

Mecalac

MCR
RAIL-ROAD



PETTIBONE

RAIL
MAINTENANCE SOLUTIONS

Mecalac



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.

OUR TRADITION

INNOVATION IN MOTION



As a common feature and denominator to all Mecalac excavators, the unique 3-piece-boom with integrated offset, provides the machine with unmatched compactness and versatility. On this basis, Mecalac has developed the MCR range, a new innovative concept based on the perfect fusion of a loader with total rotation and a compact crawler excavators that can travel up to 6.2 mph. Mecalac has chosen the 8MCR model to develop the first machine of its kind specialized for work in rail applications: the 8MCR Rail-Road.

The 8MCR Rail-Road provides the optimum in compactness combined with highest-in-class performance - required for the majority of service work and railway maintenance.

MECALAC: SUPPLIER OF RAIL SOLUTIONS



**30°
LEFT & RIGHT
OFFSET**



- > OPERATING WEIGHT: 19842 LBS / 9000 KG
- > ENGINE PERFORMANCE: 75 HP / 55 KW
- > SPEED ON-GROUND: 6.2 MPH / 10 KM/H
- > SPEED ON-RAIL: 14.3 MPH / 23 KM/H
- > TRANSMISSION ON-RAIL: HYDROSTATIC,
4 SELF-PROPELLED RAIL WHEELS
- > BOOM KINEMATICS: MECALAC 3-PIECE BOOM WITH
VARIABLE AND INTEGRATED OFFSET (LEFT/RIGHT)
- > MAXIMUM REACH: 22 FT / 6700 MM
- > MAXIMUM DIGGING DEPTH: 11.8 FT / 3600 MM
- > MAX LIFTING CAPACITY AT : 6614 LBS / 3000 KG*, 3307 LBS /
1500 KG**, STRAIGHT ; 2205 LBS / 1000 KG IN 360° ROTATION

* at 8.2 ft / 2.5m

** at 14.8 ft / 4.5m

8MCR RAIL-ROAD FEATURES

- > 2 hi-rail assemblies with 4 self-propelled wheels
- > 2 independent hydraulic pumps for travelling and working
- > Independent control of hi-rails for comfortable re- or de-railing
- > Hydrostatic transmission with closed circuit and automotive control
- > Auxiliary hydraulic circuit with pressure setting in a range
of 7.9 to 26.4 gpm (30 to 100 l/min)
- > Hydraulic performance and precision by a load sensing system
combined with flow sharing
- > Diameter of rail wheels: 19.69 in (500 mm) (UIC)



14 MPH
ON RAIL



BALANCE

Superior balance is the basis of numerous benefits of the Mecalac 8MCR Rail-Road. The patented design of the Mecalac boom gives the machine an extraordinary weight distribution. Along with the tracked chassis the machine achieves best-in-class stability, combined with uncompromising compactness and maximum performance.



COMPACTNESS

- > The short rear radius ensures that the machine works within the minimum clearance outline
- > The all around compactness allows for easy handling in tunnels or subway networks
- > High maneuverability in constricted or cramped working areas
- > The patented boom kinematics allows for work very close to the machine
- > An integrated boom offset designed for increased flexibility and a larger working radius
- > Transport possible on a standard-size 6x4 truck or a dump-truck



The machine provides the operator with a natural 360° visibility. This ensures that the driver is at all times aware of what is happening around the machine – on the rail track or next to it. There is no counterweight in the rear field of vision. The Mecalac boom, with its high level of flexibility, adapts precisely to every jobsite condition. The 8MCR Rail-Road has been designed for total operator vision on the work area and its environment.

VISIBILITY



Up to

6600 LBS AT 8.2 FT



PERFORMANCE

The 8MCR Rail-Road excavator is the ideal solution for users looking for a compact machine with high performance.

The key values are unique:

- > Load handling of 3.3 tons (3 metric tons) at a distance of 8.2 ft (2.5 m) from the center of the rail track
- > Lifting of 1.1 tons (1 metric ton) in a full turning radius of 14.8 ft (4.5 m)
- > Loading of 1323 lbs (600 kg) at a maximum reach of 19.7 ft (6 m)
- > Ability to use hydraulic attachments usually used by larger-sized machines, such as the special railway clamshell, a ballast tamping head or a mechanical or hydraulic sleeper layer.



**360°
ALL-AROUND
VISIBILITY**

SECURITY

- > On-demand height limitation of boom when working under overhead lines
- > On-demand rotation limiting of upperframe when working parallel to an adjacent railway track
- > Approved by the French National Railway Authority (SNCF)
- > All daily maintenance accessible from ground level
- > Hose rupture safety valves on all hydraulic cylinders and on each hi-rail
- > Equipped with an overload warning device
- > Hydrostatic braking system, parking brake and emergency stop
- > Emergency system providing repositioning of boom and upperframe for towing
- > CONNECT quick coupler with constant pressure for efficient and safe handling
- > High-performing light equipment for work at night



TECHNICAL DATA

WEIGHT	DATA
Without load, in working order, without bucket, with rubber tracks, with no bucket, full tank of fuel, and operator	19842 lbs (9000 kg)
Additional counterweight included	937 lbs (425 kg)
Ground Pressure	6.8 lb/in ² (0.48 kg/cm ²)

ENGINE	DATA
Turbo charged engine with intercooler, EGR valve and catalytic converter (DOC), complying with standard	US EPA Tier 4 Final EU STAGE IIIB
Diesel 4 in-line cylinders	DEUTZ TCD 2.9 L4
Horsepower (DIN 70020)	75hp (55.4 kW)
Engine speed	2000/2300 rpm
Maximum torque	221.3 ft-lb (300 Nm) at 1600 rpm
Displacement	177 in ³ (2900 cm ³)
Cooling	water
Air filter, cyclonic, dry, cartridge	•
Fuel consumption (depending on operating conditions)	2.1 to 2.4 gal/h (8 to 9 l/h)
Machine external sound level	99 dB
Fuel tank capacity	19.3 gal (73 l)
Cooling system capacity	5.3 gal (20 l)

ELECTRICAL CIRCUIT	DATA
Batteries	12 V (100 A)
Voltage	12 V
Alternator	14 V (95 A)
Starter	12 V (2.7 kW)

UNDERCARRIAGE	DATA
Central X frame chassis. Triangular beams	•
Rubber tracks	width 1.48 ft (450 mm)
Travelling rollers/Support roller	6/1
Track tension: sprung shock absorber with grease stress chamber	•
2 independent front & rear bogies controlled by 2 cylinders with safety valves. Remaining automatic pressure during translation of the machine.	

TRANSMISSION ON TRACKS	DATA
Closed circuit hydrostatic transmission SENSO DRIVE	
Transmission hydraulics: 1 dual variable displacement pump, automotive power control	
- Flow rate	2x 26.4 gal/min (100 l/min)
- Maximum pressure	5221.4 psi (360 bar)
- 2 x 2 speed gear motors with automatic brakes	
Foot pedal control in excavator mode	•
Joystick control in loader mode	
- Drawbar pull	12139.7 lbf (5400 daN)
- Travel speed	Range I 3.1 mph (5 km/h) Range II 6.2 mph (10 km/h)

TRANSMISSION ON HI-RAILS	DATA
4 hydraulic independent engines with parking brake at loss of pressure	•
Transmission and hydrostatic brakes with closed circuit	•
Foot pedal control	•
Speed on rail	14.3 mph (23 km/h)
4 hydrostatically driven rail wheels	Ø19.69 in (500 mm)
Railway type	UIC 56.5 in (1435 mm)

FRENCH RAILWAY, SNCF CERTIFIED	DATA
Electronic height limiter of the boom 12.8 ft (3.92 m) & 14 ft (4.28 m)	with 2 pairs of redundant circuits
Electronic swing limiter of the upperstructure	with mechanical safety stop
Electrical emergency pump	•

HYDRAULIC SYSTEM	DATA
ATTACHMENT AND ROTATION CIRCUIT	
Variable displacement pump	3.8 in ³ (63 cm ³)
ACTIVE CONTROL power control	
"Load Sensing - Flow Sharing" type LUDV main control valve block, proportionality of functions maintained regardless of the pressure level in individual elements	7SX14
- Maximum flow rate	33.3 gal/min (126 l/min)
- Maximum working pressure	4061.1 psi (280 bar)

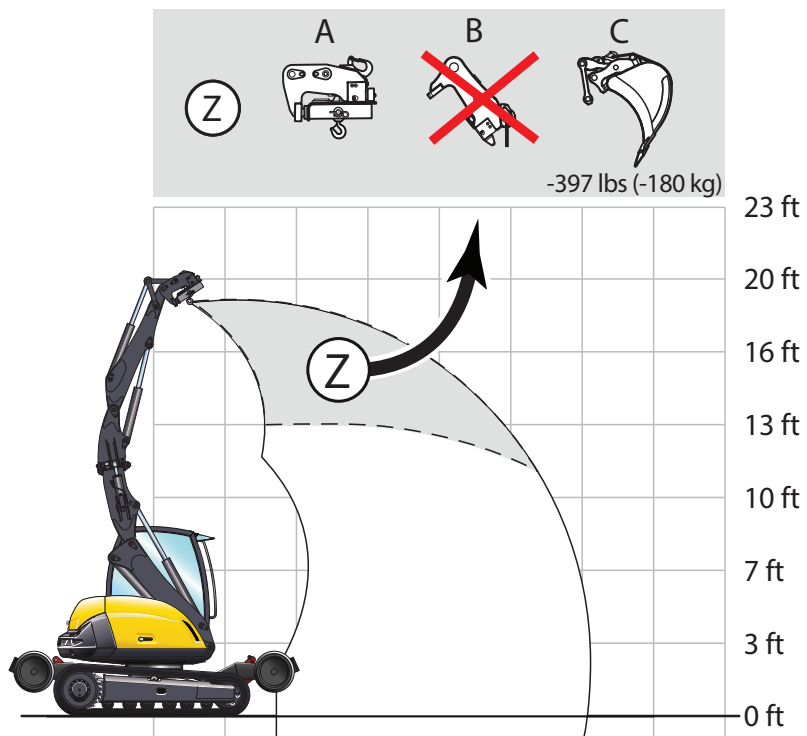
STANDARD AUXILIARY LINE	DATA
Maximum flow available	23.8 gal/min (90 l/min)
Minimum flow available	5.3 gal/min (20 l/min)
Flow can be set via control panel (factory setting)	21.1 gal/min (80 l/min)
Pressure can be set between 1740.5 psi and 4061.1 psi (120 and 280 bar) (factory setting)	2610.7 lbs/ft ² (180 bar)
Proportional hydraulic control of the attachment integrated on right-hand joystick	•

EXTRA AUXILIARY LINE (DIVERTED FROM OFFSET CYLINDER)	DATA
Maximum flow available	7.9 gal/min (30 l/min)
Flow can be set via control panel (factory setting)	7.9 gal/min (30 l/min)
Pressure maximum (fixed)	max. 4061.1 psi (280 bar)
Proportional hydraulic control of the attachment integrated on right-hand joystick	(option)

OTHER HYDRAULIC FUNCTIONS	DATA
The cylinder coupling function simultaneously combines the movements of the two cylinders of the boom to enable operation like an excavator with a one-piece boom	
The bucket direction inversion function enables the operator to reverse the controls of the bucket cylinder with the right joystick to simulate the maneuvering direction of a loader	

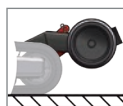
TURNTABLE	DATA
Full rotation	360°
Swing by slow hydraulic motor with automatic braking by discs equipped with anti-bounce pressure relief valve	•
Driven by internal crown slewing wheel	•
Swing speed	10 rpm
Swing torque	3799.3 lbf (1690 daNm)

CAB	DATA
Comfortable panoramic cab	ROPS and FOPS
Monocoque cab fastened to 4 spring posts	•
Front windshield partially or fully retractable	under the cab roof
Seat can be set and adjusted to operator height and weight	•
Water heating system compliant with ISO 10263	•
Independent adjustment for joystick support consoles	•
Controls assisted by ergonomic, proportional joy	•
Dial display of fuel level and coolant temperature	•
Control panel including color screen with automatic brightness and contrast setting	•
Proportional hydraulic control of the attachment integrated on right-hand joystick	•
Front working light	•
Rear storage area	•
Sound level in cab	78 db(A)
Air-conditioning	(option)
Stereo USB radio	(option)
Heated and air suspended seat	(option)

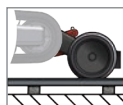


WORKING CONDITIONS

- On horizontal, compact ground
- Equipment used without offset
- Without tool (bucket, shovel...)
- With handling plate and loading hook of 3.2 MT [A] : minus 110 lbs (50 kg) to each values
- With Mecalac quick-coupler + lifting hook: 3.3 MT [B] (except area Z)
- With 2 ft (600 mm) bucket (C): 397 lbs (180 kg) to be deducted from shown values
- The lifting device must not rub on a sharp edge
- The lifting device must not act on the locking lever of the lifting hook
- With rubber tracks 1.5 ft (450 mm)
- Maximal 75% of the tipping load or 87% of the hydraulic capacity
- Maximum values determined for optimal position of boom and cylinders



Machine on tracks



Machine hi-rails engaged

MACHINE ON TRACKS WITHOUT INCLINATION

All the weights are given in lbs. Calculations are carried out for the entire range of Mecalac quick couplers.

HEIGHT OF THE LIFTING POINT	RADIUS OF THE LIFTING POINT									
	6.6 ft		9.8 ft		13.1 ft		16.4 ft		19.7 ft	
	0°	360°	0°	360°	0°	360°	0°	360°	0°	360°
16.4 ft	4409	4409	4409	3968	2976	2315				
9.8 ft	5071	4850	4850	3738	2866	2205	1764	1433	1213	992
4.9 ft	5071	4850	4189	3417	2535	1874	1653	1323	1213	882
0 ft	5071	4850	3968	2976	2205	1764	1543	1213	1102	882
-3.3 ft	5071	4850	3748	2646	2205	1653	1433	1102	1102	882
-6.6 ft	4409	4409	3086	2646	1984	1653	1433	1102	1102	882
-9.8 ft	4409	4409	2205	2205	1213	1213	882	882		

MACHINE ON HI-RAILS WITHOUT INCLINATION

All the weights are given in lbs. Calculations are carried out for the entire range of Mecalac quick couplers.

HEIGHT OF THE LIFTING POINT	RADIUS OF THE LIFTING POINT									
	6.6 ft		9.8 ft		13.1 ft		16.4 ft		19.7 ft	
	0°	360°	0°	360°	0°	360°	0°	360°	0°	360°
16.4 ft	4409	4409	4409	4409	3527	2646	-	-	-	-
9.8 ft	5732	5732	4630	4299	3527	2646	2910	1698	2425	1213
4.9 ft	6173	6173	4630	4189	3738	2425	2866	1698	2425	1102
0 ft	6173	6173	4630	3638	3968	2205	2866	1543	1984	1102
-3.3 ft	5291	5291	5071	3307	3307	2094	2425	1433	1653	1102
-6.6 ft	4409	4409	3086	3086	1984	1984	1433	1433	1102	1102
-9.8 ft	4409	4409	2205	2205	1213	1213	882	882	-	-

MACHINE ON HI-RAILS WITH INCLINATION ≤ 7° (7.1 IN)

All the weights are given in lbs. Calculations are carried out for the entire range of Mecalac quick couplers.

HEIGHT OF THE LIFTING POINT	RADIUS OF THE LIFTING POINT									
	6.6 ft		9.8 ft		13.1 ft		16.4 ft		19.7 ft	
	0°	360°	0°	360°	0°	360°	0°	360°	0°	360°
16.4 ft	4409	4409	4409	3968	3527	2315	-	-	-	-
9.8 ft	5732	4850	4630	3748	3527	2205	2910	1433	2425	992
4.9 ft	6173	4850	4630	3417	3748	1874	2866	1323	2425	882
0 ft	6173	4850	4630	2976	3968	1764	2866	1213	1984	882
-3.3 ft	5291	4850	5071	2646	3307	1653	2425	1102	1653	882
-6.6 ft	4409	4409	3086	2646	1984	1653	1433	1102	1102	882
-9.8 ft	4409	4409	2205	2205	1213	1213	882	882	-	-



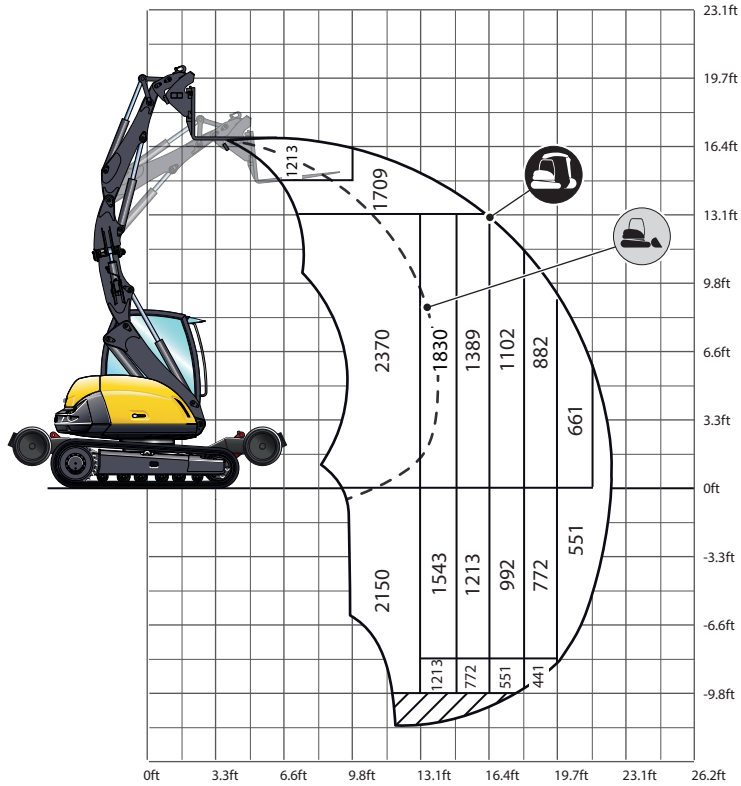
Working in longitudinal position on blade side



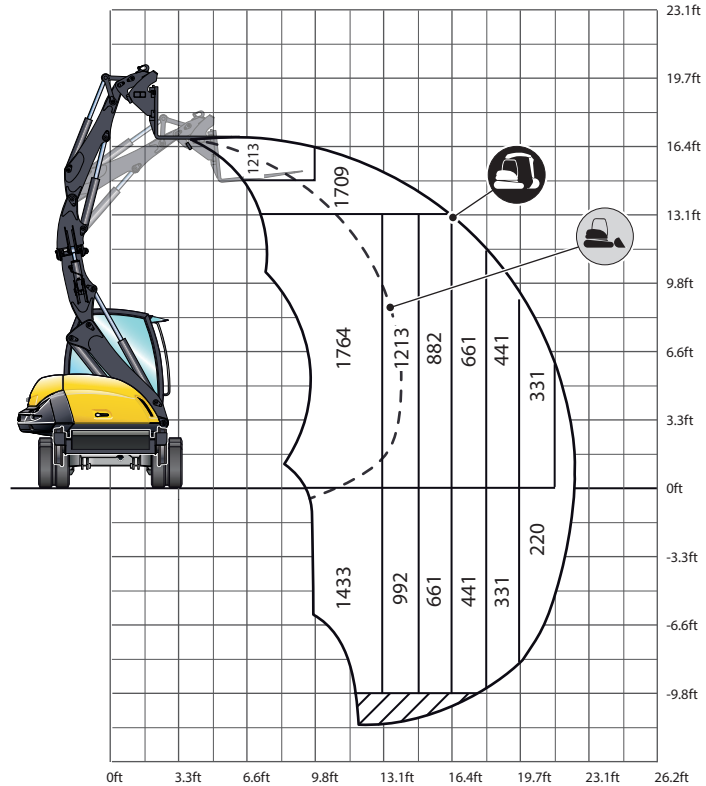
Working in transverse position

↓ LIFTING CAPACITY - PALLET FORK - MACHINE ON TRACKS



All values are given with U.S. Imperial units



Machine on tracks



Machine on tracks - 90° work

-  Lifting capacities in excavator mode
-  Lifting capacities in loader mode

WORKING CONDITIONS

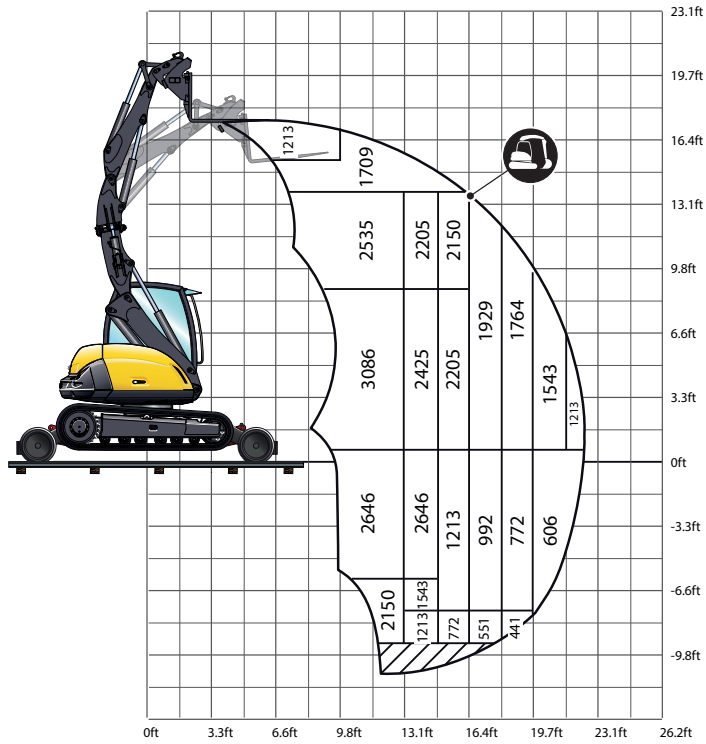
- On horizontal, compact ground
- Equipment used without offset
- Equipped with pallet fork
- boom equipped with 4 safety valves
- with 1702 lbs (772 kg) counterweight + 937 lbs (425 kg) additional mass

ACCORDING TO ISO 10567

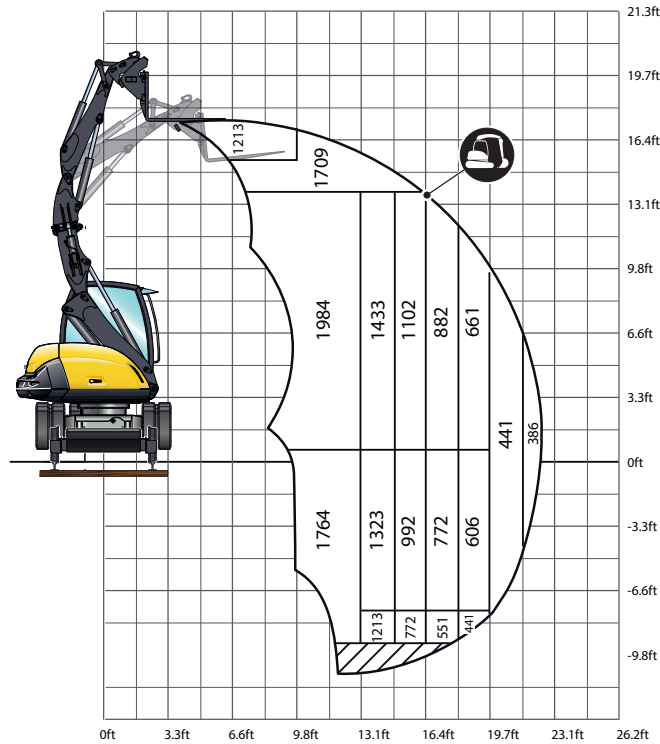
- Maximal 75% of the tipping load or 87% of the hydraulic capacity
- Maximum values determined for the most unfavorable position of booms and cylinders

↓ LIFTING CAPACITY - PALLET FORK - HI-RAILS ENGAGED

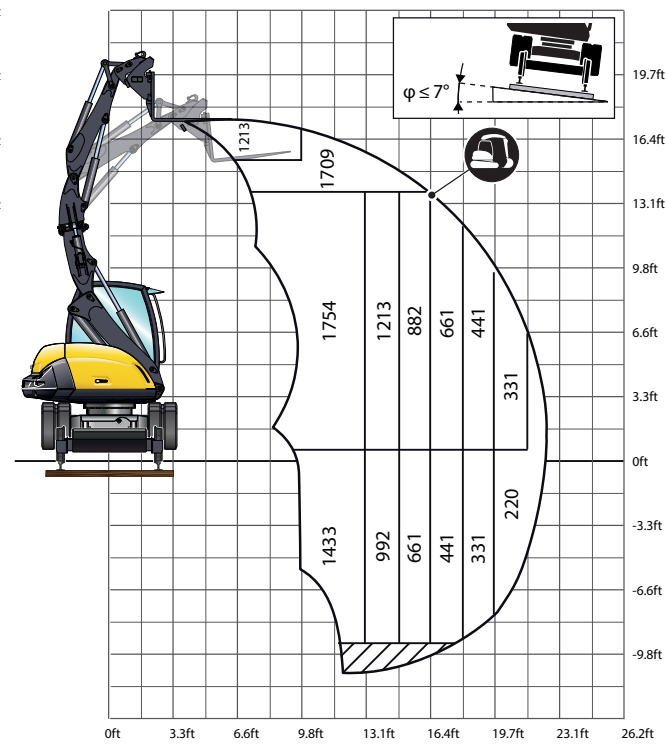
All values are given with U.S. Imperial units



Lifting capacity - Hi-Rails Engaged



Lifting capacity - Hi-Rails Engaged, 90° working without inclination



Lifting capacity - Hi-Rails Engaged, 90° working with 7° inclination 7.1 in (180 mm)

WORKING CONDITIONS

- On horizontal, compact ground
- Equipment used without offset
- Equipped with pallet fork
- boom equipped with 4 safety valves
- with 1702 lbs (772 kg) counterweight + 937 lbs (425 kg) additional mass

ACCORDING TO ISO 10567

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



Pettibone/Traverse Lift, LLC

1100 Superior Ave.
Baraga, MI 49908
Tel: +1 906-379-4529

gopettibone.com