

Fifteen.G Mountain Components, by The Hive:

Fifteen.G brings you cutting edge mountain bike components with an edge. If we can't engineer a product that provides a tangible benefit, we'd just as soon work on something else. (Don't expect to see a Fifteen.G (insert something stupid here) any time soon. Just saying.)

Fifteen.G brand mountain components are brought to you by The Hive.

Fifteen.G Triple and SS Crankset Summary:

The Fifteen.G crankset uses a novel combination of features to provide a class leading value in a lightweight cross country/all mountain crankset.

Forged and CNC machined arms are attached to a 30mm aluminum spindle using a proprietary polygon interface (Based on DIN 32711 P3). The cranks spin on an oversized external bottom bracket bearing system, including an integrated non-contact shield.

Feature Bullets:

- Crankset/spindle interface based on DIN 32711 P3 polygon interface
- 7050 Aluminum crankarms, forged and completely CNC-machined
- 7075 Aluminum, fully CNC's chainrings
- 6806 external bearings BB with additional, serviceable seals
- 30mm aluminum spindle
- Bottom Bracket Adapters compatible with 1 3/4" 12=point socket wrench available at any hardware or auto parts store

- BB
 - 68, 73 or 73E type compatible
 - BSA threading
 - 91 grams

- Single Speed crankset
 - 32 or 34T ring available
 - with or without rock guard
 - 175 & 180mm lengths
 - 666 g

- Triple chainring crankset
 - 22-32-44 AL chainrings
 - 51mm chainline, compatible with Shimano HG & IG chains.
 - 170, 175 & 180mm lengths
 - 711 g

What does the DIN 32711 standard mean to me?

Polygon connections have been used throughout history, but most recently they were developed by Austria during WWII for tank transmission parts. German DIN Standards included data for three-sided metric polygon connections, which evolved to DIN 32711. Polygonal shaped shafts and bores present many advantages in applications calling for fixed or sliding drive connections. These advantages stem primarily from greater load carrying capacities for a given length and diameter of connection as compared to spline-type connections (involute or otherwise.)

In regards to the bicycle world, and the bottom bracket interfaces currently available, a large part of the Polygon's design integrity is owed to the fact that there is 100% surface contact between the spindle and crankarm. Current spline BB interface designs rely on clearances between non-torque carrying surfaces due to manufacturing constraints. This can lead to fretting corrosion, and in time damage and loosening of the interfaces. Since the standard has a long, proven history, there is a wealth of manufacturing data and research to pull from to make sure the interface is manufactured correctly.

Polygon and three sided crank interfaces are not new to the bicycle world.

As early as 193X, (someone) was using a three sided interface on a cotterless crank. (What's their names? The gun guys?) In the late 1980s and early 1990s Grove innovations used a polygon connection for their Hot Rods crank set.

Our design has been heavily customized to gain a weight advantage from using an aluminum spindle. By using external 6806 bearings, we are able to use a 30mm aluminum alloy spindle for increased weight savings while maintaining stiffness. We use a tapered polygon interface on both ends of the spindle. The taper design is more appropriate for a permanent (or semi-permanent) connection, and allows us to eliminate the need for any sort of clamping mechanism (a'la BMX-style pinch bolt cranks) which reduces weight and improves stiffness of the junction.

We have also improved upon most exterior bearing assembly sealing designs, and are using Japanese cartridge bearings with custom grease for long life.