

The specimen details

Diameter of bolt	$d$ (mm)	20
Diameter of bolt hole	$d_0$ (mm)	22
End distance	$e_1$ (mm)	60
Edge distance	$e_2$ (mm)	50
Spacing between centres of bolts in the direction of load transfer	$p_1$ (mm)	60
Spacing between rows of bolts	$p_2$ (mm)	103
Thickness of end plate	$t_p$ (mm)	10
Horizontal distance of lever arm	$B_L$ (mm)	490
Vertical distance of lever arm	$D_L$ (mm)	51.7

Steel Grade	S275	S355	
<b>Dimension of Members</b>	UB305x165 x40	UC254x25 4x89	
Depth of Section	$D$ (mm)	303.4	260.3
Width of Section	$B$ (mm)	165	256.3
Thickness of Web	$t$ (mm)	6	10.3
Thickness of Flange	$T$ (mm)	10.2	17.3
Root Radius	$r$ (mm)	8.9	12.7
Depth between Fillets	$d$ (mm)	265.2	200.3

Nominal Temperature

650°C

Time	Thermocouple	Jack	Load	Beam	Column	Connection	Force	F3 from	F3 from	F3	Tension	Shear	Moment
(minute)	Average(°C)	Displacement	Angle	Rotation	Rotation	Rotation	Rotation	F1	F2	Average	(kN)	(kN)	(kN*m)
		(mm)	$\alpha(^{\circ})$	( $^{\circ}$ )	( $^{\circ}$ )	( $^{\circ}$ )	( $^{\circ}$ )	(kN)	(kN)	(kN)	(kN)	(kN)	(kN)
0	646.368	1.807											
1	646.602	1.807											
2	646.603	1.808											
3	646.832	1.808	48.10	0.000	0.000	0.000	66.821	-3.74	2.99	-0.37	-0.25	-0.28	-155.55
4	647.026	3.126	48.13	0.075	0.008	0.067	66.720	-2.23	3.26	0.52	0.34	0.38	215.19
5	647.122	4.704	48.20	0.151	0.009	0.142	66.565	-2.01	3.93	0.96	0.64	0.72	401.43
6	647.356	6.307	47.97	0.180	0.013	0.167	66.766	-1.93	4.45	1.26	0.85	0.94	525.43
7	647.311	8.051	47.58	0.229	0.017	0.212	67.114	-1.80	4.53	1.36	0.92	1.01	563.70
8	647.390	9.765	48.25	0.270	0.021	0.249	66.400	-1.71	4.38	1.33	0.89	0.99	555.34
9	647.548	11.400	48.36	0.304	0.015	0.289	66.254	-1.41	4.21	1.40	0.93	1.05	584.53
10	647.468	13.003	48.21	0.436	0.025	0.411	66.272	-1.29	4.63	1.67	1.11	1.24	695.57
11	647.712	14.607	48.12	0.572	0.034	0.538	66.229	-1.26	4.19	1.47	0.98	1.09	610.71
12	647.793	16.154	48.16	0.642	0.009	0.633	66.116	-1.30	4.53	1.61	1.08	1.20	672.46
13	647.883	17.694	48.04	0.814	0.023	0.791	66.064	-1.46	4.32	1.43	0.96	1.06	594.79
14	648.124	19.218	48.02	0.908	0.037	0.871	65.990	-1.07	4.17	1.55	1.04	1.15	644.87
15	648.081	20.767	47.91	0.994	0.004	0.990	66.013	-1.19	4.74	1.78	1.19	1.32	737.24
16	648.254	22.349	47.81	1.126	0.029	1.097	65.986	-1.12	4.87	1.88	1.26	1.39	778.42
17	648.360	23.881	47.72	1.239	0.032	1.207	65.962	-1.04	4.78	1.87	1.26	1.38	774.95
18	648.356	25.349	47.59	1.358	0.006	1.352	65.974	-1.12	4.75	1.81	1.22	1.34	750.35
19	648.535	26.751	47.47	1.525	0.026	1.499	65.926	-0.72	4.40	1.84	1.24	1.35	758.01
20	648.543	28.216	47.26	1.648	0.030	1.618	66.012	-0.80	4.69	1.94	1.32	1.43	799.81
21	648.640	29.689	47.27	1.826	-0.008	1.834	65.829	-0.89	4.68	1.90	1.29	1.39	781.52
22	648.690	31.139	47.13	1.981	0.013	1.968	65.809	-0.77	4.50	1.86	1.27	1.37	765.97

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23	648.736	32.667	47.13	2.073	0.027	2.046	65.718	-0.29	4.66	2.19	1.49	1.60	897.86
24	648.948	34.037	47.02	2.174	0.021	2.153	65.728	-0.21	4.84	2.31	1.58	1.69	948.95
25	648.972	35.581	46.89	2.313	-0.009	2.322	65.717	-0.25	5.21	2.48	1.69	1.81	1014.43
26	649.100	37.207	46.87	2.442	0.030	2.412	65.605	0.11	5.26	2.69	1.84	1.96	1099.07
27	649.228	38.816	46.76	2.594	0.031	2.563	65.567	0.32	5.66	2.99	2.05	2.18	1221.62
28	649.191	40.386	46.64	2.715	0.020	2.695	65.569	0.40	5.82	3.11	2.14	2.26	1268.71
29	649.371	42.034	46.64	2.824	0.033	2.791	65.461	1.09	5.76	3.43	2.35	2.49	1398.55
30	649.365	43.636	46.61	2.944	0.045	2.899	65.367	1.25	5.86	3.56	2.44	2.58	1450.00
31	649.410	45.318	46.44	3.123	0.019	3.104	65.359	1.17	5.87	3.52	2.43	2.55	1431.96
32	649.551	46.967	46.42	3.281	0.024	3.257	65.220	1.10	5.95	3.53	2.43	2.55	1433.77
33	649.574	48.569	46.26	3.444	0.022	3.422	65.214	1.18	5.72	3.45	2.39	2.49	1400.81
34	649.732	50.196	46.20	3.534	0.027	3.507	65.187	1.39	6.48	3.94	2.72	2.84	1595.61
35	649.845	51.828	46.03	3.727	0.046	3.681	65.164	2.13	6.44	4.29	2.98	3.09	1733.67
36	649.877	53.413	45.97	3.861	0.057	3.804	65.085	2.39	6.62	4.50	3.13	3.24	1819.98
37	650.016	55.016	45.85	3.996	0.053	3.943	65.075	2.76	6.77	4.76	3.32	3.42	1921.39
38	649.985	56.609	45.80	4.171	0.049	4.122	64.947	2.98	6.98	4.98	3.47	3.57	2006.56
39	650.114	58.154	45.59	4.311	0.069	4.242	65.017	3.39	7.04	5.22	3.65	3.73	2095.97
40	650.195	59.810	45.49	4.451	0.076	4.375	64.982	3.31	7.71	5.51	3.87	3.93	2211.41
41	650.163	61.403	45.40	4.547	0.052	4.495	64.972	3.98	7.71	5.85	4.11	4.16	2342.42
42	650.325	63.020	45.27	4.748	0.084	4.664	64.906	4.37	8.37	6.37	4.48	4.52	2545.65
43	650.357	64.679	45.18	4.882	0.102	4.780	64.854	5.45	8.98	7.22	5.09	5.12	2880.96
44	650.410	66.257	45.13	5.009	0.153	4.856	64.779	7.30	10.19	8.74	6.17	6.20	3488.31
45	650.573	67.850	45.11	5.032	0.153	4.879	64.780	8.60	11.23	9.91	7.00	7.02	3953.06
46	650.599	69.411	45.02	5.140	0.159	4.981	64.765	9.10	12.16	10.63	7.51	7.52	4232.78
47	650.714	70.925	44.96	5.249	0.142	5.107	64.715	9.82	12.43	11.13	7.87	7.86	4426.92
48	650.760	72.479	44.84	5.380	0.205	5.175	64.703	10.41	12.79	11.60	8.23	8.18	4608.36
49	650.771	73.975	44.69	5.527	0.213	5.314	64.706	10.84	13.27	12.06	8.57	8.48	4777.47
50	650.900	75.512	44.61	5.601	0.187	5.414	64.707	11.05	13.80	12.43	8.85	8.73	4918.44
51	650.841	77.098	44.52	5.709	0.209	5.500	64.694	11.60	14.15	12.87	9.18	9.03	5087.77
52	651.018	78.722	44.42	5.843	0.214	5.629	64.653	12.03	14.48	13.26	9.47	9.28	5231.74

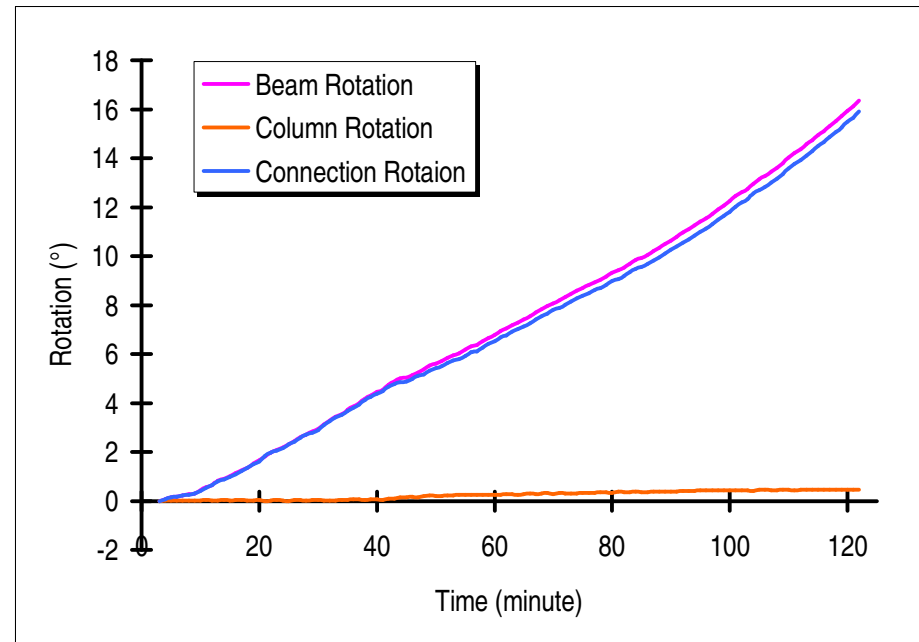
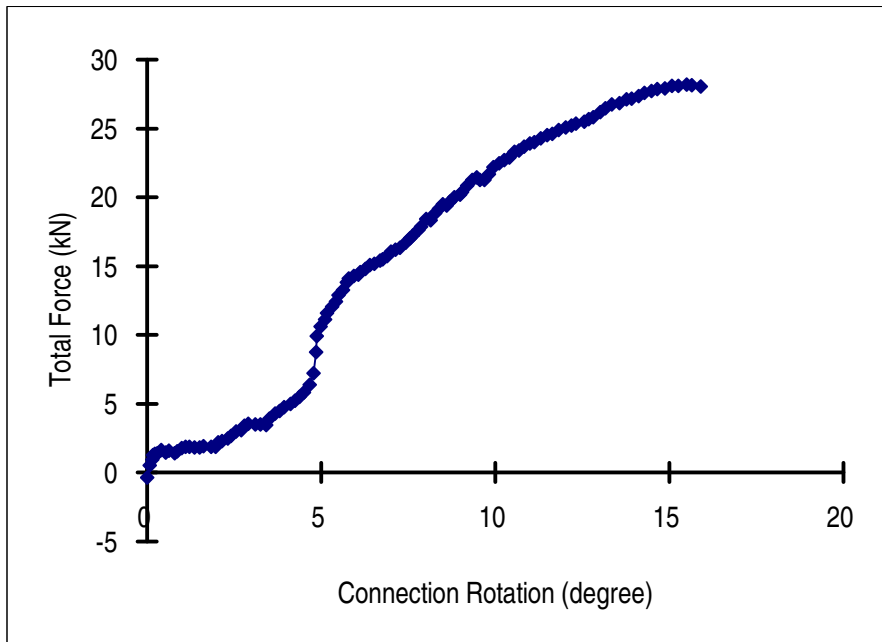
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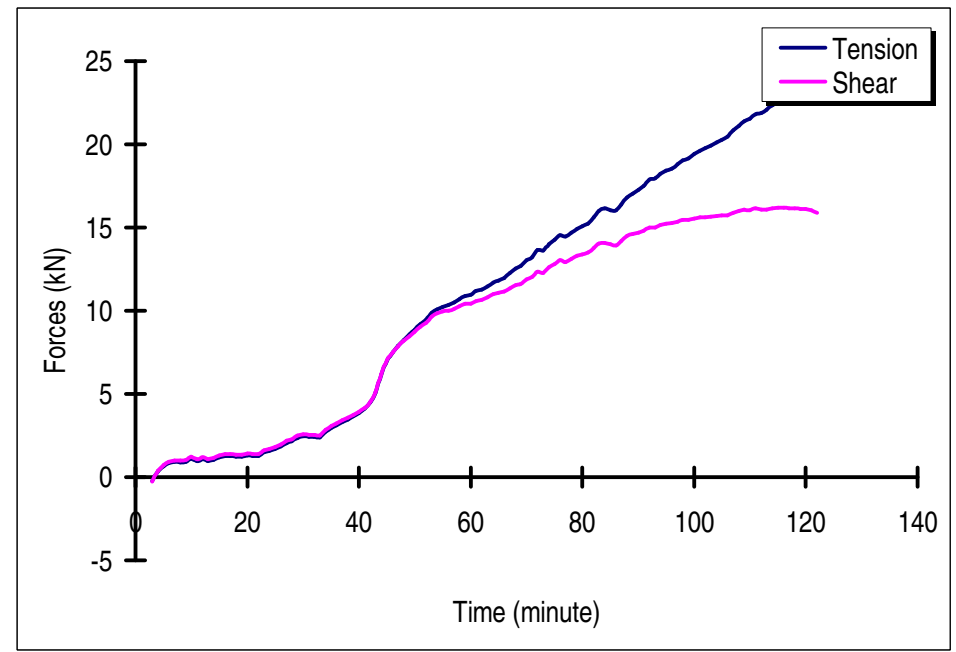
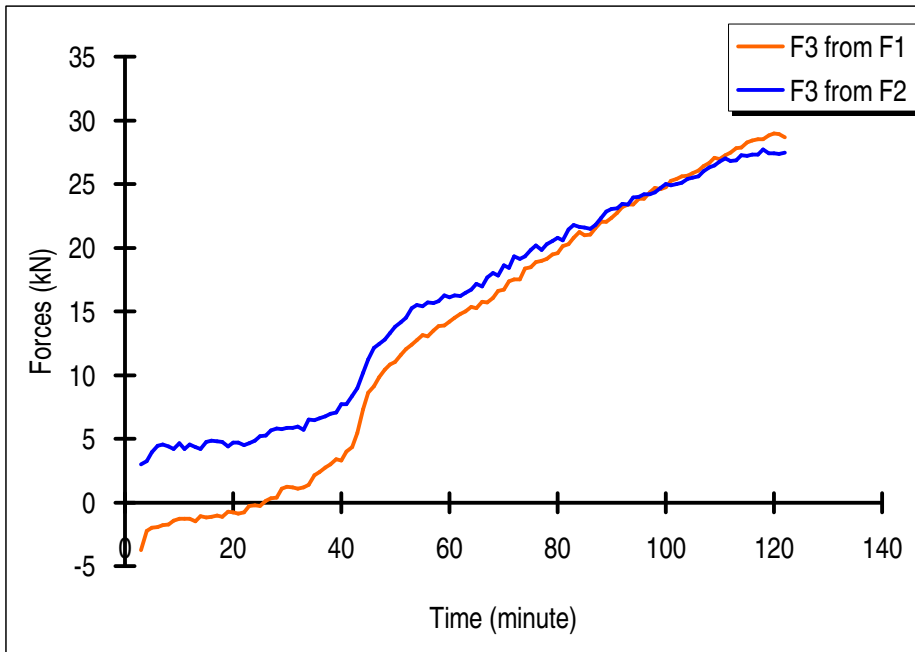
53	651.039	80.342	44.37	5.951	0.217	5.734	64.599	12.38	15.26	13.82	9.88	9.67	5450.83
54	651.052	81.991	44.30	6.025	0.241	5.784	64.591	12.72	15.48	14.10	10.09	9.85	5554.15
55	651.206	83.567	44.17	6.173	0.242	5.931	64.581	13.14	15.40	14.27	10.24	9.94	5610.34
56	651.218	85.152	44.04	6.318	0.244	6.074	64.561	13.02	15.73	14.37	10.33	9.99	5639.79
57	651.355	86.810	43.93	6.375	0.258	6.117	64.615	13.51	15.67	14.59	10.51	10.12	5713.38
58	651.413	88.427	43.82	6.520	0.250	6.270	64.582	13.85	15.79	14.82	10.69	10.26	5794.04
59	651.392	90.012	43.70	6.665	0.259	6.406	64.560	13.90	16.23	15.07	10.89	10.41	5878.79
60	651.568	91.629	43.56	6.784	0.261	6.523	64.572	14.19	16.12	15.15	10.98	10.44	5900.06
61	651.658	93.191	43.37	6.946	0.257	6.689	64.602	14.51	16.25	15.38	11.18	10.56	5971.51
62	651.822	94.777	43.37	7.045	0.282	6.763	64.502	14.79	16.22	15.51	11.27	10.65	6019.19
63	651.892	96.361	43.31	7.179	0.277	6.902	64.435	15.01	16.48	15.75	11.46	10.80	6106.25
64	651.803	97.916	43.24	7.272	0.261	7.011	64.413	15.36	16.71	16.03	11.68	10.98	6210.22
65	651.851	99.503	43.10	7.406	0.282	7.124	64.413	15.23	17.14	16.18	11.82	11.06	6255.64
66	651.943	101.096	43.00	7.555	0.288	7.267	64.363	15.73	16.97	16.35	11.96	11.15	6309.74
67	651.961	102.674	42.79	7.706	0.286	7.420	64.422	15.71	17.68	16.70	12.25	11.34	6420.89
68	652.048	104.244	42.62	7.842	0.288	7.554	64.458	16.06	18.00	17.03	12.53	11.53	6531.01
69	652.002	105.733	42.52	7.949	0.315	7.634	64.454	16.60	17.80	17.20	12.68	11.62	6584.45
70	652.062	107.334	42.36	8.075	0.277	7.798	64.484	16.70	18.61	17.66	13.05	11.90	6742.06
71	652.133	108.928	42.29	8.203	0.327	7.876	64.425	17.37	18.40	17.88	13.23	12.03	6821.71
72	652.104	110.427	42.13	8.326	0.309	8.017	64.461	17.52	19.31	18.41	13.66	12.35	7004.84
73	652.253	112.018	42.08	8.450	0.313	8.137	64.393	17.53	19.13	18.33	13.60	12.28	6965.64
74	652.185	113.565	41.99	8.576	0.310	8.266	64.355	18.35	19.34	18.85	14.01	12.61	7152.96
75	652.210	115.103	41.92	8.702	0.314	8.388	64.303	18.47	19.85	19.16	14.26	12.80	7262.49
76	652.219	116.592	41.88	8.824	0.335	8.489	64.217	18.86	20.15	19.51	14.52	13.02	7388.96
77	652.248	118.010	41.81	8.935	0.331	8.604	64.176	18.97	19.84	19.41	14.46	12.94	7342.35
78	652.394	119.363	41.76	9.039	0.347	8.692	64.117	19.13	20.28	19.70	14.70	13.12	7448.72
79	652.321	120.756	41.67	9.170	0.342	8.828	64.081	19.48	20.52	20.00	14.94	13.30	7549.56
80	652.391	122.196	41.61	9.317	0.333	8.984	63.990	19.57	20.78	20.17	15.08	13.40	7608.11
81	652.448	123.629	41.50	9.425	0.376	9.049	63.997	20.11	20.60	20.36	15.25	13.49	7662.24
82	652.447	125.111	41.41	9.542	0.353	9.189	63.969	20.26	21.42	20.84	15.63	13.78	7831.64

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83	652.600	126.656	41.30	9.688	0.342	9.346	63.933	20.79	21.78	21.28	15.99	14.05	7983.32
84	652.610	128.113	41.12	9.837	0.372	9.465	63.968	21.23	21.63	21.43	16.15	14.09	8013.05
85	652.622	129.443	41.10	9.915	0.348	9.567	63.903	20.98	21.56	21.27	16.03	13.98	7951.26
86	652.746	130.763	40.95	10.042	0.362	9.680	63.933	21.01	21.46	21.24	16.04	13.92	7918.38
87	652.692	132.173	40.91	10.197	0.385	9.812	63.818	21.52	21.81	21.66	16.37	14.18	8069.87
88	652.819	133.750	40.74	10.333	0.382	9.951	63.844	22.05	22.36	22.20	16.82	14.49	8248.64
89	652.872	135.343	40.57	10.488	0.373	10.115	63.859	22.05	22.86	22.45	17.05	14.60	8316.51
90	652.863	136.913	40.39	10.627	0.369	10.258	63.902	22.32	23.05	22.69	17.28	14.70	8376.25
91	652.950	138.497	40.23	10.794	0.392	10.402	63.896	22.74	23.09	22.91	17.49	14.80	8435.40
92	652.885	140.068	40.01	10.958	0.400	10.558	63.950	23.20	23.45	23.33	17.87	15.00	8555.67
93	652.975	141.668	39.88	11.103	0.414	10.689	63.941	23.37	23.42	23.40	17.95	15.00	8559.20
94	652.965	143.277	39.72	11.247	0.415	10.832	63.955	23.41	23.97	23.69	18.22	15.14	8642.28
95	652.971	144.864	39.55	11.421	0.430	10.991	63.953	23.82	23.99	23.91	18.43	15.22	8694.48
96	653.127	146.465	39.45	11.548	0.427	11.121	63.927	23.83	24.22	24.02	18.55	15.26	8720.61
97	653.107	148.017	39.21	11.738	0.428	11.310	63.974	24.34	24.19	24.26	18.80	15.34	8770.08
98	653.080	149.661	39.06	11.920	0.428	11.492	63.936	24.71	24.34	24.53	19.04	15.46	8841.41
99	653.116	151.254	38.90	12.070	0.427	11.643	63.955	24.58	24.68	24.63	19.17	15.46	8850.10
100	653.063	152.855	38.70	12.243	0.428	11.815	63.977	24.76	24.98	24.87	19.41	15.55	8905.72
101	653.141	154.480	38.50	12.450	0.431	12.019	63.966	25.25	24.92	25.08	19.63	15.62	8949.10
102	653.149	156.049	38.31	12.611	0.426	12.185	64.002	25.41	25.02	25.21	19.79	15.63	8961.96
103	653.203	157.682	38.18	12.755	0.432	12.323	63.988	25.60	25.10	25.35	19.93	15.67	8988.82
104	653.278	159.278	37.97	12.966	0.406	12.560	63.983	25.63	25.38	25.51	20.11	15.69	9008.44
105	653.254	160.854	37.80	13.135	0.453	12.682	63.985	25.86	25.49	25.68	20.29	15.74	9038.25
106	653.345	162.407	37.59	13.265	0.452	12.813	64.063	26.03	25.59	25.81	20.45	15.75	9050.96
107	653.327	163.986	37.34	13.458	0.443	13.015	64.127	26.38	26.01	26.20	20.83	15.89	9139.41
108	653.365	165.537	37.13	13.609	0.443	13.166	64.179	26.65	26.30	26.48	21.11	15.98	9199.82
109	653.423	167.083	36.90	13.793	0.445	13.348	64.228	27.04	26.45	26.74	21.39	16.06	9251.01
110	653.411	168.733	36.64	14.027	0.452	13.575	64.254	26.96	26.75	26.85	21.55	16.03	9240.92
111	653.466	170.318	36.50	14.202	0.440	13.762	64.214	27.26	26.99	27.12	21.80	16.14	9308.90
112	653.520	171.937	36.25	14.361	0.450	13.911	64.307	27.49	26.83	27.16	21.90	16.06	9272.64

113	653.517	173.608	36.07	14.577	0.459	14.118	64.278	27.82	26.85	27.33	22.10	16.09	9298.05
114	653.642	175.291	35.86	14.724	0.447	14.277	64.339	27.86	27.27	27.57	22.34	16.15	9338.03
115	653.581	176.876	35.69	14.949	0.464	14.485	64.280	28.28	27.19	27.73	22.52	16.18	9362.20
116	653.601	178.549	35.57	15.110	0.456	14.654	64.238	28.41	27.29	27.85	22.65	16.20	9378.43
117	653.559	180.256	35.33	15.319	0.455	14.864	64.269	28.54	27.33	27.93	22.79	16.15	9359.19
118	653.531	181.864	35.13	15.522	0.455	15.067	64.268	28.49	27.71	28.10	22.98	16.17	9376.47
119	653.678	183.465	34.96	15.733	0.468	15.265	64.229	28.80	27.43	28.12	23.04	16.11	9347.76
120	653.732	185.156	34.86	15.942	0.450	15.492	64.121	28.95	27.42	28.18	23.13	16.11	9349.79
121	653.851	186.829	34.74	16.106	0.455	15.651	64.078	28.91	27.36	28.14	23.12	16.03	9311.20
122	653.908	188.519	34.51	16.363	0.465	15.898	64.048	28.68	27.46	28.07	23.13	15.90	9242.79







Photographs after Test



ERROR: stackunderflow  
OFFENDING COMMAND: ~

STACK: