

# THE LOK



The “LOCOTRACTOR” model LOK is a rail/road Diesel vehicle in accordance to latest CEE rules among which both antipollution and antinoise ones, whose extraordinary versatility cuts down the time taken for rail movements.

LOK can be on road and off-tracked at any point, even in strict areas, in one easy and quick manoeuvre. This vehicle can also cross rails to make cross-terminal movements quickly and efficiently.

LOK can be transported easily on highway trucks, on railway freight wagons as it conforms to European clearance gauges.

Components used in its manufacture are of well-known international makes, and spare parts are easily available.

LOK guarantees higher performances than traditional shunting locomotives, notwithstanding its lower weight and dimensions.

# **LOK 22.520**

**DRAW BAR PULL: 230 kN**

**MAX TOWING/PULLING CAPACITY: 4.600 t \***

**ENGINE: 362 kW, 485 HP**

**MAX SPEED: 25 km/h (limited speed)**

**WEIGHT: 40 t**

**DIMENSIONS (LxWxH): 7400x2500x3664 mm**

**GAUGE: 1435 mm**

\*max capacity on flat, straight and dry rail

## LOK 22.520 Standard Description

---

**ENGINE:** CUMMINS, Tier 3/Stage IIIA, Diesel engine, 6 cylinders in line, water cooled, total displacement 15 litres, rated power 362 kW (485 HP) at 2.100 rpm, maximum power 387 kW (519 HP) at 1.800 rpm, maximum torque 2.222 Nm at 1.400 rpm.

As option: CUMMINS Diesel engine, Tier 4(i)/Stage IIIB, 6 cylinders in line, water cooled, total displacement 14,9 litres, rated power 336 kW (450 HP) at 2.100 rpm, maximum power 373 kW (500 HP) at 1.800 rpm, maximum torque 2.305 Nm at 1.400 rpm.

As option: CUMMINS Diesel engine, Tier 4(f)/Stage IV, 6 cylinders in line, water cooled, total displacement 11,8 litres, rated power 383 kW (513 HP) at 1.900 rpm, maximum power 383 kW (513 HP) at 1.800 rpm, maximum torque 2.299 Nm at 1.400 rpm.

As option: CUMMINS Diesel engine, Tier 4(f)/Stage V, 6 cylinders in line, water cooled, total displacement 11,8 litres, rated power 383 kW (513 HP) at 1.900 rpm, maximum power 383 kW (513 HP) at 1.900 rpm, maximum torque 2.300 Nm at 1.400 rpm.

**TRANSMISSION:** Powershift DANA SPICER (CLARK), assembled on block to the thermal engine, 4 forward gears + 4 reverse gears with torque converter, semi-automatic electric gear control with anti-inversion safety device.

**AIR FILTER:** DONALDSON with double cartridge and electric clogging indicator.

**FRONT AXLE:** Heavy duty, steering type, double reduction, with gleason differentials and epicyclical final drive on the wheels.

**REAR AXLE:** Heavy duty, double reduction, with gleason differentials and epicyclical final drive on the wheels.

**SUSPENSIONS:** Front and rear suspensions with semi-elliptic leaf springs, width 100 mm.

**DRIVING:** DANFOSS hydrostatic type, acting on the front wheels through 2 double-effect hydraulic cylinders, oil tank with filter hydraulic gear pump assembled on the engine.

**BRAKING:** With 2 independent hydraulic circuits, one on the front and one on the rear axle, hydraulic pump flanged on the engine, 3 safety accumulators able to effect 6 full powered brakes even if the hydraulic pump is out of order. 4 disc brakes diameter = 510 mm with 4 calipers on the front axle and 6 calipers on the rear axle, brake pads with wear and tear indicator.

**PARKING BRAKE:** Mechanical type with negative acting, antagonist spring, working on an independent disc assembled on the transmission.

**WHEELS:** Pneumatic interchangeable tires 14.00-24.

**BODY WORK:** Monobloc type, made of thick sheet-steel making a unique ensemble with the chassis, of a great strength.

## LOK 22.520 Standard Description

---

**CABIN:** Metallic cabin, completely closed and assembled on “Silent block” , wide and stratified windscreen with safety sliding glasses. Rear glass with heater, unique rear door, 2 sun-protecting tongues, green antiglare strip, heating and summer ventilation.

**ELECTRIC SYSTEM:** 24 Volts with 2 batteries of 12 V, 160 Ah each one. Alternator 80 A, 24 V.

**RAILWAY AXLES:** Lifting and floating type, with 8 wheels with a diameter of 400 mm in steel, assembled on conical bearings.

**FUEL TANK:** Metallic type having a capacity of 450 litres.

**STONECATCHERS:** installed on the front of rail wheels with adjustable height.

**EMERGENCY BUTTONS:** installed on the 4 sides of the vehicle and managed by an independent circuit with safety relays.

### ZEPHIR TRACTION ANTISLIP SYSTEM

### OPTIONS

**Operator remote control (rail mode only) with dedicated receiver / battery charger and spare battery**

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

**THEIMEG TECH/LO remote control according EN50239 (SIL3)**

**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 transceiver installed on UWL and transceiver on board the machine**

**Different rail gauge measures**

**In-railing video camera system (1 monitor and 2 video cameras)**

**Video camera system for coupler (available only with in-rail video camera system)**

**Pre-arrangement for coupler supplied by the customer**

**ZEPHIR automatic coupler**

**Hydraulic slide**

**UIC hook**

**AAR coupler with shock absorber**

**Tow bar**

**Semi permanent bar**

**Double hoses**

**Electric winch**

**4 steering road wheels system**

**Pneumatic braking system with 1540 liters/minute air compressor**

**Pneumatic braking system with 2200 liters/minute air compressor**

**Sanding system**

**On-rail presence magnetic sensor**

## LOK 22.520 Standard Description

---

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

**COMFORT RIGHT:** comfort steel cabin with rear door, heating and summer ventilation, driver seat on RIGHT side ONLY (D62dx)

**COMFORT LEFT 180:** comfort steel cabin with rear door, heating and summer ventilation, driver seat on LEFT side with second driver seat turned 180° on RIGHT side with rail commands only (D61sx+180dx)

**COMFORT RIGHT 180:** comfort steel cabin with rear door, heating and summer ventilation, driver seat on RIGHT side plus second driver seat turned 180° on LEFT side with rail commands only (D62dx+180sx)

**LUXURY LEFT:** thermal and acoustic polyester lining fabric, electrical sideview mirror with heater, rear window wiper, documents binder, fiberglass headlight support, fiberglass remote control cover, and bottle and glasses holder on LEFT side ONLY (C83sx)

**LUXURY RIGHT:** thermal and acoustic polyester lining fabric, electrical sideview mirror with heater, rear window wiper, documents binder, fiberglass headlight support, fiberglass remote control cover, and bottle and glasses holder on RIGHT side ONLY (D60dx)

**LUXURY LEFT 180:** thermal and acoustic polyester lining fabric, electrical sideview mirror with heater, rear window wiper, documents binder, fiberglass headlight support, fiberglass remote control cover, and bottle and glasses holder, driver seat on LEFT side plus second driver seat turned 180° on RIGHT side with rail commands only (C83sx+180dx)

**LUXURY RIGHT 180:** thermal and acoustic polyester lining fabric, electrical sideview mirror with heater, rear window wiper, documents binder, fiberglass headlight support, fiberglass remote control cover, and bottle and glasses holder Driver seat on RIGHT side plus second driver seat turned 180° on LEFT side with rail commands only (D60dx+180sx)

In-cab central rear view mirror (external left and right mirrors are included in std configuration)

Air conditioning system inside cabin

Passenger seat

Electro-pneumatic passenger seat

Electro-pneumatic driver seat

Transceiver predisposition only (12V, 10Ah, negative ground) with fuse

**Arctic Pack: electrically heated driver seat, kit special oils, hydraulic oil heating, extra heater in the cabin, heating of critical components (valves, electronic comps, etc)**

**Comfort pack: electrically heated driver seat, speed cruise control, triple speed limiter with extractable key control**

**SPF Soot Particulate Filter**

**Engine as per European std TIER-4i**

**Engine as per European std TIER-4f**

**Over pressure control system (included when machine is equipped with operator remote control)**

**Multi-unit system for connection of two vehicles in master-slave configuration**

**Customized painting**

**Hydraulic engine cover lifting system**

**4 RUD lifting eyes**

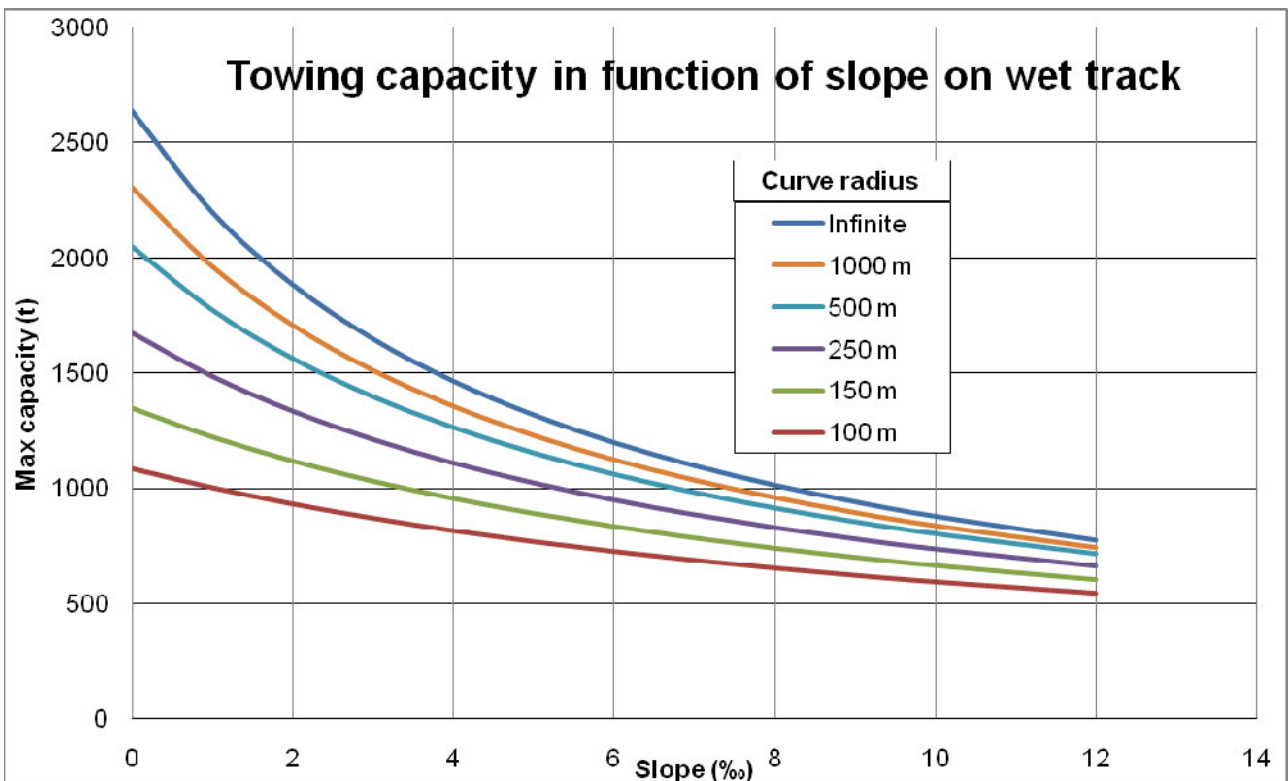
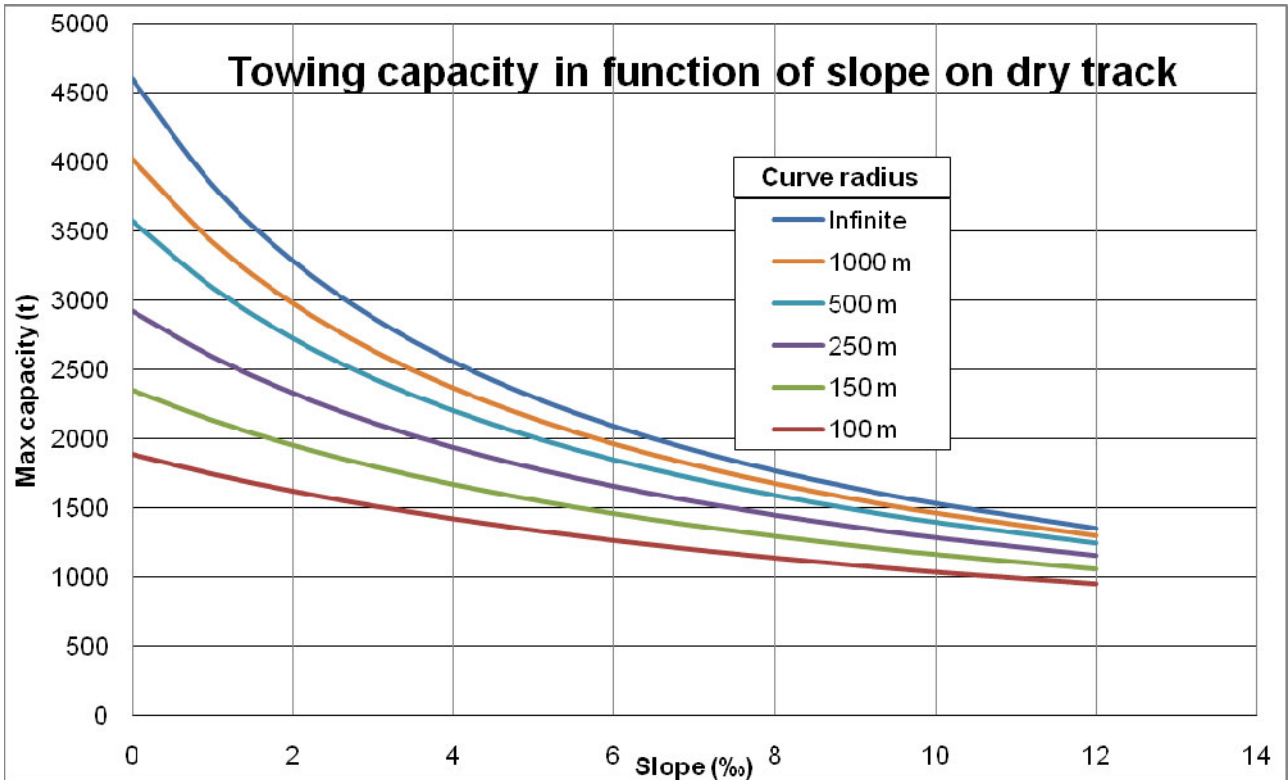
**Rescue kit: RUD lifting eyes, two emergency screws for rail boogie positioning, special flexible hose for emergency pneumatic connection**

**Spare wheel (Rim + tyre)**

**Additional Trojan refilling**

*Other options available on demand*







### 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%