INTERNATIONAL CAVITATION EROSION TEST
Test Rig Identification Card

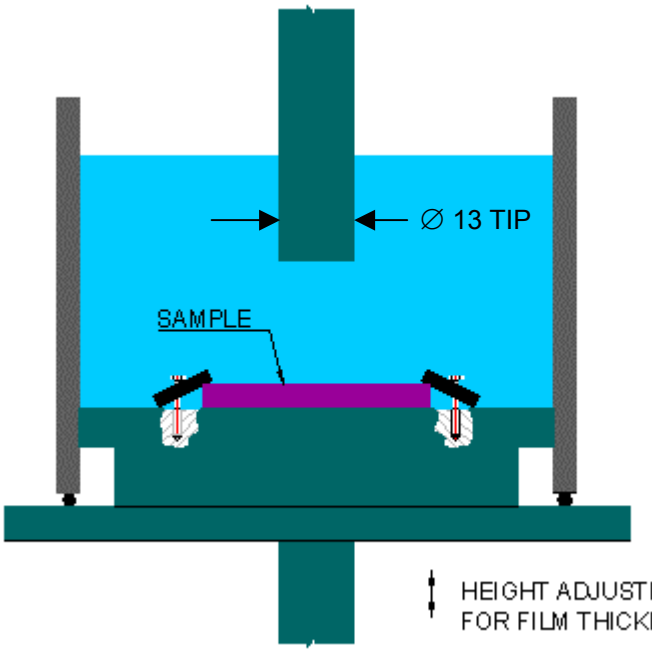
Facility: vibratory rig

Principle of vibration generation:

~~magnetostriction~~ /piezoelectricity/

Laboratory: **DEPARTMENT OF ENGINEERING DESIGN & MANUFACTURE, UNIVERSITY OF HULL,**

1. Sketch of the sample (counter-sample) with dimensions and showing mounting method



sample size

∅ 20 ÷ ∅ 40

or

□ 20 ÷ □ 40

thickness
up to 5 mm

2. Basic operational data

input power:	1000	W
oscillation frequency:	20	kHz
oscillation amplitude(p-p):	≈ 50	µm
standard temperature:	20±1	˚C

open/~~pressurised~~ vessel

sample submergence depth (open vessel):	40	mm
vessel diameter: 80 mm height:	70	mm
sample area subjected to damage: (TIP ∅ 13)	133	mm^2

other data:

designer/manufacturer:
PR Kerry / DEPARTMENT OF ENGINEERING DESIGN & MANUFACTURE

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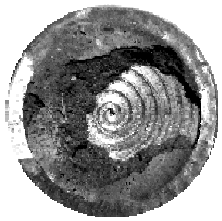

INTERNATIONAL CAVITATION EROSION TEST

Laboratory Results Summarisation

Laboratory: **UNIVERSITY OF HULL**
DEPARTMENT OF ENGINEERING DESIGN & MANUFACTURE
HULL, U.K.

Facility: VIBRATORY RIG (stationary specimen)

oscillation frequency: 20.0 kHz *tip/sample distance:* 0.5 mm
amplitude: 117.0 µm *impinged area:* 218.5 mm^2

working liquid: tap water, pH 7.5, 20˚C

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	720	75.8	211.3	359.2	-	0.19	9	4.76	0.33
M63	720	17.95	131.3	140.95	-	10	44	0.60	0.12
E04	720	9.40	129.2	72.8	-	20	73	0.69	-
45	720	12.0	126.1	94.6	-	33	43	0.59	0.14
1H18N9T	720	4.40	123.9	35.6	-	13	40	0.090	-

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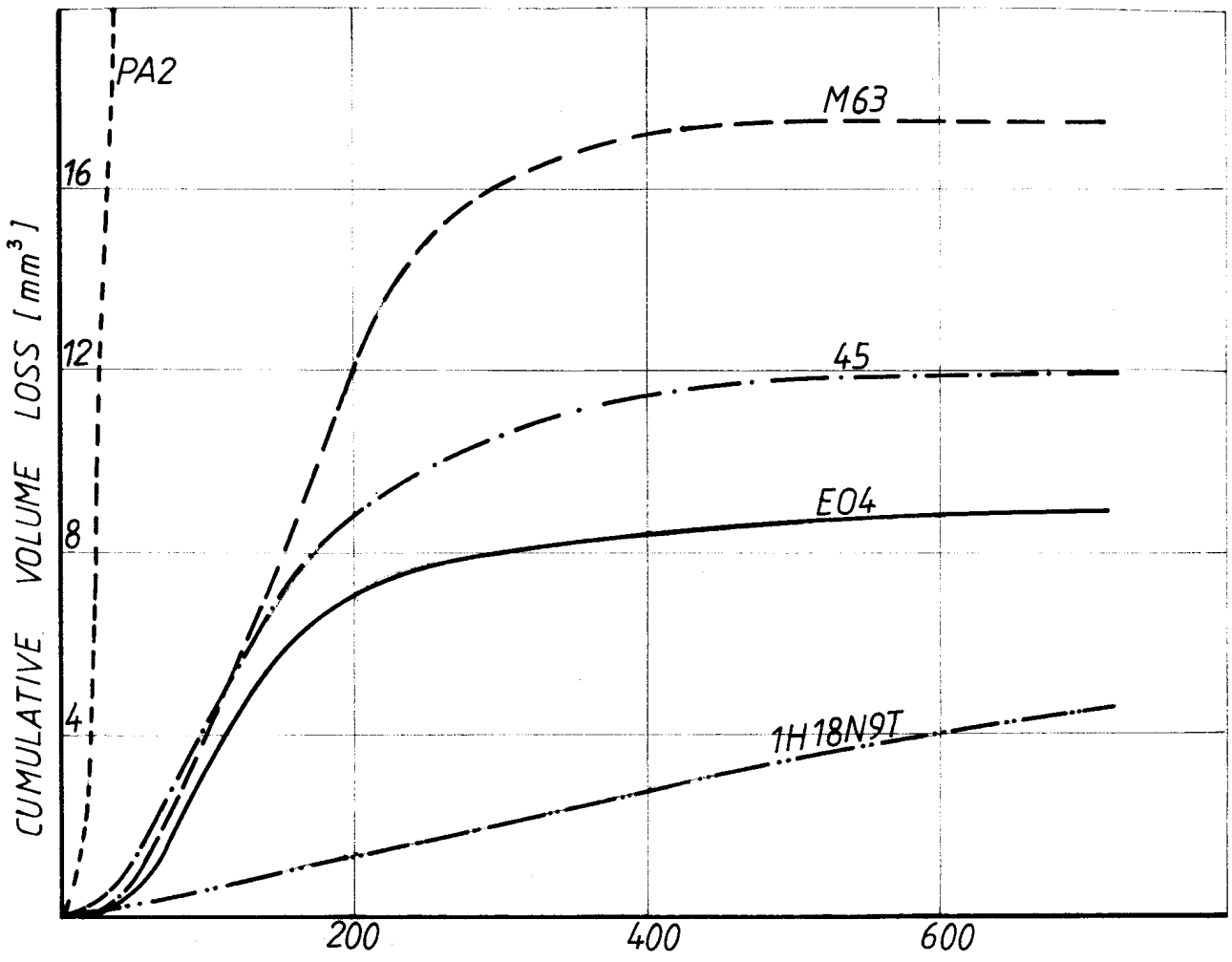
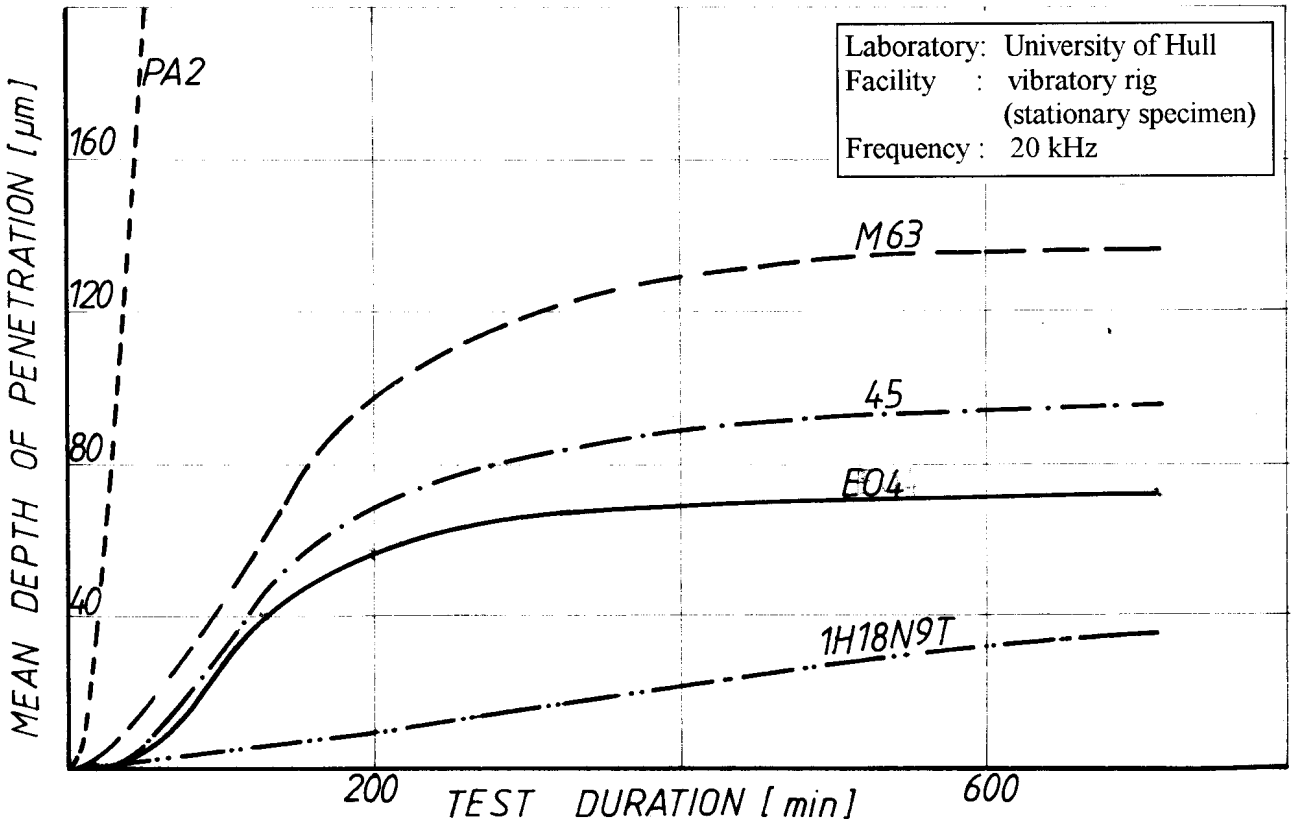

PA2
M63
45
E04
1H18N9T
16
12
8
4
200
400
600
CUMULATIVE VOLUME LOSS [mm³]


Laboratory: University of Hull
Facility : vibratory rig
(stationary specimen)
Frequency : 20 kHz
PA2
M63
45
E04
1H18N9T
160
120
80
40
200
600
MEAN DEPTH OF PENETRATION [μm]
TEST DURATION [min]