

Kaiser. Performance counts.



# S22<sup>RR</sup>

Impressive technology to master tough challenges.

**KAISER  
ROAD-RAIL EXCAVATOR**



# S22<sup>RR</sup>

## Short-tail road-rail excavator

Outstanding performance, stability and simple changeover to narrow gauge are the distinguishing features of the universal S22 road-rail excavator. The innovative S22<sup>RR</sup> comes in a short-tail design with a tail swing radius of less than 157 cm. A major advantage of the short-tail excavator is the enhanced safety on site.

## 125 kW diesel engine with stage IV emissions standards

The high-powered diesel engine provides the basis for efficient and rapid operations. The requirements of the stage IV emissions standards and the Swiss Ordinance on Air Pollution Control (OAPC) are fully met with the newly developed John Deere engine. The integration of the exhaust after-treatment system in the engine control system ensures optimal availability of the entire machine under every possible load status. The generously designed cooling system enables high continuous load, even in conjunction with power-intensive attachments.

## Optimal axle load distribution

The short-tail design of the excavator calls for an innovative concept with the best possible layout of all the components. While the maximum axle load should not be exceeded, an adequate counterbalance should nonetheless be provided to achieve the required lifting capacity. The result with the S22<sup>RR</sup>: an ideal weight distribution for deployment on and alongside the railway track.

## ROTOline for the use of power-intensive attachments

The S22<sup>RR</sup> features a modern hydraulic system in a mixed open/closed and load-sensing construction to achieve the best possible work results. The closed circuit system enables sensitive control as well as regenerative braking during slewing operations. In conjunction with the standard tool management system, the load-sensing hydraulic system ensures unsurpassable versatility of the up to three double-acting circuits. The optional ROTOline is unique in this machine class and is synonymous with efficiency in the case of power-intensive attachments.



# INNOVATIVE ROAD-RAIL EXCAVATOR



Two-piece offset boom to increase working performance



Generously dimensioned cooling for the toughest working conditions



Innovative road-rail excavator in a short-tail design (tail swing radius <math>< 1.57 \text{ m}</math>)



Powerful 125 kW diesel engine with stage IV and OAPC emissions standards.



Optimal axle load distribution for stability and maximum lifting capacity.



Four-circuit hydraulic system with optional ROTOLINE for the use of power-intensive attachments.



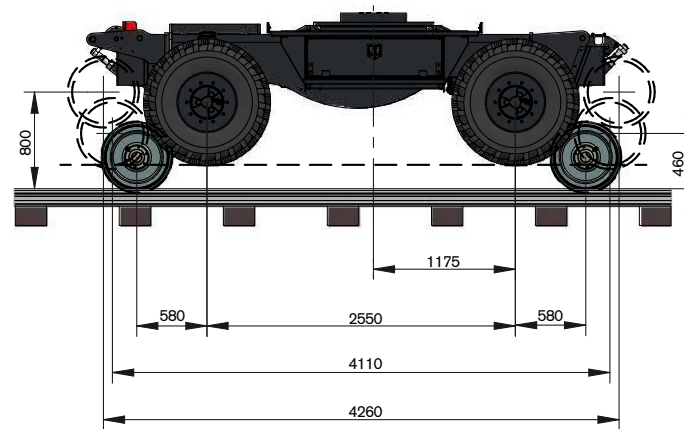
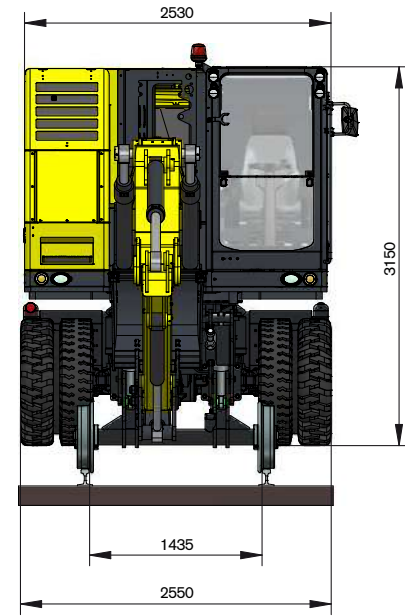
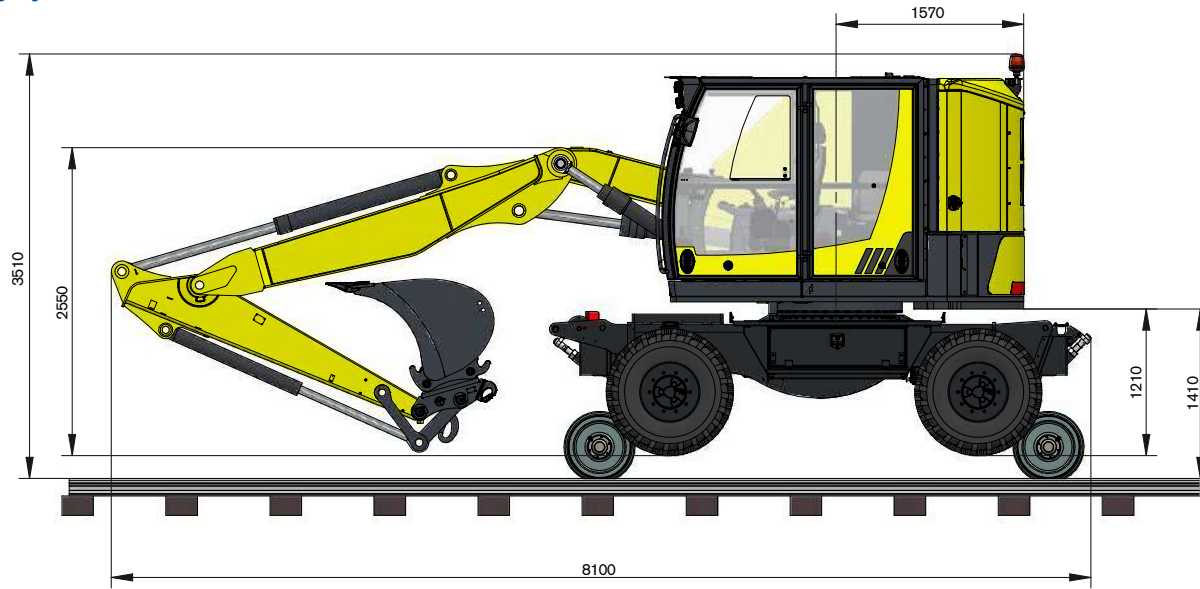
Modern double cab for safe and productive working.



Joystick, display and operating elements optimally matched.

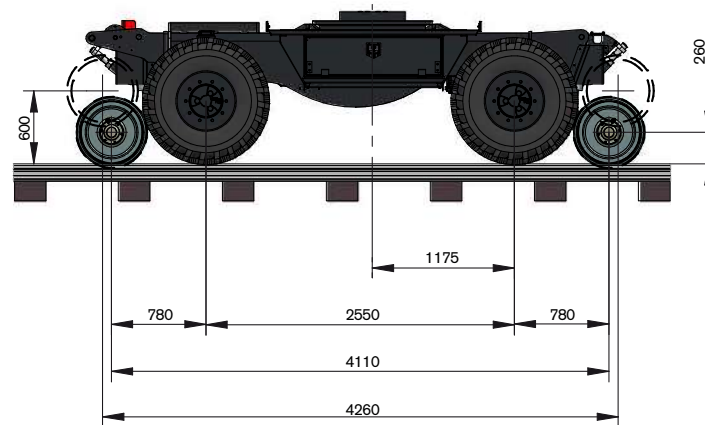
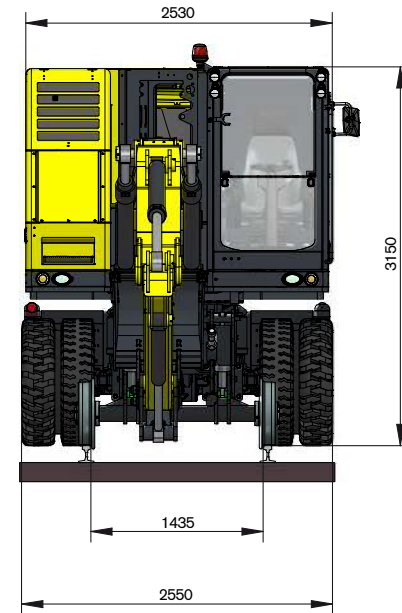
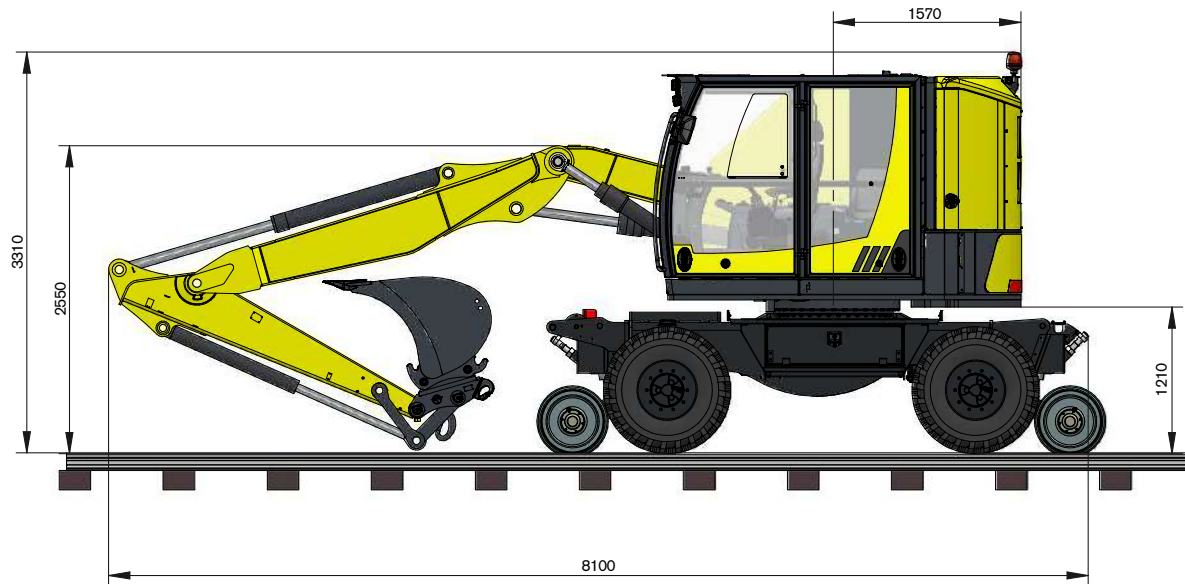
# DIMENSIONS

with two-piece boom / stick length 2.1 m  
Position category 9B to EN 15746-1

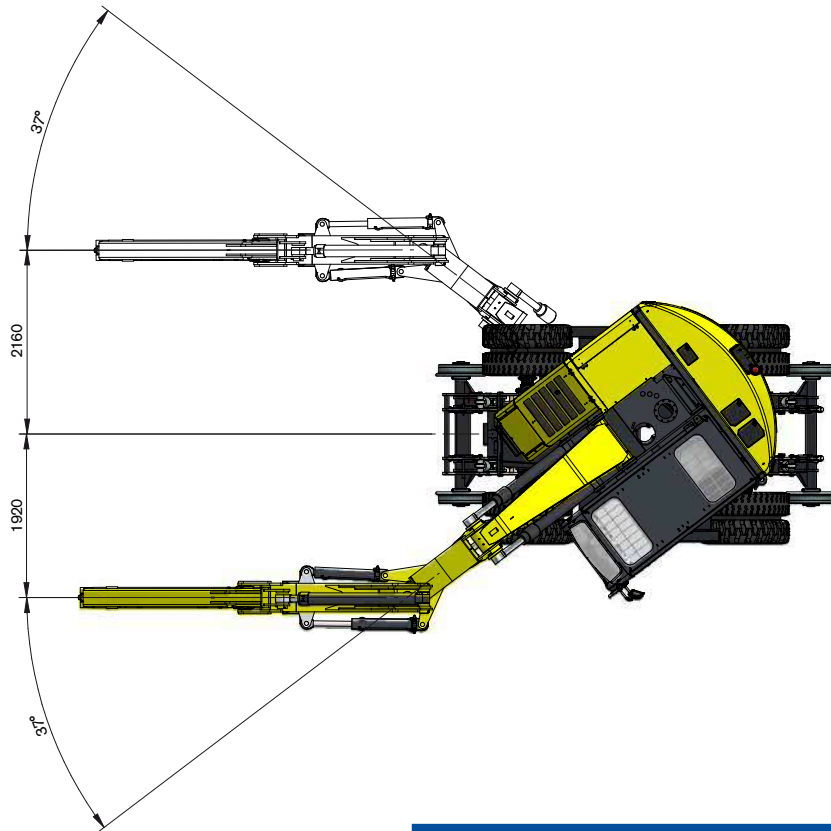


# DIMENSIONS

with two-piece boom / stick length 2.1 m  
Position category 9C to EN 15746-1



## TWO-PIECE OFFSET BOOM



### Digging forces

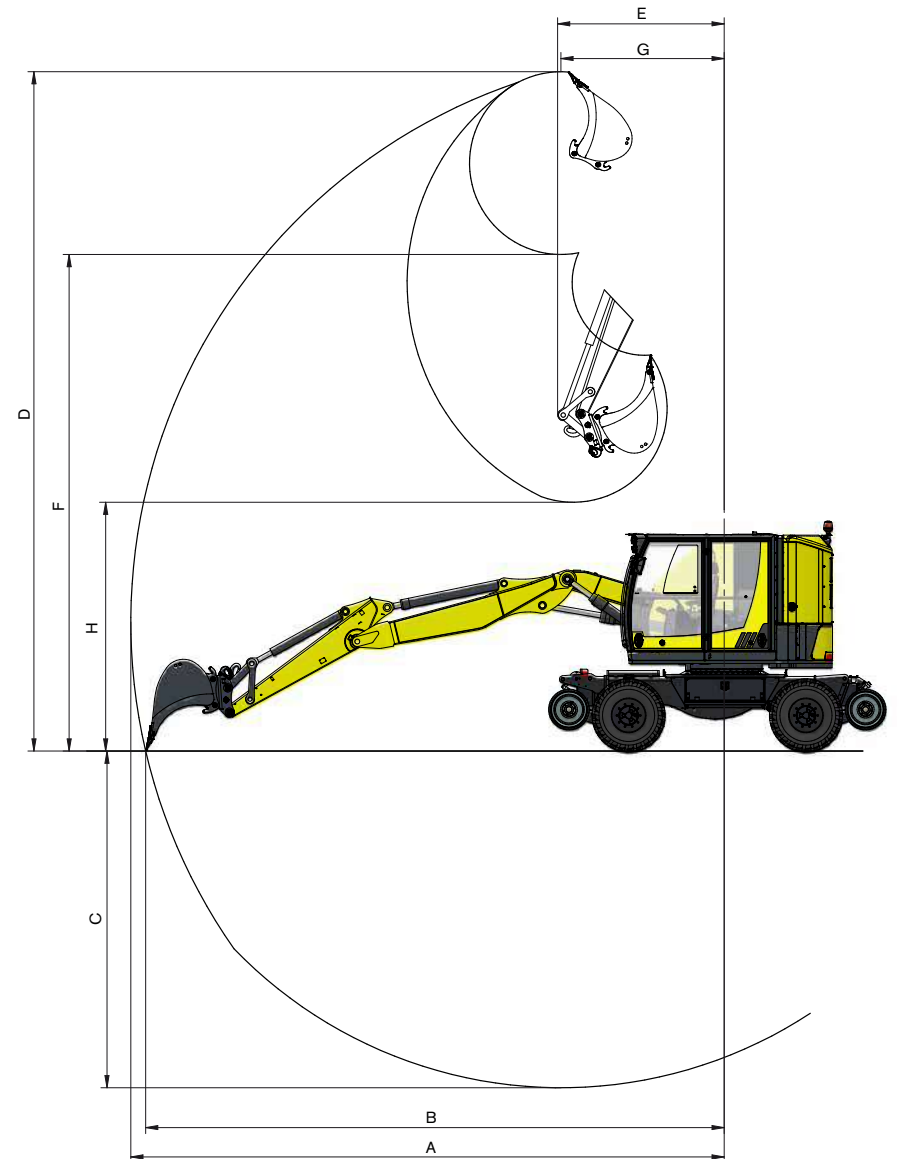
#### Stick length 2.1 m

Breakout force	97.3 kN
Ripping force	79.4 kN

### Digging envelope

Stick length 2.1 m	mm
A - Max. reach	8530
B - Max. reach at ground level	8320
C - Max. digging depth	4840
D - Max. digging height	9770
E - Min. swing radius	2400
F - Max. dumping height	7140
G - Swing radius at max. height	2350
H - Max. dumping height with stick fully retracted	3580

## DIGGING ENVELOPE



# TECHNICAL SPECIFICATIONS

(Technical specifications will vary depending on chassis type and equipment)

## Engine

Engine model	John Deere 4045HFC09
Power rating to ISO3046	125 kW (168 PS) @ 2000 rpm
Torque	667 Nm @ 1600 rpm
Engine type	in-line, 4-cylinder
▶ Bore/stroke	106 / 127 mm
▶ Displacement	4.5 l
Operating method	4-cycle diesel common-rail injection, twin turbochargers with charge air cooler
Exhaust emissions	EU 97/68/EC Stage IV US EPA Tier IV Final
Exhaust filters	Particulate filter and SCR
Cooling system	Water cooling
Air filter	Dry air filter with main and safety elements
Fuel tank capacity	280 l
Automatic idle running	Joystick
Electrical system	
▶ Operating voltage	24 V
▶ Battery	2x 95 Ah / 12V
▶ Alternator	100 A
▶ Starter	7.8 kW

## Swing system

Drive	Closed, stepless hydraulic circuit
Gearbox	Two-stage planetary gearing running in oil bath
Slewing ring	Module 10 with hardened surfaces
Slewing speed	0 – 10 rpm, stepless
Slewing torque	45 kNm
Brake	Negative holding brake, lockable

## Attachment

Hydraulic cylinders	Cylinders with end position damping
Lubrication	Central lubrication

## Hydraulic system

Hydraulic system	Four-circuit LS / LUDV load-independent flow-sharing system; option of 5-circuit system (ROTOline)
Operating pressure	340 bar / 370 bar (booster)
Max. flow rate	460 l/min (without ROTOline)
Hydraulic circuit 1	Double-acting, proportional max. 180 l/min, 150 – 350 bar
Hydraulic circuit 2	Double-acting, proportional max. 100 l/min, 150 – 350 bar
Hydraulic circuit 3	Double-acting, proportional max. 50 l/min, 150 – 350 bar
Quick coupler circuit	Double-acting, digital 50 – 350 bar
ROTOline (optional)	Single-acting with priority max. 190 l/min, 20 – 350 bar
Pump control	Bosch Rexroth LUDV system with electronic power limiting controller, pressure cut-off
Hydraulic tank capacity	150 l
Hydraulic system capacity	300 l
Filters	Return filter 10 µm Fine filter 1 µm
Cooling system	Stepless, hydraulically driven fan
Mode selection	Three individually adjustable performance modes and driver profiles for efficient and
Speed setting	Stepless adjustment of setting over the entire speed range

## Control system

Energy distribution	Bosch Rexroth control valves with integrated pressure relief and anti-cavitation valves
Operation	
▶ Superstructure	Electroproportional joysticks
▶ Driving	Electroproportional foot pedal
Additional functions	Electroproportional foot pedals and rocker switches on joystick

## Cab

Cab	ROPS/FOPS approved two-man safety cab, upper windscreen assisted and retractable under cab roof, integrated working light, door with side window, large storage compartments and integrated cool box, cab with hydromount suspension, tinted windows, sun blind
Driver seat	GRAMMER air-suspended super comfort seat with headrest, APS (automatic positioning system), fore/aft isolator, seat heating, passive climate system and lap belt
Control	Joysticks on control carriers at seat
Operation and display	Large, high-resolution display, controller next to operator seat
Air-conditioning	Central manual operating element for heating and air-conditioning, three-speed blower

## Undercarriage

Drive	Bent-axis motor with brake valve on both sides
Gearbox	Two-speed powershift transmission with creep speed
Tractive force	85 kN
Travel speed	
▶ Creep speed	0 – 3 km/h
▶ 1 <sup>st</sup> gear	0 – 8 km/h
▶ 2 <sup>nd</sup> gear	0 – 30 km/h
Travel mode	Automotive driving mode with foot pedal
Axles	Manually or automatically operated locking of oscillating axle
Dual-circuit braking system	Hydraulically operated, low-maintenance multiple-disc brake running in oil bath
Stabilisation options	Rail axle front & rear Outriggers

## EQUIPMENT

Cab		Undercarriage	Superstructure	Attachment
Adjustable steering column	▪	Dual-circuit braking system	Battery isolator switch	Cylinder end position damping
Air-conditioning, manually adjustable	+	Grab suspension bracket	Electric refuelling pump	Humus bucket
Auxiliary heater	+	Grounding cable reel incl. cable (30 m)	Hand rails, anti-slip coatings	Hydraulic circuit 1 incl. return line
Beacon	▪	Lashing eyes for transportation	Rear working lights, LED, 2 off	Hydraulic circuit 2
Coat hook	▪	Oscillating axle lock	Service doors, lockable	Hydraulic circuit 3
Cool box	▪	Outriggers	Signal lights, LED	Leakage oil line
Display controller	▪	Parking brake	Swing lock, mechanical	Offset two-piece boom
Driver seat with air suspension, heated and individually adjustable	▪	Pipe fracture safety valves for rail guide cylinders		Overload warning device
Emergency brake and air horn actuation	▪	Rail axle position monitor	<b>Hydraulic system</b>	Pipe fracture safety valve for adjusting cylinder
Emergency stop switch	▪	Special track gauge for rail axle	Accumulator for controlled lowering of attachment	Pipe fracture safety valve for dipper cylinder
Fire extinguisher (ABC, 6 kg)	▪	Tool box on both sides (in the case of outriggers)	Biodegradable hydraulic oil	Pipe fracture safety valve for lift cylinder
Foot mat (rubber), removable	▪	Tow bar	Bypass filter	Provision for ballast tamper
FOPS level I (ISO 10262)	▪	Trailer hitches	Emergency actuation, electric	Provision for hydraulic quick coupler
Front working lights, LED, 4 off	▪	Trailer socket (15-pole)	Hydraulic oil filter in return line	Provision for Oilquick quick coupler
Fuel consumption indicator	▪	Travel speed levels	Power limiting controller, electric	ROTOline EW/DW
Interior lighting	▪	Two-speed power shift transmission	Pressure testing connectors	Tool management (adjustable via display)
Proportional steering	▪	Tyre filling tube in the case of wagon braking system		Two-piece boom
Radio with Bluetooth and USB	▪	Wagon air brake	<b>Complete machine</b>	Working lights on boom, LED, 2 off
Rain cover over windscreen	▪	Wagon vacuum brake	Central lubrication for superstructure and attachments, electric	
Reversing alarm	+		Custom paint finish	
Roof guard FOPS level II (ISO 10262)	+		Height and swing limitation (road and rail)	
ROPS (roll-over protection structure) to ISO 12117-2)	▪		Remote diagnostics	

▪ = Standard  
+ = Option