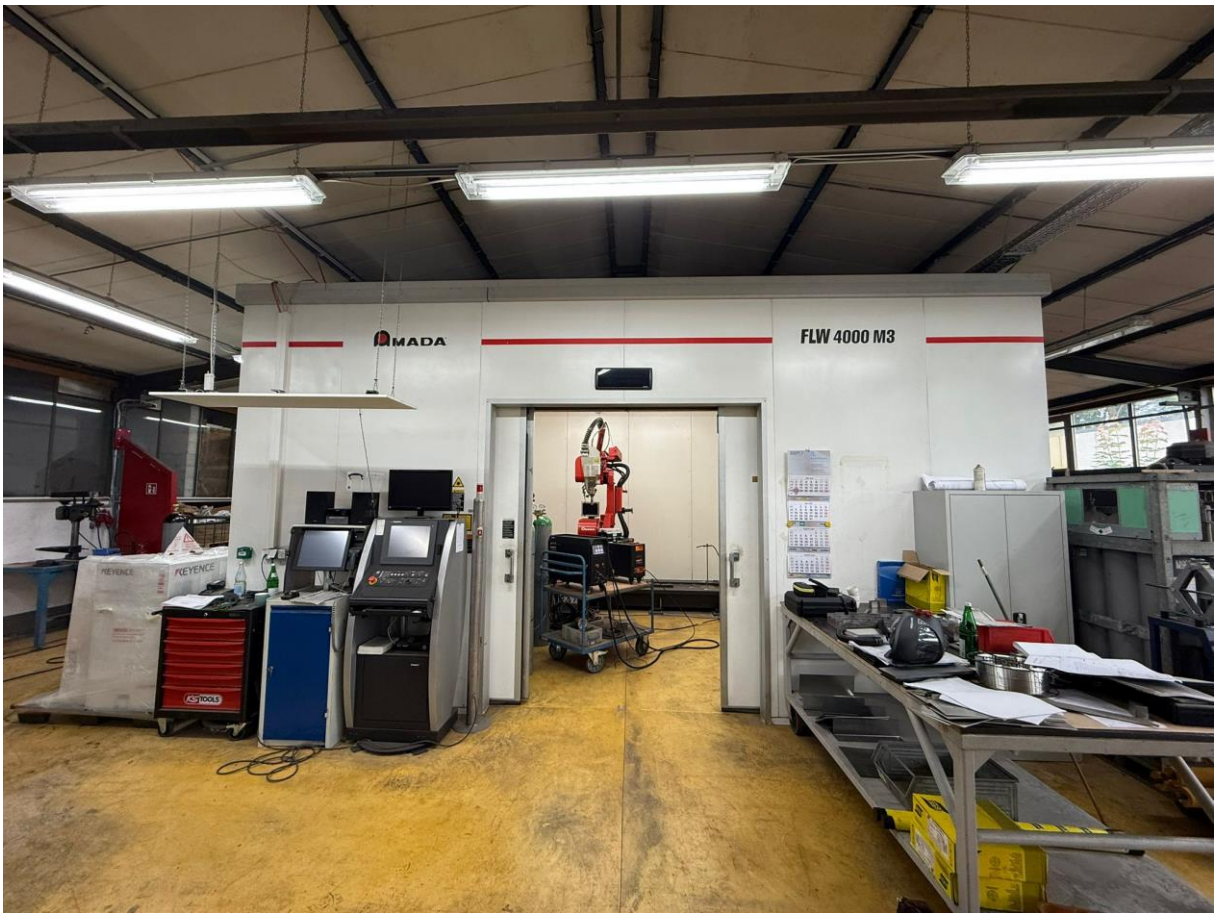
Laser welding cell Amada FLW – 4000 M3

Year 2013
Machine hours: about 16.500 h



The FLW is a flexible and highly productive laser welding cell with extensive equipment. The focused laser beam is used as the energy source to melt or join materials.
The laser welding cell consists of a fiber laser with a 6-axis industrial robot that moves on a guide rail.
The parts to be welded are clamped onto a rotary and tilting table.
The safety cabin is equipped with a sliding door to ensure safe working.

Technical data:
Robot:

Type	M-710iC/50 (FANUC)
Robot control	SYSTEM R-30iA (FANUC)
CNC control	AMNC
Number of controlled axis	6
Reach	2050 mm
Welding head	AMADA
Repeatability	0,07 mm
Security cabin	Complete enclosure

Robotic track:

Length	1500 mm
Speed	60 m/min
Repeatability	± 0,1 mm

Positioning table:

Working height	700 mm
Max. loading weight	500 kg
Rotation axis	± 720°
Swivel axis	± 90°

Oscillator:

Beam source	YLS4000-S2T
Wave length	1070 - 1080 µm
Laser power	4 kW

Control:

Type	Amada
Display	15“ LCD Colour Touchscreen
Controlled axis	Robot and linear axis Coordinates between robot and laser source
Memory	3 MB SRAM
I/O Interface	LAN, USB

Welding head:	Amada
Focus position control	-10 mm bis 50 mm
CCD camera for TAS-system	included in standard
Optical Waeving	included in standard
Cross Jet Nozzle	included in standard
Coaxial Nozzle	included in standard
Welding wire feed	0,8 to 1,6 mm

Weaving system:
The integrated rotating optics circulate the laser beam. This AMADA-patented system allows for larger gaps, with or without filler material, and even for welding aluminum.

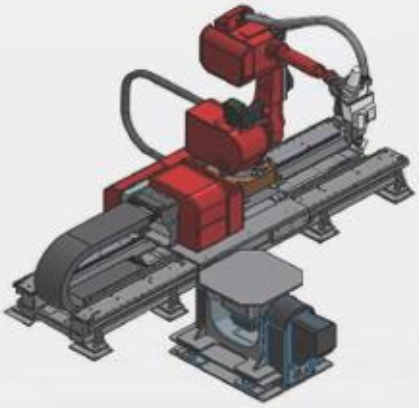
NC focal system
The NC focus system automatically adjusts the optimal focus position for the respective welding conditions. It helps weld simple butt joints as well as hard-to-reach corners.

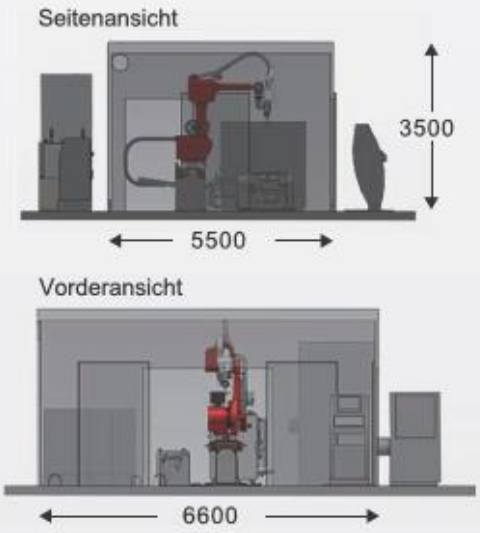
Flux-cored wire and intelligent gas supply
Up to 20 kg of flux cored wire can be carried. When using the TAS (Teach Assistant System), the gas nozzle retracts automatically.

TAS (Teach-Assistant-System)
The TAS system eliminates time-consuming manual teaching operations. Any deviation between the programmed and actual seam path is detected by a CCD camera.

Modell 3

Roboter, Positioniertisch und Roboterfahrbahn






Ytterbium Laser System
YLS - 4000