

GROUND-BREAKING PERFORMANCE. LOWER DRILLING COST.

Robit **SERIES** DTH HAMMERS

**High performance. Lower air consumption.
Reliability you can count on.**



Robit



Vikkiniittyntie 9, FI-33880 Lempaala, Finland



Tel: +358 3 3140 3400



www.robittgroup.com



sales@robittgroup.com

PROVEN PERFORMANCE. AROUND THE WORLD.

From water wells to demanding mining operations.

Robit **H** SERIES
DTH HAMMERS

FINLAND
MINING AND GEOTHERMAL &
WATER WELL DRILLING

AUSTRALIA
WATER WELL DRILLING

SOUTH AFRICA
QUARRYING &
PRODUCTION DRILLING

PERU
DEMANDING
MINING APPLICATIONS

ROBIT H SERIES DTH HAMMERS – PROVEN PERFORMANCE AROUND THE WORLD

From deep geothermal wells in Finland and water well drilling in Australia to demanding open-pit mines in South Africa, Peru and the Arctic conditions of Finnish Lapland, Robit H Series DTH hammers are proving their performance in real-world drilling operations around the globe.

Developed to combine high performance, lower energy consumption and flexibility, the Robit H Series represents a new generation of Down-the-Hole hammers. Today, customer experience from very different drilling environments is demonstrating what the H Series was designed to deliver: more efficient drilling, reliable performance and lower total drilling cost.

ONE PLATFORM. DIFFERENT CONDITIONS.

No two drilling operations are the same. Ground conditions, applications, compressor capacity and performance requirements can vary considerably from one site to another.

That challenge was one of the starting points for the H Series.

Available in 4, 5, 6 and 8-inch sizes, the H Series features a modular architecture that enables up to twelve configurations from a single base assembly for each hammer size. Two inner cylinder displacements allow the hammer to be optimized either for maximum power or for efficiency with reduced airflow demand. By changing only two parts, the hammer can also be converted between footvalved and tubeless configurations.

PERFORMANCE THAT TRANSLATES INTO LOWER DRILLING COST

Different continents. Different applications. Different rock conditions.

The common objective is the same: **drill more efficiently and reduce the total cost per drilled metre.**

Field experience with the H Series demonstrates the benefits across water well drilling, geothermal drilling, quarrying and demanding mining applications. Depending on the application and configuration, customers have reported improvements in penetration rate, fuel efficiency, wear life, maintenance and overall drilling economics.

From Finland to Australia, South Africa and Peru, the H Series is no longer just a new hammer concept. It is a field-proven platform built to deliver where it matters most – at the bottom of the hole.

High performance. Lower air consumption. Reliability you can count on.



OULUN PORAKAIVOT THRIVES USING ROBIT'S WEAR PARTS

Kauno Määttä was a familiar name to Finnish wrestling fans in the 1960s and 70s: he won the Finnish Greco-Roman wrestling championship in his weight class several times. In his day job, however, Kauno did not make the headlines despite being a respected professional: he drilled wells.

Kauno's career as a driller continued into retirement and was passed on to the next generations. In the late 1980s, Kauno's primary school-age grandsons, **Sami** and **Simo Manninen**, got the spark when they got invited as helpers for a well-drilling job.

The spark ignited a lasting passion, and as a result, the brothers' own company, Oulun Porakaivot, was finally born in 2012. It operates throughout Finland, and its core business is drilling geothermal energy fields for large properties. Oulun Porakaivot also handles the design and permitting of the energy fields and has a wide range of customers from the public sector to commercial properties and housing cooperatives. They also drill individual geothermal and water wells for detached houses and other small properties.

Oulun Porakaivot operates six drilling rigs and has long been Robit's contract customer, using Robit products for all key consumables such as rods, ring bits, drill bits, and pilots. **Panu Haulos**, Design Engineer at Oulun Porakaivot, has noticed a welcome improvement in the quality of drilling tools.

"Reliability of consumables is critical in this sector. The wells are getting deeper – up to 450 meters – and the plots of land are often small: if the first hole falls short, there may not be enough room to drill a new one. In consumables, we have to look at the cost of a drill meter from an overall economic perspective: performance, drilling speed and fuel consumption. Robit's products have been consistently reliable and have performed excellently in deep wells. And today's hammers and bits are more durable than before," says Panu.

For about a year, Robit has been developing a new four-inch DTH hammer, branded **Robit® H4**, for well drilling. Testing in cooperation with customers is an integral part of product development. The H4 hammer was optimized and finalized as per customer feedback. Robit's Sales Director **Kimmo Kangas** approached Oulun Porakaivot and offered them an opportunity to test the new hammer. A suitable test site was found in Helsinki, at a housing cooperative's future energy field, where 23 wells will be drilled to a depth of 390 metres. Kimmo has followed the development of the H4 hammer from the beginning and has seen its potential.

"The functionality, reliability and penetration rate of the H4 are outstanding. However, the most significant improvement is fuel consumption, which is significantly lower than the competition. Typically, for example, in a 200-meter well, the compressor consumes about two litres of fuel per meter. On the H4 hammer, the consumption has been as low as one and a half litres. That's a crucial difference," says Kimmo.



KEVITSA ROCK PUSHES DTH HAMMERS TO THEIR LIMITS

In 1987, some 30 kilometres north of Sodankylä in Finnish Lapland, prospectors made a promising discovery: their rock samples contained nickel and copper. It soon became clear that this Kevitsa ore find was one of the largest ever made in Finland.

In the 1990s and early 2000s, the mining rights for the deposit changed hands several times. Actual mining did not begin until 2012. Since 2016, the Kevitsa open pit has been owned by the Swedish company **Boliden**. In 2024, it processed almost 10 million tonnes of ore, primarily nickel and copper, as well as cobalt, platinum, palladium, and gold.

Today, Boliden Kevitsa's polymetallic mine is one of the largest in Finland. It provides direct and indirect employment for hundreds of people in Lapland and generates significant tax revenues for the region. Production is expected to continue well into the 2030s. Responsible metal production in Arctic conditions The strategy of the Swedish metals company Boliden revolves around responsible mining, circular-economy solutions, and the production of critical metals for the green transition. Boliden Kevitsa's polymetallic mine is an integral part of this whole.

"The bedrock at Kevitsa is demanding in all respects. The rock is both tough and extremely abrasive", says **Juha Ranta, Drilling Development Coordinator at Boliden Kevitsa.**

"The mixture of various ore zones, wall rock, and waste rock has formed over thousands of years. Alongside the copper and nickel, there is cobalt, platinum, palladium, and gold, and each zone behaves differently when drilled," Juha explains.

The natural conditions in Sodankylä don't make mining any easier either. *"In winter, the groundwater in the pit is completely frozen. The hammer must operate just as reliably at -40 degrees as it does at +35 degrees in the summer. That's a tough combination for any equipment,"* Juha says.

Technologically, Kevitsa is a state-of-the-art mine. Production drilling is conducted almost entirely by remote control. From the control room, operators monitor the drill rigs working in the pit around the clock.

Testing and developing Robit's H8 DTH hammer together

"Since early 2025, Robit's H8 DTH hammer has been tested and developed at Kevitsa in close cooperation with Boliden", says Robit Sales Director **Kimmo Kangas.**

"The feedback from the operators has been encouraging: the H8 is easy to drill with, penetration rate is good, and durability looks promising," Kimmo says.



The H8 hammer has been tested with two different 229 mm drill bits to optimize the combined performance of hammer and bit for Kevitsa's conditions. The H8 is by no means the first hammer to be tested in Kevitsa's demanding rock. Tools that perform well elsewhere have often revealed weaknesses in Lapland. *"Here, for example, rock hardness and the way the impact energy bounces back from the rock can be very different from what you encounter in other mines,"* Juha notes.

Cooperation with Robit's product development team has been close. *"Whenever we've found a component that doesn't last, we've sat down together to decide what to do about it. Do we change the material or redesign the part completely? Recently, we've focused on improving the hammer's wear life, first the 'innards' and now increasingly the durability of the hammer body,"* Juha says.

At Kevitsa, the "Marathon" version of the H8 hammer is in use, featuring a wear-protected outer casing. The goal is to extend service life and reduce both downtime and spare part consumption.

A step towards more economical and sustainable mining

Boliden works systematically towards environmentally friendly and cost-efficient mining. *"The drilling tools are one part of that. With the right tooling, you can achieve substantial cost savings, both in the equipment itself and in fuel efficiency,"* Juha points out.

"Equipment durability and reliability have a direct impact on cost per drill meter. As wear resistance improves, material flows – and therefore costs – go down."

"New surface treatment methods also allow us to make the materials more wear-resistant. Reliability improves when components that have proved weak are reshaped and redesigned." Testing the H8 hammer at Kevitsa is part of this overall effort. *"With measures like these, we keep moving towards economical mining, with green values firmly in mind,"* Juha Ranta concludes.





ROBIT'S H SERIES HAMMERS: CHANGING THE GAME THROUGH MODULARITY

In addition to increasing performance, the drilling industry faces growing demands for energy efficiency and cost control. Robit's H Series Down-the-Hole (DTH) hammers have been developed to address these challenges by combining high performance, lower energy consumption and a flexible modular design.

Primarily designed for drill and blast operations and water well drilling, the H Series is available in four sizes: 4, 5, 6 and 8 inches. The innovative modular design enables up to twelve configurations from a single base assembly for each hammer size, providing flexibility for different drilling environments and requirements. A lighter hammer combined with heavier pistons delivers higher penetration rates while consuming less energy. Two inner cylinder displacements allow the hammer to be optimized either for maximum power output or improved efficiency with reduced airflow demand. In addition, by changing only two parts, the hammer can be converted from a conventional footvalved configuration to a tubeless version, or vice versa.

The H Series has undergone extensive development and validation through customer trials in real-world drilling conditions worldwide. In South Africa, **Brauteseth Blasting** has tested the 6" H Series hammer at the Phalaborwa open-pit phosphate mine in Limpopo. According to Plant Manager **Owen Du Plooy**, the hammer delivered an increased penetration rate, contributing to a 5% lower cost per drilled meter. Other benefits included easy maintenance, good wear sleeve life and competitive pricing. Du Plooy also highlighted Robit's responsive technical support.

Zizwe Opencast Mining has also tested the 6" H Series hammer at the Lwala open-pit chrome mine in Limpopo. The challenging ground conditions include fractured rock, sandstone and clay. Operational Manager **Derik Van Deventer** confirms that Zizwe has observed improved penetration rates and faster hammer maintenance, demonstrating the H Series' ability to perform effectively across varying ground conditions.

Building on the H Series platform, Robit has introduced the **H Marathon Series**, engineered for extended wear life and improved durability. The Marathon design focuses particularly on reinforcing the hammer's most wear-prone components, including the drive chuck and wear sleeve.

Brauteseth Blasting has tested the H Marathon at the Phalaborwa mine, where trials demonstrated significantly longer component life. Only one drive chuck was required throughout the hammer's entire service life. More even wear helped reduce downtime and component replacement costs, further improving drilling efficiency.

No two drilling sites are identical. Traditionally, this has required manufacturers to offer a wide range of DTH hammers for different applications and conditions. With its modular architecture, field-proven performance and wear-optimized Marathon option, the Robit H Series offers a different approach: greater flexibility from a common platform while helping drillers improve productivity, energy efficiency and overall drilling cost.



FNQ DRILLING BOOSTS EFFICIENCY WITH THE H SERIES HAMMER

Far North Queensland (FNQ) is one of the fastest-growing regions in Australia. Despite being the region with the most annual rainfall in the country, FNQ is facing water supply challenges. Particularly along the coast, the area's capacity to store water for urban use is limited, which may hinder future growth.

One of the leading companies providing water well drilling services, as well as bore drilling and utility drilling, in the region is FNQ Drilling, a family-owned business headquartered in Bamboo. Their water well drilling service includes site evaluation, well construction, and pump installation. In a competitive industry such as well drilling, companies must find ways to improve efficiency or reduce costs to maintain a competitive edge. **Shane Naude**, the owner of FNQ Drilling, switched to Robit drilling tools a few years ago. *"I was using a hammer that kept breaking barrels and shanking bits without resolution. So I asked around other water well drillers and was told to try Robit. I started using Robit in early 2023 with a D45 DHD340 hammer, a D65W HD QL60 hammer, and bits to suit,"* Shane reminisces.

In September 2024, Shane got an opportunity to test and validate the performance and reliability of Robit's new 6" H Series hammer in water well drilling. The H Series hammer line was more widely introduced to the Australian market at the DRILL24 trade fair in Perth the following month. A key selling point of the H Series is its modular design, allowing it to adapt to varying practical needs in the field. *"I do water well drilling in and around all FNQ for domestic, rural, and commercial clients. Ground conditions vary greatly, including shale, basalt, granite, marble, clay, and schist. So, a lot of variation in the hammer performance is needed to suit the ground,"* Shane explains.

Shane's business depends heavily on the quality of his tools. *"A reliable hammer is key to my success. More drilling and less downtime due to the product not performing to specifications cost my business money and clients. Due to the remote locations I have clients at, such as stations, I require reliable and suitable products to complete my work."*

"Before switching to Robit, I had many issues with failures, e.g., a simple hammer spring continually failing and causing downtime, costing my Company money and time, and a potential loss of reputation to my business," Shane says. After months of validation trials, Shane's experiences with the new Robit H Series hammer are overwhelmingly positive. *"The trial hammer has drilled approximately 500m of water bore drilling only. All components, including the hammer barrel, piston, top sub, and threads, wear better than those of competitor products previously used."*

"I'm achieving more drilled metres per day. The penetration of the hammer is powerful and punchy, which decreases the time needed to drill a hole. I have also noticed a reduction in my fuel consumption," Shane says. In product development, Robit has consistently relied heavily on direct customer experiences and collaboration. The H Series hammer is no exception. Throughout the trials, Shane has discussed with Robit and provided valuable feedback to further improve the hammer's performance, always with an eye toward that competitive edge.



LA ARENA: PRECISION DRILLING IN PERU'S ANDEAN COPPER–GOLD BELT

High in the mountains of northern Peru lies the La Arena open-pit mine, a combined gold and copper operation. The site sits along one of the world's largest porphyry copper–gold belts, part of the Andean metallogenic area that has yielded many of South America's major deposits. As of late 2024, the mine is owned by Zijin Mining.

The geology at La Arena is notably abrasive, with hard volcanic and intrusive formations that place significant stress on drilling equipment. These ground conditions make controlled blasting especially important, and the mine relies on pre-splitting to define stable walls and predictable bench geometries. Pre-splitting involves drilling a precise line of holes ahead of the main blast, creating a clean fracture plane that limits overbreak and improves overall pit stability.

Pre-splitting at La Arena is performed by Spanish company **Acciona**, a global infrastructure and mining contractor. Acciona uses 4" Down the Hole hammers paired with 5" bits. Because of the highly abrasive rock, tool life has been a long-standing challenge, prompting Acciona to run a series of comparative tests to identify equipment that could best withstand the conditions.

In mid-2025, Acciona invited Robit to participate in the tests. The setup included the **Robit® H4 Marathon** hammer with a TD40 shank, along with three different sets of drill bits. Robit's DTH Drillmaster, **Renato Castro**, supervised the trial on site, ensuring proper operation, monitoring wear, and gathering performance data. The test period ran from June to July 2025.

The results were decisive. The **Robit H4 Marathon hammer achieved a total service life of 4,740 drill meters**, significantly outlasting the **competitor, which reached 3,100 meters**.

Bit performance showed the same trend. In the extremely abrasive rock, Robit's bits averaged at 140 meters, while competitor bits averaged around 65 meters. Among the designs tested, the convex-face bit with Extreme Carbide gauge inserts delivered the best balance of durability and penetration.

Encouraged by the results, Acciona is exploring additional bit designs with Robit, including Extreme Carbide models, to further reduce cost per meter and improve productivity. The Marathon hammer has already convinced the contractor with its longer lifetime and penetration rates about **30% faster than the competing product**.

For Robit, the successful trials represent a promising technical outcome – and the foundation for a potential long-term collaboration.

SERIES DTH HAMMERS For Professionals

- ✓ Up to 25% lower fuel consumption
- ✓ Unbeatable for all conditions
- ✓ Best in class performance

MARATHON

- ✓ At least 15% longer wear resistance guaranteed in abrasive bedrock conditions



- ✓ Efficient DTH Bits

For drilling blast holes, wells; for general purposes as well as RC models for sampling. Robust designs for achieving maximum penetration rate in hard and abrasive rock conditions.

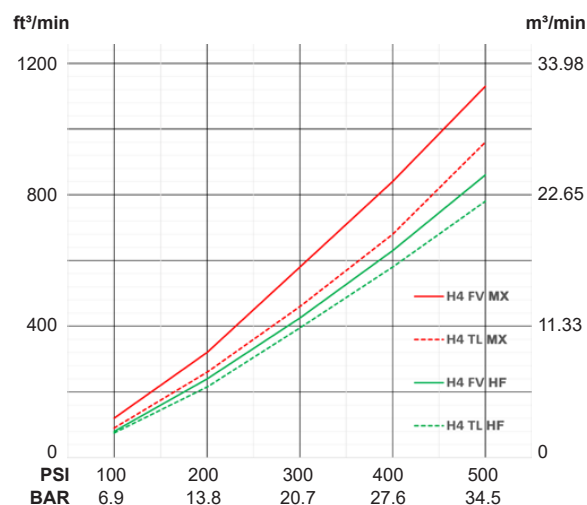


Products are supplied from Finland, the UK, or Australia, depending on customer location and product variant.

Robit H4

DTH hammer for 108 mm / 4 1/4" (SL) - 140 mm (5 1/2") diameter holes (TD40 or DHD340 fitting)
115 mm / 4 1/2" (HD)

Air Consumption



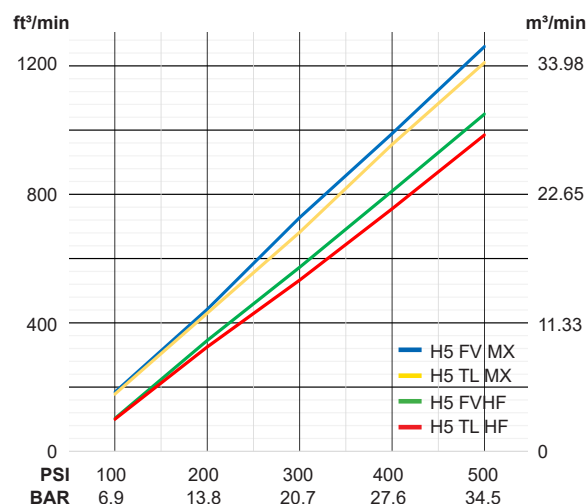
Hammer Specifications

	Imperial	Metric
Weight (HD, less bit)	83.8 lbs	38.0 kg
Weight (SL, less bit)	75.0 lbs	34.0 kg
Length (less bit)	33.86"	860 mm
Outside Dia. (HD)	4.02"	102 mm
Outside Dia. (SL)	3.86"	98 mm
Discard Limit	3.54"	90 mm
Piston Weight (FV)	18.5 lbs	8.4 kg
Piston Weight (TL)	17.9 lbs	8.1 kg

Robit H5

DTH hammer for 127 mm / 5" (SL) - 165 mm (6 1/2") diameter holes (QL50 or DHD350 fitting)
140 mm / 5 1/2" (HD)

Air Consumption



Hammer Specifications

	Imperial	Metric
Weight (HD, less bit)	179.7 lbs	61.5 kg
Weight (SL, less bit)	119.0 lbs	54.0 kg
Length (less bit)	36.02"	915 mm
Outside Dia. (HD)	4.96"	126 mm
Outside Dia. (SL)	4.72"	120 mm
Discard Limit	4.49"	114 mm
Piston Weight (FV)	30.6 lbs	13.9 kg
Piston Weight (TL)	26.0 lbs	11.8 kg

Components

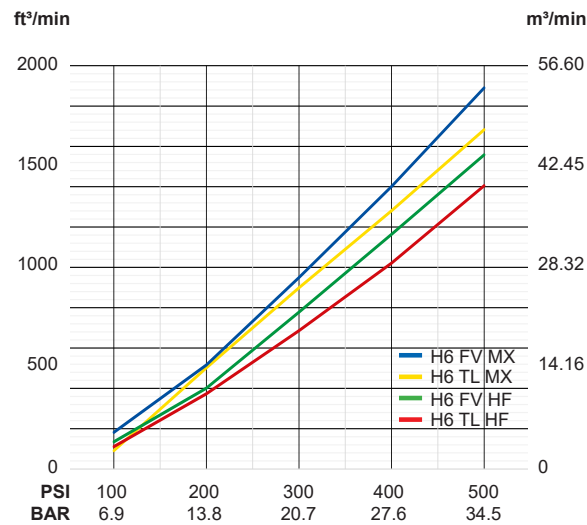
Ref	Description
1	Top adaptor/Backhead HD (SL)
2	Backhead O-ring
3	Check valve
4	Make up ring
5	Check valve spring
6	Air distributor O-ring
7	Air distributor
8a	Inner cylinder assembly - MX (Maximum Performance)
8b	Inner cylinder assembly - HF (High Efficiency)

9	Piston FV, Foot valved (TL, Tubeless)
10	Wear sleeve HD (SL)
11	Guide bush FV (TL)
12	Bit retaining ring assembly (incl. 13, O-ring)
13	Bit retaining ring O-ring
14	Chuck HD (SL)
	Service kit incl. (2, 5, 6, 13)
	Repair kit HD (SL) incl. (2, 3, 4, 5, 6, 12, 14)
	Life Kit HD (SL) FV (1, 10, 11, 14)
	Life Kit HD (SL) TL (1, 10, 11, 14)

Robit H⁶

DTH hammer for 152 mm / 6" (SL) - 216 mm / 8 1/2" diameter holes (QL60 or DHD360 fitting)
158 mm / 6 1/4" (HD)

Air Consumption



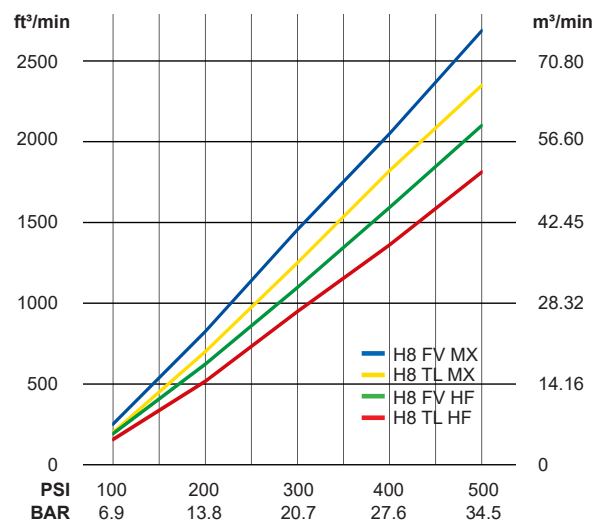
Hammer Specifications

	Imperial	Metric
Weight (HD, less bit)	164.2 lbs	74.5 kg
Weight (SL, less bit)	143.3lbs	65.0 kg
Length (less bit)	39.92"	1014 mm
Outside Dia. (HD)	5.75"	146 mm
Outside Dia. (SL)	5.51"	140 mm
Discard Limit	5.12"	130 mm
Piston Weight (FV)	45.2 lbs	20.5 kg
Piston Weight (TL)	38.6lbs	17.5kg

Robit H⁸

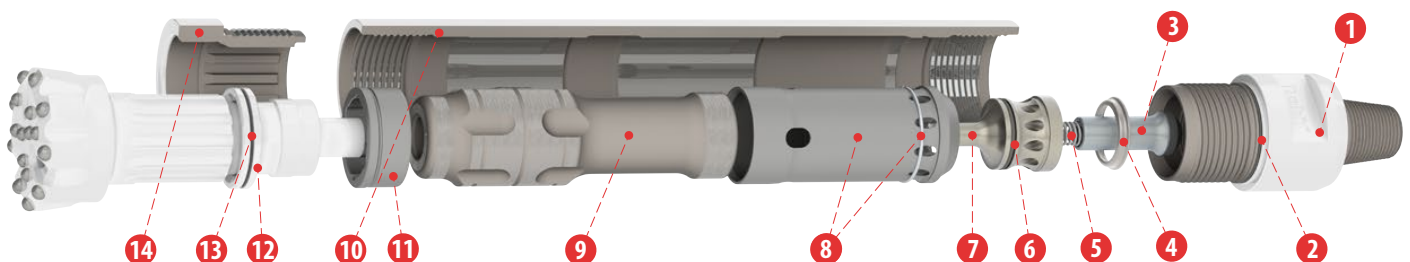
DTH hammer for 203 mm / 8" (SL) - 254 mm (10") diameter holes (QL80 or DHD380 fitting)
216 mm / 8 1/2" (HD)

Air Consumption



Hammer Specifications

	Imperial	Metric
Weight (HD, less bit)	441.0 lbs	200.0 kg
Weight (SL, less bit)	379.2 lbs	172.0 kg
Length (less bit)	49.02"	1245 mm
Outside Dia. (HD)	7.64"	194 mm
Outside Dia. (SL)	7.24"	184 mm
Discard Limit	6.85"	174 mm
Piston Weight (FV)	103.2 lbs	46.8 kg
Piston Weight (TL)	91.7 lbs	41.6 kg



HD = Heavy Duty
SL = Slim Line
FV = Foot Valved
TL = Tubeless
MX = Maximum Performance
HF = High Efficiency

Please contact Robit's sales regarding the

Robit MARATHON

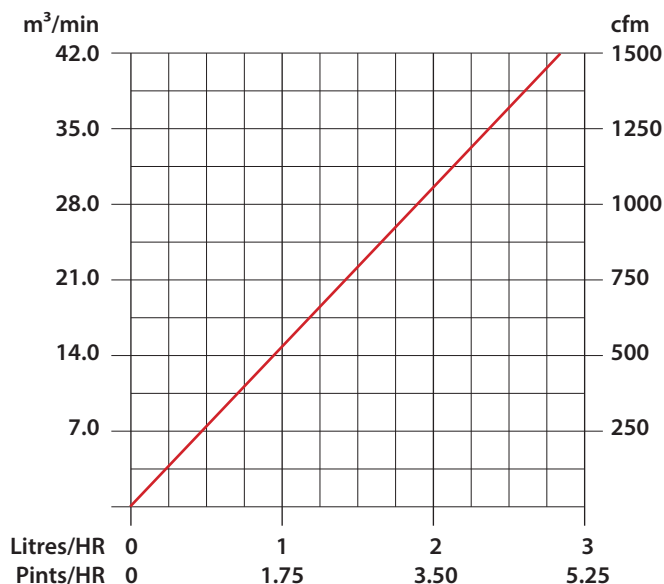
DTH hammers: sales@robitgroup.com

LUBRICATING OIL

Just like any other piece of precision machinery, the DTH hammer must be lubricated and small quantities of oil should be injected into the air stream at regular interval whilst the hammer is working. Rock drill oils are recommended because these contain the emulsifying and viscosity additives necessary to deal with high pressure and high air flow conditions in which water is usually present, if only from condensation in the air line.

Oil not only provides slip to prevent pick up and premature failure of components but it also acts as a seal on the surface of running parts to use air efficiently without pressure loss. It is therefore of paramount importance that the correct grade of oil is used at the appropriate consumption rate to suit volume and pressure, in line with the hammer manufacturers recommendation. Most modern valveless hammers, particularly when operating at high pressures need a heavy oil providing of course that ambient temperatures allow the oil to run through the airline.

Oil Consumption



DTH hammer need:

- 0.20 L of oil per hour per 3 m³/min of air consumed (1/3rd of imp.pint of oil per hour per 100 cfm of air consumed)
- Up to double the amount of oil is required when used with water injection.
- At temperatures below 5°C oil with an antifreeze additive may be required.

Your distributor:
