

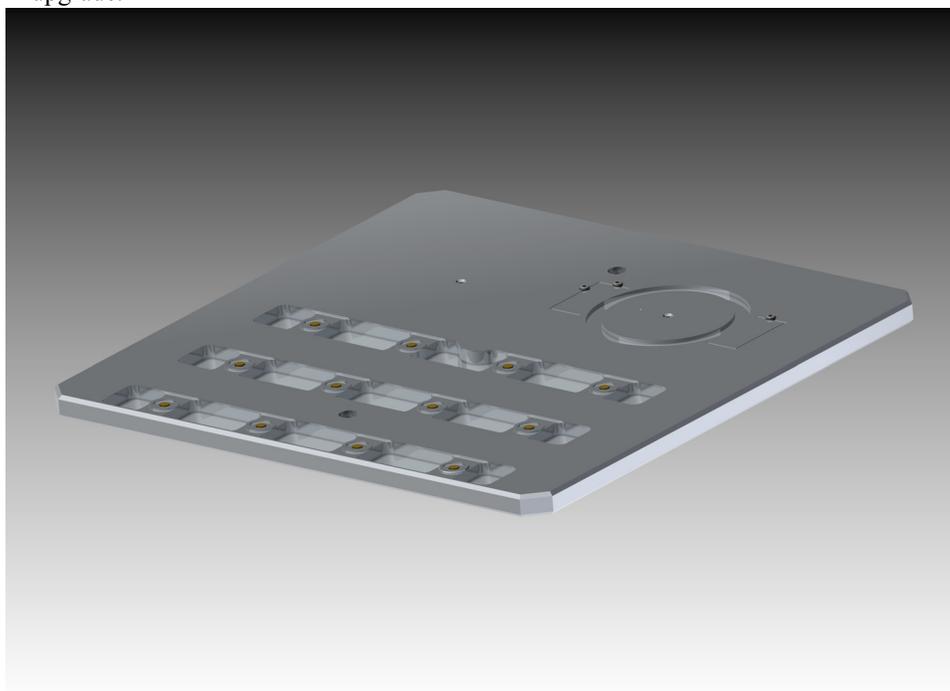


Dimension Icon Multi-Sample Chuck

460.1 Introduction

The Dimension Icon™ Multi-Sample Chuck allows up to 12 indexed small samples, a 60mm petri dish or an indexed glass slide.

This chuck is available as an option with the purchase of a new Dimension Icon or as a system upgrade.



Document Revision History: Dimension Icon Multi-Sample Chuck

Rev.	Date	Sections	Ref. DCR	Approval
Rev. D	May 4, 2011	5.2		Vinson Kelley
Rev. C	8-Jan.-2011	Rebranding		Melissa Wright
Rev. A	29-Sept.-2009	5.2		Vinson Kelley
Rev. A	11-Aug.-2009	Initial Release		Vinson Kelley

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Dimension Icon™
MultiMode™
Dimension™
BioScope™
Atomic Force Profiler™ (AFP™)
Dektak®

Software Modes:

TappingMode™
Tapping™
TappingMode+™
LiftMode™
AutoTune™
TurboScan™
Fast HSG™
PhaseImaging™
DekMap 2™
HyperScan™
StepFinder™
SoftScan™

Hardware Designs:

TrakScan™
StiffStage™

Hardware Options:

TipX®
Signal Access Module™ and SAM™
Extender™
TipView™
Interleave™
LookAhead™
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Software Options:

NanoScript™
Navigator™
FeatureFind™

Miscellaneous:

NanoProbe®

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460.1.1 Scope of this Document

This support note is a guide to the installation and operation of the Dimension Icon Multi-Sample Chuck.

460.1.2 Conventions and Definitions

Note: In the interest of clarity, certain nomenclature is preferred. A SPM *probe* comprises a *tip* affixed to a *cantilever* mounted on a *base*, which is inserted in a *probe holder*.

Three font styles distinguish among contexts. For example:

Window or Menu Item / **BUTTON OR PARAMETER NAME** is set to **VALUE**.

460.2 Safety Precautions

This section details safety requirements involved in the installation of the Dimension Icon Multi-Sample Chuck. Specifically these safety requirements include all safety precautions, conditions and equipment safety applications. Training and compliance with all safety requirements are essential during installation and operation of the Dimension Icon AFM.

Table 460.2a Safety Symbols Key

Symbol	Definition
	This symbol identifies conditions or practices that could result in damage to the equipment or other property, and in extreme cases, possible personal injury.
	Ce symbole indique des conditions d'emploi ou des actions pouvant endommager les équipements ou accessoires, et qui, dans les cas extrêmes, peuvent conduire à des dommages corporels.
	Dieses Symbol beschreibt Zustaende oder Handlungen die das Geraet oder andere Gegenstaende beschaedigen koennen und in Extremfaellen zu Verletzungen fuehren koennen.

To avoid operator injury and equipment damage, observe the following cautions regarding Dimension Icon Multi-Sample Chuck.

	<p>CAUTION: If you use the equipment in a manner not specified by the manufacturer, the protection provided by the equipment may be impaired.</p>
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	<p>CAUTION: Follow company and government safety regulations. Keep unauthorized personnel out of the area when working on equipment.</p>
	<p>ATTENTION: Il est impératif de suivre les prérogatives imposées tant au niveau gouvernemental qu'au niveau des entreprises. Les personnes non autorisées ne peuvent rester près du système lorsque celui-ci fonctionne.</p>
	<p>VORSICHT: Befolgen Sie die gesetzlichen Sicherheitsbestimmungen Ihres Landes. Halten Sie nicht autorisierte Personen während des Betriebs fern vom Gerät.</p>

460.3 Multi-Sample Chuck Components

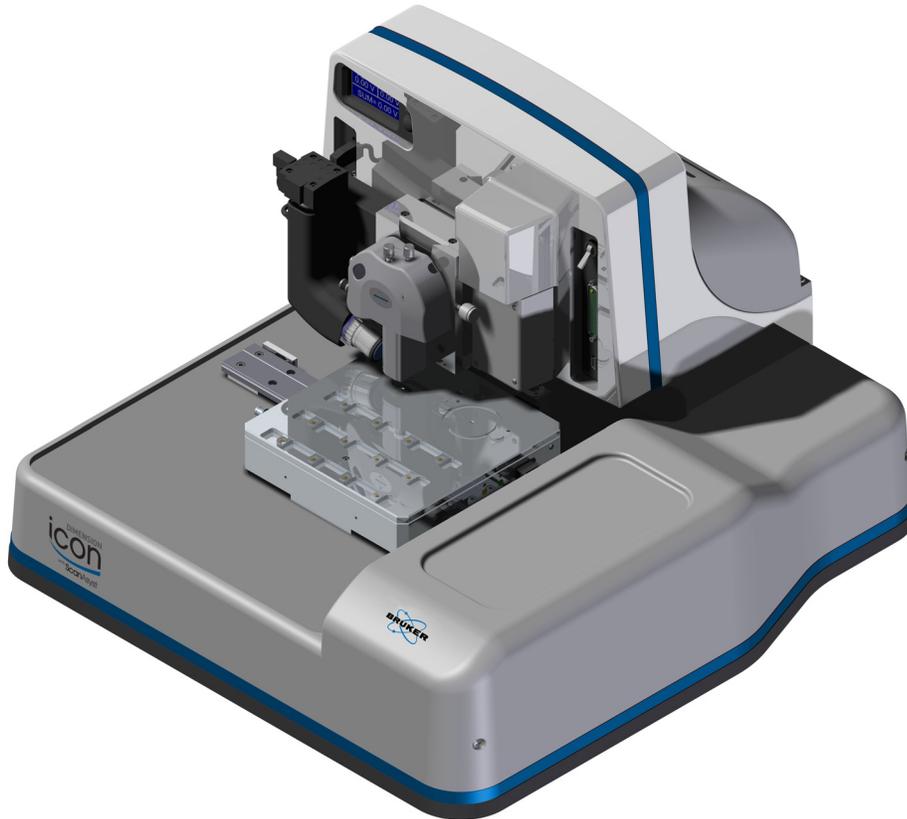
The Dimension Icon Multi-Sample Chuck ships with the following components:

- Dimension Icon Multi-Sample Chuck assembly.
- 15mm diameter sample disks.
- “Sticky dots” to hold samples to the sample disks.
- 1/2” x 0.060” thick NeFeB disk magnets to hold the glass slides to the chuck.
- 60mm petri dishes (Corning[®] Not TC-Treated Culture Dish, product #430589).
- O-rings to provide a vacuum seal to the petri dish.
- M3 x 8mm socket cap screws to attach the Multi-Sample Chuck to the chuck base.
- 1 x 72 x 1/8” socket head cap screws to locate glass slides.
- 0-80 x 1/8” 82° flat head screws to seal vacuum holes.

460.4 Installation

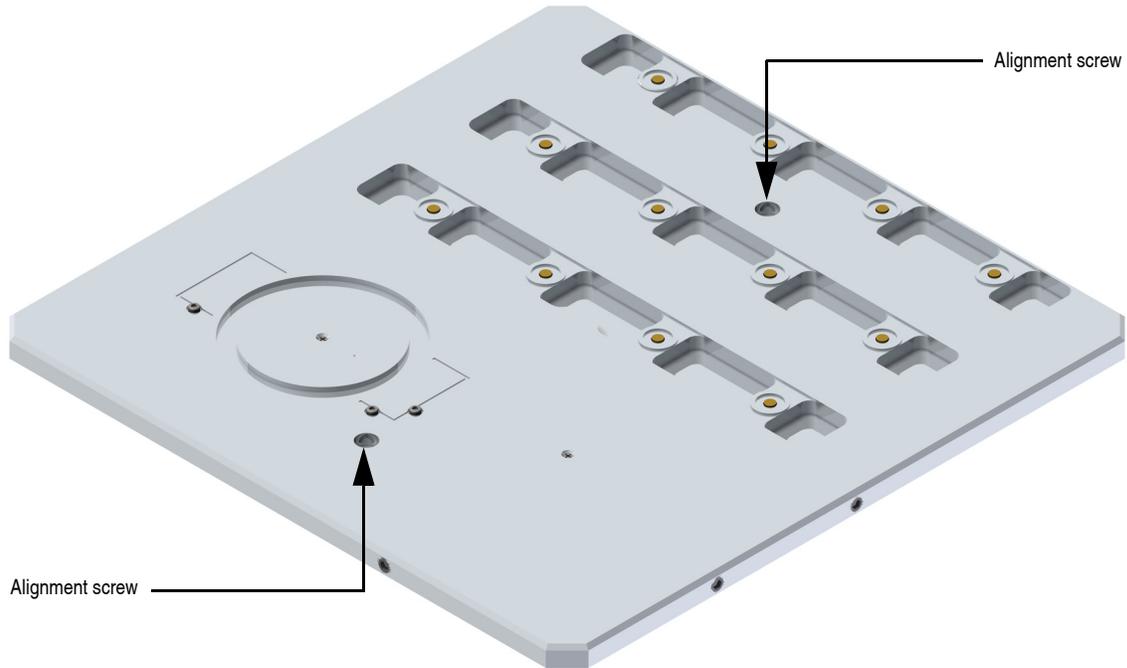
1. Guide the pilot on the bottom of the Multi-Sample Chuck into the pilot hole in the center of the Dimension Icon chuck base and place the Multi-Sample Chuck on the Dimension Icon chuck base as shown in [Figure 460.4a](#).

Figure 460.4a Multi-Sample Chuck installed



2. Using the supplied 2.5mm hex key, insert and tighten two M3 x 8mm socket cap screws to attach the chuck to the chuck base. See [Figure 460.4b](#).

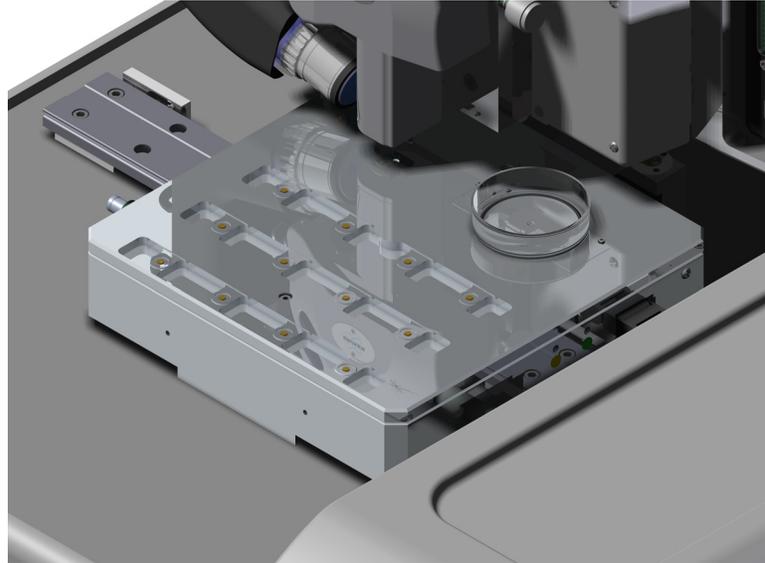
Figure 460.4b Screw holes to attach the Multi-Sample Chuck to the chuck base



To accommodate several sample styles, the Multi-Sample Chuck has two orientations:

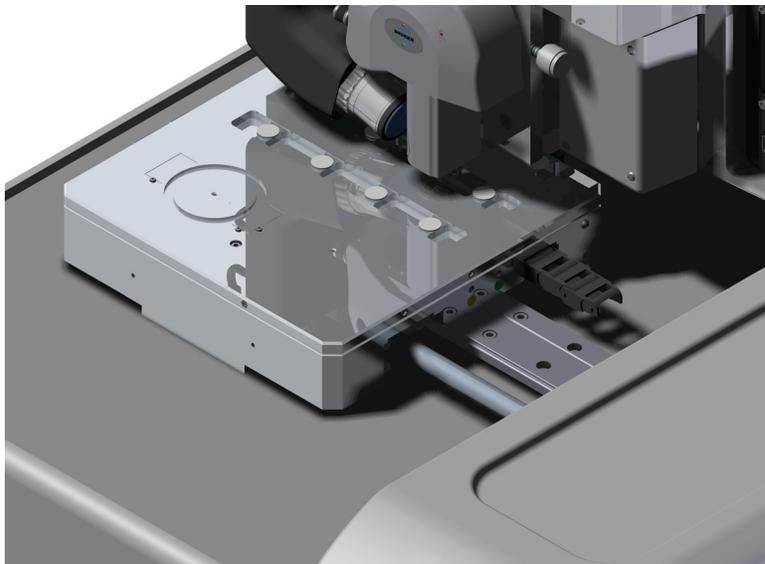
- Petri dish and glass slides use the orientation shown in [Figure 460.4c](#) where the petri dish/glass slide position is closest to the Dimension Icon head.

Figure 460.4c Multi-Sample Chuck installed with the petri dish location nearest the Dimension Icon head



- If you are using samples on 15mm diameter pucks, reverse this orientation to position the 3 x 4 magnet array nearest the Dimension Icon head, shown in [Figure 460.4d](#).

Figure 460.4d Multi-Sample Chuck installed with the magnet array nearest the Dimension Icon head

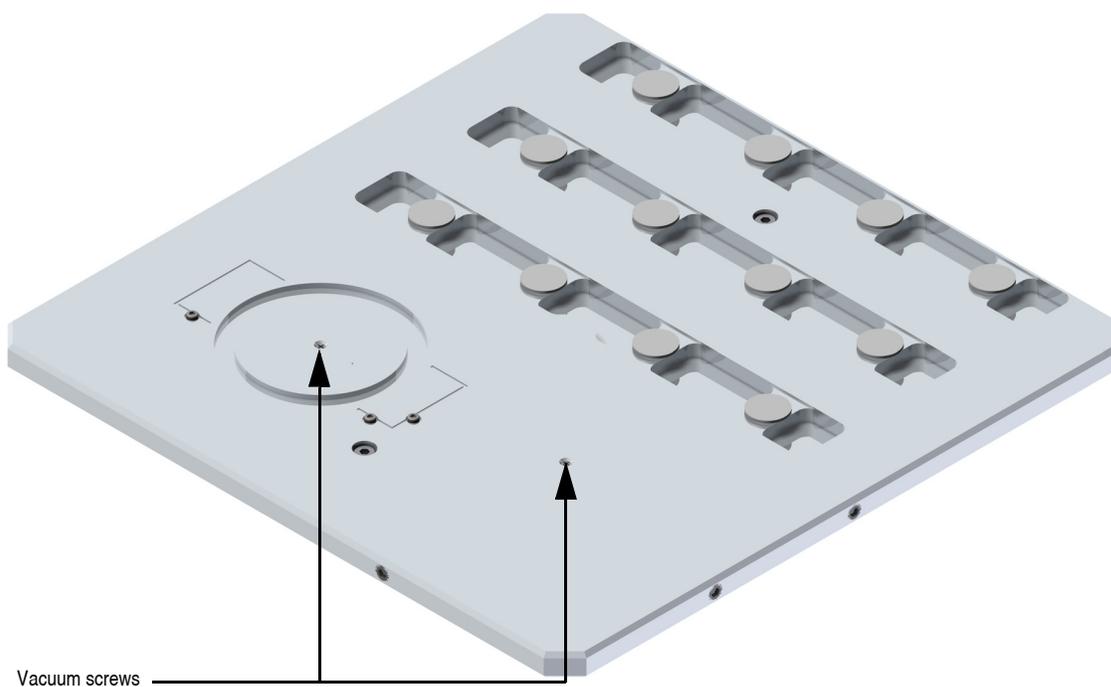


460.5 Operation

460.5.1 Small samples

1. Ensure that the Chuck Vacuum switch on the Dimension Icon is turned **OFF**.
2. Using “sticky dots” (supplied), glue your samples to the sample pucks.
3. Ensure that the Multi-Sample Chuck is positioned with the 3 x 4 magnet array closest to the Dimension Icon head. See [Figure 460.4d](#).
4. Place the loaded sample pucks on the magnet array. See [Figure 460.5a](#).

Figure 460.5a Plug the vacuum holes and load the sample pucks



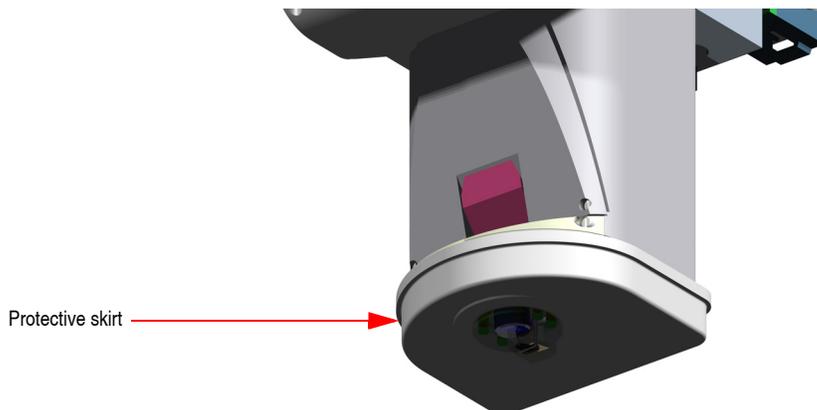
5. The sample puck centers are 40mm (40,000 micrometers) apart in X and Y. Use this information for Programmed Moves or in Recipes.

460.5.2 Petri dish

1. Install a protective skirt on the Dimension Icon head (see [Figure 460.5b](#)).

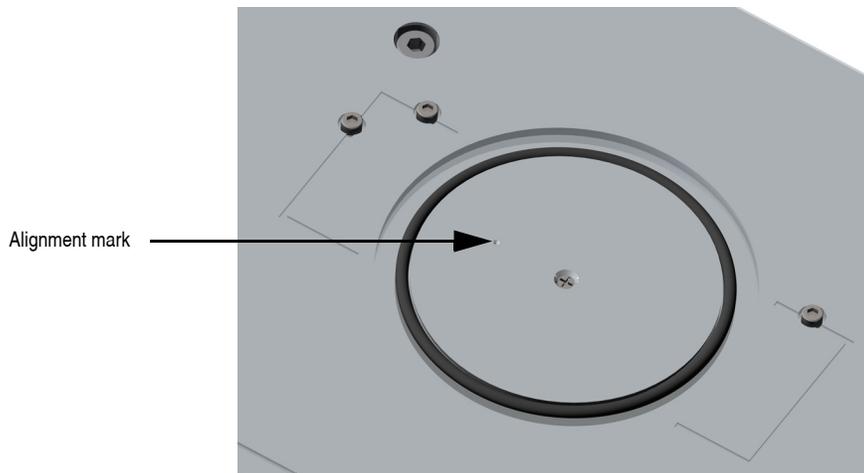
Note: Refer to the *Dimension Icon Instruction Manual*, Bruker p/n 004-1023-000 and the *Direct Drive Fluid Cantilever Holder Support Note*, Bruker p/n 013-410-000 for instruction about operating your Dimension Icon in fluids.

Figure 460.5b Protective skirt on Dimension Icon SPM head



2. Install the O-ring in the groove for the petri dish.
3. Using a supplied 0-80 x 1/8" 82° flat head screw, plug the vacuum hole that is not under the petri dish. See [Figure 460.5a](#).
4. Using the camera/optics, find the alignment mark, shown in [Figure 460.5c](#).

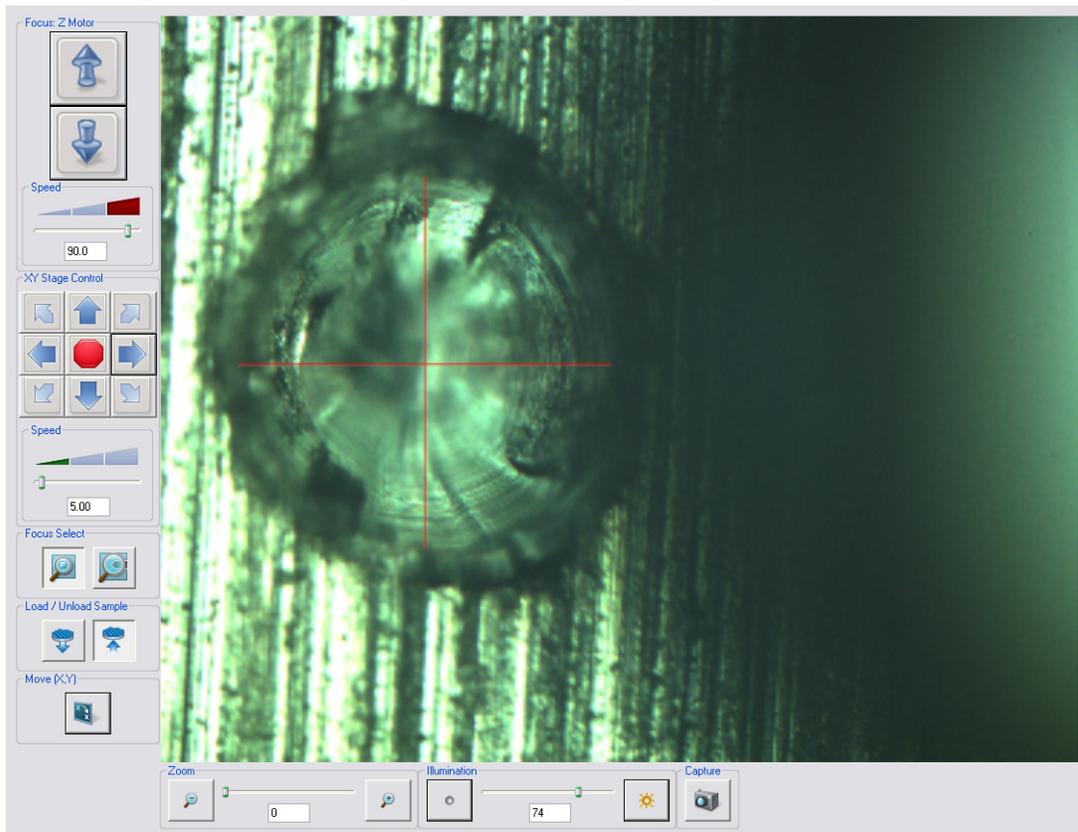
Figure 460.5c Petri dish alignment mark





- a. Click the **NAVIGATE** icon in the **Workflow Toolbar**. This opens the **Navigate** window, shown in [Figure 460.5d](#).

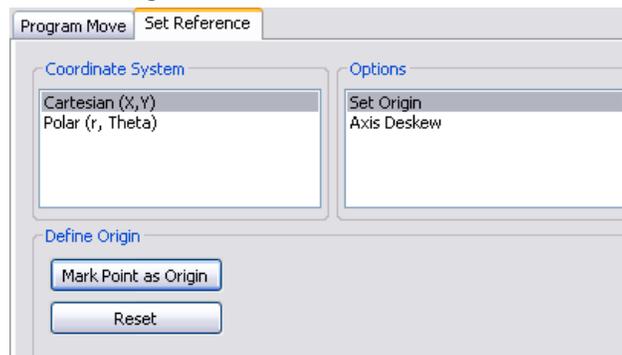
Figure 460.5d The **Navigate** Window showing the alignment mark in the chuck



- b. Use the trackball or the **XY Stage Control** buttons in the **Navigate** window to center the alignment mark.

5. Select the **SET REFERENCES** option under the **STAGE** menu. This opens the **Set Reference** panel, shown in [Figure 460.5e](#), in the **Navigate** window.

Figure 460.5e Set Reference Panel

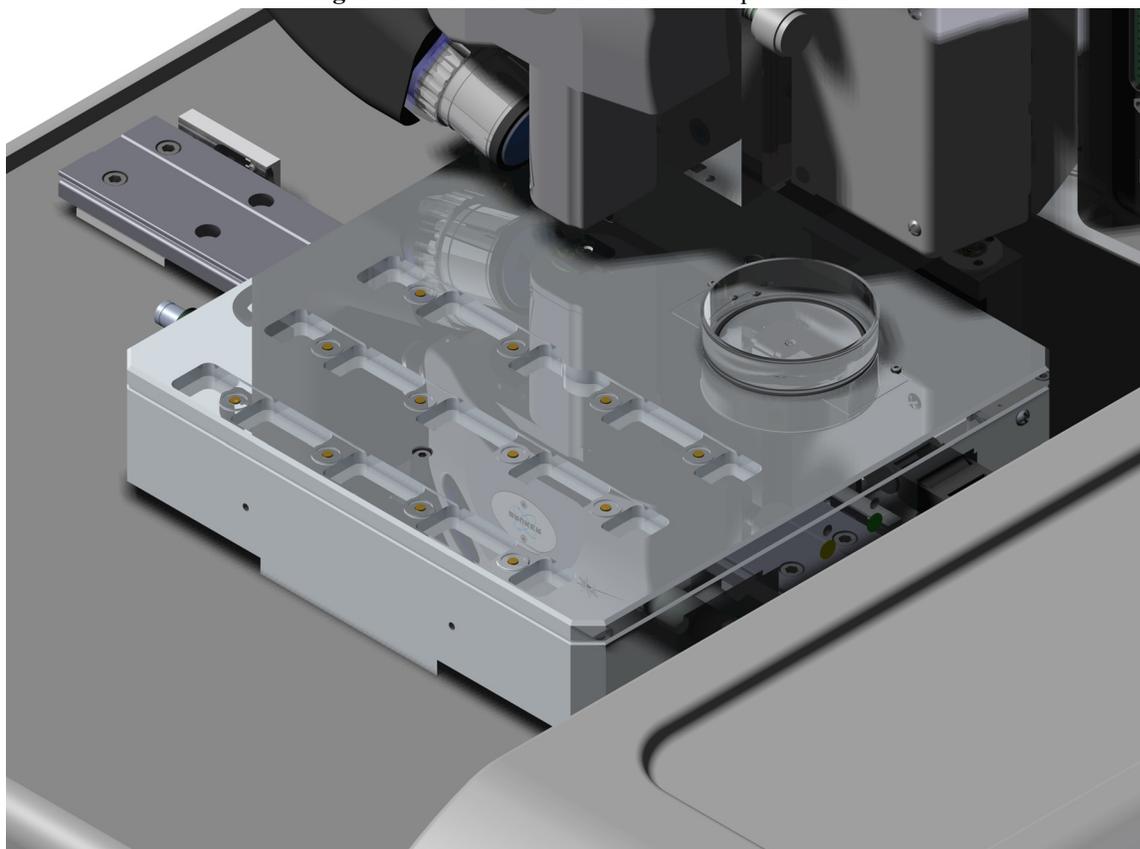


6. Select a coordinate system, either **CARTESIAN (X,Y)** or **POLAR (R, THETA)**. See [Figure 5e](#).
7. Select the **SET ORIGIN** option.
8. Click the **MARK POINT AS ORIGIN** button to set the current stage position as the new origin.
9. Using the **FOCUS: Z MOTOR UP ARROW**, raise the Dimension Icon head as far as it will go.
10. Click the **MOVE SAMPLE TO LOAD POSITION** icon in the **Navigate** window.
11. Place a 60 mm petri dish, supplied, on the Multi-Sample Chuck. See [Figure 460.5f](#).



	CAUTION:	If the fluid level is too high, the end of the scanner tube may be dunked too far into fluid. Do not allow this to happen. Permanent damage to the scanner tube may occur.
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Figure 460.5f Petri dish on Multi-Sample Chuck



12. Turn the Chuck Vacuum **ON** and verify that the petri dish is being held securely by the chuck vacuum.



13. Click the **MOVE BACK TO ANALYSIS POSITION** icon



CAUTION:

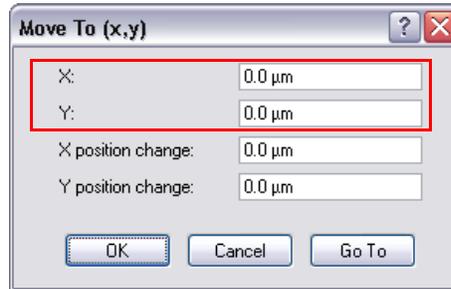
You can move the XY stage no more than 2000 μ m in X or Y when the Dimension Icon head is lowered into the petri dish or the head will collide with the petri dish. Raise the Dimension Icon head to the Z+ limit when moving the XY stage distances greater than 2000 μ m.



Note:

You can always move to the petri dish position once the origin is set by clicking the **MOVE (X, Y)** icon in the **Navigate** window or by selecting **STAGE > MOVE TO (X, Y)** with X = 0, Y = 0. See [Figure 460.5g](#). Ensure that the Dimension Icon head is fully raised before you do this.

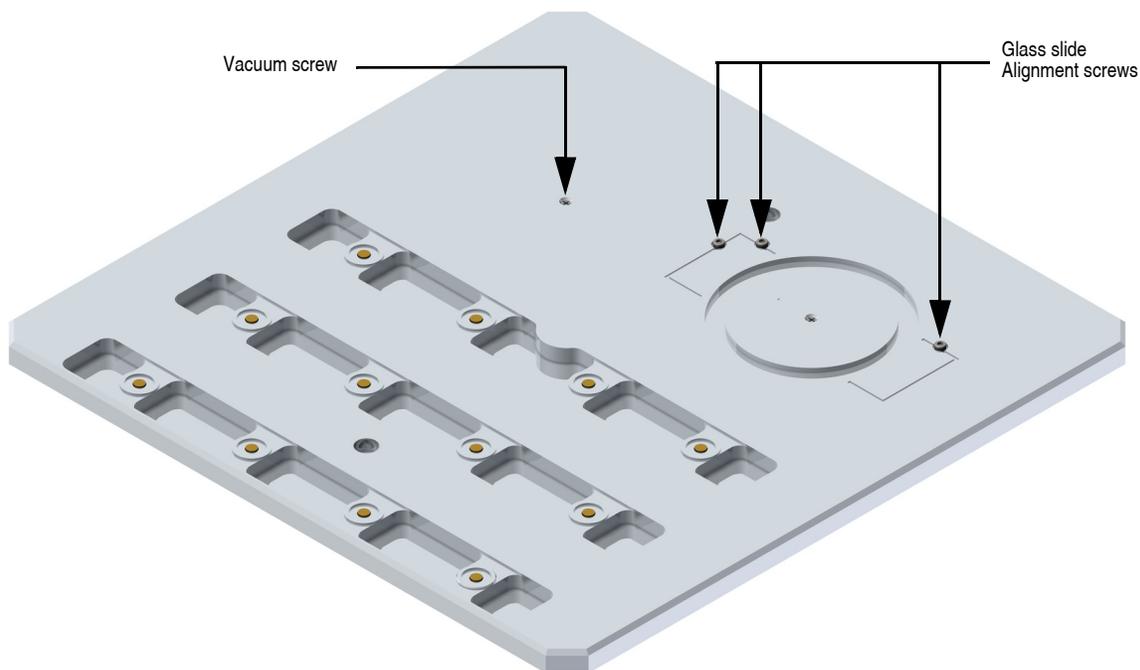
Figure 460.5g Move To X = 0, Y = 0



460.5.3 Glass slides

1. Ensure that the Multi-Sample Chuck is positioned with the glass slide/petri dish position closest to the Dimension Icon head.
2. Attach the three glass slide locating screws (1 x 72 x 1/8" socket head cap screw), shown in [Figure 460.5h](#), to the Multi-Sample Chuck.

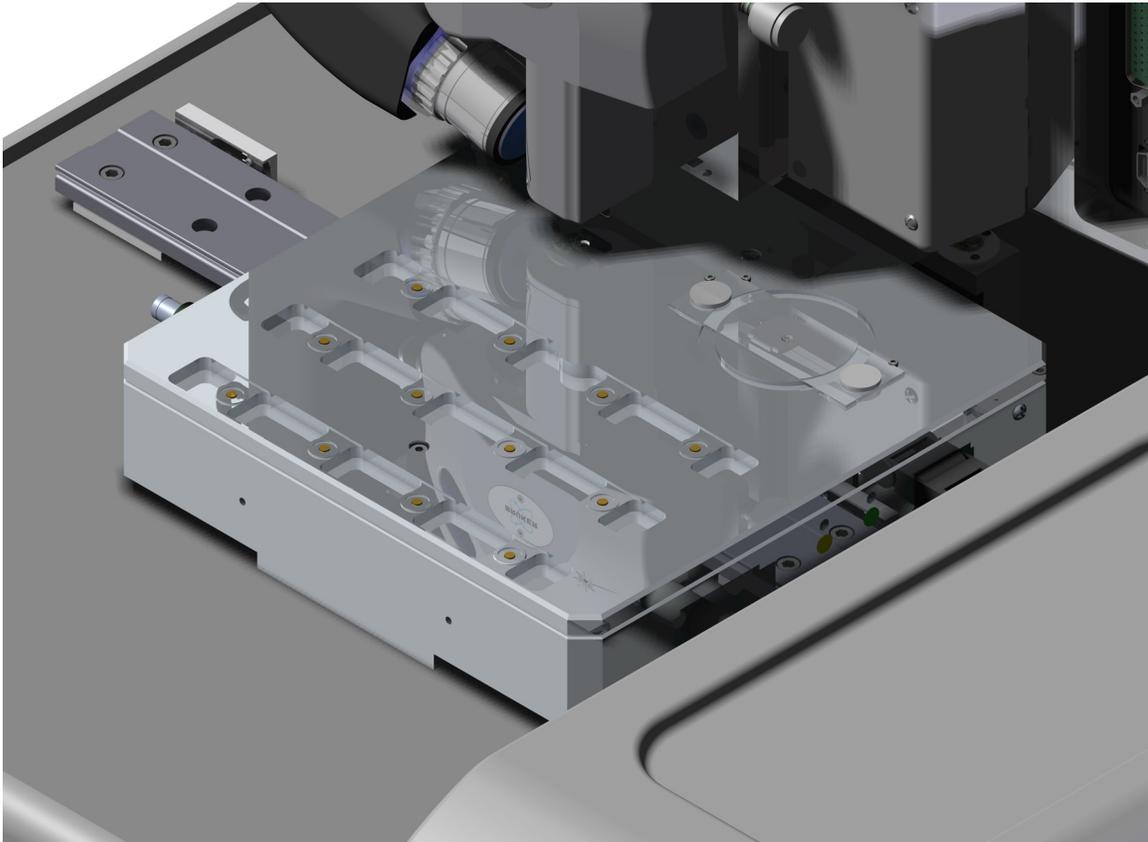
Figure 460.5h Alignment screws for glass slide



3. Ensure that the Chuck Vacuum switch on the Dimension Icon is turned **OFF**.
4. Position the glass slide against the three alignment screws.

5. Place a 0.50" NeFeB disk magnet at each end of the glass slide to hold it to the Multi-Sample Chuck. See [Figure 460.5i](#).

Figure 460.5i Glass slide held by magnets onto the Multi-Sample Chuck



CAUTION:

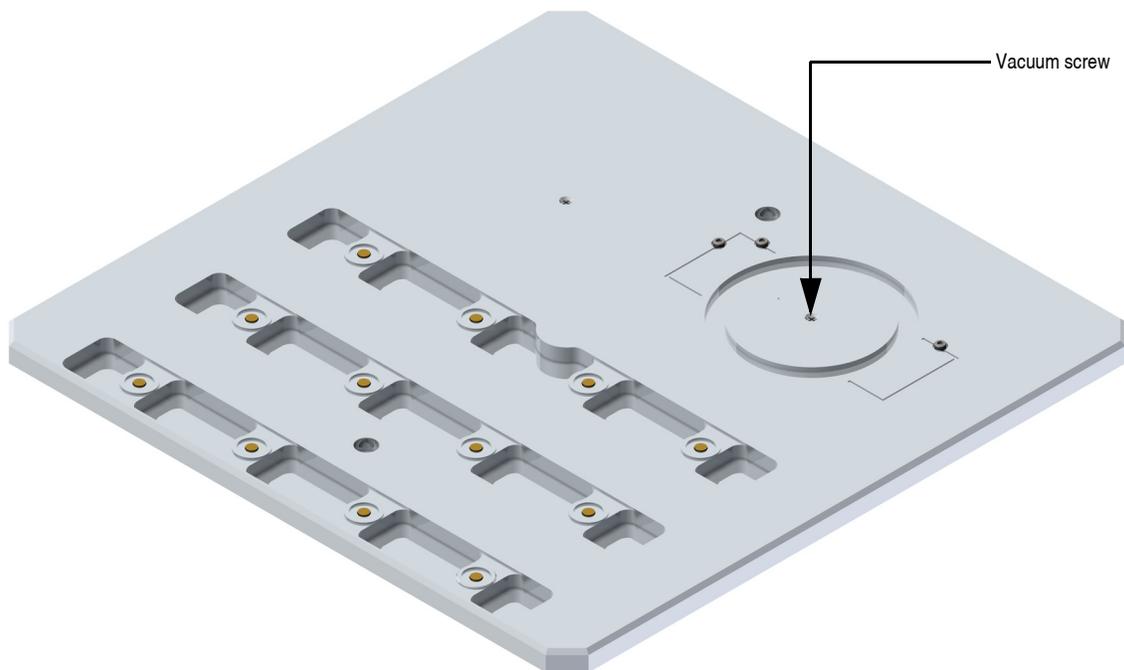
When moving the XY stage, ensure that the Dimension Icon head is raised sufficiently so as not to hit the magnets holding the glass slide in place.

460.5.4 Miscellaneous Samples

Miscellaneous samples may be held down by the second vacuum hole in the Multi-Sample Chuck.

Plug the vacuum line under the petri dish when using the second vacuum hole. See [Figure 460.5j](#).

Figure 460.5j Vacuum screw for petri dish



WARRANTY INFORMATION

This product is covered by the terms of the Bruker standard warranty as in effect on the date of shipment and as reflected on Bruker's Order Acknowledgement and Quote. While a summary of the warranty statement is provided below, please refer to the Order Acknowledgement or Quote for a complete statement of the applicable warranty provisions. In addition, a copy of these warranty terms may be obtained by contacting Bruker.

WARRANTY. Seller warrants to the original Buyer that new equipment will be free of defects in material and workmanship for a period of one year commencing (x) on final acceptance or (y) 90 days from shipping, whichever occurs first. This warranty covers the cost of parts and labor (including, where applicable, field service labor and travel required to restore the equipment to normal operation).

Seller warrants to the original Buyer that replacement parts will be new or of equal functional quality and warranted for the remaining portion of the original warranty or 90 days, whichever is longer.

Seller warrants to the original Buyer that software will perform in substantial compliance with the written materials accompanying the software. Seller does not warrant uninterrupted or error-free operation.

Seller's obligation under these warranties is limited to repairing or replacing at Seller's option defective non-expendable parts or software. These services will be performed, at Seller's option, at either Seller's facility or Buyer's business location. For repairs performed at Seller's facility, Buyer must contact Seller in advance for authorization to return equipment and must follow Seller's shipping instructions. Freight charges and shipments to Seller are Buyer's responsibility. Seller will return the equipment to Buyer at Seller's expense. All parts used in making warranty repairs will be new or of equal functional quality. The warranty obligation of Seller shall not extend to defects that do not impair service or to provide warranty service beyond normal business hours, Monday through Friday (excluding Seller holidays). No claim will be allowed for any defect unless Seller shall have received notice of the defect within thirty days following its discovery by Buyer. Also, no claim will be allowed for equipment damaged in shipment sold under standard terms of F.O.B. factory. Within thirty days of Buyer's receipt of equipment, Seller must receive notice of any defect which Buyer could have discovered by prompt inspection. Products shall be considered accepted 30 days following (a) installation, if Seller performs installation, or (b) shipment; unless written notice of rejection is provided to Seller within such 30-day period.

Expendable items, including, but not limited to, lamps, pilot lights, filaments, fuses, mechanical pump belts, V-belts, wafer transport belts, pump fluids, O-rings and seals ARE SPECIFICALLY EXCLUDED FROM THE FOREGOING WARRANTIES AND ARE NOT WARRANTED. All used equipment is sold 'AS IS, WHERE IS,' WITHOUT ANY WARRANTY, EXPRESS OR IMPLIED.

Seller assumes no liability under the above warranties for equipment or system failures resulting from (1) abuse, misuse, modification or mishandling; (2) damage due to forces external to the machine including, but not limited to, acts of God, flooding, power surges, power failures, defective electrical work, transportation, foreign equipment/attachments or Buyer-supplied replacement parts or utilities or services such as gas; (3) improper operation or maintenance or (4) failure to perform preventive maintenance in accordance with Seller's recommendations (including keeping an accurate log of preventive maintenance). In addition, this warranty does not apply if any equipment or part has been modified without the written permission of Seller or if any Seller serial number has been removed or defaced.

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