
Turbo
SOLUTIONS
Authorized
Distributor
CAT
PREVOST
CAT
336E
CAT
SCHOOL BUS
REMANUFACTURED IN THE USA
ISO 9001-2015 Certified
Turbocharger Specialists
Serving Independent Distributors
MANUFACTURED AGAIN
CERTIFIED
QUALITY PROCESS
ManufacturedAgain.com

Turbochargers For All Engine Applications

Cummins



Detroit Diesel



CAT









We Also Supply Turbos For Other Manufacturers Including:

Case • Ford • International • John Deere
Komatsu • Kubota • Mack • MAN • Mitsubishi
Perkins • Volvo • Waukesha ...and Many Others

- **No core grading, 100% refund on like-for-like part numbers**
- **Large inventory for critical same day shipments**
- **Competitive cost alternative to OEM brands**
- **Private label programs available**
- **Exclusive Turbo key selling mobile app**
- **1 year unlimited mileage/hour warranty**
- **Serving the Truck, Bus, Off-Highway and Marine Industries**

Turbo Solutions Specializes In Cummins Engine Applications

Cummins Holset turbochargers are vertically integrated throughout the industry. Because Cummins Holset makes the most technically advanced turbos in the world, not all remanufacturers can work on Cummins Holset Turbos with electronic actuators. Turbo Solutions' technicians have the expertise and specialized tools to remanufacture these and other Holset turbos to meet or exceed OEM specifications.



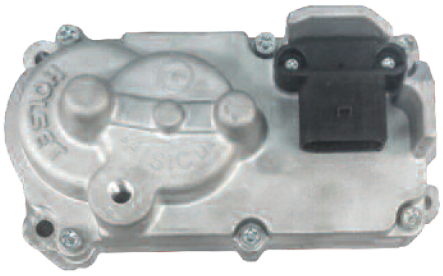
HE351VE • #RHL3770973



HE431VE • #RHH5350503



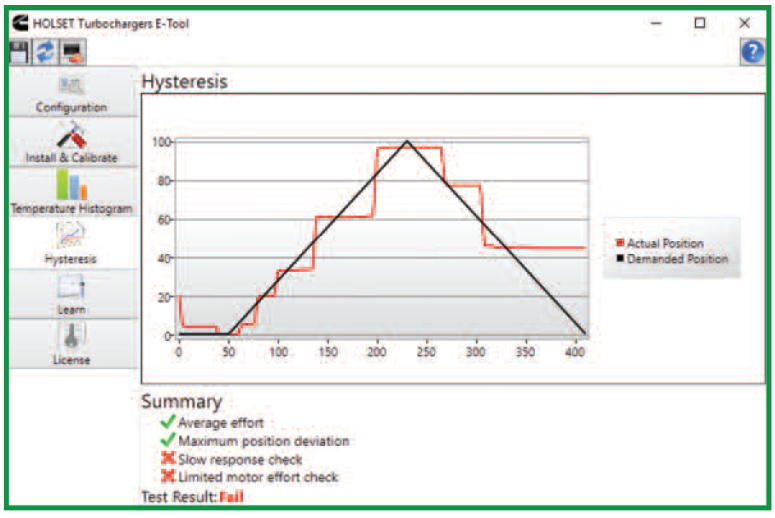
HE561VE • #RHH3767615



4034315-VGT Electric Actuator
(The Brain)

Over 1,000 Units In Stock Ready To Ship!





Technology & Testing

Pictured to the left is a screen shot of our Genuine Cummins E-Tool in action, testing VGT Turbocharger Actuators.

This proprietary Tool not only allows us to test but gives us the ability to diagnose common failures.

We Stock The Most Popular Models

300 Series • 400 Series • 500 Series

ISB • ISM • ISL • ISC • ISX

Offering Genuine Holset NEW and Factory Reman Turbochargers as Well as Turbo Solutions Remanufactured Turbochargers.

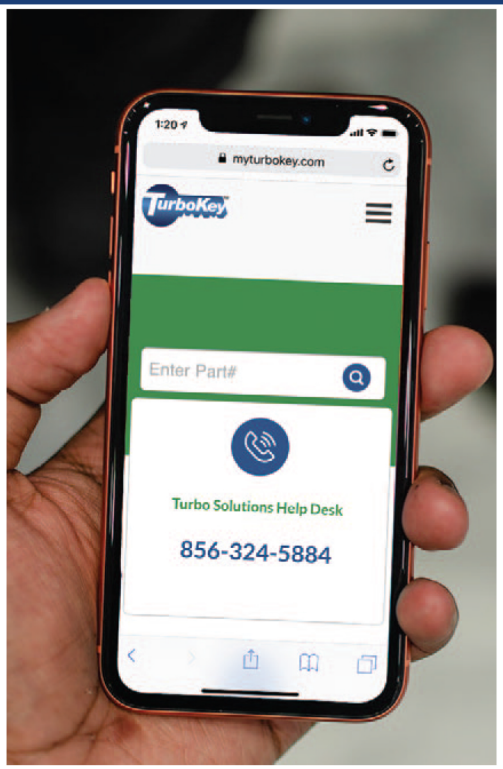
Exclusive Turbo Key Selling Mobile App

TurboKey™

Welcome To The Turbo Fast Lane

Turbo Key Selling App Technology

- Exclusive, proprietary selling app only available to Authorized Distributors
- Turbocharger expertise via Clicks.
- Ordering capabilities include:
  - 18,500 cross references.
  - Engine serial number & VIN lookup - All makes.
  - Receive a quote or place an order.



Tag Identification

Identifying The Right Turbo For Your Engine

Look for the old ID tag on the current turbo and make note of the tag information



ID Tag Location: Seal Plate



ID Tag Location: Compressor Housing



ID Tag Location: Bearing Housing

If you can't find a turbo ID tag, note the Serial Number and Model Number of the engine, as you will need this information for the selection of your replacement turbocharger.

Turbocharger Application Guide

Engine Application For:	Application	New Part Number	Reman Part Number
Caterpillar	Hidden to protect company information.		

Engine Application For:	Application	New Part Number	Reman Part Number
Cummins	Hidden to protect company information.		

Engine Application For:	Application	New Part Number	Reman Part Number
Volvo	Hidden to protect company information.		

Disclaimer: All brand names, trade names, logos and symbols are for reference purposes only and do not imply any association with their holder. All part numbers and model numbers are also for reference only and in no way imply that they are products manufactured by the associated companies.

Engine Application For:	Application	New Part Number	Reman Part Number
Detroit Diesel	Hidden to protect company information.		

Engine Application For:	Application	New Part Number	Reman Part Number
International	Hidden to protect company information.		

Engine Application For:	Application	New Part Number	Reman Part Number
Mack	Hidden to protect company information.		

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Ordering Instructions/Identification

- The ID tag is located on your current turbo. If you cannot find the turbo ID tag, please provide your engine serial number or vehicle VIN number.
- **Authorized distributors utilize Turbo Key for fast, accurate identification.**

Availability

- Same day shipping on most units.
- 24 hour turnaround on Custom Units (R&R).
- Flat rate ground and air freight charges.

Quality

- Turbos are completely cleaned and remanufactured to original specifications.
- All turbochargers are balanced and calibrated using the latest high speed, state of the art equipment available.

Packaging

- A Turbo Solutions branded ID tag is affixed to each unit specifying the part and serial number.
- All units are shipped with the following:
  - Gasket Kit
  - Installation Guide / Instructions
  - Warranty Information
  - Core Return Tag

Warranty

- There is a One-Year unlimited mileage warranty on all Turbo Solutions remanufactured turbochargers.
- Standard coverage includes all defective material and workmanship, subject to limitations and exclusions.
- The warranty period begins on the date of invoice.

Core Return Policy

- No Hassle 100% core return. We do not grade cores.
- Core must be same part number as unit purchased.
- Core must be fully assembled and must be accompanied by core return tag.

TurboKey™

BorgWarner
MASTER DISTRIBUTOR

HOLSET®
TURBOCHARGERS
For Cummins Engines
MASTER DISTRIBUTOR

Turbocharger Troubleshooting Matrix For Turbo Diesel Engines

POSSIBLE CAUSES / PROBLEM DESCRIPTION	Compressor/ Turbine wheel damaged	Insufficient power/boost pressure too low	Boost pressure too high	Black smoke	Blue smoke	Turbocharger generates acoustic noise	High oil consumption	Oil leakage at compressor end	Oil leakage at turbine end
Dirty air filter system	●	●			●		●	●	
Intake or pressure hose distorted and/or leaking		●	●	●		●			
Excessive flow resistance in exhaust system & leakage upstream of turbine		●		●	●	●	●	●	
Oil feed and/or drain lines clogged, leaking or distorted					●		●	●	●
Crankcase ventilation clogged and/or distorted					●		●	●	●
Oil coked or sludge in turbocharger center housing					●		●	●	●
Fuel system/injection feed system defective or incorrectly adjusted		●	●	●					
Valve guide, piston rings, engine or cylinder liners worn/increased blow by		●		●	●		●	●	●
Dirty compressor or clogged intercooler		●		●	●	●	●	●	
Boost presssure control swing valve/poppet valve does not close		●		●					
Boost pressure control swing valve/poppet valve does not open			●						
Pipe or hose assy. to actuator valve defective or ruptured		●	●						
Compressor or turbine end sealing rings damaged					●		●	●	●
Turbocharger bearing damage	●	●		●	●	●	●	●	●
Foreign object damage to compressor or turbine wheel	●	●		●		●			
Exhaust gas leak between turbine outlet and exhaust pipe						●			
Engine air collector/cleaner missing or loose gaskets		●		●		●			
Turbine housing/flag damaged	●	●		●		●			
Insufficient oil supply to Turbocharger	●	●		●		●			
Turbo variable ring mechanism inoperable or damaged (Variable geometry turbos only)		●	●	●					

Top 3 Reasons for Turbocharger Failure



Before You Fit A New Turbocharger, Find Out What Caused The First Unit To Fail Or You Risk The Replacement Failing As Well

- ***Turbochargers are very reliable: Less than 1% of turbochargers fail due to a manufacturing fault with the turbocharger itself.***
- ***95% of turbocharger failures are because of problems with oil starvation, oil contamination or foreign object damage.***

1. Contaminated Oil

- A blocked, damaged or poor quality oil filter.
- High carbon build-up in the engine. This can rapidly contaminate even new oil.
- A malfunctioning oil filter bypass valve.
- Engine wear, leaving swarf deposits in the oil.
- Oil that has degraded due to excessive temperatures or extended service intervals.

2. Oil Leaks at the Compressor End

- Blocked or restricted air intake filter or air intake pipe.
- Air leaks on intake hoses or at the intercooler.
- Leaks in the EGR system.
- Leaks in the exhaust system.
- Any restriction in the oil drain pipe from the turbo to the engine.
- Restriction in the engine breather.

3. Impact Damage

- Items sucked into the air intake because of a damaged, poor quality or missing air filter.
- Damaged hoses allowing small particles to enter the intake.
- Gasket material entering the intake.
- Broken engine components, e.g. injector tips, valves, or fragments of damaged piston.
- Fragments from a previous turbocharger failure.