

MPM-Probe Mount-1AS

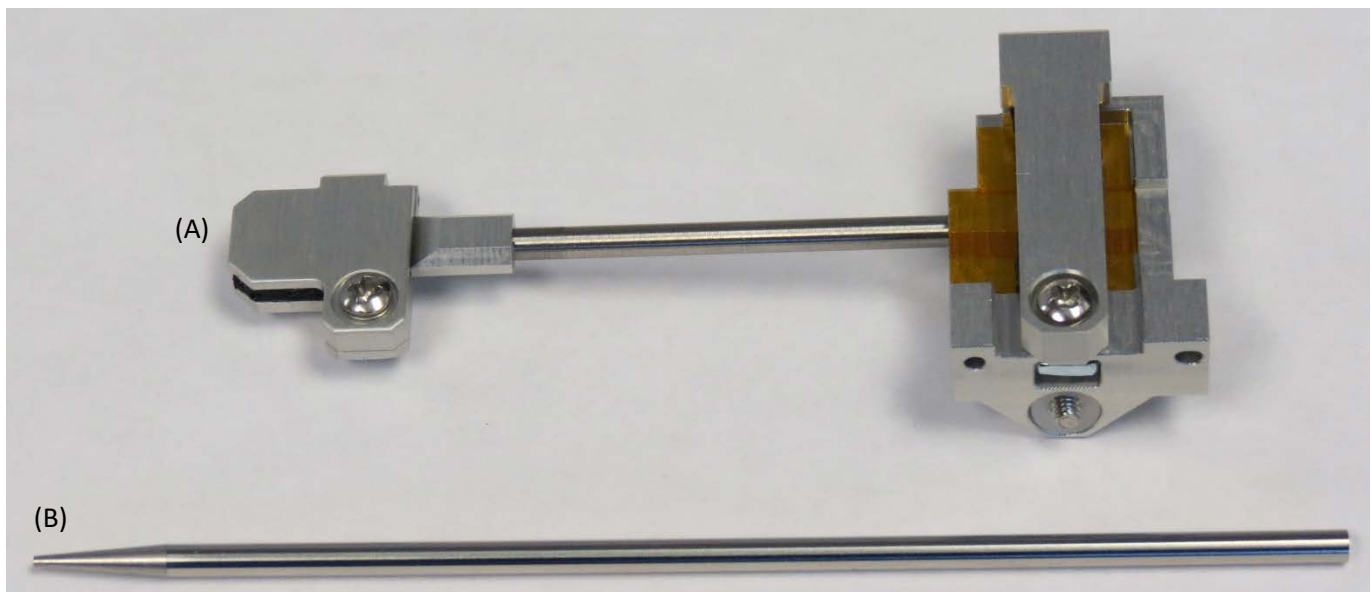
Item # 07022-3-0002

Description: A hardware kit that mounts an IMEC silicon probe (not provided) to the Z-axis stage of a New Scale M3-LS-3.4-XYZ-MPM assembly, for use with a Multi-Probe Micromanipulator 4 Degree of Freedom Arm (MPM-4 DOF Arm-Upright and/or MPM-4 DOF Arm-Inverted).

This Probe Mount is designed for Neuropixels 1.0 Neural Probes and is compatible with both packaged versions: flat silicone cap and stainless steel dovetail.

MPM-Probe Mount-1AS

(A) Probe Mount 1AS and (B) steel reference probe

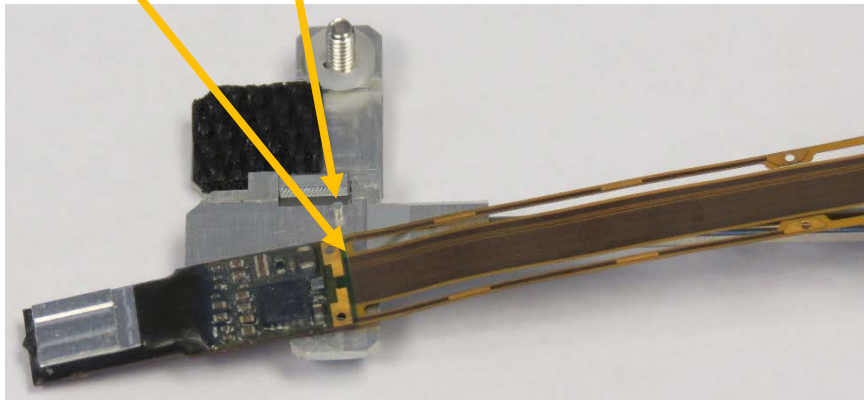


NOTE: Actual probe mount may differ from color/material shown.

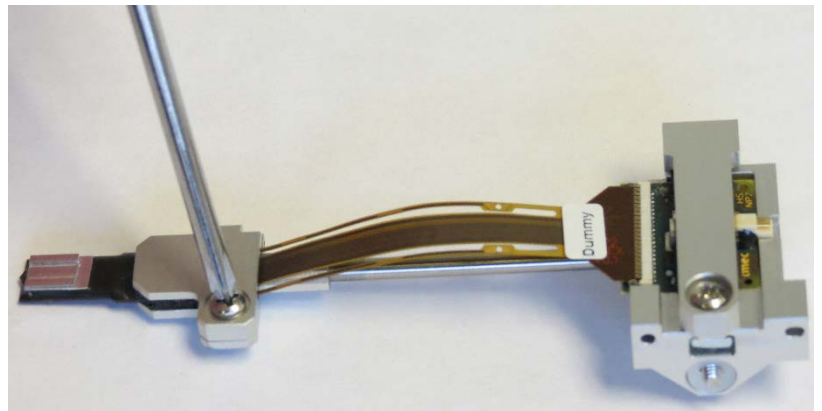
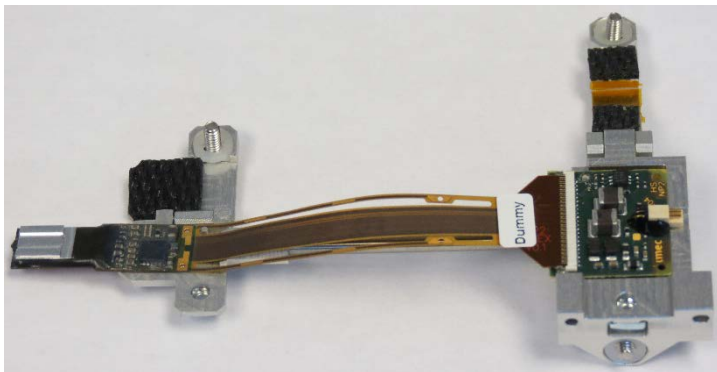
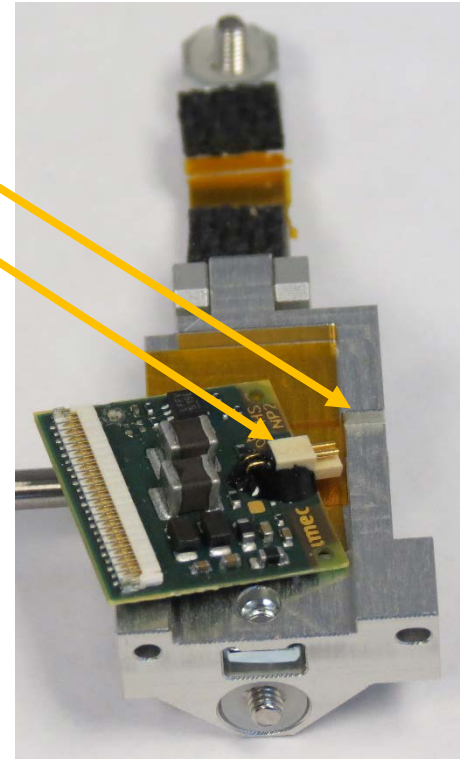
Install a probe into MPM-Probe Mount-1AS

Install IMEC probe into the probe mount using the screwdriver provided with an MPM-System Kit, as shown.

Place slot of FPC over post

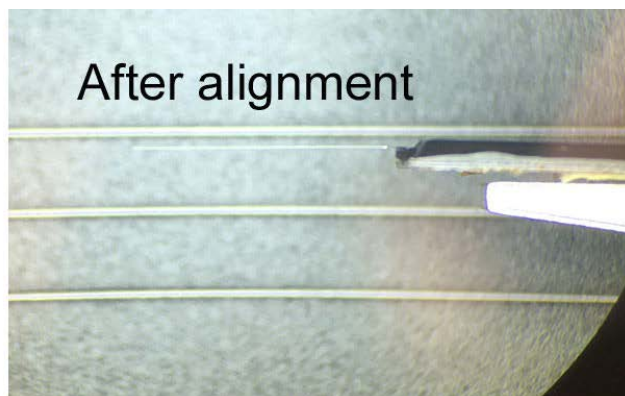
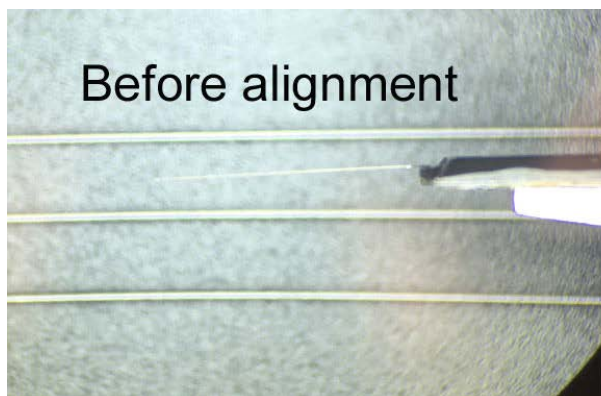


Place tab into slot

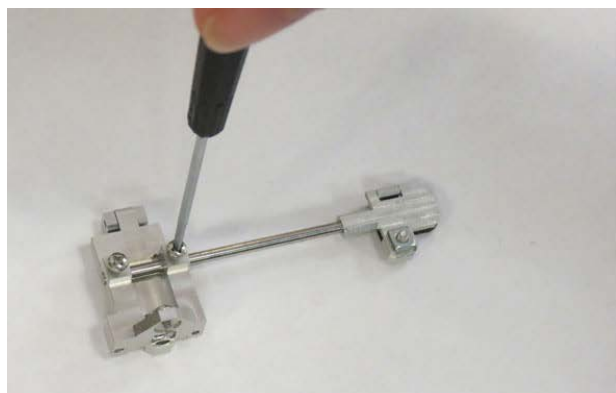


MPM-Probe Mount-1AS Probe Alignment

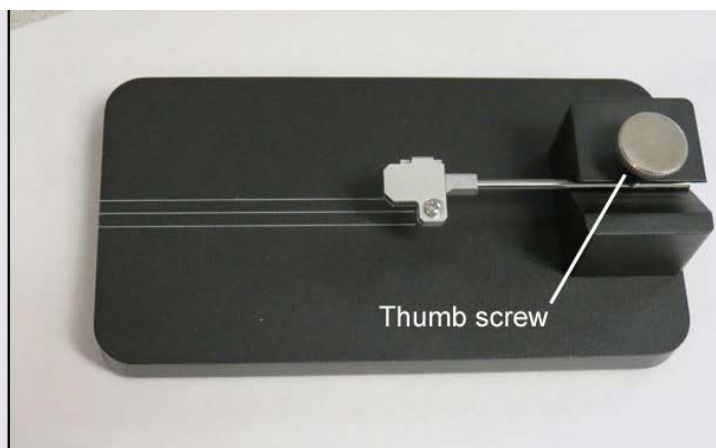
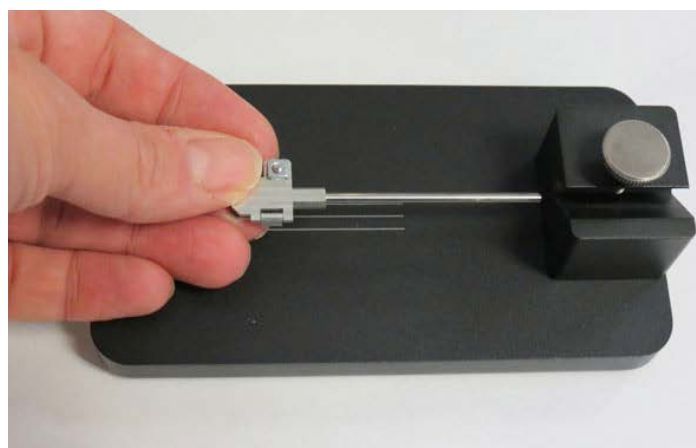
Due to manufacturing variations in the circuit boards of the Neuropixels probes, researchers often need to add shims between the circuit board and probe holder to achieve proper alignment. It is highly recommended that alignment is performed with the aid of an alignment fixture (shown here using New Scale Technologies Item # 07608-3-0000 Alignment Fixture, MPM-Probe Mount).



1. Use a screwdriver to loosen the two screws in the MPM-Probe Mount-1AS base. Remove the probe holder from the base.

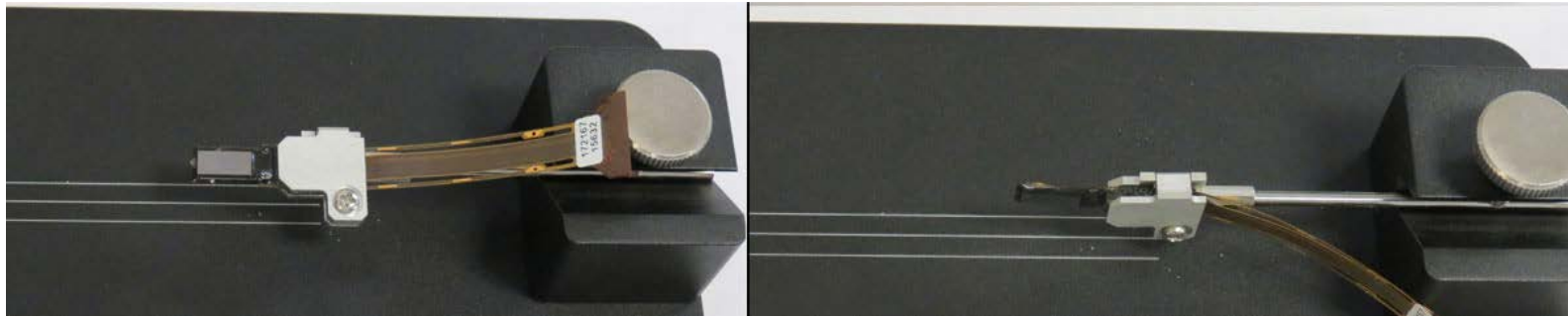


2. Loosen the thumbscrew of the Alignment Fixture. Slide the probe holder into the v-groove. With the probe holder in the orientation shown, tighten the thumbscrew.



MPM-Probe Mount-1AS Probe Alignment (continued)

3. Install the probe in the probe mount as shown in previous sections. Check the alignment of the probe shank under a microscope, using the reference lines in the Alignment Fixture. The probe holder can be rotated 360° in the Alignment Fixture. Only the two orientations shown here are needed to check for proper alignment.

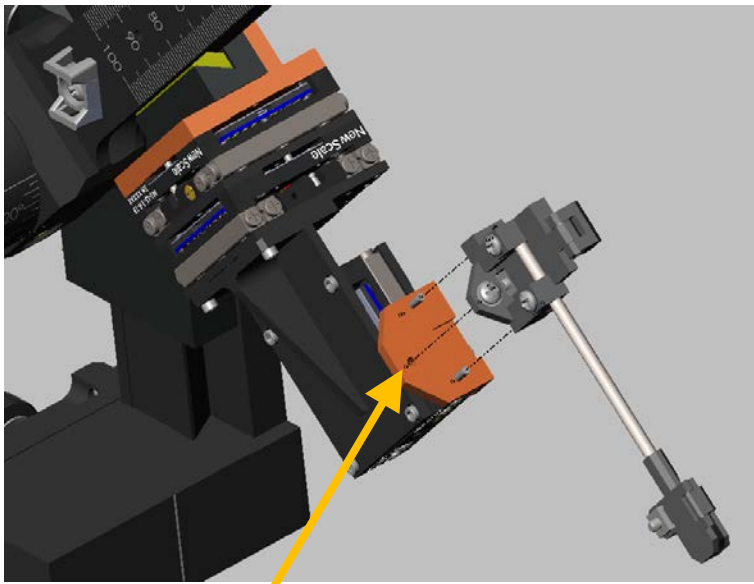


4. If needed, loosen the probe clamp screw and use shimming material (for example, Kapton Tape ~24 micron thick) between the probe PCB and the Probe Holder to adjust alignment. Re-tighten the probe clamp's screw and check again.

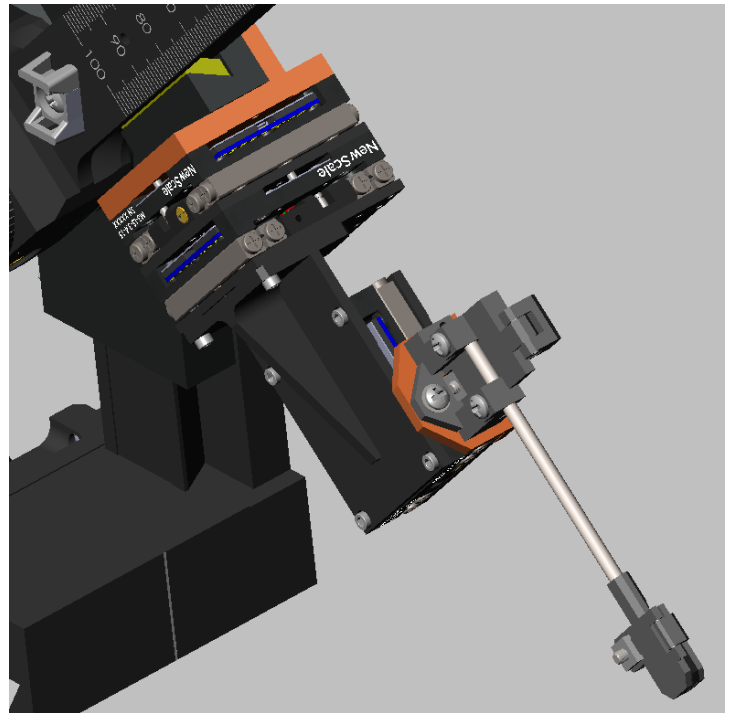
Install MPM-Probe Mount-1AS onto M3-LS-3.4-XYZ-MPM assembly

Use the captive screw and screwdriver to mount the MPM-Probe Mount-1AS to the mount bracket on the Z-axis stage of the M3-LS-3.4-XYZ-MPM assembly.

NOTE: See 07022-8-0002, MPM-Probe Mount-1AS specification drawing for more information on mounting requirements.



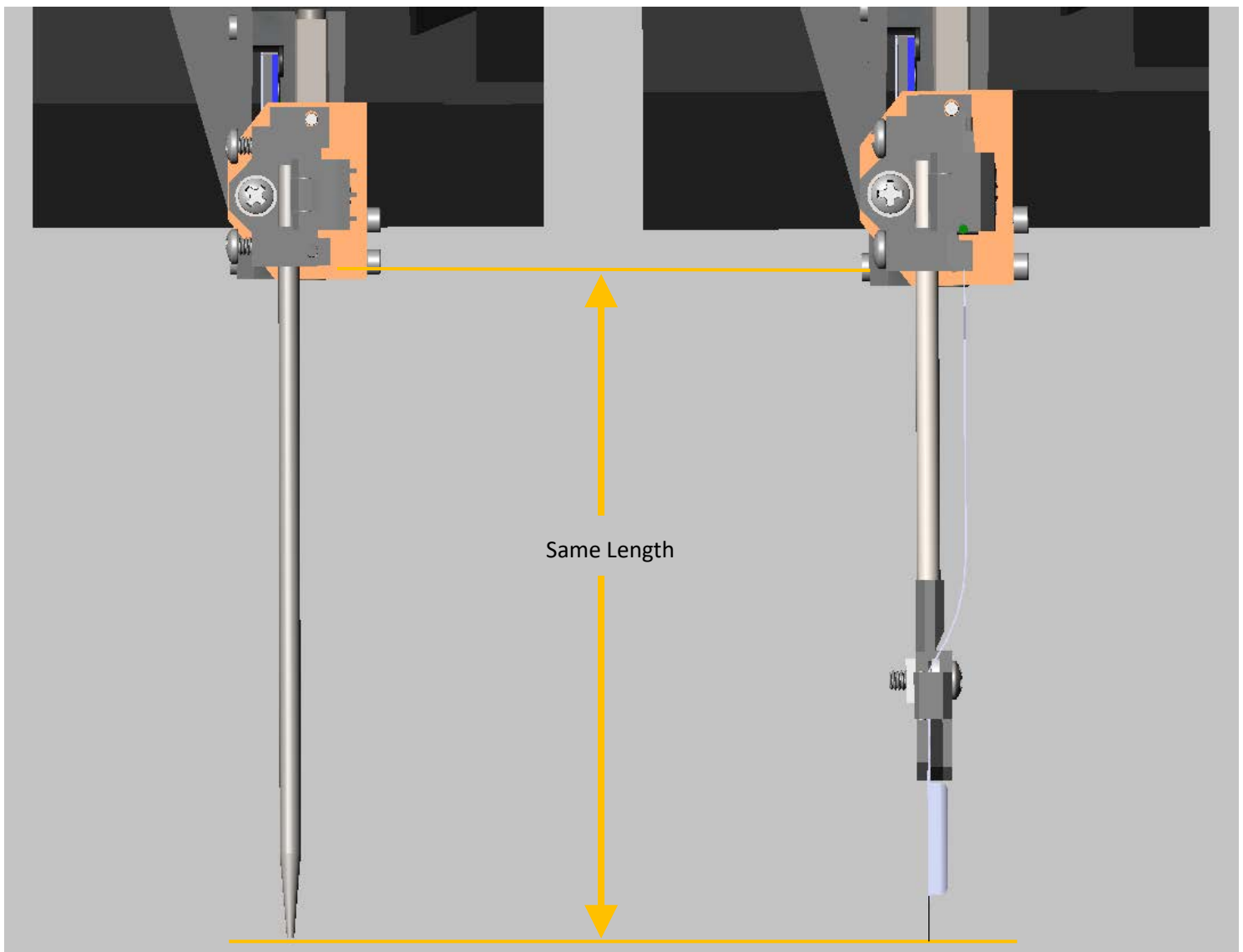
Tapped hole to mount Probe Mount onto
M3-LS-3.4-XYZ-MPM Assembly



Using the Reference Probe to Pre-Align the MPM-4 DOF Arm

A steel reference probe is provided to allow pre-alignment of the MPM-4 DOF Arm without risking damage to the probe. To make the best use of the steel reference probe, the distance from the base to the tip of the probe should be known and constant. The steel reference probe is used as follows:

1. Remove the ceramic rod from the base and replace it with the steel reference probe as shown.
2. Adjust the steel reference probe to the same length as the IMEC probe as shown.
3. With the Arm in the down position, complete pre-alignment of the MPM-4 DOF Arm's vertical, horizontal and insertion angle adjustments to place the steel reference probe tip at the correct insertion angle and starting location.
4. Move the Arm to the up position and replace the steel reference probe with the IMEC probe.
5. Move the Arm to the down position and operate XYZ manipulator to place probe and begin recording.



For questions and support, please contact:

New Scale Technologies
121 Victor Heights Parkway
Victor, NY 14564

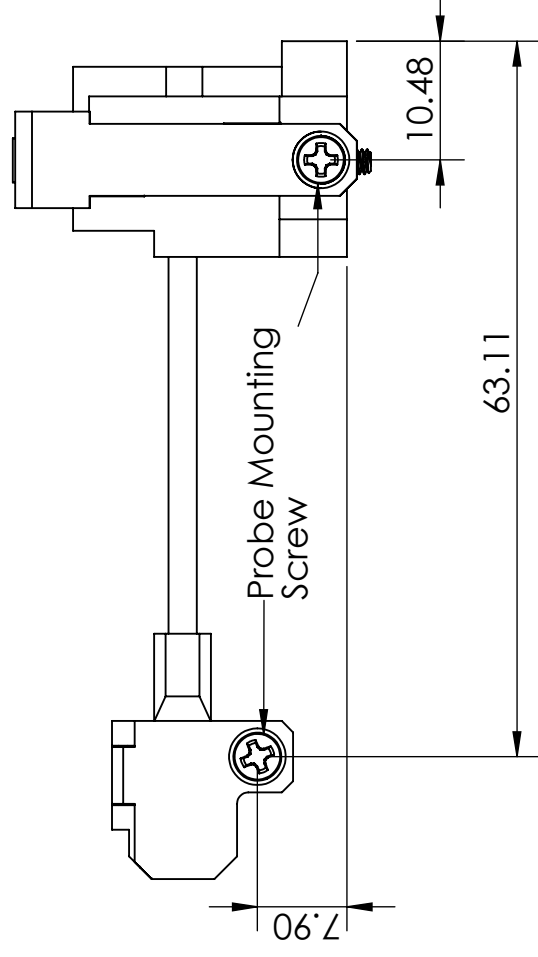
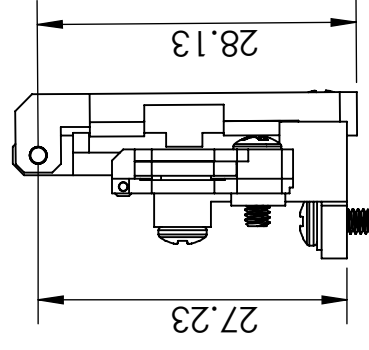
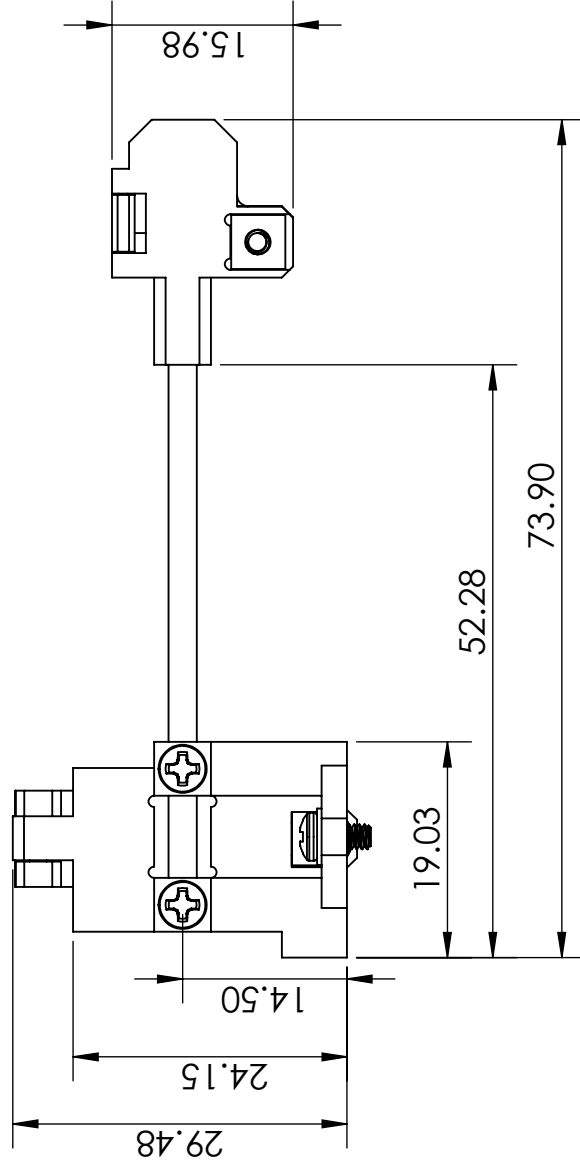
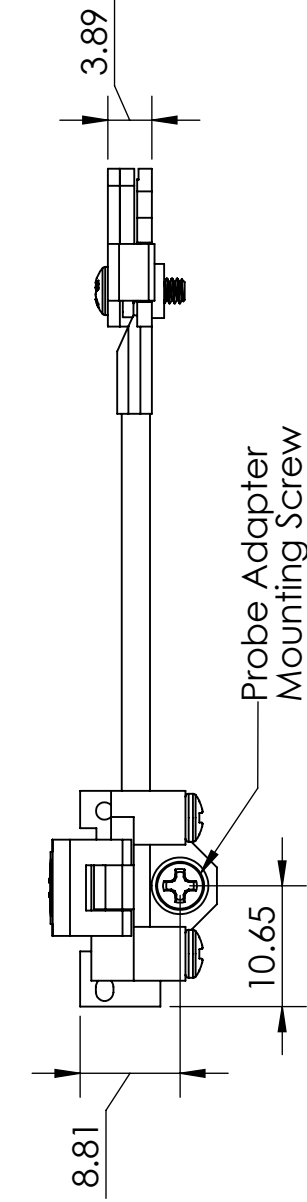
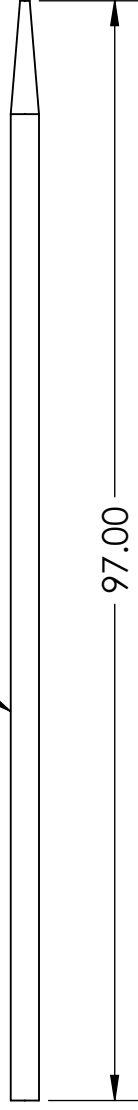
Phone: 585-924-4450

Online: www.newscaletech.com

Revision History

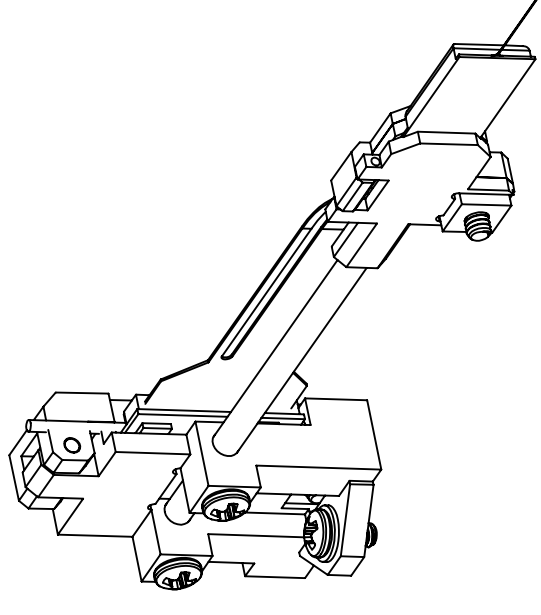
Revision	Description of changes	Release Date
A	Initial Release	Mar 15, 2018
B	Updated graphics to show M3-LS-3.4 stages instead of M3-LS-1.8 stages, updated note about probe mount compatibility on page 1, added 07022-8-0000 specification drawing	May 1, 2019
C	Updated graphics to show all metal probe mount, remove references to obsolete parts, update specification drawing to 07022-8-0002	January 9, 2020
D	Added section on probe alignment starting on page 3	April 12, 2022

REFERENCE PROBE



Probe Mount Specifications	
Parameter	Specification
Probe Mount Insertion/Removal	Single Mounting Screw
Orientation	Upright / Inverted
Weight (Probe Mount Only)	<= 10 grams
Total Weight with User Probe and Cabling	MAX 20 grams

NOTE: PROBE MOUNT IS DESIGNED FOR NEUROPIXELS 1.0 NEURAL PROBES AS DESCRIBED IN THE NEUROPIXELS 1.0 USER MANUAL V1.0.2 DATED 11 JAN 2019. CONTACT NEW SCALE TECHNOLOGIES IF DIFFERENT PROBES ARE REQUIRED.



REVISIONS				
REV.	DESCRIPTION	DATE	APPR'D	Change #
1	Initial draft	11/12/19	AS	
A	Initial Release	11/12/2019	AS	446

DRAWING NOTES:

THIS DOCUMENT CONTAINS THE PRODUCT SPECIFICATION FOR NST ITEM NUMBER 07022-3-0002



DRAWN: ASolomon



DATE: 11/11/19

Compliant to RoHS Directive 2002/95/EC

PRODUCT: MPM

DESCRIPTION: MPM-Probe Mount-1 AS

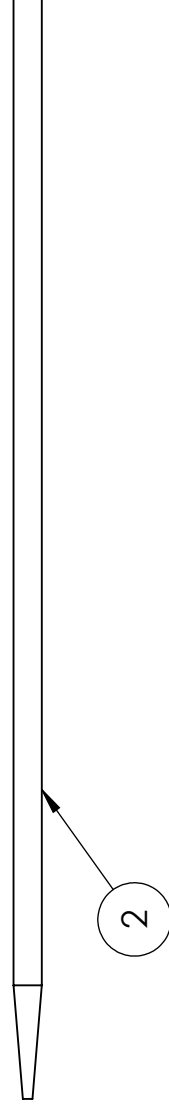
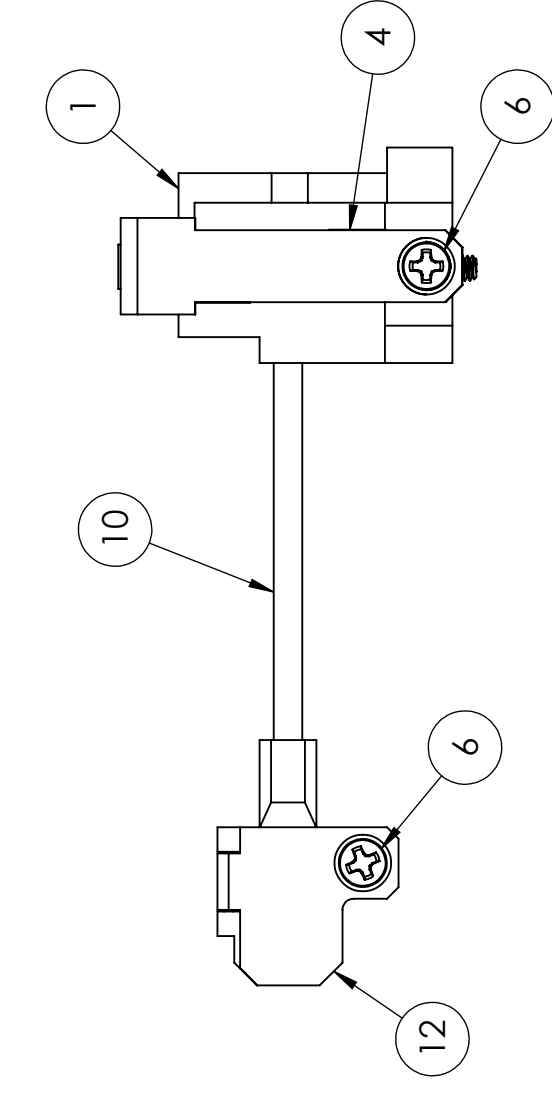
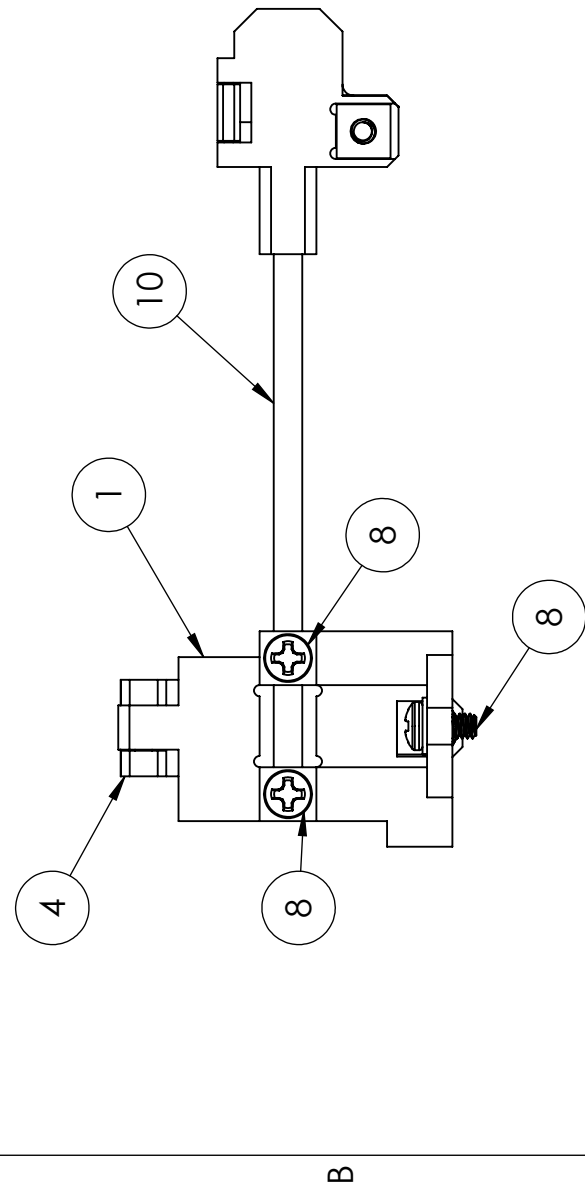
ALL UNITS mm

ENG: QX
MFG: JA

PART NO: A3

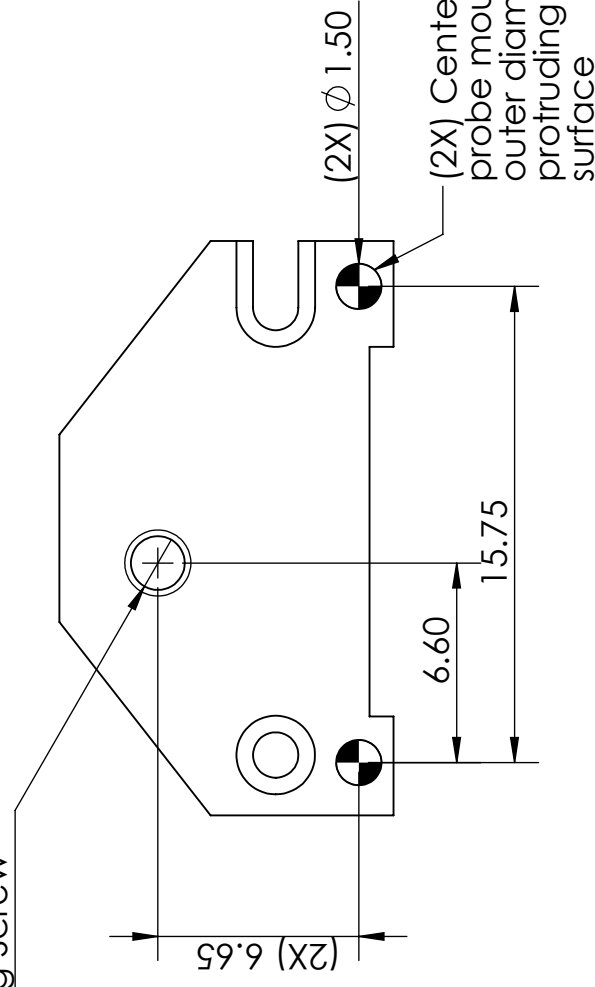
07022-8-0002

REV A



ϕ 1.78 THRU ALL
2-56 UNC THRU ALL
Tapped Hole for
Probe Adapter
Mounting Screw

Mounting Requirements
Adapter plate not included -
shown for illustration purposes only



(2X) Center of dowel for precise
probe mount location, 1.5mm
outer diameter, ~4mm length
protruding above mating
surface

ITEM NO.	PART NUMBER	DESCRIPTION	Probe Mount/QTY.
1	07021-0-0001	BASE, PROBE MOUNT 1A, Aluminum	1
2	06475-0-0000	Shaft, 97mm Length, pointed	1
3	06405-0-0000	Pin, Dowel, M1.5x8, 18-8SS	1
4	07025-0-0001	TOP CLAMP, PROBE MOUNT 1A, Aluminum	1
5	01946-0-0004	Washer, Nylon, 2-56 Self-Retaining	3
6	01945-0-0123	Scr, 2-56 x 1/4" Lg, PHH, Pnhd, 18-8SS	2
7	01946-0-0003	WASHER, M2, 2.2ID x 5 OD, 18-8SS	1
8	01945-0-0145	SCR, PHM, 2-56 x 3/16", PH, 18-8SS	3
9	07243-0-0000	Nut, Square, 2-56, steel	2
10	06474-0-0001	303 SS Rod, 2.49mm Dia. X 55.5mm Lg	1
11	07026-0-0001	Bottom Clamp, Probe Mount 1A, Aluminum	1
12	07027-0-0001	Small Clamp, Probe Mount 1A, Aluminum	1
13	01031-0-0034	PIN, DOWEL, M0.8x8, 18-8SS	1
14	06545-0-0000	FOAM STRIP, 1/2"W x 1/16" THICK	1

A3

PART NO: **07022-8-0002**

REV

A

SCALE: 1.5:1

SHEET 2 OF 2