

# A Look Inside

## EFR™ Series



### Forged Milled Compressor Wheels (FMW)

EFR turbos 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.

### Gamma Ti turbine Wheel & Shaft

Gamma-Ti turbine wheel cuts turbine inertia by roughly 50% dramatically improving turbo response. Turbine sizes range from 58 to 80mm in tip diameter.

### Stainless steel turbine housings

Stainless steel turbine housings improve durability in high-temperature applications and offer superior corrosion resistance as well as being cast with thin walls to reduce weight and thermal inertia. All EFR turbine housings are offered with industry standard connection flanges, select configurations available with V-band inlet and outlets for improved mounting freedom.

### Sensor Mounting

Convenience Speed sensor mounting provisions are also supplied on every compressor cover. Speed sensors are sold separately.

### Boost Control Solenoid Valve (BCSV)

A boost control solenoid valve (BCSV) is included with every EFR turbo.

### Simplified Installation

Integrated compressor recirculation valve (CVR) to help avoid compressor surge and backflow during a throttle lift event. This feature helps to simplify the installation task and lowers overall system install cost.

### Flexible Compressor Cover

The 'large' cover has a dual-machined outlet, both for a hose connection and a v-band connection

### Enhanced Turbo Response

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.

### High Flow Wastegates

Purpose designed large wastegate ports give the wastegated EFR turbos the capability of handling the flow requirements of high performance applications.

### High Turbine Efficiency

The EFR turbine wheels have the characteristic of very high efficiencies and have been paired with our 'Superback' and 'Fullback' back-disk shapes. The Superback shape adds a curved profile to the backdisk and has the effect of lowering centrifugal rotational speeds. Select sizes available with Mixed Flow Turbine (MFT) geometry to further enhance durability, lower inertia, and improve exhaust pulse response.

### Ease of Orientation

Turbo orientation flexibility is facilitated by the wastegate bracket to bearing housing mounting arrangement, allowing freedom to locate the end housings independent of the wastegate canister.

### Adjustable Wastegate

The fabrication and installation task is simplified with wastegated EFR models that feature adjustable wastegates available in several canister spring options, which provide base pressure settings ranging from 6-45 psi.

