

WOODCOMP

ALES KREMEN

NEW DIRECTION IN AVIATION



www.woodcomp.cz

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WOODCOMP KŘEMEN

Since 1989, our company has been actively designing, testing, manufacturing, and selling aircraft propellers, and currently, it has 35 employees. Traditionally, majority of production has been for light planes up to 450kg (Czech UL category) and for wind turbines in the past. Currently, the company focuses on GA category. Thanks to its production capacity, broad product range, and most importantly, thanks to top reputation of its UL products, the company became one of top producers of propellers not only in Europe, but worldwide. Approximately 1.500 propellers for aircraft and wind turbines are manufactured each year.

PRODUCTION

We have 4.500 square meters of our own production facilities and organization, regularly audited and supervised by EASA. All production is handled by us, without external suppliers. We have complete development and technology facilities at our disposal, without the need to cooperate with external parties. Individual production operations are performed on last-generation CNC machinery, using modern technology and the most up-to-date materials.

Our HR policy resulted in stable, highly qualified team of employees. Their experience, professional abilities and personal qualities are the key to the safety and security of our products.



Our company does not use transferred technologies, nor foreign patents. All our products and technologies are the result of our own design and development organization, or of cooperation with renowned Czech design and development experts. This forms the base of our successful designs, progressive manufacturing technologies, and their successful utilization in mass production. Křemen Woodcomp company has long time ago become totally independent in research, manufacturing and technology. We guarantee complete production in our own plant with our full control and supervision.



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Based on our experience with development, manufacturing, and sales of propellers for microlight aircraft, we have developed new line of three-blade, hydraulically adjustable propellers, designated KW.

PROPELLER RANGE

We manufacture propellers for:

UL, EXPERIMENTAL, Normal category aircraft up to 5.700kg

- ▶ Fixed-pitch two-blade propellers
- ▶ Fixed-pitch two-blade, wood-composite, suitable for current and historic aircraft. **All our fixed-pitch two-blade propellers have EASA type certification**
- ▶ Composite ground-adjustable multiblade propellers
- ▶ Composite in-flight adjustable multiblade propellers, mechanically, electrically, or hydraulically controlled
- ▶ Composite aeroelastically-adjustable multiblade propellers „constant speed“
- ▶ Propellers for wind turbines



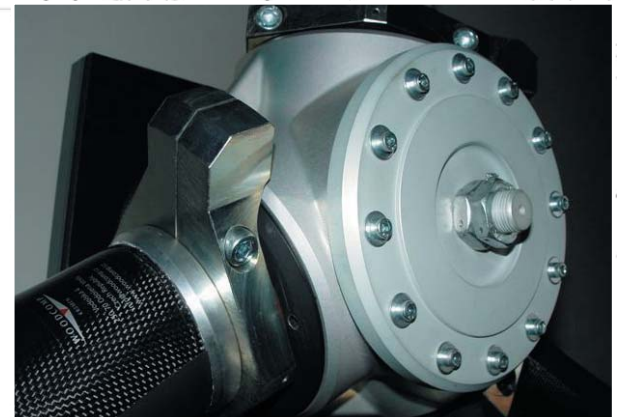
▲ Our test aircraft Extra 330 LC during final testing of **KW range propeller**.



▲ **KW 10 propeller**
Hydraulically adjustable, for maximum power 310HP at 2700rpm

TECHNOLOGY

Competitors have certified their propellers 20 or more years ago; they continue to use outdated technology - e.g. manual application of laminates with repeated grinding and final spraying of lacquer with loose tolerances. Křemen Woodcomp company has developed and is using new technology - vacuum lamination in special molds. This production method achieves tight tolerances (to 1/100-th of mm). Moreover, no lacquer used on modern propellers can withstand the loads which gelcoat withstands. Blade materials used by our company combine beautiful looks with exceptional technical properties. We offer blades with highly resistant and solid surface in carbon design or color finish. This new development has been made possible by advances in materials and technology. Thanks to precise dimensions, resulting blades run without vibrations and resonances.



CERTIFICATION

Our company holds many authorizations/certification permits for development, manufacturing, and sale of propellers for aircraft operated in Normal category up to 5.700kg. Based on our experience with development, manufacturing, and sales of propellers for microlight aircraft, we have developed new line of three-blade, full automatic hydraulically adjustable propellers.

- ▶ **DOA:** design authorization approval, EASA AP.250 by European Aerospace Agency
- ▶ **POA:** production authorization approval CZ.21G.0048
- ▶ **Testing:** authorization L-3-079 to perform type and verification tests according to CS/JAR/FAR
- ▶ **Type certificates**

TESTING

Documented testing of technical and safety parameters of products is core activity for our company. We have built a test facility for propellers as a part of our development and certification process.

Our company therefore has test and development facility, allowing us to research and develop new products, as well as to perform production and operation testing. Our test facility has CAA CZ authorization L-3-079.

We have developed vast range of testing equipment, methodology, and procedures. Our facility fully covers EASA CSP process from laboratory tests through engine tests up to flight tests, using our Extra 330 plane. Our test facility has been certified according to CS rules, certificate # L-3-079.



CAA SK - TC V-1/2010



POA: CZ.21G.0048



DOA: EASA.AP250



PROPELLER TYPE CERTIFICATES

SERVICE

To support the marketing and sale of our products, we created service centers worldwide. Our company currently operates 29 service branches. Their employees have been professionally trained and equipped with technology for adjustment and repair of propellers, as well as with stock of spare parts. This guarantees regular and timely service, or repair, of propellers operated by foreign customers. Thanks to close relations between service branches and our company, we have detailed knowledge of local environment (be it hot or cold climate), and we are also able to react to customers' needs quickly.

We guarantee replacement of our propeller blades worldwide within 14 days.



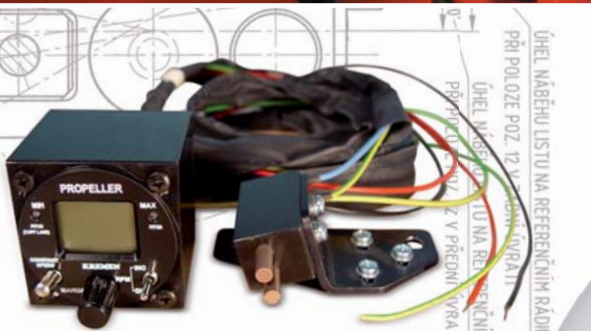
SR 3000 THREE-BLADE PROPELLER

SR 3000 constant speed in-flight adjustable three-blade propeller has become the most popular automatic propeller in the world.



Woodcomp propellers hold several European and World speed and endurance records.

Existing experience with production and operation of "small props" led our company to expand its reach also to civil aviation sector, and this new trend supported by extraordinary economic results has been later supported by EU funding.



ÚHEL NÁBĚHU LISTU NA REFERENČNÍM RÁDUSU
Při POL OZE POZ. 12 V KONTAKTŮV RÁTU
ÚHEL NÁBĚHU LISTU NA REFERENČNÍM RÁDUSU
Při POL OZE POZ. 12 V KONTAKTŮV RÁTU

ÚHEL MAXIMÁLNÍHO POTOČENÍ LISTU

10°
20°
30°



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WHY YOU SHOULD USE WOODCOMP KREMEN PROPELLER?

- ▶ Modern carbon design
- ▶ Higher resistance to damage
- ▶ Longer operating life
- ▶ Replaceable metal leading edge protection
- ▶ Fair price
- ▶ Individual customer approach
- ▶ low Individual customer approach
- ▶ propeller weight
- ▶ Unique design of KW propellers allows transport to the customer in a small package. This helps to keep transport costs low.



We carefully evaluate the results of our own testing, as well as practical experience with our products; we also study and monitor competitor's products and the history of propeller production in the Czech Republic and worldwide.



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ÚHEL MAXIMÁLNÍHO POTOČENÍ LISTU

10°
10°
20°-30°
10°

U14
ZV
HU
EPI

KNV

DYNAMICALLY STRESSED COMPONENTS



▲ Rotor blade



▼ Rotor head

THERMALLY STRESSED COMPONENTS



▼ Engine parts

HIGH-STRENGTH COMPOSITES

Load bearing composite plane structures



SPECIAL PRODUCTION



DEVELOPMENT OF COMPOSITE PROPELLERS AND COMPOSITE STRUCTURES

Our company cooperates with renowned research and development centers in the field of new composite structures for planes, and also for other rotating components, e.g. wind turbines or helicopter rotor blades. We also develop and produce special dynamically stressed components, thermally stressed components, high-strength composites, extremely light structures and other special parts. Based on specific requirements, we employ our long-term experience combined with abilities of external chemists, technologists, and/or designers. This guarantees optimum production technology and adherence to product specifications.

EXTREMELY LIGHT STRUCTURES

Honeycombed airplane structures





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Our company is based in the Czech Republic, just outside Prague, the national capital, in the immediate vicinity of Vodochody international airport.

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