



Utilift MF 540 SD



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Pictures may include options and additional equipment.

INTRODUCTION



Utilift MF 540 SD Scissor Lift with lifting capacity up to 4.5 tonnes and max. platform height of 4.5 m is designed to provide a safe work platform for all kinds of installation works in tunnels up to 6.5 m (21 feet) high.

Typical applications are fan installations, ventilation ducting, electrification works and piping for air and water services. Three platform sizes with side shift provide complete drift coverage from single setup practically in all kinds of mine headings. The works can be accomplished safely, efficiently and comfortably from the level work deck, elevated to a optimum work height. Optional remote drive system from the deck provides fully new type efficiency into installation and assembly works in underground mines.

The fully electric vehicle architecture (SmartDrive) includes latest Li-ion battery technology, fast charging capability, and two high-torque direct drive electric motors, which provide instant torque and efficient operation without any local emissions. Energy recuperation technology comes as a standard feature. Batteries are charged during downhill driving and deceleration which further increases total efficiency of the operation.

Maximum speed is 20 km/h. The fully reversible 4WD with high traction capability and instant torque ensures safe and sure movement in difficult ground conditions. Majority of the braking is done via electric motors recuperating energy, but the vehicle also includes efficient hydraulic dual-circuit oil immersed multi-disc brakes to provide additional braking power when it is needed.

Vehicle has an front axle suspension system, which improve safety, driving comfort and increases component lifetime.

Normet's FOPS and ROPS approved safety cabin provides superior visibility and comfortable compartment for the driver and the passenger. Cabin controls are easy and ergonomic to use, and the multifunctional display (MID) provides driving information (speed, RPM, temperatures, safety warnings & alarms etc.), which can be recorded for further analysis. The enclosed cabin and SmartDrive provide low noise level.



NorSmart 3 electric system is designed for harsh underground environment. System consists of self-extinguishing wire harnesses with tinned wires, water tight conduits and all exposed components are minimum IP65 protection class. In addition, vehicle layout allows easy access to all service points, all daily checks can be done from the ground level.

TECHNICAL SPECIFICATION

LIFTING PLATFORM

Dimensions:

- 2000 X 4000 mm
 - Lifting capacity 4500 kg
 - Side shifting 550 mm
- 2400 X 4000 mm
 - Lifting capacity 4500 kg
 - Side shifting 650 mm
- 2400 X 5200 mm
 - Lifting capacity 4000 kg
 - Side shifting 650 mm

Max. Lifting height 4500 mm

Tilt +/- 8°

Start/stop from platform

Battery operated emergency pump

Side access gates to platform

Rear handrails of platform:

- Fixed handrail
- Gate for loading equipment on platform

Scissors movement alarm

Safety monitoring system of MEWP:

Dangerous movement preventing system
 (mandatory in NAP, NAS, CE area)

ELECTRICAL SYSTEM

Main supply voltage

Power supply for the electrical functions

- 50 Hz
 - 380 V (IEC)
 - 400 V (IEC)
 - 415 V (IEC)
 - 525 V (IEC)
 - 690 V (IEC)
 - 1000 V (IEC)
 - 1000 V (AS/NZS)
- 60 Hz
 - 440 V (UL/CSA)
 - 440 V (IEC)
 - 480 V, (460 V) (UL/CSA)
 - 600 V, (575 V) (UL/CSA)
 - 1000 V (UL/CSA)

Robust and abrasion-resistant mains voltage supply cable with PUR outer sheath (excluding plug)

- 7 m cable without cable reel
- Hydraulically driven cable reel
 - No cable
 - 25 m cable
- Hydraulically driven cable reel with spooling device
 - No cable
 - 100 m cable

Pilot circuit

- No
- Yes

ELECTRIC MOTORS

Two direct drive permanent magnet electric motors

4-wheel drive, no separate transmission

Combined power rating 200 kW

PERFORMANCE

Max. tractive effort 99 kN

Tramming speed (horizontal) 20 km/h

Lateral gradient for tramming (continuous) 4°

Longitudinal gradient for tramming (continuous) 9°

Lateral gradient for operation 3°

BATTERY

Li-ion battery technology

Nominal voltage 663 V

Energy content 90 kWh

Liquid cooled

Fast charging capability

BATTERY CHARGING

25-30 kW on-board 3-phase AC charging system

for up to 2.5 hours of charging time (from 0 to 80%)

CCS type 2 fast-charging socket

to charge batteries from 0-80% in up to 40 min
 depending on charger

NOTE: compatible CCS charging station required with
 type 2 plug

AXLES AND BRAKES

Dana planetary type axles

Fixed load end axle

Suspended battery module axle

Electronic braking: energy recuperation
via electric motor braking

Service brake: hydraulically powered dual-circuit oil immersed
multidisc brakes in both axles

Safety/Parking brake: spring applied hydraulically released
fail-safe -type brake

Brake testing possible from cabin

TYRES AND RIMS

- Nokian Tyres 12.00–20" with NDT inspected rims
- Bridgestone 12.00–20" with NDT inspected rims

STEERING

Orbitrol type hydraulic frame steering

Frame articulation +/- 42°

HYDRAULIC SYSTEM

Hydraulic oil tank capacity 145 l

Variable displacement pump system for carrier:
200 bar, 100 l/min

24 VDC ELECTRICAL SYSTEM

2 x 12 V deep cycle batteries

24 V battery charger (DC/DC converter)

LED driving and indicator lights

LED work lights

LED side lights

Warning LED light:

Color

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

Light pattern

- Strobe
- Rotating

DRIVER'S COMPARTMENT

Enclosed 2-operator cabin FOPS/ROPS approved

Air conditioning and heating

Driver's seat and seat belt:

- Air suspended T-back seat with 3-point seat belt
- Air suspended heavy duty seat with 3-point seat belt

Passenger's seat:

- T-back seat with 3-point seat belt
- Heavy duty seat with 3-point seat belt
- 2 seats with retractable lap seat belts

Cabin door interlock switches with safety brake application

MACHINE CONNECTIVITY

- Machine connectivity hardware (WLAN/3G/4G/LTE)
- Analytics license (includes connectivity hardware)

TECHNICAL DOCUMENTATION

Standard documents:

Instruction manuals, hard copy 2 pcs:

- English
- Russian
- One of destination EU languages

Spare parts manuals, hard copy 2 pcs:

- English
- Russian

PDF manuals on USB-stick 2 pcs, includes instruction and
spare parts manuals

Additional documentation:

- Extra hard copies of manuals
- Extra PDF manuals
- LinkOne WebView electronic manuals
- Other than standard language manuals

OTHER

Dry chemical fire extinguisher system:

Ansul A-101, Checkfire 210

Powder extinguisher:

- 6 kg
- 12 kg
- Ansul Sentry

Number of extinguishers:

- 1
- 2

Painting and taping:

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

Reversing camera:

- 3 cameras, 3 displays
- 3 cameras, 3 displays and reversing radar
- 6 cameras, 3 displays with recording support

2 pairs of support legs at the load end and standard at the engine end

Electric pump for brake release

Text labels in:

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

Measurements:

- Noise
- Vibration

ACCESSORIES

PROCESS PRODUCTIVITY

- Fan rack, Max. diameter of fan 1250 mm

Platform size	Max. length of fan
2000 x 4000 mm	Fan rack not available
2400 x 4000 mm	3000 mm
2400 x 5200 mm	4250 mm
 - Hydraulic pipe lifters:
 - Lifting capacity of pipe lifters 350 kg
 - Stroke length 600 mm
 - Pipe diameter 70 - 270 mm or pipes with a nominal value from 2½" to 10"
 - Reduces lifting capacity of platform 400 kg
 - Hydraulic pipe lifters with tilt:
 - Lifting capacity of pipe lifters 350 kg
 - Stroke length 450 mm
 - Tilt -23°...+45°
 - Pipe outer diameter 25 - 335 mm or pipes with a nominal value from ¾" to 12"
 - Reduces lifting capacity of platform 400 kg
 - Crane Hiab 029:
 - Lifting capacity 12 kNm, 350 kg/3,4 m
 - Two hydraulic extensions, max reach 3,4 m
 - Reduces lifting capacity of platform 1000 kg
 - Crane only available with 2400 x 5200 platform
 - Load monitoring
 - Installation to rear of platform, gate at rear required
- Accessories:
- Radio controller and controls for optional grapple
 - Grapple for crane:
 - Pipe diameter 60 - 440 mm
 - Max. opening 1040 mm
 - Radio remote control
 - Rotator for grapple
 - Reduces max lifting capacity of crane 80 kg
 - Only available with CE approved crane with radio controller
 - Remote driving system (RDS)
 - Joystick drivable carrier from elevated platform
 - Speed of carrier, height of platform and incline of terrain limited to ensure safety
 - Only available with dangerous movement preventing system

- Radio remote controller
 - Platform functions, support legs
 - RDS functions if selected
- Hydraulic generator 400/230 V 50 Hz, 14.6 / 21.7 A
- 0,4 m³/min compressor with hose reel, air tank and tyre filling pistol (n/a with socket supply transformer)
- Compressed air inlet on carrier and air outlet in platform
- Welding kit
 - Includes welding generator (180 A welding current and 230V/400VAC output voltage) and welder's equipment; mask, gloves, scratch brush and slag hammer
- Grouting mixer / pump on platform
 - Pumping capacity max 40 l/min
 - Mixing capacity 90-100 l
- Toolbox on platform
- Scaling bars with rack:
 - bar lengths 1.8, 2.4 and 3.0 m
- Socket supply voltage (n/a with compressor)
 - No sockets
 - 220/230/240 V
 - 110/120 V

CARRIER PRODUCTIVITY

- Accessories for enclosed cabin:
 - Two-piece windscreen
 - Sliding rear window for driver's side
 - Audio system
 - Heated mirrors
 - 12 V, 20 A power supply in cabin with socket and connector
 - Deutch connector for 24 V, 10 A for external power supply
 - Drive battery coolant heater with interior heater and 24 VDC battery charger (230 V)
 - Fluid evacuation panel with sampling points
 - Automatic lubrication system
 - Spare rim and tyre
 - Toolbox and maintenance tools
 - Interior cooling fan
 - Wax tape for electric connectors

SAFETY

- Safety roof or bar on work platform
 - Hydraulic liftable safety bar
 - Safety roof with hydraulic lift and slide
 - Reduces lifting capacity 300 kg
- Cabin door puddle lights
- Extra warning LED light
 - Color
 - Amber
 - Blue
 - Red
 - Green (n/a with rotating light pattern)
 - White (n/a with rotating light pattern)
 - Light pattern
 - Strobe
 - Rotating
- Direction lights (Green/Red)
 - Both lights always on
 - Lights follows driving direction
- Extra warning LED light with battery backup
 - Color
 - Amber
 - Blue
 - Red
 - Green (n/a with rotating light pattern)
 - White (n/a with rotating light pattern)
 - Light pattern
 - Strobe
 - Rotating
- Seat belt interlock switch applies safety brake
- Front and rear grounding straps
 - Flat cable
 - Chain
- Redundant brake monitoring system
- Methane monitoring system
- Protection guards for tunnel curtains
- Tyre pressure indicators
- Warning triangles
- Flashlight with charger
- Hearing protectors
- Wheel chocks with brackets

BEV SAFETY FEATURES

- Battery safe box (for transportation and storage)

SERVICES

NORMET SERVICES

Normet is committed to servicing its customers all over the world. We provide service from a single machine to an entire fleet. The Normet service offering consists of many different products from delivery of parts and training to fleet performance agreements.

More information check [normet.com](https://www.normet.com):

<https://www.normet.com/en/products-and-services>

For any questions about Normet Services contact local Normet.

<https://www.normet.com/en/contact/>

SPARE PARTS

As a leading global Original Equipment Manufacturer, we are committed to providing a complete solution to your spare parts needs. All of Normet's spare parts are manufactured to the highest possible standards to help maintain the safety and profitability of your projects. Our spare parts improve efficiency and total cost of ownership throughout your operations.

Start a carefree journey with Normet equipment by having the right selection of parts available from the beginning.

Spare part recommendation / Start-up Spare Part package:

Available for the first 2000h*: includes periodical service parts, most common wearing parts and other recommended parts. (*Recommendations are based on average hours that can vary depending on worksite conditions.)

Underground, every part is critical!

More information check <https://www.normet.com>

SERVICE AGREEMENTS

Service agreements are always customized to meet our customer needs, consisting of various Normet service products. The service solution is created together with the customer and the level of an agreement can vary with different support agreements (including e.g. parts, periodical maintenance, on-call services, and audits) up to guaranteed fleet availability or process performance (including e.g. parts, all maintenance activities, operator trainings and process audits).

Note that we can provide Digital solutions with connected equipment.

More information check [normet.com](https://www.normet.com).

TRAININGS

Training services can be tailored to your individual needs and range from equipment service training to process application training.

We offer a sustainable training path from the beginning of your operation to the execution stage of your project.

More information check [normet.com](https://www.normet.com).

COMMISSIONING

Equipment commissioning concerns **equipment familiarization**. This is included as part of Normet vehicle delivery. Safety introduction and operating basics for Normet Equipment. Review of Normet user and spare parts manuals. Hands-on equipment safety device operational training. Ensure product quality and customer satisfaction during handover.

Commissioning includes machinery handover to customers and safety operating principles without technical insights or process application training.

EXTENDED COMMISSIONING

We offer an extended training package on top of standard commissioning. Normet provides extended commissioning services that offer basic insights into maintenance manuals, periodical and daily maintenance, as well as modern operating perspectives to maximize handling efficiency. Safety-oriented training ensures reliable operations for Battery Electric Vehicles and Diesel-Driven based on your vehicle fleet. This cost-effective solution covers the essential aspects of equipment operation, safety, and maintenance schedules.

To ensure continuous and maximized safe operations with your new equipment and to expand your knowledge scale of operations, this option is the most suitable and recommended option for extending your new equipment training. This cost-effective solution covers the essential aspects of equipment operation, safety, and maintenance schedules.

UPGRADES AND MODIFICATIONS

We build our machines to last. We also understand that your needs on the ground can change - and reacting to that change makes a big difference in your productivity. Normet Upgrades & Modifications provide you with access to product improvements that meet your evolving requirements and let you stay one step ahead of the curve.

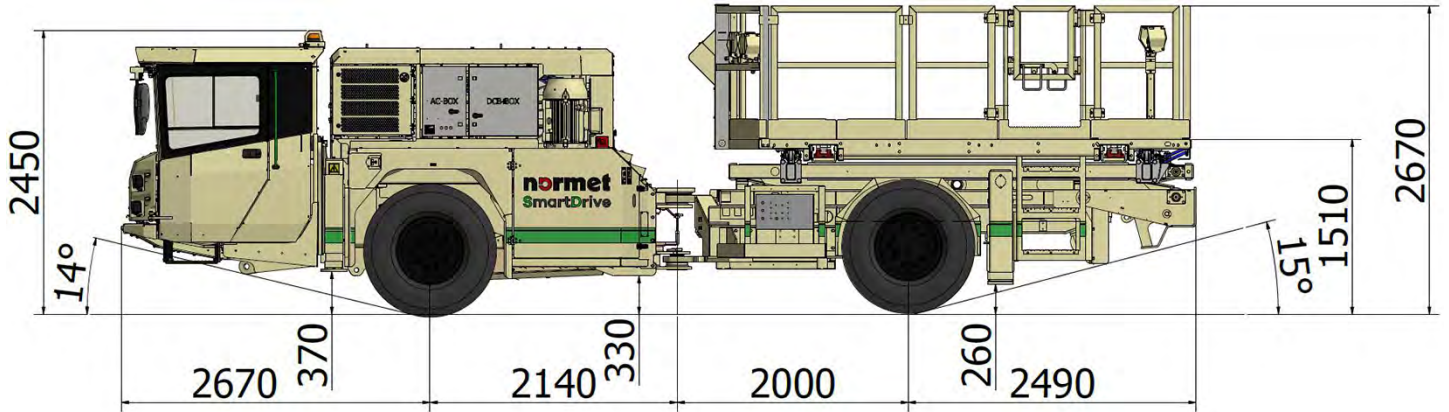
Contact your local Normet office for Upgrade offering to your fleet.

More information check [normet.com](https://www.normet.com).

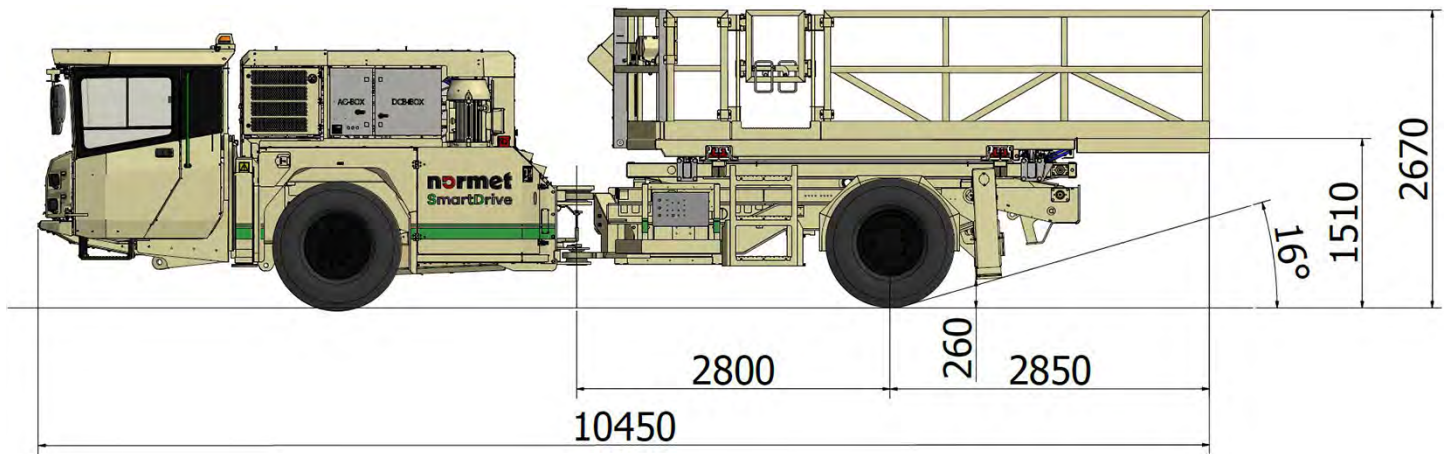
DIMENSIONS

Length	9300 mm	Track	1670 mm
Width	2030 mm	Ground clearance	300 mm
Height	2670 mm	Turning radius outer	6880 mm
Wheel base	4140 mm	Turning radius inner	4350 mm

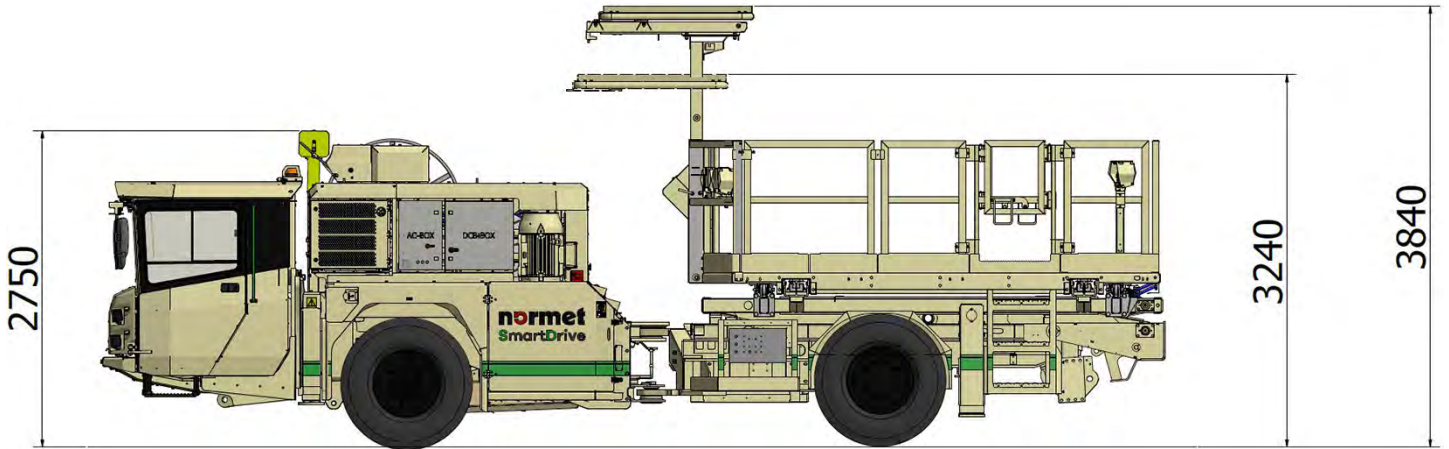
SIDE VIEW – BASIC MACHINE



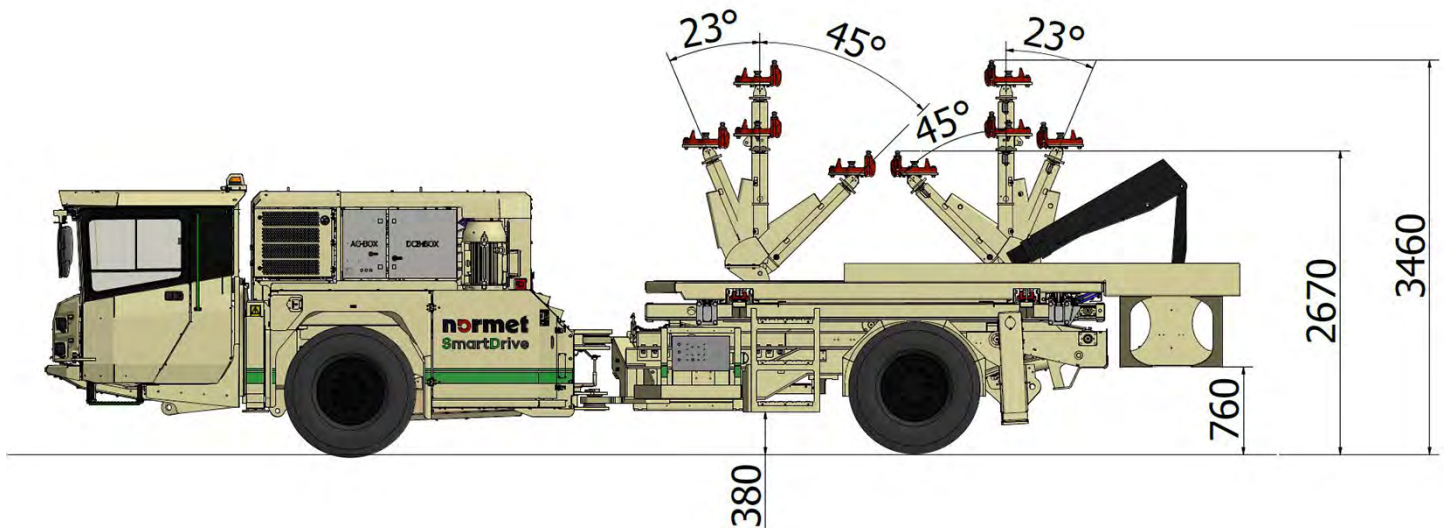
SIDE VIEW – 2400 X 5200 MM PLATFORM



SIDE VIEW – MACHINE WITH SAFETY ROOF



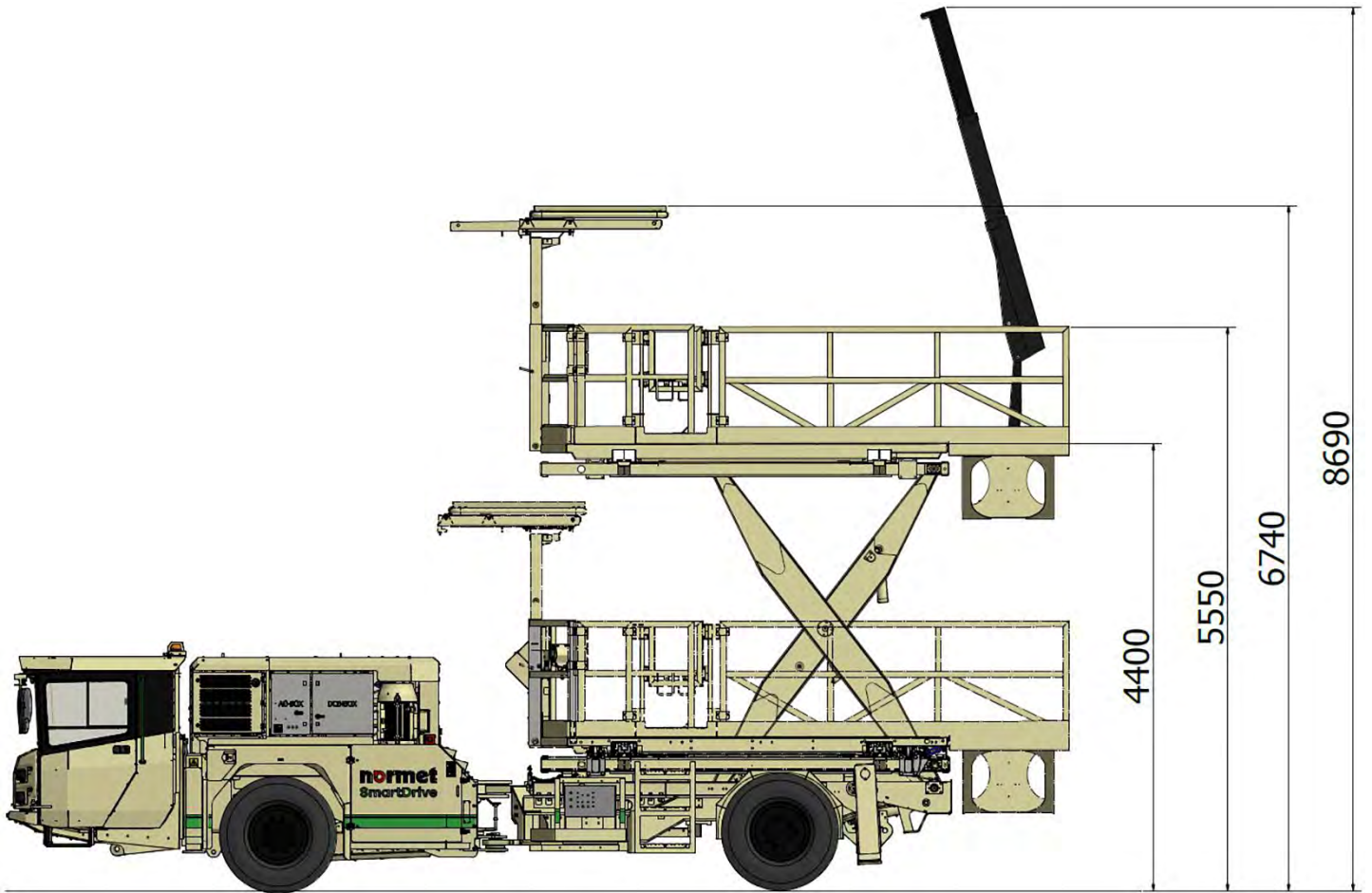
SIDE VIEW – MACHINE WITH CRANE



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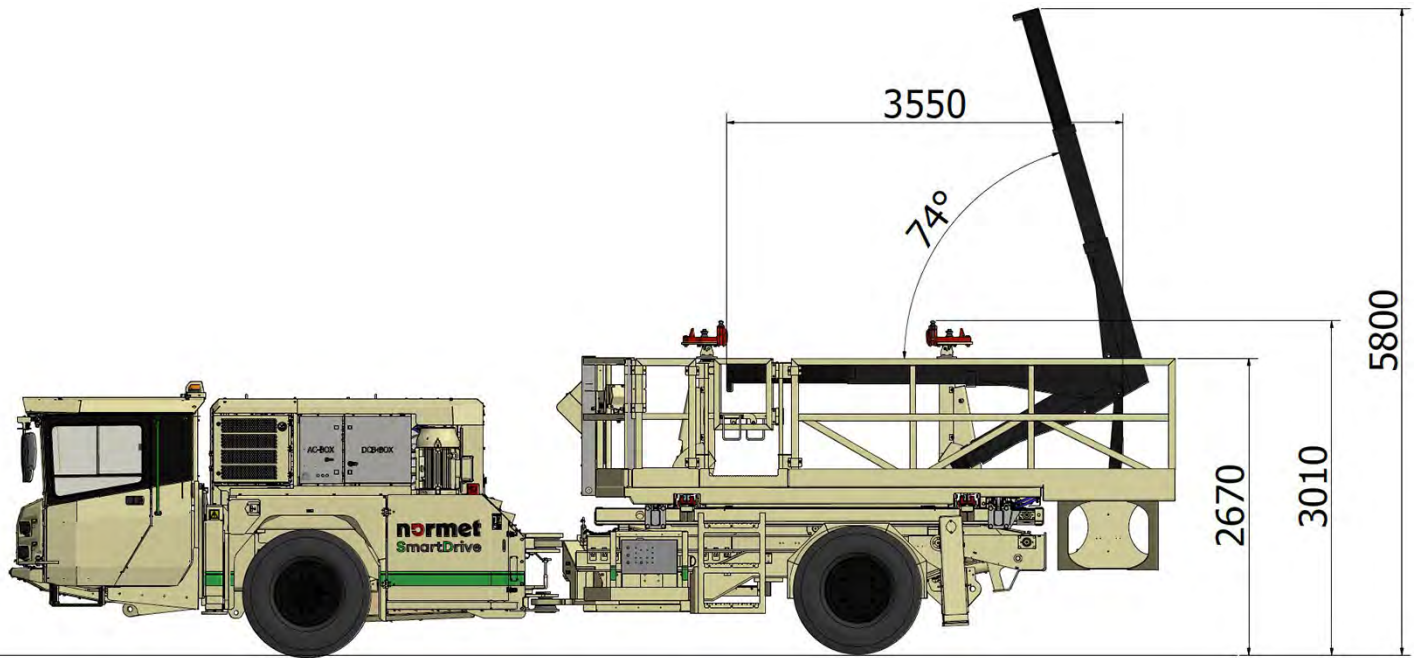
SIDE VIEW - 2400 X 5200 MM PLATFORM



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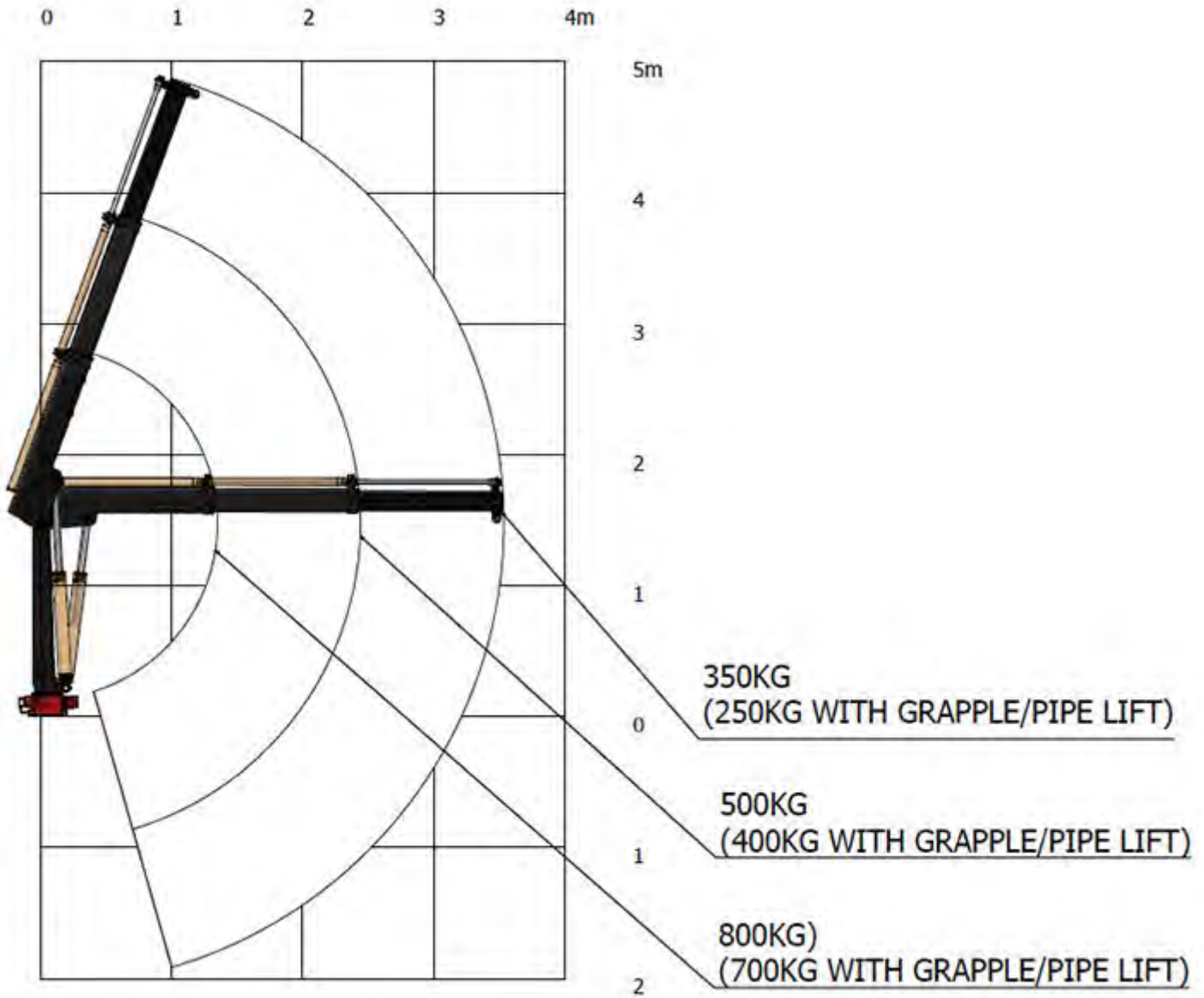
SIDE VIEW - 2400 X 5200 MM PLATFORM



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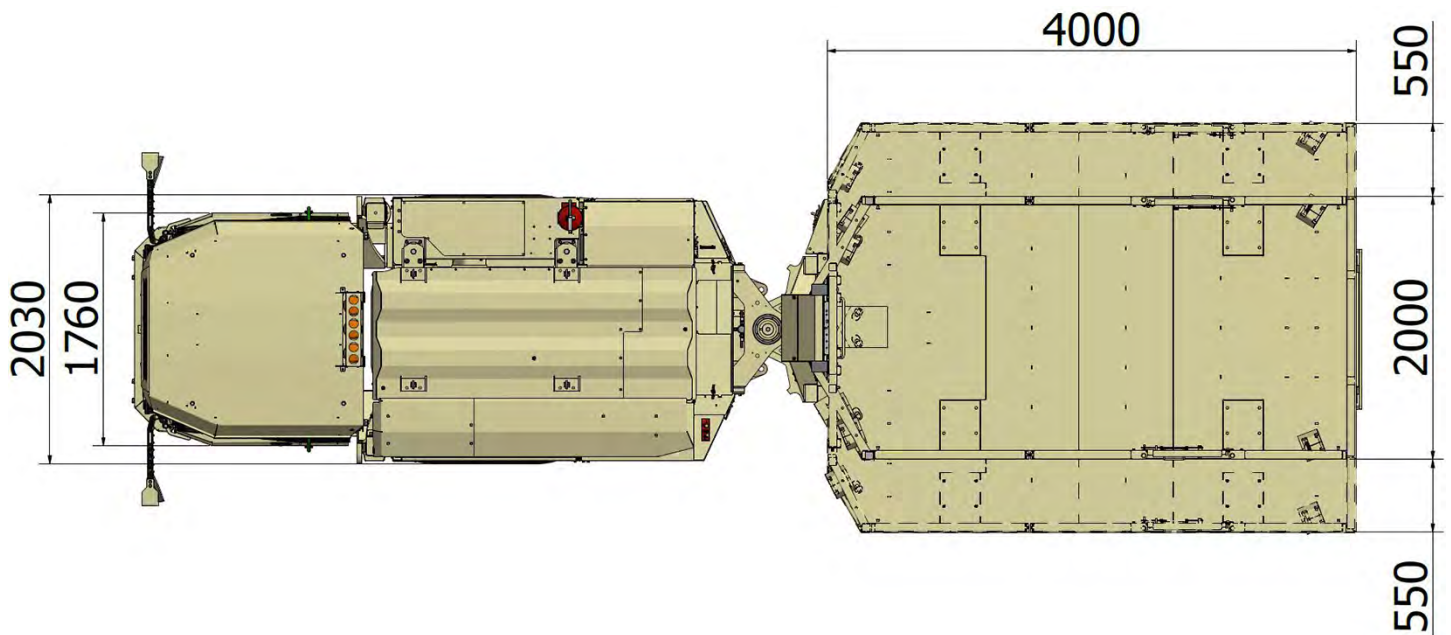
PLATFORM MOUNTED CRANE HIAB 029 LIFTING CAPACITIES



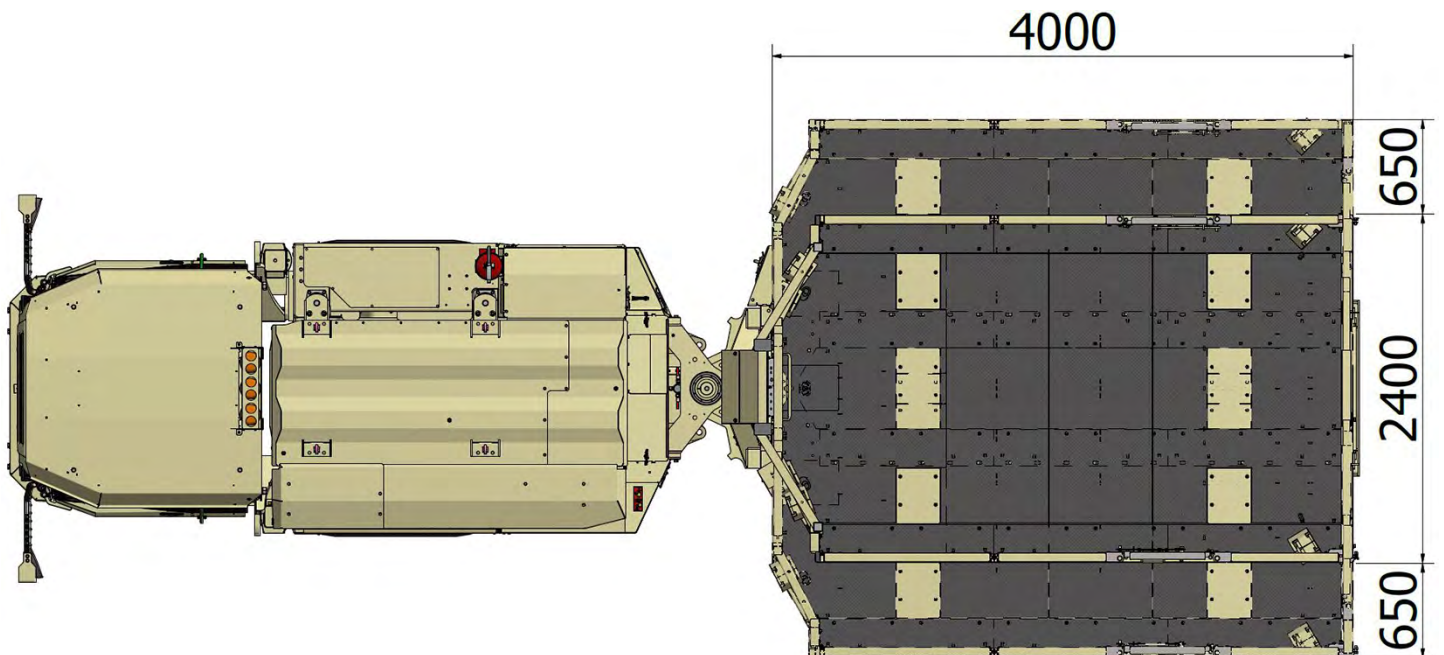
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TOP VIEW - 2000 X 4000 MM PLATFORM



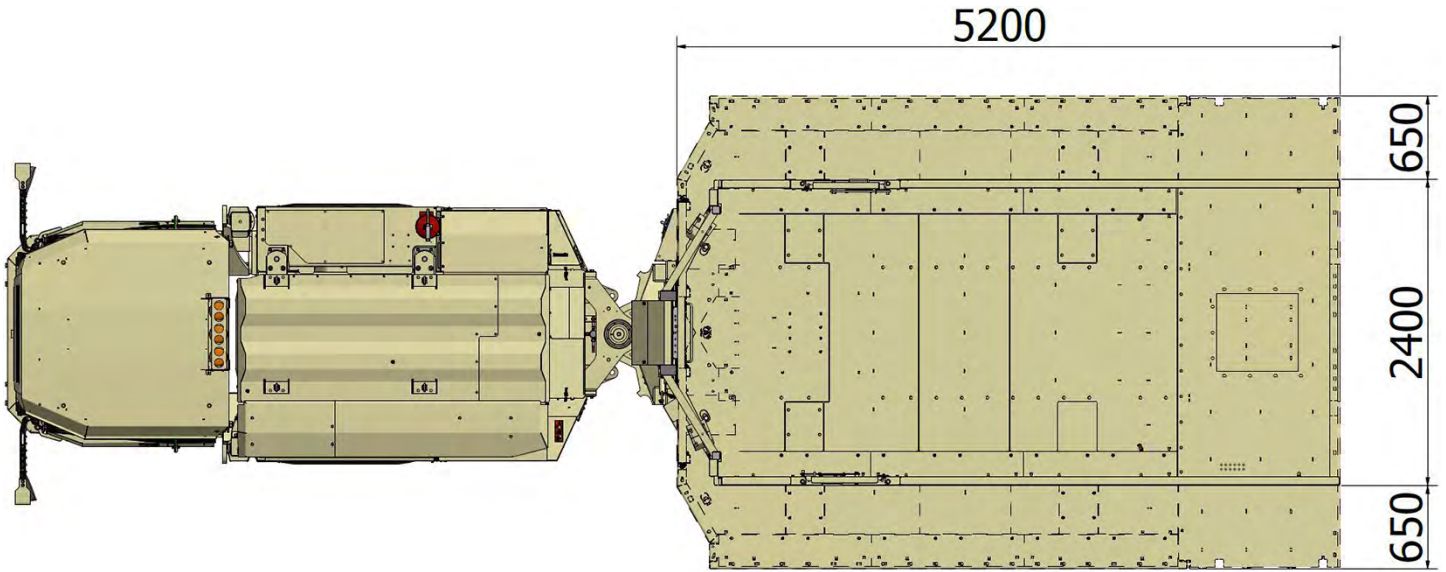
TOP VIEW - 2400 X 4000 MM PLATFORM



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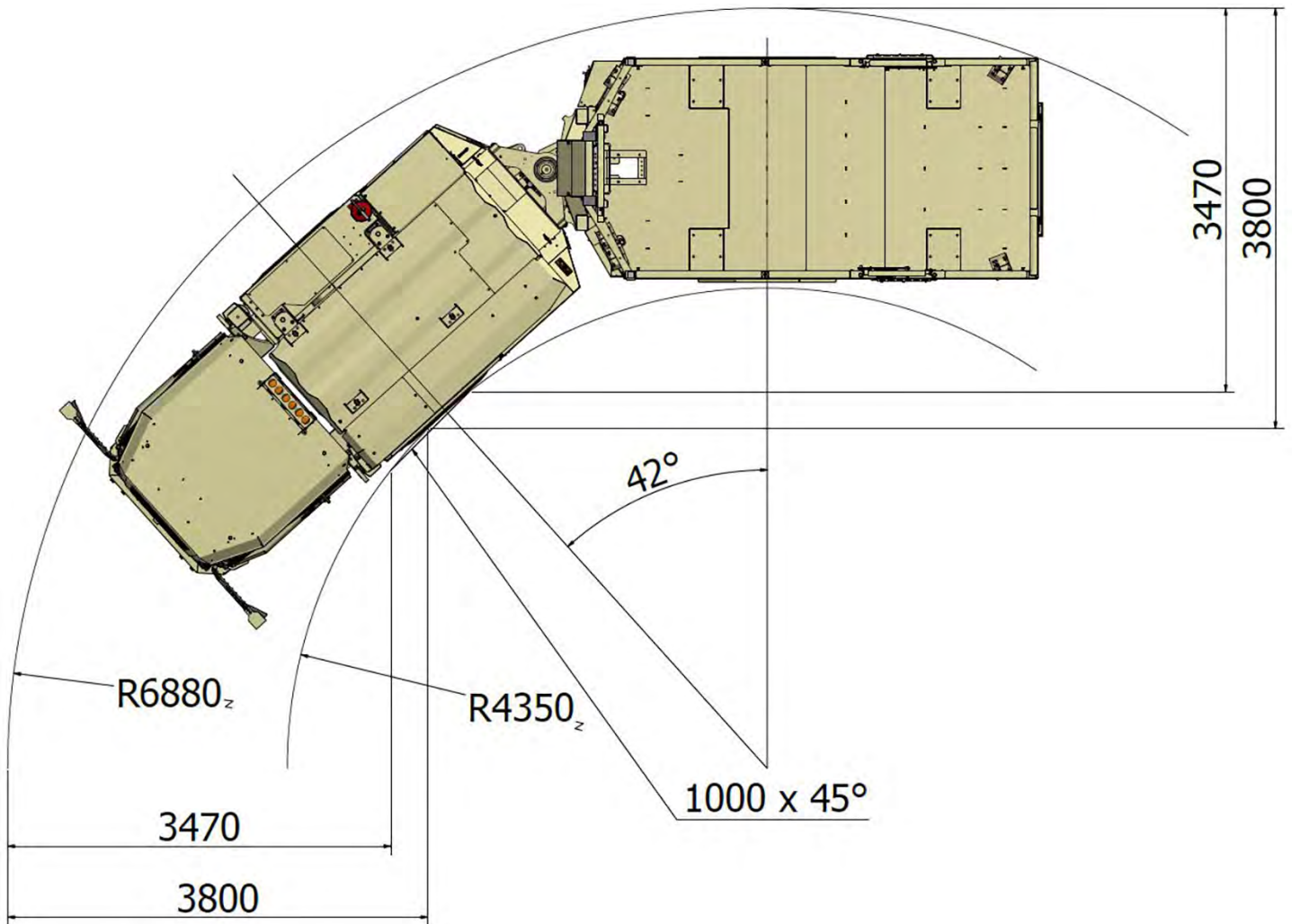
TOP VIEW - 2400 X 5200 MM PLATFORM



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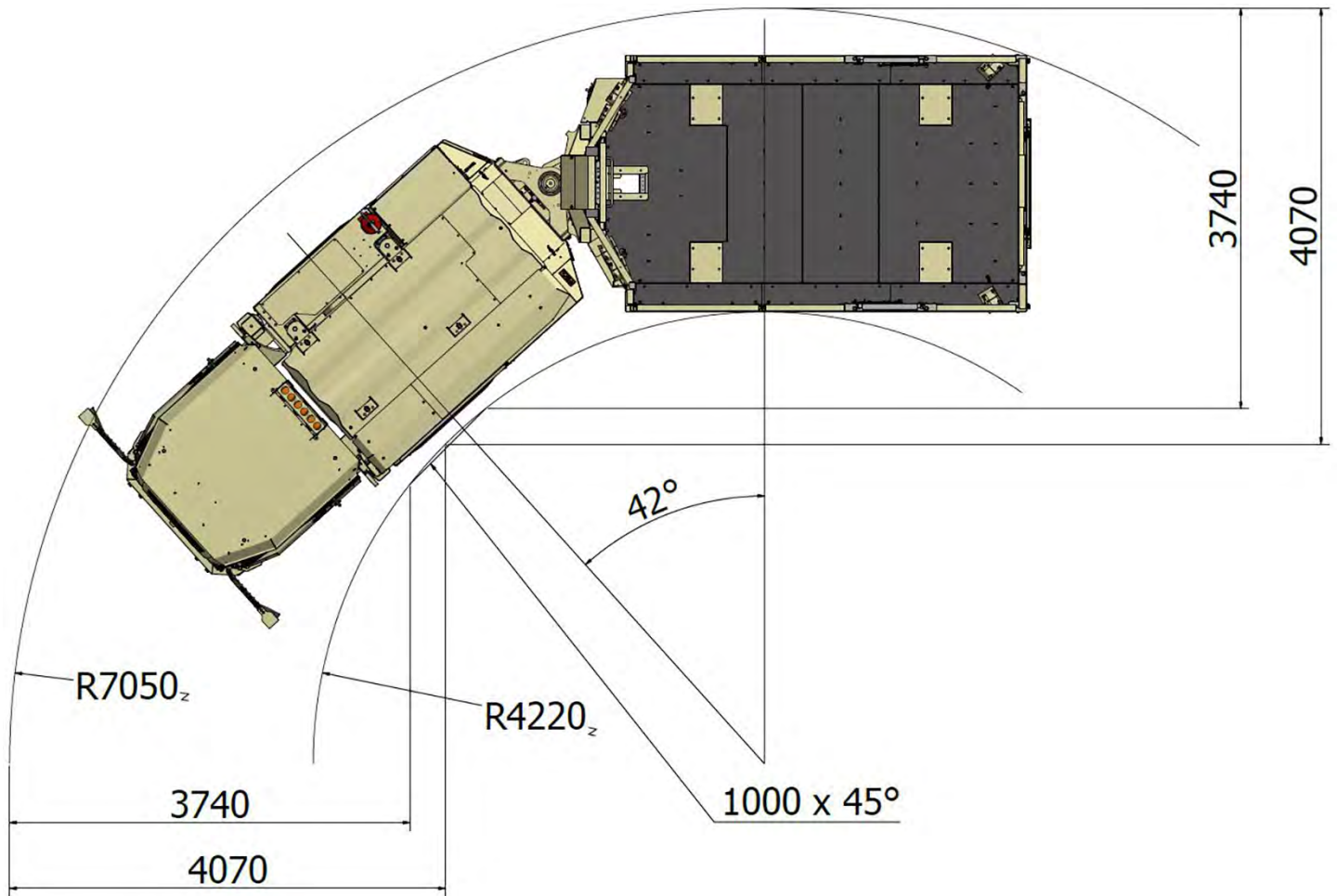
TURNING RADIUS - 2000 X 4000 MM PLATFORM



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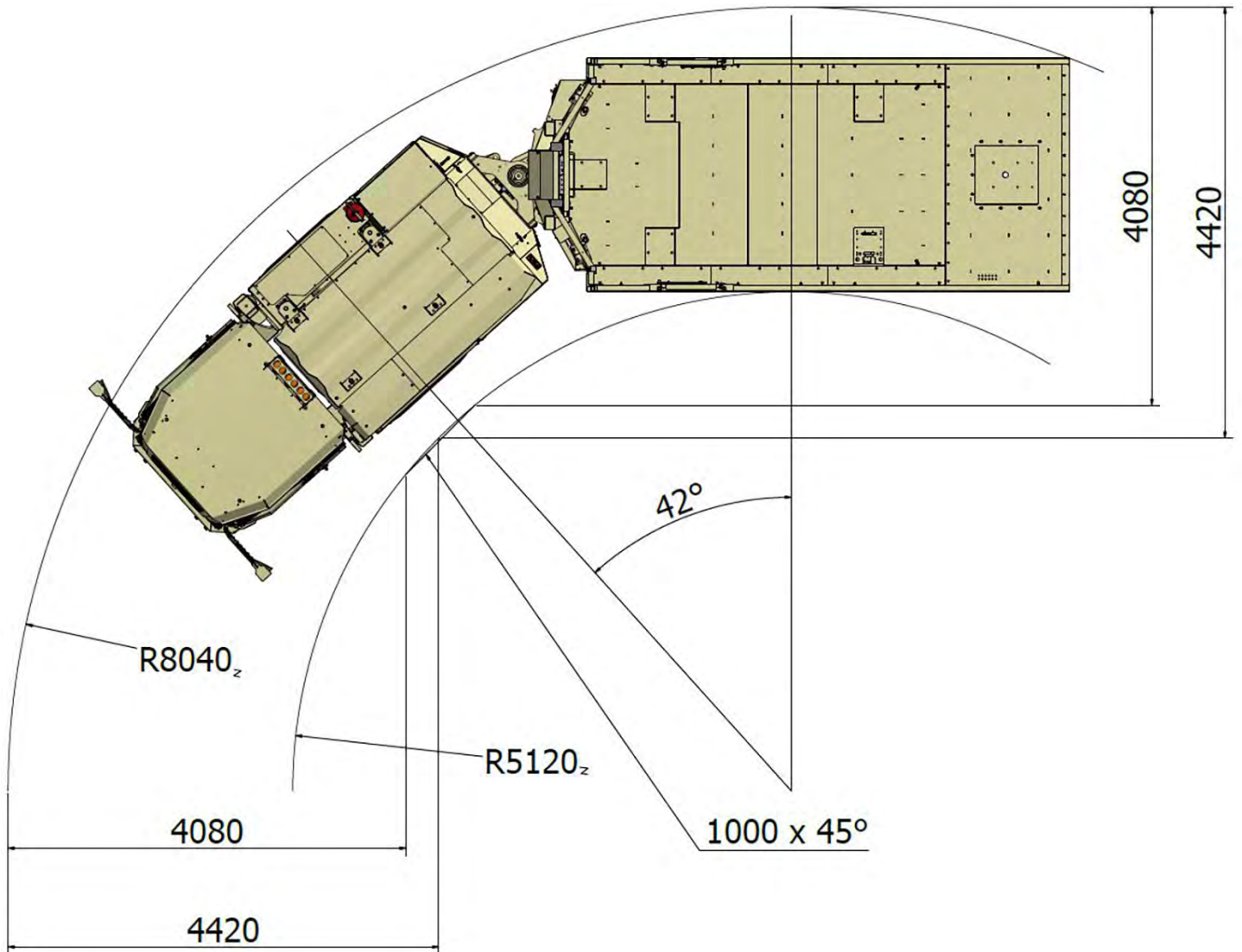
TURNING RADIUS - 2400 X 4000 MM PLATFORM



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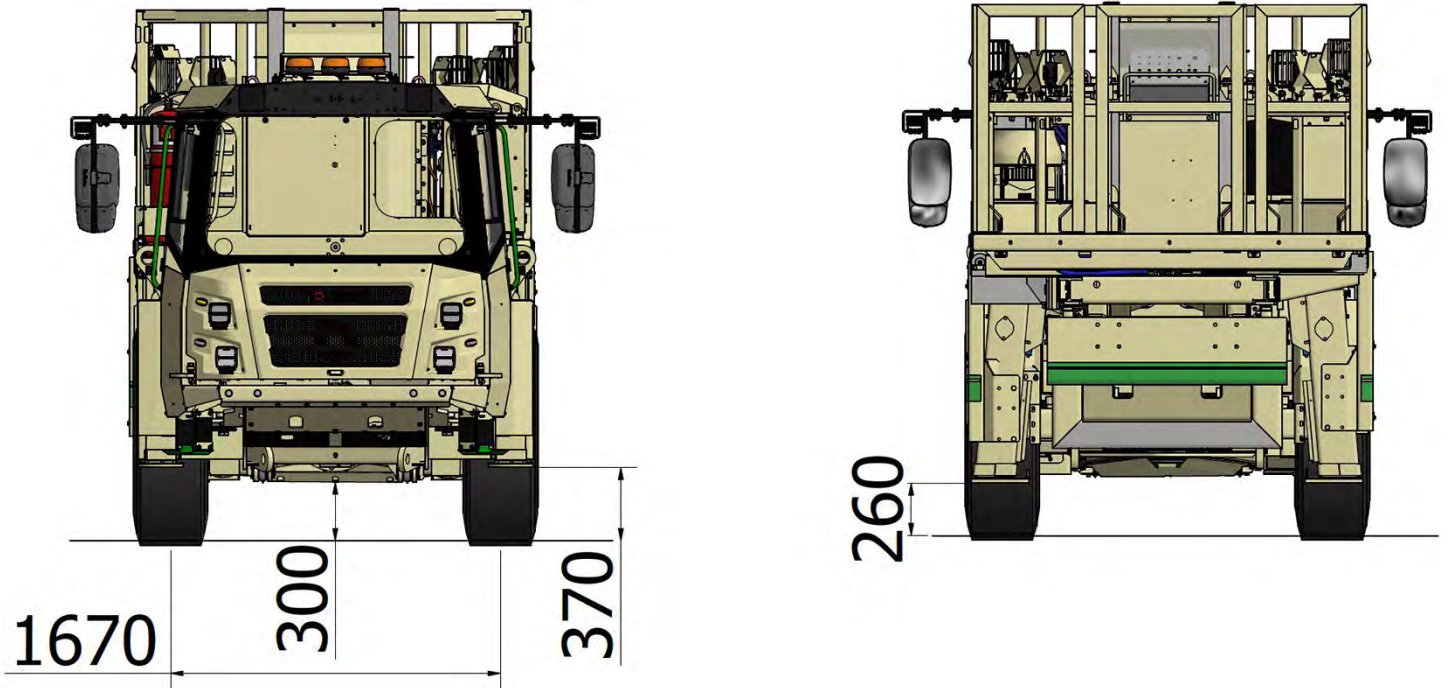
TURNING RADIUS - 2400 X 5200 MM PLATFORM



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FRONT AND BACK VIEWS



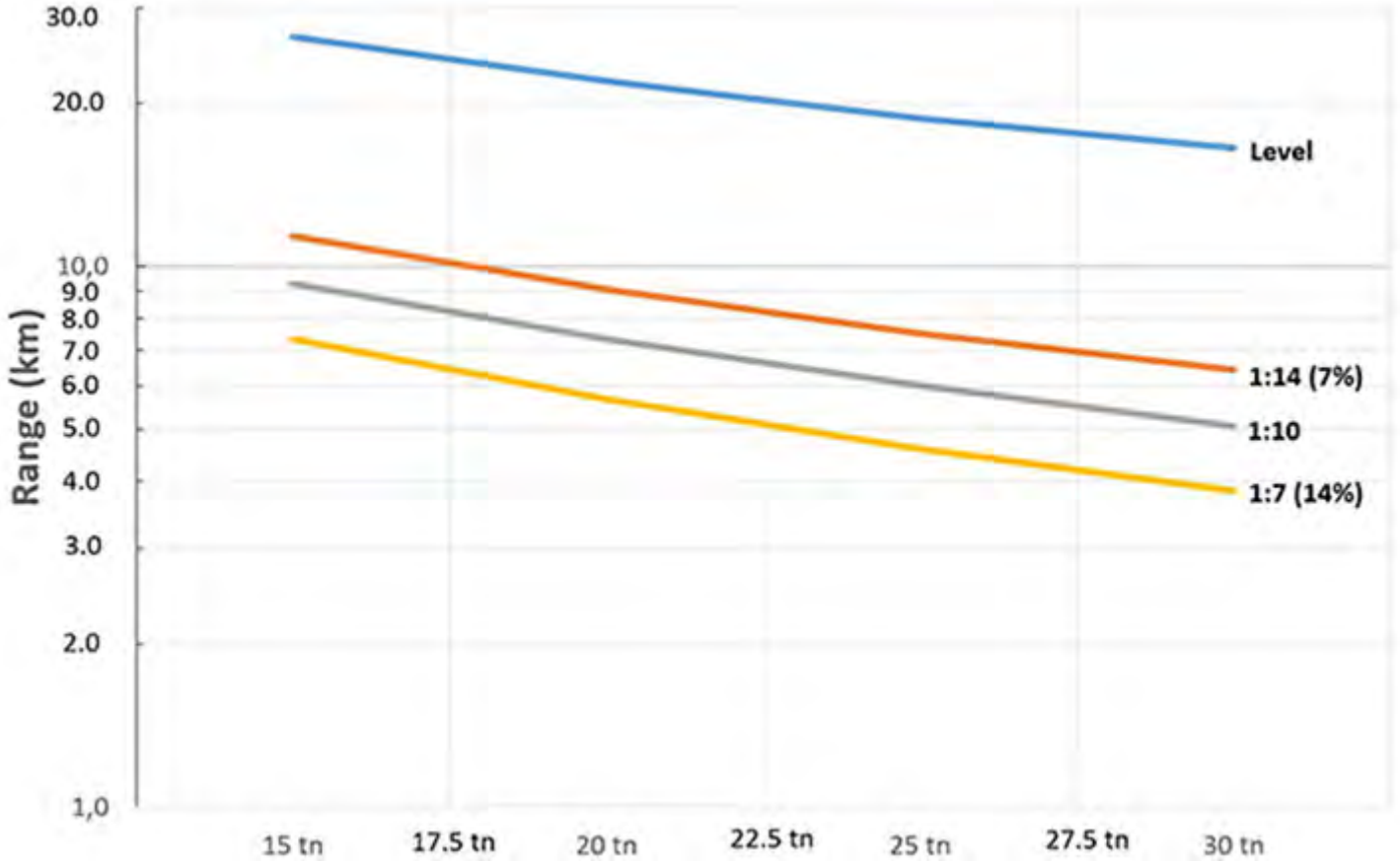
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DRIVING RANGE AND TRACTIVE EFFORT

DRIVING RANGE

Driving range curve: DOC060017



OPERATING WEIGHT

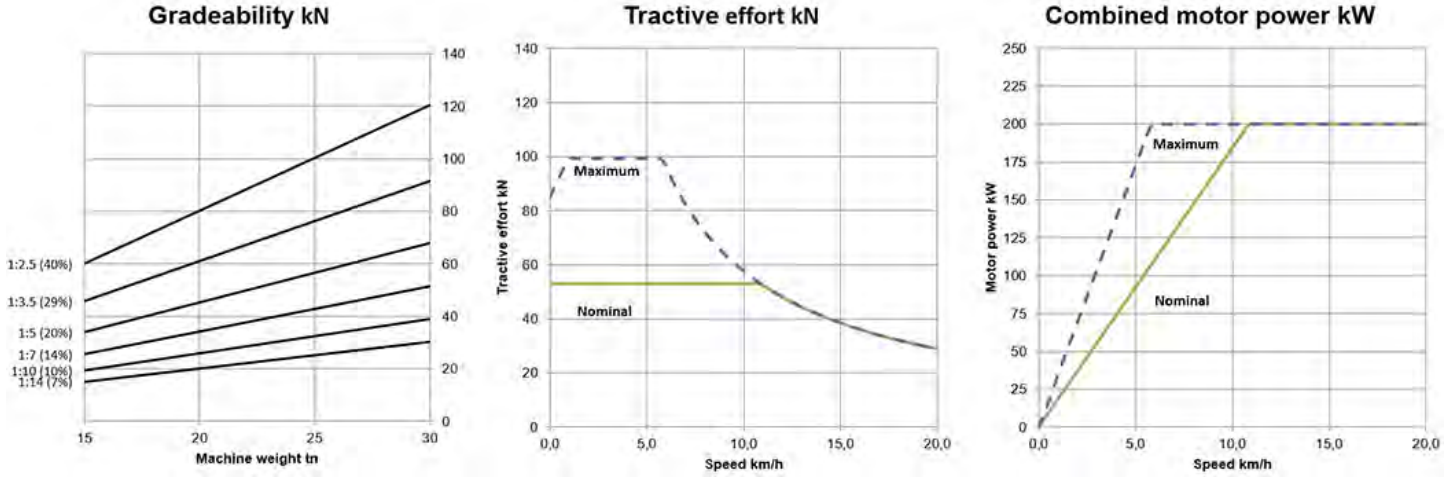
Base machine

18 000 kg

final machine weight variate in agree with selected options

TRACTIVE EFFORT

Performance curve: DOC059935



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