



Terms of reference for the manufacture of a self-propelled underground machine for concrete delivery

Parameters

Geometric characteristics of mine workings

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|---------------------------------|---------|
| Height of mine working: | 4020 mm |
| Width of mine working: | 3440mm |
| Turning width (T-section): | 3500mm |
| Maximum slope of inclined exit: | 14 ° |
| Pavement: | Rock |

Environmental properties

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| Air temperature, °C | 10 |
| Deposit inundation (humidity), %: | 50 |
| Air supply: m ³ /min: | 6000 |
| Content of aggressive impurities in water, pH: | 5-7 |
| Carbonization: | No |
| Dust content: | 1.6 |

MACHINE SPECIFICATION AND EQUIPMENT

| | |
|--------------------------|--------------------|
| Length: | 9 000 mm |
| Height: | 2 500 mm |
| Width: | 2 000 mm |
| Tray discharge height: | 1 750 mm |
| Barrel unloading height: | 3 150 mm |
| Cabin height: | 2 400 mm |
| Barrel volume: | 4.5 m ³ |

Engine

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| Type of engine: | Radiator cooled diesel engine. Diesel emission standards Euro 3, Tier III |
| Air intake system: | Dry air filter |
| Exhaust system: | Catalyst, muffler |
| Starter voltage: 24 V | 24 V |

Transmission

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| Converter (Hydrotransformer): | Single-stage converter with lock-up converter |
| Transmission: | Hydromechanical gearbox, Three forward and three reverse gears |

Axles

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| Front axle: | Differential |
| Rear axle: | Balancer. Differential |

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| Tires | |
| Front wheels: | Tire size and type: 12.00x20 |
| Rear wheels: | Tire size and type: 12.00x20 |
| Braking system | |
| Design: | Multidisc spring brake (SAHR) |
| Service brake: hydraulic dual-circuit brake system of closed design on both axles multi-disc brakes in oil bath. | Hydraulic dual-circuit brake system of closed design on both axles multi-disc brakes in oil bath. |
| Safety/Parking Brake: | Reverse, normally spring-applied, hydraulic disengagement. |
| Performance | |
| Max. speed: | (loaded forwards/reverse, on a level road): 1st gear: 6 km/h 2nd gear: 12 km/h 3rd gear: 24 km/h |
| Maximum gradient: | 15° |
| Turning radius (internal): | 4 000 mm |
| Turning radius (outer): | 6 650 mm |
| Steering | |
| Steering | Hydraulic steering with articulated frame. |
| Angle of rotation of the frame joint: | ± 40° |
| Ковш | |
| Barrel | 4.5 m ³ , with hydraulic barrel lift |
| Electrical system | |
| Operating voltage | 24 V |
| Battery: | 2 x 12 V |
| Protection Class: | IP65 |
| Main and rear lights: | LED |
| Additional headlights and signal lamps: | LED |
| Sound and light reverse signaling: | Sound and light reverse signaling |
| Electrical wiring: | Wiring harnesses in fireproof and waterproof casing |
| Other: Battery switch | Battery switch |
| Operator's cabin | |
| Type of operator's cabin: | Closed cabin. ROPS / FOPS certificate |
| Operator seat: | Ergonomic seat with safety belt |
| Other: | Seat for mine self-rescuer. |
| Other: | Cabin air conditioning and heating system |
| Other equipment | |
| Safety: | Emergency stop buttons on the machine body |
| Washing system: | High pressure washer 150 bar |
| Option | Headlight protection grilles |
| Lubrication/Greasing system: | Central automated lubrication system |
| Fire extinguisher: | Portable fire extinguisher 2 x 8 kg |
| Information plates: | Warning signs and inscriptions in Russian and English. |
| Signal lights: | Amber flashing light beacon |
| Spare tire (with disk) | 2 pcs. |
| Fire extinguishing system: | Fire extinguishing system (manual / automatic) with automatic shutdown |
| Documentation: | 2 operating manuals and spare parts in Russian and |

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| | English; spare parts catalog on CD. |
| Emergency braking system: | Hydraulic brake release |
| Wheel blocks: | With brackets, 2 pcs. |
| CE certification, ROPS and FOPS certification, Tier 2 for underground works | ROPS and FOPS certification, Tier 2 for underground works. |