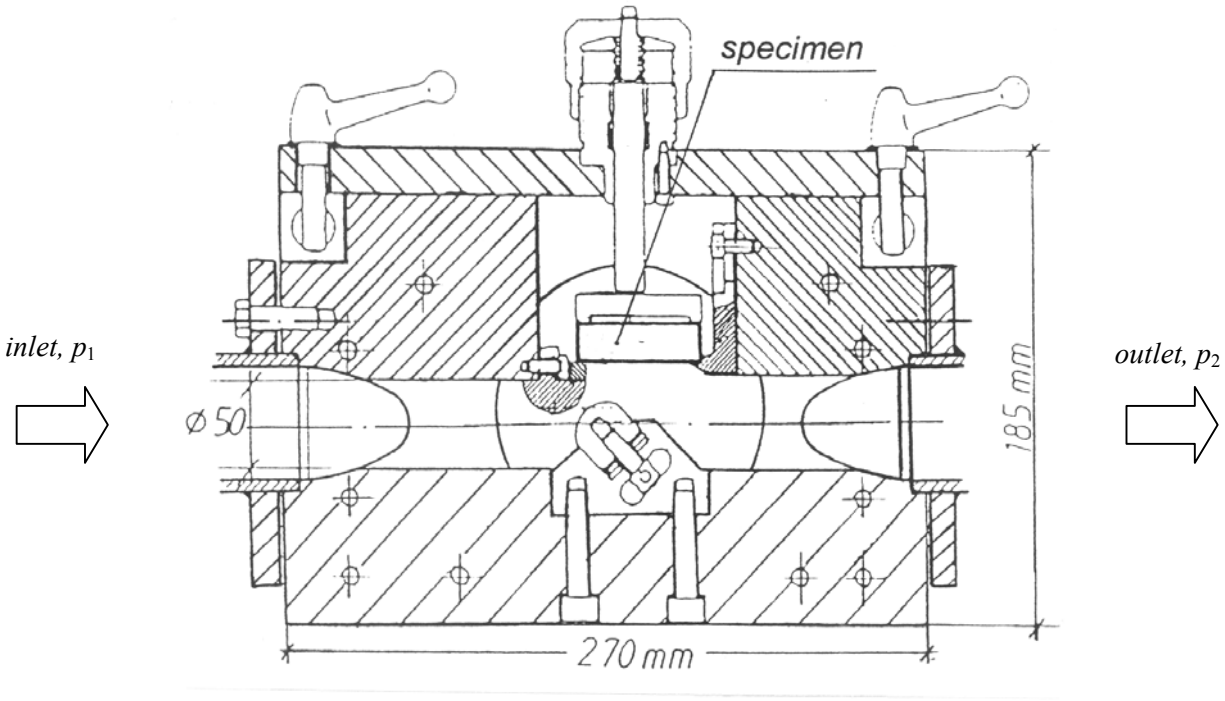
INTERNATIONAL CAVITATION EROSION TEST
Test Rig Identification Card

Facility: cavitation tunnel
chamber of barricade and anti-barricade

Laboratory: **Universität Hannover, Institut für Werkstoffkunde**
Appelstraße 11A, 3000 Hannover 1, Germany

1. Sketch of the cavitation chamber with specimens and basic dimensions (streamwise and transverse sections), dimensions and installation sites of the cavitator, specimen, pressure taps etc.

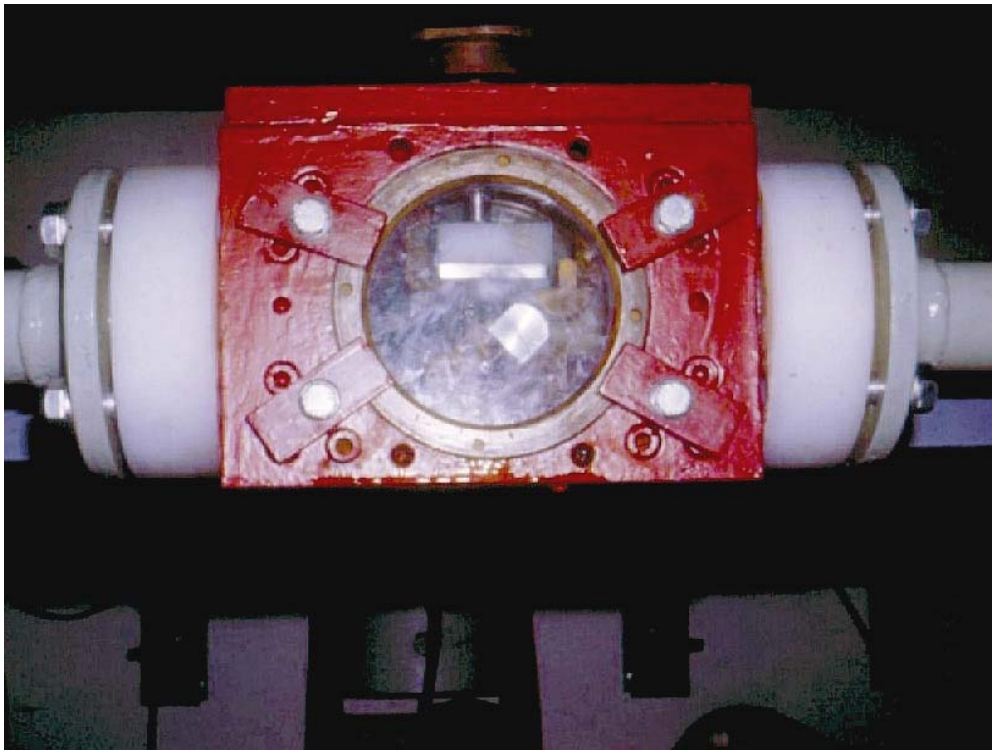


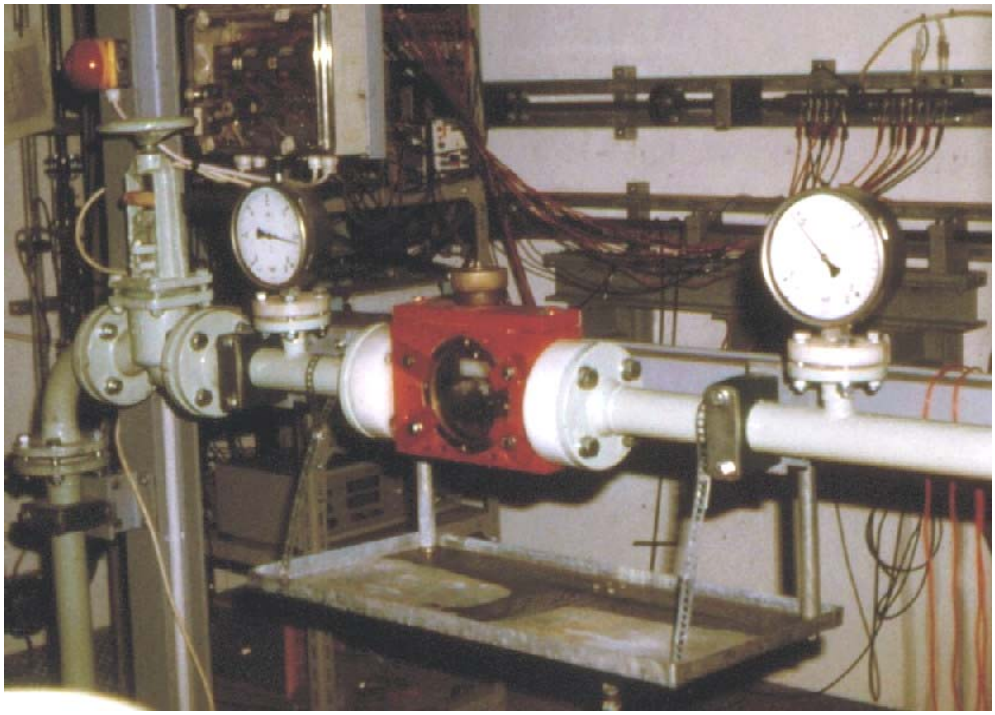
specimen width: 30 mm, height: 8 … 12 mm, length: 60 mm

2. Basic operational data

pump power	12	kW
liquid velocity in the undisturbed flow		m/s
liquid pressure upstream the chamber (gauge)	600 ÷ 1100	kPa
liquid velocity at the specimen surface		m/s
liquid pressure downstream the chamber (gauge)	40 ÷120	kPa
standard temperature of liquid	22	˚C
other data		
distance barricade/counter-barricade	2.8 … 3.2	mm

designer/manufacturer: Prof. Hartmut Louis,
Institute of Material Science
University of Hannover, Germany





INTERNATIONAL CAVITATION EROSION TEST

Laboratory Results Summarisation

Laboratory: **HANNOVER UNIVERSITY**
INSTITUTE OF MATERIALS SCIENCE
HANNOVER, Germany

Facility: CAVITATION TUNNEL

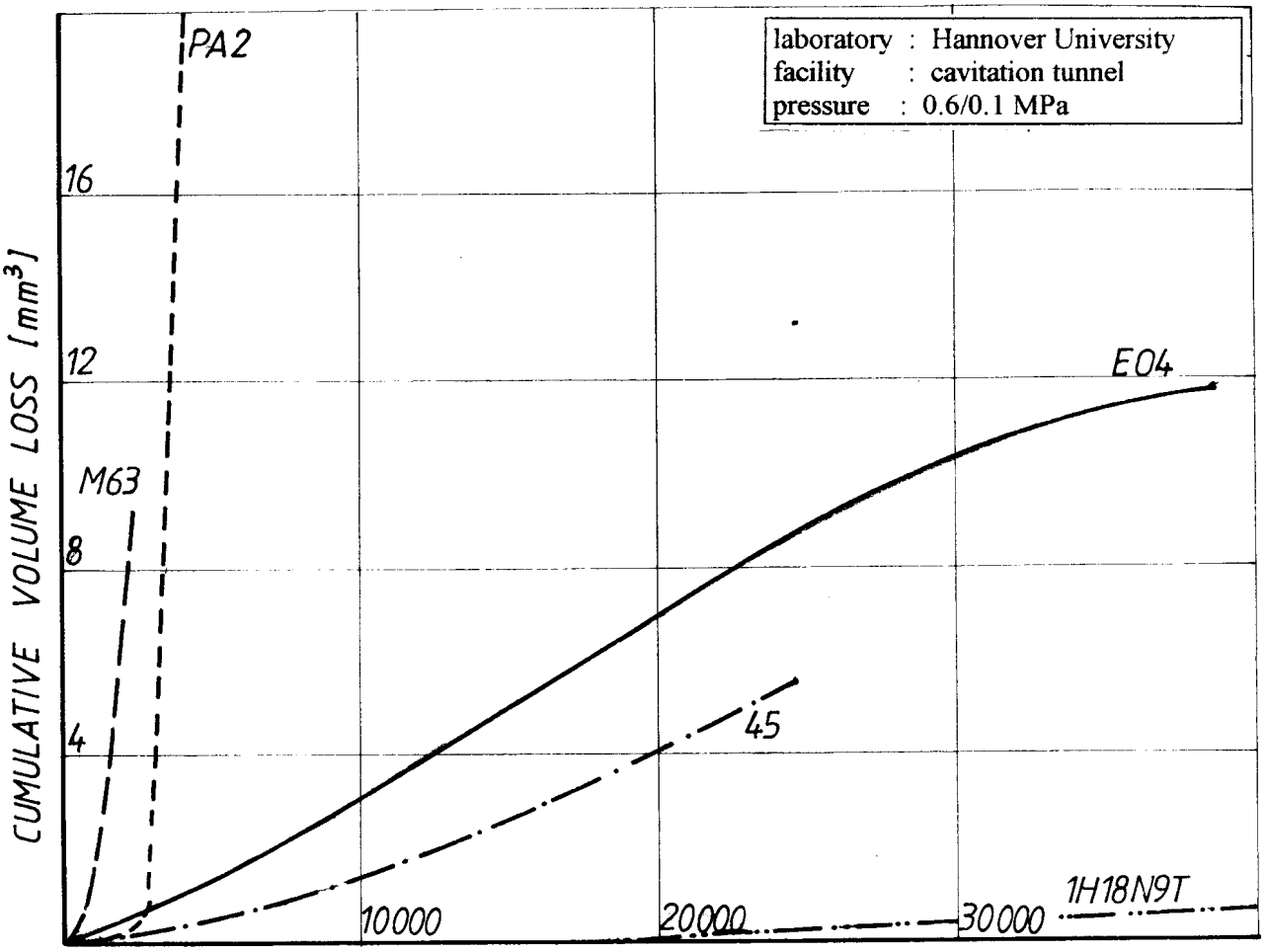
cavitator: system of barricades
specimen: rectangular plate
impinged area: 1800 mm^2
pressure upstream 600 kPa
pressure downstream: 100 kPa
flow velocity: 40 m/s

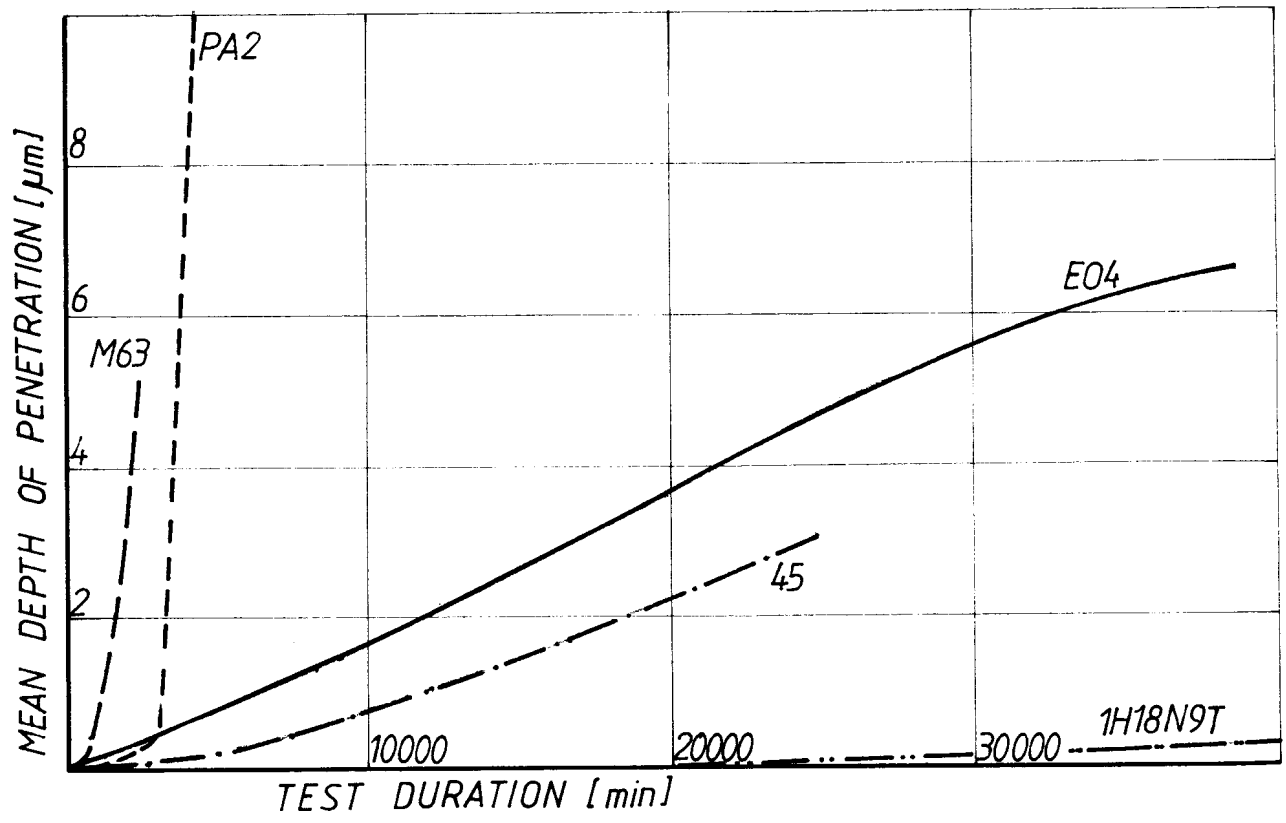
working liquid: tap water, pH = 7.8÷8.3, oxygen content: 5.0÷5.2 ppm
temperature: 25 ^{0}C

material	*Test duration*	*Volume loss*	*Eroded area*	*Mean&Max Depth of Penetration*		*Incubation period*		*MDPR*	
						$\tau_{0.2}$	τ_{inc}	*max*	*ultimate*
	min	mm^3	mm^2	μm	μm	min	min	nm/min	
PA2	6 932	24.991	1800	13.88	-	1000	3183	15.10	-
M63	2 446	9.312	1800	5.17	-	210	1167	3.90	3.90
E04	38 348	11.830	1800	6.57	-	84	3500	0.22	-
45	24 665	5.516	1800	3.06	-	420	9250	0.173	0.173
1H18N9T	104 212	3.411	1800	1.89	-	12330	22667	0.041	-
PA2	2 000	0.325	1800	0.18	-	1000	3183	15.1	-
M63	2 000	6.35	1800	3.52	-	230	1167	3.90	0.004
E04	2 000	0.65	1800	0.36	-	84	3500	0.22	-
45	2 000	0.235	1800	0.13	-	420	9250	0.173	0.173
E04	20 000	6.67	1800	3.71	-	84	1167	0.22	-
45	20 000	3.975	1800	2.21	-	420	9250	0.173	0.173
1H18N9T	20 000	0.119	1800	0.066	-	12330	22667	0.041	-

Comment

Eroded area has been assumed to cover whole the impinged surface.


laboratory : Hannover University
facility : cavitation tunnel
pressure : 0.6/0.1 MPa
CUMULATIVE VOLUME LOSS [mm³]
16
12
8
4
PA2
M63
E04
45
1H18N9T
10000
20000
30000


MEAN DEPTH OF PENETRATION [µm]
8
6
4
2
PA2
M63
E04
45
1H18N9T
10000
20000
30000
TEST DURATION [min]