



QM-045 UNDERGROUND MINING PICK SCALER

QM-045 is a multifunctional underground mobile prying trolley, suitable for 3.30×3.30m mine tunnels. This underground mobile prying trolley, also known as roadway cleaning trolley, prying top vehicle, slag prying truck, and prying machine, is a product developed to replace manual prying operations with machinery (mechanization of prying operations). This equipment is mainly suitable for prying hair on roadways, tunnels, culverts, etc. in metal mines and various underground projects. It can quickly and effectively remove the relatively concealed work panels and two unstable floating rocks that are easy to fall and collapse after blasting operations. Prevent accidents from happening. QM-045 has been improved and upgraded on the basis of the original underground prying trolley, and the safety level has been further improved, making the operation and maintenance more smooth.

The whole machine adopts full hydraulic proportional pilot control, equipped with rotary oil cylinder and rotary hammer cylinder. The hammer head can be rotated up and down and left and right, so that the impact hammer can realize space three-dimensional striking; the working device adopts the rotary reducer device, which has compact structure, stable movement and overturning moment. The main arm horizontal swing range is 160°, and the working radius of the mane is wide; the rear end of the working mechanism adopts a translation mechanism, which can move the working mechanism horizontally to increase the impact range without moving the equipment. Through the unique working mechanism, the work surface, the top plate, the side sill and the bottom plate can be scaled in all directions.

The QM-045 scaler is equipped with double working positions, which are convenient for the operator to locate the working mechanism and the scaling. The slanting side position can be better for driving equipment in the underground roadway. The front shovel is integrated with the front body stabilizing legs to improve the stability of the scaling. In case of danger, the function of the legs can be quickly retracted and the dangerous conditions can be quickly evacuated. After changing the bucket, the drain can also be cleaned; after changing to the basket, it is also convenient for the staff to work at height.



MAIN SPECIFICATIONS

| | |
|-------------------------|--------------|
| Hammer impact energy | 300 J |
| Hammer impact power | 3-6 KW |
| Beat per minute | 700~1200 bpm |
| Hammer working Pressure | 90~120 bar |
| Rod Diameter | 45 mm |

SPEEDS FORWARD & REVERSE WITH Cummins QSF3.8-C99

| | |
|----------|-----------|
| 1st gear | 4.6 km/h |
| 2nd gear | 10.0 km/h |
| 3rd gear | 23.1 km/h |

WORK MECHANISM, OPERATION CAB

| | |
|---------------------------------|--------|
| Boom Oscillation Angle | ±80° |
| Hammer maximum working height | 7030mm |
| Hammer maximum working distance | 6110mm |
| Cab lift height | 400mm |
| Cab tilt angle | 25° |

MAIN SPECIFICATION

| | |
|--------------------------|----------------------|
| Total operating weight* | 13000 kg |
| Dimension | 7066mmx1800mmx2500mm |
| Min. Steering Radius | 6202mm/4118mm |
| Minimum Ground Clearance | 250mm |
| Grade ability | 14° (25%) |

*Unit weight is dependent on the selected options



OPERATIONAL CONDITIONS AND LIMITS

| | |
|-----------------------------|--|
| Environmental temperature | -15 °C~+50 °C |
| Standard operating altitude | With engine Cummins QSF3.8-C99 from -1500 m to +4000 m at 25 °C without rated power derate |

DESIGN STANDARD

| | |
|-----------------|---|
| MT/T199-1996 | General technical conditions for hydraulic drilling rigs for coal mines |
| JB 8518 | Underground loader safety requirements |
| GB25518 | Underground loader safety requirements |
| XYQB 004 - 2016 | Scaler trolley enterprise standard |

POWER TRAIN

ENGINE

| | |
|--------------------------------------|--|
| Diesel engine | Cummins QSF3.8-C99 |
| Output | Cummins QSF3.8-C99 |
| Torque | 420 Nm @ 1000-1600 rpm |
| Number of cylinders | In Line 4 |
| Displacement | 3.8 L |
| Cooling system | Water-cooled engine, radiator uses engine Drive cooling fan |
| Combustion principle | 4-stroke direct injection engine |
| Air filtration | Dry air filtration, pre-filtration + two-stage filtration |
| Electric system | 24 V |
| Emissions | Euro Stage III |
| Euro III certificate number | C3CI86A |
| Exhaust system | DOC+POC+Silencer |
| Average fuel consumption at 50% load | 7.4 L/h |
| Fuel tank capacity | 181L |

TORQUE CONVERTER, GEARBOX INTEGRATED

| | |
|-------------------------------|--|
| DANA 1201FT20321 | Shift buffer function Single-stage three-element, with hydraulic pump drive |
| Electric control transmission | three gears forward and reverse |

AXLES

| | |
|--|-----------------------|
| Front Axle | |
| SAHR | YR14 |
| Fixed | Standard differential |
| Rear Axle | |
| SAHR | YR14 |
| The rear axle swings, the swing angle is $\pm 8^\circ$ | Standard differential |

TIRES

| | |
|------------|------------------|
| Tire size | 10.00-20NHS-16 |
| Tire brand | TIANLI / QIANJIN |

HYDRAULICS

| | |
|-----------------------------|---|
| Hydraulic oil radiator | Maximum heat dissipation can meet $\leq 50^\circ\text{C}$ ambient temperature |
| Transmission oil radiator | |
| Fittings | JIC |
| Hoses | GB3683 |
| Hydraulic oil tank capacity | 276L |
| Sight glass for oil level | 1 pc |

STEERING HYDRAULICS

| | |
|---|--|
| Full hydraulic, centre-point articulation, power steering with two double acting cylinders. | Electro-hydraulic integrated handle Steering for hydraulic pilot control Shifting is electronically controlled |
| Steering main valve | Open circuit type |
| Steering hydraulic cylinders | 2 pcs |
| Steering pump | Gear type quantitative pump |

WORK HYDRAULIC SYSTEM

| | |
|------------------------|---|
| Control mechanism | Hydraulic control handle operation (breaker control is electronically controlled) 2pcs |
| Work mechanism type | Folding work arm (with translation function) |
| Slewing reducer | 1 pc |
| Boom cylinder | 1 pc |
| Second boom cylinder | 1 pc |
| Third boom cylinder | 1 pc |
| Rotary hammer cylinder | 1 pc |
| Rotary cylinder | 1pc |
| Push shovel cylinder | 1 pc |
| Outrigger cylinder | 2 pcs |
| Working main valve | Center open core type |
| Working pump type | Gear type metering pump |

BRAKES

Service brakes are spring applied; hydraulically operated multidisc wet brakes on all wheels. Brake system performance meets EN ISO 3450, AS2958.1 and SABS 1589 standards.

| | |
|-----------------------------|--|
| Characteristic | Working brake: hydraulic brake, spring release Parking brake: spring brake, hydraulic release |
| Brake hydraulic tank volume | Integrated with the hydraulic tank |

QM-045 cab provides a superior ergonomic operating environment, the cab is equipped with mechanical shock-absorbing suspension seats, 90° rotation, easy to change the operator's driving position and work position, equipped with two-point seat belt. The seat is adjustable up and down, front and rear.

The cab has passed ROPS/FOPS certification to protect the operator's safety. The cab has sufficient strength to prevent falling and rolling, and protect operator; the cab is equipped with a high-strength protective grille to prevent the flying stone from injuring the staff; the cab can be lifted up to a maximum of 400mm, and the cab can be tilted down overall (Maximum) 25 degrees, and equipped with variable-width work lights, the operator has a wider range of sight when working on the scaler; with spray system of the scaler, the dust generated by the impact hammer operation is eliminated, the field of view is clearer, and the content of harmful silicon particles in the air is greatly reduced.

CABIN

ROPS certification according to ISO 3471

FOPS certification according to ISO 3449

Open cabin

High-strength protective grille

Dry powder fire extinguisher

Full hydraulic pilot proportional control handle

Washable cab floor to reduce dust

Three-point access to the cab

All power circuit breaker power off switch

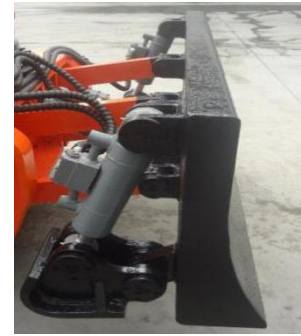
Mechanical suspension seat

Cab dashboard

The icon form panel makes it easier for the operator to identify the switch information of the alarm and have more time to look at the road and work.

Xingye Standard Intelligent Control System

| | |
|--------------------------|---|
| Warning and alarm system | Sound and light alarm prompt |
| dash board | Icon dashboard |
| | Full-featured knob and push button switch control |



Push plate, Outrigger

The front plate is integrated with the front body stabilizing legs. In case of danger, the vehicle can retract the leg and evacuate the dangerous condition. The plate adopts a parallelogram machine structure, which keeps the plate in a vertical state in the retracting process, so the scaler can clear the roadblock with different heights. The plate, left leg, right leg can be adjusted independently to keep stable on rough road condition; the plate also has support function like the leg at the same time, to increase the support area, and improve the stability of the body of the scaler.

Translation mechanism

Integration

Fast retraction

Independent adjustment control

Frame

Structure

The sturdy chassis features a newly designed high-strength steel frame that minimizes damage to the impact of the roadway wall; long service life; the rear-mounted large-capacity water tank can be used as an active counterweight to provide stability for equipment operations; High-strength alloy steel plate, optimized material thickness, reduced self-weight, improved overall transportation capacity, and long structural life.

The boom of the working mechanism is box-shaped and provides a strong impact load resistance and is optimized to reduce stress and extend boom life;

All articulation systems of the QM-045 are equipped with lubrication points and are equipped with a multi-door wraparound hood that is well designed, saves time and effort, is easy to maintain, and is durable.

| | |
|--|-------------------------------|
| Central articulation | adjustable bearing connection |
| Boom | Box structure |
| Grille door | Side opens |
| Automatic centralized lubrication system | Optional |

ELECTRICAL EQUIPMENT

MAIN COMPONENTS

| | |
|----------------------------|---|
| Alternator | 28 V, 35 A |
| Batteries | 2 x 12 V, 100Ah |
| Starter | 4 kW, 24 V |
| Driving and working lights | LEDlights 4PCS in front frame 2PCS inside the cabin 2PCS in the rear frame |
| Dual horn configuration | Standard |
| Rotation beacon | Standard |

INCLUDED SAFETY FEATURES

FIRE SAFETY

| | |
|---|----------|
| Portable fire extinguisher | 2kg 1PC |
| Centralized fire extinguishing system | optional |
| Hot side - cold side design | standard |
| Exhaust pipe insulation cotton protection | optional |

ENERGY ISOLATION

| | |
|--|----------|
| Lockable main switch | Standard |
| Manual discharge for pressure accumulators | Standard |
| Frame articulation locking device | Standard |

DOCUMENTATION

STANDARD MANUALS

| | |
|---------------------------|---------|
| Operator's Manual | English |
| Maintenance Manual | English |
| Parts Manual | English |
| Service and Repair Manual | English |
| Decals | English |

OPTIONS

SAFETY OPTIONS

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| Sight remote control system |
| Retrieval hook (hydraulic brake release by pulling the hook) |
| Ansul Manual Fire suppression system with auto shutdown |
| Emergency steering function |
| Remote control system |

Optional configuration of the electrical system

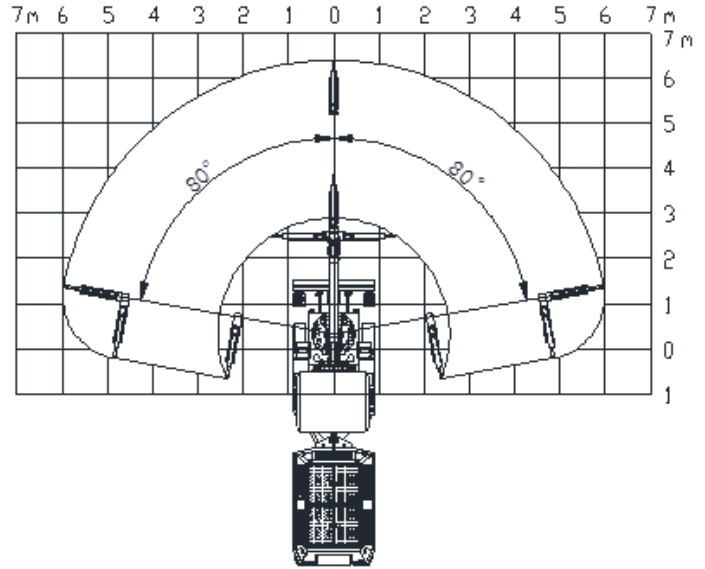
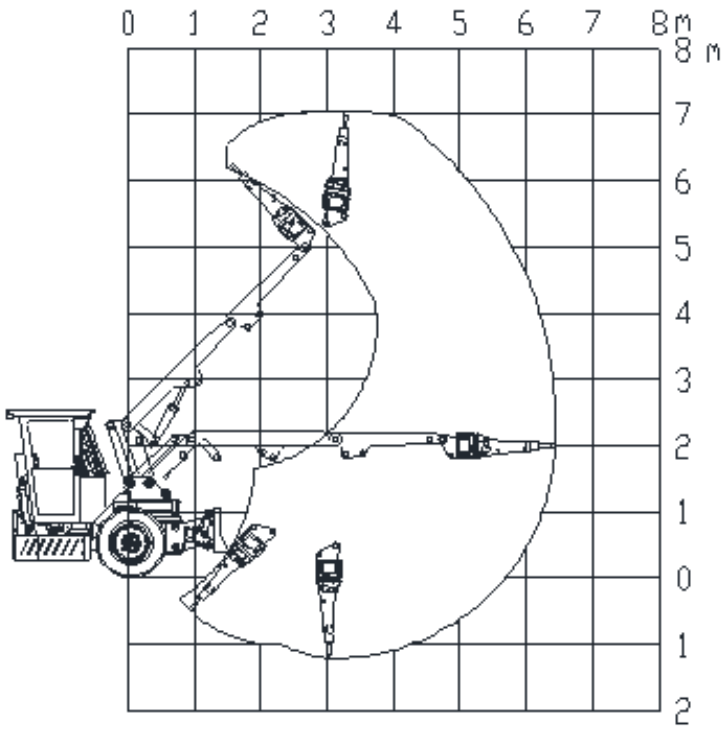
| |
|----------------|
| Imaging system |
|----------------|

OTHER OPTIONS

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| Closed cab and air conditioning system |
| Fast fueling, hydraulic oil and transmission oil interface |
| Customizable other breakers |

GOOD WORKING RANGE

rEquipped with EDT200 breaker



Vertical Working Range

Horizontal Working Range Impacting Range



