The turbocharger is an integral part of a modern diesel engine. It is comprised of a turbine and a compressor, connected by a common shaft and supported on a bearing system. The turbocharger converts waste energy from an engine’s exhaust gases into compressed air, which it pushes into the engine. This allows the engine to burn more fuel, producing more power and improving the overall efficiency of the combustion process, even in high altitudes.

Genuine Cummins turbochargers deliver increased power density and fuel economy, while reducing emissions. With the latest technology, they can deliver engine braking, exhaust gas recirculation (EGR) and intake and exhaust noise reduction.

**Types of Turbocharger Technologies for ISX Engines**

**Fixed Geometry**
Established, robust and cost effective, Genuine Cummins fixed geometry turbochargers are available in all of our product ranges. Fixed geometry turbochargers are for applications where no turbine variability is required.

**Wastegate**
A wastegate turbocharger has a valve that allows some of the exhaust gas to pass directly from the exhaust manifold to the exhaust pipe. Boost pressure is used to activate the wastegate valve. It is a simple, but effective way to control the turbocharger speed and boost pressure. Genuine Cummins wastegate turbochargers are for low- to mid-power densities.

**Variable Geometry**
The Genuine Cummins variable geometry turbocharger (VGT™) offers a wide flow range, allowing higher boost pressures at low engine speeds, faster transient response times, and characteristics ideally suited for EGR-equipped engines.

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**Turbocharger Sizes**
The turbocharger used in ISX engines is typically the 500 – 600 series. The series or size of the turbocharger has some correlation to the engine displacement. Contact your distributor to determine the right turbocharger for your ISX engine.

<table>
<thead>
<tr>
<th>Series</th>
<th>Compressor Wheel Diameters (mm)</th>
<th>Fixed Geometry</th>
<th>Wastegate</th>
<th>Variable Geometry</th>
</tr>
</thead>
<tbody>
<tr>
<td>500</td>
<td>98 - 108</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>600</td>
<td>108 - 112</td>
<td></td>
<td>X</td>
<td></td>
</tr>
</tbody>
</table>

**Benefits of Genuine Cummins Turbochargers**
- Increased engine power output (up to 50% increase)
- Improved fuel economy with improved pressure balance across the engine
- Enhanced compression brake capability
- Excellent transient response
- Reduced emissions

Genuine Cummins turbochargers are designed to last the life of your ISX engine. To ensure its long-lasting life, your turbocharger should be serviced at the maintenance intervals indicated in your Owner’s Manual.

**Cummins Warranty Coverage**
Cummins warranty coverage is 1 year/100,000 miles for turbochargers. This warranty protects parts, labor and progressive damage when the repair is performed at a Cummins authorized service location.

From better performance and reliability to unmatched warranty and service support, Genuine Cummins parts add genuine value. Contact your local Cummins distributor for more information on Genuine Cummins turbochargers.