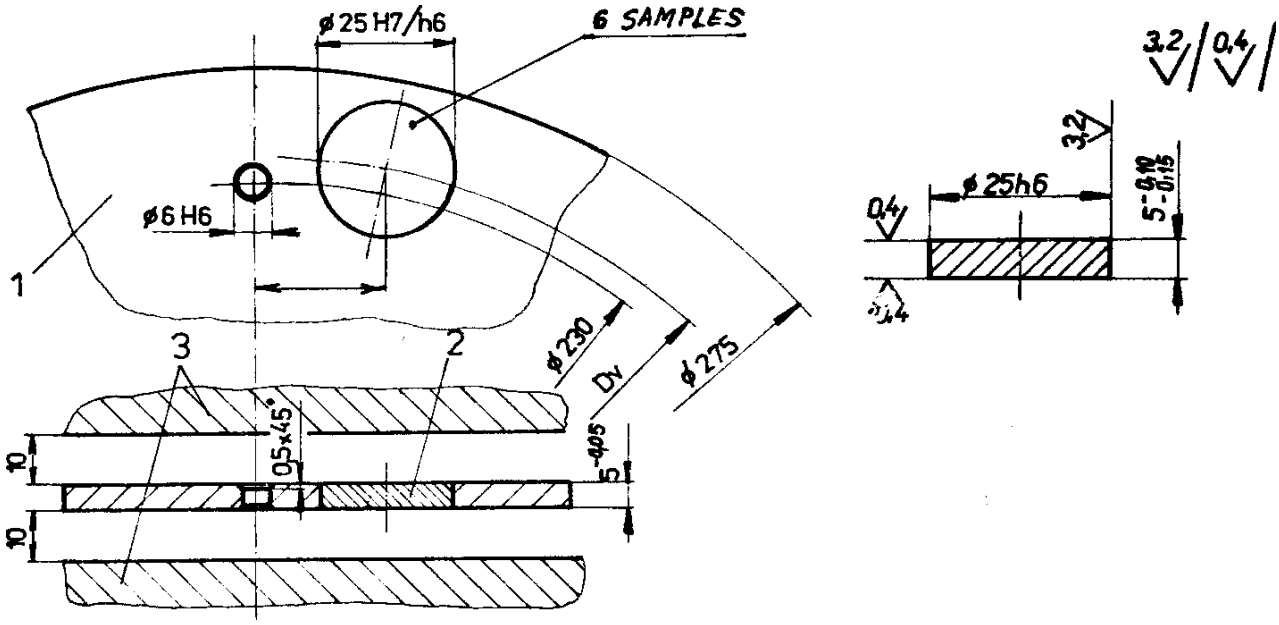
INTERNATIONAL CAVITATION EROSION TEST
Test Rig Identification Card

Facility: rotating disk

Laboratory: **SIGMA Research Institute**, Olomouc, Czechoslovakia

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



2. Basic design and operational parameters

main motor power:	52.5	kW
rotation speed:	3000÷6000	rpm
peripheral speed of a cavitator/specimen	36.1 ÷72.2	m/s
mean pressure in the test chamber:	70	kPa
standard temperature:	40±2	°C
specimen area subjected to damage:	2×491	mm^2
gap between the disk and stagnator vanes	10	mm
other data		

designer/manufacturer: SIGMA Research Institute

INTERNATIONAL CAVITATION EROSION TEST

Laboratory Results Summarisation

Laboratory: **SIGMA RESEARCH INSTITUTE**
OLOMOUC, Czechoslovakia

Facility: ROTATING DISK

rotational speed : 5000 r.p.m
cavitator velocity: 60.2 m/s
mean pressure : 700 hPa

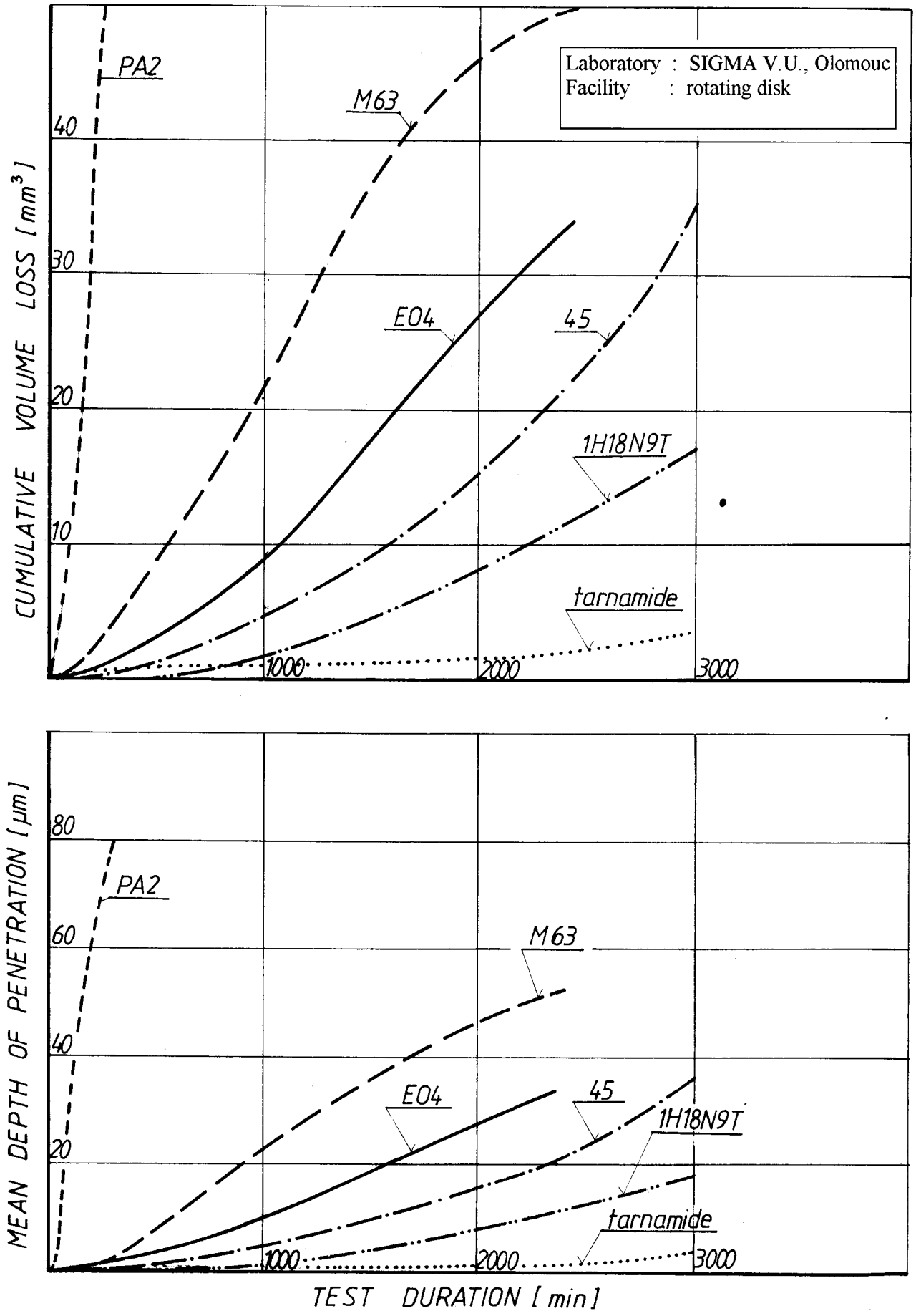
specimen area subjected to damage: 2×491 mm^2

working liquid: tap water, temperature: 40 ^{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	300	77.3325	982	78.75	-	13	22.5	0.405	-
M63	2400	51.5555	982	52.5	-	139	350	0.037	0.021
E04	2400	34.1245	982	34.75	-	52	550	0.018	0.018
45	3000	34.861	982	35.5	-	61	>1875	>0.036	-
1H18N9T	3000	16.9395	982	17.25	-	110	>1137.5	>0.009	0.009
tarnamide	3000	2.8969	982	2.95	-	88	75	0.033	0.001

Comment

Eroded area has been assumed to be determined by the specimen surface area subjected to the cavitation attack..


Laboratory : SIGMA V.U., Olomouc
Facility : rotating disk
CUMULATIVE VOLUME LOSS [mm³]
MEAN DEPTH OF PENETRATION [μm]
TEST DURATION [min]
PA2
M63
E04
45
1H18N9T
tarnamide
40
30
20
10
80
60
40
20
1000
2000
3000