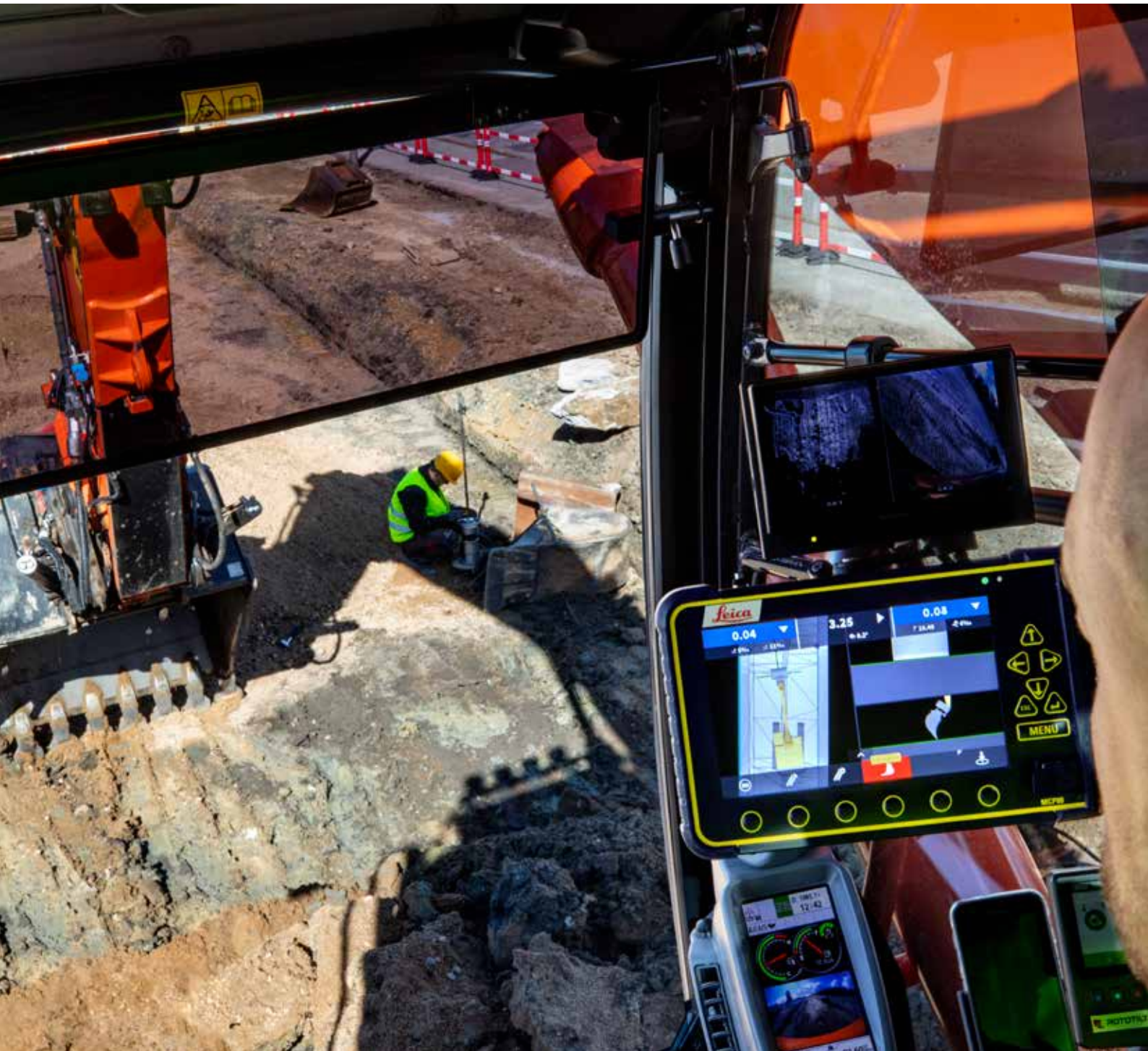


Leica iCON excavate

The future of excavating



leica-geosystems.com



- when it has to be **right**

Leica
Geosystems

Excavator solutions



Leica iCON iXE3

This 3D machine control solution delivers the ultimate precision guidance. Work from 2D and/or 3D digital models for supreme accuracy and the most complex designs.



Leica iCON site excavator

The simple solution for compact excavators brings a higher level of efficiency to small to medium sized excavators in your fleet.





Leica iCON iXE2

Our 2D solution gives you high-accuracy dual slope and level control for maximum utilisation of your machine from the start.



Leica iCON iXE1

A simple economic excavator control system that can tackle difficult tasks, such as blind cuts or underwater digging.



Semi-automatic excavator – Increase your uptime

The semi-automatic functionality for Leica iXE2/iXE3 excavator machine control solutions helps you perform complex fine grading jobs faster and more accurately by automating the movements of the **boom, bucket, tilt bucket and tilt rotator functions**. The semi-automatic excavator is a flexible solution that allows you to easily switch between manual and auto mode to ensure maximum safety.



FEATURES

- Ability to follow design slopes automatically with minimal stick input
- Intelligent slope detection with closest cross slope
- Rotation control cross-cut
- Stick enabling (no push and hold on the button)
- Easy to switch between auto and manual function when manual control is required

BENEFITS

- Less operator fatigue
- The job can be done faster because costly and time-consuming rework can be avoided
- Consistent quality of finished surface
- The semi-automatic functionality from Leica Geosystems is safe to use
- Flexible configurations to suit any use case and machine configuration

Automating excavator functionalities



iXE CoPilot

Using the Leica iXE CoPilot, the excavator operator only needs to concentrate on controlling the digging movement (boom, stick and bucket) while the tilt and rotation function of the tilt rotator is adjusted automatically based on the reference model surface under the bucket.

The operator maintains control of the bucket rotation allowing him to manage material in the bucket properly but eliminating the constant manual adjustment of the slope of the bucket. Enabling the CoPilot by simply pressing a button simplifies the use of tilt rotators regardless of training level reducing operator fatigue.

Automatic Tool Recognition

Use tool recognition to automatically select the right tool for your excavator. Tool recognition modules are mounted on the excavator buckets and tilt rotators. The hub in the cabin registers and sends signals to the machine control solution when the bucket is taken off, a new bucket is selected and sends warnings if a bucket that is not calibrated is selected. The operator no longer needs to manually change settings when changing work tools.

This minimises the risk of using the wrong bucket and the subsequent over or under digging and costly rework. Besides supporting the attached tools, the tool recognition system also supports standard tilt buckets and detachable tilt rotators.



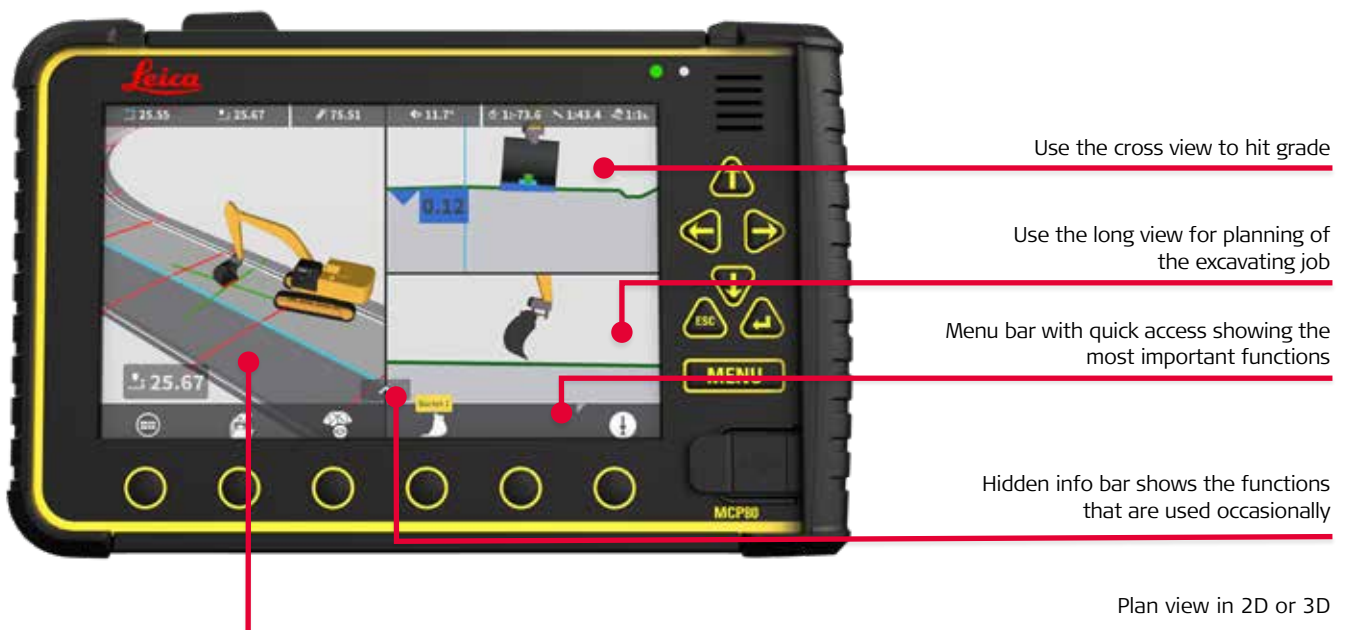
Leica MC1 – Intelligent Software

The efficient menu structure enables you to easily manage all project files. Increase your uptime with a user interface that gives you quick access to select the best functions for your workflow. The iXE3 solutions allows you to share log points and model data between machines for project progress monitoring and follow-up. Transfer files seamlessly between iCON 3D software and iCON site projects.



Targeted attention

The interface keeps you in the run screen and directs your attention to the job at hand. Select full screen or split screen to guide you to the most efficient view that assists you through the task at hand.



3D Avoidance Zone System

Leica Geosystems and Xwatch Safety Solutions have jointly developed a new solution to safeguard construction assets and infrastructure on site. This solution is possible by combining the state-of-the-art Leica MC1 machine control software and the top-of-the-line XW5 Series from Xwatch Safety Solutions. The 3D Avoidance Zone System will allow users to create or import 3D avoidance zones above and below the surface area directly within the Leica MC1 machine control software. The solution minimises downtime, reduces unforeseen costs, and provides a safer environment for machine operators and nearby workers.



The operator can quickly create or use imported avoidance zones in the in-cabin display, the Leica MCP80 panel. Critical avoidance areas include overhead obstructions such as powerlines, underground services, and operations close to pedestrian walkways, live carriageways, and public roads.



When approaching an avoidance zone, the system will take control of the machine's height, depth and slew movements triggering the hydraulic functions of the excavator to stop once approaching these zones. The hydraulic control is proportional, meaning the machine's movement will slow down before completely stopping when approaching an avoidance zone. The motion of the excavator's tracks can also be disabled so it cannot breach environmental sites, power cables, or drainage.



Once the solution has stopped the machine, the Leica MC1 software will trigger a visual warning that needs to be acknowledged before continuing any other operation.

Leica iCON iXE3 – For ultimate accuracy

The iXE3 machine control solution guides the operator using reference models and GNSS in 3D. Design information and real-time cut/fill indications are displayed in the cab on your control panel, allowing you to rapidly excavate to the reference design. The solution ensures more uptime and operator satisfaction while increasing safety and productivity.

Work with a wide range of popular data formats including LandXML, DXF, GEO, KOF, L3D, LMD, LIN, MBS and TRM formats. The operator can use the function **Create Model** to make even complex models directly on the panel without leaving the cab and without the assistance of a surveying engineer. The surface logging functionality in Leica MC1 ensures a live digital representation of the operators work. Follow the progress made while digging on the run screen, as model modifications are made with tool point interaction.



One for all

Digitize your construction site with one software and one hardware platform. Switch from one machine to another and build complex designs with simpler workflows and less downtime.



Easy to use

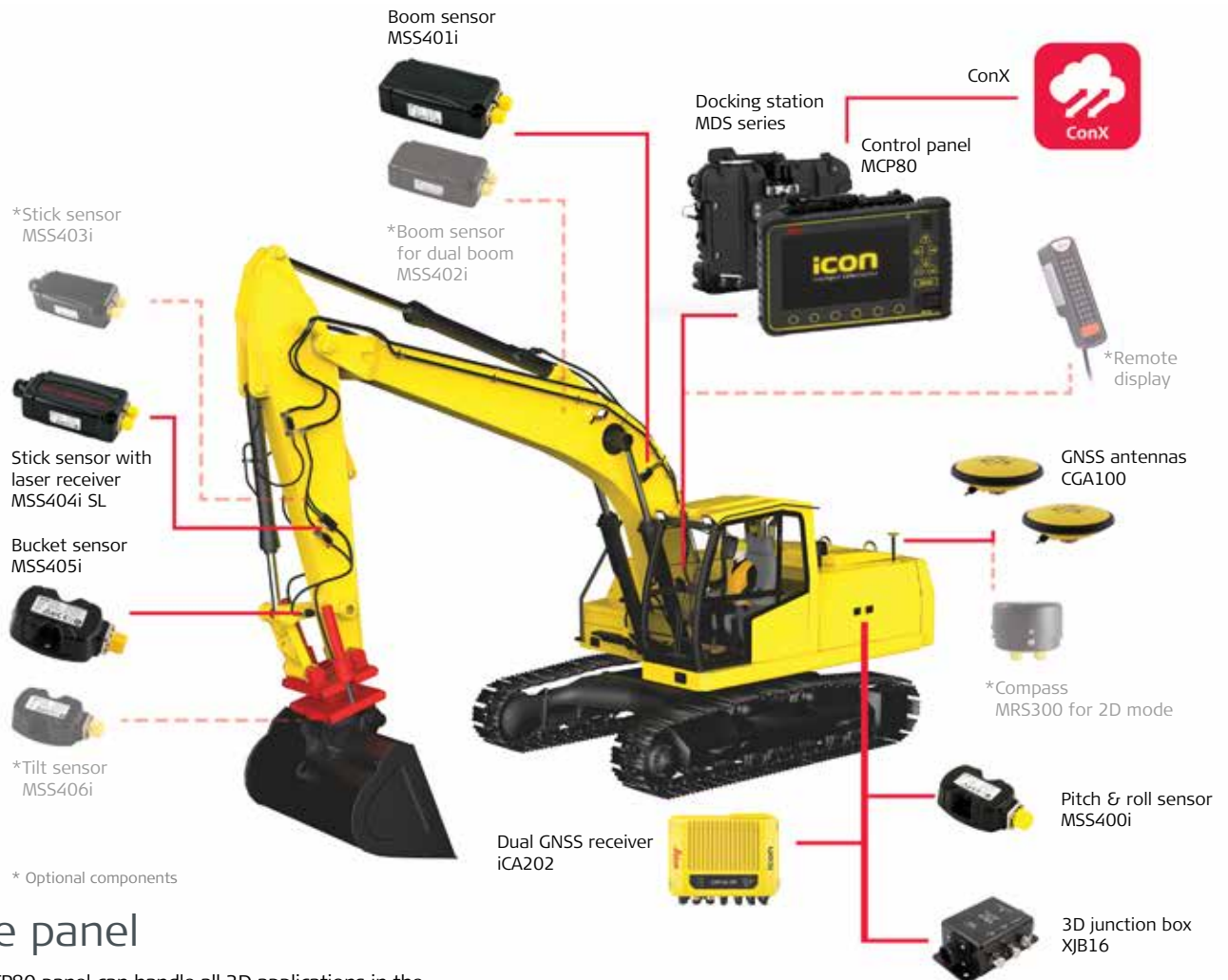
The simple, clean and intuitive interface adapts to your needs. The assistive technology with wizards and help functions help you drive the excavator and get more work done with high quality and less rework.



Robust design

The Leica MCP80 panel and Leica MDS series docking station are designed to operate in the harshest environments and deliver high performance to the heavy construction industry.

Excavator 3D solution – Get full **control** of your excavator



One panel

The MCP80 panel can handle all 3D applications in the heavy construction industry. The easy-to-use industry-leading interface can be used across all 3D machine applications. The panel features a large touch-screen panel with backlit buttons - personalise it to your liking and take it with you from one machine to another. The MDS series docking station stores your latest calibration values and hydraulic parameters for easy swapping of the panel. The docking station makes the panel completely cable-free for easy removal.

One user interface

One software platform for all machines with a simple and intuitive user interface. Simply turn the key and get on with your work. The interactions support the workflow of the task at hand, and the clean interface makes it easy to find the functions you need using icons for fast navigation. The assistive technology with wizards and help functions enable you to get more work done with higher quality and fewer errors.

Other available options:

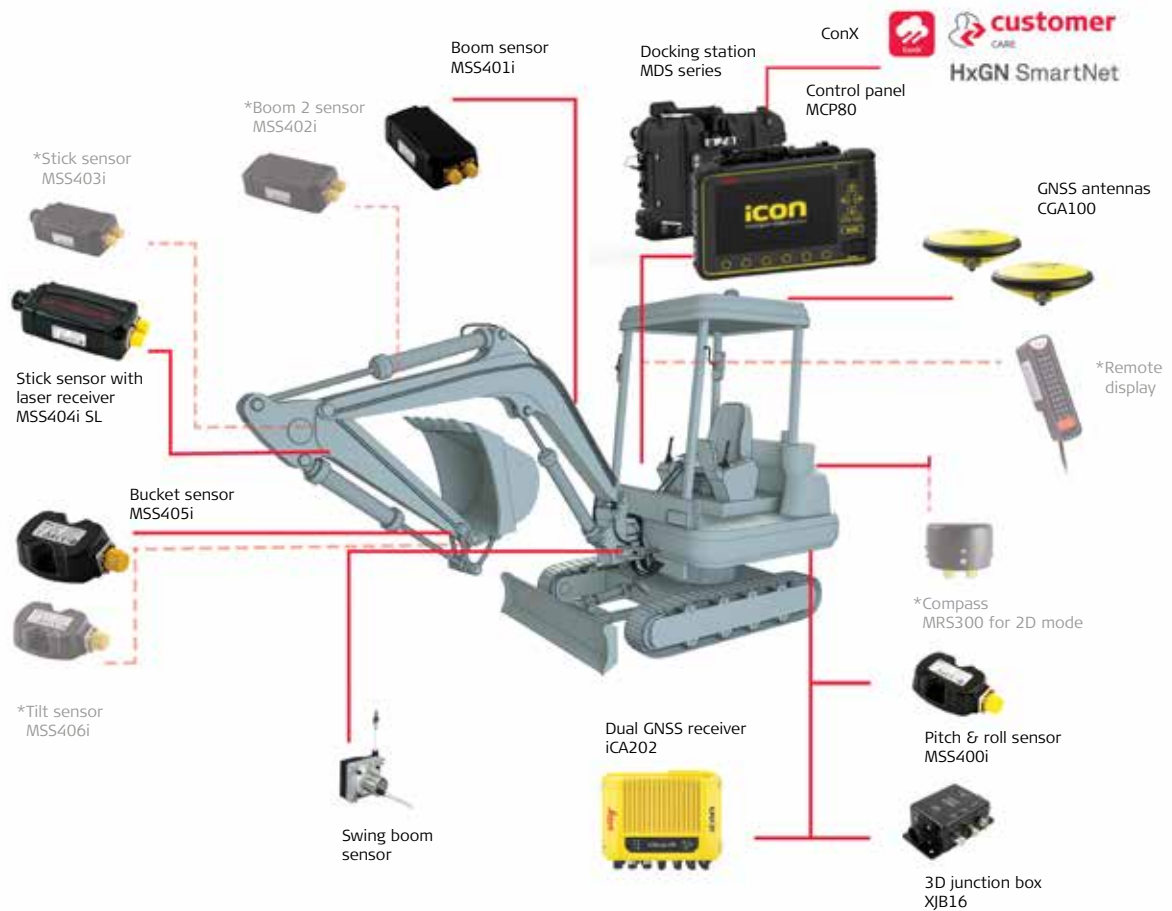


Prism & compass configuration



Leica iCON iXE3 – for compact excavators with swing boom

Add machine control to mini excavators with swing boom, and benefit from all the advantages of machine control such as higher accuracy, digital workflows and as-built documentation.



Other available options:

a) Prism & TPS configuration



b) Manually defined angles of swing boom (no swing boom sensor)

MC1 FOR COMPACT EXCAVATORS

- Swing boom sensor or manual support of swing boom
- Same software and hardware platform as other MC applications
- Digital workflows available for mini excavators and backhoes
- ConX integration for data sharing, as-built documentation and remote communication.



Machine control – for the mini excavators in your fleet

Even your smallest trenching and excavating jobs can benefit from a boost in performance. Experience higher-accuracy work, less risk of over-digging, and reduced rework and errors. Gain simplicity through a common software and hardware platform with similar menus and workflows across applications. Maximize flexibility by moving key hardware components between machine applications. And achieve greater transparency with digital logging, reporting and as-built documentation through the use of ConX. Harness the full power of machine control for every machine in your fleet.



High accuracy machine control for compact excavators

Compact excavators and Huddig backhoes with swing boom are designed for trenching and excavating in areas where larger equipment can't operate. The machine's swing boom moves independently, so you can dig alongside obstacles with better visibility. Leica Geosystems offers a flexible solution with a swing boom sensor or manual calculation of the swing boom position.



Select swing boom type



Select swing boom position



Run screen for excavator with swing boom

Submersible configuration – Underwater excavating

As part of the MSS400 series, the MSS420 sensors for underwater dredging jobs are built on the well-established MSS400 series sensor technology. Ensuring speed, performance, precision and productivity (SP), the MSS400 series sensors incorporate SP Technology that allows faster digging without loss of precision at higher speeds, dramatically increasing machine utilisation and productivity



Reinforced cabling, sensor housing and bracket

Designed to be used down to 40 m at 5 bar pressure, the MSS420 sensors are equipped with reinforced components such as pressure tight connectors, a robust sensor housing, rugged cabling and stainless-steel brackets making it the most reliable equipment for underwater applications. The Leica MSS420 dredging sensors can be programmed to boom 1, boom 2, stick, bucket and even tilt sensors.

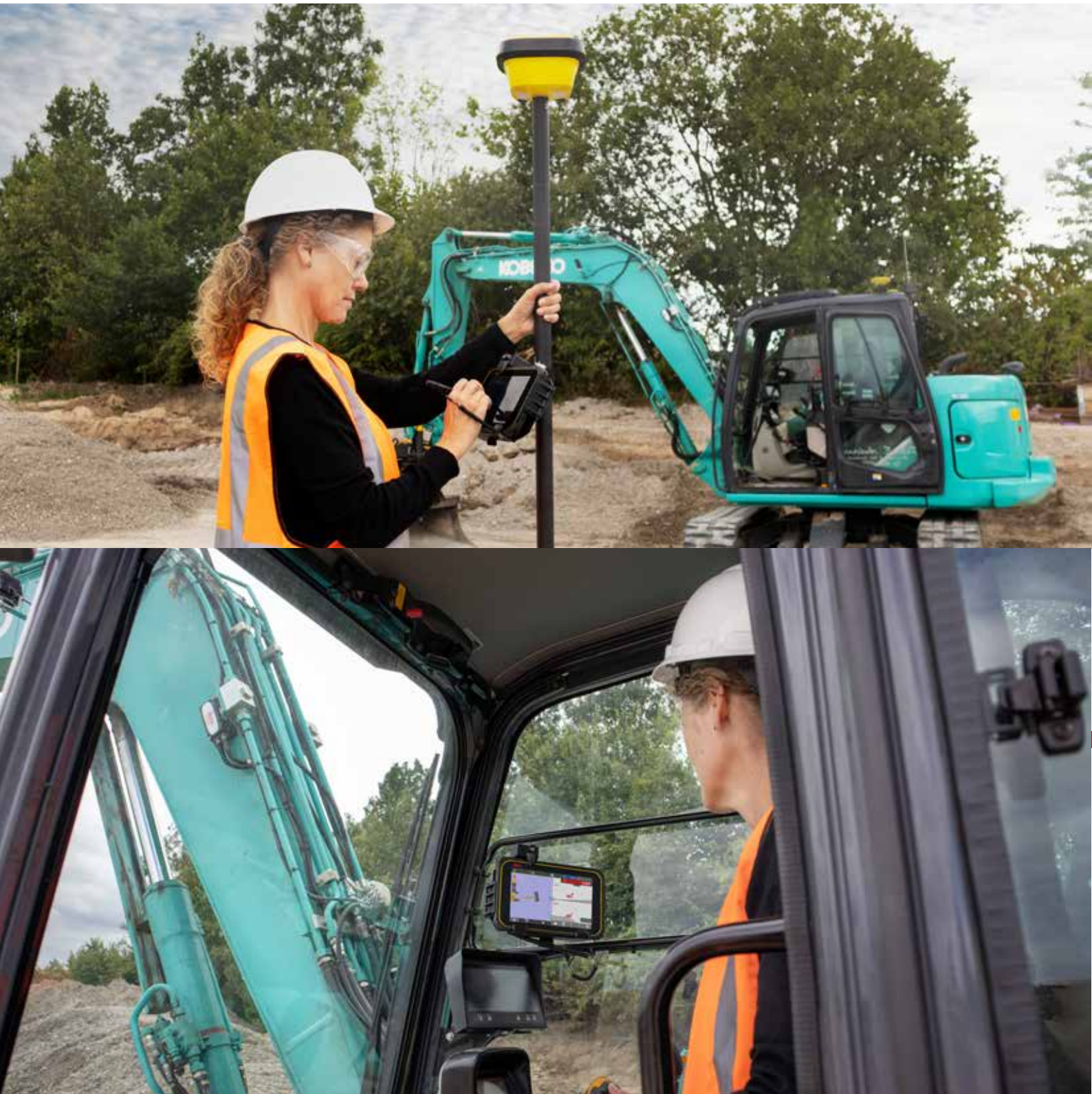
Modify models, a new norm for dredging excavators

The Modify Model feature of the Leica MC1 software is the ultimate tool for dredging productions. This allows for a graphic representation of the progress made by the excavator-based dredging machine, generating the ability to visualise the bucket and position below the water surface on the MC1 run screen. The logged model gets modified with tool point interaction, allowing for a live progress update on the panel while working.



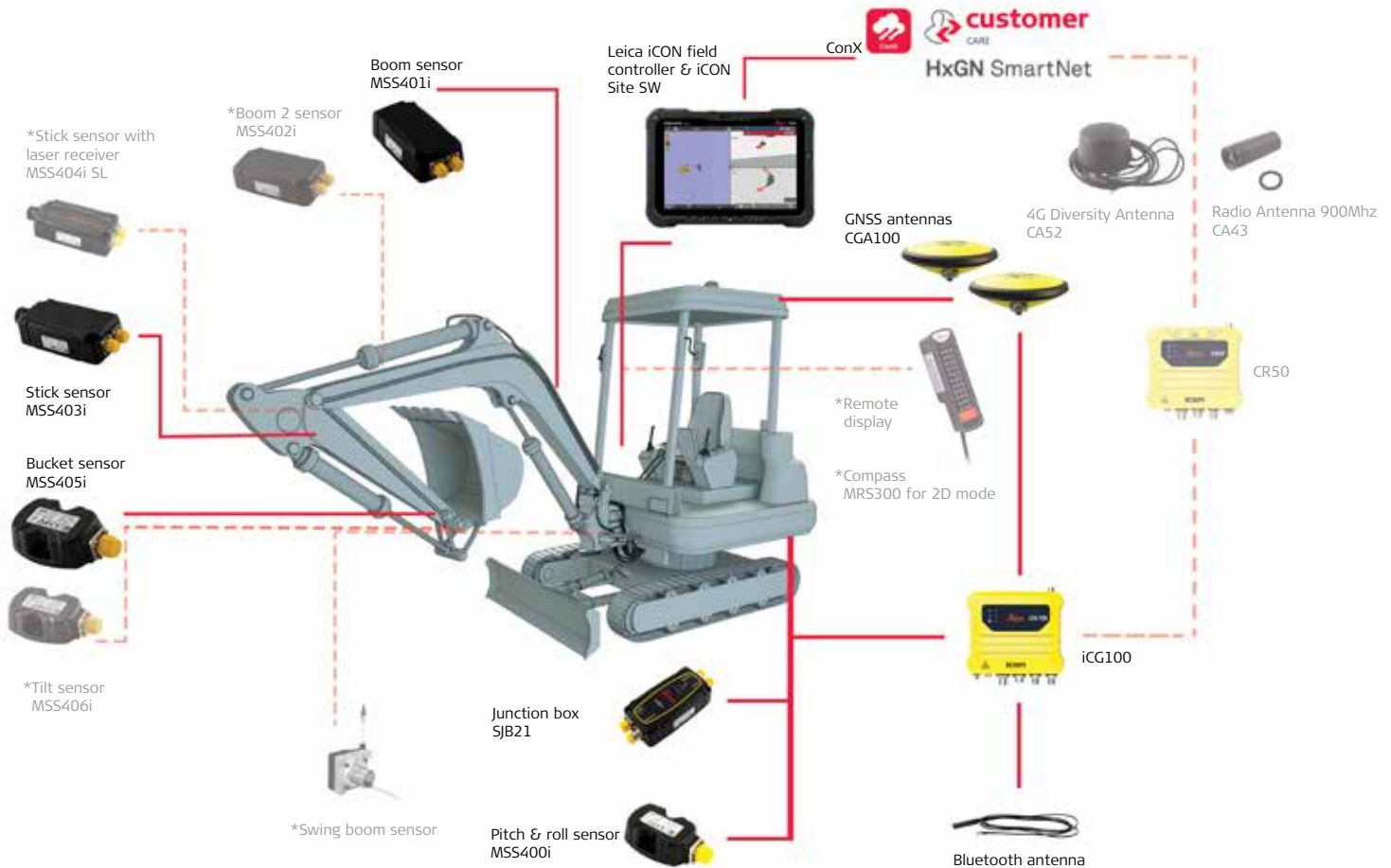
Leica iCON site excavator – The best way to get started with machine control is here

The Leica iCON site excavator is a simple, easy-to-use machine control solution for optimising the earthmoving jobs of compact excavators. This new solution integrates easily with the existing iCON site applications, so you can benefit from efficient workflows. Measure an area, create a design, and then directly dig according to that design by simply using the same field controller in the excavator cab.



Extreme simplicity – Design it. Dig it. Check it.

Achieve optimal on-site flexibility and efficiency along with independence from surveyors and their schedules - all with a solution that is incredibly easy to set up and use.



Other available options:

- Manually defined angles of swing boom (no swing boom sensor)

DIRT SIMPLE SOLUTION FOR COMPACT EXCAVATORS

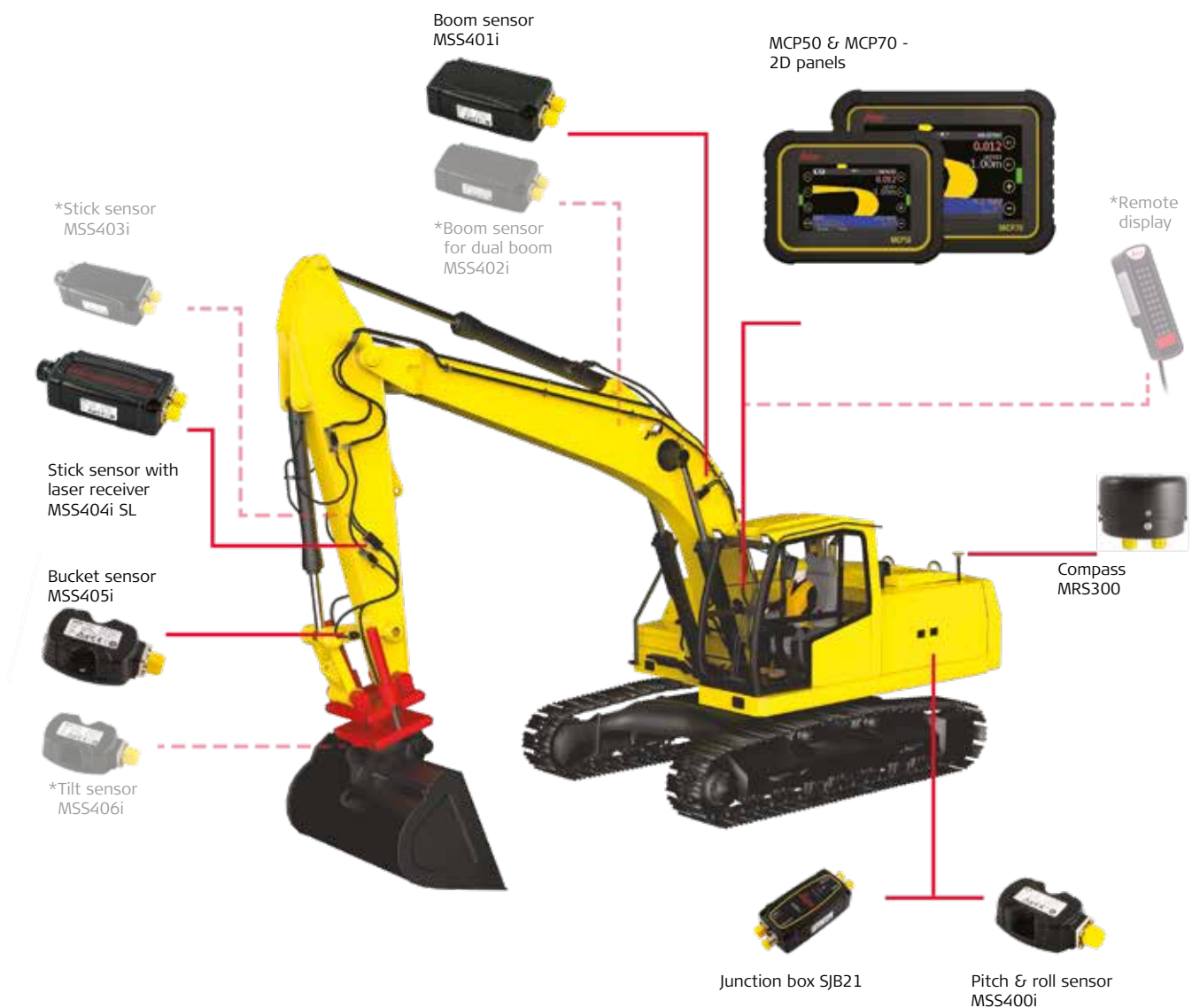
- Supports swing boom, tilt rotator and tilt bucket functionalities
- Map-driven selection and navigation
- Traffic-light indication of work results
- Split-screen functionality that allows different viewing perspectives
- Use the same digital designs as the big machines in the project ecosystem
- Integration with Leica ConX to ensure seamless communication of design updates





Leica iCON iXE2 – Single/dual slope and depth control

This multi-functional 2D machine control solution is designed to make excavating easier and more productive. It allows multiple elevations and slopes to be constructed, at any orientation, without resetting the machine or laser height reference.



BENEFITS

- Upgrade to 3D by adding a GNSS receiver and 3D control panel
- Displays the bucket's actual position relative to design elevation and slope
- High-accuracy dual slope and level control via the rotation sensor
- Real-time cut/fill indication on the graphic display
- No grade checking needed
- No more over excavations

Leica iCON excavate – Highest precision and productivity for excavating with tilt rotators

Boost your productivity by maximising the use of your tilt rotator attachments with Leica iCON excavate iXE2 & iXE3 systems. By interfacing to the tilt rotator attachment, iCON excavate can visualise the actual position of the bucket in any angle or orientation.



BENEFITS OF TILT ROTATOR SUPPORT

- Increase your machine control application and productivity
- Maneuver in tight site areas without having to reposition the machine several times
- Clear and easy user guidance on the colour display
- Precise sculpting of edges, slopes and contours in any direction needed.



iXE CoPilot – Simplifying the use of tilt rotators



Ease-of-use with tilt rotator

You focus on controlling the digging movement (boom, arm, bucket and slew of the machine) while the tilt and rotation function of the tilt rotator is adjusted automatically based on the reference model surface under the bucket.

iXE CoPilot enables you to maintain control of the bucket rotation while you dig, allowing you to manage material in the bucket properly but eliminating the need to constantly adjust the tilt of the bucket. This decreases operator fatigue, increases the accuracy of the iXE2/iXE3 excavator solutions and saves time and cost.

BENEFITS OF TILT ROTATOR WITH iXE COPILOT

- Use the tilt rotator attachment in any position while the iXE CoPilot automatically positions the bucket to the desired grade, and get even more productivity out of your grade control system
- Reduce the complexity of operating multiple moving parts on an excavator
- Use your tilt rotator equipped excavator to accomplish all tasks on site, from bulk earthworks to finish work
- Use the tilt rotator attachments on excavators without the need for special training or long learning curves
- Increase focus on the area you are digging in, making it a safer working environment
- No steep learning curve





Leica iCON excavate – Increasing opportunities with integrated **auger support**

The 2D excavator machine control solution offers you more opportunities and flexibility – you can control excavator drill attachments easily with visual guidance in the cab. Exploit the capabilities of your excavator and handle multiple tasks on site with high precision.



FEATURES

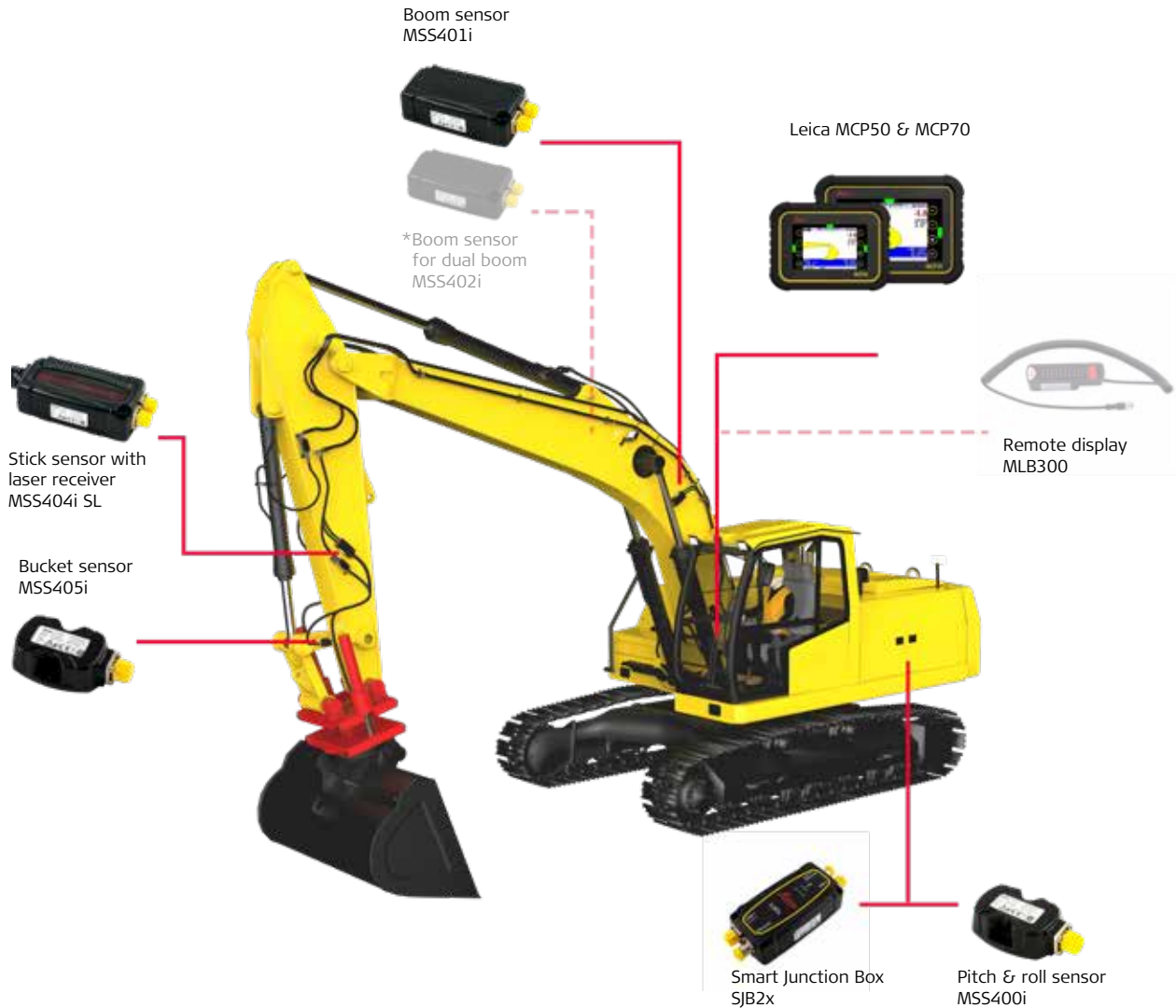
- Full visual indication of the top and bottom position of the auger
- The drill-bit tip is shown as a green filled circle if within target (0-5 cm) and the top of the drill-tower as an orange circle if +5 cm away of the target
- The tip becomes red if +5 cm away from target, and the top of the drill-tower turns blue if within the target
- Auger top and bottom shown in a correct position.. Zero-set the position and start drilling. Move arm/turn upper part and read the values for your next desired X and Y working position.

BENEFITS

- Increased machine application and productivity through support for drilling
- Easy user guidance on colour display
- Quick system installation – wizard-based and semi-automatic calibration procedures
- System works on all excavators including mini excavators
- One system for many different application



Excavator 1D solution



Leica iCON iXE1

The Leica iXE1 is a simple, economic excavator control system that's perfect for backhoes and mini excavators. This single slope control panel can even tackle difficult tasks like blind cuts or digging underwater. The iXE1 has the flexibility to work from different references such as existing surface, string line, or a laser reference.

SYSTEM FEATURES

- The MCP50/70 are 5" & 7" colour graphic displays.
- Simple menu structure - very easy-to-use
- Remote display supported
- 100 % waterproof (IP68) – no special sensors or cables needed for underwater use
- Offset your reference surface
- Visual and audio guidance according to reference height

Leica Geosystems – when it has to be right

Revolutionising the world of measurement and survey for nearly 200 years, Leica Geosystems is the industry leader in measurement and information technologies. We create complete solutions for professionals across the planet. Known for innovative product and solution development, professionals in a diverse mix of industries, such as surveying and engineering, building and heavy construction, safety and security, and power and plant trust Leica Geosystems for all their geospatial needs. With precise and accurate instruments, sophisticated software, and trusted services, Leica Geosystems delivers value every day to those shaping the future of our world.

Leica Geosystems is part of Hexagon (Nasdaq Stockholm: HEXA B; hexagon.com), a leading global provider of information technology solutions that drive productivity and quality across geospatial and industrial landscapes.



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**Intelligent
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Leica ConX flyer



**Customer Care
Packages flyer**