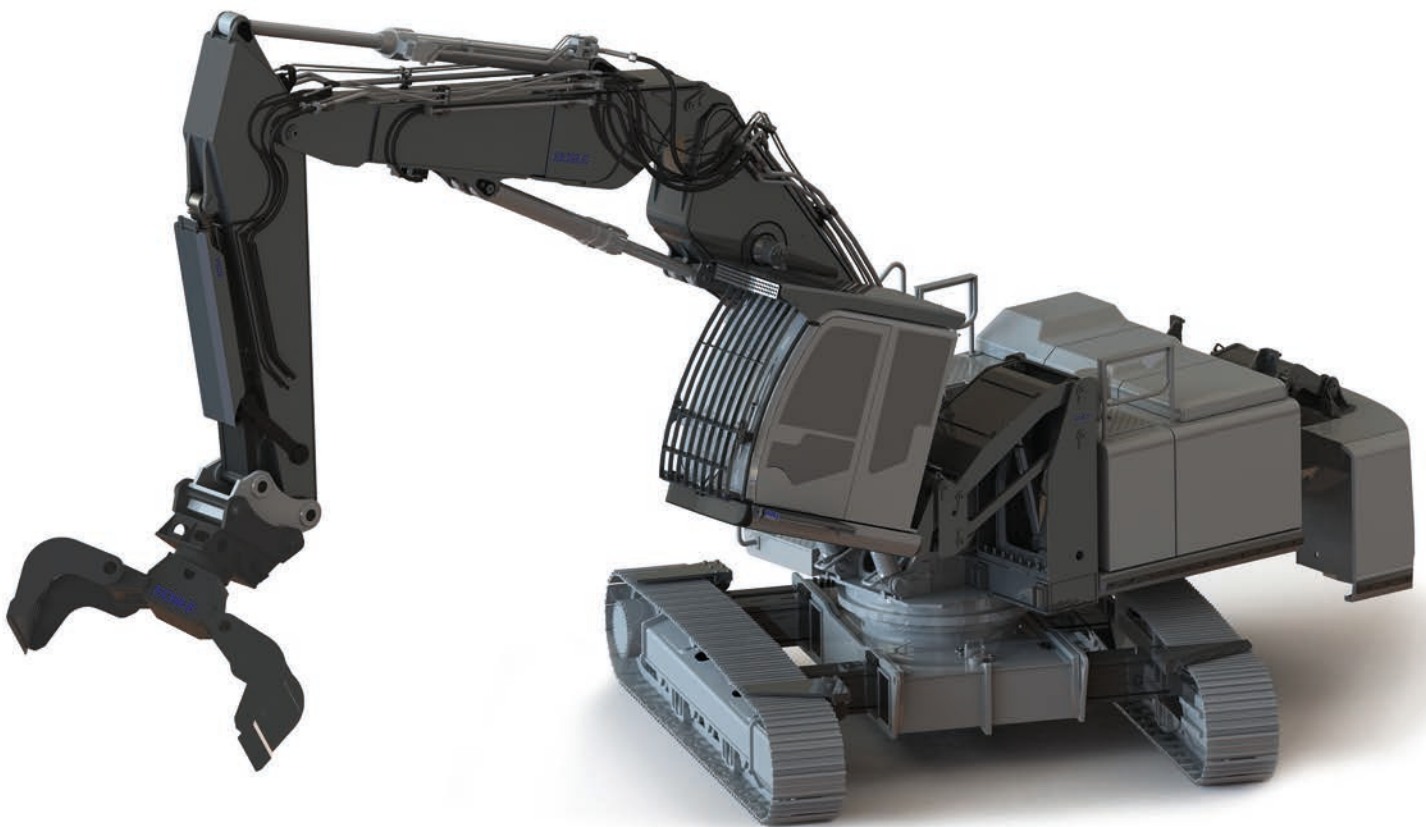


INTELLIGENT SOLUTIONS

FOR CONSTRUCTION MACHINERY



Your leading partner
for individual requirements.



Lothar Echle
CEO

Florian Kappes
Managing Director

| Contents

- 04 Company
- 06 Services
- 12 Products
- 22 References

“In order to achieve maximum efficiency, construction machinery needs to be more and more customised to the needs of the customers. We develop and manufacture what complements the standard – everything is tailored and of highest quality.”

Lothar Echle, founder of the company ECHLE Hartstahl GmbH



ECHLE is THE partner,

...when **intelligent solutions for construction machinery** are required.

Our medium-sized company has been specialised in a wide range of attachments, special constructions for construction machinery as well as protective devices, such as patented cabin protective structures (FOPS) and cylinder guards. With innovative electrifications of construction machines we have been able to consolidate our leadership in the industry.

The decade-long experience of our competent team of skilled workers, Technicians and Engineers is the key to the successful implementation of any project – no matter if repairs, modifications or special constructions. In doing so, we rely on our comprehensive knowledge in development, steel construction, subsequent machining, cover-painting, assembly and service, so that it is possible to **individually accompany and implement any customer request from the idea to the delivery.**

With our around 70 colleagues we are working on about 22.000 sqm at our premises in Wolfach in the beautiful central Black Forest.

Our values

> Performance

Average is not good enough, therefore, we set highest standards for ourselves and our products.

> Trust

We are aware of the responsibility in the implementation of any project and will also support you after the completion of the project at any time.

> Reliability

If we have made agreements, they will always be completely fulfilled. We stand by our word!

> Straightforwardness

Any activities during a project only serve to accomplish the goal, outright and without unnecessary additional expenses.





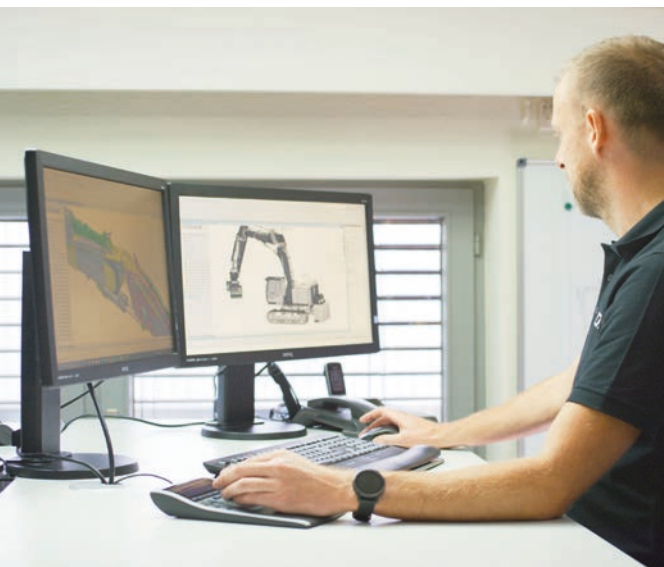




Services

The implementation of any project depends on the specific customer requests. Thanks to our cross-sectoral knowledge we are able to accompany projects from the idea stage to the delivery of the finished machine or also only to offer the support as a service in subsections.

This means that we offer you the complete package of engineering, welding and welding supervision, machining, hydraulic and electrical solution finding, cover-painting as well as repairs – everything from a single source.



Construction & development

Each new project starts with the question, how an idea would become reality.

At this stage, applicable standards, directives and laws are considered, so that the basic conditions for the further conception are set.

In the further course of development, more and more details are determined in consultation with the customer, in order to achieve the desired final result.



Material cuts & bent parts

We offer material cuts and bent parts made of different materials and in different thicknesses.

To do so, simple drawings are sufficient, to obtain your product which will completely meet your requirements.



Welding & welding supervision

We have the necessary certifications and manufacturer qualifications for welding our products. Our own special welding engineers and welding specialists are permanently present when performing the welding which require auditing.

We perform ourselves internal dye penetration testing, magnetic powder crack testing and ultrasonic testing or cooperate with independent recognised institutes and material testing companies.

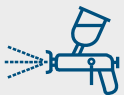


Machining

The machining of components have always been part of our core competences.

With our comprehensive machinery, we are able to perform high-quality machining accurate to one thousandth.

In doing so, we can machine small as well as very large components up to 15 tons, such as complete undercarriages of construction machinery.



Cover painting & powder coating

In our in-house painting and powder coating facility, we can efficiently and flexibly coat surfaces according to the requirements.

Thus, we are able to perform repainting and special painting in a short time at the highest standard. At this, the possibilities range from smallest assembly parts up to whole construction machines.



Hydraulics

Thanks to our years of experience with hydraulic functional principles for machines of different manufacturers in the construction and agricultural machinery industry, we have developed a high systems expertise across all the machines.

This enables us to handle problems with sophistication and consequently conceive and implement the best suitable hydraulic system solutions for each task.



Electrics

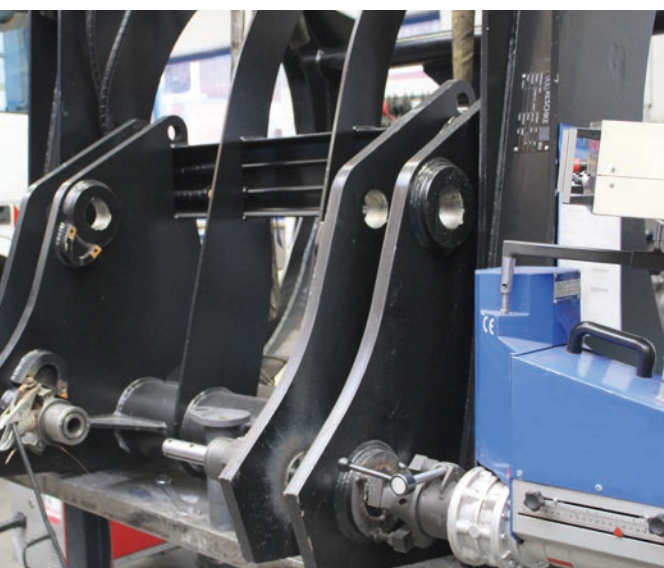
Besides adaptations of the mere electrical system of a machine, the electrical or control technological implementation of overall systems shall be in the focus.

Elements that had to be operated pre-controlled mechanically and hydraulically, can now be implemented with electrical solutions.

Commerce Accessories

You may order accessories for construction machinery such as teeth, glazing, wear plates, bushings, pins and many more from our stocks.

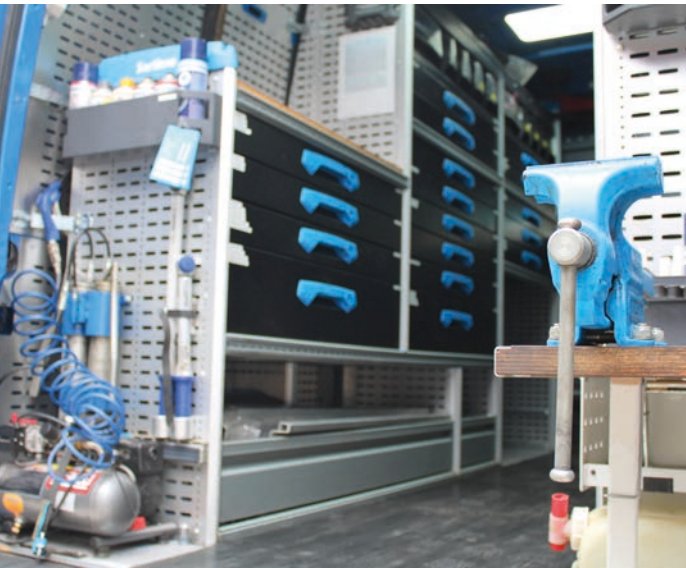
Due to our good network in the industry, we can procure missing accessories or spare parts for you at any time.



Mobile boring mill

Worn out pin bearings, bushing fits and drill holes can be repaired with the help of our mobile welding and drilling technology within a very short time.

It is neither necessary to perform time-consuming disassembly nor to transport your machine to our main factory. We would be more than happy to perform these repair works at your premises.



Repairs & service

Our close network and continuous exchange with all renowned manufacturers of construction machinery enables us to rapidly extrapolate the problem source and to understand the other function chains.

We are able to repair all types of defects, either of the steel construction, electronic or hydraulic system in our main plant at Wolfach. With the help of our specialised tools, we also offer repairs and overhauls at your premises.

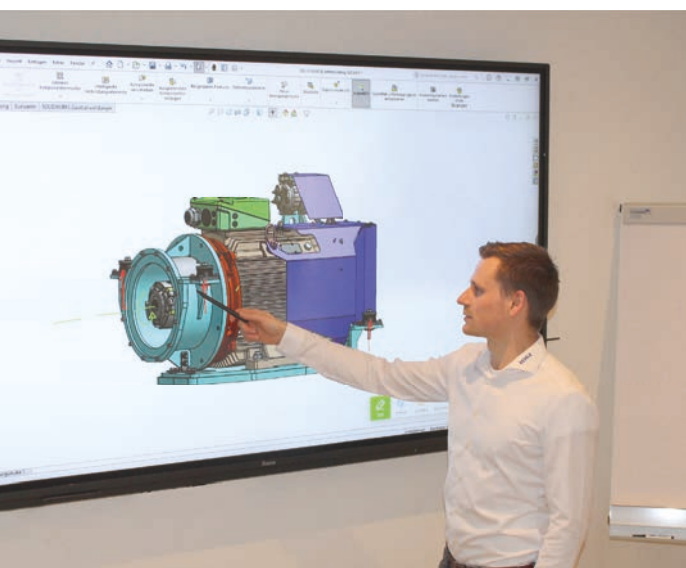


Commissioning

The first commissioning ensures the correct functional parameters and is indispensable for a long-lasting operation of a new product.

Simultaneously, it is possible to give practical application examples and hints to the user.

All this is performed targeted and customer-oriented, in order to meet the specific needs.



Training courses

In order to enable you to gain optimum benefits from your new product, we offer product training courses for manufacturers and distributors.

The deeper knowledge transfer of the theory shall optimise the practical application later on, in order that the participants would finally become product experts.

Such training courses can take place in our site at Wolfach or at your premises.



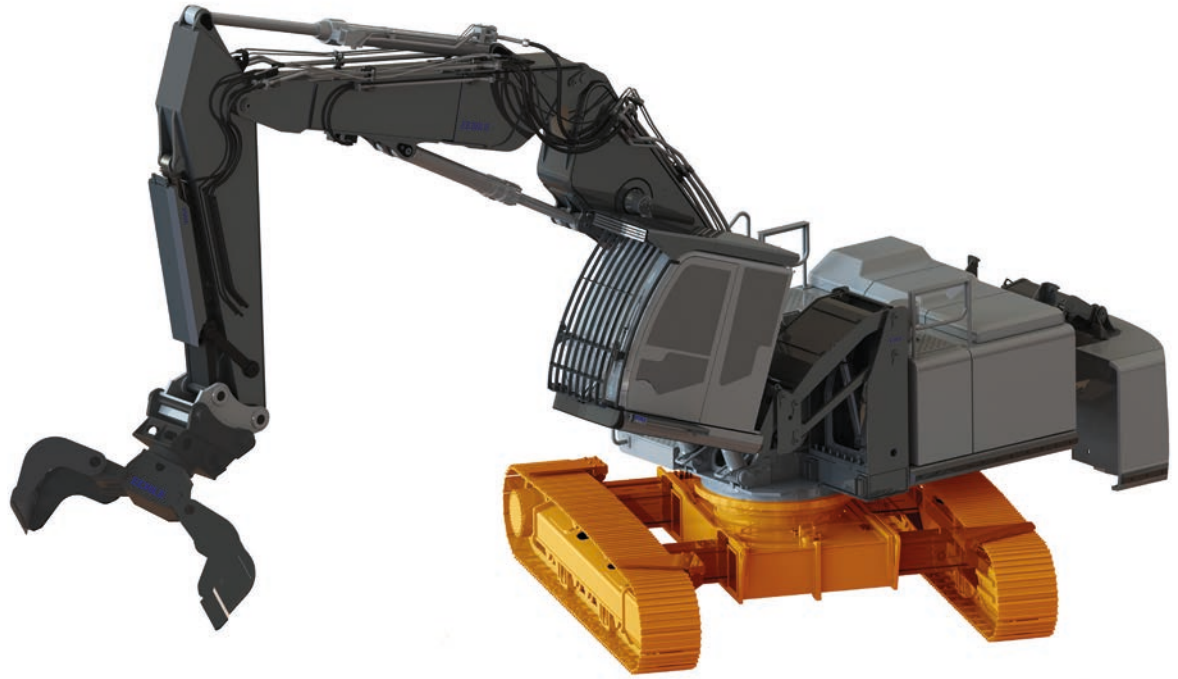


Products

Construction machines will more and more become individual projects – ECHLE will deliver the corresponding knowledge.

Beside the custom modification of construction machinery, we are known as the leading manufacturer for protective systems. We continuously develop and produce new innovative solutions for machines of any manufacturer for subsequent electrification.

These ground-breaking solutions will be specifically adapted to the later range of application. Therefore, fully-electrical and hybrid-technical implementations already belong to our day-to-day business.



| Modification of undercarriages

➤ **Hydraulically adjustable undercarriage**

or telescoping undercarriage serve to improve the stability when working with long working equipment and heavy attachments.

It is possible to retract the width of the undercarriage subsequently corresponding to the width of the upper carriage to allow safe transporting of the machine.

➤ **Narrowing the undercarriage**

will be performed in order to facilitate working in restricted space conditions and to guarantee easier transportation.

➤ **Expansions of the undercarriage**

serve to improve stability when working transversely to the undercarriage.

➤ **Lengthening of the undercarriage**

leads to an increase in stability when working lengthwise to the undercarriage.

➤ **Chain scrapers**

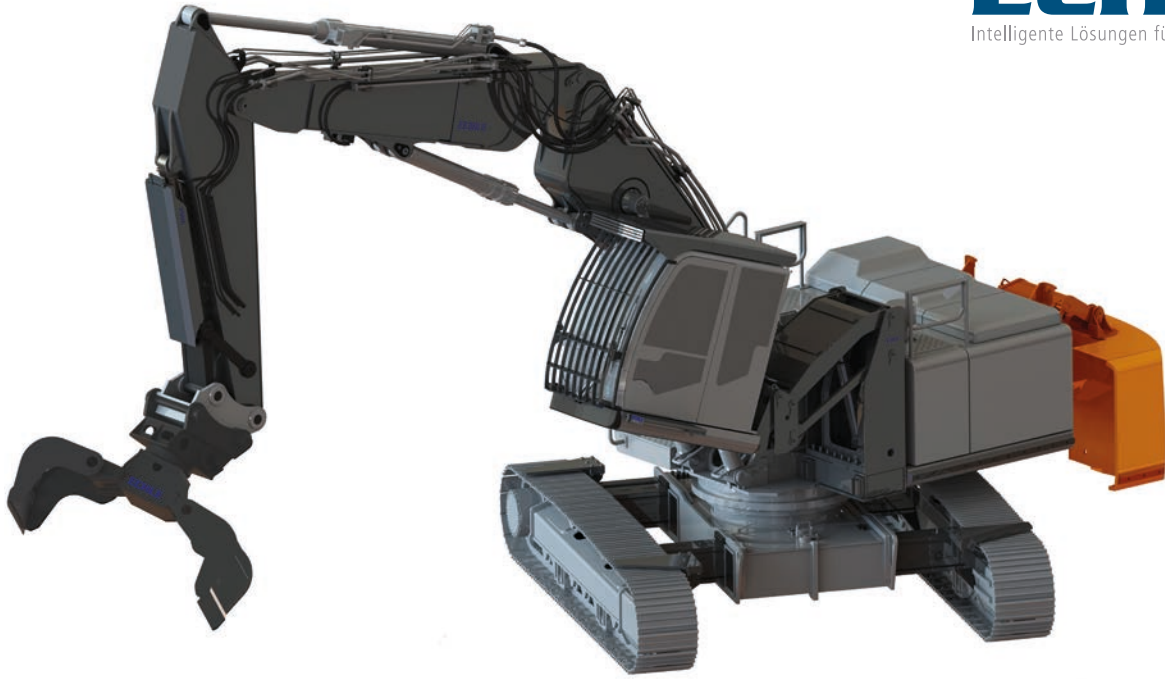
are mounted on both sides of the running gear. They avoid that building debris or steel parts would enter into the crawler chain and thus protect the upper carriage against damages.

➤ **Dozer blades / support blades**

serve to level surfaces and to brace the machine.

➤ **Dome covers**

protect the electrical and hydraulic rotary transmission.



Modification of counterweights

- **Hydraulically removable counterweights**
are decisive to attain a required transport weight.
The counterweight can be set down at the touch of a button, so that a separate transport is possible.
- **Additional counterweights**
can be implemented as firmly welded intermediate plates or as plates which are screwed underneath the existing counterweight. This has an advantageous influence on the bearing load and therefore enables the machine to be used in a more versatile way.
- **Individual counterweights**
can be manufactured to meet customer requests, in order to adapt them to their conditions.



Modification of the upper carriage

➤ **Electrification with a trailing cable**

are a good choice, where the necessary infrastructure for cable-operated machines is available and the machines are used stationary.

A continuous power supply without charging times will be ensured by a trailing cable or by a cable drum.

➤ **Electrification with rechargeable batteries**

are the solution for machines of higher mobility, which require alternatives to the cable operation.

➤ **Electrification as hybrid**

allow the application-specific change between diesel and electric drive.

➤ **Ram protections**

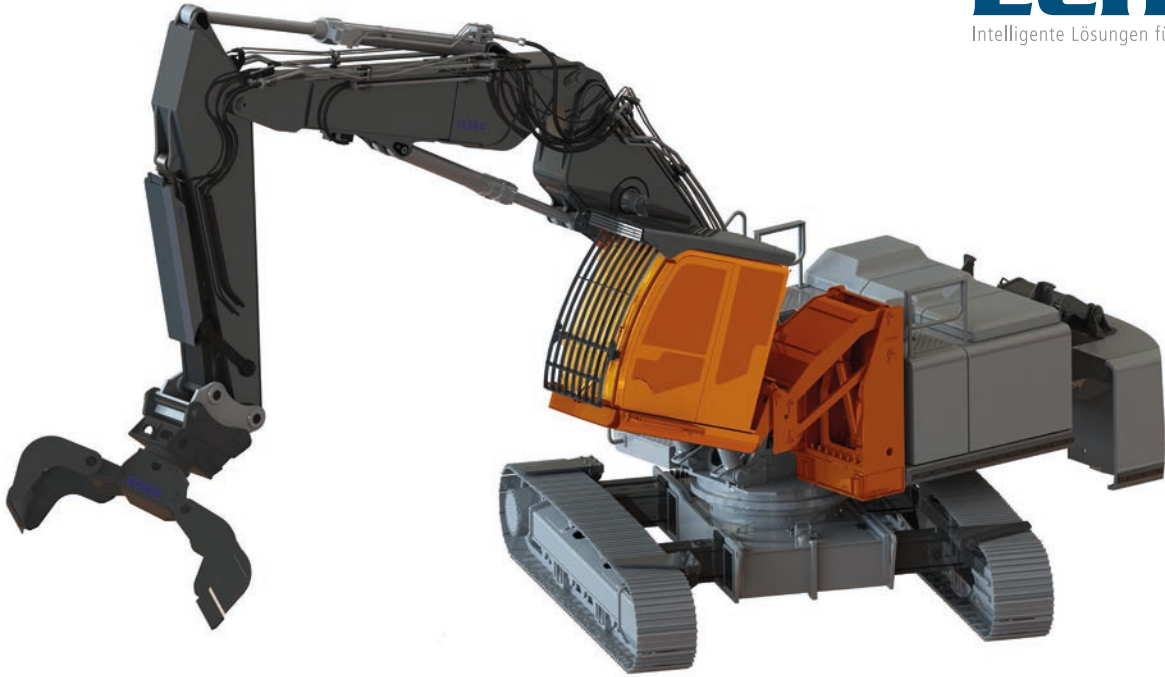
made of steel and hard rubber are best suitable for the lateral protection of the upper carriage.

➤ **Reinforcements**

are additionally added to meet the customer wishes, such as reinforced underbody panels, in order to protect the components of the upper carriage.

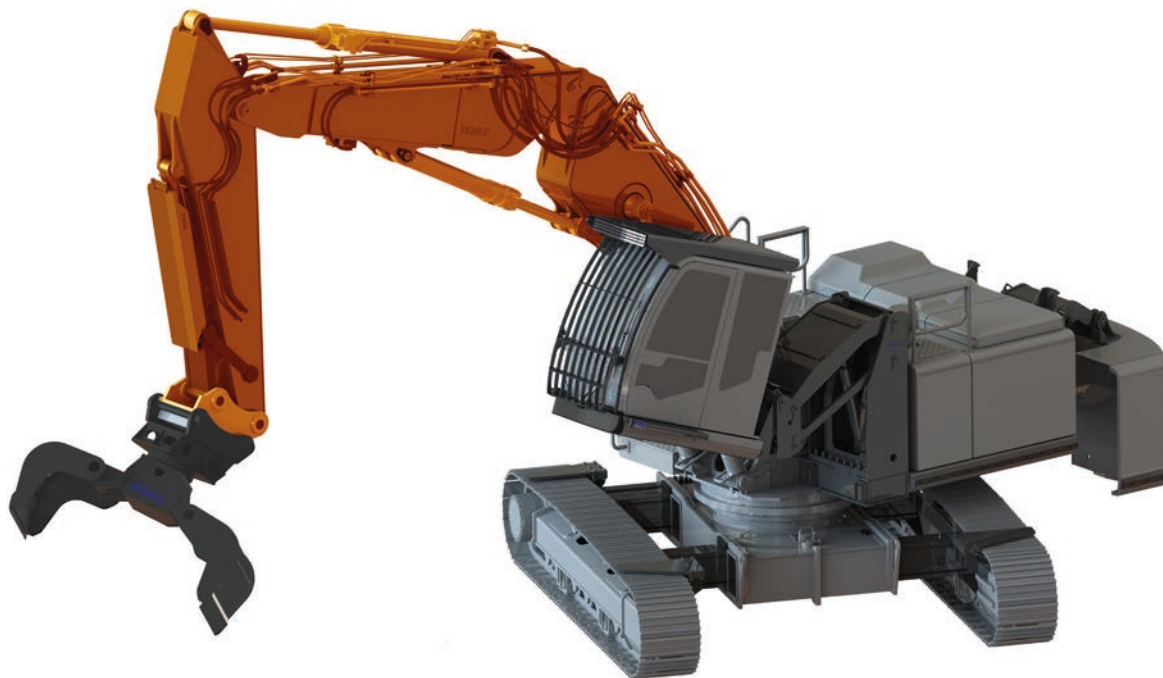
➤ **Protective structures**

are provided to protect components of the upper carriage.



| Cabin modification

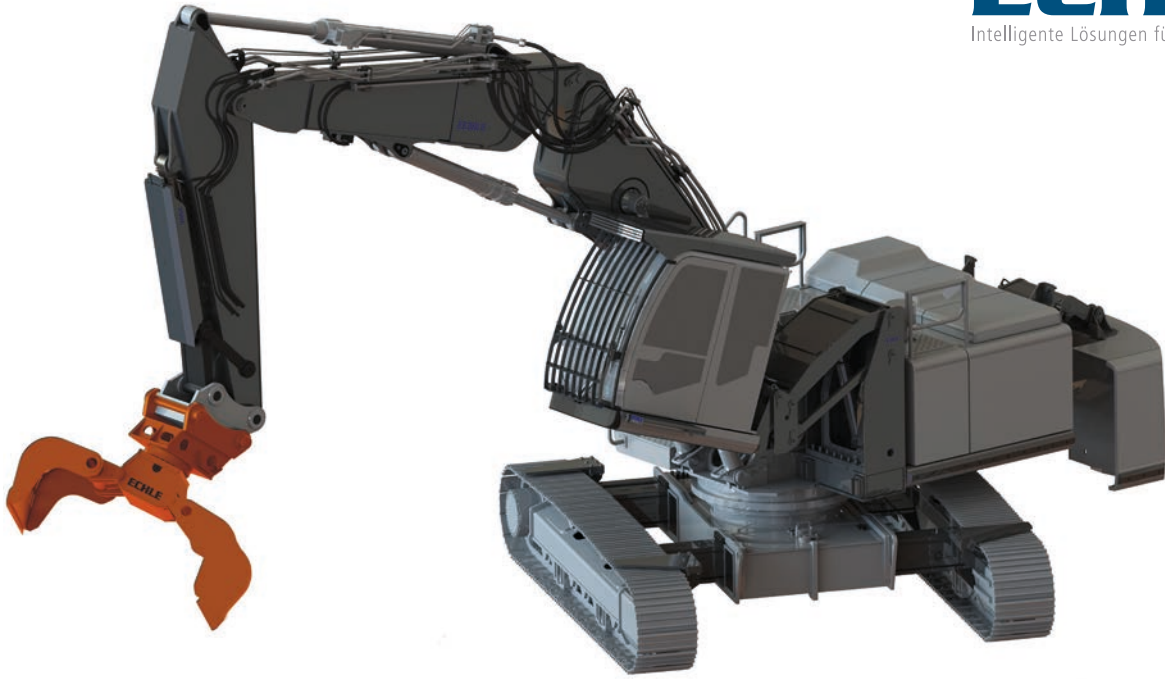
- **Lifting and tilting cabins as well as lift-tilt cabins**
are the right choice for demolition works and material handling.
Thus, the machine operator obtains optimum visibility while working.
- **Protective glazing**
for the front and roof panel provides the best possible protection with a minimum restricted field of view. This may be polycarbonate glazing as well as laminated safety glass of any resistance classes.
- **Tinted windows**
provide an ideal sun protection and optically enhance the machine.
- **Driver seats**
for maximum seating comfort can be individually adapted to the requirements or completely replaced.
- **Joysticks**
will be adapted according to the customer requirements and would therefore have higher level of functionality and better ergonomics.



| Boom modification

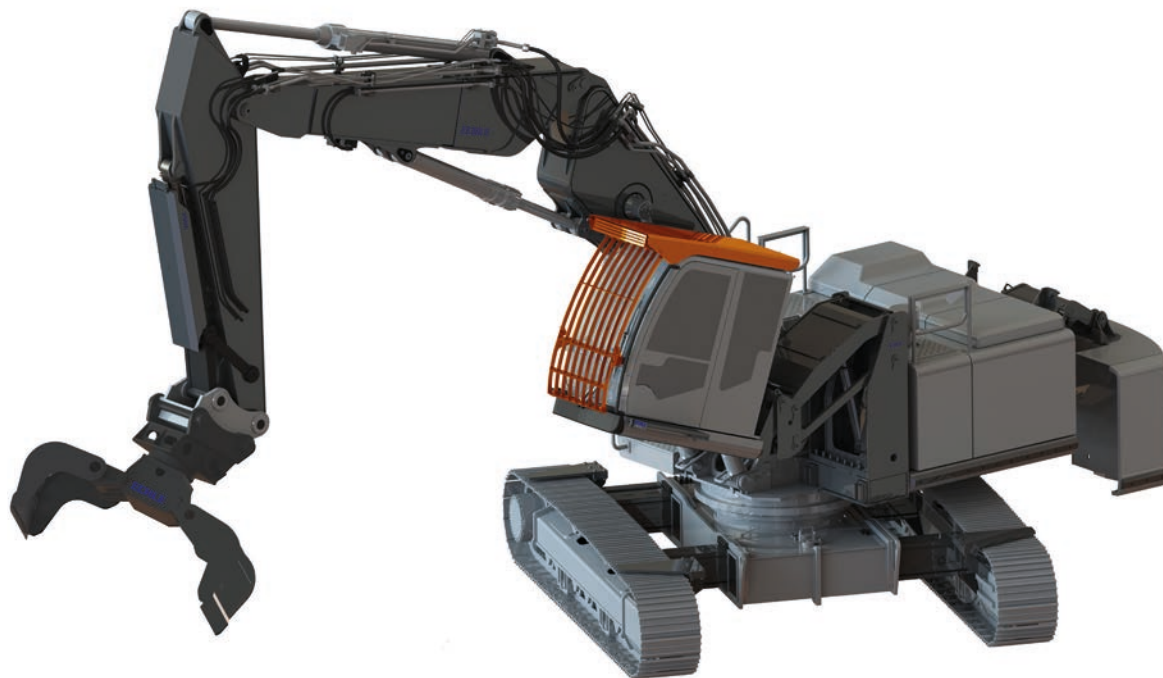
- **Quick-change systems**
are the ideal solution for switching between different equipments such as from a demolition equipment to an earthwork equipment.

A hydraulic locking as well as quick couplings allow to replace an equipment within a few minutes.
- **Manufacture of new booms**
as demolition, adjustable, long-reach booms, deep digging, face shovel, industrial booms. Other types can be developed and manufactured for any field of application.
- **Boom stretching / boom extension / boom shortening**
serve to attain the desired working range.
- **Protective structures / cylinder guards**
help to avoid machine breakdowns and the purchase of spare parts.
- **Stick extensions / stick shortenings**
allow to attain the requested working range.
- **Additional sticks**
are used for a temporary extension of the equipment.



| Attachments

- **Buckets**
to excavate material can be manufactured as requested by the customer with regards to shape and size.
- **Grapples**
to break off and sort material can be manufactured customized.
- **Hammers**
to crush materials such as stone, concrete or rocks are developed tailor-made.
- **Shears / pulveriser / crusher**
are used to destroy reinforced concrete components and are manufactured by us according to the required crushing force.
- **Loading shovels**
are provided to be used on wheel loaders in accordance with the application.



Protective structures

- **Retractable FOPS (ISO 10262) – THE ORIGINAL**
 retracted in just a few steps for a clear view. It is also perfectly suitable for mobile excavators. Thus, it is the allrounder which guarantees clear view in the earthwork without the disassembly of the front protection.
- **Hinged FOPS (ISO 10262)**
 achieves a little installation height and thus transport height due to its low protective roof. Moreover, easy access to the front windscreen will be allowed thanks to the supported folding mechanism.
- **Frame-mounted FOPS (ISO 10262)**
 is designed for particularly tough applications (e.g. in stone quarries) and provides for highest safety due to the additional frame structure.
- **Polycarbonate FOPS (ISO 10262)**
 is the first FOPS without grid braces for an unrestricted view in any work situation.
- **Roof hatches**
 are optional and additionally ease the cleaning of the roof panel.



| Accessories

- **Handrails / steps**
provide for an easy and safe ascending and descending.
- **Dust suppression systems**
avoid the spreading of the dust in the environment and also provide for a comfortable working process such as for demolition or underground applications.
- **Magnet systems**
serve to lift loads in the scrap handling and loading of material.
- **Central lubrication systems**
are used for the automatic lubrication of all bearing positions on the machine.
- **Miscellaneous**
such as quick-change units, lighting systems, camera systems, wiper systems, control systems and machine controls are also included in our product portfolio.

REFERENCES





ECHLE is your supplier for:

Special constructions

- > Hydraulically adjustable undercarriages
- > Undercarriage widening
- > Narrowing of the undercarriage
- > Additional counterweights
- > Removable counterweights
- > Lifting and / or tilting cabins
- > Adjustable booms
- > Demolition booms
- > Long-reach booms
- > Industrial booms
- > Face shovel booms
- > Deep burrowing booms
- > Boom stretching
- > Boom extension
- > Stick extension
- > Additional sticks

Electrification

- > Cable-operated solutions
- > Hybrid solutions
- > Solutions with rechargeable batteries

Cabin repairs

Protective glazing

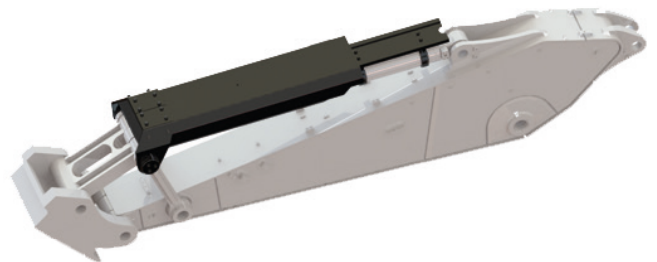
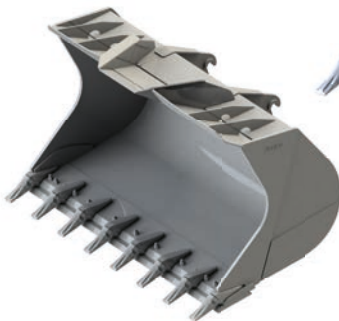
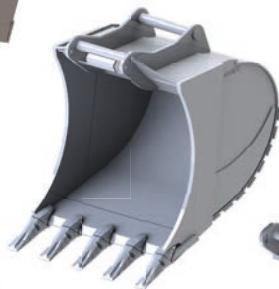
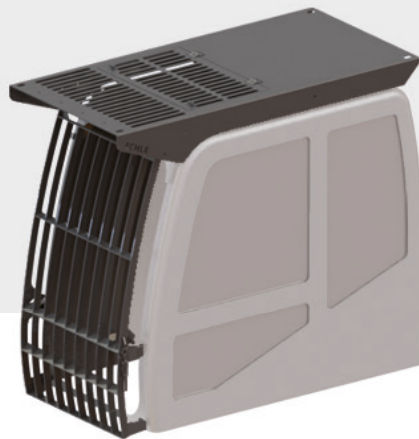
Attachments

Accessories for construction machinery

FOPS (ISO 10262)

- > Retractable
- > Hinged
- > Frame-mounted
- > Polycarbonate

Cylinder guards and many more



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