

SC-25.09 Shotcrete Robot



SC-25.09 shotcrete robot is a special mechanized equipment independently developed by NANCHANG KAMACH MINING CO., LTD. for metal mines, tunneling and other support work, which integrates walking, concrete pumping and spraying, and has the remarkable characteristics of flexible construction operations, high efficiency, safety and reliability.

1. Multi-degree hydraulic-driven spray arm design, with LoS wireless remote control, can easily achieve extension, rotation, pitch and spraying of the arm, with wide coverage and convenient operation
2. The hopper is equipped with a hydraulic drive agitator and an adjustable electric agitator grille for easy pumping, cleaning and maintenance.
3. Standard electric drive screw-type air compressor, additive pumping system using screw quick-condensing agent pump, PLC control, according to the change of concrete flow rate in proportion to synchronously adjust the output flow, so that it can achieve the optimal ratio.
4. Central articulated-chassis, four-wheel drive, suitable for working in narrow underground roadways and tunnels. The power transmission system adopts a full set of imported EFI turbocharged engine, hydraulic shift transmission and wet brake axle, equipped with spring-pressured brake, hydraulic release brake, the braking performance is safe and reliable.
5. The layout of the whole vehicle is reasonable, and maintenance convenient.

Technical Parameter

Spray boom	
Maximum spray range	
Spray height	10 m
Spray width	18 m
Spray forward distance	9 m
Spray boom stroke	4 m
Spray boom Pitch angle	+45°/-30°
Boom rotate angle	270 °

Spray Nozzle	
Nozzle longitudinal axis rotation angle	360°
Nozzle vertical axis swing angle	240°
Nozzle rotate angle	360°
Nozzle diameter	DN 50

Concrete pumping pump	
Hydraulic driven tandem piston pump	
➤ Pumping capacity	25m ³ /h
➤ Pumping pressure	7.5 MPa
➤ Pumping cylinder diameter	160 mm
Pumping pipe diameter	DN 65
Lubrication type	Automatic lubricate

Additive pumping system	
Hydraulic driven Progressive cavity pump	
➤ Pump flow range	50~1000 L/h
➤ Working pressure	Max. 2 MPa
➤ Control mode	PLC
➤ Additive tank volume	350 Litre

Air-compressor	
Electric drive screw compressor	
➤ Air volume	9.3 m ³ /min
➤ Air pressure	8 bar
➤ Electric motor power	45 kw/380V

Concrete hopper	
➤ Hopper volume	300 Litre
➤ Hopper height	1450 mm

High voltage electrical system	
➤ Voltage	380V @ 50 60Hz
➤ Electric motor	55KW
➤ Hydraulic cable reel	
➤ Electric cable size	3×70 mm ² +1×35 mm ²
➤ Electric cable length	70 m

TECHNICAL PARAMETER

Chassis	
Articulated mining chassis	
Articulation steering angle	max ±40°
Engine	
Brand, model & specifications	TCD2013 Deutz engine with turbo charger
Rated power	120 KW@2300 rpm
Emission standard	EU 3
Exhaust purifier silencer	DOC+COP
Transmission	
Brand, model & specifications	DANA T24000 electric control power shift transmission
Gears	Advance 2 gears+ Rev 1 gear
Drive method	4WD
Drive axle	
Brand, model & specifications	DANA 123 Series wet brake axles
Front axle oscillate angle	±8°

Rear axle fixed	
Tires	12.00-20 PR16
Fuel tank volume	240 L

Vehicle performance	
Vehicle travel speed	
➤ 1 st gear speed	Max. 5 km/h
➤ 2 nd gear speed	12 km/h
➤ 3 rd gear speed	25 km/h
➤ Travel speed at 1:7 slope	Max. 6 km/h
➤ Max. grade ability	25%

Braking system	
Service brake, parking brake, emergency brake	
Service brake	Dual-circuit independent braking system for front and rear axles
Parking brake	Spring brake, hydraulic release, fail-safe brake
Equipped with automatic pressure protection, neutral automatic braking function	

Cab	
Open cabin	STD 1 driver
Standard mechanical suspension seat	
Norsmark multi-function display	
Counter	Engine speed, working hours, vehicle speed
Vehicle status	Different liquid level, temperature. Pressure, alarms

High pressure cleaning system	
Hydraulic driven high pressure cleaning water pump	
Output flow	15L/min
Output pressure	8 MPa
Water hose length	15 m

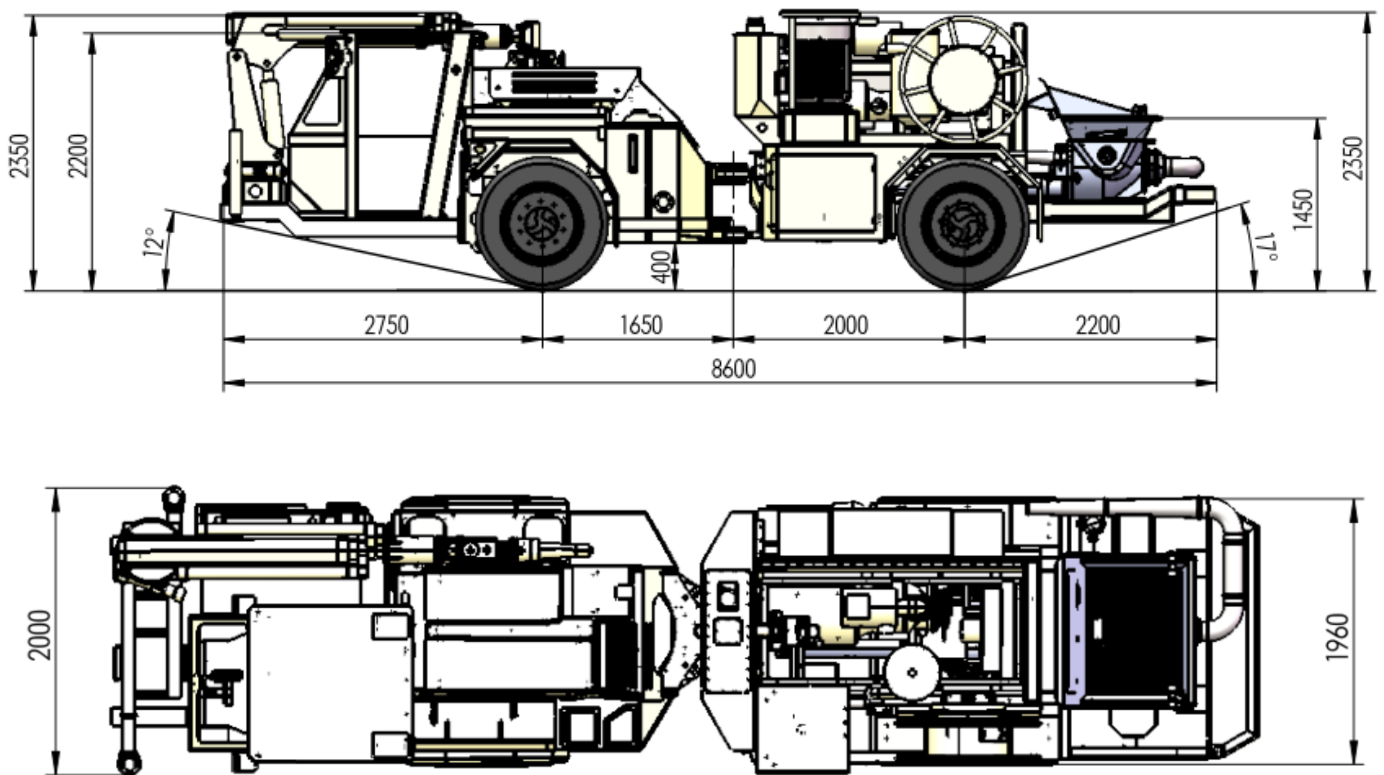
Hydraulic system	
Variable plunger pump, load start protection	
Variable pump	210 bar, 95 L/min @ 2300rpm
Hydraulic oil tank volume	300 Litre
Filtration accuracy	10 μm
Spray hydraulic system	
Variable plunger pump service system	
Drive motor	45kW/50Hz/1480rpm
Concrete pumping pump	190L/min
Spray boom oil pump	65L/min

Electric system	
Can-bus design	
Norsmark controlled chassis with failure diagnosis system, VCU production system	
Spray system adopts PLC automatic control system	
Electric wiring IP65 protection class	
Battery	2×115 Ah
Generator	100 A
LED driving lights	
Front lights	4×18W

Rear lights	2×18W
Side lights	2×43W
LED work lights	
Cab	2×43W
Spray boom	2×43W
Concrete hopper	1×43W

Others	
Hand brake activate device	
Sealed cabin with air-conditioner	
Automatic fire suppression system	Manual activate, self-activation, controller activate
Travel aid system with 1TB recorder	
Rim	

EXTERNAL DIMENSIONS



GENERAL DIMENSIONS

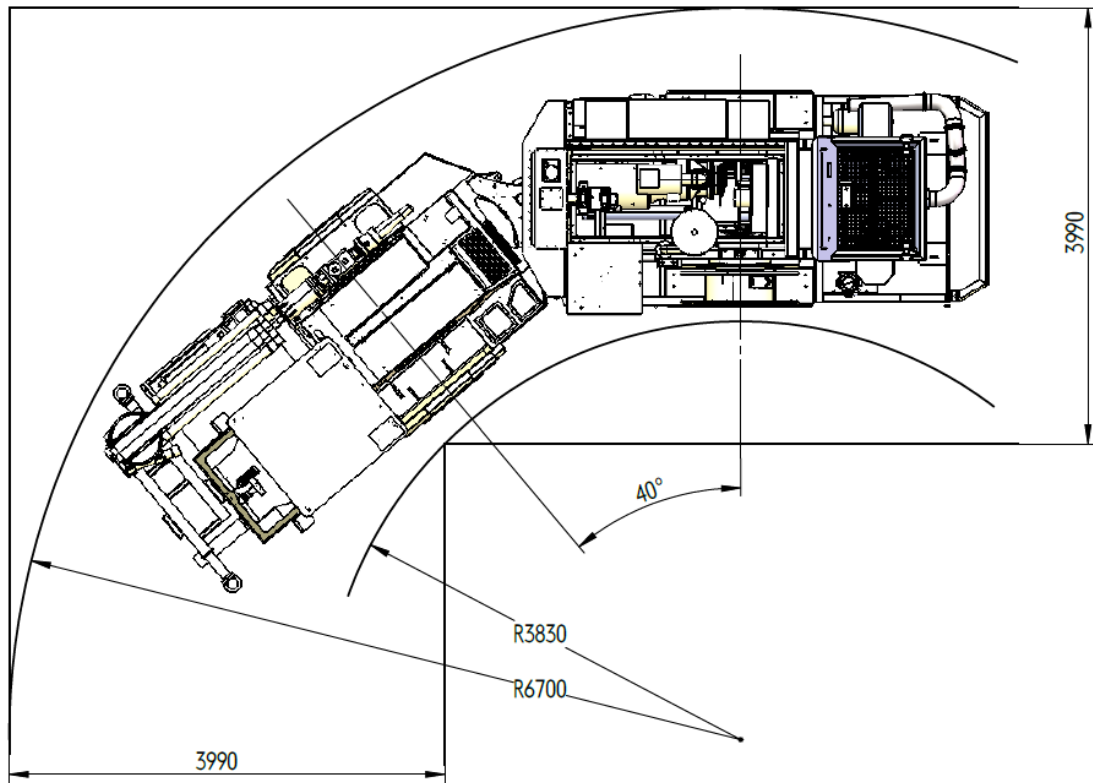
General dimensions	
Length	8600 mm
Width	2000 mm
Height	2350 mm
Cab height	2200 mm
Tread	3650 mm
Wheel base	1650 mm
Ground clearance	400 mm
Turning radius (External)	6700 mm
Turning radius (Inner)	3830 mm

Weight	
G.V.W.	13500 KG

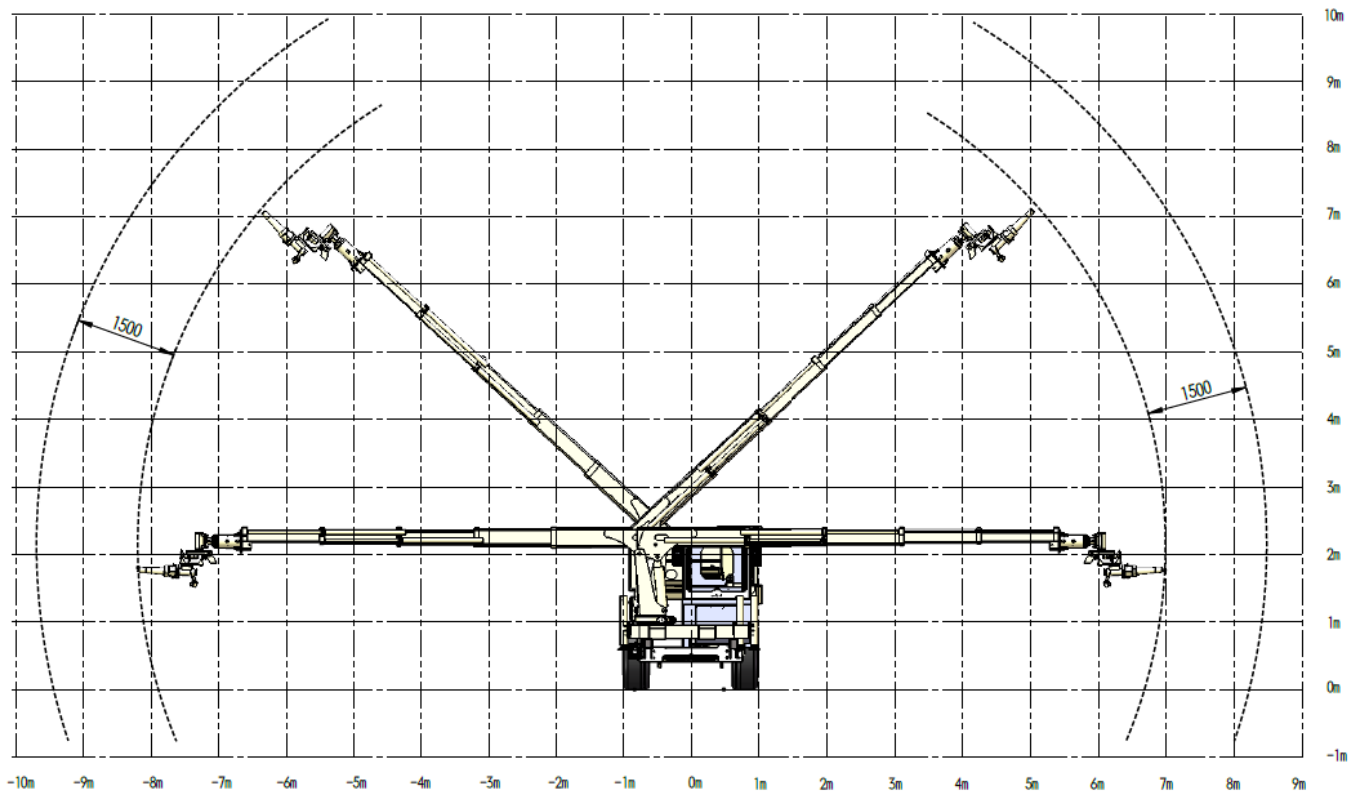
SHOTCRETE ROBOT MAIN COMPONENTS			
ITEM	NAME	BRAND	MODEL
ELE. SYSTEM	Cable, Wiring		
	Cable reel		
ADDITIVE SYSTEM	Additive screw pump	NETZSCH	
	Pump drive motor	DANFOSS EATON	
AIR COMPRESSOR	Screw rotate motor	POWRTEC	ES700PD-88/45KW
SPRINKLE SYSTEM	360° rotate motor	TRATO	
	240° rotate motor	TROTO	
	Brush motor	EATON	
	Brush assembly		
CLEARNING SYSTEM	High pressure water pump & Accessories--Cleaning		
	Drive motor		
BOOM SYSTEM	Boom assembly	BOB-LIFT	SQ4SG4
	Boom multi-way valve	ITALY FP	ICPSV4S1/210-3-6EA2
HYD. SYSTEM	Radiator	KAMACH	KT-YS-QZ2008
	Accumulator	KAMACH	NXQ-A-6.3/20-L-Y
	Main valve group and auxiliary valve group		KVF25-16ZFZ-GL(0208)
	Additive valve group		GPSNJFZ(0009)
	Motor and Flange Couplings	SY-MOTOR WANNAN	YE3-250M-4-B35
	Main oil pump	REXROTH	A11V095LRDU2/10R-NZD12K04P
	Boom pump	REXROTH	A10VO45DFLR-31R-VSC12K068
	Dual gear pump	WANYE CHANGYUAN	CBHLB-F525/F525-AFφ
PUMPING SYSTEM	Master cylinder		
	Delivery cylinder		
	Automatic lubrication system		
	Reducer & piping	PUMPING WEAR HOSE	65 hose、120-65
	Elbow and quick-release connect	PUMPING WEAR HOSE	120
	Sprinklers, manifolds, mounts, etc.	PUMPING WEAR HOSE	
CTRL. SYSTEM	Host intelligent Ctrl. Cabinet		EPC/REXROTH
	Remote controller	HM	TCS-C64-L-CAN



TURNING RADIUS



SPRAY RANGE



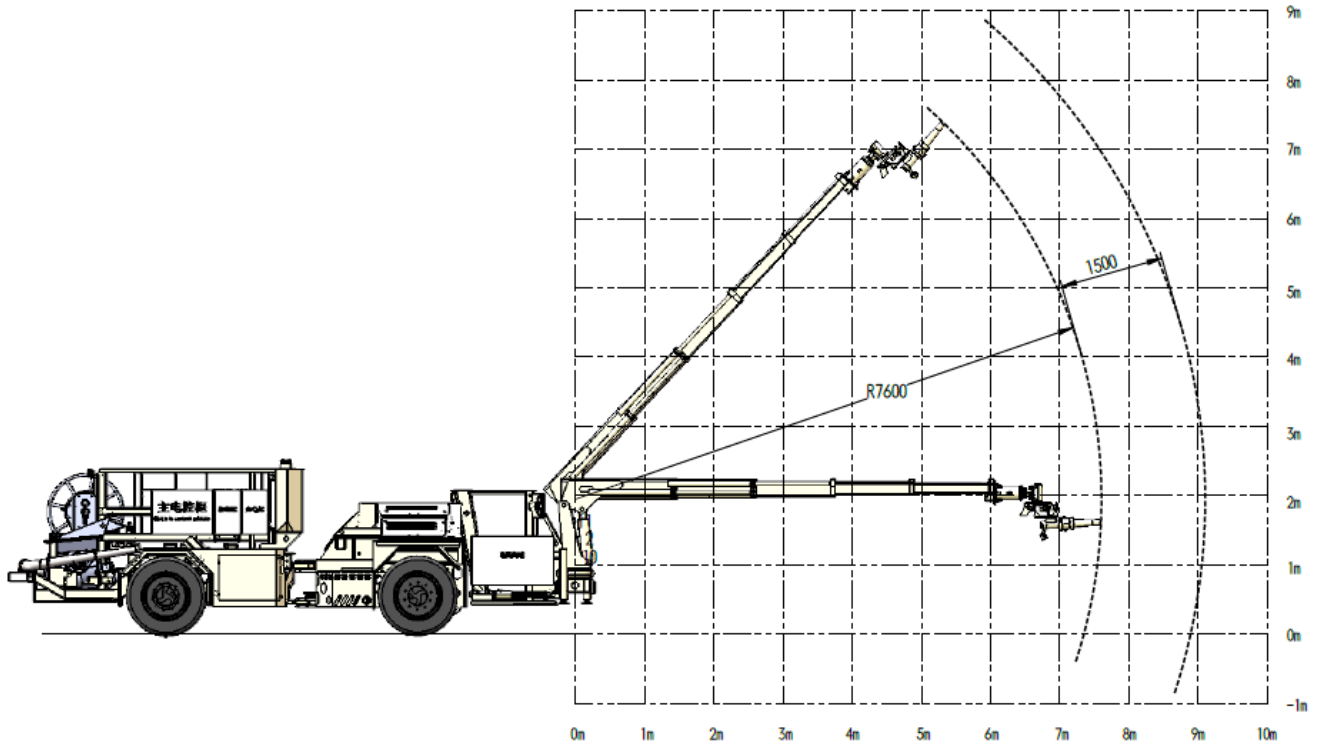


PHOTO GALLERY

