

# DR460 **blasthole drill**



**SANDVIK**

# DR460



## Class leader performance engineered

In its class of blasthole drills, the DR460 is the benchmark for user approval, reliability, and drilling productivity. Its applications include copper and iron mining with 251 and 270 mm (9-7/8 and 10-5/8 inch) diameter holes, gold mining with 203 mm (8 inch) holes, and coal overburden drilling with 270 and 311 mm (10-5/8 and 12-1/4 inch) holes. Supporting open pits with 10 m (33 ft) bench heights, the multi-pass version uniquely delivers a 12 m (40 ft) deep clean hole on the first pipe!

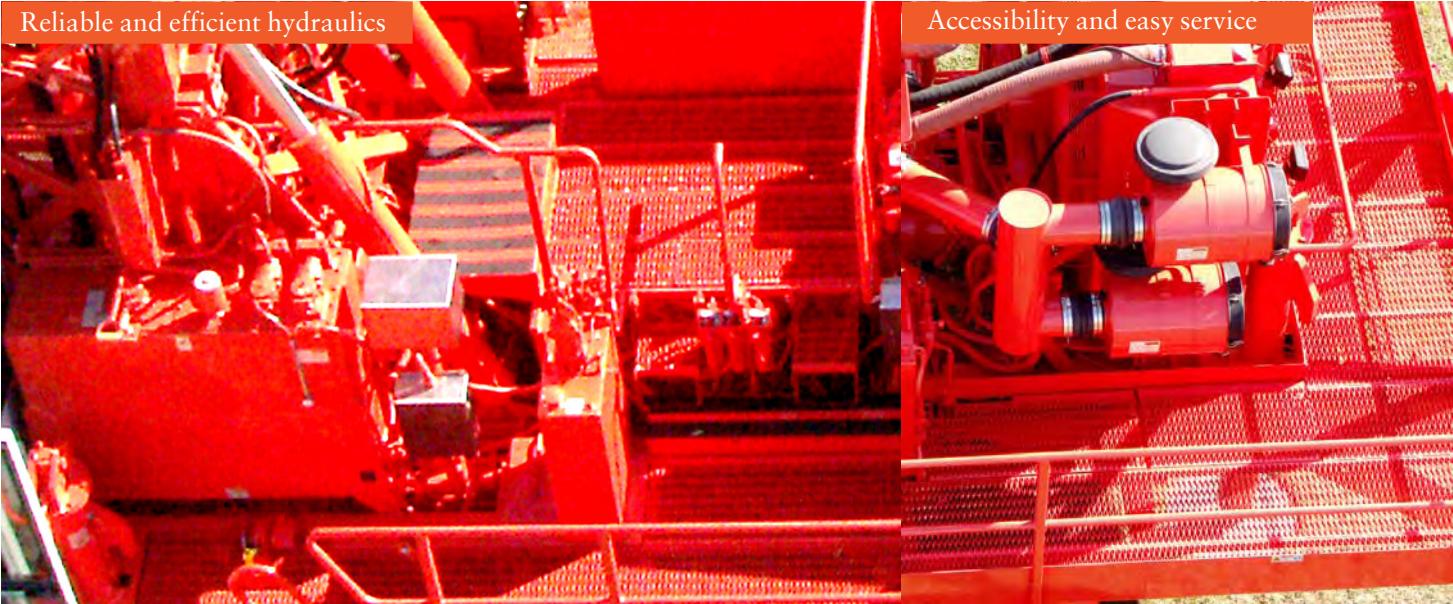
It packs more power and adaptability than traditional drills. Rotary horsepower alone surpasses others by 38%. Whether or not the DR460 is operated at maximum capacity, the enhanced mechanical and hydraulic systems benefit every mining application. Configured for rotary or down-the-hole (DTH) drilling, using a multi- or single-pass mast, with an arctic package or other options, the DR460 sets a higher performance standard in this class of blasthole drills.

- State-of-the art work environment
- More pulldown, horsepower, torque, and flushing air
- Longer drill pipe and wider range of diameters
- Reliability and easy service by design
- Performance at extreme altitudes and climates

### DRILLER'S CHOICE

A machine is only as productive as the person operating it - the human factor. The extra spacious DR460 operator's cab comfortably facilitates both a driller and a trainer. The cab extends beyond providing a controlled environment and FOPS (Falling Object Protective Structure) compliance. The operator has "all in the seat" drilling and tramping controls on the swivel seat, with complete control at his fingertips, and an unobstructed view of the drill deck through the floor-to-ceiling window. The driller focuses on hole spotting, pipe handling, tramping, and other functions without turning or reaching. The driller also has the option to stand and use the wall mounted console controls during tramping and set-up. Both increase the operator's scope for maximum visibility and the improved ergonomics contribute to productivity and safety, as well as the driller's well being. The performance benefits are even more pronounced near the end of a long shift. The DR460 is *the driller's drill*.





## HIGHEST RELIABILITY

By rethinking the hydraulic and electric designs, the DR460 is engineered for reliability. Following the most stringent Australian standards, hard piping is used whenever possible and the remaining hydraulic hoses are well routed and secured. Valves are located close to the point of use, eliminating component build-up in any single location. Electric cables are separated and shielded to reduce hazards. Traditional layouts are cheaper up-front, but the DR460 design assures proper installation, reduces chafing, and allows for quick trouble shooting and repairs. Service access and security are clearly improved with the full perimeter walkway. Reliability and serviceability translate into continuous performance with lower operating costs and higher mechanical availability.

## MOST TONNES DRILLED

Productivity comes down to effective drilling time and instantaneous penetration rate. The former results from high availability, quick trammimg, setup, and hole spotting, and effective pipe handling. With 12,8 m (42 ft) long multi-pass pipes or the 16,8 m (55 ft) long single-pass pipe, less time is lost adding and racking pipe. Instantaneous penetration rate depends on pulldown, rotation speed, and hole cleaning, as well as the operator's ability to fine tune the drilling parameters.

- Maximum bit load 444 kN (100000 lb)
- Extra heavy duty pulldown chains
- Diesel engines from 652 to 746 kW (875 to 1000 hp)
- Air compressors from 41 to 56,6 m<sup>3</sup>/min (1450 to 2000 SCFM)
- Drill pipe diameter from 6 to 9-5/8 inch
- Rotary head power, multi-pass 194 kW (260 hp), single-pass 142 kW (190 hp)
- Options for the most demanding environments

Whether your perspective is from the operator's cab, the maintenance shop, the production office, or the finance department, the DR460 is *the leader in its class*.



## OPTIMIZED POWER DELIVERY

**Diesel power**, C27, QSK23, or QST30 engines rated 652 - 746 kW (875 - 1000 hp), optimized for load requirements and altitude. All operate at 1800 rpm

Preferred engine for local service support

Optimized power and fuel consumption for application

Performance up to 5000 m (16400 ft) above sea level

Longer engine life at lower rpm

**Cooling capacity**, system rated for up to 54°C (130°F), or below -40°C (-40°F) with special cold weather equipment. Variable speed, thermostat controlled fan, with start-up delay

Cooling capacity in extreme heat

Reliability in extreme cold

Easy start-up

**Compressors**, 56,6 m<sup>3</sup>/min (2000 SCFM) at 6,9 Bar (100 psi) or 41 m<sup>3</sup>/min (1450 SCFM) at 24,1 Bar (350 psi). Compressor mounted directly to fly wheel housing in line with engine

Rotary or down-the-hole drilling

Effective hole cleaning balanced with fuel consumption

Efficient power transfer



## EFFECTIVE PIPE HANDLING

**Pipe size**, choice of 6, 7, 7-5/8, 8-5/8, and 9-5/8 inch diameters. 12,8 m (42 ft) pipes for multi-pass mast. 16,8 m (55 ft) with two additional 7,6 m (25 ft) pipes for single-pass mast

Wider hole range capacity

Ideal up-hole velocity. Effective hole cleaning. Fuel efficiency

Less time on pipe handling. Higher productivity

**Hole depth capacity for multi-pass mast**, optimized for carrying capacity with each pipe size

77 m (251 ft) with 6 pipes (6, 7, or 7-5/8 inch)

64 m (209 ft) with 5 pipes (8-5/8 inch)

51 m (167 ft) with 4 pipes (9-5/8 inch)

**Hole depth capacity for single-pass mast**

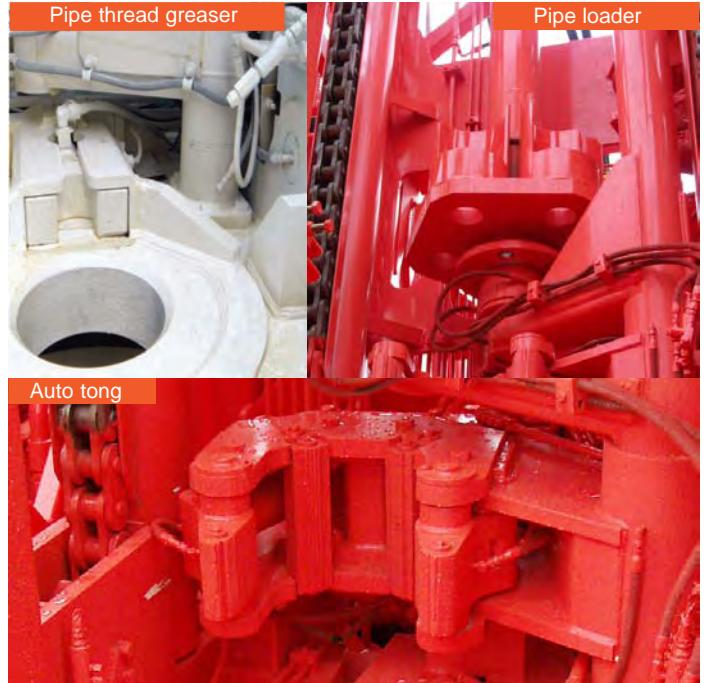
30 m (99 ft) single-pass mast

**Hydraulic auto tong, holding wrench, swing, indexer**, with few moving parts

Efficient, reliable pipe handling. Increased productivity

**Pipe thread greaser**, operated from inside cab

Extended thread life. Fast joint loosening. Lower pipe cost



## PRODUCTIVE WORK ENVIRONMENT

**Working environment**, oversized operator's cab, 4,4 m<sup>2</sup> (47 ft<sup>2</sup>), FOPS compliant. Air conditioning, heating, and pressurized air supply. Shock mounting, sun shades, thermal insulation, noise reduction to 80 dBA

Ample space for driller, trainer, auxiliary equipment

Operator comfort and security

**Operator control**, electric over hydraulic, with all controls in the seat and additional wall mounted controls for tramping and set-up. Large windows in four directions, floor-to-ceiling facing drill deck

Logical joystick controls. Easy to learn and fine-tune

Enhanced visibility when standing up, using wall mounted controls

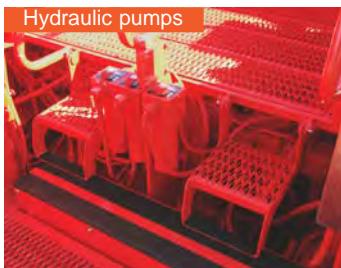
Unobstructed view of drilling operation when seated

**Ergonomics**, fully adjustable, comfortable swivel seat, well laid out controls, good leg room

No reaching, turning, or awkward movements

Less operator fatigue. Improved safety and productivity





Hydraulic pumps



Hydraulic tank



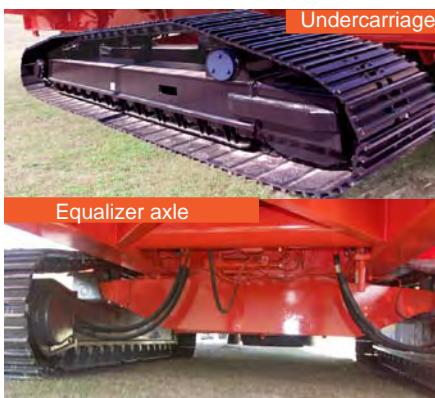
In-line design



Fluids service center



Central greasing station



Undercarriage



I-beam frame



Equalizer axle



Feed system



Angle drilling



Angle drilling

## RELIABILITY AND SERVICEABILITY

**Closed loop systems**, with four pumps for rotation, feed, tracks, and fan circuits. Oversized oil reservoir, 964 L (260 gallon), 12 µm (12 micron) filters

Reduced power load. Improved fuel efficiency

Lower oil temperature. Fewer oil cycles. Longer service interval

Effective filtration. Improved component life

**Hydraulic and electric lines**, meeting Australian MDG15 standards. Greater use of hard piping with hoses well routed and secured with stauff clamps. Valves moved close to the point of use, minimizing build-up in one location. Electric cables separated and shielded.

Fewer hoses to maintain. Less chafing. Easy access

Good visibility and space for diagnostics and replacements

Reduced fire hazards

**Service centers**, for fluids and lubrication

Fast, easy service. Greater mechanical availability

**In-line design**, for engine, compressor, cooler, and intake filters

Unobstructed service access from both sides

Maximum separation of cooler and filters from drill holes and dust collector, for a cleaner system

**Full perimeter walkway**, no bump, extra wide, safety railings, MDG15 compliant

Greatly improved accessibility for service personnel

Improved safety. Reduced tripping, burning, or catching hazards

## SOLID PLATFORM

**Undercarriage**, 330SL, or 345SL, with 198 kW (265 hp) per track maximum

Proven reliability

Excellent gradeability and slewing power

Stability

**Main frame**, heavy duty wide flange I-beams, WF 18 × 86, ASTM alloy A572, grade 50 steel. Fixed axle at drilling end, equalizer at cooler end, to reduce stresses on frame

Low center of gravity

Fatigue resistance. Long frame life

Increased mobility

**Four leveling jacks**, two independently controlled jacks at the drill end, two connected at the cooler end

Side-way stability with easy leveling

Minimum twisting for extended frame life

## MAST AND DRILLING FORCE

**Feed force**, maximum pulldown 356 kN (80000 lb) with automatic hydraulic tensioning

Bit load to 444 kN (100000 lb). Increased penetration rate in hard rock

**Chain feed**, extra heavy duty roller pulldown chain

Longer life than cable. No fraying. No bending fatigue

Constant bit load. Less elasticity and force oscillation

**Rotary power**, multi-pass rotary head 194 kW (260 hp), single-pass 142 kW (190 hp). Maximum torque or rpm selected for the application

Increased rotation speed, penetration rate, when conditions allow

Smoothen rotation

**Torsional strength**, increased with heavier mast cords and welds

Less deflection at maximum load

Improved fatigue life

**Angle drilling**, 0-25° multi-pass mast, 0-20° single-pass mast, in 5° increments

Ideal for most angle drill applications

**Open hose tray**, all rotary head hoses rest against a fixed tray

No moving tray parts. Less service

No rubbing inside tray. Longer hose life



The **operator's cab** extends to the full width of the machine for maximum space and comfort



A **2,5 kW (34 hp) generator set** goes with special cold weather equipment and allows for shut-down and service in arctic conditions

The **hard piping** and well engineered **layout** of hydraulic hoses eliminate clutter. The electric installation keeps cables extremely well protected

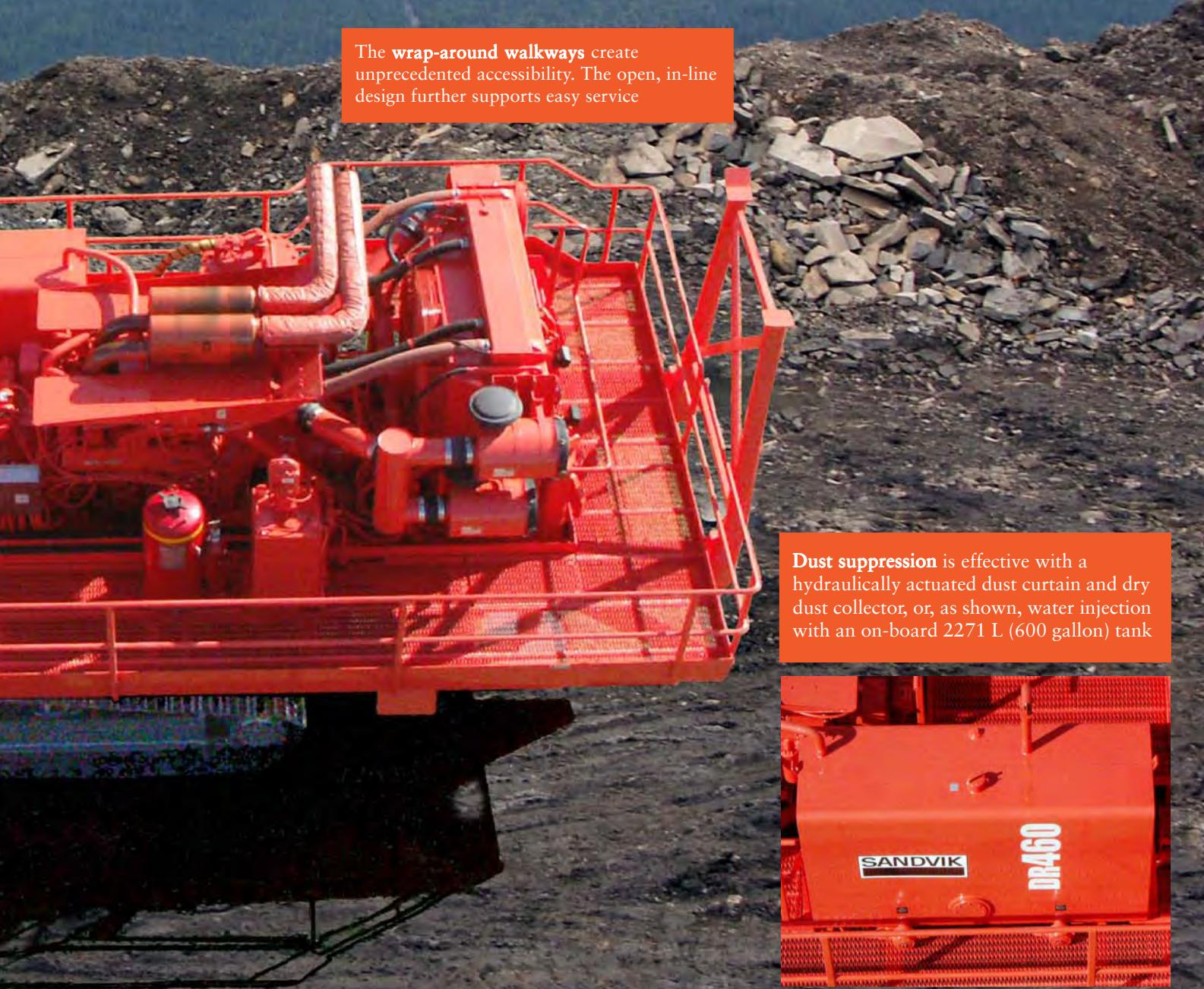
## THE DR460 – LEADER IN ITS CLASS

Rotary blasthole drills from Sandvik set the standard for productivity, durability, and cost effectiveness. These machines are built for continuous drilling in some of the harshest operating environments in the world. Proven designs, rigid lattice style masts, heavy duty pulldown chains, and durable power groups place these rigs in a class of their own. Structural strength, easy maintenance, and world-wide support all maximize drilling time and keep you on top of your production schedule. Sandvik offers tailored options to meet all application requirements. Invest in the right rig for your needs and count on it to perform for years to come.

The DR460 is a diesel powered, self-propelled crawler mounted drill. Specifically designed for the highest drilling productivity, reliability, and ergonomics, the DR460 stands for engineered performance and is the leader in its class.

- Down-the-hole or rotary drilling
- Rotary drilling hole size 251 to 311 mm (9-7/8" to 12-1/4")
- 12 m (40 ft) clean hole on the first pipe in multi-pass configuration
- Highest pulldown force in its class
- Most rotary power and air delivery
- All controls mounted to driller's chair
- Hydraulic and electric designs to the most stringent standards

The **wrap-around walkways** create unprecedented accessibility. The open, in-line design further supports easy service



**Dust suppression** is effective with a hydraulically actuated dust curtain and dry dust collector, or, as shown, water injection with an on-board 2271 L (600 gallon) tank



Sandvik is a high-technology engineering group with world-leading positions in selected areas – tools for metal working, advanced materials technology, and mining and construction. We employ more than 47000 people and are represented in 130 countries.

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