



TECHNICAL BROCHURE

KGHM
ZANAM

LD9

4,3 M³ BUCKET VOLUME, 9 TON TRAMMING CAPACITY

UNDERGROUND LOADER FOR LOW PROFILE MINING TUNNELS



LD9 low-profile underground loader is designed for ore loading and ore handling in underground excavations of methane-free mines, and in the extraction of metal-containing ores or other mineral resources.

The loader is equipped with a **Cummins Euro 5** (Phase V) (**optional Deutz**) diesel engine that meets the latest and strictest European emission standard. Depending on customer requirements and applicable market standards, it is possible to reduce the CO₂ emission standard to Phase II.

DANA SPICER (USA) automatic **transmission** provides unparalleled transmission efficiency and controllability.

All four wheels, with **KESSLER (Germany)** axles, are equipped with spring-loaded, hydraulically released, normally closed wet multi-disc brakes. These brakes, in conjunction with an automatically controlled hydraulic retarder to support braking, provide the vehicle with excellent braking performance.

Thanks to its robust welded structure and special paint coating, the machine has enhanced resistance to demanding underground applications where high performance and excellent efficiency are required.

The '**capsule**' type cabin provides **protection** against vertical impacts with energies up to 60 kJ, **five times higher than the standard requirement worldwide**. The machine is **ROPS and FOPS** certified.

CAPACITIES	
Standard Bucket Volume *1	4.3 m ³
Loading	9,000 kg
Max Breakout Force, Lift	140,000 N



DIMENSIONS	
Total Length	10,400 mm
Width - over the bucket	2,950 mm
Width - over the cabin	3,300 mm
Height - top of cabin	1,750 mm
Height - with the bucket fully raised	4,600 mm
Ground Clearance	310 mm

MOVING TIMES	
Boom Lifting and Unloading	5,5 second
Boom Lowering	4,5 second
Machine Full Rotation	3,0 second

SPEEDS (FORWARD – BACKWARD)	
Speed (1st Gear)	4.0 km/h
Speed (2nd Gear)	8.0 km/h
Speed (3rd Gear)	13.0 km/h
Speed (4th Gear)	18.0 km/h

WEIGHTS	
Working Weight	30,300 kg
Loaded Weight	39,300 kg
Front Axle (Unloaded)	15,200 kg
Rear Axle (Unloaded)	15,100 kg
Front Axle (Loaded)	28,500 kg
Rear Axle (Loaded)	10,800 kg

* Weights may change depends on options

WHEELS	
Tire Dimensions	23.50-R25 L-5 Tubeless Goodyear

TANK CAPACITIES	
Fuel Tank	390 liters
Working Hydraulic Oil Tank	390 liters

ENGINE	
Model	CUMMINS B6.7 C225
Power	168kW@2200rpm
Max Torque	1186Nm@1300rpm
Cylinder	In Line 6
Electric	24 V
Control	Electronic fuel injection
Cooling System	Extreme liquid cooling system Copper body
Emission	Stage V (Euro 5)
Air Intake	Dry air filter with pollution sensor inside the cabin
Exhaust System	DOC / DPF / SCR + AdBlue

TRANSMISSION	
Torque Converter	
Brand	DANA
Model	C-5400
Features	Single-phase Single-stage Flexible plate
Gearbox	
Brand	DANA
Model	RT14400
Features	Automatic Under-load changeable Modulating Four gears (forward and reverse)

AXLES	
Brand	KESSLER
Front Axle	Model: D102 SAHR Limited Slip - Posi-Stop Emergency - parking brake (HAP)
Rear Axle	Model: D102 SAHR Limited Slip - Posi-Stop Emergency - parking brake (HAP) Oscillation ±10°

CHASSIS	
Front and Rear Frame	Welded construction
Joint	Sliding bearing with vertical axis of rotation
Turn Angle	±40°



CABIN	
Type	Welded construction, Glazed, 'Capsule' type, Compression resistance up to 60kJ (FOPS)
Seat	Equipped with shock absorber, Headrest and 4-point seatbelts, type ZANAM BE-GE 9000 HD (certified)
Emergency Hatch	In the roof of the cabin
Noise Level	89,3 dB
Air Conditioning	Up to 50°C, evaporator in the cabin
Gas Protection	Optional
Indicators, Meters	Mass disconnecter Odometer Oil loss Work hours

HYDRAULIC WORKING SYSTEM	
Pump Type	Gear
Pump Element	Hydraulic controller
Stabilization System	Piston accumulator
System Pressure	210 Bar



STEERING HYDRAULIC SYSTEM	
Pump Type	Gear
Pump Elements	Turning distributor, Distributors and valves
Steering Elements	Steering wheel HYDROMAR hydraulic cylinder, temp. up to 120°C
System Pressure	140 Bar

HYDRAULIC BRAKING SYSTEM	
Pump Type	Gear
Service brake	With disconnection of transmission drive while braking
Performance element	Multi-plate, Wet brakes in hubs (POSI STOP)
Emergency - Parking Brake (HAP)	Electrically activated Initiated by opening the operator's door
Power Maintain System	Hydro-accumulators Braking valve, Battery's charging valve
System Pressure	125 Bar

HYDRAULIC SYSTEM	
Hoses Type	MANULI, 4-spiral steel wire, over 20 DN Metric system
Hydraulic Hoses Temp. Resistance	100°C / 120°C
Hydraulic Cylinders in Turning and Working System	Maintenance-free, Anti-corrosion protection, Seals resistance up to 90°C
Oil Filtration	Drain and high-pressure filters FILTREC FD

ALLOWED WORKING CONDITIONS	
Longitudinal Angle	±15°
Transverse Angle	±8°
Ambient Temperature	Max 55°C

CENTRAL LUBRICATION SYSTEM	
Elements	Pump with grease container providing automatic lubrication Progressive system
Lubrication Points	Pin connections of the working system Turning system Frame articulation Suspension of rear axle

ELECTRIC	
Batteries	2 * 12V, 185 Ah EXIDE brand – Acid type
Alternator	24 V
Lighting	LED type Road, working and parking
Directional Lights	Red / green
Protection Degree	IP-54, modular with high resistant protection
Temperature Resistance	Wires min 90°C
Wires Insulation	In critical areas are used protective, flame retardant, non-toxic hoses on wires with resistance 140°C -180°C
Additional Protection	Fuses on wire by batteries



VISION AND MONITORING SYSTEM	
Cameras	1 pc front right 1 pc rear right
Monitors LCD	2 pcs in the cabin

EMERGENCY SYSTEMS	
Emergency Towbar	Optional
Emergency Buttons	2 pcs on the machine body 1 pc inside the cabin

FIRE SUPPRESSION SYSTEM	
Brand	ANSUL
Type	Check Fire 210 with LVS (wet/dry system)
Fixed fire suppression system activated automatically with detection system or manually by initiators located 2 pcs on the machine body and 1 pc inside the cabin	

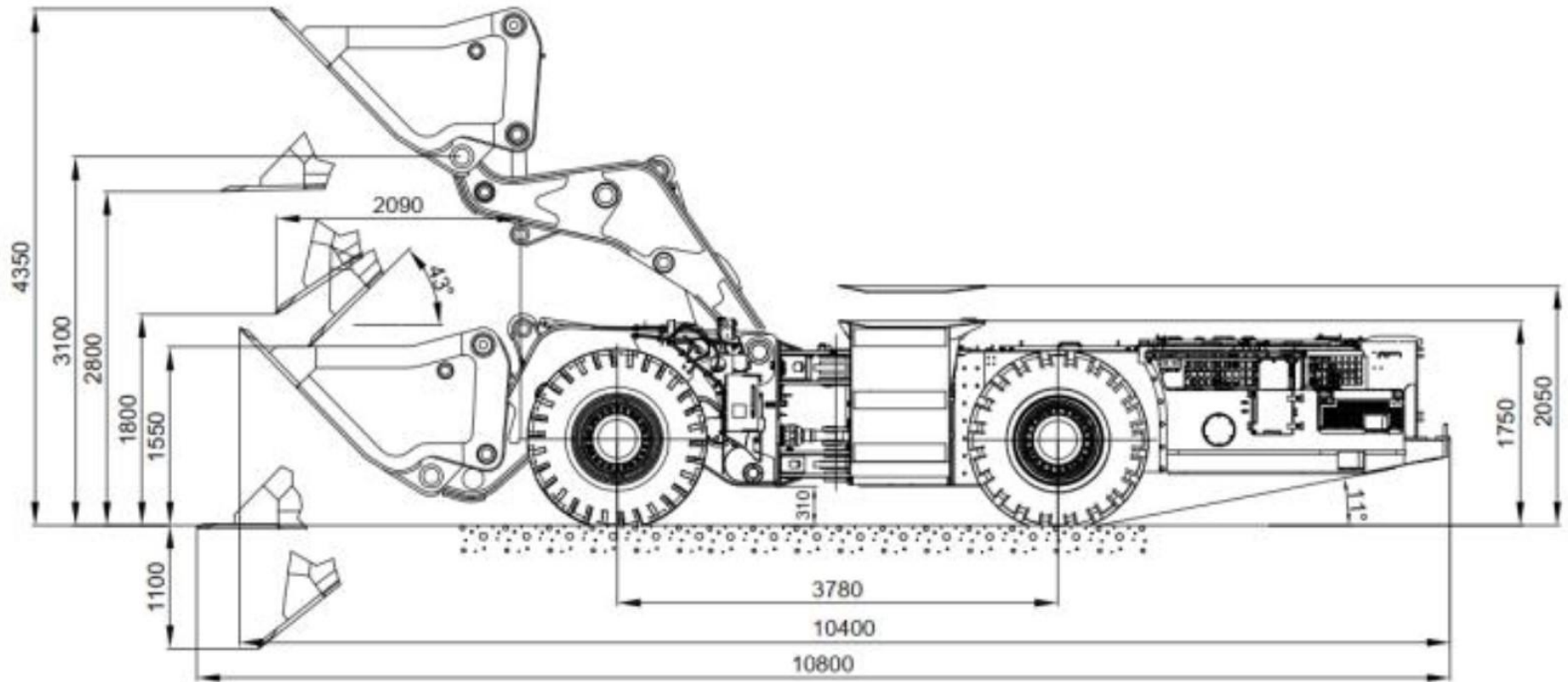
OPTIONAL ENGINE	
Model	CUMMINS B6.7 – C225
Power	168kW@2200rpm
Max Torque	1186Nm@1300rpm
Cylinder	In line 6
Electric	24 V
Control	Electronic fuel injection
Cooling System	Water cooling
Starter	5.5 kW motor
Air Intake	Dry air filtration Prefiltration Two stage filtrations
Exhaust System	DOC + catalytic converter + exhaust gas separator (without AdBlue)

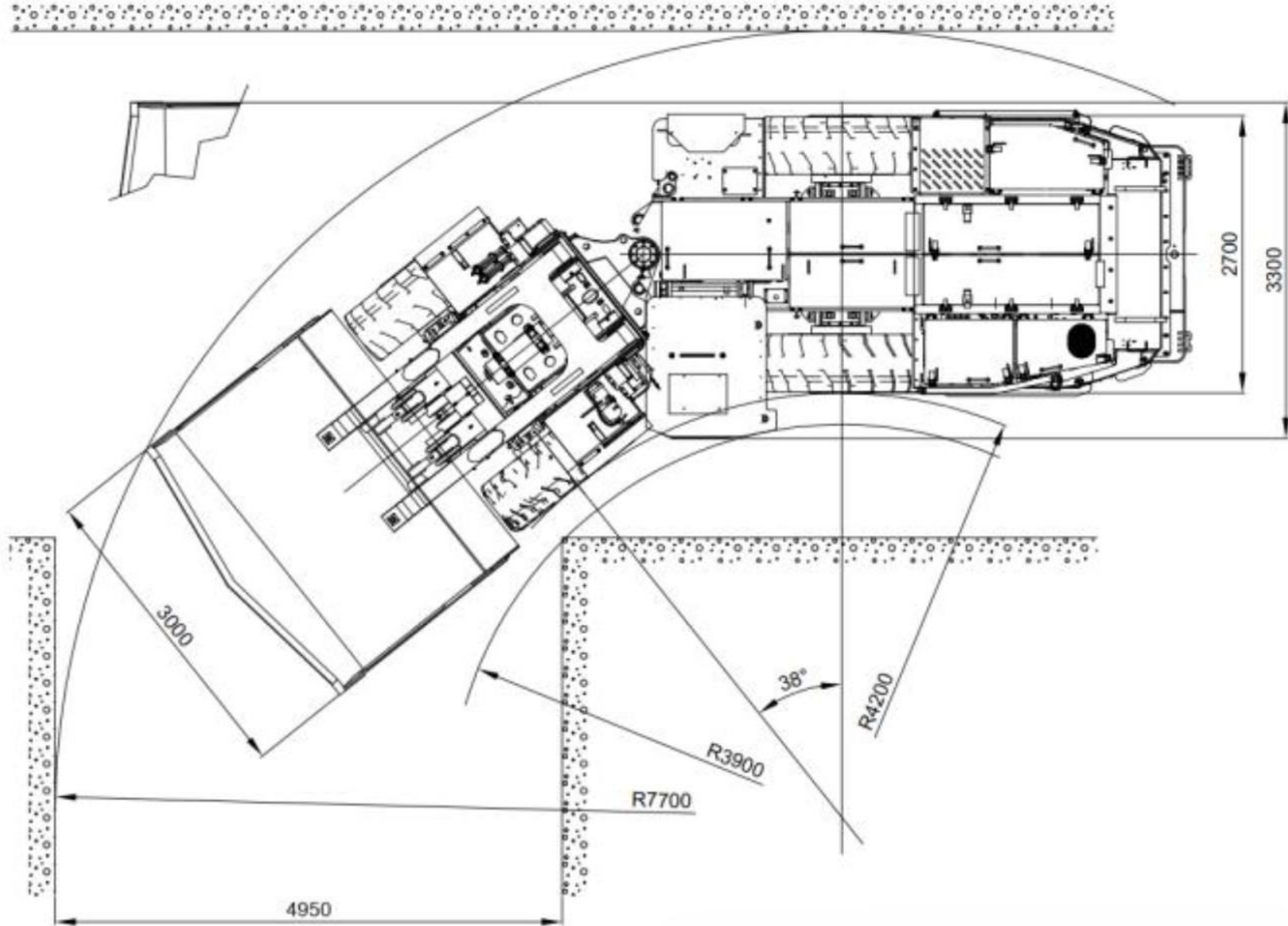
OPTIONS	
Push plate for bucket	
* ¹ With this option, the bucket volume becomes 4 m ³	
Automatic central lubrication system	
Automatic dry powder fire suppression	
Emergency towbar	
G.E.T. (ground-holding devices) (cast iron)	
Air conditioner (with heating and cooling functions)	
Gas protection system	
Different Tires	20.5 R25 Goodyear
	20.5 R25 Bridgestone
	18.0 R25 Michelin (+50mm)
	18.0 R25 Goodyear (+50mm)

DOCUMENTS	
User manual (Turkish - English)	
Maintenance manual (Turkish - English)	
Spare parts manual (Turkish - English)	



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