



Minimec 2



Normet reserves the right to change this specification without further notice

Pictures may include options and additional equipment.

INTRODUCTION



Very agile and robust carrier

The spray manipulator is mounted on a sturdy tracked carrier which is driven by a powerful, yet quiet diesel engine of the latest generation. The two powerful independent hydraulic drive hub motors allow turning on the spot.

Hydraulically activated stabilizers ensure a safe stand of the carrier during the spraying process. The included additional foot blocks provide even more stability on soft ground and in slopes. Easily accessible lifting points at the center of the machine allow easy and safe lifting.

Plenty of power for a dynamic operation

The electric motor or diesel engine provides the spray arm and spray head with the hydraulic power for a dynamic spraying operation. The well protected air/oil cooler delivers the cooling capacity required for continuous operation.

Built for purpose

Six powerful LED-lights on the boom and carrier provide a great illumination of the working environment which makes any additional lighting obsolete.

The field-tested and fast responding spray head with a wide and high range and the greatest possible degree of movements facilitates the correct application of a high-quality sprayed concrete layer even in very confined spaces.



Safety

The safety is further increased by the stability of the machine and the possibility to drive and spray remotely from a safe distance. In addition, the drive hub motors are equipped with spring applied brakes which are activated whenever the operator releases the controls. Minimec is CE-certified and meets the industry requirements and safety regulations.

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TECHNICAL SPECIFICATION

SPRAY BOOM

Nozzle nutation for better distribution of the spray material and surface quality.

All hydraulic movements are proportionally controlled and pressure compensated.

Boom working range:

Telescopic boom extension	1900 mm
Boom rotation	110°
Lateral	6.0 m
Vertical max.	7.2 m
Nozzle head rotation	360°
Nozzle tilting	180°
Nozzle nutation	5°

CONCRETE LINE ON BOOM

Concrete line diameter 65 mm (2.5")

- 5 m concrete hose with anti-kink spring, mass tube and necessary clamps and gaskets (Standard couplings)
 - Without concrete hose (Mass tube with HD-flange)
 - 20 mm - 50 mm ID concrete hose with anti-kink spring plus dry spraying equipment

ACCELERATOR AND AIR LINE ON BOOM

Boom air line	1 1/4"
Boom accelerator line	3/4"
Connection block with quick connectors	
Shut-off and bleed valves	

BOOM CONTROL SYSTEM

Two joystick radio remote control for spray boom

Control functions:

- Boom movements
- Nozzle head movements
- Nozzle oscillator on/off

Adjustable movement speeds

Back-up cable for radio remote

Radio remote frequency:

- 419 MHz
- 429 MHz
- 434 MHz
- 458 MHz and tilt switch 22,5°

HYDRAULIC SYSTEM

Diesel powered hydraulic pump

Variable displacement pump for carrier and spray boom

Electric power pack 11 kW, 50/60 Hz with hydraulic pump

Variable displacement pump for carrier and spray boom

Oil tank capacity, stainless steel 55 l

Return oil filtration 10 µm

Oil level and return filter contamination indicator

Hydraulic oil cooling system is only active when electric power pack is activated.

PERFORMANCE

Tramming speed (on flat)	2.5 km/h
Max. tramming incline	20°
Max. tramming incline (sideways)	10°
Max. working incline	10°

ELECTRICAL SYSTEM

Mains supply voltage:

- 50 Hz
 - 380 V (IEC)
 - 400 V (IEC)
 - 415 V (IEC)
 - 440 V (IEC)
 - 525 V (IEC)
 - 690 V (IEC)
 - 60 Hz
 - 440 V (UL/CSA)
 - 480 V, (460 V) (UL/CSA)
 - 600 V, (575 V) (UL/CSA)

Hooks for storing the supply cable

Battery charger for 12/24 V system

12/24 V ELECTRICAL SYSTEM

Mechanical main switch

12 V LED driving and parking lights

24 V LED working lights on boom (4 pcs)

Signal horn

Warning signal for carrier movements

CARRIER

Caterpillar C1.1 IOPU 552-5768 18,4 kW at 2800 RPM

EU Stage V / EPA Tier4 final

12 V Battery

Electric starter

Fuel tank capacity 20 l

Four mechanical operating levers for controlling the tracks and support legs

Hydraulic drive hub motors with spring applied brakes

Hydraulic support legs

Two rubber tracks (surface contact 200 x 1300 mm)

OTHER

Powder extinguisher:

- 6 kg
- Ansul Sentry (9 kg)

Support leg feet extension blocks

Painting and taping:

- Standard painting and taping
- Painting and taping according to customer specifications

Text labels in:

- En/Ru/One of destination EU languages
- Other language

Measurements:

- Noise
- Vibration
- Emissions

Standard tool set:

Cleaning plug
 Washing ball
 Hitting tool for nozzle
 Claw coupling
 Hose clamp
 Rubber hose 3/4", 4 m
 Carabiner
 Wrench for spraying nozzles
 Hammer 800 g
 Nozzle tip d45 mm plastic

ACCESSORIES

- Robust and abrasion-resistant mains voltage supply cable with PUR outer sheath

Cable reel capacity:	
Voltage / Frequency	Cable
380 V / 50 Hz	25 m 4 x 6 mm ²
400 V / 50 Hz	25 m 4 x 6 mm ²
415 V / 50 Hz	25 m 4 x 6 mm ²
440 V / 50 Hz	25 m 4 x 6 mm ²
525 V / 50 Hz	25 m 4 x 6 mm ²
690 V / 50 Hz	25 m 4 x 6 mm ²

- Remote Driving System (RDS) to move the machine from the remote control
- Mechanical boom extension 68 cm including counter weight
- Concrete delivery system 12,5 m
 65 mm (2½") Concrete hose, standard couplings and gas-kets
 Accelerator hose 19 mm (3/4")
- Dry spraying equipment kit
- Warning LED light (From the options below it is possible to choose 1 combination)

Color

- Amber
- Blue
- Red
- Green (n/a with rotating light pattern)
- White (n/a with rotating light pattern)

Light pattern

- Strobe
- Rotating

SERVICES

NORMET SERVICES

Our services cover the whole life cycle of your equipment. They include start-up and commissioning, genuine spare parts, upgrades & modifications, and remanufacturing, as well as rental and leasing offerings, and field services. We also offer improvement services such as operator training and process audits.

SPARE PARTS

Genuine parts from Normet Services ensure that you always have the highest quality parts available to keep your equipment up and running. Depending on your needs, we can offer everything from individual parts to complete parts contracts, and our professionals around the world have the experience to ensure that you have the parts you need when you need them.

Initial spare parts package:

Available for 1000h of use*. Includes periodical service, most common wearing parts and most critical safety parts.

Spare parts packages made for customer needs:

Available based on hours of use*. Includes periodical service, most common wearing parts and most critical safety parts.

* Recommendations are based on average hours – can vary a lot depending on work site conditions.

UPGRADES AND MODIFICATIONS

Our Upgrades and Modifications services are designed to ensure the economical, efficient and purposeful performance of your equipment over its entire life cycle. A service provided by a reliable OEM like Normet ensures the safety and performance of your equipment. Normet Upgrades and Modifications save you both time and money, while delivering the high quality you expect from us.

SERVICE CONTRACTS

With a service agreement, Normet manages your fleet with guaranteed availability and agreed costs, giving you transparency for your life cycle costs, annual operational budget and fleet uptime. This lets you focus on your core operations. Each service agreement is built and customized to meet the individual customer's needs from our portfolio of services. Depending on the level of service agreement you need, you can choose anything from basic technical support for an individual machine all the way up to services for your entire fleet, as well as process performance. The service levels we offer are:

- Parts Availability
- Fleet Support
- Fleet Availability
- Process Performance

The content of a service level can be tailored to meet your particular requirements.

TRAINING SERVICE

Our Training Services are available for you and your operators throughout the equipment lifecycle and they include:

	 Operation & Maintenance	 Spraying	 Charging	 Scaling
ADVANCED	Advanced fault diagnostics & troubleshooting	Concrete chemicals, testing and preparing for EFNARC-certificate test		
INTERMEDIATE	Troubleshooting training Foundations of electrics, hydraulics and mechanics NorSmart	Advanced training in concrete spraying Economics of concrete spraying	Advanced training in explosives Economics of charging	Advanced training in scaling Economics of scaling
BASIC	Operation and Maintenance Training Basic Product Training	Basic understanding of concrete spraying	Basic understanding of charging	Basic understanding of scaling
LEVEL	SERVICE	PROCESS KNOWLEDGE		

START-UP AND COMMISSIONING

1. OPERATOR TRAINING

	Start-up training	Commissioning
1.1 Classroom training		
General introduction and operation of machine	Basic	No classroom training included in commissioning
Safety instructions	Basic	
Use of manuals	Basic	
Technical introduction of equipment	Basic	
Hands-on service and pre-operation checks	Basic	
Controls and driving (starting, driving, stopping, parking)	Basic	
1.2 Practical training		
Pre-operation checks	Basic	Introduction
Driving, starting, stopping, parking	Basic	Introduction
Preparing the machine for specific operation conditions	Basic	Not covered
Operation	Basic	Introduction
Washing the machine	Basic	Introduction
Troubleshooting	Basic	Basic

2. MAINTENANCE AND REPAIR TRAINING

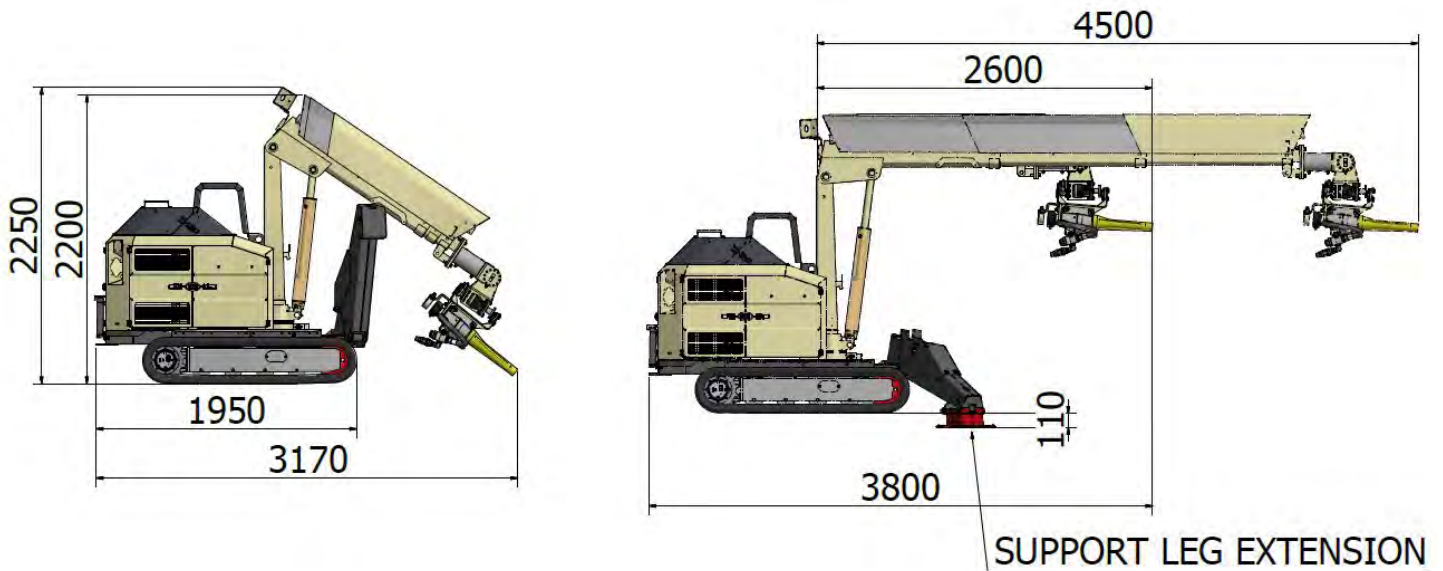
General operation of machines	Basic	Introduction
Symbols of drawings and codes	Basic	Not covered
Understanding hydraulic and electric schematics	Basic	Introduction
Control systems	Basic	Introduction
Function of main components (depending on equipment)	Basic	Introduction
Locations of components in the machine	Basic	Not covered
Periodical maintenance	Basic	Introduction
Troubleshooting	Basic	Not covered
Use of manuals	Basic	Introduction
Connection of hydraulic and electrical equipment	Basic	Not covered

DIMENSIONS AND WEIGHT

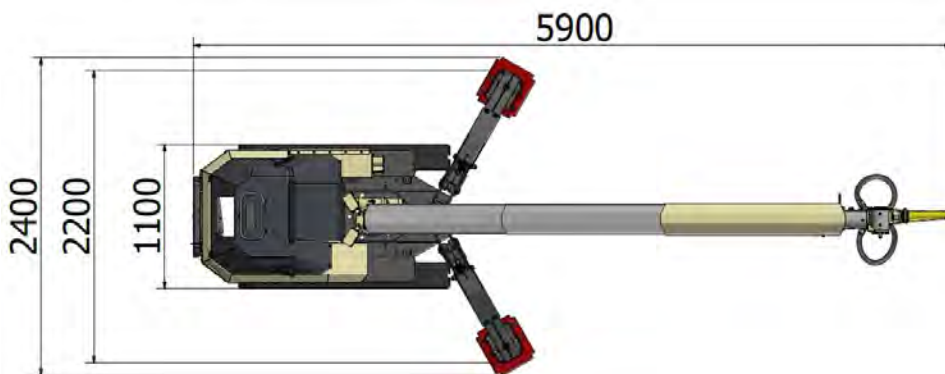
Length	3170 mm	Height	2250 mm
Width	1100 mm	Ground clearance	180 mm
Width (support legs extended)	2400 mm	Weight	2075 kg

SIDE VIEW

Transportation / Operational



TOP VIEW

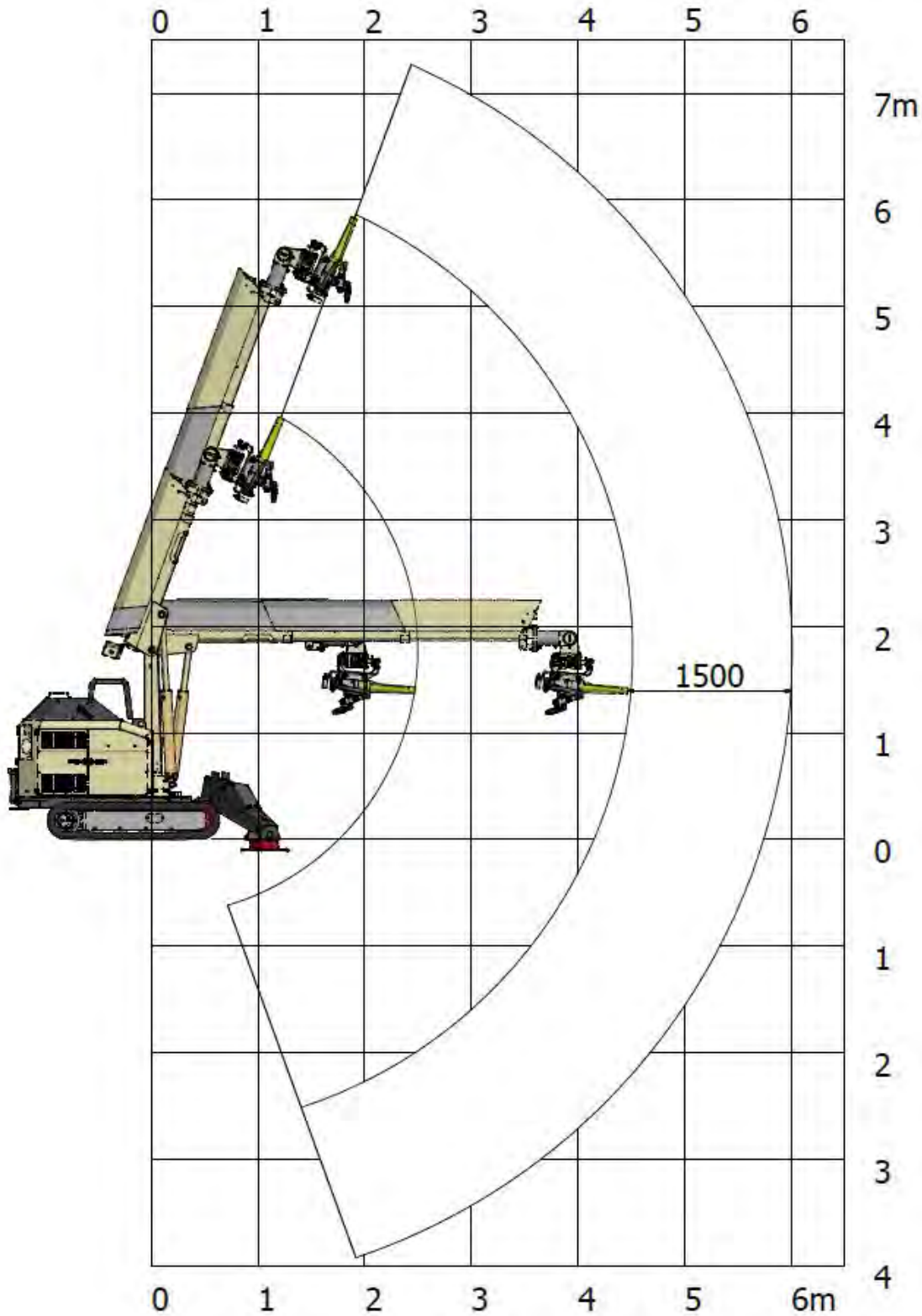


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BOOM COVERAGE

Vertical

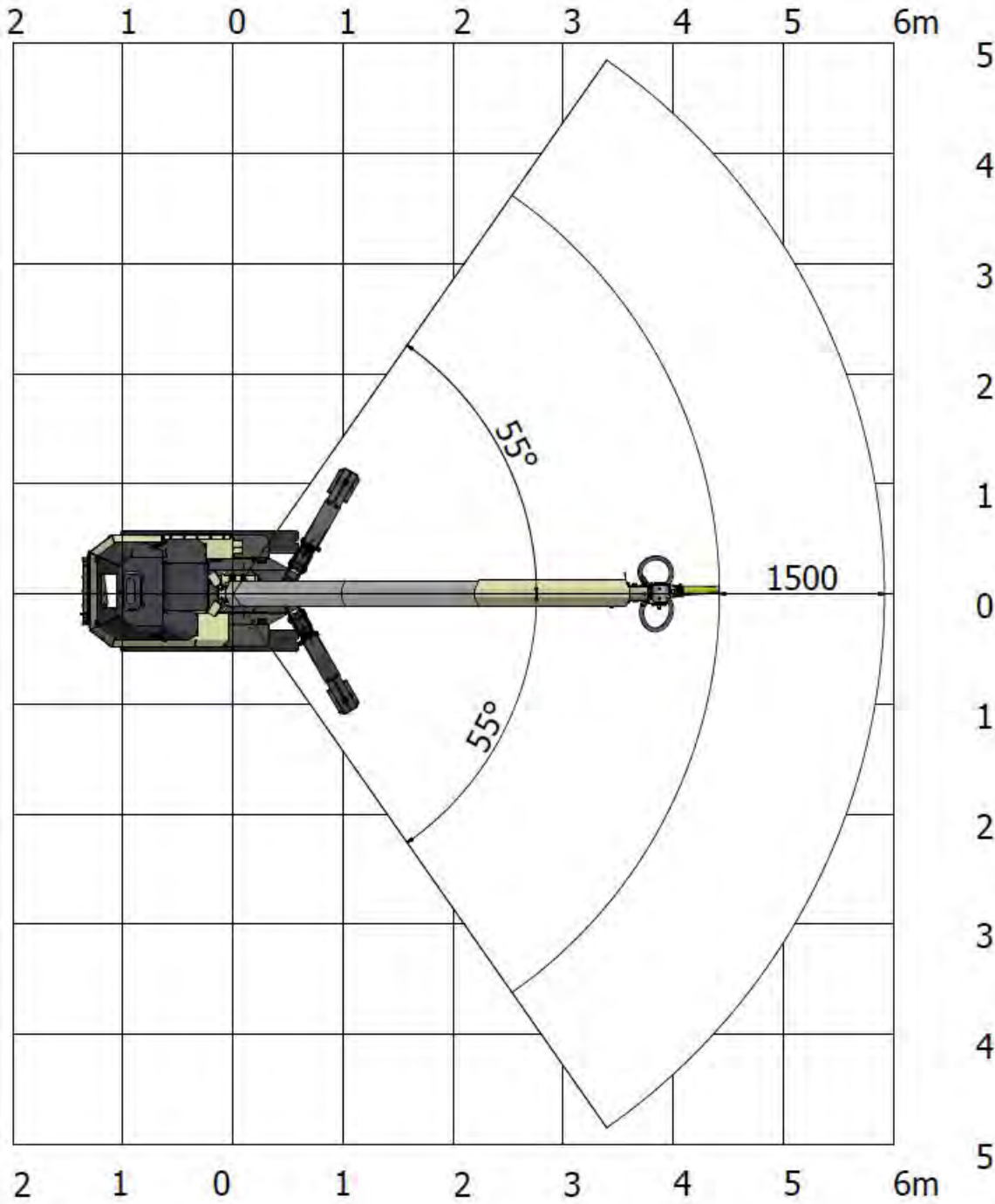


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BOOM COVERAGE

Lateral



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