

r/R	c/R	?	H/D	r	c	H	t	Airfoil
[-]	[-]	[°]	[-]	[mm]	[mm]	[mm]	[mm]	[-]
0.0000	Spinner	-	-	-	-	-	-	-
0.0500	0.1777	73.9	0.5	50.0	177.7	1088.4	21.6	interpolated
0.1000	0.3138	63.4	0.6	100.0	313.8	1254.7	38.2	interpolated
0.1500	0.4499	52.9	0.6	150.0	449.9	1246.2	54.7	interpolated
0.2000	0.4969	44.9	0.6	200.0	496.9	1252.3	60.4	interpolated
0.2500	0.4924	38.7	0.6	250.0	492.4	1258.4	59.9	interpolated
0.3000	0.4653	33.9	0.6	300.0	465.3	1266.6	56.6	interpolated
0.3500	0.4302	30.1	0.6	350.0	430.2	1274.8	52.3	Clark Y, Re=500,000
0.4000	0.3946	27.1	0.6	400.0	394.6	1286.1	48.0	interpolated
0.4500	0.3596	24.6	0.6	450.0	359.6	1294.5	43.7	interpolated
0.5000	0.3275	22.6	0.7	500.0	327.5	1307.7	39.8	interpolated
0.5500	0.2981	20.9	0.7	550.0	298.1	1319.6	36.2	interpolated
0.6000	0.2709	19.5	0.7	600.0	270.9	1335.0	32.9	interpolated
0.6500	0.2456	18.2	0.7	650.0	245.6	1342.8	29.9	Clark Y, Re=500,000
0.7000	0.2162	17.1	0.7	700.0	216.2	1353.1	26.3	interpolated
0.7500	0.1860	16.2	0.7	750.0	186.0	1369.1	22.6	interpolated
0.8000	0.1584	15.3	0.7	800.0	158.4	1375.1	19.3	interpolated
0.8500	0.1308	14.6	0.7	850.0	130.8	1391.2	15.9	interpolated
0.9000	0.1002	13.9	0.7	900.0	100.2	1399.4	12.2	interpolated
0.9500	0.0696	13.3	0.7	950.0	69.6	1411.0	8.5	interpolated
1.0000	0.0331	12.8	0.7	1000.0	33.1	1427.5	4.0	Clark Y, Re=500,000

Enter Design Parameters and press the 'Design It!' button.

Propeller Name:

Number of Blades B:

2

[-]

Revolutions per minute rpm:

2000

[1/min]

Diameter D:

.5

[m]

Spinner Dia. Dsp:

0.000

[m]

Velocity v:

60.000

[m/s]

Thrust T:

306

[N]

shroud chord:

60.000

[-]

shroud angle:

60.000

[°]

☐ shrouded rotor

☐ square tip

☐ open hub

Wind turbine			
$v/(nD)$	3.6	$v/(\Omega R)$	1.146
Efficiency η	3.525 %	loading	low
Thrust T	-91.58 N	Ct	-1.08
Power P	-912.73 W	Cp	-0.6459
Torque Q	-4.36 Nm	Cs	3.9289
β at 75%R	16.2°	Pitch H	342 mm

Remark: The RPM setting is also used for Analysis page.

Design It!

Copy Text

Copy (HTML)

Click and drag to select a new capture area

Propeller Off-Design Analysis for full v/nD range.

v/nD	C_s	T_c	P_c	η	η^*	stalled	v	rpm	Power	Thrust	Torque
	[-]	[-]	[-]	[%]	[%]	[%]	[m/s]	[1/min]	[MW]	[N]	[Nm]
588	0.000053	9.999999	9.999999	0.01	0.00	26.00 !	0.00	10459	0.0143	306.00	13.02
313	0.087971	9.999999	9.999999	11.24	15.48	64.00 !	4.33	10403	0.0118	306.00	10.83
532	0.169473	9.999999	9.999999	17.55	29.18	17.00 !	8.94	10723	0.0156	306.00	13.87
310	0.254367	9.999999	9.999999	25.50	40.70	13.00 !	13.64	10912	0.0164	306.00	14.32
799	0.339644	7.321032	9.999999	32.49	50.72	9.00 !	18.67	11204	0.0176	306.00	14.99
818	0.426973	4.355249	9.999999	38.83	59.52	2.00	24.21	11621	0.0191	306.00	15.68
729	0.515535	2.775447	6.293470	44.10	67.10	0.00	30.33	12131	0.0210	306.00	16.56

show:

Coefficients C_p , C_t

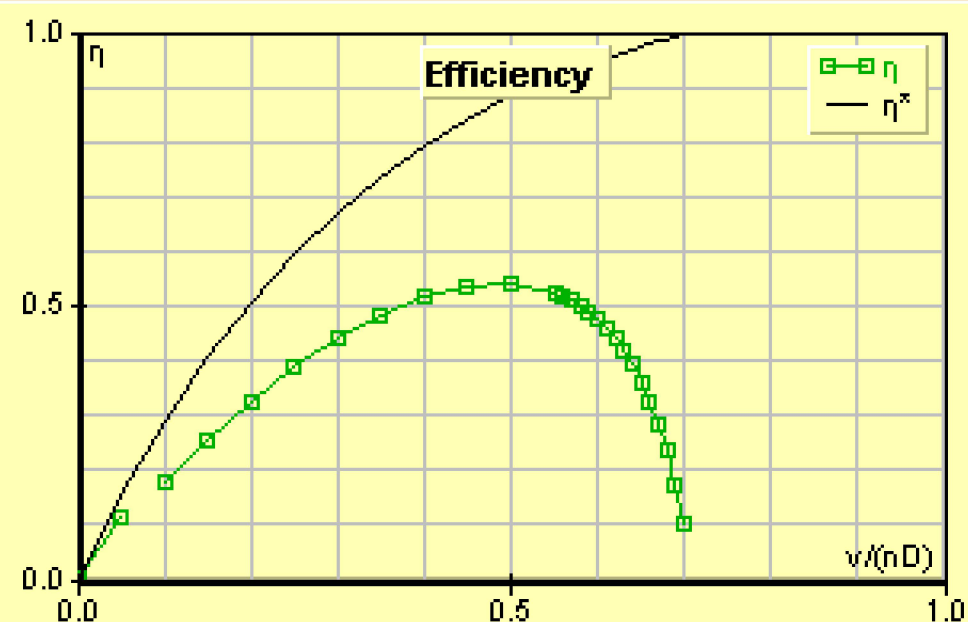
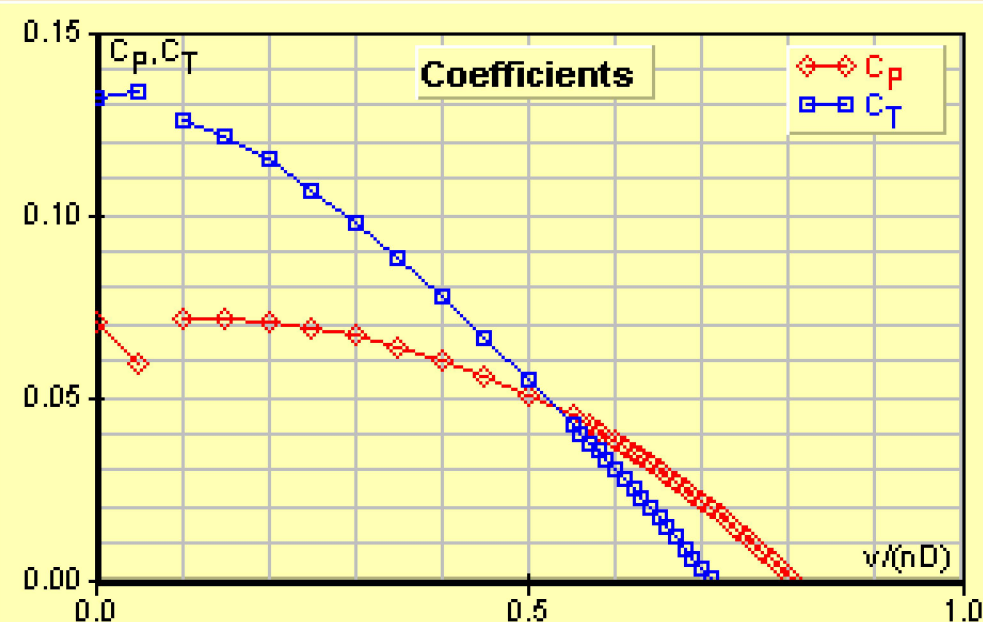
Coefficients P_c , T_c

Thrust

Power

rpm

Torque



☐ Add to existing plots

Analysis with T =prescribed



(Results are valid for B , rpm, D , ρ from Design card)

Analyze!

Copy Text

Copy (HTML)

Print...

Save...

Propeller Geometry.

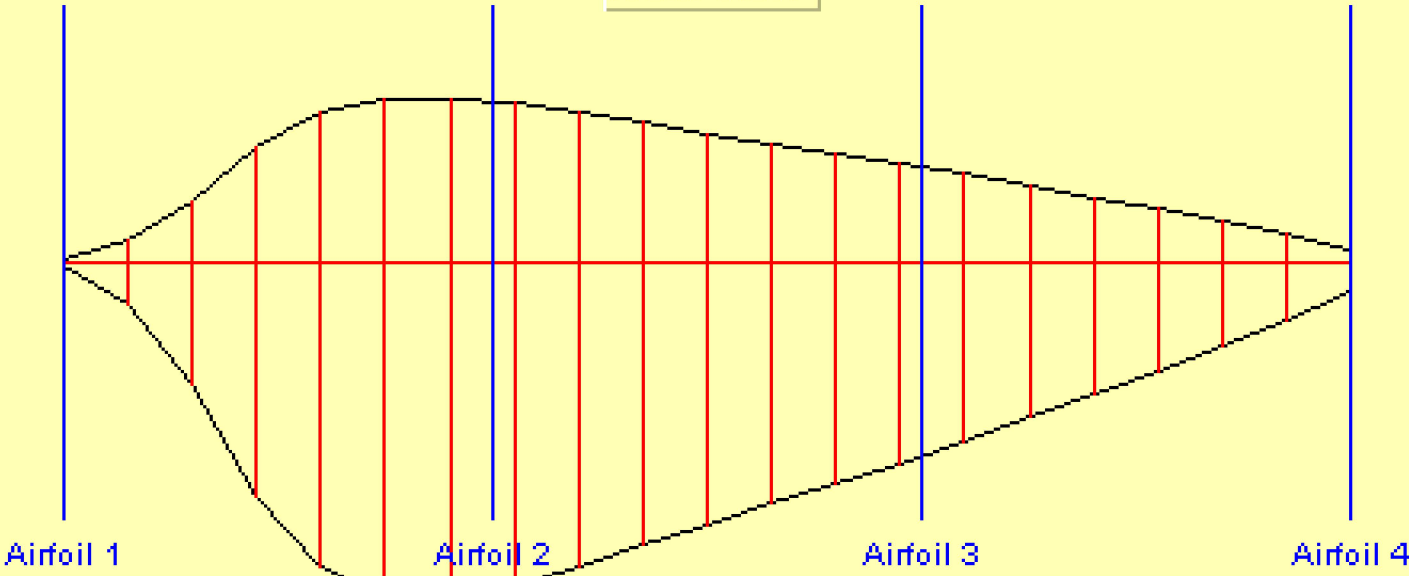
r/R	c/R	β	H/D	r	c	H	t	Airfoil
[-]	[-]	[°]	[-]	[mm]	[mm]	[mm]	[mm]	[-]
0.0000	0.0416	84.4	0.0	0.0	10.4	0.0	0.5	Flat Plate
0.0500	0.1777	73.9	0.5	12.5	44.4	272.1	2.3	interpolated
0.1000	0.3138	63.4	0.6	25.0	78.5	313.7	4.0	interpolated
0.1500	0.4499	52.9	0.6	37.5	112.5	311.5	5.7	interpolated
0.2000	0.4969	44.9	0.6	50.0	124.2	313.1	6.3	interpolated
0.2500	0.4924	38.7	0.6	62.5	123.1	314.6	6.2	interpolated
0.3000	0.4653	33.9	0.6	75.0	116.3	316.7	5.9	interpolated

show:

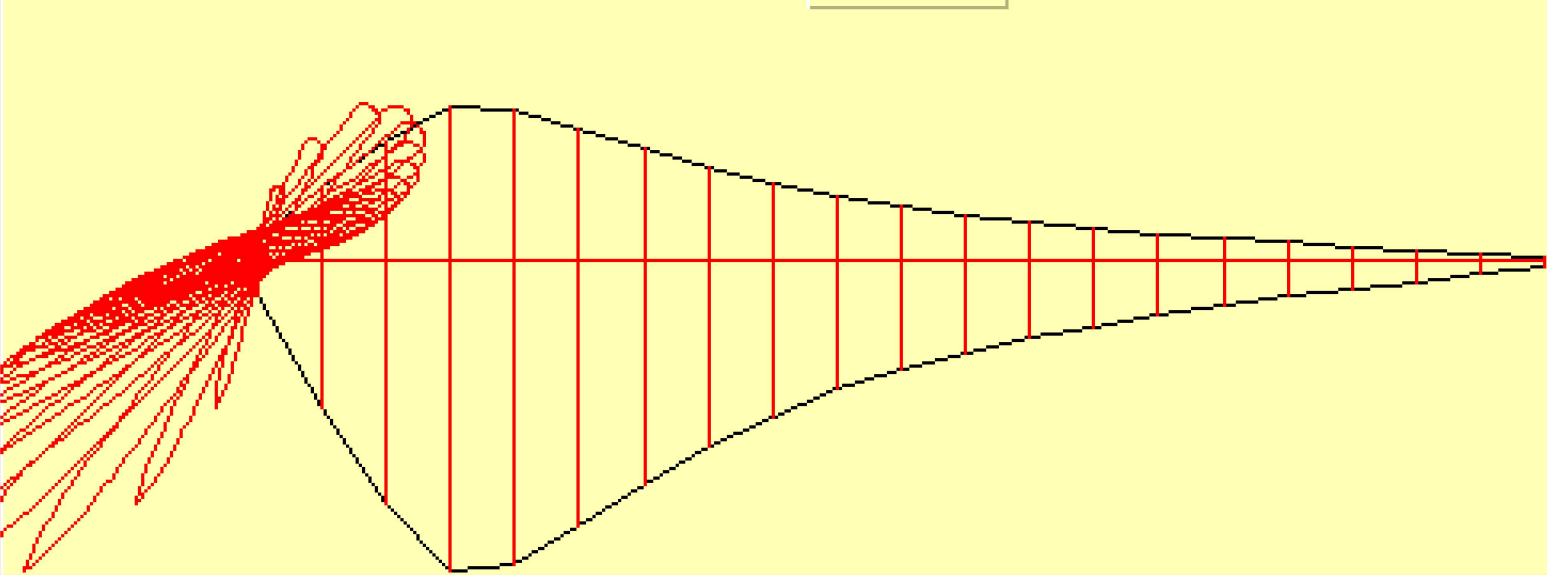
Views

Pitch/Diameter

Front View



Side View



Copy Text

Copy (HTML)

Print...

Save...

Import...

SPECIFICATIONS

Frame size F11	-005	-006	-008	-010	-012	-014	-019
Displacement [cm ³ /rev]	4.9	6.0	8.0	9.8	12.5	14.3	19.0
[cu in/rev]	0.30	0.37	0.49	0.60	0.76	0.87	1.16
Operating pressure							
max intermittent ¹⁾ [bar]	420	420	420	420	420	420	420
[psi]	6000	6000	6000	6000	6000	6000	6000
max continuous [bar]	350	350	350	350	350	350	350
[psi]	5075	5075	5075	5075	5075	5075	5075
Motor operating speed [rpm]							
max intermittent ¹⁾	14 000	11 200	11 200	11 200	10 300	9 900	8 900
max continuous ³⁾	12 800	10 200	10 200	10 200	9 400	9 000	8 100
min continuous	50	50	50	50	50	50	50
Max pump selfpriming speed ²⁾							
L or R function; max [rpm]	4 600	—	4200	4 200	3 900	3 900	3 500
Motor input flow							
max intermittent ¹⁾ [l/min]	69	67	90	110	129	142	169
[gpm]	18.2	17.7	23.8	29.1	34.1	37.5	44.6
max continuous [l/min]	63	61	82	100	118	129	154
[gpm]	16.6	16.1	21.7	26.4	31.2	34.1	40.7
Drain temperature ³⁾ , max [°C] / [°F]	115 / 239	115 / 239	115 / 239	115 / 239	115 / 239	115 / 239	115 / 239
min [°C] / [°F]	-40 / -40	-40 / -40	-40 / -40	-40 / -40	-40 / -40	-40 / -40	-40 / -40
Theoretical torque at 100 bar [Nm]	7.8	9.5	9.5	15.6	19.8	22.7	30.2
[lbft]	5.8	7.0	7.0	11.5	14.6	16.8	22.3
Mass moment of inertia							
(x10 ⁻³) [kg m ²]	0.16	0.39	0.39	0.39	0.40	0.42	1.1
(x10 ⁻²) [lbft ²]	0.38	0.92	0.92	0.92	0.95	1.00	2.61
Weight [kg]	4.7	6.5	6.5	6.5	7.5	7.5	11
[lb]	10.4	14.3	14.3	14.3	16.5	16.5	24.3

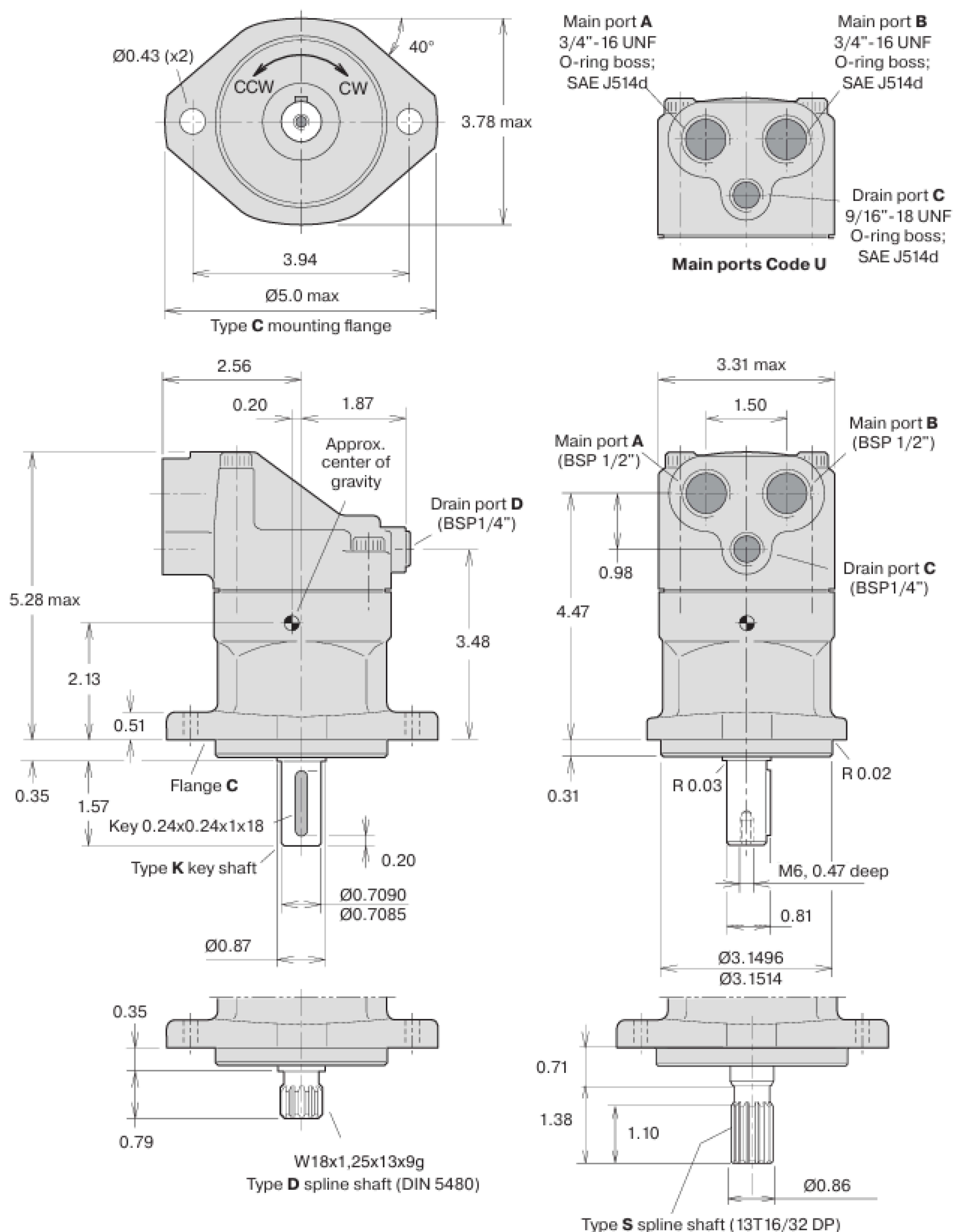
1) Intermittent: max 6 seconds in any one minute.

2) Selfpriming speed valid at sea level. Find more info on page 27

3) See also installation information. Page 85 – 87

INSTALLATION DIMENSIONS

F11-005 (CETOP versions)



×

Product Catalogs

☒ CATALOGUE - Series F10/F11/F12, Fixed Displacement, MSG30-8249/UK

☐ CATALOGUE - Series F10/F11/F12, Fixed Displacement, MSG30-8249/US

☐ CATALOGUE - Hydraulic Saw Motor, Fixed Displacement, Series F11/F12, MSG30-8245/UK

☐ CATALOGUE - Boost Unit, Series BLA, MSG30-8224/UK

Cancel

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14.000 rpm. The F11 motor is a robust design motor, and can be used in numerous applications in both open and closed loop circuits. Sizes from 5-19 cc.

Technical Specifications

Body Material:

Cast Iron

Maximum Operating

14000 RPM

×

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HYDRAULIC MOTOR/PUMP SERIES F10/F11/F12

Fixed Displacement



2

Basic formulas for hydraulic motors			Conversion factors	
Flow (q)	D	- displacement [cm³/rev]	1 kg	2.20 lb
$q = \frac{D \times n}{1000 \times \eta_v}$ [l/min]	n	- shaft speed [rpm]	1 N	0.225 lbf
	η_v	- volumetric efficiency	1 Nm	0.738 lbf ft
Torque (M)			1 bar	14.5 psi



1