In-house hydraulic performance validation

Xylem A-C Custom Pump North America test facility



At Xylem, we're focused on performance. That's why our team does more than manufacture world-class pumps. We thoroughly test them, too.

With our investment in exclusive in-house testing capabilities at the Xylem A-C Custom Pump facility in Pewaukee, Wisconsin, USA, we can verify the performance of some of the world's largest pumps. Our extensive testing experience minimizes customer risk and delivers peace of mind that pumps are working according to defined parameters.

At the center of our test facility is an industry-leading 440,000-gallon (1,665-m^3) wet pit designed for testing the largest pumps. Running alongside this is a bank of guide rails for submersible pump testing, a sunken dry pit test area, and an above-ground dry-installation semi-closed test loop for pumps up to 16 inches (400 mm) in discharge diameter.

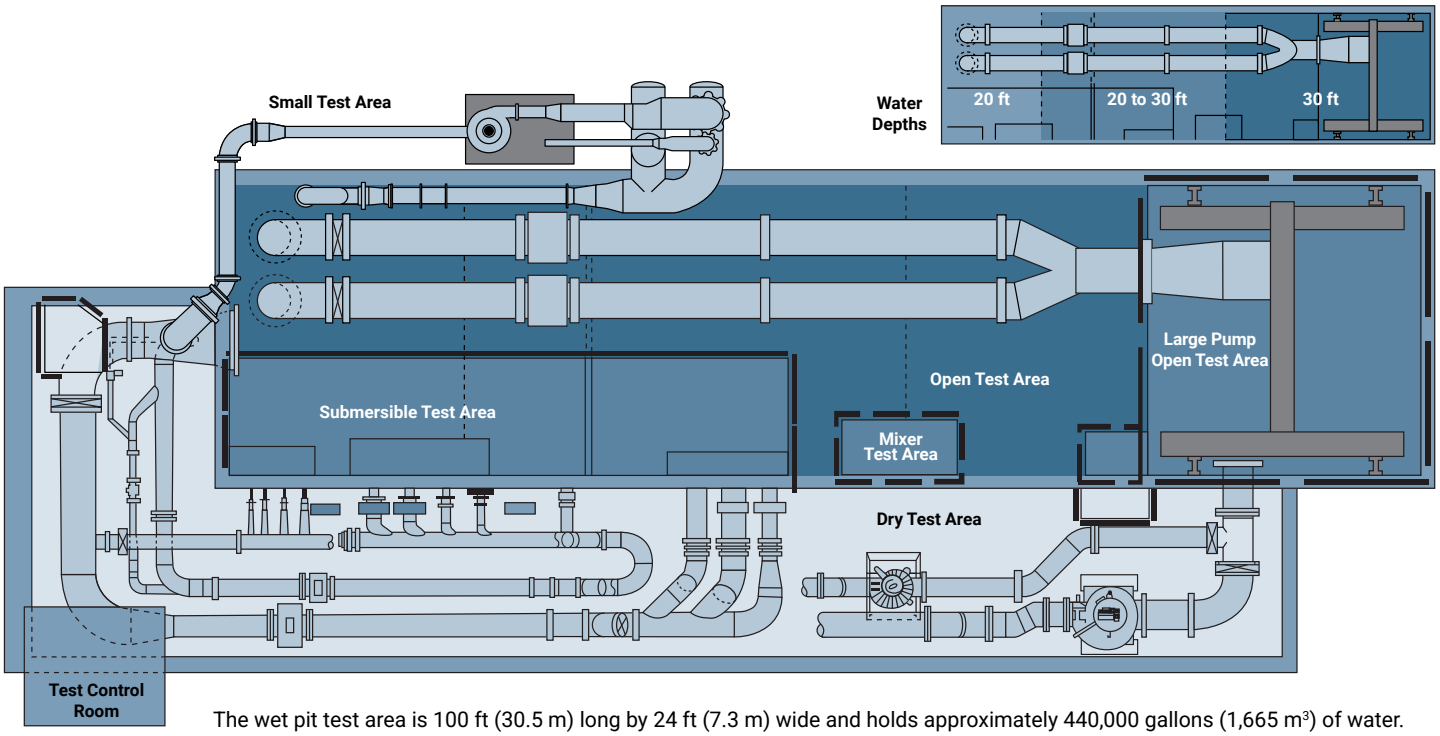
These facilities allow us to test in accordance with Hydraulic Institute and ISO standards, as well as contract-specific requirements.

Verifying pump efficiency

Factory performance tests take power measurements via calibrated torque or power meters in conjunction with a calibrated shop motor or efficiency-tested job motor. A string test can be done to verify performance with the job motor and a variable frequency drive (VFD). Vibration and noise measurement are also available.



Preparation of an A-C Custom Pump vertical column pump for performance testing at the Pewaukee facility.



The wet pit test area is 100 ft (30.5 m) long by 24 ft (7.3 m) wide and holds approximately 440,000 gallons (1,665 m^3) of water.



Closed-loop model testing

For pumps too large to be tested at the Pewaukee facility, closed-loop scale-model testing is available. Closed-loop scale-model testing is also used to accurately determine net positive suction head (NPSH) requirements for pumps operating under low suction pressure conditions. A vacuum is pulled on the pump suction to test for NPSH requirements below atmospheric conditions.

Test capabilities

Flow	Up to 300,000 gpm (68,000 m^3/h)
Pressure	Up to 150 psi; higher with knock-down valve
Power rating	Up to 5,800 hp (4,325 kW)
Lifting	Up to 60 tons
Voltage	Up to 15 kV
Frequency	60 Hz and 50 Hz
Shop VFDs	50 to 5,800 hp (37 to 4,325 kW)
Shop motors and gear boxes	Up to 3,000 hp (2,250 kW)
Flowmeters	• 36 inch (914 mm) magnetic flow meters on the main test loop • 2 to 30 inch (50 to 762 mm) venturi flow meters • 10 to 30 inch (254 to 762 mm) venturi flow meters

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FB294. A-C Custom Pump Test Facility. Master ENUS. 20260924