



AUC Cell Alignment Tool

User Manual

WARRANTY

Spin Analytical Inc., warrants this product to be defect free in both material and workmanship for 90 days from the date of shipment. Labor services are guaranteed for 3 months. During the warranty period, we will, at our discretion, either repair or replace any product or product components that proves to be defective.

For warranty support and information please visit our website at www.spinanalytical.com or contact a customer service representative at support@spinanalytical.com

LIMITATION OF WARRANTY

This warranty does not apply to defects resulting from product modification without Spins written consent, misuse of any product or part, or failure to follow instructions.

SAFETY PRECAUTIONS

This product is intended for use by qualified personnel who recognize hazards and are familiar with the safety precautions required to avoid possible injury. Read and follow all installation, operation and maintenance information carefully before using this product. Refer to the manual for complete product specifications.

If the product is used in a manner not specified, the protection provided by the product may be impaired.

Only use approved Spin Analytical accessories with the AUC Cell Alignment Tool. Improper use of the alignment tool can result in damage to your AUC cell components, alignment tool and rotor.

Table of Contents

Introduction.....	1
Product Operation.....	2
Tool Adjustment.....	2

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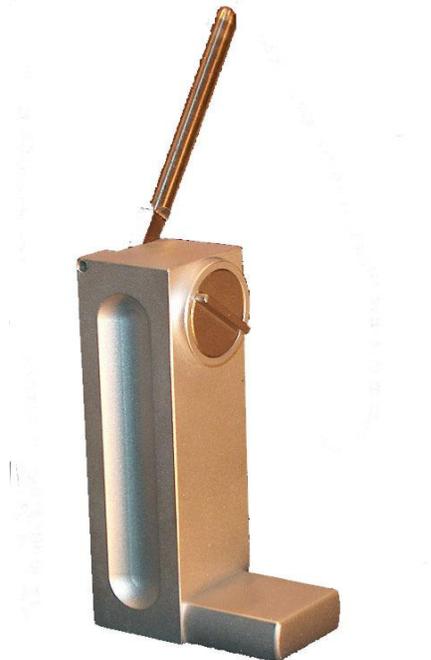
1 Introduction

The Spin CAT alignment tool is used to align cell housings in standard 4 or 8-hole rotors used in the Beckman-Coulter XL-A/XL-I analytical ultracentrifuge. When properly adjusted, the Spin CAT can guarantee repeatable cell alignment to better than 0.1 degree. The tool is intended for use with the cell housings that have solid bottoms with rectangular cutouts and a screw ring on the top only; it will not work correctly with cells that have screw rings on both the top and bottom of the housing.

The Spin CAT tool consists of two parts: a fixed body and a rotating arm. The body of the tool has a leg on the end of the tool farthest from the rotating arm which fits into the center of the rotor and a raised circular area at the top of the tool that fits into the bottom side of the hole position containing the cell to be aligned.

The rotating arm which projects from the top of the tool is attached to a steel key that projects from the face of the tool. This key is designed to engage with the rectangular cutouts in the bottom of the aluminum cell housings. By rotating the arm, the user can rotate the key and thus the angular position of the cell.

Alignment is achieved by the arm pressing against a stainless steel set screw which projects from one side of the tool body. When the arm is rotated into contact with the set screw, it stops and the cell is correctly aligned. Although it is accurately set at the factory, the user can adjust the alignment of the tool with the included hex wrench.



2 Product Operation

1. Place a cell into the desired rotor hole, rotating the cell housing slightly in the clockwise direction (as viewed from above), and push the cell down into the rotor until it seats on the bottom of the hole.
2. Insert the Spin CAT tool into the bottom of the rotor. The tool's leg fits into the center hole of the rotor and the raised circular section at the head fits into the hole with the cell to be aligned. The tool should fit snugly but not tightly. If the tool doesn't fit into the rotor, **DO NOT FORCE IT**, as this could damage the rotor and/or the alignment tool.
3. In order for the tool to fully seat, the rotating key must engage with the rectangular cutouts in the bottom of the cell housing. Rotate the key by moving the alignment tool arm until you feel the key pop into the cell housing cutouts and then firmly push the tool in so that it fully seats into the rotor. Be sure the tool doesn't force the cell up when doing this.
4. Now, holding the rotor right side up, grasp the tool body and rotate the alignment tool arm until it reaches the set screw stop. In this position, the arm will be aligned approximately with the tool body (be careful not to pinch yourself). The cell housing is now correctly aligned.
5. Remove the tool by gently rocking the body until it disengages from the rotor. When doing this, be careful not to disturb the alignment of the cell housing when removing the tool.

3 Tool Adjustment

The tool alignment can be adjusted by moving the set screw which acts as a stop for the alignment arm. To do this, use the hex wrench that was shipped with the tool.

In the side of the tool body, near the top of the tool is a small threaded hole. The hole contains two small set screws. The first screw acts to lock the two screws together and the second screw is the actual stop. To adjust the alignment, insert the hex wrench and, turning counterclockwise, remove the first screw. The screw has a small amount of Loctite thread locker on it so it may feel tight as it is unscrewed. Set the screw aside (it is small so be careful not to lose it). Now the wrench can reach the first screw. Insert the wrench into the hole and turn the first set screw the desired amount. When adjustment is complete, replace the second set screw and, holding the arm tight against the first screw, tighten the second set screw to lock the alignment.

NOTE Don't over tighten the second screw or it could move the first screw and accidentally change the alignment.

Spin Analytical cell housings are fabricated with the rectangular cutouts on the cell housing bottom at precisely 90 degrees to the radius from the rotor center to the cell housing center. It is therefore possible to set the tool alignment extremely accurately with a jig at the factory. For Beckman housings, it is also possible to achieve excellent alignment by manually checking the alignment to see if the scribe lines in the rotor and cell housings are lining up correctly. If you have confidence that the scribe lines in these components are accurately placed, then the housing will be aligned properly each time the tool is used.

NOTE We advise that if you are not using the Spin Analytical cell housings to check the housings you are using at least once a month to make sure there is no variation from one housing to the next.