

elobau 
sustainable solutions

Tame the Beast

WITH THE NEW ROBUST
JOYSTICK JE





The JE is designed specifically for construction machinery. No ifs, ands or buts. The tougher the application, the more comfortable it feels.



STEFFEN ZODEL
PRODUCT MANAGER

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WE PROUDLY PRESENT
A NEW KIND OF JOYSTICK



**ROBUST
JOYSTICK**

JE

BY **elobau** 



We have been supplying the Off-Highway market with innovative controls and system solutions since 1972. We see ourselves as innovation drivers with the highest quality standards. With an above-average vertical integration of 90% and seamless in-house processes, we develop the right solutions for our customers. Genuine quality – made in Germany.

THE NEW ONE.

ELOBAU | ROBUST JOYSTICK JE

An evolution of our joystick portfolio, the Robust Joystick JE offers even greater safety and comfort in the harsh working environment of construction equipment. As the central control element for the latest generation of high-tech vehicles, it gives the operator exactly the power, control and precision they need to achieve perfect results. Even on the longest days.



ROBUST

INDIVIDUAL

VARIABLE

RELIABLE

DURABLE

COMPATIBLE



The power of control.

Tame the Beast

Loud. Dirty. Cold. Where construction machinery is used day in and day out, strong nerves are required. With a joystick in your hand, you become part of the machine and the machine becomes part of you. Everything obeys your command.

Add the new elobau Robust Joystick JE and get the most out of your vehicle with the right control element!

DEVELOPMENT HISTORY

Inspired by YOU

Potential for improvement often only becomes apparent with use. By listening closely to customers, we have been able to identify their key needs and wishes. Our goal is to make the best even better for you, because innovation is in our DNA.



MAKING THE BEST EVEN BETTER.



THE APPLICATIONS

Built for you

'Cause you build the world. The new Robust Joystick JE has been designed specifically for the harsh construction environment. With an extremely long service life (> 3 million test cycles and additionally 600,000 in Arizona dust) it can withstand even the most adverse conditions.

CRAWLER EXCAVATORS | MOBILE EXCAVATORS | MINI EXCAVATORS | BACKHOE LOADERS | DUMPERS | TELEHANDLERS | WHEEL LOADERS



THE NEW FEATURES AT A GLANCE

Work like a machine.

To get the most out of powerful construction machines, the new Robust Joystick JE offers full control with innovative technology in the smallest space.

01
PRESENCE
DETECTION

02
ERGONOMICS &
SURFACE FINISH

03
HANDLE
HEATING

04
WEATHER-
PROOF

05
FUNCTIONAL
SAFETY

06
VIBROTACTILE
FEEDBACK

THE HANDLE

POWER IN
YOUR HANDS



THE HANDLE

01 PRESENCE DETECTION

READY WHEN YOU ARE

- The joystick is activated when two sensor points on the sensor foil within the handle are touched. This prevents accidental joystick activation and possible machine movement which could lead to accidents.
- Also detects with dusty, dirty and wet hands – even when wearing gloves.
- Sub-functions can be individually programmed to suit customer requirements.



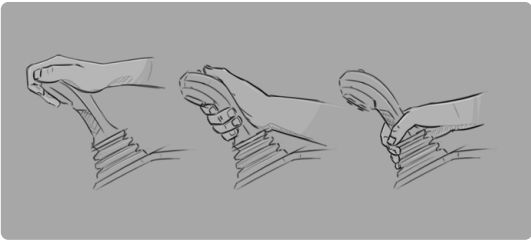
‘Excavator operators can position their hands in various ways on the joystick while operating the machine. To accommodate all operator preferences, the presence sensor foil is installed throughout the handle.’

EDUARD ZANG / BUSINESS DEVELOPMENT

02 ERGONOMICS & SURFACE FINISH

FEELS GOOD

- Improved ergonomics to ensure fatigue-free working.
- The symmetrical and inwardly sloping handle encourages different operating preferences and allows for different grip positions.
- Two button options are available: flat or dome-shaped for better cognitive ergonomics.



- A large contact area for the thumb ensures improved comfort.
- The fine-pore surface promotes a secure grip, ensuring that the joystick does not slip out of sweaty hands.

04 WEATHERPROOF [IP6K9K]

DIRT AND WATER DON'T STAND A CHANCE

- IP6K9K protection ensures the joystick can be used in all weather conditions Inside or outside the cabin.
- The two main shells of the handle are completely sealed during production.
- The buttons and thumbtips are completely impervious to water and dirt thanks to high quality rubber gaiter.



05 FUNCTIONAL SAFETY

INTEGRATED BODYGUARD

- The high Performance Level of several components and functions makes working with the machine safer for the user.
- Integration into the machine's safety architecture is greatly simplified. Plug and play – and off you go!



03 HANDLE HEATING

WARM HANDS, FULL CONTROL

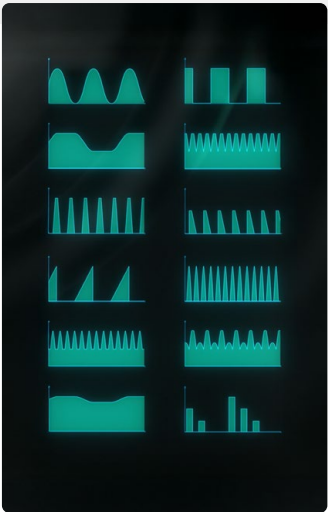
- Direct heat for increased comfort in cold environments with a heating foil around the fingers.
- The joystick heats up when activated, just like seat or steering wheel heating.



06 VIBROTACTILE FEEDBACK

FOR A SAFE ENVIRONMENT

- Efficient and safe communication between man and machine in the noisy environment of a construction site.
- A vibration motor in the joystick handle generates a strong and effective vibration.
- The frequency and intensity of the vibrations can be individually adjusted.



- The vibration effects make operation more intuitive, which can reduce training time and the risk of operating errors.

Safety First!



Safety is the top priority for mobile machinery – whether through legal or normative requirements or through a comprehensive risk assessment.

Functional Safety ensures that electrical or electronic protective systems operate reliably in an emergency and minimize risks by detecting and eliminating systematic and accidental faults.

Several components and functions of the joystick fulfil a high Performance Level, which simplifies integration into the safety architecture of mobile machines and saves time and costs.

With the elobau Robust Joystick JE, you can rely on the highest safety standards. Thanks to its outstanding Performance Level, it can be seamlessly integrated into the safety architecture of your machine – for maximum reliability and protection in use.

ADVANTAGES THROUGH SECURITY



Protection of people and the environment

When a safety system performs its function in an emergency, it protects people and the environment. It should significantly reduce potential risks by preventing systematic failures, detecting and responding to failures.



Increased reliability

Our product operates under the most difficult conditions and minimizes the risk of accidents.



Compliance

Many industries have strict safety regulations that must be adhered to. The relevant construction machinery standard for the JE Robust Joystick is

EN ISO 13849

THE FOLLOWING COMPONENTS AND FEATURES MEET THIS PERFORMANCE LEVEL:

01	Joystick base	PLd	according to EN ISO 13849
02	Thumbtips	PLd	according to EN ISO 13849
03	Buttons	PLc	according to EN ISO 13849
04	Presence detection	PLc	according to EN ISO 13849

The Center-piece

The sophisticated joystick base for a new user experience. With many additional options for customer-specific tailoring.

01
SECURITY

02
WEATHERPROOF

03
PRECISION

04
RELIABILITY

05
PLUG & PLAY

06
COMMUNICATION

07
DEFLECTION ANGLE

08
ACTUATION TYPES

09
TORQUE



THE BASE

NOTICE THE DIFFERENCE

THE BASE

01 SECURITY

A SECURE SYSTEM

Secure through Performance Level PLd.

02 WEATHERPROOF

BLOCKS EVERYTHING

Assembly

Enable quick installation by inserting the joystick into the pre-drilled holes and securing with nuts. After tightening the nuts, the joystick is sealed above the mounting height.

Rubber gaiter

High-quality rubber gaiter completely seal the joystick above the mounting surface so that neither water nor dirt can penetrate the joystick or the console below.

Integrated studs

The combination of overlapping rubber gaiter and integrated studs ensures optimum ingress protection.

03 PRECISION

PINPOINT ACCURACY

- The JE Base's sophisticated mechanics make the joystick extremely easy to move in all directions.
- The JE Base has no mechanical play in the center position. With no play in the center, the operator can feel the machine's response immediately, allowing for precise steering.



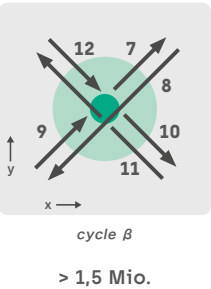
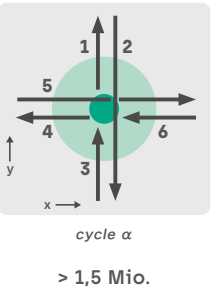
'Sealing the entire handle and all interfaces was a challenging task, especially while designing the most compact handle possible. We're thrilled with the outcome.'

FLORIAN MORENT / MECHANICAL DESIGN ENGINEER

04 RELIABILITY

AND THERE'S MORE ...

- Sustainable: the base is designed to withstand > 3 million complete cycles.
- It has also been tested in the dust chamber of the company's own test laboratory (> 3 million test cycles and additionally 600,000 in Arizona dust).



05 PLUG & PLAY

ALL IN ONE



Molex connector

- A proven connector with many advantages in terms of compactness and sealing.
- Enables the entire joystick system to be integrated into the machine with a single connector.
- Other connector options available upon request.



Patented Helix Cable Routing

- In the new JE Base, two twisted cable ducts are routed through the base. This results in better operation, a longer service life and less wear.
- This innovative cable routing also prevents the cables from being kinked and damaged during assembly.
- Overall, this patented routing enables a clean, innovative cable harness solution that allows for easy 'plug-and-play' assembly.

06 COMMUNICATION

DATA UNDER CONTROL

- The joystick's CAN controller is located in the handle and the CAN signal is routed to the base via the intelligent cable routing. This means the entire joystick is CAN enabled.
- The following CAN protocols are available for digital communication with the system:

- The UDS protocol [Unified Diagnostic Services] enables simple updates, maintenance and diagnostics.

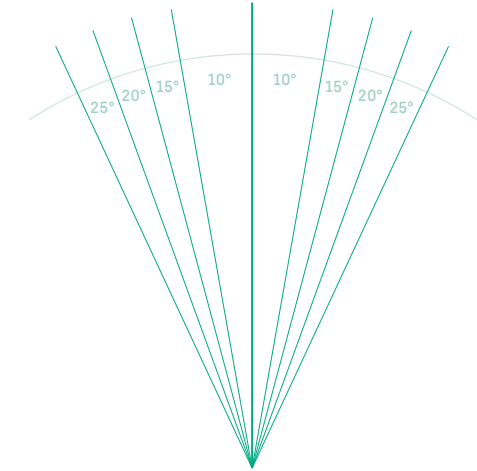
- CAN SAE J1939
- CAN SAE J1939-76
- CANopen
- CANopen Safety [DIN EN 50325-5:2016]

CAN

07 DEFLECTION ANGLE

ULTRA FLEXIBLE

- The following deflection angles can be selected as standard for the JE Base: 10°; 15°; 20°; 25°. Asymmetrical deflection angles are also possible.
- Individual deflection angles can also be tailored at the customer's request.



08 ACTUATION TYPES

DIRECTIONAL

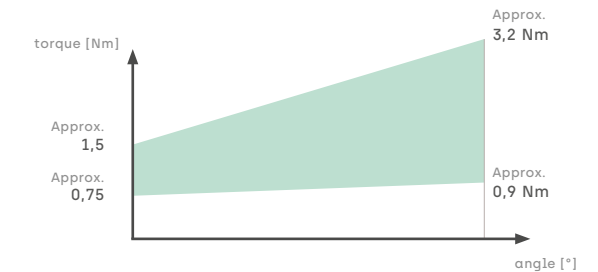
- The JE Base is multiaxial, so that the joystick can be deflected in all directions, or single-axis. Due to its innovative mechanical design, the joystick returns to the center position after a deflection.
- Feel points can also be tailored with the JE Base through mechanical adjustments.



09 TORQUE

POWERHOUSE

- Any torque between 0.75 – 3.2 Nm can be selected for both directions of the X and Y axes. This enables different and asymmetrical deflection forces.
- This is realized by springs of different strengths.



Focus: Perfor- mance

Discover the innovative buttons of the Robust Joystick JE, which have been specially developed for intuitive operation and maximum ergonomics.



01

BUTTON DESIGN
& FEEL

02

MULTICOLOUR
RGB LEDs

03

LONG
SERVICE
LIFE

04

FUNCTIONAL
SAFETY

05

ALWAYS-ON-
BUTTON

THE BUTTONS

MAXIMUM
INTUITIVENESS &
ERGONOMICS

THE BUTTONS



01 BUTTON DESIGN & FEEL

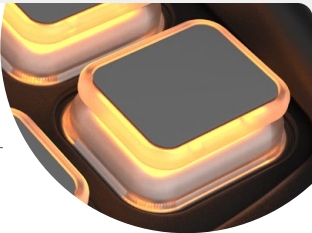
CONTROL PANEL

- Totally sealed [IP6K9K]: The rubber gaiter and button arrangement prevents dirt from being trapped and water from penetrating and freezing.
- Maximum contact area prevents finger fatigue.
- The rectangular shape and mechanical design allow the buttons to be operated on the outer edge.
- Flat or dome-shaped buttons can be selected to suit preference.
- Mechanical switches provide haptics through an audible and tactile ,click'.
- A range of inlay options means that any colour and symbol can be chosen. They are printed on the reverse side and are therefore abrasion resistant.

02 MULTICOLOUR RGB LEDs

SETTING A BRIGHT EXAMPLE

- The RGB multicolour LEDs can display any colour and individual brightness levels.
- Fantastic brightness of up to 70,000 lux. Even in direct sunlight, the LED light on the buttons and therefore the symbols are clearly visible.



03 LONG SERVICE LIFE

LASTS AND LASTS AND LASTS

The buttons have a long service life of > 4 million cycles.

05 ALWAYS-ON- BUTTON

ALWAYS READY

- The always-on button can be operated without ignition. For example, the warning signal can sound even if the machine has not been started.
- The always-on button can be selected once for a button on the front or back of the joystick. Typical applications are a horn or a light.

04 FUNCTIONAL SAFETY

TOP PRIORITY

Secure through Performance Level PLc.

'I love the new buttons. Their tactile feel is fantastic, and the RGB LED options introduce an exciting new dimension to human-machine interaction for our customers.'

KERIM TARHAN / PRODUCT MANAGER

>4Mio.



Down to the smallest detail

Maximum control with minimum effort – the thumbtips also contain a great deal of elobau know-how.

02

MULTICOLOUR
RGB LEDS

01

DESIGN

03

OPERATING
OPTIONS

04

LONG
SERVICE
LIFE

05

FUNCTIONAL
SAFETY

THE THUMB- TIPS

MINI-JOYSTICKS



THE THUMBTIPS

01 DESIGN

SMALL BUT MIGHTY

- Extremely robust construction using Metal Injection Moulding (MIM) technology, which enables a pull-out force of 250 N to be achieved.
- The thumbtips have a soft-touch coating for comfortable operation.
- Different sticker variants allow the selection of any colours and symbols.



02 MULTICOLOUR RGB LEDs

CLARITY

- LED colour and brightness levels controlled via CAN
- Brightness performance: The colour of the LED buttons with illuminated symbols is clearly visible even in direct sunlight (up to 70,000 lux).
- Customizable: The brightness of the LEDs can increase or decrease depending on the angle of deflection.
- Colour selection: The colours of the LEDs can differ on the right and left or top and bottom.
- Each thumbtip is equipped with two LEDs whose colours can be individually configured.

03 OPERATING OPTIONS

AS INDIVIDUAL AS YOU

Deflection angle

0°; ±15°; ±30°
[Asymmetrical deflection angles possible]

Actuation types

detent; no detent; Feel points (asymmetrical actuation types possible)

Push function

Optional push function enables additional button assignment.



04 LONG SERVICE LIFE

LASTS AND LASTS AND LASTS

The buttons have a long service life of > 4 million cycles.

05 FUNCTIONAL SAFETY

TOP PRIORITY

Secure through Performance Level PLd.

'The thumbtips are a standout feature. They're completely sealed, have a long lifespan, and a comfortable soft touch surface. Plus, they can be used as extra buttons, offering nearly endless possibilities.'

STEFFEN ZODEL / PRODUCT MANAGER

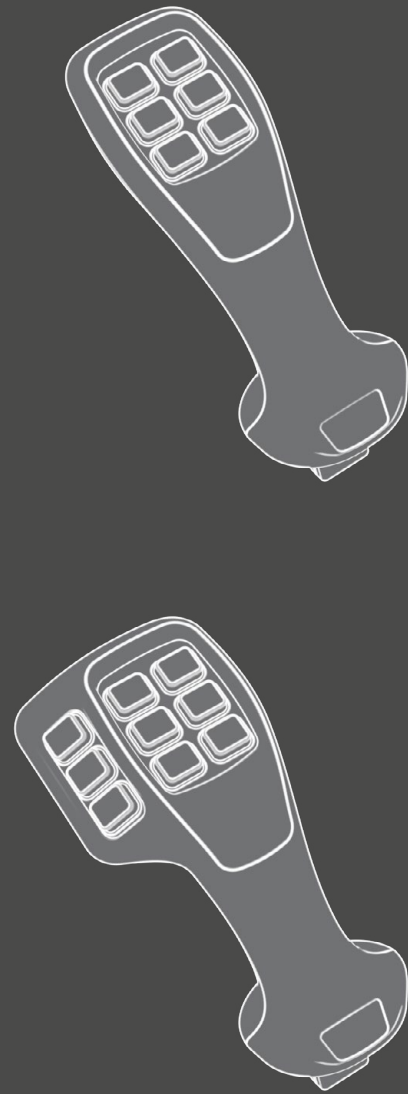


THE LAYOUT OPTIONS

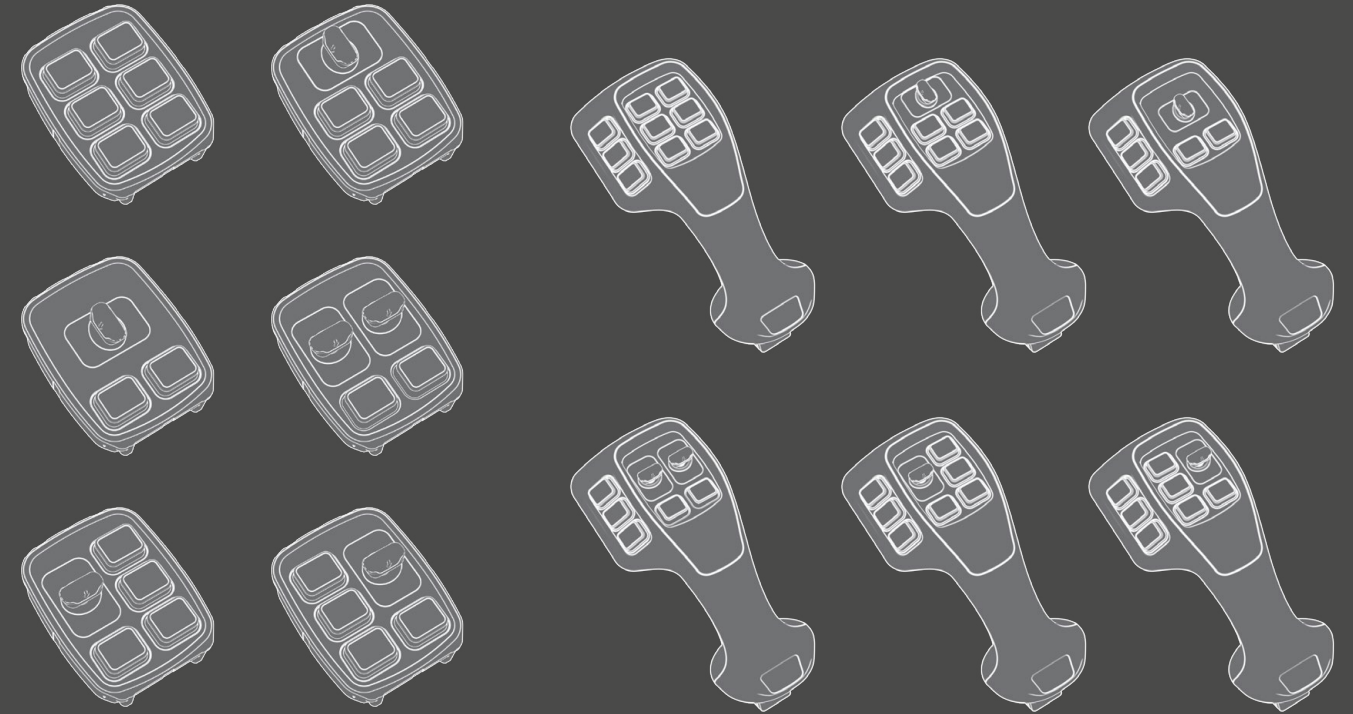
Which layout suits you?

With or without Wing? Numerous layout combinations are possible for both the front and the back. We are also happy to discuss individual customer wishes on request.

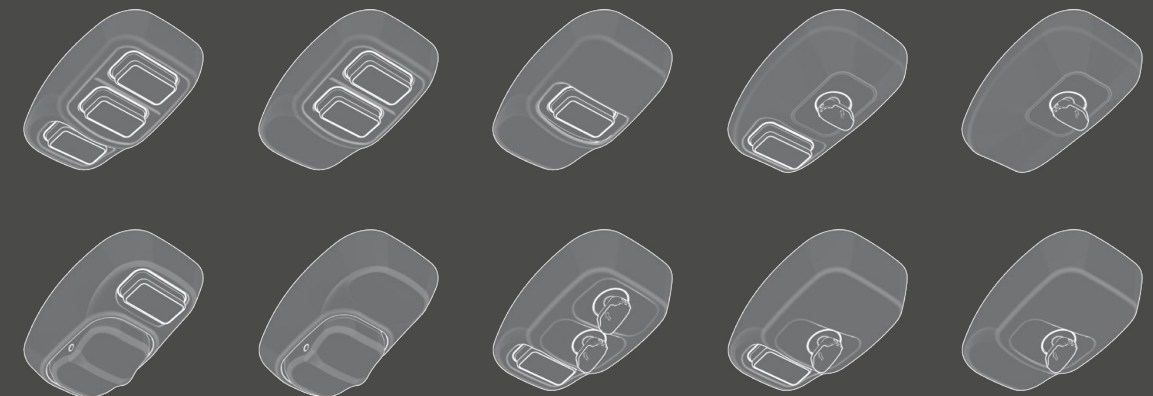
HANDLE



FRONT



BACK





10 Reasons for a Change.



01

MAXIMUM SECURITY

Easy integration into the existing safety architecture of your machines.

02

COMPATIBILITY

Easy integration of the electric joystick into your CAN system.

03

WEATHERPROOF

Can be used in all environments thanks to its impermeability.



04

SIMPLE INSTALLATION

Time and cost savings thanks to smart plug & play solution.

05

LONG SERVICE LIFE

Less maintenance due to low-wear mechanics

06

IMPROVED SAFETY

Numerous safety functions protect people and the environment.

07

AUTOMATED PRODUCTION

Fast production of large quantities with high quality.

08

ERGONOMICS

Fatigue-free and efficient even on the longest days.

09

MODULARITY

High configurability for individual operating requirements.

10

MADE IN GERMANY

High quality – developed, tested and produced in Germany.



YOU NEED MORE DATA?

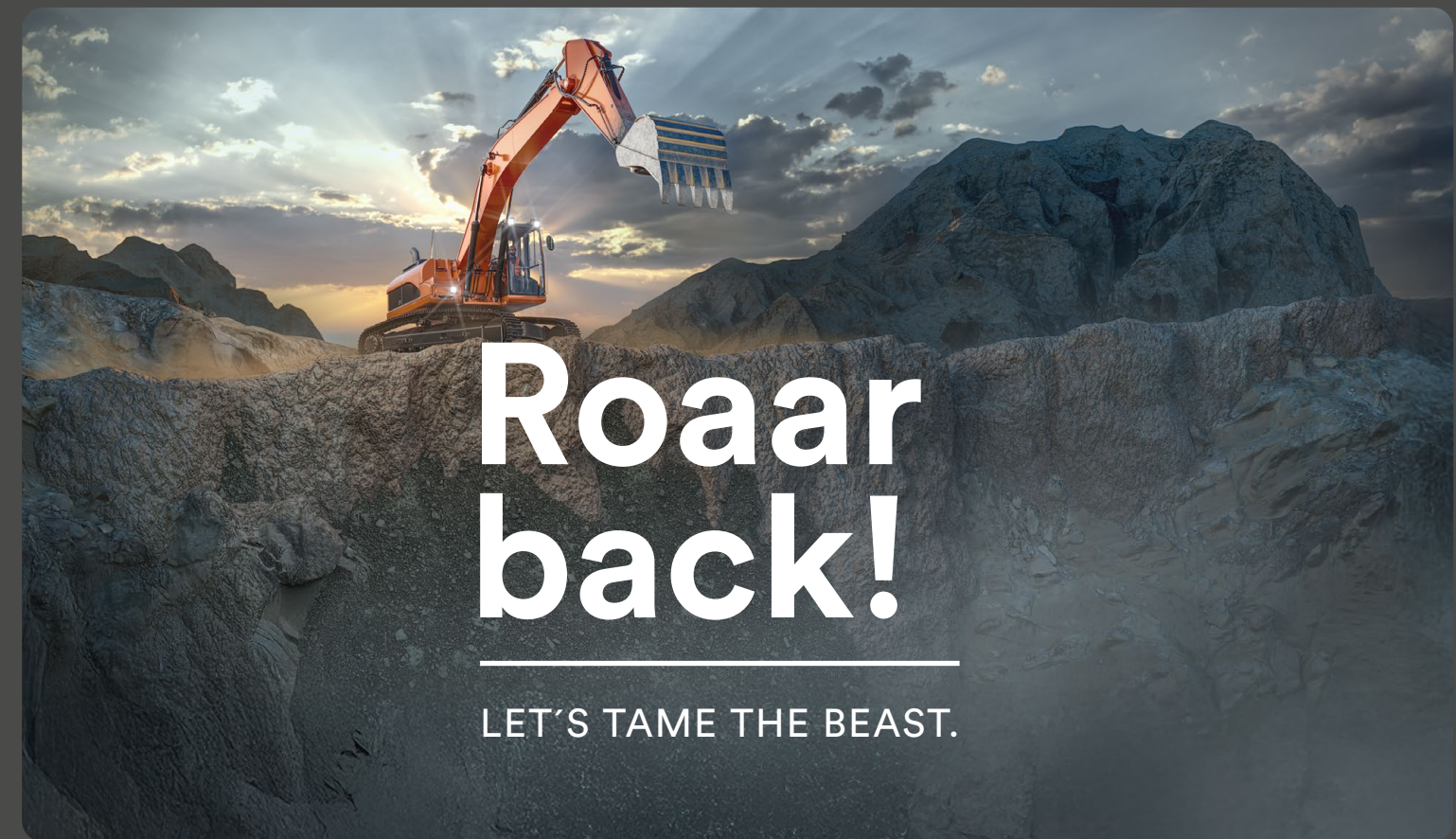
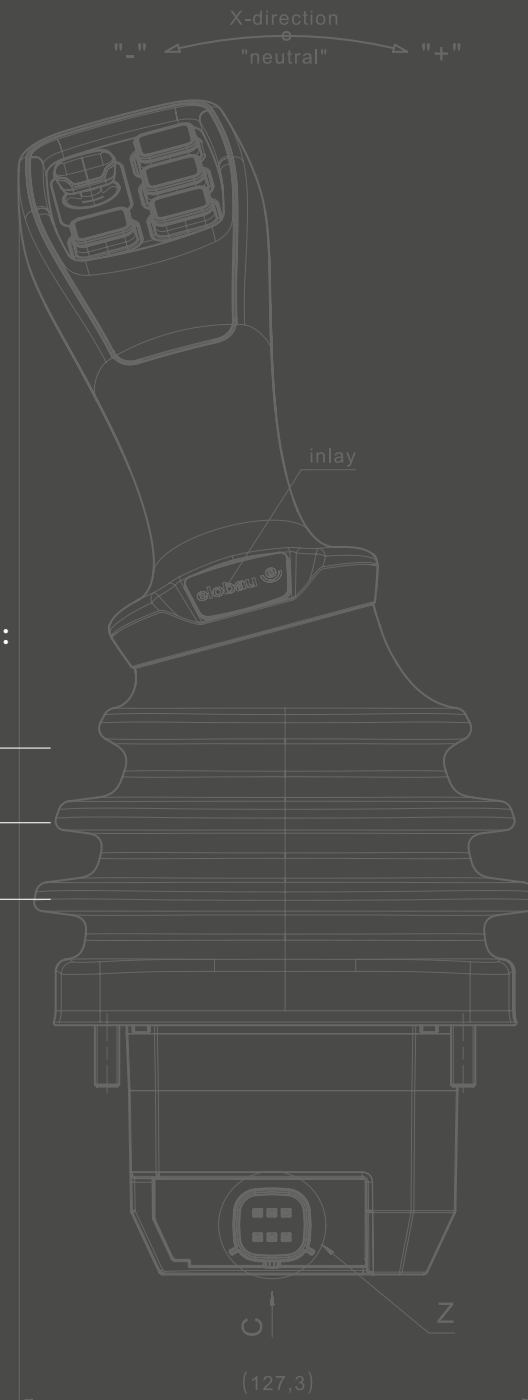
If you would like to go into more technical detail, the following data sheets are available on our website:

Comparison JE and J4F

Technical Drawing



←
**DOWNLOAD
HERE**



Roar back!

LET'S TAME THE BEAST.

Would you like to find out more?

JE-TEAM@ELOBAU.COM

Experience next-level control with the new elobau joystick generation!

Tame the Beast

elobau 
sustainable solutions



UY2

www.blauer-engel.de/uz195

This printed matter has been
awarded the Blue Angel.



EXPLORE THE NEW
ROBUST JOYSTICK JE



- + mineral oil-free, non-toxic printing inks
- + 100% recycled paper
- + print production with 100% green electricity
- + one tree planted with every order
- + CO₂ reduced and low-emissions printing