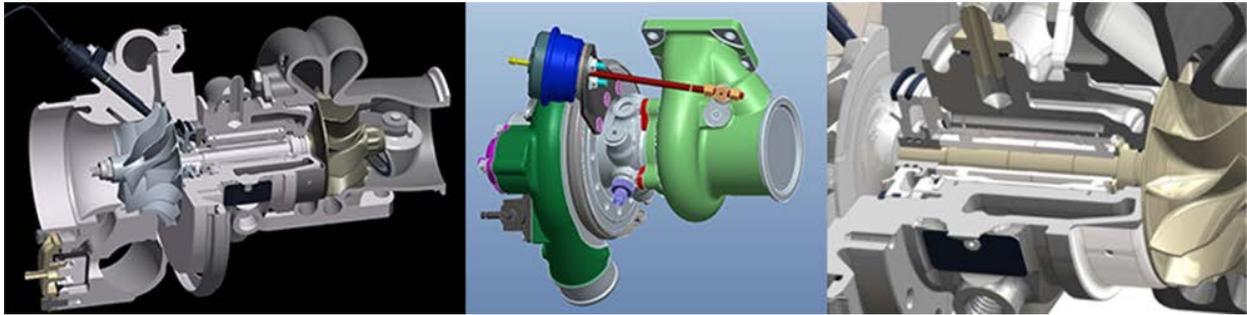




AAM Competition Twin Turbocharger BorgWarner Turbocharger Features

Low Inertia Turbine Wheel

o Gamma-Ti, or Titanium Aluminide, turbine wheel cuts turbine inertia by roughly 50% dramatically improving turbo response. This is the first time this type of material is available to the public in a turbocharger. The compound is a strange compound as it's not quite ceramic or metal but a inter-metallic. It can withstand much higher temperatures than titanium or ceramic individually and weighs much less. Utilizing the Gamma-TI for the turbine wheel is a huge benefit to the turbocharger significantly reducing turbo lag.



Heat Resistant Turbine Housings

o Cast stainless steel turbine housings improve durability and offer an extremely smooth internal flow channel. Turbine housings have thin walls to reduce weight and thermal inertia.

High Turbine Efficiency

o "Superback" and "Fullback" back-disk shapes offer very high efficiencies. The Superback shape adds a curved profile to the back-disk and has the effect of lowering centrifugal stress and permitting higher rotational speeds. The Fullback shape extends the hub deck all the way to the OD of the wheel and by doing this the turbine flow leaving the housing volute is better guided into the wheel blade cavities. The combination of these two shapes is a significant step forward in turbine geometry yielding better efficiency, quicker response, and higher power.

Enhanced Turbo Response

o EFR turbochargers use a dual-row ball bearing cartridge with ceramic balls and metal cage. This bearing system provides substantial friction reduction at low turbo speeds and in the process helps improve turbo response. Metal cage improves the durability of the ball bearing assembly.

Simplified Installation

o Integrated compressor recirculation valve (CRV) to help avoid compressor surge and backflow during a throttle lift event. This feature helps to simplify installation and improves reliability.

Forged Milled Compressor Wheels (FMW)

o EFR turbochargers contain wheels that are fully milled from forged aluminum, commonly known as "billet". Cut from custom forgings, their strength exceeds that which is available from typical bar-stock and also exceeds the material properties of an aluminum casting. Greatly improving the reliability of the



turbocharger.

Speed Sensor Mounting Convenience

o Turbocharger speed sensor mounting provisions are also supplied on every compressor cover. Speed sensors are sold separately for those who want to push all boundaries and monitor their turbocharger wheel speed in extreme racing conditions.

Boost Control Solenoid Valve (BCSV)

o An integrated boost control solenoid valve (BCSV) is included with every EFR turbo. This simplifies adding adjustable boost control for those who want to run over wastegate pressure (10psi+).

High Flow Integrated Wastegate

o Purpose designed large wastegate ports give the EFR turbochargers the capability of handling the flow requirements of high performance applications without the hassle and reliability concerns of installing an external wastegate. This significantly aids in eliminating dreaded boost creep.

Adjustable Wastegate

o The fabrication and installation task is simplified with adjustable wastegates that allows the installer to set the base boost pressure.

These features and advantages make the BorgWarner EFR Turbocharger the best aftermarket turbocharger that money can buy. They perform above the competition in all categories, performance, response, installation, appearance, and overall value. BorgWarner has engineered an excellent turbocharger - INDYCAR uses the BorgWarner EFR turbochargers in their race vehicles. Being proven and number one for INDYCAR it is perfect for Advanced Automotive Manufacturing & Competition's turbocharger systems.