



More than just a FLIRT –  
Stadler Rail Group and Angst+Pfister

**FLIRT is the name of one of the successful train models manufactured by the Stadler Rail Group. As an electric low-floor train, the FLIRT is equipped with a power converter that needs to be cooled. Angst+Pfister outfits FLIRT trains with perfectly tailored high-grade cooling conduit systems.**

**Technical application challenge**

The coolant fluid needed to cool the power converter circulates through a hose assembly system. Tight bending radii, countless connection points and an enormous temperature spectrum that ranges from  $-40^{\circ}\text{C}$  to  $+80^{\circ}\text{C}$  put the hose lines to a severe test, especially since a service life of up to 30 years is required. Optimal hose lines must be lastingly impermeable to diffusion and must guarantee trouble-free performance in the face of harsh stresses and strains.

**Technical solution**

Custom-fabricated ASSIWELL® hose lines from Angst+Pfister meet the toughest demands. The all-metal hoses do not become porous when exposed to enormous temperature swings, unlike many conventional elastomer hoses. The corrugated hoses effortlessly cope with even the tightest bending radii. The hose fittings are professionally welded so that connection points do not pose any potential weak spots. Angst+Pfister possesses the highest certification level rating for welding of components for railway vehicles: CL1 according to DIN EN 15085-2. Whether in the frigid Finnish winter or the sweltering southern summer, ASSIWELL® metal hoses stand up to any challenge.

**Angst+Pfister – product solutions in the area of fluid-handling technology**

The customer has access to the entire ASSIWELL® product range, and our APSOfuid® specialists possess the requisite skills to refine the hoses into perfect cooling conduit systems. Long-standing experience in the railway industry enables Angst+Pfister to assist its customers competently, flexibly and with quick response times even during early stages of construction and to optimize hose lines for individual installation situations. The end outcome is highly dependable hose lines with enormous service lives, which results in long maintenance intervals, minimal downtimes and an excellent price-performance proposition.

**Your contact**

Urs Nötzli  
Angst+Pfister AG  
Thurgauerstrasse 66  
8052 Zürich  
Phone: +41 (0)44 306 64 41  
E-mail: urs.noetzli@angst-pfister.com

APSOfluid® is a registered trademark of Angst+Pfister.  
ASSIWELL® is a registered trademark of Angst+Pfister.