

CRAB 1800E



MAX DRAW BAR PULL: 18 kN

MAX CAPACITY: 360 t*

RAIL MOTOR: 12 kW , 80 V - AC

MAX RAIL SPEED UNLOADED: 5 km/h

MAX RAIL SPEED AT MAX LOAD: >2 km/h

WEIGHT: 4,0 t

DIMENSIONS (LxWxH): 2180x1830x1550 mm

GAUGE: 1435 mm

(*) max performance on dry, flat and straight rail

CRAB 1800E Standard Description

COMPACT ROAD-RAIL SHUNTER (W 2200 mm x L 1830 mm), able to transversally enter/exit from track side, without any maneuvering, in a quick and easy movement.

RAIL MOTOR: Electrical type, 12 kW, 80V A/C. The motor corresponds to the norm C.E.I. 2-3 fasc.355 for the electrical rolling machines, EN 50081-1. Electromagnetic compatibility and 89/336/CEE. Motor performance may vary depending on altitude and temperature.

AXLES: Heavy duty double central reduction with conical gleason gear-pair.

RAIL WHEELS: **Large diameter** (520 mm rolling diameter) Zephir patented wheels with steel guidance flange and replaceable high traction rolling surface ensures top of class performances. **All the weight of the machine is equally distributed on the 4 rail wheels**, granting maximum safety while passing on rail switches, transfer tables' gaps or tight curves.

BATTERY: Industrial type, in heavy duty metallic body, centralized refilling system, each element is fitted with visual floater indicating the liquid level, 80 V, 350 Ah. The battery is designed to be easily replaced by the side of the CRAB with the use of a simple fork lift truck, or handled through its lifting eyes.

SERVICE BRAKE: Fully proportional hydraulic powerbrake system with 2 independent circuits, one per each axle. 1,5 kW motor-driven pump equipped with 1 safety Nitrogen accumulators granting full powered brake capacity even in case of failed pump. 4 drum brakes self-regulated, diameter 250 x 40 mm. Additional electric regenerative motor brake.

PARKING/EMERGENCY BRAKING: Electromagnetic, mechanically spring applied brake on the electric motor. Braking torque is multiplied by the heavy reduction ratio of the axles, and brake safety is maximized by the equal action on the 4 rail wheels loaded with all the weight of the machine.

TRACTION CONTROL SYSTEM: High efficiency inverter, with speed control, hour-meter, regenerative brake, alarm logger, parameter modification (through optional programming console).

DISPLAY: Multifunctional user friendly digital display. Main functions :

- Battery charge level;
- Hour-meter.

BODY WORK: Metallic type, thick frontals in quality steel (S275J0 according the European norm EN 10025). Easy maintenance due to large access on the upper part and both sides.

COUPLER: According customer specifications. Possibility to fit multiple couplers on the same machine.

BATTERY CHARGER: High performance 80V, 60A (complete charging time <8h) integrated and positioned inside the chassis, equipped with alarm lighting/acoustic signaling.

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Equipment according standard 89/336/CEE dated 03/05/89 (Electromagnetic Compatibility) and the successive modifications.

The vehicle is equipped with charging connection with a safety system to prevent moving the vehicle while charging the battery.

Supply connection through IEC309 industrial socket (3 poles + ground / max 32 A).

ROAD MODE: This system allows the machine to be moved in road mode thanks to a special hydraulically activated lifting/lowering system.

In road mode the machine is powered by a steering motorwheel with a 80 V, 2 kW AC electric motor.

A **rabbit / turtle** switch incorporates two levels of programmable travel performance so operators can select the setting that matches their experience level or application requirements.

Thanks to the extremely compact dimensions and the great steering, the **turning radius is 1,5 m using the tiller and 2,5 m using the remote control (remote control in road mode is available as option).**

The automatic speed reduction control in curve allows maximum driving control during tight maneuvers.

Smooth rail track crossing, and significant shock reduction caused by road irregularities is achieved thanks to the **suspension system** operated by precharged Nitrogen accumulators.

Electric regenerative service braking system is performed by the high-torque AC traction motor. Braking torque is multiplied by the reduction ratio of the motorwheel.

Parking/emergency brake is electromagnetic failsafe type, acting on the steering wheel.

The braking system uses the power of the high-torque AC traction motor to stop the machine and keep it static until a travel input is requested, even when operating on an incline.

An automatic parking brake activates if the machine is stopped, the operator leaves the driving handle or power is disconnected.

REMOTE CONTROL: Ventral type complete with ergonomic belts with large regulations, 10 mW radio. The remote control has the following controls:

- fully proportional brake;
- acoustic signal;
- direction selector;
- fully proportional accelerator;
- emergency stop button with reset;
- regulation control for coupler's height;
- coupler's opening and closing control;
- angle/tilting detection on the transmitter;
- vigilance system;
- stand-by function.

The kit is delivered complete with no. 2 batteries and the battery charger.

RAIL SIGNALLING LIGHTS: Each rail front of the machine is equipped with red and white direction movement signaling lights with memory function.

EMERGENCY BUTTONS: Easily accessible, reset required to restart the machine. Road driving handle equipped with dedicated inversion movement function safety push button.

ORANGE BEACON LIGHT: Signaling movement of the machine.

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PAINTING PROCEDURE:

- Sandblasting SA 2,5,
- PRIMER EPOXIC painting, thickness 80 microns,
- Polyurethane RAL variable enamel 40 microns,
- Final dry thickness 100/120 microns.

CRAB 1800E Standard Description

OPTIONS

Ground operator safety remote control with dedicated receiver / battery charger and spare battery

Sil3 remote control certified

Cable controls (functions: Fw/Rev/Brake/Emergency brake/Horn)

Interlock safety remote control system (4 channels) including transmitter (installed on UWL) and receiver (on board the machine)

Interlock safety remote control system (9 channels) (bi-directional for UWL) including transreceiver (installed on UWL) and transreceiver (on board the machine)

Photocell safety barrier: 2 photocells and 10 pads, automatically stops the machine in a certain set distance

Different rail gauge measures

Pin type connector single stage (plate and pin)

Pin type connector four stage (plate and pin)

Pre-arrangement for coupler supplied by the customer

Electric winch

ZEPHIR automatic coupler

Hydraulic slide

UIC hook

AAR coupler (short version)

Tow bar

Semi permanent bar

Rubber buffers

Mechanical locking transmission for rail mode (locked differentials granting 4WD capacity)

Rail track short-circuiting signalling system (permitting the visibility of the vehicle for the control/safety systems)

Arctic Pack: electronic comps., hyd. oil tank, oil filters, battery are heated with dedicated heating resistors in order to keep the temperature over the allowed limit of - 20°C.

Led working lights

CRAB 1800E Standard Description

Foldable Driver Platform: allows easy travel in road mode in long aisles or open spaces.



Extra capacity battery: 420Ah, 80V (replaces the standard 350Ah, 80V battery) industrial type, in heavy duty metallic body, centralized refilling system, each element is fitted with visual floater indicating the liquid level. The battery is designed to be easily replaced by the side of the CRAB with the use of a simple forklift truck, or handled through its lifting eyes.

Customized painting

Other options available on demand

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STANDARD SAFETIES

HAND BRAKE INSERTION

In case of low oil pressure in the braking system, the emergency brake is automatically inserted.

FLASH LIGHT

Activated every time the CRAB is in motion.

BUZZER

In rail mode the buzzer is activated when the remote control is used.

EMERGENCY BUTTONS

On the CRAB perimeter there are 4 buttons which can activate the following functions:

- Emergency braking;
- Hand brake locking;
- Engine stop.

VEHICLE STOPPING

If road wheels lower from their position during rail mode, the CRAB is automatically stopped.

ANTI-INVERSION SYSTEM

The system prevents the insertion of a reverse gear when the machine is still in movement. The gear is enabled only once the machine is stopped.

SAFETY AGAINST MOVEMENT WHEN THE CRAB IS ON CHARGE

A dedicated safety switch prevents the machine to be moved during the charging.

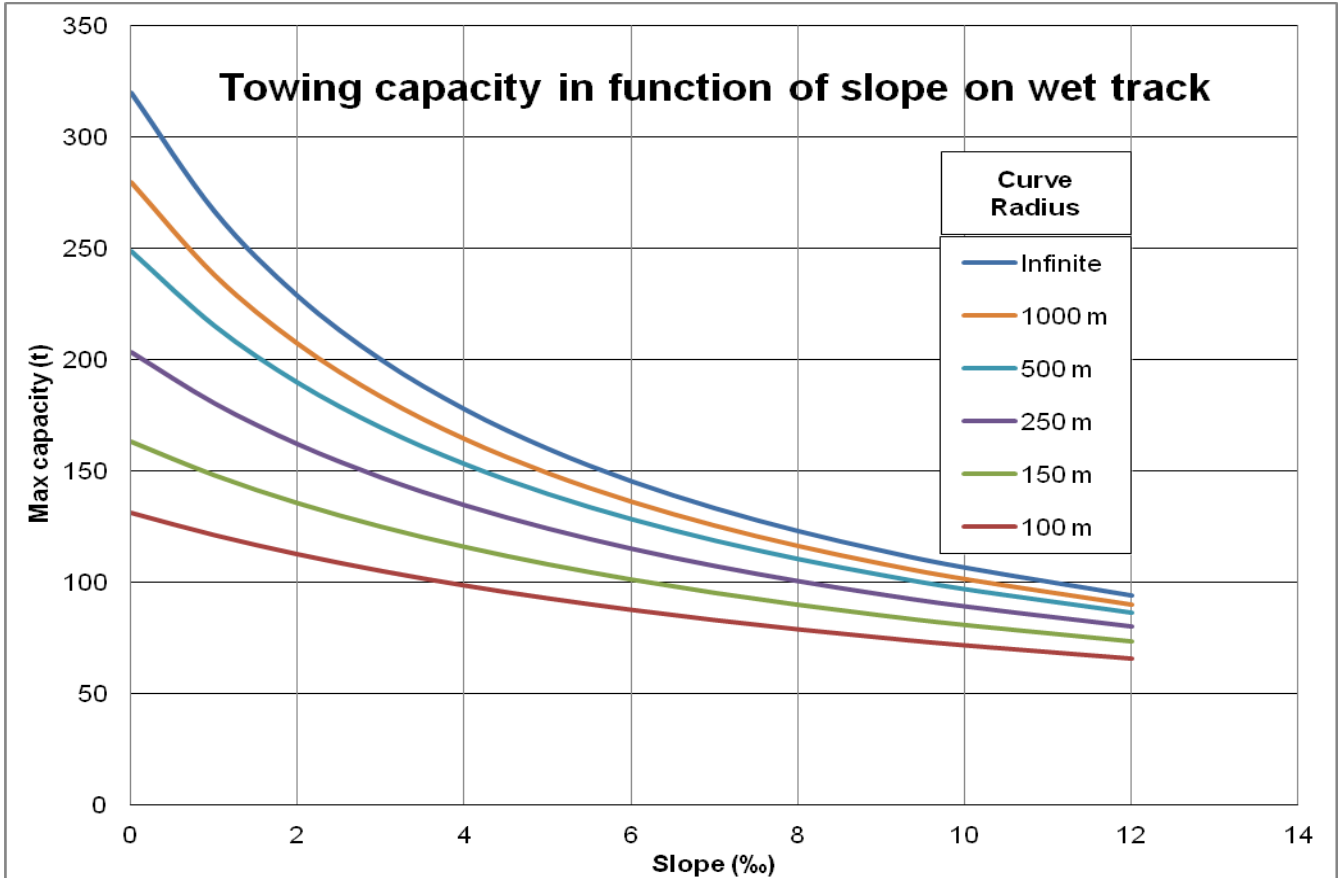
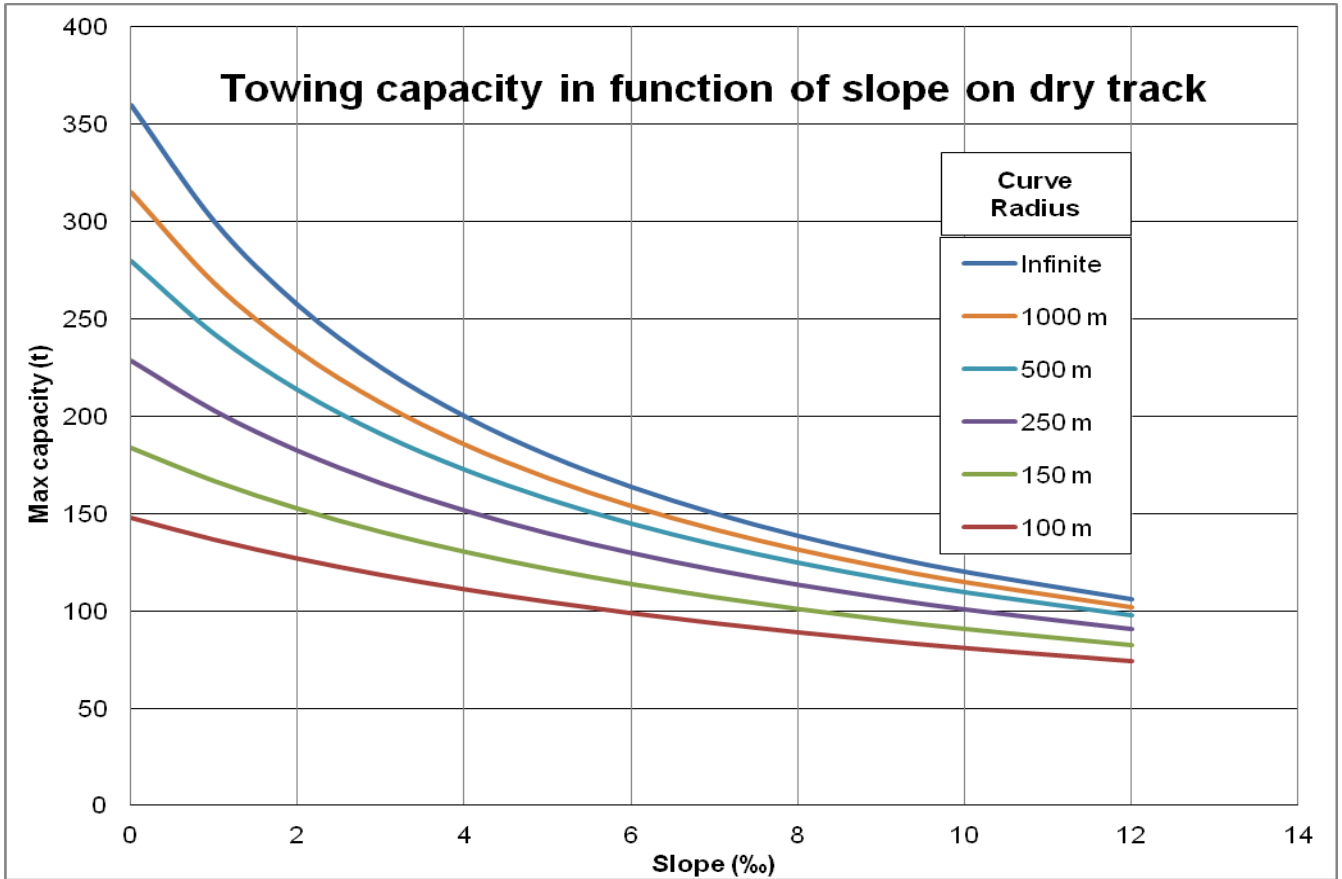
RECOVERING THE MACHINE

In case of failure, the parking brake can be released to recover the machine by hand pump.

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REFERENCE PARAMETERS USED FOR THE DIAGRAMS

Rolling Resistance

5 [kg/t]

Slope Resistance

1 [kg/t] per 1 ‰

Curve Resistance

750/radius [m] [kg/t]

Dry Track Rail Wheels Friction

72%

Wet Track Rail Wheels Friction

40%