

# **BoonDocker**

**PERFORMANCE**

**2017-18 Gen4 Ski-Doo 850 SideKick Turbo  
Installation Instructions**



# **Gen 4 Ski-Doo 850 SideKick**

**IMPORTANT: some of the installation steps are COLOR dependent. Please verify your installation against COLOR instructions.**

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## **Proper fuel is CRITICAL**

1. For the first 100 miles of operation, your high-performance machine will require two gallons of race-gas or av-gas per tank.
2. After the first 100 miles: This turbo kit has been validated with 91-octane, non-ethanol fuel, at 6,000+ feet. **DO NOT USE fuel below 91-octane.** If you are unsure of your fuel quality, please add two (2) gallons of race-gas or av-gas to each tank.
3. If non-ethanol fuel is not available, please use a race gas concentrate, or at least one gallon of av-gas or race-gas per tank.
4. Take note, that on blended pumps (where more than one grade of fuel comes from the same hose), that apparatus may contain up to two (2) gallons of low-octane fuel. The first 2 gallons of fuel from any blended pump should not be put into a high-performance machine.

## **Engine Codes**

- Any engine code, when using a turbo kit, is an immediate concern.
- If you see an engine code, immediately stop operation and contact BoonDocker to prevent potential damage.

## **Operation below 6,000 Feet**

1. Tuning for this kit has not been validated for operation below 6,000 Feet (1820m).
2. Operation below 6,000 feet WILL require **additional octane and clutching** adjustments. Contact BoonDocker for technical support for this application.

# **Gen 4 Ski-Doo 850 SideKick**



1. Un-Box the contents of your SideKick and layout/organize the pieces. **READ ALL INSTRUCTIONS FIRST!**



2. Remove the glove-compartment screws and remove the glove-box compartment



3. Disconnect hood wiring (headlights/MAP sensor/factory gauge), unplug and remove gauge



4. Remove two screws under the gauge cluster



5. Remove side-panels (both sides)

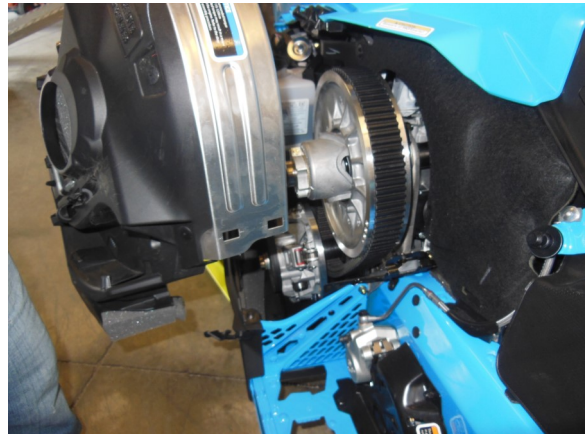


6. Remove forward small hood screws (both sides)

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7. Remove Seat



8. Remove clutch cover



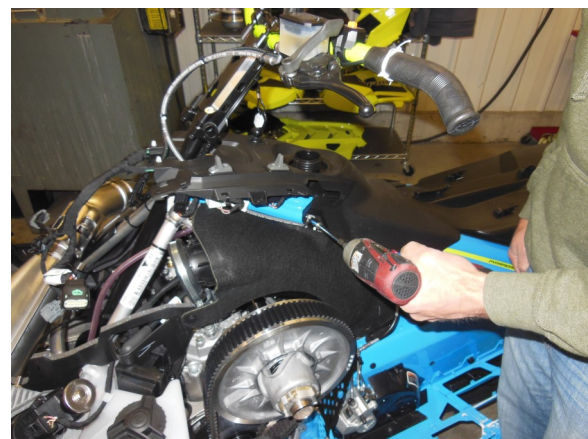
9. Disconnect factory air-intake from air-box



10. Remove hood assembly

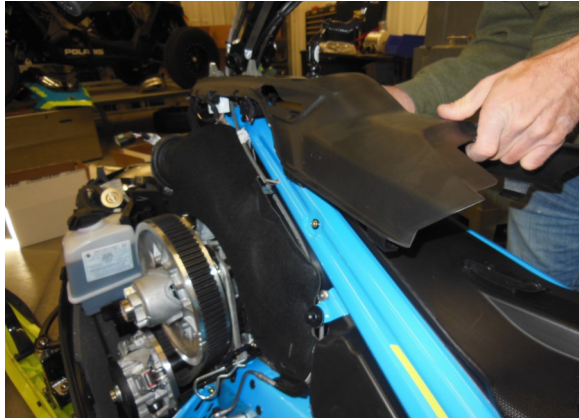


11. Remove fuel-tank jam-nut



12. Remove tank cover nuts (both sides)

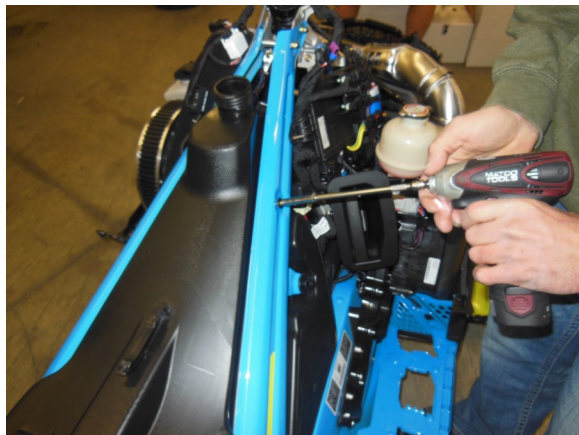
# **Gen 4 Ski-Doo 850 SideKick**



13. Remove fuel tank shroud (partially, see next step)



14. Cut zip-ties, unplug wire harness for tether/switches, and remove shroud.



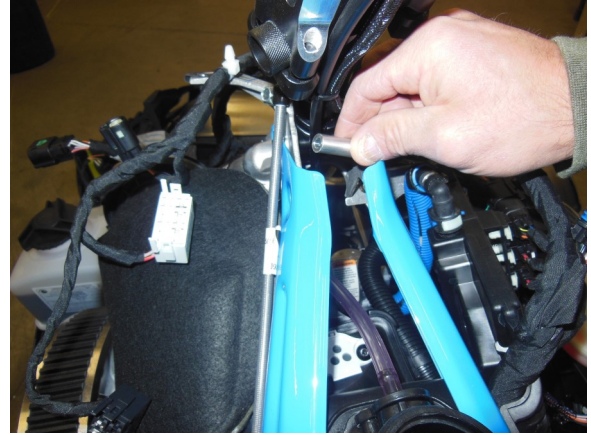
15. Remove front screws from overstructure (both sides)



16. Remove rear screws (2 each side) from overstructure

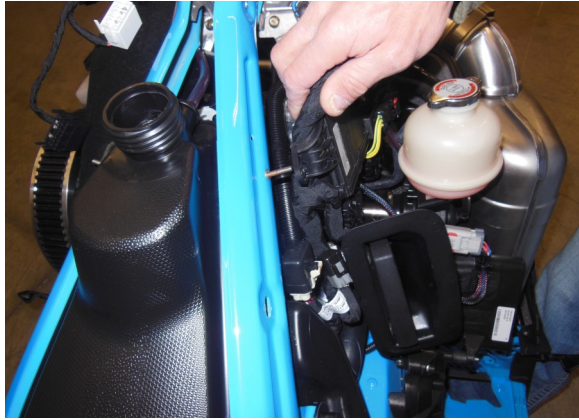


17. Remove overstructure assembly bolt where steering post connects to overstructure. **DON'T DROP THE SPACER**

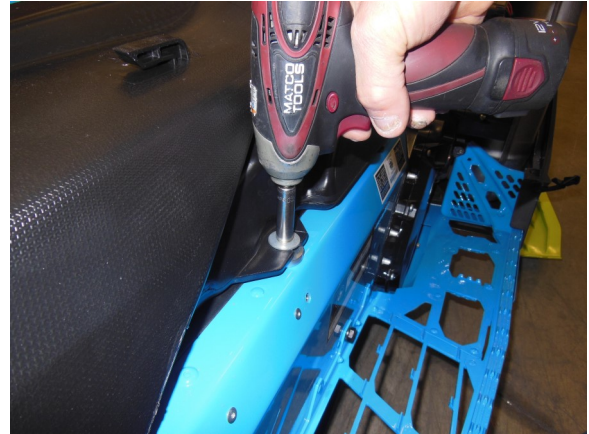


18. **DON'T DROP THE SPACER**, Remove and keep.

# **Gen 4 Ski-Doo 850 SideKick**



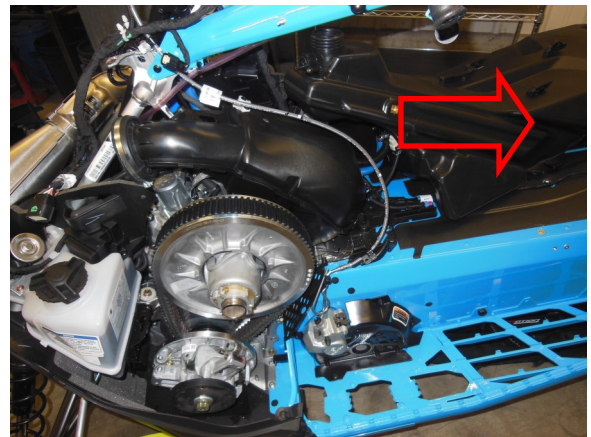
19. Gently slide ECU off stud. There will be some resistance, only flex the minimum amount to clear stud. Lift Rear of SPAR overstructure.



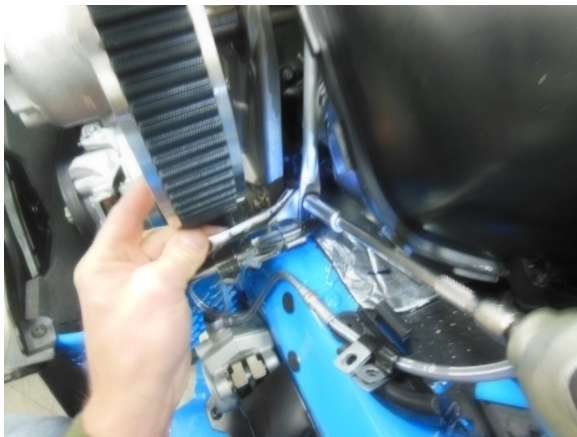
20. Remove fuel-tank bolts



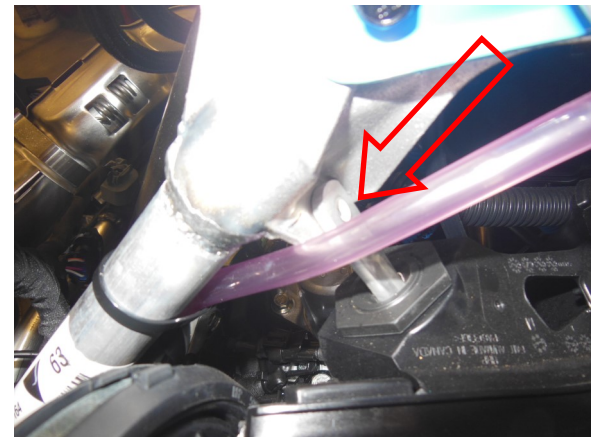
21. Your sled should now look like THIS.



22. Slide back fuel-tank

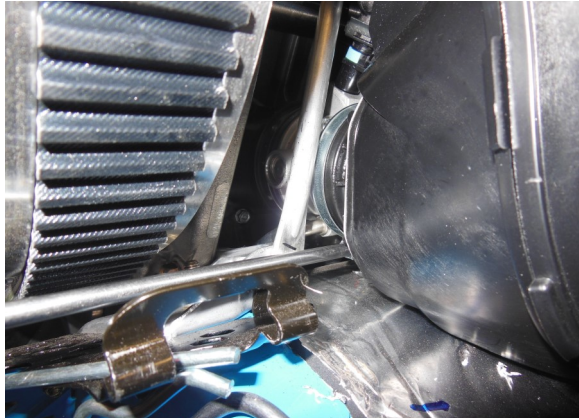


23. Remove (bottom-side) cross-member bolt, use an open-end wrench on the back side. Don't drop the nut.

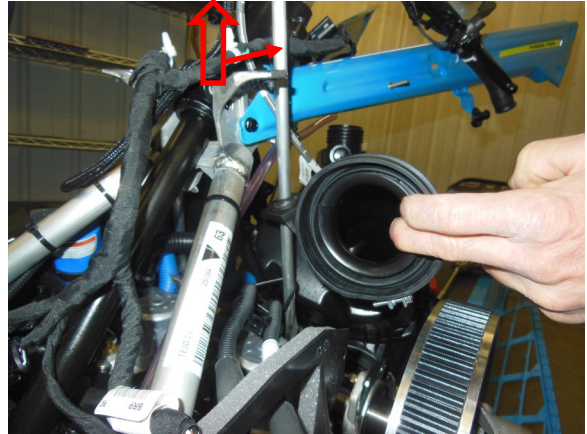


24. Remove (top-side) cross-member bolt, use an open-end wrench on the back side. Don't drop the nut.

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25. Loosen the hose clamp connecting throttle-body to air-box



26. Slide up cross-member shaft and remove



27. Cut zip-ties on the top of the air-box (mag-side) to free harness-hoses



28. Lifting from the bottom, remove the factory air-box. Make sure hoses/harnesses are free

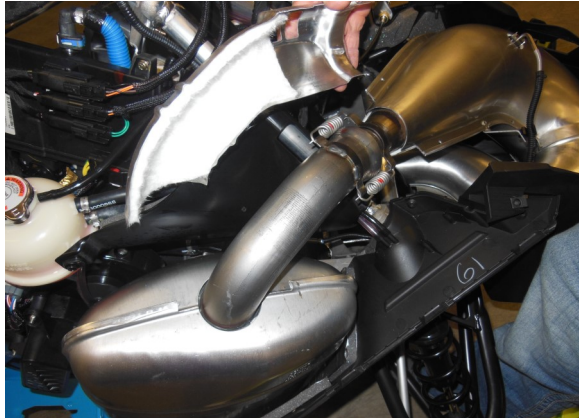


29. Remove rubber grommet for future use

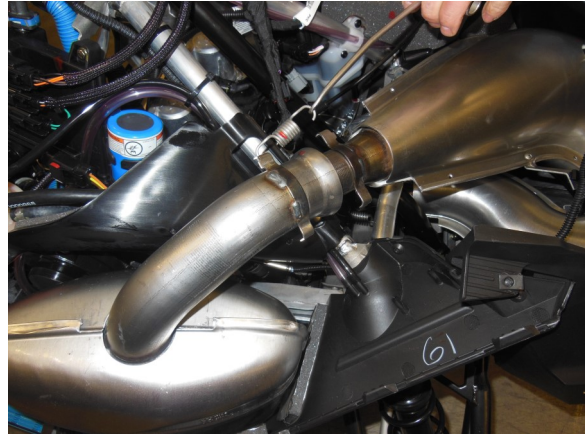


30. Remove spring-clamps from exhaust pipe heat-shield

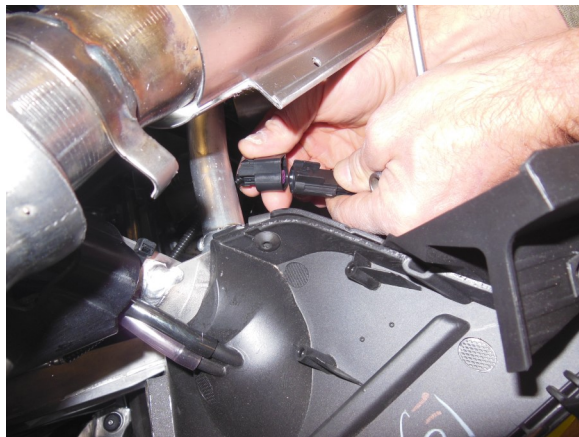
# **Gen 4 Ski-Doo 850 SideKick**



31. Remove exhaust-pipe heat shield



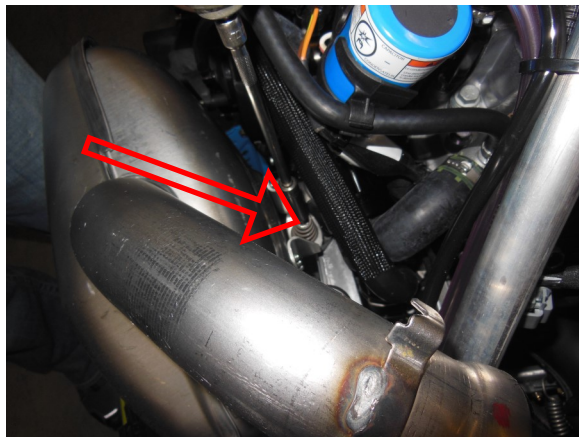
32. Remove muffler-springs



33. Disconnect muffler temp sensor



34. Remove screw from coolant bottle, and remove plastic sound-shield



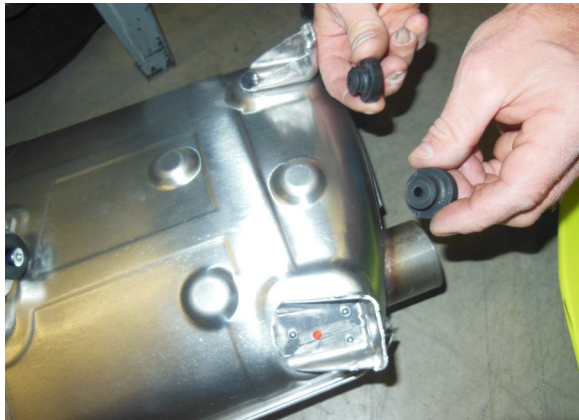
35. Remove muffler bolt



36. Remove muffler



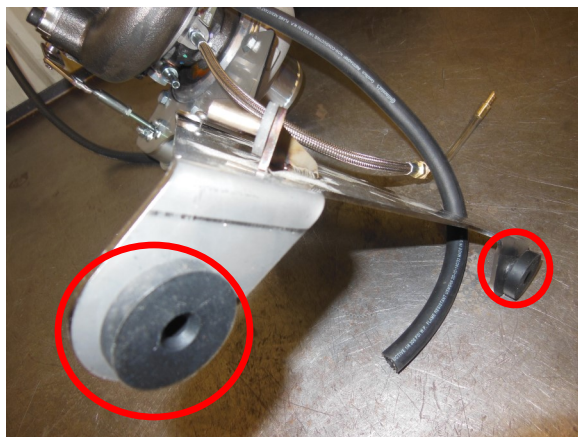
# **Gen 4 Ski-Doo 850 SideKick**



37. Remove and save factory muffer dampeners



38. Bend tabs back and unbolt/remove muffer temp-sensor



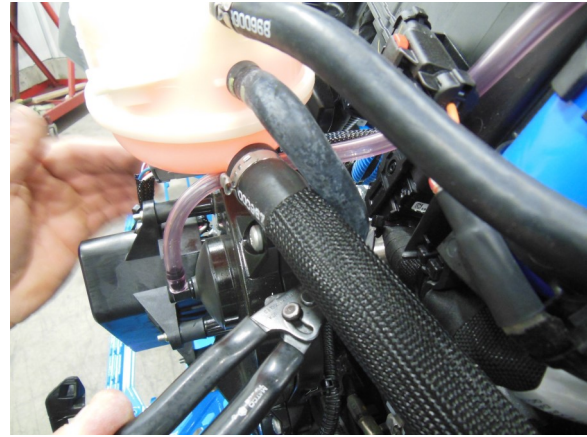
39. Install factory muffer dampeners (step 37) into Turbo Bracket



40. Double up all exhaust springs with (new) springs (Y-pipe to pipe)



41. Cut and remove MIDDLE otiker clamp. DO NOT TWIST OR MANGLE. Don't break nipple

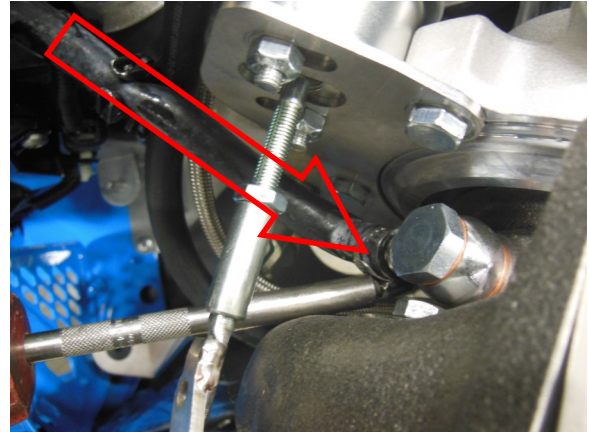


42. Crimp coolant line to prevent a spill. Siphon coolant from bottle

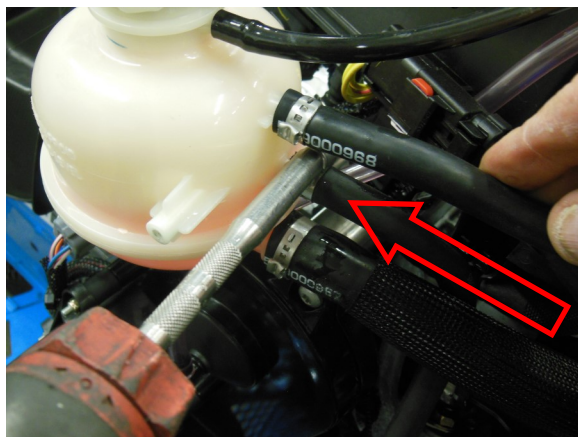
# **Gen 4 Ski-Doo 850 SideKick**



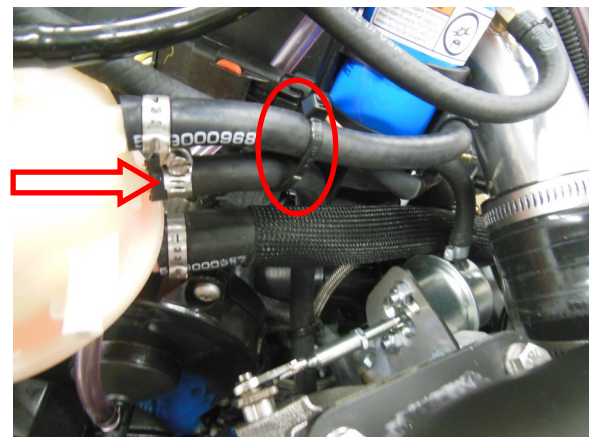
43. Install turbo/bracket by setting onto lower pins



44. Route coolant line previously disconnected from coolant bottle, to inner banjo fitting on turbo and tighten



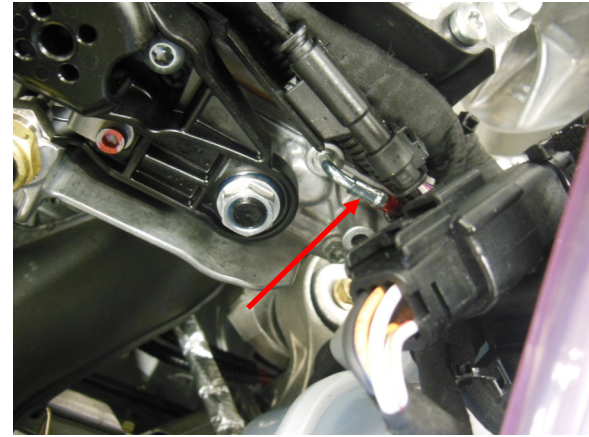
45. Route OUTER coolant line as shown, from turbo, and connect to coolant bottle



46. Use supplied hose-clamp and tighten. Zip tie the coolant line.



47. Cut clamps feeding exhaust valve oiling system (2 clamps, one on PTO and one on MAG side)

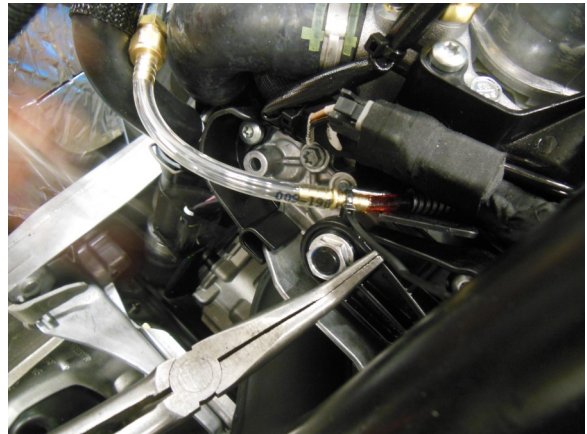


48. Cont'd...Cut clamps feeding exhaust valve oiling system (2 clamps, one on PTO and one on MAG side)

# **Gen 4 Ski-Doo 850 SideKick**



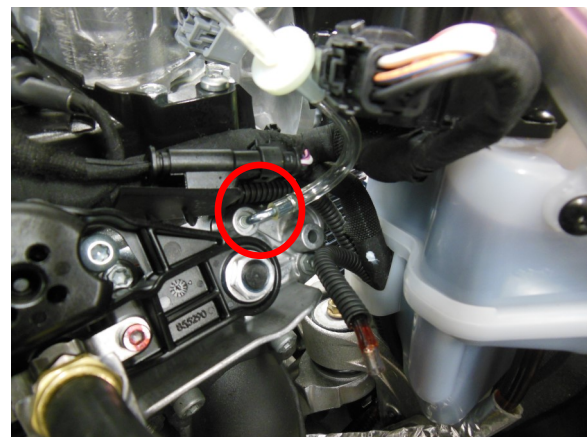
49. Fill (new) turbo oil feed line with 2-stroke oil



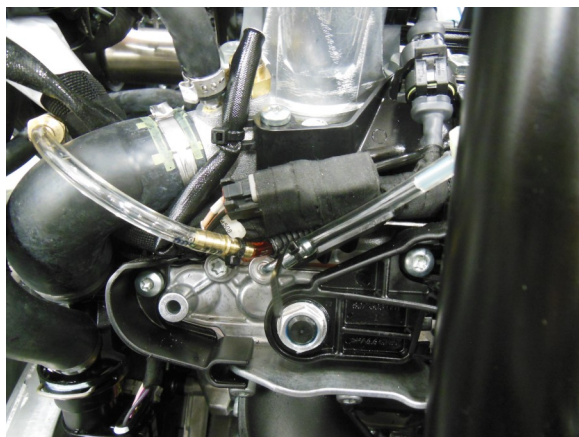
50. Attach factory oil line to turbo-oil-feed line and secure with zip-tie (MAG side)



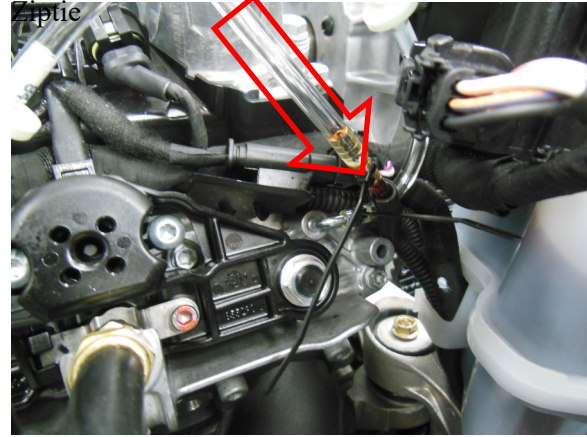
51. Install upper-turbo bracket bolt and tighten



52. Install PTO-side oil-feed system (you can't install this backwards, either way works)

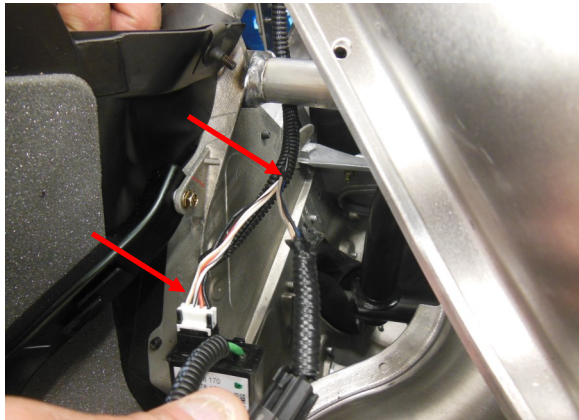


53. Install MAG-side oil feed lines and secure with zip-tie

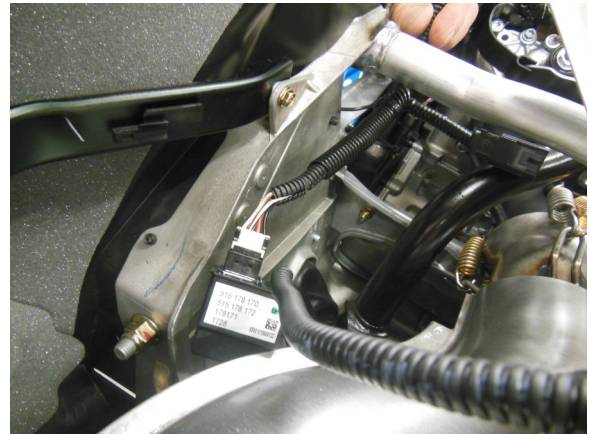


54. From the T of the turbo oil-feed system, hook into the factory oil feed

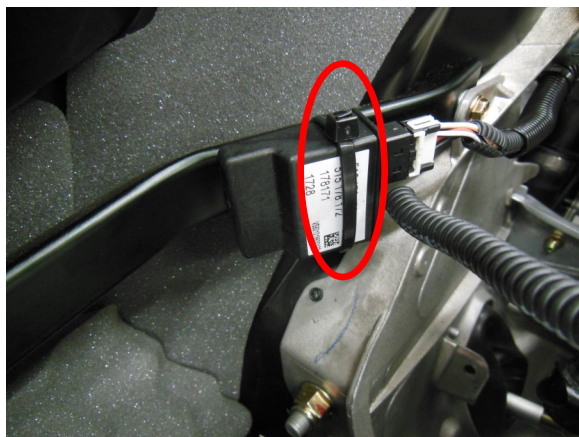
# **Gen 4 Ski-Doo 850 SideKick**



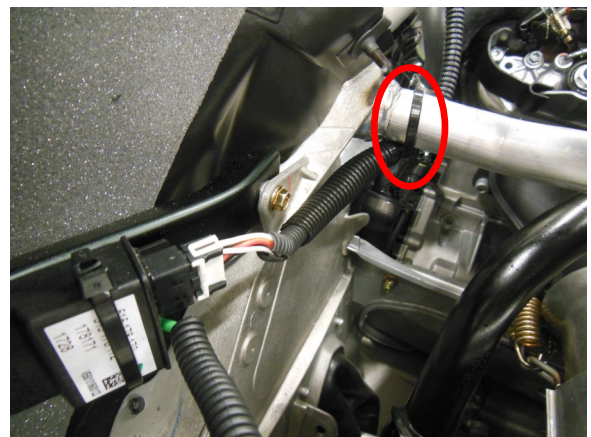
55. Un-tape muffler & pipe temp-sensor, as shown. Separate the muffler temp-sensor connection



56. Use supplied wire-tubing to double-back and cover muffler temp-sensor



57. Secure sensor junction with zip-tie



58. Zip-tie wire harness to overstructure

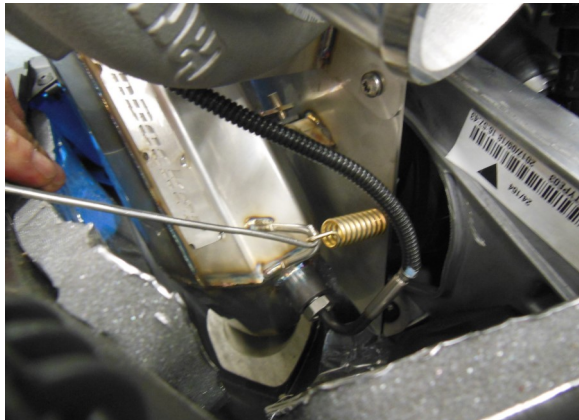


59. Install muffler temp-sensor into (new) muffler. Don't tighten, yet



60. Use silicon on inside of flange

# **Gen 4 Ski-Doo 850 SideKick**



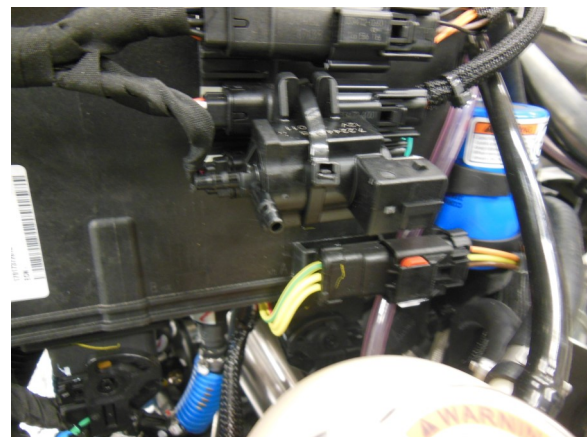
61. Install muffler onto pins, and install lower spring



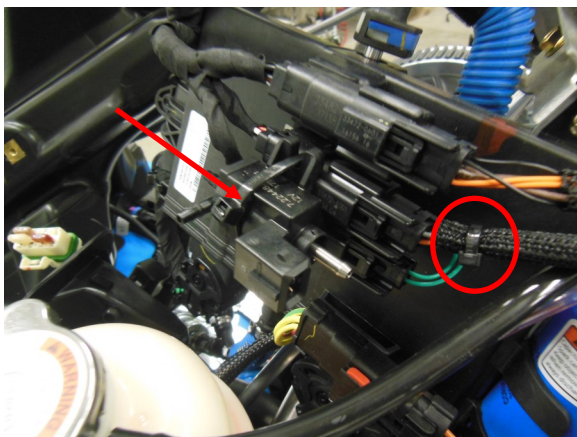
62. Install upper spring on muffler



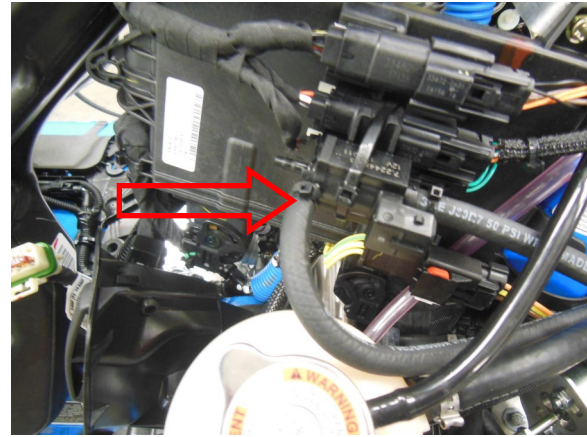
63. Install muffler temp-sensor connection and tighten sensor-nut on muffler



64. Install boost solenoid



65. Zip tie as shown



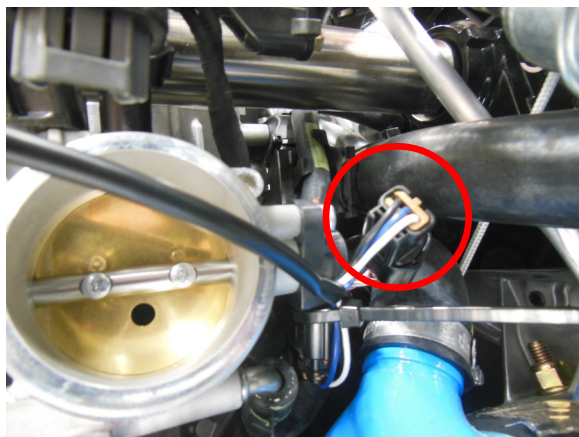
66. Install waste-gate hose as shown, secure with zip-tie

# **Gen 4 Ski-Doo 850 SideKick**

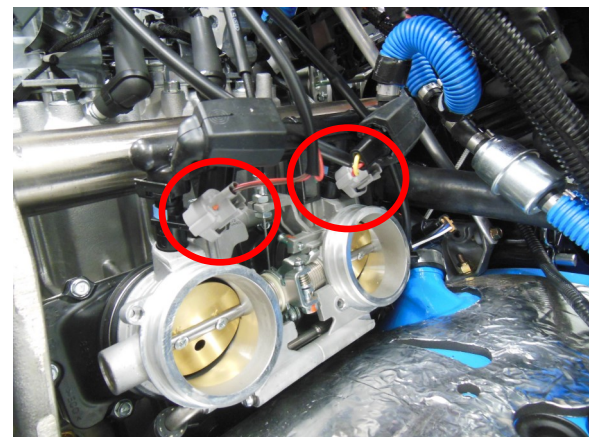
67. INTENTIONALLY LEFT BLANK



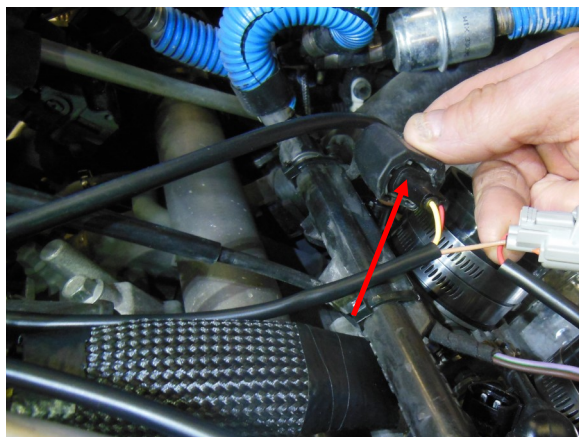
68. Disconnect factory TPS connection



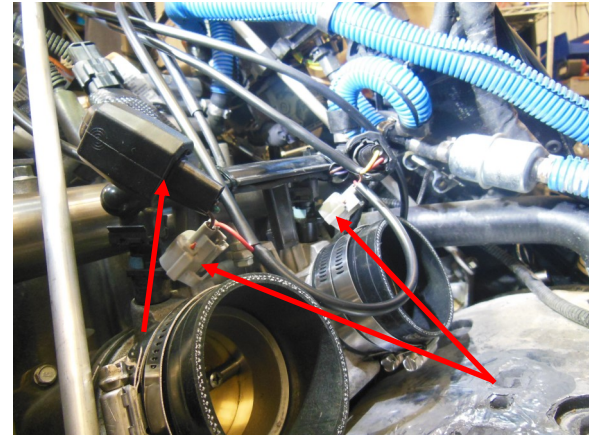
69. Plug in BoonDocker TPS connection and zip-tie as shown



70. Unplug factory injector harnesses.



71. Plug BoonDocker injector harness connector (yellow to MAG) into factory injector connector. Then plug into factory injector with remaining connection

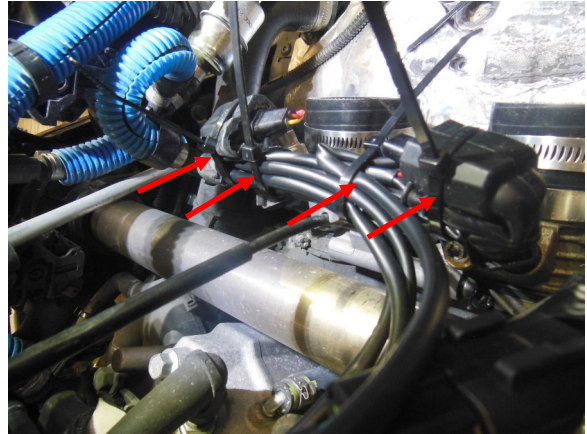


72. Plug BoonDocker injector harness connector (Green to PTO) into factory injector connector. Then plug into factory injector with remaining connection

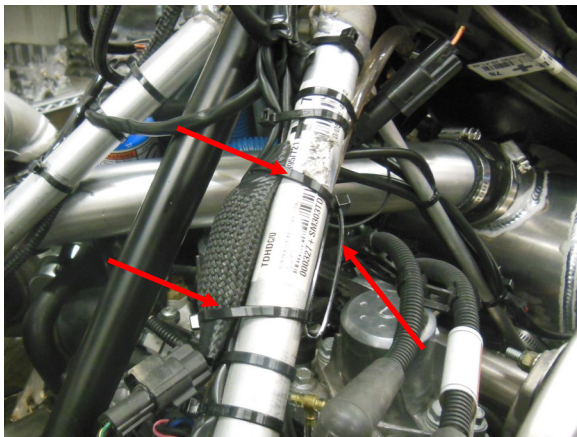
# **Gen 4 Ski-Doo 850 SideKick**



73. Plug BoonDocker harness into factory "Accessory" plugin, previously unplugged from console by hand-warmer switches

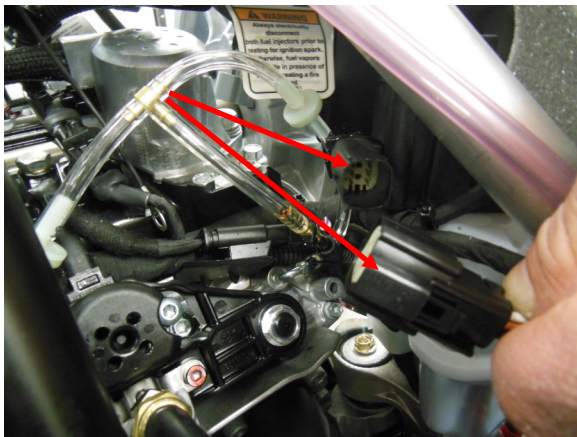


74. Secure wires and injector connectors to fuel rail. Be sure to take up any slack and properly secure with zip-ties



75. Secure capacitor bag to overstructure. Use extra zip-ties, route UNDER fuel lines.

76. Capacitor bag must be on the inside of the overstructure, NOT top or bottom.

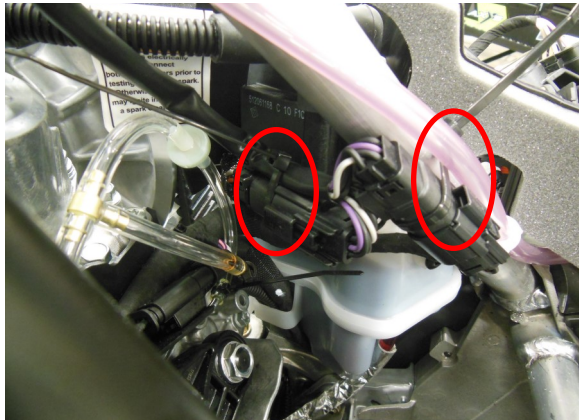


77. Unplug connector from coil

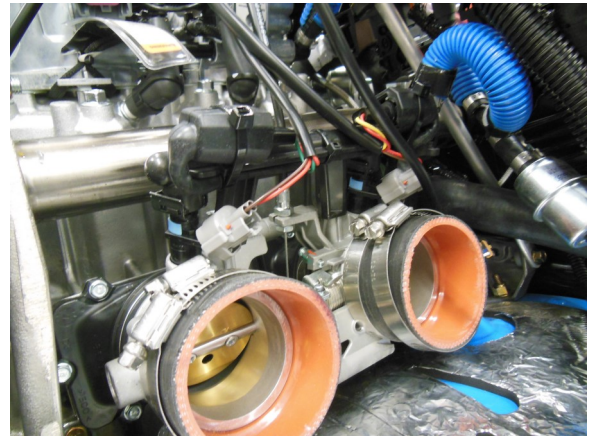


78. Install BoonDocker coil harness as shown. USE DIELECTRIC GREASE on this connection

# **Gen 4 Ski-Doo 850 SideKick**



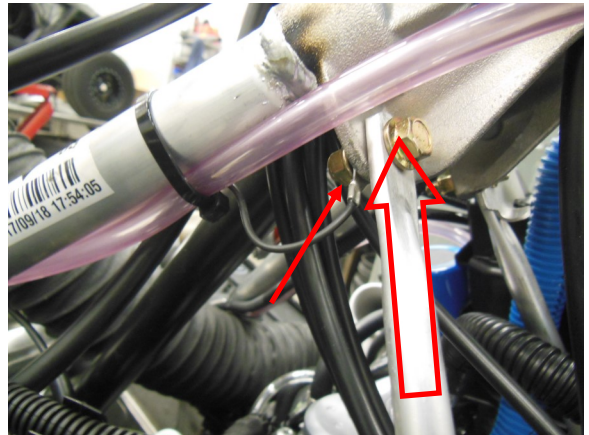
79. Zip-tie as shown



80. Install intake boots and tighten hose clamps to throttle bodies. Take note of clamp positions



81. Install Airbox, tighten clamps, install sensor



82. Reinstall crossmember and attach ground wire. (Install bolts on top and bottom of cross-member, ground wire is ONLY on the top-side connection)

83. INTENTIONALLY LEFT BLANK



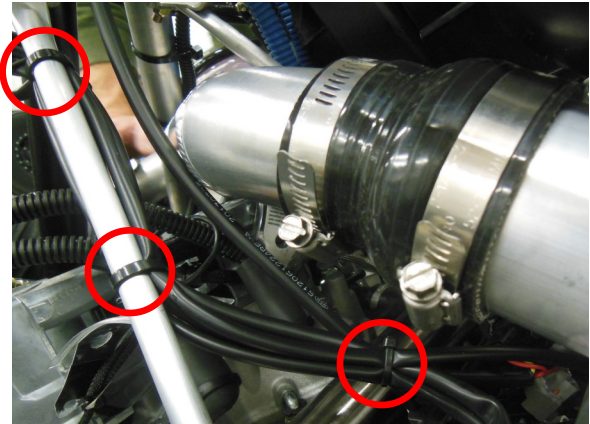
84. Install silicon hose onto turbo. Take note of clamp orientation. Tighten hose clamp on turbo-side.



# **Gen 4 Ski-Doo 850 SideKick**



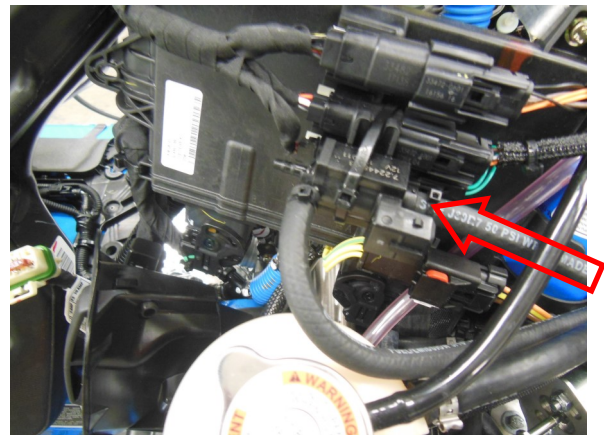
85. Install reducer on air box and aluminum boost charge tube as shown. Take note of hose clamp orientation. Tighten all connections



86. Route and install zip ties as shown



87. Install boost solenoid reference line and zip tie as shown



88. Install solenoid reference line to solenoid and zip-tie

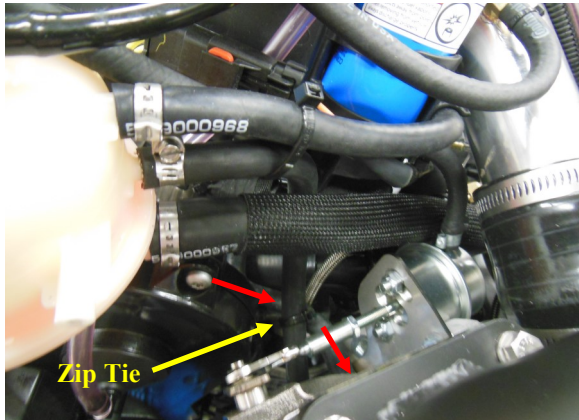


89. Install turbo inlet pipe and tighten. Don't forget the gasket

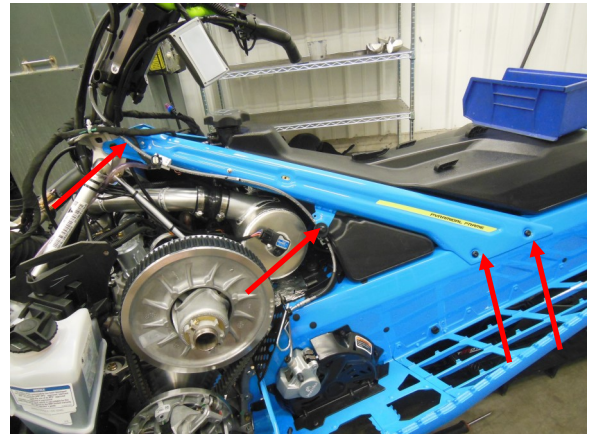


90. Install springs. Long end of spring goes towards exhaust pipe

# **Gen 4 Ski-Doo 850 SideKick**



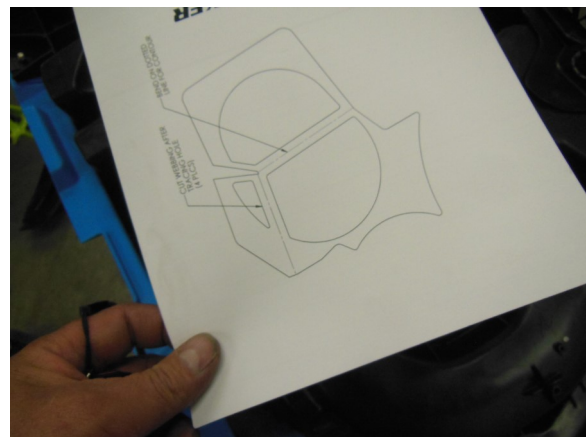
91. Verify routing of oil line, and zip tie to coolant line.



92. Reposition the fuel-tank and check clearances. If clearance is good, install bolts on tank and overstructure. Re-rivet brake line as shown.



93. Move to the hood. Turn it upside down. Remove the retainer washers and sound shield



94. Use template. Cut the outside shape and inside windows to prepare for marking.



95. Mark intake ducting as shown on template and carefully cut



96. Install cold air adapter as shown. Carefully install screws. DO NOT STRIP.

# **Gen 4 Ski-Doo 850 SideKick**



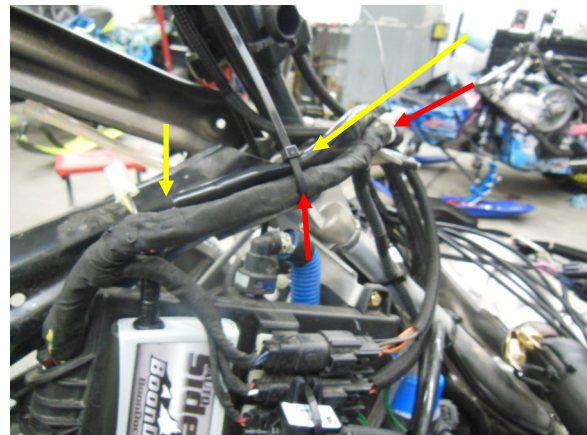
97. Silicone perimeter of cold-air adapter



98. Install aluminum block-off plate in previously removed air-box grommet and install this assembly on factory cold-air intake.



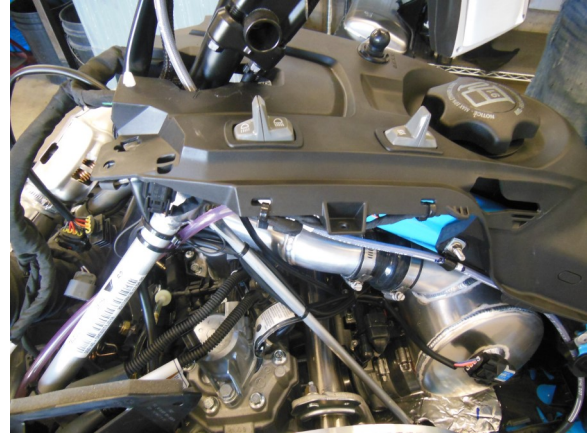
99. Re-install heat shield from pipe to turbo. Secure using supplied hose clamps



100. Route control box following factory harness towards ECU. Secure with Zip Ties

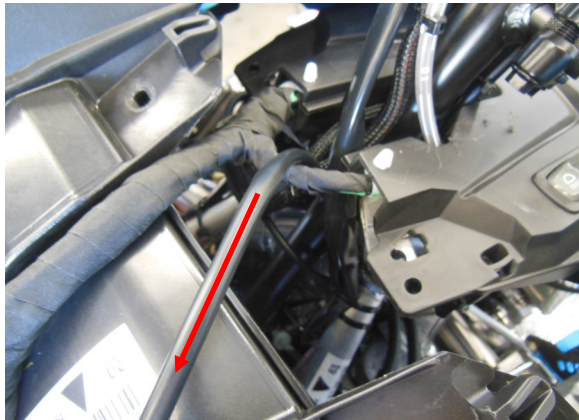


101. Clean ECU surface with rubbing alcohol. Slide control box behind factory harness as shown and attach with Velcro to ECU surface as shown.



102. Reinstall console, wiring switches/tether appropriately. Zip tie as shown. Install bolts and brake line/ECU clip and nuts as shown, both sides.

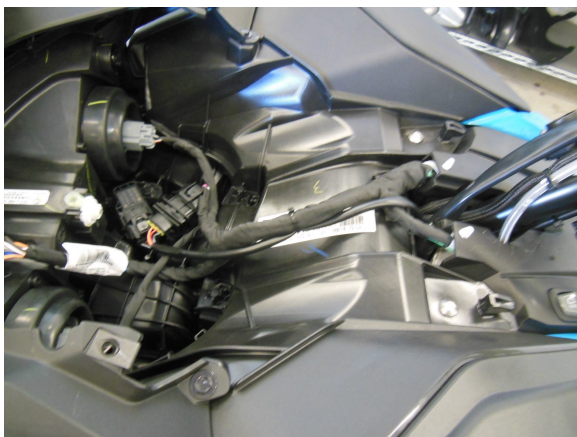
# **Gen 4 Ski-Doo 850 SideKick**



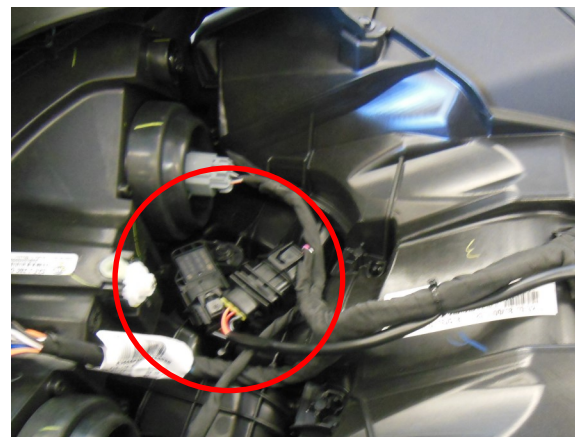
103. Reinstall factory harness into console, and route temp sensor harness as shown.



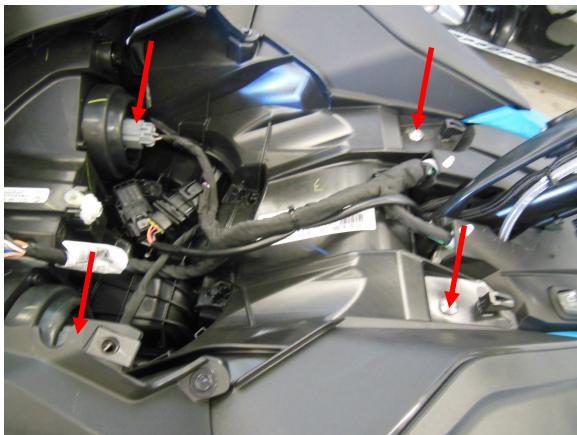
104. Set hood on sled, install cold-air intake flex hose as shown. Route intake under overstructure to turbo.



105. Slide hood into position. Verify wire-routing. Connect cold air to turbo and secure.



106. Connect factory temp sensor using BoonDocker harness.



107. Install hood screws and attach headlights.



108. Plug in factory gauge and install glove compartment. Fasten using stock screws.

# **Gen 4 Ski-Doo 850 SideKick**



109. Connect lower side of cold-air intake tube to turbocharger. Secure with hose clamp. Note orientation.



110. Install seat



110. Remove primary clutch. You will either need specialty tools or will need to visit your local Ski-Doo dealer for assistance on installing clutching. Please refer to Ski-Doo Service Manual for proper installation technique.



112. Install BoonDocker Supplied clutching. NOTE-Weights are already PRE-LOADED to spec.

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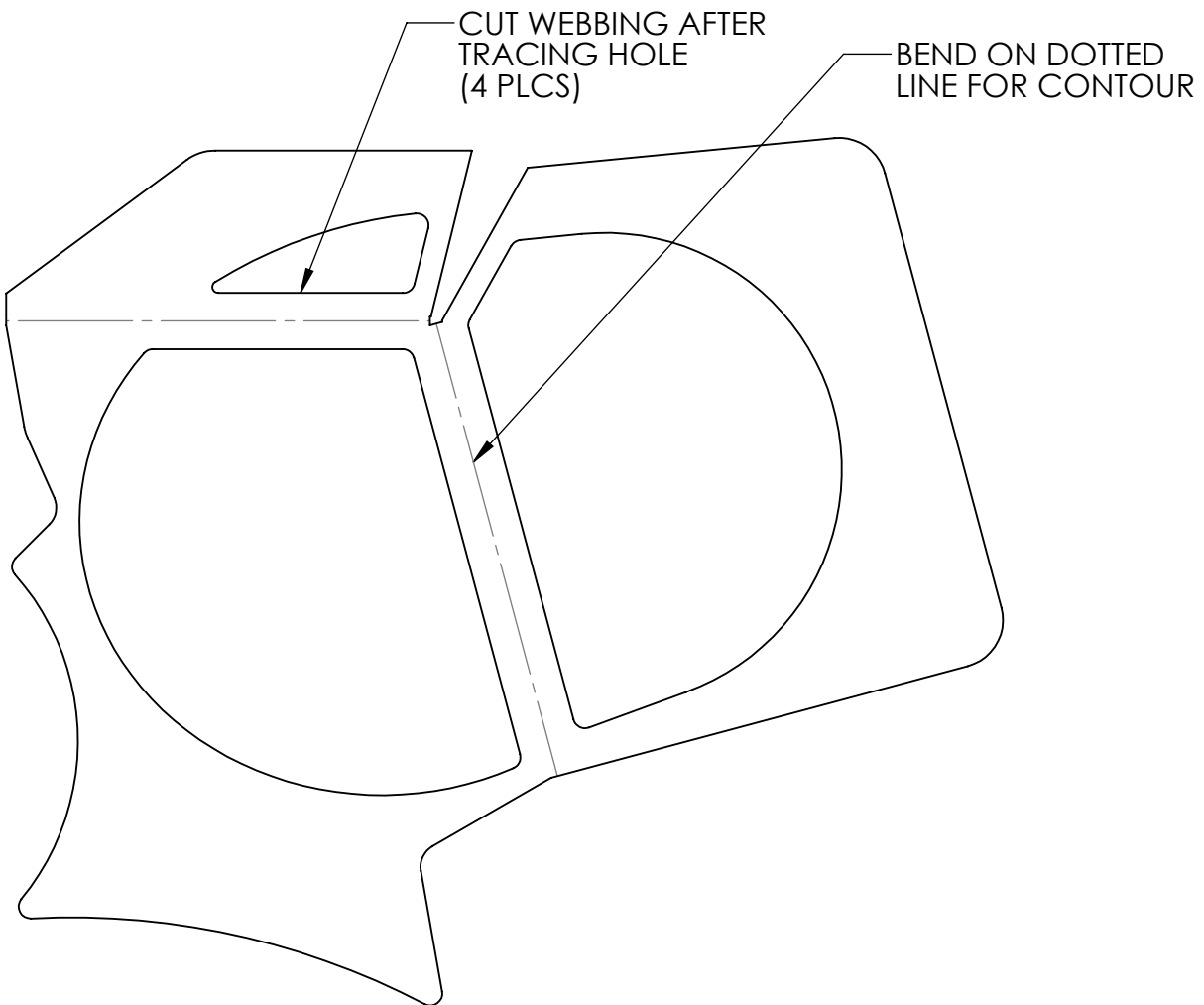
113. DO NOT add weights to supplied clutching without consulting a BoonDocker technician.

NOTE: Primary Spring is ONLY necessary on 2017 Models.

2018 SkiDoo 850's are shipped with the included spring already installed from factory. If you have a 2018, you may save this spring to freshen up your clutches later this season!



114. Reinstall side-panels and go ride your sled.



***BOONDOCKER***

***SKI-DOO 850 GEN4***

***COLD AIR PLENUM TEMPLATE***