



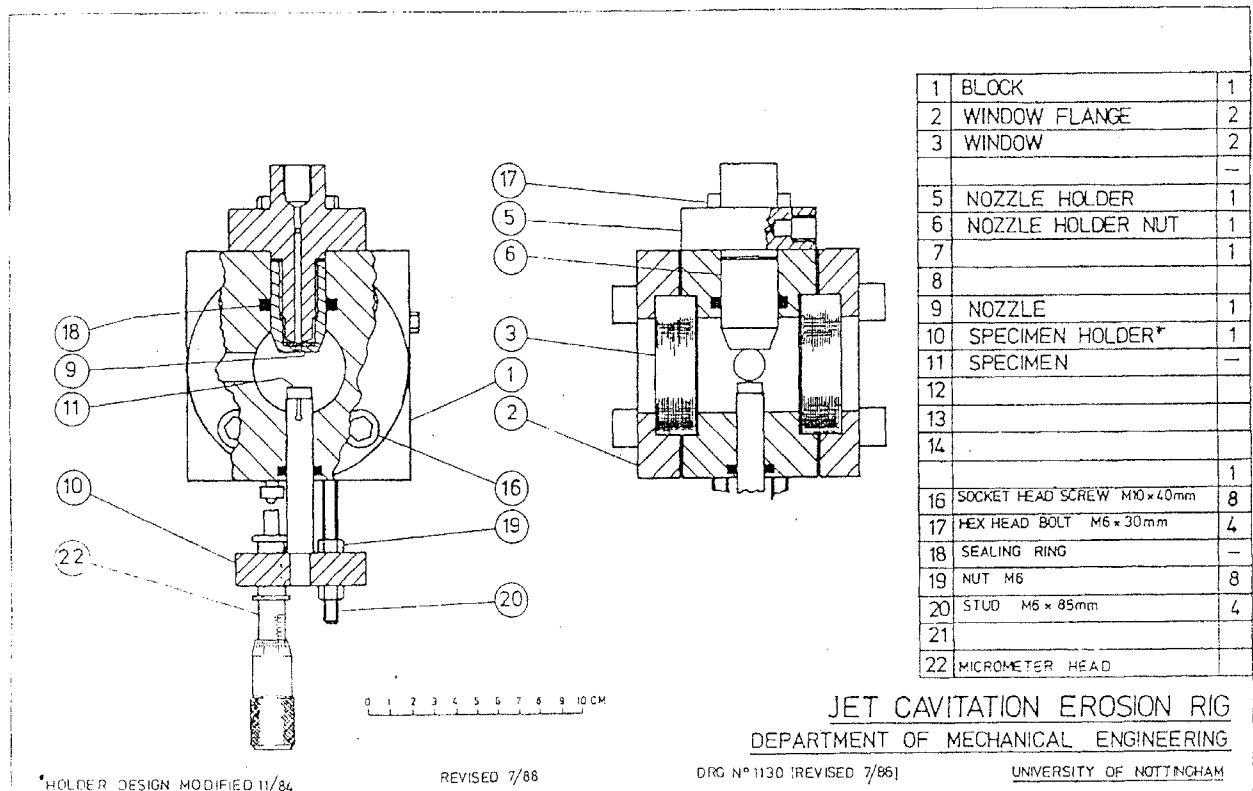
INTERNATIONAL CAVITATION EROSION TEST

Test Rig Identification Card

Facility: **Cavitating Jet**

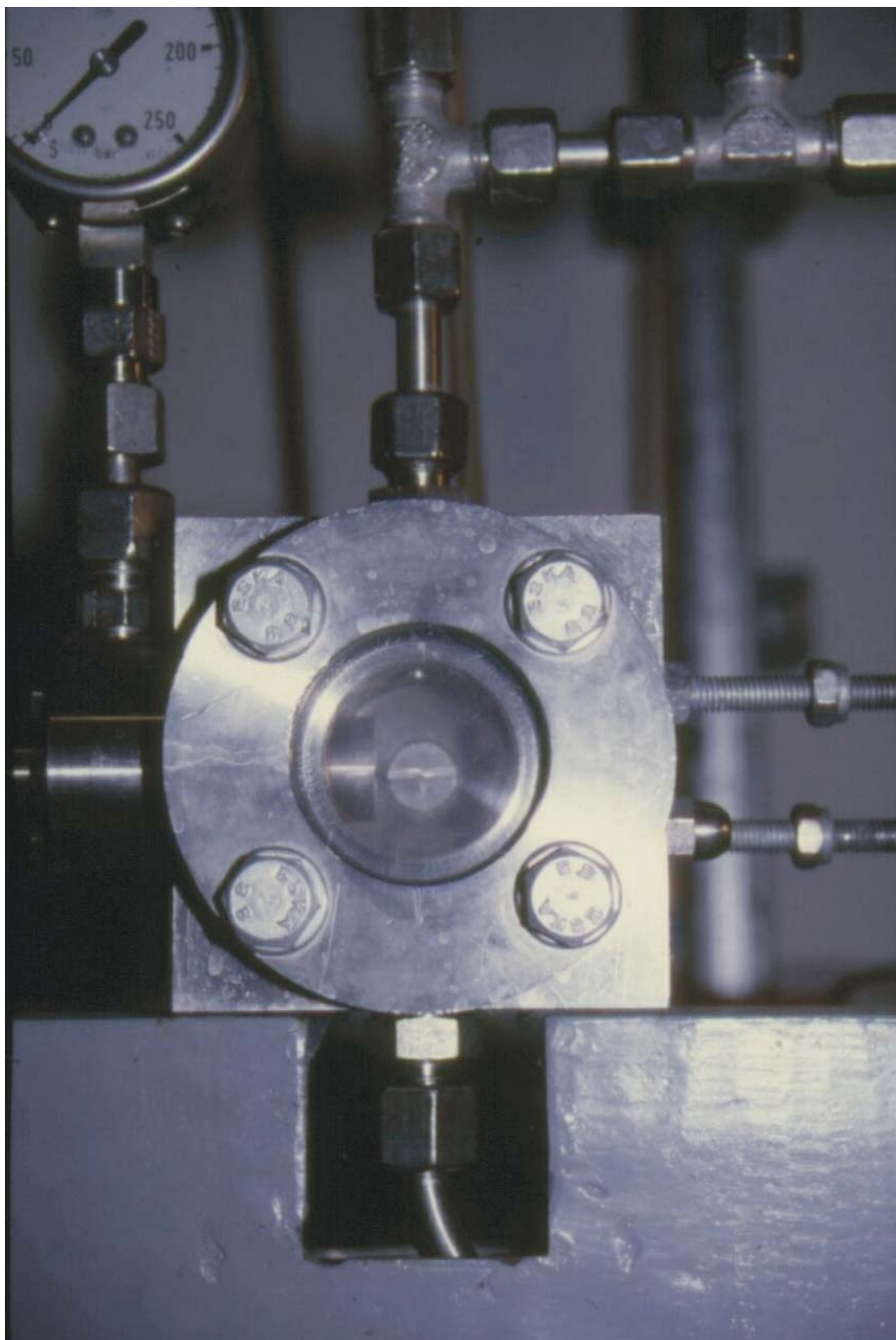
Laboratory: **Universität Hannover, Institut für Werkstoffkunde**
Appelstraße 11A, 3000 Hannover 1, Germany

1. Sketch of the facility with specimen and basic dimensions



2. Basic operational data

nozzle diameter 0.4+0.015 mm
 nozzle length 1.0 mm
 test chamber size (diameter/width) dia 50 mm / length 50 mm
 specimen diameter 14.5 mm
 stand-off distance of the specimen 18.0 mm
 pump power 10.8 kW
 maximum pressure upstream the nozzle (pump pressure) 210 bar
 maximum and minimum pressure in the chamber:
 adjustable, adjustment range 8 ÷ 20 MPa
 designer: Dr Andrzej Lichtarowicz, University of Nottingham





INTERNATIONAL CAVITATION EROSION TEST

Laboratory Results Summarisation

Laboratory: **HANNOVER UNIVERSITY**
INSTITUTE OF MATERIALS SCIENCE
HANNOVER, Germany

Facility: **CAVITATING JET**

upstream pressure : 14.0 MPa *stand-off distance*: 18.0 mm
pressure in the chamber: 0.1 MPa *specimen area subjected*
nozzle diameter : 0.4 mm *to damage*: 165.1 mm²

working liquid: tap water, pH 8.0÷8.2, temperature: 24.5±0.5 °C,
oxygen: 4.5÷4.9 ppm

<i>material</i>	<i>Test</i>	<i>Volume</i>	<i>Eroded</i>	<i>Mean&Max Depth</i>		<i>Incubation period</i>		<i>MDPR</i>	
	<i>duration</i>	<i>loss</i>	<i>area</i>	<i>of Penetration</i>		$\tau_{0.2}$	τ_{inc}	<i>max</i>	<i>ultimate</i>
	min	mm ³	mm ²	μm	μm	min	min	μm/min	
PA2	294	17.860	165.1	108.2	–	6	43.3	0.3175	0.4175
M63	735	2.918	165.1	17.7	–	95	360	0.065	–
E04	2671	8.226	165.1	49.8	–	110	283	0.025	0.0195
45	930	3.152	165.1	19.09	–	206	443	0.035	0.035
1H18N9T	1805	2.270	165.1	13.8	–	162	416.6	0.0085	0.0085
M63	600	1.803	165.1	11.7	–	95	360	0.065	–
E04	600	1.325	165.1	8.03	–	110	283	0.025	0.0195
45	600	1.238	165.1	7.5	–	206	443	0.035	0.035
1H18N9T	600	0.488	165.1	3.2	–	162	416.6	0.0085	0.0085
E04	1200	3.350	165.1	20.29	–	110	283	0.025	0.0195
1H18N9T	1200	1.325	165.1	8.4	–	162	416.6	0.0085	0.0085

Comment

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

