

96-04 TT INSTRUCTIONS

The logo features the word "HELLION" in large, bold, metallic 3D letters with a red-to-silver gradient. Below it, "POWER SYSTEMS" is written in smaller, red, metallic 3D letters. The background includes a stylized orange brushstroke of a wing or flame at the top and a large, faint orange brushstroke of a wheel at the bottom.

**HELLION**  
**POWER SYSTEMS**

**HELLION POWER SYSTEMS**  
**1996-2004 MUSTANG**  
**TWIN TURBO**  
**KIT INSTRUCTIONS**

**HELLION**

# 99-04 TT INSTRUCTIONS

1. Disconnect battery and elevate front end of car on either Jack stands or a lift if available
2. Lock steering wheel and remove key, then remove front tires and wheels



3. Remove sway bar assembly



4. Remove steering shaft bolt



5. Remove rack bolts



Hellion recommends that the front suspension system be installed either by trained professionals or by someone with mechanical experience.

6. Remove steering tie rod ends (you may want to try using an air hammer with a pickle fork to remove the tie rod end if it is difficult to remove)



7. You may need to loosen and remove engine mount bolts and raise drivers side block to clear steering lines from oil filter boss



8. Pry rack from K-member



9. Strap rack to front cooler



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10. Remove brake calipers left & right



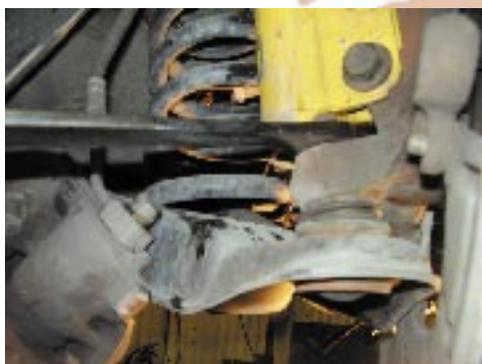
11. Remove both front discs



12. Remove ABS sensor lines both left and right



13. Loosen lower ball joint 15/16 nut (both left and right) until there is a 1/8 inch gap with the nut maintaining full thread engagement.



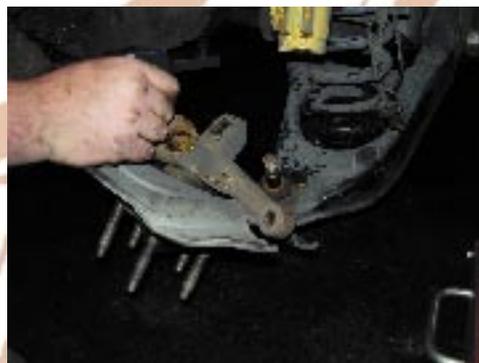
14. Use an air hammer or electric hammer with a pickle fork in order to disengage ball joint from spindle



15. Support A-arm with jack to take load off of spring and remove the 2 strut to spindle bolts, then lower A-arm, being cautious because spring is under pressure.



16. Remove spindle, both left and right



17. Remove left and right motor mount nuts



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18. Support engine and transmission with appropriate upper support tool or support from beneath.



19. Support K-member and remove K-member bolts (6) attaching K-member to frame.



20. Remove old K-member

21. Remove factory O2 sensors (4)

22. Remove ground strap on drivers side frame rail and remove Oil filter

23. Raise new K-member into place, re-install the 6 K-member bolts that attach K-member to frame. Make sure that the brake lines are not between K-member and frame.

24. Tighten bolts to 66 ft. lbs for the lower bolts, and 85 ft. lb.s for the upper bolts.



25. Install bushings and sleeves into tubular A-arms, making sure that the short sleeve is in front, and the long sleeve in back



26. Install a-arms using supplied bolts and tighten to 148 ft. lbs.



27. Install motor mounts nuts and tighten to 110 ft. lbs.



28. Install grease boots on lower ball joints



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29. Install steering rack, install rack bolts and tighten



30. Re-install steering knuckle and tighten

31. Remove factory caster/camber plates by removing the 3 nuts on each side



32. Remove plate from strut by removing large nut on top of strut shaft



33. Install new caster/camber plates



34. Install strut with coilover kit into caster/camber plate, using caster/camber instructions as reference for bearing/shim stacking order.



35. Re-install factory spindle and hub assembly and retorque to factory specs



36. Re-install factory ABS sensor, steering linkage, brake rotor, and calipers

37. Re-install Sway bar and end links, re-install ground strap to frame using supplied self-tapping screw, and install supplied oil filter.

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38. Remove left and right side splash guards



39. Remove screws that hold inner fenderwell to front fascia



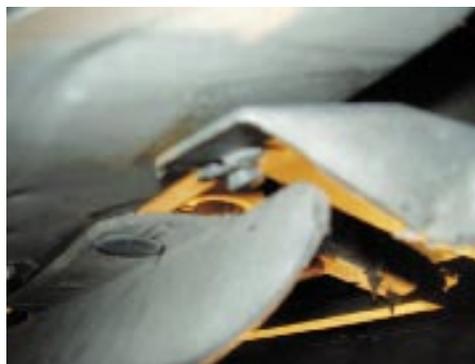
40. Remove 4 nuts holding front fascia to fender



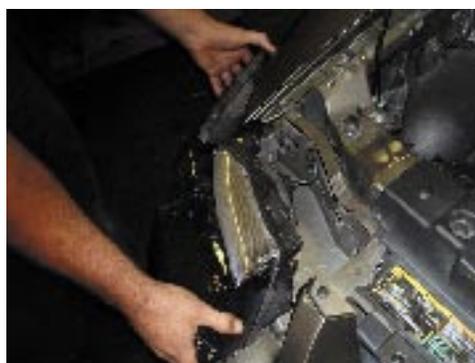
41. Disconnect fog lights



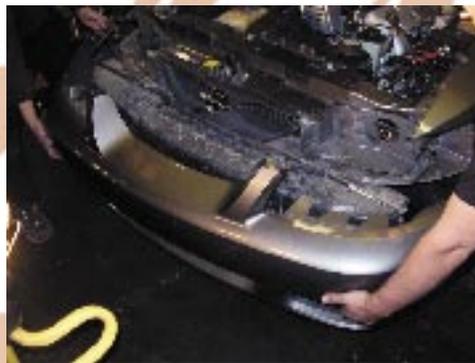
42. Remove 2 lower push pins that hold fascia to lower radiator support



43. Disconnect and remove headlights by removing headlight straps (4 total, 2 per side) and pulling headlights straight out.



44. Remove front fascia and remove radiator core support cover



45. Remove foam bumper insert by pulling straight off.



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46. Remove left and right forward splash guards



47. Remove lower, passenger side intercooler hose and drain aftercooler system

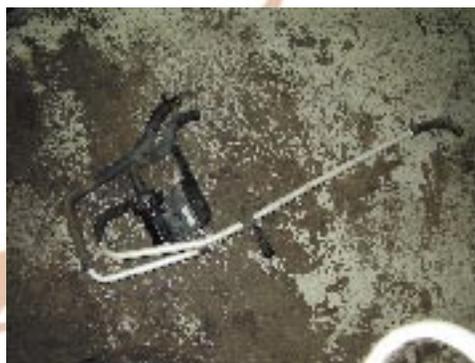


48. Disconnect aftercooler hard line from front of heat exchanger

49. Remove factory heat exchanger and set it aside for re-assembly later



50. Disconnect 2 clamps and hoses between pump and engine hard lines



51. Unbolt and remove factory aftercooler water pump and set it aside for later use



52. Mark both ends of bumper with lines marking where the bumper support lip ends

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53. Remove bumper from vehicle for cutting



54. Cut marked ends of bumper off, and de-bur



55. Take turbo support bracket and position on radiator support. Mark holes and drill with a .310 bit (2 bits may be necessary for drilling, a smaller bit to start the hole, and a larger bit to finish drilling, also if a 90 degree drill, either air powered or electric is available for use, it can make this process easier.



56. Bolt plates to radiator support using supplied 5/16 x 3/4 long bolts, nuts, and washers.



57. Insert 1 1/4" long bolt from rear to front as shown



58. Slide supplied aluminum spacer over bolt as shown on both sides



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59. Remove factory hood latch support rod



60. Unbolt power steering cooler and let hang



61. Install 9" silicone hose with clamp onto intercooler and tighten, repeat this process with both the 3" and 2.5" silicone hose



62. Install intercooler support strap with supplied bolt and nut



63. Install intercooler



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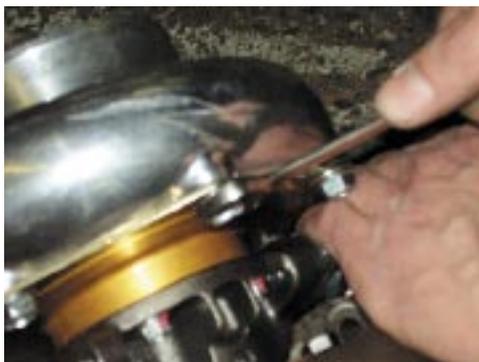
64. Bolt intercooler to lower radiator support using supplied M6 bolt and nut



65. Bolt intercooler support strap to top of cooler using supplied bolt & nut



66. Re-attach power steering cooler to radiator support  
67. Loosen turbo clocking bolts (6 per side)



68. Clock turbo according to picture  
( Turbo clocking may need to be adjusted several times for proper fitment)



69. Install 90 degree wastegate fitting into compressor cover. (Fitting is located in wastegate box)



70. Install oil feed fitting using thread sealant



71. Install 45 degree oil drain fitting using thread sealant.  
**NOTE: When installed on the vehicle, the oil feed and drain fittings must be vertical for proper function.**



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72. Insert passenger side compressor housing discharge into intercooler end, making sure to slide the clamp on first

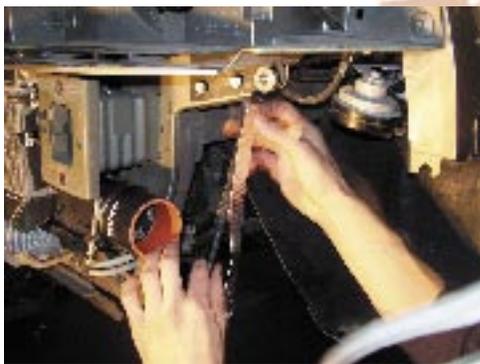


73. Install turbo support strap over bolt with spacer, then install nut. There are 3 support straps included, each with varying lengths to accommodate for different chassis. Start with the shortest strap, and install different straps until the fit is satisfactory. The turbine housing will need to be turned to remove the bolt in order to sandwich the strap. After bolt is re-installed, rotate turbine to shown position and then tighten all bolts. (Repeat on drivers side)



74. Wrap driver and pass. side wiring harnesses with supplied heat wrap and secure with supplied stainless wire. Repeat this step on the other side, and also make sure to wrap horn with protective wrap also

75. Trim driver and pass. side wheel well liner as shown



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76. Install pass side HTT-2 turbo inlet making sure that the gasket from the factory manifold to the pipe is installed, it may be necessary to raise the A-arm with a jack in order for this pipe to clear, but please note that the only time that these two pipes will have close contact is when the car is in the air, this clearance will NOT be an issue during normal driving.



77. Install factory manifold nuts



78. Insert stainless turbo gasket in between turbo and up-pipe and install (4) 1 1/2" long x 3/8" hex bolts and snug. -NOTE- Do NOT tighten anything fully yet, as this may make aligning the kit piping difficult later on, once kit is fully installed, tighten everything up



81. Repeat pipe installation on drivers side

82. Install heat shield on turbo, shield may need to be cut and trimmed in order to attain a proper fit



83. Install 3" downpipe with supplied 3" V-band clamp, making sure that the V-band does not interfere with the heat shield, and is fully seated on the exhaust housing of the Turbo



84. Install studs into wastegate

85. Slide wastegate gasket over studs, only 1 gasket per wastegate



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86. Install studs on wastegate

87. Install wastegate, making sure that none of the bolts bottom out on the lower pipe



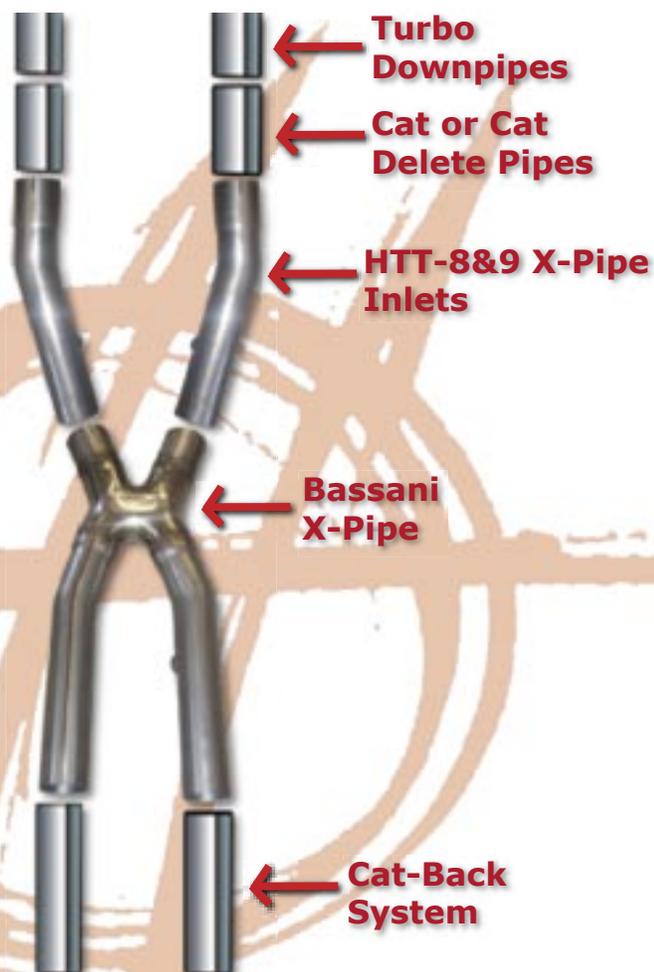
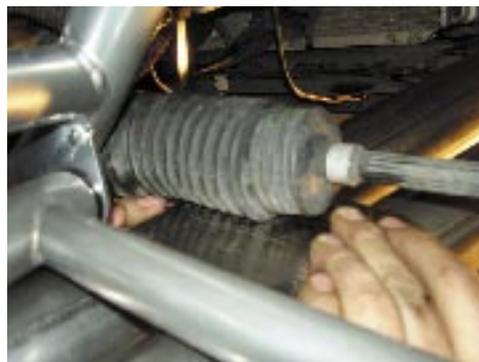
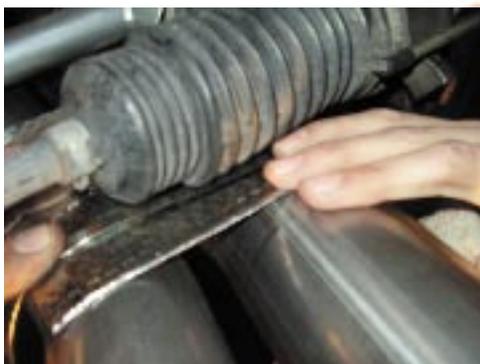
88. Install Fittings into wastegate (supplied in wastegate box\_)



89. Re-install O2 sensors

90. Connect turbo kit to cat-back system

91. Install 4x6" heat shields and secure to piping using supplied steel zip-ties, these ties will need to be doubled up in order to reach around tubing. -NOTE- This step must follow the installation of the cat-back system, otherwise lining up the cat-back with the piping will be very difficult

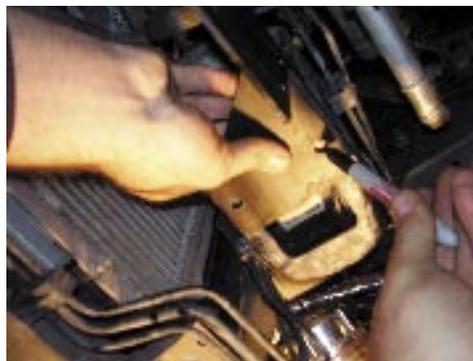


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92. Punch Oil pan using supplied punch and tap using the supplied tap coated with grease



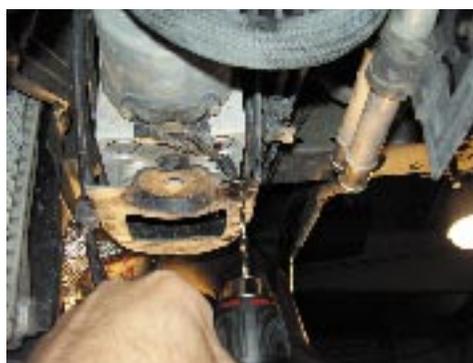
96. Position oil pump mounting bracket and mark (2) holes 1/2" from edge



93. Install #6 to 3/8 pipe fitting in pan using Teflon tape to seal threads



97. Drill 2 5/16" holes in bracket, being careful not to harm the wires above the bracket



94. Remove coolant can support rod



98. Install supplied fittings with sealant on oil pump as shown



95. Locate ABS bracket on the front part of the passenger side of the engine compartment. Measure 1/2" in from inner edge and mark



99. Install supplied hose clamps through oil pump bracket



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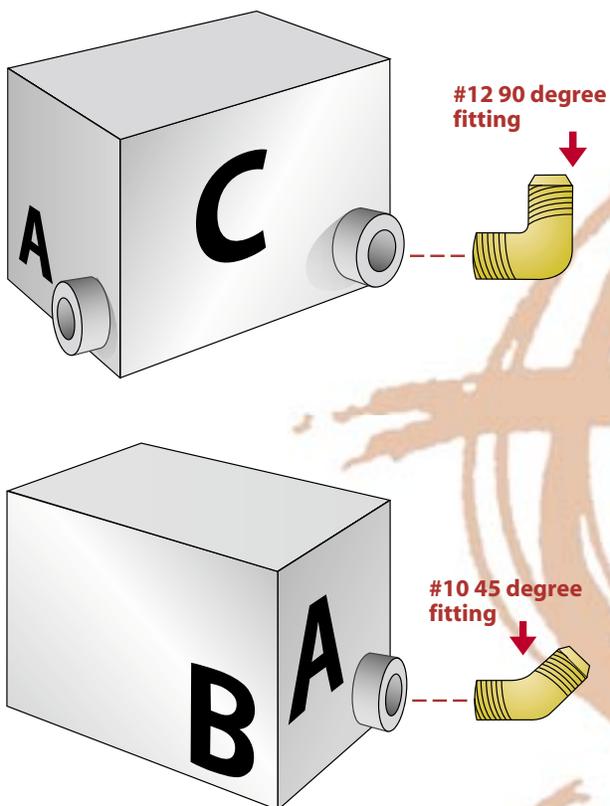
100. Bolt oil pump to other side of bracket using supplied 10/24 button head bolts and nuts



101. Bolt bracket to ABS bracket using supplied 1/2" long bolts and nuts



102. Install fittings in oil catch can as shown using thread sealant to insure that there are no leaks



103. Install can and attach to pump



104. Assemble turbo oil return lines, both drivers and passengers sides and attach to turbo and oil catch can



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104. Assemble the #6 line that connects the oil pump to the oil pan, connect and tighten



106. Locate pipe port on oil filter housing and remove



107. Screw 90 degree, 1/4" pipe male fitting into port using sealant

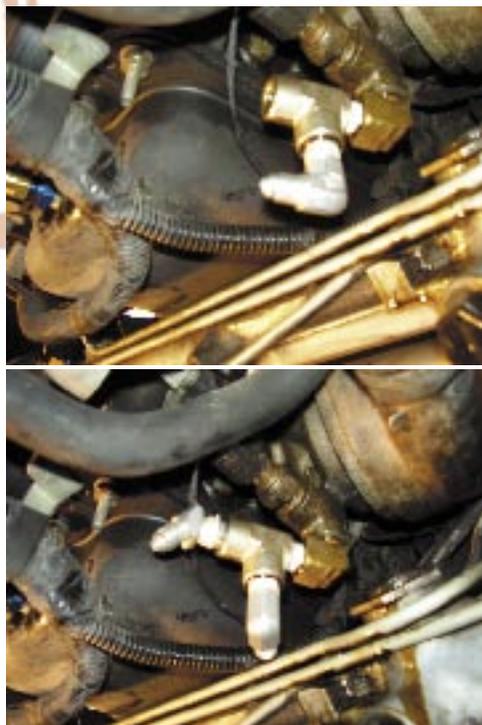


108. Screw tee fitting into 90 degree fitting



109. Install 90 degree and 45 degree fittings into tee using sealant

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Shown are a factory hose setup as well as the new setup that will be used for the kit.



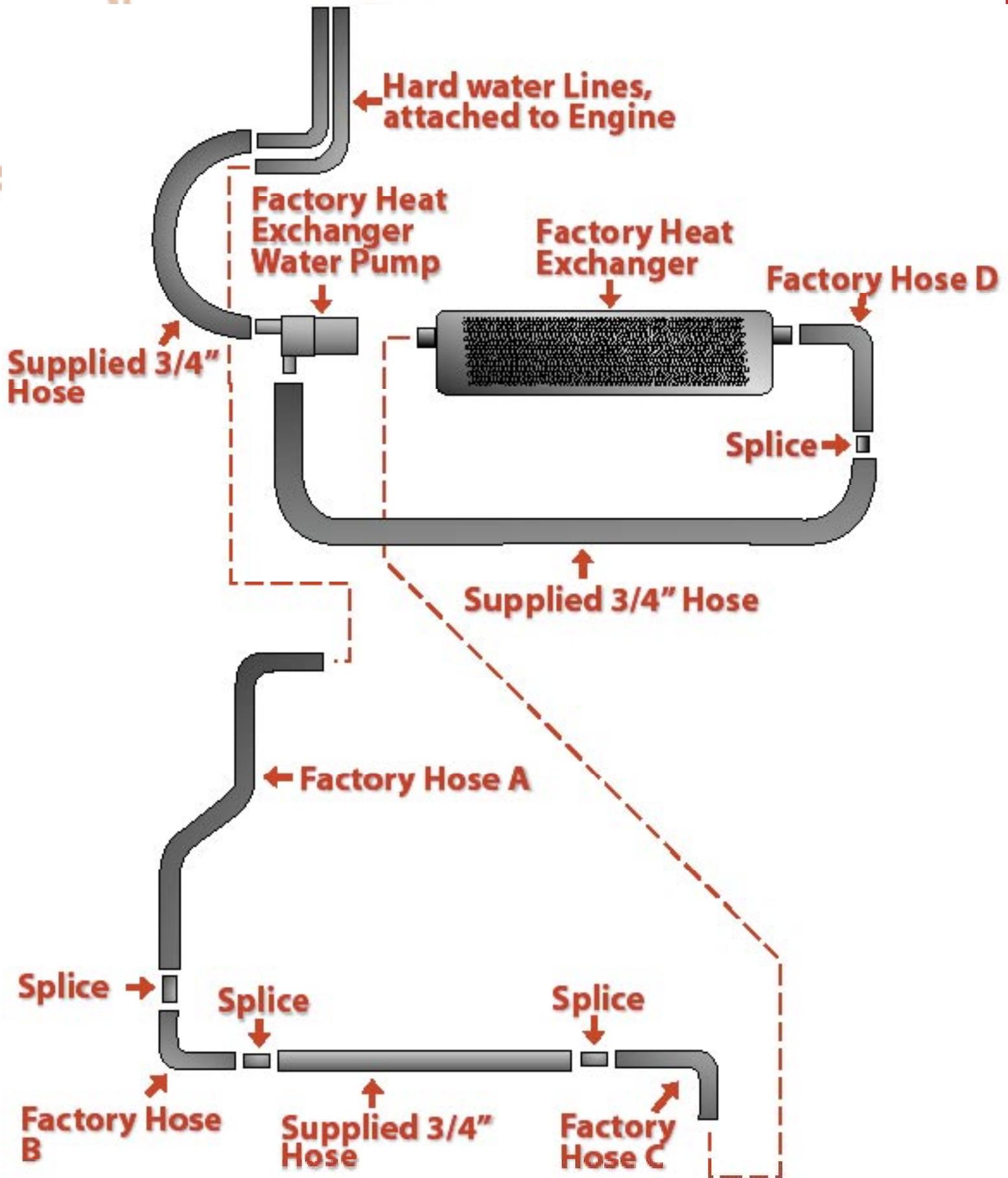
110. Connect supplied oil feed lines from fittings to each turbo using the long line for the passenger side, route away from moving parts.

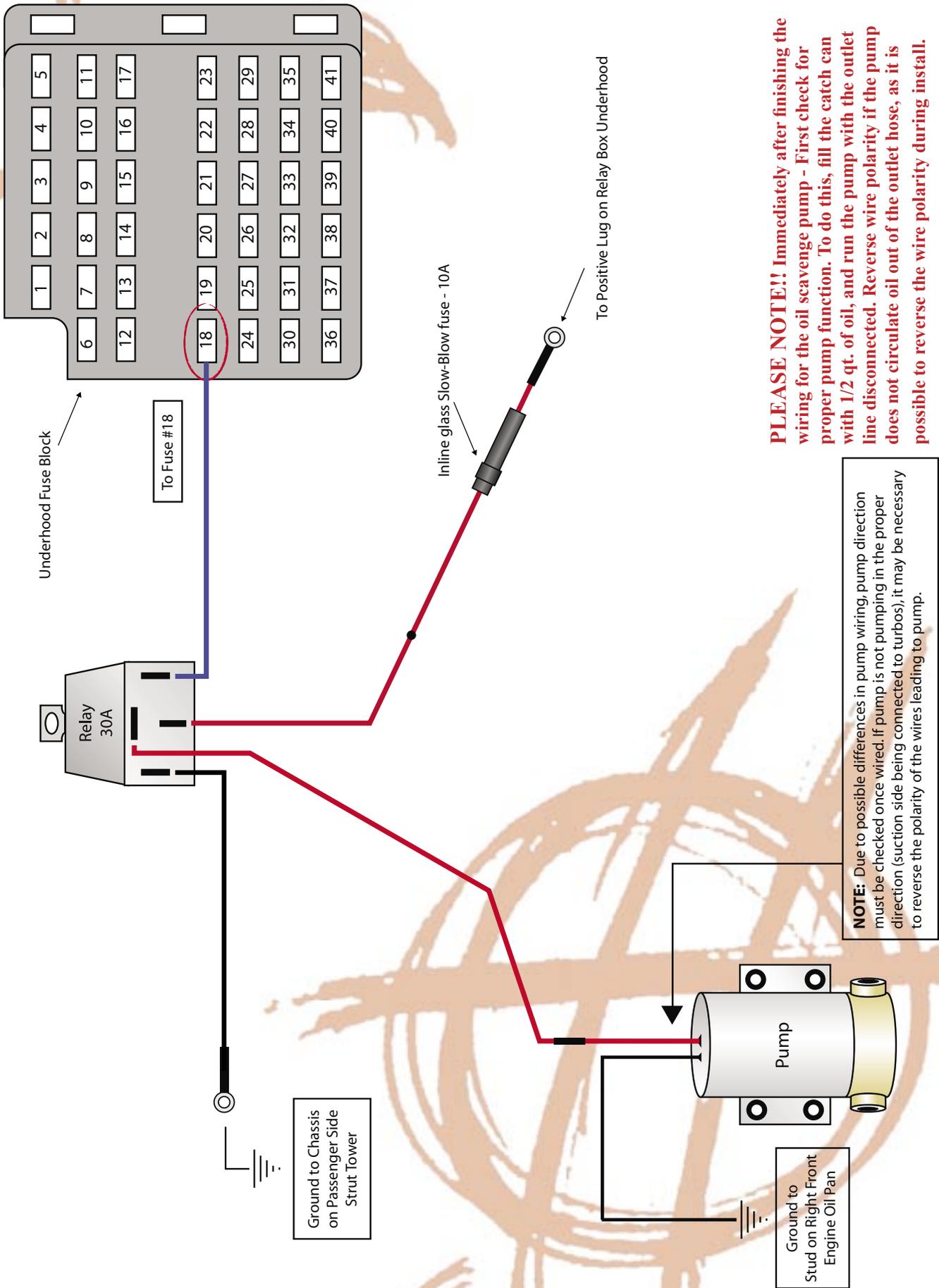


111. Re-install bumper and factory heat exchanger



112. In this step we are relocating the aftercooler pump to the new bracket. You will re-use some of the factory aftercooler water hoses. See pictures for assistance. Use the extra supplied hose and hose splices.

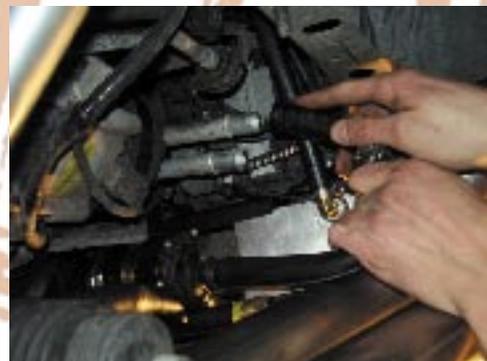




**PLEASE NOTE!!** Immediately after finishing the wiring for the oil scavenger pump - First check for proper pump function. To do this, fill the catch can with 1/2 qt. of oil, and run the pump with the outlet line disconnected. Reverse wire polarity if the pump does not circulate oil out of the outlet hose, as it is possible to reverse the wire polarity during install.



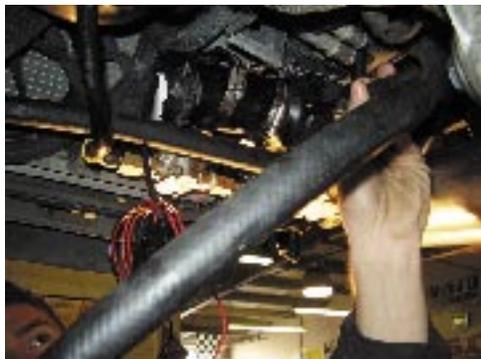
113. Install hoses and clamps (see pictures)



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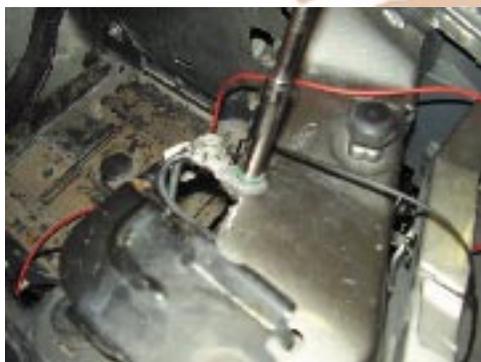
114. Install pump into hose clamps and tighten



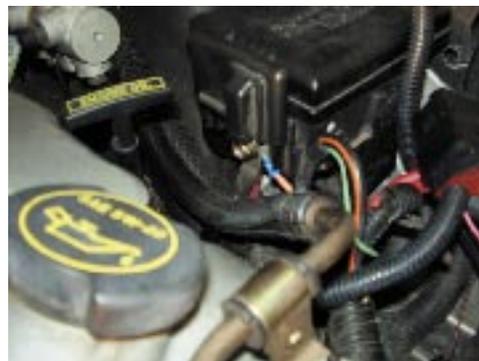
115. Extend intercooler pump wire using supplied splices, wire, and plug in, making sure to use solder and shrink wrap on all connections.



116. Ground oil pump and relay to ground on driver's side radiator core support (refer to wiring diagram for assistance with wiring the pump. )



117. Wire supplied fuse holder to fuse junction box next to battery



118. Use supplied loom to cover wires



119. Run supplied 22 gauge wire through firewall harness boot to fuse #18 and connect using supplied fuse tap making sure to solder all connections, then cover wire with loom, but do not allow wire to scuff on body around boot (use supplied fuses)



120. Remove factory air inlet assembly, detach mass air meter

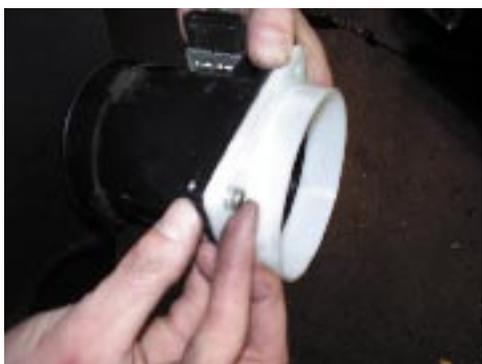


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120. Install intercooler pipe and connect to intercooler, secure with clamp



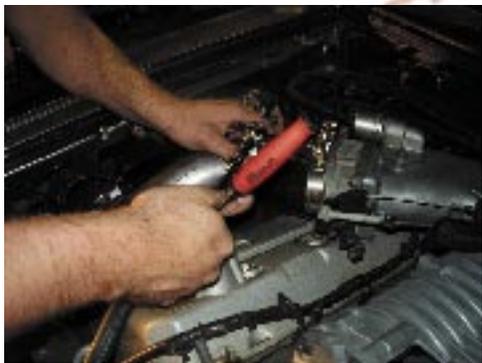
121. Connect MAF adapter flange to mass air meter if you are using the factory air meter.



122. Connect adapter hoses, re-install MAF meter



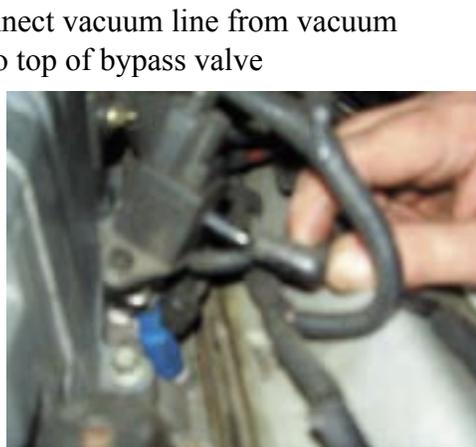
123. Install polished throttle body inlet pipe into oval throttle body adapter tube and secure using the supplied clamps



124. Reconnect MAF plug



125. Attach bypass valve using supplied clamp



126. Connect vacuum line from vacuum source to top of bypass valve



127. Install 2 tees off of the fuel rail pressure sensor. One signal to feed the boost controller (if used), the other to connect to the bypass valve (see pictures)



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128.(Optional, but recommended) wrap boost pipe in heat wrap to reduce under-hood heat



129.Check that sway bar does not hit oil feed fitting or oil filter housing by putting the cars weight on the wheels (the swaybar can swing back and possibly hit oil feed fittings).



## Final Steps

- Change the oil
- Re-connect battery
- Test for oil pump operation by turning key to "ON" position , and check to see if pump is functioning, If it's not, refer back to the wiring diagram and check all connections and fuses and replace or re-do if necessary.
- NOTE- Oil pump operation is critical. If the oil pump ceases function, sever problems can occur. In a vehicle

with modifications such as this, it is imperative that the operator regularly check for oil pump operation. If the system fails, bluish white smoke from the turbos will be a warning sign of possible damage to the system. If this occurs, stop vehicle immediately. You can call Hellion Power Systems at 505-873-4670 for technical assistance if a problem arises.

-Re- install factory bumper cover

- Check/ top off all fluids

- Start car and let it idle for a couple of minutes while checking for any leaks or possible problems, fix any leaks if found.

- Take car to a dynamometer facility and have it professionally tuned as soon as possible to avoid any damage to the engine. DO NOT put vehicle under boost until it has been properly tuned by a professional.



# HELLION POWER SYSTEMS

HELLION