

99-04 GT INSTRUCTIONS

HELLION POWER SYSTEMS

HELLION POWER SYSTEMS 99-04 MUSTANG GT KIT INSTRUCTIONS

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Hellion recommends that the front suspension system be installed either by trained professionals or by

PART 1

K-MEMBER INSTALLATION 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



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



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



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



33. Install new caster/camber plates



29. Install steering rack, install rack bolts and tighten



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



30. Re-install steering knuckle and tighten

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



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



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



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.

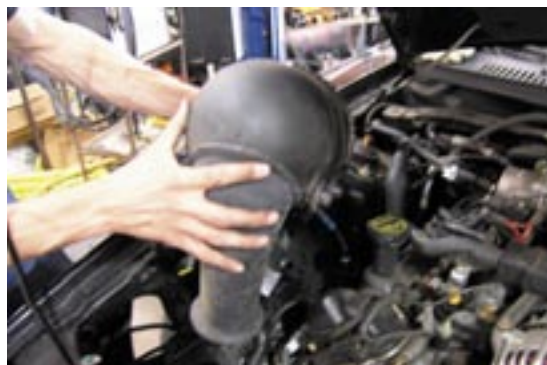
(Bob McClurg supplies most pictures)

PART 2 - TURBO KIT

1. Make Sure Vehicle is low on fuel before attempting install.
2. Disconnect battery.
3. Remove old k-member, springs and a-arms.
(See Part 1 of instructions)
4. Remove stock 19 lb injectors and replace with supplied 42 lb injectors. Install new injectors with a spray lubricant for easy installation.
5. Remove stock spark plugs and replace with supplied spark plugs. Gap plugs to .030 before installation. Remember to coat plugs with anti-seize before installation.
6. Raise car and support on jack stands.
7. Remove gas tank straps and lower tank.
8. Disconnect harnesses attached to tank.
9. Disconnect fuel feed lines and vapor lines.
10. Slide tank from under the car.
11. Unbolt fuel pump cover.
12. Remove fuel pump basket from tank. The basket is secured with two clips. Depress clips and remove basket.
13. Disassemble new fuel pump basket and old basket. Swap pumps and re install basket into tank.
14. Re install tank and connect all harnesses and fuel lines.
15. Remove factory h-pipe, removing O2 sensors for reassembly.
16. Remove passenger splash guard (wheel well).
17. Remove air inlet tube.



18. Remove air box.



19. Disconnect (4) connectors and push harness through hole back into fender well.



20. Reconnect (4) connectors through air inlet hole. This will open up the smaller hole in the fender, allowing installation of boost inlet tube.





21. Unbolt AC line from block, Remove stud that originally held AC line.

24. Bend AC line down towards the ground and slightly towards radiator. This will create clearance for turbo-charger. Take care when bending by supporting the line while bending.



25. Drain radiator.

26. Remove overflow tank cover.



27. Remove overflow tank and support rod.

28. Remove top radiator hose.



29. Re locate inner fender computer box. It is blocking the hole that is used to route the boost tubes. When removing computer box on inside of fender, remove the tabs that hold box to car, this will reveal longer holes in fender. Reinstall box with the supplied $\frac{1}{4}$ " bolts. This will relocate the box about $\frac{1}{2}$ " towards front of the car. This will make room for the $2 \frac{1}{2}$ " boost pipe that will be run through that hole.



30. Loosen clocking bolts on turbocharger.

31. Clock compressor housing and turbine housing according to supplied picture. Snug one bolt on each housing to hold clocking in place. If clocking is off, just loosen the one bolt and re-clock.



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32. Install 90 degree 1/8 pipe to #4 fitting to top of turbo. Install and tighten fitting so it faces the rear of the car.



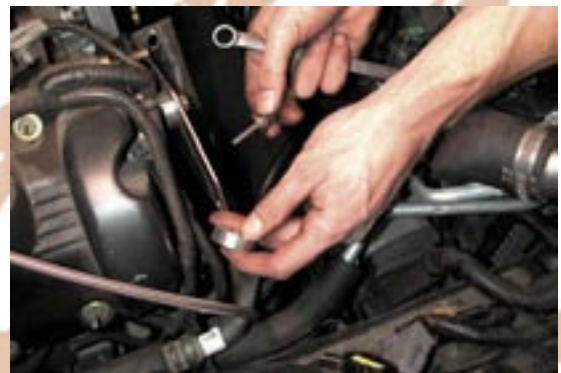
36. Install turbo support bracket to Cylinder Head using supplied M8x40mm long & M6x35mm long bolts and aluminum spacers.

33. Install 90 degree barb fitting to compressor housing. Position fitting so it faces downwards. This will be connected to the underside of the wastegate.

34. Install oil drain flange with supplied gasket and bolts.



35. Slide supplied 2 1/2" silicone hose onto end of compressor housing. Install and tighten supplied 2 1/2" T-bolt clamp.



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37. Remove the compressor housing retention bracket that is on the engine side of the turbo. Bolt turbocharger to bracket, using compressor-housing bolts. Leave bolts loose.



38. Locate pipe plug on the underside of the oil filter mount, remove plug. (This is the fitting for the turbo oil feed. Replace plug with supplied 90-degree 1/4" pipe to #4 fitting.

39. The next step is to punch and tap the oil pan.



40. Mark a point 3/4" Inches down from oil pan rail, and centered left to right.

41. Take supplied punch and hammer a hole into the oil pan. Hit punch until it seats against pan.



42. Next, take a 3/8" pipe tap (supplied) and coat it with grease. Tap hole in pan. The grease will catch the tapped shavings.



43. Remove tap and wipe the remaining grease from hole, being careful not to let shavings fall into pan.

44. Take supplied 3/8" pipe to #10 fitting and install in pan using pipe paste to seal threads.



45. Install drainpipe.

46. Install main turbine inlet pipe. From underneath, raise pipe up and bolt to passenger side exhaust manifold using factory nuts.



47. Next, install (4) bolts that secure Turbo to main pipe, using steel shim gasket between turbo and pipe. Leave bolts loose.



48. Hang down pipe to exhaust housing using supplied V-band clamp. Leave clamp loose.



49. Install wastegate, using supplied gasket and bolts. Bolt wastegate to inlet pipe with supplied 8mm socket head bolts. There is no gasket between wastegate and the main pipe. Bolt wastegate outlet pipe to wastegate using gasket and supplied 5/16" socket head bolts. Leave bolts loose.

50. Install exhaust crossover pipe. First, remove (2) factory studs from driver side exhaust manifold. Before installing crossover check for ball size on exhaust manifold. Depending on the ball size, the supplied insert may need to be installed. Bolt crossover pipe to driver side manifold using supplied bolts and washers. Bolt other end to main turbine inlet pipe using supplied 3/8" bolts, washers, and nuts.



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51. Bolt exhaust hanger to driver side transmission mount using supplied 5/16" bolt, nut and washer. This is the sheet metal bracket that is attached to the floor of the car.



52. Install dog bone rubber hanger to bracket. Use lubricant for easy installation.

53. Install "double barrel" exhaust pipe to down pipe. We recommend using anti-sieze in all slip fit connections. Slide 3" exhaust clamps on before sliding pipe on.



54. Hang "double barrel" on rubber "dog bone".



55. Install straight pipe or catalytic converter onto the "double barrel". Again, slide clamp on first.



56. Install Y-pipe onto straight pipe or cat, sliding clamp on first. Install O2 sensors and plug in.



57. Bolt Y-pipe to mufflers.



58. Position the entire exhaust system with about 1/2" clearance from other parts.

59. Position pipes taking aware proximity to suspension components.

60. The turbo support bracket is slotted to allow for differences among cars. Find correct placement and tighten all bolts. When tightening exhaust clamps, slide clamp to the edge of the pipe.



61. Zip tie power steering lines to lower radiator hose to hold lines away from down pipe.

62. Install 47" oil feed line from turbo oil inlet to the underside of the oil filter mount. Route line away from hot pipes & moving parts. Secure with supplied zip ties.



63. Install turbo oil outlet extension with pipe paste and tighten.

64. Assemble #10 steel braided oil return line, positioning 90 degree fitting on the pan, and straight end towards turbo. Tighten oil return line.



65. Remove air temp sensor from factory air inlet pipe and install the sensor in the top of the supplied conical air filter. Hole may need to be slightly enlarged or drilled for fitment.



66. Remove headlights



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67. Remove front clip, remove (4) nuts from inside fender, 2 on each side, remove pushpins from top of front fascia, remove pushpins from bottom fascia to lower radiator support, disconnect lower headlight plugs.



68. Remove hood latch support bracket.



69. Slide supplied 2 1/2 inch silicone hose ends onto intercooler inlet and outlet, and clamp with supplied T-bolt clamps.



70. Unbolt PS line cooler from radiator support.
71. Install intercooler with supplied metric bolts. Bolt it to lower radiator support, leaving bolts loose.



72. Install intercooler support strap, hang strap from hood latch and secure with supplied 5/16" hardware.



73. To mount Power Steering cooler, either bend power steering cooling line to reach front tab on intercooler, OR Cut 3/8" PS feed and return lines. Install supplied line and splices to extend cooler to reach front of intercooler. Once bent or extended, bolt it to intercooler.

74. Install intercooler pipe #1 from turbo to lower intercooler inlet. Slide 2 1/2 inch clamps over pipe first to ease installation. Tighten clamps.



75. Install intercooler pipe #2 onto upper intercooler outlet.



76. Install silicone hose and clamps.



77. Install intercooler pipe #3 and silicone hose.



78. Install 4" turbo inlet pipe, Massair meter, and filter onto turbo inlet. Make sure that the flow is correct and the air filter is secured to the end of the meter.

Leave clamps loose until final intercooler pipe fitment.





79. Install 1 3/8" silicone hose onto Intercooler pipe #4. Next slide Bypass valve into silicone hose. It may be necessary to cut hose to desired length.



80. Install intercooler pipe #4 and 3" silicone hose to throttle body. When installing final intercooler pipe, make sure to slide bypass valve hose over tube that is welded to turbo inlet. It may be necessary to cut 1 3/8" hose. Install bypass valve hose clamps.



81. Position all intercooler pipes and tighten all clamps.

82. Re connect mass air meter, and plug in air temp sensor inside inner fender.

83. Connect breather hose from valve cover to turbo air inlet using supplied 1/2" hose.

84. Install with supplied hose clamps and tighten.

85. Install supplied 1/8" pipe barb into the underside of the wastegate. (SEE PIC). This is very important. The fitting must be on the correct side for proper operation. An incorrect installation will over boost the engine.



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86. Install 90 degree barb fitting to compressor housing. Position fitting so it faces downwards. This will be connected to the underside of the wastegate.
87. Attach the supplied vacuum line from the turbo compressor to the underside of the wastegate.
88. Wrap all power steering lines with supplied heat wrap and zip ties. Heat wrap is not intended to be in contact with turbo pipes.
89. Wrap all a/c lines with supplied heat wrap.
90. Install the supplied 4"X6" heat shields on top of the main turbo pipe and the double barrel exhaust. Secure with supplied metal zip ties. This will shield heat from the steering rack boots.
91. Install the supplied overflow tank support rod. Slide on washer, then push the threaded end through the hole on the overflow tank.
92. Re-install the overflow tank and attach hose.
93. Tighten all overflow tank bolts.
94. Take stock radiator hose and cut center section out to install polished hose.
95. Install supplied Polished stainless radiator hose with supplied clamps.

- *Re-install coolant can cover*
- *Re-install fender well, and front fascia.*
- *Re-install headlights*
- *Fill radiator.*
- *Change oil and filter. We recommend using synthetic oil.*
- *Check all bolts and hose connections.*
- *Start car, checking for exhaust and fluid leaks.*



Take vehicle to a dyno facility and have a chip burned to tune in the car. Putting the vehicle under boost without the proper programming will cause major engine damage.

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