

TIER 4f

Pictured machine may include options and additional equipment.

Features

Charmec MC 605 ANFO charger (short end model) with diesel hydraulic drive is designed for face and production charging in underground mines and tunnels up to 65 m² cross sections where max face height is 8.8 m.

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.

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.

The liquid cooled turbo charged Cummins 119 kW TIER 4f approved engine provides clean and efficient operation and gives maximum speed of 10 km/h in upward 1:7 inclined tunnel.

The FOPS /ROPS approved safety canopy / cabin with pivotal instrument console 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.

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TIER 4f

Technical specification**CHARGING SYSTEM**

2 ANFO vessels and work stand, 1 charging operator
500 liter stainless steel ANFO kettle
Pressure max. 7 bar
Extra air for charging
Pneumatic hand and foot control for charging and blowing
Charging hose 19 x 25 mm, 30 m
Pneumatic control in basket to switch between vessels
Earth straps front and rear
Storage area for packaged explosives
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
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)

ENGINE

Liquid cooled turbo charged Cummins QSB 4.5,
119 kW/2300 rpm, TIER 4f approved
Engine break

EXHAUST SYSTEM

DOC (Diesel Oxidation Catalyst) and SCR (Selective Catalytic Reduction)

TRANSMISSION

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

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	25 km/h
Max. tractive effort	
Max speed in 1:7 inclined tunnel	
• Full	
• Empty	
Performance curve	

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

ADBLUE TANK

Capacity 18.9 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

24 VDC ELECTRICAL SYSTEM

Exposed components are min IP 65 standard
Battery 2 x 115 Ah
Alternator 100 A
Halogen driving lights (4 + 2 pcs) 70 W
Halogen work lights on cabin (4 pcs) 70 W
LED working lights in basket (2 pcs)
LED parking, brake and turning indicator lights
Side reversing halogen lights (2 pcs) 70 W
Rotating beacon, amber
Wire harness (self extinguishing) with tinned wires and water tight conduits

TIER 4f

Technical specification**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:

- 1 ANFO vessel and ANFO transport room
- 1 ANFO vessel with 4 m³/min onboard compressor

ANFO vessel size:

- 360 L
- 720 L

Radio controlled charging and blowing in basket**ANFO hose diameter:**

- For manual hose feeding
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

ENGINE**Liquid cooled turbo charged Mercedes- Benz 904 LA,
110 kW/2200 rpm, TIER 3 approved:**

1st gear max.	5 km/h
2nd gear	10 km/h
3rd gear	25 km/h
Max. tractive effort	120 kN
Max speed in upward 1:7 inclined tunnel	10 km/h
Performance curve	100006272

OTHER**LED driving lights (4 + 2 pcs) 18 W****LED work lights on cabin (2 + 2 pcs) 43 W****Warning lights: 1 unit**

- Rotating beacon; red
- Rotating beacon; blue

TIER 4f

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
Directing pulley for downward production charging
Water for ANFO system: 35 L container
Pressurized air after-cooler for a very high humidity

FOR ENCLOSED CABIN

CD/Radio system
Cabin ventilation:

- Cabin heating
- Air conditioning

FOR NBB BASKET BOOM

Safety bar
Safety roof with hydraulic lift:

- 400 kg = 240 kg + 2 persons

Safety roof with hydraulic lift and slide:

- 300 kg = 140 kg + 2 persons

LED working lights on safety roof (2 pcs) 43 W
Boom suspension

FIRE SUPPRESSION SYSTEM

Fogmaker: Manually or automatically actuated
Ansul: Manually or automatically actuated
Tempus: Manually actuated (Non CE)

GREASING SYSTEM

Automatic lubrication system (Lincoln) for:

- Carrier
- Carrier and boom

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 when manually operated
- 1" 50 m when hydraulically operated

Towing kit
WLAN connection

LTC services**SPARE PARTS**

Spare parts package A: Available for 1000 h of use*. Include periodical service, most common wearing parts and most critical safety parts.

Spare parts package B: Available for 3000 h of use*. Include 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.

TRAINING SERVICES

Available before delivery, at start up and after delivery.
NOTE! after/during Start up / Commissioning as additional training days these are cheaper.
In general training reduces operation costs.

Product training:

Operation and Maintenance
NorSmart
Foundation of electrics, hydraulics and mechanics
Audit

Process training:

Concrete spraying
Charging
Scaling
Process audit

AUDIT SERVICES

To improve machines performance
To improve your processes performance and quality

SERVICE CONTRACTS

Spare parts supply programmes
Scheduled inspection programmes
Supervision programmes
Periodic maintenance programmes
Machine usage programmes

LINK ONE

Link One electronic spare part manuals

WARRANTY SERVICES

Extended warranty

Dimensions**SIDE VIEW**

Basic machine

SIDE VIEW

Machine with optional and additional equipment

DIMENSIONS

Length	11260 mm
Width	2000 mm
Height	2400/2720 mm
Wheel base	3650 mm
Ground clearance as shown	390 mm

TURNING RADIUS

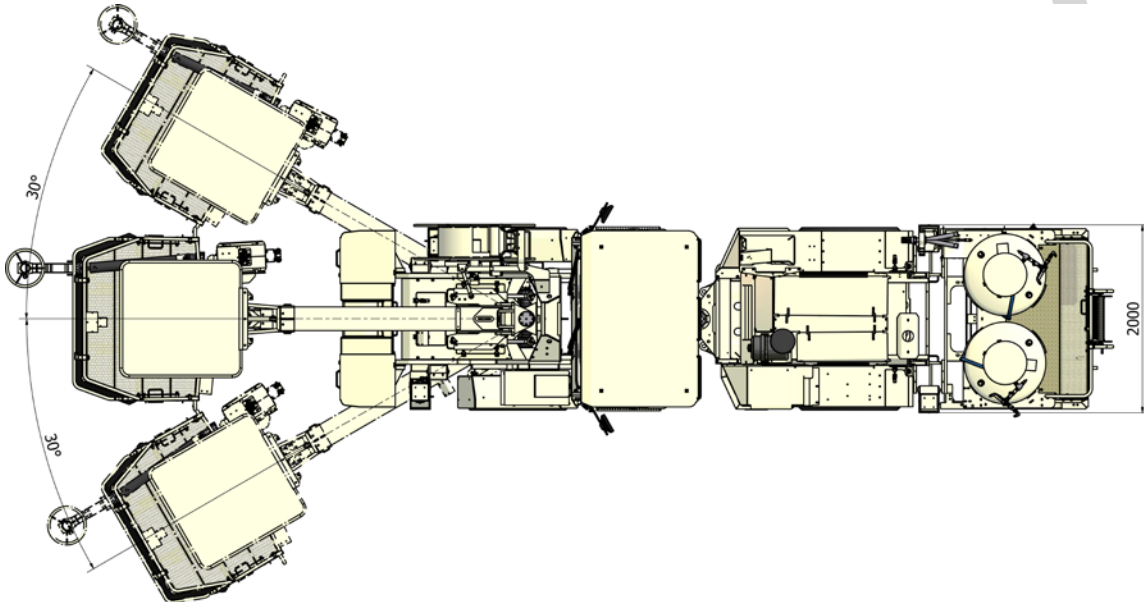
Outer	(6820 mm) 7410 mm
Inner	3950 mm

WEIGHT

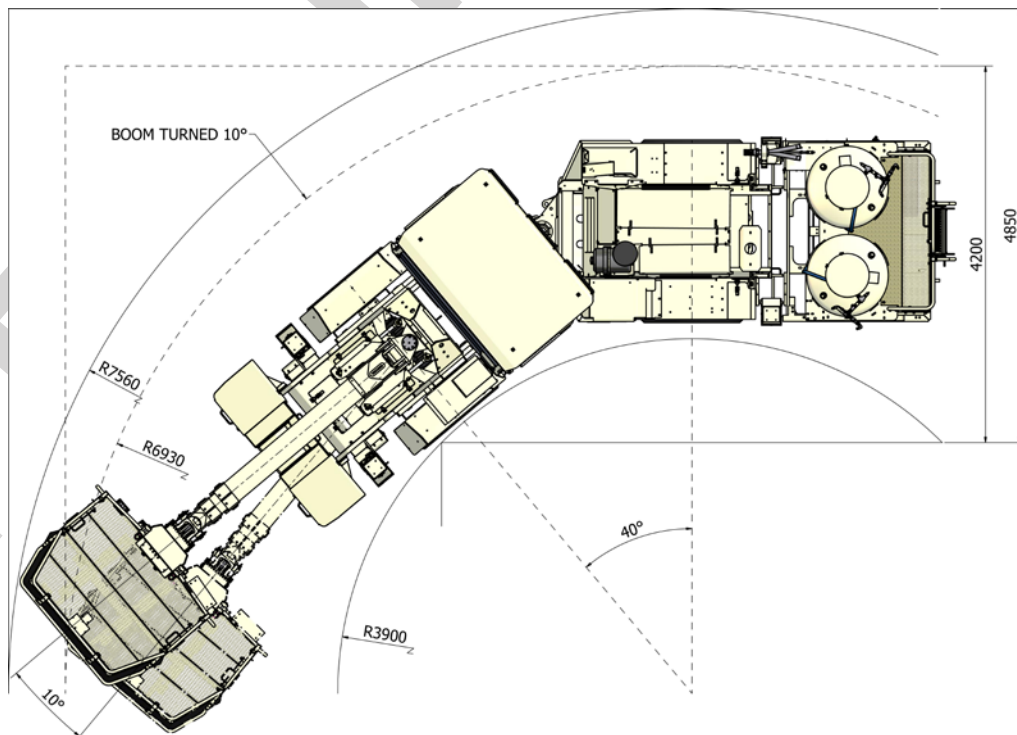
Operating	15 000 kg
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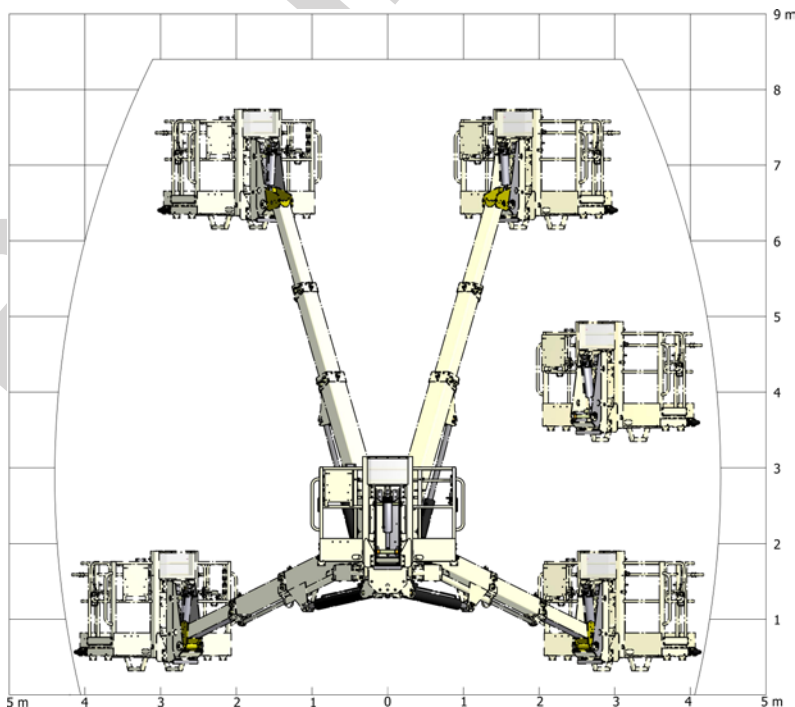
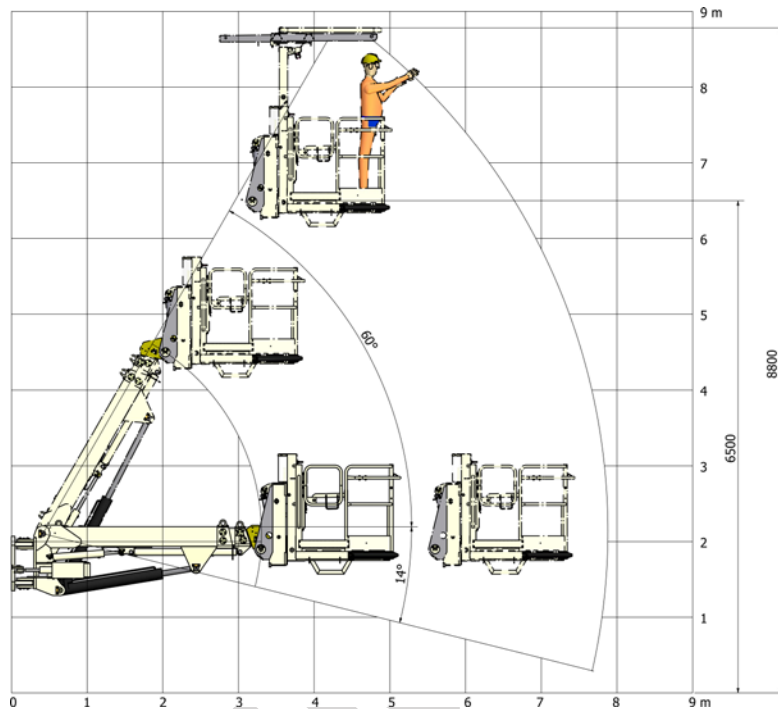
Dimensions**TOP VIEW**

Machine with options and extra equipment

**TURNING RADIUS**

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Dimensions**COVERAGE AREA OF NBB3S BASKET BOOM**

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Charmec MC 605 DA, short end

TIER 4f

Tractive efforts**CUMMINS QSB 4.5, 119 kW**
Performance curve

PRELIMINARY