



Each material handler is unique because every client is unique

HIGGINS BALERS LTD
RENEWING, REPAIRING, REPLACING

Artisan care in detail and industrial precision in construction

Our Mission

'Our efforts are focused on the technological development of the product in an environmentally friendly and energy saving, and on improving comfort for the operator in respect of safety and health.'

Over half a century ago, Abele, Renato, Vittorina and Francesco Minelli began to design and build their Material Handlers: initially equipment for agriculture and moving earth. Today the brother's vehicles are used every day in the recovery and the reprocessing of a range of materials, including: scrap iron and metal, paper, plastics, waste, organic material, and even mud. They are used in a variety of industries, from demolition to forestry, proving their versatility, as they are able to 'handle' everything in bulk form or full, solid or semi-solid, as long as it can be gathered and raised with a grapple, a clamp, clamshell bucket or a hook.

Over time, thanks to new and challenging needs of customers who grew up with the company, Officine Minelli has consistently sought the best solutions to the problem of handling and lifting of materials, offering continuity with ever more modern and high-performance models, using increasingly advanced hydraulic systems, with ever higher quality standards.



HIGGINS BALERS LTD
RENEWING, REPAIRING, REPLACING

Also starting up over 50 years ago, Higgins Balers Ltd has grown and developed basing its principles on providing innovative solutions to customer's requirements in all aspects of the recycling industry. There is much that is mirrored in the two companies.

By providing professional, impartial advice and a full range of services Higgins Balers can ensure your system runs continuously and smoothly, no matter what waste you are dealing with. This company has the expertise required for all your recycling and waste management needs from initial contact to installation, continued support and servicing.

www.higginsbalers.com

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Call: +44 (0)1562 824406

[**www.officineminelli.it/en/**](http://www.officineminelli.it/en/)

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Contents

M18	8m outreach
M20	8.3m to 9.3m outreach
M25	8.5 to 10m outreach
M30	9.5m to 11.7m outreach

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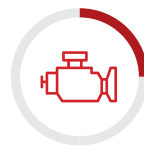
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MINELLI
MATERIAL HANDLERS

M18



89 kW



8 m



17,5 t

HIGGINS BALERS LTD

RENEWING, REPAIRING, REPLACING

EN

LOAD CAPACITY (t)

Height [m]	Undercarriage Configuration	Outreach [m]					
		3	4	5	6	7	8
8	On wheels	-	3,9	3,2	-	-	-
	Stabilized (on outriggers)	-	4,5	3,7	-	-	-
7	On wheels	-	-	3,4	2,9	-	-
	Stabilized (on outriggers)	-	-	3,9	3,5	-	-
6	On wheels	-	3,9	3,4	2,9	-	-
	Stabilized (on outriggers)	-	4,2	3,9	3,6	-	-
5	On wheels	-	4,0	3,6	2,9	2,5	-
	Stabilized (on outriggers)	-	4,3	4,1	3,7	3,4	-
4	On wheels	5,0	4,6	3,8	2,9	2,5	-
	Stabilized (on outriggers)	6,1	5,2	4,4	3,9	3,5	-
3	On wheels	-	4,6	3,8	2,9	2,4	-
	Stabilized (on outriggers)	-	6,0	4,8	4,1	3,6	-
2	On wheels	-	4,9	3,7	2,8	2,4	1,9
	Stabilized (on outriggers)	-	6,4	5,2	4,3	3,6	2,9
1	On wheels	-	4,9	3,6	2,8	2,4	1,9
	Stabilized (on outriggers)	-	6,7	5,4	4,4	3,7	2,9
0	On wheels	6,0	4,8	3,5	2,7	2,4	-
	Stabilized (on outriggers)	7,1	6,2	5,4	4,3	3,6	-
-1	On wheels	-	-	3,5	2,7	-	-
	Stabilized (on outriggers)	-	-	5,1	4,1	-	-
-2	On wheels	-	-	-	-	-	-
	Stabilized (on outriggers)	-	-	-	-	-	-

Height [m]	Undercarriage Configuration	MAX outreach [m]
		8,01
2	On wheels	1,9
	Stabilized (on outriggers)	2,9

Loads are shown in Ton (t). With reference to ISO 10567 standard, load values refers to a maximum of 75% of the tipping load or to 87% of the hydraulic lifting force. The indicated loads must be understood with stationary machines, blocked axles on flat solid ground, valid for 360°. The equipment is an integral part of the load. For the telescopic version, loads have to be understood with second arm fully extended.

WEIGHT & DIMENSION

Operating weight with rear outrigger and front dozer blade	ca 17,5 t
Model operating weight	16,5 - 18 t
Max width	2500 mm
Wheel distance	2400 mm
Max outreach	8,0 m

DIESEL ENGINE

Type	NEF N45. ENT
Emissions Standard	EU STAGE IV* (US Epa Tier 4 Final)
Number of Cylinders	4 L
Air intake	Turbo Intercooler with Wastegate valve
Valves /cylinder	4
Capacity	4500 cc
Max power (2200 rpm)	89 kW (119 CV)
Max torque (1500 rpm)	549 Nm
Cooling	water cooling
Electric system	24 V
Battery	2 x 12 V / 100 Ah / 810 A

***Max emissions (g/kWh):** $NO_x = 0,4$ / $NMHC = 0,19$ / $CO = 5$ / PM (particulate) = 0,025.

Power Unit supplied with HI-eSCR patented system for the exhaust emissions treatment with over 95% reduction of oxides of nitrogen.

A compact design and an efficient pipes insulation system enable a safe and easy access to

compartment. PowerCore[®] air filter with microcyclone prefilter. Completely soundproofed engine compartment.

Sound power according to 2000/14/CE and 2005/88/CE.

- ☑ Automatic battery switch.
- ☑ Integrated diagnostic system.
- ☑ Auto Idling.
- ☑ Fuel filter with water drain and fuel preheating.
- ☐ Reversible fan drive kit.
- ☐ Water Heater 24 V cc.
- ☐ Fuel electric pump.

HYDRAULIC SYSTEM

Linde "**Load Sensing**" system for synchronized movements, regardless from the load and without any mutual influence. The system allows **precise controls**, it ensures **better comfort** for the operator and a remarkable **energy saving**. It is made of a *Load Sensing* modular proportional distributor, with increased capacity of the first and secondary arms function. It is powered by an axial piston pump with variable displacement.

Max flow	210 l/min
Max pressure	350 bar
Lifting circuit	350 bar
Travel circuit	350 bar
Rotation circuit	280 bar
Secondary circuit	250 bar

☑ **Hydraulic oil tank with safety valve.**

Cooling

Aluminium radiator for Hydraulic oil, engine's motor liquid and intercooler, with **anti-clogging meshes**.

A special, **high capacity fan** with a broad blade, **reduce the overall noise**.

- ☐ Hydraulic oil preheating 230 V ca.
- ☐ Electromagnet hydraulic system.

Electrical control

System control with **microprocessor** with hydraulic drive, which controls the injection pump of the diesel engine.

"*Fine mode*" for precision movements and "*auto-idle*" function for energy saving.

In case of electronic malfunctioning, it is however possible to move the machine, although with reduced power.

EQUIPMENT

- ☑ Standard
- ☐ Optional



HIGHEST EFFICIENCY

Thanks to the *Load Sensing* electronic control, speed and load capacity are among the best-in-class and enable quick and precise work cycles.



ENVIRONMENTAL CARE

Reduced fuel consumption and emissions under the strictest standards; patented system which enables to reduce NO_x , with no need of anti-particulate filters.

UPPER CARRIAGE

Rotation group with **"swing drive"** axial pistons **engine** with **LS control** section and braking valve, set on a double-stage planetary gearbox with hardened pinion. Alloy-steel slewing ring, with double row and internal hardened gear.

Swing bearings diameter	1160 mm
Max rotation speed	6 - 8 rpm

- ☑ Automatic lubrication system for rows and gear with nylon pinion.

The structure of the upper rotating carriage is provided with a counterweight ballast made of cast iron, produced with privately owned molds.

- ☑ Handrail and stairs for filters' access.
- ☑ Upper carriage's perimetric handrail.

Operator's cabin

Soundproofed cabin in order to guarantee the **best comfort** to the operator; **wide glazed surfaces** allow the best view in each direction.

Under the roof the cabin is provided with retractable front crystal, lower front crystal and fixed crystal on the roof, in order to guarantee the best view above; wiper; openable side glass; radio set-up with antenna and speakers; document case and bottle holder.

- ☑ **Roll-bar grid**, sunroof, sunblind, working lights.
- ☑ **Flashing orange light**.
- ☑ Protective film for crystals.
- ☑ FOPS/FOGS device.

MIN 100/4.0 model with vertical elevation, with heating and air conditioned (anti-dust filter, windscreen heating, air circulation).

- ☑ Air conditioner with microfilter.
- ☑ Activated carbon microfilter.
- ☑ Automatic air-conditioning.
- ☑ Auxiliary heating system.
- ☑ Pressurization system with carbon filter/HEPA.

Vehicle roof's height	4,50 m
Operator level height	ca 4,00 m

- ☑ **Emergency lowering system, from the cabin and from the ground.**
- ☑ Cabin additional height +400 mm.

Grammer® ACTIMO model seat with steel manipulators' holder; swing control, independent slide adjustment, fold-down backrest, lumbar strip adjustment, arm and head support.



- ☑ Weight adjustable seat.
- ☑ XL seat with pneumatic suspension and heating.
- ☑ **Safety belt.**
- ☑ Radio with MP3 player, USB/Bluetooth input.
- ☑ Cameras for shadowy areas.
- ☑ Electronic anti tipping system.
- ☑ Multi-function color display 7".
- ☑ Intouch® computer system.
- ☑ Fire extinguisher.

Controls

Fully servo-driven controls: the two main manipulators are within the armrests and control the boom and the stick, the slewing movement and the grab. A single manipulator controls the front blade and the outriggers, while three pairs of electrical buttons control the grab's rotor, the telescopic extension and the cabin.

- ☑ Operator's presence switch.
- ☑ Proportional electrical control.
- ☑ Emergency and stationary brake.

Steering

Hydraulic steering with dedicated pump and safety valve. Steering cylinder on the axle. Steering column with adjustable inclination.

- ☑ Steering system with electrical buttons on a joystick.



EASY DIAGNOSTIC

New electric device with color screen 7" which allows to monitor the main working parameters, considerably helping the operator.



LOW MAINTENANCE COSTS

Easily available spare parts, common fittings, extended maintenance intervals.

UNDERCARRIAGE

Four-wheel **drive undercarriage**; cast iron axles with planetary hub.

☑ In-gauge undercarriage width 2,5 m.

Variable-displacement axial piston motor with displacement block system.

Gearbox with two speed manual gearshifts selectable from the cab.

Max speed in 1 st gear	4 km/h
Max speed in 2 nd gear	12 km/h
Max inclination/slope	30%
Axle load capacity (each)	22 t

Wheels

No. 08 solid rubber wheels 9.00x20" on heavy duty 6,5" rims; rubber spacers between wheels.

☐ Pneumatic tyres 9.00x20".

Brakes

Negative brake system on both axles (wet discs): during work the machine is perfectly locked.

☑ **Reverse gear buzzer.**

☑ Undercarriage with rear outriggers and front dozer blade with two cylinders and integrated cylinder shield.

☐ Manual greasing system.

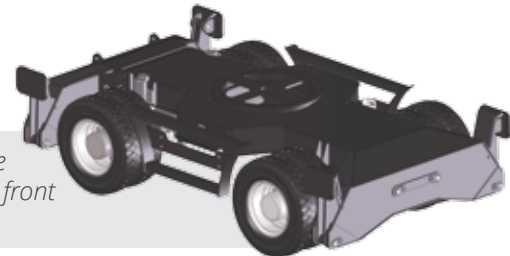
☐ Tow hitch.



Undercarriage with front dozer blade



Undercarriage with rear and front outriggers



HIGH STANDARD SAFETY DEVICES

Several safety devices to guarantee operator cab security & comfort.



RELIABILITY

60 years of manufacturing experience and first quality components allow us to offer stability, safety, design, and long-lasting machines, 100% made in Italy.

ARMS

High resistance and "FEM-tested".

Standard version: **primary curved arm + telescopic second arm** (stick).

Curved boom	4650 mm
Stick with hydraulic extension	from 2300 to 3300 mm
Total outreach	8 m
Working range	8,9 m

Hydraulic cylinders

Cylinders with hydraulic-end-stroke brakes. Chrome plated and hardened stems. **Safety valves** on each cylinder.

- ☑ LED working lights.
- ☑ Secondary arm end-switch.
- Logs guard.

Lubricating system

Centralized system for arms and upper carriage:

- ☑ Manual greasing system.
- Automatic greasing with timer and diagnostic system; 8 lubrication points.

TERA7 SYSTEM

Innovative Electronic Diagnostic System with 7" color display. The control unit collects all machine's parameters and displays them through easy-to-read graphical symbols, for an immediate understanding.

In case of anomalies or malfunctioning, the operator is warned with indication of the error level.

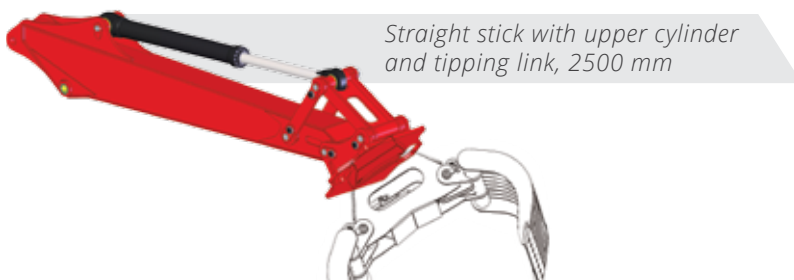
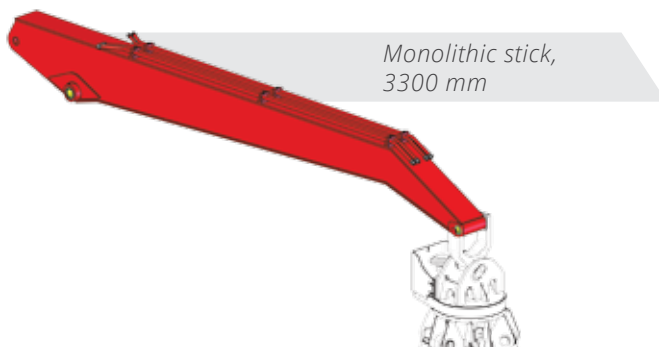
In addition to the anti-tipping device, the system supplies info regarding the deadline service and weight.

Parameters

- Engine speeds.
- **Anti-tipping.**
- Material handler status.
- Levels of gasoline and liquid temperatures.
- Engine and hydraulic malfunctions.

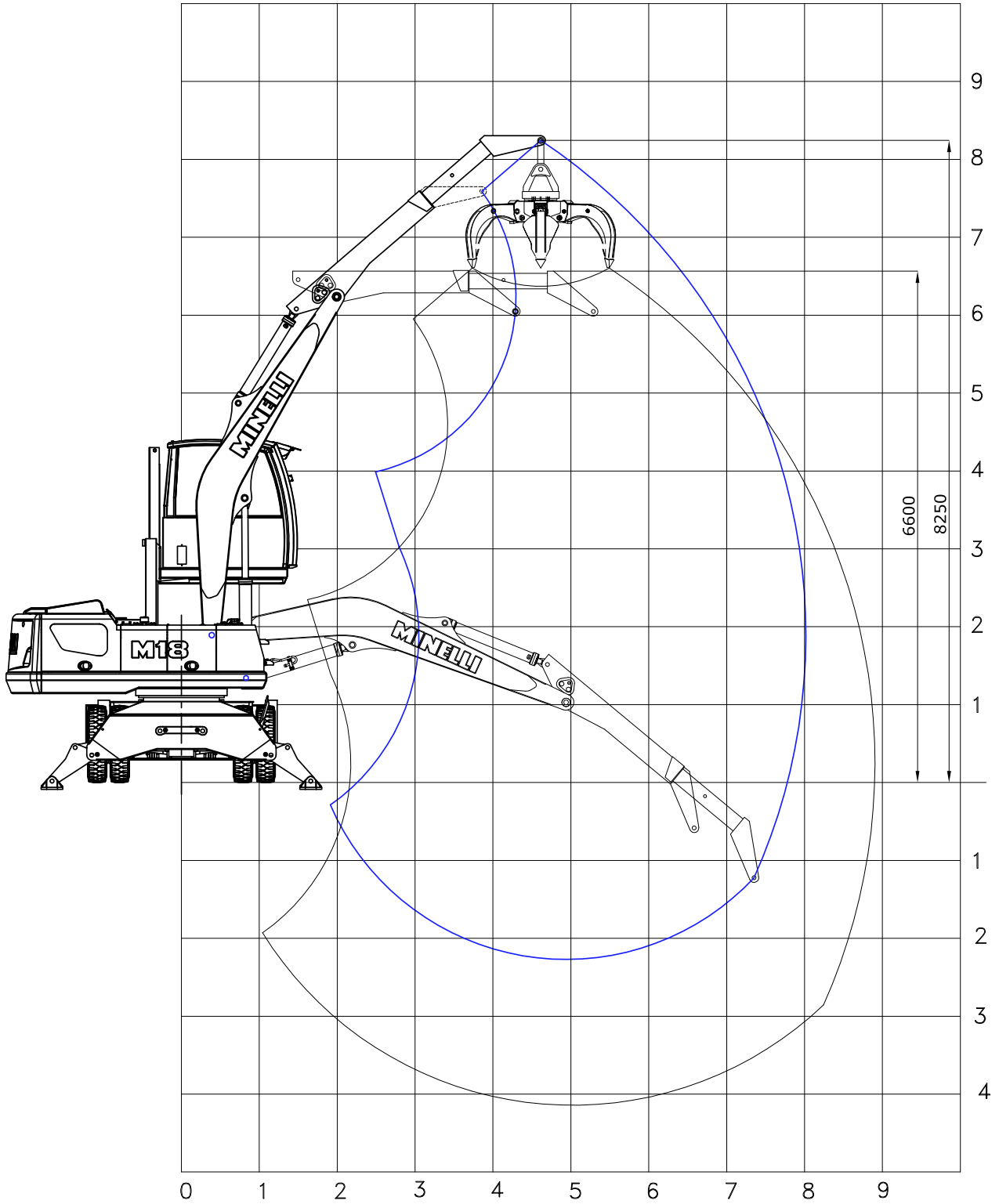
Secondary pages

- Fuel consumption.
- Weighing (approx $\pm 5\%$).
- Service timing.
- Working range limits.

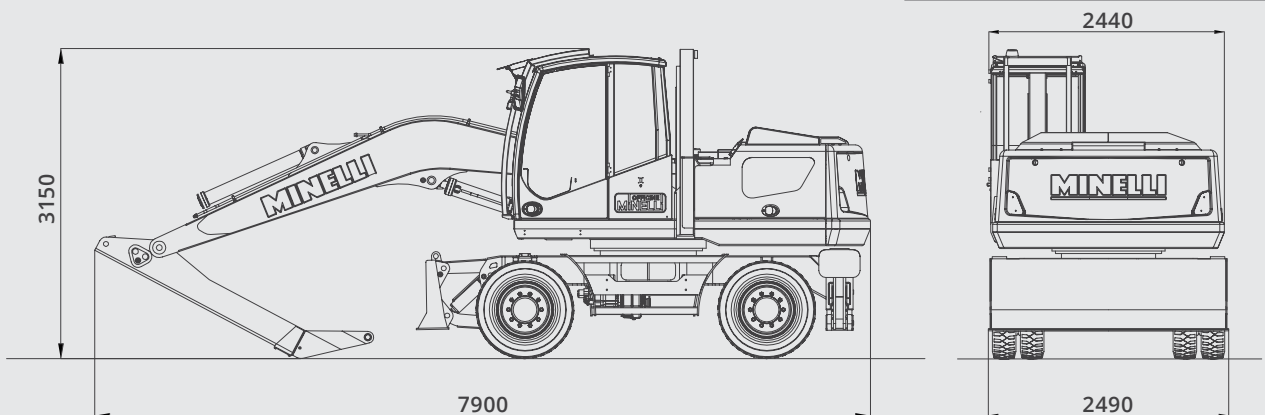


360°

WORKING AREA M18.8 pro



TRANSPORT DIMENSIONS



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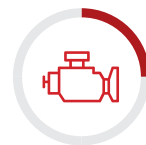
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M20



89 kW



8.3 - 9.3 m



19.5 t

HIGGINS BALERS LTD

RENEWING, REPAIRING, REPLACING

EN

LOAD CAPACITY (t)

Height [m]	Undercarriage Configuration	Outreach [m]						
		3	4	5	6	7	8	9
9	On wheels	-	-	3,4	-	-	-	-
	Stabilized (on outriggers)	-	-	4,0	-	-	-	-
8	On wheels	-	-	3,8	2,9	-	-	-
	Stabilized (on outriggers)	-	-	4,3	4,1	-	-	-
7	On wheels	-	-	3,8	2,9	2,4	-	-
	Stabilized (on outriggers)	-	-	4,3	4,3	3,5	-	-
6	On wheels	-	-	3,8	2,9	2,4	2,0	-
	Stabilized (on outriggers)	-	-	4,4	4,3	3,7	2,7	-
5	On wheels	-	4,6	3,8	2,9	2,4	2,0	-
	Stabilized (on outriggers)	-	4,5	4,6	4,5	3,7	3,1	-
4	On wheels	5,3	5,1	3,8	2,9	2,4	2,0	1,7
	Stabilized (on outriggers)	5,5	5,1	5,0	4,7	3,8	3,1	2,0
3	On wheels	7,0	5,1	3,8	2,9	2,4	2,0	1,7
	Stabilized (on outriggers)	7,2	5,9	5,4	4,9	3,9	3,2	2,5
2	On wheels	-	5,1	3,8	2,9	2,4	2,0	1,7
	Stabilized (on outriggers)	-	6,5	5,7	5,1	4,0	3,2	2,5
1	On wheels	7,9	5,0	3,7	2,9	2,4	2,0	1,7
	Stabilized (on outriggers)	8,1	6,5	5,9	5,2	4,0	3,2	2,4
0	On wheels	7,7	4,9	3,6	2,8	2,4	2,0	-
	Stabilized (on outriggers)	7,9	6,3	5,9	5,1	3,9	3,0	-
-1	On wheels	-	4,9	3,6	2,8	2,4	-	-
	Stabilized (on outriggers)	-	6,0	5,5	4,9	3,7	-	-

Height [m]	Undercarriage Configuration	MAX outreach [m]
		9,3
2	On wheels	1,6
	Stabilized (on outriggers)	2,4

Loads are shown in Ton (t). With reference to ISO 10567 standard, load values refer to a maximum of 75% of the tipping load or to 87% of the hydraulic lifting force. The indicated loads must be understood with stationary machines, blocked axles on flat solid ground, valid for 360°. The equipment is an integral part of the load.

WEIGHT & DIMENSION

Operating weight with rear outrigger and front dozer blade	ca 19,5 t
Model operating weight	19 - 21 t
Max width	2500 mm
Wheel distance	2500 mm
Max outreach	9,3 m

DIESEL ENGINE

Type	NEF N45. ENT
Emissions Standard	EU STAGE IV* US Epa Tier 4 Final
Number of Cylinders	4 L
Air intake	Turbo Intercooler, with Wastegate valve
Valves / cylinder	4
Capacity	4500 cc
Max power (2200 rpm)	89 kW (119 CV)
Max torque (1500 rpm)	549 Nm
Cooling	Water cooling
Electric system	24 V
Battery	2 x 12 V / 100 Ah / 810 A
Full load consumption	205 g/kW

***Max emissions (g/kWh):** $NO_x = 0,4$ / $NMHC = 0,19$ / $CO = 5$ / PM (particulate) = $0,025$

Power Unit supplied with HI-eSCR patented system for the exhaust emissions treatment with over 95% reduction of oxides of nitrogen.

A compact design and an efficient pipes insulation system enable a safe and easy access to compartment. PowerCore[®] air filter with microcyclone pre-filter. Completely soundproofed engine compartment.

Sound power according to 2000/14/CE e 2005/88/CE.

- ☑ Automatic battery switch.
- ☑ Integrated diagnostic system.
- ☑ Auto Idling.
- ☑ Fuel filter with water drain and fuel preheating.
- ⊖ Reversible fan drive kit.
- ⊖ 24 V cc Water Heater.
- ⊖ Fuel electric pump.

HYDRAULIC SYSTEM

Linde "**Load Sensing**" system for synchronized movements, regardless from the load and without any mutual influence. The system allows **precise control**, it ensures **better comfort** for the operator and a remarkable **energy saving**.

It is made of a *Load Sensing* modular proportional distributor, with increased capacity of the first and secondary arms function. It is powered by an axial piston pump with variable displacement.

Max flow	210 l/min
Max pressure	350 bar
Lifting circuit	350 bar
Travel circuit	350 bar
Rotation circuit	280 bar
Secondary circuit	250 bar

☑ **Hydraulic oil tank with safety valve.**

Cooling

Aluminum radiator for Hydraulic oil, engine's motor liquid and intercooler, with **anti-clogging meshes**. A special, **high capacity fan** with a broad blade, **reduce the overall noise**.

- ⊖ Hydraulic oil preheating 230 V ca.
- ⊖ Electromagnet hydraulic system.

Electrical control

System control with **microprocessor** with hydraulic drive, which controls the injection pump of the diesel engine.

"*Fine mode*" for precision movements and "*auto-idle*" function for energy saving.

In case of electronic malfunctioning, it is however possible to move the machine, although with reduced power.

EQUIPMENT

- ☑ Standard
- ⊖ Optional



HIGHEST EFFICIENCY

Thanks to the *Load Sensing* electronic control, speed and load capacity are among the best-in-class and enable quick and precise work cycles.



ENVIROMENTAL CARE

Reduced fuel consumption and emissions under the strictest standards; patented system which enables to reduce NO_x , with no need of anti-particulate filters.

UPPER CARRIAGE

Rotation group with “*swing drive*” axial pistons **engine** with **LS control** section and braking valve, set on a double-stage planetary gearbox with hardened pinion. Alloy-steel slewing ring, with double row and internal hardened gear.

Swing bearing diameter	1160 mm
Max rotation speed	6 - 8 rpm

- ☒ Automatic lubrication system for rows and gear with nylon pinion.

The structure of the upper rotating carriage is provided with a counterweight ballast made of cast iron, produced with privately owned molds.

- ☒ Handrail and stairs for filters' access.
- ☒ Upper carriage's perimetric handrail.

Operator's cabin

Soundproofed cabin in order to guarantee the **best comfort** to the operator; **wide glazed surfaces** allow the best view in each direction.

Under the roof the cabin is provided with retractable front crystal, lower front crystal and fixed crystal on the roof, in order to guarantee the best view above; wiper; openable side glass; radio set-up with antenna and speakers; document case and bottle holder.

- ☒ **Roll-bar grid**, sunroof, sunblind, working lights.
- ☒ **Flashing orange light**.
- ☒ Protective film for crystals.
- ☒ FOPS/FOGS device.

MIN 100/5.0 model with **parallelogram** elevation, with heating and air conditioned (anti-dust filter, windscreen heating, air circulation).

- ☒ Air conditioner with microfilter.
- ☒ Activated carbon microfilter.
- ☒ Automatic air-conditioning.
- ☒ Auxiliary heating system.
- ☒ Pressurization system with carbon filter/HEPA.

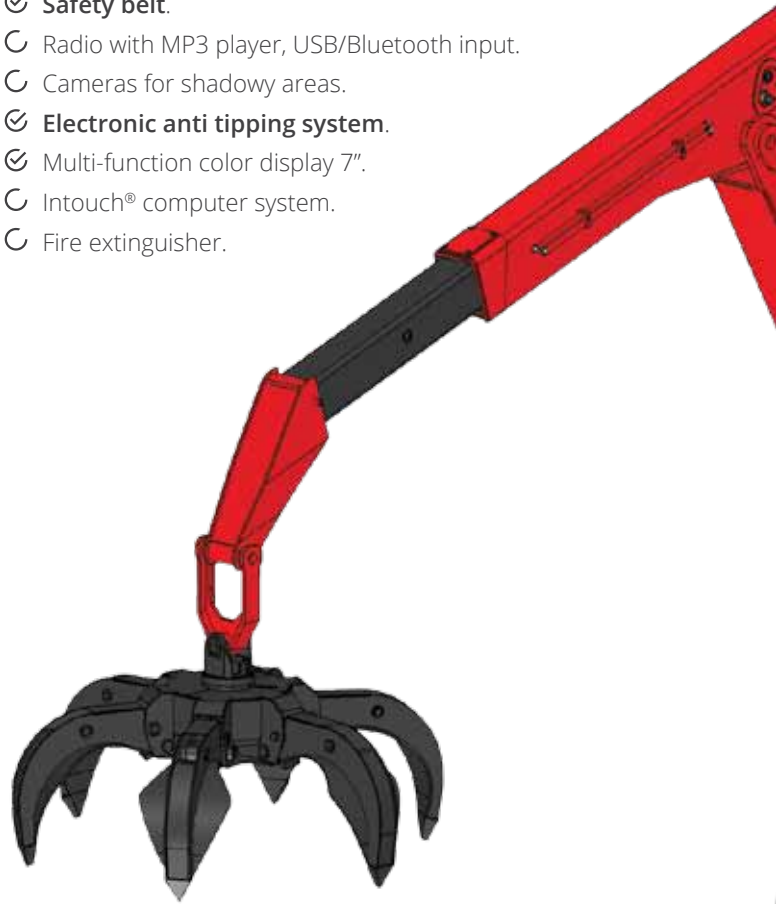
Vehicle roof's height	5,50 m
Operator level height	ca 5,00 m

- ☒ **Emergency lowering system, from the cabin and from the ground.**

Grammer® ACTIMO model seat with steel manipulators' holder; swing control, independent slide adjustment, fold-down backrest, lumbar strip adjustment, arm and head support.

- ☒ Weight adjustable seat.

- ☒ XL seat with pneumatic suspension and heating.
- ☒ **Safety belt.**
- ☒ Radio with MP3 player, USB/Bluetooth input.
- ☒ Cameras for shadowy areas.
- ☒ **Electronic anti tipping system.**
- ☒ Multi-function color display 7".
- ☒ Intouch® computer system.
- ☒ Fire extinguisher.



Controls

Fully servo-driven controls: the two main manipulators are within the armrests and control the boom and the stick, the slewing movement and the grab. A single manipulator controls the front blade and the outriggers, while three pairs of electrical buttons control the grab's rotor, the telescopic extension and the cabin.

- ☒ Operator's presence switch.
- ☒ Proportional electrical control.
- ☒ Emergency and stationary brake.

Steering

Hydraulic steering with dedicated pump and safety valve.

Steering cylinder on the axle.

Steering column with adjustable inclination.

- ☒ Steering system with electrical buttons on joysticks.



EASY DIAGNOSTIC

New electric device with color screen 7" which allows to monitor the main working parameters, considerably helping the operator.



LOW MAINTENANCE COSTS

Easily available spare parts, common fittings, extended maintenance intervals.

UNDERCARRIAGE

Four-wheel drive undercarriage; cast iron axles with planetary hub.

☑ In-gauge undercarriage width 2,5 m.

Variable-displacement axial piston motor with displacement block system. Gear-box with two speed manual gearshifts selectable from the cab.

Max speed in 1 st gear	4 km/h
Max speed in 2 nd gear	12 km/h
Max inclination/slope	30%
Axle load capacity (each)	22 t

Wheels

No. 08 solid rubber wheels 9.00x20" on heavy duty 6,5" rims; rubber spacers between wheels.

☐ Pneumatic tyres 9.00x20".

Brakes

Negative brake system on both axles (wet discs): during work the machine is perfectly locked.

☑ **Reverse gear buzzer.**

☑ Undercarriage with rear outriggers and front dozer blade with two cylinders & integrated cylinder shield.

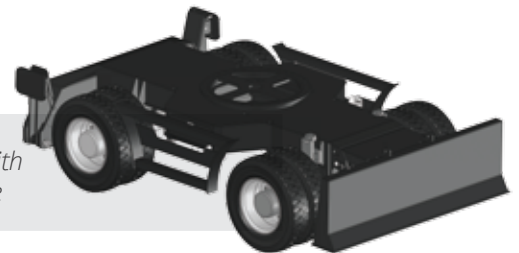
☐ Hydraulic front and rear outriggers.

☐ Manual greasing system.

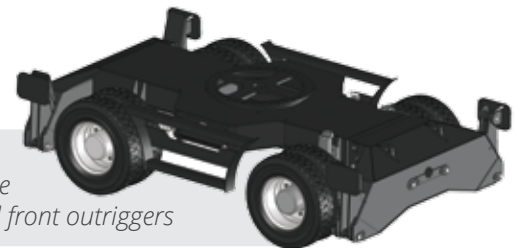
☐ Tow hitch.



Undercarriage with front dozer blade



Undercarriage with rear and front outriggers



HIGH STANDARD SAFETY DEVICES

Several safety devices to guarantee operator cab security & comfort.



RELIABILITY

60 years of manufacturing experience and first quality components allow us to offer stability, safety, design, and long-lasting machines, 100% made in Italy.

ARMS

High resistance steel and "FEM-tested" arms.

8,3 m - Arm version

Curved boom	4650 mm
Stick with hydraulic extension	from 2300 to 3300 mm
Monoblock stick	3300 mm

9,3 m - Arm version

Straight boom	5300 mm
Stick with hydraulic extension	from 2900 to 3900 mm
Monoblock stick	3900 mm

9 m - SG Version

Straight boom	5300 mm
Straight monoblock stick with triangulation and cylinder for sorting grab	3400 mm

Hydraulic cylinder

Cylinders with hydraulic-end-stroke brakes. Chrome plated and hardened stems. **Safety valves** on each cylinder.

- ☑ LED working lights.
- ☑ Secondary arm end-switch.
- Logs guard.

Lubricating system

Centralized system for arms and upper carriage:

- ☑ Manual greasing system.
- Automatic greasing with timer and diagnostic system; 10/12 lubrication points.



TERA7 SYSTEM

Innovative Electronic Diagnostic System with 7" color display. The control unit collects all machine's parameters and displays them through easy-to-read graphical symbols, for an immediate understanding.

In case of anomalies or malfunctioning, the operator is warned with indication of the error level.

In addition to the anti-tipping device, the system supplies info regarding the deadline service and weight.

Parameters

- Engine speed.
- **Anti-tipping system.**
- Material handler status.
- Gasoline level and liquid temperatures.
- Engine and hydraulic malfunctions.

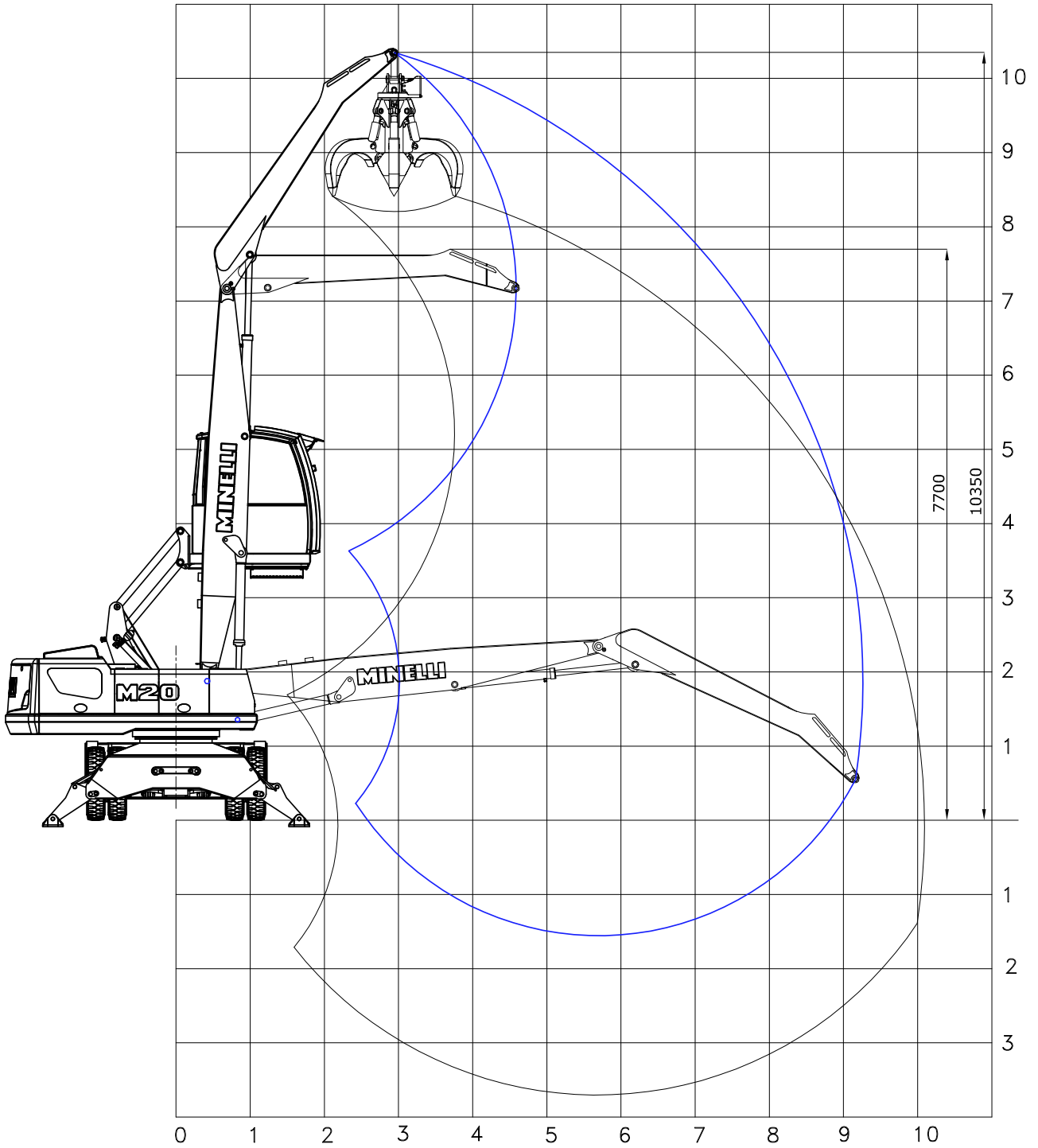
Secondary pages

- Fuel consumption.
- Weighing (approx ±5%).
- Service timing.
- Work range limits.

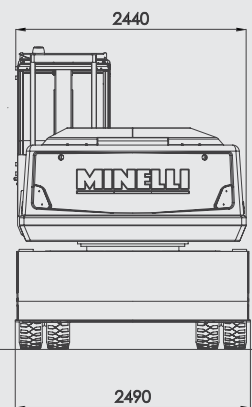
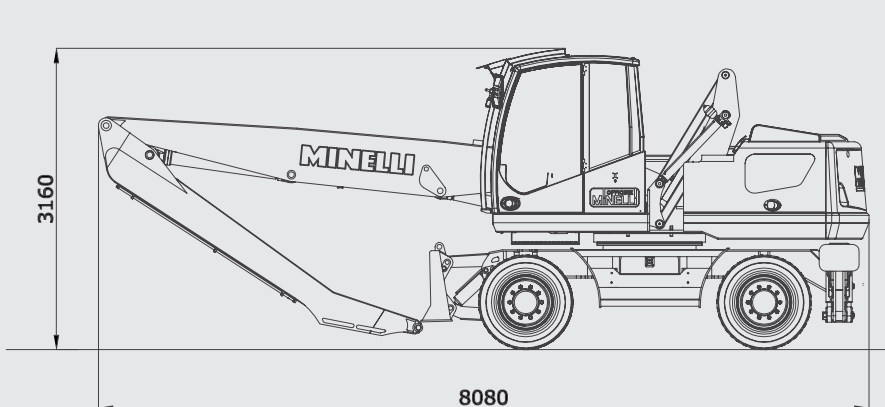


(360°)

WORKING AREA M20.93



TRANSPORT DIMENSIONS



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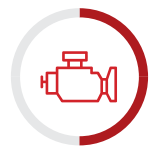




MINELLI



M25



125 kW



8.5 - 10 m



25 t

HIGGINS BALERS LTD

RENEWING, REPAIRING, REPLACING



LOAD CAPACITY (t)

Height [m]	Undercarriage Configuration	Outreach [m]							
		3	4	5	6	7	8	9	10
11	On wheels	-	4,2	-	-	-	-	-	-
	Stabilized (on outriggers)	-	6,0	-	-	-	-	-	-
10	On wheels	-	-	4,5	-	-	-	-	-
	Stabilized (on outriggers)	-	-	4,9	-	-	-	-	-
9	On wheels	-	-	4,5	4,0	3,3	-	-	-
	Stabilized (on outriggers)	-	-	4,9	4,9	4,5	-	-	-
8	On wheels	-	-	4,5	4,0	3,3	2,8	-	-
	Stabilized (on outriggers)	-	-	4,9	4,9	4,5	3,9	-	-
7	On wheels	-	-	4,5	4,0	3,3	2,8	-	-
	Stabilized (on outriggers)	-	-	4,9	4,9	4,5	3,9	-	-
6	On wheels	-	-	4,7	4,0	3,3	2,8	2,3	-
	Stabilized (on outriggers)	-	-	5,1	5,0	4,6	3,9	3,5	-
5	On wheels	-	4,7	5,0	4,0	3,3	2,8	2,3	-
	Stabilized (on outriggers)	-	6,5	5,4	5,2	4,7	3,9	3,5	-
4	On wheels	6,0	5,4	5,0	4,0	3,3	2,8	2,3	-
	Stabilized (on outriggers)	7,5	6,5	5,8	5,4	4,8	4,0	3,5	-
3	On wheels	-	5,5	5,0	4,0	3,3	2,8	2,3	-
	Stabilized (on outriggers)	-	7,0	6,2	5,9	4,9	4,0	3,5	-
2	On wheels	-	5,5	5,0	4,0	3,3	2,8	2,3	1,7
	Stabilized (on outriggers)	-	7,0	6,5	5,8	5,0	4,0	3,5	2,8
1	On wheels	-	5,3	4,8	3,9	3,2	2,8	2,2	-
	Stabilized (on outriggers)	-	7,3	6,6	5,8	4,9	3,9	3,4	-
0	On wheels	6,5	5,2	4,7	3,8	3,2	2,7	2,2	-
	Stabilized (on outriggers)	8,0	7,5	6,3	5,7	4,9	3,8	3,1	-
-1	On wheels	-	-	4,6	3,7	3,1	2,7	-	-
	Stabilized (on outriggers)	-	-	5,8	5,3	4,5	3,4	-	-

Height [m]	Undercarriage Configuration	MAX outreach [m]	
			10
2	On wheels		1,7
	Stabilized (on outriggers)		2,8

Loads are shown in Ton (t). With reference to ISO 10567 standard, load values refer to a maximum of 75% of the tipping load or to 87% of the hydraulic lifting force. The indicated loads must be understood with stationary machines, blocked axles on flat solid ground, valid for 360°. The equipment is an integral part of the load.

WEIGHT & DIMENSION

Operating weight with rear outrigger and front dozer blade	25 t
Model operating weight	24 - 26 t
Max width	2500 mm
Wheel distance	2600 mm
Max outreach	10 m

DIESEL ENGINE

Type	NEF N45. ENT
Emissions standard	EU STAGE IV* US Epa Tier 4 Final
Number of cylinders	4 L
Air intake	Turbo Intercooler, with Wastegate valve
Valves / cylinder	4
Capacity	4500 cc
Max power (2200 rpm)	125 kW (170 CV)
Max torque (1500 rpm)	710 Nm
Cooling	water cooling
Electric system	24 V
Battery	2 x 12 V / 100 Ah / 810 A
Full load consumption	205 g/kW

***Max emissions (g/kWh):** $NO_x = 0,4$ / $NMHC = 0,19$ / $CO = 5$ / PM (particulate) = $0,025$.

Power Unit supplied with HI-eSCR patented system for the exhaust emissions treatment with over 95% reduction of oxides of nitrogen.

A compact design and an efficient pipes insulation system enable a safe and easy access to compartment. PowerCore[®] air filter with microcyclone prefilter. Completely soundproofed engine compartment.

Sound power according to 2000/14/CE e 2005/88/CE.

- ☑ Automatic battery switch.
- ☑ Integrated diagnostic system.
- ☑ Auto Idling.
- ☑ Fuel filter with water drain and fuel preheating.
- ⊖ Reversible fan drive kit.
- ⊖ 24 V cc Water Heater.
- ⊖ Fuel electric pump.

HYDRAULIC SYSTEM

Linde "Load Sensing" System for **synchronized movements**, regardless from the load and without any mutual influence. The system allows **precise control**, it ensures **better comfort** for the operator and a remarkable **energy saving**.

It is made of a *Load Sensing* modular proportional distributor, with increased capacity of the first and secondary arms function. It is powered by an axial piston pump with variable displacement.

Max flow	270 l/min
Max pressure	350 bar
Lifting circuit	350 bar
Travel circuit	350 bar
Rotation circuit	280 bar
Secondary circuit	250 bar

☑ Hydraulic oil tank with safety valve.

Cooling

Aluminum radiator for Hydraulic oil, engine's motor liquid and intercooler, with **anti-clogging meshes**. A special, **high capacity fan** with a broad blade, **reduce the overall noise**.

- ⊖ Hydraulic oil preheating 230 V ca.
- ⊖ Electromagnet hydraulic system.

Electrical control

System control with **microprocessor** with hydraulic drive, which controls the injection pump of the diesel engine.

"*Fine mode*" for precision movements and "*auto-idle*" function for energy saving.

In case of electronic malfunctioning, it is however possible to move the machine, although with reduced power.

EQUIPMENT

- ☑ Standard
- ⊖ Optional



HIGHEST EFFICIENCY

Thanks to the *Load Sensing* electronic control, speed and load capacity are among the best-in-class and enable quick and precise work cycles.



ENVIRONMENTAL CARE

Reduced fuel consumption and emissions under the strictest standards; patented system which enables to reduce NO_x , with no need of anti-particulate filters.

UPPER CARRIAGE

Rotation group with “*swing drive*” axial pistons **engine** with **LS control** section and braking valve, set on a double-stage planetary gearbox with hardened pinion. Alloy-steel slewing ring, with double row and internal hardened gear.

Swing bearing diameter	1200 mm
Max rotation speed	6 - 8 rpm

☑ Automatic lubrication system for rows and gear with nylon pinion.

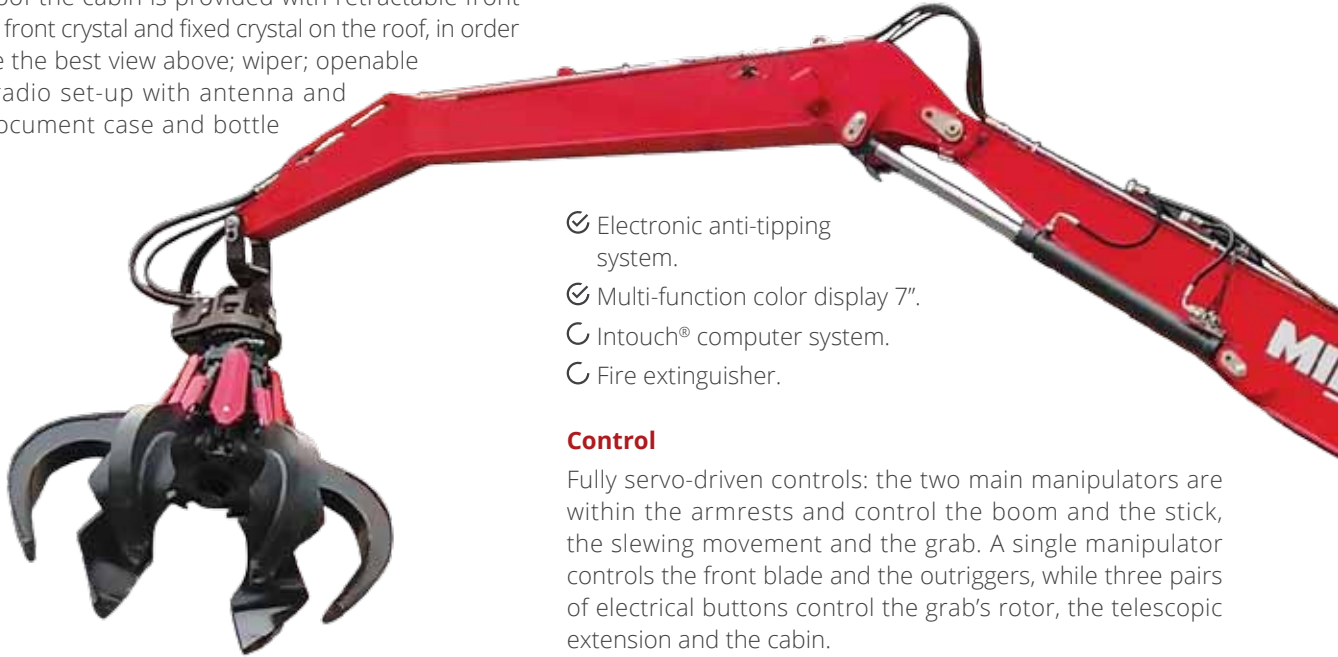
The structure of the upper rotating carriage is provided with a counterweight ballast made of cast iron, produced with privately owned molds.

- ☑ Handrail and stairs for filters’ access.
- ☐ Upper carriage’s perimetric handrail.

Operator’s cabin

Soundproofed cabin in order to guarantee the **best comfort** to the operator; **wide glazed surfaces** allow the best view in each direction.

Under the roof the cabin is provided with retractable front crystal, lower front crystal and fixed crystal on the roof, in order to guarantee the best view above; wiper; openable side glass; radio set-up with antenna and speakers; document case and bottle holder.



- ☑ Roll-bar grid, sunroof, sunblind, working lights.
- ☑ Flashing orange light.
- ☐ Protective film for crystals.
- ☐ FOPS/FOGS device.

MIN 100/5.0 model with **parallelogram**, with heating and air conditioned (anti-dust filter, windscreen heating, air circulation).

- ☐ Air-conditioner with microfilter.

- ☐ Activated carbon microfilter.
- ☐ Air-conditioning.
- ☐ Auxiliary heating system.
- ☐ Pressurization system with carbon filter/HEPA.

Vehicle roof’s height	5,50 m
Operator level height	ca 5,00 m

☑ **Emergency lowering system, from the cabin and from the ground.**

Grammer® ACTIMO model seat with steel manipulators’ holder; swing control, independent slide adjustment, fold-down backrest, lumbar strip adjustment, arm and head support.

- ☑ Weight adjustable seat.
- ☐ XL seat with pneumatic suspension and heating.
- ☑ **Safety belt.**
- ☐ Radio with MP3 player, USB/Bluetooth input.
- ☐ Cameras for shadowy areas.

- ☑ Electronic anti-tipping system.
- ☑ Multi-function color display 7”.
- ☐ Intouch® computer system.
- ☐ Fire extinguisher.

Control

Fully servo-driven controls: the two main manipulators are within the armrests and control the boom and the stick, the slewing movement and the grab. A single manipulator controls the front blade and the outriggers, while three pairs of electrical buttons control the grab’s rotor, the telescopic extension and the cabin.

- ☑ Operator’s presence switch.
- ☐ Proportional electrical control.
- ☐ Emergency and stationary brake.

Steering

Hydraulic steering with dedicated pump and safety valve. Steering cylinder on the axle. Steering column with adjustable inclination.

- ☐ Steering system with electrical buttons on joysticks.



EASY DIAGNOSTIC

New electric device with color screen 7” which allows to monitor the main working parameters, considerably helping the operator.



LOW MAINTENANCE COSTS

Easily available spare parts, common fittings, extended maintenance intervals.

UNDERCARRIAGE

Four-wheel drive undercarriage; cast iron axles with planetary hub.

☑ In-gauge undercarriage width 2,5 m.

Variable-displacement axial piston motor with displacement block system. Gear-box with two speed manual gearshifts selectable from the cab.

Max speed in 1 st gear	4 km/h
Max speed in 2 nd gear	12 km/h
Max inclination/slope	30%
Axle load capacity (each)	40 t

Wheels

No. 08 solid rubber wheels 10.00x20" on heavy duty 8" rims; rubber spacers between wheels.

☐ Pneumatic tyres 10.00x20".

Brakes

Negative brake system on both axes (drums); during work the machine is perfectly locked.

☑ **Reverse gear buzzer.**

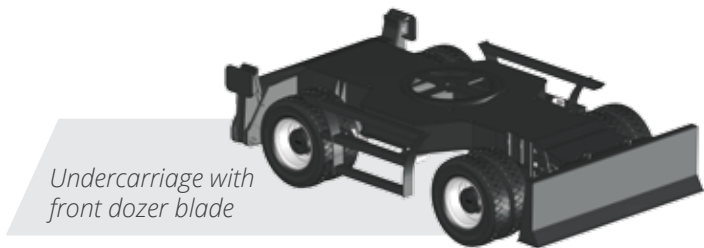
☑ Undercarriage with rear outriggers and front dozer blade with two cylinders & integrated cylinder shield.

☐ Hydraulic front and rear outriggers.

☐ Four outriggers and front blade.

☐ Manual greasing system.

☐ Tow hitch.



HIGH STANDARD SAFETY DEVICES

Several safety devices to guarantee operator cab security & comfort.



RELIABILITY

60 years of manufacturing experience and first quality components allow us to offer stability, safety, design, and long-lasting machines, 100% made in Italy.

ARMS

High resistance steel and "FEM-Verified" arms.

M25

Curved boom	5000 mm
Stick with hydraulic extension	from 2500 to 3500 mm
Monoblock stick	3500 mm
Total outreach	8,5 m

M25.10

Straight boom	5800 mm
Monoblock stick	4250 mm
Total outreach	10 m

M25 SG

Straight boom	5800 mm
Straight stick with triangulation and cylinder for selection grab	3600 mm
Total outreach	9,5 m

Hydraulic cylinder

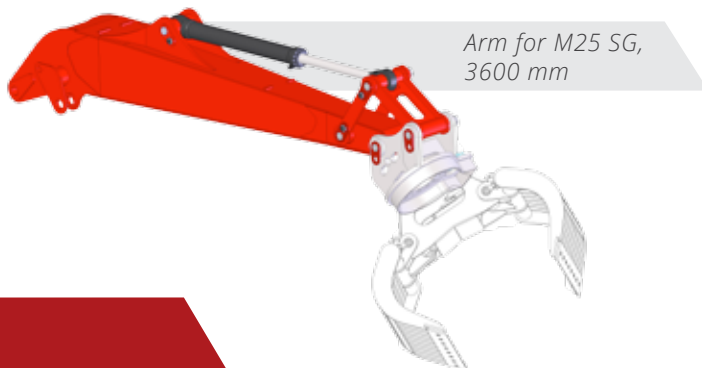
Cylinders with hydraulic-end-stroke brakes. Chrome plated & hardened stems. **Safety valves** on each cylinder.

- ☑ LED working lights.
- ☑ Secondary arm end-switch.
- ☐ Logs guard.

Lubricating system

Centralized system for arms and upper carriage:

- ☑ Automatic greasing with timer & diagnostic system; 10/12 lubrication points.



TERA7 SYSTEM

Innovative Electronic Diagnostic System with 7" color display. The control unit collects all machine's parameters and displays them through easy-to-read graphical symbols, for an immediate understanding.

In case of anomalies or malfunctioning, the operator is warned with indication of the error level.

In addition to the anti-tipping device, the system supplies info regarding the deadline service and weight.

Parameters

- Engine speed.
- **Anti-tipping system.**
- Material handler status.
- Gasoline level and liquid temperatures.
- Engine and hydraulic malfunctions.

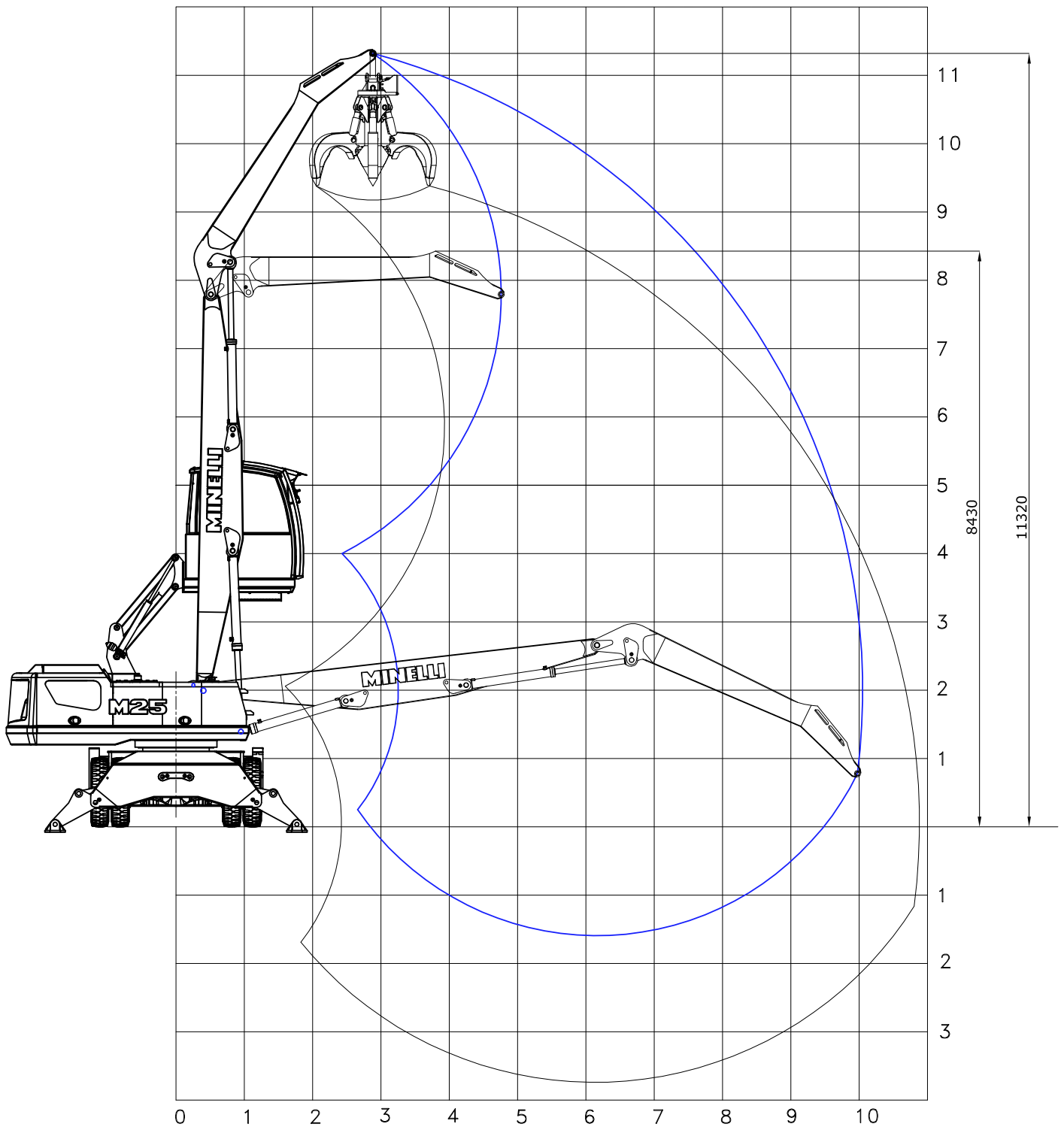
Secondary pages

- Fuel Consumption.
- Weighing (approx ±5%).
- Service timing.
- Working range limits.

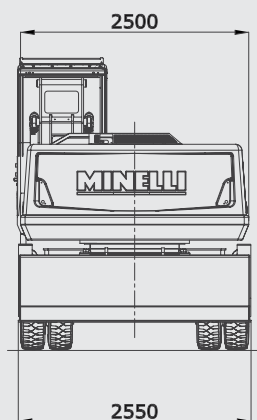
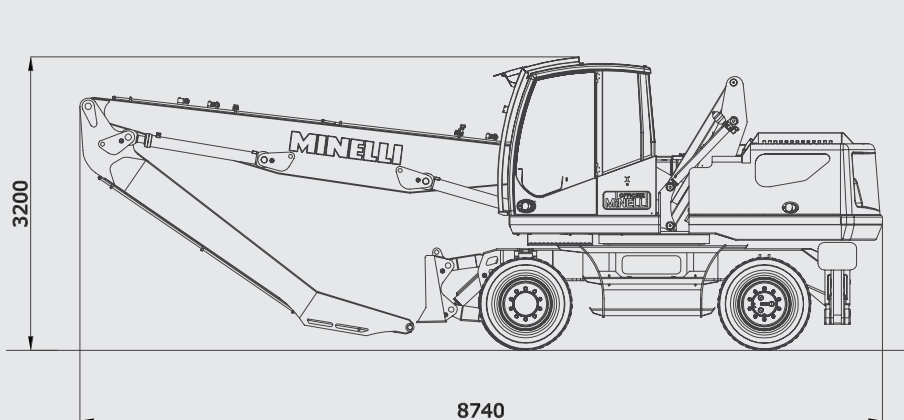


360°

WORKING AREA M25.10



TRANSPORT DIMENSIONS



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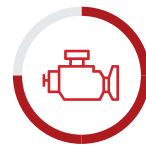
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MINELLI
MATERIAL HANDLERS

M30



187 kW



9.5-11.7 m



30 t

HIGGINS BALERS LTD

RENEWING, REPAIRING, REPLACING

EN

LOAD CAPACITY (t)

Height [m]	Undercarriage Configuration	Outreach [m]								
		3	4	5	6	7	8	9	10	11
12	On wheels	-	-	5,5	-	-	-	-	-	-
	Stabilized (on outriggers)	-	-	6,2	-	-	-	-	-	-
11	On wheels	-	-	-	5,1	4,1	-	-	-	-
	Stabilized (on outriggers)	-	-	-	5,8	5,4	-	-	-	-
10	On wheels	-	-	-	5,1	4,1	3,4	-	-	-
	Stabilized (on outriggers)	-	-	-	5,8	5,4	5,2	-	-	-
9	On wheels	-	-	-	5,1	4,1	3,4	2,9	-	-
	Stabilized (on outriggers)	-	-	-	5,8	5,4	5,2	4,7	-	-
8	On wheels	-	-	-	5,1	4,1	3,4	2,9	2,5	-
	Stabilized (on outriggers)	-	-	-	6,1	5,5	5,2	4,7	4,4	-
7	On wheels	-	-	-	5,1	4,1	3,4	2,9	2,5	-
	Stabilized (on outriggers)	-	-	-	6,2	5,6	5,2	4,7	4,4	-
6	On wheels	-	-	6,4	5,1	4,1	3,4	2,9	2,5	-
	Stabilized (on outriggers)	-	-	6,9	6,5	5,7	5,3	4,7	4,4	-
5	On wheels	-	8,3	6,4	5,1	4,1	3,4	2,9	2,5	2,2
	Stabilized (on outriggers)	-	9,4	7,9	6,8	6,0	5,4	4,8	4,4	3,9
4	On wheels	-	8,3	6,4	5,1	4,1	3,4	2,9	2,5	2,2
	Stabilized (on outriggers)	-	10,0	8,5	7,2	6,2	5,6	4,8	4,4	3,8
3	On wheels	-	8,3	6,4	5,1	4,1	3,4	2,9	2,5	2,2
	Stabilized (on outriggers)	-	10,6	9,1	7,5	6,4	5,7	4,9	4,4	3,8
2	On wheels	-	8,3	6,4	5,1	4,1	3,4	2,9	2,5	2,2
	Stabilized (on outriggers)	-	11,0	9,5	7,8	6,5	5,7	4,9	4,3	3,7
1	On wheels	-	8,0	6,1	4,9	3,9	3,3	2,9	2,5	2,2
	Stabilized (on outriggers)	-	11,0	9,5	7,8	6,5	5,7	4,7	4,1	3,4
0	On wheels	8,5	7,8	5,9	4,7	3,8	3,2	2,8	2,4	2,1
	Stabilized (on outriggers)	11,0	10,5	9,2	7,5	6,3	5,4	4,5	3,8	3,0
-1	On wheels	-	7,7	5,8	4,6	3,8	3,1	2,8	2,4	-
	Stabilized (on outriggers)	-	9,7	8,7	7,0	5,8	5,0	4,1	3,4	-
-2	On wheels	-	-	5,8	4,6	3,7	3,1	2,8	-	-
	Stabilized (on outriggers)	-	-	6,9	6,2	5,1	4,4	3,4	-	-

Height [m]	Undercarriage Configuration	MAX outreach [m]
		11,7
2	On wheels	2,2
	Stabilized (on outriggers)	3,7

Loads are shown in Ton (t). With reference to ISO 10567 standard, load values refer to a maximum of 75% of the tipping load or to 87% of the hydraulic lifting force. The indicated loads must be understood with stationary machines, blocked axes on flat solid ground, valid for 360°. The equipment is an integral part of the load.

WEIGHT & DIMENSION

Operating weight with rear outrigger and front dozer blade	30 t
Model operating weight	29 - 31 t
Max width	2500 - 2700 mm
Wheel distance	2800 mm
Max outreach	11,7 m

DIESEL ENGINE

Type	NEF N67. ENT
Emissions standard	EU STAGE IV* US Epa Tier 4 Final
Number of cylinders	6 L
Air intake	Turbo Intercooler, with Wastegate valve
Valves / cylinder	4
Capacity	6700 cc
Max power (2200 rpm)	187 kW (254 CV)
Max torque (1500 rpm)	1160 Nm
Cooling	water cooling
Electric system	24 V
Battery	2 x 12 V / 100 Ah / 810 A
Full load consumption	204 g/kW

***Max emissions (g/kWh):** $NO_x = 0,4$ / $NMHC = 0,19$ / $CO = 5$ / PM (particulate) = $0,025$.

Power Unit supplied with HI-eSCR patented system for the exhaust emissions treatment with over 95% reduction of oxides of nitrogen.

A compact design and an efficient pipes insulation system enable a safe and easy access to compartment. PowerCore[®] air filter with microcyclone prefilter. Completely soundproofed engine compartment.

Sound power according to 2000/14/CE e 2005/88/CE.

- ✔ Automatic battery switch.
- ✔ Integrated diagnostic system.
- ✔ Auto Idling.
- ✔ Fuel filter with water drain and fuel preheating.
- Reversible fan drive kit.
- 24 V cc Water Heater.
- Fuel electric pump.

EQUIPMENT

- ✔ Standard
- Optional



HIGHEST EFFICIENCY

Thanks to the *Load Sensing* electronic control, speed and load capacity are among the best-in-class and enable quick and precise work cycles.

HYDRAULIC SYSTEM

Linde "Load Sensing" System for **synchronized movements**, regardless from the load and without any mutual influence. The system allows **precise control**, it ensures **better comfort** for the operator and a remarkable **energy saving**.

It is made of a *Load Sensing* modular proportional distributor, with increased capacity of the first and secondary arms function. It is powered by an axial piston pump with variable displacement.

Max flow	420 l/min
Max pressure	350 bar
Lifting circuit	350 bar
Travel circuit	350 bar
Rotation circuit	280 bar
Auxiliary circuit	250 bar

✔ Hydraulic oil tank with safety valve.

Cooling

Aluminum radiator for Hydraulic oil, engine's motor liquid and intercooler, with **anti-clogging meshes**. A special, **high capacity fan** with a broad blade, **reduce the overall noise**.

- Hydraulic oil preheating 230 V ca.
- Electromagnet hydraulic system.
Additional hydraulic circuit and saddle for shears.

Electrical control

System control with **microprocessor** with hydraulic drive, which controls the injection pump of the diesel engine.

"*Fine mode*" for precision movements and "*auto-idle*" function for energy saving. In case of electronic malfunctioning, it is however possible to move the machine, although with reduced power.



ENVIRONMENTAL CARE

Reduced fuel consumption and emissions under the strictest standards; patented system which enables to reduce NO_x , with no need of anti-particulate filters.

UPPER CARRIAGE

Rotation group with “*swing drive*” axial pistons **engine** with **LS control** section and braking valve, set on a double-stage planetary gearbox with hardened pinion. Alloy-steel slewing ring, with double row and **external hardened gear**.

Swing bearing diameter	1290 mm
Max rotation speed	6 - 8 rpm

- ✔ Automatic lubrication system for rows and gear with nylon pinion.

The structure of the upper rotating carriage is provided with a counterweight ballast made of cast iron, produced with privately owned molds.

- ✔ Handrail and stairs for filters' access.
- Upper carriage's perimetric handrail.

Operator's cabin

Soundproofed cabin in order to guarantee the **best comfort** to the operator; **wide glazed surfaces** allow the best view in each direction.

Under the roof the cabin is provided with retractable front crystal, lower front crystal and fixed crystal on the roof, in order to guarantee the best view above; wiper; openable side glass; radio set-up with antenna and speakers; document case and bottle holder.

- ✔ **Roll-bar grid**, sunroof, sunblind, working lights.
- ✔ **Flashing orange light**.
- Protective film for crystals.
- FOPS/FOGS device.

Certified **MIN 100/5.0** model with **parallelogram**, with heating and air conditioned (anti-dust filter, windscreen heating, air circulation).

- ✔ Air-conditioner with microfilter.
- Activated carbon microfilter.
- Automatic air-conditioning.
- Auxiliary heating system.
- Pressurization system with carbon filter/HEPA.

Vehicle roof's height	5,50 m
Operator level height	ca 5,00 m

- ✔ **Emergency lowering system, from the cabin and from the ground.**

Grammer® ACTIMO model seat with steel manipulators' holder; swing control, independent slide adjustment, fold-down backrest, lumbar strip adjustment, arm and head support.



- Weight adjustable seat.
- ✔ XL seat with pneumatic suspension and heating.
- ✔ **Safety belt.**
- Radio with MP3 player, USB/Bluetooth.
- Cameras for shadowy areas.
- ✔ Electronic anti-tipping system.
- ✔ Multi-function color display 7".
- Intouch® computer system.
- Fire extinguisher.

Control

Fully servo-driven controls: the two main manipulators are within the armrests and control the boom and the stick, the slewing movement and the grab. A single manipulator controls the front blade and the outriggers, while three pairs of electrical buttons control the grab's rotor, the telescopic extension and the cabin.

- ✔ Operator's presence switch.
- Proportional electrical control.
- Emergency and stationary brake.

Steering

Hydraulic steering with dedicated pump and safety valve. Steering cylinder on the axle. Steering column with adjustable inclination.

- Steering system with electrical buttons on joysticks.



EASY DIAGNOSTIC

New electric device with color screen 7" which allows to monitor the main working parameters, considerably helping the operator.



LOW MAINTENANCE COSTS

Easily available spare parts, common fittings, extended maintenance intervals.

UNDERCARRIAGE

Four-wheel drive undercarriage; cast iron axles with planetary hub.

Undercarriage width and axial	2500 mm	2700 mm
M30	☑	☐
M30.11	☐	☑
M30.12	-	☑
M30 SG	☐	☑

Variable-displacement axial piston motor with displacement block system. Gear-box with two speed manual gearshifts selectable from the cab.

Max speed in 1 st gear	4 km/h
Max speed in 2 nd gear	12 km/h
Max inclination/slope	30%
Axle load capacity (each)	40 t

Wheels

No. 08 solid rubber wheels 10.00x20" on heavy duty 8" rims; rubber spacers between wheels.

- ☐ Pneumatic tyres 10.00x20".
- ☐ Double steering.

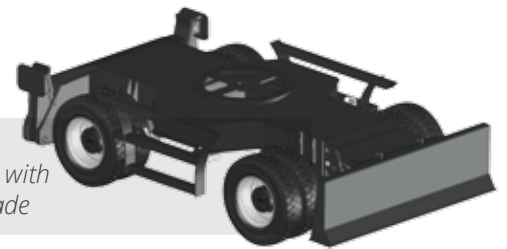
Brakes

Negative brake system on both axles (wet discs - drums); during work the machine is perfectly locked.

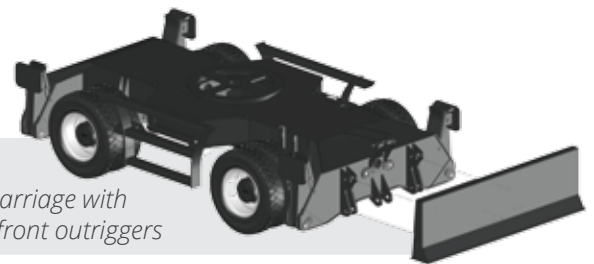
- ☑ **Reverse gear buzzer.**
- ☑ Undercarriage with rear outriggers and front dozer blade with two cylinders and integrated cylinder shield.
- ☐ Hydraulic front and rear outriggers.
- ☐ Four outriggers and front blade.
- ☐ Manual greasing system.
- ☐ Tow hitch.



Undercarriage with front dozer blade



Undercarriage with rear & front outriggers



HIGH STANDARD SAFETY DEVICES

Several safety devices to guarantee operator cab security & comfort.



RELIABILITY

60 years of manufacturing experience and first quality components allow us to offer stability, safety, design, and long-lasting machines, 100% made in Italy.

Arms

High resistance steel and "FEM-Verified" arms.

M30

Curved boom	5500 mm
Stick with hydraulic extension	from 2600 to 3900 mm
Monoblock stick	3600 mm
Total outreach	9,5 m

M30.11

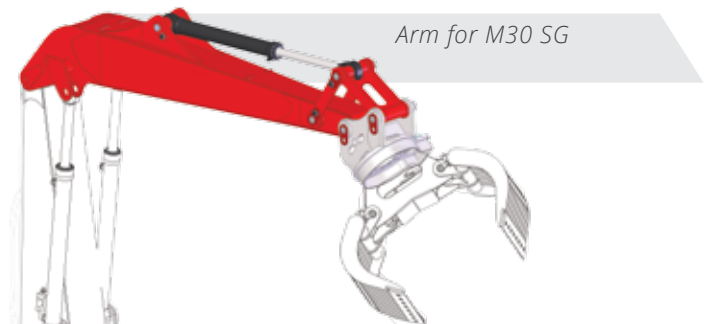
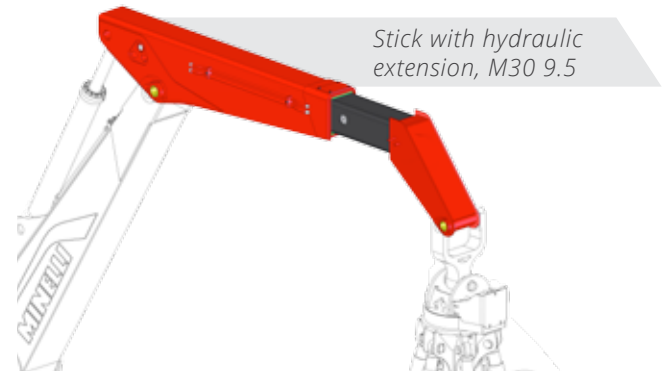
Straight boom	6200 mm
Monoblock stick	4500 mm
Stick with hydraulic extension	from 3200 to 4500 mm
Total outreach	10,6 m

M30.12

Straight boom	6700 mm
Monoblock stick	5000 mm
Total outreach	11,6 m

M30 SG

Straight boom	6200 mm
Straight stick with triangulation and cylinder for sorting grab	4200 mm
Total outreach	10,4 m



Hydraulic cylinders

Cylinders with hydraulic-end-stroke brakes. Chrome plated & hardened stems. **Safety valves** on each cylinder.

- ☑ LED working lights.
- ☑ Secondary arm end-switch.
- ☐ Logs guard.

Lubricating system

Centralized system for arms and upper carriage:

- ☑ Automatic greasing with timer and diagnostic system; 10/12 lubrication points.

TERA7 SYSTEM

Innovative Electronic Diagnostic System with 7" color display. The control unit collects all machine's parameters and displays them through easy-to-read graphical symbols, for an immediate understanding.

In case of anomalies or malfunctioning, the operator is warned with indication of the error level.

In addition to the anti-tipping device, the system supplies info regarding the deadline service and weight.

Parameters

- Engine speed.
- **Anti-tipping system.**
- Material handler status.
- Gasoline level and liquid temperatures.
- Engine and Hydraulic malfunctions.

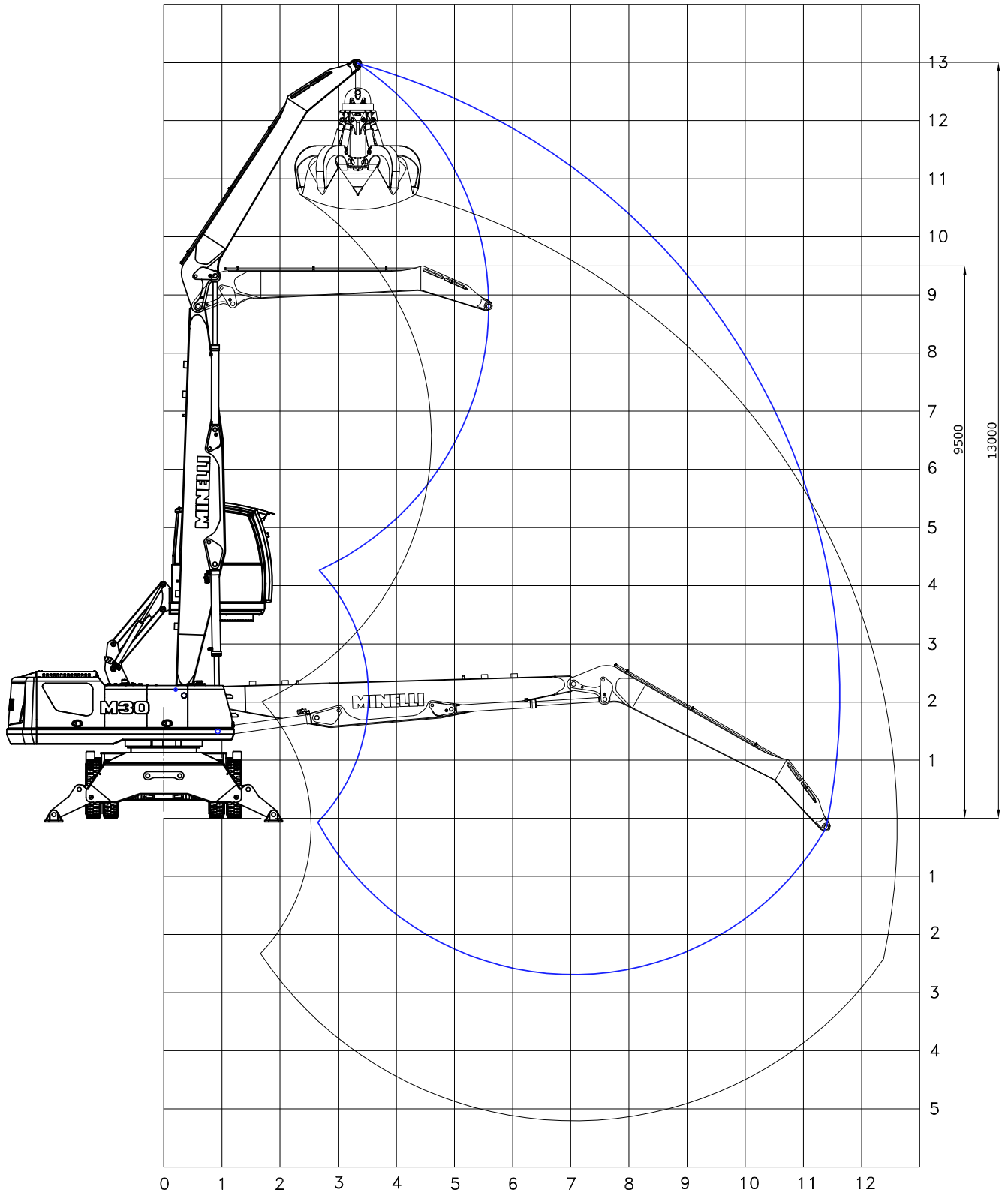
Secondary pages

- Fuel consumption.
- Weighing (approx ±5%).
- Service timing.
- Working range limits.

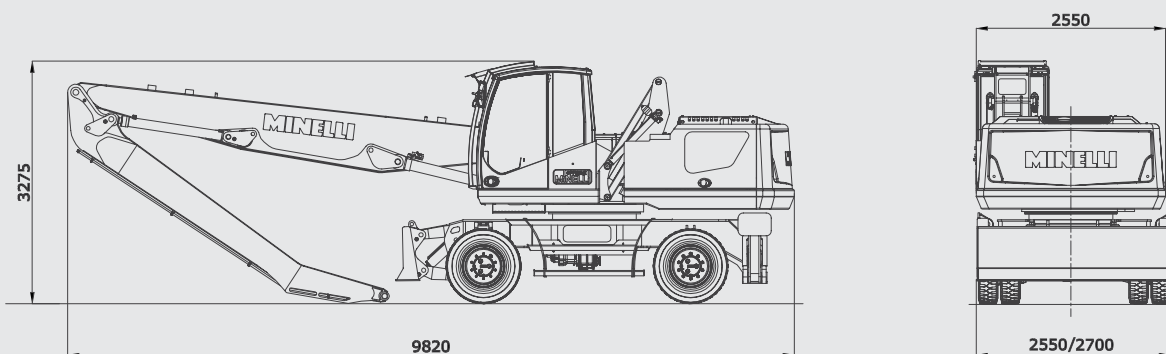


(360°)

WORKING AREA M30.12



TRANSPORT DIMENSIONS





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