

J109 Rudder Offsets (Ref. J109 Rudder Drawing)

R.A.Johnstone

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Offsets in Millimeters

	Sec 1 (above Rudder)	Sec 2	Sec 3	Sec 4	Sec 5	Sec 6	Sec 7	Sec 8	Sec 9	Sec 10	Sec 11 (Tip)
Chord Length	560.9	553.4	529.1	489.3	427.8	390.4	348.7	289.3	236.4	191	127.2
Distance Below Sec 1	0	112.3	415.1	717.9	1020.7	1172.1	1323.5	1474.9	1550.6	1588.4	1588.4
LE Radius	12.3	11.3	8.9	6.8	5.2	4.2	3.3	2.3	1.9	1.5	1.5
Yc half widths at Xc Stations											
0.005 x	7.9	7.5	6.5	5.5	4.5	3.9	3.2	2.5	2.0	1.6	1.3
0.0075 x	9.5	9.0	7.8	6.6	5.4	4.6	3.9	3.0	2.4	1.9	1.6
0.0125 x	12.1	11.5	10.0	8.4	6.8	5.9	4.9	3.8	3.1	2.5	2.0
0.025 x	16.8	16.0	13.8	11.6	9.5	8.2	6.8	5.2	4.3	3.4	2.7
0.050 x	23.3	22.2	19.2	16.2	13.2	11.4	9.5	7.3	5.9	4.8	3.8
0.075 x	28.2	26.8	23.2	19.5	15.9	13.8	11.4	8.8	7.2	5.8	4.6
0.10 x	32.1	30.6	26.5	22.3	18.1	15.7	13.0	10.0	8.2	6.6	5.3
0.15 x	38.2	36.3	31.4	26.5	21.6	18.6	15.5	11.9	9.7	7.8	6.2
0.20 x	42.5	40.5	35.0	29.5	24.0	20.8	17.2	13.3	10.8	8.7	7.0
0.25 x	45.5	43.4	37.5	31.6	25.7	22.3	18.5	14.2	11.6	9.3	7.4
0.30 x	47.5	45.2	39.1	32.9	26.8	23.2	19.3	14.8	12.1	9.7	7.8
0.35 x	48.3	46.0	39.8	33.5	27.3	23.6	19.6	15.1	12.3	9.9	7.9
0.40 x	48.0	45.7	39.5	33.3	27.1	23.4	19.5	15.0	12.2	9.8	7.8
0.45 x	46.7	44.5	38.5	32.4	26.4	22.8	19.0	14.6	11.9	9.6	7.6
0.50 x	44.6	42.4	36.7	30.9	25.2	21.8	18.1	13.9	11.3	9.1	7.3
0.55 x	41.6	39.7	34.3	28.9	23.5	20.3	16.9	13.0	10.6	8.5	6.8
0.60 x	38.1	36.3	31.4	26.4	21.5	18.6	15.5	11.9	9.7	7.8	6.2
0.65 x	34.0	32.4	28.0	23.6	19.2	16.6	13.8	10.6	8.7	7.0	5.6
0.70 x	29.4	28.0	24.2	20.4	16.6	14.4	11.9	9.2	7.5	6.0	4.8
0.75 x	24.7	23.5	20.4	17.1	14.0	12.1	10.0	7.7	6.3	5.1	4.0
0.80 x	19.9	19.0	16.4	13.8	11.3	9.7	8.1	6.2	5.1	4.1	3.3
0.85 x	15.1	14.4	12.5	10.5	8.5	7.4	6.1	4.7	3.8	3.1	2.5
0.90 x	10.3	9.8	8.5	7.2	5.8	5.0	4.2	3.2	2.6	2.1	1.7
0.95 x	5.5	5.3	4.5	3.8	3.1	2.7	2.2	1.7	1.4	1.1	0.9
1.00 x	0.7	0.7	0.6	0.5	0.4	0.3	0.3	0.2	0.2	0.1	0.1

- 1) Section 1 is located above finished rudder.
- 2) Top of rudder is defined by profile angle of 11.9 deg. with top of angle beginning at trailing edge @ Sec 1 then sweeping forward and down.
- 3) Rudder shaft is perpendicular to top of rudder. Center of the shaft is located 96.5mm aft of leading edge along top on center.
- 4) All rudder sections are parallel and aligned at an angle of 101.9 degrees to the axis of the rudder shaft.