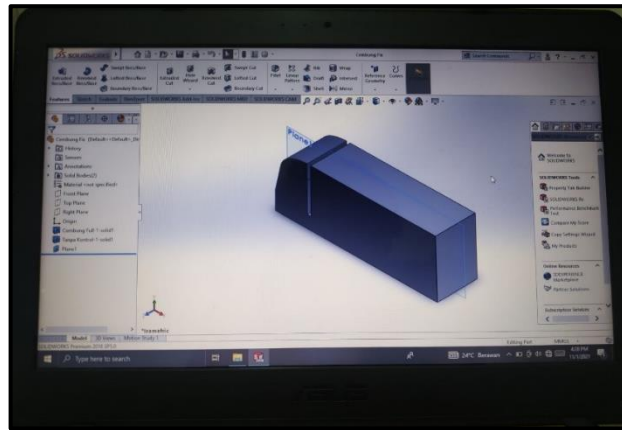


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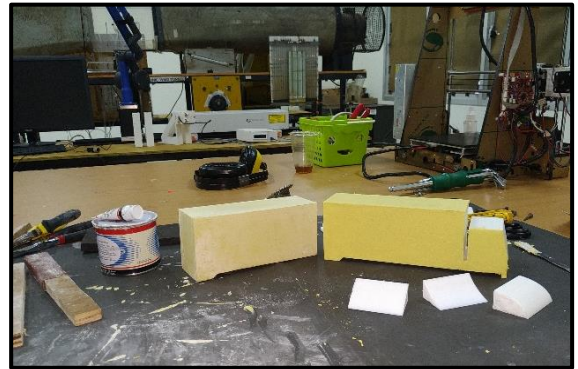
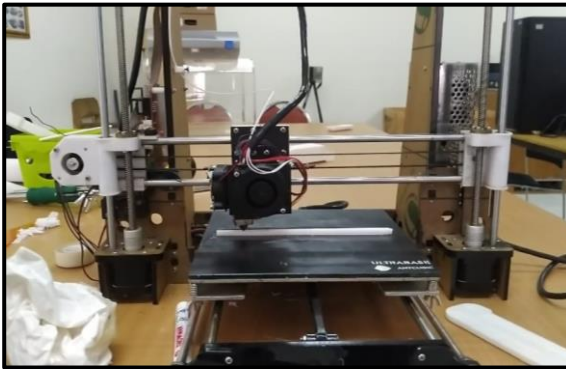
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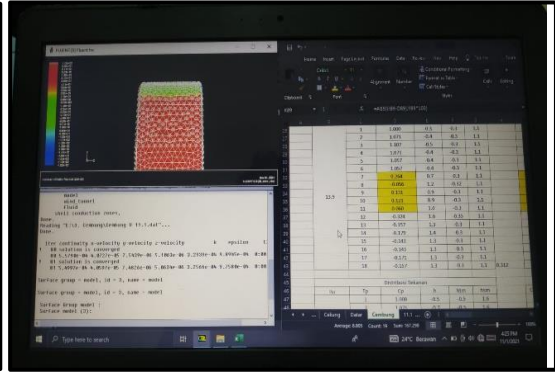
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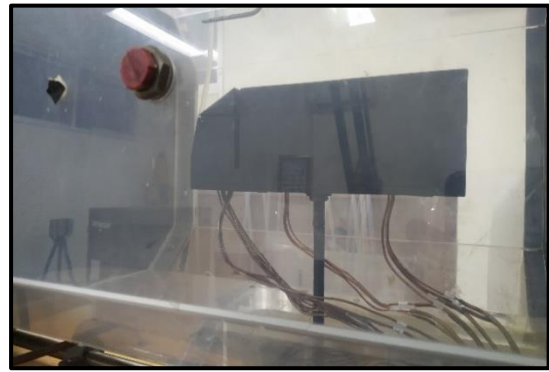
Proses pendesainan model



Proses pembuatan model uji



Proses pengambilan data komputasi



Proses pemasangan model uji pada wind tunnel



Proses pengambilan data eksperimental

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Lampiran A

Tabel A.1. Perbandingan nilai koefisien tekanan pendekatan komputasi dan eksperimental pada model uji dengan kecepatan *upstream* $U_{01} = 11.1$ m/s

Koefisien Tekanan (C_p)												
Tp	Tanpa Kontrol			Cekung			Datar			Cembung		
	Kom	Eks	%	Kom	Eks	%	Kom	Eks	%	Kom	Eks	%
1	1.053	0.967	8.199	1.069	0.978	8.533	1.076	0.978	9.128	1.081	1.000	7.493
2	1.126	1.022	9.216	1.132	1.022	9.698	1.145	1.033	9.753	1.149	1.044	9.100
3	1.137	1.044	9.450	1.148	1.044	9.021	1.157	1.056	8.768	1.159	1.056	8.925
4	1.150	1.044	9.179	1.127	1.033	8.311	1.139	1.033	9.277	1.142	1.044	8.543
5	1.079	1.018	9.155	1.086	1.000	7.919	1.094	1.011	7.577	1.099	1.000	9.008
6	0.942	1.022	8.516	0.958	1.000	4.384	0.962	1.056	9.725	0.971	0.889	8.456
7	-0.455	-0.500	9.890	-0.324	-0.298	8.093	-0.113	-0.122	8.161	0.288	0.267	7.407
8	-0.393	-0.356	9.528	-0.214	-0.233	9.034	0.079	0.072	8.579	-0.069	-0.074	7.890
9	-0.197	-0.211	7.163	-0.106	-0.116	9.015	0.061	0.056	8.925	0.135	0.122	9.465
10	-0.287	-0.311	8.401	-0.059	-0.064	9.228	-0.004	-0.004	8.333	0.103	0.111	7.875
11	-0.346	-0.378	9.184	-0.142	-0.130	8.451	-0.191	-0.178	6.923	0.043	0.039	9.561
12	-0.643	-0.589	8.415	-0.613	-0.667	8.755	-0.586	-0.633	8.077	-0.258	-0.233	9.561
13	-0.333	-0.356	6.773	-0.304	-0.333	9.649	-0.249	-0.272	9.326	-0.184	-0.200	8.696
14	-0.215	-0.197	8.527	-0.207	-0.222	7.354	-0.170	-0.186	9.150	-0.163	-0.173	6.339
15	-0.162	-0.147	9.465	-0.155	-0.168	8.244	-0.148	-0.160	8.108	-0.143	-0.157	9.557
16	-0.162	-0.147	9.465	-0.155	-0.168	8.244	-0.148	-0.160	8.108	-0.143	-0.156	8.780
17	-0.188	-0.203	8.156	-0.182	-0.200	9.890	-0.165	-0.178	7.744	-0.153	-0.167	8.932
18	-0.210	-0.230	9.524	-0.204	-0.186	9.041	-0.187	-0.200	6.952	-0.167	-0.156	6.853
Rata-rata	0.161	0.139	8.789	0.214	0.183	8.492	0.264	0.233	8.479	0.327	0.292	8.469

Tabel A.2. Perbandingan nilai koefisien tekanan pendekatan komputasi dan eksperimental pada model uji dengan kecepatan *upstream* $U_{02} = 13.9$ m/s

Koefisien Tekanan (Cp)												
Tp	Tanpa Kontrol			Cekung			Datar			Cembung		
	Kom	Eks	%	Kom	Eks	%	Kom	Eks	%	Kom	Eks	%
1	1.078	0.986	8.561	1.077	1.000	7.149	1.082	1.000	7.579	1.093	1.000	8.509
2	1.149	1.043	9.238	1.156	1.071	7.316	1.167	1.086	6.965	1.174	1.071	8.737
3	1.167	1.043	6.500	1.173	1.071	8.659	1.189	1.071	9.888	1.198	1.107	7.584
4	1.147	1.071	6.589	1.156	1.071	7.316	1.164	1.071	7.953	1.172	1.071	8.581
5	1.117	1.014	9.196	1.128	1.021	9.448	1.139	1.043	8.441	1.146	1.057	7.754
6	0.937	0.857	8.523	0.941	0.857	8.911	0.959	0.886	7.642	0.966	1.057	9.435
7	-0.441	-0.400	9.297	-0.312	-0.286	8.425	-0.095	-0.086	9.774	0.293	0.264	9.800
8	-0.386	-0.350	9.326	-0.207	-0.224	8.351	0.087	0.093	6.732	-0.053	-0.056	6.298
9	-0.184	-0.171	6.832	-0.093	-0.102	9.831	0.073	0.079	7.632	0.144	0.131	8.730
10	-0.268	-0.293	9.275	-0.036	-0.039	9.127	0.021	0.019	8.163	0.113	0.121	7.459
11	-0.331	-0.300	9.366	-0.123	-0.114	7.085	-0.176	-0.163	7.468	0.065	0.060	7.692
12	-0.630	-0.693	9.977	-0.601	-0.650	8.153	-0.591	-0.629	6.357	-0.295	-0.324	9.877
13	-0.324	-0.350	8.025	-0.294	-0.321	9.329	-0.240	-0.263	9.524	-0.173	-0.157	9.166
14	-0.210	-0.229	8.844	-0.201	-0.221	9.808	-0.179	-0.193	7.741	-0.168	-0.179	6.293
15	-0.156	-0.143	8.425	-0.147	-0.161	9.329	-0.138	-0.150	8.696	-0.132	-0.143	8.225
16	-0.156	-0.143	8.425	-0.147	-0.161	9.329	-0.138	-0.150	8.696	-0.132	-0.143	8.225
17	-0.182	-0.200	9.890	-0.178	-0.161	9.711	-0.157	-0.171	8.735	-0.160	-0.171	7.143
18	-0.208	-0.229	9.890	-0.197	-0.214	8.774	-0.174	-0.157	9.688	-0.170	-0.157	7.563
Rata-rata	0.173	0.140	8.677	0.228	0.191	8.670	0.277	0.244	8.204	0.338	0.312	8.171

Tabel A.3. Perbandingan nilai koefisien tekanan pendekatan komputasi dan eksperimental pada model uji dengan kecepatan *upstream* $U_{03} = 16.7$ m/s

Koefisien Tekanan (C_p)												
Tp	Tanpa Kontrol			Cekung			Datar			Cembung		
	Kom	Eks	%	Kom	Eks	%	Kom	Eks	%	Kom	Eks	%
1	1.086	0.967	7.919	1.082	1.000	7.579	1.092	0.986	9.733	1.107	1.000	9.666
2	1.159	1.022	7.967	1.165	1.052	9.667	1.176	1.095	6.868	1.182	1.071	9.355
3	1.196	1.044	8.425	1.203	1.095	8.958	1.206	1.095	9.184	1.210	1.095	9.484
4	1.198	1.044	9.770	1.203	1.095	8.958	1.184	1.095	7.497	1.182	1.095	7.340
5	1.136	1.018	7.780	1.147	1.048	8.664	1.128	1.048	7.126	1.154	1.071	7.155
6	1.013	1.022	9.275	1.009	0.914	9.434	0.987	0.910	7.850	0.984	1.071	8.885
7	-0.432	-0.500	9.127	-0.306	-0.286	6.629	-0.083	-0.090	9.007	0.303	0.329	8.439
8	-0.377	-0.356	8.627	-0.194	-0.176	9.180	0.101	0.091	9.477	-0.046	-0.050	7.660
9	-0.173	-0.211	7.349	-0.081	-0.089	9.935	0.087	0.095	9.469	0.149	0.138	7.319
10	-0.255	-0.311	8.497	-0.023	-0.025	9.731	0.034	0.031	7.563	0.127	0.116	8.511
11	-0.320	-0.378	8.631	-0.113	-0.124	9.566	-0.164	-0.152	7.085	0.079	0.071	9.584
12	-0.625	-0.589	8.571	-0.591	-0.648	9.580	-0.586	-0.543	7.362	-0.289	-0.314	8.749
13	-0.320	-0.356	8.631	-0.285	-0.305	6.934	-0.257	-0.281	9.320	-0.169	-0.186	9.890
14	-0.205	-0.197	7.085	-0.194	-0.210	8.002	-0.188	-0.171	8.815	-0.159	-0.171	7.817
15	-0.144	-0.147	9.127	-0.138	-0.151	9.731	-0.126	-0.138	9.599	-0.123	-0.133	8.401
16	-0.144	-0.147	9.127	-0.138	-0.151	9.731	-0.126	-0.138	9.599	-0.123	-0.133	8.401
17	-0.174	-0.203	9.469	-0.162	-0.176	8.760	-0.146	-0.157	7.632	-0.151	-0.162	7.222
18	-0.201	-0.230	5.236	-0.191	-0.205	7.205	-0.165	-0.152	7.648	-0.161	-0.171	6.477
Rata-rata	0.190	0.139	8.367	0.244	0.203	8.791	0.286	0.257	8.380	0.348	0.319	8.353

Tabel A.4. Perbandingan nilai koefisien tekanan pendekatan komputasi dan eksperimental pada model uji dengan kecepatan *upstream* $U_{04} = 19.4$ m/s

Koefisien Tekanan (Cp)												
Tp	Tanpa Kontrol			Cekung			Datar			Cembung		
	Kom	Eks	%	Kom	Eks	%	Kom	Eks	%	Kom	Eks	%
1	1.095	0.989	9.654	1.098	0.993	9.576	1.103	0.986	9.662	1.114	1.004	9.913
2	1.168	1.071	8.268	1.173	1.068	8.964	1.182	0.996	9.657	1.198	1.100	8.180
3	1.213	1.096	9.610	1.231	1.111	9.771	1.211	1.068	9.166	1.237	1.136	8.188
4	1.223	1.107	9.473	1.231	1.143	7.160	1.211	1.100	9.756	1.208	1.089	9.827
5	1.193	1.079	9.592	1.175	1.071	8.815	1.182	1.093	9.959	1.180	1.068	9.504
6	1.031	0.929	9.935	1.023	0.929	9.231	1.012	1.064	8.950	1.008	0.929	7.880
7	-0.419	-0.461	9.956	-0.293	-0.268	8.581	-0.069	0.921	8.696	0.313	0.289	7.576
8	-0.369	-0.332	9.988	-0.186	-0.200	7.527	0.113	-0.075	7.459	-0.034	-0.037	8.193
9	-0.158	-0.143	9.584	-0.073	-0.079	7.632	0.101	0.121	8.062	0.154	0.139	9.555
10	-0.244	-0.221	9.251	-0.011	-0.012	7.143	0.047	0.093	6.383	0.132	0.143	8.225
11	-0.309	-0.286	7.536	-0.105	-0.114	8.844	-0.153	0.050	8.964	0.092	0.086	6.832
12	-0.614	-0.675	9.935	-0.588	-0.643	9.329	-0.571	-0.139	6.330	-0.272	-0.250	8.088
13	-0.311	-0.339	9.095	-0.280	-0.300	7.143	-0.262	-0.607	9.051	-0.160	-0.171	7.143
14	-0.200	-0.218	8.929	-0.187	-0.200	6.952	-0.181	-0.286	8.524	-0.146	-0.159	8.855
15	-0.132	-0.121	8.009	-0.124	-0.136	9.447	-0.112	-0.196	8.418	-0.108	-0.118	9.127
16	-0.132	-0.121	8.009	-0.124	-0.136	9.447	-0.112	-0.121	8.418	-0.108	-0.118	9.127
17	-0.168	-0.182	8.418	-0.157	-0.171	9.190	-0.143	-0.121	7.393	-0.133	-0.143	7.411
18	-0.193	-0.211	9.178	-0.178	-0.193	8.347	-0.165	-0.154	6.061	-0.151	-0.164	8.798
Rata-rata	0.204	0.164	9.134	0.257	0.215	8.505	0.300	-0.175	8.384	0.362	0.323	8.468

Tabel A.5. Perbandingan nilai koefisien tekanan pendekatan komputasi dan eksperimental pada model uji dengan kecepatan *upstream* $U_{05} = 22.2$ m/s

Koefisien Tekanan (Cp)												
Tp	Tanpa Kontrol			Cekung			Datar			Cembung		
	Kom	Eks	%	Kom	Eks	%	Kom	Eks	%	Kom	Eks	%
1	1.126	1.054	6.390	1.129	1.027	9.032	1.133	1.027	9.353	1.133	1.054	7.377
2	1.238	1.135	8.309	1.242	1.119	9.910	1.238	1.119	9.619	1.238	1.135	8.824
3	1.250	1.135	9.189	1.251	1.127	9.910	1.248	1.135	9.044	1.248	1.132	9.694
4	1.245	1.124	9.693	1.241	1.119	9.837	1.248	1.135	9.044	1.248	1.122	8.959
5	1.221	1.108	9.246	1.214	1.105	8.945	1.220	1.108	9.171	1.220	1.108	8.873
6	1.157	1.054	8.898	1.101	1.000	9.173	1.047	0.943	9.910	1.047	0.968	9.658
7	-0.410	-0.446	8.767	-0.281	-0.257	8.627	-0.054	-0.059	8.609	-0.054	0.297	8.524
8	-0.353	-0.324	8.123	-0.174	-0.189	8.729	0.121	0.111	8.421	0.121	-0.020	7.862
9	-0.137	-0.124	9.252	-0.055	-0.059	8.108	0.111	0.100	9.910	0.111	0.181	8.432
10	-0.234	-0.214	8.755	-0.003	-0.003	9.910	0.063	0.057	9.910	0.063	0.159	9.972
11	-0.291	-0.270	7.124	-0.089	-0.097	9.323	-0.139	-0.151	8.886	-0.139	0.095	8.161
12	-0.603	-0.657	8.915	-0.576	-0.611	6.044	-0.566	-0.622	9.827	-0.566	-0.238	7.815
13	-0.298	-0.324	8.834	-0.276	-0.297	7.716	-0.253	-0.270	6.826	-0.253	-0.168	8.810
14	-0.191	-0.208	8.957	-0.179	-0.195	8.712	-0.165	-0.181	9.746	-0.165	-0.146	9.734
15	-0.122	-0.111	9.171	-0.115	-0.124	8.108	-0.108	-0.116	7.608	-0.108	-0.084	8.931
16	-0.122	-0.111	9.171	-0.115	-0.124	8.108	-0.108	-0.116	7.608	-0.108	-0.084	8.931
17	-0.158	-0.143	9.340	-0.142	-0.154	8.489	-0.135	-0.146	8.108	-0.135	-0.135	9.866
18	-0.182	-0.200	9.890	-0.164	-0.149	9.361	-0.157	-0.170	8.452	-0.157	-0.135	8.071
Rata-rata	0.230	0.193	8.779	0.278	0.235	8.780	0.319	0.272	8.892	0.319	0.347	8.805

