

# Professional Propulsion Systems

## SYSTEM SPECIFICATIONS

### ENGINE



Name:	<b>F23</b>
Manufacturer:	<b>HIRTH ENGINES</b>
Type:	<b>2-cylinder</b>
Displacement:	<b>521 cm<sup>3</sup></b>
Max. performance:	<b>36 kW at 6100 RPM</b>
Weight:	<b>28 kg</b>
RPM range:	<b>2500–6500 RPM</b>
Running direction:	<b>Clockwise</b>

### PROPELLER



Name:	<b>37x22 2B</b>
Manufacturer:	<b>Mejzlik</b>
Diameter:	<b>37 in</b>
Pitch:	<b>22 in</b>
Mass:	<b>513 g</b>
Contact:	<b>info@mejzlik.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@mejzlik.eu](mailto:info@mejzlik.eu) or [info@hirthengines.com](mailto:info@hirthengines.com)

ID: **0119**



# PERFORMANCE OF THE SYSTEM

Flight velocity

**0 m/s**

Rotational Speed [RPM]	Thrust [N]	Torque [Nm]	Mechanical Power [W]	Propulsion efficiency [%]
1000	28	1.59	<b>166</b>	<b>0</b>
1400	55	3.1	<b>455</b>	<b>0</b>
1900	103	5.8	<b>1154</b>	<b>0</b>
2400	167	9.34	<b>2348</b>	<b>0</b>
2900	247	13.93	<b>4229</b>	<b>0</b>
3300	325	18.21	<b>6294</b>	<b>0</b>
3800	437	25.12	<b>9996</b>	<b>0</b>
4300	571	33.07	<b>14892</b>	<b>0</b>
4800	731	42.62	<b>21423</b>	<b>0</b>

Flight velocity

**10 m/s**

Rotational Speed [RPM]	Thrust [N]	Torque [Nm]	Mechanical Power [W]	Propulsion efficiency [%]
1000	9	1.14	<b>119</b>	<b>78</b>
1400	33	3.12	<b>458</b>	<b>73</b>
1900	77	6.25	<b>1244</b>	<b>62</b>
2400	136	10.21	<b>2565</b>	<b>53</b>
2900	212	15.12	<b>4591</b>	<b>46</b>
3300	285	19.81	<b>6846</b>	<b>42</b>
3800	394	26.81	<b>10669</b>	<b>37</b>
4300	523	35.23	<b>15865</b>	<b>33</b>
4800	676	45.27	<b>22756</b>	<b>30</b>

# PERFORMANCE OF THE SYSTEM

Flight velocity

**20 m/s**

Rotational Speed [RPM]	Thrust [N]	Torque [Nm]	Mechanical Power [W]	Propulsion efficiency [%]
1000	-11	-0.45	<b>-47</b>	—
1400	-6	-0.06	<b>-9</b>	—
1900	31	3.77	<b>751</b>	<b>82</b>
2400	84	8.52	<b>2142</b>	<b>78</b>
2900	154	14.04	<b>4263</b>	<b>72</b>
3300	222	19.09	<b>6598</b>	<b>67</b>
3800	324	26.49	<b>10540</b>	<b>61</b>
4300	447	35.25	<b>15873</b>	<b>56</b>
4800	592	45.58	<b>22912</b>	<b>52</b>

Flight velocity

**30 m/s**

Rotational Speed [RPM]	Thrust [N]	Torque [Nm]	Mechanical Power [W]	Propulsion efficiency [%]
1000	-15	-1.38	<b>-144</b>	—
1400	-23	-1.16	<b>-170</b>	—
1900	-23	-1.21	<b>-240</b>	—
2400	17	2.89	<b>727</b>	<b>70</b>
2900	78	9.31	<b>2828</b>	<b>83</b>
3300	140	15.11	<b>5221</b>	<b>81</b>
3800	236	23.26	<b>9256</b>	<b>76</b>
4300	351	32.61	<b>14684</b>	<b>72</b>
4800	488	43.32	<b>21777</b>	<b>67</b>

# PERFORMANCE OF THE SYSTEM

Flight velocity

**40 m/s**

Rotational Speed [RPM]	Thrust [N]	Torque [Nm]	Mechanical Power [W]	Propulsion efficiency [%]
1000	-20	-2.92	<b>-306</b>	—
1400	-29	-2.74	<b>-401</b>	—
1900	-43	-2.29	<b>-455</b>	—
2400	-48	-3.26	<b>-819</b>	—
2900	-7	0.39	<b>118</b>	—
3300	46	6.8	<b>2351</b>	<b>79</b>
3800	131	15.81	<b>6293</b>	<b>83</b>
4300	237	25.99	<b>11705</b>	<b>81</b>
4800	365	37.51	<b>18856</b>	<b>77</b>

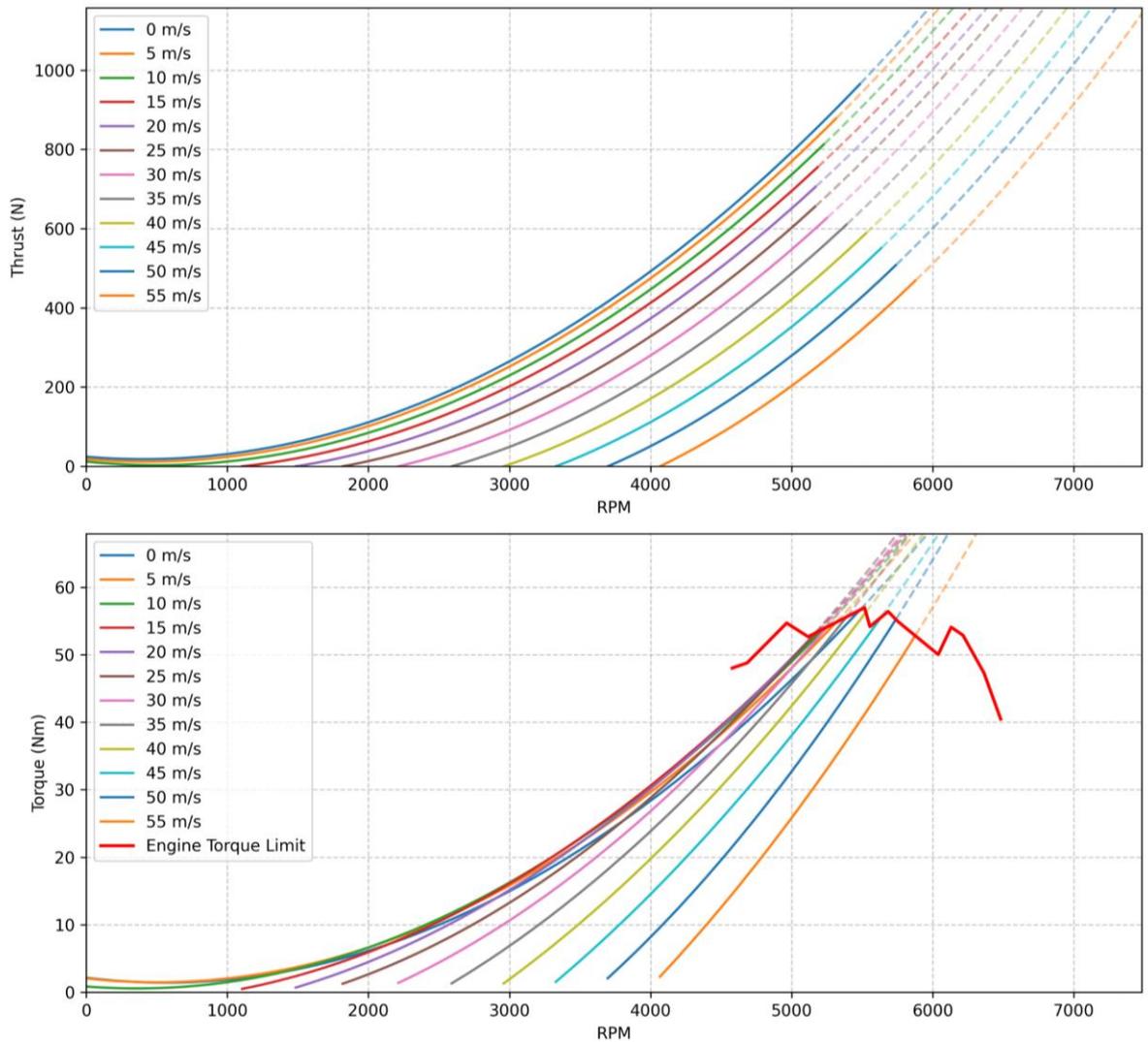
Flight velocity

**50 m/s**

Rotational Speed [RPM]	Thrust [N]	Torque [Nm]	Mechanical Power [W]	Propulsion efficiency [%]
1000	-25	-4.92	<b>-516</b>	—
1400	-36	-4.88	<b>-715</b>	—
1900	-52	-4.61	<b>-917</b>	—
2400	-69	-3.96	<b>-995</b>	—
2900	-80	-6.01	<b>-1825</b>	—
3300	-54	-4.9	<b>-1694</b>	—
3800	16	3.97	<b>1579</b>	<b>52</b>
4300	110	14.92	<b>6719</b>	<b>82</b>
4800	226	27.21	<b>13675</b>	<b>83</b>

# PERFORMANCE OF THE SYSTEM

## Hirth F23 + Mejlzik 36x16 2B Q 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 Mejlziks 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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