

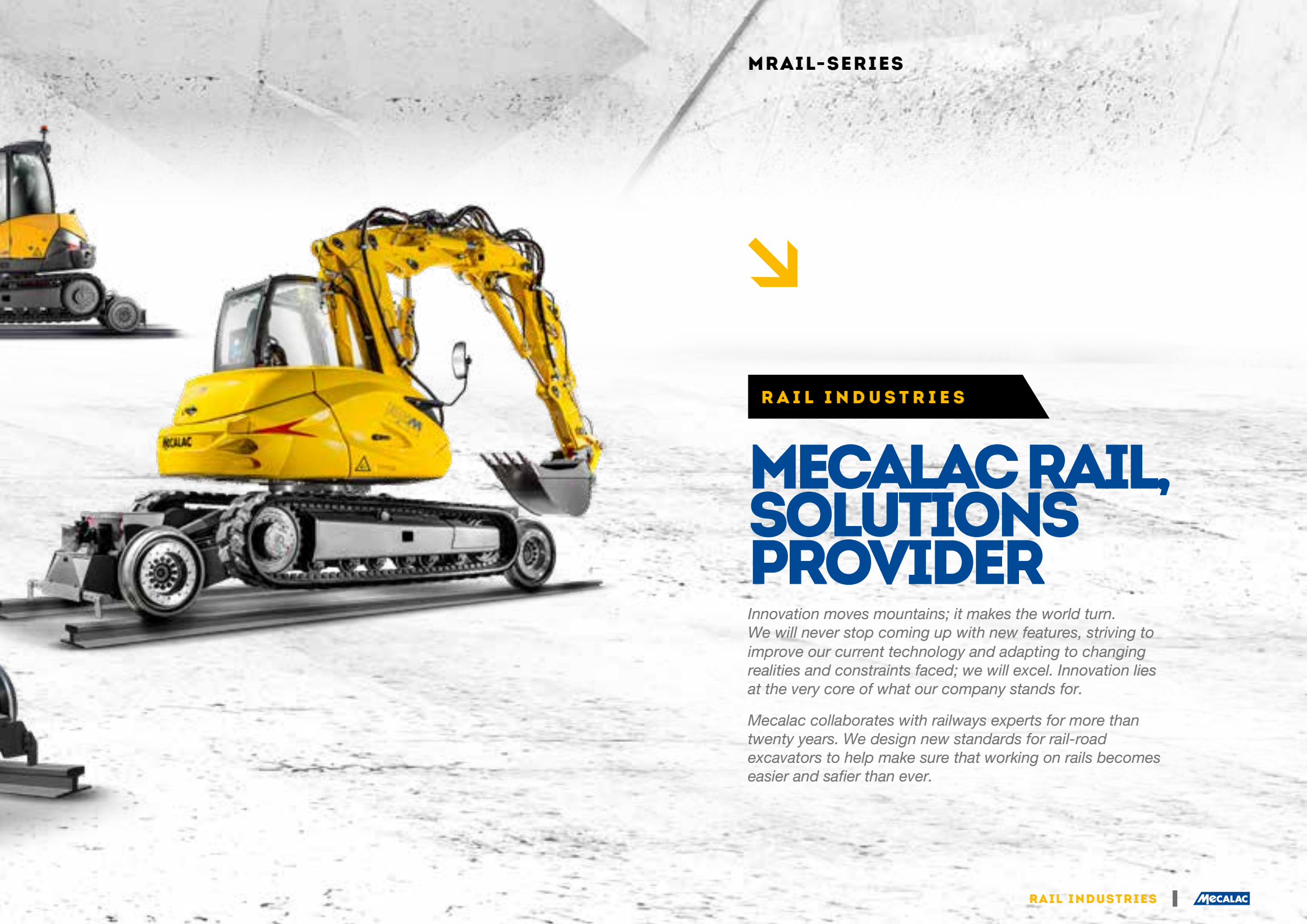


**MRAIL-SERIES**









**MRAIL-SERIES**



**RAIL INDUSTRIES**

# MECALAC RAIL, SOLUTIONS PROVIDER

*Innovation moves mountains; it makes the world turn. We will never stop coming up with new features, striving to improve our current technology and adapting to changing realities and constraints faced; we will excel. Innovation lies at the very core of what our company stands for.*

*Mecalac collaborates with railways experts for more than twenty years. We design new standards for rail-road excavators to help make sure that working on rails becomes easier and safer than ever.*

**RAIL INDUSTRIES**

**Mecalac**



## MECALAC MRAIL-SERIES

# PURPOSE-BUILT MACHINES FOR THE RAIL INDUSTRIES

### SAFE

**AT MECALAC, SAFETY IS NOT JUST A WORD. WE ENDEAVOUR TO HELP MAKE SURE OPERATORS ARE SAFE IN AND AROUND OUR EXCAVATORS; GROUND-LEVEL MAINTENANCE INCLUDING DIESEL REFUELING, UNIQUE EASE OF EGRESS/INGRESS, UNMATCHED ALL-AROUND DIRECT VISIBILITY, WORK AREAS LIMITERS, AND MUCH MORE...**

### PERFORMING

Mecalac rail-road excavators are the ideal solutions for users in need for a compact machine with high performance. Every part of the machine is specifically designed to boost the weight to performance ratio. Don't look further, we're known for that.

### BALANCED

Superior balance is the basis of the numerous benefits of the Mecalac MRail-Series. The patented design of our booms gives the machine an outstanding weight distribution and force. Add the aligned position of the upper-frame on the undercarriage and you achieve best-in-class stability, which translates into optimized lifting performances with no compromise on compactness.

### MOBILE

Time is money – Mecalac products make their way quickly from one site to the next. The different types of transmissions and steering modes make them ideally equipped for a wide range of applications and environments.

### VERSATILE

It is necessary to be able to carry out productively a wide range of tasks in rail-road applications – 365 days a year, nights and days and in all weather conditions. A single Mecalac fulfils these demands and is perfectly tailored to this requirement.

### COMPACT

True compactness is not just a matter of rear radius. Not obstructing the adjacent track and working in areas where very little space is available: at the rear, at the front and in height: this is true compactness. Our machines are all designed around this concept in order to guarantee optimum manoeuvrability.











# 106M

R a i l

## SPECIAL STRENGTHS

### PERFORMING COMPACTNESS

*The 106MRail is the smallest end of our MRail product line. In this size and with such a ease of use, it's the perfect utility machine to support larger equipment.*

### APPLICATIONS

The standard offset boom along with the overall compactness of this model make it a very handy tool for all light applications in urban environments (subways, tramways, ...) and for working in tunnels or tight areas. The 106MRail is an easy goer; easy to enroll, easy to operate, and easy to move with less impact on the ballast.

#### KEY RAIL FEATURES

Regulation compatibility	NF 58003
Rail transmission	Hydrostatic drive
Track width, standard	1435 mm (4'8.5")
Track width, adjustable	950 mm - 1600 mm (3'1.4" - 5'3")
Pneumatic braking system for towing	-
Height and swing limiters	o
Load limiter (RCI / RCL**)	-
Operating weight	10T

o = Optional

#### EASE OF SERVICE

- Ground level maintenance
- Fuel refueling from the ground
- Side by side radiator, easy access
- Toolbox with tools and grease gun
- MyMecalac Connected Services (telematics)
- Optional diesel refueling pump

#### BEST-IN-CLASS VISIBILITY

- All-round direct visibility
- Low height of the hoods
- Optional rear and side cameras
- Standard side camera
- 5x LED lights package
- Optional white/red rail front/rear lights

#### ENGINE POWER 55KW / 75HP

- DEUTZ TCD 2.9 engine
- Meets EU Stage V / U.S Tier 4 Final emission standards

- DEUTZ TCD 3.6 engine

#### MAX TAIL SWING RADIUS

- 1347 mm (4'5") with extra counterweight

- 1484 mm (4'10") with extra counterweight

#### HYDROSTATIC TRANSMISSION

- Independent control of the hi-rails for comfortable re-or de-railing
- Speed on rails: 23 kph (14.3 mph)

- Speed on rails: 20 kph (12.4 mph)

#### PROVEN ROBUST STRUCTURES

- 2 monobloc lorries powered by cylinders with check valves
- Optional back-up system in case of rail emergencies
- Optional adjustable width to track gauge

- 1 oscillating lorry, lockable, powered by cylinders with check valves
- Optional semi-automatic hook for towing

#### RAIL BRAKING PERFORMANCE

- Multi-disks parking brakes, oil-immersed
- Optional pneumatic system for rail trailer and rail car brakes



106/136MRAIL

136MRAIL



#### CAB

- Large cab with legroom
- START / STOP button
- Intuitive and ergonomic controls
- Joystick steering and speed limiter
- 1 switch excavator / loader mode
- Optional rail pneumatic horn

#### MECALAC BOOMS AND STICKS

- Large working envelope, far AND close
- Optimized for compactness AND force
- Wide offset, left and right
- Optional height and swing limiters

- Optional Rated Capacity Indicator (RCI) system\*\*

#### HYDRAULIC PRECISION

- Load Sensing, Flow sharing
- High-flow auxiliary hydraulic circuit
- 4 anti-drop safety check valves
- Work tools control system, with flows adjustable from the cab

#### CONNECT HYDRAULIC QUICK COUPLER

- INTEGRATED: light, safe, reversible
- Standard with all the lines and circuits

#### CAB FRONT SWING RADIUS

- 1280 mm (4'2")
- 1360 mm (4'5")

#### LARGE RAIL WHEELS (UIC\* profile)

- Self-propelled wheels by 4 motors
- 500 mm (16.69 in) steel wheels
- Optional insulated wheels

- 630 mm (24.80 in) steel wheels

#### TRACK GROUP

- Hydrostatic transmission, SensoDrive
- Dedicated pump to the transmission
- 450 mm (18") rubber tracks
- Speed on tracks: 10 kph (6.2 mph)
- Speed on tracks: 9 kph (5.6 mph)



**136M**  
RAIL

## SPECIAL STRENGTHS

### COMPACT PERFORMER

*Like the 106MRail, the 136MRail is a very handy tool for all light to medium applications in urban networks and for working in tight areas. Plus it boosts your overall productivity, also in national networks, with the upmost safety devices to meet the most stringent regulation standards.*

### APPLICATIONS

The outstanding lifting and towing capacities along with the ability to work as a loader, spreading large buckets of ballast for instance, will boost your overall productivity. Now you can work faster, for all types of service works and maintenance on rails.

#### KEY RAIL FEATURES

Regulation compatibility	EN15746 and NF 58003
Rail transmission	Hydrostatic drive
Track width, standard	1435 mm (4'8.5")
Track width, adjustable	950 mm - 1600 mm (3'1.4" - 5'25")
Pneumatic braking system for towing	o
Height and swing limiters	o
Load limiter (RCI / RCL**)	o
Operating weight	13T

o = Optional

\* International Union of Railways

\*\* Rated Capacity Indicator (RCI)  
Rated Capacity Limiter (RCL)



**156M**  
RAIL

# SPECIAL STRENGTHS

## YOUR DEDICATED SOLUTION FOR URBAN RAIL NETWORKS, SUBWAYS OR PRIVATE TRACKS

*Sometimes you need a big machine to do the job, with all the key requirements for rail applications, but not necessarily all the costly features linked to rail regulations. The 156MRail is the easiest and cheapest solution to operate on rails.*

### APPLICATIONS

If you are working on subways or private tracks, then the 156MRail may be the most profitable solution for you. The exceptional compactness of this model and the flexible Mecalac boom kinematics will give you the agility to work in tunnels and a great direct visibility. The friction-drive transmission adds more traction in slopes for a better price.

#### KEY RAIL FEATURES

Regulation compatibility	-
Rail transmission	Friction drive
Track width, standard	1435 mm (4'8.5")
Track width, adjustable	-
Pneumatic braking system for towing	-
Height and swing limiters	-
Load limiter (RCI / RCL**)	-
Operating weight	15T

#### MECALAC BOOMS AND STICKS

- Large working envelope, far AND close
- Optimized for compactness AND force
- Mecalac Rail dedicated boom, designed for working below catenaries and all the way in below the boom
- Optional Rated Capacity Indicator (RCI) system\*\*
- Optional height and swing limiters

#### EASE OF SERVICE

- Ground level maintenance
- Fuel refueling from the ground
- Side by side radiator, easy access
- Toolboxes with tools and grease gun
- MyMecalac Connected Services (telematics)
- Optional diesel refueling pump

#### CONNECT HYDRAULIC QUICK COUPLER

- INTEGRATED: light, safe, reversible
- Standard with all the lines and circuits

#### CAB FRONT SWING RADIUS

- 1700 mm (5'7")

#### DIRECT ACCESS INTO THE CAB

- Slidding door
- Cab entry in-lined with the steps
- Independent door for the passenger

#### UNDERCARRIAGE

- Hydrostatic transmission, SensoDrive
- 4-wheel drive and 4-steering wheels
- Oscillating front axle
- Diesel tank in the undercarriage
- Speed on tires: 35 kph (21.7 mph)
- Speed on tires: 30 kph (18.6 mph)

#### LARGE RAIL WHEELS (UIC\* profile)

- 500 mm (16.69 in) steel wheels
- 630 mm (24.80 in) steel wheels
- Self-propelled by 2 motors
- Optional insulated wheels

#### BEST-IN-CLASS VISIBILITY

- All-round direct visibility
- Large glass area at the rear and sides
- Low height of the hoods
- Rear and side cameras
- 9x LED lights package
- Optional Rail front/rear stop lights, auto switch





#### CAB

- Large cab with refrigerated lunchbox (156MRail)
- START / STOP button
- Emergency stop button
- Intuitive and ergonomic controls
- Operator IDs
- Autoshift to rail mode
- Optional rail pneumatic horn

- Large double cab
- 2x emergency stop buttons

#### HYDRAULIC PRECISION

- Load Sensing, Flow sharing
- High-flow auxiliary hydraulic circuit
- 4 anti-drop safety check valves
- Work tools control system, with flows adjustable from the cab

#### ENGINE POWER 100KW / 136HP

- DEUTZ TCD 3.6 engine (with ECO Mode)
- Meets EU Stage V / U.S Tier 4 Final emission standards

#### MAX TAIL SWING RADIUS

- 1545 mm (5'1") with heavy counterweight
- 1570 mm (5'2") with heavy counterweight

#### FRICTION-DRIVE TRANSMISSION (156MRail)

- Increases traction - Reduces cost
- Speed on rails: 30 kph (18.5 mph)

#### HYDROSTATIC TRANSMISSION

- Reduces drift - Reduces wear on tires
- Speed on rails: 30 kph (18.5 mph)

#### PROVEN ROBUST STRUCTURES

- Lorries for a standard gauge of 1435 mm (4.70')
- 2 monobloc lorries powered by cylinders with check valves
- Toolbox in the rear lorry
- Optional back-up system in case of rail emergencies

- 1 monobloc and 1 oscillating lorries, lockable, powered by cylinders with check valves
- Optional adjustable width to track gauge
- Optional automatic hook for towing

#### BRAKING PERFORMANCE

- Automatic parking brakes (travel mode)
- Multi-disks service brakes, oil-immersed (travel mode)

#### BRAKING SYSTEMS

- 1 multi-disk parking brake in each lorry
- 2 dry-disk service brakes in each lorry
- Optional pneumatic system for rail trailer and rail car brakes

**216M**  
RAIL

## SPECIAL STRENGTHS

### THE STRONGEST MACHINE FOR THE TOUGHEST JOBS, WITH ZERO COMPROMISE ON MANEUVERABILITY

*Strong machines to complete all the hard tasks in a minimum of time but also with a maximum of constraints around. If you don't want to jeopardize your maneuverability and agility against force, then the 216MRail is made for you. The 216MRail excavator is here to offer you a new alternative: that of agile strength, to give you the freedom of movement you are longing for.*

### APPLICATIONS

The 216MRail is compatible with the EU EN15746 legislation, the most stringent legislation. The hydrostatic transmission will bring you appreciable smoothness. Most of all, its rail-dedicated boom will give you back the freedom to move, even under heights constraints.

#### KEY RAIL FEATURES

Regulation compatibility	EN15746 and NF 58003
Rail transmission	Hydrostatic drive
Track width, standard	1435 mm (4'8.5")
Track width, adjustable	1000 mm - 1435 mm (3'1.4" - 4.70')
Pneumatic braking system for towing	o
Height and swing limiters	o
Load limiter (RCI / RCL**)	o
Operating weight	20T

o = Optional

\* International Union of Railways

\*\* Rated Capacity Indicator (RCI)  
Rated Capacity Limiter (RCL)



# THE BEST OF ALL WORLDS

**YOU'VE GOT THE CHOICE!**

**TRACKS OR WHEELS**

**HYDROSTATIC OR FRICTION-DRIVE**

→ **ALL SIZES**

**ALL POSSIBLE SOLUTIONS**







**WATCH THE VIDEO**

**MECALAC INNOVATES  
AND OFFERS YOU TO  
WATCH OUR MRAIL  
VIDEOS.**

It's easy, all you need to do is scan the QR codes present on the pages of the brochure with your smartphone in order to access the video content.

If you don't have a scanning app, you can download a QR code scanner from the App Store or Google Play.





# 106MRAIL TECHNICAL DATA

## OPERATING WEIGHTS

With 75kg operator, full fuel tank, rubber tracks, rail powertrain, heavy counterweight 427 kg (941 lbs), and Mecalac boom. 9475 kg (20,889 lbs)  
With digging bucket 900mm (2'11"), 200 kg (441 lbs)

## ENGINE

Turbocharged engine with intercooler, chilled air inlet, water-cooled, electronic control and "Common Rail" injection system. Emission technologies include an EGR valve, a Diesel Oxidation Catalyst (DOC), and for Europe a standard Diesel Particulate Filter (DPF). Meets EU Stage V and U.S. EPA\* Tier 4 Final standards

Engine model	DEUTZ TCD 2.9 L4
Cylinders	4, in-line
Ratings	2300 rpm
Horsepower (DIN 70020)	55.4 kW (75 HP / 74.3 imperial HP)
Maximum torque	300 N.m (221 lbf-ft) at 1600 rpm
Displacement	2900 cm <sup>3</sup> (177 in <sup>3</sup> )

\* EPA: Environmental Protection Agency - Depending on your local legislation

## ELECTRICAL CIRCUIT

Batteries	12 V (50 AH)
Voltage	12 V
Alternator	14 V (95 A)
Starter	12 V (2.7 kW)

## BOOMS AND STICK

Mecalac variable kinematics consisting of 4 parts: boom, intermediate boom, offset and dipperstick	•
Right and left offset by hydraulic cylinder.	
System enabling all penetration force to be kept regardless of the angular position of the offset	•
Left offset	1551 mm (61 in)
Right offset	1899 mm (75 in)
Stick length	1800 mm (5'10.8")
Boom with shock absorbers and 4 safety check valves	•

## SWING MECHANISM

Maximum swing speed	10 rpm
Maximum swing torque	16.9 kNm (12,400 lbf-ft)

## UNDERCARRIAGE

Central X-frame chassis, triangular beams	•
Rubber tracks	450 mm (18 in)
Track tension: sprung shock absorber with grease stress chamber	•

## TRANSMISSION - TRACKS

Closed-circuit hydrostatic, SENSO DRIVE	•
1 dual variable displacement pump 2x45 cm <sup>3</sup> (2x 2.7 in <sup>3</sup> )	2x 100 l/min (2x 26.4 gpm**) 330 bar (4,800 psi)
2x2 speed gear motors, with automatic brakes	•
Maximum speed - on tracks	0-10 kph (0 - 6.2 mph)
Traction capacity	54 kN (12,139.7 lbf)

\*\* US gallon

## TRANSMISSION - RAILS

4 independant hydraulic engines, with park brake at loss of pressure	•
Hydrostatic transmission, closed circuit	•
2 independant front and rear bogies controlled by 2 cylinders with safety check-valves	•
Maximum speed - on rails	0-23 kph (0 - 14.3 mph)
4 Rail Wheels:	UIC profile
Wheels diameter:	Standard gauge 500 mm (19.69 in)
Wheels diameter:	Adjustable gauge 630 mm (24.80 in)
Track gauge:	Standard 1435 mm (4'8.5") Adjustable 950-1600 mm (3'1.4"-5'3")
Oscillation	-
Maximum slope (without trailer)	60‰
Maximum cant	180 mm (7.87 in)
Braking distance to stop (dry rails, 0° slope)	< 20m (< 65'7")
Minimum track turning radius	80 m (262'5")
Traction capacity at the tow bar***	1400 kg (3,086 lbs)
Traction capacity, maximum weight of trailers (without braking system)	8 t (17,637 lbs)

\*\*\* Traction capability depends on the railway regulations of your country.

## HYDRAULIC SYSTEM

### BOOM, STICK AND ROTATION CIRCUIT

Maximum variable displacement pump	63 cm <sup>3</sup> (3.8 in <sup>3</sup> )
ACTIVE CONTROL power control. "Load Sensing - Flow sharing" type LUDV main valve.	
Proportionality of functions maintained regardless of the pressure level in individual elements	
Maximum Flow Rate	120 l/min (31.7 gpm**)
Maximum working pressure	280 bar (4,060 psi)

\*\* US gallon

## REFILL CAPACITIES

Fuel tank	73 L (19.2 gal**)
Hydraulic tank	56 L (14.8 gal**)
Engine Coolant	20 L (5.3 gal**)

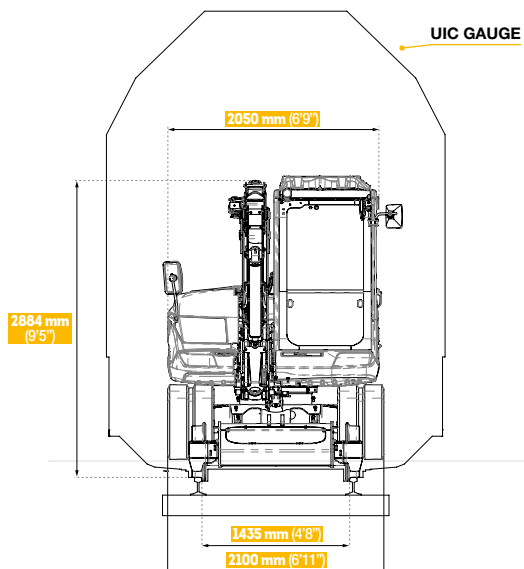
\*\* US gallon

Standard and optional equipment may vary depending on your region. Consult your Mecalac dealer for details.

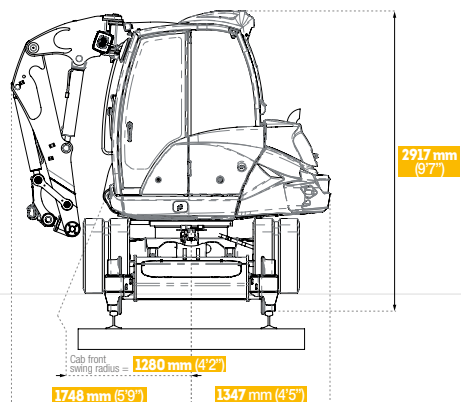


# 106MRAIL TECHNICAL DATA

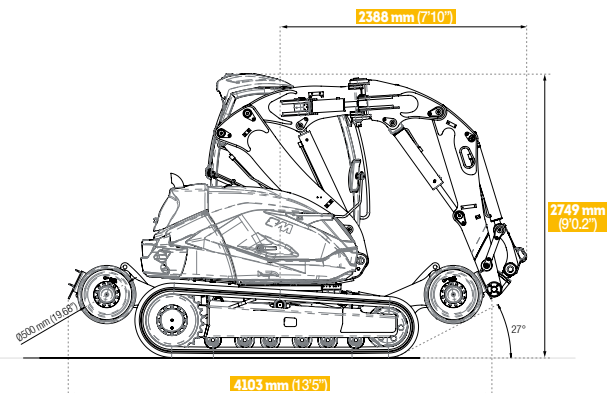
## WORK POSITION - OVER THE FRONT, ALIGNED



## WORK POSITION - OVER THE SIDE, 90°

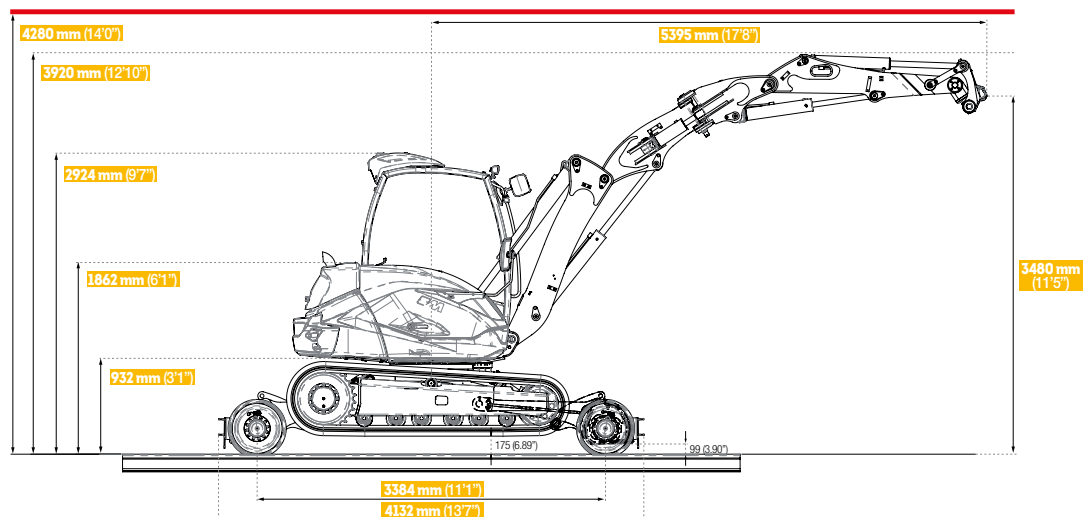


## TRAVEL POSITION



Add the track rail clearance when on rails for all heights.

## WORK POSITION - BELOW CATENARIES



### SHIPPING DIMENSIONS

	mm (ft-in)
Shipping height	2850 (9'4")
Shipping length	4440 (14'7")



# 136MRAIL TECHNICAL DATA

## OPERATING WEIGHTS

With 75kg operator, full fuel tank, rubber tracks, rail powertrain, heavy counterweight 590 kg (1,300 lbs), and Mecalac boom. 12830 kg (28,285 lbs)  
With digging bucket 900mm (2'11"), 330 kg (728 lbs)

## ENGINE

Turbocharged engine with intercooler, chilled air inlet, water-cooled, electronic control and "Common Rail" injection system. Emission technologies include an EGR valve, a Diesel Oxidation Catalyst (DOC), and for Europe a standard Diesel Particulate Filter (DPF) Meets EU Stage V and U.S. EPA Tier 4 Final standards\*

Engine model	DEUTZ TCD 3.6 L4
Cylinders	4, in-line
Ratings	2200 rpm
Horsepower (DIN 70020)	55.4 kW (75 HP / 74.3 imperial HP)
Maximum torque	405 N.m (287 lbf-ft) at 1300 rpm
Displacement	3600 cm <sup>3</sup> (220 in <sup>3</sup> )

\* EPA: Environmental Protection Agency - Depending on your local legislation

## ELECTRICAL CIRCUIT

Batteries	12 V (50 AH)
Voltage	12 V
Alternator	14 V (95 A)
Starter	12 V (2.7 kW)

## BOOMS AND STICK

Mecalac variable kinematics consisting of 4 parts: boom, intermediate boom, offset and dipperstick •

Right and left offset by hydraulic cylinder. •

System enabling all penetration force to be kept regardless of the angular position of the offset •

Left offset	1775 mm (70 in)
Right offset	2034 mm (80 in)
Stick length	2025 mm (6'7.7")

Boom with shock absorbers and 4 safety check valves •

## SWING MECHANISM

Maximum swing speed	10 rpm
Maximum swing torque	25 kNm (18,440 lbf-ft)

## UNDERCARRIAGE

Central X-frame chassis, triangular beams •

Rubber tracks 450 mm (18 in)

Track tension: sprung shock absorber with grease stress chamber •

## TRANSMISSION - TRACKS

Closed-circuit hydrostatic, SENSO DRIVE •

1 dual variable displacement pump 2x45 cm <sup>3</sup> (2x 2,7 in <sup>3</sup> )	2x 100 l/min (2x 26.4 gpm**) 330 bar (4,800 psi)
----------------------------------------------------------------------------------	--------------------------------------------------

2x2 speed gear motors, with automatic brakes •

Maximum speed - on tracks 0-9 kph (0 - 5.6 mph)

Traction capacity 68 kN (15,300 lbf)

\*\* US gallon

## TRANSMISSION - RAILS

4 independant hydraulic engines, with park brake at loss of pressure •

Hydrostatic transmission, closed circuit •

2 independant front and rear bogies controlled by 2 cylinders with safety check-valves •

Maximum speed - on rails 0-20 kph (0 - 12.4 mph)

4 Rail Wheels: UIC profile  
Wheels diameter: For all track gauges 630 mm (24.80 in)

Track gauge:	Standard	1435 mm (4'8.5")
	Adjustable	950-1600 mm (3'1.4"-5'3")

Oscillation ±7°

Maximum slope (without trailer) 60‰

Maximum cant 180 mm (7 in)

Braking distance to stop (dry rails, 0° slope) < 20m ( < 65'7")

Minimum track turning radius 80 m (262'5")

Traction capacity, at the tow bar\*\*\* 1500 kg (3,307 lbs)

Traction capacity, maximum trailer (with air braking system) 14 t (30,864 lbs)

\*\*\* Traction capability depends on the railway regulations of your country.

## HYDRAULIC SYSTEM

### BOOM, STICK AND ROTATION CIRCUIT

Maximum variable displacement pump 75 cm<sup>3</sup> (4.6 in<sup>3</sup>)

ACTIVE CONTROL power control. "Load Sensing - Flow sharing" type LUDV main valve.

Proportionality of functions maintained regardless of the pressure level in individual elements

Maximum Flow Rate 150 l/min (39.6 gpm\*\*)

Maximum working pressure 300 bar (4,350 psi)

\*\* US gallon

## REFILL CAPACITIES

Fuel tank 105 L (27.7 gal\*\*)

Hydraulic tank 77 L (20.3 gal\*\*)

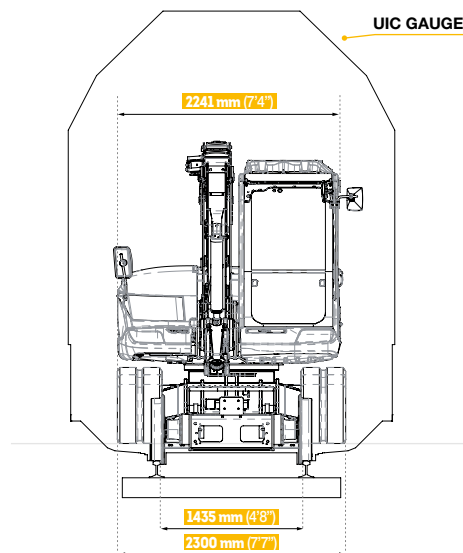
Engine Coolant 20 L (5.28 gal\*\*)

\*\* US gallon

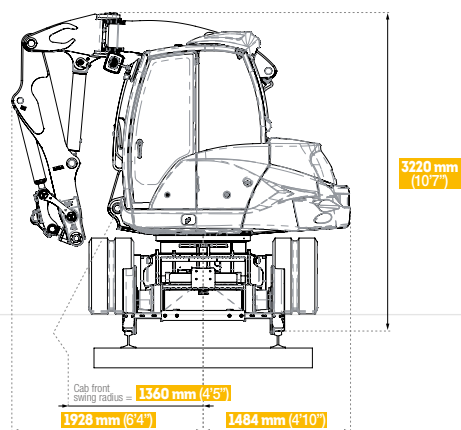
Standard and optional equipment may vary depending on your region. Consult your Mecalac dealer for details.

# 136MRAIL TECHNICAL DATA

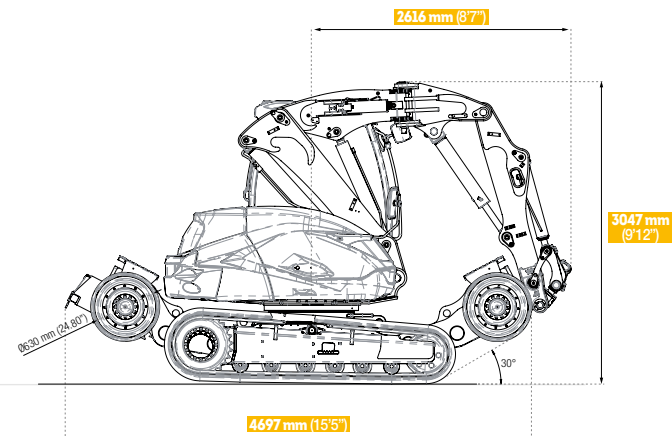
## WORK POSITION - OVER THE FRONT, ALIGNED



## WORK POSITION - OVER THE SIDE, 90°

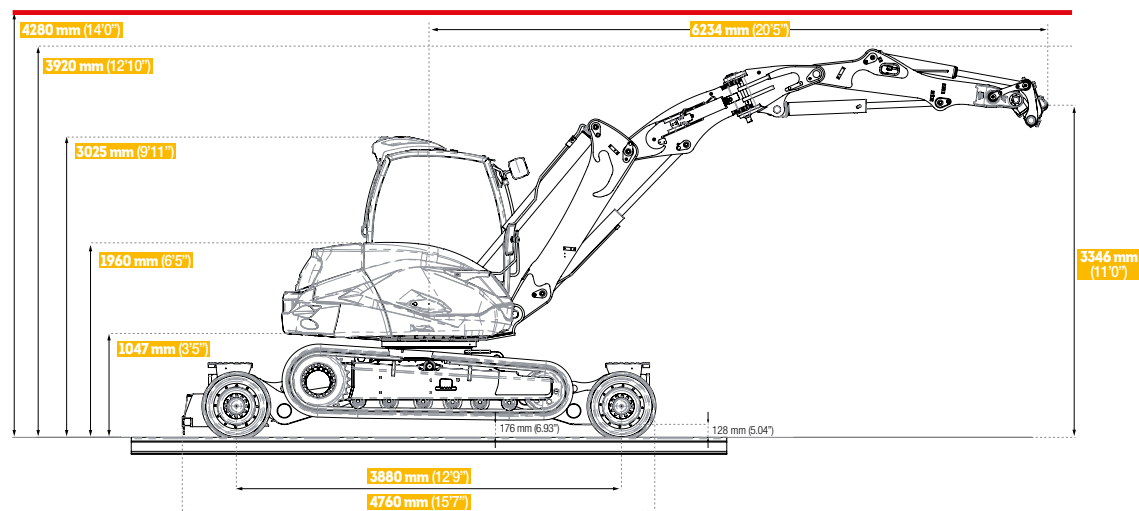


## TRAVEL POSITION



Add the track rail clearance when on rails for all heights.

## WORK POSITION - BELOW CATENARIES



### SHIPPING DIMENSIONS

	mm (ft-in)
Shipping height	3240 (10'7")
Shipping length	4965 (16'3")





# 156MRAIL TECHNICAL DATA

## OPERATING WEIGHTS

With 75kg operator, full fuel tank, twin-tires, rail powertrain, heavy counterweight 3800 kg (8,378 lbs) and Mecalac boom. 16360 kg (36,067 lbs)  
With bucket 1000 mm (3'3"), 485 kg (1,070 lbs).

## ENGINE

Turbocharged engine with intercooler, chilled air inlet, water-cooled, electronic control and "Common Rail" injection system. Emission technologies include an EGR valve, a Diesel Oxidation Catalyst (DOC), Selective Catalytic Reduction system (SCR) and for Europe a standard Diesel Particulate Filter (DPF). Meets EU Stage V and U.S. EPA\* Tier 4 Final standards

Engine model	DEUTZ TCD 3.6 L4
Cylinders	4, in-line
Ratings	2300 rpm
Horsepower (DIN 70020)	100 kW (136 HP / 134 imperial HP)
Maximum torque	500 N.m (370 lbf-ft) at 1600 rpm
Displacement	3621 cm <sup>3</sup> (221 in <sup>3</sup> )

\* EPA: Environmental Protection Agency - Depending on your local legislation

## ELECTRICAL CIRCUIT

Batteries	12 V (50 AH)
Voltage	12 V
Alternator	14 V (120 A)
Starter	12 V (3.2 kW)

## BOOMS AND STICK

Mecalac variable kinematics consisting of 4 parts: boom, intermediate boom, offset and dipperstick	•
Right and left offset by hydraulic cylinder. System enabling all penetration force to be kept regardless of the angular position of the offset	•
Left offset	± 2300 mm (7'6")
Right offset	± 2300 mm (7'6")
Stick length	2450 mm (8'0.4")
Boom with shock absorbers and 4 safety check valves	•

## SWING MECHANISM

Maximum swing speed	10 rpm
Maximum swing torque	38 kNm (28,000 lbf-ft)

## AXLE AND WHEELS

4-steering wheels with steering angle - with single tires	27°
Outside tires turning radius - with single tires	4440 mm (14'7")

## TRANSMISSION - ROAD

Open-circuit hydraulic, SENSO DRIVE	•
Hydraulic motor coupled to a 2-speed ZF gearbox, Powershift.	107 cm <sup>3</sup> (6.5 in <sup>3</sup> )
Continuously variable displacement pump	160 l/min (42.3 gpm**) 350 bar (5,080 psi)
Double-circuit braking system	Multi-disk, wet
Maximum speed - on roads	0-35 kph (0 - 21 mph)
Traction capacity	83 kN (18,660 lbf)

\*\* US gallon

## TRANSMISSION - RAILS

Friction-type Transmission (tires on rails), open circuit	•
2 independant front and rear bogies.	•
Controlled by 2 cylinders, with safety check-valves	
Maximum speed - on rails	0-30 kph (0 - 18.6 mph)
4 Rail Wheels:	UIC profile
Wheels diameter:	Standard gauge 500 mm (19.69 in)
Track gauge:	Standard 1435 mm (4'8.5")
Oscillation	-
Maximum slope (without trailer)	60%
Maximum cant	5° = 130 mm (5.11 in)
Braking distance to stop (dry rails, 0° slope)	< 20 m (< 65'7")
Minimum track turning radius	80 m (262'5")
Traction capacity, at the tow bar***	4000 kg (8,818 lbs)
Traction capacity, maximum trailer (without braking system)	20 t (44,092 lbs)

\*\*\* Traction capability depends on the railway regulations of your country.

## HYDRAULIC SYSTEM

<b>BOOM, STICK AND ROTATION CIRCUIT</b>	
Maximum variable displacement pump	130 cm <sup>3</sup> (8.0 in <sup>3</sup> )
ACTIVE CONTROL power control. "Load Sensing - Flow sharing" type LUDV main valve.	
Proportionality of functions maintained regardless of the pressure level in individual elements	
Maximum Flow Rate	270 l/min (71.3 gpm**)
Maximum working pressure	350 bar (5,080 psi)

\*\* US gallon

## REFILL CAPACITIES

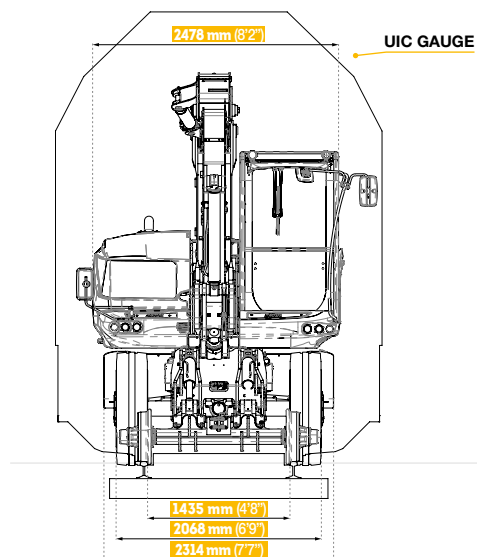
Fuel tank	220 L (58.1 gal**)
Diesel Exhaust Fluid (DEF)	20 L (5.28 gal**)
Hydraulic tank	122 L (32.2 gal**)
Engine Coolant	20 L (5.28 gal**)

\*\* US gallon

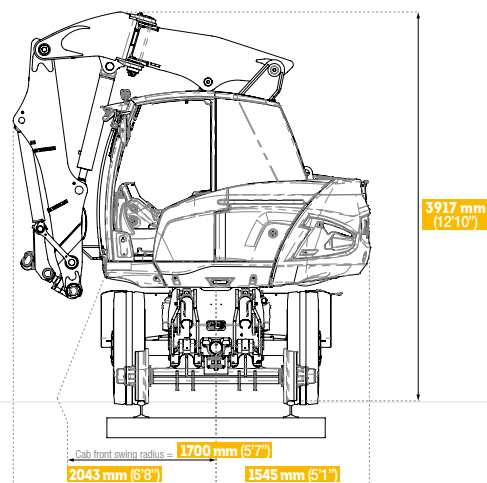
Standard and optional equipment may vary depending on your region. Consult your Mecalac dealer for details.

# 156MRAIL TECHNICAL DATA

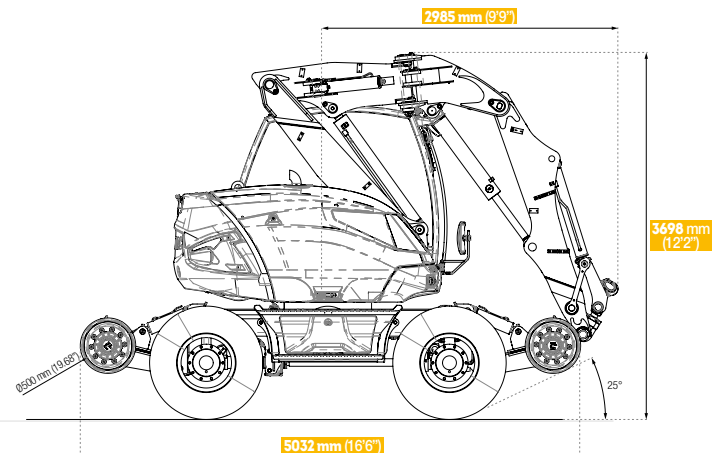
WORK POSITION - OVER THE FRONT, ALIGNED



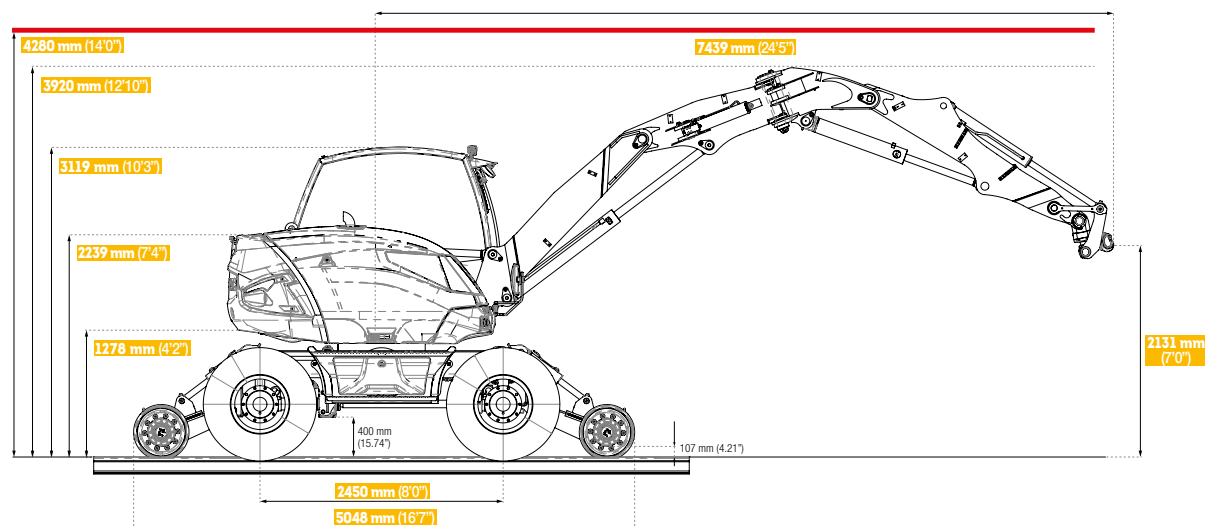
WORK POSITION - OVER THE SIDE, 90°



TRAVEL POSITION



WORK POSITION - BELOW CATENARIES



## SHIPPING DIMENSIONS

	mm (ft-in)
Shipping height	3200 (10'6")
Shipping length	8200 (26'11")



# 216MRAIL TECHNICAL DATA

## OPERATING WEIGHTS

With 75kg operator, full fuel tank, twin-tires, rail powertrain, heavy counterweight 4700 kg (10,362 lbs) and Mecalac rail dedicated boom. With clamshell 1000 mm (3'4").

20367 kg (44,902 lbs)

## ENGINE

Turbocharged engine with intercooler, chilled air inlet, water-cooled, electronic control and "Common Rail" injection system. Emission technologies include an EGR valve, a Diesel Oxidation Catalyst (DOC), Selective Catalytic Reduction system (SCR) and for Europe a standard Diesel Particulate Filter (DPF).

Meets EU Stage V and U.S. EPA\* Tier 4 Final standards

Engine model	DEUTZ TCD 3.6 L4
Cylinders	4, in-line
Ratings	2300 rpm
Horsepower (DIN 70020)	100 kW (136 HP / 134 imperial HP)
Maximum torque	500 N.m (370 lbf-ft) at 1600 rpm
Displacement	3621 cm³ (221 in³)

\* EPA: Environmental Protection Agency - Depending on your local legislation

## ELECTRICAL CIRCUIT

Batteries	12 V (50 AH)
Voltage	12 V
Alternator	14 V (120 A)
Starter	12 V (3.2 kW)

## BOOMS AND STICK

Mecalac two-piece boom kinematics, rail dedicated for working under 4.28 m (14 ft) catenaries with freedom of movements. Consisting of 3 parts: boom, intermediate boom and dipperstick

Right and left offset	-
Stick length	2450 mm (8'0.4")
Boom with shock absorbers and 4 safety check valves	•

## SWING MECHANISM

Maximum swing speed	10 rpm
Maximum swing torque	38 kNm (28,000 lbf-ft)

## AXLE AND WHEELS

4-steering wheels with steering angle - with twin tires	17.6°
Outside tires turning radius - with twin tires	5473 mm (17.9 ft)

## TRANSMISSION - ROAD

Open-circuit hydraulic, SENSO DRIVE	•
Hydraulic motor coupled to a 2-speed ZF gearbox, Powershift.	140 cm³ (8.5 in³)
Continuously variable displacement pump	160 l/min (42.3 gpm**) 350 bar (5,080 psi)
Double-circuit braking system	Multi-disk, wet
Maximum speed - on roads	0-30 kph (0-18.5 mph)
Traction capacity	112 kN (24,692 lbf)

\*\* US gallon

## TRANSMISSION - RAILS

2 independant hydraulic engines, with multi-disk park brake at loss of pressure	•
Hydrostatic transmission, open circuit	•
2 independant front and rear bogies, lockable. Controlled by 2 cylinders, with safety check-valves	•
Maximum speed - on rails	0-30 kph (0-18.5 mph)
4 Rail Wheels:	UIC profile
Wheels diameter:	For all track gauges 630 mm (24.80 in)
Track gauge:	Standard 1435 mm (4'8.5") Adjustable 1000-1435 mm (3'3.4"-4'8.5")
Oscillation	±5°
Maximum slope (without trailer)	60‰
Maximum cant	180 mm (7.08 in)
Braking distance to stop (dry rails, 0° slope)	< 30 m (< 98'5")
Minimum track turning radius	90 m (295'3")
Traction capacity, at the tow bar***	2250 kg (4,960 lbs)
Traction capacity, maximum trailer (with air braking system)	20 t (44,092 lbs)

\*\*\* Traction capability depends on the railway regulations of your country.

## HYDRAULIC SYSTEM

### BOOM, STICK AND ROTATION CIRCUIT

Maximum variable displacement pump	130 cm³ (8.0 in³)
ACTIVE CONTROL power control. "Load Sensing - Flow sharing" type LUDV main valve.	
Proportionality of functions maintained regardless of the pressure level in individual elements	
Maximum Flow Rate	270 l/min (71.3 gpm**)
Maximum working pressure	350 bar (5,080 psi)

\*\* US gallon

## REFILL CAPACITIES

Fuel tank	280 L (73.9 gal**)
Diesel Exhaust Fluid (DEF)	20 L (5.28 gal**)
Hydraulic tank	122 L (32.2 gal**)
Engine Coolant	20 L (5.28 gal**)

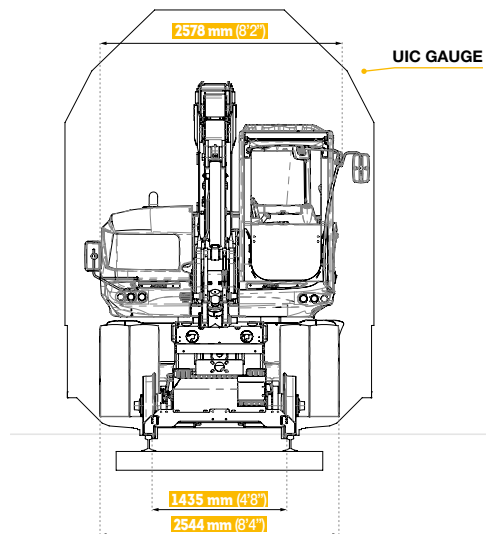
\*\* US gallon

Standard and optional equipment may vary depending on your region. Consult your Mecalac dealer for details.

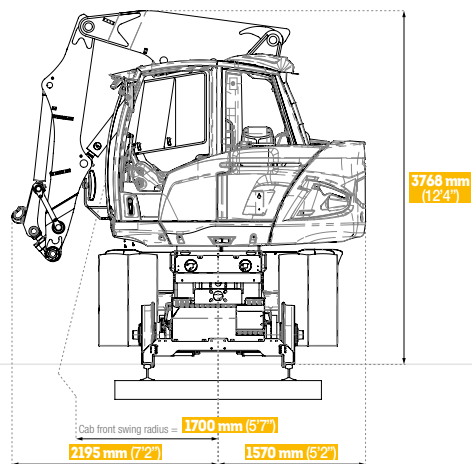


# 216MRAIL TECHNICAL DATA

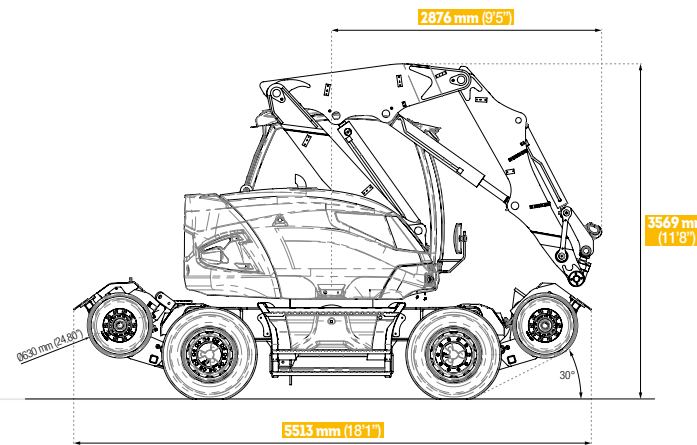
## WORK POSITION - OVER THE FRONT, ALIGNED



## WORK POSITION - OVER THE SIDE, 90°

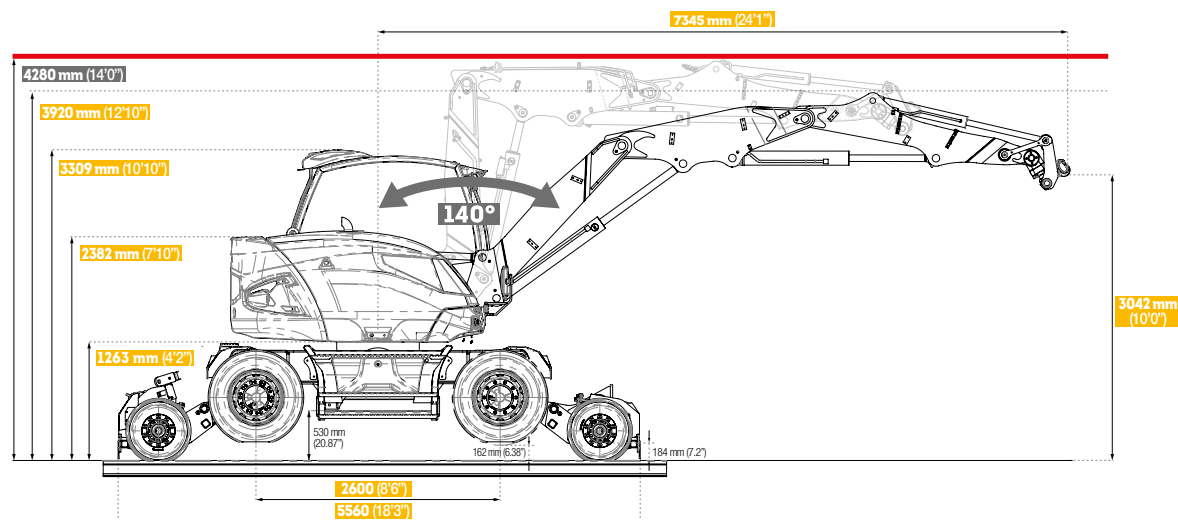


## TRAVEL POSITION



Add the tire rail clearance when on rails for all heights.

## WORK POSITION - BELOW CATENARIES

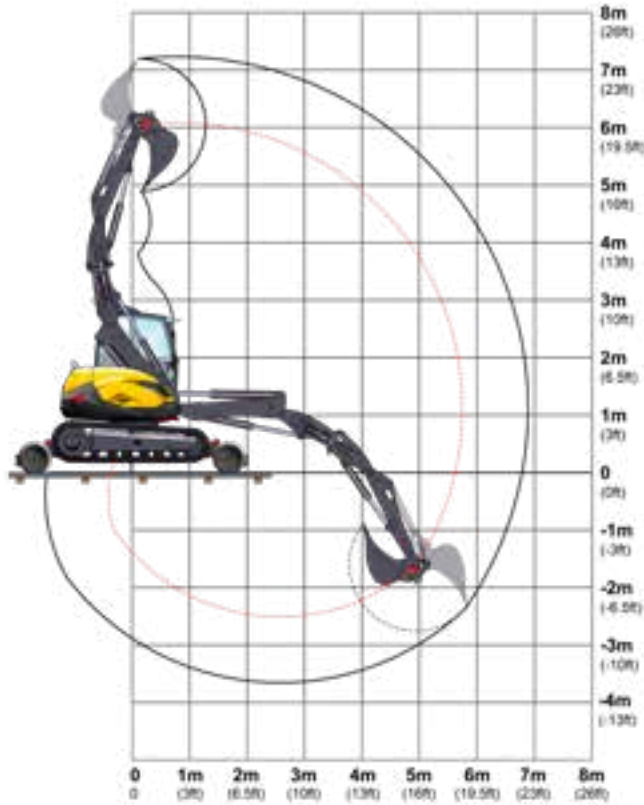


### SHIPPING DIMENSIONS

	mm (ft-in)
Shipping height	3116 (10'3")
Shipping length	9162 (30'0")

## 106MRail MECALAC VERSATILE BOOM\*

### WORKING RANGES - ON RAILS



### WORKING RANGES ON RAILS

Maximum reach	6750 mm (22'2")
Maximum digging depth	3600 mm (11'10")

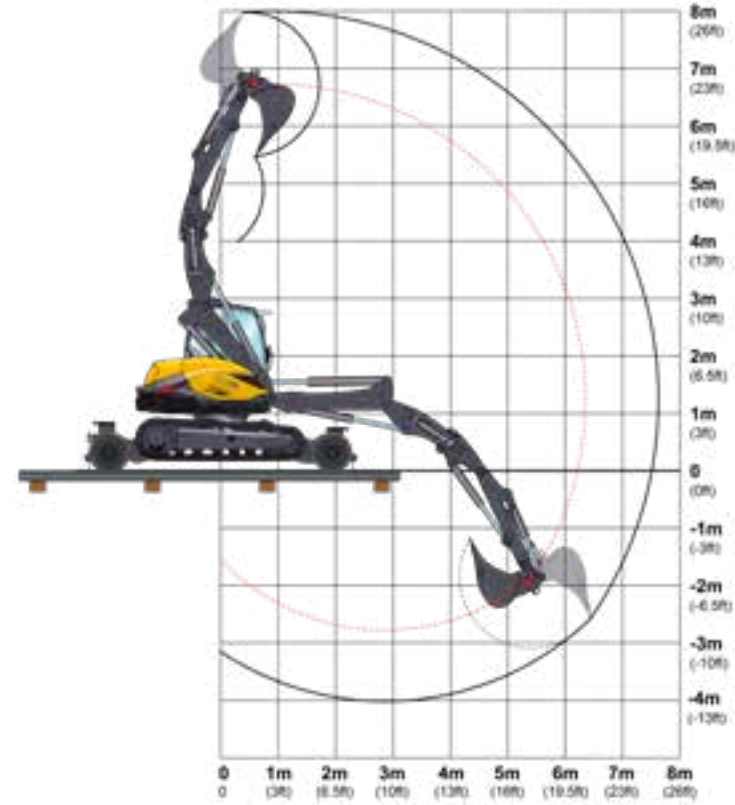
### DIGGING PERFORMANCE

Break-out force (maximum)	5100 daN (11,460 lbf)
Penetration/Tear-out force (maximum)	2700 daN (6,070 lbf)

\* With offset

## 136MRail MECALAC VERSATILE BOOM\*

### WORKING RANGES - ON RAILS



### WORKING RANGES ON RAILS

Maximum reach	7500 mm (24'7")
Maximum digging depth	3824 mm (12'6")

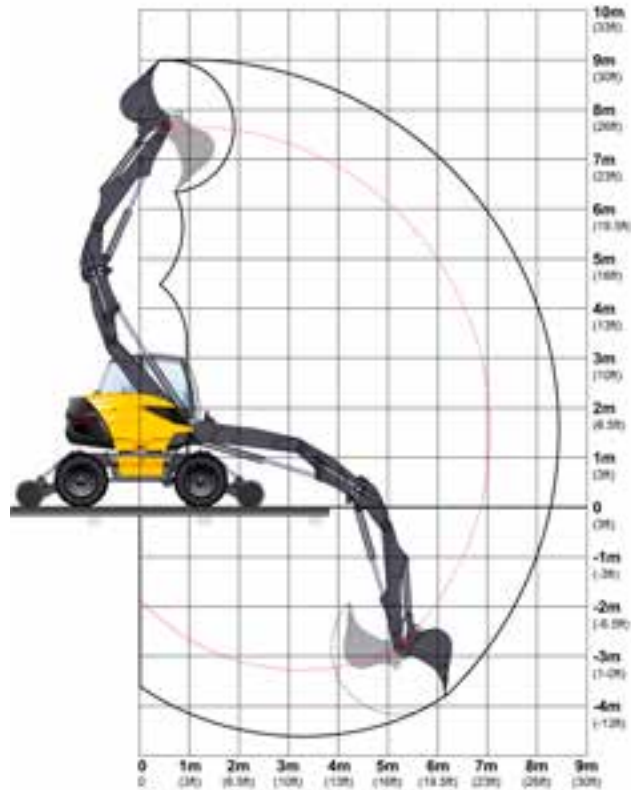
### DIGGING PERFORMANCE

Break-out force (maximum)	6500 daN (14,600 lbf)
Penetration/Tear-out force (maximum)	3300 daN (7,400 lbf)

\* With offset

## 156MRail MECALAC VERSATILE BOOM\*

### WORKING RANGES - ON RAILS



### WORKING RANGES ON RAILS

Maximum reach	8300 mm (27'3")
Maximum digging depth	4550 mm (14'11")

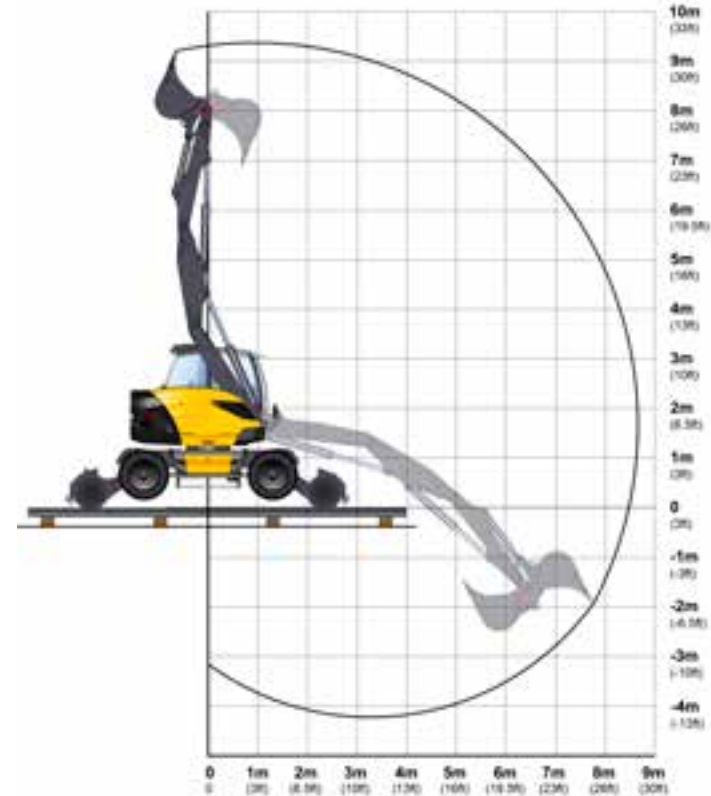
### DIGGING PERFORMANCE

Break-out force (maximum)	8170 daN (18,370 lbf)
Penetration/Tear-out force (maximum)	5500 daN (12,360 lbf)

\* With offset

## 216MRail MECALAC RAIL-DEDICATED BOOM

### WORKING RANGES - ON RAILS



### WORKING RANGES ON RAILS

Maximum reach	8906 mm (29'3")
Maximum digging depth	4437 mm (14'6")

### DIGGING PERFORMANCE

Break-out force (maximum)	8170 daN (18,370 lbf)
Penetration/Tear-out force (maximum)	6800 daN (15,280 lbf)














# 106MRail


## MECALAC VERSATILE BOOM WITH OFFSET

### LIFTING CHARTS WITH HOOK - WITHOUT INCLINATION

All the weights are given in kg (lb) with CONNECT.

			2M (7 ft)		3M (10 ft)		4M (131 ft)		5M (16 ft)		6M (20 ft)
											
											
5M (20 ft)	on rails	2000 (4,409)	2000 (4,409)	2000 (4,409)	2000* (4,409)	1600 (3,527)	1200* (2,646)	-	-	-	-
	on tracks	2000 (4,409)	2000 (4,409)	2000 (4,409)	2000* (4,409)	1350 (2,976)	1200* (2,646)	-	-	-	-
3M (10 ft)	on rails	2600 (5,732)	2600 (5,732)	2100 (4,630)	1950* (4,299)	1600 (3,527)	1200* (2,646)	1300 (2,866)	770* (1,697)	-	-
	on tracks	2300 (5,071)	2200 (4,850)	2000 (4,409)	1950* (4,299)	1300 (2,866)	1200* (2,646)	800 (1,764)	770* (1,697)	-	-
1.5M (5 ft)	on rails	2800 (6,173)	2800 (6,173)	2100 (4,630)	1900* (4,189)	1700 (3,738)	1100* (2,425)	1300 (2,866)	770* (1,697)	1100 (2,425)	500* (1,102)
	on tracks	2300 (5,071)	2200 (4,850)	1900 (4,189)	1900* (4,189)	1150 (2,535)	1100* (2,425)	750 (1,653)	770* (1,697)	1100 (2,425)	500* (1,102)
0 M	on rails	-	2800 (6,173)	2100 (4,630)	1650* (3,638)	1800 (3,968)	1000* (2,205)	1300 (2,866)	700* (1,543)	-	-
	on tracks	-	2200 (4,850)	1800 (3,968)	1650* (3,638)	1000 (2,205)	1000* (2,205)	700 (1,543)	700* (1,543)	-	-
-1M (-3 ft)	on rails	-	2400 (5,291)	2300 (5,071)	1500* (3,307)	1500 (3,307)	950* (2,094)	1100 (2,425)	650* (1,433)	-	-
	on tracks	-	2200 (4,850)	1700 (3,748)	1500* (3,307)	1000 (2,205)	950* (2,094)	650 (1,433)	650* (1,433)	-	-
-2M (-7 ft)	on rails	-	2000 (4,409)	1400 (3,086)	1400* (3,086)	900 (1,984)	900* (1,984)	-	-	-	-
	on tracks	-	2000 (4,409)	1400 (3,086)	1400* (3,086)	900 (1,984)	900* (1,984)	-	-	-	-

 Working in longitudinal position

 Working over the side or at 360°

### WORKING CONDITIONS

#### ON TRACKS

- On crawler, lorry up
- On horizontal, compact ground

#### ON RAILS

- Machine bogies on rails
- On level tracks, CANT = 0°

#### TRACKS AND RAILS

- Boom and stick used without offset
- Without tools (bucket, shovel...)
- With CONNECT quick coupler, with loading hook of 3 t (6,613 lb) and with standard track shoes.

#### ACCORDING TO ISO 10567

- Maximum 75% of the tipping load or 87% of the hydraulic capacity
- Maximum values determined for optimal position of the boom and cylinders











The lifting capabilities shown with an asterisk (\*) are limited by the tipping load that can be lifted. Other values are limited by the hydraulic capabilities and capacity of the hook.


# 136MRail


## MECALAC VERSATILE BOOM WITH OFFSET

### LIFTING CHARTS WITH HOOK - WITHOUT INCLINATION

All the weights are given in kg (lb) with CONNECT.

			2M (7 ft)		3M (10 ft)		4.5M (15 ft)		6M (20 ft)		MAXIMUM	
												MM (ft-in)
												
6M (20 ft)	on rails	4000 (8,818)	4000 (8,818)	4000 (8,818)	3250* (7,165)	-	-	-	-	-	-	
	on tracks	4000 (8,818)	4000 (8,818)	4000 (8,818)	4000 (8,818)	-	-	-	-	-	-	
4.5M (15 ft)	on rails	4000 (8,818)	4000 (8,818)	4000 (8,818)	3450* (7,605)	4000 (8,818)	1700* (3,748)	-	-	-	-	
	on tracks	4000 (8,818)	4000 (8,818)	4000 (8,818)	2700* (5,952)	2450* (5,401)	-	-	-	-	-	
3M (10 ft)	on rails	-	-	4000 (8,818)	3300* (7,275)	4000 (8,818)	1750* (3,858)	3500* (7,716)	950* (2,094)	-	-	
	on tracks	-	-	4000 (8,818)	2750* (6,063)	2450* (5,401)	1550* (3,417)	1400* (3,086)	-	-	-	
1.5M (5 ft)	on rails	-	-	4000 (8,818)	3200* (7,055)	4000 (8,818)	1650* (3,638)	3600* (7,937)	900* (1,984)	3000* (6,614)	700* (1,543)	6600 (21'8")
	on tracks	-	-	4000 (8,818)	2650* (5,842)	2400* (5,291)	1550* (3,417)	1400* (3,086)	1250* (2,756)	1100* (2,425)	6600 (21'8")	
0 M	on rails	-	4000 (8,818)	4000 (8,818)	2850* (6,283)	4000 (8,818)	1500* (3,307)	3500* (7,716)	850* (1,874)	-	-	
	on tracks	4000 (8,818)	4000 (8,818)	4000 (8,818)	2450* (5,401)	2200* (4,850)	1450* (3,197)	1300* (2,866)	-	-	-	
-1.5M (5 ft)	on rails	-	4000 (8,818)	4000 (8,818)	2500* (5,511)	4000 (8,818)	1300* (2,866)	2050 (4,519)	800* (1,764)	-	-	
	on tracks	4000 (8,818)	4000 (8,818)	4000 (8,818)	3850* (8,488)	2250* (4,960)	2000* (4,409)	1400* (3,086)	1250* (2,756)	-	-	
-3M (-10 ft)	on rails	-	4000* (8,818)	4000 (8,818)	2300* (5,070)	-	-	-	-	-	-	
	on tracks	4000 (8,818)	4000 (8,818)	4000 (8,818)	3650* (8,047)	-	-	-	-	-	-	

 Working in longitudinal position

 Working over the side or at 360°

### WORKING CONDITIONS

#### ON TRACKS

- On crawler, lorry up
- On horizontal, compact ground

#### ON RAILS

- Machine bogies on rails
- On level tracks, CANT = 0°

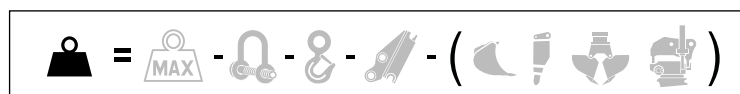
#### TRACKS AND RAILS

- Boom and stick used without offset
- Without tools (bucket, shovel...)
- With CONNECT quick coupler, with loading hook of 3 t (6,613 lb) and with standard track shoes.

#### ACCORDING TO ISO 10567

- Maximum 75% of the tipping load or 87% of the hydraulic capacity
- Maximum values determined for optimal position of the boom and cylinders

The lifting capabilities shown with an asterisk (\*) are limited by the tipping load that can be lifted. Other values are limited by the hydraulic capabilities and capacity of the hook.



All elements added to the end of the dipperstick must be taken into consideration when measuring the real lifting capacities in kg (lbs), particularly their positions and weights

# 156MRail

## MECALAC VERSATILE BOOM WITH OFFSET

### LIFTING CHARTS WITH HOOK - WITHOUT INCLINATION

All the weights are given in kg (lb) with CONNECT.

		2M (7 ft)		3M (10 ft)		4.5M (15 ft)		6M (20 ft)		MAXIMUM		
												MM (ft-in)
6M (20 ft)	on rails	6800 (14,991)	6800 (14,991)	6800 (14,991)	4600* (10,141)	5200 (11,464)	2350* (5,181)	-	-	4350 (9,590)	1650* (3,638)	5400 (17'8")
	on tyres	6800 (14,991)	6800 (14,991)	6800 (14,991)	5950* (13,117)	3650* (8,047)	3000* (6,614)	-	-	2700* (5,952)	2150* (4,740)	
4.5M (15 ft)	on rails	-	-	6650 (14,660)	4600* (10,141)	5200 (11,464)	2400* (5,291)	4850 (10,692)	1400* (3,086)	4600 (10,141)	1150* (2,535)	6500 (21'4")
	on tyres	-	-	6650 (14,660)	5950* (13,117)	3800* (8,377)	3100* (6,834)	2200* (4,850)	1800* (3,968)	1900* (4,189)	1550* (3,417)	
3M (10 ft)	on rails	-	-	8000 (17,640)	4450* (9,810)	6600 (14,550)	2400* (5,291)	4950 (10,912)	1350* (2,976)	3900 (8,598)	900* (1,984)	7100 (23'3")
	on tyres	-	-	7500* (16,535)	5750* (12,676)	3800* (8,377)	3050* (6,724)	2200* (4,850)	1800* (3,968)	1600* (3,527)	1250* (2,756)	
1.5M (5 ft)	on rails	-	-	8000 (17,640)	4350* (9,590)	8000 (17,640)	2300* (5,071)	4900 (10,802)	1300* (2,866)	3100 (6,834)	800* (1,764)	7400 (24'3")
	on tyres	-	-	7350* (16,204)	5650* (12,456)	3700* (8,157)	2950* (6,504)	2150* (4,740)	1700* (3,748)	1400* (3,086)	1100* (2,425)	
0 M	on rails	-	7350 (16,204)	-	4000* (8,818)	8000 (17,640)	2050* (4,519)	3950 (8,708)	1200* (2,645)	2350 (5,180)	800* (1,764)	7300 (23'11")
	on tyres	-	8000 (17,640)	-	5300* (11,684)	3400* (7,496)	2650* (5,842)	2050* (4,519)	1600* (3,527)	1400* (3,086)	1100* (2,425)	
-1.5M (-5 ft)	on rails	-	6500 (14,330)	-	3400* (7,496)	4550 (10,031)	1800* (3,968)	2650 (5,842)	1100* (2,425)	2050 (4,519)	900* (1,984)	6700 (22'0")
	on tyres	-	8000 (17,640)	-	4650* (10,251)	3150* (6,944)	2450* (5,401)	1950* (4,299)	1500* (3,307)	1600* (3,527)	1250* (2,755)	
-3M (-10 ft)	on rails	-	-	-	3300* (7,275)	3800 (8,377)	1750* (3,858)	-	-	3100 (6,834)	1300* (2,866)	5400 (17'8")
	on tyres	-	-	-	4500* (9,921)	3050* (6,724)	2350* (5,181)	-	-	2250 (4,960)	1750* (3,858)	

Working in longitudinal position

Working over the side or at 360°

# 216MRail

## MECALAC RAIL-DEDICATED BOOM

### LIFTING CHARTS WITH HOOK - WITHOUT INCLINATION

All the weights are given in kg (lb) with CONNECT.

		2M (7 ft)		3M (10 ft)		4.5M (15 ft)		6M (20 ft)		MAXIMUM		
												MM (ft-in)
6M (20 ft)	on rails	-	-	6800 (14,990)	5700 (12,566)	5200 (11,464)	3400* (7,496)	4300 (9,480)	1850* (4,078)	5060 (11,155)	1750* (3,858)	6200 (20'4")
	on tyres	-	-	6800 (14,990)	6800 (14,990)	5200 (11,464)	5000* (11,023)	3800* (8,377)	2600* (5,732)	3600* (7,936)	2300* (5,070)	
4.5M (15 ft)	on rails	-	-	6650 (14,660)	5350 (11,794)	5200 (11,464)	3400* (7,496)	4875 (10,747)	1800* (3,968)	4270 (9,413)	1300* (2,866)	7200 (23'7")
	on tyres	-	-	6650 (14,660)	6650 (14,660)	5200 (11,464)	5000* (11,023)	4150* (9,149)	2600* (5,732)	2850* (6,283)	1800* (3,968)	
3M (10 ft)	on rails	-	-	8000 (17,640)	5850 (12,897)	6600 (14,550)	3300* (7,275)	4950 (10,913)	1900* (4,188)	3310 (7,297)	1150* (2,535)	7750 (25'5")
	on tyres	-	-	8000 (17,640)	6500 (14,330)	5250 (11,574)	5000* (11,023)	3750* (8,267)	2650* (5,842)	2450* (5,401)	1550* (3,417)	
1.5M (5 ft)	on rails	-	-	8000 (17,640)	5400* (11,904)	8000 (17,640)	3150* (6,944)	4925 (10,857)	1800* (3,968)	2611.5 (5,757)	1050* (2,314)	7850 (25'9")
	on tyres	-	-	8000 (17,640)	7600 (16,755)	4925 (10,857)	4800* (10,580)	3425 (7,550)	2350* (5,180)	2400* (5,291)	1500* (3,306)	
0 M	on rails	-	-	8000 (17,640)	4700* (10,361)	8000 (17,640)	2900* (6,393)	3950 (8708)	1550* (3,417)	2060 (4,541)	1100* (2,425)	7700 (25'3")
	on tyres	-	-	8000 (17,640)	7300 (16,093)	4750 (10,472)	4550* (10,031)	3300* (7,275)	2250* (4,960)	2050 (4,519)	1550* (3,417)	
-1.5M (-5 ft)	on rails	-	-	8000 (17,640)	4375* (9,645)	4550 (10,031)	2700* (5,952)	2650 (5,842)	1550* (3,417)	1960* (4,321)	1300* (2,866)	6900 (22'7")
	on tyres	-	-	8000 (17,640)	7075 (15,597)	4550 (10,031)	4300* (9,480)	2850* (6,283)	2100* (4,629)	1925 (4,243)	1500* (3,306)	
-3M (-10 ft)	on rails	-	-	4800 (10,580)	4100 (9,038)	3800 (8,377)	2600* (5,732)	-	-	3100 (6,834)	2150* (4,739)	5300 (17'5")
	on tyres	-	-	4800 (10,580)	4800 (10,580)	3800 (8,377)	3800 (8,377)	-	-	3100 (6,834)	2400* (5,291)	

Working in longitudinal position

Working over the side or at 360°



All elements added to the end of the dipperstick must be taken into consideration when measuring the real lifting capacities in kg (lbs), particularly their positions and weights

### WORKING CONDITIONS

#### ON TIRES

- On tires, lorry up
- On horizontal, compact ground
- With axle oscillation locked and brakes

#### ON RAILS

- Machine bogies on rails
- On level tracks, CANT = 0°

#### TIRES AND RAILS

- Boom and stick used without offset
- Without tools (bucket, shovel...)
- With CONNECT quick coupler, with loading hook of 8 t (17,637 lb) and with standard tires.

#### ACCORDING TO ISO 10567

- Maximum 75% of the tipping load or 87% of the hydraulic capacity
- Maximum values determined for optimal position of the boom and cylinders

The lifting capabilities shown with an asterisk (\*) are limited by the tipping load that can be lifted. Other values are limited by the hydraulic capabilities and capacity of the hook.

### WORKING CONDITIONS

#### ON TIRES

- On tires, lorry up
- On horizontal, compact ground
- With axle oscillation locked and brakes

#### ON RAILS

- Machine bogies on rails
- On level tracks, CANT = 0°

#### TIRES AND RAILS

- Boom and stick used without offset
- Without tools (bucket, shovel...)
- With CONNECT quick coupler, with loading hook of 8 t (17,637 lb) and with standard tires.

#### ACCORDING TO ISO 10567

- Maximum 75% of the tipping load or 87% of the hydraulic capacity
- Maximum values determined for optimal position of the boom and cylinders

The lifting capabilities shown with an asterisk (\*) are limited by the tipping load that can be lifted. Other values are limited by the hydraulic capabilities and capacity of the hook.

# 106•136MRail

## STANDARD / OPTIONAL EQUIPEMENT

ENGINE	106MRail	136MRail
Engine, meets U.S. EPA Tier 4 Final / EU Stage V standards, with DOC (Diesel Oxidation Catalyst) and DPF (Diesel Particulate Filter) for Europe, 4 cylinders, turbocharged "common rail", intercooler, water-cooled		
Deutz engine TCD2.9	•	
Deutz engine TCD3.6		•
Automatic engine low idle when no function is used	•	•
Engine rpms adjustment by potentiometer	•	•
Fuel/water separator and diesel filter	•	•
Electric fuel priming pump	•	•
Engine hydraulic oil filter	•	•
Engine air filter, cyclonic	•	•
Automatic engine idle shutdown (depending on regulations, excl. France)	o	o

ELECTRICAL EQUIPMENT		
Alternateur (14V-95A)	•	•
Battery Optima high performance 12V (50AH)	•	•
Interior cab light	•	•
One front working light, on top of the cab	•	•
Horn	•	•
One rear working light	•	
Side camera, meets ISO 5006:2017 standards	o	•
Rear camera, meets ISO 5006:2017 standards	o	o
Working lights package, 5 LED lights: 2x front, 1x rear, 2x on front linkage		o
Back-up alarm, white noise	o	o
Electric diesel refueling pump, with automatic stop	o	o

OPERATOR STATION		
Panoramic cab, FOPS-ROPS certified with standard FOPS Level II guard	•	•
Skylight window and sunshade (for windshield and/or skylight roof window)	•	•
Windscreen, 2-piece split "60/40", entirely or partially retractable	•	•
Wiper, 3 positions (stop, intermittent, continuous)	•	•
Mirrors, left and right	•	•
Cab rain protector	o	o
LED beacon	o	o
Anti-theft (electronic, 6 keys included)	o	o

Cab Interior		
Heating system, meets ISO 10263 standard	•	•
Storage area for documents / phone, coat hook	•	•
Footrest	•	•
Left tilting console, with hydraulic functions lockout	•	•
12V Plug	•	•
Air conditioning	o	o

OPERATOR STATION	106MRail	136MRail
Cab readiness for radio installation with speakers	•	•
Cab air filter	•	•
Fuse box, enclosed	•	•
MP3 Bluetooth Radio	o	o

Seat		
Adjustable in height and horizontally with lumbar, back and headrest adjustments	•	•
Adjustable armrests	•	•
Safety seatbelt, retractable, integrated into the seat	•	•
Heated pneumatic seat	o	o

Controls		
Start/Stop button	•	•
2-way pedals (forward/reverse) and 2 levers for left and right tracks control	•	•
Pedal for variable adjustment boom, cylinder selection via the right joystick	•	•
Lever for front and rear lorries	•	•
User-friendly control pannel (keypad) and rotary encoder	•	•
Joysticks with hydraulic proportional control	•	•
ISO / SAE switch control pattern	o	o

Operation-assisting features		
One-Switch system for operating the machine like an excavator or a loader	•	•
Bucket controls (open/close) reversing switch	•	•
Coupling function of the intermediate boom and stick cylinders (monoboom-type operation)	•	•
Speed control	•	•

Monitor		
7" Color screen monitor, real-time machine and safety data visuals, audible alarms. Adaptation for video input.	•	•
Diesel level gauge, coolant temperature, indicators for filter replacement or default codes. Work tools control and flows setting and much more...	•	•
Overload warnings and audible alarm (if RCL option not selected)	•	•

HYDRAULIC FLUIDS - OIL		
Mecalac mineral hydraulic oil (ISO 46)	•	•
Total Bio-hydraulic oil (TMP 46) or Panolin (HLP 46)	o	o
Hydraulic oil for cold weather (ISO 32)	o	o
Hydraulic oil for warm weather (ISO 68)	o	o
Hydraulic oil for extreme warm weather (ISO 100)	o	o

Country packs available  
• = Standard  
o = Optional  
\* Please reach your local dealer sales administration contact for more information.  
\*\* Excluding pins for quick couplers



# 106•136MRail

## STANDARD / OPTIONAL EQUIPEMENT

UNDERCARRIAGE - CENTRAL X FRAME	106MRail	136MRail
Closed hydrostatic transmission circuit, Senso Drive	•	•
Two-speed automatic travel motors (5 kph and 10 kph / 3 mph and 6,2 mph)	•	
Two-speed automatic travel motors (5 kph and 9 kph / 3 mph and 5,6 mph)		•
Automatic parking brakes	•	•
Idle block with tension adjustment through greasing point	•	•

UNDERCARRIAGE - RAIL		
2x monobloc lorry powered by cylinders with safety check valves, for a rail standard gauge of 1435 mm (4'8.5")	•	
1x monobloc lorry and 1x oscillating lorry (+/-7°) lockable via the joystick, powered by cylinders with safety check valves		•
Four steel wheels (UIC profile), 500 mm (19,68 in)	•	
Four steel wheels (UIC profile), 630 mm (24,80 in)		•
Steel wheels self-propelled by four hydraulic motors	•	•
2x multidisk parking brakes, oil-immersed	•	•
Hydrostatic transmission. Max speed on rails: 23 kph (14,3 mph)	•	
Hydrostatic transmission. Max speed on rails: 20 kph (12,4 mph)		•
Toolbox included into the rear lorry, tow bar and hook included	•	•
Semi-Automatic hook for trailers		o

TRACK GROUP		
Rubber tracks, 450 mm (18 in)	•	•

HYDRAULICS		
Systems		
Main hydr. variable piston pump (boom, stick and swing)	•	•
2x variable displacement piston pumps (transmission)	•	•
Hydr. distributor Active Control with load sensing and flow sharing	•	•
Hydr. swing motor with brake and shockless valve for 360° upperframe swing	•	•
Lines and circuits		
Main auxiliary hydraulic line, proportional, high flow	•	•
Hydr. continuous flow (via a switch) for tools with a continuous movement	•	•
Hydraulic lines and circuit for a Mecalac CONNECT or Direct quick coupler	•	•
4 Anti-drop check valves on booms, stick, bucket (with overload alarm if RCL option is not selected)	•	•
Hammer return line	o	•
2 <sup>nd</sup> auxiliary hydraulic line, proportional (offset bypass for rotating or other function)	o	o
Hydraulics for clamshells (deviation of the bucket cylinder) - open/close	o	o

BOOMS AND STICK	106MRail	136MRail
Mecalac boom, including offset, 3-part adjustable boom kinematics	•	•
Mecalac stick, 1800 mm (5'11")	•	
Mecalac stick, 2025 mm (6'7")		•

QUICK COUPLER		
Mecalac patented CONNECT quick coupler, with hook	•	•
Mecalac direct coupling option (pin-on, with hook)	o	o

OTHER EQUIPEMENT		
Manual centralised greasing system (upperframe)	•	•
Additional heavy counterweight (+425kg / 937 lbs)	•	
Additional heavy counterweight (+590kg / 1,300 lbs)		•
MyMecalac Connected Services (telematics)	•	•
Grease gun	•	•
2-years warranty / 3000 hours	•	•
Manual centralised greasing system (upperframe and booms/stick**)	o	o
Automatic greasing system (upperframe and booms/stick**)	o	o
Start-up digicode	o	o

SPECIAL PAINT		
Special paint option 1 color (excluding cab)	o	o
Special paint option 2 colors (excluding cab)		o

RAIL REGULATIONS AND SPECIFICITIES		
France - NF58003 Homologation	o	o
EU - EN15746 homologation compatibility		o
Yellow or Blue RCI lights depending RCI option and local regulation		o
Rail white/red lights, front/rear, with auto shift		o
Rail warning horn	o	o
In-cab emergency stop button		o
Rated Capacity Indicator (RCI) and Rated Capacity Limiter (RCL) system with 4.3" screen		o
Height and swing limiters. Heights: 3.92 m (12'10"), 4.28 m (14'0") and adjustable	o	o
Adjustable track gauge, 950 - 1600 mm (3'1.4" - 5'3")	*	o
Other gauges on demand	*	*
Pneumatic braking system for rail car brakes (1 line), braking with lever		o
Pneumatic braking system for rail trailers (2 lines), braking with the lever		o
Emergency back-up system, for repositioning and towing the machine in case of diesel engine failure	o	o
Insulated steel wheels	o	o

• = Standard

o = Optional

\* Please reach your local dealer sales administration contact for more information. \*\* Excluding pins for quick couplers

## STANDARD / OPTIONAL EQUIPEMENT

ENGINE	156MRail	216MRail
Engine, meets U.S EPA Tier 4 Final / EU Stage V standards, with DOC (Diesel Oxidation Catalyst) and DPF (Diesel Particulate Filter) for Europe, SCR (Selective Catalyst Reduction), Diesel Exhaust Fluid (DEF), 4 cylinders, turbocharged "common rail", intercooler, water-cooled		
Deutz engine TCD3.6, 100kW (136 hp)	•	•
Automatic engine low idle when no function is used	•	•
Engine rpms adjustment by potentiometer or pedal	•	•
Fuel/water separator and diesel filters	•	•
Electric fuel priming pump	•	•
Engine hydraulic oil filter	•	•
Engine air filter, cyclonic	•	•
Automatic engine idle shutdown (depending on regulations, excl. France)	o	o
ELECTRICAL EQUIPMENT		
Alternator, 14V / 120A	•	•
Battery Optima high performance (12V-50AH)	•	•
Interior cab light	•	•
One LED front working light, on top of the cab	•	•
Road lights, front and rear, bottom of counterweight	•	•
Side camera, meets ISO 5006:2017 standards	•	•
Rear camera, meets ISO 5006:2017 standards	•	•
Horn	•	•
Additional LED working light, front	o	
One rear LED working light	o	
Working lights package, 9 LED lights: 2x front, 1x rear, 4x front linkage, 1x counterweight, 1x on the engine hood		o
Back-up alarm, white noise	o	o
Electric diesel refueling pump, with automatic stop	o	o
OPERATOR STATION		
Panoramic cab, FOPS-ROPS certified with standard FOPS Level II guard	•	•
Secondary seat for a second operator, with independent door / access		•
In-line cab access steps for a direct entry into the cab	•	•
Sliding door for the main cab, with sliding side window	•	•
Skylight window and sunshade (for windshield and/or skylight roof window)	•	•
Windscreen, 2-piece split "60/40", entirely or partially retractable	•	•
Wiper, 3 positions (stop, intermittent, continuous)	•	•
Mirrors, left and right	•	•
Cab rain protector	o	o
LED beacon	o	o
Anti-theft (electronic, 6 keys included)	o	o
Cab Interior		
Heating system, meets ISO 10263 standard	•	•
Air conditioning	•	•
Storage area for documents / phone, coat hook, bottle holder	•	•
Refrigerated lunchbox	•	

	156MRail	216MRail
Cab Interior		
Storage compartment below the 2 <sup>nd</sup> operator's seat		•
Steering column, 3 adjustments (2x fore/aft + 1x height)	•	•
Left tilting console, with hydraulic functions lockout	•	•
12V Plug	•	•
MP3 Bluetooth Radio	•	•
Cab air filter	•	•
Fuse box, enclosed	•	•
Cab readiness for radio installation with speakers	o	o
Seat		
Adjustable in height and horizontally with lumbar, back and headrest adjustments	•	•
Adjustable armrests	•	•
Safety seatbelt, retractable, integrated into the seat	•	•
Heated pneumatic seat	o	o
Controls		
Start/Stop button	•	•
One-way travel pedal and FNR switch (forward/Neutral/Reverse)	•	•
Pedal for variable adjustment boom, cylinder selection via the right joystick	•	•
Lever for front and rear lorries	•	•
User-friendly control pannel (keypad) and rotary encoder	•	•
Joysticks with hydraulic proportional control	•	•
Two-way travel pedal (forward/reverse), no FNR switch		o
Switch for steering wheel direction inversion	o	o
ISO / SAE switch control pattern	o	o
Operation-assisting features		
Eco Mode	•	•
Configured for two applications: road and rail applications. For each: One-switch system for switching between Parking, Work and Travel modes	•	•
Shift between road and rails (via the lowering/rise of the lorries, with steering wheels locked and 2-steering wheels position selected)		•
Operator ID profiles	•	•
Bucket controls (open/close) reversing switch	•	•
Coupling function of the intermediate boom and stick cylinders (monoboom-type operation)	•	•
Speed and Ride control	•	•
Monitor		
7" Color screen monitor, real-time machine and safety data visuals, audible alarms. Adaptation for video input.	•	•
Diesel level gauge, coolant temperature, indicators for filter replacement or default codes. Work tools control and flows setting and much more...	•	•
Overload warnings and audible alarm (if RCL option not selected)	•	•

Country packs available

• = Standard

o = Optional

# 156•216MRail

## STANDARD / OPTIONAL EQUIPEMENT

HYDRAULIC FLUIDS - OIL	156MRail	216MRail
Mecalac mineral hydraulic oil (ISO 46)	•	•
Total Bio-hydraulic oil (TMP 46) or Panolin (HLP 46)	o	o
Hydraulic oil for cold weather (ISO 32)	o	o
Hydraulic oil for warm weather (ISO 68)	o	o
Hydraulic oil for extreme warm weather (ISO 100)	o	o

UNDERCARRIAGE		
Diesel tank in the undercarriage (220 l / 58 US gal)	•	
Diesel tank in the undercarriage (280 l / 74 US gal)		•
4-wheel drive	•	•
4-steering wheels	•	•
Oscillating front axle, lockable via the joystick	•	•
Open hydrostatic transmission circuit, Senso Drive	•	•
Two-speed automatic Powershift gearbox (0 - 30 kph / 0 - 18,6 mph)		•
Two-speed automatic Powershift gearbox (0 - 35 kph / 0 - 21,7 mph)	•	
Automatic parking brakes integrated in the gearbox (travel mode only)	•	•
Multidisk Service brakes, oil-immersed, integrated into both axle	•	•
Clamshell travel support bar		o

UNDERCARRIAGE - RAIL		
2x monobloc lorry powered by cylinders with safety check valves, for a rail standard gauge of 1435 mm (4'8.5")	•	
1x monobloc lorry and 1x oscillating lorry (+/-5°) lockable via the joystick, powered by cylinders with safety check valves		•
Four steel wheels (UIC profile), 500mm (19,68 in)	•	
Four steel wheels (UIC profile), 630mm (24,80 in)		•
Steel wheels mounted on 2 axles propelled by 2 hydraulic motors		•
1 Multidisk dry parking brake integrated in each lorry		•
2 dry disks service brakes integrated in each lorry		•
Hydrostatic transmission (9A). Max speed on rails: 30 kph / 18,6 mph		•
Friction-drive transmission (9C). Max speed on rails: 30 kph / 18,6 mph	•	
Toolbox included into the rear lorry, tow bar and hook included		•
Semi-Automatic hook for trailers		o

WHEELS		
Single tires ZXM 12.00-R20 with HD insert	•	
Single tires XF 18R 19.5		o
Twin tires 315/70R 22.5 without spacer		o

HYDRAULICS		
Systems		
Main hydr. variable piston pump	•	•
Hydr. distributor Active Control with load sensing and flow sharing	•	•
Hydr. swing motor with brake and shockless valve for 360° upperframe swing	•	•
Lines and circuits		
Main auxiliary hydraulic line, proportional, high flow	•	•
Hydr. continuous flow (via a switch) for tools with a continuous movement	•	•
2 <sup>nd</sup> auxiliary hydraulic line, proportional (offset bypass for rotating or other function)	o	o

Lines and circuits	156MRail	216MRail
Hydraulic lines and circuit for a Mecalac CONNECT or Direct quick coupler	•	•
4 Anti-drop check valves on booms, stick, bucket (with overload alarm if RCL option is not selected)	•	•
Hydraulics for clamshells (deviation of the bucket cylinder) - open/close	o	•
Hammer return line	o	•

BOOMS AND STICK		
Mecalac rail-dedicated boom 2-part adjustable boom kinematics, purpose-built for working under overhead lines, without offset boom		•
Mecalac boom, including offset, 3-part adjustable boom kinematics	•	
Mecalac stick, 2450 mm (8'0.4")	•	•

QUICK COUPLER		
Mecalac patented CONNECT quick coupler, with hook	•	•
Mecalac direct coupling option (pin-on, with hook)	o	o

OTHER EQUIPEMENT		
Manual centralised greasing system (upperframe)	•	•
Additional heavy counterweight (+3800kg / 8,377 lbs)	•	
Additional heavy counterweight (+4700kg / 10,362 lbs)		•
MyMecalac Connected Services (telematics)	•	•
Grease gun	•	•
2-years warranty / 3000 hours	•	•
Manual centralised greasing system (upperframe and booms/stick**)	o	o
Automatic greasing system (upperframe and booms/stick**)	o	o
Start-up digicode	o	o

SPECIAL PAINT		
Special paint option 1 color (excluding cab)	o	o
Special paint option 2 colors (excluding cab)	o	o

RAIL REGULATIONS AND SPECIFICITIES		
2 in-cab emergency stop buttons, one for each seat		•
France - NF58003 Homologation		o
EU - EN15746 homologation compatibility		o
Yellow or Blue RCI lights depending RCI option and local regulation		o
Rail white/red lights, front/rear, with auto shift		o
Rail warning horn	o	o
Rated Capacity Indicator (RCI) and Rated Capacity Limitation (RCL) system with 4.3" screen		o
Height and swing limiters. Heights: 3.92 m (12'10"), 4.28 m (14'0") and adjustable		o
Adjustable track gauge, 1000 - 1435 mm (3'3.4" - 4'8.5")		o
Other gauges on demand	*	*
Pneumatic braking system for rail car brakes (1 line), braking with lever		o
Pneumatic braking system for rail trailers (2 lines), braking with the foot pedal		o
Emergency back-up system, for repositioning / towing the machine in case of diesel engine failure	o	o
Insulated steel wheels		o

Country packs available

• = Standard / o = Optional

\* Please reach your local dealer sales administration contact for more information. \*\* Excluding pins for quick couplers.

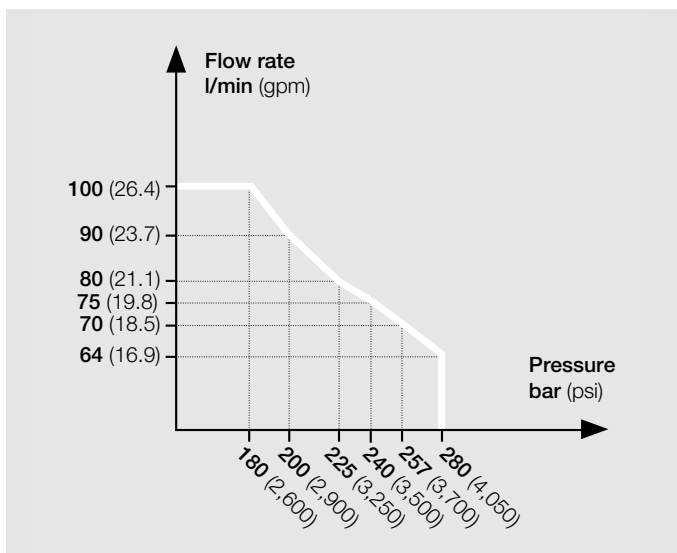


# 106•136MRail

## HYDRAULIC ATTACHMENTS

### 106MRail

FLOW RATE / PRESSURE AUXILIARY 1 (PROPORTIONAL)



AUXILIARY LINE 2	DATA
Offset cylinder diverted (clamshell rotation)	
Flow rate maximum	30 l/min (7.9 gpm*)
Pressure maximum	280 bar (4,050 psi)
Controls	Proportional

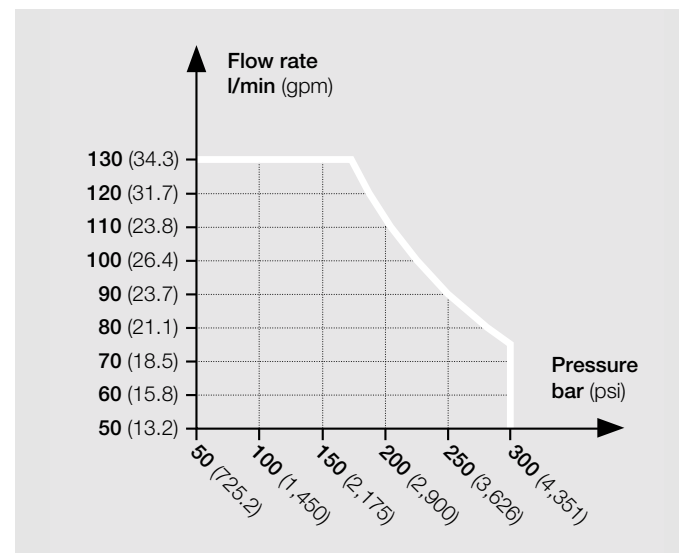
\* US gallon

AUXILIARY LINE 3	DATA
Bucket cylinder diverted (clamshell function)	
Flow rate maximum	80 l/min (21.1 gpm*)
Pressure maximum	280 bar (4,050 psi)

\* US gallon

### 136MRail

FLOW RATE / PRESSURE AUXILIARY 1 (PROPORTIONAL)



AUXILIARY LINE 2	DATA
Offset cylinder diverted (clamshell rotation)	
Flow rate maximum	30 l/min (7.9 gpm*)
Pressure maximum	300 bar (4,350 psi)
Controls	Proportional

\* US gallon

AUXILIARY LINE 3	DATA
Bucket cylinder diverted (clamshell function)	
Flow rate maximum	120 l/min (31.7 gpm*)
Pressure maximum	300 bar (4,350 psi)

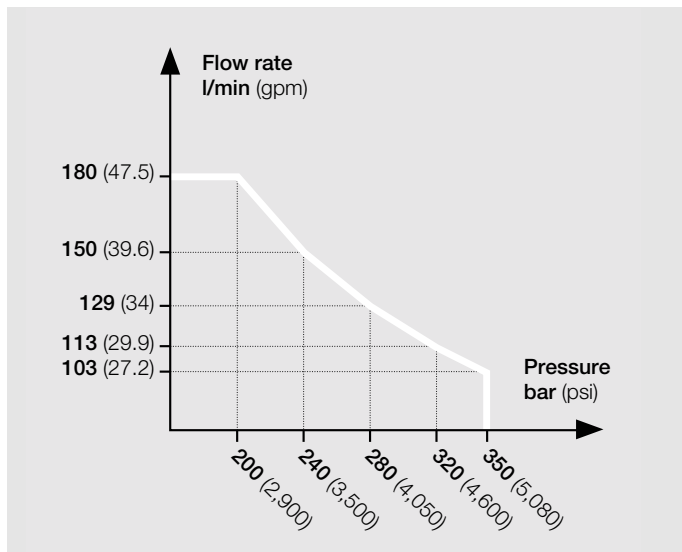
\* US gallon

# 156•216MRail

## HYDRAULIC ATTACHMENTS

### 156MRail

FLOW RATE / PRESSURE AUXILIARY 1 (PROPORTIONAL)



AUXILIARY LINE 2	DATA
Offset cylinder diverted (clamshell rotation)	
Flow rate maximum	45 l/min (11.9 gpm*)
Pressure maximum	350 bar (5,080 psi)
Controls	Proportional

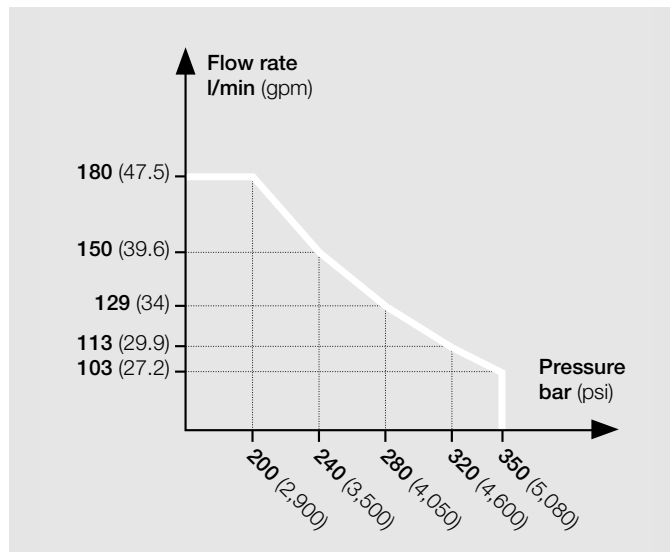
\* US gallon

AUXILIARY LINE 3	DATA
Bucket cylinder diverted (clamshell function)	
Flow rate maximum	160 l/min (42.3 gpm*)
Pressure maximum	350 bar (5,080 psi)

\* US gallon

### 216MRail

FLOW RATE / PRESSURE AUXILIARY 1 (PROPORTIONAL)



AUXILIARY LINE 2	DATA
Offset cylinder diverted (clamshell rotation)	
Flow rate maximum	45 l/min (11.9 gpm*)
Pressure maximum	350 bar (5,080 psi)
Controls	Proportional

\* US gallon

AUXILIARY LINE 3	DATA
Bucket cylinder diverted (clamshell function)	
Flow rate maximum	160 l/min (42.3 gpm*)
Pressure maximum	350 bar (5,080 psi)

\* US gallon

# COMPARATIVE CHART

## CHOOSE YOUR RAIL-ROAD EXCAVATOR NOW!



106MRail	136MRail	SPECIFICATIONS	156MRail	216MRail
EU Stage V / U.S. EPA Tier 4 Final	EU Stage V / U.S. EPA Tier 4 Final	ENGINE	EU Stage V / U.S. EPA Tier 4 Final	EU Stage V / U.S. EPA Tier 4 Final
55.4 kW (75 hp) at 2300 rpm	55.4 kW (75 hp) at 2200 rpm	Engine Power	100 kW (136 hp) at 2300 rpm	100 kW (136 hp) at 2300 rpm
300 Nm (221 lbf) at 1600 rpm	405 Nm (287 lbf) at 1300 rpm	Maximum torque	500 Nm (370 lbf) at 1600 rpm	500 Nm (370 lbf) at 1600 rpm
OPERATING WEIGHT				
9475 kg (20,889 lbs)	12830 kg (28,285 lbs)	With Work Tool	16360 kg (36,067 lbs)	20367 kg (44,903 lbs)
BOOM				
Mecalac boom with offset	Mecalac boom with offset	Boom type	Mecalac boom with offset	Rail dedicated boom
TRACK WIDTH				
950-1600 mm (3'1.4"-5'3")	950-1600 mm (3'1.4"-5'3")	Possible Track Widths	1435 mm (4'8.5")	1000-1435 mm (3'3.4" - 4'8.5")
TOWING CAPABILITIES				
1400 kg (3,086 lbs)	1500 kg (3,307 lbs)	Traction capacity at the tow bar	4000 kg (8,818 lbs)	2250 kg (4,960 lbs)
8 t (17,637 lbs)	14 t (30,864 lbs)	Traction capacity - maximum Trailer	20 t (44,092 lbs)	20 t (44,092 lbs)
	o	Pneumatic Braking System		o
SAFETY LIMITERS				
o	o	Height and Swing Limiters		o
	o	RCI Load Limiter		o
TRANSMISSION				
Crawler closed circuit	Crawler closed circuit	Road Transmission	Hydrostatic	Hydrostatic
Hydrostatic	Hydrostatic	Rail Transmission	Friction, tires on rails	Hydrostatic
SPEEDS				
10 kph (6.2 mph)	9 kph (5.6 mph)	On ground	35 kph (21 mph)	30 kph (18.5 mph)
23 kph (14.3 mph)	20 kph (12.4 mph)	On rails	30 kph (18.6 mph)	30 kph (18.5 mph)
CABIN				
Single	Single	Single or double	Single	Double
LIFTING CAPACITY - RAILS				
2T	4T	At 3 m (10 ft) and 0°. Height: 3 m (10 ft)	8T	8T
	950 kg (2,094 lbs)	At 6 m (19'8") and 90°. Height: 3 m (10 ft)	1350 kg (2,976 lbs)	1900 kg (4,188 lbs)
TYPICAL APPLICATIONS				
Light applications	Light and medium applications	Type of applications	Medium to heavy applications	Heavy applications
Urban (subways, trams), tunnels	National railways, urban, tunnels	Type of networks	Urban (subways, trams), tunnels	National railways, urban, tunnels
France (NF 58003)	EU - Compatible with EN15746	Rail regulation compatibility	No specific homologation	EU - Compatible with EN15746





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Documents and specifications subject to change without notice. Photos are not contractually binding. Machines shown in photos may have equipment additional to or different from what is locally available. To find out the options available in your region, please contact your MECALAC dealer.

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**MX398/EN-08/23** RAIL-ROAD INDUSTRIES **Design** Service Communication Mecalac **Photo credits** Séraphore - MFR - Fabola **Non-binding document**