

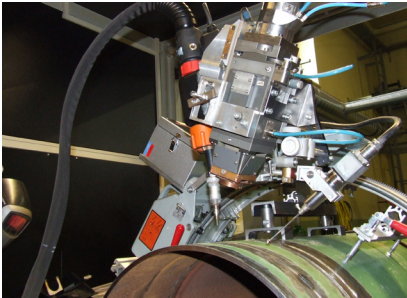


Developments on equipment and welding technology on laser beam GMA orbital hybrid welding

**Equipment**

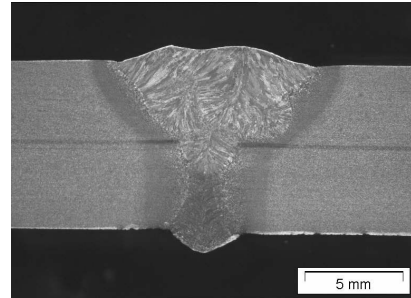
**State**

**Technology**



Laboratory trial with equipment available on the market

2007

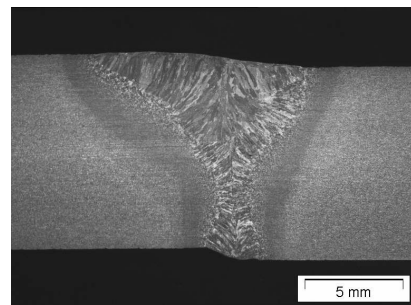


3 passes in 3 orbits at  $t = 8$  mm



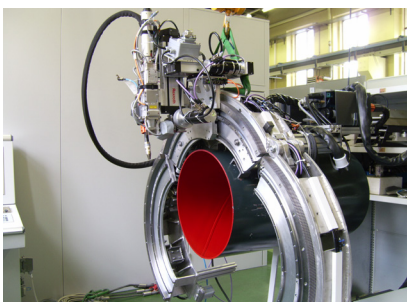
Field trial with equipment available on the market

2008



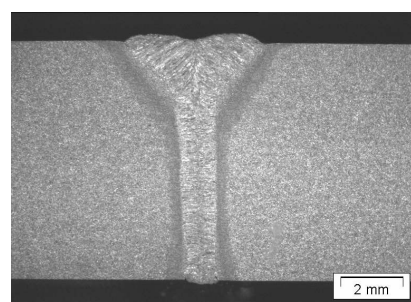
2 passes in one orbit at  $t = 10$  mm

$v_s = 0.6$  m/min



Specialised prototype

2009



2 passes in one orbit at  $t = 12$  mm

$v_s = 2$  m/min

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