

EcoCFlex



EcoClean

EcoCFlex



The Process

The technology of our *EcoCFlex* cleaning machine combines proven cleaning methods with the flexibility of a 6-axis robot, fully integrated into a treatment module. This design permits fast process optimization or adjustment, involving quick, minimum-effort workpiece changes or integration of new workpiece types.

Individual or palletized workpieces are picked up by the robot at a defined point outside the system and transferred into the multifunctional chamber for cleaning. Once the part is loaded, everything takes place in the same location: cleaning, air drying, and optional vacuum drying. The robot movements can be precisely adapted for specialized cleaning requirements via a workpiece-specific program. The flexible robot is especially beneficial for complex high-pressure applications where the part has irregularly shaped cavities or drill holes. The multifunctional chamber's ability to accommodate a wide variety of different processes also improves cycle times.

Details

The separate cleaning processes take place in a single multifunctional chamber. The chamber contains fixed spray systems for powerful injection flood washing (power IFW), targeted nozzles for precision cleaning, and optional high-pressure deburring.

Replaceable assembly plates on the multifunctional chamber offer added flexibility. Additional cleaning processes can be retrofitted at any time:

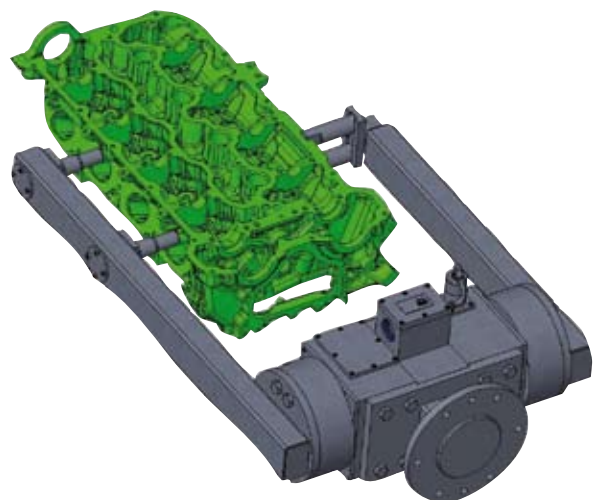
- 10 bar power IFW for pre-cleaning
- 300 bar for high-pressure deburring
- 10 bar for selective and/or general after-cleaning

Additional treatment systems can be mounted outside the multifunctional chamber, depending on specific cleaning requirements.

Optional high-pressure systems:

- Lances for deep drilled holes
- Nozzle rake for smaller areas
- Rotor nozzles for large areas
- Thin-flow and full-flow nozzles for targeted deburring

A general pre-drying of the workpiece is accomplished via intense air blow-off in the treatment module. The blow-off process can be combined with an optional vacuum drier to ensure the product is 100% dry.



Fields of application (e.g.)

- Cylinder heads and crankcases
- Clutch and transmission housings
- Shift valve plates
- Crankshafts and camshafts
- Timing housings
- ABS mouldings

Benefits

The *EcoCFlex* offers more functionality and cleaning space than older machines, even though the *EcoCFlex* has a smaller overall footprint.

- It is modular, enabling the user to add on options at a later time or adapt to any production line.
- The robot is equipped with a newly developed gripper which can be easily adjusted to accommodate different workpieces. It can be used as a purely parallel gripper as well as with a binder. Another new feature is the ability to handle workpieces with a weight of up to 70 kg and to move them with an overlaid rotation axis. An integrated brake ensures quick and safe operation under all circumstances, even when the compressed air supply fails.
- The machine does not need a separate supply module, as it is equipped with an integrated tank and filtration system.
- Its air concept has been optimized so that there are no more steam emissions during loading and unloading.
- The multifunctional chamber enables the integration of different treatment systems.
- Short retooling times for workpiece changeovers or integration of additional types.

The decentral machine concept allows lean and flexible production planning through the whole life cycle of the cleaning machine.



Treatment module with integrated 6-axis robot



EcoCFlex supply module

EcoCFlex

Design

A stable base frame with an integrated bottom tray forms the basic structure.

All elements in contact with media are made of stainless steel or are otherwise protected from corrosion.

All containers, equipment and aggregates are mounted inside a sound-insulating enclosure. The control panels are also attached to the base frame, flush with the outer housing.

Generous maintenance openings and readily accessible aggregates ensure time savings for maintenance and repair. In addition, the system has a crane that enables the robot to be serviced and all important machine components to be accessed.

Easy access during setup and teaching operation is ensured by the accessible design of the treatment module.

Technical Data

Equipment specifications *EcoCFlex*

Length	5,600 mm
Width	3,600 mm
Height	3,600 mm
Weight*	approx. 18,000 kg
Connected electric load**	approx. 210 kVA

Workpiece specifications

Length	750 mm
Width	500 mm
Height	500 mm
Weight*	approx. 70 kg
Throughput	max. 45 pcs./h
Noise level	approx. 78 dB(A)

* without container filling

** Electric load depends on high-pressure pump rating (approx. 50 kVA to 180 kVA).

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