

# **MX3 pucks, pins, and tools information**

# Puck compatibility **BEFORE** MX2 upgrade (end of 2025)

MX1

MX2

MX3

'Old' Australian  
Synchrotron pucks



Unipucks



# Puck compatibility **AFTER** MX2 upgrade (end of 2025)

MX1

MX2

MX3

'Old' Australian  
Synchrotron pucks



Unipucks



# old system

8 pucks per cradle



# new system

7 pucks per cradle



# old system

8 pucks per cradle

No puck lids needed

Pins are picked up  
by their bases



# new system

7 pucks per cradle

Lids required

Pins are picked up  
'upright'





# old system

8 pucks per cradle

No puck lids needed

Pins are picked up  
by their bases

No 'notches' or internal  
thread



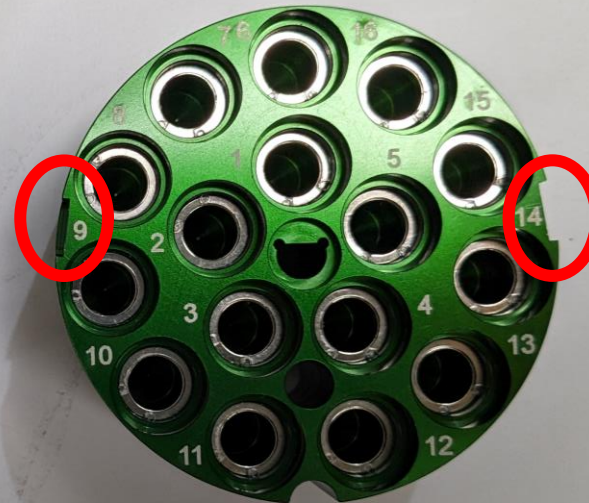
# new system

7 pucks per cradle

Lids required

Pins are picked up  
'upright'

Notches and internal  
thread needed



# old system

8 pucks per cradle

No puck lids needed

Pins are picked up by their bases

No 'notches' or internal thread

Engraved ID



# new system

7 pucks per cradle

Lids required

Pins are picked up 'upright'

Notches and internal thread needed

Engraved ID and QR code

# old system

8 pucks per cradle

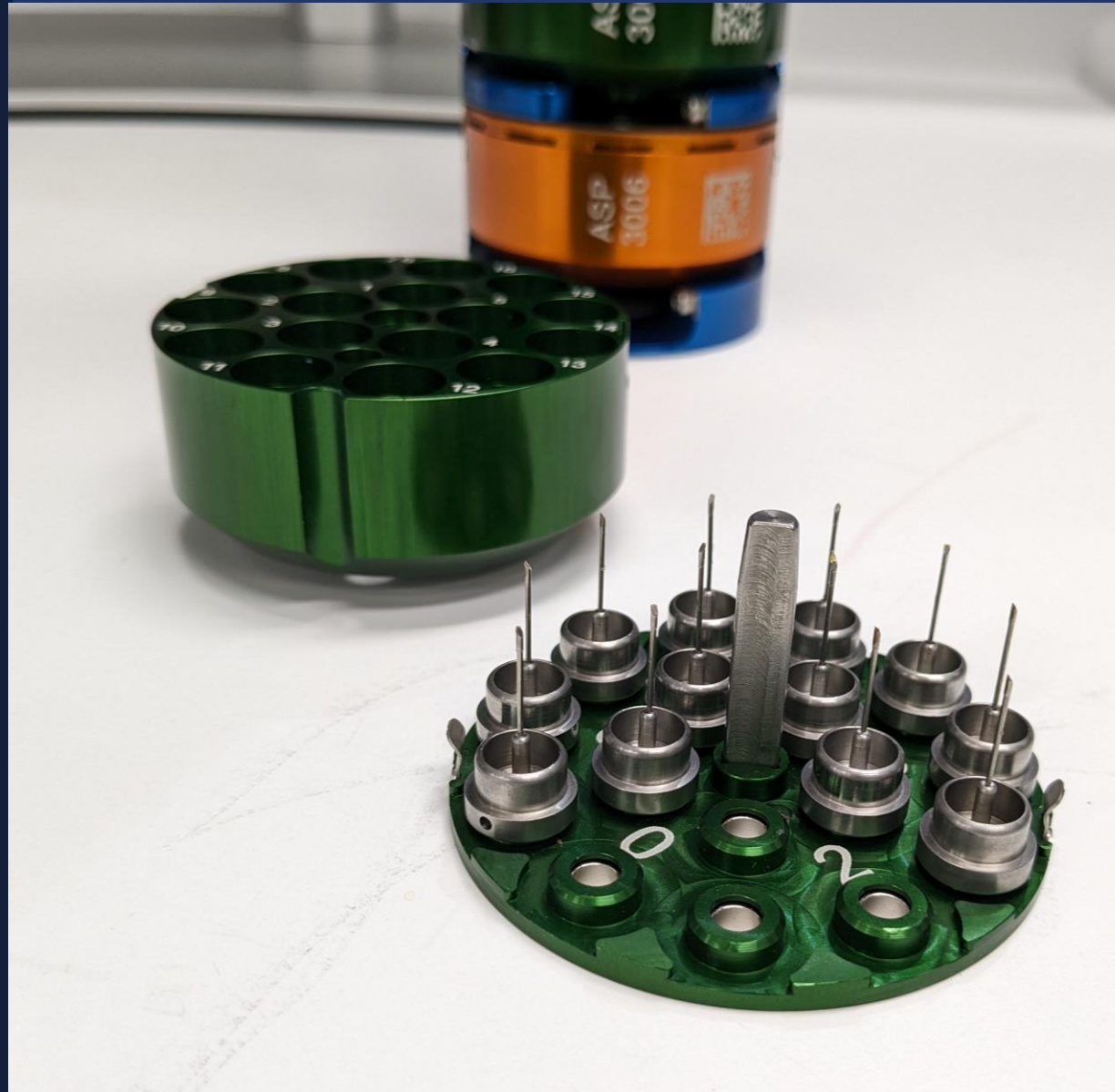
No puck lids needed

Pins are picked up  
by their bases

No 'notches' or internal  
thread

Engraved ID

Pin free-for-all



# new system

7 pucks per cradle

Lids required

Pins are picked up  
'upright'

Notches and internal  
thread needed

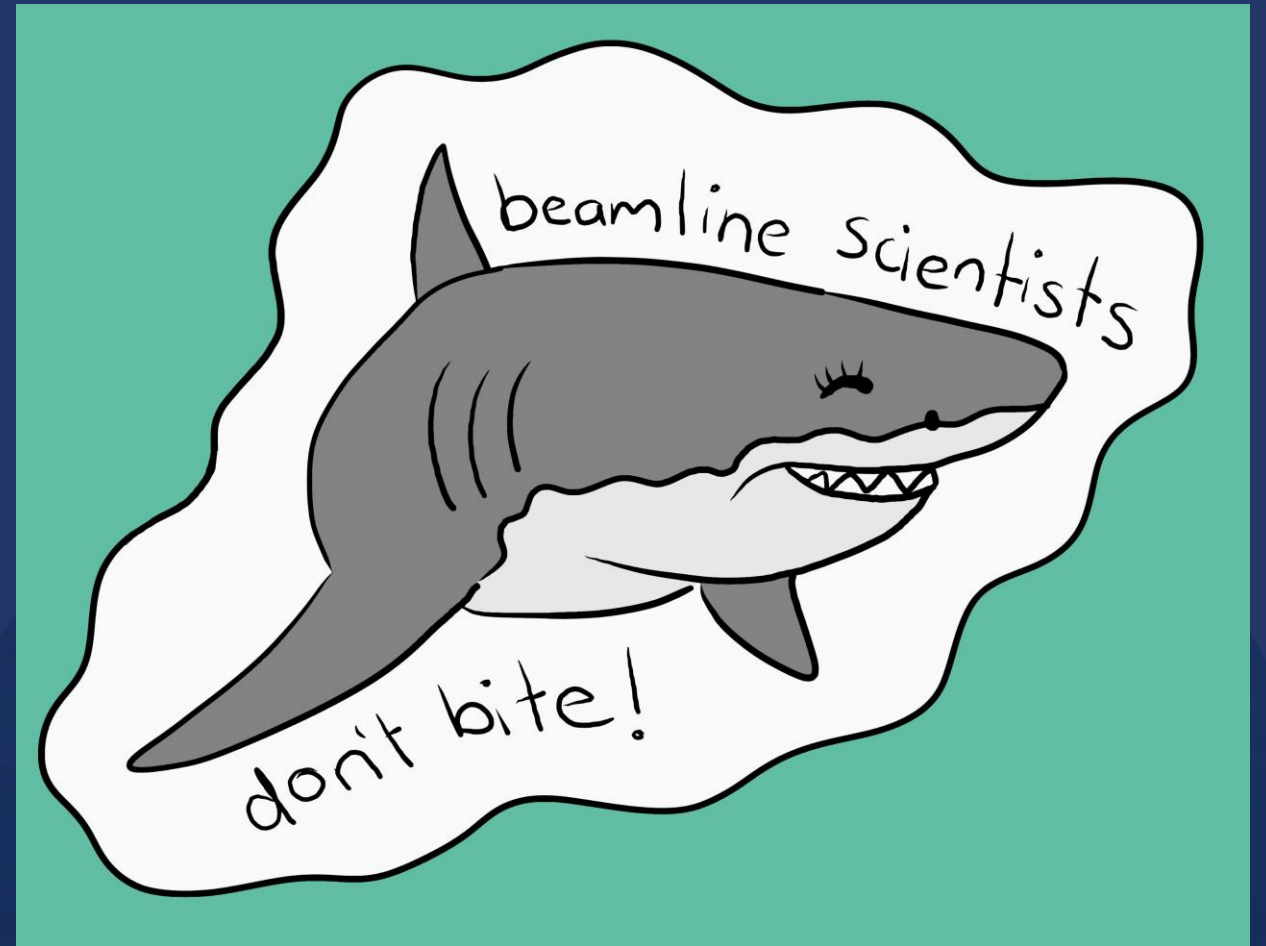
Engraved ID  
and QR code

One type of pin  
per puck  
(ideally B5 SPINE type)



If you haven't already arranged to have your existing old pucks modified, please get in touch with Eleanor for options:

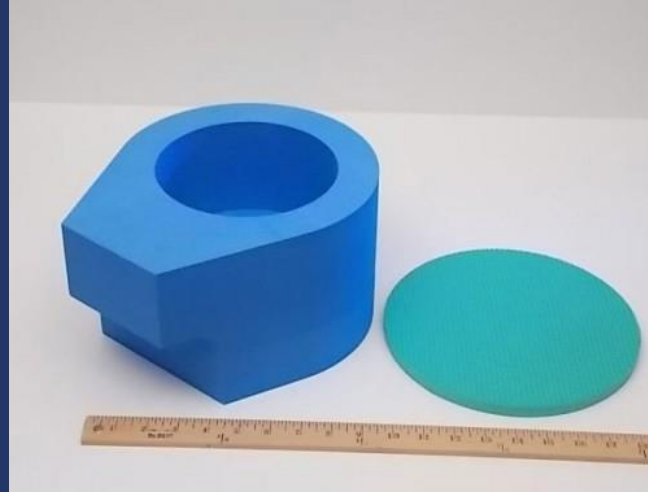
[campbele@ansto.gov.au](mailto:campbele@ansto.gov.au)



## Tools you might already have if you send pucks to MX1 and MX2



Cryo tongs



Foam dewar



Magnetic pin wand

These are the standard tools you might use to load pins into pucks under LN<sub>2</sub>, then handle the cold puck into the cradle in your shipping dewar.

# Tools you might need for using Unipucks



Puck wand base holder tool

For putting the lid on your puck after you've filled it with pins. It's just a steel disc on an LN2-safe plastic rod, could be made in-house if you're handy.

Watch this video from Diamond Lightsource for demo of Unipuck loading with this tool:

<https://www.youtube.com/watch?v=20z5N5SOAIk>



Puck separator tools

For popping the lids off your pucks while keeping everything underneath LN2.

Watch this video from Diamond Lightsource for demo of Unipuck lid separation with this toolset:

<https://www.youtube.com/watch?v=20z5N5SOAIk>

# Unipuck kit from Crystal Positioning

HOME / UNIPUCKS



## Universal Puck Kit #1

**\$4,297.40**

In \$ USD

This Universal Puck Kit #1 Contains the following:

7 Universal Pucks (CP-111-021-7)

1 Double Puck Loading Dewar with Lid (CP-111-022)

1 Puck Shipping Cane with Locking T-Handle & Lifting J-Hook (CP-111-065)

1 Puck Wand (CP-111-026)

1 Puck Dewar Loading Tool \ Puck Pusher (CP-111-027)

1 Puck Separator Tool & Base (CP-111-028)

1 Bent Cryo-Tong (CP-111-030)

\* Puck Kit Shipping \ Carry Case is Sold Separately as CP-111-061

This is a tool we use at MX to load your pucks into the dewar, you won't need one in your lab

I prefer the bent tongs to the flat ones

- 1 +

ADD TO CART

# If you're getting pucks and cradles modified via MX:

HOME / UNIPUCKS



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- 1 +

**ADD TO CART**

Your existing pucks will be modified, and if you're buying lids through MX, no need to buy those from CPS either

Your shipping cane/cradle will be modified, no need for T bar or J hook

**You can buy the individual tools separately too**








# Unipuck kit from Mitegen

## Universal Puck (Uni-Puck) Starter Kits

To get you up-and-running sending samples to the beamline in easy-to-order bundles.

FULL DESCRIPTION

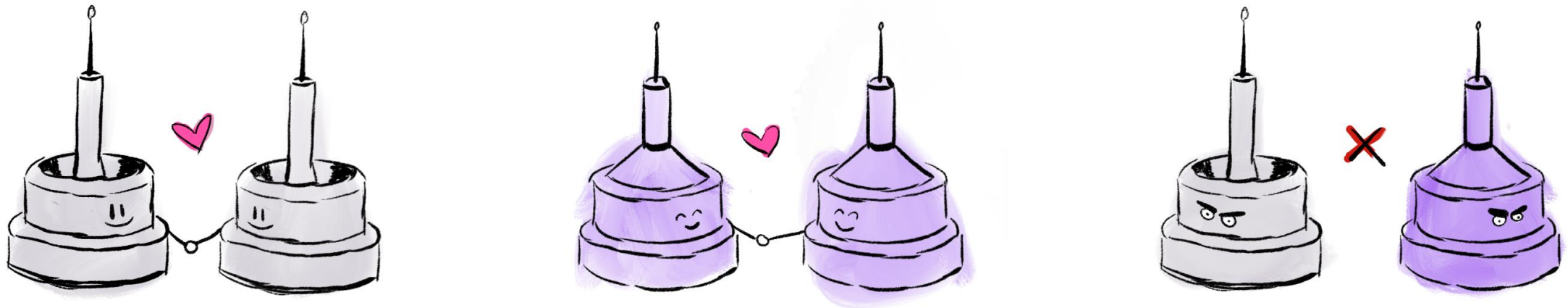
<input type="text" value="0"/>		Uni-puck Starter Kit 1 SKU: M-CP-UPSK001	\$4,290.00
<input type="text" value="0"/>		Uni-Puck Starter Kit 2 SKU: M-CP-UPSK002	\$6,327.00
<input type="text" value="0"/>		Uni-Puck Starter Kit 3 SKU: M-CP-UPSK003	\$8,092.00
<input type="text" value="0"/>		Uni-Puck Starter Kit 3 (x2) SKU: M-CP-UPSK003-2	\$16,134.00
<input type="text" value="0"/>		Storage Case for Uni-Puck Starter Kit SKU: M-CP-UPSK-C1	\$359.00

<https://www.mitegen.com/product/universal-pucks-starter-kits/>

Starter kit 1 is identical to CPS, similar price.

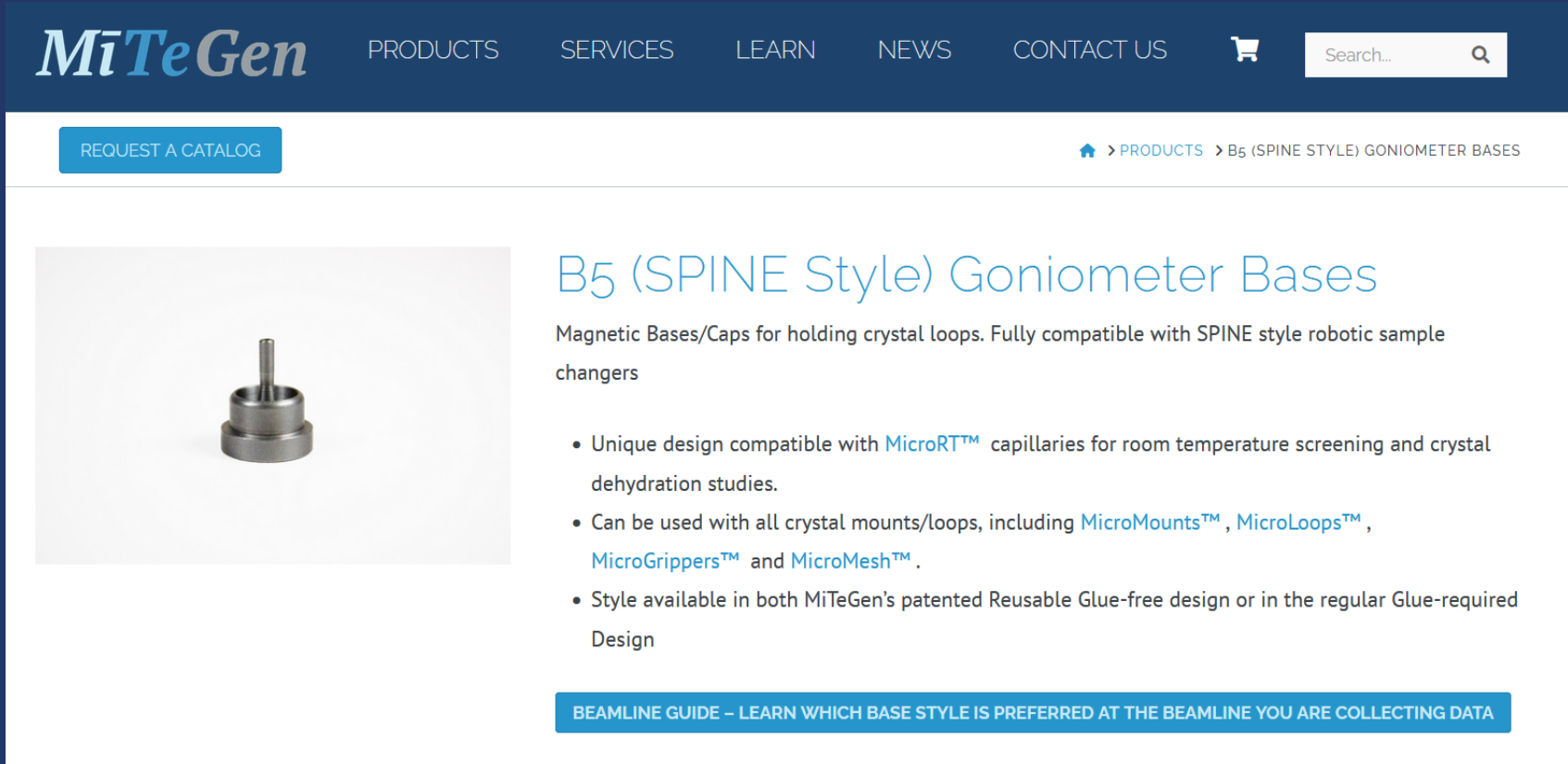
# Pin bases

## When filling pucks for MX3



**only one type of pin per puck!**

# Pin bases: we recommend B5 SPINE style



The screenshot shows the MiTeGen website's product page for B5 (SPINE Style) Goniometer Bases. The page features a dark blue header with the MiTeGen logo and navigation links for PRODUCTS, SERVICES, LEARN, NEWS, and CONTACT US. A search bar is located in the top right corner. Below the header, there is a white navigation bar with a 'REQUEST A CATALOG' button on the left and a breadcrumb trail: 'HOME > PRODUCTS > B5 (SPINE STYLE) GONIOMETER BASES'. The main content area has a white background and includes a product image of a metallic pin base on the left. To the right of the image, the title 'B5 (SPINE Style) Goniometer Bases' is displayed in a large, light blue font. Below the title, a descriptive paragraph states: 'Magnetic Bases/Caps for holding crystal loops. Fully compatible with SPINE style robotic sample changers'. A bulleted list follows, detailing the product's features: compatibility with MicroRT™ capillaries, use with various crystal mounts/loops (MicroMounts™, MicroLoops™, MicroGrippers™, and MicroMesh™), and availability in both Reusable Glue-free and regular Glue-required designs. At the bottom of the main content area, a blue button reads 'BEAMLINE GUIDE - LEARN WHICH BASE STYLE IS PREFERRED AT THE BEAMLINE YOU ARE COLLECTING DATA'.

If you're buying new pin bases, we would recommend SPINE style.

They are lighter than the B3 style, so equilibrate faster when taken from LN2 and mounted on the goni (thermal expansion)

B5 SPINE pins are compatible with MX1, MX2 and MX3.

You can use any loop style as long as your pin bases are consistent per puck.

<https://www.mitegen.com/product/b5-spine-style-goniometer-bases/>

## Pin length: 22 mm +/- 0.5 mm

The cryojet on MX3 is at an angle to the goniometer, rather than in line with the direction of the pin.



This means pin length is more important because pins too long or too short will spend a bit of time outside the main flow of the N<sub>2</sub>.

Automated centering will minimise this time, but we would still recommend 22 mm pin lengths for MX3

