

## BERINGER - Quality and Performance since 1985

1985 Gilbert Béringer created BERINGER Company helped by his wife Véronique. He has been manufacturing wheels, forks and side cars for motorbikes and then brakes, in the same spirit of quality and performance for 30 years. BERINGER braking products for motorbikes and cars have been accepted by the well-known racing teams for their exceptional reliability, allowing BERINGER to be used by many teams in the World Endurance Championships with many World Champion titles. This was all made possible by a team of exceptional mechanical engineers who have studied and developed new products whose performance/weight ratio is without precedent, for each specific use.
2002 BERINGER Wheels \& Brakes was born, when Gilbert Béringer, also a pilot and aircraft builder fond of aviation, decided to apply his patented high performance braking solutions to the aeronautical world.
2007 Rémi Béringer, son of Gilbert and Véronique, joined the Company after he graduated as Mechanical Dipl. Engineer. Also fond of aviation, he designed with Gilbert most of the products dedicated to light-sport aircraft, Formula One Racers, gliders and various fast machines.

2009 BERINGER Company sold motorbike and car activities to focus on the development of wheels \& brakes for aircraft. BERINGER AERO was born.

2011 BERINGER AERO moved to the airport of Gap-Tallard in the south of France, in a new building dedicated to aviation, with a direct access to the runway. This new plant consists of offices, workshops, and test room with the dyno and test benches designed by Rémi. A hangar welcomes the aircraft receiving the wheel \& brake prototypes for the tests.
Claire Béringer, daughter of Gilbert and Véronique, joined the Company after she graduated as Aeronautical \& Energy Dipl. Engineer (including 5 months at Oakland University-Detroit, MI) topped with a Master's degree in Commercial and Management Operations.
2012 BERINGER AERO USA Inc. was born in Chicago to answer the US customer needs. Viviane Michaud, also from Béringer's family, is in charge of the subsidiary.
2015 BERINGER celebrated the 30th anniversary of the Company. The ALG landing gear was designed to improve the safety of Taildragger Aircraft.
2016 BERINGER AERO USA moves to Greenville, South Carolina. For personal reasons, Rémi décides to leave the Company.
A flying family In Béringer family, everybody flies: Gilbert, Véronique and Claire fly with their homebuilt tail dragger and also with ultraleight Aircraft and gliders.

## An advanced technology

BERINGER makes wheels and braking systems for a wide range of aircraft, from light aircraft up to its now-standard STC for the Pilatus PC-6, and the Cirrus SR20/22 plus complete kits for many popular aircraft, that include everything for a bolt-on conversion. These innovations are covered by nine patents and have allowed BERINGER brakes to take a decisive technological lead. The new ALG undercarriage is covered by a patent.

## Quality and Certification

Of course, BERINGER® controls product quality to ensure total reliability to the users of wheels and brakes. This is evidenced by the Alternative Procedures to Design Organisation Agreement given by EASA in 2006 and by the Production Organisation Agreement given by DGAC in
 2008.


Gilbert Béringer Owner - R\&D


Marie Cruveillé Workshop Manager


Christine Rochas Accounting Officer


Yann Merle Engineering intern


Véronique Béringer
Owner - Marketing


Viviane Michaud
Operations BERINGER AERO USA


Christian Designer


Marie Tartarat Logistics


Claire Béringer
Owner - General Manager


Frédéric Salle
Quality and Certification Manager


Julie Chaix
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Lukas Stutzer Lead Engineer


Brice Barone Senior Purchaser / Quality


Carla Panetta Sales Assistant (USA)


Daniel Massett Logistics BERINGER AERO USA

## BERINGER respects our planet

## BERINGER AERO's commitment to sustainable development

## Respect for the Environment

- At BERINGER, toxic substances and non recyclable materials are eliminated from the fabrication process
- Workshop trash is sorted prior to disposal.
- An environmental awareness campaign is in force and consistently reviewed.


## Reduction of Energy Consumption

- Our specially-designed bioclimatic building (BBC) made of local wood only consumes only 10\% of the energy required to heat or cool a conventional steel building.
- $98 \%$ of the energy used to heat our water is solar-powered
- BERINGER employs vehicles using propane (LPG): they have reduced CO2 emissions and have no particulate emissions.


## Eco-Designs for Products

- BERINGER products are designed to have a virtually unlimited service life, because pieces that are worn down can be replaced.
- Components are 99\% recyclable.
- $98 \%$ of the products are made in France, within a radius of 200 miles; this process reduces transportation and energizes local industrial bases.


## Respect for Human Dignity in the Workplace

- From one end of the assembly line to another, from in-house to subcontractors, BERINGER staff members work in optimal conditions following the regulations of OIT (International Work Organization).
- BERINGER does not award contracts based on "lowest-cost," and does not use outsourcing.


## Respect for the Ethics of Economics

- BERINGER partners (suppliers, subcontractors, banks, clients) are chosen based on ethical criteria, not only the lowest price
- BERINGER commits to projects based on their moral philosophy :
- BERINGER wheels are not involved in projects that could intentionally threaten human life.
- BERINGER has partnerships in eco-friendly projects (e.g., Green challenge, Solarlmpulse).


## Zero Compromise on Quality

At BERINGER, quality is not only respect for procedures that the EASA certifies, such as the Design Approval Organization and the Production Approval Organization (Part 21G). Quality is a pledge of trust to our clients: our clients entrust us with their lives. To remain worthy of this trust, we offer a lifetime warranty ( liability insurance) on materials and craftsmanship on all our products.

BERINGER integrates its partners in the projects, from the design stage to commercialization

- AeroProviders : a group of suppliers for Light Aviation manufacturers
- PEGASE : innovation and development group of companies working for Aviation
- Hautes Alpes Développement: Development Agency for local companies In Hautes Alpes department (region) of France.

Since 2010 the MADE IN RESPECT label has been recognizing BERINGER AERO's commitment to sustainable development.

On February 34th, 2012, BERINGER AERO won the Trophée RSE PACA TPE (Social Responsibility of the Companies).
In July 2015, the specific Know-how of BERINGER AERO has been recognized through the Label „Entreprise du Patrimoine Vivant" EPV.
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CAN'T FIND WHAT YOU NEED ? LET US HELP
Technical or sales support: Tel +33 (0) 492201619 Fax +33 (0) 492526966commercial e-mail sales@beringer-aero.com

Company hours : Mon. - Fri. : 8.30-12.30 am and 01.30-6.00 pm Postal address: BERINGER AERO - Aéropôle - 05130 Tallard - France
WARNING: the mounting and the maintenance of the wheels and brakes must be done by an authorized BERINGER SERVICE CENTER (and by a certified Part 145 workshop for certified aircraft). BERINGER Company is not responsible of troubles due to a wrong mounting, not in accordance with BERINGER instruction (available on our website) and with State of the Art.

## ? How can I order BERINGER parts

You can order through the BERINGER network as listed from the website.
Call us or send an e-mail at contact@beringer-aero.com at any time and we will return some ideas.
? I have a technical question. Who can help?
Our Service Centers are able to answer many technical questions, but for a precise tech-
nical or engineering question, please contact BERINGER directly.

## ? Why are most BERINGER wheels made for tubeless tires?

Tubeless has many advantages compared to tube type:

- safer (less risk of puncture)
- weight saving (a tube weights around 1 to 2 lbs )
- cost effective (no tube means no tube to buy)

These are the same reasons why nowadays you find tubeless wheels on cars, motorcycles, and all commercial airplanes. Tubeless designs have specific features to be airtight (most designs use o-rings) and precise machining to ensure proper contact between tire and wheel.

## ? How can I choose the correct wheels, tires and brakes?

1. First, select your tires according to your use: What kinds of runways: grass, concrete, rough?
2. Match the wheel to the tires. (See our tire-wheel application chart in the catalog.)

The brakes you need will depend mostly on the weight of the aircraft and the landing speed, though tire size can come into play at the extremes of the size ranges: to get close, use the formula to calculate the Kinetic energy needed (see the catalogue page 9). Many popular setups are already listed p.10-17.
? How do I know the type of brake fluid to fill my brake system?
The type of brake fluid to use is most of the time written directly on the brake caliper and on m. cyls. DOT4 usually has yellow to amber color and MINERAL ("Mil spec" or "aviation") brake fluid is red. If you have any doubt please contact your BERINGER SERVICE CENTER.
? I filled my brake system with the wrong brake fluid: what can I do?
The wrong brake fluid will damage the seals after only few minutes of contact. This is potentially dangerous because after a short period your brakes can lock, leak or stop working properly. If you have put the wrong fluid into the system, you will have to change all the seals of the entire system. (Note: this is true, regardless which brand of brake parts you use.) If you have a BERINGER system, ask BERINGER for repair kits or send the parts back to BERINGER service for repair.

## ? If I switch to BERINGER Wheels \& Brakes do I also need to change my M. Cylinders?

If they are compatible with the brake fluid then you still need to check the hydraulic ratio: with our brakes we recommend using M. Cyl.s with a piston bore of $1 / 2$ " ( $9 / 16$ " maximum). If the bore of the M. Cyl.s is too big, they cannot produce enough pressure to provide enough braking torque on the wheels. Some master cylinders are so crude (or just so old) that the inherent smoothness and feel of BERINGER calipers can be masked in operation; for this reason, we recommend using only BERINGER master cylinders.
? I want to improve my Wheel \& Brake system but BERINGER prices are too high.
BERINGER systems are a little more expensive than ordinary products but thanks to their exceptional reliability and life, the operating cost is much more economical. It is often possible to pay back your investment in 1 or 2 years, with brake components that last, lines that don't leak, pads that have 3-5 times the life of legacy pads, quicker and simpler pad replacements, no tube expenses, no bearing maintenance, and (with ALIR), fewer flatspotted tires and straighter, shorter stops. And all that time, you are enjoying better, smoother braking. (And BERINGER wheels save weight and look good, too.)

## BRAKE FLUID : information

Brake fluid is critical to the function and performance of your brake system. Choosing the right brake fluid will insure trouble free functioning for many years. Conversely, the wrong brake fluid will damage seals and cause failure of your brake system. There are two predominant "families" of brake fluid in use worldwide:


## A. The first family is polyethylene-glycol based and is compatible with only EPDM seals.

These fluids have been developed for the hydraulic brakes of motor vehicles and are called DOT3, DOT4, DOT5 or DOT5. 1
DOT3 has lower performance and has been replaced by DOT4. DOT4 is the most commonly used fluid in motor vehicles. DOT5 is usually silicone-based, but is not commonly used, and is not miscible ("mixable") with DOT3 or DOT4. DOT5.1 is not miscible with DOT5 and may also be not miscible with DOT3 or DOT4.
The primary objection to DOT 3 and 4 fluids was that they are hygroscopic (they absorb water). However, in a sealed reservoir, in a corrosion-resistant brake system, DOT4 fluids will remain usable for minimum 10 years. Additionally DOT3 and 4 brake fluids are aggressive with paint. Continent systems and care in handling remove this negative.
In the "DOT" family, we recommend using DOT4 and only DOT4 because the performance is adequate, and all DOT4 brands are miscible with each other.
DOT4 is used on many ultralight aircraft. You can purchase DOT4 almost everywhere around the globe as it is used on all recent cars and most motorcycles.


## B. The second family is mineral-oil based and compatible with only* NBR (Nitrile) seals.

The hydraulic fluid MIL-H-5606 has been commonly used in general aviation for many years.
The major deficiencies of MIL-H-5606 are its high flammability and a relatively low boiling point.
In the "mineral" or "MIL" family we recommend using the MIL-PRF-87257 as a replacement of the MIL-H-5606. These 2 fluids are compatible and miscible with each other. MIL-PRF-87257 is fire resistant and synthetic-hydrocarbon based, it has also a higher boiling point than MIL-H-5606.

| FLUID | FLUID Color | SEALS |  |
| :---: | :---: | :---: | :---: |
|  |  | EPDM | NBR (Nitrile) |
| DOT4 | colorless to amber | ok | Not compatible |
| MIL-H-5606 | red | Not compatible | ok |
| MIL-PRF-87257 | red | Not compatible | ok |

## NBR (Nitrile) seals $\rightarrow$ mineral fluid $\rightarrow$ red color $\rightarrow$ MIL-PRF-87257 recommended EPDM seals $\rightarrow$ DOT4 brake fluid $\rightarrow$ colorless to amber color $\rightarrow$ DOT4 only

Notes:
EPDM seals are very sensitive to petroleum based solvents: few minutes of contact can completely damage the EPDM seals. That is why we recommend cleaning the parts only with a dry cloth or soap and water.

[^0]All prices are quoted in euro without tax - Prices and descriptions are indicative and are not contractual.

## BERINGER Wheels \& Brakes

BERINGER WHEELS and BRAKES for main gear are designed to provide the best stopping power and the reliability you are expecting from a safe braking system. We will help you to choose the dimension and brake torque adapted to your aircraft. We have a large range of assemblies: wheel / brake caliper / brake pad / brake disc.
We also design and manufacture the optimal upstream components: reservoirs, master cylinders, the ALIR anti-skid system, and parking brakes. All these are tied together with top-quality braided stainless steel Teflon lines and proper fittings. Components and complete systems are available.

## BERINGER WHEELS: advanced technology

- High strength aluminum alloy CNC machined from solid, anodized for optimal corrosion resistance
- TUBELESS wheel with O-rings and rigid valve
- SEALED BALL BEARINGS for optimal durability: greased for life, no maintenance
- Very low rolling resistance

During the design of a wheel we focus on three criteria: strength, weight, and durability. First, we assess the overall design and apply our experience and some hand calculations. Then we build a 3D model on CAD software and run FEM (finite element analysis) in the optimizing process, where we remove material from one side to add it on another, etc... till the result is satisfying for us with an optimized strength/weight ratio.
Then we make prototypes and start the qualifying process on our own bench machines.


FEM -calculated and checked


The BERINGER R\&D laboratory is dedicated to Research, Development and Certification tests.

On the wheel itself we do 3 different tests :

- Load test: we apply different loadings on the wheel and tire (radial and side load) to check the strength and load rating of the wheel. Ultimate load tests go up to 6 times the static load using our $40,000 \mathrm{lb}$ hydraulic press capacity.
- Pressure test: mounted tire is inflated with water up to 3.5 times the maximum inflation pressure to check bolts' strength and wheel stiffness.
- Roll test : wheel is pressed on a rotating drum for 1000 miles at maximum
 static load to detect eventual fatigue problems or bearing failure, etc...
When the wheel has passed all the tests then we install the wheel on an aircraft for ground and flight checks.

Note: when the wheel's design work for the Solar Impulse was occurring, BERINGER's proprietary dynamometer was employed, because of the BERINGER wheel' strength and our dyno's exceptional ability to load and measure the tire. On the aircraft, that tire and its Beringer wheel (5.00-5) were of course run tubeless, at a pressure of 10 bar (over 140 psi ) and a static load of $3,850 \mathrm{lbs}$ ( 2.7 times more than rated load).


## Brake calipers:

- Covered by AEROTEC ${ }^{\circledR}$ Patent
- 2 or 3 stainless steel polished pistons
- Body made of aerospace alloy to withstand high temperatures ( $>200 \mathrm{Mpa}$ at $200^{\circ} \mathrm{C}$ )
- Available for DOT4 fluid OR for MINERAL (MIL FLUID)
(seals are different; specify and never mix)
- 2 inputs, thread size M10x1
- Full metallic brake pads (no rivets) for extended life



## Brakes discs :

- Stainless steel disc or high strength steel disc with coating
- Brake discs are made of highest quality material for thermal stability and long life
Many tests are done to certify brake calipers and discs. One of those tests is the dynamic torque test; for this test we use our dynamometer. The kinetic energy capacity is tested with this machine. The dyno allows us to push the brake system to its limits. Many sensors are installed to measure temperatures. All these tests are performed to ensure the total safety and reliability of the brake system. Kinetic energy values indicated in the next pages are not only calculated but measured and checked on real tests.

The endurance test is also a proof of quality and durability.
The purpose of this test is to verify the life of the parts. The certification test requires 100,000 cycles at maximum operating pressure, but we test our parts to a minimum 200,000 cycles. This represents more cycles than the brake system will be subjected to in the entire aircraft life.

## How to choose your wheel \& brake system:



- Select the size of tire that you need
- Then select the wheel size required for this tire (use our application chart page 29)
- Check the static load rating: this is the weight on each wheel (at maximum static aircraft weight) that the wheel is capable of supporting.
- Check the kinetic energy rating : the first function of a brake system is to transform aircraft kinetic energy into heat. This heat is absorbed and dissipated mostly by the
 disc (a thicker disc will absorb more heat energy).
The kinetic energy required to stop an aircraft is a function of the mass of the aircraft and its landing speed. You can calculate the kinetic energy requirement of your aircraft by using the following formula:

$$
\text { Kinetic Energy [FT-LBS] }=\frac{0.044 \times \mathrm{W} \mathrm{x} \mathrm{~V}^{2}}{\mathrm{~N}}
$$

$$
\begin{aligned}
& \mathrm{W}=\text { Gross weight (lbs) } \\
& \mathrm{V}=\text { Braking speed (kts) } \\
& \mathrm{N}=\text { Number of wheels with brakes }
\end{aligned}
$$

The kinetic energy values shown in the chart on page 24 are maximum values in case of an RTO (Rejected Take Off). This RTO value should be $30 \%$ higher than the value calculated above.
If you are not sure what system is right for your aircraft, give us a call.


ALG Landing Gear:
The patented ALG landing gear has to go through several tests for the certification process. The tests are in progress for the Piper SuperCub. Stay tuned ...


## Wheels \& Brakes - Complete kits

Installing BERINGER wheels and brakes on your Aircraft increases a lot the performance and improves your safety.

- Weight saving and no risk of cracking >> the wheels and calipers are fully CNC machined from aeronautical aluminum alloy. This manufacturing process gives 2 to 3 times more strenght than cast wheels and prevents any risk of cracking. You save 6.60 Lbs to 11 Lbs ( 3 to 5 kg ) depending on your original brake system
- Rolling distance dramatically reduced >> increased safety level - landing on most airfields
- High efficiency combined with easy landing >> progressive rise in performance, no wheel locking thanks to the regulator or limiter
- Tubeless wheels >> less risk of bursting - can be used everywhere: on seal, grass and rough terrain (tube mounting possible in case of emergency)
- Maintenance free hydraulic line >> the circuit is sealed, it does not leak and suit aerobatic airplanes
- Extended braking disc and pad life >> BERINGER products are reliable and they are designed to last longer. The bearings are sealed and do not need maintenance. The aluminum parts are anodized for corrosion resistance.
You will find pages 12-17 the table of the complete main wheel and brake sets. They are designed to mount directly, replacing original equipment. Brake calipers use sintered metallic pads and stainless steel discs (except specifications) for increased life.
Concerning homebuilt Aircraft, we recommend to read the FAQ page 6 that will guide you to chose the suitable parts.

MAIN WHEELS: the wheel \& brake kits includes:

- Main wheels with calipers and discs
- Tires (mounted and pressure tested)
- Axles or adaptation parts (as required)
- Master brake cylinders \& fluid reservoirs
- A parking brake valve (not always included)
- An anti-lock regulator or pressure limiter
- Stainless steel brake lines and fittings
- Detailed mounting instructions

The composition of the kits may vary depending on the Aircraft Type. (For example kits for Van's do not include the reservoirs nor the regulators).

ALIR anti-lock system: a real advance in terms of safety Most kits include the ALIR anti-lock regulator allowing to brake in-line and to avoid wheel locking.

ALIR System Anti Lock In line Regulator

NOSE WHEEL: the nose wheel kit includes:

- A tubeless nose wheel with the tire (mounted on rim, pressure tested)
- An aluminum axle with bearing spacer

The composition of the kits may vary depending on the Aircraft Type.
TAILWHEEL: we recommend the GLR tailwheel, groundloop-resistant developed to increase the safety when you take off and you land. The GLR is available for taildraggers up to 750 kg (1500lbs) . It features a robust design for rough airstrips. (complete description page 21).
Two types are available:
Tailwheel complete system including wheel and tire 2.80/2.504" (weight $8.31 \mathrm{Lbs} / 3.77 \mathrm{~kg}$ ) $=1065 €$ P/N TW-001 BUSH tailwheel complete system including wheel and tire 4.00 -4" $($ weight $9.08 \mathrm{Lbs} / 4.12 \mathrm{~kg})=1280 € \mathrm{P} / \mathrm{N}$ TW-002


PATENTED groundloopresistant tailwheel

## Wheels \& Brakes - Complete kits

We also propose retrofit tailwheel kits to fit original mounting. The tailwheel kit includes:

- A tubeless tailwheel with the tire (mounted on rim, pressure tested)
- An aluminum axle with bearing spacer

The composition of the kits may vary depending on the Aircraft Type.


## OPTION: Copilot brakes - Parking brake valve - Wheel caps - Amphibian use - Skis mounting

Depending on the aircraft, you will find in the table of the complete sets that is following next page, the option available. In most cases, the option is not included in the wheel and brake kit.

## The copilot brake option includes:

the master cylinder (s) for the copilot seat + ends + hydraulic fittings + 1,50m hose (see the table of the complete kits).

## The Parking brake valve option includes:

the parking valve + fittings +1 m hose.
On hand master cylinder HAB02, the parking pin is included (see the table of the complete kits).
The wheel cap option includes:
two wheel caps according to your wheel dimension and the screws if required (see the table of the complete kits).


| P/N | OPTION | List of parts included in the OPTION | Price |
| :--- | :--- | :--- | :---: |
| INOBE | Amphibian use | Two stainless steel bearings for one wheel | 134 |
| FUS-013 | $1000-1500$ Datum ski <br> option | Two special axles for 4.00-6 wheels - Datum <br> skis installation (only for T1 axles) | 155 <br> (each axle) |
| FUS-015 | 2000 Datum ski option | Two special axles for 6.00-6 wheels - Datum <br> skis installation (only for T1 axles) | 159 <br> (each axle) |

The Amphibian use option includes: two stainless steel bearings for one wheel.

Parking brake pin


P/N INOBE price 134€
The Datum skis option:
this option allows the mounting of DATUM skis on a BERINGER 4.00-6" wheel. It includes two special axles.
It is available only for axle template T1.


Tires included in the kits are standard ones. Contact us for specific use or other dimensions. The type of your airplane is not indicated in the table of kits available? We may still have it. Please contact us.

WE RECOMMEND FIRST MOUNTING OF TIRES ON WHEELS IN OUR PLANT. This service, free of charge, includes a pressure test, ensuring maximum security of the assembly.

FINISH : Red anodizing is standard color for wheels, brakes and master cylinders.
Calipers are ALWAYS red. Other colors can be available for certain wheels on special order with an extra delay at an additional cost of $85 €$ per batch of parts. WARNING: Colors may vary.

Wheels \＆Brakes－Complete kits

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|  | $\begin{aligned} & \mathbb{K} \\ & \mathbf{o} \\ & \hline \mathbf{O} \\ & 0 \\ & \hline \end{aligned}$ | ＇ |  | 边 |  |  | ＇ | ＇ | ＇ | ＇ | ＇ | ＇ | ＇ | 发 | 发 | 发 | ＇ | ＇ | ＇ | $\begin{aligned} & \mathbb{K} \\ & \vdots \\ & 0 \\ & \sum_{\infty} \\ & \hline \end{aligned}$ |  |  | $\begin{aligned} & \mathbb{K} \\ & \vdots \\ & \vdots \\ & \sum_{\infty} \\ & \hline \end{aligned}$ |  |
| © | $\underset{N}{N}$ | $\underset{\infty}{\prime}$ | $\begin{aligned} & \text { N } \\ & \underset{\sim}{2} \end{aligned}$ | $\frac{0}{N}$ | $\stackrel{N}{2}$ | $\stackrel{N}{2}$ | $\stackrel{\circ}{\stackrel{\circ}{2}}$ | $\stackrel{\circ}{\circ}$ | $\underset{\sim}{\sim}$ | $\stackrel{N}{N}$ | $\stackrel{\square}{\mathbf{O}}$ | $\stackrel{প}{ী}$ | $\begin{aligned} & 0 \\ & \underset{\sim}{n} \\ & \end{aligned}$ | $\begin{aligned} & \text { N } \\ & \text { N } \end{aligned}$ | $\begin{aligned} & \text { O} \\ & \underset{N}{N} \end{aligned}$ | $\underset{N}{N}$ | $\stackrel{\square}{\mathrm{O}}$ | $\frac{\mathrm{O}}{\mathrm{~N}}$ | $\stackrel{\square}{\circ}$ |  | $\xrightarrow{\wedge}$ | $\stackrel{\Gamma}{\vdots}$ | $\stackrel{0}{i}$ | $\cdots$ |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| $\stackrel{\mathscr{N}}{\stackrel{\omega}{\omega}}$ | $\begin{aligned} & 0 \\ & 0 \\ & 0 \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & 0 \\ & 0 \\ & 0 \\ & 0 \\ & i \end{aligned}$ | $\begin{aligned} & 0 \\ & \dot{O} \\ & \vdots \\ & \dot{\gamma} \end{aligned}$ | $\begin{aligned} & 0 \\ & \hline \stackrel{1}{\circ} \\ & \dot{r} \end{aligned}$ | \|on | $\left\lvert\, \begin{aligned} & 10 \\ & 0 \\ & 0 \\ & 0 \\ & \hline 1 \end{aligned}\right.$ | $\begin{gathered} 10 \\ 0 \\ 0 \\ 0 \\ 0 \end{gathered}$ | $\begin{aligned} & 0 \\ & 0 \\ & O \\ & \dot{\gamma} \end{aligned}$ | $\begin{aligned} & 0 \\ & 0 \\ & 0 \\ & 0 \\ & 0 \end{aligned}$ | $$ | $\begin{aligned} & 10 \\ & 0 \\ & 0 \\ & 0 \\ & \hline 0 \end{aligned}$ | $\begin{aligned} & 0 \\ & 0 \\ & 0 \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & 0 \\ & \dot{O} \\ & \dot{O} \\ & \dot{r} \end{aligned}$ | $\left\lvert\, \begin{aligned} & n \\ & \dot{0} \\ & \dot{\Psi} \\ & \underset{\sim}{x} \\ & \hline \end{aligned}\right.$ | $\begin{aligned} & 10 \\ & 0 \\ & 0 \\ & 0 \\ & 0 \end{aligned}$ |  |  | $\begin{array}{\|c} 10 \\ 0 \\ 0 \\ 0 \\ \hline \end{array}$ |  | $\begin{aligned} & 0 \\ & \vdots \\ & \vdots \\ & \dot{\gamma} \end{aligned}$ | $\begin{aligned} & 0 \\ & 0 \\ & O \\ & 0 \\ & 0 \end{aligned}$ | $\begin{array}{ll} 0 & 0 \\ 0 \\ 0 & 0 \\ 0 & \vdots \\ \dot{\gamma} & + \\ + \end{array}$ | $\begin{aligned} & 0 \\ & 0 \\ & O \\ & \dot{\gamma} \\ & \hline \end{aligned}$ | $\begin{aligned} & 0 \\ & 0 \\ & \hline \mathbf{O} \\ & 0 \\ & 0 \end{aligned}$ |
| $\begin{aligned} & \bar{\Phi} \\ & \stackrel{+}{\Sigma} \\ & \stackrel{y}{3} \end{aligned}$ | \％ | \％ | $\overline{0}$ | 0 | م\％ | \％ | \％ | $\bar{\circ}$ | \％ | ̇ | ¢ | م\％ | ¢ | \％ | \％ | \％ | ¢ | \％ | \％ | $\overline{0}$ | $\overline{0}$ | $\overline{\overline{0}}$ | $\overline{0}$ | $\bar{\circ}$ |
|  | $\begin{aligned} & \mathrm{N} \\ & \mathrm{O} \\ & \mathbf{O} \\ & \mathcal{O} \end{aligned}$ |  |  |  |  |  |  | $\begin{aligned} & \bar{\circ} \\ & \text { O} \\ & \text { 心 } \end{aligned}$ | $\begin{aligned} & \mathrm{O} \\ & \mathrm{O} \\ & \mathrm{O} \\ & \hline \mathrm{O} \end{aligned}$ | $\begin{aligned} & 9 \\ & \stackrel{9}{4} \\ & \infty \end{aligned}$ |  | $\begin{aligned} & N \\ & \underset{\sim}{\circ} \\ & \stackrel{1}{2} \end{aligned}$ | $\begin{aligned} & \bar{\circ} \\ & \stackrel{\rightharpoonup}{\omega} \end{aligned}$ | $\begin{aligned} & \text { U } \\ & \text { O } \\ & \text { ब } \end{aligned}$ |  |  | $\frac{\bar{\circ}}{\bar{心}}$ |  |  | $\begin{aligned} & \bar{\delta} \\ & \sum_{\infty} \\ & \sum_{0} \end{aligned}$ | $\begin{aligned} & N \\ & \underset{O}{0} \\ & \sum_{\infty} \end{aligned}$ | $\begin{aligned} & \text { M } \\ & \substack{0 \\ \sum_{i}} \end{aligned}$ |  | $\begin{array}{\|c} 10 \\ 0 \\ 0 \\ \sum_{\infty}^{0} \end{array}$ |
| $\begin{aligned} & 0 \\ & \stackrel{0}{2} \\ & \stackrel{4}{4} \\ & \frac{\pi}{0} \\ & \frac{.0}{4} \end{aligned}$ |  |  |  | $\begin{aligned} & \frac{0}{N} \\ & \frac{1}{5} \\ & \frac{3}{2} \\ & \hdashline \frac{0}{2} \\ & \hline \end{aligned}$ |  | Jabiru J400／J430 | $\begin{aligned} & \Sigma \\ & S \\ & 0 \\ & 0 \\ & \text { N } \\ & 0 \\ & 0 \\ & 0 \\ & 0 \end{aligned}$ |  |  | LAK Mini (UAB) | LAK-17A (UAB) |  |  |  |  | $$ |  |  |  |  |  |  |  |  |

Wheels \＆Brakes－Complete kits

| \％¢ \％ | N | N | N | N | N | N | ＇ | ¢8 | N | N | N | ＇ | N |  |  |  |  | N | N |  |  |  |  | N | N | N |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | $\begin{aligned} & \text { O} \\ & \hline \mathbf{O} \\ & \hline \\ & \hline \end{aligned}$ |  | $\begin{aligned} & \text { No } \\ & \hline \mathbf{X} \\ & \frac{1}{U} \\ & \hline ⿴ 囗 ⿰ 丿 ㇄ \end{aligned}$ |  |  |  | ， |  |  | $\begin{array}{\|l\|l} 0 \\ 0 \\ \vdots \\ \vdots \\ \hline \end{array}$ |  | ， | $\begin{aligned} & \mathrm{O} \\ & \hline \mathbf{O} \\ & \frac{1}{0} \\ & \hline \mathrm{O} \end{aligned}$ |  | $\begin{aligned} & \mathbf{O} \\ & \frac{0}{0} \\ & \frac{0}{0} \\ & \underline{I} \end{aligned}$ | ס |  |  | $\begin{aligned} & \text { No } \\ & \hline \mathbf{X} \\ & \frac{1}{U} \\ & \hline ⿴ 囗 ⿰ 丿 ㇄ \end{aligned}$ | $\begin{aligned} & \mathrm{O} \\ & \underline{\mathrm{D}} \\ & \hline \frac{1}{0} \\ & \underline{E} \end{aligned}$ |  | $\begin{aligned} & \text { No } \\ & \hline \mathbf{O} \\ & \bar{U} \\ & \hline \mathbf{M} \end{aligned}$ | ＇ |  |  |  |
| $\stackrel{0}{0}$ | ¢ |  | No | Nôo |  | No | ＇ | 侖 |  |  | ＇ |  |  |  |  |  | ＇ | $\stackrel{\circ}{\mathrm{N}}$ | 夐 |  | ＇ | ＇ |  | $\stackrel{\circ}{\circ}$ | $\stackrel{\circ}{\sim}$ | 啬 |
|  | $\begin{aligned} & \bar{y} \\ & \text { O} \\ & \bar{\alpha} \end{aligned}$ |  | $\begin{aligned} & \bar{o} \\ & 0 \\ & \text { O} \\ & \text { y } \end{aligned}$ | $\left\lvert\, \begin{aligned} & \bar{Z} \\ & \bar{y} \\ & \overline{2} \\ & \hline \end{aligned}\right.$ |  |  | ， |  | $\begin{array}{\|l} \mathbf{0} \\ \frac{\mathrm{D}}{0} \\ \underline{0} \\ \underline{0} \end{array}$ | $\begin{aligned} & \mathrm{O} \\ & \underline{\mathrm{D}} \\ & \underline{\bar{O}} \\ & \underline{\underline{I}} \end{aligned}$ | $\begin{aligned} & \mathbf{O} \\ & \frac{0}{0} \\ & \frac{0}{0} \\ & \underline{I} \end{aligned}$ |  |  |  | ， |  |  | $\begin{aligned} & \bar{r} \\ & 0 \\ & \frac{y}{a} \end{aligned}$ | $\begin{aligned} & \overline{0} \\ & 0 \\ & \overline{0} \\ & \hline \end{aligned}$ |  | ＇ |  |  | $\left\lvert\, \begin{aligned} & \overline{0} \\ & 0 \\ & \frac{1}{\alpha} \end{aligned}\right.$ | $\begin{aligned} & \bar{\gamma} \\ & \mathrm{O} \\ & \bar{\alpha} \end{aligned}$ | $\begin{aligned} & \bar{Z} \\ & \cline { 1 - 1 } \\ & \text { y } \end{aligned}$ |
|  | ＇ | Noల | ＇ | ＇ | ＇ | op | ＇ |  | ৷্লি | O్ల | ল্ল্লি | ＇ | ＇ | $$ |  |  |  |  |  | ＇ |  | ＇ |  | o্ল | প্লি |  |
|  | ， | $\begin{aligned} & 1 \\ & 0 \\ & 0 \\ & 0 \\ & 0 \end{aligned}$ | ＇ | ＇ | ＇ | $\begin{aligned} & \bar{y} \\ & 0 \\ & 0 \\ & 0 \end{aligned}$ | ＇ | \|r | $\begin{aligned} & 1 \\ & 0 \\ & 0 \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & \mathrm{y} \\ & 0 \\ & 0 \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & 1 \\ & 0 \\ & 0 \\ & 0 \\ & 0 \end{aligned}$ | － | － |  | $\begin{gathered} 0 \\ 0 \\ \underline{x} \\ n \end{gathered}$ | \|on | $\left\lvert\, \begin{aligned} & \underline{6} \\ & \underline{a} \end{aligned}\right.$ | ， | $\begin{aligned} & \overline{0} \\ & 0 \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & \mathbf{0} \\ & \frac{0}{0} \\ & \frac{1}{0} \\ & \underline{0} \end{aligned}$ | $\begin{aligned} & \mathrm{D} \\ & \frac{0}{9} \\ & \frac{0}{0} \\ & \underline{0} \end{aligned}$ | ＇ |  | $\begin{aligned} & \mathrm{N} \\ & 0 \\ & 0 \\ & 0 \\ & 0 \end{aligned}$ | $\begin{aligned} & \mathrm{N} \\ & 0 \\ & 0 \\ & 0 \\ & 0 \end{aligned}$ | － |
| $\stackrel{\text { U }}{2}$ | $\underset{\sim}{\underset{\sim}{2}}$ | $\underset{\sim}{N}$ | $\underset{\sim}{\underset{\sim}{2}}$ | $\stackrel{\underset{N}{N}}{ }$ |  |  | ＇ | ＇ | \|্লে | প্ল্লি | প্লে | ＇ | ＇ |  |  |  |  | $\stackrel{\underset{N}{\prime}}{ }$ | $\underset{\sim}{N}$ | ， | ＇ | ＇ |  | ＇ | ＇ | N N్ర |
| $\stackrel{\text { ® }}{ }$ | $\underset{\dot{\prime}}{\dot{+}}$ | $\underset{\dot{~}}{\dot{+}}$ | $\begin{aligned} & \dot{+} \\ & \underset{\sim}{\circ} \\ & \dot{\sigma} \end{aligned}$ | $\underset{\dot{\prime}}{\dot{+}}$ | ＇ | ＇ | ＇ | ＇ |  |  |  | － | ， |  |  | $$ |  | $\underset{\sim}{\dot{O}}$ |  | ＇ | ＇ | ＇ |  |  |  | － |
|  | － | \％ | \％ | \％ |  |  | ＇ | ＇ | $\bar{\circ}$ | $\bar{\circ}$ | － | ＇ | ＇ | \％ | \％ | \％ | \％ | \％ | 幺 | $\bar{\circ}$ | \％ | ＇ |  | ＇ | ＇ | \％ |
|  | $\begin{aligned} & \mathbb{K} \\ & \hline \\ & 0 \\ & 0 \\ & \sum_{i n} \\ & \hline \end{aligned}$ |  |  |  |  |  | ＇ | ＇ |  |  |  | ＇ | ＇ | $\begin{aligned} & 0 \\ & i n \\ & \underline{n} \end{aligned}$ | $\left\lvert\, \begin{gathered} 0 \\ i n \\ \underline{n} \end{gathered}\right.$ | $\left\lvert\, \begin{gathered} 0 \\ b \\ \underline{n} \end{gathered}\right.$ | $\begin{gathered} 0 \\ 0 \\ \underline{y} \end{gathered}$ | $\frac{\stackrel{⿺}{2}}{\frac{\grave{2}}{2}}$ |  | $\begin{aligned} & \mathrm{O} \\ & \frac{\mathrm{D}}{9} \\ & \underline{0} \\ & \underline{0} \end{aligned}$ | $\begin{aligned} & \mathrm{D} \\ & \frac{0}{0} \\ & \frac{1}{0} \\ & \underline{0} \end{aligned}$ | ＇ |  | ＇ | ＇ | ¢ |
| 른 | $\begin{aligned} & \bar{\circ} \\ & \stackrel{\circ}{6} \end{aligned}$ |  | $\underset{\sim}{\infty}$ | $\underset{\sim}{\infty}$ | $\frac{N}{N}$ | $\underset{\sim}{\underset{\infty}{\sim}}$ | ＇ | NiN | $\frac{\mathrm{O}}{\mathrm{Q}}$ | $\begin{aligned} & \mathrm{O} \\ & \stackrel{0}{6} \\ & \hline- \end{aligned}$ | $\stackrel{N}{\stackrel{N}{\Omega}}$ | $\infty$ | $\begin{aligned} & \underset{\circ}{\circ} \\ & \underset{\leftarrow}{2} \end{aligned}$ | $\begin{aligned} & \underset{\sim}{\sim} \\ & \underset{\sim}{2} \end{aligned}$ | $\begin{aligned} & 9 \\ & \underset{\sim}{0} \\ & \end{aligned}$ | $\begin{aligned} & \underset{\sim}{N} \\ & \end{aligned}$ | $$ | $\stackrel{\stackrel{\infty}{\infty}}{\stackrel{\infty}{2}}$ | $\stackrel{\curvearrowleft}{\stackrel{\infty}{\gtrless}}$ | $$ | $\begin{array}{\|l} \hline 8 \\ \hline \mathbf{O} \\ \hline \end{array}$ | $\underset{\sim}{2}$ | $\underset{\sim}{N}$ | $\stackrel{\rightharpoonup}{\circ}$ | $\stackrel{\infty}{\infty}$ | $\begin{aligned} & \mathrm{o} \\ & \stackrel{\circ}{\infty} \\ & \bullet \end{aligned}$ |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  | $\left\lvert\, \begin{aligned} & 0 \\ & 0 \\ & \underline{0} \\ & \underline{c} \end{aligned}\right.$ | $\stackrel{\substack{0 \\ 6 \\ \underline{y} \\ \hline}}{ }$ |  | $\begin{gathered} 0 \\ 6 \\ \underline{a} \\ \end{gathered}$ |  |  |  |  |  |  |  |  |  |
| $\stackrel{\mathscr{0}}{\stackrel{\rightharpoonup}{\omega}}$ |  |  |  |  | \|n | $\left\lvert\, \begin{aligned} & n \\ & 0 \\ & 0 \\ & 0 \end{aligned}\right.$ |  |  | $\begin{array}{\|l} \hline \dot{O} \\ \hline \mathbf{O} \\ \dot{\sim} \end{array}$ | $\begin{array}{\|c} \substack{0 \\ \hline \\ \hline \\ \hline} \end{array}$ |  | $\begin{array}{\|c} 10 \\ 0 \\ 0 \\ 0 \end{array}$ |  | ， |  | ＇ |  | $\underset{+}{\circ}$ |  | ＇ | ＇ |  |  |  |  |  |
| $\begin{aligned} & \bar{\Phi} \\ & \stackrel{\otimes}{3} \end{aligned}$ | $\overline{\text { \％}}$ | ¢ | \％ | \％ | － | ¢ | \％ | $\bar{\circ}$ | $\bar{\circ}$ | \％ | ＝ | ¢ | $\bigcirc$ | \％ | \％ | $\stackrel{\square}{\mathrm{N}}$ | 차N | $\bar{\circ}$ | ¢ | $\overline{\bar{\circ}}$ | $\bar{\circ}$ | \％ | － | $\bar{\circ}$ | $\bar{\circ}$ | \％ |
|  | $\begin{aligned} & 0 \\ & \hline 0 \\ & \sum_{i n} \\ & \hline \end{aligned}$ | $\begin{aligned} & \mathrm{N} \\ & \\ & \text { O } \\ & \hline \end{aligned}$ | $\begin{aligned} & \text { n } \\ & \substack{2 \\ 0 \\ \hline} \end{aligned}$ | $\underset{\substack{-\vdots \\ \infty \\ \hline}}{ }$ |  | $\sum_{\substack{\infty \\ \infty}}^{\sum_{\infty}}$ |  |  |  |  |  |  | $\frac{\bar{\sigma}}{\frac{1}{9}}$ |  |  | $\begin{array}{\|c} \stackrel{\rightharpoonup}{\mathrm{N}} \\ \mathbf{O} \\ \text { OU } \\ \dot{N} \end{array}$ | $\begin{aligned} & \text { y } \\ & \text { di } \\ & 0 \\ & 0 \\ & \vdots \\ & \omega \end{aligned}$ | $\frac{\overline{0}}{0}$ | $\frac{N}{\mathrm{o}}$ |  |  | $\begin{aligned} & \bar{o} \\ & \vdots \\ & \vdots \\ & \infty \end{aligned}$ |  | $\begin{aligned} & \mathbb{N} \\ & \underset{\sim}{\alpha} \\ & \underset{\sim}{\aleph} \\ & \hline \end{aligned}$ |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 0 0 0 0 0 0 0 $\vdots$ $\vdots$ $\vdots$ $\vdots$ $\vdots$ $\vdots$ 0 0 0 0 0 |  |  |  |  |  |  |  |  |  |

## Wheels \& Brakes - Complete kits



Wheels \＆Brakes－Complete kits

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## PILATUS PC-6

Save up to $16 € /$ hour $=$ Investment paid off in less than 1000 hours (maintenance cost $=3 €$ with BERINGER / $19 €$ with original parts)
180 Pilatus PC-6 equipped with the complete wheel \& brake set, launched in 2010.
More than 240,000 landings/60,000h have proven the reliability and efficiency of the wheel \& brake set.
Wheel dimension available: 12" and 10"
No corrosion Optimised to last longer


## CIRRUS SR22/20

INCREASE YOUR SAFETY AND REDUCE YOUR ROLLING DISTANCE
SINGLE wheel \& brake kit: lower operating costs
DUAL wheel \& brake kit: more safety with dual caliper and the ALIR regulator
$\rightarrow$ reduced landing distance for short runways
Both kits include the three tubeless wheels, pilot and co-pilot brakes, High Energy brakes with Formula1 ventilated pistons and cooling fins.


## PIPER PA-28 Cherokee, Warrior, Archer

A complete upgrade (3 wheels - Pilot/Co-pilot brakes - Stub axles/ strut tubes)
Easy maintenance, amazing braking performance, weight saving, improved safety.

This complete kit that replaces the original parts, is installed without modification.


## EXTRA 300

## AMAZING PERFORMANCE and WEIGHT SAVING

The wheel and brake kit was developed in collaboration with Nicolas Ivanoff. BERINGER advanced technology has allowed to save 3.5 kg ( 6.61 Lbs ) due to the optimized design and to the manufacturing process. CNC machined parts are 2 to 3 times stronger than cast wheels.


## DIAMOND DA42/DA42NG

DRAMATIC REDUCTION of WHEEL LOCKING and LIFE-CYCLE COSTS. Investment paid off in less than $\mathbf{8 0 0}$ hours (estimated value, depending on the use).
Progressive rise in performance and better con- trol of the brakes allow to reduce the stopping distance by $20 \%$ or more. It reduces the tire wear and increases the safety level. Discs and brake pads last $3 x$ longer than standard. The complete upgrade includes the 6 " main wheels, the 5 " nose wheel and the brakes.

## DIAMOND DA40NG TUNDRA

## REDUCED STOPPING DISTANCE and MAINTENANCE COSTS WEIGHT SAVING (5kg-11 Lbs)

The TUNDRA kit for DA40NG allows to land safely on rough terrain. The complete updgrade includes the three tubeless wheels, the tires and

Stopping distances reduced Weight saving $-5 \mathrm{~kg} / 11$ Lbs Maintenance costs reduced
 the pilot/co-pilot brakes.

## ROBIN DR400/DR300/HR2160

## BRAKING SYSTEM UPGRADE: STRONG BRAKES

 REDUCED STOPPING DISTANCE and MAINTENANCE COSTSThe kit includes 2 inner bowls to be bolt on the existing wheels that are supporting the floating brake discs, made in steel chrome molybdenum :
$\rightarrow$ No vibration at braking due to disc deformation
$\rightarrow$ The disc can expand when it heats up without any strength and avoid any buckling or crack


## Twin Otter DHC-6:

SWITCH TO A HIGH PERFORMANCE NOSE WHEEL. OPTIMIZED TO LAST LONGER.

- Excellent resistance to corrosion due to the anodized aluminum parts.
- Greasing of the bearings spaced out due to lipseals, O-Rings.

More than 70 Twin Otter have been retrofitted so far

## GLIDERS

UPGRADE YOUR BRAKES and SAVE WEIGHT (from 3.30 Lbs to 7.70 Lbs / 1.5 to 3.5 kg )

Increase your safety when you land off-airfield. You can count on powerful brakes in any case.
The wheel is aluminum red anodized, fully CNC machined, with O-Ring for tubeless mounting. The brake caliper uses sintered metallic pads and stainless steel disc for increased life.
The kit includes a pressure limiter and the complete hydraulic line.
The master cylinder can be cable operated.


Kits for: ASW20, Discus/Ventus 2A, Duo Discus, Arcus, LS4, HPH304S, Lak17A, MiniLak, Jonker, Pegase, H201Libelle, Swift


# ALASKAN LANDING GEAR ${ }^{\text {TM }}$ Rough terrain... Are you ready? 



## Greater Safety for taildraggers and backcountry pilots.

The ALG patented Landing Gear is designed to improve the safety on rough terrain. Thanks to the oleo-pneumatic shocks, it absorbs the surface defects.
The G-factor test has demonstrated that the ALG provides three times less structural impact

- High efficiency LG with oil/pneumatic, no-rebound dampers
- 12 inch damping travel - for high energy dissipation
- Strong design for bush use (3G proof tested)
- Lightweight, high strength aluminum (2024)

Combined with the BERINGER light and powerful wheels and brakes, as well as with the groundloop-resistant patented tailwheel, the ALG offers the ULTIMATE
 LANDING SOLUTION that protects the Aircraft airframe and improves the safety.

| P/N | ALG landing gear for: | Price |
| :--- | :--- | :---: |
| AV-CUB-020 | Cubcrafters Carbon Cub | 5390 |
| AV-JUST-120 | Just Aircraft Highlander | 4800 |
| AV-SAF-120 | Kitplanes for Africa Safari | 4800 |
| AV-SVNA-120 | Savannah Taildragger | 4800 |
| AV-GROP-120 | Trail Nando Groppo | 4800 |
| AV-MAV-120 | Maverick | 4800 |
| AV-ZLIN-120 | Zlin Savage | 4800 |
| AV-CUB-020 | PA18 SuperCub experimental | 5390 |

The $V$ cabane is not included.
Please contact us.


The STC for the Piper SuperCub is in progress. Stay tuned...

## Bush- Backcountry flying

## Extend the landing possibilities of your STOL airplane with BERINGER systems:

$\rightarrow$ Groundloop-resistant Tailwheel
$\rightarrow$ Alaskan Landing Gear for taildragger
$\rightarrow$ Ultralight Bush wheels
$\rightarrow$ Powerful dual brakes
$\rightarrow$ ALIR anti-skid
$\rightarrow$ Ultralight 26" Bush tires
We offer you a new dimension of freedom with bush wheels and low pressure tires.
Please refer to pages 10-17 for complete wheel and brake sets and page 28-29 for tires.


Dual braking system for tires over 29" See page 16

Cross wind... are you ready? Patented groundloop-resistant tailwheel


## Greater Safety for taildraggers



Double pivot system, lockable from the cockpit:
Unlocked: the tailwheel is free to castor for taxiing. Steering is accomplished using the brakes on the rudder pedals. Locked: the tailwheel is locked to the rudder for take off and landing. The tailwheel follows the rudder movement.
For taildraggers up to $\mathbf{7 5 0 k g}$ (1500lbs) - robust design for rough airstrips.

| P/N | Description | Wheel <br>  | Tire |  | Weight |  |
| :---: | :--- | :---: | :---: | :---: | :---: | :---: |
|  | Price |  |  |  |  |  |
| TW-001 | Complete tailwheel including the wheel and the tire | $4 "$ | $2.80 / 2.50-4 "$ | 8.31 | 3.77 | 1065 |
| TW-002 | Complete bush-tailwheel including the wheel and the tire | $4 "$ | $4.00-4 "$ | 9.08 | 4.12 | 1280 |

## 4" - the lightest 4 " wheel in the World Only 1.1 kg (39oz) - (RF-013)

- Static load rating of $528 \mathrm{lbs}(245 \mathrm{~kg})$
- Dimension 3.50-4
- Single-piston brake caliper

- Lightweight floating disc
- Suitable for light aircraft, up to 770 Lbs MTOW (350kg)


## 5" - STANDARD Serie - (RF-019 RF-020)

- Static load rating of $1,518 \mathrm{lbs}$ ( 703 kg )
- Dimensions 5.00-5 and 4.00-5
- 2 piston standard brake (patented)
- Lightweight stainless steel disc
- Suitable for LSA, experimental and gliders


## 5" - HL Series - (RF-018 RF-021 RF-022)

## TSO \& ETSO

- Static load rating of 1518 Lbs ( 703 kg )
- Dimensions 5.00-5 and 4.00-5
- HE 2 piston caliper with cooling fins (patented)
-     + 40\% Braking torque
- 2 types of high strength discs
- Insulated full metallic brake pad
- Caliper EA-002: for 2 seat aircraft (RV's)
- Caliper EA-002.2 (thicker disc): for high landing speed aircraft (Lancair, Glasair, Aerobatic...)



## 6" - SL Series - (RF-009 RF-004)

The SL wheel designed in 2 parts instead of 3 , is even lighter and allows an easy maintenance.
Static load rating is increased up to $968 \mathrm{lbs}(440 \mathrm{~kg})$ to fit Aircraft up to 1,870 Lbs (850kg) (gross weight)

- Easy maintenance: only $1 \times$ o-ring seal
- Sizes : 4.00-6 and 6.00-6

- 2 piston standard brake (patented) and lightweight stainless steel disc
- Suitable for ultra light aircraft and LSA

The RF-009 with dual caliper EA-006 is available for tires>29" (increased braking torque).
The RF-014 6.00-6 SL wheel includes a larger bearing in the inner rim.
RF-004 + EA-006


## Vintage spoke wheel with brake

- Tire 3.50-19" Ribbed (vintage style)
- Aluminum rim with stainless steel spokes
- Load: suitable for Aircraft < 1,100lbs
- Price: 802€ per wheel
(including wheel+brake+tire+tube+spokes)
- Weight: 20 Lbs ( 9.12 kg )
(wheel+brake+tire+tube+spokes)



## Wheels \& Brakes

## 6" - LE - (RF-015)

Designed for SuperCub and similar airplanes.

- Static load rating $1,430 \mathrm{lbs}(663 \mathrm{~kg})$ to fit Aircraft up to $2,728 \mathrm{Lbs}$ (1240 kg) (gross weight)
- Easy maintenance: only 1 o'ring seal
- Size : 6.00-6"
- 2 piston brake EA-003.2 (patented)
- stainless steel disc
- Suitable for SuperCub and similar airplanes.


## 6" - HE Series - (RF-006)

- Static load rating 1,870 Lbs (866 kg)
- Dimension 6.00-6
- HE 2 piston caliper with cooling fins (patented)
- doubled braking torque compared to SL series
- 4 types of high strength discs
- Insulated full metallic brake pads
- Caliper EA-003: for 2 seat aircraft (Taildragger, Champion, Glasair)
- Caliper EA-003.3 (thicker disc): for 4 seat aircraft (Lancair IV, Cirrus SR20)

- Caliper EA-003.4: dual caliper for increased braking torque, ultra short braking distance (suitable for Cirrus SR22, DA42,...)
- Bremszange EA-003.5: Dualzange (nebeneinander) für höher Bremsdrehmoment.


## 6" - HL Series - (RF-017)

- Static load rating 2310 Lbs (1070kg)
- Dimension 6.00-6
- Caliper EA-003.X: 4 pistons for increased braking torque and more braking power for aircraft up to $2,400 \mathrm{~kg}$.



## 8" (RF-010)

- Static load rating 3,568 Lbs ( $1,417 \mathrm{~kg}$ )
- Dimension $18 \times 5.5$
- HE 2 piston caliper EA-008, with cooling fins (patented)
- High strength discs
- Insulated full metallic brake pads

TSO \& ETSO

## 10" (RF-011) and 12" (RF-003)

- Static load rating 3,080lbs (1400kg)
- Dimensions 10": 24x7.7 and 12" : 11.00-12"
- Caliper EA-001, 3 pistons (patented)
- Insulated full metallic brake pads



## Wheel caps

- Anodized cap for wheel - Billet aluminum machined on CNC for 5" - 6" wheels


## Wheels \& Brakes

| Assy P/N | Certification | Wheel size | Static load Lbs $\mathbf{K g}$ |  | Limit load Lbs $\quad \mathbf{K g}$ |  | Caliper P/N | Disc P/N | Braking torque inch.lbs | Max RTO Energy ft-lbs |  | $\begin{aligned} & \mathrm{Kg} \end{aligned}$ | Price per assy |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 4" wheel |  |  |  |  |  |  |  |  |  |  |  |  |  |
| RF-013 | - | 3.50-4" | 528 | 245 | 1848 | 856 | EA-009 | DSC-013 | 1400 | 105000 | 2.43 | 1.10 | 308 |
| 5" wheels - STANDARD Serie |  |  |  |  |  |  |  |  |  |  |  |  |  |
| RF-019 | - | 5.00-5" | 1518 | 703 | 6820 | 3160 | EA-006 | DSC-006 | 2450 | 140000 | 4.92 | 2.23 | 380 |
| RF-020 | - | 4.00-5" | 1518 | 703 | 6820 | 3160 | EA-006 | DSC-006 | 2450 | 140000 | 4.74 | 2.15 | 380 |
| 5" wheels - HL Series |  |  |  |  |  |  |  |  |  |  |  |  |  |
| RF-018 | TSO | 5.00-5" | 1518 | 703 | 6820 | 3160 | EA-002 | DSC-008 | 4500 | 210000 | 5.82 | 2.64 | 452 |
| RF-018 | TSO | 5.00-5" | 1518 | 703 | 6820 | 3160 | EA-002.2 | DSC-008.2 | 4500 | 361000 | 6.37 | 2.89 | 493 |
| RF-022 | - | 5.00-5" | 1518 | 703 | 6820 | 3160 | EA-002 | DSC-008 | 4500 | 210000 | 5.88 | 2.67 | 452 |
| RF-021 | - | 4.00-5" | 1518 | 703 | 6820 | 3160 | EA-002 | DSC-008 | 4500 | 210000 | 5.61 | 2.55 | 452 |
| RF-021 | - | 4.00-5" | 1518 | 703 | 6820 | 3160 | EA-002.2 | DSC-008. | 4500 | 361000 | 6.16 | 2.80 | 493 |
| 6" wheels - SL series |  |  |  |  |  |  |  |  |  |  |  |  |  |
| RF-009 | - | 6.00-6" | 968 | 440 | 3388 | 1540 | EA-006 | DSC-00 | 2450 | 140000 | 5.81 | 2.64 | 450 |
| RF-004 | - | 4.00-6" | 968 | 440 | 3388 | 1540 | EA-006 | DSC-006 | 2450 | 140000 | 5.47 | 2.48 | 409 |
| 6" wheel - LE |  |  |  |  |  |  |  |  |  |  |  |  |  |
| RF-015 | - | 6.00-6" | 1430 | 663 | 5005 | 2319 | EA-003.2 | DSC-014 | 4900 | 250000 | 7.13 | 3.23 | 515 |
| 6" wheels - HE Series |  |  |  |  |  |  |  |  |  |  |  |  |  |
| RF-006 | TSO | 6.00-6" | 1870 | 866 | 6545 | 3033 | EA-003.5 | DSC-009.4 | 9800 | 550000 | 11.62 | 5.27 | 918 |
| RF-006 | TSO | 6.00-6" | 1870 | 866 | 6545 | 3033 | EA-003 | DSC-009 | 4900 | 355000 | 8.11 | 3.68 | 617 |
| RF-006 | TSO | 6.00-6" | 1870 | 866 | 6545 | 3033 | EA-003.3 | DSC-009.3 | 4900 | 500000 | 9.03 | 4.09 | 617 |
| RF-006 | TSO | 6.00-6" | 1870 | 866 | 6545 | 3033 | EA-003.4 | DSC-009.3 | 9800 | 550000 | 10.91 | 4.95 | 751 |
| RF-016 | - | 6.00-6" | 1870 | 866 | 6545 | 3033 | EA-003.3 | DSC-009.3 | 4900 | 678000 | 9.03 | 4.09 | 706 |
| 6" wheels - HL Series |  |  |  |  |  |  |  |  |  |  |  |  |  |
| RF-017 | - | 6.00-6" | 2310 | 1070 | 9460 | 4383 | EA-004.3 | DSC-009.5 | 9300 | 980000 | 13.40 | 6.08 | 912 |
| RF-017 | - | 6.00-6" | 2310 | 1070 | 9460 | 4383 | EA-004.2 | DSC-009.5 | 9300 | 975000 | 13.31 | 6.04 | 860 |
| RF-017 | - | 6.00-6" | 2310 | 1070 | 9460 | 4383 | EA-004.1 | DSC-009. | 9800 | 975000 | 13.38 | 6.07 | 860 |
| 8" wheel |  |  |  |  |  |  |  |  |  |  |  |  |  |
| RF-010 | TSO | 18x5.5" | 3568 | 1417 | 9625 | 4460 | EA-008 | DSC-012 | 9300 | $\begin{aligned} & 1115000 \\ & 1200000 \end{aligned}$ | 17.04 | 7.73 | * |
| 10" wheel |  |  |  |  |  |  |  |  |  |  |  |  |  |
| RF-011 | - | 24×7.7" | 3080 | 1427 | 8160 | 3782 | EA-001 | DSC-011 | 16900 | 845000 | 25.26 | 11.46 | * |
| 12" wheel |  |  |  |  |  |  |  |  |  |  |  |  |  |
| RF-003 | - - | 11.00-12" | 3080 | 1427 | 8160 | 3782 | EA-001 | DSC-011 | 16900 | 845000 | 31.35 | 14.22 | * |
| 4.00-5' Wheel |  |  | 5.00-5 Wheel |  |  |  | * fragen Sie uns bitte |  | $\mathbf{1} \mathrm{Lbs} \leftrightarrow 0.45 \mathrm{~kg} \mathrm{1} \mathrm{kg} \mathrm{↔} 2.2 \mathrm{Lbs}$ |  |  |  |  |
| 4.0 | -5' Whee |  |  |  |  |  | Wheel Cap P/N |  | main wheel |  |  | Unit Price |  |
|  | 4" |  |  |  |  |  | BCH-003 4 |  | 4.00-6" SL series |  |  | 24 |  |
|  |  |  |  |  |  | 冒 | BCH-002 5 |  | 5" \& 6.00-6" SL series |  |  | 24 |  |
|  |  | P |  |  |  |  | BCH-004 6 |  | 6" HE series \& HL serie |  |  | 45 |  |
|  |  | - |  |  |  |  | BCH-006 6 |  | 6" LE |  |  | 45 |  |
| - | , | - |  |  |  |  | BCH-005 |  | 8" |  |  | 45 |  |
|  |  |  |  |  |  |  | BCH-001 10 |  | 10" \& 12" |  |  | 113 |  |

FINISH : Red anodizing is standard color for wheels, brakes and master cylinders.
Calipers are ALWAYS red. Other colors can be available for certain wheels on special order with an extra delay at an additional cost of $85 €$ per batch of parts. WARNING: Colors may vary.

## CAUTION: static load valid only with appropriate tire

 Spare part catalog on demand. Please contact us.BERINGER wheels without brake for nose wheel or tail wheel are:

- High strength aluminum alloy machined from solid on CNC
- TUBELESS (except JC-01) two or three pieces plus O-Ring and rigid valve
- Sealed ball bearings for optimal durability
- Use BERINGER tapered axles with those wheels (except 200x50 version)


## Tailwheel 200x50 (RA-004)

- Tire $200 \times 50$ with tube
- For 5/16" bolt
- Weight : 9.45 oz / 268g


## Delivered mounted with <br> 6ply tyre and tube

- Only fork mounting
- Suitable for Pipistrel Sinus



## 4" ultralight WHEEL (RA-003)

- Bush tail wheel
- Nose wheel for LSA ULM
- High load rating
- Cantilever OR fork mounting
- Perfect for ultralight aircraft



## 5" Nose wheel

for homebuilt aircraft

TUBELESS


6" SL nose wheel
for ultralight aircraft and LSA

Price
Price

| RA-004 |  | $200 \times 50$ | 337 | 153 | 1349 | 612 | 0.59 | 0.268 | 163 with tire |
| :--- | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | ---: |
| RA-003 |  | $3.50-4 "$ | 539 | 245 | 1888 | 856 | 1.36 | 0.62 | 174 |
| RA-001 |  | $5.00-4$ | 1034 | 469 | 2810 | 1274 | 2.43 | 1.1 | 694 |
| RA-015 |  | $4.00-5 "$ | 1551 | 703 | 6968 | 3160 | 3.10 | 1.41 | 255 |
| RA-014 | TSO | $5.00-5 "$ | 1551 | 703 | 6968 | 3160 | 3.28 | 1.49 | 334 |
| RA-009 |  | $4.00-6$ SL | 970 | 440 | 3396 | 1540 | 2.93 | 1.327 | 290 |
| RA-010 |  | $6.00-6 "$ SL | 970 | 440 | 3396 | 1540 | 3.26 | 1.48 | 321 |
| RA-005 | TSO | $6.00-6 " \mathrm{HE}$ | 2135 | 968 | 7642 | 3466 | 4.56 | 2.07 | 411 |
| RA-013 |  | $6.00-6^{\prime \prime} \mathrm{HL}$ | 2360 | 1070 | 9665 | 4383 | 5.41 | 2.455 | 411 |
| RA-008 | TSO | $8.90-12.5 "$ | 2023 | 917 | 9103 | 4128 | 16.43 | 7.45 | 4148 |

Material: High strength anodized aluminum or high strength steel with nickel coating

- Different types of axle available:
- for wheel fork (supported at both ends)
- for cantilever installation
- FEM calculated for optimized weight and stress distribution


Axle nut and cotter pin
$1 \mathrm{lbs} \leftrightarrow 0.45 \mathrm{~kg}$
$1 \mathrm{~kg} \leftrightarrow 2.2 \mathrm{lbs}$
$1 \mathrm{~kg} \leftrightarrow 2.2 \mathrm{lbs}$

## Axle spacer BGE-016

| P/N | DESCRIPTION (all aluminum axles are anodized except specifications) | Axle thread | Static load rating per axle Lbs kg |  | Limit load Lbs $\quad$ kg |  | $\begin{aligned} & \text { weight } \\ & \text { oz kg } \end{aligned}$ |  | Price$66+9$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| FUS-001+BGE016 | Tapered aluminum Axle | M25X1.5 | 780 | 354 | 2714 | 1231 | 8.8 | 0.25 |  |
| FUS-004 | Tapered steel Axle Nickel coated | M25X1.5 | 1430 | 649 | 4976 | 2257 | 21.92 | 0.62 | 142 |
| FUS-005 | Tapered aluminum Axle | M25X1.5 | 950 | 431 | 3306 | 1499 | 8.16 | 0.23 | 66 |
| FUS-005.1 | Tapered aluminum Axle | M25X1.5 | 950 | 431 | 3306 | 1499 | 8.16 | 0.23 | 66 |
| FUS-006 | Tapered aluminum Axle | M15X1 | 401 | 182 | 1397 | 633 | 2.72 | 0.08 | 59 |
| FUS-007 | Tapered aluminum Axle | M35X1.5 | 1650 | 748 | 5775 | 2619 | 17.92 | 0.51 | 142 |
| FUS-007.1 | Stainless steel axle | M35X1.5 | 2090 | 948 | 7315 | 3317 | 45.12 | 1.28 | 385 |
| FUS-008 | Tapered aluminum Axle | M25X1.5 | 700 | 317 | 2450 | 1111 | 15.36 | 0.44 | 122 |
| FUS-009 | Tapered aluminum Axle | M25X1.5 | 860 | 390 | 2993 | 1357 | 8.8 | 0.25 | 139 |
| FUS-010 | Tapered aluminum Axle | M25X1.5 | 832 | 377 | 2894 | 1313 | 11.84 | 0.33 | 179 |
| FUS-011 | Tapered aluminum Axle | M25X1.5 | 780 | 354 | 2714 | 1231 | 10.24 | 0.29 | 64 |
| FUS-012 | Tapered aluminum Axle | M25X1.5 | 832 | 377 | 2894 | 1313 | 8.32 | 0.24 | 129 |
| FUS-013+ BGE026 | Tapered aluminum Axle | 3/4"-16 | 780 | 354 | 2714 | 1231 | 12.64 | 0.36 | 134+9 |
| FUS-014.1 | Tapered aluminum Axle | M30X1.5 | 1400 | 635 | 4900 | 2222 | 16.00 | 0.45 | 142 |
| FUS-015 | Tapered aluminum Axle | $\begin{gathered} \text { M25X1.5 } \\ +3 / 4 "-16 \end{gathered}$ | 780 | 354 | 2714 | 1231 | 16.80 | 0.48 | 139 |
| ECR-001 | Aluminum nut | M35x1,5 | - | - | - | - | 0.8 | 0.02 | 20 |
| ECR-002 | Aluminum nut | M25x1,5 | - | - | - | - | 0.32 | 0.01 | 10 |
| ECR-004 | Aluminum nut | M30x1,5 | - | - | - | - | 0.64 | 0.02 | 20 |
| E-HN-008 | Steel nylstop nut | 3/4"-16 | - | - | - | - | 1.9 | 0.054 | 9.20 |
| BGE-016 | Spacer for axle FUS-001 | - | - | - | - | - | 0.16 | 0.01 | 9 |
| BGE-026 | Spacer for axle FUS-013 | - | - | - | - | - | 0.16 | 0.01 | 9 |

## Axle/wheel fitting table

Other axles are available. Please contact us.

| Axle P/N / Wheel $\rightarrow$ | 3.50-4" | $\begin{aligned} & \hline 4.00-5 " \& \\ & 4.00-5 " \mathrm{HL} \end{aligned}$ | $\begin{aligned} & 5.00-5^{\prime \prime} \& \\ & 5.00-5 \text { "HL } \end{aligned}$ | 4.00-6" SL | 6.00-6" SL | $\begin{gathered} 6.00-6 " \\ \text { LE } \end{gathered}$ | $\begin{gathered} \text { 6.00-6" } \\ \text { HE } \end{gathered}$ | $\begin{gathered} \text { 6.00-6 } \\ \text { HL } \end{gathered}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| FUS-001 | - | - | T1, T2, T4, T5 | T1, T2, T4, T5 | - | - | - | - |
| FUS-004 | - | - | T1, T2 | - | - | - | - | - |
| FUS-005 | - | T1, T2 | - | - | - | - | - | - |
| FUS-006 | T6 | - | - | - | - | - | - | - |
| FUS-007 | - | - | - | - | - | - | T3 | - |
| FUS-007.1 | - | - | - | - | - | - |  | T3 |
| FUS-008 | - | - | - | - | T3 | - | - | - |
| FUS-009 | - | - | T2 | - | - | - | - | - |
| FUS-010 | - | - | - | - | T1, T2, T4, T5 | - | - | - |
| FUS-011 | - | - | - | T3 | - | - | - | - |
| FUS-012 | - | - | - | - | 1"1/4 US | - | - | - |
| FUS-013 | - | - | - | T1 | - | - | - | - |
| FUS-014.1 | - | - | - | - | - | T3 | - | - |
| FUS-015 | - | - | - | - | T1 | - | - | - |

## Tires



This tire is BERINGER AERO exclusivity for Europe

## Tires

| P/N | Description | Static load lbs | Ø A (inch) | $\underset{\text { (inch) }}{\mathbf{B}}$ | Weight |  | Price |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| PAG05 | Tire and tube 200x50 6PLY TT | - | 7,90 | 2,00 | 1.10 | 0,50 | 45 |
| PAG07 | Tire 2.80/2.50-4" 6PLY Kenda TL | - | 9,00 | 2,80 | 1.32 | 0,60 | 24 |
| PAG04 | Tire 2.80/2.50-4" 6PLY Aero Classic TT | 475 | 9,00 | 2,80 | 1.76 | 0,80 | 55 |
| PAG06 | Tire 10x3.50-4" 4PLY AeroClassic TT | 460 | 9,80 | 3,20 | 2.54 | 1,15 | 58 |
| PAG02 | Tire 3.00-4" 4PLY Veloce TL | - | 10,30 | 3,50 | 1.32 | 0,60 | 24 |
| PAC01 | Tire 11x4.00-5 8PLY Aero Classic TL | 650 | 11,60 | 3,80 | 3.75 | 1,70 | 55 |
| PAG01 | Tire 4.00-4" 4PLY Kenda TL |  | 11,90 | 3,90 | 2.20 | 1,00 | 24 |
| PAG03 | Tire 4.00-4" 8PLY Aero Classic TL | 800 | 12,00 | 4,30 | 2.87 | 1,30 | 65 |
| PAC03 | Tire 13x5.00-6 4PLY DeliTire TT | - | 13,40 | 4,70 | 2.87 | 1,30 | 39 |
| PAC07 | Tire 13x5.00-6 4PLY Sava TL | - | 13,40 | 4,70 | 3.30 | 1,50 | 39 |
| PAC04 | Tire 13x5.00-6 8PLY Sava TL | - | 13,40 | 4,70 | 3.30 | 1,50 | 39 |
| 505T08-1 | Tire 5.00-5 10PLY Flight Eagle LT GoodYear TL | 2150 | 13,80 | 4,70 | 7.05 | 3,20 | 225 |
| PAA02 | Tire 5.00-5 10 PLY Michelin Aviator TL | 2150 | 14,20 | 4,70 | 5.73 | 2,60 | 149 |
| 070-310-0 | Tire 5.00-5 8PLY Michelin Air TL | 1800 | 14,20 | 4,70 | 5.73 | 2,60 | 125 |
| PAD01 | Tire 4.00-6 6PLY Sava TL | - | 14,50 | 4,40 | 2.87 | 1,30 | 42 |
| PAD03 | Tire 4.00-6 6PLY Aero Classic TL |  | 14,50 | 4,40 | 3.75 | 1,70 | 65 |
| PAC08 | Tire 15x6.00-6 10PLY Flight Custom II GoodYear TL | 3200 | 14,50 | 5,30 | 9.70 | 4,40 | 350 |
| PAC02 | Tire 15x6.00-6 6PLY Sava TL | - | 14,80 | 5,10 | 4.85 | 2,20 | 39 |
| PAC05 | Tire 15x6.00-6 6PLY Air Trac TT | 1950 | 15,00 | 5,30 | 6.17 | 2,80 | 119 |
| PAB01 | Tire 380x150-5 6PLY Michelin Air TT | 1598 | 15,00 | 5,50 | 6.61 | 3,00 | 179 |
| 025-501-1 | Tire 15x6.00-6 6PLY Michelin Air TL | 1950 | 15,00 | 5,30 | 7.27 | 3,30 | 159 |
| PAC06 | Tire 15x6.00-6 6PLY Aero Classic TL | 1950 | 15,00 | 5,30 | 7.72 | 3,50 | 149 |
| PAB03 | Tire 6.00-6 4PLY AirTrac TT | 1150 | 17,50 | 6,30 | 6.83 | 3,10 | 115 |
| 070-317-1 | Tire 6.00-6 8PLY Michelin Air TL | 2350 | 17,50 | 6,30 | 9.26 | 4,20 | 142 |
| 606T86-3 | Tire 6.00-6 8PLY Flight Custom III GoodYear TL | 2350 | 17,50 | 6,30 | 13.00 | 5,90 | 279 |
| PAF03 | Tire 21x8.00-6" 4PLY Aero Classic TL | 800 | 20,50 | 7,10 | 10.80 | 4,90 | 119 |
| 076-325-0 | Tire 8.50-6 6PLY Michelin TL | 2275 | 21,00 | 7,50 | 15.43 | 7,00 | 289 |
| PAF05 | Tire $22 \times 8.50-6 " 4 \mathrm{LLY}$ Aero Classic TT | 1600 | 22,00 | 8,10 | 8.82 | 4,00 | 225 |
| PAF06 | Tire 26" Alaskan Bush Tire | - | 26,40 | 10,00 | 14.33 | 6,50 | 995 |


| Wheel size $\rightarrow$ <br> $\downarrow$ Tire size | 200x50 | 3.50-4 | 4.00-5 | 5.00-5 | 4.00-6 | 6.00-6" |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 200x50 | ok | - | - | - | - | - |
| 2.80/2.50-4" | - | ok | - | - | - | - |
| 3.00-4" | - | ok | - | - | - | - |
| 10x3.50-4" | - | ok | - | - | - | - |
| 4.00-4" | - | ok | - | - | - | - |
| $11 \times 4.00-5$ | - | - | ok | - | - | - |
| 5.00-5" | - | - | * | ok | - | - |
| $\begin{aligned} & 380 \times 150-5 \\ & (15 \times 6.00-5) \end{aligned}$ | - | - | - | ok | - | - |
| 13x5.00-6" | - | - | - | - | ok | - |
| 4.00-6" | - | - | - | - | ok | - |
| 15x6.00-6" | - | - | - | - | ok | ok |
| $\begin{aligned} & 6.00-6 " \text { - } \\ & 17.5 \times 6.25-6 \end{aligned}$ | - | - | - | - | ok | ok |
| 8.00-6" | - | - | - | - | - | ok |
| 21x8.00-6" | - | - | - | - | - | ok |
| 8.50-6" | - | - | - | - | - | ok |
| 22x8.50-6" |  |  |  |  |  | ok |
| $\begin{aligned} & \text { 26" 29" } 31 " \\ & \text { Bushwheel } \\ & \hline \end{aligned}$ | - | - | - | - | - | ok |


$1 \mathrm{Lbs} \leftrightarrow 0.45 \mathrm{~kg} 1$ inch $\leftrightarrow 25.4 \mathrm{~mm}$ $1 \mathrm{~kg} \leftrightarrow 2.2 \mathrm{Lbs}$

Notes: the dimensions and the weight of the tires may vary. BERINGER AERO cannot be responsible for the load indicated, which are those given by the tire manufacturers.

BERINGER wheels are tubeless. WE RECOMMEND FIRST MOUNTING OF TIRES ON WHEELS IN OUR PLANT. This service, free of charge, includes a pressure test, ensuring maximum security of the assembly.

## Differential braking system with in-line balanced anti-lock regulator (ALIR antiskid \& in-line braking) and parking brake valve



Stainless steel braided hose with banjo fitting


## Master brake cylinders and attachments

These master cylinders have been designed for a very long life and assure very long trouble free service. We have tested them over 200,000 cycles with success. The piston is protected from dust by a lipseal.

- Available for DOT4 fluid OR for MINERAL (MIL FLUID) (seals are different, never mix)
- High quality aluminum alloy machined from solid on CNC
- $100 \%$ protected from corrosion: anodized coating and stainless steel components
- Light weight: more than $30 \%$ of weight saving compare to standard master cylinder
- Ultralow friction for improved efficiency

MP-001 Series - Bore 9/16" - Pin-to-pin length and attachments available


Master brake cylinders and attachments
MP-002 Series - Bore 1/2" - Pin-to-pin length and attachments available


## Master brake cylinders and attachments

MP-003 Series - Bore 1/2" - Pin-to-pin length and attachments available

|  |  |  |
| :---: | :---: | :---: |
|  |  |  |
|  |  |  |
|  |  |  |
| COUPE B-B WCPGOOS 2 |  |  |
|  |  |  |
|  |  |  |

## Heel operated - SuperCub Type

For original Piper SuperCub and also BERINGER dual braking calipers.
AV-CUB-122 (links) Preis $=585 €$
AV-CUB-123 (rechts) Preis $=585 €$
For BERINGER single caliper:
AV-CUB-120 (links) Preis $=585 €$
AV-CUB-121 (rechts) Preis $=585 €$
Two ball bearings for smooth actuation and good feeling

Short lever kit - to be pushed
MP-004.7 +MP-002+CHP-003


## Cable operated



Dual
MP-004.2 +2xMP-002
$+2 x$ CHP-003


## Master brake cylinders and attachments

## CAUTION:

The seals inside the MASTER BRAKE CYLINDERS are specific for each type of brake fluid.

- It is not possible to put DOT4 brake fluid in a master cylinder with

It is not possible to put DOT4 brake fluid in a master cylinder with
seals for MINERAL (MIL) fluid and it is not possible to put MINERAL brake fluid in a master cylinder with seals for DOT4 brake fluid.

- The letter E means for DOT4 brake fluid
- The letter $\underline{\mathbf{N}}$ means for MINERAL (MIL) brake fluid

| Master brake cylinder P/N | Attachments | Brake fluid | Pin-to-pin length |  |  |  | Bore |  | Weight |  | Price |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  | Min |  | Max |  |  |  |  |  |  |
|  |  |  | Inch | mm | Inch | mm | Inch | mm | 02 | g |  |
| MP-001 | - CHP-001 | DOT4 o. MIL | 7,441 | 189 | 8,189 | 208 | 3/16 | 14,5 | 5,89 | 167 | 180 |
| MP-001.1 | CHP-001-PGT-001 | DOT4 o. MIL | 8,189 | 208 | 8,937 | 227 | 3/16 | 14,5 | 6,38 | 181 | 208 |
| MP-001.2 | - CHP-007 | DOT4 o. MIL | 7,441 | 189 | 8,189 | 208 | 3/16 | 14,5 | 5,82 | 165 | 192 |
| MP-001.3 | - CHP-007 | DOT4 o. MIL | 7,441 | 189 | 8,189 | 208 | 3/16 | 14,5 | 5,78 | 164 | 192 |
| MP-001.4 | - CHP-009 | DOT4 o. MIL | 7,402 | 188 | 8,189 | 208 | 3/16 | 14,5 | 5,89 | 167 | 194 |
| MP-001.5 | - CHP-010 | DOT4 o. MIL | 6,890 | 175 | 7,874 | 200 | 3/16 | 14,5 | 5,18 | 147 | 225 |
| MP-002 |  | DOT4 o. MIL |  |  |  |  | 1/2 | 12,2 | 3,53 | 100 | 143 |
| MP-002.1 | - ZM-001 | DOT4 o. MIL | 5,433 | 138 | 5,630 | 143 | 1/2 | 12,2 | 4,15 | 118 | 157 |
| MP-002.2 | - CHP-003 | DOT4 o. MIL | 5,512 | 140 | 5,669 | 144 | 1/2 | 12,2 | 3,96 | 112 | 155 |
| MP-002.3 | CHP-003-ZM-001 | DOT4 o. MIL | 6,457 | 164 | 6,929 | 176 | 1/2 | 12,2 | 4,81 | 136 | 169 |
| MP-002.4 | CHP-003-CHP-003 | DOT4 o. MIL | 6,654 | 169 | 6,929 | 176 | 1/2 | 12,2 | 4,62 | 131 | 167 |
| MP-002.5 | ZM-001-ZM-001 | DOT4 o. MIL | 6,496 | 165 | 6,969 | 177 | 1/2 | 12,2 | 5,00 | 142 | 171 |
| MP-002.6 | PGT-002+ZM-001-ZM-001 | DOT4 o. MIL | 6,535 | 166 | 6,929 | 176 | 1/2 | 12,2 | 4,81 | 136 | 185 |
| MP-002.7 | - CHP-006 | DOT4 o. MIL | 5,118 | 130 | 5,433 | 138 | 1/2 | 12,2 | 3,72 | 105 | 188 |
| MP-002.8 | - CHP-003 | DOT4 o. MIL | 5,512 | 140 | 5,669 | 144 | 1/2 | 12,2 | 3,76 | 107 | 155 |
| MP-003 | - CHP-002 | DOT4 o. MIL | 7,32 | 186 | 7,56 | 192 | 1/2 | 12,2 | 4,30 | 122 | 193 |
| MP-003.1 | - CHP-002 | DOT4 o. MIL | 8,07 | 205 | 8,31 | 211 | 1/2 | 12,2 | 4,80 | 136 | 193 |
| MP-003.2 | - CHP-005 | DOT4 o. MIL | 7,32 | 186 | 7,56 | 192 | 1/2 | 12,2 | 4,41 | 125 | 193 |
| MP-003.3 | - CHP-002 | DOT4 o. MIL | 7,32 | 186 | 7,56 | 192 | 1/2 | 12,2 | 4,27 | 121 | 193 |
| MP-003.4 | - CHP-008 | DOT4 o. MIL | 6,93 | 176 | 7,20 | 183 | 1/2 | 12,2 | 4,30 | 122 | 193 |
| MP-003.5 | - CHP-005.1 | DOT4 o. MIL | 7,52 | 191 | 7,76 | 197 | 1/2 | 12,2 | 4,44 | 126 | 205 |
| MP-003.6 | - CHP-011 | DOT4 o. MIL | 7,40 | 188 | 7,64 | 194 | 1/2 | 12,2 | 4,34 | 123 | 193 |


| Lever kit for MP-XXX <br> Master brake cylinder <br> P/N <br> (see page 34) | Master brake <br> cylinder <br> (not included) | Weight |  |  |
| :---: | :---: | :---: | :---: | :---: |
|  |  | oz | $\mathbf{g}$ | Price |
| MP-004.1 | MP-002.3 | 8,77 | 249 |  |
| MP-004.2 | MP-002.3 | 16,06 | 455 | 97 |
| MP-004.3 | MP-002.8 | 9,30 | 264 | 61 |
| MP-004.4 | MP-002.8 | 17,11 | 485 | 112 |
| MP-004.5 | MP-002.8 | 9,58 | 272 | 61 |
| MP-004.6 | MP-002.8 | 10,33 | 293 | 112 |
| MP-004.7 | MP-002.8 | 8,48 | 240 | 61 |

Adapter for rod ends:
our rod ends are only metric $\varnothing 6 \mathrm{~mm}$. For connexion with $3 / 16^{\prime \prime}$ bolts, please order the adapter P/N: BGE-011

| Attachment <br> $\mathbf{P} / \mathbf{N}$ | Weight |  | Price |
| :---: | :---: | :---: | :---: |
|  | $\mathbf{o z}$ | $\mathbf{g}$ |  |
| CHP-001 | 0,83 | 24 | 14 |
| CHP-002 | 0,23 | 6 | 12 |
| CHP-003 | 0,40 | 11 | 12 |
| CHP-004 | 0,39 | 11 | 12 |
| CHP-005 | 0,32 | 9 | 12 |
| CHP-005.1 | 0,37 | 11 | 24 |
| CHP-006 | 0,43 | 12 | 45 |
| CHP-007 | 0,79 | 22 | 12 |
| CHP-008 | 0,27 | 8 | 12 |
| CHP-009 | 0,80 | 23 | 14 |
| CHP-010 | 0,77 | 22 | 45 |
| CHP-011 | 0,27 | 8 | 12 |
| ZM-001 | 0,792 | 22 | 14 |
| BGE-011 | 0,159 | 5 | 4 |

[^1]Only few exemples of hydraulic fittings and adaptors are shown. Many other combinations are available. Please contact us.


## Hydraulic hoses - fittings : to be screwed or assembled in plant

BERINGER Brake hose is stainless steel braided with PTFE inner tube and stainless steel fittings:

- Provides consistent brake pedal pressure without spongy feeling
- Flexibility allows landing gear leg movements and avoids leakage that appears with hardline tube.
- Ends can be straight fittings, female concave seat: $7 / 16 \times 20$ or $3 / 8 \times 24$ (steel plated or stainless)
- Maximum pressure 3000 PSI - strength pressure 9000PSI

SCREW IT YOURSELF: You order brake hose and brake fittings separately and you follow the «assembly instructions» delivered with the parts.

WE ASSEMBLE THESE HOSES AND FITTINGS and WE DELIVER THEM READY TO INSTALL.
Choose your fittings, your length and order your brake hose assembly ready to use.


For hydraulic hoses and fittings, please contact us.

## Brake fluid reservoirs

Each master cylinder requires a reservoir. We propose several types depending on your plane configuration. The reservoirs always incorporate tight bellows and are $100 \%$ tight, without any risk of leak. You must not install them close to the engine (install only inside the cockpit).

## Integral Brake fluid reservoirs :

Vertical or horizontal mounting - available for DOT4 OR MINERAL brake fluid

- CNC machined from aluminium billet - Attaches directly to the master cylinder, $180^{\circ}$ rotable
- Weight : from 55 g (2 oz) to


Aluminium Reservoif

- Perfect for aerobatic use



## Remote brake fluid reservoir :

Transparent reservoir with CNC aluminium cover and visible fluid level and with mounting kit and 0.50 m of EPDM tube. Available for DOT4 brake fluid only.


| P/N | Brake fluid | DESCRIPTION | Weight <br> type |  | Price |  |
| :--- | :---: | :--- | :---: | :---: | :---: | :---: |
| HFA01 | E | Remote reservoir kit | 1.38 | 39 | 33 |  |
| RV-001 | E oder N | Integral reservoir CNC machined | 1.94 | 55 | 49 |  |
| RV-003 | E oder N | Integral reservoir CNC machined (Van's for example) | 1.59 | 45 | 49 |  |
| RV-004 | E oder N | Integral reservoir CNC machined - threaded port | 1.27 | 36 | 49 |  |
| RV-004.1 | E oder N | Integral reservoir CNC machined - unthreaded port | 1.27 | 36 | 49 |  |

## Hand master brake cylinder AEROTEC ${ }^{\circledR}$

- Built-in reservoir
- Parking brake pin optional
- Three ball bearings for smooth operation, long life
- Covered with the AEROTEC ${ }^{\circledR}$ patent, it brings exceptional brake feeling
- Machined from billet on CNC
- To install on 22 mm (7/8") or 25 mm (1") axle or directly on flat surface with 2 screws



## Master brake cylinder - cable operated

- Built-in reservoir, delivered with aluminum support
- Actuated with sleeved cable
- only available for DOT4



## Master brake cylinder - hand operated

All in one: lever, master cylinder, sealed reservoir. To be mounted on Ø22mm (0.866") axle or on support with two 6 mm screws.

| P/N | Description | Weight <br> oz |  | Brake fluid | Price |
| :---: | :--- | :---: | :---: | :---: | :---: |
| HAB01 | Built-in master cylinder | 10.41 | 295 | DOT4 | 244 |
| HAB02 | Built-in master cylinder with mechanical parking brake pin | 10.41 | 295 | DOT4 | 262 |
| HAA03 | Additionnal master cylinder to mount in serie (double bra- <br> king control). To be used with primary HAB01 or HAB02 | 10.02 | 284 | DOT4 | 262 |
| HAC01 | Master cylinder CABLE actuated with support | 10.41 | 295 | DOT4 | 244 |
| HAB04 | Master cylinder with built-in reservoir | 10.41 | 295 | DOT4 | 262 |
| FP-004 | Parking brake for HAB01 and HAA03 | 0,10 | 3 | - | 15 |



## Brake schematics with hand master cylinder and ultralight pressure limiter



## Ultralight pressure limiter

Ultralightweight PRESSURE LIMITER for symmetrical braking on two wheels or one wheel system

- Limits progressively the pressure in the braking system from 25, 35, 45 or 60bars
- Highly recommended to avoid over pressure and damage to the brake
 system
- Must be used with hand master cylinder
- Outlet M10x1
- CNC Machined from solid
- For DOT4 brake fluid OR MIL (on demand)
- Anodized for corrosion resistance


| P/N | Description | Weight |  | oz | grake fluid |
| :---: | :--- | :---: | :---: | :---: | :---: |
|  |  |  |  |  |  |
| LM-001 | Ultralight pressure limiter 20 bars | 2,40 | 68 | DOT4 or MIL | 85 |
| LM-002 | Ultralight pressure limiter 25 bars | 2,43 | 69 | DOT4 or MIL | 85 |
| LM-003 | Ultralight pressure limiter 35 bar s | 2,47 | 70 | DOT4 or MIL | 85 |
| LM-004 | Ultralight pressure limiter 45 bars | 2,50 | 71 | DOT4 or MIL | 85 |
| LM-005 | Ultralight pressure limiter 60 bars | 2,54 | 72 | DOT4 or MIL | 85 |

## "ALIR" anti-skid

Many accidents occurring on the ground are due to a bad control of the brakes. Avoid all these risks with the BERINGER ALIR on your aircraft
The BERINGER ALIR system improves the control of the brakes and helps the pilot to control the brakes.
This Anti-skid in Line Regulator allows the control of the direction on the ground with differential braking. It avoids wheel locking and risk of nose over when applying full effort on the braking pedals.
It reduces the stopping distance.
The BERINGER ALIR system is included in most wheel \& brake kits.



The ALIR system allows the control of the direction on the ground with differential braking.
The system can be installed on certain old aircraft.

## EMERGENCY BRAKING: comparison:

- Blue curve: with ALIR: the pilot applies full braking without any control (similar to a car ABS)
- Red curve: without ALIR: no regulation, the pilot must control the braking (in both cases, conditions are the same: same plane, same brakes) Weight of the aircraft: 1200 kg , braking speed: $\mathbf{7 0} \mathrm{Kt}$


Nota: BERINGER brake pads used int the ALIR system have a friction coefficient that increases with the temperature allowing an increase of the deceleration when the lift decreases on the wings.

Installs in-line; regulates in case of emergency overpressure

- Prevents nose over and improves safety
- Low hysteresis
- Adjustment range: 10-40 bars (or 20-50 bars), with thumbwheel
- Machined from solid on CNC
- For DOT4 OR MINERAL (MIL) brake fluid
- 2 inputs, 2 outputs (thread: M10x1)
(See schematic page 30)

| P/N | Description | Weight <br> oz |  | Brake <br> fluid | Price |
| :---: | :---: | :---: | :---: | :---: | :---: |
| RE-001E | In-line balanced anti-lock regulator 10 to 40 bars | 11.64 | 330 | DOT4 | 133 |
| RE-001N | In-line balanced anti-lock regulator 20 to 50 bars | 11.64 | 330 | MIL | 133 |



## Parking brake valve

## Available for DOT4 OR MINERAL (MIL) brake fluid

- Open/close quarter turn lever operated
- CNC machined from billet, red anodized
- Max. input pressure: 1500PSI (100 bars)
- Optimized for long life
- $100 \%$ protected from corrosion: anodized coating and stainless steel components


| P/N | Weight |  | exit | Brake fluid | Price |
| :--- | :---: | :---: | :---: | :---: | :---: |
| oz | g |  |  |  |  |
| FP-001 | 5,01 | 142 | $3 / 8^{\prime \prime} \times 24$ | E or N | 201 |
| FP-001.2 | 5,13 | 145 | $7 / 16^{\prime \prime} \times 20$ | E or N | 201 |
| FP-001.3 | 4,67 | 132 | $7 / 16^{\prime \prime} \times 20$ | E or N | 201 |
| FP-002 | 4,69 | 128 | $3 / 8^{\prime \prime} \times 24$ | E or N | 201 |
| FP-002.1 | 4,69 | 133 | $3 / 8^{\prime \prime} \times 24$ | E or N | 201 |
| FP-003 | $4 / 80$ | 136 | $7 / 16^{\prime \prime} \times 20$ | E or N | 201 |
| FP-003.1 | 4,80 | 136 | $3 / 8^{\prime \prime} \times 24$ | E or N | 201 |



| P/N | Description | Price |
| :---: | :--- | :---: |
| OT-002 | Tire changing tool for 5" wheels | 99 |
| OT-001 | Tire changing tool for 6" wheels | 114 |
| OT-012 | Tire changing tool for 8" wheel | 377 |
| OHT01 | Torquing tool for M25x1.5 nut | 54 |
| OHT02 | Metric tool kit | 9 |
| ONA01 | Spray lubricant Tire Up | 26 |
| ONB01 | Spray anti-puncture | 21 |
| ONC01 | Brake bleeder tank kit | 0.33L |
| HJA01 | High performance Brake fluid DOT4 | 75 |
| HJA02 | High performance Brake fluid DOT5 Silicone base <br> DOT5 cannot be mixed with DOT4. | 17 |
| HJA03 | High performance Mineral brake fluid MIL-PRF-87257 | 24 |

## BERINGER ${ }^{\circledR}$ tool for tire changing

Specific tire change tool for BERINGER ${ }^{\circledR}$ wheels with conical aluminum spacer: eases mounting of tire on wheel half.

- Plywood flanges steady tire while positioning second wheel half with the O-ring.
- Includes: Plywood flanges, bolts with butterfly nut and conical aluminum spacer


## Brake fluids



- High performance DOT4 brake fluid with dry boiling point at $440^{\circ} \mathrm{F}$ minimum meets FMVSS 116/DOT4 specifications.
DOT4 is yellow colored and it is not compatible with brake system designed for mineral base fluids (see explanation page 6)
- Mineral brake fluid: HIGH PERFORMANCE following spec. MIL-PRF-87257



## Brake bleeder tank

Necessary for an easy bleeding operation
helps the bleeding by sending the brake fluid under pressure in the line through the calipers. Delivered with manometer, hose and small bottle to collect the extra fluid.

## Tire lubricant

Spray of professional liquid soap.

## Spray anti-puncture

To spray into the tire in case of puncture.

Small bottle to collect the extra fluid

## Spare parts:

For all spare parts, please contact us (O-Ring seal / valves / O-Ring valves / wheel clip / clip screw / wheel screw / brake discs / brake pads...)
We will send you the «spare part catalogue ».
The catalogue can also be uploaded from www.beringer-aero.com.
The certified parts are delivered with Form1 ( $10 €$ per P/N; $30 €$ flatrate over three P/N)

## BERIN G ER 2016 Ambassadors ...

## Skip STEWART

Airshow Performer
Pitts Special
" The quest for Performance is to seek more power with less weight. BERINGER is the definition realized in an exquisitely beautiful package. »
Copyright Skip Stewart


## Luca BERTOSSIO

Aishow performer
Jet Swift Segelflugzeug
«I use BERINGER because I fell in love with the feeling on the brake handle when I used it for the first
time...BERINGER is just the best feeling, feedback and performances !»
Copyright Luca Bertosssio

Robby PEDERSEN Just Aircraft Superstol Winner of the LSA class Short landing and take off competition Valdez Mai 2016 with BERINGER Bremsen and Alaskan Bush Tyre. Copyright Roby Pedersen


Greenlight World flight Matevz LENARCIC Dynamic WT9 S «With BERINGER I flew over all the continents, to the summits of Mt. Everest and Aconcagua, and to the North Pole. During my 28 days fast trip around the World, I did not even have any problem with BERINGER wheels. »


## BERIN G ER 2016 Ambassadors...

## Nigel HOPKINS

Aerobatics, ZA
Extra 330
«I am blown away by the BERINGER brake system on my new Extra 330SC. Phenomenal braking performance and reduced overall weight of the aircraft. With no brake friction groung handling is easy both for taxi and pushing the aircraft and as a result brake wear is greatly reduced. » Copyright Nigel Hopkins

Kirby CHAMBLISS, USA
Air show performer MXS
Red Bull Air Race Pilot
Copyright Kirby Chambliss


Michael GOULIAN, USA
Air show performer
Red Bull Air Race Pilot
Edge 540
"I recently switched to BERINGERbrakes on my Red Bull Air Race Edge 540 and absolutely love them. The BERINGERsystem is much lighter than the legacy system on my plane but the stopping power makes all the difference in the world. I simply had to have the BERINGER brakes on my Extra 330 as well."


Copyright Mike Goulian

## Nicolas IVANOFF

Edge 540
Air show Performer
Red Bull Air Race Pilot
The wheel and brake kit for Extra 330 was developped with the help of Nicolas.


## They have chosen BERINGER as original equipment..



JMB Aircraft




## They have chosen BERINGER as original equipment..


courtesy of Cirrus Aircraft



[^0]:    * These fluids may be compatible with other seal materials (contact us for more information)

[^1]:    1 bar $\leftrightarrow 14.5$ psi - 1 psi $\leftrightarrow 0.069$ bar

