

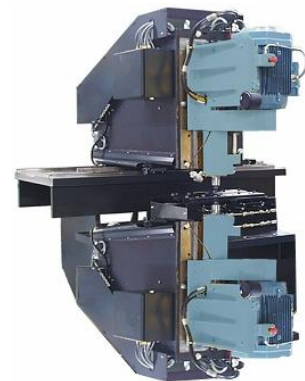
Friction Stir Welding

Friction Stir Welding (FSW) joins two parts with a specially shaped, rotating tool.

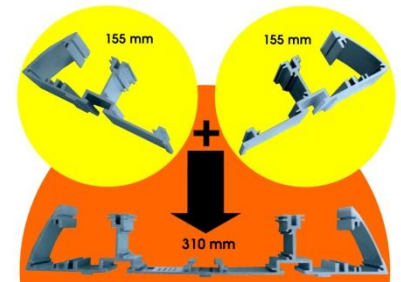
Due to rotation and pressure of the tool frictional heat is produced and the parts soften plastically in the area of the rotating tool without reaching the melting point.

The pin of the tool immerses into the malleable material of the parts and produces by its rotation and shape a homogenous blend along the joining line. The shoulder of the tool forms and smoothes the welding line with only a marginal ridge.

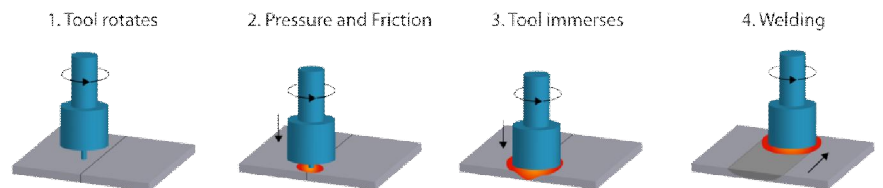
After cooling there is a solid phase joint of the two parts. The process does not need filler wire, welding flux or gas shielding and produces a sealed weld without porosity and without inclusions.



Double-head welding unit



Extruded Profiles extension with FSW



Work flow of the FSW process

EURO-COMPOSITES® uses a **very modern double-head welding unit** which is especially suited for the joining of extruded profiles:

- Maximum dimension for parts: 3000 x 18000 mm
- Maximum dimension for single extruded profile: 500 x 3300 mm resp. 500 x 6000 mm with repositioning
- Maximum distance between upper and lower welding tool: 420 mm
- Maximum welding line thickness (full material, both heads welding simultaneously):
 - 10 mm (in AA5xxx and AA2xxx),
 - 18 mm (in AA6xxx)