

Draft

ISIS

OVERDRIVE

STANDARD DOCUMENT
REV. A

Revisions

Rev	Date	By	Description
X0	6-Aug-02	G. Smith	Creation.
X1	19-Aug-02	G. Smith	Edit text in sections 1.1, 1.2, 2.0, 3.1, 3.2 Add section 3.3
X2	22-Aug-02	G. Smith	Incorporate Paul's comments and edits.
X3	23-Aug-02	G. Smith	Add drawing sheets.
Beta	12-Dec-02	G. Smith	Beta version for prototyping only. Simplifications to all sections.
A	12-Aug-03	G. Smith	Release. No changes from Beta document.

1.0 OVERVIEW

The ISIS Overdrive bottom bracket shell standard is designed to increase the load capacity, life, and durability of bottom brackets while at the same time reducing their potential cost.

2.0 DESIGN

2.1 BEARINGS

This standard does not constrain bearing choice in any way other than by dictating the frame interface parameters.

2.2 BEARING-TO-FRAME INTERFACE

The ISIS Overdrive interface consists of bearings pressed into bottom bracket cups that thread into the frame. Drawing sheet 1 at the end of this document shows the required thread dimension for the frame shell while drawing sheet 2 shows the required bottom bracket cup dimensions. The drive-side cup is left-hand threaded while the non-drive cup is right-hand threaded. The threaded interface is summarized as:

<u>Shell Threads:</u>	M48 x 1.5 – 6H
<u>Cup Threads:</u>	M48 x 1.5 – 6g
<u>Drive-side Cup:</u>	Left-hand threaded
<u>Non-Drive Cup:</u>	Right-hand threaded

2.3 FRAME SHELL DIMENSIONS

2.3.1 SHELL WIDTH

Standard shell widths are 68mm and 100mm as shown on drawing sheet 1.

2.3.2 OUTER SHELL DIAMETER

The ISIS Overdrive bottom bracket shell wall thickness will depend on the frame material used and is the responsibility of the frame designer to specify. As a guide we recommend at least 5mm of wall thickness for aluminum mountain bike frames.

2.4 INSTALLATION AND REMOVAL

The threaded cups may be engaged for installation using several methods. The XTR spider/BB cup tool or Truvativ X-Tool (see **Figure 1**) is currently available for spline engagement. This tool will work for both flanged and non-flanged cup designs. Dimensions for this tool interface are provided on drawing sheet 2 at the end of this document.

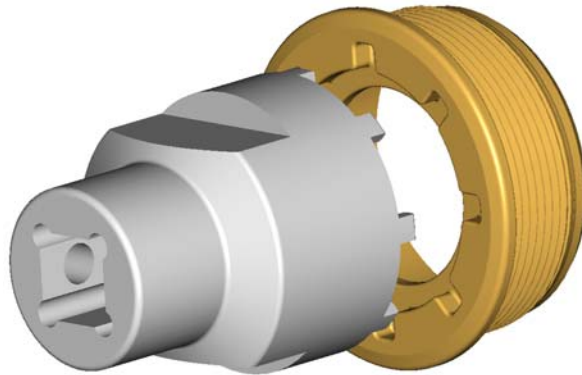


Figure 1. *The Truvativ X-Tool engaging into a bottom bracket cup.*

Alternatively, many other tool interfaces, including a standard “hook” spanner wrench attachment, may be used for flanged cups if manufacturers do not wish to utilize the XTR/X-Tool attachment. Dimensions for this type of attachment are left to the designer of such a system.

2.5 REVERSE COMPATIBILITY

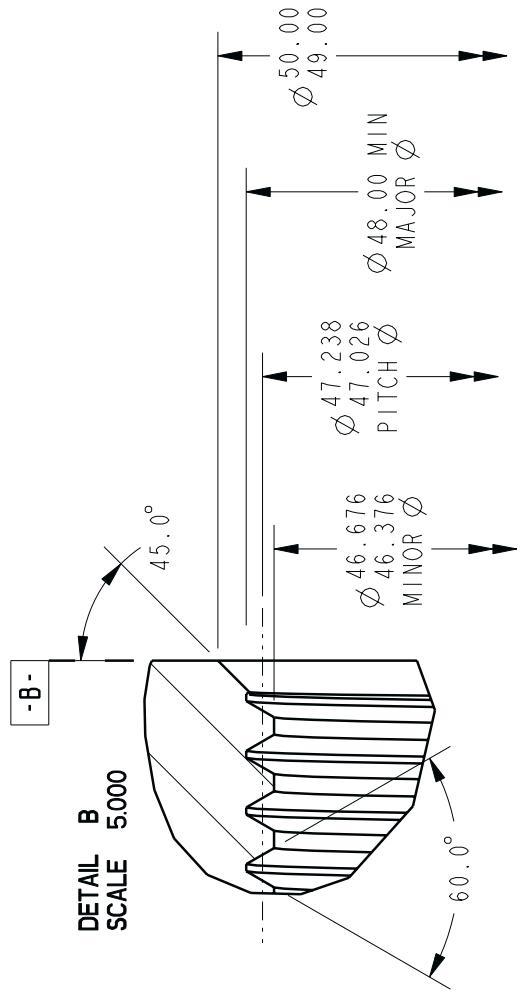
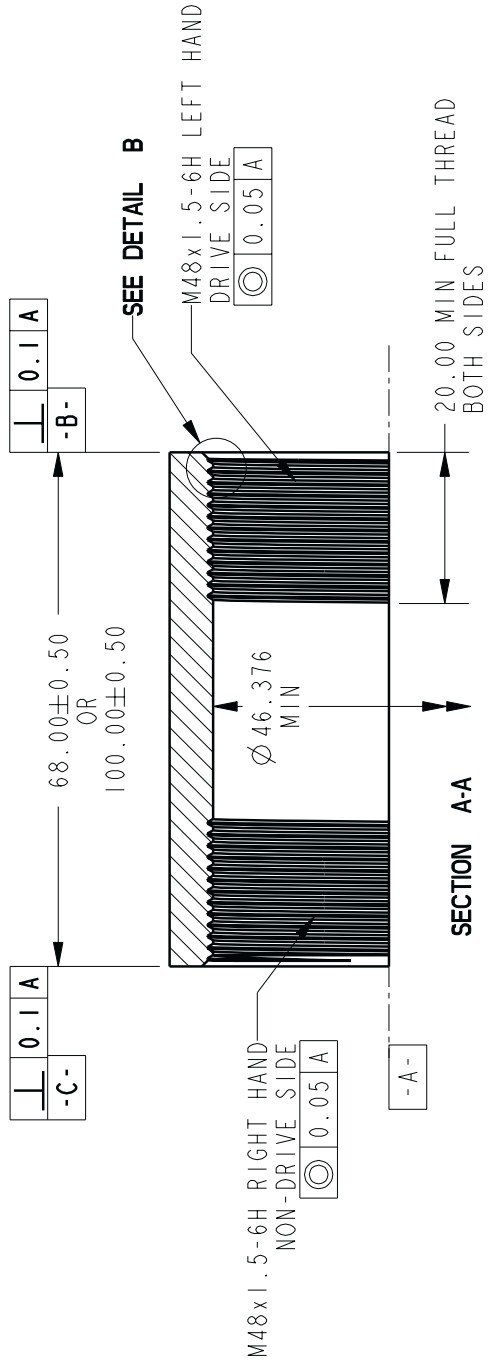
The ISIS Overdrive standard provides the opportunity for aftermarket adapters that can effectively adapt existing BSA bottom brackets to frames built with an ISIS Overdrive bottom bracket shell. These adapters would thread into the shell and contain BSA threads on their inner diameter.

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REVISIONS

REV	DATE	CHANGES
BETA	12-DEC-02	DRAWING CREATION.
A	12-AUG-03	RELEASE.



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NOTES:

- ALL DIMENSIONS ARE POST WELDING, HEAT TREATMENT, AND FINISHING.
- SEE ISO 965/1 FOR THREAD TOLERANCE LIMITS.

UNLESS OTHERWISE NOTED:
BREAK ALL EDGES R0.20-0.30
REMOVE ALL BURRS
ALL DIMENSIONS AFTER FINISHING

ISIS
OVERDRIVE

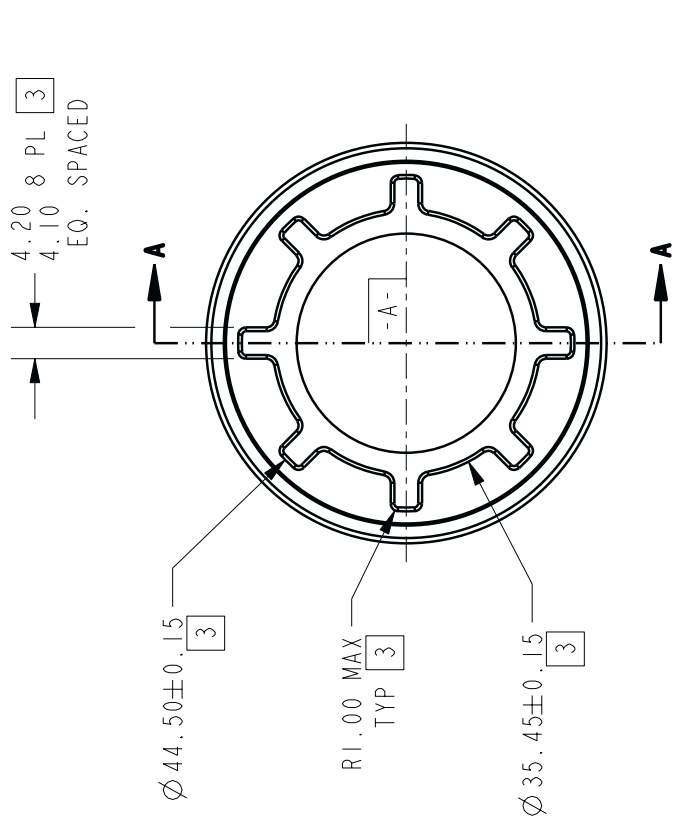
BY G. SMITH
SCALE 1:1
DO NOT SCALE DRAWING

FRAME BOTTOM BRACKET SHELL

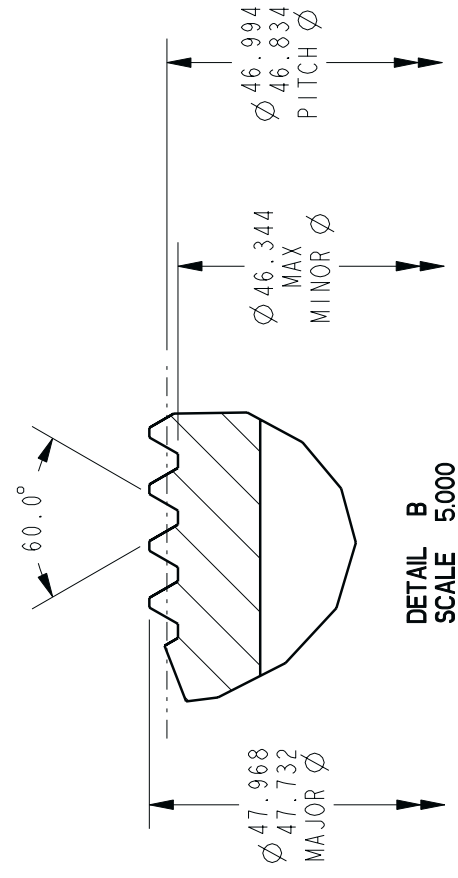
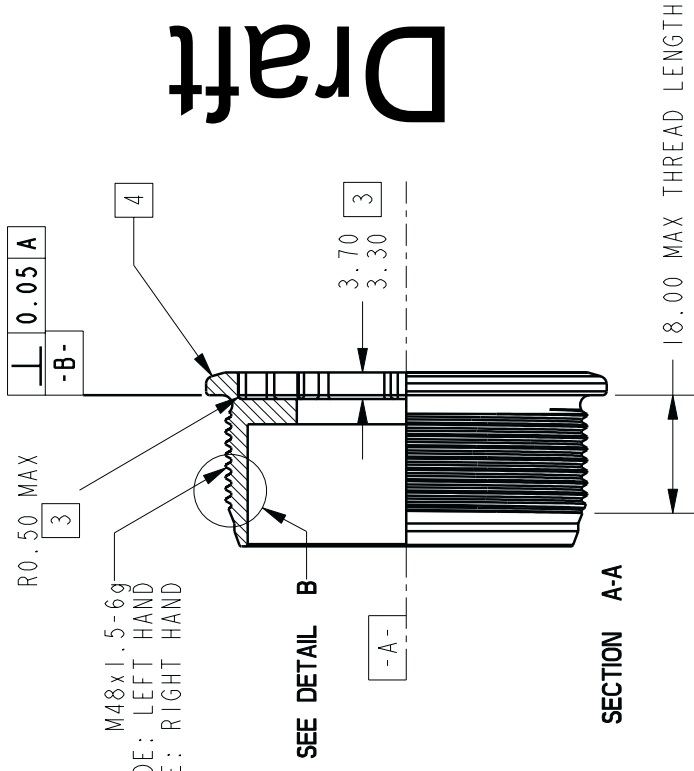
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- SEE ISO 965/1 FOR THREAD TOLERANCE LIMITS.
- OPTIONAL (PREFERRED) TOOL INTERFACE DIMENSION.
- CUP FLANGE OPTIONAL.

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BOTTOM BRACKET CUP

DETAIL B
SCALE 5.000