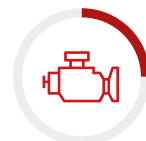




# M20



90 kW



8,3 - 9,3 m



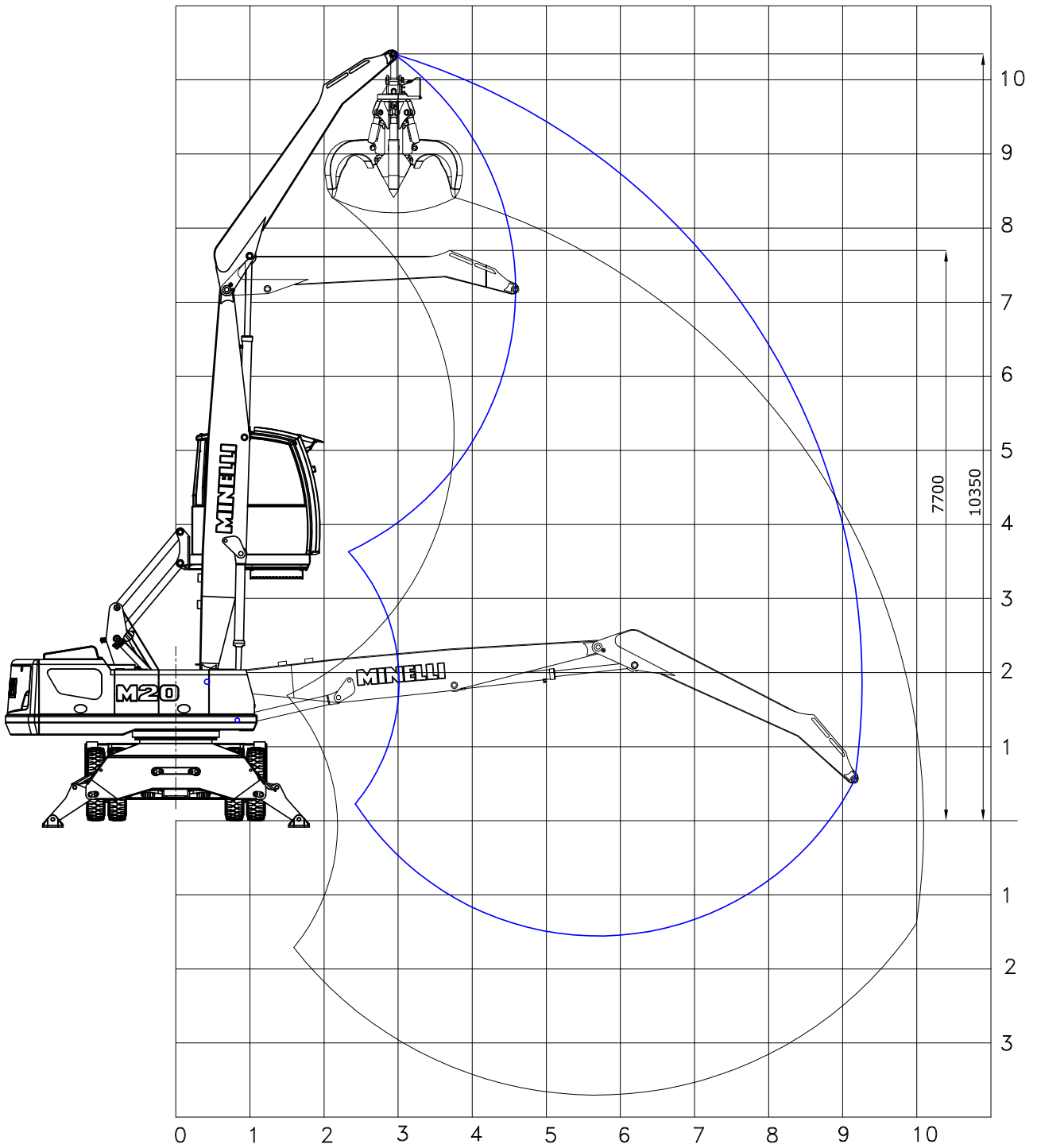
19,5 t

EN

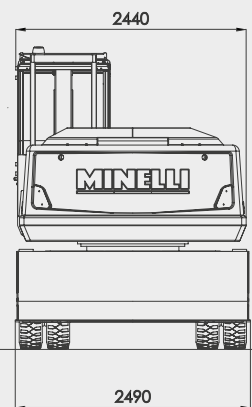
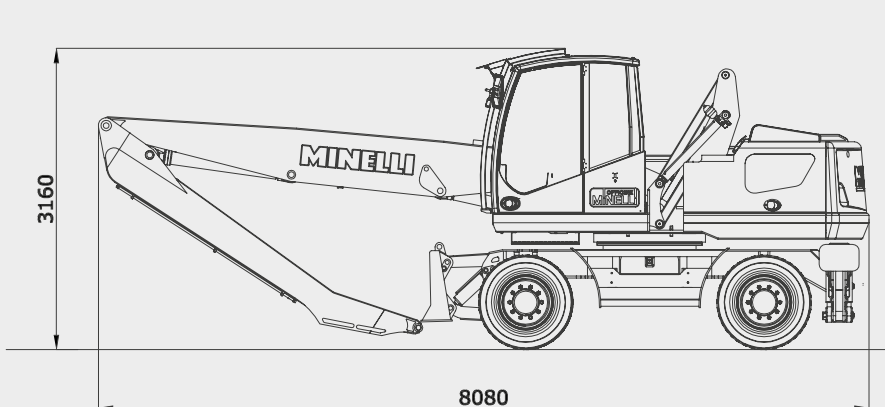
(360°)

# WORKING AREA

# M20.93



## TRANSPORT DIMENSIONS



## 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	PK 854F-E34TA
Emissions Standard	<b>EU STAGE IV*</b> US Epa Tier 4 Final
Number of Cylinders	4 L
Air intake	Turbo Intercooler, with Wastegate valve
Valves / cylinder	4
Capacity	3400 cc
Max power (2200 rpm)	90 kW (121 CV)
Max torque (1500 rpm)	490 Nm
Cooling	Water cooling
Electric system	12 V
Battery	12 V / 120 Ah / 830 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.
- 12 V dc 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
<b>Max pressure</b>	<b>350 bar</b>
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 ac.
- 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	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.

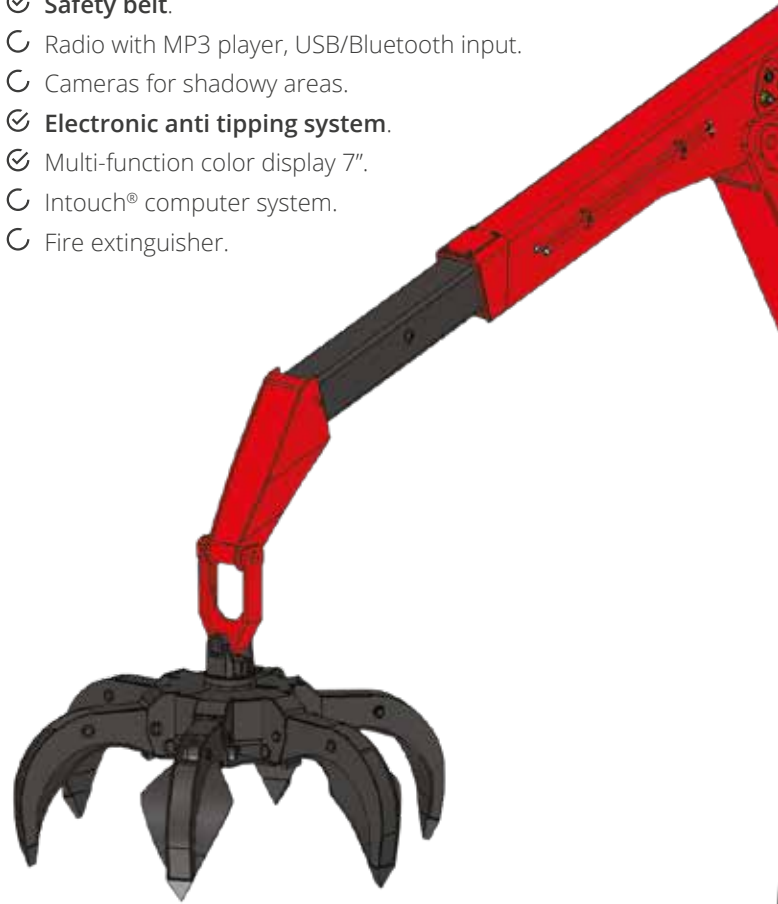
Vehicle roof's height	5,50 m
Operator level height	ca 5,00 m

- ☑ **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 <sup>st</sup> gear	4 km/h
Max speed in 2 <sup>nd</sup> 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 <b>hydraulic extension</b>	from 2300 to 3300 mm
Monoblock stick	3300 mm

### 9,3 m - Arm version

Straight boom	5300 mm
Stick with <b>hydraulic extension</b>	from 2900 to 3900 mm
Monoblock stick	3900 mm

### 9 m - SG Version

Straight boom	5300 mm
<b>Straight monoblock stick with triangulation and cylinder for sorting grab</b>	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.



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



**OFFICINE MINELLI s.r.l.**

Via Padana Superiore, 1  
 25046 Cazzago San Martino (BS)  
 ITALIA  
 Tel. +39 030 725012 r.a.  
 Fax +39 030 7254518  
[info@officineminelli.it](mailto:info@officineminelli.it)

