SEPTEMBER 18, 2019 / BOTTOM BRACKETS

BOTTOM BRACKET TOOL SELECTION: THREADED AND THREAD-TOGETHER

There are many different brands and models of bottom brackets as well as many variations on tool fittings for their service. This article will review the selection of Park Tool options for various bottom bracket systems in threaded frame shells and for thread-thru bottom brackets. For a review of the various bottom bracket standards, see Bottom Bracket Standards and Terminology.

To find the proper tool based on make and model, see: Bottom Bracket Tool Finder

1 PRELIMINARY INFO

WHAT TOOLS DO I NEED?

To determine the correct tool, begin by inspecting the bottom bracket. In some cases it will be necessary to remove the crank in order to measure and determine the tool choices.

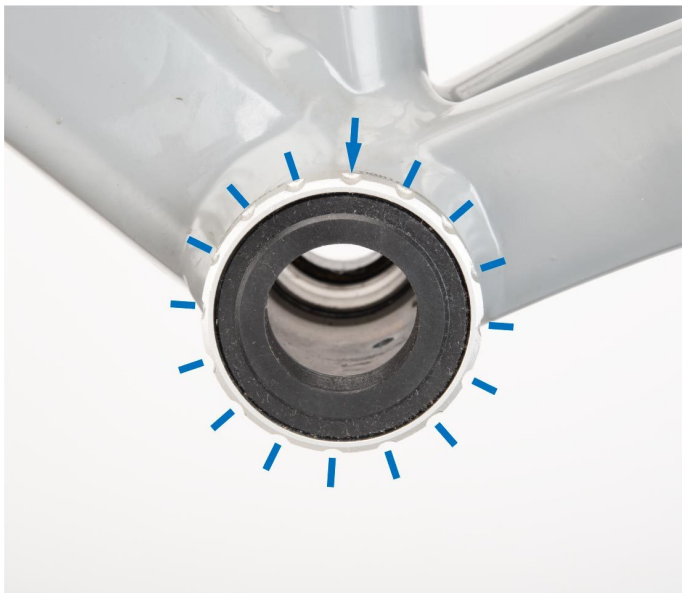
If there are no tool fittings visible it is likely a press fit bottom bracket. See Bottom Bracket Tool Selection: Press Fit.

If the bottom bracket is installed and removed using threads, there will be tool fittings visible. This is also the case for frames using press fit shells and a "thread-together" bottom bracket, also known as a "thread-thru". For purposes of tool selection, a thread-together bottom bracket is treated the same as a threaded bottom bracket.

PRESS FIT BOTTOM BRACKET SHOWING NO TOOL FITTINGS

Tool fittings can be notches or indentations on the outer perimeter, splines on the inside perimeter, or pin holes on the face. Count the number of tool fittings on the cup.

Next, use a caliper to measure the diameter or width of the tool fittings. For external notches, first measure the outer diameter of the bottom bracket cup or adapter as seen below. This is the **major diameter** of the tool fitting. Next, measure from the inside of one notch to the inside of the notch directly opposite. This is the **minor diameter** of the tool fitting.



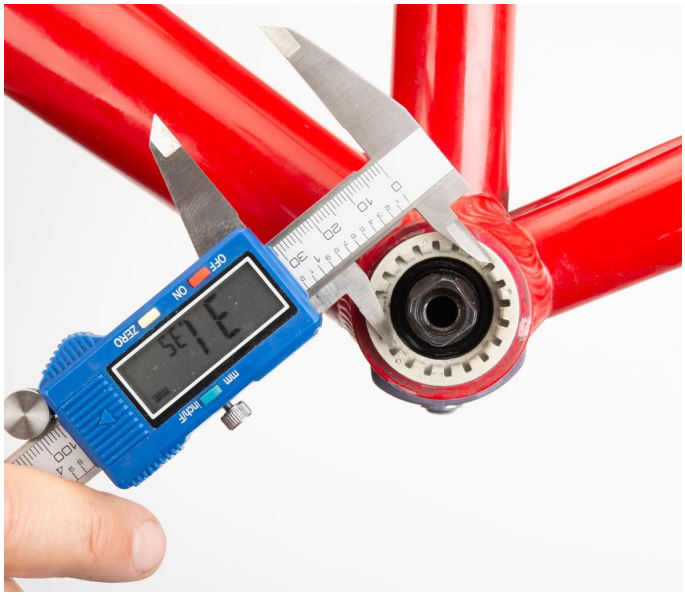
THIS CUP HAS 16 NOTCHES AS TOOL FITTINGS

Although the tools fit at the inside portion of the external splines, measuring the outside will be enough to differentiate the standard.

For tool fittings on the inside perimeter, measure to where the tool would fit as seen in the image below.

MEASURING THE MAJOR DIAMETER OF THE CUP

It can be difficult to get exact measurements. For most models, getting within a millimeter will be good enough to get the correct tool.



2 TOOL FINDER TABLE

Use the table below to find the best match, and click the name of the tool to see an example of the tool fitting as well as a list of popular brands that feature this fitting. There are also some proprietary styles not listed here.

FLATS/PIN HOLES/SPLINES

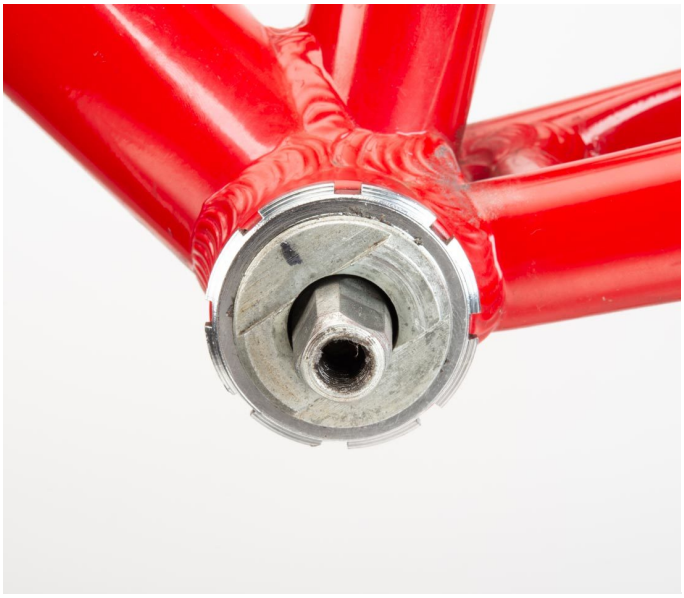
TOOL FITTING	DIMENSION	TOOL
2 flats	16 mm width	HCW-11
2 flats	36 mm width	HCW-4
4/6/8 pin holes	3 mm hole	SPA-1
12 internal splines	23 mm ID	BBT-5/FR-11
20 internal splines	31.5 mm ID	BBT-22, BBT-32

EXTERNAL NOTCHES

TOOL FITTING	MAJOR DIAMETER	MINOR DIAMETER	TOOL
3/4/6/8 external notches	44–46 mm OD	~40 mm OD	HCW-5
6 external notches	43–44 mm OD	38 mm OD	BBT-4
8 external notches	40–45 mm OD	38mm OD	BBT-18
12 external notches	45–47 mm OD	44 mm OD	BBT-79.3
12 external notches	48–50 mm OD	46.3 mm OD	BBT-35-12
12 external notches	50–53 mm OD	48.2 mm OD	BBT-47-12
16 external notches	39–40 mm OD	37.6 mm OD	BBT-49.2, BBT-29
16 external notches	41–42 mm OD	39 mm OD	BBT-59.2
16 external notches	44–45 mm OD	42.7 mm OD	BBT-69.3, BBT-19.2, BBT-9
16 external notches	48–50 mm OD	46.4 mm OD	BBT-27.3, BBT-29

TOOL FITTING	MAJOR DIAMETER	MINOR DIAMETER	TOOL
16 external notches	52–54 mm OD	48.8 mm OD	BBT-47-16
24 external notches	45–47 mm OD	44 mm OD	BBT-79.3
36 external notches	51–53 mm OD	50.7 mm OD	BBT-35-36

3 TOOL FITTINGS 2 FLATS, 16 MM WIDTH



2 FLATS ON ADJUSTABLE CUP

PARK TOOL HCW-11

Examples include adjustable bottom bracket non-drive-side cups using two wrench flats at 16mm.

Use the Park Tool HCW-11

2 FLATS, 36 MM WIDTH

BOTTOM BRACKET CUP WITH TWO WRENCH FLATS

PARK TOOL HCW-4

Examples include many adjustable ball bearing bottom brackets using a drive side (right side) cup with two wrench flats spaced at 36mm.

Use the Park Tool HCW-4

4/6/8 PIN HOLES

PIN HOLES IN LEFT CUP

PARK TOOL SPA-1

Examples include many adjustable ball bearing bottom brackets using a non-drive (left side) cup with 4, 6, or 8 pin holes.

Use the Park Tool SPA-1

3/4/6/8 EXTERNAL NOTCHES, 44–46 MM OD

EXTERNAL LOCKRING OF ADJUSTABLE CUP BOTTOM BRACKET

PARK TOOL HCW-5

Examples include adjustable cup-and-cone bottom brackets with left side outer lockring.

Use the Park Tool HCW-5

6 EXTERNAL NOTCHES, 43 MM OD

6-NOTCH CARTRIDGE BOTTOM BRACKET

PARK TOOL BBT-4

Examples include Campagnolo® cartridge bottom bracket using six radiused tool fittings.

Use Park Tool BBT-4

8 EXTERNAL NOTCHES, 40–45 MM OD

8 EXTERNAL NOTCHES

PARK TOOL BBT-18

Examples include Truvativ® Giga Pipe™ , Bontrager® and others.

Use Park Tool BBT-18

12 INTERNAL SPLINES, 23 MM ID

12 INTERNAL SPLINES

PARK TOOL BBT-5/FR-11

Examples include Campagnolo® Centaur®, Chorus®, and Record® Track, as well as Miche® square spindle models. The tool fitting is the same as the Campagnolo® cassette lockring tool.

Use Park Tool BBT-5/FR-11

12 EXTERNAL NOTCHES, 45–47 MM OD

12 EXTERNAL NOTCHES, 45–47 MM OUTSIDE DIAMETER

PARK TOOL BBT-79.3

Examples include Race Face® Cinch®, Rotor® 30, and others.

Use Park Tool BBT-79.3

12 EXTERNAL NOTCHES, 48–50 MM OD

12 EXTERNAL NOTCHES, 48–50 MM OD OUTSIDE DIAMETER

PARK TOOL BBT-35-12

Examples include Praxis Works® M30 bottom bracket cup.

Use the Park Tool BBT-35-12

12 EXTERNAL NOTCHES, 50–53 MM OD

12 EXTERNAL NOTCHES, 50–53 MM OUTSIDE DIAMETER

PARK TOOL BBT-47-12

Examples include Chris King® ThreadFit™ 30, Wheels Mfg™, and others.

Use Park Tool BBT-47-12

16 EXTERNAL NOTCHES, 39–40 MM OD

16 EXTERNAL NOTCHES, 39–40 MM OUTSIDE DIAMETER

PARK TOOL BBT-49.2

Examples include Shimano® XTR® BB91/3/4, Dura-Ace® R9100, and Shimano® STEPS® Hollowtech® II e-bike motor lockring.

Use Park Tool BBT-49.2 or BBT-29

16 EXTERNAL NOTCHES, 41–42 MM OD

16 EXTERNAL NOTCHES, 41–42 MM OUTSIDE DIAMETER

PARK TOOL BBT-59.2

Examples include Shimano® XT® MT800, Ultegra® BBR60/72, and others.

Use Park Tool BBT-59.2

16 EXTERNAL NOTCHES, 44–45 MM OD

16 EXTERNAL NOTCHES, 44–45 MM OUTSIDE DIAMETER

PARK TOOL BBT-69.3

Example include Shimano® Hollowtech® II, SRAM® GXP®, Chris King® ThreadFit™ 24, Campagnolo®, Race Face®, Praxis Works®, and more.

Use Park Tool BBT-69.3, BBT-19.2, or BBT-9

16 EXTERNAL NOTCHES, 48–50 MM OD

16 EXTERNAL NOTCHES, 48–50 MM OUTSIDE DIAMETER

PARK TOOL BBT-27.3

Examples include FSA® MegaEvo® and Wheels Mfg™.

Use Park Tool BBT-27.3 or BBT-29

16 EXTERNAL NOTCHES, 52–54 MM OD

16 EXTERNAL NOTCHES, 52–54 MM OUTSIDE DIAMETER

PARK TOOL BBT-47-16

Examples include Chris King® and Wheels Mfg™.

Use Park Tool BBT-47-16

20 INTERNAL SPLINES, 31.5MM ID

20 INTERNAL SPLINES WITH ISIS DRIVE SPINDLE

20 INTERNAL SPLINES WITH SQUARE SPINDLE

PARK TOOL BBT-22

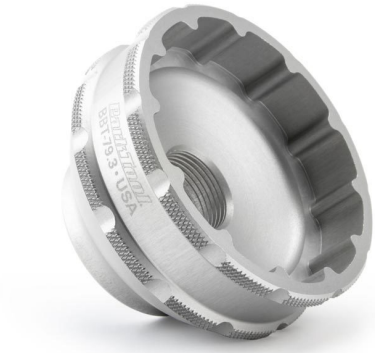
PARK TOOL BBT-32

Examples include cartridge bottom brackets from Shimano® square spindle type, Shimano® Octalink®, SRAM®, Sunlite®, FSA®, Suntour®, and others.

Use Park Tool BBT-22 or BBT-32

24 EXTERNAL NOTCHES, 45–47 MM OD

SRAM® DUB® BOTTOM BRACKET



PARK TOOL BBT-79.3

Examples include the SRAM® DUB® bottom bracket cup.

Use the BBT-79.3

36 EXTERNAL NOTCHES, 51–53 MM OD

36 EXTERNAL NOTCHES, 51–53 MM OUTSIDE DIAMETER

PARK TOOL BBT-35-36

Examples include Praxis Works® M35. The 36-notch cup pattern fits the 18-notch pattern of the BBT-35-36.

Use Park Tool BBT-35-36

NEXT ARTICLE IN THIS SERIES

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- Bottom Bracket Removal & Installation: Thread-Together View Article
- Bottom Bracket Service: Adjustable Cup-and-Cone View Article

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