CONVENTIONAL CAVITATION TUNNELS

HSVA has a long experience in cavitation testing and offers three tunnels for cavitation tests. Propellers behind complete ship models are investigated in HYKAT. In the two conventional cavitation tunnels (medium tunnel, large high speed cavitation tunnel) the propellers are tested in simulated ship model wake fields behind wire mesh screens or behind partial appendage models.
Medium cavitation tunnel

Dimension of test section: 0.57 x 0.57 x 2.20 meters
Max. velocity 9.5 m/s
Max. revs. of model propeller 58 1/s
Range of propeller diameter 240-290 mm
Description of facility: Produced by K & R, K22 type
Type of drive system: 4 bladed axial flow impeller, 4-quadrant converter control
Total motor power:
  Impeller: 60 kW at 1500 1/min
  Propeller: 14.3 kW at 3500 1/min
Max. & min. pressures: 1.5 bar absolut down - vapour pressure
Instrumentation: Laser Doppler Velocimetry
Types and locations of torque and thrust dynam.:
  Mechanical, upstream, horizontal shaft, 14.3 kW at 3500 1/min
Tests performed: Cavitation tests in uniform flow as well as in simulated wa>
Large high speed cavitation tunnel

Dimension of test section: 0.75 x 2.25 meters, circular

Max. velocity: 19.5 m/s

Max. revs. of model propeller: 75 1/s

Range of propeller diameter:
1. 300-400 mm
2. 280-320 mm

Description of facility: Produced by K & R, K16 type

Type of drive system: 4 bladed axial flow impeller, Leonard-System

Total motor power:
- Impeller: 350 kW at 375 1/min
- Propeller: 130 kW at 4500 1/min

Max. & min. pressures: 2.5 bar absolut down - vapour pressure

Types and locations of torque and thrust dynam.:  
1. Mechanical, upstream, horizontal shaft, 130 kW at 4500 1/min
2. Strain gauges, downstream, inclined shaft up to 12 degree

Tests performed: Cavitation tests in uniform flow as well as in simulated wake field.  
CR and tandem propeller testing, high Reynolds Number testing, partial rudder model testing.