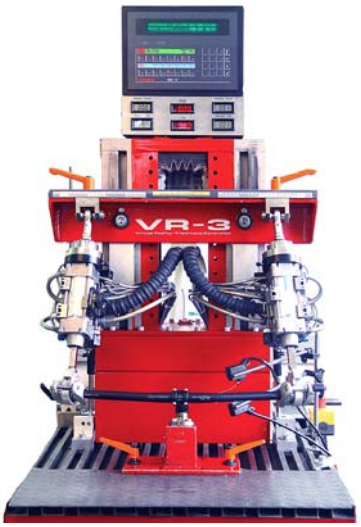
Technology in Detail
Stress corrosion and testing technology



Syntace VR-3 testing machine,

The legendary VR-3 fatigue test

With the existing Syntace testing procedure, the VR-3 testing machine (The Red Monster), we are able to put the hardest push forces and fatigue stress in the world onto stems and handle bars. The one thing that the VR-3 is not able to do is to test the many thousands of hours of permanent pull stress at the screw locations or the quick-releases (for example on screws, spokes, and clamps) that can cause hairline fractures over time.

New: The SSM Stress Corrosion Test

Materials like aluminum, even with the most sophisticated surface coatings, are subject to the risk of fissure development if exposed to permanent pull stress. The oxygen in the air alone is corrosive and can be the cause of such fissures. (The only "protection" would be use in a vacuum or under a protective gas.)

SSM Salt Spray Monster

We have now developed a Syntace testing procedure, in conjunction with Dr. Ing. Walter Schuetz, the former head of the Department for Vibration Strength and Fracture Mechanics at the IABG, Ottobrunn. The "35° alternate immersion SSC-test" is a salt spray test with all threaded connections under permanent, high pull force inside the new Syntace Saltspray Tester. The testing machine, nicknamed "The Salt Spray Monster" (SSM), exposes our stems for the 400 hours of the test to an alternating spray and dry cycle with a highly corrosive salt fog inside a testing chamber heated to 35° Celsius at 100% relative humidity.

The torture in the Syntace SSM-chamber exceeds (by far) the effects of high tension and aggressive environments bike parts experience in the real world.
So far this procedure is unique in the bike industry. Similar tests are only being done in the aerospace and automobile industry with only a few load-bearing parts.

Thick salt crust after 400h hot and wet tests inside the Syntace SSM chamber.

The combination of both tests=the safest stem in the world in its class

Armed with the results, we have developed a changed Syntace production method as well as precise reinforcements in the clamping area of the Syntace Force 99. The unique SSC testing procedure will guarantee you the Syntace-typical long life span, even under long-lasting, massive environmental impacts (see picture).

The combination of SSM and VR-3 testing machines ensures a unique level of quality. This testing methodology enables us to form the Syntace Force 99 into the safest stem in its class in the world.

--From now on, we are using this same testing procedure and the know-how gained from it for all Syntace stems.--

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