



Paragon Machine Works

Useful Information for Bottom Bracket Shells

There are now a wide variety of bottom bracket shells available in the bicycle industry, making "industry standards" a thing of the past. The following article will help clarify which bottom bracket shells we manufacture so that you can choose the right one for your bottom bracket assembly.

A Brief History

The bottom bracket originated around 100 years ago in Europe during a time when taxes and the high cost of transport limited European trade. Italian frame builders sold most of their goods in Italy, the French concentrated on French customers, and the British made bikes for their home market. From the beginning the result was a hodgepodge of design specifications, which continues today.

Overview of a Bottom Bracket Assembly

The bottom bracket assembly on a bicycle connects the crankset to the bicycle and allows the crankset to rotate freely. It contains a spindle that the crankset attaches to and the bearings that allow the spindle and cranks to rotate. The chain rings and pedals attach to the cranks. The bottom bracket assembly fits inside the bottom bracket shell which connects to the seat tube, down tube, and chain stays.

Threaded Bottom Bracket Shells

English

Threaded bottom brackets have the advantage of being compatible with the largest range of cranks. Traditionally they have two bearing cups that screw into the frame, a right hand (fixed) cup, and a left side cup (adjustable). There are three common types of threading for bottom bracket shells: English, Italian and French. All of our threaded bottom bracket shells are English style, meaning they are 1.370" in diameter, have 24 threads per inch with a thread length of 0.50", and are right and left

threaded (also known as British Standard, ISO/English or BSA); making them compatible with most modern threaded bottom bracket spindles. Our threaded BBs are available in titanium, steel, and stainless steel in varying widths, and are 0.5 mm oversize to allow for finishing after welding.

T47

The T47 bottom bracket was introduced in October 2015 and was a joint effort between several American bicycle and component manufacturers: White Industries, Chris King Precision Components, Argonaut Cycles, Engin Cycles and Paragon Machine Works. T signifies THREADED, and 47 is the MAJOR DIAMETER of the thread. Like the venerable English threaded bottom bracket, a standard for decades, the T47 has right and left hand threads and is supplied in a variety of widths. However, it features a finer thread pitch of 1 mm and a larger diameter of 47 mm. The larger diameter allows for larger diameter bearings in both internal and external applications, a requirement for 24 mm and 30 mm crank spindles.

Threadless Bottom Bracket Shells

PressFit 30

SRAM introduced the PressFit 30 (PF30) bottom bracket standard in 2009. The PF30 uses 30 mm ID bearings and 30 mm spindle cranksets; the bearings are contained inside cups and the cups are pressed into the frame. The shell has a smooth bore due to the lack of snap ring grooves; the outer lip of the cup contacting the frame is what stops the press action. The large ID of the PF30 bottom bracket shell gives it the advantage of being adaptable to a wide variety of bottom brackets assemblies, including eccentrics.

We make our PF30 shells in titanium, steel, stainless steel, and aluminum in a variety of lengths and widths; the ID is supplied .5 mm undersized, to 45.5 mm (1.791"), and must be finished to diameter and width after welding by the frame builder.

Why all the alternatives?

The demand for alternatives to threaded bottom bracket shells grew out of a desire to provide a greater variety of frame styles that are lighter, stiffer, and cost less to manufacture. With today's emphasis on cutting edge technology and innovation, new standards are the norm rather than the

exception. Our decision to manufacture a given standard will be based on its anticipated applications and longevity in the market.

References

Bike Radar: [Complete Guide to Bottom Brackets](#)

Video: [How to Tap a T47](#)