

CSR₁ – CRYO SAMPLE ROTATOR 1



Features

- Endless rotation
- Non-magnetic
- High torque output
- Central open aperture
- Integrated scanner functionality
- 20 mK to 375 K, vacuum compatible
- Position feedback option -RRS
- Robust design with ceramic roller bearings

Description / Applications

The CSR₁ is a compact rotational positioner with high torque output. The use of spring preloaded ceramic roller bearings results in a large load capacity. It is non-magnetic and can be fitted with a resistive sensor for closed loop control.

Specifications

General info	
Type of motion	Rotational
Dimensions	See drawings below
Operational environmental conditions	20 mK to 375 K, ambient to UHV
Weight	25 g
Central open aperture diameter	2 mm
Wobble, typical	±2 mrad
Stepping motion	
Travel range	Endless
Velocity @ 300 K	20 deg/s
Velocity @ 4 K	6 deg/s
Minimal step size @ 300 K	0,006 mrad
Minimal step size @ 4 K	0,003 mrad
Scanning motion	
Scanning range @ 300 K	0,6 mrad
Scanning range @ 4 K	0,2 mrad
Minimal step size	nrad
Drive voltage @ 300 K	-30 V to 120 V
Drive voltage @ 4 K	-30 V to 120 V
Forces and load capacity	
Driving torque @ 300 K	9 Nmm (0,9 Ncm)
Driving torque @ 4 K	6 Nmm (0,6 Ncm)
Load capacity, vertical rotation axis	200 g
Materials	
Main body	Titanium
Piezo actuator	Low voltage multilayer, ceramic insulated
Roller bearings	Ceramic
Model specific information	
-RRS	Resistive Rotary Sensor, typical resolution 10 µrad RMS, range 335 degrees
-V, -HV or -UHV	Level of vacuum compatibility, see the glossary on the homepage for details
Electronics CPSC	
Controller Base Cabinet	CAB
Driver for stepping and scanning	CADM
Position readout	RSM

Ordering Information

Available Models

CSR1-V	Cryo Sample Rotator 1
CSR1-RRS-V	Cryo Sample Rotator 1-Resistive Rotary Sensor

Available Options

-HV	Upgrade to High Vacuum compatibility
-UHV	Upgrade to Ultra High Vacuum compatibility

Accessories

AKM1	Accessory Kit Mechanical 1
AKE1	Accessory Kit Electrical 1

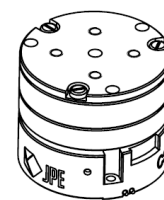
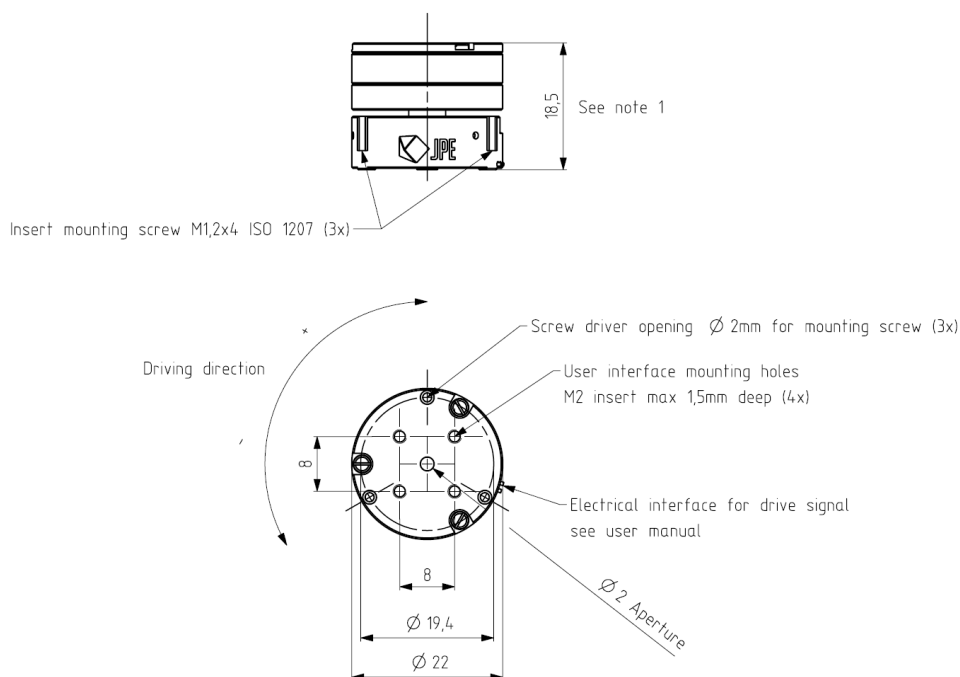
Mechanical and electrical information

Download 3D step files and manuals from:
<https://www.jpe-innovations.com/cryo-nano-products/>

Contact

For quotations, specials, or engineering services, please contact us at:
<https://www.jpe-innovations.com/contact/>

Drawings



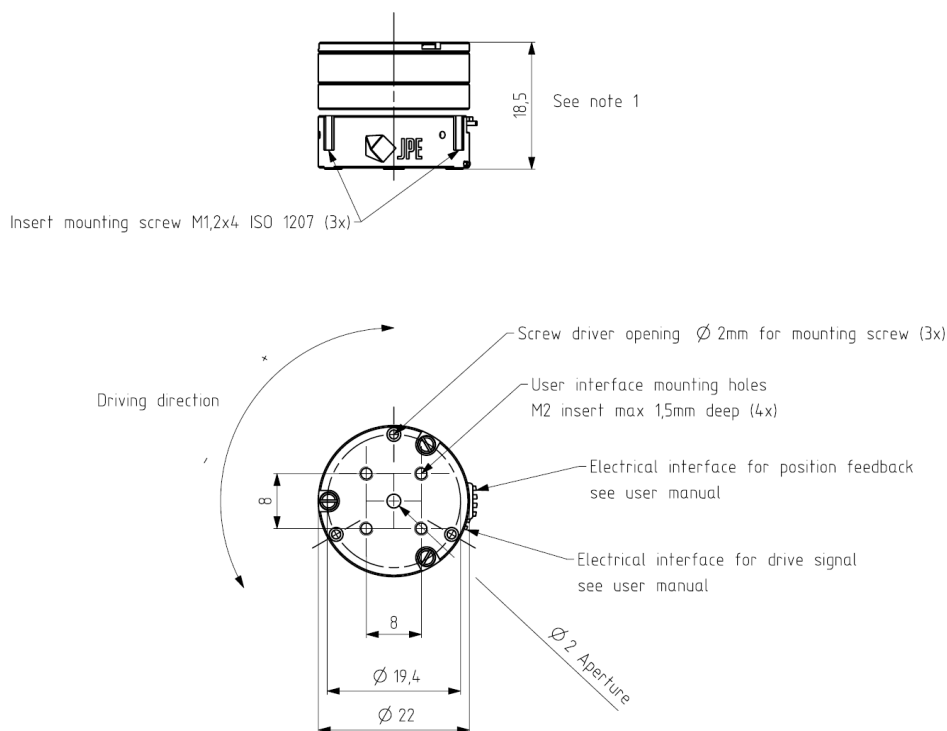
Max allowed torque on the sample table
while fastening the screws is 0,15Nm

Note 1: Starting from production number 2540XXXX and above, the total height is increased by 0,5 mm

PROJ.	SCALE	PART NAME	PART NUMBER
BY: JPE	2:1	CSR1	A001556
2022-SEP-23	MM	JPE Aziëlaan 12, 6199AG Maastricht-Airport NL	A3 SHEET 1 OF 1

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STATUS: RELEASED



Max allowed torque on the sample table
while fastening the screws is 0,15Nm

Note 1: Starting from production number 2540XXXX and above, the total height is increased by 0,5 mm

PROJ.	SCALE	PART NAME	PART NUMBER
BY: HELL	2:1	CSR1-RRS	A001625
2025-OCT-01	MM	JPE Aziëlaan 12, 6199AG Maastricht-Airport NL	A3 SHEET 1 OF 1

STATUS: RELEASED