

Second Target Station Project: Interface Sheet Target Assembly & Target Viewing Periscope



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Second Target Station Project

INTERFACE SHEET TARGET ASSEMBLY & TARGET VIEWING PERISCOPE

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1. NORMAL OPERATION

Target View Periscope will provide visible light viewing capability of the Target Nose.

Unobstructed viewing of the segment is permitted via coordinating between TVP (AIC) [S.03.05] and Vessel Systems [S.03.06].

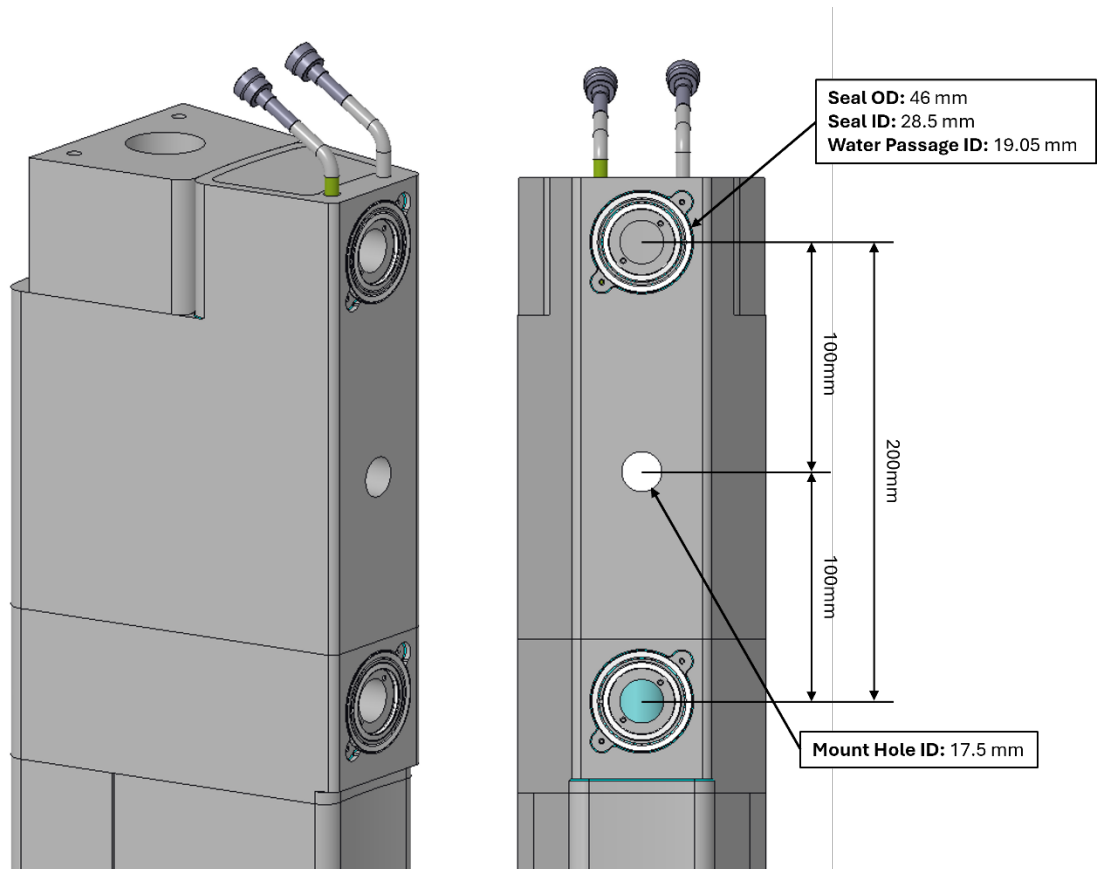
Note: TVP outputs are provided directly to the control system.

The following table is a scope definition of what is handled by Target Assembly [S.03.02] and what is handled by the Target Viewing Periscope [S.03.05].

	Target Assembly	Target Viewing Periscope
Target Surface Temperature Operating Range	35-150 °C	
IR Running Temperature Resolution		30 - 100 +/- 5 °C
IR Maintenance Temperature Resolution		100 - 300 +/- 10 °C
Peak Flame Spray Heat Flux		≤ 1 kW for 3 minutes (TBR)
Target Temperature During Coating Process		20 °C - 100 °C
Coating Application	N/A	Specify, Apply & Inspect
Coating Interface	Raw Inconel 718 SA (as machined)	Target Face preparation prior to coating
Fiducials		Specify size(s) and location(s)
Installation Protection	Coordinated by Target Assembly/Remote Handling	
Coating Interface	Width: 140mm Height: 70mm Reference Figure 2	
Configuration at Spray Application	Segment MFG complete, 5.11m (16.78 ft) tall	
Cleanliness Required after Coating	Free of contamination and protected	Free of contamination and protected from impact or abrasion
Weight	550kg	
Procurement	Shared	Shared
Shipping	Custom shipping crate	

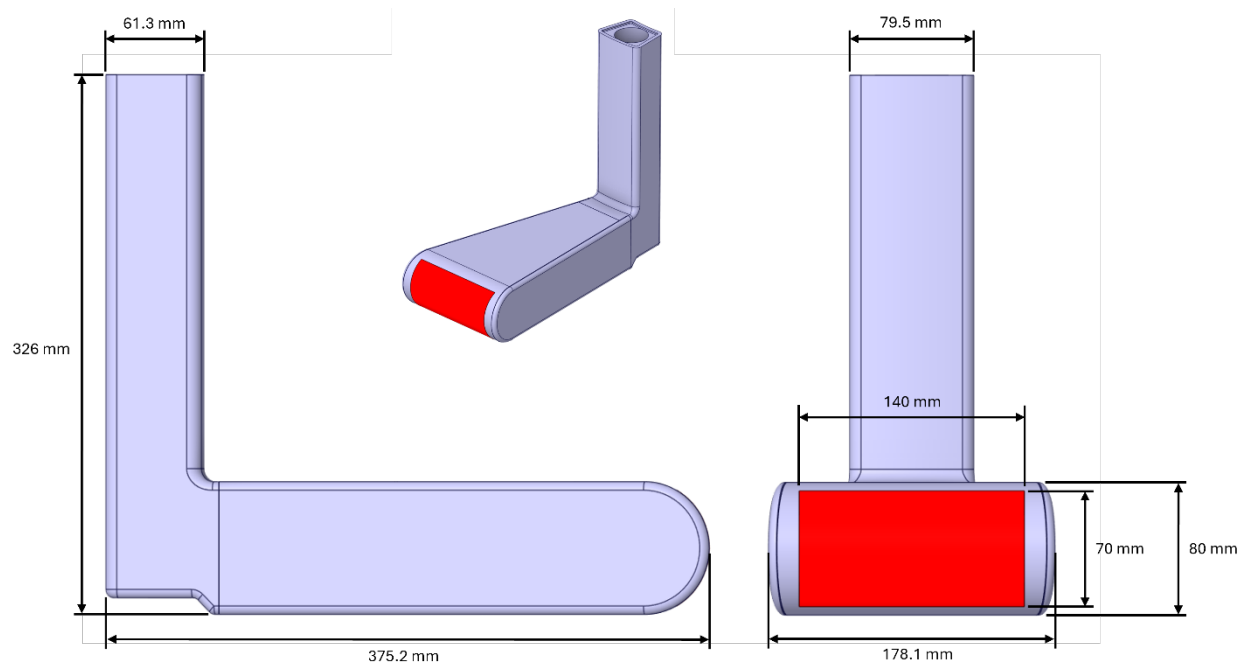
It is important to keep the internal temperature of the segment foot at or below 100 °C during flame spray. To this end, if deemed necessary by the vendor, it is permissible to pump non-corrosive gas, or deionized water (or approved alternate) through the cooling passages in the Target Segment. See Figure 1 for interface details.

Figure 1. Water Connection Interface



2. GENERAL TARGET GEOMETRY FOR FIXTURING

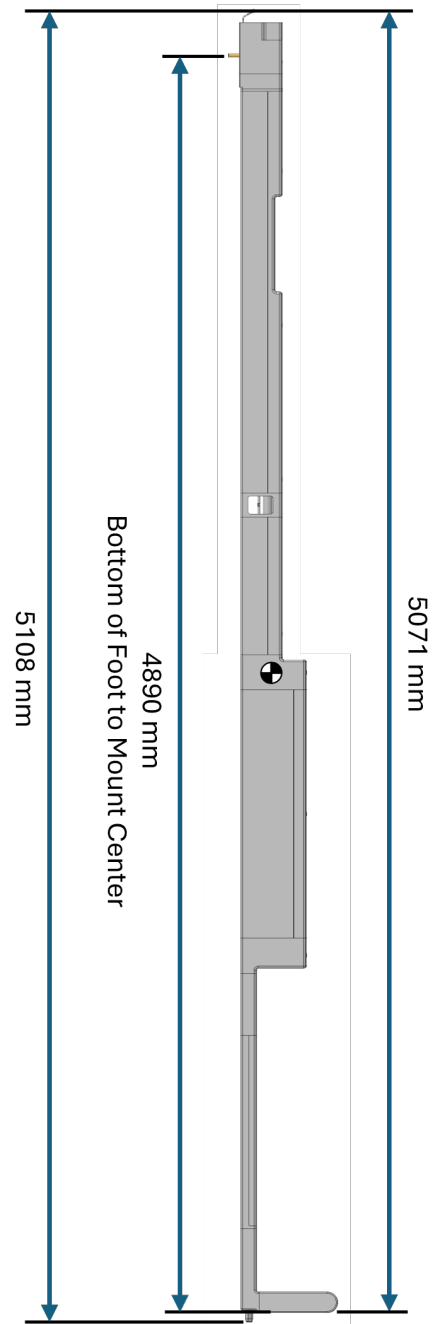
Figure 2. Target Segment Foot & Coating Dimensions



Target Segment Sizing:

- **Length:** 375.2 mm
- **Width:** 178.1 mm
- **Height:** 5108 mm
- **Wedge Angle:** 18°
- **Foot Height:** 80 mm
- **Coating Width:** 140 mm
- **Coating Height:** 70 mm

Figure 3. Target Segment Vertical Dimensions



3. COATING PROTECTION FOR SHIPPING

The assembled Target Segment shall arrive from the machining and welding vendor to the coating vendor in a custom-built crate that will ensure nose protection. The coating vendor shall be responsible for removing the segment from the crate, applying the coating, and replacing the segment in the crate. The coating vendor will then ship the segment to ORNL.
