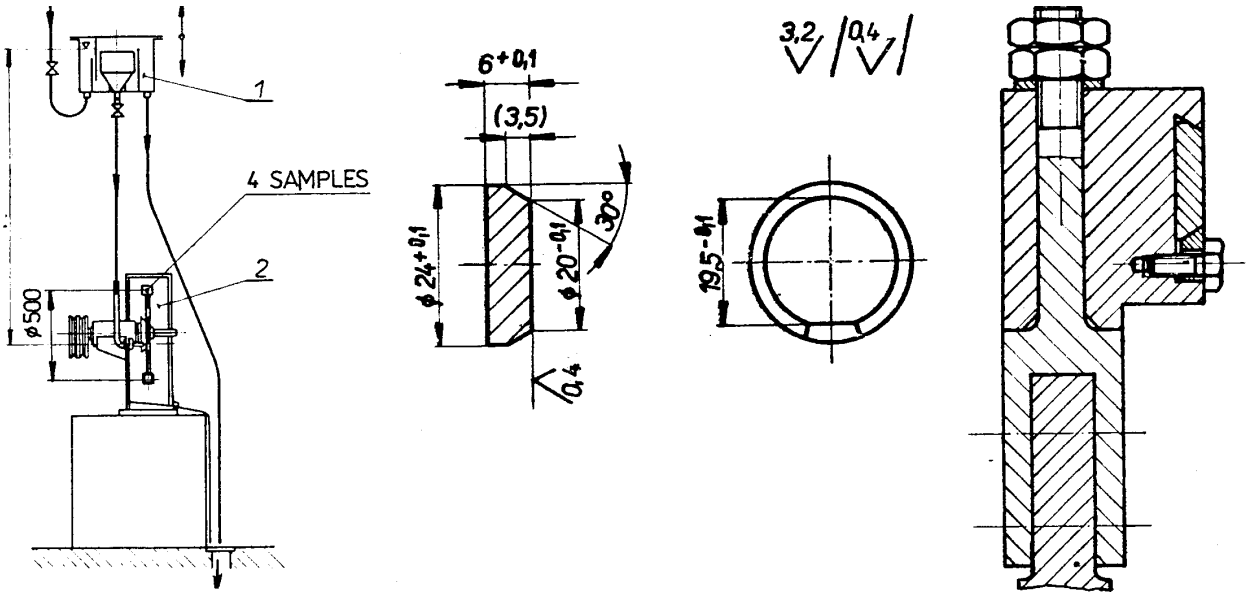
INTERNATIONAL CAVITATION EROSION TEST

Test Rig Identification Card

Facility: **Liquid Jet Impact Device**

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

1. Sketch of the rotating wheel with specimens and basic dimensions (wheel diameter, number of specimens, dimensions and the method of mounting)



2. Basic operational data

pump power	-	kW
wheel motor power	2.2/5.5	kW
rotation speed of the wheel	1530 ÷ 3055	rpm
peripheral velocity of the specimens	40÷80	m/s
jet diameter	18.0	mm
absolute velocity of the jet	6.75	m/s
relative impact velocity of the jet	maximum 80.3	m/s
outlet diameter of the nozzle	20/6	mm
distance between the nozzle and specimens	5	mm

designer/manufacturer: SIGMA Research Institute

INTERNATIONAL CAVITATION EROSION TEST

Laboratory Results Summarisation

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

Facility: LIQUID JET

rotational speed : 3055 r.p.m
specimen velocity: 80 m/s
head : 2.5 m H_2O

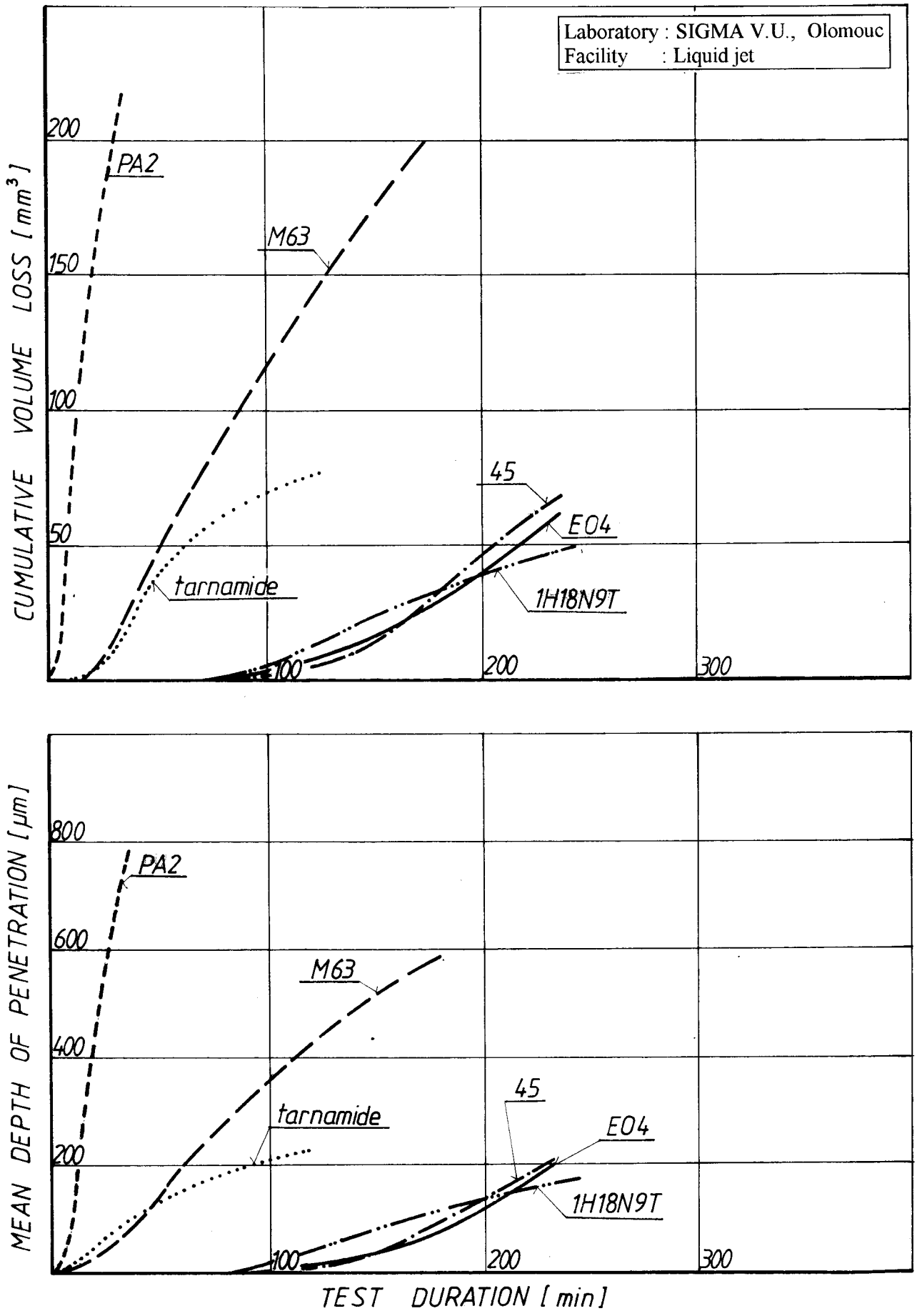
nozzle diameter: 6 mm
specimen area subjected to damage : 298.6 mm^2

working liquid: tap water

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	
PA2	30	230.92	298.6	773	-	?	1.25	33.75	24.0
M63	180	188.3927	298.6	631	-	9	32.5	11.1	-
E04	240	67.4347	298.6	220	-	34	151	>2.6	2.20
45	240	69.9997	298.6	234	-	56	134	>2.6	2.60
1H18N9T	240	50.5019	298.6	173	-	25	94	1.32	<0.86
tarnamide	120	81.7843	298.6	274	-	0.5	12.5	5.2	-

Comment

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


Laboratory : SIGMA V.U., Olomouc
Facility : Liquid jet
CUMULATIVE VOLUME LOSS [mm³]
200
150
100
50
PA2
M63
45
E04
tarnamide
1H18N9T
100
200
300
MEAN DEPTH OF PENETRATION [μm]
800
600
400
200
PA2
M63
tarnamide
45
E04
1H18N9T
100
200
300
TEST DURATION [min]

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