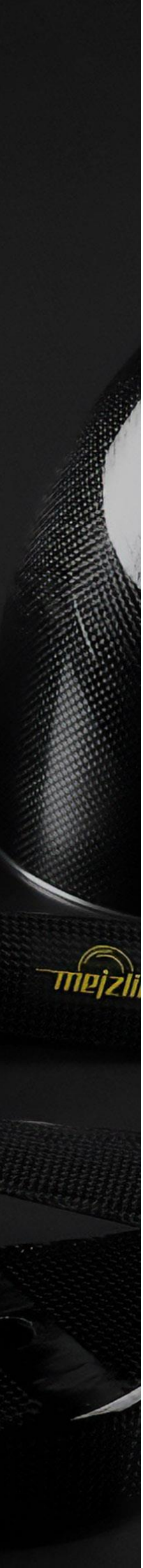


Professional Propulsion Systems

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**
Manufacturer:	**Mejzlik**
Diameter:	**22 in**
Pitch:	**12 in**
Mass:	**183 g**
Contact:	**info@mejzlik.eu**

ANALYSIS

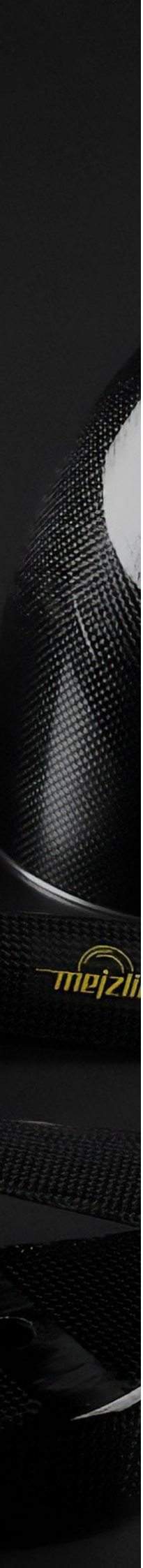
Need expert guidance on analyzing your flight performance?
Our team provides a comprehensive analysis of RPM calculations, motor and propeller efficiency, including customized propeller selection recommendations to ensure your system achieves maximum efficiency.

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

ID: 0120

HIRTH ENGINES

mejzlik



PERFORMANCE OF THE SYSTEM

Flight velocity

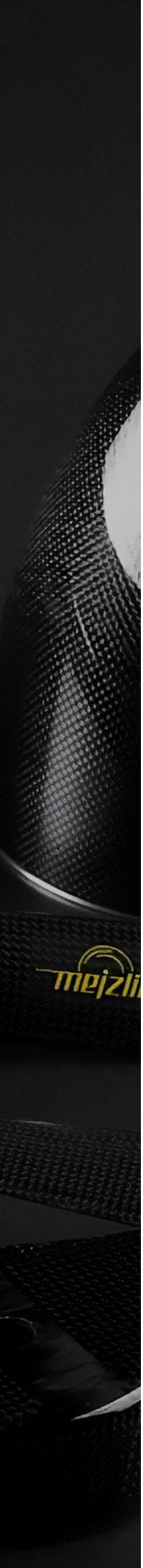
0 m/s

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

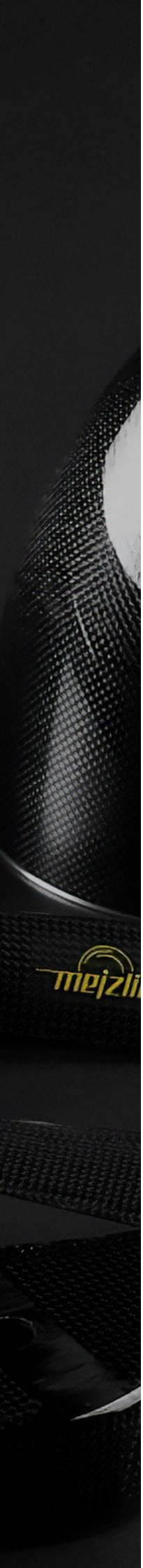
20 m/s

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

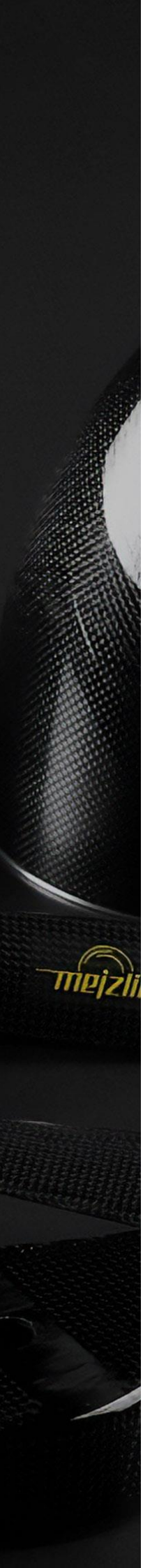
40 m/s

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

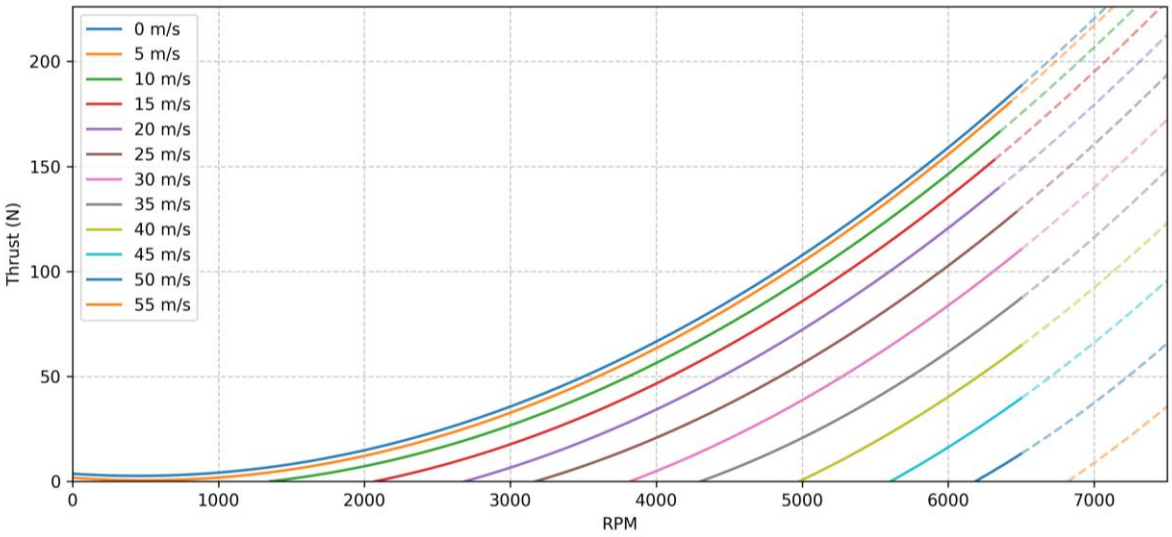
50 m/s

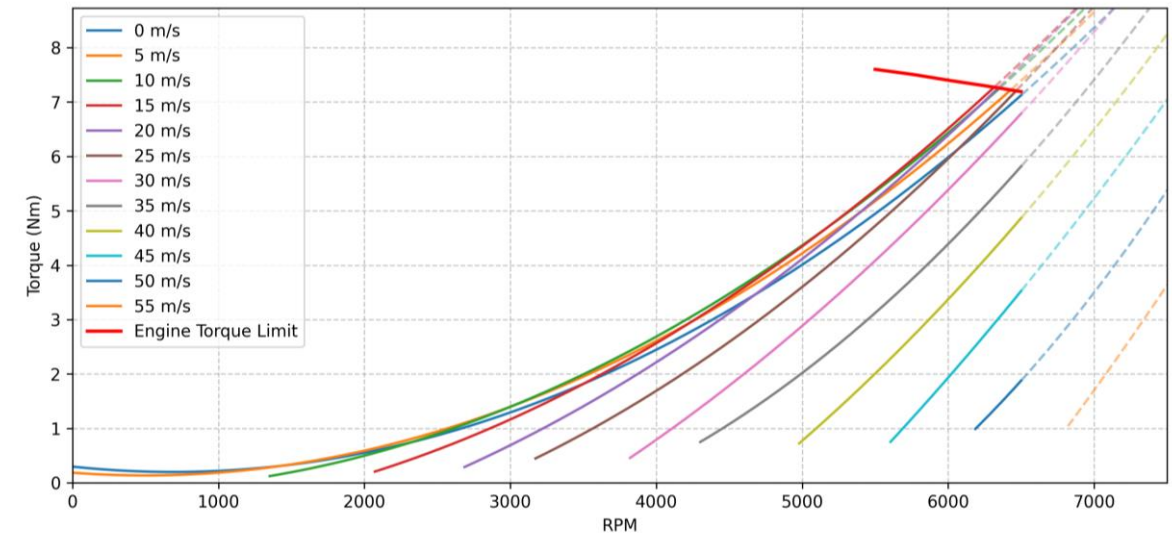
Rotational Speed [RPM]	Thrust [N]	Torque [Nm]	Mechanical Power [W]	Propulsion efficiency [%]
1000	-8	-1.24	**-130**	—
1800	-12	-1.12	**-212**	—
2700	-18	-1.08	**-305**	—
3600	-26	-0.89	**-335**	—
4500	-29	-0.43	**-202**	—
5400	-26	-0.74	**-420**	—
6300	4	1.16	**766**	**24**
7200	49	4.36	**3287**	**75**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

ID: **0120**