

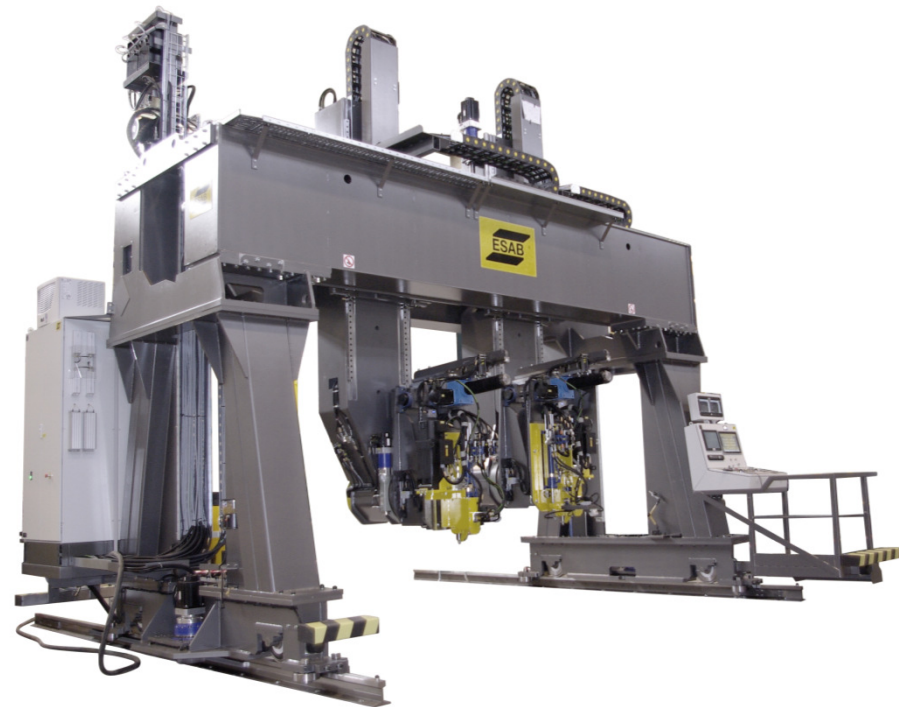
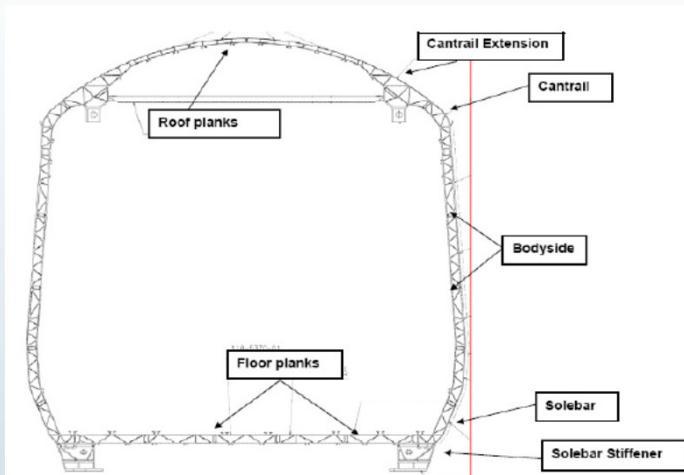
The background of the slide is a photograph of a friction stir welding process. It shows a bright, intense light source at the center, surrounded by a hazy, blue-tinted atmosphere. The foreground is a dark, metallic surface with some visible weld lines and a textured appearance.

FRICTION STIR WELDING

FSW GANTRY - DUAL HEADS

RAIL CAR BODY PANELS

- CRRC, China - largest supplier of rail cars in world
- FSW Gantries with dual heads
- Two Gantries supplied in September
- Floors, roofs and side walls



ARIANE 6 - ESA ROCKET LAUNCHER

Ariane 6

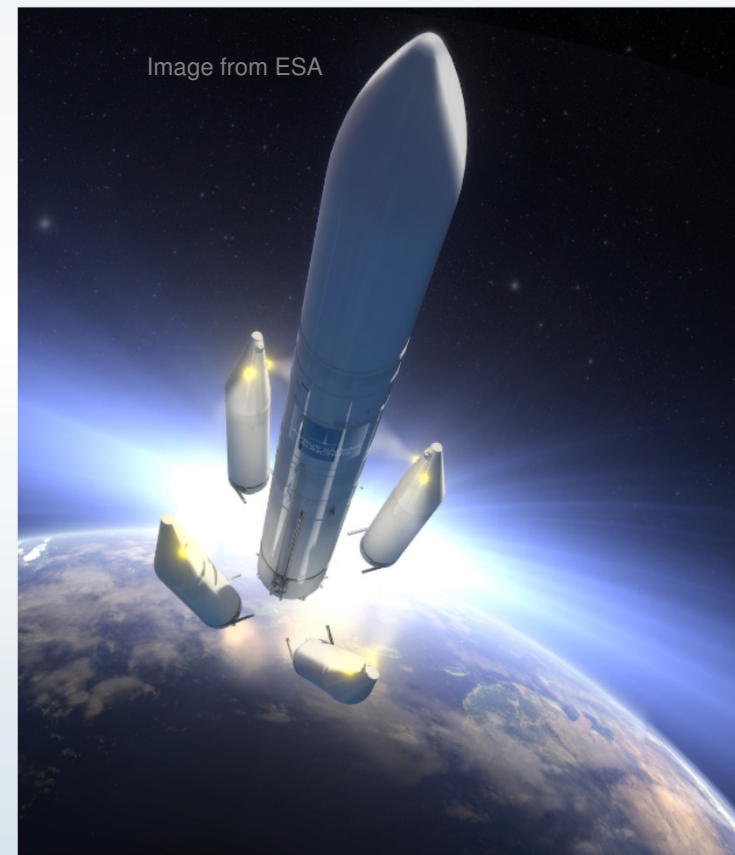
- Height: 63 meter
- Payload: 10 ton

Space flight:

- Geostationary Earth orbit (GEO), altitude 35,786 km (weather- och communications satellites)
- Low Earth Orbit (LEO), (International Space Station (ISS), altitude 330 – 435 km)

Launch

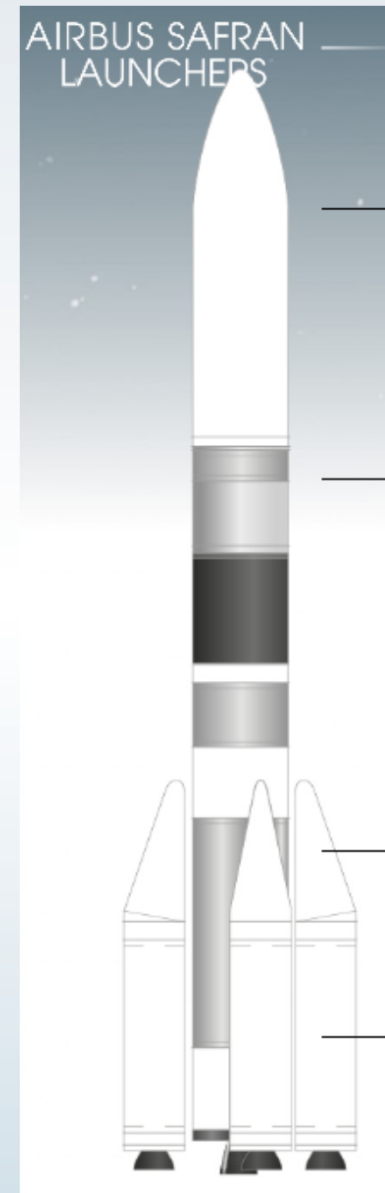
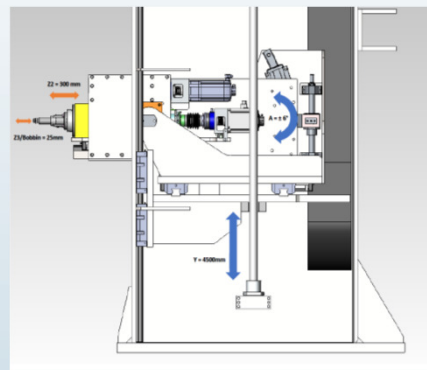
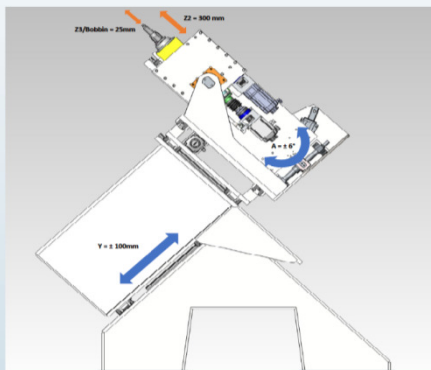
- The Ariane 6 is a launch vehicle under development by the European Space Agency (ESA), with a first test flight scheduled for 2020.



MAJOR FSW PROJECT

AIRBUS - ESAB

- ESAB Automation awarded FSW machine contract for Ariane 6 by Airbus Safran Launchers (ASL).
- Two FSW machines for vertical and circular welding
- Fuel tanks - Hydrogen & Oxygen
 - Diameter 5,4 m
 - Length 20 m
- Installation in August 2017 in Paris, France



SUPERSTIR™ GANTRY

COPPER COILS

Siemens Energy

- Rigid framework
- Strong and high precision motion components
- Work envelope 1,5 * 7 m
- FSW Head 100 kN
- Latest CNC-control system
- 2D welding
- Video monitoring system
- Fixture system
- FSW tools designed for copper



**Copper coils for
generator windings**

NEW FSW HEAD

COMPACT AND POWERFUL

- Compact and powerful for industrial aerospace, automotive and rail car fabrication.
- Z axis actuated by electro mechanical cylinder
- Integration with a 5-axis machine welding 3D joints
- Designed to be used
 - ✓ Conventional FSW
 - ✓ Bobbin tools
 - ✓ Retractable Pin Tools (RTP)
- Welding capacity of up to 18 mm for Al 6xxxx alloys.
- Options
 - ✓ Laser joint tracking systems,
 - ✓ Video cameras to monitor the weld zone
 - ✓ Tool temperature sensors





esab.com

