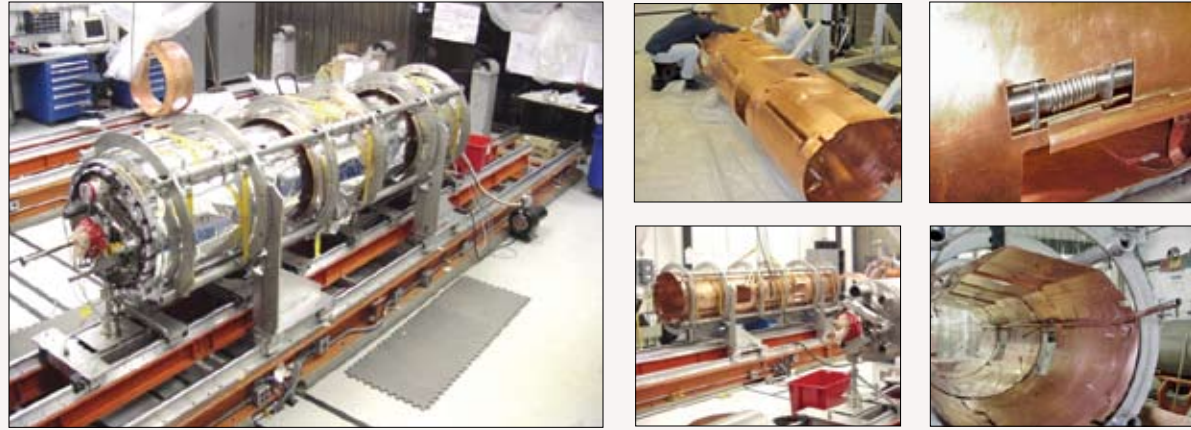


Cavity parts for Spallation Neutron Source (SNS)

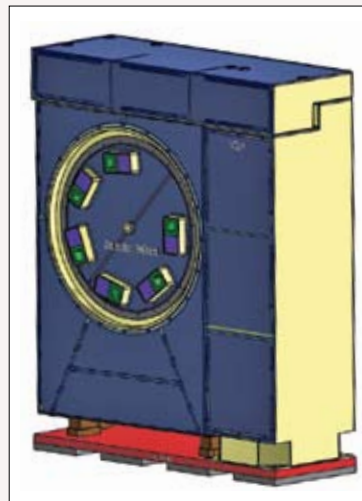


ADC fabricated 24 sets of thermal shields and space frame assemblies for the U.S. Department of Energy Spallation Neutron Source. Each system underwent complete testing and inspection which included thermal shock, leak checking, and precise physical measurements. The project was a two-year contract that was completed within the budget and schedule.

Selector Wheel System for SANS Instrument

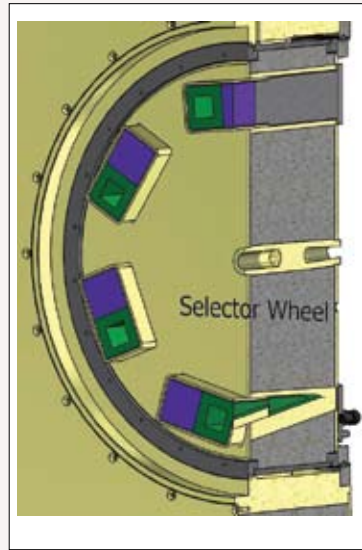
This system is for the Bragg Institute, a division of ANSTO, to provide a selector wheel shutter unit for their Radiography Instrument.

This new state-of-the-art instrument is to support the area of neutron imaging research (neutron radiography/tomography). It provides university, government and industry-based users of the new ANSTO research reactor OPAL, a new world-class powerful tool for nondestructive real space testing and evaluation, with properties complementary to x-rays and synchrotron methods. The instrument covers a large area of scientific research from medical applications, biology and environmental science, geology and engineering science as well industrial applications, which are key areas for future technology and industrial developments in Australia.



The selector wheel shutter unit combines two different functions in one item. The first function is to work as an instrument shutter and the second one is to work as a selector wheel.

The selector wheel assembly component as suggested in its name provides selective aperture options for high resolution or phase contrast imaging and separate the two beams coming from the in-pile collimator. One beam is blocked and the other passes the selector wheel insert to be used for an imaging experiment. A positioning accuracy of 0.01° step width is essential.



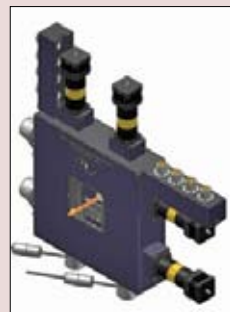
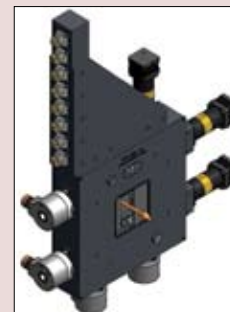
The selector wheel is designed with a stepped housing to mate with the inserts and prevent direct shine from the beam.

Custom High Precision Slits Delivered to Neutron Facilities Around the World

These models features include; micron precision, encoder, cadmium, boron carbide, boron nitride, and/or composite structure blades.



Custom High Precision Neutron Slits Delivered to CCLRC at the Rutherford Appleton Laboratory in UK



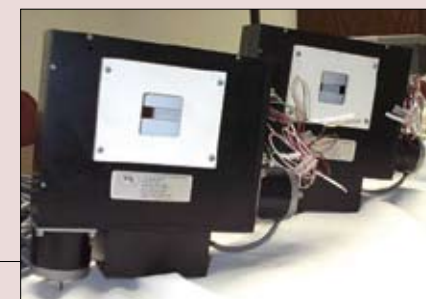
Custom High Precision Neutron Slits Delivered to Australian Nuclear Sciences and Technology Organization (ANSTO) - Australia



Custom High Precision Neutron Slits Delivered to Oak Ridge National Laboratory - Spallation Neutron Source



Custom High Precision Neutron Slits Delivered to Los Alamos National Laboratory (LANL) - USA



ADC USA, Inc. is a hands-on engineering company with over 15 years of experience. We custom design devices, integrated systems and a broad array of high-precision components and instruments for commercial, academic and government agencies worldwide. Our work covers mechanical design, control instrumentation, control software, manufacturing and assembly, and installation and training.

For more information on the above systems or any of our products contact us at:

607-533-3531 email: adc@adc9001.com

126 Ridge Rd. P.O. Box 187 Lansing, NY 14882 607-533-3531 email: adc@adc9001.com www.adc9001.com

Custom Neutron/HEP Projects



Ultra-Small-Angle Neutron Scattering (USANS) Monochromator Instrument for ANSTO - Australia



Cavity parts for Spallation Neutron Source (SNS) - USA



Custom High Precision Neutron Slits for ANSTO - Australia



Bilby-SANS Instrument for ANSTO - Australia

EQUIPMENT with REALIABILITY and DEPENDABILITY

DELIVERING THE FUTURE OF ENGINEERING TODAY

www.adc9001.com

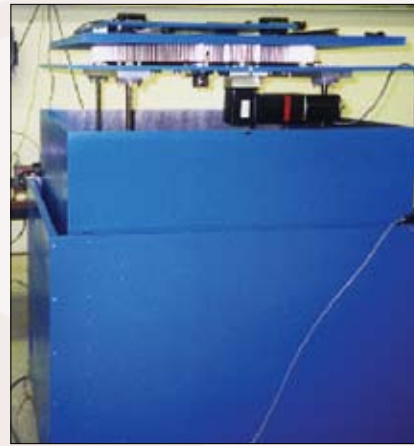
126 Ridge Rd. P.O. Box 187 Lansing, NY 14882 607-533-3531 email: adc@adc9001.com www.adc9001.com

Custom Projects for Neutron/HEP Facilities

ADC has over fifteen years working on custom manufacturing and design projects for Neutron & High Energy Physics (HEP) Facilities around the world. ADC offers a large assortment of custom designed precision equipment specifically designed for Neutron applications including: Slits, Neutron Monochromator, Optical Tables, Spectrometers, and Goniometers. When requested by customers, our designs will use nonmagnetic materials, high radiation resistance components such as motors, brakes, and encoders. For slits blades delivered to many Neutron Facilities we have used Cadmium, Boron Nitride, Boron Carbide and/or composite structure consisting of several materials. For more information on ADC's undulators visit our web site at http://www.adc9001.com/products/show_list/id/115

SMARTS Translator for LANL Neutron Facility

This system was designed and built for a new spectrometer called SMARTS (spectrometer for materials research at temperature and stress) at the LANSCE facility at Los Alamos National Laboratory. SMARTS is used for measurements of residual macrostrain in engineering components and in-situ loading. This translator is the central component of SMARTS. It is used to position plates or tube specimens 10's of centimeters in dimension with a mass of a few kg as well as ancillary equipment (load frame, furnaces, eulerian cradle with a mass of as much as 1000 kg) relative to a fixed neutron beam and two detectors in permanent locations on either side of the translation table.



Ultra-small-angle neutron scattering monochromator instrument for ANSTO

Ultra-small-angle neutron scattering (USANS) is a method for studying structures in the 100nm to 10µm range by diffraction. USANS uses a neutron beam with an extremely sharp angular profile which can be obtained by diffraction from a perfect crystal ("Bonse-Hart" technique).



4-axis Translation / Rotation Table for Radiography Instrument ANSTO (Australia)

This new state-of-the-art instrument was designed to support the area of neutron imaging research (neutron radiography/tomography). The sample stage consists of a z, xy-translation table and a rotation stage. The xyz-translation table is needed for sample positioning in front of the detector. For this procedure a range of >500mm in xy-direction and 400mm in z-direction is essential.

In addition a high precision rotation stage with a resolution of 0.001° is needed for neutron tomography. The rotation stage has a loading capacity up to 200kg. Due to high absorption and long counting times, very large samples are not feasible for tomography.

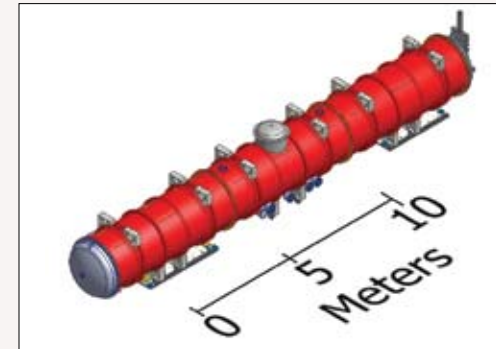


Bilby-SANS Instrument

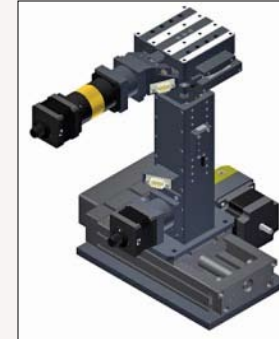
Bilby Detector vessel was designed for the new Time-of-Flight Small-Angle Neutron Scattering (SANS) instrument for The Australian Nuclear Sciences and Technology Organization (ANSTO) In Australia. SANS is a powerful technique for looking at structures of objects on the nanoscale (1-10nm), like polymer molecules, defect structures in metals and ceramics.

Key Specifications:

Vacuum:	7.5 x 10 ⁻⁵ TORR, Leak Rate = 1 x 10 ⁻⁷ mbar-l/sec
Vessel Diameter:	2300 mm
Internal Diameter Tolerance:	0 to + 10 mm
Vessel Length:	65.7 feet (20020 mm) with the ends closed
Vessel Straightness:	Front to Back, +/- 10 mm
Number of Sections:	3, Accurately Repositioned
O-Ring Seal:	Sections, Front, Rear, and Top Hatches
O-Ring Material:	Viton
Rear Hatch:	Full Diameter with Articulated Hinge
Internal Carriage Capacity:	2000 kg
Internal Movement:	~ 60 Feet (15,240 mm)
Internal Drive:	Rack and Pinion
Internal Velocity:	4 m/min
External Movement:	59 inches (1500 m)
External Drive:	Ballscrew
Weight:	42,000 lbs



HFIR IMAGINE Neutron Focusing System (SNS-US)



This system was designed and built for Oak Ridge National Laboratory - Spallation Neutron Source. The Positioning System is composed of three distinct sections in order of neutron transport, they are the Flat Mirror Section, Filter Sections, and the Elliptical Mirror Sections. All three Positioning System sections will operate in a Helium gas environment at approximately 3-8 psi above atmospheric pressure. Normal operating temperature is 70°F - 100°F.

Compact Precision Translator for LANL Neutron Facility

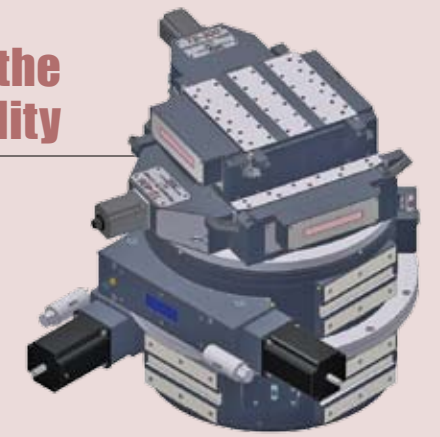
This system was designed and built for the Los Alamos National Laboratory. Although highly customized, it uses several of our standard slides, both motorized and non-motorized.

Motions: Vertical (Z): 50 mm max, Rotation (R): ±5° max, Horizontal (X, Y; normal to one another in the horizontal plane): 100 mm max. each, Tilt: ±5° max. parallel to beam. Capacity: The maximum mass to be placed on the table is 680 kg.



Other features: Limit switches on all slides, mercury tilt switches, lifting attachments for crane.

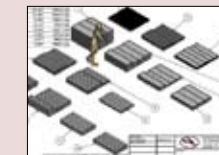
Four-Axis Goniometer for the Korea Neutron Facility



Goniometer for the Canadian Neutron Beam Centre

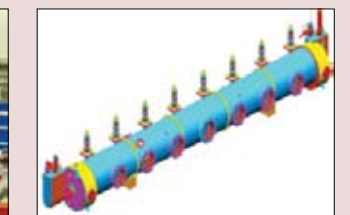
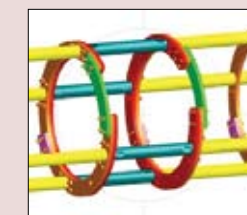
Transport Magnet for Jefferson Laboratory (JLAB-USA)

ADC fabricated a large order of magnet material for Jefferson Laboratory's latest upgrade. All the magnet materials had to come from the same heat from a mill supplier, material had to be heat treated with very tight tolerances, magnet material then rough cut, strict material handling procedures were implemented not using magnetic lifting devices (not to magnetize the material), parts were machined using large machining centers to achieve the tight machining tolerances for large pieces, parts were then painted, and delivered for assembly at JLab.



Cavity Parts for Jefferson Laboratory (JLAB-USA)

ADC delivered ten space frame assemblies for the U.S. Department of Energy/Thomas Jefferson National Laboratory. ADC fabricated, assembled, welded, and weld certified each assembly.



DELIVERING THE FUTURE OF ENGINEERING TODAY
www.adc9001.com

126 Ridge Rd. P.O. Box 187 Lansing, NY 14882 607-533-3531 email: adc@adc9001.com www.adc9001.com

DELIVERING THE FUTURE OF ENGINEERING TODAY
www.adc9001.com

126 Ridge Rd. P.O. Box 187 Lansing, NY 14882 607-533-3531 email: adc@adc9001.com www.adc9001.com

DELIVERING THE FUTURE OF ENGINEERING TODAY
www.adc9001.com

126 Ridge Rd. P.O. Box 187 Lansing, NY 14882 607-533-3531 email: adc@adc9001.com www.adc9001.com