

Innovation from STEMME

Like no other name in the world of sport aviation, STEMME stands for highly-innovative products and the highest levels of flight performance. Using the most up-to-date procedures and software tools, our engineering team continues to do research and development to fulfill these expectations. Their efforts have resulted in fundamental innovations which underlie the unique performance and the wide range of uses of the S10-VT and the new STEMME TSA product line.



Side-by-side concept

- allows for a) shared workload (instrument monitoring/handling of the oxygen system), b) eye contact, c) better monitoring of students' performance
- full aircraft control from both ergonomically optimized seats
- one piece canopy with central jettison mechanism
- optimized canopy seal
- high passive safety via the structural center console and crash-worthy design of forward fuselage
- no need for duplication of instruments, leaving more room for advanced instrumentation

Foldable wings

- Reduced wingspan for taxiing and storage. Reduction to 31ft (7.2m) (S2, S6, S8), and 11.2 m resp. 37ft 4in (11.4m) for the S10
- Wing folding can easily be done by one person



Folding propeller for S10-VT

- The retractable, adjustable STEMME propeller is contained in the nose cone. It is activated by extending the nose cone and unfolding the propeller blades by centrifugal force
- Fast (5 sec) transition from powered to un-powered flight and vice versa



Mid-fuselage engine location and remote shaft drive

- Engine power is transferred via a composite drive shaft embedded within the center console between the two pilots. This allows for the engine to be close to the center of gravity.

Engine sub-frame for TSA

- In the TSA family, power plants and accessories are mounted on a sub-frame, reducing removal or installation time to 15min allowing for more efficient maintenance and repair

Landing gear of TSA product line

- Tricycle gear configuration, retractable gear optional. Steerable nose wheel connected to the rudder.
- Wide track and generous spacing between main gear and nose wheel – 6' 6" (2m) in both dimensions.



STEMME—the aviation enthusiasts

When Dr. Reiner Stemme founded the STEMME company in 1984, it was the first certified German aircraft manufacturer in West Berlin. After the wall came down, STEMME was able to re-locate to the Strausberg airport, just to the east of the city.

Today, STEMME AG does more than produce highly-innovative sports aircraft. It's 100% subsidiaries STEMME F&D and STEMME UMS work for outside clients as well. STEMME F&D provides research and development for the parent company, and develops and distributes manufacturing machinery and documentation. Flight systems for environmental monitoring and measurement are the main focus of STEMME UMS, and they have taken responsibility for the Commercial Applications business sector, which supports public and private reconnaissance and remote sensing efforts.

If you require additional materials on individual aircraft models and / or any other type of further information, STEMME will be delighted to provide more detail.

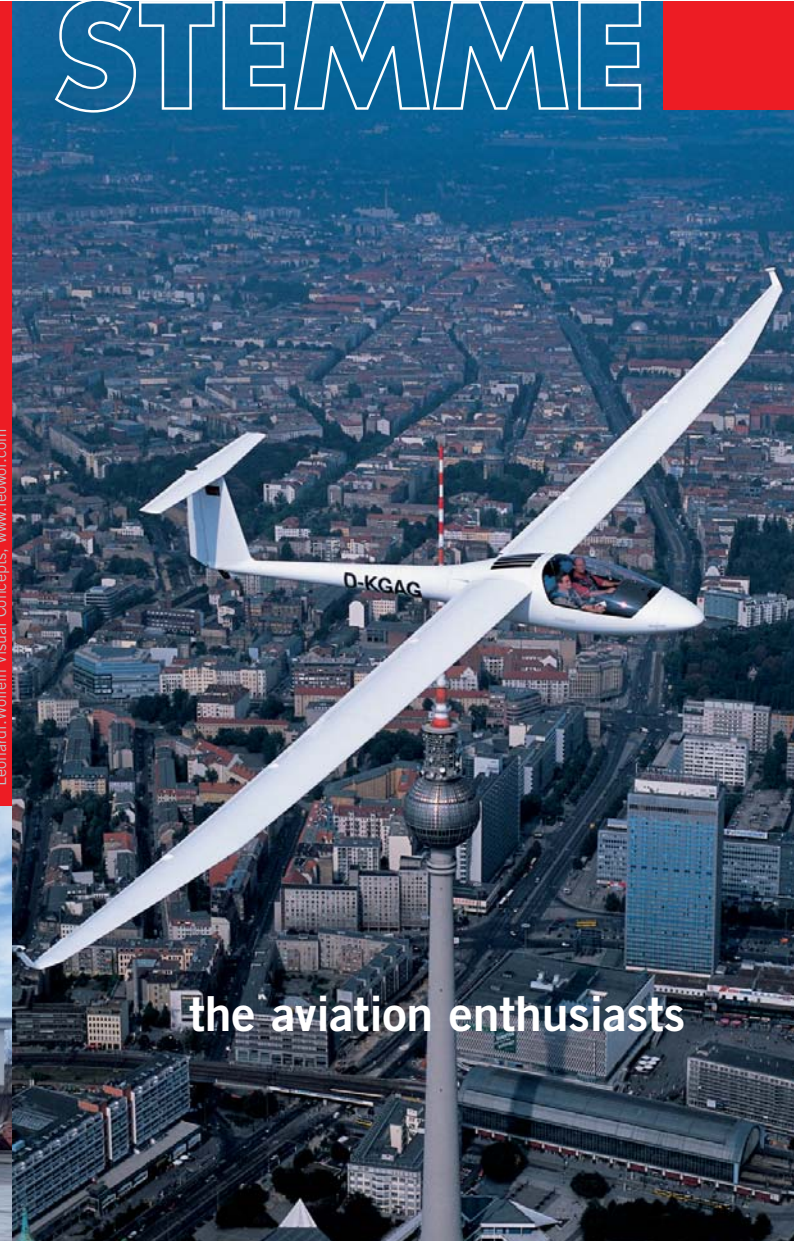
Jan 2004; Construction and equipment are subject to change without prior notice.



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TSA – the new product line

STEMME is introducing a new line of aircraft based on a modular design concept. All of our **Two-Seat-Aircraft** will offer accommodation for two pilots, enjoying the side-by-side seating that has proven so successful in the S10. The new TSA line of aircraft ranges from pure glider (S2), to powered glider (S6), to a touring motorglider (S8). Modular design allows for the utilization of common components in all three models, streamlining production and making it more flexible. They all share a design feature well proven in the S10, namely installation of the engine behind the pilots, near the center of gravity, driving a nose mounted propeller via shaft drive. In order to contain cost, the S10-VT's folding propeller will not be used. A full feathering Muehlbauer prop will be installed in its place. Pilots are protected by a newly developed safety cockpit of extreme strength. The wings are equipped with camber changing flaps and differential flaperons. Laminar flow characteristics of the wing section have been optimized across the full span. The S6 and S8 will be equipped with tricycle landing gear and nose wheel steering. All STEMME aircraft can be equipped with folding mechanisms for the outer wing sections.



Models S6 and S8 feature a wing span of 18 meters. Aerodynamics have been optimized by using integrated winglets specifically designed for these motor gliders' high cruise speeds.

■ STEMME S2

← **side-by-side 60ft (20m) two place glider / wing span acro 60,8ft (18m)**

This glider is optimized for instruction, training, and competition flying – all of this wide range of soaring flight can be enjoyed while sitting next to each other. Camber changing flaps and ballast tanks are standard equipment, the S2 is designed for a glide ratio of up to 1:47 and minimum sink of down to 108ft/min. Due to its optimized controls and its state-of-the-art aerodynamic design, the S2's handling resembles that of a single seat glider. The S2 can be flown equally well from either seat, the seats can be adjusted to accommodate pilots from 5'2" to 6'5" in size. Electrically powered retractable gear and electric trim make operations comfortable. At a later stage, an electric sustainer engine driving a foldable propeller will be made available as a retrofit.

■ STEMME S6

← **the soaring motorglider**

This sporty powered glider featuring standard glider appearance and good soaring potential, is – as you would expect from STEMME – well suited to fast powered flight. The S6 can be equipped with fixed landing gear or retractable gear, and either Rotax 912S or 914F engine. With retractable gear and 84.5 KW power (S6-RT), maximum cruise will be 151kts, and economy cruise will allow a range of 1,297nm (2,400km). At the same time, the S6 is a real glider with a glide ratio of up to 1:39. Even with fixed gear, the glide ratio is up to 1:33. When equipped with a three bladed propeller and Rotax 914F, it is suitable for towing gliders up to a maximum weight of 1,653lbs (as is the S8).



■ STEMME S8

↑ **the touring motorglider**

A powered glider designed for the power pilot. Cockpit height is increased, allowing for a more upright seating position. Instead of using a one-piece opening canopy, two large doors are provided for side entry. Options for engines and landing gear are the same as for the S6. The S8-RT will also reach a maximum cruise speed of 151kts. Maximum range will be 1,270nm (2,300km). The glide ratio with retractable gear is up to 1:38 – 1:32 with fixed gear, making the S8 well suited for soaring flight. A large baggage compartment in the fuselage makes it well suited for long range travel (just like the S6).

■ STEMME S10-VT

↓ **the ultimate high performance motorglider**

The S10-VT is the star of the motorglider class. It offers an unsurpassed combination of high performance soaring potential and efficient travel capabilities under power – no compromise required in either flight regime. The basis for this versatility is the S10-VT's unique power train; a mid-fuselage engine (Rotax 914F), located behind the pilots' seats in combination with a retractable STEMME propeller mounted in the nose – a location which allows for best propeller efficiency. For un-powered flight, the propeller is retracted into the nose cone. It is driven via a drive shaft embedded in the console between the pilots' seats. Equipped with retractable landing gear and a 23m wing, the S10-VT looks like a pure glider and flies like one. Its glide ratio of up to 1:50 is world class. Klaus Ohlmann flew a S10-VT for the world's longest distance of 2463 km in 14 hours soaring the mountain waves of the Andes in 2000. To glider pilots, the S10-VT offers the advantage of complete independence from ground crews during taxi and takeoff, and also allows the pilot to ignore weak local weather and seek better soaring conditions at cruise speeds up to 111kts (206km/h) at 75% power; the maximum range is 929nm (1,720km).

