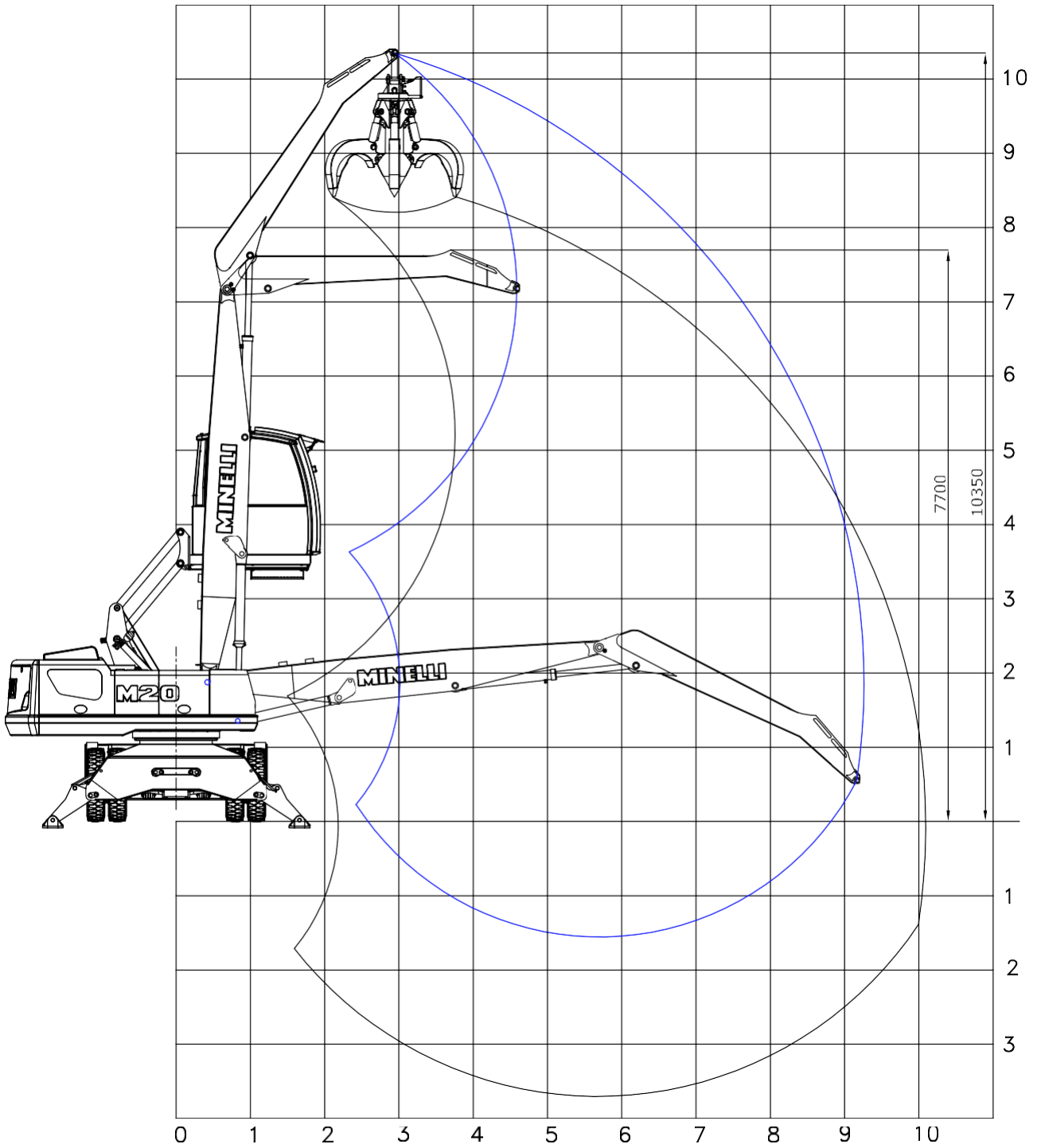


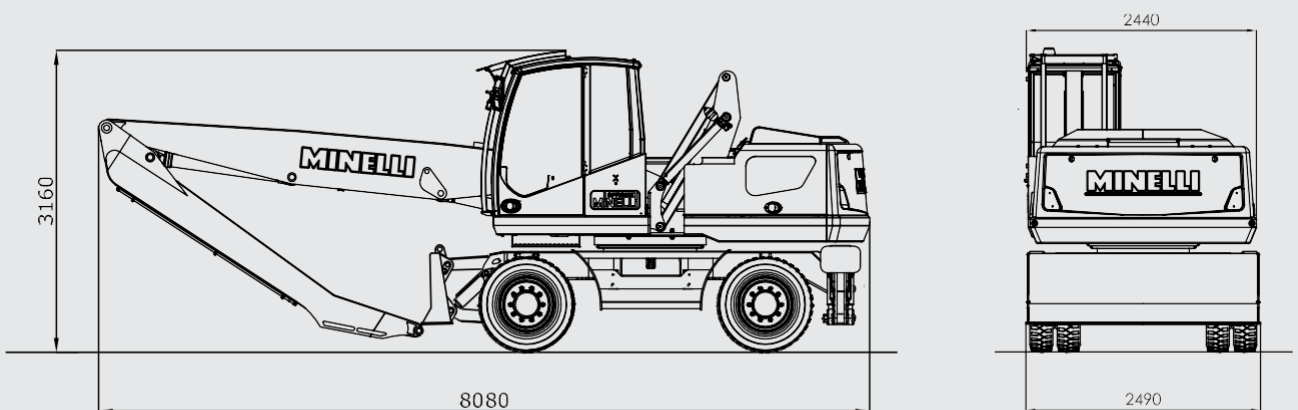
(360°)

WORKING AREA

M20.93



MACHINE SEIZE FOR TRANSPORTATION



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M20



89 kW



8,3 - 9,3 m



19,5 t



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	Outreach [m]						
		3	4	5	6	7	8	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	EUSTAGEIV USEpaTier4Final N
Number of Cylinders	4 L
Air intake	Turbo Intercooler, c/valve Wastegate
Valves /cylinder	4
Capacity	4500 cc
Max power (2200 g/min)	89 kW (119 CV)
Max torque (1500g/min)	549 Nm
Cooling	Water cooling
Electric system	24 V
Battery	2 x 12 V / 100 Ah / 810A
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 micro-cyclone 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 pre-heating
- ✓ Reversible fan drive kit
- ✓ 24 V CC Water Heater
- ✓ Electric pump for fuel

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 pre-heating 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 r.p.m.

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

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

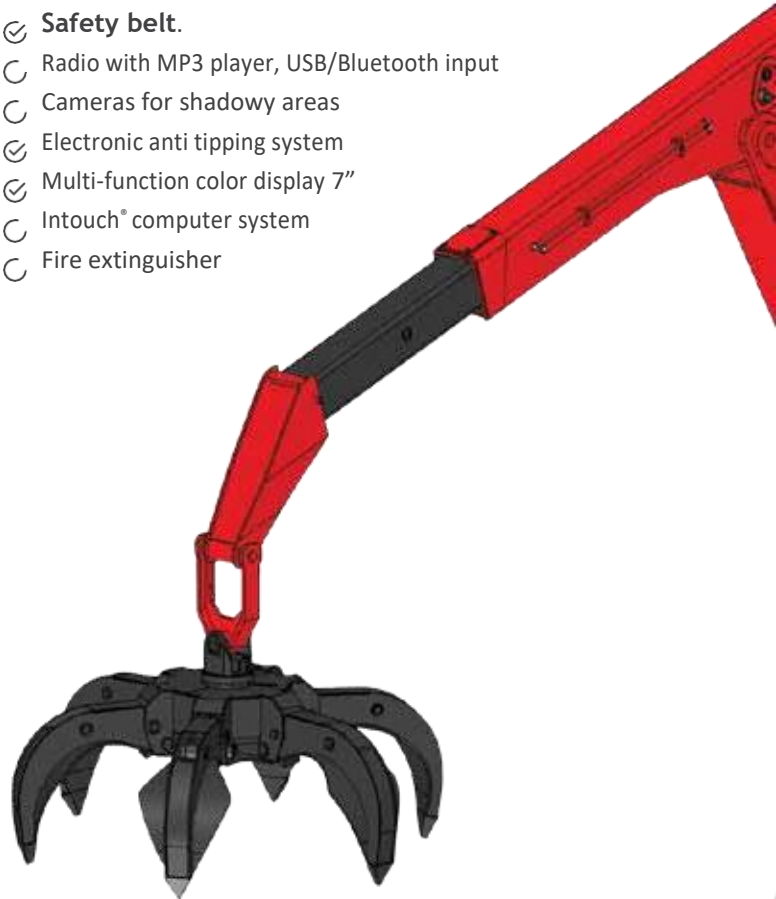
Vehicle roof's height	5,50 m
Operator level height	ca 5,00 m

➤ 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

- ☐ Trailer 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 & "FEM tested" arms.

Arm version 8,3 m

Arched primary arm 4650 mm

Secondary arm with hydraulic extension da 2300 a 3300 mm

Monobloc secondary arm 3300 mm

Arm version 9,3 m

Straight primary arm 5300 mm

Secondary arm with hydraulic extension da 2900 a 3900 mm

Secondary **monobloc** arm 3900 mm

SG Version, 9 m arm

Straight primary 5300 mm

Straight monobloc secondary arm with triangulation and cylinder for selection grab 3400 mm

Hydraulic cylinder

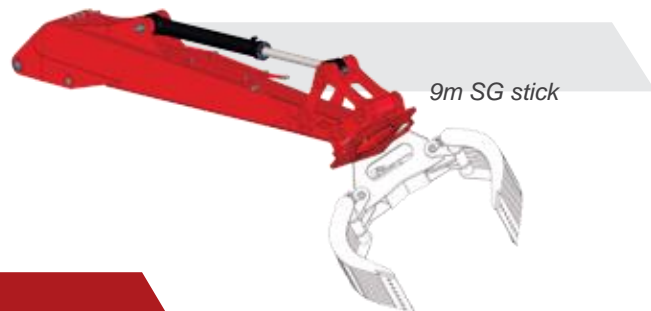
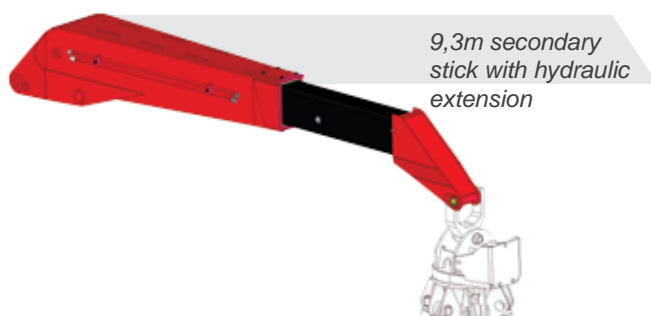
Cylinders with hydraulic-end-stroke brakes.
Chrome plated & hardened stems. **Safety valves** on each cylinder.

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

Lubricating system

Centralized system for arms and upper carriage

- Manual greasing system
- 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

- **Consumption**
- **Weighing (approx ±5%)**
- **Service timing**
- **Work range limits**

