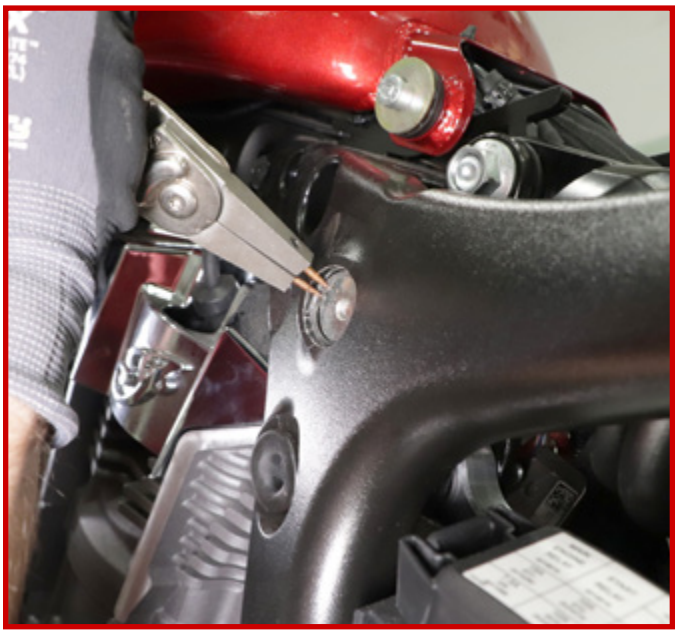


FIGURE 21

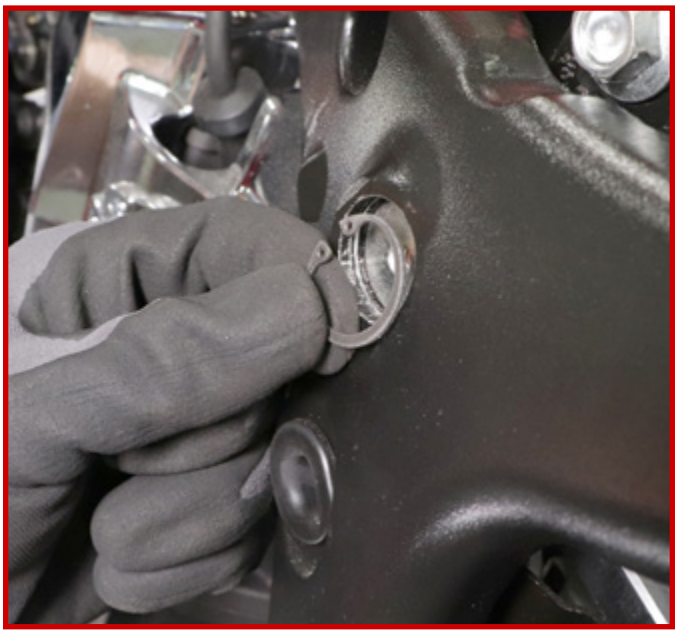


FIGURE 22

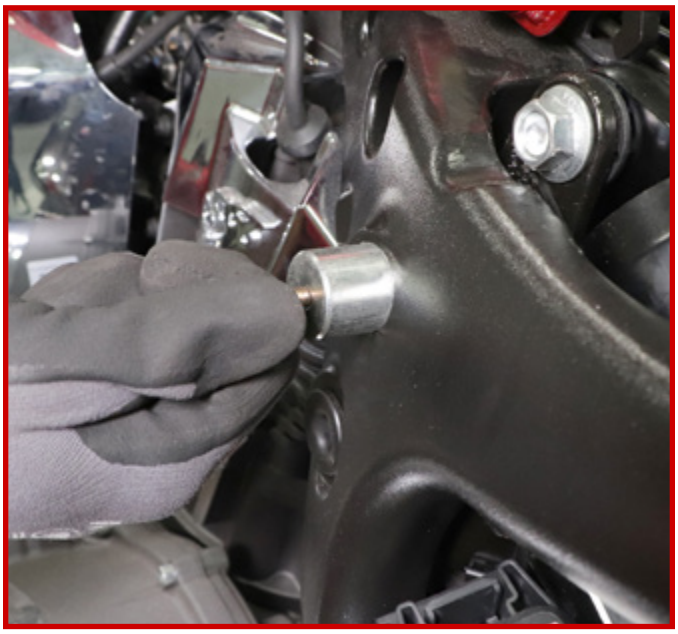


FIGURE 23

FIGURE 24

8. Remove the bottom shock mount bolt and nut. The hardware will be reused. (Figures 25, 26)

FIGURE 25

FIGURE 26

9. Remove the top shock mount bolt and nut. (Figures 27, 28)

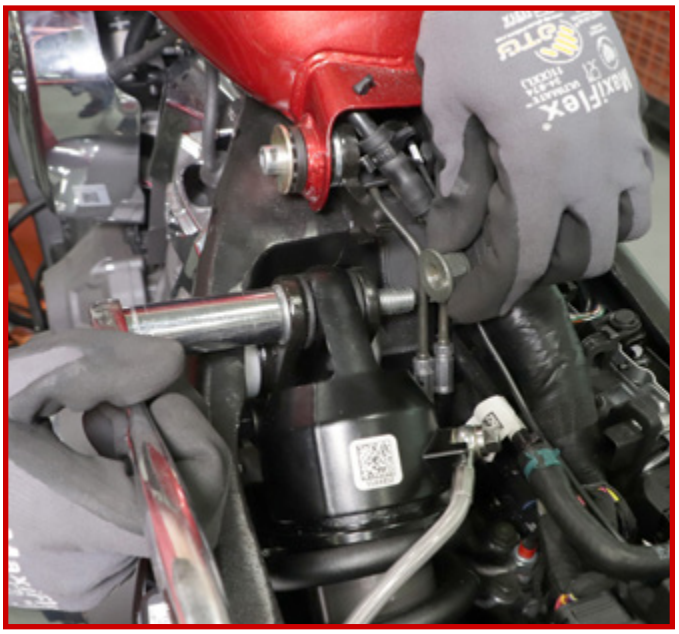


FIGURE 27

FIGURE 28

NOTE: It is recommended to carefully grind down a side of the flange on the shock's top mount bolt for ease of removal and later installation of the new shock. The hardware will be reused. (Figure 29)

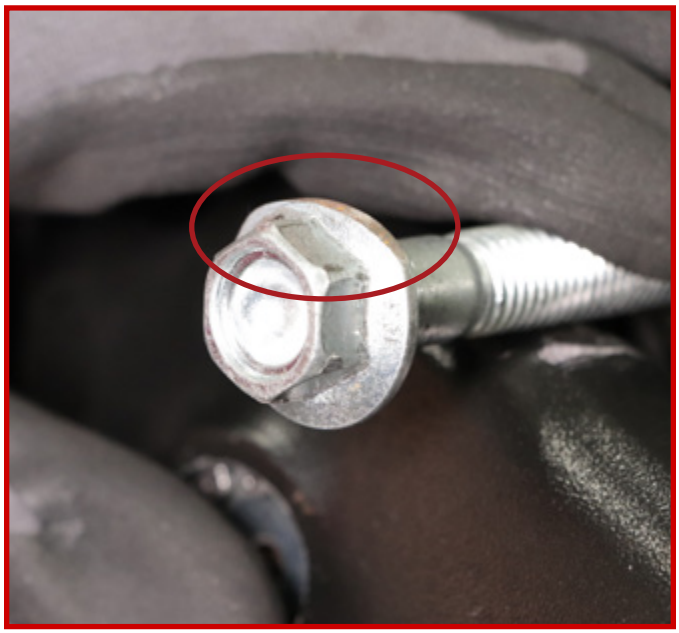


FIGURE 29

10. Remove the shock and shock preload adjuster. (Figure 30)

FIGURE 30

11. Reinstall the three (3) coolant reservoir bolts to secure the coolant reservoir. (Figures 31, 32, 33)

FIGURE 31

FIGURE 32

FIGURE 33

12. Install the new shock on the motorcycle with the VOSS fitting for the air line facing towards the right. (Figure 34)

FIGURE 34

13. Install the shock mount bolts and nuts and tighten. (Figures 35, 36)

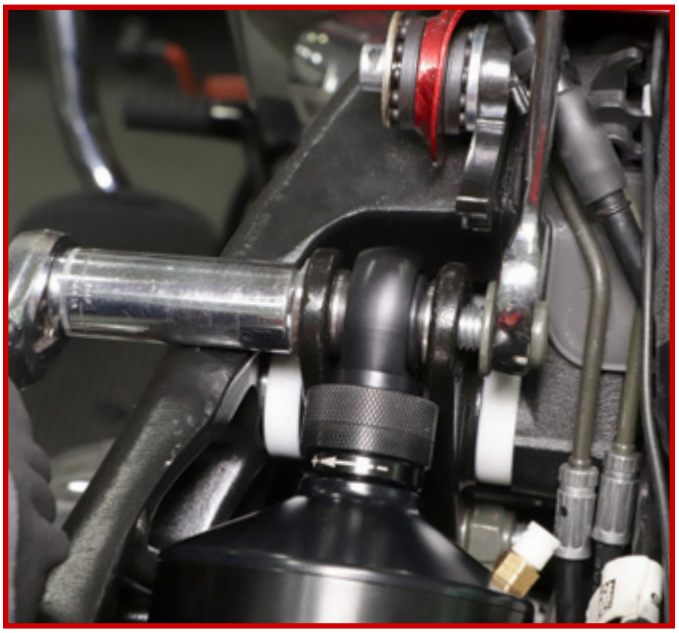


FIGURE 35

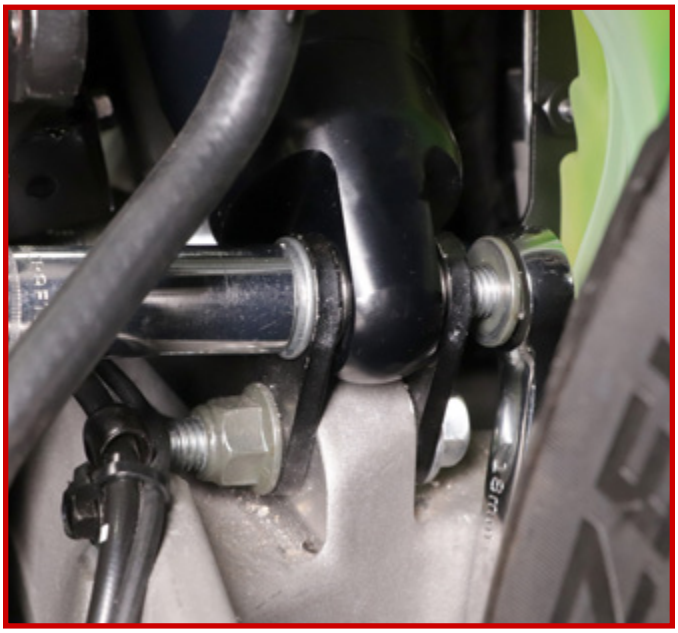


FIGURE 36

14. Reinstall the linkage and linkage snap ring. (Figures 37, 38)

FIGURE 37

FIGURE 38

15. Remove the two bolts securing the tail of the exhaust pipe to the frame, located left of the rear tire. Discard these bolts. (Figures 39, 40, 41)

FIGURE 39

FIGURE 40

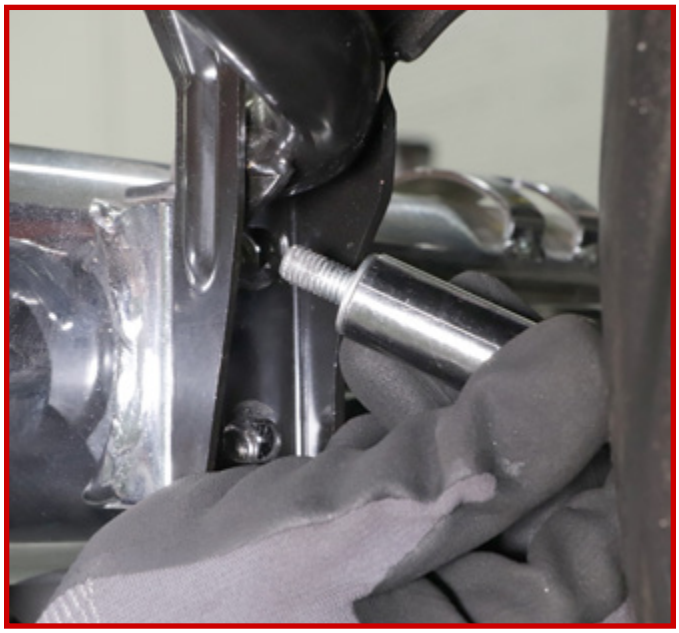


FIGURE 41

16. Install the compressor with the bracket sliding between the frame and the exhaust. The pump faces in towards the wheel. Use the supplied bolts to mount the compressor and tighten. (Figures 42, 43, 44, 45)

FIGURE 42

FIGURE 43

FIGURE 44

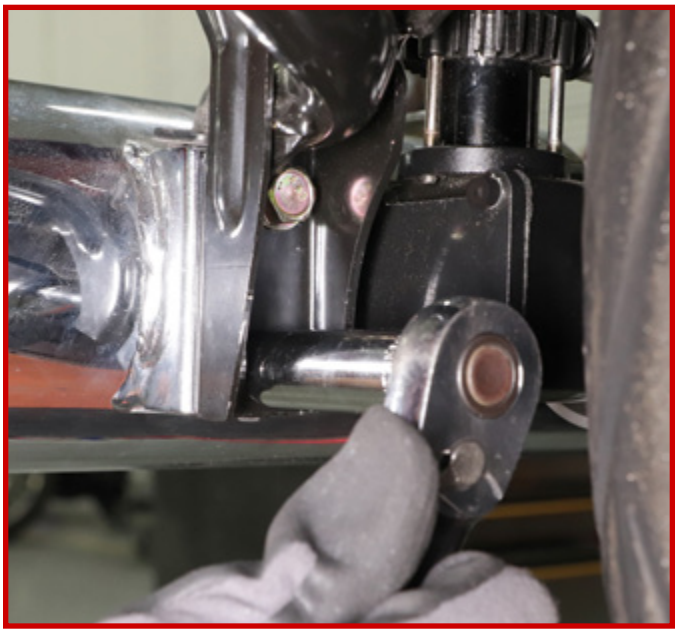


FIGURE 45

17. Connect the supplied compressor extension wire to the compressor as shown. (Figure 46)

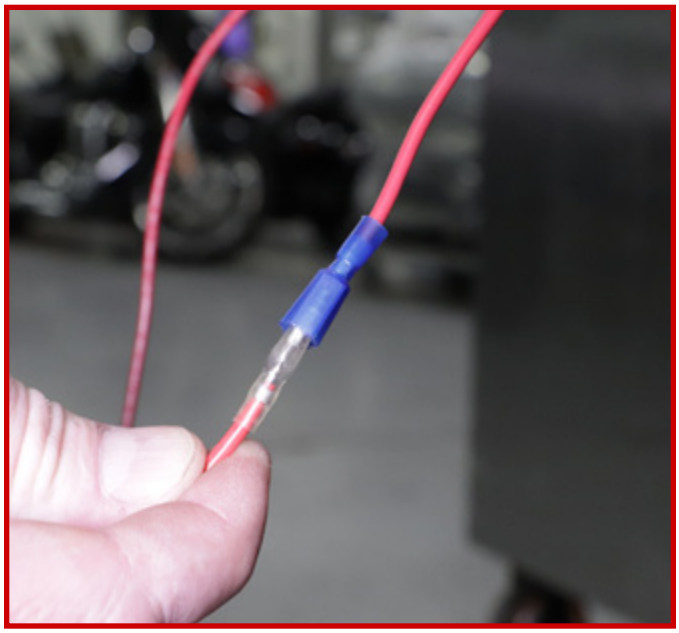


FIGURE 46

18. Bundle the wires of the compressor in the supplied split loom. (Figures 47, 48)

FIGURE 47

FIGURE 48

19. Insert the supplied 1/4" air line into the compressor. Press in until firmly seated in the fitting. (Figures 49, 50)

FIGURE 49

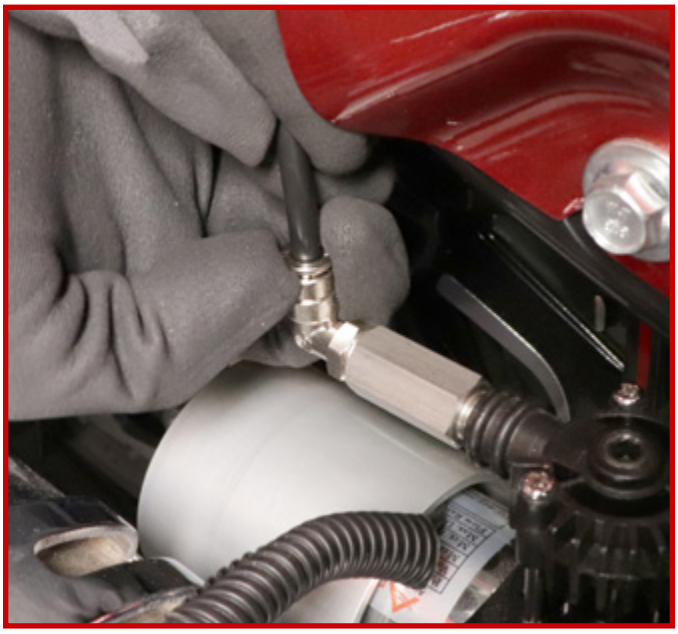


FIGURE 50

20. Prepare the rear fender with the supplied adhesives and zip ties. Route the split loom and the air line towards the center of the frame. Do not over tighten zip ties and clip the excess from the zip ties when finished. (Figures 51, 52, 53, 54)

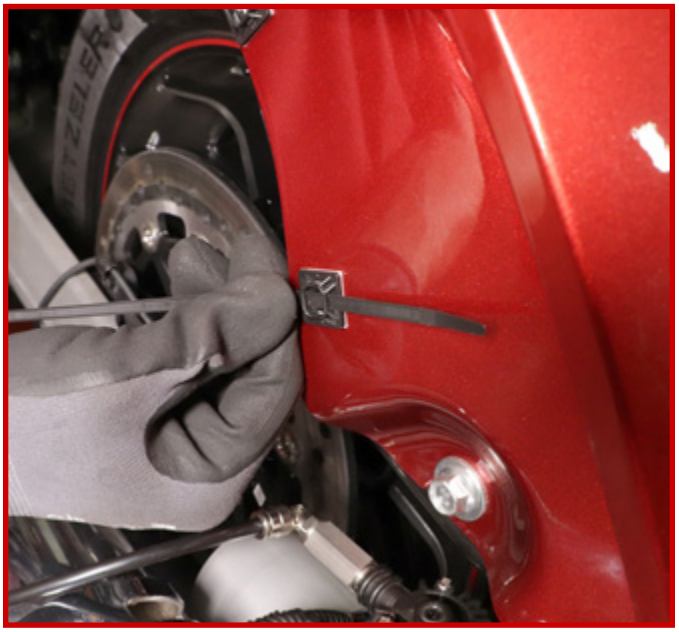


FIGURE 51

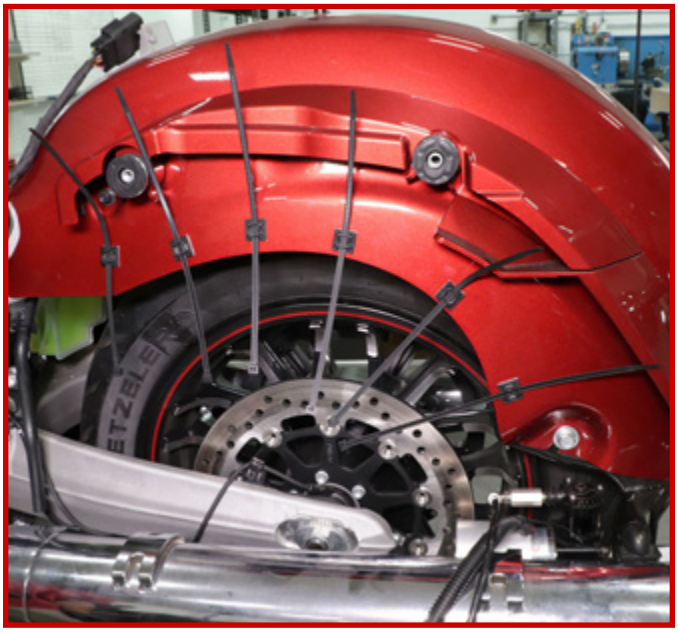


FIGURE 52

FIGURE 53

FIGURE 54

21. Route the relay wires down through the frame, connect the relay to the compressor, and ground both the relay and compressor to the frame in the location shown, reusing the bolt from the previous shock. (Figures 55, 56, 57, 58, 59)

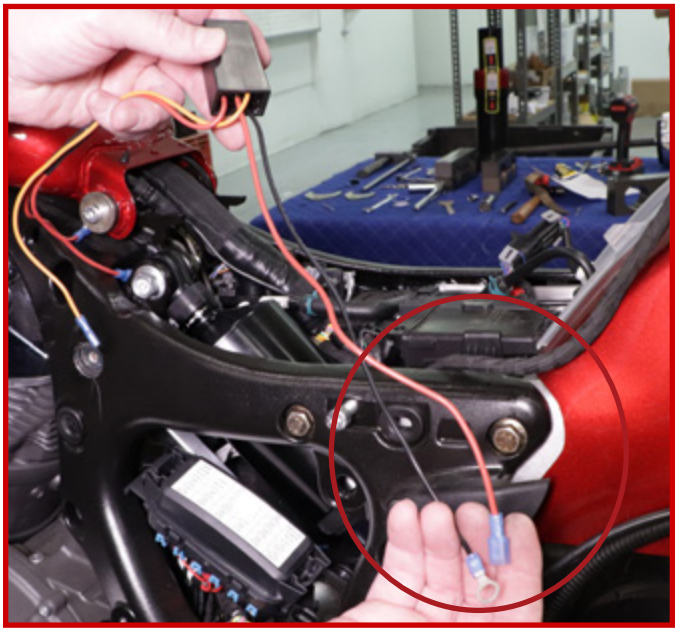


FIGURE 55

FIGURE 56

FIGURE 57

FIGURE 58

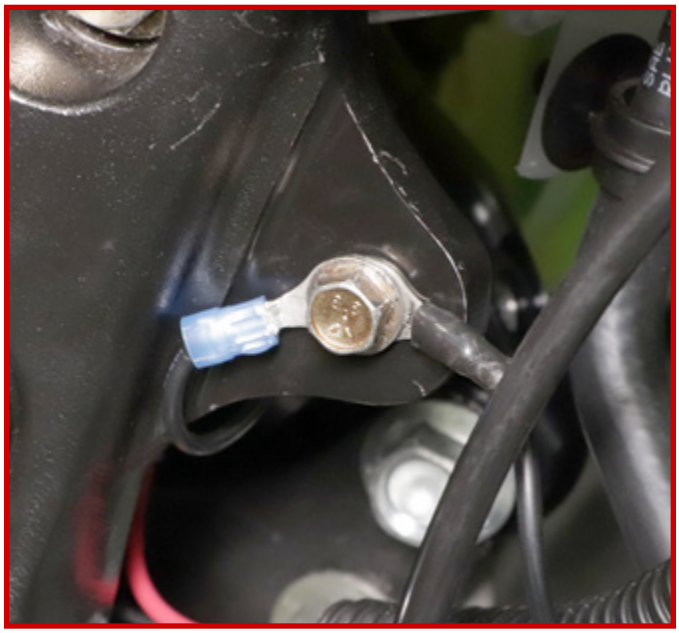


FIGURE 59

22. Route the 1/4" air line from the compressor up through the frame. (Figures 60, 61)

FIGURE 60

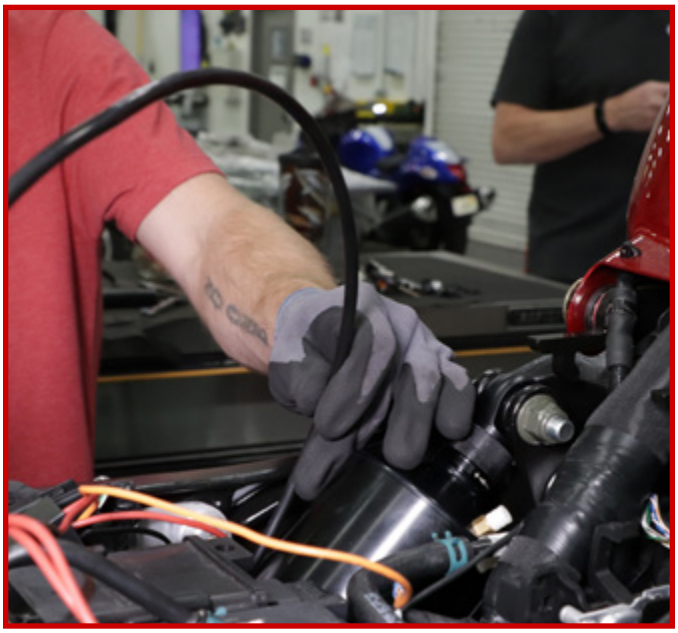


FIGURE 61

23. Secure the air line and compressor relay wires to the frame with a zip tie through the old shock adjuster bracket hole. Do not over tighten and clip the excess from the zip tie when finished. (Figures 62, 63)

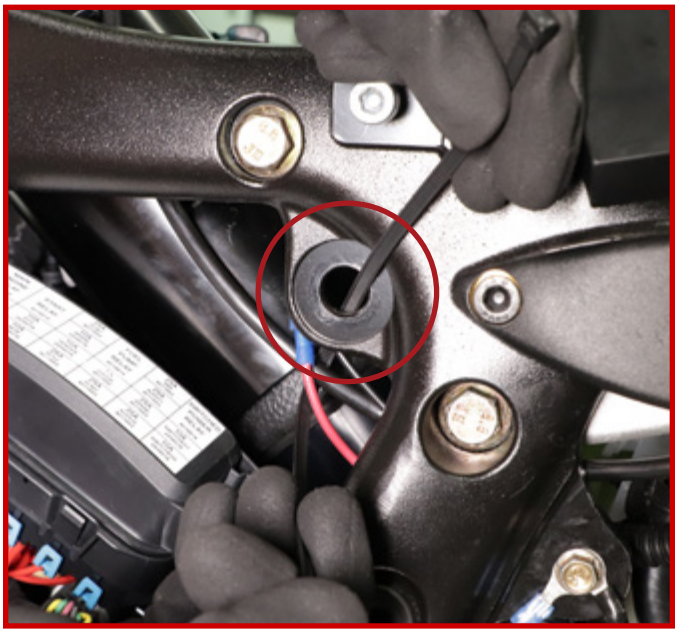


FIGURE 62

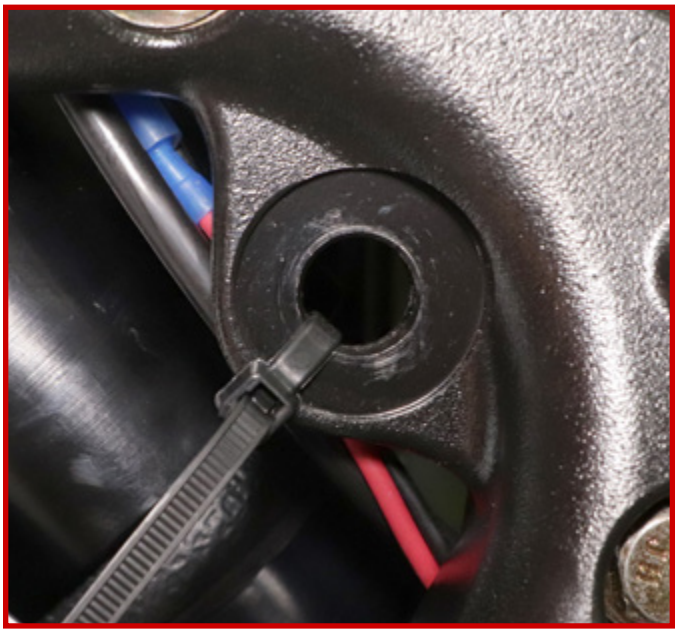


FIGURE 63

24. Connect the 1/4" air line to the supplied manifold. Press in the air line until it is seated firmly. (Figure 64)

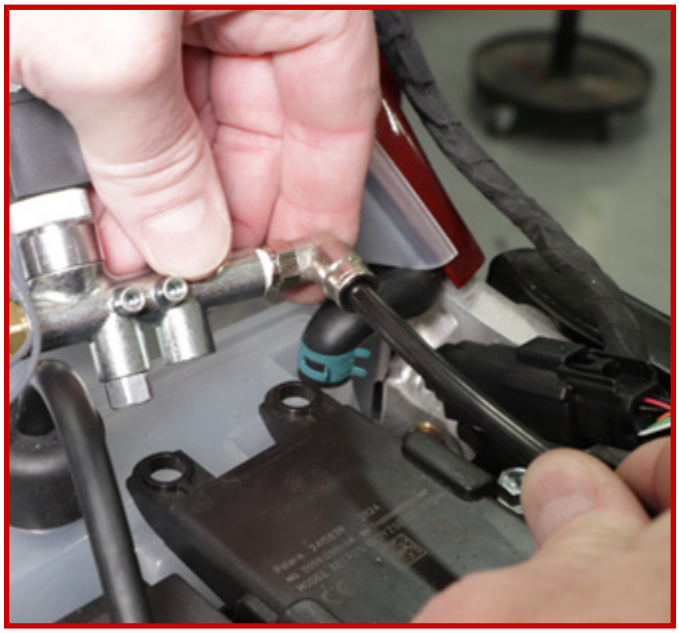


FIGURE 64

25. Screw a VOSS fitting into the air shock, finger tight. Then remove the white shipping pin. Insert the 4mm air line into the fitting until you feel it seat. Remove the fitting from the shock and confirm the keeper is on the air line. Reinstall the fitting on the shock and tighten snugly with a wrench. (Figures 65, 66, 67)

FIGURE 65

FIGURE 66

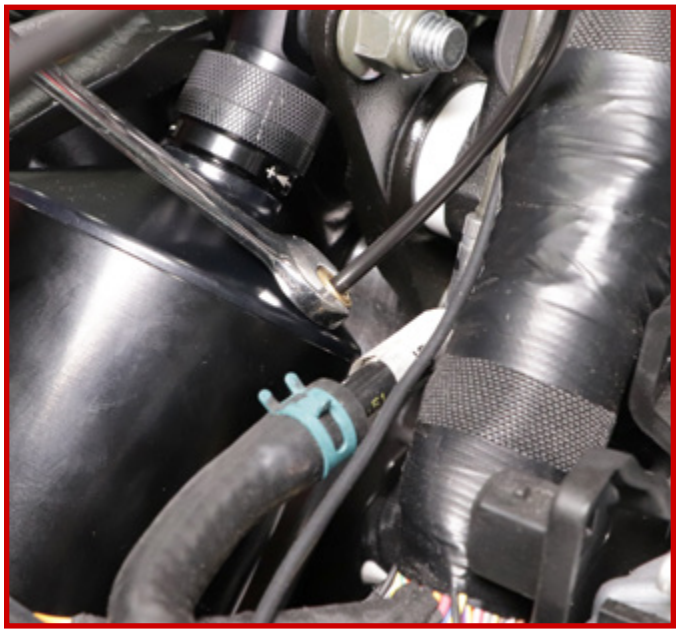


FIGURE 67

26. Screw a VOSS fitting into the manifold, finger tight and pull out the white shipping pin. Insert the other end of the 4mm air line into the fitting until you feel it seat. Remove the fitting from the manifold and confirm the keeper is on the air line. Reinstall the fitting on the manifold and tighten snugly with a wrench. (Figures 68, 69, 70)

FIGURE 68

FIGURE 69

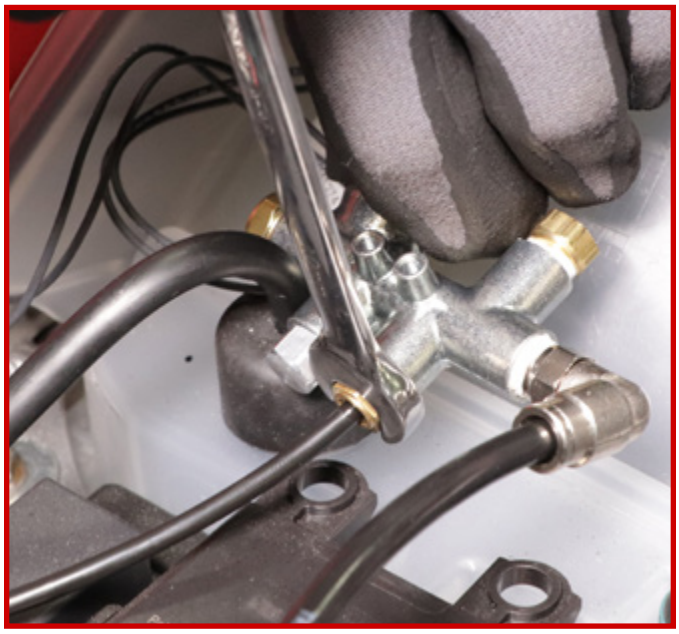


FIGURE 70

27. Remove the battery cover to access the battery and connect the supplied fuse harness. Connect the supplied wire extension to the fuse harness and bundle in the split loom. (Figures 71, 72, 73, 74)

FIGURE 71

FIGURE 72

FIGURE 73

FIGURE 74

28. Remove the lower clutch perch bolt and reuse the hardware to mount the handle bar switch to the perch. (Figures 75, 76, 77)

FIGURE 75

FIGURE 76

FIGURE 77

29. Route and secure both the handlebar switch wire and the fuse harness loom along the frame and under the tank towards the center of the motorcycle. (Figures 78, 79, 80)

FIGURE 78

FIGURE 79

FIGURE 80

30. Follow the wiring diagram on Pages 30 and 31 of this manual to complete the electrical connections.
31. The clocking of the shock eyes relative to the air inlet can be changed to suit the owner's tastes. Simply fix the lower eye in a vise to keep it from moving. Then, grasp the damper sleeve as shown below. Twist the sleeve on the shock body. (Figures 81, 82)

FIGURE 81

FIGURE 82

32. In MC-3905 & MC-3906 kits with rebound adjustable shocks, the rebound damping force can be increased or decreased to suit the rider's preference. Increasing the rebound damping will slow the speed at which the shock extends after it is compressed. This is usually desirable when running higher air pressures than normal for a single rider. For example, riding 1 up would require lower air pressure and less rebound damping than riding 2 up with a fully loaded motorcycle. The increased air pressure is trying to extend the shock faster. This can lead to an uncontrolled bouncy feeling in the rear of the motorcycle. Increasing the rebound damping will help slow down the extension and make a more controlled feeling. (Figures 83, 84)

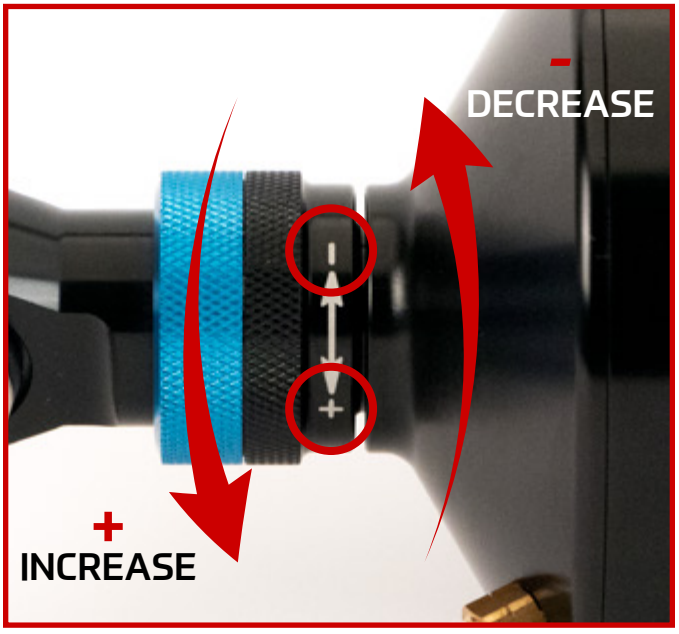


FIGURE 83

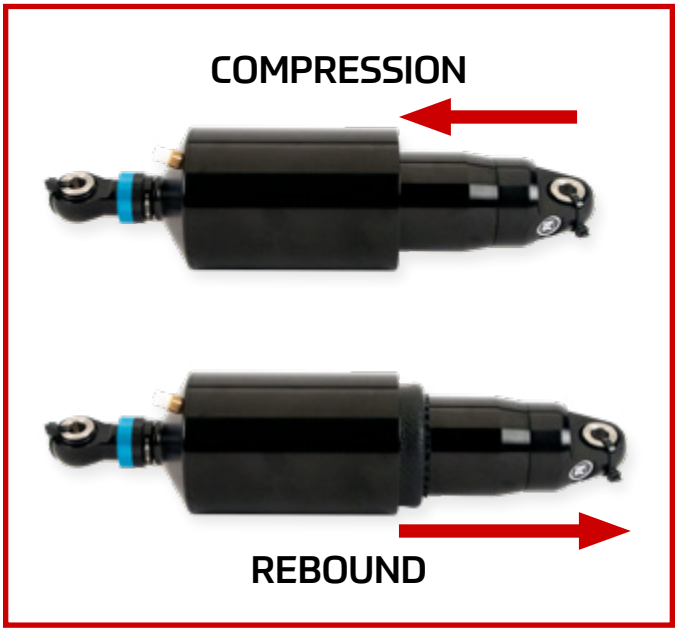
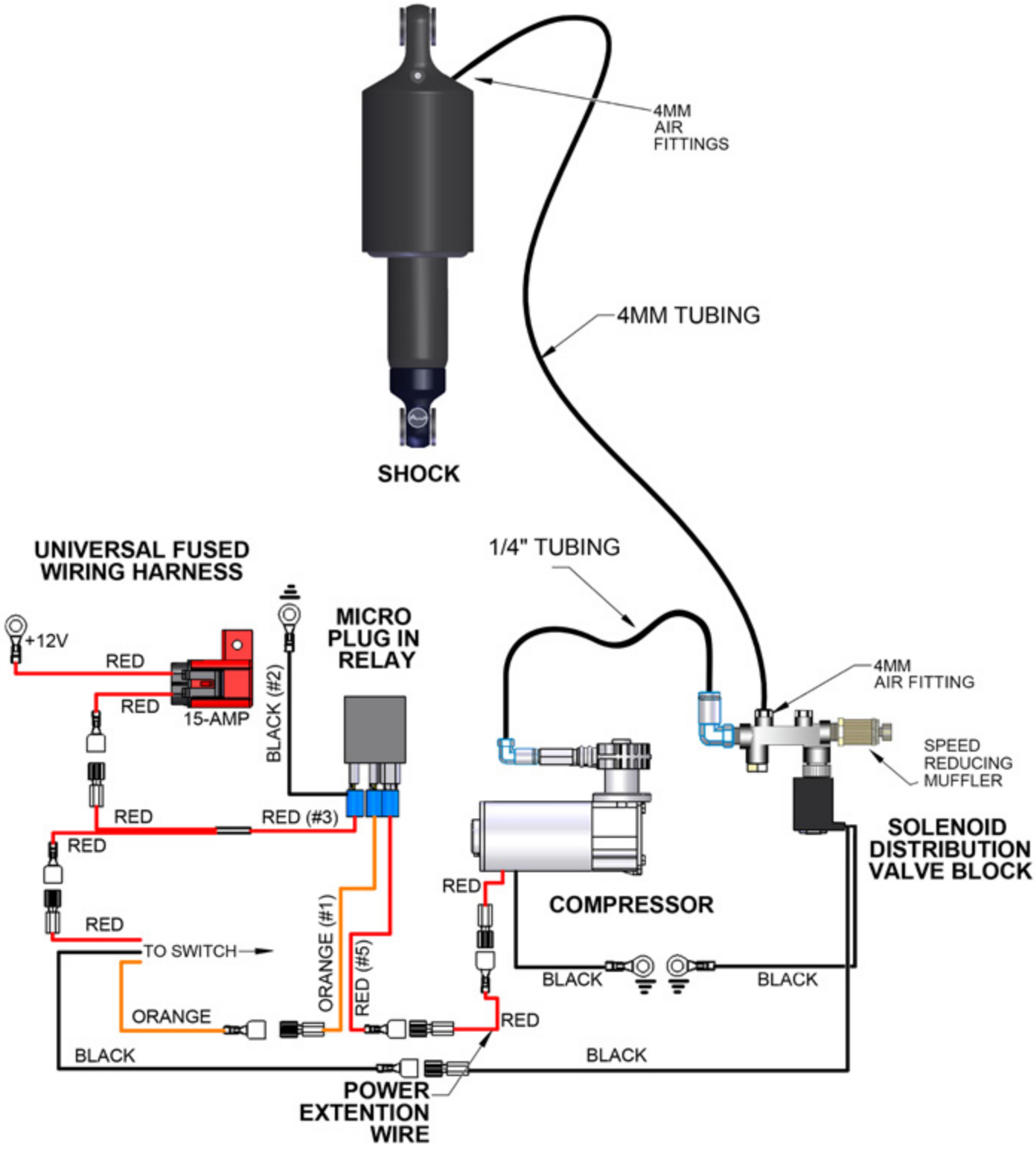
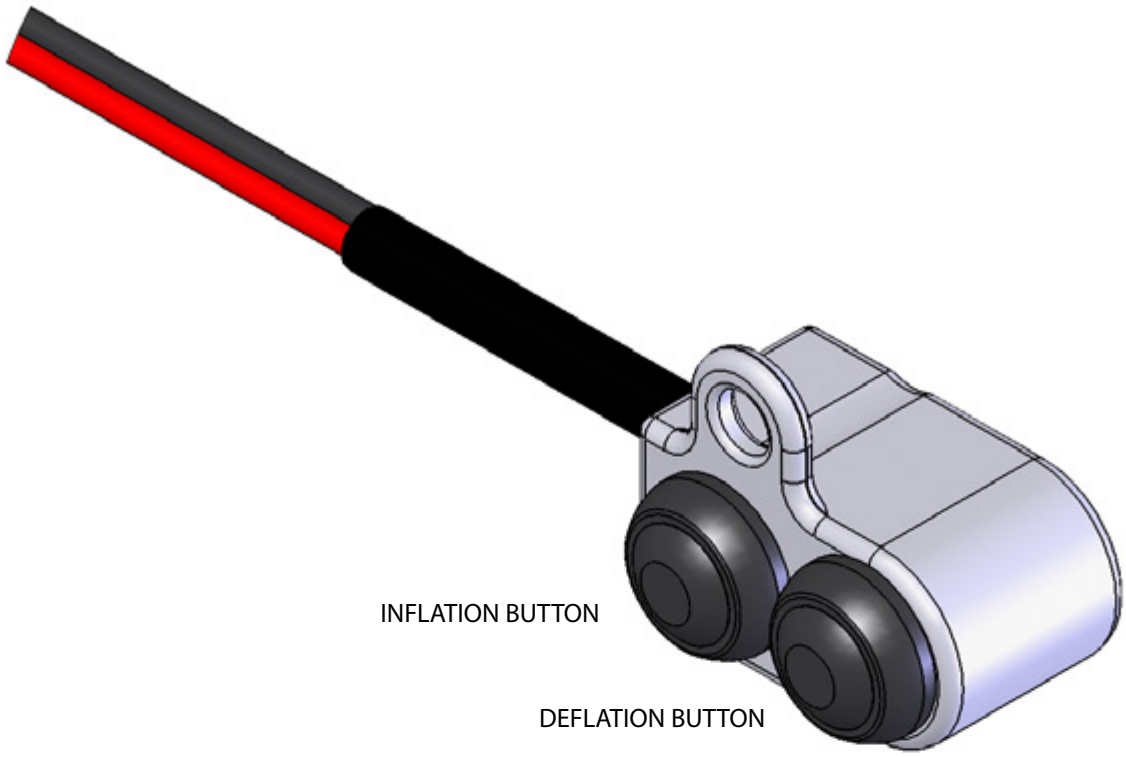
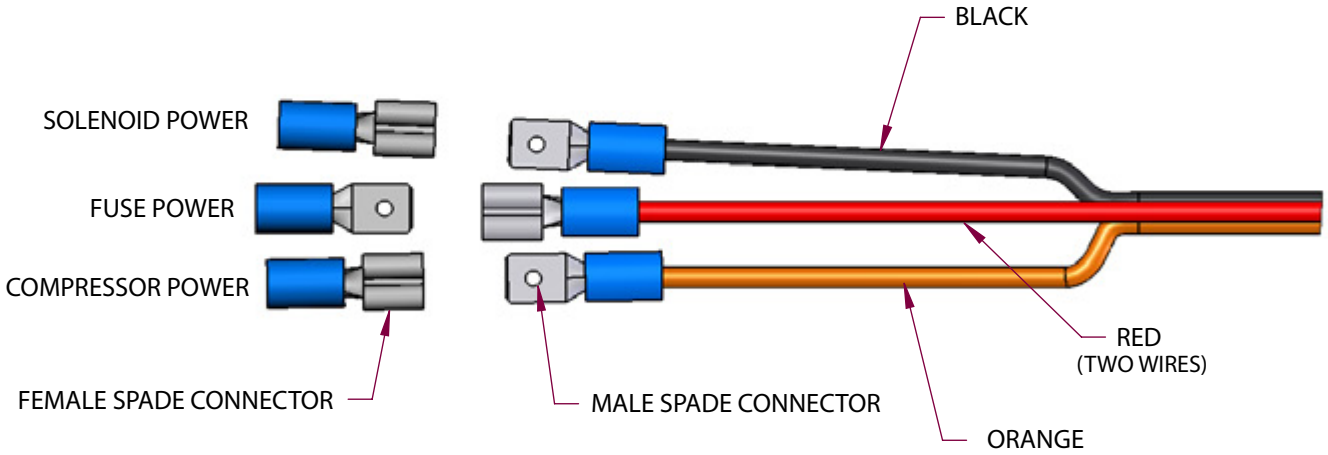


FIGURE 84


4MM
AIR
FITTINGS
4MM TUBING
SHOCK
UNIVERSAL FUSED
WIRING HARNESS
1/4" TUBING
MICRO
PLUG IN
RELAY
+12V
RED
RED
15-AMP
BLACK (#2)
4MM
AIR FITTING
SPEED
REDUCING
MUFFLER
RED
RED (#3)
RED
SOLENOID
DISTRIBUTION
VALVE BLOCK
RED
COMPRESSOR
RED
TO SWITCH
ORANGE (#1)
RED (#5)
BLACK
BLACK
ORANGE
RED
BLACK
BLACK
POWER
EXTENTION
WIRE





AS SHOWN IN ILLUSTRATION ABOVE;
1. CUT SWITCH WIRING TO APPROPRIATE LENGTH.
2. CRIMP THE TWO MALE SPADE CONNECTORS TO THE ORANGE WIRE AND TO THE BLACK WIRE.
3. CRIMP THE FEMALE SPADE CONNECTOR TO THE DOUBLE RED WIRE.

Arnott™

Motorcycle Suspension

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