Intelligent Excavator Guidance System

Precise、Convenient、Efficient



GZJOYAIOT
精研智联

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Intelligent Excavator Guidance System

GZJOYAIOT The Intelligent Excavator Guidance System uses BeiDou high-precision positioning to obtain centimeter-level positioning values. Combined with the excavator's mechanical model and sensors mounted on the machine body, it calculates the 3D coordinates of the excavator bucket tip in real time and transmits the coordinate information in real time to the integrated display terminal in the cab. By comparing with 3D design data, it monitors the bucket attitude in real time and enables functions such as precise leveling, precise slope trimming, and electronic geofencing. It guides operators to perform precise construction through multiple methods including graphical and numerical indications.

System Benefits

High-Precision Positioning

Adopts GNSS/RTK and IMU Fusion Positioning Technology

Achieves Precise Control with Centimeter-Level Accuracy

High Efficiency

One-Click Elevation Setting, Preset Trench Depth and Width

Real-Time Slope Guidance, Efficient Task Completion

All-Weather Operation

Withstands harsh weather and delivers
24/7 precision operation,
uninterrupted by day, night, rain or snow.

User-Friendly Interface

Easy to Learn, Simple to Operate,
Ready to Use Right Away
Clean Interface, Functions at a Glance

High-Safety Standard

Intelligent Electronic Geofence Monitors Operation Boundaries in Real Time

Automatic Alerts and Braking When Approaching Hazardous Areas

System Functions

Bucket Orientation

Electronic Geofence

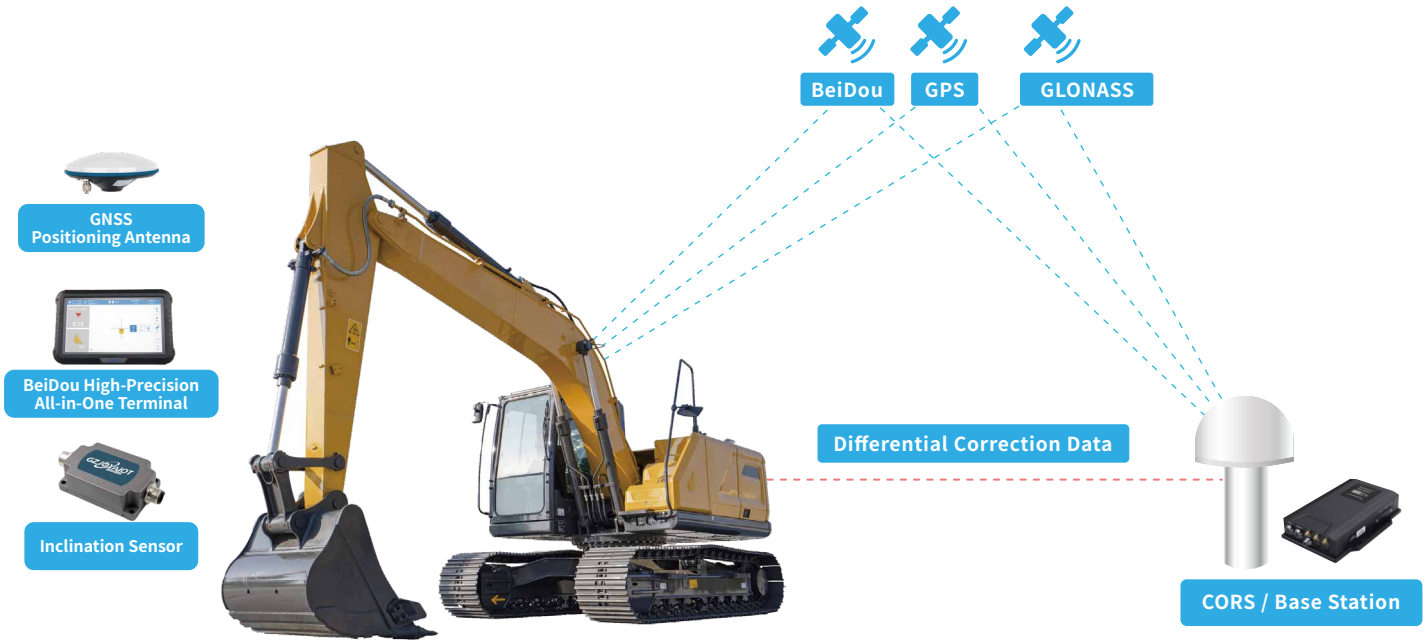
Precise Leveling

Precise Slope Trimming

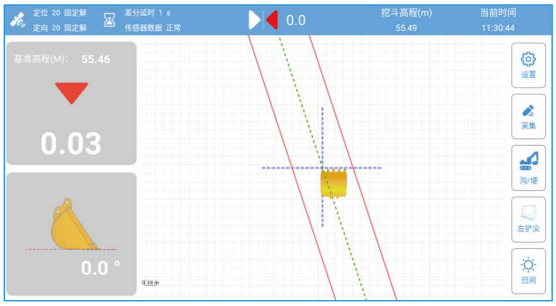
Visual Display

Centimeter-Level Accuracy

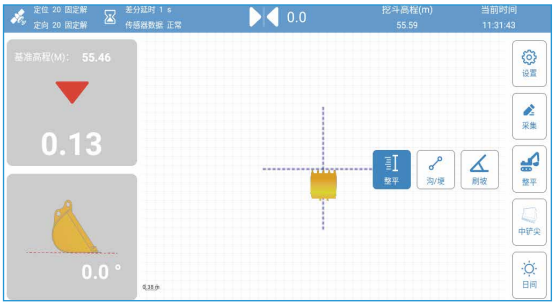
System Architecture



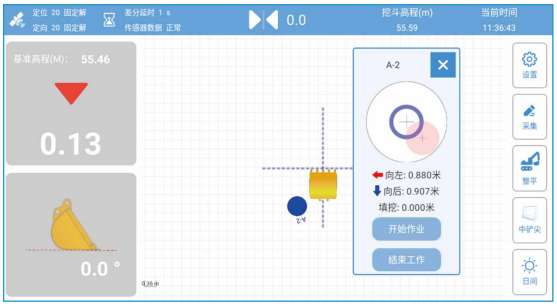
Software Interface



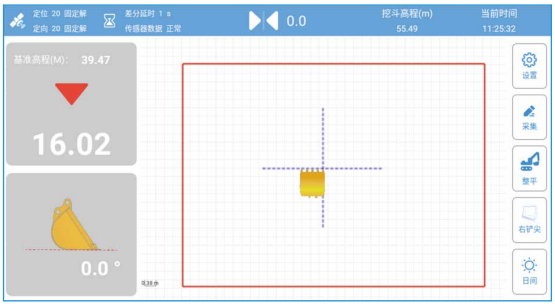
Line Guidance Mode (Trenching, Ridging)



Elevation Control Mode (Site Leveling)



Intelligent Guidance, Precise Setting-Out



Safe Construction, Intelligent Protection

System Value

- Precise Guidance
- Reduce Labor Costs
- Improve Construction Efficiency
- Reduce Fuel Consumption

Application Areas



Foundation Pit Excavation



Slope Trimming



Water Conservancy and Waterway



Farmland Consolidation

Practical Cases





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