

IN FLIGHT VARIABLE PITCH IDROVARIO PROPELLERS



WHEELS WITH "HYDROCONIC" BRAKES



STREAMLINED LIGHT-ALLOY TUBING



alisport.com

PROPELLERS & ACCESSORIES DIVISION

0307

IN-FLIGHT **VARIABLE PITCH "IDROVARIO" PROPELLERS**

Alisport is an aviation leader in the design and manufacture of composite structures and mechanical components. Our propeller division produces the "IDROVARIO" series of hydraulically-controlled variable-pitch carbon-fiber propellers. The propeller blades are highly reliable, have an excellent safety record, very low mass and rotational inertia, and exceptional performance and durability. All of our blades are now manufactured from carbon-fiber and include the latest pre-preg technology.
Our hydraulic controls are the most advanced, lightweight, and reliable units currently available. Several choices exist: a manual thumbscrew control, electo-hydraulic units with switch or digital control, or a traditional constant-speed governor.
Our "IDROVARIO" propellers are perfectly suited for installation on virtually all two-stroke or four-stroke Rotax engines.







BLADES

Our well-proven blades ❶ have **structures comprised entirely of epoxy pre-impregnated carbon-fiber fabrics:**

- significant weight reduction resulting in lower stresses due to centrifugal forces and engine torque.
- high strength and optimized stiffness.





❷ Maximum consistency and reliability throughout the manufacturing process:

- all fabrics are precisely cut by numeric control cutting machine.
- highly consistent resin/fabric weight ratio.
- precisely documented quality control checking of lamination schedules.

All of our blades are designed with 3D CAD software with structural optimization performed using finite element analysis (FEA) methods. Extensive testing and strength verification is performed via both static tensile and bending load tests ❸ while dynamic load tests are performed on a propeller test machine. ❹







HIGH SPEED blade
Available in right-hand version. These blades are perfect for aircraft with the highest cruise speeds.



STANDARD blade
Available in right and left-hand versions. These blades have demonstrated remarkable performance in both the two-blade (80 hp) and three-blade (100 - 120 hp) applications.



BAY-BLADE
Available in right-hand version. Suitable for high-performance aircraft with reduced ground clearance.

Model	PROP DIA.		WEIGHT[1]		MOMENT OF INERTIA		MAX. REVS	ENGINE POWER		ROTATION DIRECTION
	(mm)	(in.)	(kg)	(lbs)	(kg cm²)	(lbs in²)	(rpm)	(HP)	(KW)	
2 blades HIGH SPEED	1760	69,29	5,8	12,8	3260	1100	2450	100/115	75/86	RH only
2 blades STANDARD	1720	67,72	5,7	12,5	2940	1000	2560	80	60	*RH* or *LH*
3 blades STANDARD	1760	69,29	7,9	17,4	4400	1500	2560	80/100/115	60/75/86	*RH* or *LH*
2 blades BAY-BLADE	1620	63,78	5,4	11,84	2000	680	2560	80	60	*RH*
3 blades BAY-BLADE	1660	65,35	7,6	16,67	3370	1146	2560	100	75	*RH*
4 blades BAY-BLADE	1670	65,75	10,0	21,93	4600	1565	2560	115	86	*RH*

[1] including hub (excluding spinner)

CONTROL SYSTEM COMPONENTS

A) ROTATING JOINT
The rotating hydraulic joint allows oil to flow through the reduction gear shaft on Rotax engines to the propeller hub.

B) MANUAL CONTROL
A simple and highly reliable cockpit panel-mount thumbscrew that provides precise manual control of propeller pitch.

C) ELECTRO-HYDRAULIC CONTROL
An electrically driven version of the manual control. It can be remotely mounted and driven by either a panel-mounted switch or joystick-mounted switch. Alternately, it can be driven by a panel-mount "electronic governor" which transforms the propeller from an in-flight adjustable pitch propeller to a "constant speed" propeller.



ELECTRONIC GOVERNOR

These highly refined instruments provide electronic pitch control and transform propellers operated with the electro-hydraulic control into "constant-speed" propellers. Both electronic governors we supply are intuitive to use and simple to operate. They are well proven and have excellent reliability.

A) AUTOPROP Ø80 mm (Ø 3 1/8")
B) FLYBOX Ø57 mm (Ø 2 1/4")

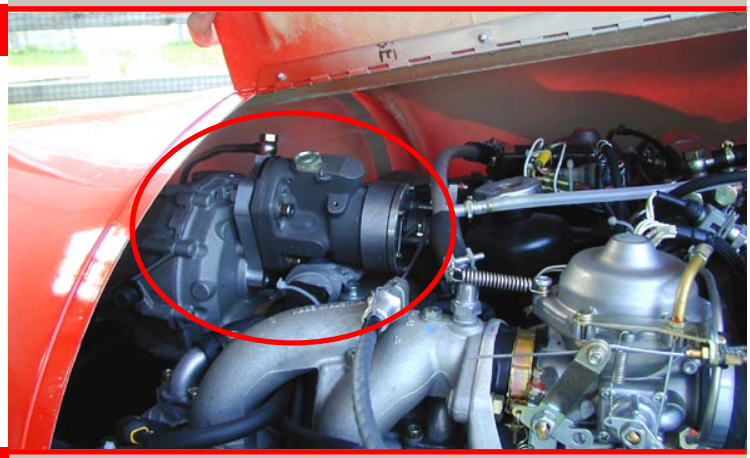


HYDRAULIC GOVERNOR

The hydraulic governor is placed directly on the gear reduction drive of Rotax engines and provides traditional "constant speed" control. A rotating joint is no longer needed.



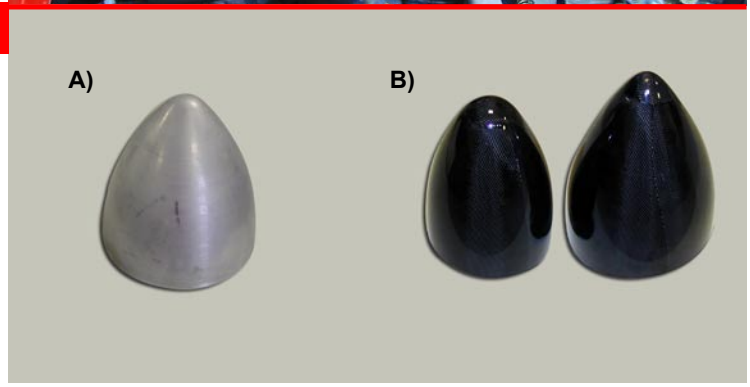
Hydraulic Governor ***JIHOSTROJ***



SPINNERS

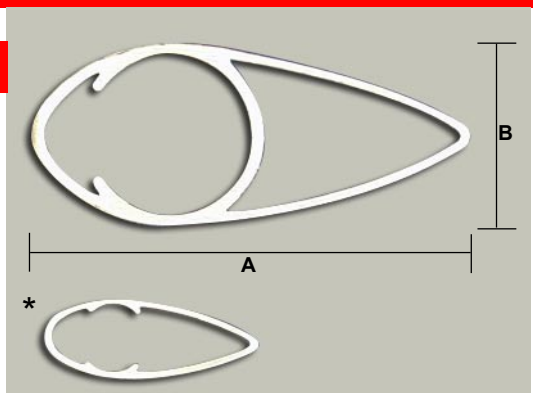
Our spinners are supplied complete with backing plates and fully trimmed. On a special request basis, we can provide the cutouts for the propeller blade roots as an additional finishing process.

A) Aluminium **SPINNERS**
Ø254 mm (Ø 10")
Ø310 mm (Ø 12 1/4")
B) Carbon fibre **SPINNERS**
Ø200 mm (Ø 7 7/8")
Ø240 mm (Ø 9 1/2")
Ø300 mm (Ø 11 3/4")



FLIGHT
ACCESSORIES

STREAMLINED LIGHT-ALLOY TUBING

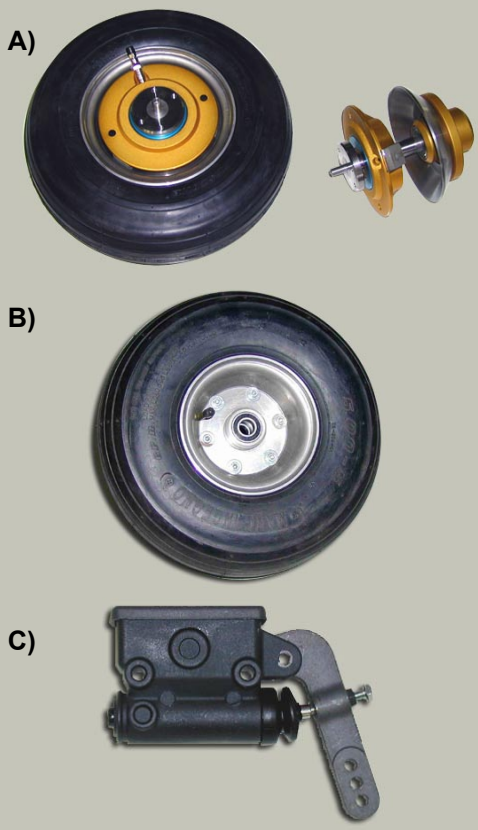


Streamlined 6005-T5 aluminum alloy tubing. Used by many well known light aircraft and ULM manufacturers. Certified for wing strut use.

No. 10.001.000	(A x B)	81,75 x 34,00 mm	1.100 gr/m
No. 10.002.000	(A x B)	71,00 x 30,40 mm	840 gr/m
No. 10.003.000	(A x B)	52,50 x 22,50 mm	530 gr/m
*No. 10.004.000	(A x B)	39,50 x 14,80 mm	270 gr/m

Extrusion length: 6400 mm

WHEELS



A) WHEELS WITH "HYDROCONIC" BRAKES
An advanced braking solution for the sport aviation market. HYDROCONIC brakes are well suited to aircraft with either regular or fast landing speeds. The advanced design results in an aerodynamically clean installation with all the main components neatly hidden within the wheel rim. The component set is now also available with a high-strength "Avional" aluminum-alloy axle that replaces the steel axle. The resulting weight reduction is 370 grams per wheel assembly.

Available sizes: 5.00x5" - 5.00x6" - 6.00x6"

B) WHEELS WITHOUT BRAKES
Available rim diameters: 4", 5", 6". They may be fitted with aftermarket brakes from various manufacturers. For medium quantity orders we can manufacture wheels to customer required dimensions and specifications.

TIRES
Available sizes:
4,00 x 6" (4 ply) - 5,00 x 6" (4/6 ply) - 6,00 x 6" (4/6 ply)
4,00 x 5" (4 ply) - 5,00 x 5" (4/6 ply) - 4,00 x 4" (4 ply)

C) MASTER CYLINDER
A reliable and practical brake master cylinder. Superb quality and excellent availability of replacement parts.

GASCOLATOR



An economical and dependable gascolator of exceptional design that combines a filter and water drain. Available with various fuel inlet and exit locations and orientations. Can be supplied with or without a built-in fuel pressure regulator.

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