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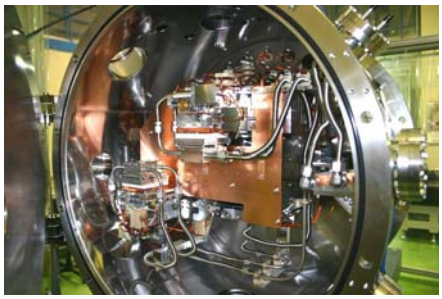
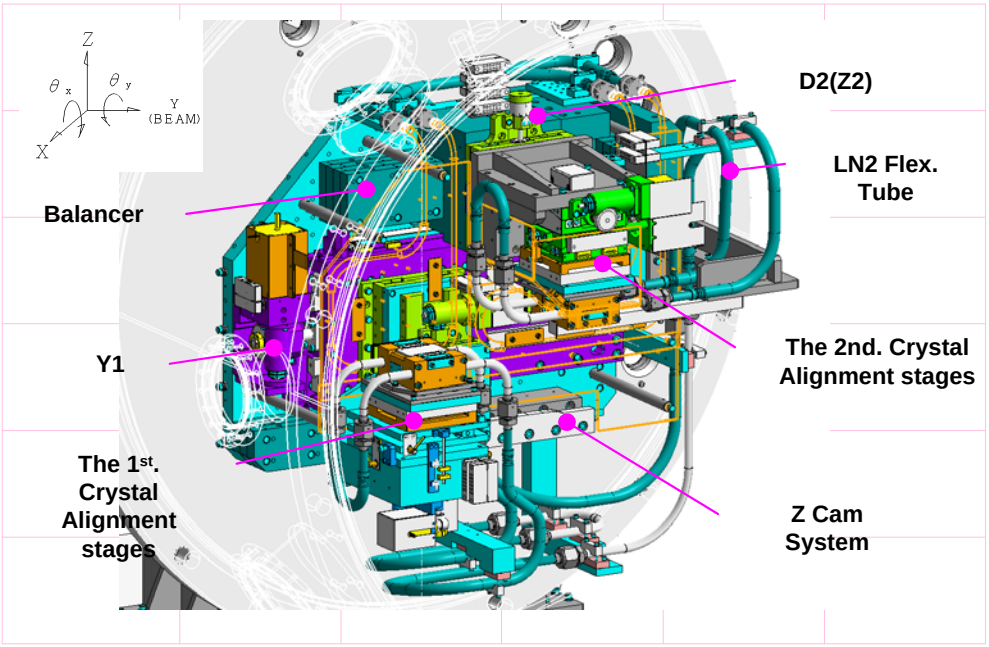
Pioneering the door to the future
with commitment to technology

Single Cam Type DCM <TWD-1C>

The main rotation axis coincides with the surface plane and center of the 2nd crystal. Shift of the 1st crystal position with respect to the incident beam, which would be caused by simple rotation of the table around the main axis is compensated by vertical motion of the 1st crystal guided by the cam.



<TWD-1C installed in NSRRC BL15 >



Specifications

Model	TWD-1C
Rotation Center (main θ)	1375 mm
Beam Offset	25 mm Upward
Bragg Angle Range	3.0 – 40.0 degree (-0.5 – 42 degree mechanically)
Energy Range : Si(111)	3.1 – 37.0 KeV
Main θ Rotation Center	Center and surface of the second crystal
Exit Beam Stability in time	3 arcsec in 2 hours
Crystal Parallelism	10 arcsec (Each θ = 3 – 8 degree, 8 – 40 degree) (5 arcsec as target without piezo in each angle range) 1 arcsec (with piezo adjustment)
Vacuum Pressure	4.00 x 10E-5 Pa
Crystal Size : Si(111)	60 x 40 x 40 (W x L x T : mm) *1
Dimension	1100 x 1480 x 1936 (W x L x H : mm)

*1 The crystal is not abailable

Date of issue: 2010/May/19

Features

◆The energy of the exit beam is determined only by the rotation angle θ without any displacement of the crystals with respect to the beam.

◆Consists of ;

◆Main axis goniometer
◆Offset-footprint control and optical element adjustment mechanisms
◆Supporting structure
◆Vacuum chamber
◆Cooling provisions
◆Motor drivers
◆Piezo
◆Encoder electronics
◆Accessories

◆70 degree Celsius bakeable.

◆The first and second crystal are cooled by LN2.

◆The first crystal alignment stages
Y1 : -5 to 240 mm
Zc1 : -17.26 to -12.5 mm
D1(Z1) : ±10 mm
φ1 : ±1 degree
θ1 : ±1 degree (Coarse)
: ±50 arcsec (Fine)

◆The second crystal alignment stages
D2(Z2) : ±10mm
φ2 : 1 degree
θ2 : ±1 degree (Coarse)

◆The supporting table
Xt : 420 mm (Only gonio)
Zt : ±50mm

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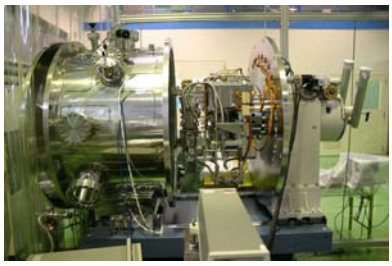
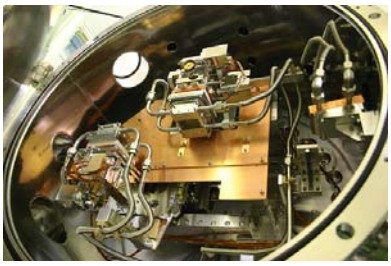
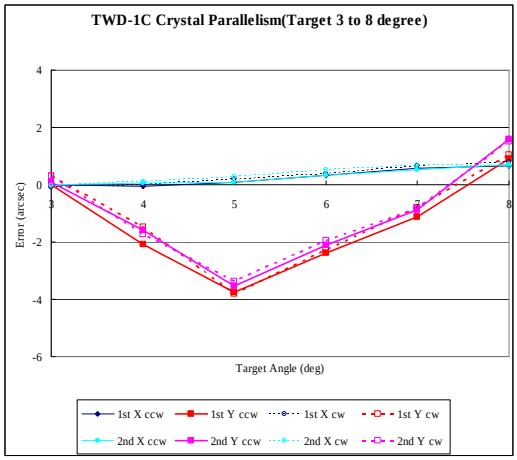
Single Cam Type DCM <TWD-1C> Continued

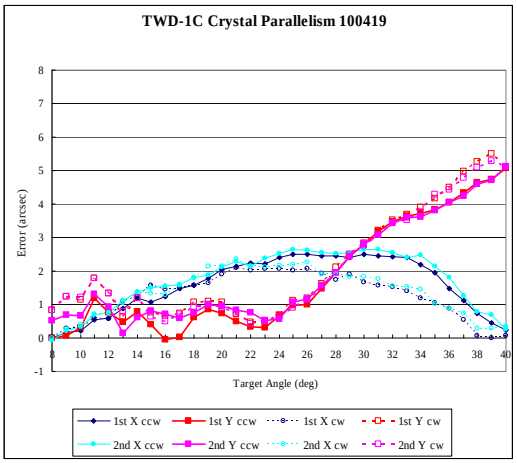




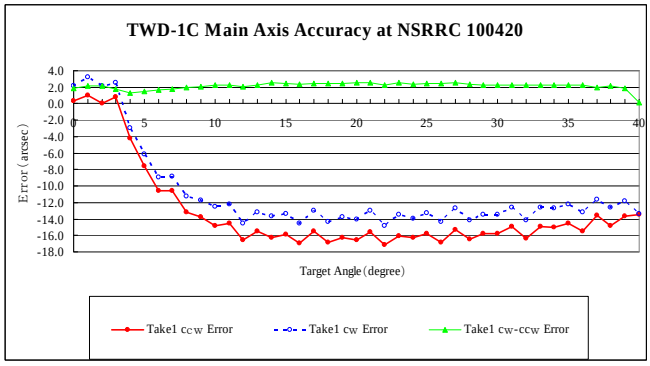
Data (Parallelism)

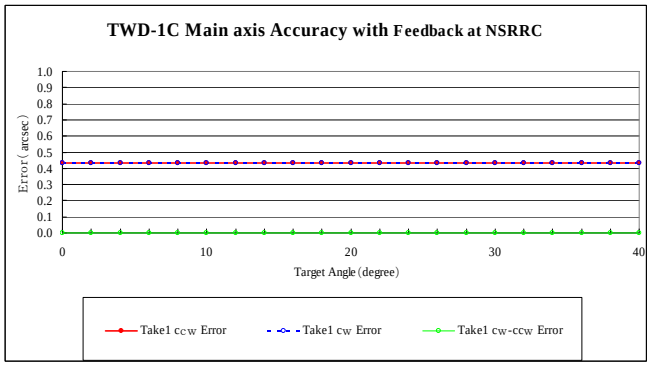
5.5 arcsec (pitch Y), 3 arcsec (roll X)





Data (Accuracy for main θ)





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