

# Professional Propulsion Systems

## SYSTEM SPECIFICATIONS

### ENGINE



Name:	<b>4103</b>
Manufacturer:	<b>HIRTH ENGINES</b>
Type:	<b>2-cylinder</b>
Displacement:	<b>100 cm<sup>3</sup></b>
Max. performance:	<b>5 kW at 6500 RPM</b>
Weight:	<b>3.4 kg</b>
RPM range:	<b>2500–6500 RPM</b>
Running direction:	<b>Clockwise</b>

### PROPELLER



Name:	<b>25x12 2B S</b>
Manufacturer:	<b>Mezlik</b>
Diameter:	<b>25 in</b>
Pitch:	<b>12 in</b>
Mass:	<b>181 g</b>
Contact:	<b>info@mezlik.eu</b>

### 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](mailto:info@mezlik.eu) or [info@hirthengines.com](mailto:info@hirthengines.com)

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# PERFORMANCE OF THE SYSTEM

Flight velocity

**0 m/s**

Rotational Speed [RPM]	Thrust [N]	Torque [Nm]	Mechanical Power [W]	Propulsion efficiency [%]
1000	4	0.16	<b>17</b>	<b>0</b>
1700	12	0.47	<b>83</b>	<b>0</b>
2500	28	1.04	<b>272</b>	<b>0</b>
3200	49	1.78	<b>597</b>	<b>0</b>
4000	79	2.86	<b>1196</b>	<b>0</b>
4800	118	4.22	<b>2121</b>	<b>0</b>
5500	158	5.68	<b>3270</b>	<b>0</b>
5600	164	5.91	<b>3465</b>	<b>0</b>
6300	213	7.69	<b>5075</b>	<b>0</b>
7100	280	10.17	<b>7559</b>	<b>0</b>

Flight velocity

**10 m/s**

Rotational Speed [RPM]	Thrust [N]	Torque [Nm]	Mechanical Power [W]	Propulsion efficiency [%]
1000	-1	0.05	<b>5</b>	—
1700	3	0.31	<b>56</b>	<b>55</b>
2500	18	1.06	<b>277</b>	<b>63</b>
3200	37	1.91	<b>639</b>	<b>57</b>
4000	65	3.07	<b>1287</b>	<b>50</b>
4800	101	4.55	<b>2289</b>	<b>44</b>
5500	139	6.11	<b>3519</b>	<b>40</b>
5600	145	6.35	<b>3726</b>	<b>39</b>
6300	191	8.22	<b>5423</b>	<b>35</b>
7100	253	10.78	<b>8013</b>	<b>32</b>

# PERFORMANCE OF THE SYSTEM

Flight velocity

**20 m/s**

Rotational Speed [RPM]	Thrust [N]	Torque [Nm]	Mechanical Power [W]	Propulsion efficiency [%]
1000	-2	-0.06	-6	—
1700	-4	0.12	21	—
2500	-1	0.37	96	—
3200	14	1.24	417	67
4000	39	2.58	1082	72
4800	72	4.2	2112	68
5500	108	5.89	3390	63
5600	113	6.15	3604	63
6300	157	8.13	5361	58
7100	215	10.79	8021	54

Flight velocity

**30 m/s**

Rotational Speed [RPM]	Thrust [N]	Torque [Nm]	Mechanical Power [W]	Propulsion efficiency [%]
1000	-4	-0.22	-23	—
1700	-6	-0.05	-8	—
2500	-9	0.24	63	—
3200	-6	0.58	194	—
4000	7	1.28	535	38
4800	34	2.87	1443	71
5500	66	4.67	2690	74
5600	72	4.95	2902	74
6300	111	7.05	4650	72
7100	166	9.85	7320	68

# PERFORMANCE OF THE SYSTEM

Flight velocity

**40 m/s**

Rotational Speed [RPM]	Thrust [N]	Torque [Nm]	Mechanical Power [W]	Propulsion efficiency [%]
1000	-5	-0.48	<b>-51</b>	—
1700	-8	-0.32	<b>-57</b>	—
2500	-12	-0.01	<b>-1</b>	—
3200	-15	0.29	<b>99</b>	—
4000	-13	0.75	<b>314</b>	—
4800	-3	1.33	<b>667</b>	—
5500	20	2.66	<b>1530</b>	<b>52</b>
5600	24	2.91	<b>1705</b>	<b>57</b>
6300	59	4.94	<b>3256</b>	<b>73</b>
7100	109	7.88	<b>5859</b>	<b>74</b>

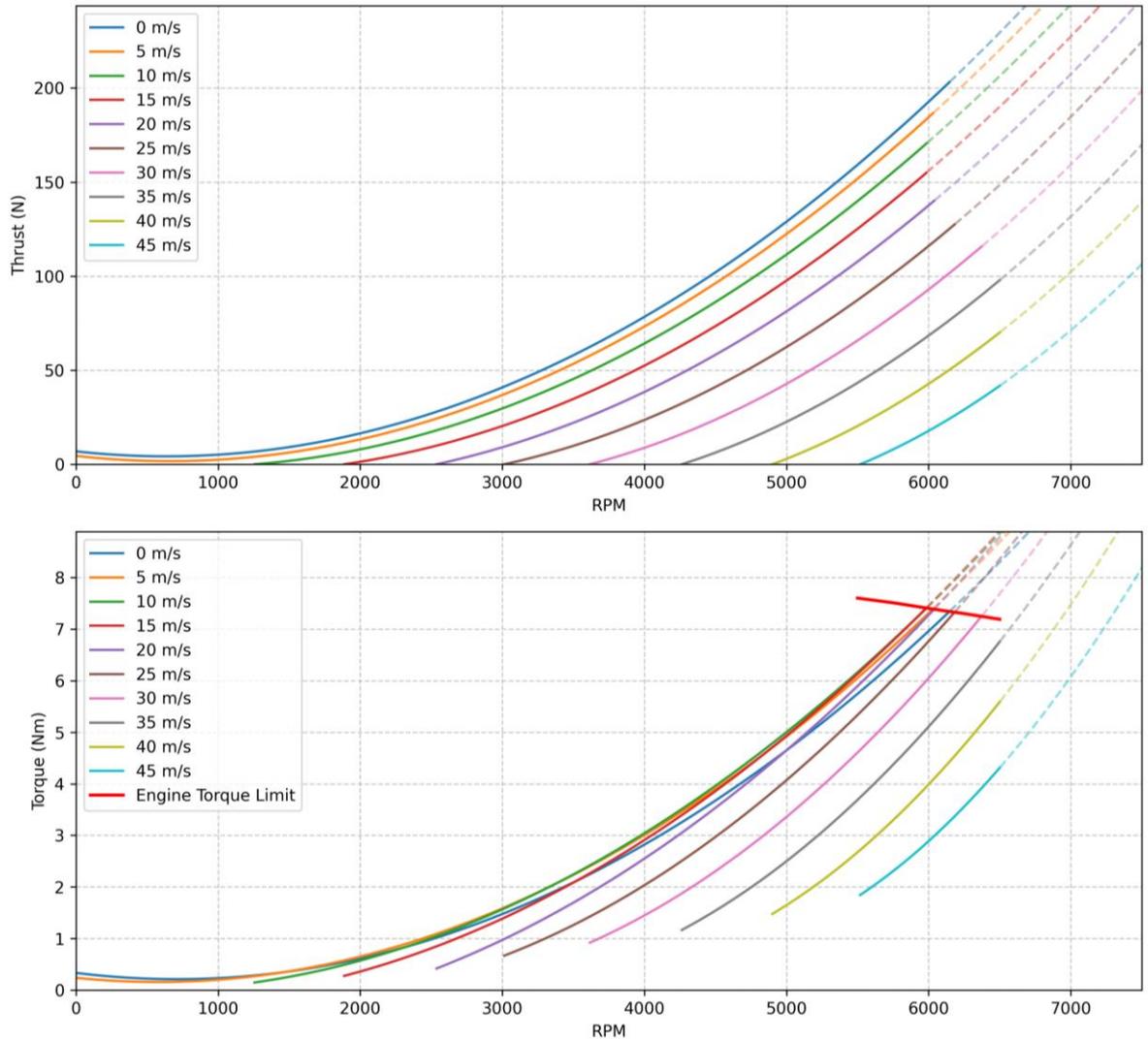
Flight velocity

**50 m/s**

Rotational Speed [RPM]	Thrust [N]	Torque [Nm]	Mechanical Power [W]	Propulsion efficiency [%]
1000	-7	-0.85	<b>-89</b>	—
1700	-10	-0.66	<b>-117</b>	—
2500	-14	-0.35	<b>-90</b>	—
3200	-19	0.04	<b>13</b>	—
4000	-24	0.4	<b>166</b>	—
4800	-23	0.99	<b>498</b>	—
5500	-16	1.36	<b>785</b>	—
5600	-14	1.41	<b>829</b>	—
6300	6	2.67	<b>1760</b>	<b>18</b>
7100	46	4.98	<b>3706</b>	<b>61</b>

# PERFORMANCE OF THE SYSTEM

## Hirth 4103 + Mejzlik 25x12 2B S 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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