

Subject: NENZF test case: T4 shot 10572

From: Wilson Chan <y.chan1@uq.edu.au>

Date: 18/12/19, 10:19 pm

To: Peter Jacobs <p.jacobs@uq.edu.au>

Hi Peter,

As promised, data from a NENZF run for one of my T4 shots (10572).

The fill conditions, nozzle-supply and nozzle-exit conditions are shown below (highlighted in blue).

	Res.	C.T.		S.T.					Nozzle-supply conditions			Nozzle-exit conditions							
Shot -	p_{fill} MPa	p_{fill} kPa	Argon frac.	p_{fill} kPa	T_{fill} K	Test gas	Diaph. mm	u_{shock} m/s	p_s MPa	T_s K	H_s MJ/kg	p_{∞} kPa	T_{∞} K	ρ_{∞} kg/m ³	U_{∞} m/s	M_{∞} -	Re_{∞} 1/m	γ_{∞} -	\dot{m}_{capture} kg/s
10558	4.65	67	60	140	300	Air	5	2208	32.98	3726	4.595	8.866	529.7	0.0583	2862	6.24	6.003×10^6	1.384	0.4178
10559	4.80	67	51	130	300	Air	5	2434	37.07	4223	5.543	10.58	674.4	0.0547	3127	6.08	5.251×10^6	1.368	0.4283
10560	4.80	67	55	150	300	Air	5	2265	35.36	3825	4.771	9.671	560.2	0.0601	2917	6.19	6.076×10^6	1.381	0.4391
10561	4.80	67	55	150	300	Air	5	2276	34.98	3837	4.795	9.579	563.3	0.0592	2924	6.19	5.977×10^6	1.381	0.4334
10562	4.85	67	55	150	300	Air	5	2276	35.72	3851	4.819	9.759	565.4	0.0601	2932	6.20	6.069×10^6	1.381	0.4413
10563	4.85	67	55	150	300	Air	5	2253	36.03	3817	4.756	9.875	559.4	0.0615	2912	6.18	6.213×10^6	1.381	0.4483
10564	4.85	67	55	150	300	N ₂	5	2270	36.66	4213	4.928	8.681	553.3	0.0529	3038	6.37	5.821×10^6	1.387	0.4022
10565	4.85	67	55	150	300	N ₂	5	2253	35.11	4133	4.820	8.266	539.4	0.0516	3008	6.38	5.717×10^6	1.388	0.3889
10566	4.85	67	55	150	300	N ₂	5	2259	35.81	4164	4.863	8.450	544.9	0.0522	3020	6.38	5.768×10^6	1.388	0.3951
10567	4.85	67	55	150	300	N ₂	5	2247	35.36	4126	4.811	8.326	538.3	0.0521	3006	6.38	5.775×10^6	1.388	0.3922
10568	4.85	67	55	150	300	Air	5	2236	34.98	3769	4.670	9.500	544.7	0.0608	2886	6.21	6.197×10^6	1.383	0.4391
10569	4.85	67	55	150	300	N ₂	5	2236	34.36	4075	4.742	8.067	529.5	0.0513	2986	6.39	5.712×10^6	1.389	0.3838
10570	4.85	67	100	200	300	Air	5	2006	35.49	3223	3.737	9.496	455.4	0.0727	2668	6.26	7.739×10^6	1.400	0.4854
10571	4.85	67	35	80	300	Air	5	2909	37.57	5335	8.074	12.53	1094	0.0397	3681	5.69	3.332×10^6	1.334	0.3657
10572	4.85	67	35	80	300	Air	5	2890	37.47	5299	7.988	12.46	1080	0.0399	3665	5.70	3.359×10^6	1.335	0.3666

The ESTCj output, which was used as inflow to the NENZF calc, is called "estcj.out".

The input file to NENZF is called "nenzf_ne.in".

The output file from NENZF is called "nenzf_nominal_PP_stag.out"

Happy to provide more info, if needed.

Wilson

— Attachments: —

nenzf_nominal_PP_stag.out	17.8 KB
estcj.out	1.2 KB
nenzf_ne.in	4.6 KB