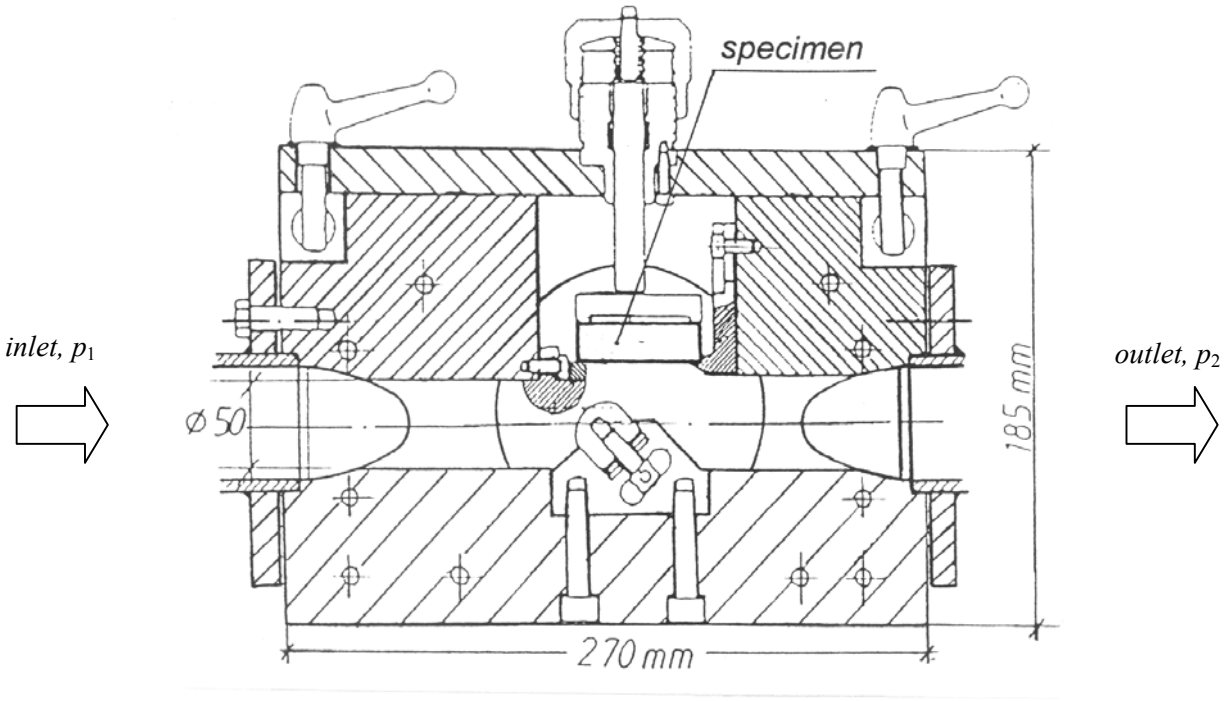
INTERNATIONAL CAVITATION EROSION TEST
Test Rig Identification Card

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

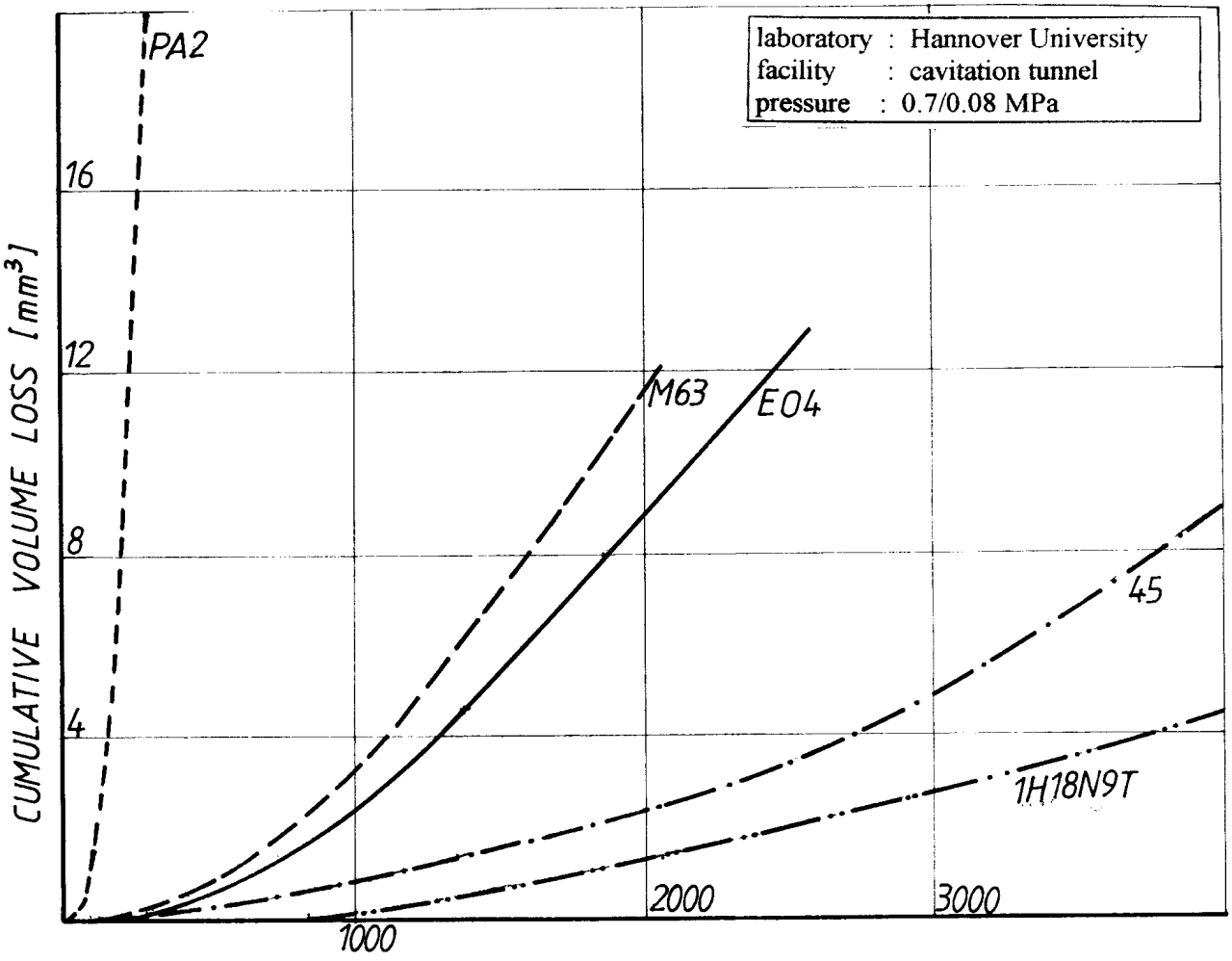
cavitator: system of barricades
specimen: rectangular plate
impinged area: 1800 mm^2
pressure upstream 700 kPa
pressure downstream: 80 kPa
flow velocity: 40 m/s

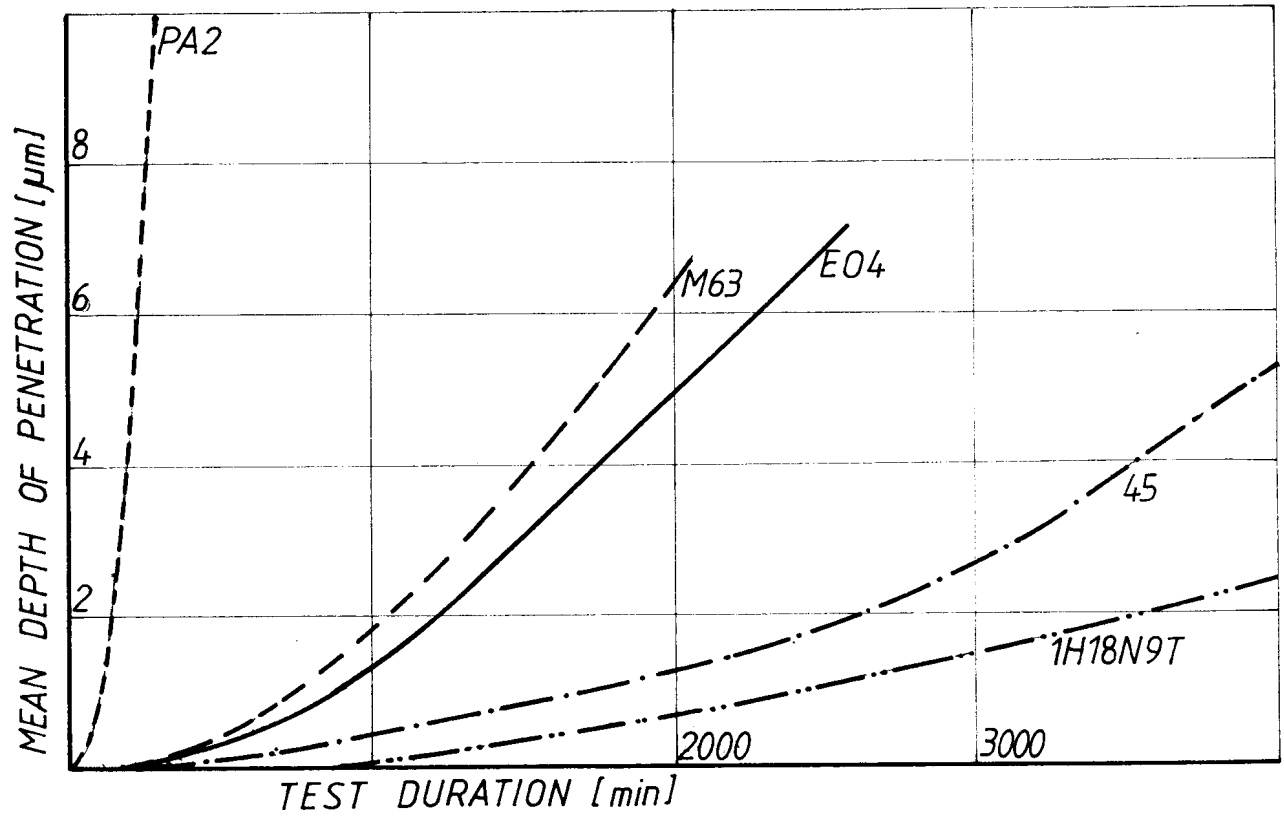
working liquid: tap water, pH = 7.8÷8.3, oxygen content: 5.0÷5.2 ppm
temperature: 25 ^{0}C

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	μm/min	
PA2	430	37.95	1800	21.08	-	40	135	0.071	0.071
M63	2040	12.123	1800	6.735	-	100	779.1	0.0049	0.0049
E04	2550	12.950	1800	7.190	-	34	683.3	0.0037	0.0037
45	4885	12.748	1800	7.225	-	70	1616.6	0.0025	-
1H18N9T	7912	13.949	1800	7.775	-	633	2050	0.0013	-
M63	2000	11.75	1800	6.53	-	100	779.1	0.0049	0.0049
E04	2000	9.09	1800	5.071	-	34	683.3	0.0037	0.0037
45	2000	2.35	1800	1.41	-	70	1616.6	0.0025	-
1H18N9T	2000	1.10	1800	0.625	-	633	2050	0.0007	-
45	4000	9.175	1800	4.95	-	70	1616.6	0.0025	-
1H18N9T	4000	4.675	1800	2.575	-	633	2050	0.0012	-

Comment

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


laboratory : Hannover University
facility : cavitation tunnel
pressure : 0.7/0.08 MPa
PA2
M63
E04
45
1H18N9T
16
12
8
4
1000
2000
3000
CUMULATIVE VOLUME LOSS [mm³]


PA2
M63
E04
45
1H18N9T
8
6
4
2
2000
3000
MEAN DEPTH OF PENETRATION [µm]
TEST DURATION [min]