

Professional Propulsion Systems

SYSTEM SPECIFICATIONS

ENGINE



Name:	4103
Manufacturer:	HIRTH ENGINES
Type:	2-cylinder
Displacement:	100 cm³
Max. performance:	5 kW at 6500 RPM
Weight:	3.4 kg
RPM range:	2500–6500 RPM
Running direction:	Clockwise

PROPELLER



Name:	22x12 3B CCW (Direction guide)
Manufacturer:	Mezlik
Diameter:	22 in
Pitch:	12 in
Mass:	183 g
Contact:	info@mezlik.eu

ANALYSIS



Need expert guidance on analyzing your flight performance? Our team provides a comprehensive analysis of RPM calculations, motor and propeller efficiency, including customized propeller selection recommendations to ensure your system achieves maximum efficiency.

Please reach out to us at info@mezlik.eu or info@hirthengines.com

ID: **0120**



PERFORMANCE OF THE SYSTEM

Flight velocity

0 m/s

Rotational Speed [RPM]	Thrust [N]	Torque [Nm]	Mechanical Power [W]	Propulsion efficiency [%]
1000	4	0.14	15	0
1800	12	0.46	87	0
2700	28	1.09	309	0
3600	55	2.03	764	0
4500	86	3.21	1513	0
5400	127	4.74	2678	0
6300	175	6.48	4278	0
7200	233	8.84	6664	0
8100	301	11.58	9825	0

Flight velocity

10 m/s

Rotational Speed [RPM]	Thrust [N]	Torque [Nm]	Mechanical Power [W]	Propulsion efficiency [%]
1000	-2	-0.02	-2	—
1800	4	0.32	60	59
2700	19	1.1	312	61
3600	44	2.2	829	53
4500	76	3.52	1660	46
5400	116	5.13	2901	40
6300	162	7.06	4655	35
7200	218	9.35	7046	31
8100	286	12.13	10290	28

PERFORMANCE OF THE SYSTEM

Flight velocity

20 m/s

Rotational Speed [RPM]	Thrust [N]	Torque [Nm]	Mechanical Power [W]	Propulsion efficiency [%]
1000	-3	-0.17	-18	—
1800	-6	-0.08	-15	—
2700	0	0.26	74	-4
3600	22	1.61	606	73
4500	52	3.16	1490	70
5400	91	5	2826	64
6300	137	7.09	4679	58
7200	192	9.56	7209	53
8100	257	12.45	10560	49

Flight velocity

30 m/s

Rotational Speed [RPM]	Thrust [N]	Torque [Nm]	Mechanical Power [W]	Propulsion efficiency [%]
1000	-5	-0.45	-47	—
1800	-8	-0.3	-56	—
2700	-11	-0.07	-19	—
3600	-5	0.06	24	—
4500	20	1.78	838	72
5400	56	3.87	2188	76
6300	100	6.21	4099	73
7200	152	8.88	6695	68
8100	215	11.98	10161	63

PERFORMANCE OF THE SYSTEM

Flight velocity

40 m/s

Rotational Speed [RPM]	Thrust [N]	Torque [Nm]	Mechanical Power [W]	Propulsion efficiency [%]
1000	-6	-0.78	-82	—
1800	-9	-0.62	-117	—
2700	-15	-0.45	-128	—
3600	-19	-0.19	-73	—
4500	-14	-0.3	-142	—
5400	15	1.68	952	62
6300	55	4.28	2825	77
7200	104	7.21	5434	77
8100	164	10.5	8908	74

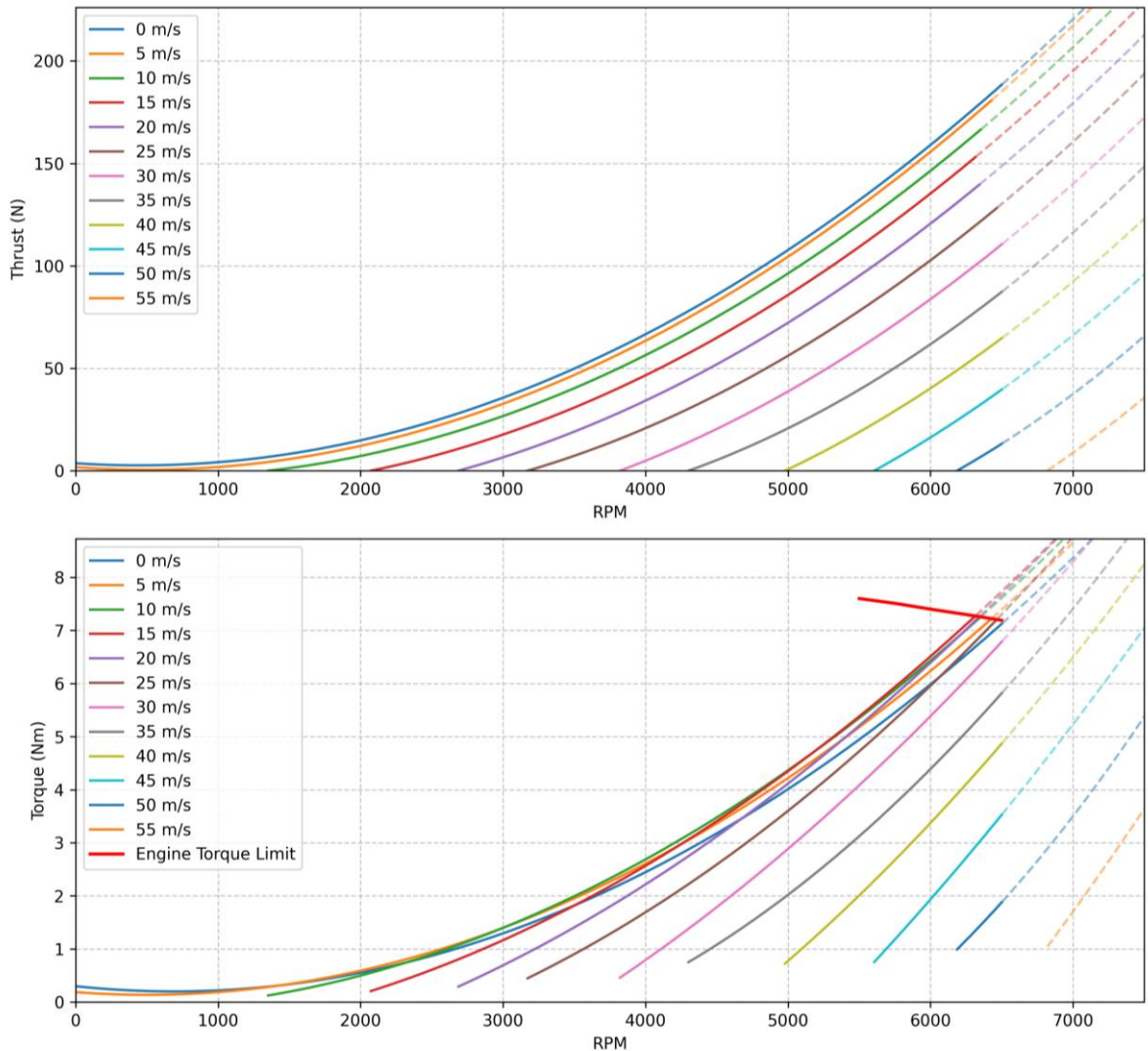
Flight velocity

50 m/s

Rotational Speed [RPM]	Thrust [N]	Torque [Nm]	Mechanical Power [W]	Propulsion efficiency [%]
1000	-8	-1.24	-130	—
1800	-12	-1.12	-212	—
2700	-18	-1.08	-305	—
3600	-26	-0.89	-335	—
4500	-29	-0.43	-202	—
5400	-26	-0.74	-420	—
6300	4	1.16	766	24
7200	49	4.36	3287	75
8100	105	7.91	6713	78

PERFORMANCE OF THE SYSTEM

Hirth 4103 + Mejzlik 22x12 3B Performance in flight



NOTE



Data presented in this product sheet are a combination of measurements of engine performance (RPM, torque), which is complemented with propeller data, simulated in Mejzliks proprietary simulation software. The greyed out values are above engine limit.

Data is valid for 0m ISA. Propeller performance simulation accuracy can diverge at higher tip speeds (above 0.7 Mach). Propeller is structurally safe to operate below Mach 1 tip speed.

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