

SPEED UTV DESIGN PRESENTATION: 50



ROBBY GORDON, TODD ROMANO

DANIEL GRANGER



Robby z Ride

10 Year Anniversary of Polaris' first 4-seater.



Concept to Reality - Polaris



5 likes

michiganmoto11 Polaris first 4-seater!
2011 800cc Robby Gordon edition Wow! 10
year anniversary. That cage tho 😂 I hate

Robby z NEW Ride

SPEED  **UTV**

10 Year after launching the first 4 seat UTV, the Speed UTV is coming to life

[Build Yours Now](#)



Concept to Reality – Speed UTV

El Jefe Doors Open



Rear Door opens backwards

Motor:
999CC
Turbo
Flex fuel Sensor
105 amp Alternator
Hydraulic Power Steering

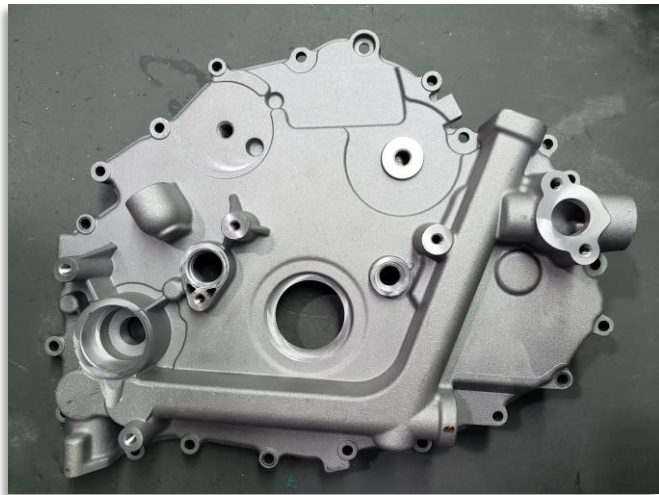


**Orange Cage, and Suspension is
available only on RG Trim**

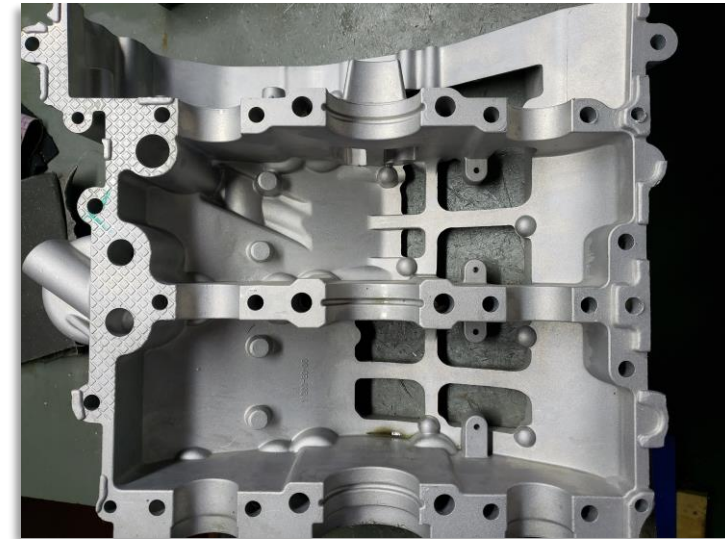
SPEED UTV – MOTOR

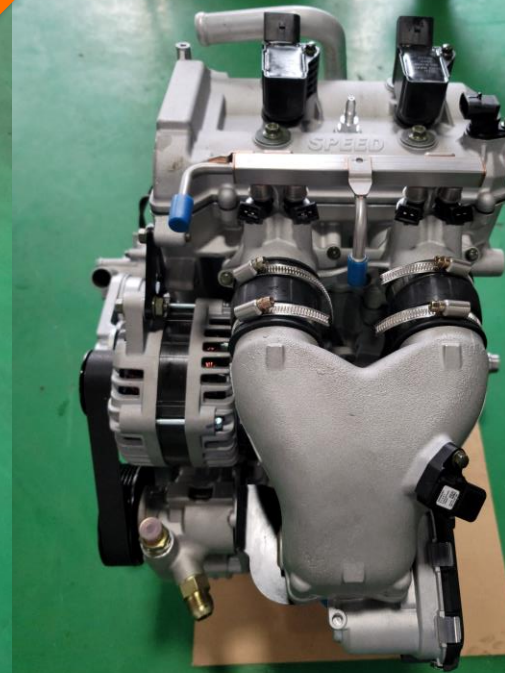
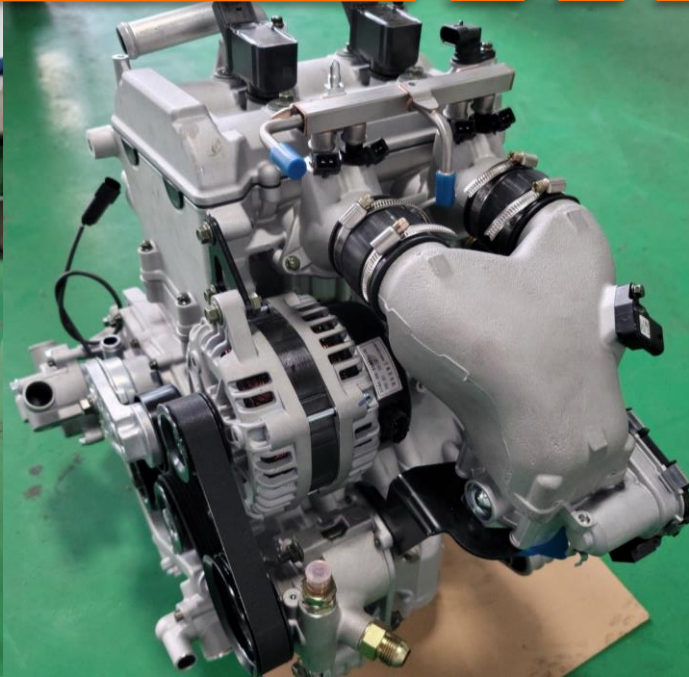
Motor:

- 999 cc
- Turbocharged
- 230hp pump gas
- 300hp E-85



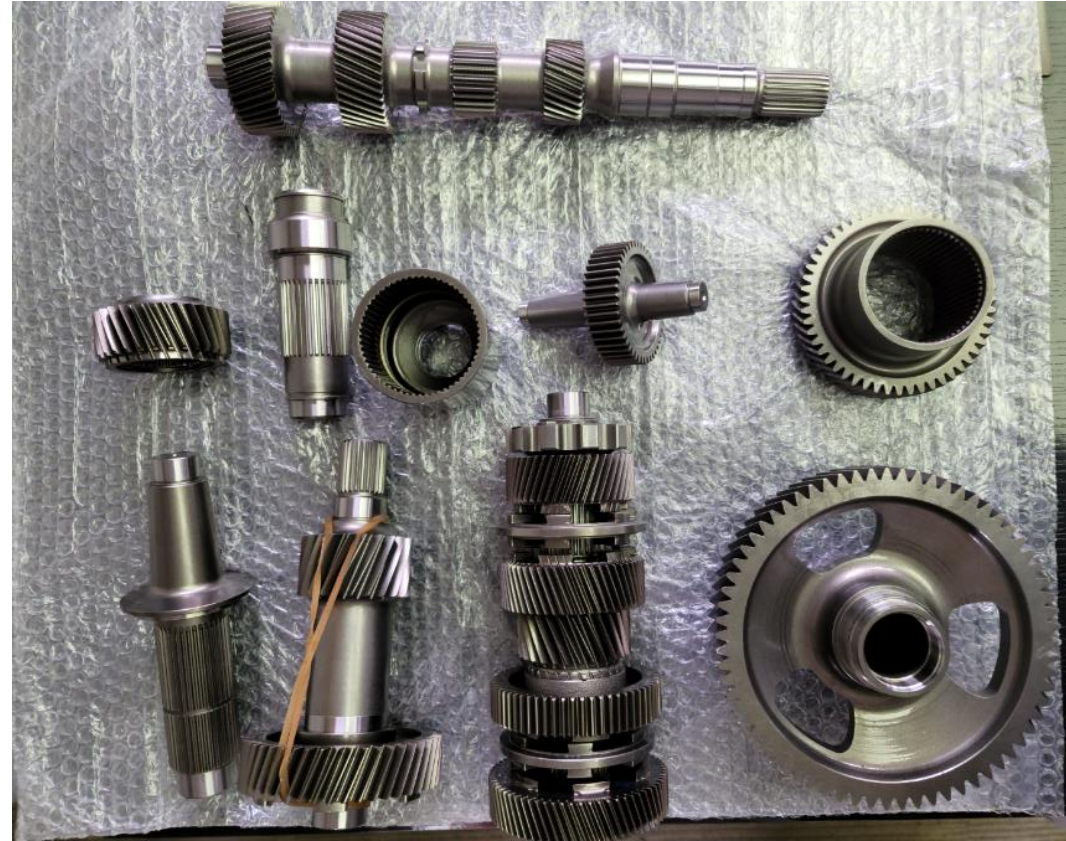
SPEED UTV





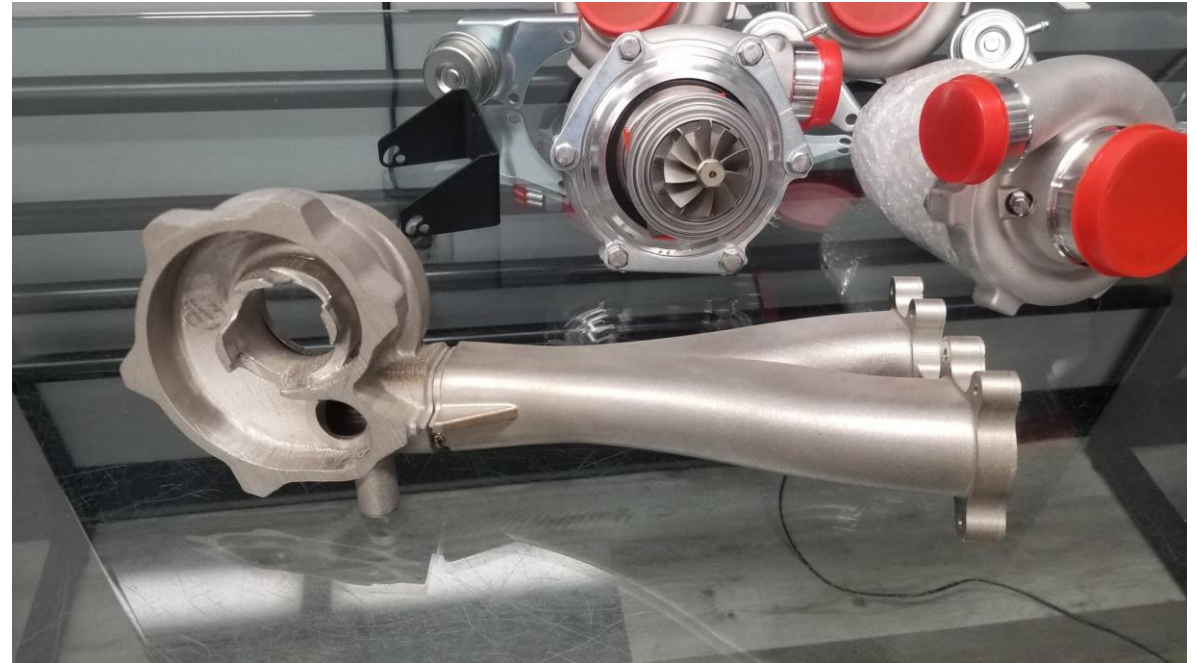
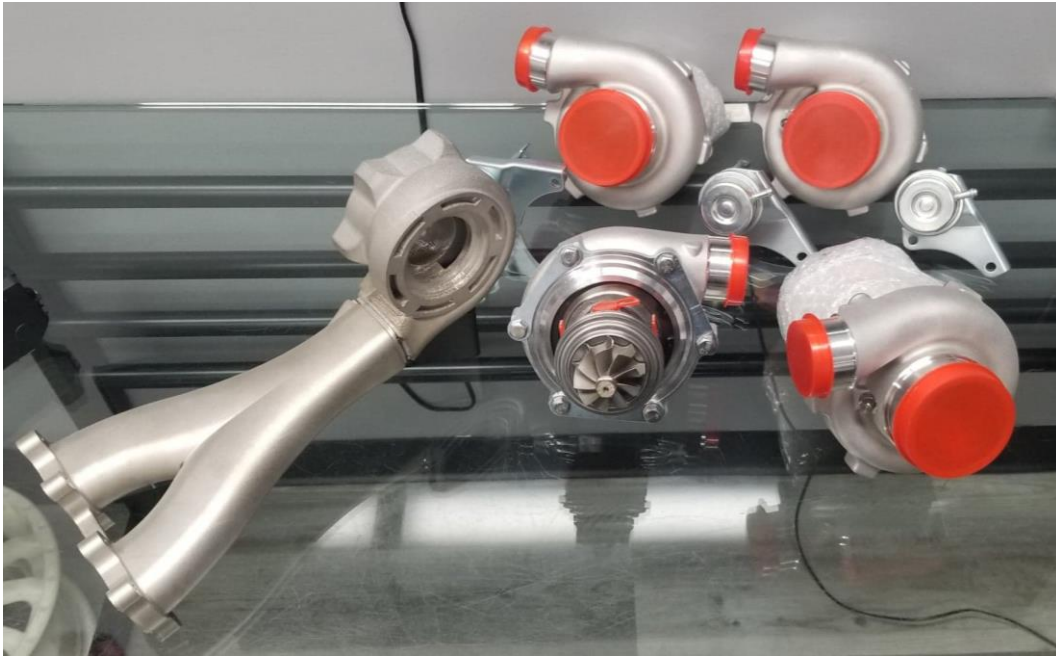
Drivetrain

**3 Speed Transaxle gears,
shift dogs, torque
limiting clutch parts**



High quality gear standards

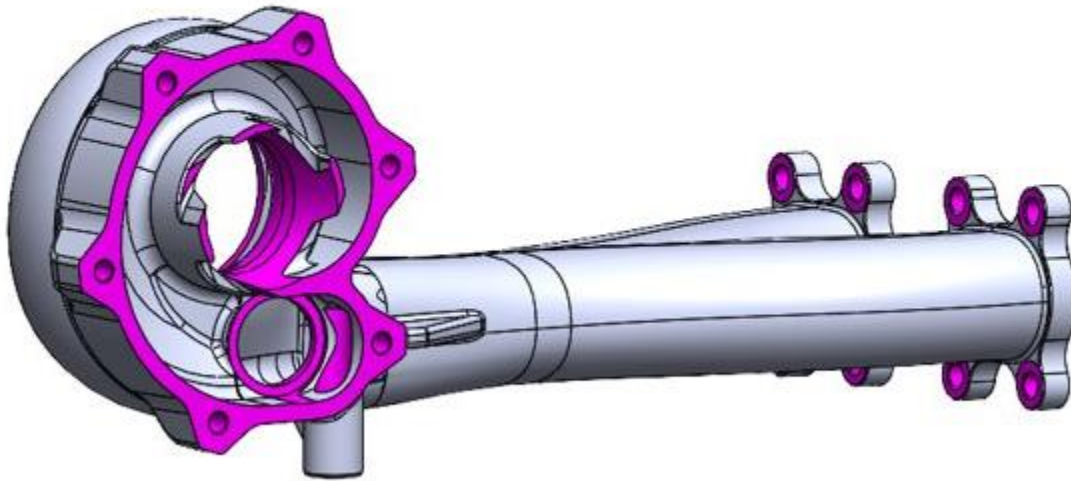
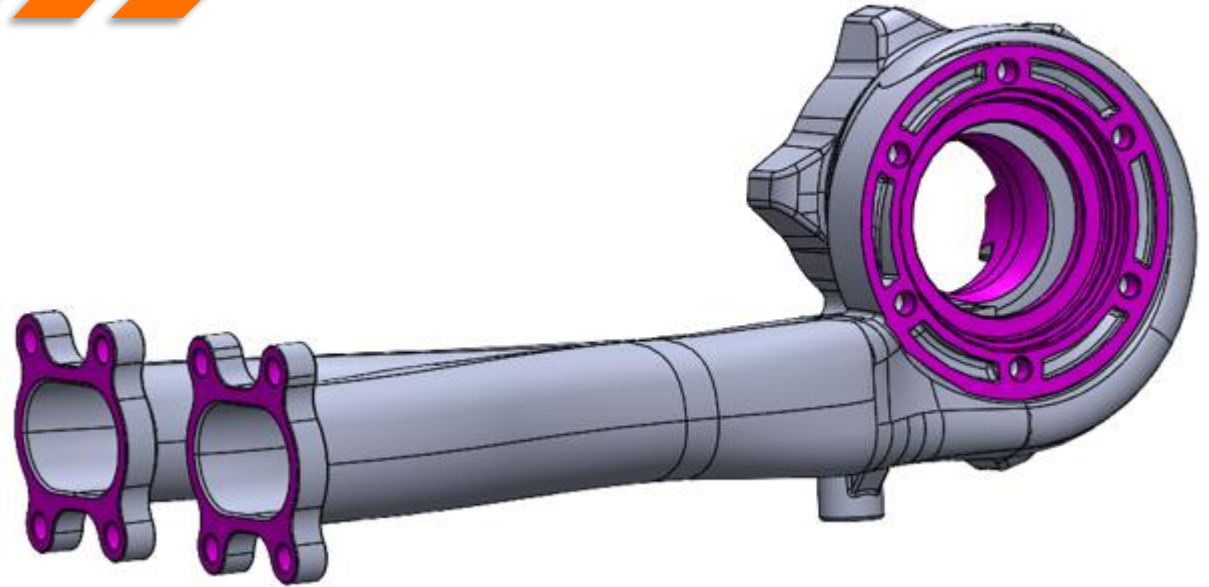
3D Printed Inconel 625, turbo manifold.



Allows us to verify production geometry

SPEED UTV – Integrated Turbine Manifold

**The one-piece,
integrated exhaust manifold
and turbine housing is a part
critical to vehicle performance
and reliability**



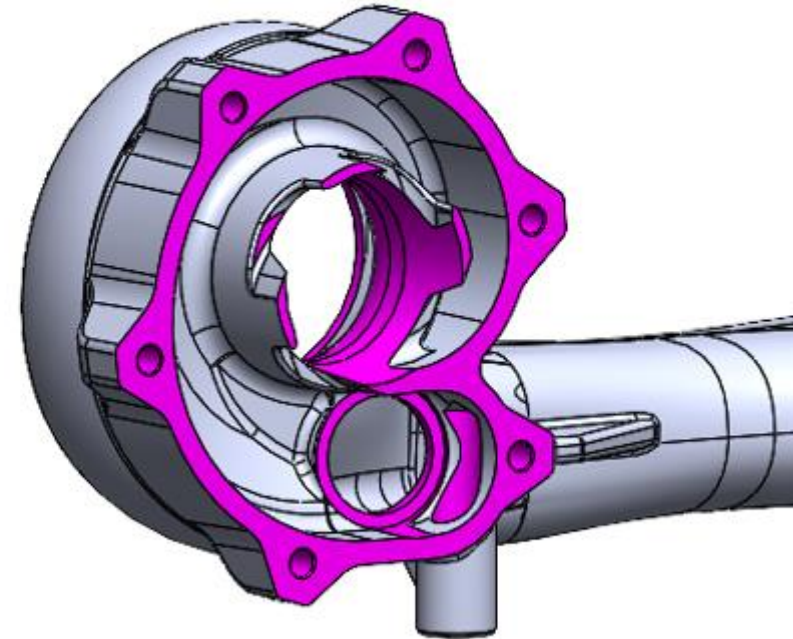
A one piece manifold/turbine housing is the best solution because it eliminates all failure points. We have experienced failures at every other type of connection attempted (bolts, v-band, expansion joints)

None of the other methods can withstand the extreme temperature, vibration and shock loading that this will be subject to on our vehicle

SPEED UTV – Integrated Turbine Manifold

The turbine housing geometry provides 3 key performance and drivability benefits:

- **Less drive pressure**
- **Improved wastegate actuation**
- **Better exhaust connection**

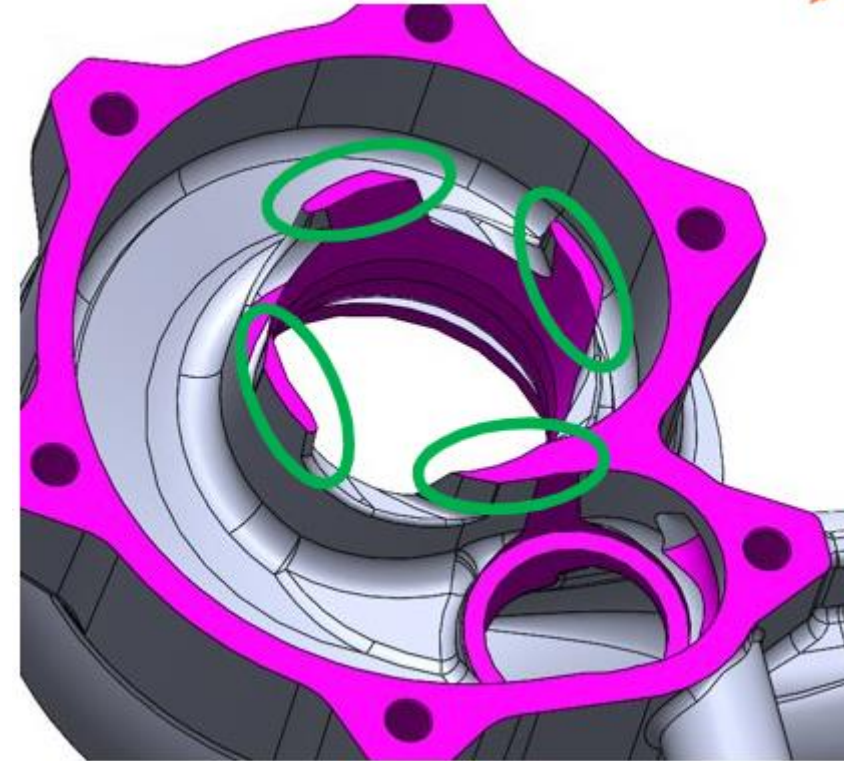


The next few slides will detail some of the core features.

SPEED UTV – Integrated Turbine Manifold

Reduced drive pressure:

The blades on the exit of the turbine help control the main flow of gasses without being interrupted by the wastegate flow. The wastegate flow is introduced to the main flow by creating low pressure zones which pull the wastegate flow in (almost like a venturi effect)

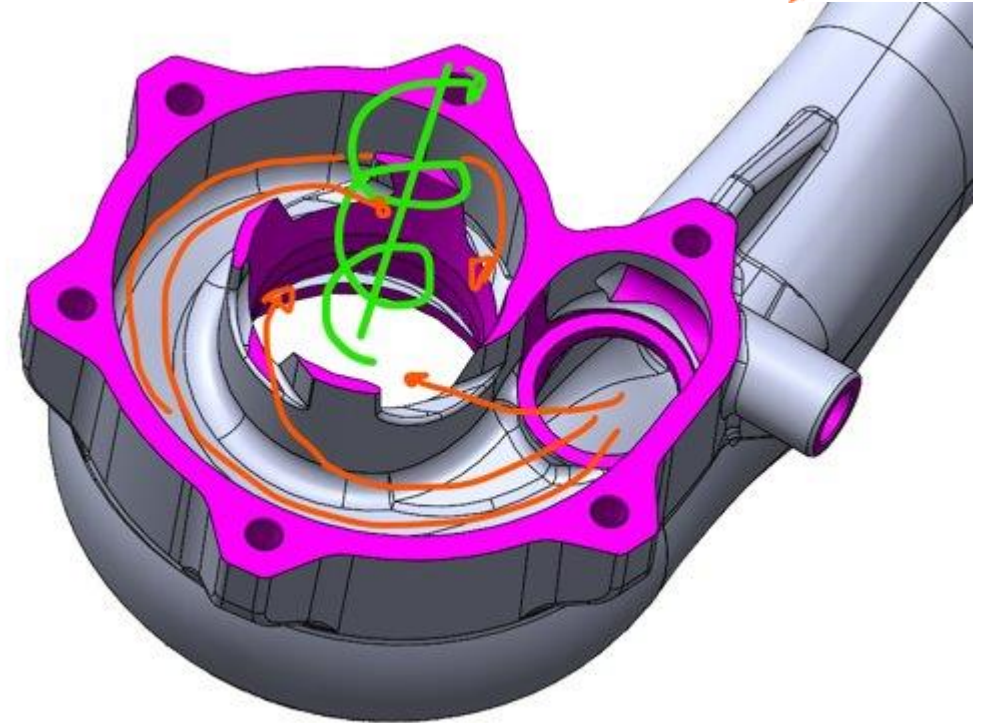


A reduction in drive pressure helps reduce the torsional load on the turbo shaft and reduce exhaust gas temperatures

SPEED UTV – Integrated Turbine Manifold

Improved wastegate actuation

- **By separating the exhaust flow through the wastegate and reintroducing it to the main flow in a vortex fashion we can control the actuation of the wastegate more precisely without risk of boost creep""**

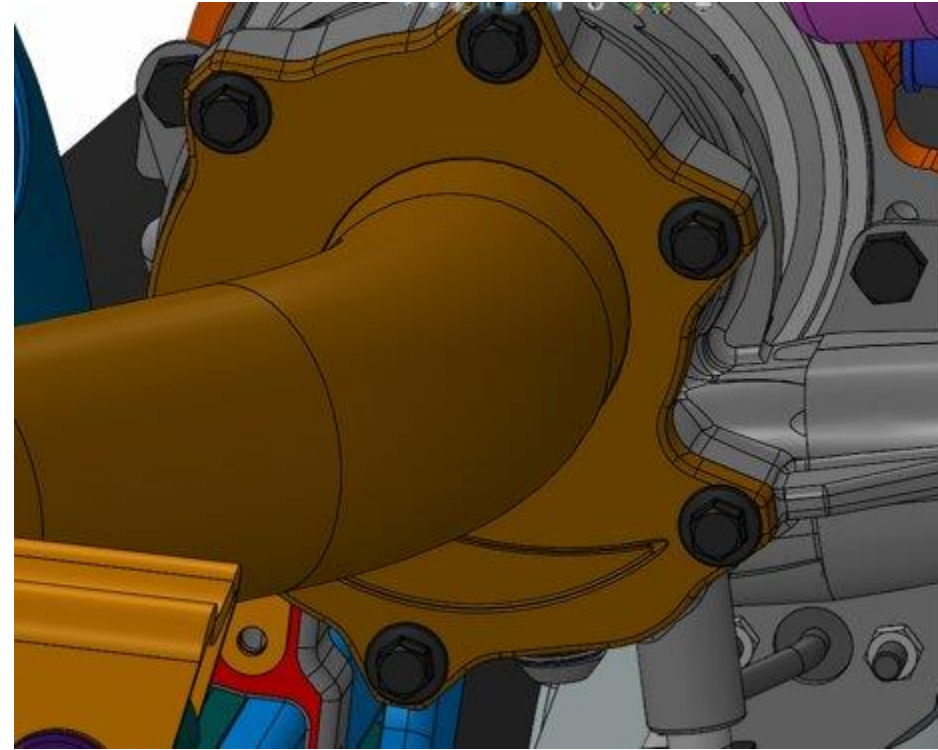


Boost creep is an issue we encountered while testing on the dyno with an early turbo set up. It is when the wastegate is opened (to reduce or maintain desired boost level) but the actual boost pressure continues to increase, this occurs because the exhaust flow through the turbine overpowers the flow through the wastegate. This can have bad consequences because the turbo is producing more boost that the tune is commanding and could cause a lean condition resulting in detonation or other negative engine impacts

SPEED UTV – Integrated Turbine Manifold

Better exhaust connection

- **The backing plate of this turbine housing is designed to fit a round 2.5" exhaust and still allow adequate clearance to the mounting bolts.**



Because the wastegate flow is re-integrated into the main exhaust flow, there is no need for a complex housing shape to trap and capture the wastegate air as well



Call in with your questions:

704-949-1255



Lucky Caller gets a prize

SPEED UTV – FAMILY

SPEED  **UTV**

