Dynamic Surf series 2

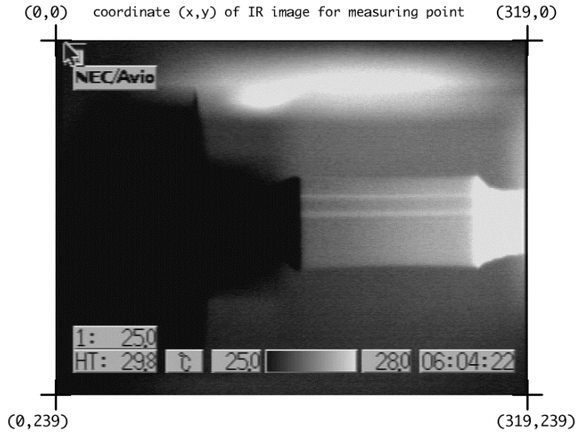
[acronym]
AR: Aspect Ratio (=Length/Dia.=L/D)
C/O: check out
CD: Cooling Disk
Dia.: Diameter
DSD : Dynamic Surf Deformation
ΔT: Temperature difference between Cooling disk and Heating disk
Exp.: Experiment
GMT: Greenwich Mean Time
H: Liquid Bridge Length [mm]
HD: Heating Disk
IR: Infrared (Infrared image)
JST: Japan Standard Time (=GMT+9h)

[acronym]
L/D: Length/Diameter (ratio of liquid bridge length to liquid bridge diameter)
L/R: Length/Radius (ratio of liquid bridge length to liquid bridge radius)
LB: Liquid Bridge
N/A: Not Applicable
V/V_0: actual Liquid Bridge volume / straight Liquid Bridge volume
VR: Volume Ratio (=actual Liquid Bridge volume/straight Liquid Bridge volume)
VRU: Video Recording Unit

[glossary]
LB target length: Cooling disk position on telemetry data from initialized point
Corrected LB Length[mm]=""LB target length" on telemetry data"+"initial gap"
or ""CD taraget posn w/o volume adjusting" on telemetry data"+"initial gap"
initial gap: correction value of distance between disks

[Information]

Correction value	surrounding gas
Corrected HD temperature = HD temperature of telemetry (H-D TC1 Temp) + 0.04[K]	from DS2-C/O to DS2-11: Neon(99.9%)+Air(0.1%) from DS2-12 to DS2-31: Argon(96.3%)+Neon(3.7%)



Pic.-1 Coordinate of IR image

The Liquid Bridge size on above image: Dia.=10[mm], L=20[mm]

[Experiment sample]

	Material name	Manufacture	Model number, Character	amount	density @25 dgree C [kg/m^3]	kinematic viscosity @25degree C [m^2/s]	temperature coefficient of surface tension [N/mK]	Thermal diffusivity [m^2/s]
Working fluid	silicone oil	Shin-Etsu Chemical Co., Ltd.	KF-96L-5CS	-	912.35	5.00E-06	-6.58E-05	7.46E-08
Dye	N/A							
Tracer particles	Gold-coated acrylic sphere particles	Soken Chemical & Engineering Co., Ltd.	Dia.=30 micrometer	0.0585 mg	1485.68	N/A	N/A	-

[Experiment Table]

Exp. No. unit	Exp. Day(JST) YYYY/MM/DD	Exp. Day (GMT) YYYY/MM/DD-DD	Disk Dia. [mm]	surrounding gas	Target LB Length (corrected) [mm]	initial gap [mm]	"LB target length" or "CD target posn" at Exp. end [mm]	AR (L/D)	Typical VR (V/V_0)	Target	measuring point in IR image, coordinate (X1, Y1), see Pic.-1	MIDM image position from HD surface (Edge) (mm)	note	recording status
DS2-C/O (DS2-01)	2014/12/01	2014/11/30-12/01	10	Neon	-	no data	3	-	-	function check	No function on the Dynamic Surf series-1 and 2	-	checkout operation (cont.) misaligned IR image field	without VRU Rec.
DS2-02	2014/12/17	2014/12/16-17	10	Neon	5.00	3.00	0	0.50	1.00	critical ΔT, measurement of DSD		from 0 to 4.92	fixed IR image field at Dec. 15 22:01-23:32 air bubble removal	without VRU Rec.
DS2-03	2014/12/18	2014/12/17-18	10	Neon	10.00	3.00	2	1.00	1.00	critical ΔT, measurement of DSD		from 0 to 9.9	22:25-00:13 air bubble removal	without VRU Rec.
DS2-04	2014/12/25	2014/12/24-25	10	Neon	2.50	5.00		0.25	1.00	critical ΔT		0.1	-	with VRU Rec. No Down link video.
					5.00		0	0.50	1.00					
DS2-05	2015/01/07	2015/01/06-07	10	Neon	20.00	5.00	0	2.00	1.00	influence of cooling disk temp. on critical ΔT		-	-	with VRU Rec. No Down link video.
DS2-06	2015/01/13	2015/01/12-13	10	Neon	5.00	5.00	0	0.50	1.00	influence of cooling disk temp. on critical ΔT		-	-	with VRU Rec.
DS2-07	2015/01/20	2015/01/19-20	10	Neon	20.00	5.00	0	2.00	1.00	influence of cooling disk temp. on oscillation mode		-	-	without VRU Rec.
DS2-08	2015/01/22	2015/01/21-22	10	Neon	5.00	5.00	0	0.50	1.00	critical ΔT		0.23	-	with VRU Rec. No Down link video.
					2.50		2.5	0.25	1.00	influence of cooling disk temp. on critical ΔT		0.12	I/O Box OFF at 03:40. After 3:40, Experiment has been canceled.	
DS2-09	2015/01/26	2015/01/25-26	10	Neon	20.00	5.00	0	2.00	1.00	influence of cooling disk temp. on critical ΔT		-	There are no data from 01:51 to 01:57 due to reset operation system.	without VRU Rec.
DS2-09'	2015/01/26	2015/01/26	10	Neon	1.00	5.00	0	0.10	-	offset value of TC		-	This run is for checking the offset value of TC4 ,TC5 and TC6 on Cooling Disk, and for checking the offset value of TC1, TC2 and TC3 on Heating Disk. You can use the data between 11:03-11:10 to correct.	without VRU Rec.
DS2-10	2015/01/27	2015/01/26-27	10	Neon	2.50	5.00		0.25	1.00	influence of cooling disk temp. on critical ΔT		-	-	with VRU Rec.
					5.00		0	0.50	0.80	critical ΔT				
DS2-10'	2015/01/27	2015/01/27	10	Neon	1.00	5.00	0	0.10	0.9-0.93	correction value of TC		–	This run is for getting the correction value of TC4 ,TC5 and TC6 on Cooling Disk, and TC1, TC2 and TC3 on Heating Disk. You can use the data between 06:55-10:30 to correct TC value.	without VRU Rec.
DS2-11	2015/01/28	2015/01/27-28	10	Neon	5.00	5.00		0.50	0.5, 0.6, 0.65, 0.7, 0.8, 1.0	influence of volume ratio on critical ΔT		4.9	-	with VRU Rec.
					10.00		-4.85	1.00	1.0, 0.65	influence of cooling disk temp. on critical ΔT				
DS2-12	2015/02/25	2015/02/24-25	10	Argon	5.00	0.15	4.85	0.50	1.00	influence of cooling disk temp. on critical ΔT		-	gas replacement from Neon to Argon	with VRU Rec. No Down link video.
DS2-13	2015/03/02	2015/03/01-02	10	Argon	5.00	5.00	0	0.50	1.00	influence of cooling disk temp. on critical ΔT		-	-	without VRU Rec.
DS2-14	2015/03/03	2015/03/02-03	10	Argon	10.00	5.00	0	1.00	1.00	influence of cooling disk temp. on critical ΔT		-	-	without VRU Rec.
DS2-15	2015/03/05	2015/03/04-05	10	Argon	10.00	5.00	-2.5	1.00	1.00	influence of cooling disk temp. on critical ΔT		-	-	with VRU Rec. No Down link video.
DS2-16	2015/03/06	2015/03/05-06	10	Argon	5.00	2.50	3.5	0.50	0.60	Drying operation for Cooling Disk, and air bubbel removal operation		-	02:43-04:11 air bubble removal	without VRU Rec.
DS2-17	2015/03/07	2015/03/06-07	10	Argon	5.00	6.00	1	0.50	0.60	influence of cooling disk temp. on critical ΔT		-	-	without VRU Rec.
DS2-18	2015/03/13	2015/03/12-13	10	Argon	5.00	7.00	0	0.50	0.50	influence of cooling disk temp. on critical ΔT		-	-	with VRU Rec.

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DS2-19	2015/03/14	2015/03/13-14	10	Argon	5.00	7.00	0	0.50	0.50	influence of cooling disk temp. on critical ΔT	No function on the Dynamic Surf series-1 and 2	-	-	without VRU Rec.
DS2-20	2015/03/15	2015/03/14-15	10	Argon	2.50 3.00	7.00	0	0.25 0.30	- -	leak (from Edge) condition check		-		without VRU Rec.
DS2-21	2015/03/16	2015/03/15-16	10	Argon	-	7.00	-2	-	-	Drying operation for Cooling Disk		-	Experiment has been canceled by oil leak at the disk edge.	without VRU Rec.
DS2-22	2015/03/17	2015/03/16-17	10	Argon	-	5.00	0	-	-	Drying operation for Cooling Disk		-		without VRU Rec.
DS2-23	2015/03/18	2015/03/17-18	10	Argon	5.00	5.00	-2.5	0.50	0.44 0.35	critical ΔT		-	with air bubble	without VRU Rec.
DS2-24	2015/03/22	2015/03/21-22	10	Argon	5.00	2.50	4.5	0.50	0.7, 0.8	influence of cooling disk temp. on critical ΔT		-	23:35-00:07 air bubble removal	without VRU Rec.
DS2-25	2015/03/23	2015/03/22-23	10	Argon	5.00	7.00	0	0.50	0.40	influence of cooling disk temp. on critical ΔT		-	-	without VRU Rec.
DS2-26	2015/03/24	2015/03/23-24	10	Argon	5.00	7.00	0	0.50	0.35	influence of volume ration on leak (from Disk Edge) condition		-	Experiment has been canceled by oil leak at the disk edge.	without VRU Rec.
DS2-27	2015/03/25	2015/03/24-25	10	Argon	5.00	7.00	-4.5	0.50	0.8, 0.7, 0.65	influence of cooling disk temp. on critical ΔT		-	-	with VRU Rec. No Down link video.
DS2-28	2015/04/07	2015/04/06-07	10	Argon	25.00 28.00	2.50	0	2.50 2.80	0.95 0.94	critical ΔT		0.1	Long liquid bridge (L=27.5mm, 30.5mm)	with VRU Rec.
DS2-29	2015/04/08	2015/04/07-08	10	Argon	10.00	2.50	0	1.00	1.00	influence of cooling disk temp. on critical ΔT		-	-	without VRU Rec.
DS2-30	2015/04/10	2015/04/09-10	10	Argon	5.00	2.50	0	0.50	1.00	measurement of DSD		from 0 to 5.1	-	without VRU Rec.
DS2-31	2015/04/15	2015/04/15	10	Argon	5.00	2.50	0	0.50	1.00	Critical ΔT, Long liquid bridge, Spherical Liquid		-	Long liquid bridge (L=31.5mm), Spherical liquid (Dia.=25mm), Fatter liquid bridge (L=40.66mm), etc.	without VRU Rec.