

# Charmec MC 605 DA(V) long end

Stage V



Pictured machine may include options and additional equipment.

## Features

Charmec MC 605 ANFO charger (long end model) with diesel hydraulic or electro-hydraulic drive is designed for face and production charging in underground mines and tunnels up to 65 m<sup>2</sup> cross sections where max face height is 8.8m.

ANFO vessels options of 2 x 360 / 500 / 720 litres provides enough explosive storage volume for several faces without need for refuelling. Ready designed place for packed explosives, primers and detonators makes it possible to bring all the needed materials to the workplace at once and eliminates the need for an additional explosive service vehicle.

Compressor option eliminates the need for external pressure air line. Optional ANFO filling system allows filling of ANFO tanks from ground level during operation and eliminates the need for climbing up to the machine during the work. In production charging optional mechanical hose feeding system allows 33.5 mm, 38 mm or 44 mm charging hoses to be used for up- and down holes. Water adding system allows 1-2 % of water to be added into ANFO during the charging of up-holes for helping ANFO to stay in vertical holes.

Optional genuine electro-hydraulic process allows to charge without diesel fumes and more ergonomically with lower noise level. If electricity is not available charging work can be still done with diesel.

Normet M- and L -series equipment can be provided with Stage V engine technology for mining and tunneling customers. Together with the new features like exhaust brake and lock-up converter in transmission, the Stage V units offer remarkable driving ergonomics and safety for driving.

The FOPS /ROPS approved safety canopy / cabin with pivotal instrument consol provides comfortable compartment for the driver and his assistant and superior visibility forwards and backwards. The enclosed cabin provides noise level < 75 dB. The Norsmart CAN bus carrier control system comes with fault diagnostics. Self extinguishing marine type wire harness with tinned wires and water tight conduits are specially designed for safe and reliable operation in hard underground conditions. All daily checks can be done from the ground level.

Normet reserves the right to change this specification without further notice.

# Charmec MC 605 DA(V) long end

## Stage V

### Technical specification

#### CHARGING SYSTEM

2 ANFO vessels and work stand, 1 charging operator (work stand not available with electro-hydraulic drive)  
500 liter stainless steel ANFO kettle  
Charging hose 19 x 25 mm, 30 m  
Pressure max. 7 bar  
Extra air for charging  
Pneumatic hand and foot control for charging and blowing  
Pneumatic control in basket to switch between vessels  
Earth straps front and rear  
Storage area for packaged explosives, payload 500 kg  
Storage boxes for primers and detonators

#### NBB3S BASKET BOOM

2-men basket  
Lifting capacity 500 kg  
Boom lift -18°...+ 60°  
Max. Lifting height (basket floor) 6.5 m  
Max. Vertical reach 8.8 m  
Boom slew +/- 30°  
Automatic levelling of basket  
Diesel start/stop from basket  
Battery operated emergency pump for lowering the boom

#### CONTROL SYSTEM

Integrated, seamless control and diagnostic system NorSmart for all machine functions. NorSmart controls:

- Carrier functions
- Boom functions
- Charging process
- Safety requirements
- Fault diagnostics
- Data logging

#### DRIVER'S COMPARTMENT

Open 2-man cabin FOPS/ROPS approved  
Air suspended driver's and passenger's seat  
Seat with retractable (75 mm wide) lap seat belt  
The driver's compartment with pivoting instrument console with driving controls and pedals Instrument console contain multi-informational color display  
Assembled in upper mounting height (2700 mm)  
Cabin door interlock switches with safety brake application

#### MACHINE CONNECTIVITY

Machine connectivity hardware (WLAN/3G/4G/LTE)

#### ENGINE

Liquid cooled turbo charged Cummins B4.5,  
121 kW/2500 rpm, Stage V approved  
Exhaust brake  
Requires diesel exhaust fluid (DEF) and ultra-low sulphur diesel (ULSD) (max sulphur content < 15 ppm)

#### TRANSMISSION

Dana 24 000 series power shift with pump drive group  
Automatic 3 speeds forward and reverse  
4-wheel drive  
Lock-up converter

#### TYRES

12.00 - 20 PR 20

#### AXLES

Planetary type  
Dana 123  
Load end axle fixed  
Engine end axle oscillation +/- 10°

#### PERFORMANCE

1st gear max.	6 km/h
2nd gear	12 km/h
3rd gear	28 km/h
Max. tractive effort	132 kN
Max speed in 1:7 inclined tunnel	7 km/h
Performance curve	100087562

#### BRAKES

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

#### STEERING

Hydraulic frame steering  
Orbitrol type  
Frame articulation +/- 40°

#### FUEL TANK

Capacity 112 L

#### DEF TANK

Diesel Exhaust Fluid  
Capacity 19 L

#### HYDRAULIC SYSTEM

Variable displacement pump system  
Pressure setting 190 bar, 95 L/min/2200 rpm  
Hydraulic oil tank capacity 115 L  
Return oil filtration 10 µm  
Indication of level, filtration and temperature

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### Technical specification

#### 24 VDC ELECTRICAL SYSTEM

Exposed components are min IP 65 standard	
Battery	2 x 115 Ah
Alternator	100 A
LED driving lights (4 + 2 pcs)	
LED work lights on cabin (4 pcs)	
LED work lights in basket (2 pcs)	
LED parking, brake and turning indicator lights	
Side reversing LED lights (2 pcs)	
Rotating beacon, amber	
Wire harness (self extinguishing) with tinned wires and water tight conduits	

#### GREASING SYSTEM

Centralized grease fittings for the carrier and boom

#### OTHER

12 kg hand held fire extinguisher 2 pcs  
Standard symbol labels  
2 pairs of support legs; extendable legs at the load end and standard at the engine end

### Optional equipment

#### CHARGING SYSTEM

##### ANFO system:

- 2 charging operators  
(N/A with one ANFO vessel systems)

##### ANFO module:

- 2 ANFO vessels with 6 m<sup>3</sup>/min onboard compressor and work stand
- 2 ANFO vessels with 6 m<sup>3</sup>/min onboard compressor and ANFO filling system (available only with 360 L anfo vessels when electro-hydraulic driven, up to 500 L when diesel hydraulic driven)
- 2 ANFO vessels and ANFO filling system
- Payload 500 kg

##### ANFO vessel size:

- 360 L
- 720 L

##### Radio controlled charging and blowing in basket

##### ANFO hose diameter:

- For manual hose feeding  
19 x 25 / 22 x 28 / 26,5 x 33,5 / 41,5 x 51 mm
- For Mechanical hose feeding  
26,5 x 33,5 / 30 x 38 mm / 34 x 44 mm

##### ANFO hose length:

- 30/60 m

#### DRIVER'S CABIN

##### Canopy:

- Lower assembly height: 2400 mm

##### Enclosed cabin: Noise level in cabin LA = 75 dB

- Upper assembly heights: 2700 mm
- Lower assembly height: 2400 mm

#### MACHINE CONNECTIVITY

- Data lifetime license (Include connectivity hardware)
- Analytics lifetime license  
(Include connectivity hardware and data lifetime license)

#### OTHER

##### Warning lights: 1 unit

- Rotating beacon; red
- Rotating beacon; blue

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## Stage V

### Additional equipment

#### CHARGING SYSTEM

**Additional pneumatic charging controls:** For toe holes and ground level charging work

**Mechanical ANFO hose feeding for production charging**

**Hose guide for upward production charging**

**Diverting pulley for downward production charging**

**Water for ANFO system: Capacity 70 L**

**Pressurized air after-cooler for a very high humidity**

#### HIGH VOLTAGE ELECTRICAL SYSTEM

**Electro hydraulic drive:**

- 400 V / 50 Hz with 100 m cable
- 440 V / 60 Hz with 100 m cable
- 690 V / 50 Hz with 100 or 150 m cable
- 1000 V / 50 Hz with 100 or 150 m cable

#### FOR ENCLOSED CABIN

**CD/Radio system**

**Cabin ventilation:**

- Cabin heating
- Air conditioning

#### FOR NBB BASKET BOOM

**Safety bar**

**Safety bar with hydraulic lift:**

Reduces lifting capacity 60 kg

**Safety roof with hydraulic lift:**

Reduces lifting capacity 100 kg

**Safety roof with hydraulic lift and slide:**

Reduces lifting capacity 200 kg

**LED working lights on safety roof / safety bar (2 pcs) 43 W**

**Boom suspension**

#### FIRE SUPPRESSION SYSTEM

**Fogmaker:** Manually or automatically actuated

**Ansul:** Manually or automatically actuated

#### GREASING SYSTEM

**Automatic lubrication system (Lincoln) for:**

Carrier or carrier and lifter

#### OTHER

**Winter kit for diesel engine**

**Fast fuel filling system: Wiggins**

**Oil evacuation kit with sample points**

**Extra hand held fire extinguisher (12 kg)**

**Warning lights, 1 unit:**

- Rotating beacon; amber
- Rotating beacon; red
- Rotating beacon; blue
- Strobe light; white

**Toolbox and maintenance tools**

**2 wheel chocks with brackets**

**Spare wheel**

**Reversing camera**

**Text labels in:** Fin/ En / Por/ Swe/ Rus/ Nor/ Ger/

Fra/ Spa/ Ita

**Hose reel for pressurized air:**

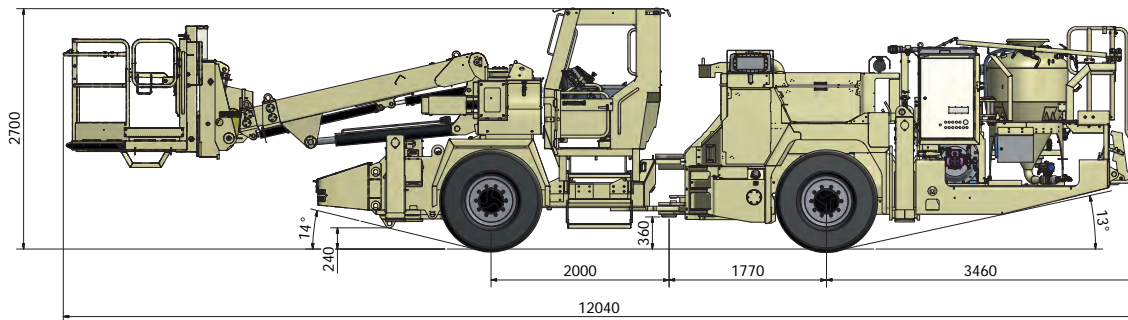
(N/A with compressor models)

- 1" 30 m in manually operated
- 1" 50 m in hydraulically operated

**Towing kit**

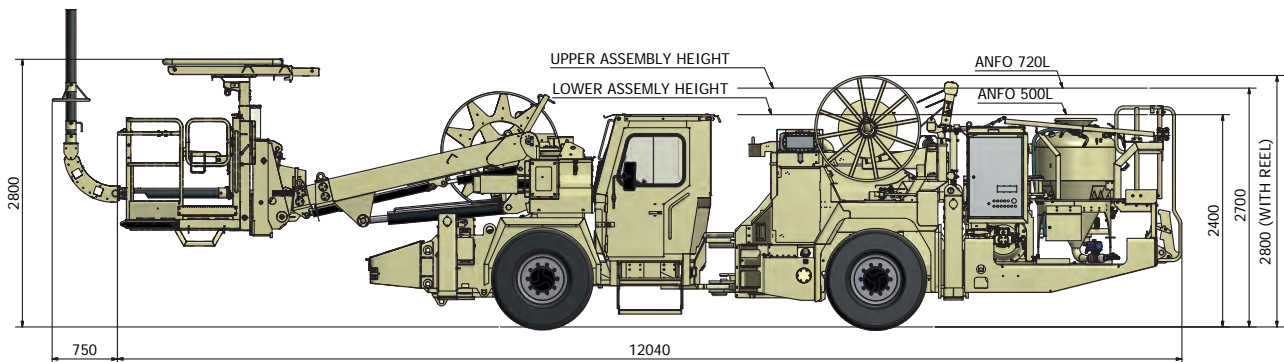
Stage V

**Dimensions**



**SIDE VIEW**

Basic machine



**SIDE VIEW**

Machine with enclosed cabin and additional equipment

**DIMENSIONS**

Length	12040 mm
Width	2150 mm
Height	2400/2800 mm
Wheel base	3770 mm
Ground clearance as shown	240 mm

**TURNING RADIUS**

Outer	(7200 mm) 7700 mm
Inner	4200 mm

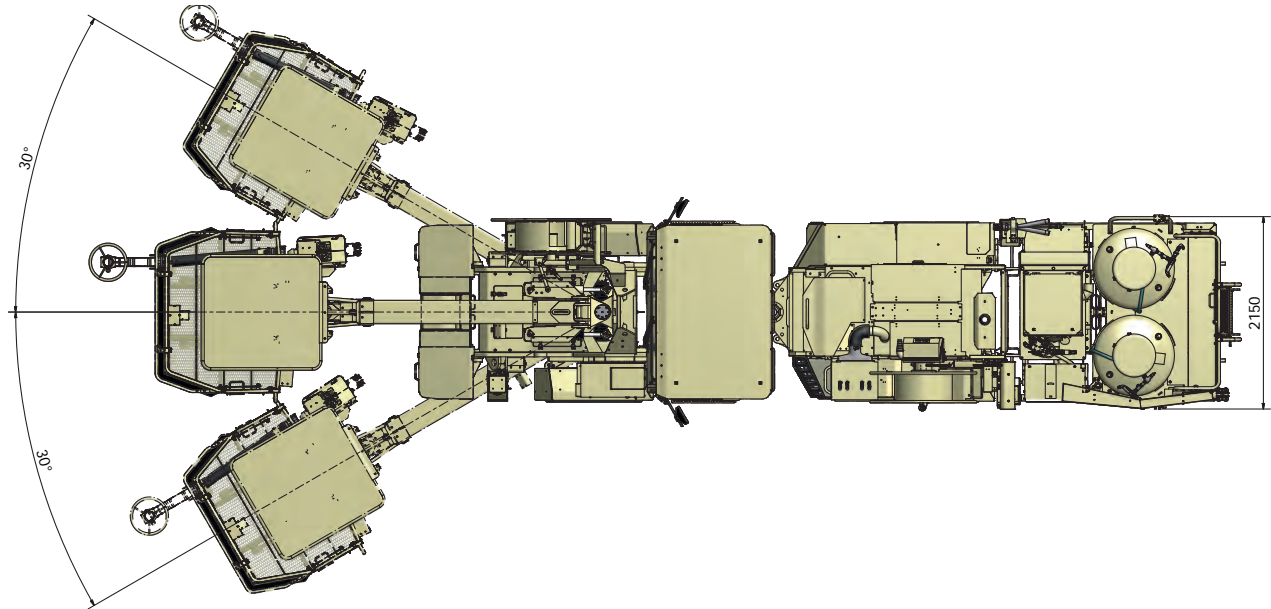
**WEIGHT OF BASE UNIT WITHOUT OPTIONS**

Operating	17 500 kg
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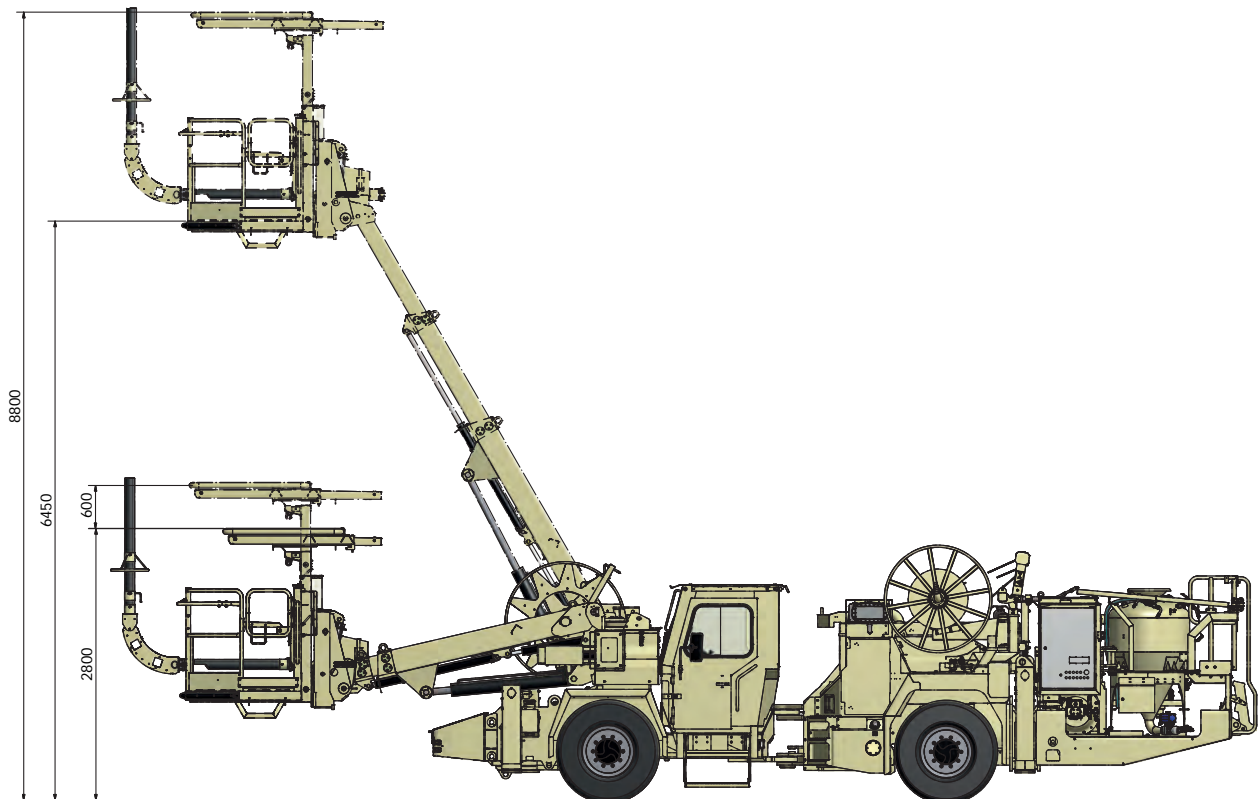
# Charmec MC 605 DA(V) long end

Stage V

## Dimensions



## TOP VIEW

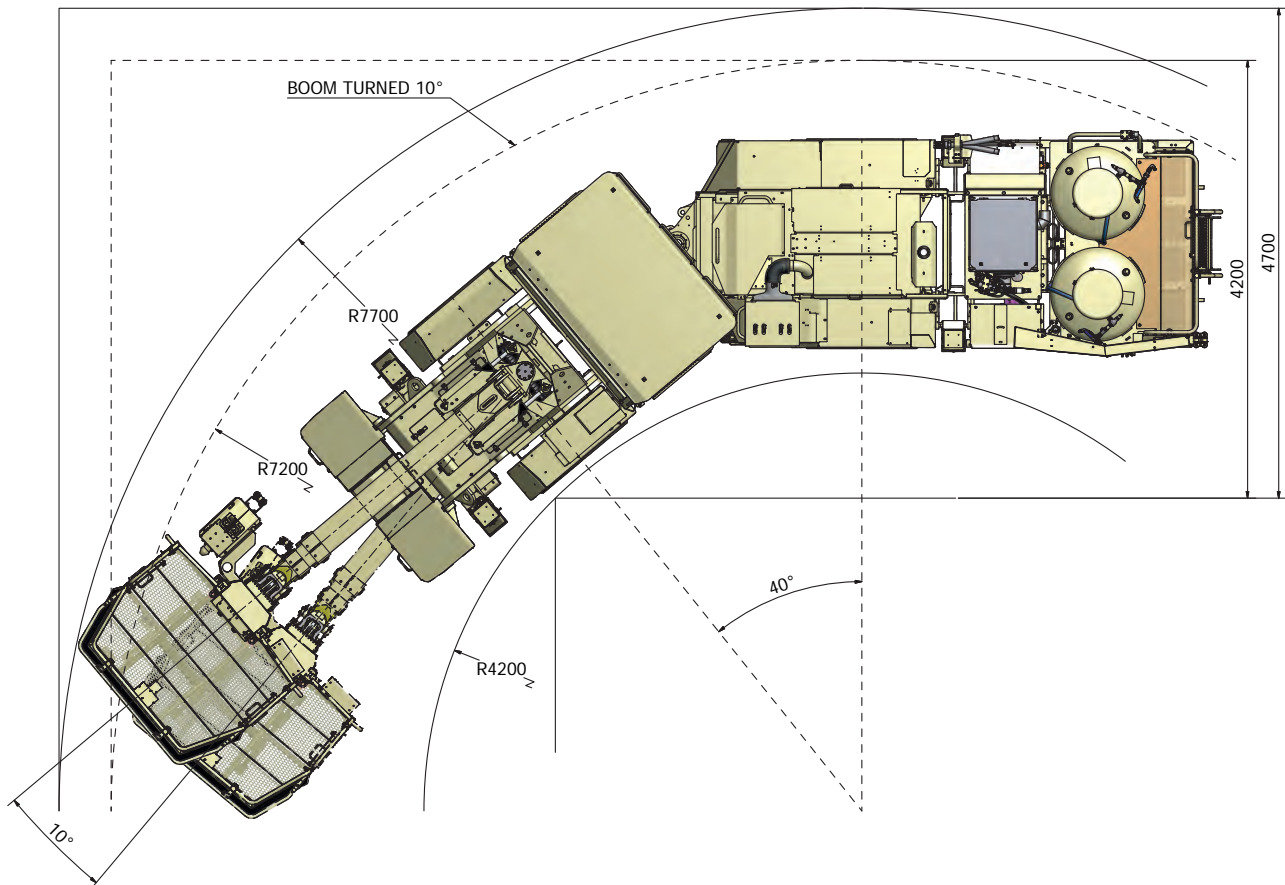


## BOOM REACH

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Stage V

## Dimensions

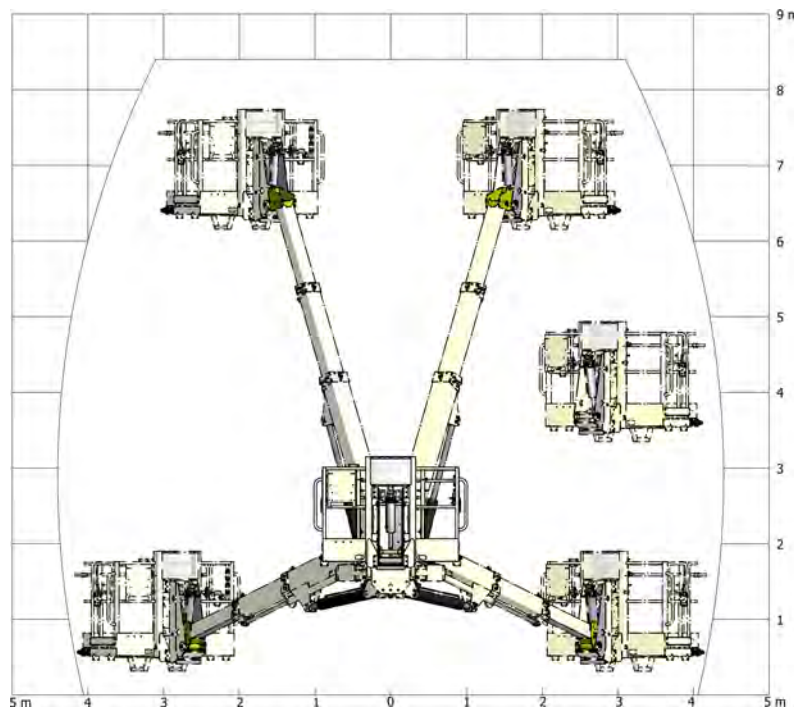
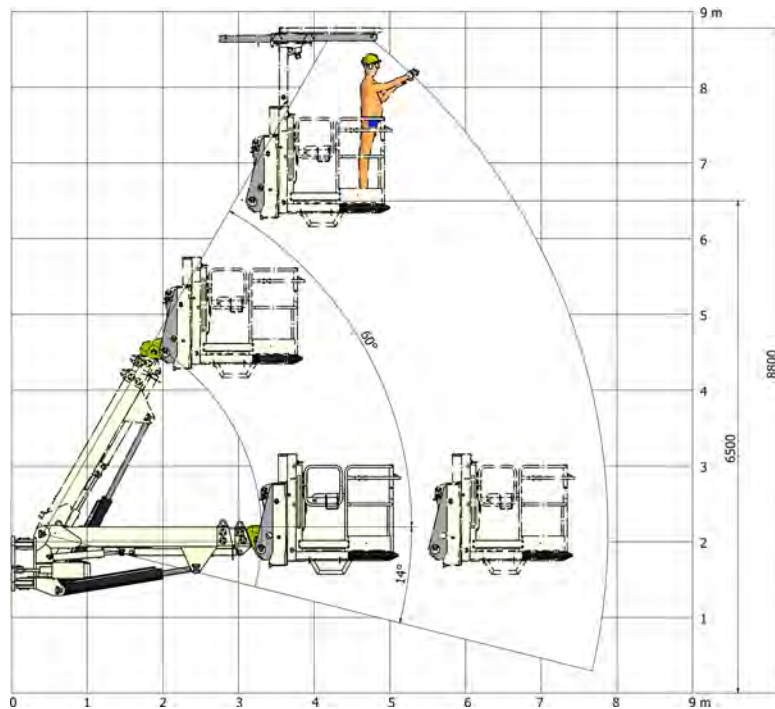


## TURNING RADIUS

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Stage V

## Dimensions

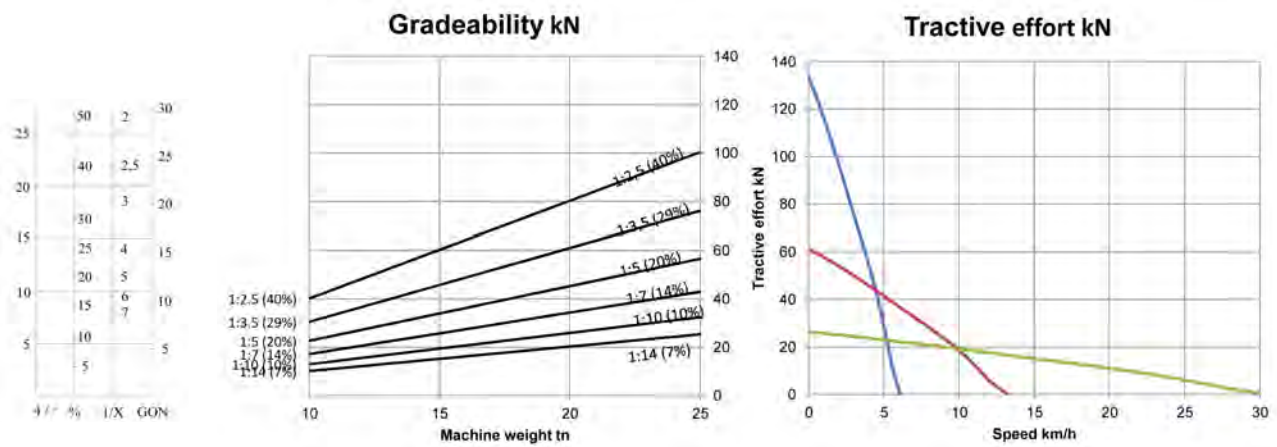


### COVERAGE AREA OF NBB3S BASKET BOOM



Stage V

Tractive efforts



CUMMINS B 4.5, 121 kW  
Performance curve 100087562