FALCON

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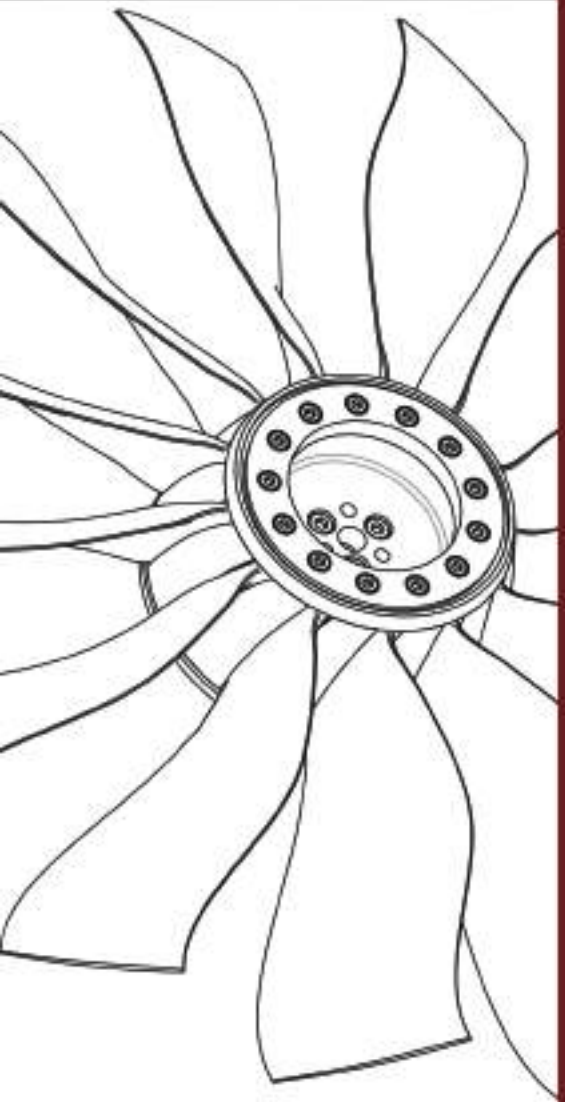
World-class propellers and rotors manufacturer

ABOUT US

Falcon, founded in 2000 is the name behind the well-known respected brand. Our expertise in the design, development and production of top-quality, high performance precision, propellers, helicopter rotors, blades for multirotor, ducted fan is "class leading" in the industry. Hawk Aviation also manufactures a range of precision bespoke aviation components.

Our design and research team work diligently to develop high-quality products, which deliver superior performance using the latest advanced testing techniques. Our 25,000 sq meter facility houses, a powerful computing center, alongside an independent laboratory and extensive testing facilities. These capabilities enable Falcon to work with customers to deliver products which meet their specific specifications and tolerances e.g. avoiding resonance frequency issues, delivering efficient aerodynamic designs for optimum performance.

Customers working with Falcon can be confident that our professional team will provide customized solutions which meet their exact design and performance requirements.



CAPABILITIES

Hawk Aviation has demonstrated its commitment to development, innovation and quality through the creation of a 6 million yuan onsite Research & Development center. This purpose-built facility houses a Research and Development area of 600 m^2 and a Pilot Base area of 1,600 m^2, including a technical department, a testing center, and a propeller fan power laboratory. The centers focus is research and development of new products and new/emerging technologies.

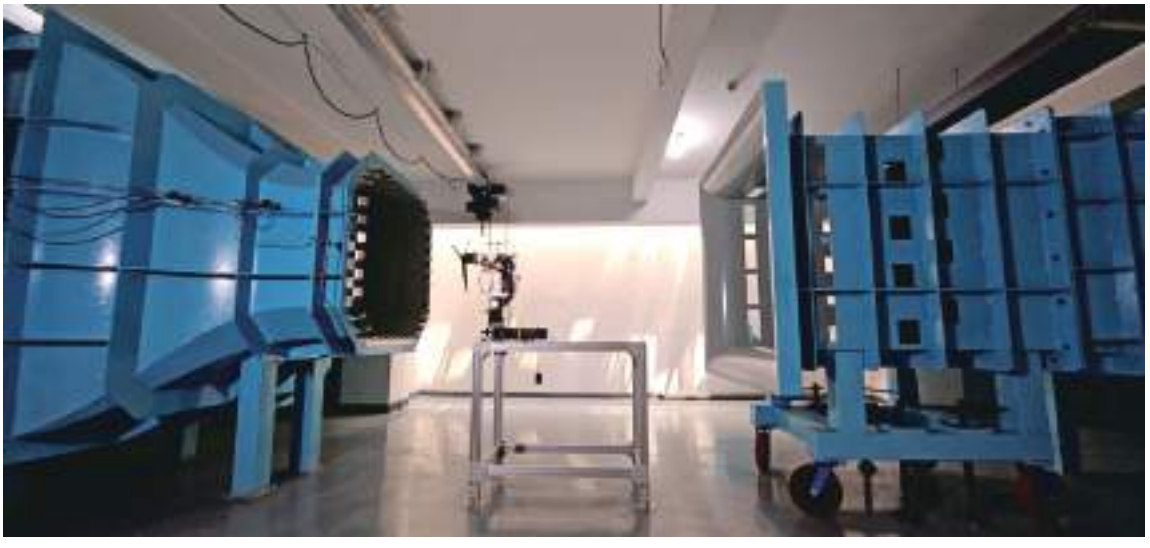
Experimental equipment contained within the facility includes DSC differential scanning calorimeter, electronic balance, fully automatic three-dimensional coordinate measuring machine, high and low temperature single tension testing machine, universal testing machine, dynamic balancing machine, television microscope, stormo viscometer, dynamometer, electric propeller testing system, DHDAS dynamic signal acquisition and analysis system, viperl vibration tester, porous airspeed meter, micro-controlled high and low temperature single tensile testing machine (30 tons), touch screen digital display Burawoy hardness tester.

The instrument performance is state-of-the-art and can meet research and testing needs across a multitude of applications such as aerodynamic performance testing, material performance testing, and functional analysis of propellers and rotors.

WIND TUNNEL

Wind tunnel testing is a critical predicter of propeller aerodynamic performance and provides key aerodynamic data required for propeller design. In the Wind Tunnel we can use a model with propeller power, different thrust of the propeller and aerodynamic characteristics of the entire aircraft under different conditions. The ability to undertake physical simulations allows us to test prototypes and experimental products in a realistic and reliable way. Therefore, the wind tunnel test is an important link in the development of propeller models.

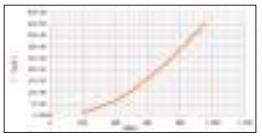
Technical indicators:	
Test section:	1.2m*1.2m*3m(W*H*L)
Speed range:	20m/s-80m/s
Turbulence:	< 0.2%
Velocity uniformity:	< 0.5%
Airflow deflection angle:	< 0.5%
Static pressure gradient along tunnel:	< 0.5%
Speed stability:	< 0.5%



CAPABILITIES

Test capability

Outdoor Test Environment



Differential Scanning Calorimeter

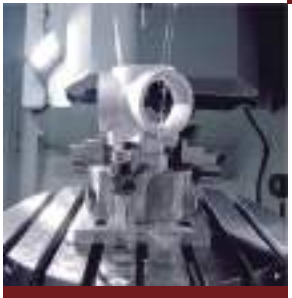
Applied to melt, crystallization, vulcanization solidification, glass transition, thermal history, reaction melt and filler effects, polymorphism, eutectic point, compatibility and specific heat, etc.

Non Destructive Testing

Detect the inner damage of product depending on the penetrating property of X-ray

Fabric cutting machine

Ensure precise control of the cutting process and improves production efficiency. Provides guarantee for manufacturing high-quality composite aviation products



Mold-level CNC

Process various types of high-precision metal molds to ensure the accuracy of the aerodynamic shape of the mold products to the greatest extent.

High-low temperature mechanical UTM

Micro-controlled high and low temperature single tensile testing machine (30 tons)Used for high and low temperature tensile test of metal and non-metal parts

Fully automatic CMM

Used to accurately measure the size, shape, position and other elements of precision machined parts

High and low temperature test box

Provide extreme temperature environment and simulate various temperature conditions that the product may encounter in actual use

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PAF

Heavy Payload

- Diameter：45~102inch
- Suitable for eVTOL

Reduce noise

*For example 63X22（36.4℃，992.4hPa，33.3%Rh）

RPM	T(kgf)	W	gf/W
800	11	435	24.14
1100	19	1349	14.06
1400	30	2800	10.87
1700	44	5221	8.49
2000	64	8770	7.28
2300	86	13787	6.21
2600	110	20178	5.43
2900	139	29113	4.77
3000	150	32697	4.58

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PBF
VTOL

- Diameter：16.1~48.1inch
- Suitable for VTOL fixed wing

*For example 42X16.5（28.33°C，1009.6hPa，37.72%Rh）

RPM	T(kgf)	W	gf/W
921	3.02	143.23	21.05
1385	6.92	495.17	13.97
1850	12.48	1194.78	10.44
2314	19.77	2374.82	8.32
2778	28.73	4139.22	6.94
3229	39.43	6687.60	5.90
3373	43.52	7710.32	5.64

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PBL
Extra Light

- Diameter：17~36inch
- Extra Light

*For example 24X7.2（27.56℃，1004.7hPa，55.8%Rh）

RPM	T(kgf)	W	gf/W
734	0.15	2.92	51.92
1437	0.63	26.24	23.93
2086	1.32	81.08	16.29
2742	2.33	183.87	12.66
3289	3.38	319.02	10.61
3783	4.48	489.70	9.16
4314	5.88	731.43	8.04
4765	7.22	990.71	7.29
5124	8.39	1235.00	6.80
5184	8.61	1281.46	6.72

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PAD

Efficient

- Diameter: 18.3~46.3inch
- High gloss finish
- Aerodynamic design to reduce noise and optimize installation space

*For example 32.3X10.9（27.44°C，1000.5hPa，49.02%Rh）

RPM	T(kgf)	W	gf/W
602	0.25	9.20	27.41
1230	1.47	77.41	19.04
1825	3.42	244.25	13.99
2392	6.00	555.10	10.80
2882	8.91	987.23	9.03
3386	12.58	1624.74	7.74
3805	16.18	2350.98	6.88
4172	19.65	3154.45	6.23
4536	23.72	4145.06	5.72
4663	25.10	4526.27	5.55

PAB
Foldable

- Diameter: 15.2~36.2inch
- High gloss finish
- Folding for easy transportation and storage

PAE
Quieter

- Diameter: 18.3~32.3inch
- High gloss finish
- High efficiency
- Light weight

PAW
Hot-selling

- Diameter: 18~46.5inch
- High gloss finish

PBB
Economical

- Diameter: 5~34inch
- Matte finish

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C2D

For Gas Engine

- Diameter：11~42inch
- Various sizes

C3D

C4D

*For example 20X13（21.42℃，1001.3hPa，60.28%Rh）

RPM	T(kgf)	W	gf/W
1439	0.47	26.52	17.80
2157	1.15	85.39	13.47
2821	2.01	181.69	11.08
3498	3.11	353.13	8.82
4130	4.34	569.61	7.62
4745	5.66	856.67	6.61
5389	7.11	1237.06	5.75
5965	8.67	1689.74	5.13
6475	10.63	2250.55	4.72
7000	12.42	2843.57	4.37

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C2U

For Gas Engine

- Diameter：16~47inch
- Suitable for high speed cruising applications

C3U

*For example 26X16（10.24℃，1019.8hPa，43.09%Rh）

RPM	T(kgf)	W	gf/W
2309	3.89	308.06	12.63
3544	9.23	1225.87	7.53
4417	14.28	2480.72	5.76
5099	19.24	3987.25	4.82
5645	23.86	5621.94	4.24
6103	28.09	7439.41	3.78
6646	32.36	10221.99	3.17
7279	38.70	14599.16	2.65

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W2U

- Diameter：24~40inch
- German beech wood
- CNC

*For example 33X24（29.05℃，1001.1hPa，46.53%Rh）

RPM	T(kgf)	W	gf/W
1538	5.19	497.37	10.44
2354	12.69	1784.30	7.11
2971	20.59	3666.38	5.62
3718	32.77	7476.88	4.38
4501	49.46	14290.64	3.46
5178	64.92	24889.54	2.61
5353	68.92	27997.16	2.46

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C2

For Electric Motor

- Diameter: 14~46inch
- Suitable for high speed cruising applications

C2UD

For Gas Engine

- Diameter: 18~40inch
- Suitable for diverse environments and climates

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C2F
Folding Propeller

Diameter: 9~24inch
CW and CCW

C2FB

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C2E

For Electric Motor

- Diameter： 8~32inch
- Designed for use with electric motors

C3E

*For example 22X12（18.1℃，1016.4hPa，51.51%Rh）

RPM	T(kgf)	W	gf/W
2789	2.11	155.97	13.52
3442	3.18	293.05	10.83
4045	4.39	483.76	9.08
4667	5.96	768.79	7.75
5238	7.47	1085.01	6.88
5746	9.07	1454.40	6.24
6261	10.84	1911.94	5.67

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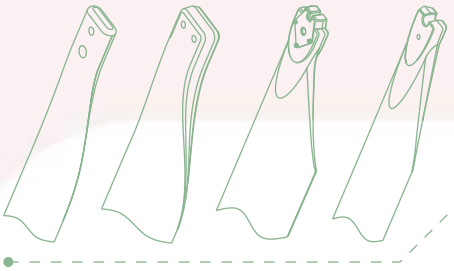
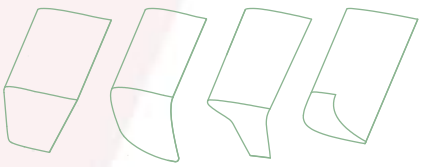
Helicopter Main Rotor



Root customization

Leading edge protection



Tip customization

Tail rotor

Diameter: 700~3400mm, or larger

Designed for a range of different helicopters

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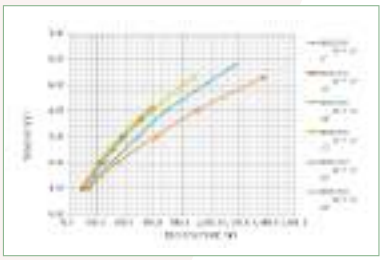
VP3

Variable Pitch

Direct Drive



Belt Reduction Drive

Designed and produced to meet customer's requirements

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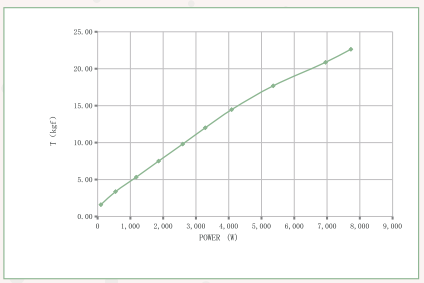
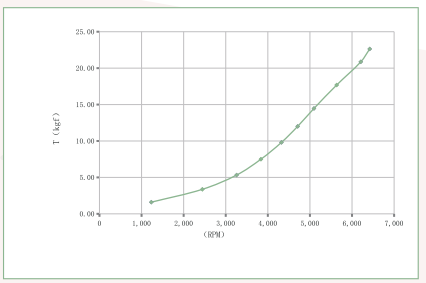
Ducted Fans

- Diameter: 200~800mm
- Designed and produced to meet customer's requirements

*For example HD400mm





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