INTERNATIONAL CAVITATION EROSION TEST
Test Rig Identification Card

Facility: rotating disk

Laboratory: **China Ship Scientific Research Centre** (CSSRC)

1. Sketch of the disk with cavitators and specimens as well as basic dimensions (disk diameter; mounting radius and size of cavitators and specimens)

disk diameter:	350 mm
size of cavitator:	*hole of* 16 mm dia.
number of cavitators:	9
mounting radius of cavitators:	80 mm, 110 mm, 140 mm
size of specimens:	∅ 30 mm × 3 mm, ∅ 40 mm × 3 mm
number of specimens:	18, ∅ 30 mm × 3 mm × 12, ∅ 40 mm × 3 mm × 6

2. Basic design and operational parameters

main motor power:	30	kW
rotation speed:	2950	rpm
peripheral speed of a cavitator/specimen	25, 34, 43	m/s
mean pressure in the test chamber:	≈ 10.6	kPa
standard temperature:	20÷25	°C
specimen area subjected to damage:	≈ 400	mm^2
gap between the disk and stagnator vanes	10	mm
other data		

designer Ji Zhiye

manufacturer: SIGMA Research Institute

INTERNATIONAL CAVITATION EROSION TEST

Laboratory Results Summarisation

Laboratory: **CHINA SHIP SCIENTIFIC RESEARCH CENTER**
WUXI, China

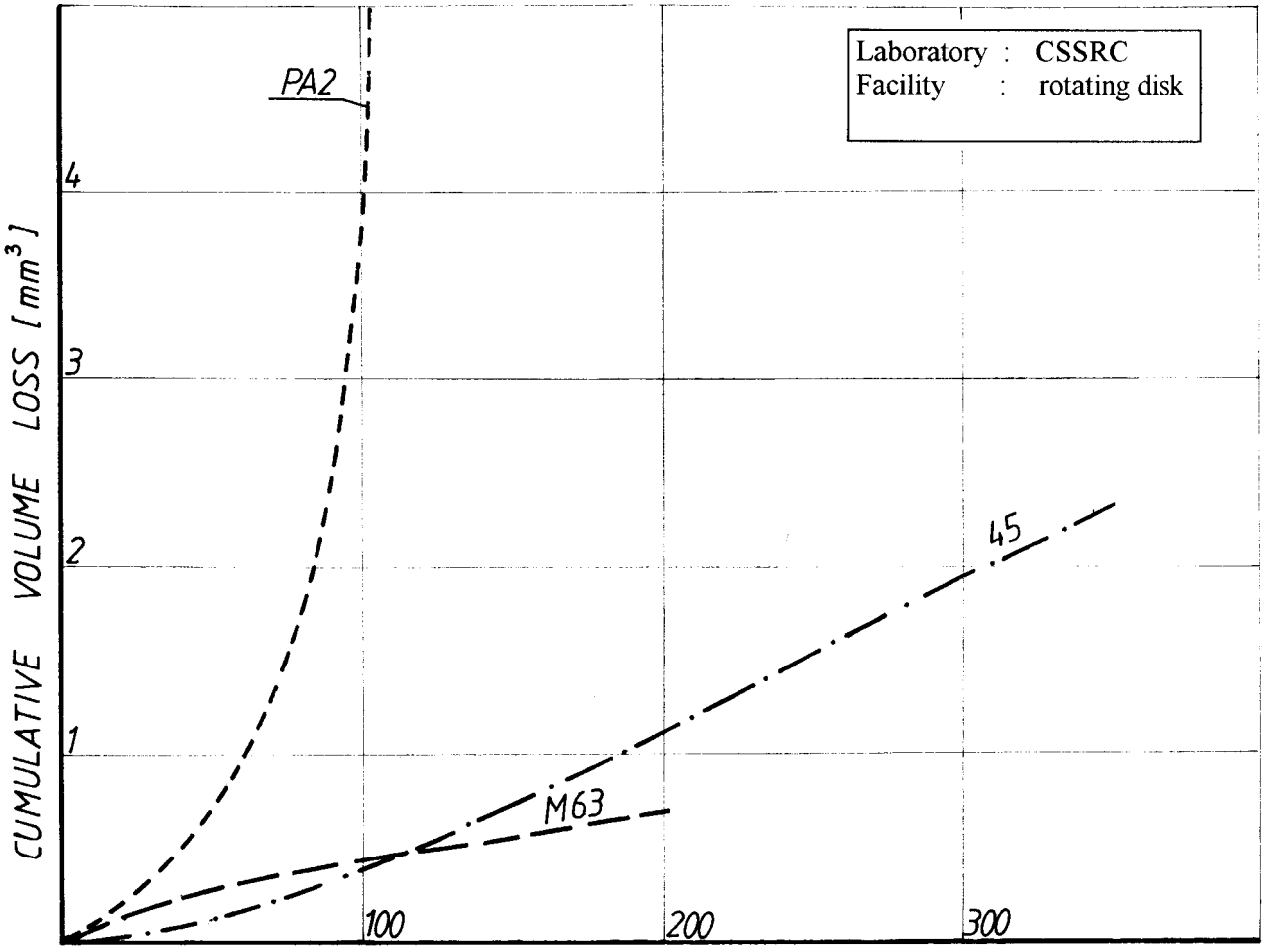
Facility: ROTATING DISK

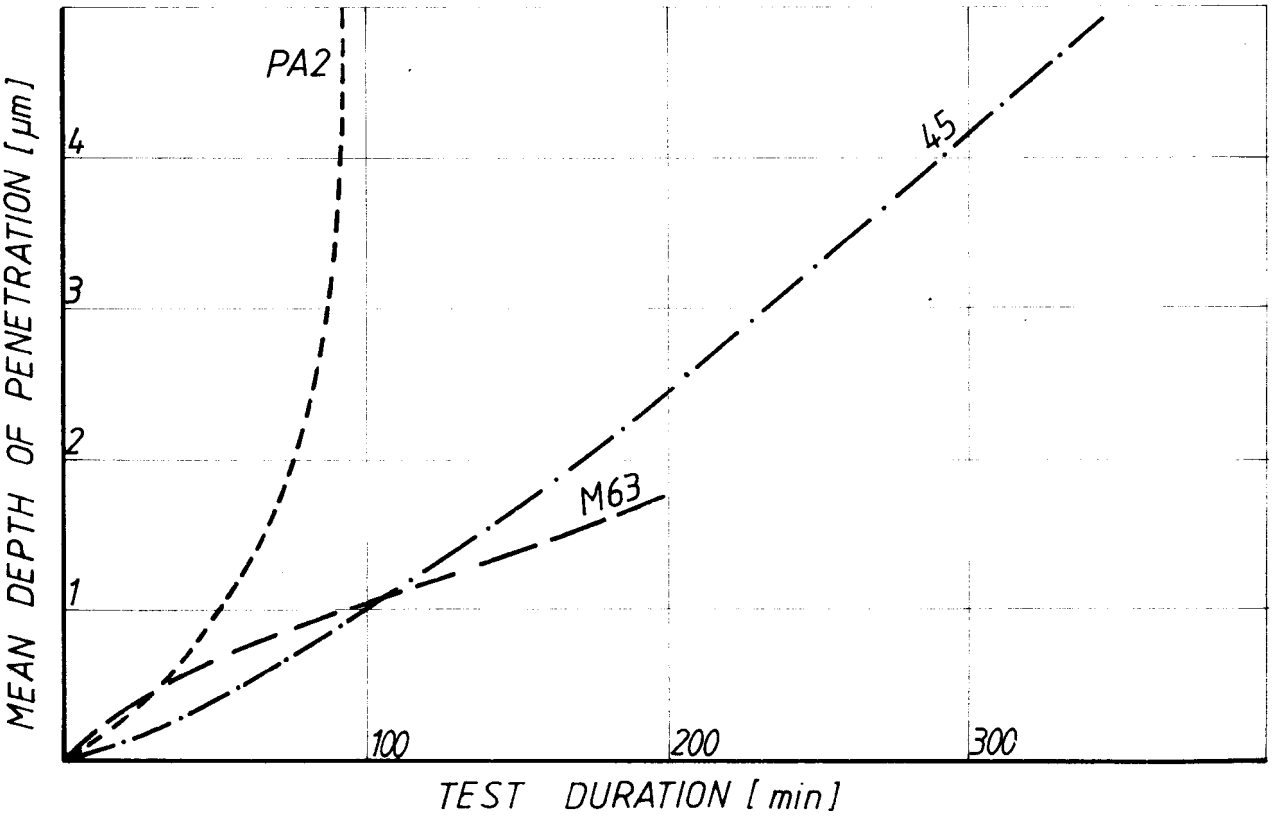
rotational speed : 2950 r.p.m
cavitator velocity: 43 m/s
mean pressure : 1030 hPa

specimen area subjected to damage: 1256.6 mm^2

working liquid: tap water, pH 7, temperature: 20 °C, oxygen: 8.3 mgO_2/dm^3 dissolved air content: 16.7 ml/l, chloride: 22.0 mg/dm^3 turbidity: 1°

material	*Test duration*	*Volume loss*	*Eroded area*	*Mean&Max Depth of Penetration*		*Incubation period* $\tau_{0.2}$	*Incubation period* τ_{inc}	*MDPR max*	*MDPR ultimate*
	min	mm^3	mm^2	μm	μm	min	min	μm/min	μm/min
PA2	160	24.0	750.0	32	412	9	89	0.48	0.44
M63	160	0.58	391.0	1.48	-	4	3	0.021	0 007
45	160	0.84	464.0	1.8	-	9	70	0.0182	0.182
M63	200	0.68	391.0	1.75	29	4	3	0.021	0.007
45	360	2.41	464.0	5.2	17	9	70	0.0182	0.0182


Laboratory : CSSRC
Facility : rotating disk
PA2
45
M63
CUMULATIVE VOLUME LOSS [mm³]
1
2
3
4
100
200
300


PA2
45
M63
MEAN DEPTH OF PENETRATION [µm]
1
2
3
4
100
200
300
TEST DURATION [min]