

MAN01-07 – CRYO TIP / TILT / PISTON STAGE (CTTPS) USER MANUAL

CRYO & NANO PRODUCTS

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RELEVANT DOCUMENTATION

Ref	Title, Author
[1]	CNP_MAN00_Rxx_Getting-Started.pdf (JPE)
[2]	CNP_MAN02_Rxx_Software-User-Manual.pdf (JPE)
[3]	CNP_APNo1_Rxx_Connection-Overview.pdf (JPE)
[4]	CTTPSx_Datasheet.pdf (JPE)
[5]	

DOCUMENT HISTORY

JPE	2019-06-20	Ro1. Creation.
JPE	2023-02-17	Ro2. Update.

DEFINITIONS

ABBREVIATIONS

1. INTRODUCTION

Thank you for using JPE's Cryo & Nano Products!

This *User Manual* describes the handling and use of Cryo Tip / Tilt / Piston Stage (CTTPS), from here on described as stage).



Please read this document carefully prior to installation and (initial) operation of the controller, (stand-alone) positioners, actuators and stages. Failure to observe the safety regulations results in a risk of electric shock and/or damage to the controller(s), positioner(s), actuator(s) and/or stage(s)!

JPE shall not be liable for damage or injury resulting from misuse of the controller(s), positioner(s), actuator(s) and/or stage(s) or unauthorized alterations to either of those.

All products mentioned in this manual are intended for use in a laboratory and/or scientific research environment only and may only be installed, maintained and used by higher educated, technical skilled personnel (from here on described as operators).

Please note that all content in this document is superseded by any new versions of this document. Visit the JPE website (www.jpe-innovations.com) to obtain the most recent version. All images in this document are for illustrative purposes only.

1.1 Prerequisites

Before continuing with this user manual, please make sure to read and understand the contents of the (latest version of the) Cryo & Nano Positioning Products Getting Started Guide (MANoo).

2. INSIDE THE BOX

Systems will be delivered in a white-colored (membrane) polypropylene box. The stage is fixed onto the inner part of the polypropylene using fasteners. The inner part of the polypropylene box can be taken out and bend in such way that the actuators and/or systems can be easily unpacked.

Do not cut the membrane plastic. Keep the box in case products need to be returned.

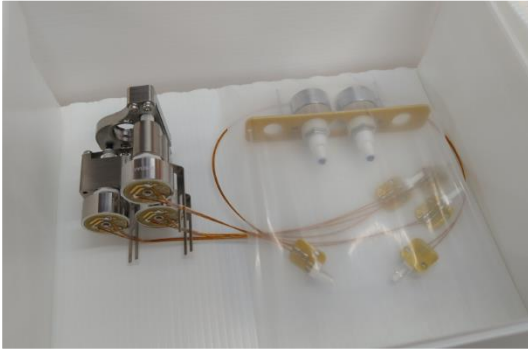


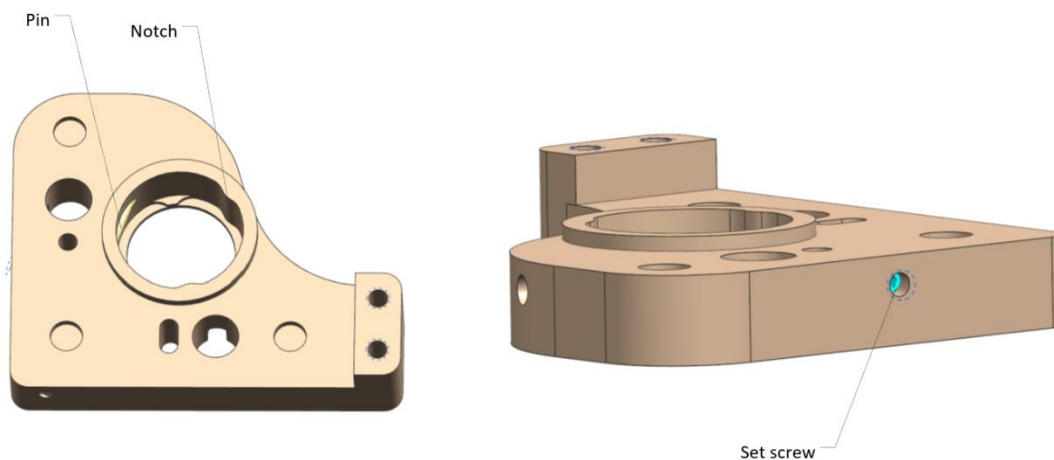
Figure 1: Example packaging with 1x CTTPS_{1/2}

3. MOUNTING INSTRUCTIONS

Consult the Datasheet for detailed dimensions and mounting interfaces.

Make sure the wiring to the Connector Interface PCB does not get damaged or stuck in the setup when mounting the CTTPS. Also take care not to damage the wiring to the positioners (as these wires are not covered).

1/2" - (CTTPS_{1/2}) or 1" - (CTTPS₁) optics can be fixed in the free aperture. The interface assumes a cylindrical part. It is side clamped by a flexible pin, which pushes the cylindrical part against 2 notches. The pushing force can be adjusted with a set screw.



4. CONNECTION TO THE CONTROLLER

Consult the Connection Overview application note for a simple and clear overview on how to connect positioners to the controller.

The CTTPS is assembled with a Connector Interface PCB already mounted onto the system. For each actuator in the CTTPS there is a 2-pin 2.54mm pitch header (*Molex KK 22-27-2021*) available.

The Ambient Cable (ACL) or Cryostat Cable (CCL) can be connected directly to the Connector Interface PCB. If any custom cabling is required, please consult the Getting Started Guide (MAN00) or the Connection Overview application note (APN01).

Pin configuration (for each axis, 1-3)	
Pin	Name
1	Cryo Actuator Signal (CA SIG)
2	Cryo Actuator REF (CA REF)

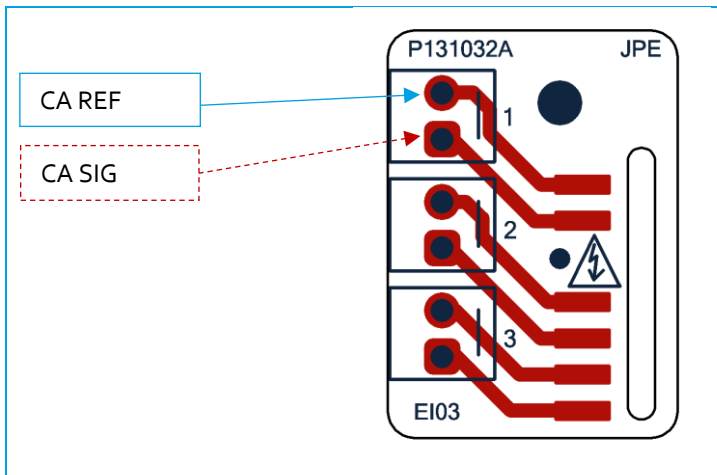


Figure 2: CTTPS Connector Interface PCB (top view)

The numbers (1, 2 and 3) next to each pin header indicates the axis number (which is engraved on the system as well).

Please note that (Piezo) REF is NOT the same as (system) GND or PE, so do not connect these to each other and do not use standard oscilloscope probes!

Because of design constraints, open voltage contacts are present!

Controller with Plug-in Modules ¹		
	Module	Slot #
Axis 1	CADM ₂ Output	1
Axis 2	CADM ₂ Output	2
Axis 3	CADM ₂ Output	3

¹ For available Modules see CNP-Products MAN01-09 (CPSC).

5. DECLARATION OF CONFORMITY

Manufacturer : JPE B.V.
Address : Aziëlaan 12
6199 AG Maastricht-Airport
The Netherlands

The manufacturer hereby declares that the product:

Product Name : **Cryo Tip Tilt Piston Stage (CTTPS)**
Product Description : **Cryogenic tip tilt stage (+ piston motion) with nanometer accuracy.**
Product Number : **C181048**

Complies with the following European directives:

2014/35/EU Low Voltage Directive
2014/30/EU EMC Directive
2011/65/EU RoHS

A copy of the Technical file for this equipment is available at JPE.

Maastricht-Airport, 29 June 2018



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