



Multimec MF 100 CN-IV

INTRODUCTION

Normet Multimec system provides an innovative, multipurpose solution for logistics at mines and tunnel construction sites, allowing the operator to perform several jobs with just one machine.

MF 100 has a maximum payload of ten tonnes respectively. Multimec system consists of a series of cassette, each for a different purpose. With hydraulic operated cassette manipulator changing the cassette takes only couple of minutes.



POWER TRAIN

M-series China 4 units have powerful Deutz 6-cylinder 129 kW liquid cooled turbocharged engine.

Machine is equipped with Dana hydrodynamic transmission and planetary type axles which have hydraulically powered dual-circuit oil immersed multidisc service brakes. Moreover, axles have spring applied hydraulically released fail-safe -type parking/safety brake.

SAFETY AND USABILITY

Vehicle has an optional 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.

Enclosed cabin provides low noise level ensuring safe and comfortable driving.

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

CASSETTE HANDLER

Carrying capacity 10 000 kg

ENGINE AND TRANSMISSION

Deutz TCD 6.1 L6, 129 kW/2200 rpm, CN-IV approved

Exhaust system:

Catalytic converter and DPF

Deutz TCD 6.1 CN-IV -engine and telemetry system, which fulfil the requirements of the China-IV emission regulation

Fuel tank capacity 110 l

Dana 24000 series powershift transmission

3 speeds forward and reverse

4-wheel drive

Manual gear selector

PERFORMANCE

Tramming speed (horizontal): 26 km/h

Lateral gradient for tramming (continuous) 4°

Longitudinal gradient for tramming (continuous) 9°

Depending of machine configuration, lateral and longitudinal tramming gradient can temporarily be higher.

AXLES AND BRAKES

Load end axle:

Dana 123 series fixed

Engine end axle:

Dana 123 series

- +/- 8° oscillation
 - Hydro-pneumatic suspension and +/- 8° oscillation

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

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

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 +/- 40°

HYDRAULIC SYSTEM

Variable displacement pump system:
190 bar, 135 l/min at 2200 rpm

Hydraulic oil tank capacity 110 l

24 VDC ELECTRICAL SYSTEM

Main switch:

- Mechanical switch in battery box
 - Electric switch with control in cabin and service switch in battery box
 - Electric switch with control in cabin, start isolator and service switch in battery box

LED driving and indicator lights

LED work lights

LED side lights (left/right):

- White / White
 - Green / Red
 - Red / Green

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

Cabin type:

- Open cabin FOPS/ROPS approved
- Enclosed cabin FOPS/ROPS approved with sliding rear window

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

Seat belt safety interlock for driver:

- Warning indicator in display
- Safety brake application

Cabin door interlock switches with safety brake application

Passenger's seat:

- T-back seat with 3-point seat belt
- Heavy duty seat with 3-point seat belt
- 2 person seat with fixed lap seat belts

Throttle and brake pedal layout:

- Front and side facing pedals with seat swivel
- Front facing pedals

OTHER

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 specifications

Text labels in:

- En
- Other language

Measurements:

- Noise
- Vibration
- Emissions

MACHINE CONNECTIVITY

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

Connectivity services:

- Analytics license for three years (includes access to analytics portal)
- Remote monitoring for one year

TECHNICAL DOCUMENTATION

Standard documents:

Instruction manuals, hard copy 2 pcs:

English

Spare parts manuals, hard copy 2 pcs:

English

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

ACCESSORIES

PROCESS PRODUCTIVITY

- Hydraulics for mixer cassettes
- 0.4 m³/min compressor with hose reel and tyre filling pistol
- Front support legs
- Pressure washer with 230 l tank on cabin roof (increases cabin height by 250 mm)

CARRIER PRODUCTIVITY

- Windshield with wipers for open cabin
- Accessories for enclosed cabin:
 - Audio system
 - Air conditioning with heating
- 12 V, 18 A power supply in cabin with socket and connector
- Auto engine shutdown during idling
- Engine shutdown delay
- Inlet plug for jump start
- Block heater with interior heater and battery charger 230 V (Interior heater available with enclosed cabin)
- Fuel operated pre-heater
- Fast fuel filling system
- Hand pump for filling of hydraulic tank
- Automatic lubrication system
- Reversing camera
 - 1 camera, 1 display
 - 4 cameras, 4 displays
- Spare rim and tyre
- Toolbox and maintenance tools
- Interior cooling fan

SAFETY

- 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
- Fire extinguisher system Ansul A-101
 - Manual activation
 - Automatic, Checkfire 110
- Gear lockout:
 - Forward:
 - Highest gear locked out
 - 2 highest gears locked out
 - Reverse:
 - Highest gear locked out
 - 2 highest gears locked out
- Front and rear flat cable grounding straps
- Pump for brake release
 - Electric pump
 - Hand pump
- Hydraulic pressure monitoring kit
- Protection guards for tunnel curtains
- Tyre pressure indicators
- Additional wide angle mirrors
- Warning triangles
- Flashlight with charger
- Hearing protectors
- Wheel chocks with brackets

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.

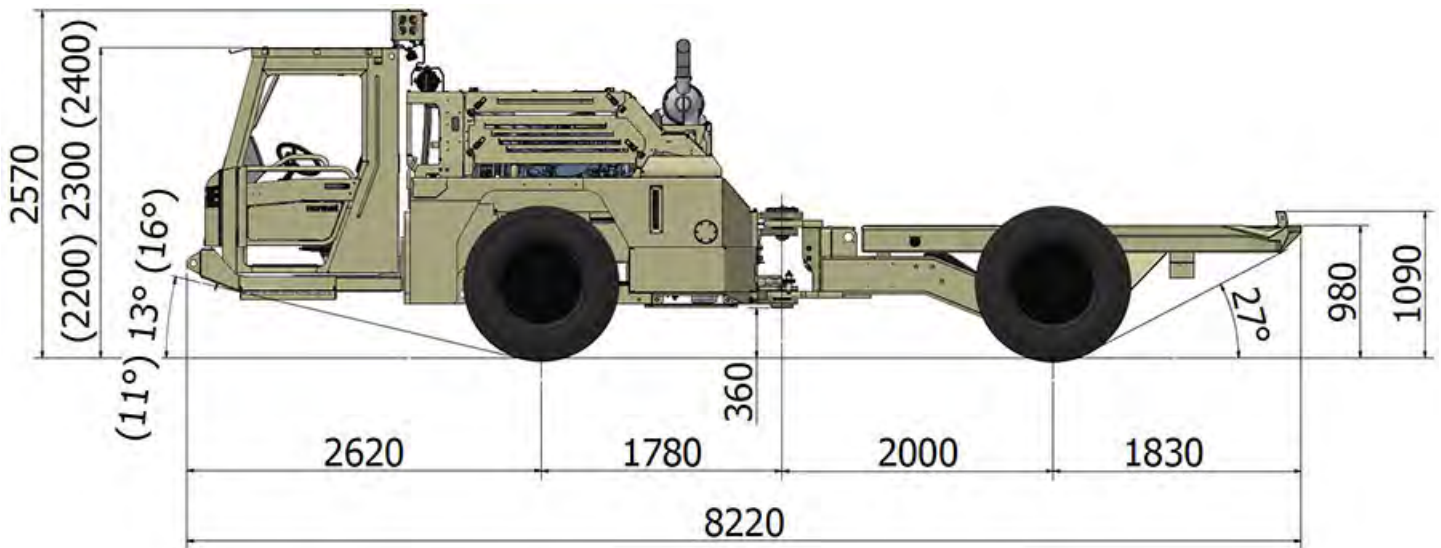
More information check [normet.com](https://www.normet.com).

DIMENSIONS

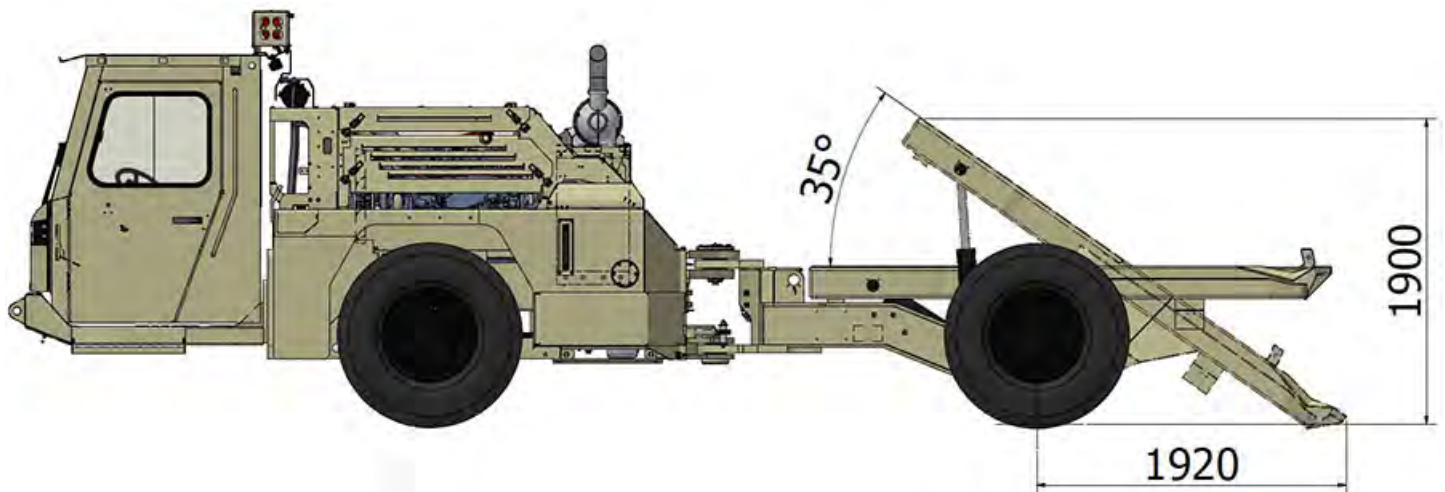
Length	8220 mm	Track	1670 mm
Width	2040 mm	Ground clearance	240 mm
Height	2570 mm	Turning radius outer	6670 mm
Height of cabin	2300 mm	Turning radius inner	4130 mm
Wheel base	3780 mm		

SIDE VIEW – BASIC MACHINE

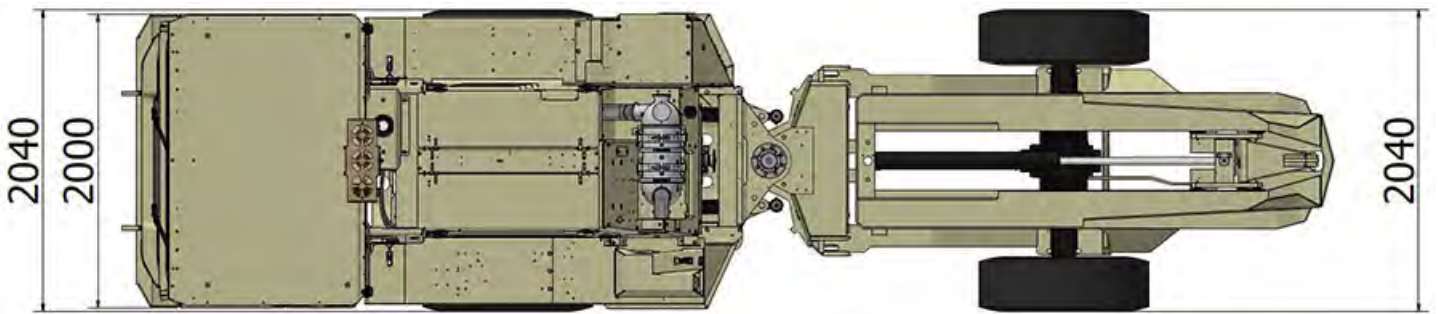
Dimensions in () apply when the cabin is installed in the upper or lower position.



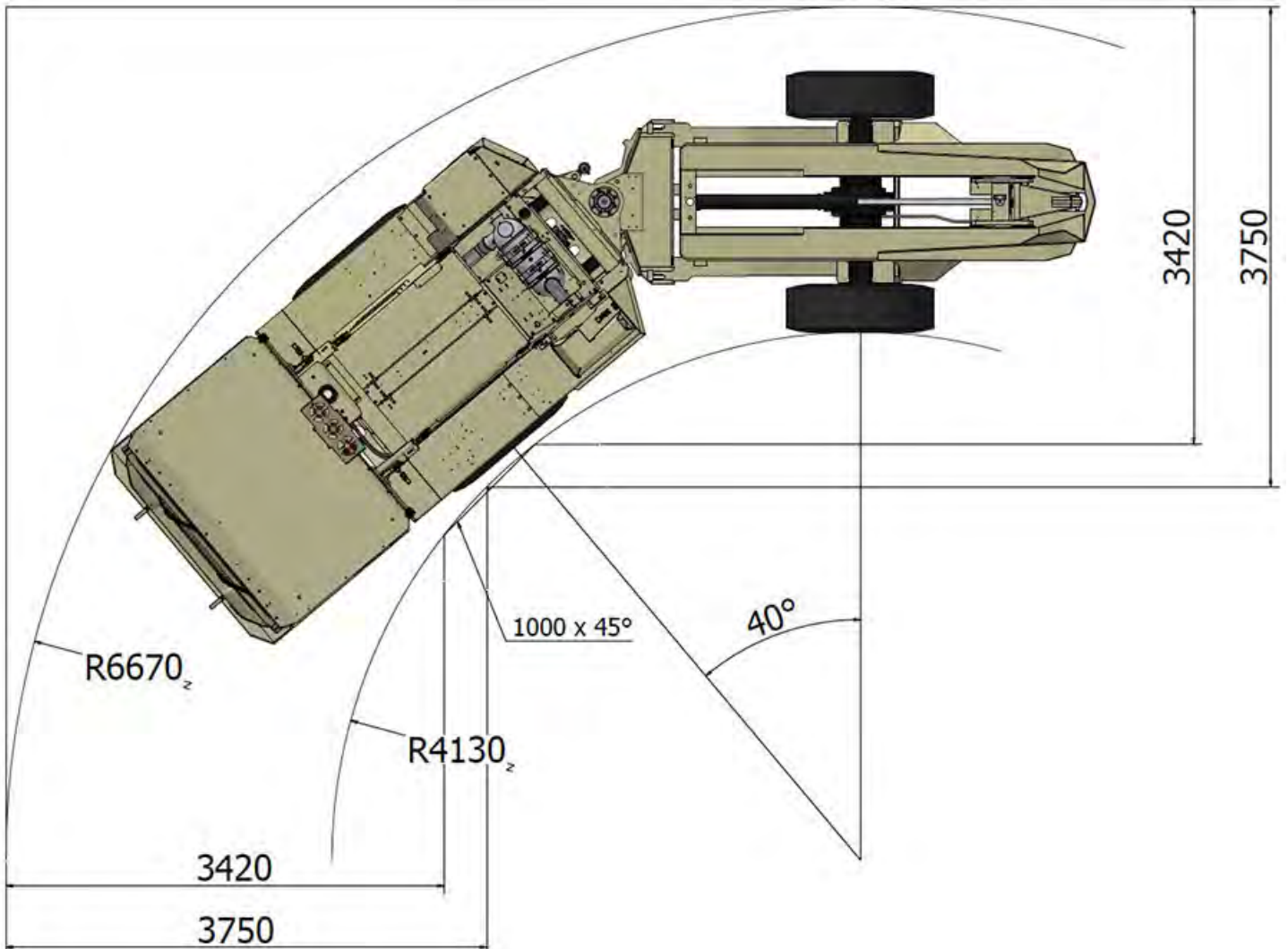
SIDE VIEW – MACHINE WITH OPTIONS



TOP VIEW



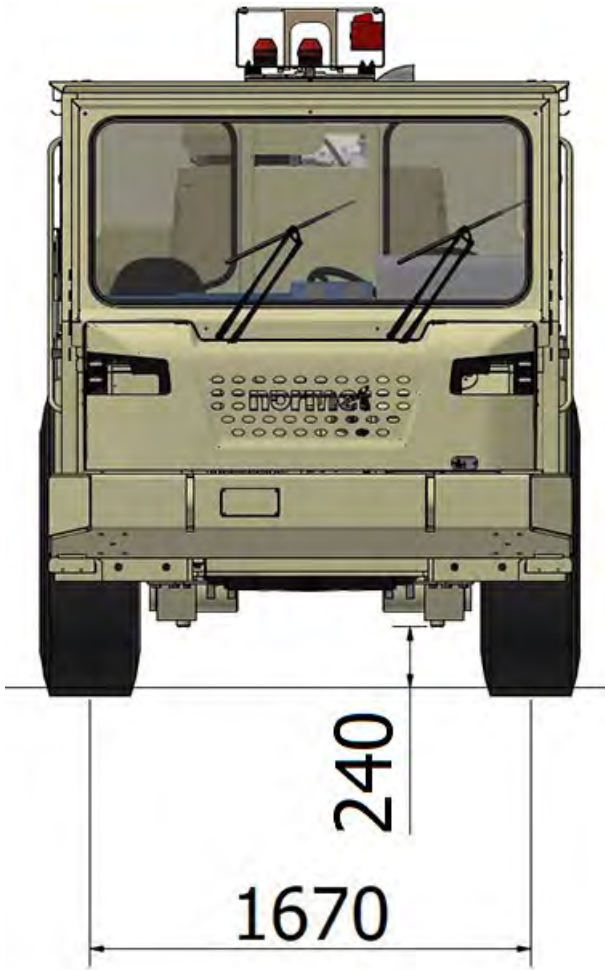
TURNING RADIUS



Normet reserves the right to change this specification without further notice

Pictures may include options and additional equipment.

FRONT VIEW



TRACTIVE EFFORTS

OPERATING WEIGHT

Empty 10 500 kg
 Fully loaded 20 500 kg
 final machine weight variate in agree with selected options

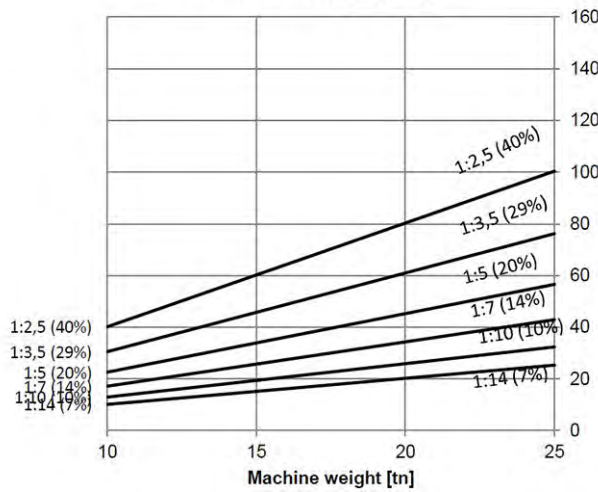
DEUTZ TCD 6.1 L6, 129 KW

Performance curve DOC064325

Conversion chart

25	50	2	30
	40	2.5	25
20	30	3	20
15	25	4	15
10	20	5	10
5	15	6	5
	10	7	
	5		
β / °	%	1/X	GON

Gradeability [kN]



Tractive effort [kN]

