Shape.
Join.
Look ahead.

FLC - Flexible Laser Cell

A perfect basis for laser cutting and welding

CutFusion

Innovative laser combination method

weil technology

A brand of weil engineering gmbh

Machinery and equipment for innovative forming, cutting and joining systems

Our product range:

Flexible Laser Solutions - Modular and flexible laser welding and cutting cells
Short tube production lines - Welding technology for the efficient production of high-quality short tubes and special applications
Roll-forming machines - The more intelligent way of forming sheet metal
Forming and punching systems - Room for flexibility
Smart Solutions - Maximizing the availability of your production line

weil technology is a weil engineering gmbh brand and incorporates different enterprises, which are market and technology leaders in the field of sheet metal processing. Machines and systems for innovative forming, cutting and joining techniques have been designed and manufactured for the global market within the group since 1987.

Our turn-key and fully automated production lines are primarily found in the automotive sector and in the HVAC, housing and container construction and electrical industries. The high overall expertise provided by the company presently covers a wide range of system solutions. Our focus is on flexible, rational and efficient production while making use of innovative roll-forming, stamping, laser welding and laser cutting technologies.

weil technology clients value the fact that our system concepts are efficient, reliable, and consistently reproduce high quality parts:

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FLC – Flexible Laser Cell

The FLC – Flexible Laser Cell is a modular laser machining system for cutting and/or welding.

Standardization and configurability
The modular machine concept allows the machine to be optimally matched to your needs.

Efficiency
Shorter throughput, material savings and thus reduction of your manufacturing costs make the FLC an economically interesting solution.

Flexibility
Thanks to the use of innovative and automated quick-release devices you are equipped for future machining tasks.

Precision
The machine can be equipped with additional linear measuring systems as an option.

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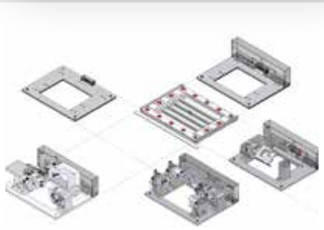
FLC – Flexible Laser Cell

The perfect basis for cutting and welding

Working areas
Depending on the machine concept, varies between 1000 mm and 2200 mm width



Tool changeover through quick-release devices permitting flexible production

Processing optics:
Cutting optics, welding optics, scanners, rotation optics and combinations

Internal and external automation for the production of large batch sizes

FLC
View of the loading side for manual production

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FLC – Flexible Laser Cell

The FLC is a modular machine which is configured for customer-specific cutting and/or welding tasks.

The FLC is configured especially for your requirements and component spectrum.

Automation
The multiple possibilities of internal and external automation depend on the specific task to be solved. There is an internal automation solution available for the feeding or repositioning of parts.

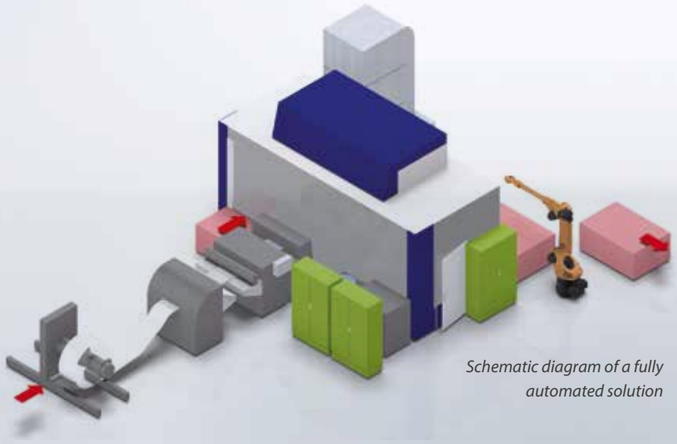
Product changeovers
can be carried out at any time thanks to the interplay between quick-release devices, axis system and dedicated CAD/CAM programs.
Device seat and program are prepared for conversion to a new product.

Accessibility
The machine is easily accessible. The FLC 1002 has two working areas for holding quick-release devices (Y-axis).

Laser
All known laser methods and solutions can be used.

Loading and unloading
Depending on the loading concept, manual and/or automatic loading and unloading processes are possible. Safety locks are provided for manual loading and unloading. Linking with coil systems, palletizing system or test stations is prepared.

Future-proof
thanks to innovative tool change concept for new applications.



Schematic diagram of a fully automated solution

FLC
View of the loading side or fully automatic production

Working chamber

	FLC 2201	***FLC 1002***
Maximum working chamber	*1x 2200 x 700 x 350 mm (x, y, z)*	*2x 1000 x 700 x 350 mm (x, y, z)*

Further design sizes on request.

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Maximum precision thanks to the CutFusion method

Laser cutting and welding in one clamping in the FLC

This guarantees that the holes and contours cut have corresponding connection components and can be welded reproducibly in the same position.

The method was specifically developed to increase the quality and precision of the components to the highest possible level. Cutting and welding operations that belong together are carried out in one clamping without any manual repositioning

Material saving of up to 30%

thanks to innovative Tailored Parts

Throughput times reduced by up to 50%

Unproductive transport times are a thing of the past

Laser integration

The right laser is integrated for the task, depending on the application.

Fields of application:

- Media-carrying systems
- Semi-finished product structures
- Substitution of cast components

Advantages in comparison with the conventional concept comprising two and more machines:

- No transport times between working sequences, no buffering between the laser cutting and welding process
- Material savings thanks to innovative tailored parts
- Reduced logistics efforts and material flow
- Reduction of the throughput time thanks to laser cut of the openings and exact supply of the threaded bushings and connection elements
- Little thermal warpage
- Product quality and component precision are improved
- Integration in network/digital environment of production.

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CutFusion
Example: Half shells with threaded bushing

Laser trimming of the half shells

Welding of the half shells with laser

Laser cutting of the hole

Automated feeding of the threaded bushing

Laser welding of the threaded bushing

Maximum precision thanks to the CutFusion method

CutFusion is a process, especially developed for the FLC (Flexible Laser Cell), which makes it possible to perform both the cutting and welding operations on a component using only one fixture to clamp the part. The result: highest levels of precision can be attained and new design opportunities in sheet metal processing are opened up.

Practical Application: Laser welding of bushings

All processing steps such as laser cutting the hole, positioning the bushing and welding with the internally developed rotation optic are carried out in one fixture thanks to the Flexible Laser Cell and CutFusion process. Releasing and re-clamping the part are not required.
Laser technology allows the bushings to be welded in positions which could thus far not be realized when using conventional gas-shielding welding.

By completely processing the parts in one machine and fixture unnecessary transportation is avoided and production times are significantly reduced.

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