

Rainbow Arch Water Feature Assembly

MULTI-ELEVATION ENGINEERING DRAWING & DIMENSIONAL LAYOUT

Doc ID: WPA-RA-10M
Equipment Class: Aquatic Play Structure
Status: Technical Specification



Elevational View Breakdown

View Aspect	Key Visible Elements	Dimensional Span	Primary Operational Function
Front / South Elevation	Concentric Rainbow Arch Array & Entry Tunnel	1,000 mm Tunnel Width	Interactive water spray entrance for visitors
Right / East Elevation	Side Profile & Pirate Fort Play Structure	10,000 mm Overall Length	Multi-stage arch sequence & splash zone path
Rear / North Elevation	Internal Rainbow Rings & Treasure Chest Detail	1,000 mm Base Width	Exit corridor leading to central pool play house
Left / West Elevation	Parallel Pipe Framing & Water Tower Frame	3,000 mm Arch Height	Structural manifold alignment & hydraulic feed

System Technical Specifications

Elevation Subsystem Specifications

1. FRONT SPRAY TUNNEL

- Arches:** 7 concentric color-coded tubular steel arches.
- Nozzles:** Integrated internal misting/spray jets along inner circumference.
- Passage:** Clear walkway with slip-resistant aquatic floor tiling.

2. STRUCTURAL FRAMEWORK

- Material:** Marine-grade stainless steel (316L) with powder-coat finish.
- Height Clearance:** Up to 3,000 mm maximum arch height.
- Anchoring:** Subsurface flange mounts embedded in pool slab.

3. HYDRAULIC DISTRIBUTION

- Main Supply:** DN100 manifold feed supplying all arch rings.
- Operating Pressure:** 1.5 – 2.5 bar regulated water pressure.
- Flow Control:** Automated solenoid valves for timed water sequences.

4. SAFETY & SURFACING

- Edge Radius:** Smooth rounded piping corners with non-abrasive finish.
- Drainage:** High-capacity deck drain channels flanking the tunnel base.
- Compliance:** ASTM F2461 aquatic play safety standard compliant.

Operating & Hydraulic Parameters

Parameter	Design Value	Operational Limits
Total Water Flow Rate	45–60 m³/hr	Adjustable based on nozzle pressure setup
Operating Line Pressure	2.0 bar	Maximum safe pressure: 3.5 bar
Overall Span Dimensions	10,000 mm (L) × 1,000 mm (W) × 3,000 mm (H)	Clearance verified across all 4 elevation profiles
Water Treatment Requirement	Chlorinated / UV Treated Circulating Water	pH 7.2–7.6, Free Chlorine 1.5–3.0 ppm

Maintenance Advisory: Inspect spray nozzle orifices weekly for calcification or debris build-up. Flush system lines and verify anchor flange bolt torque bi-annually. Ensure non-slip flooring surrounding the arch tunnel is maintained free of bio-film.