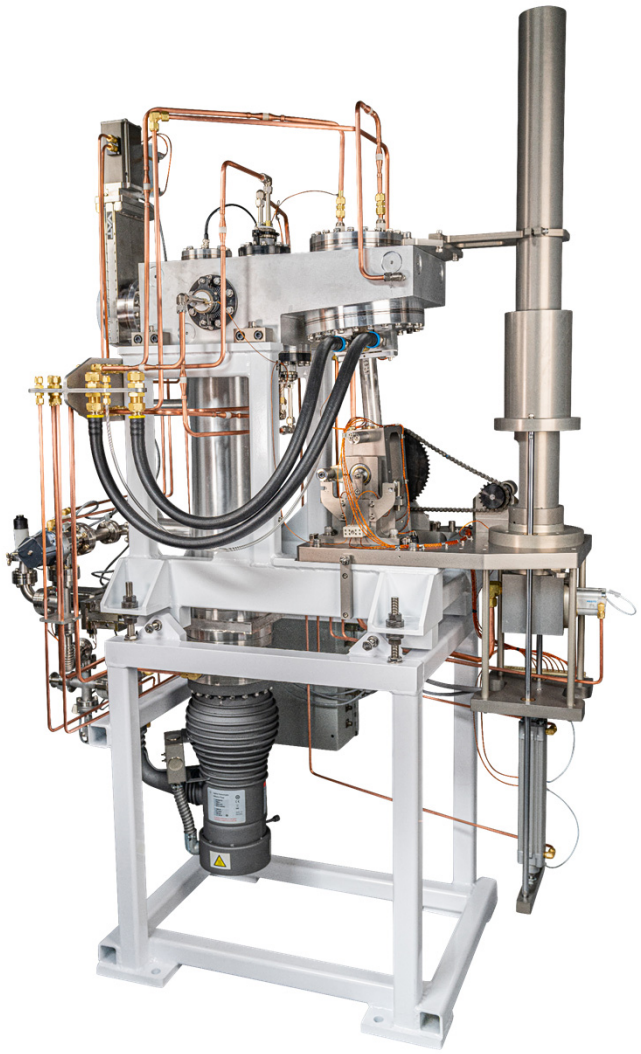
15 kW SOLID TARGET STATION

STS-5-15kW

A radiation-resistant system for the precisely controlled irradiation of solid-phase radioisotope precursors

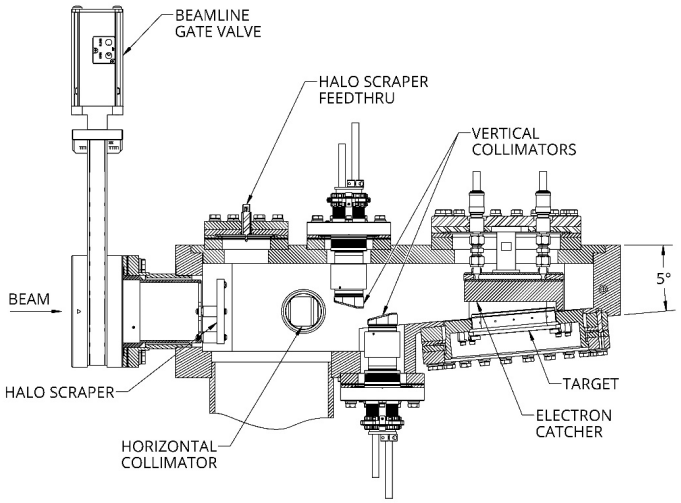


Target station ready for integration into a beamline and pneumatic transfer system.

- **Handles up to 15 kW beam power**
- **Typical case: 500 µA of protons at 30 MeV**
- **Adaptable to customers' unique installations**
- **Five-degree glancing beam/target angle**
- **TRIUMF-licensed technology[2]**

SPECIFICATION: STS-5-15kW	
Maximum Total Beam Power	15 kW
Maximum Power on Halo Scraper	60 W
Halo Scraper Aperture (Vertical X Horizontal)	22 X 41 mm
Collimator Configuration	Top, Bottom, Left, and Right
Maximum Power on Collimator	1.35 kW
Typical Power on Collimator	600 W
Collimator-Defined Aperture (Vertical X Horizontal)	6.45 X 30 mm (Adjustable)
Typical Beam Power on Target	12.6 kW
Target Inclination Angle	5°
Target Bombardment Window	74 X 30 mm
Solid Targets	Available
Pneumatic Transfer Shuttle	Available

The **15 kW Solid Target Station** is used for the production of medical radioisotopes from solid-phase materials. As the culmination of years of research and technological innovation at TRIUMF, the 15 kW Solid Target Station offers a multitude of features to ensure reliability, ease of maintenance, and precisely controlled irradiation cycles. D-Pace has commercialized the technology under licence and is pleased to offer its advantages to our customers worldwide.



Cross-section of the vacuum box showing the gate valve and current-detecting components.

Among the many carefully engineered aspects of the 15 kW Solid Target Station are

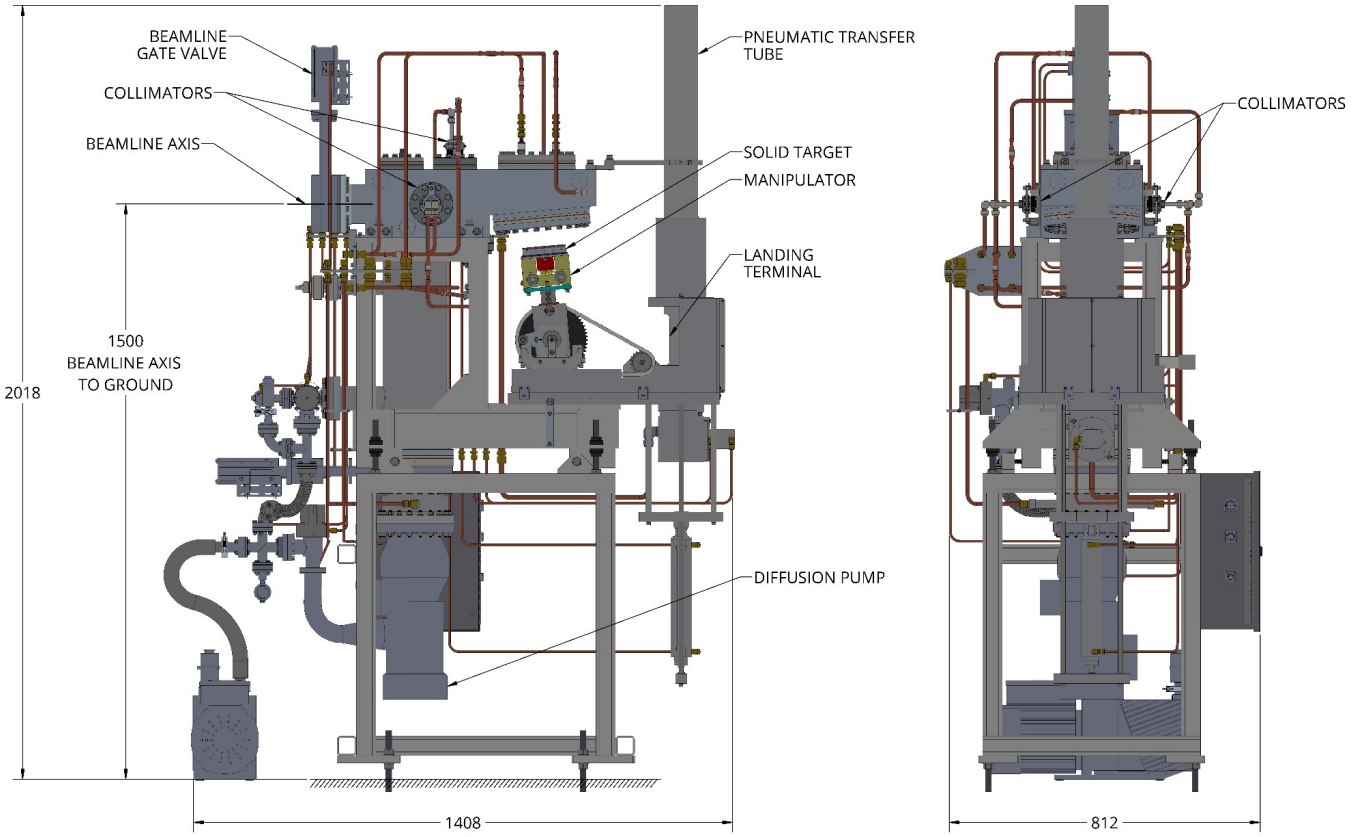
- a halo scraper to warn of a missteered beam;
- adjustable collimators to fine tune the exposed region on the target face;
- a Faraday cup, or "electron catcher," to capture secondary particles and ensure accurate measurements of the incident current;
- high-performance water cooling to enable the use of powerful beams; and
- radiation-resistant materials to resist degradation and minimize activation.

D-Pace will work with customers to tailor the design for the specialized requirements of their installation. Possible adaptations include

- modification of the beamline height and flange type;
- provision of instruments for current readback;
- custom flanges to hold unique target designs; and
- programmable logic controls to operate the manipulator, vacuum system valves, and landing terminal.

D-Pace will also be pleased to discuss complete turn-key solid target station and pneumatic transfer systems with customers seeking comprehensive solutions for their radioisotope production facility.

FACILITY CONNECTIONS: STS-5-15kW	
BEAMLINE	
Gate Valve Flange[3]	CF 6 inch or CF 150 mm
ELECTRICAL	
Supply	208 VAC, 60 Hz, 1 phase
Current Draw	14.5 A
DEIONIZED COOLING WATER	
Conductivity	<1 MΩ·cm
Temperature	18-25 °C
Total Flow Rate	49 L/minute
Pressure Drop	448 kPa (65 psi)
Connection Type	Swagelok, ¼ to ¾ inch
INSTRUMENT AIR	
Pressure	621 kPa (90 psi)
Connection Type	Swagelok, ¼ to ½ inch
CONTROLS	
Control System	Available
Instrumentation	Available



Sketch showing overall dimensions (millimeters) and key components.

1. D-Pace, Inc. reserves the right to update product specifications without notice as part of its continuous improvement program.
2. D-Pace, Inc. has licensed 15 kW Solid Target Station technology from TRIUMF for worldwide distribution.
3. Alternative flange types are available. Contact D-Pace.