



# DOWN THE HOLE ROCK DRILLING TOOLS

2023 / DIGITAL



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# WORKING WITH SAFETY IN MIND

## OPERATING THE HAMMER

- Only operate the controls while the engine is running
- Proper PPE must be worn when you are operating the drill rig and the hammer
- Before you move the drill rig with the hammer, ensure that no one will be endangered
- Do not go close to the edge of a cliff, an excavation or an overhang
- Maintain control of the drill rig while you operate the hammer. Operating the equipment beyond its design limits can cause damage to people or equipment
- Know the maximum operating dimensions of your drill rig when the hammer is installed
- Ensure that there is adequate clearance between the drill rig and any stationary objects when you are maneuvering the machine
- Know the appropriate work site hand signals, and the personnel who are authorized to give these hand signals

## PROHIBITED USE OF MACHINERY

The hammer must only be operated by trained professionals. Never allow operation by anyone who is intoxicated, tired or feeling unwell. Use of the hammer in an explosive atmosphere (gasoline fumes, coal dust, etc.) is strictly prohibited.

## HAMMER MAINTENANCE

Read through the safety procedures in the operator's manual before assembling or disassembling the hammer. Always keep the hammer in the correct position to avoid heavy parts which can fall from hammer. Use a proper assembly stand to avoid the falling-over or rolling-over of either the hammer or its parts. Always use tongs with jaws that place a uniform load on the outside diameter of the hammer. Never grip the hammer with pipe wrenches or wrenches that can deform and damage it. Always place tongs on the body of the bit, not on the carbides. Do not apply heat of any kind to the piston case in order to remove the driver sub or the top sub.

# HEALTH AND SAFETY INFORMATION

## ROUTES OF EXPOSURE

Grinding or heating hardmetal blanks or hardmetal products will produce dust or fumes with dangerous ingredients that can be inhaled or swallowed, or which might come in contact with the skin or eyes.

## ACUTE TOXICITY

The dust is toxic by inhalation. Inhalation may cause irritation and inflammation in the airways. Skin contact can cause irritation and rash. Sensitized people may experience an allergic reaction.

## CHRONIC TOXICITY

Repeated inhalation of aerosols containing cobalt may cause obstruction in the airways. Prolonged inhalation of increased concentrations may cause lung fibrosis or lung cancer. Cobalt is a potent skin sensitizer. Repeated or prolonged contact can cause sensitization.

## CLASSIFICATION

Following hazard classification according to GHS/CLP applies to the hardmetal powder (3 % ≤ Co < 10 %):

- Acute Inhalation 3, H331: Toxic if inhaled

- Carcinogenicity 1B, H350i, May cause cancer by inhalation
- Repr. 2, H361f; Suspected of damaging fertility
- STOT RE 1, H372: Causes damage to lungs through prolonged or repeated exposure through inhalation
- Resp. Sens. 1B, H334 : May cause allergy or asthma symptoms or breathing difficulties if inhaled
- Skin Sens.1, H317: May cause an allergic skin reaction.
- Aquatic Acute 1, H400: Very toxic to aquatic life
- Aquatic Chronic 2, H411: Toxic to aquatic life, with long lasting effects

## PRECAUTIONARY STATEMENTS

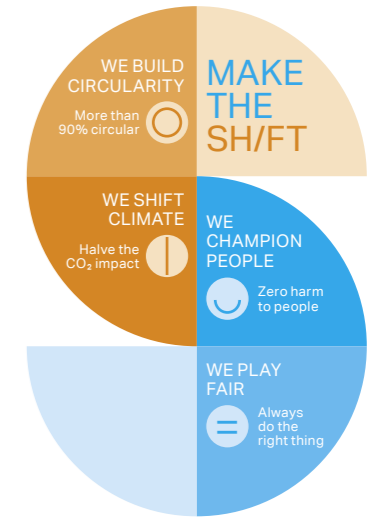
- Do not breathe the dust
- Wear protective gloves/protective clothing/eye protection
- In case of inadequate ventilation, wear respiratory protection
- Avoid release into the environment

**IF INHALED:** If breathing is difficult, remove the victim to fresh air and keep them at rest in a position comfortable for breathing. If they are experiencing respiratory symptoms: Call a POISON CENTER or doctor/physician.

# SANDVIK ROCK TOOLS: A SUSTAINABLE CHOICE

Sandvik Rock Tools is committed to contributing to a sustainable world. This commitment is in line with our Sandvik Group sustainability agenda, and we are determined to take action to make the mining industry as sustainable as possible and secure the necessary minerals we needed to make the shift towards a sustainable future.

With three clearly defined focus areas for our sustainability work, we embark on this important journey: We Lead the Way, We Build Circularity and We Shift Climate.



# SUSTAINABILITY MISSION STATEMENT

Sandvik Rock Tools has developed a Sustainability Mission Statement. This states that "we should be a forerunner in making the shift to sustainable business in our industry by being an innovative business partner, who delivers sustainable values (people, planet, profit) for all stakeholders in our industry".

The Sustainability Mission Statement also clarifies how we drive the sustainability progress within our division through the following four areas:

## WE ARE A PART OF THE SOLUTION

We commit to climate action to reach or exceed targets agreed in the Paris Agreement. We will reach carbon neutrality in our entire value chain by 2045.

## WE TAKE RESPONSIBILITY FOR OUR BUSINESS IMPACTS

We drive continuous improvement of sustainable mining and construction practices. Our offerings will not only be of the highest quality and effectiveness but also the most resource-efficient and circular.

## WE OPTIMIZE OUR OPERATIONS

Our operations, logistics and supplier base will be climate neutral, resource-lean and, as a result, nearly zero waste. We aim for zero harm to people.

## WE ARE SUSTAINABLE PEOPLE

We shall be a true learning organization with the highest level of knowledge and awareness within sustainability. Sustainability is always part of what we do.

Learn more about our sustainability work and read our full sustainability report online.



# EXPERIENCE THE CALMNESS OF RECYCLING

Few dispute the fact that we need to change the way we operate to further reduce our impact on the planet. We know that small streams make great rivers – and when working together, we make an impact. With our Rock Tools Recycling Program, we support a secure source of scarce minerals, lower the environmental impact and reduce waste.

## RECYCLING INCLUDED

Doing the right thing should be easy. That is why our carbide recycling program is now included with all our carbide rock tools. It is completely free – you even get paid for the collected minerals.

Experience the calming effects of recycling, while you know that your worn-out rock tools will be taken care of.



## FOR THE FUTURE

Carbide rock tools contain tungsten – a scarce and finite mineral expected to run out in 40 to 100 years. With our Recycling Program, we build circularity. It guarantees the production of premium tools that you can use again, and again, and again – today and in the future.

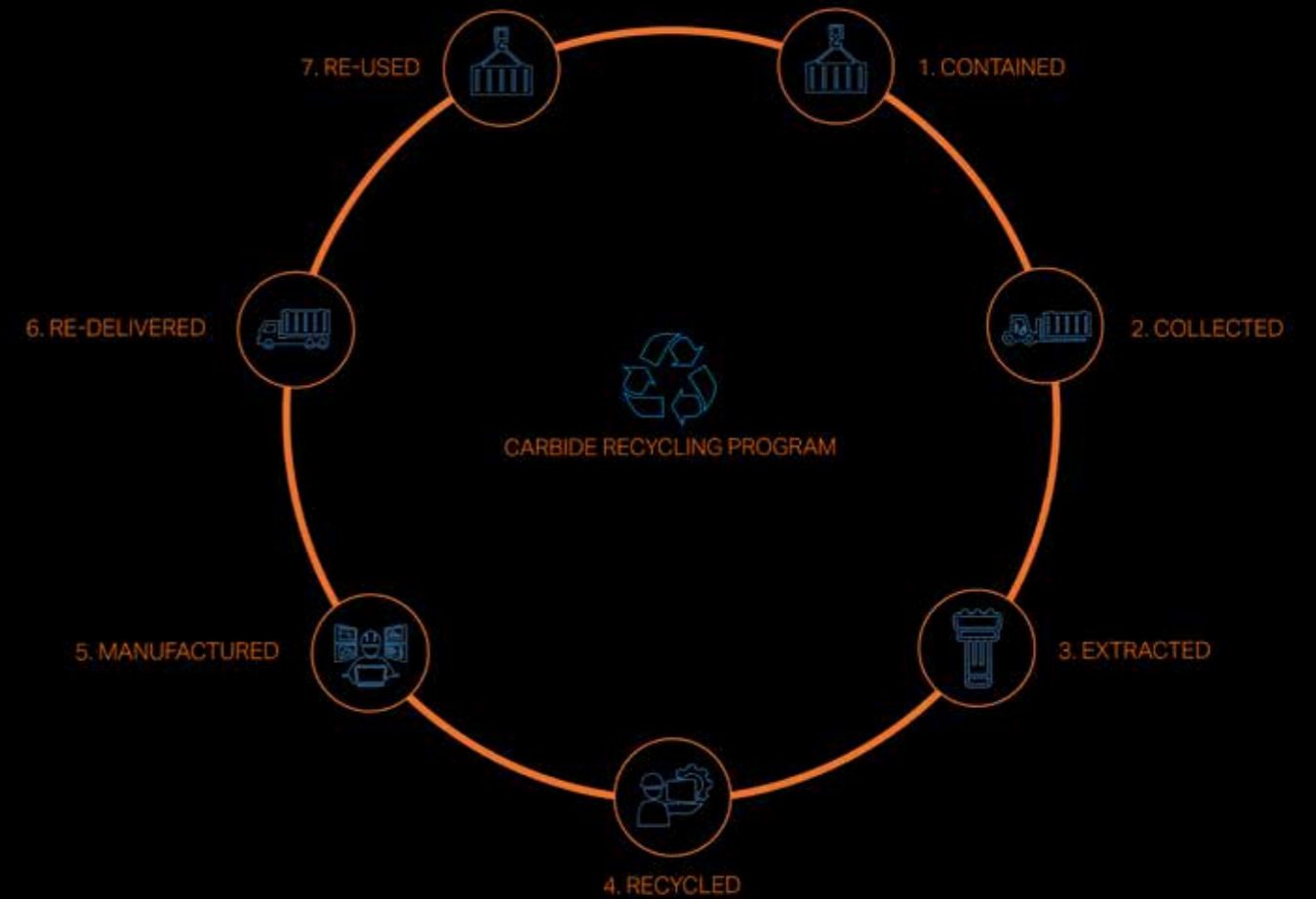


# ROCK TOOLS CARBIDE RECYCLING

## HOW DOES IT WORK?

We provide containers for your site in which you place your worn-out carbide tools. The worn-out tools are regularly collected, and the carbide inserts are removed locally by using our unique local extraction method. The inserts are then transported to our ISO certified factory, where the cemented carbide is recycled and brought back into production of new carbide rock tools.\*

This is one important action of making sure that raw materials are used in an efficient and sustainable way, and that our products are recycled when they reach end-of-life.



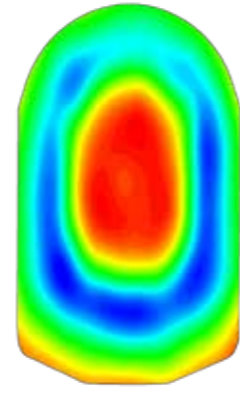
\*Please contact your local Sandvik representative for specific terms and conditions for your local market.

# POWERCARBIDE®

PowerCarbide® is the gathering of our most powerful carbide grades, representing the very best materials technology we have to offer. The innovative PowerCarbide® grades enable the buttons to retain their shape as long as possible. This ensures longer grinding intervals, fewer bit changes and improved safety.

## DUAL PROPERTY GRADES

DP55 has wear resistance similar to our standard grades but offers greater toughness. It is especially suited to large ballistic inserts, accommodating the higher loads the insert may be exposed to due to a longer protrusion. DP65 has similar toughness to our standard grades, but a considerably higher wear resistance. This grade works best when drilling in very abrasive rock with large spherical inserts.

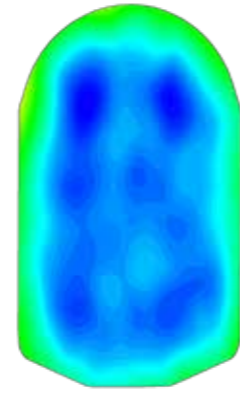


DP55 Grade

## SELF-HARDENING GRADES

SH69 is a grade with homogeneous properties throughout the material. It is "self-hardening" as it has the ability to become both more wear resistant and tougher as drilling progresses.

The hardness of the insert surface continuously increases during drilling, which means that the hard top never wears off. The self-hardening effect is greatest in hard and competent ground.



SH69 Grade

## XT GRADES

XT48 is our standard cemented carbide grade for most drilling conditions. It should be your first choice, especially when drilling in rock that is not fully known. Spherical XT48 inserts are optimized to withstand high load and wear.



XT48 Grade



Toughness

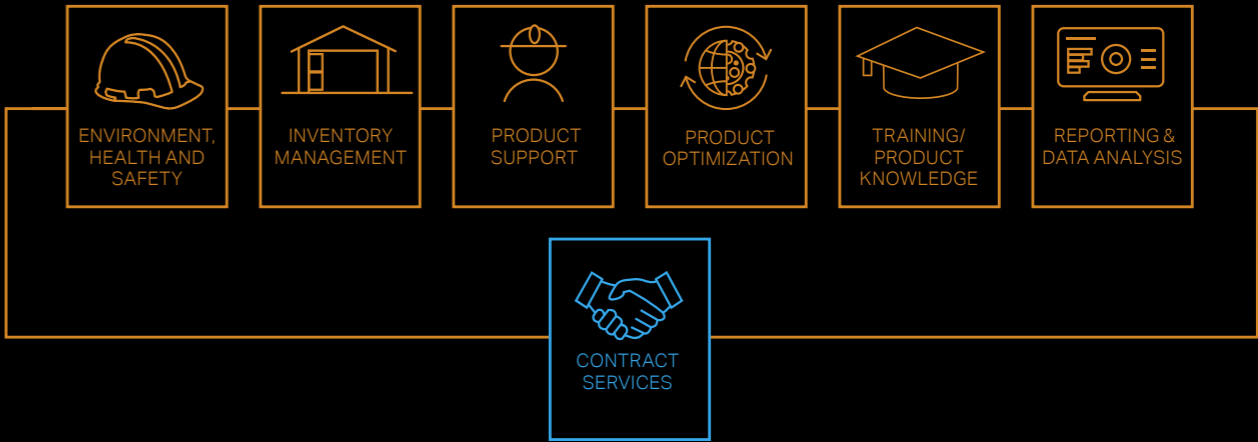
Hardness





# ROCK TOOLS SERVICES

Sandvik is a world-leader in the supply of mining and rock excavation tools and equipment. In addition to supplying your operation with the premium brand of rock tools, our range of added services and digital solutions support your drilling operations, everyday – all year round. And we can also take full responsibility for the supply and life cycle management of your tools with our Rock Tools Contract Services. Overall, we do everything we can to ensure you get maximum life, productivity and performance from your rock tools, so that you can achieve the lowest total drilling costs. With Sandvik Rock Tools Services, you will never work alone.



# PROPER CARE MEANS MAXIMIZED UPTIME

## LUBRICATION

It is extremely important that you provide the DTH hammer with a constant supply of good quality rock drill oil. This provides an air seal to reduce friction and prevent galling, when one hammer part is moving relative to another. Galling is a phenomenon that occurs when two pieces of metal rub against each other in the absence of a lubricant film between them. The excessive friction between these rubbing parts generates heat, which changes the properties of the metal, and which will consequently cause cracks in and breakage of the parts. This, therefore, leads to the loss of valuable production time.

Always make sure that you use the right rock drill oil for the climate and operating conditions at the work site.

## CORROSION

Corrosion can, in a simplified way, be defined as the destructive attack on metal through interaction with its environment.

Most environments encountered while drilling are considered to be corrosive, to a greater or lesser degree, to the metal parts of hammers and bits. For example, the fatigue strength of a steel part could be reduced by 100 times in the presence of ordinary tap water. The most devastating type of corrosion encountered in hammers and bits is corrosion pitting, where an extremely localized chemical attack results in holes in the metal. Pitting acts as a stress-raiser, which initiates cracking. Many cracks emanating from these stress sites eventually join together to form a single crack front, which ultimately results in failure of the component through corrosion fatigue.

You can prevent corrosion failures by having a protective barrier between the bit and hammer components, and the environment. This is achieved through proper and diligent use of readily available protective materials, such as rock drill oils and thread lubricants.



# ONLY THE BEST IS GOOD ENOUGH

For efficient Down-The-Hole (DTH) drilling, you need high performing drilling tools. Tools that increase your productivity and sustainability, while reducing your total operation cost and emissions. Within Sandvik, we offer one the widest range of DTH hammers and bits on the market – because we want you to have best possible outcome of your DTH drilling.

Choosing the right DTH tools for your specific needs and conditions can be a challenge, but we are here to support you every step of the way. In our extensive DTH range, you find a suitable solution for all ground conditions, and with our knowledge and experience, we guide you through to optimal accuracy and penetration.

## CONTACT US

Find your closest sales office to discover more about what we can do for you!



## OUR DOWN-THE-HOLE HAMMER RANGE OVERVIEW

### RH650



- SPEED
- AIR EFFICIENCY
- SUSTAINABILITY

The Tundo™ RH650 DTH hammer takes reliability and efficiency to a new level in your surface mining operations. The innovative solid piston and air cycle design enable high performance rates at low air consumption, leading to dramatically lowered drilling costs, fuel burn and carbon footprint.

### RH560



- SPEED
- AIR EFFICIENCY
- SUSTAINABILITY

The RH560 DTH hammer has been developed to be a robust and reliable addition to your surface mining and long-haul production drilling operations. It helps you drill faster and lower your drilling cost per hole.

### RH510



- SPEED
- AIR EFFICIENCY
- SUSTAINABILITY

The RH510 DTH hammer is engineered for high penetration rates and maximum productivity.

### RH460



- SPEED
- AIR EFFICIENCY
- SUSTAINABILITY

The RH460 DTH hammer has been developed with a focus on reliability and economy. It gives higher impact energy, giving high productivity in variable ground conditions.





# HOW ABOUT SAVING EVERY FIFTH TANK OF DIESEL?

## SIMPLY BY CHANGING THE HAMMER

In open-pit mines around the world, large down-the-hole drill rigs are working non-stop 24/7. In this context, the Tundo™ RH650 DTH hammer pays off quickly, thanks to its highly efficient use of the drill rig's compressed air.

Our field tests – benchmarking Tundo™ RH650 hammer to a selection of other, premium brand down-the-hole hammers – indicate that a drill rig equipped with the Tundo™ RH650 consumes up to 32% less diesel. With an average of 20%, this means that every fifth tank of diesel can be saved on every drill rig, by simply changing the hammer.

Tundo™ RH650 hammer is designed to give the rig operator the optimal possibility of drilling fast, straight and efficiently, without obstructions or unexpected downtime.

**SAVING 3.3 MILLION LITERS OF DIESEL ANNUALLY**  
The potential savings grow with the size of the drill rig fleet. An average-size mine operated by 15 Sandvik DI650 or equivalent, each running 5,500 hours per year, could reduce their diesel consumption by 3.3 million liters. Thereby also reducing their carbon footprint by 8,580 tons every year.

#### Key features:

- Extremely efficient air cycles for high productivity and low CO<sub>2</sub> footprint
- A solid piston with porting being done externally, to increase reliability and reduce stress induced failures
- Low weight for easier and safer handling
- No foot valve
- Optimized bit retaining system

# TUNDO™ RH650

6"

## COMPLETE HAMMER

3 1/2" API Reg Pin

32-6565-GSA-04C

| WEIGHT |       | OUTSIDE DIAMETER |      | HAMMER LENGTH |      | HAMMER LENGTH WITH BIT |      |              |      |
|--------|-------|------------------|------|---------------|------|------------------------|------|--------------|------|
| kg     | lb    | mm               | inch | mm            | inch | Bit closed             |      | Bit extended |      |
|        |       |                  |      |               |      | mm                     | inch | mm           | inch |
| 90     | 198.4 | 152              | 6.0  | 911           | 35.9 | 978                    | 38.5 | 1,008        | 39.7 |

| AIR CONSUMPTION, CFM |         |         | AIR CONSUMPTION, M <sup>3</sup> /MIN, DIN 1343 |        |        | POWER OUTPUT (KW) |
|----------------------|---------|---------|--|--------|--------|-------------------|
| 150 psi              | 250 psi | 350 psi | 10 bar   | 18 bar | 24 bar | 24 bar            |
| 283                  | 519     | 703     | 8  | 14.7   | 19.9   | 31.1              |



| REPLACEMENT PARTS ITEM DESCRIPTION              | Weight, kg | Weight, lb | Part No.    |
|---|------------|------------|-------------|
| 1. Top Sub                                      |            |            |             |
| 3 1/2" API Reg Pin                              | 22.0       | 48.5       | BG01060467  |
| 2. O-ring Top Sub                               |            |            | In seal kit |
| 3. Check Valve Dart                             | 0.4        | 0.9        | 25-99002    |
| 4. Check Valve Spring                           | 0.03       | 0.07       | BG00348123  |
| 5. Check Valve Guide                            | 2.8        | 6.2        | BG01060465  |
| 6. O-Ring Check Valve Guide                     |            |            | In seal kit |
| 7. Inner Cylinder                               |            |            |             |
| 8. Piston                                       | 17.0       | 37.5       | BG01060455  |
| 9. Piston Case Assembly incl inner cylinder (8) | 38.3       | 84.4       | BG01470195  |
| 10. O-Ring Guide Sleeve                         |            |            | In seal kit |
| 11. Guide Sleeve with O-Ring                    | 1.3        | 2.9        | BG01378687  |
| 12. Piston Retaining Ring                       |            |            | BG01060462  |
| 13 Bit Retainer Ring                            | 0.5        | 1.1        | BG01060461  |
| 14. Driver Sub                                  | 7.3        | 16.1       | BG01060460  |
| <b>Seal Kit</b>                                 |            |            |             |
| 1 Piece of 2, 6, and 10                         | 0.01       | 0.02       | BG01454154  |
| <b>Rebuild Kit</b>                              |            |            |             |
| 1 piece of 1, 7, 9, 14 & Seal Kit               |            |            |             |
| 3 1/2" API Reg Pin                              | 676        | 149        | BG01270370  |
| <b>Bit shank</b>                                |            |            |             |
| S6  |            |            |             |



# DRILL FASTER AND REDUCE YOUR COSTS

## HIGHER PRODUCTIVITY, REDUCED DOWNTIME

The RH560 DTH hammer has been developed to be a robust and reliable addition to your surface mining and long-haul production drilling operations. It helps you drill faster and lower your drilling cost per hole.

The RH560 hammer is made for jobs that require a more efficient air cycle, allowing you to get more energy out of each blow of the piston and increase your rate of penetration. Using less air, you still get a high output of power that is more energy efficient and uses less fuel.

It also does not use a foot valve in the bits, which will help prevent inconvenient and costly break-downs. Instead, designed so the airflow can be handled without the use of a foot valve. With less leakage, you'll enjoy better efficiency and lower energy costs.

Other improvements have made the RH560 an even more reliable and functional workhorse in your operations:

- Industry-standard shanks proven and reliable technology
- Robust piston, increased reliability
- A new bit retaining system, that are able to carry high loads
- A reduced number of inner components minimizes parts breakage
- A V-lock system prevents component movement
- Less air is required, allowing you to build pressure much faster and shorten start up phase for the drill

|                    |    |
|--------------------|----|
| 3.5" RH560 HAMMERS | 22 |
| 4" RH560 HAMMERS   | 23 |
| 5" RH560 HAMMERS   | 25 |
| 6" RH560 HAMMERS   | 26 |
| 9" RH560 HAMMERS   | 27 |

# RH560g

## 3.5"


### COMPLETE HAMMER

|                    |                 |
|--------------------|-----------------|
| 2 3/8" API Reg Pin | 32-5635-SRA-16S |
| #21 Cubex Pin      | 32-5635-SRA-63S |

| WEIGHT |      | OUTSIDE DIAMETER |      | HAMMER LENGTH |      | HAMMER LENGTH WITH BIT |      |              |      |
|--------|------|------------------|------|---------------|------|------------------------|------|--------------|------|
|        |      |                  |      |               |      | Bit closed             |      | Bit extended |      |
| kg     | lb   | mm               | inch | mm            | inch | mm                     | inch | mm           | inch |
| 29     | 63.8 | 85               | 3.3  | 914           | 36.0 | 979                    | 38.5 | 1,004        | 39.5 |

| AIR CONSUMPTION, CFM |         |         | AIR CONSUMPTION, M3/MIN, DIN 1343 |        |        | POWER OUTPUT (KW) |  |
|----------------------|---------|---------|-----------------------------------|--------|--------|-------------------|--|
| 150 psi              | 250 psi | 350 psi | 10 bar                            | 18 bar | 24 bar | 24 bar            |  |
| 159                  | 293     | 392     | 4.5                               | 8.3    | 11.1   | 20.9              |  |



| REPLACEMENT PARTS ITEM DESCRIPTION  | Weight, kg | Weight, lb | Part No.   |
|-------------------------------------|------------|------------|--|
| <b>1. Top Sub</b>                   |            |            |  |
| 2 3/8" API Reg Pin                  | 5.8        | 12.8       | BG00014759   |
| #21 Cubex Pin                       | 5.8        | 12.8       | BG00568016   |
| <b>2. Check Valve Dart no Choke</b> |            |            |  |
| 3. Check Valve Spring               | 0.02       | 0.04       | BG00876172   |
| <b>4. Make Up Ring</b>              |            |            |  |
| 5. Air Distributor with O-Ring      | 1.9        | 4.2        | BG00100316   |
| <b>6. O-Ring Air Distributor</b>    |            |            |  |
| 7. Inner Cylinder                   | 1.9        | 4.2        | BG00100315   |
| 8. Piston                           | 5.3        | 11.7       | BG00216128   |
| 9. Piston Case                      | 10.2       | 22.4       | BG00227151   |
| <b>10. Piston retaining ring</b>    |            |            |  |
| 11. O-Ring Guide Sleeve             |            |            | In seal kit  |
| 12. Guide Sleeve with O-Ring        | 1.3        | 2.9        | BG00216219   |
| 13. Bit Retainer Ring               | 0.2        | 0.4        | BG00227169   |
| <b>14. O-Ring Bit Retainer Ring</b> |            |            |  |
| 15. Driver Sub                      | 1.9        | 4.2        | BG00203662   |
| <b>Seal Kit</b>                     |            |            |  |
| 1 Piece of 6, 14 & 2 of 11          | 0.01       | 0.02       | BG01010257   |
| <b>Rebuild Kit</b>                  |            |            |  |
| 1 piece of 1,9,15 & Seal Kit        |            |            |  |
| 2 3/8" API Reg Pin                  | 17.0       | 37.4       | BG01010292   |
| #21 Cubex Pin                       | 17.0       | 37.4       | BG01010301   |
| <b>Bit shank</b>                    |            |            |  |
| 560-3.5                             |            |            |  |

# RH560g

## 4"


### COMPLETE HAMMER

|                    |                 |
|--------------------|-----------------|
| 2 3/8" API Reg Pin | 32-5645-GTA-16S |
| #24 Cubex Pin      | 32-5645-GTA-77S |

| WEIGHT |       | OUTSIDE DIAMETER |      | HAMMER LENGTH |      | HAMMER LENGTH WITH BIT |      |              |      |
|--------|-------|------------------|------|---------------|------|------------------------|------|--------------|------|
|        |       |                  |      |               |      | Bit closed             |      | Bit extended |      |
| kg     | lb    | mm               | inch | mm            | inch | mm                     | inch | mm           | inch |
| 48     | 105.6 | 105              | 4.1  | 1,016         | 40   | 1,106                  | 43.5 | 1,140        | 44.9 |

| AIR CONSUMPTION, CFM |         |         | AIR CONSUMPTION, M3/MIN, DIN 1343 |        |        | POWER OUTPUT (KW) |  |
|----------------------|---------|---------|-----------------------------------|--------|--------|-------------------|--|
| 150 psi              | 250 psi | 350 psi | 10 bar                            | 18 bar | 24 bar | 24 bar            |  |
| 237                  | 441     | 597     | 6.7                               | 12.5   | 16.9   | 29.1              |  |



| REPLACEMENT PARTS ITEM DESCRIPTION  | Weight, kg | Weight, lb | Part No.  |
|-------------------------------------|------------|------------|---|
| <b>1. Top Sub</b>                   |            |            |   |
| 2 3/8" API Reg Pin                  | 9.4        | 20.7       | BG00378463  |
| #24 Cubex Pin                       | 9.0        | 19.8       | BG00906532  |
| <b>2. O-ring Top Sub</b>            |            |            |   |
| 3. O-ring Check Valve Dart          |            |            | In seal kit   |
| <b>4. Check Valve Dart no Choke</b> |            |            |   |
| 5. Check Valve Spring               | 0.04       | 0.1        | BG00876172  |
| <b>6. Make Up Ring</b>              |            |            |   |
| 7. Air Distributor with O-Ring      | 2.8        | 6.2        | BG00377566  |
| <b>8. O-Ring Air Distributor</b>    |            |            |   |
| 9. Inner Cylinder                   | 2.6        | 5.7        | BG00376970  |
| 10. Piston                          | 8.5        | 18.7       | BG00334820  |
| 11. Piston Case                     | 19.5       | 42.9       | BG00361296  |
| <b>12. O-Ring Guide Sleeve</b>      |            |            |   |
| 13. Guide Sleeve with O-Ring        | 1.3        | 2.9        | BG00334637  |
| <b>14. Bit Retainer Ring</b>        |            |            |   |
| 15. Driver Sub                      | 3.4        | 7.5        | BG00803816  |
| <b>Seal Kit</b>                     |            |            |   |
| 1 Piece of 2, 3, 8 & 12             | 0.01       | 0.02       | BG00925938  |
| <b>Rebuild Kit</b>                  |            |            |   |
| 1 piece of 1,11,16 & Seal Kit       |            |            |   |
| 2 3/8" API Reg Pin                  | 32.4       | 71.3       | BG00933221  |
| #24 Cubex Pin                       | 32.0       | 70.4       | BG00933225  |
| <b>Bit shank</b>                    |            |            |   |
| 560-4                               |            |            |  |

# RH560w

4"

# RH560g

5"

## COMPLETE HAMMER

2 3/8" API Reg Pin 32-5645-WTA-16S

| WEIGHT |       | OUTSIDE DIAMETER |      | HAMMER LENGTH |      | HAMMER LENGTH WITH BIT |      |              |      |
|--------|-------|------------------|------|---------------|------|------------------------|------|--------------|------|
| kg     | lb    | mm               | inch | mm            | inch | Bit closed             |      | Bit extended |      |
|        |       |                  |      |               |      | mm                     | inch | mm           | inch |
| 48     | 105.6 | 105              | 4.1  | 1,016         | 40   | 1,106                  | 43.5 | 1,140        | 44.9 |

| AIR CONSUMPTION, CFM |         |         | AIR CONSUMPTION, M <sup>3</sup> /MIN, DIN 1343 |        |        | POWER OUTPUT (KW) |
|----------------------|---------|---------|--|--------|--------|-------------------|
| 150 psi              | 250 psi | 350 psi | 24 bar   | 30 bar | 35 bar | 35 bar            |
| 237                  | 441     | 597     | 17.9   | 23.0   | 27.1   | 45.3              |

## COMPLETE HAMMER

3 1/2" API Reg Pin 32-5655-GQA-04C

#24 Cubex Pin 32-5655-GQA-77C

| WEIGHT |     | OUTSIDE DIAMETER |      | HAMMER LENGTH |      | HAMMER LENGTH WITH BIT |      |              |      |
|--------|-----|------------------|------|---------------|------|------------------------|------|--------------|------|
| kg     | lb  | mm               | inch | mm            | inch | Bit closed             |      | Bit extended |      |
|        |     |                  |      |               |      | mm                     | inch | mm           | inch |
| 76     | 167 | 127              | 5.0  | 1,052         | 41.4 | 1,141                  | 41   | 1,170        | 42.1 |

| AIR CONSUMPTION, CFM |         |         | AIR CONSUMPTION, M <sup>3</sup> /MIN, DIN 1343 |        |        | POWER OUTPUT (KW) |
|----------------------|---------|---------|--|--------|--------|-------------------|
| 150 psi              | 250 psi | 350 psi | 10 bar   | 18 bar | 24 bar | 24 bar            |
| 250                  | 526     | 755     | 7.1  | 14.9   | 21.4   | 31.7              |



| REPLACEMENT PARTS ITEM DESCRIPTION | Weight, kg | Weight, lb | Part No.    |
|------------------------------------|------------|------------|-------------|
| 1. Top Sub                         |            |            |             |
| 2 3/8" API Reg Pin                 | 9.4        | 20.7       | BG00378463  |
| 2. O-ring Top Sub                  |            |            | In seal kit |
| 3. O-ring Check Valve Dart         |            |            | In seal kit |
| 4. Check Valve Dart no Choke       | 0.3        | 0.7        | BG00904454  |
| 5. Check Valve Spring              | 0.04       | 0.1        | BG00876172  |
| 6. Make Up Ring                    | 0.1        | 0.2        | BG00014825  |
| 7. Air Distributor with O-Ring     | 2.8        | 6.2        | BG00978469  |
| 8. O-Ring Air Distributor          |            |            | In seal kit |
| 9. Inner Cylinder                  | 2.6        | 5.7        | BG00968811  |
| 10. Piston                         | 8.5        | 18.7       | BG00334820  |
| 11. Piston Case                    | 19.5       | 42.9       | BG00361296  |
| 12. O-Ring Guide Sleeve            |            |            | In seal kit |
| 13. Guide Sleeve with O-Ring       | 1.3        | 2.9        | BG00967093  |
| 14. Bit Retainer Ring              | 0.2        | 0.4        | BG00811287  |
| 15. Driver Sub                     | 3.4        | 7.5        | BG00803816  |
| <b>Seal Kit</b>                    |            |            |             |
| 1 Piece of 2, 3, 8 & 12            | 0.01       | 0.02       | BG00925938  |
| <b>Rebuild Kit</b>                 |            |            |             |
| 1 piece of 1, 11, 16 & Seal Kit    |            |            |             |
| 2 3/8" API Reg Pin                 | 32.4       | 71.3       | BG00933221  |
| <b>Bit shank</b>                   |            |            |             |



| REPLACEMENT PARTS ITEM DESCRIPTION | Weight, kg | Weight, lb | Part No.    |
|------------------------------------|------------|------------|-------------|
| 1. Top Sub                         |            |            |             |
| 3 1/2" API Reg Pin                 | 16.2       | 35.7       | BG00419346  |
| #24 Cubex Pin                      | 15.2       | 33.5       | BG01179147  |
| 2. O-ring Top Sub                  |            |            | In seal kit |
| 3. O-ring Check Valve Dart         |            |            | In seal kit |
| 4. Check Valve Dart no Choke       | 0.5        | 1.1        | BG00906719  |
| 5. Check Valve Spring              | 0.02       | 0.04       | BG00854876  |
| 6. Make Up Ring                    | 0.2        | 0.4        | BG00014994  |
| 7. Air Distributor with O-Ring     | 4.6        | 10.1       | BG00419578  |
| 8. O-Ring Air Distributor          |            |            | In seal kit |
| 9. Inner Cylinder                  | 3.9        | 8.6        | BG00419463  |
| 10. Piston                         | 15.0       | 33.1       | BG00418976  |
| 11. Piston Case                    | 26.0       | 57.3       | BG00418712  |
| 12. O-Ring Guide Sleeve            |            |            | In seal kit |
| 13. Guide Sleeve with O-Ring       | 3.2        | 7.1        | BG00418725  |
| 14. Bit Retainer Ring              | 0.2        | 0.4        | BG00817463  |
| 15. Driver Sub                     | 5.6        | 12.3       | BG00817456  |
| <b>Seal Kit</b>                    |            |            |             |
| 1 Piece of 2, 3, 8 & 2 of 12       | 0.01       | 0.02       | BG01074634  |
| <b>Rebuild Kit</b>                 |            |            |             |
| 1 piece of 1, 11, 15 & Seal Kit    |            |            |             |
| 3 1/2" API Reg Pin                 | 48         | 106        | BG01178984  |
| #24 Cubex Pin                      | 47         | 104        | BG01179148  |
| <b>Bit shank</b>                   |            |            |             |



# RH560g

6"

# RH560

9"

### COMPLETE HAMMER

|                    |                 |
|--------------------|-----------------|
| 3 1/2" API Reg Pin | 32-5665-GQA-04C |
| #28 Cubex Pin      | 32-5665-GQA-56C |

| WEIGHT |       | OUTSIDE DIAMETER |      | HAMMER LENGTH |      | HAMMER LENGTH WITH BIT |      |              |      |
|--------|-------|------------------|------|---------------|------|------------------------|------|--------------|------|
| kg     | lb    | mm               | inch | mm            | inch | Bit closed             |      | Bit extended |      |
|        |       |                  |      |               |      | mm                     | inch | mm           | inch |
| 117    | 257.9 | 150              | 5.9  | 1,158         | 45.6 | 1,266                  | 49.8 | 1,307        | 51.5 |

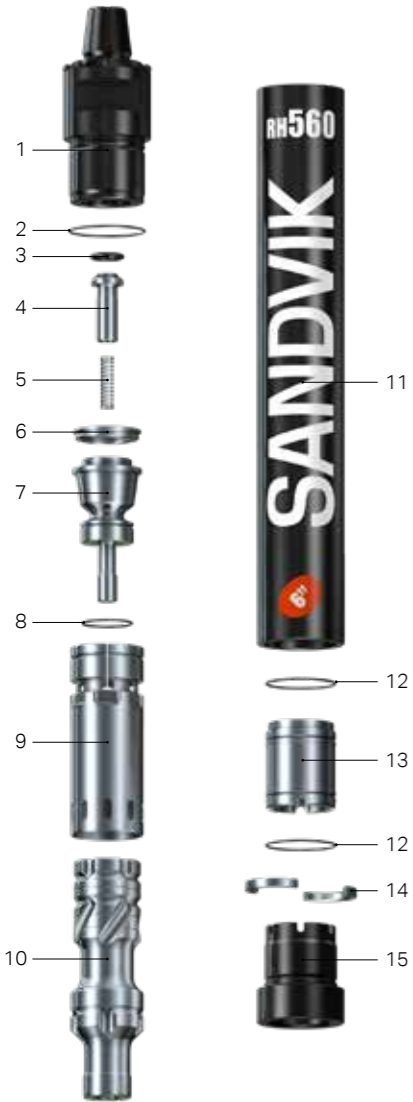
| AIR CONSUMPTION, CFM |         |         | AIR CONSUMPTION, M <sup>3</sup> /MIN, DIN 1343 |        |        | POWER OUTPUT (KW) |
|----------------------|---------|---------|--|--------|--------|-------------------|
| 150 psi              | 250 psi | 350 psi | 10 bar   | 18 bar | 24 bar | 24 bar            |
| 310                  | 629     | 847     | 8.8  | 17.8   | 24     | 34.5              |

### COMPLETE HAMMER

|                 |                 |
|-----------------|-----------------|
| 5 1/4" BECO Pin | 32-5690-SRA-84S |
|-----------------|-----------------|

| WEIGHT |     | OUTSIDE DIAMETER |      | HAMMER LENGTH |      | HAMMER LENGTH WITH BIT |      |              |      |
|--------|-----|------------------|------|---------------|------|------------------------|------|--------------|------|
| kg     | lb  | mm               | inch | mm            | inch | Bit closed             |      | Bit extended |      |
|        |     |                  |      |               |      | mm                     | inch | mm           | inch |
| 276    | 609 | 210              | 8.3  | 1,366         | 53.8 | 1,506                  | 59.3 | 1,548        | 60.9 |

| AIR CONSUMPTION, CFM |         |         | AIR CONSUMPTION, M <sup>3</sup> /MIN, DIN 1343 |        |        | POWER OUTPUT (KW) |
|----------------------|---------|---------|--|--------|--------|-------------------|
| 150 psi              | 250 psi | 350 psi | 10 bar   | 18 bar | 24 bar | 24 bar            |
| 622                  | 925     | 1,148   | 17.6   | 26.2   | 32.5   | 54.8              |



| REPLACEMENT PARTS ITEM DESCRIPTION | Weight, kg | Weight, lb | Part No.    |
|------------------------------------|------------|------------|-------------|
| <b>1. Top Sub</b>                  |            |            |             |
| 3 1/2" API Reg Pin                 | 25.4       | 56.0       | BG00867633  |
| #28 Cubex Pin                      | 27         | 59.5       | BG00859367  |
| <b>2. O-ring Top Sub</b>           |            |            | In seal kit |
| <b>3. O-ring Check Valve Dart</b>  |            |            | In seal kit |
| 4. Check Valve Dart no Choke       | 0.7        | 1.5        | BG00904397  |
| 5. Check Valve Spring              | 0.03       | 0.07       | BG00854872  |
| 6. Make Up Ring                    | 0.4        | 0.9        | BG00014865  |
| 7. Air Distributor with O-Ring     | 6.2        | 13.7       | BG00386925  |
| <b>8. O-Ring Air Distributor</b>   |            |            | In seal kit |
| 9. Inner Cylinder                  | 5.8        | 12.8       | BG00385028  |
| 10. Piston                         | 23         | 50.7       | BG00384750  |
| 11. Piston Case                    | 43         | 94.8       | BG00867630  |
| 12. O-Ring Guide Sleeve            |            |            | In seal kit |
| 13. Guide Sleeve with O-Ring       | 5          | 11.0       | BG00695224  |
| 14. Bit Retainer Ring              | 0.4        | 0.9        | BG00694800  |
| 15. Driver Sub                     | 7.2        | 15.9       | BG01054565  |
| <b>Seal Kit</b>                    |            |            |             |
| 1 Piece of 2, 7 & 2 of 11          | 0.01       | 0.02       | BG00874941  |
| <b>Rebuild Kit</b>                 |            |            |             |
| 1 piece of 1,10,14 & Seal Kit      |            |            |             |
| 3 1/2" API Reg Pin                 | 75         | 165.3      | BG00909795  |
| #28 Cubex Pin                      | 76         | 167.6      | BG00909848  |
| <b>Bit shank</b>                   |            |            |             |

560-6



| REPLACEMENT PARTS ITEM DESCRIPTION | Weight, kg | Weight, lb | Part No.    |
|------------------------------------|------------|------------|-------------|
| <b>1. Top Sub</b>                  |            |            |             |
| 5 1/4" BECO Pin                    | 68.0       | 150        | BG00735274  |
| <b>2. O-ring Top Sub</b>           |            |            | In seal kit |
| 3. Check Valve Dart                | 0.7        | 1.50       | BG00321984  |
| 4. Check Valve Spring              | 0.03       | 0.07       | BG00652827  |
| 5. Make Up Ring                    | 0.5        | 1.10       | BG00440285  |
| 6. Air Distributor with O-Ring     | 18.0       | 39.7       | BG00440270  |
| <b>7. O-Ring Air Distributor</b>   |            |            | In Seal Kit |
| 8. Inner Cylinder                  | 12.0       | 26.5       | BG00440231  |
| 9. Piston                          | 55.0       | 121.3      | BG00434983  |
| 10. Piston Case                    | 82.5       | 182.0      | BG00872359  |
| 11. O-Ring Guide Sleeve            |            |            | In Seal Kit |
| 12. Guide Sleeve with O-Ring       | 12.7       | 28.0       | BG00782271  |
| 13. Bit Retainer Ring              | 1.8        | 4.0        | BG00854834  |
| 14. Driver Sub                     | 20.2       | 44.5       | BG01478916  |

| <b>Seal Kit</b>           | Weight, kg | Weight, lb | Part No.   |
|---------------------------|------------|------------|------------|
| 1 Piece of 2, 7 & 2 of 11 | 0.01       | 0.02       | BG00875031 |

| <b>Rebuild Kit</b>              | Weight, kg | Weight, lb | Part No.   |
|---------------------------------|------------|------------|------------|
| 1 piece of 1, 10, 14 & Seal Kit |            |            |            |
| 5 1/4" BECO Pin                 | 174        | 384        | BG01152012 |

| <b>Bit shank</b> | Weight, kg | Weight, lb | Part No. |
|------------------|------------|------------|----------|
| 560-9            |            |            |          |

560-9



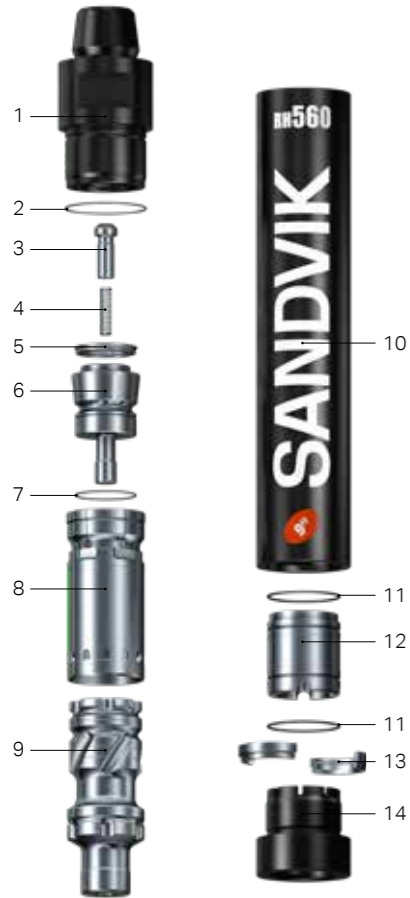
## COMPLETE HAMMER

5 1/4" BECO Pin 32-5695-GRA-84S

| WEIGHT |       | OUTSIDE DIAMETER |      | HAMMER LENGTH |      | HAMMER LENGTH WITH BIT |      |              |      |
|--------|-------|------------------|------|---------------|------|------------------------|------|--------------|------|
| kg     | lb    | mm               | inch | mm            | inch | Bit closed             |      | Bit extended |      |
|        |       |                  |      |               |      | mm                     | inch | mm           | inch |
| 310.6  | 683.4 | 220              | 8.7  | 1,366         | 53.8 | 1,506                  | 59.3 | 1,548        | 60.9 |

| AIR CONSUMPTION, CFM |         |         | AIR CONSUMPTION, M <sup>3</sup> /MIN, DIN 1343 |        |        | POWER OUTPUT (KW) |
|----------------------|---------|---------|--|--------|--------|-------------------|
| 150 psi              | 250 psi | 350 psi | 10 bar   | 18 bar | 24 bar | 24 bar            |
| 622                  | 925     | 1,148   | 17.6   | 26.2   | 32.5   | 54.8              |



| REPLACEMENT PARTS ITEM DESCRIPTION | Weight, kg | Weight, lb | Part No.    |
|------------------------------------|------------|------------|-------------|
| 1. Top Sub                         |            |            |             |
| 5 1/4" BECO Pin                    | 74.1       | 163.1      | BG01792066  |
| 2. O-ring Top Sub                  |            |            | In seal kit |
| 3. Check Valve Dart                | 0.7        | 1.5        | BG00321984  |
| 4. Check Valve Spring              | 0.03       | 0.07       | BG00652827  |
| 5. Make Up Ring                    | 0.5        | 1.1        | BG00440285  |
| 6. Air Distributor with O-Ring     | 18.0       | 39.7       | BG00440270  |
| 7. O-Ring Air Distributor          |            |            | In Seal Kit |
| 8. Inner Cylinder                  | 12.0       | 26.5       | BG00440231  |
| 9. Piston                          | 55.0       | 121.3      | BG00434983  |
| 10. Piston Case                    | 112.3      | 246.9      | BG00868579  |
| 11. O-Ring Guide Sleeve            |            |            | In Seal Kit |
| 12. Guide Sleeve with O-Ring       | 12.7       | 28.0       | BG00782271  |
| 13. Bit Retainer Ring              | 1.8        | 4.0        | BG00854834  |
| 14. Driver Sub                     | 21.0       | 46.3       | BG01151957  |

| Seal Kit                  |      |      |            |
|---------------------------|------|------|------------|
| 1 Piece of 2, 7 & 2 of 11 | 0.01 | 0.02 | BG00875031 |

| Rebuild Kit                     |     |     |            |
|---------------------------------|-----|-----|------------|
| 1 piece of 1, 10, 14 & Seal Kit |     |     |            |
| 5 1/4" BECO Pin                 | 174 | 384 | BG01152012 |

| Bit shank |  |  |  |
|-----------|--|--|--|
| 560-9     |  |  |  |



# RH510 DELIVERS ADDED VALUE TO MOST DRILLING APPLICATIONS

Designed for operating pressures up to 24 bar (350 psi). The RH510 hammer does not require a foot valve in the bit further lowering the chance for down time. The unique design maximizes energy efficiency along with fuel savings and minimizes total drilling costs.

#### Key features:

- Foot valve less bit shank
- High performance
- Simple design
- Easy to service
- Mirror impact concept

|                  |    |
|------------------|----|
| 3" RH510 HAMMERS | 32 |
| 4" RH510 HAMMERS | 33 |
| 5" RH510 HAMMERS | 34 |
| 6" RH510 HAMMERS | 37 |
| 8" RH510 HAMMERS | 41 |





# RH510r

3"

# RH510r

4"

### Complete Hammer

2 3/8" API reg. pin top sub 32-5130-RMA-16S

| WEIGHT |    | OUTSIDE DIAMETER |      | HAMMER LENGTH |      | HAMMER LENGTH WITH BIT |      |              |      |
|--------|----|------------------|------|---------------|------|------------------------|------|--------------|------|
| kg     | lb | mm               | inch | mm            | inch | Bit closed             |      | Bit extended |      |
| kg     | lb | mm               | inch | mm            | inch | mm                     | inch | mm           | inch |
| 25     | 55 | 81.3             | 3.2  | 823           | 32.4 | 875                    | 34.4 | 911          | 35.9 |

| AIR CONSUMPTION, CFM |         |         | AIR CONSUMPTION, M <sup>3</sup> /MIN |        |        |
|----------------------|---------|---------|--------------------------------------|--------|--------|
| 150 psi              | 250 psi | 350 psi | 10 bar                               | 18 bar | 24 bar |
| 172                  | 304     | 436     | 4.9                                  | 8.6    | 12.3   |

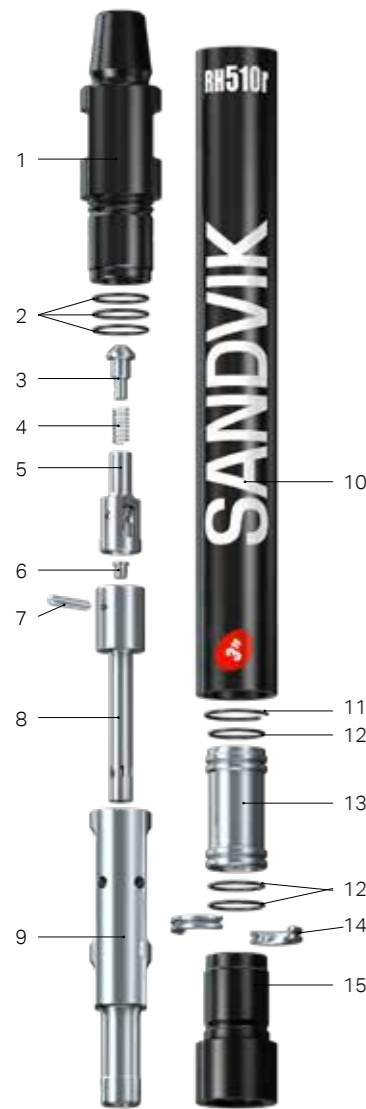
### Complete Hammer


2 3/8" API reg. pin top sub 32-5140-RMA-16S

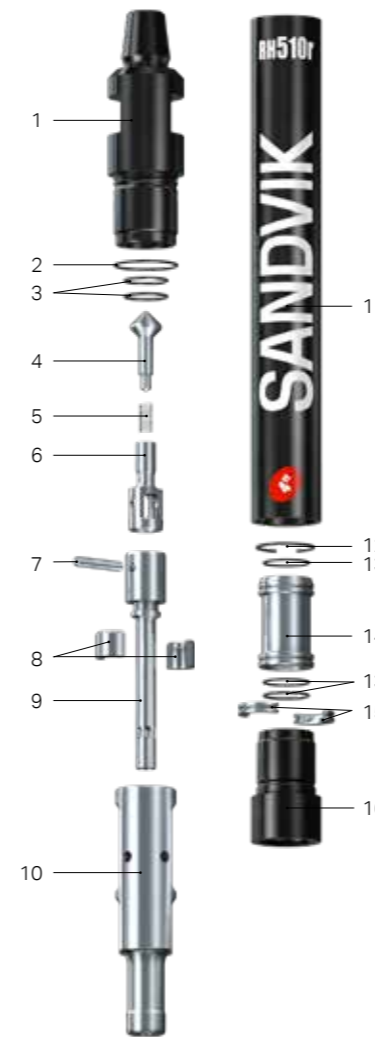
| WEIGHT |    | OUTSIDE DIAMETER |      | HAMMER LENGTH |      | HAMMER LENGTH WITH BIT |      |              |      |
|--------|----|------------------|------|---------------|------|------------------------|------|--------------|------|
| kg     | lb | mm               | inch | mm            | inch | Bit closed             |      | Bit extended |      |
| kg     | lb | mm               | inch | mm            | inch | mm                     | inch | mm           | inch |
| 38     | 83 | 98               | 3.56 | 914           | 36   | 989                    | 38.9 | 1,029        | 40.5 |


  

| AIR CONSUMPTION, CFM |         |         | AIR CONSUMPTION, M <sup>3</sup> /MIN |        |        |
|----------------------|---------|---------|--------------------------------------|--------|--------|
| 150 psi              | 250 psi | 350 psi | 10 bar                               | 18 bar | 24 bar |
| 180                  | 370     | 560     | 5.1                                  | 10.5   | 15.9   |
| Low volume option    | 151     | 315     | 4.3                                  | 8.9    | 13.2   |



| REPLACEMENT PARTS ITEM DESCRIPTION           | Weight, kg | Weight, lb | Part No.   |
|--|------------|------------|--|
| 1. Top subs                                  |            |            |  |
| 2 3/8" API reg. pin                          | 5          | 11         | 33-3A001/16A   |
| 2. O-ring top sub (3) ID and OD              |            |            | In seal kit  |
| 3. Check valve dart with spring              | 0.3        | 0.7        | 25-99006A  |
| 4. Check valve dart spring                   | 0.02       | 0.01       | 22-99071   |
| 5. Check valve guide                         | 0.23       | 0.5        | 39-3A001   |
| 6. Choke set, blank 1/8", 3/16", & 1/4"      | 0.1        | 0.2        | 29-48017A  |
| 7. Feed tube retainer pin                    | 0.03       | 0.1        | 12-99021   |
| 8. Feed tube with retainer pin & blank choke | 0.45       | 1          | 37-3A001A  |
| 9. Piston                                    | 3.86       | 8.5        | BG00468603   |
| 10. Piston case with retainer ring           | 10.9       | 24         | BG00468599   |
| 11. Piston retainer ring                     | 0.05       | 0.1        | 23-99027   |
| 12. O-rings – guide sleeve, bit retainer     |            |            | In seal kit  |
| 13. Guide sleeve with 2 O-rings (12)         | 1          | 2.2        | 26-3A010A  |
| 14. Bit retainer ring with O-ring (12)       | 0.09       | 0.2        | 27-3A006A  |
| 15. Driver sub                               | 2.18       | 4.8        | 34-3A006   |
| <b>Seal kit</b>                              |            |            |  |
| 3 piece of 2 & 3 of 12                       | 0.25       | 0.5        | 38-3A056   |
| <b>Rebuild kit</b>                           |            |            |  |
| 1 piece of 1, 1 of 10, 1 of 15 & seal kit    |            |            |  |
| 2 3/8" API reg. pin                          | 18.1       | 40         | BG00478477   |
| <b>Bit shank</b>                             |            |            |  |
| M30  |            |            |  |



| REPLACEMENT PARTS ITEM DESCRIPTION        | Weight, kg | Weight, lb | Part No.  |
|---|------------|------------|---|
| 1. Top subs with 3 O-rings                |            |            |   |
| 2 3/8" API reg. pin                       | 10         | 22         | 33-48001-1/16A  |
| 2. O-ring top sub OD (1)                  |            |            | In seal kit   |
| 3. O-ring top sub ID (2)                  |            |            | In seal kit   |
| 4. Check valve dart (with spring)         | 0.3        | 0.66       | 25-99001A   |
| 5. Check valve spring                     | 0.02       | 0.04       | 22-99071  |
| 6. Check valve guide                      | 0.2        | 0.44       | 39-48001-1  |
| 7. Feed tube retainer pin                 | 0.03       | 0.07       | 12-99014  |
| 8. Tuning ring for low volume (optional)  | 0.23       | 0.51       | 56-48552  |
| 9. Solid Feedtube with retainer pin       | 0.7        | 1.54       | BG00785560  |
| 10. Piston                                | 7          | 15.4       | BG00387202  |
| 11. Piston case with retainer ring        | 15         | 33         | BG00387230  |
| 12. Piston retainer ring                  | 0.05       | 0.11       | 23-99029  |
| 13. O-rings guide sleeve & bit ret.       |            |            | In seal kit   |
| 14. Guide sleeve with 2 O-rings (14)      | 1.8        | 3.96       | 26-48J10A   |
| 15. Bit retainer ring with O-ring (14)    | 0.23       | 0.51       | 27-48006A   |
| 16. Driver sub                            | 3.2        | 7.04       | 34-48006  |
| <b>Optional</b>                           |            |            |   |
| Feed tube with retainer pin & blank choke | 0.7        | 1.54       | 37-48001-1A   |
| Choke set, blank 1/8", 3/16", & 1/4"      | 0.1        | 0.22       | 29-48017A   |
| <b>Seal kit</b>                           |            |            |   |
| 1 piece of 2, 2 of 3 & 3 of 13            | 0.25       | 0.5        | 38-48056-1  |
| <b>Rebuild kit</b>                        |            |            |   |
| 1 piece of 1, 1 of 11, 1 of 16 & seal kit |            |            |   |
| 2 3/8" API reg. pin                       | 28         | 62         | BG00475620  |
| <b>Bit shank</b>                          |            |            |   |
| M40                                       |            |            |  |

# RH510

5"

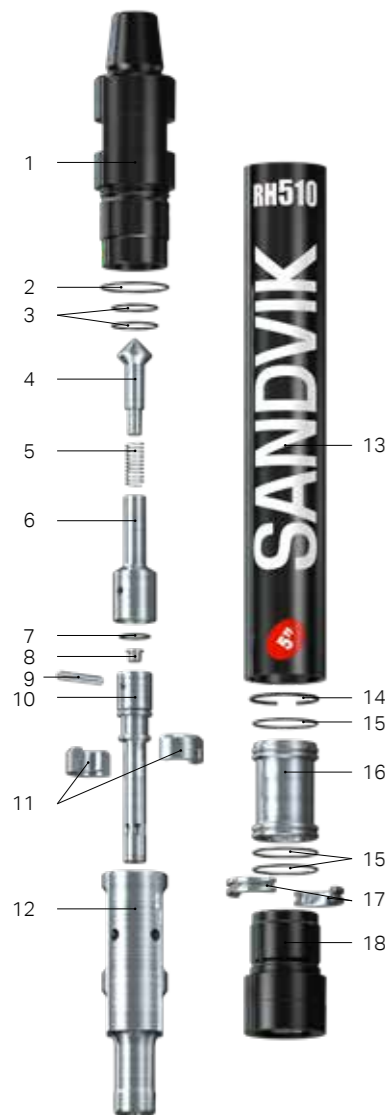
## Complete Hammer

3 1/2" API reg. pin top sub

32-5150-SMA-04S

| WEIGHT |     | OUTSIDE DIAMETER |      | HAMMER LENGTH |      | HAMMER LENGTH WITH BIT |      |              |      |
|--------|-----|------------------|------|---------------|------|------------------------|------|--------------|------|
| kg     | lb  | mm               | inch | mm            | inch | Bit closed             |      | Bit extended |      |
|        |     |                  |      |               |      | mm                     | inch | mm           | inch |
| 68     | 145 | 120              | 4.7  | 987           | 38.9 | 1,082                  | 42.6 | 1,122        | 44.2 |

| AIR CONSUMPTION, CFM |         |         | AIR CONSUMPTION, M <sup>3</sup> /MIN |        |        |
|----------------------|---------|---------|--------------------------------------|--------|--------|
| 150 psi              | 250 psi | 350 psi | 10 bar                               | 18 bar | 24 bar |
| 305                  | 580     | 855     | 8.6                                  | 16.4   | 24.2   |
| Low volume option    |         |         |                                      |        |        |
| 285                  | 540     | 790     | 8.1                                  | 15.3   | 22.4   |



| REPLACEMENT PARTS ITEM DESCRIPTION              | Weight, kg | Weight, lb | Part No.     |
|---|------------|------------|--------------|
| 1. Top subs with 3 O-rings                      |            |            |              |
| 3 1/2" API reg. pin                             | 10         | 22         | 33-58D01/04A |
| 2. O-ring top sub OD (1)                        |            |            | In seal kit  |
| 3. O-ring top sub ID (2)                        |            |            | In seal kit  |
| 4. Check valve dart (with spring)               | 0.3        | 0.66       | 25-99002A    |
| 5. Check valve spring                           | 0.02       | 0.04       | BG00348123   |
| 6. Check valve guide                            | 0.3        | 0.66       | 39-58S01     |
| 7. O-ring feed tube (1)                         |            |            | In seal kit  |
| 8. Choke set, blank 1/8", 3/16", & 1/4"         | 0.12       | 0.26       | 29-68017A    |
| 9. Feed tube retainer pin                       | 0.09       | 0.2        | 12-99018     |
| 10. Feed tube with retainer pin and blank choke | 1          | 2.2        | 37-58001A    |
| 11. Tuning ring for low volume (optional)       | 0.03       | 0.07       | 56-58552     |
| 12. Piston                                      | 12         | 26.4       | BG00387748   |
| 13. Piston case with retainer ring              | 27         | 59.4       | BG00473260   |
| 14. Piston retainer ring                        | 0.05       | 0.11       | 23-99032     |
| 15. O-rings guide sleeve & bit ret.             |            |            | In seal kit  |
| 16. Guide sleeve with 2 O-rings (14)            | 3          | 6.6        | 26-58J10A    |
| 17. Bit retainer ring with O-ring (14)          | 0.5        | 1.1        | 27-58006A    |
| 18. Driver sub                                  | 6          | 13.2       | 34-58D69     |
| <b>Seal kit</b>                                 |            |            |              |
| 1 piece of 2, 2 of 3, 1 of 7 & 3 of 15          | 0.45       | 0.99       | 38-58D56     |
| <b>Rebuild kit</b>                              |            |            |              |
| 1 piece of 1, 1 of 13, 1 of 18 & seal kit       |            |            |              |
| 3 1/2" API reg. pin                             | 43         | 94.6       | BG00475763   |
| <b>Bit shank</b>                                |            |            |              |
| M50   |            |            |              |

# RH510g

5"

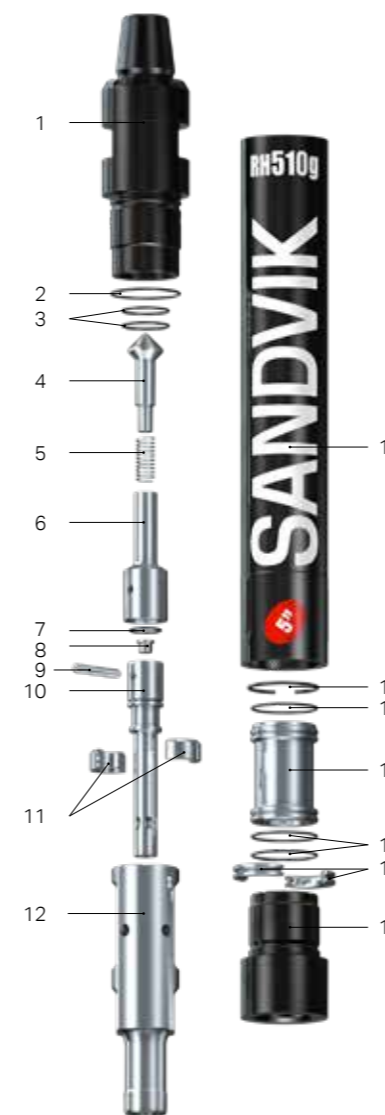
## Complete Hammer

3 1/2" API reg. pin top sub

32-5155-GMA-04C

| WEIGHT |     | OUTSIDE DIAMETER |      | HAMMER LENGTH |      | HAMMER LENGTH WITH BIT |      |              |      |
|--------|-----|------------------|------|---------------|------|------------------------|------|--------------|------|
| kg     | lb  | mm               | inch | mm            | inch | Bit closed             |      | Bit extended |      |
|        |     |                  |      |               |      | mm                     | inch | mm           | inch |
| 73     | 160 | 126              | 5    | 987           | 38.9 | 1,082                  | 42.6 | 1,122        | 44.2 |

| AIR CONSUMPTION, CFM |         |         | AIR CONSUMPTION, M <sup>3</sup> /MIN |        |        |
|----------------------|---------|---------|--------------------------------------|--------|--------|
| 150 psi              | 250 psi | 350 psi | 10 bar                               | 18 bar | 24 bar |
| 305                  | 580     | 855     | 8.6                                  | 16.4   | 24.2   |
| Low volume option    |         |         |                                      |        |        |
| 285                  | 540     | 790     | 8.1                                  | 15.3   | 22.4   |



| REPLACEMENT PARTS ITEM DESCRIPTION              | Weight, kg | Weight, lb | Part No.      |
|---|------------|------------|---------------|
| 1. Top subs with 3 O-rings                      |            |            |               |
| 3 1/2" API reg. pin                             | 18         | 39.6       | 33-58D02/04CA |
| 2. O-ring top sub OD (1)                        |            |            | In seal kit   |
| 3. O-ring top sub ID (2)                        |            |            | In seal kit   |
| 4. Check valve dart (with spring)               | 0.3        | 0.66       | 25-99002A     |
| 5. Check valve spring                           | 0.02       | 0.04       | BG00348123    |
| 6. Check valve guide                            | 0.3        | 0.66       | 39-58S01      |
| 7. Choke set, blank 1/8", 3/16", & 1/4"         | 0.12       | 0.26       | 29-68017A     |
| 8. O-ring feed tube (1)                         |            |            | In seal kit   |
| 9. Feed tube retainer pin                       | 0.09       | 0.2        | 12-99018      |
| 10. Feed tube with retainer pin and blank choke | 1          | 2.2        | 37-58001A     |
| 11. Tuning ring for low volume (optional)       | 0.03       | 0.07       | 56-58552      |
| 12. Piston                                      | 12         | 26.4       | BG00387748    |
| 13. Piston case with retainer ring              | 29         | 63.8       | BG00470986    |
| 14. Piston retainer ring                        | 0.05       | 0.11       | 23-99032      |
| 15. O-rings guide sleeve & bit ret.             |            |            | In seal kit   |
| 16. Guide sleeve with 2 O-rings (14)            | 3          | 6.6        | 26-58J10A     |
| 17. Bit retainer ring with O-ring (14)          | 0.5        | 1.1        | 27-58006A     |
| 18. Driver sub                                  | 7          | 15.4       | 34-58D70      |
| <b>Seal kit</b>                                 |            |            |               |
| 1 piece of 2, 2 of 3, 1 of 8 & 3 of 15          | 0.45       | 0.99       | 38-58D56      |
| <b>Rebuild kit</b>                              |            |            |               |
| 1 piece of 1, 1 of 13, 1 of 18 & seal kit       |            |            |               |
| 3 1/2" API reg. pin                             | 54         | 118.8      | BG00475761    |
| <b>Bit shank</b>                                |            |            |               |
| M50   |            |            |               |

# RH510r

5"

## Complete Hammer

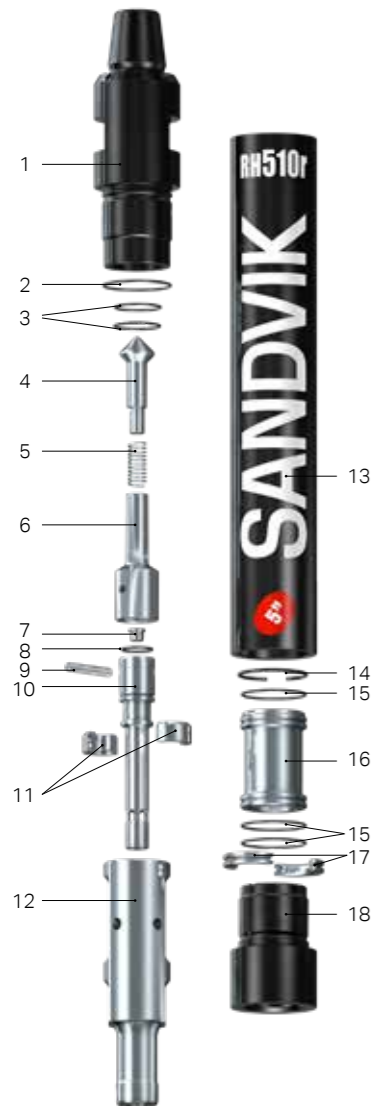
3 1/2" API reg. pin top sub

32-5155-RMA-04C

| WEIGHT |      | OUTSIDE DIAMETER |      | HAMMER LENGTH |      | HAMMER LENGTH WITH BIT |      |              |      |
|--------|------|------------------|------|---------------|------|------------------------|------|--------------|------|
| kg     | lb   | mm               | inch | mm            | inch | Bit closed             |      | Bit extended |      |
| mm     | inch | mm               | inch | mm            | inch | mm                     | inch | mm           | inch |
| 73     | 160  | 126              | 5    | 987           | 38.9 | 1,082                  | 42.6 | 1,122        | 44.2 |

| AIR CONSUMPTION, CFM |         |         | AIR CONSUMPTION, M <sup>3</sup> /MIN |        |        |     |      |      |
|----------------------|---------|---------|--------------------------------------|--------|--------|-----|------|------|
| 150 psi              | 250 psi | 350 psi | 10 bar                               | 18 bar | 24 bar |     |      |      |
| 305                  | 580     | 855     | 8.6                                  | 16.4   | 24.2   |     |      |      |
| Low volume option    |         |         | 285                                  | 540    | 790    | 8.1 | 15.3 | 22.4 |



| REPLACEMENT PARTS ITEM DESCRIPTION              | Weight, kg | Weight, lb | Part No.      |
|---|------------|------------|---------------|
| 1. Top subs with 3 O-rings                      |            |            |               |
| 3 1/2" API reg. pin                             | 18         | 39.6       | 33-58S02/04CA |
| 2. O-ring top sub OD (1)                        |            |            | In seal kit   |
| 3. O-ring top sub ID (2)                        |            |            | In seal kit   |
| 4. Check valve dart (with spring)               | 0.3        | 0.66       | 25-99002A     |
| 5. Check valve spring                           | 0.02       | 0.04       | BG00348123    |
| 6. Check valve guide                            | 0.3        | 0.66       | 39-58S01      |
| 7. Choke set, blank 1/8", 3/16", & 1/4"         | 0.12       | 0.26       | 29-68017A     |
| 8. O-ring feed tube (1)                         |            |            | In seal kit   |
| 9. Feed tube retainer pin                       | 0.09       | 0.2        | 12-99018      |
| 10. Feed tube with retainer pin and blank choke | 1          | 2.2        | 37-58001A     |
| 11. Tuning ring for low volume (optional)       | 0.03       | 0.07       | 56-58552      |
| 12. Piston                                      | 12         | 26.4       | BG00387748    |
| 13. Piston case with retainer ring              | 29         | 63.8       | BG00409895    |
| 14. Piston retainer ring                        | 0.05       | 0.11       | 23-99032      |
| 15. O-rings guide sleeve & bit ret.             |            |            | In seal kit   |
| 16. Guide sleeve with 2 O-rings (14)            | 3          | 6.6        | 26-58J10A     |
| 17. Bit retainer ring with O-ring (14)          | 0.5        | 1.1        | 27-58006A     |
| 18. Driver sub                                  | 7          | 15.4       | 34-58070      |
| <b>Seal kit</b>                                 |            |            |               |
| 1 piece of 2, 2 of 3, 1 of 8 & 3 of 15          | 0.45       | 0.99       | 38-58D56      |
| <b>Rebuild kit</b>                              |            |            |               |
| 1 piece of 1, 1 of 13, 1 of 18 & seal kit       |            |            |               |
| 3 1/2" API reg. pin                             | 54         | 118.8      | BG00475756    |
| <b>Bit shank</b>                                |            |            |               |
| M50   |            |            |               |



# RH510

6"

## Complete Hammer

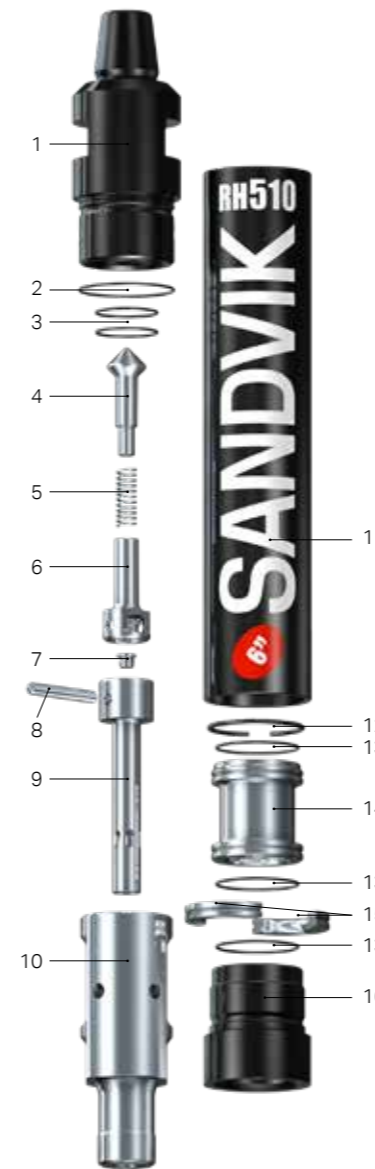
3 1/2" API reg. pin top sub

32-5160-SMA-04S

| WEIGHT |      | OUTSIDE DIAMETER |      | HAMMER LENGTH |      | HAMMER LENGTH WITH BIT |      |              |      |
|--------|------|------------------|------|---------------|------|------------------------|------|--------------|------|
| kg     | lb   | mm               | inch | mm            | inch | Bit closed             |      | Bit extended |      |
| mm     | inch | mm               | inch | mm            | inch | mm                     | inch | mm           | inch |
| 72     | 158  | 142              | 5.6  | 922           | 36.3 | 1,008                  | 39.7 | 1,046        | 41.2 |

| AIR CONSUMPTION, CFM |         |         | AIR CONSUMPTION, M <sup>3</sup> /MIN |        |        |
|----------------------|---------|---------|--------------------------------------|--------|--------|
| 150 psi              | 250 psi | 350 psi | 10 bar                               | 18 bar | 24 bar |
| 343                  | 659     | 972     | 9.8                                  | 18.7   | 27.5   |



| REPLACEMENT PARTS ITEM DESCRIPTION             | Weight, kg | Weight, lb | Part No.     |
|--|------------|------------|--------------|
| 1. Top sub with 3 O-rings                      |            |            |              |
| 3 1/2" API reg. pin                            | 20         | 44         | 33-68D08/04A |
| 2. O-ring top sub OD (1)                       |            |            | In seal kit  |
| 3. O-ring top sub ID (2)                       |            |            | In seal kit  |
| 4. Check valve dart with spring                | 0.3        | 0.66       | 22-99072     |
| 5. Check valve dart spring                     | 0.02       | 0.044      | BG00348123   |
| 6. Check valve guide                           | 0.3        | 0.66       | 39-68001     |
| 7. Choke set, blank 1/8", 3/16", & 1/4"        | 0.12       | 0.264      | 29-68017A    |
| 8. Feed tube retainer pin                      | 0.2        | 0.44       | 12-99013     |
| 9. Feed tube with retainer pin and blank choke | 1          | 2.2        | 37-68601A    |
| 10. Piston                                     | 18         | 39.6       | BG00210384   |
| 11. Piston case with retainer ring             | 33         | 72.6       | BG00214914   |
| 12. Piston retainer ring                       | 0.1        | 0.22       | 23-99028     |
| 13. O-rings – guide sleeve, bit retainer       |            |            | In seal kit  |
| 14. Guide sleeve with 2 O-rings (13)           | 4          | 8.8        | 26-68J10A    |
| 15. Bit retainer ring with O-ring (13)         | 1          | 2.2        | 27-68006A    |
| 16. Driver sub                                 | 6          | 13.2       | 34-68D69     |
| <b>Seal kit</b>                                |            |            |              |
| 1 piece of 2, 2 of 3 & 3 of 13                 | 0.25       | 0.55       | 38-68656     |
| <b>Rebuild kit</b>                             |            |            |              |
| 1 piece of 1, 1 of 11, 1 of 16 & seal kit      |            |            |              |
| 3 1/2" API reg. pin                            | 20         | 44         | BG00474856   |
| <b>Bit shank</b>                               |            |            |              |
| M60  |            |            |              |



# RH510w

6"

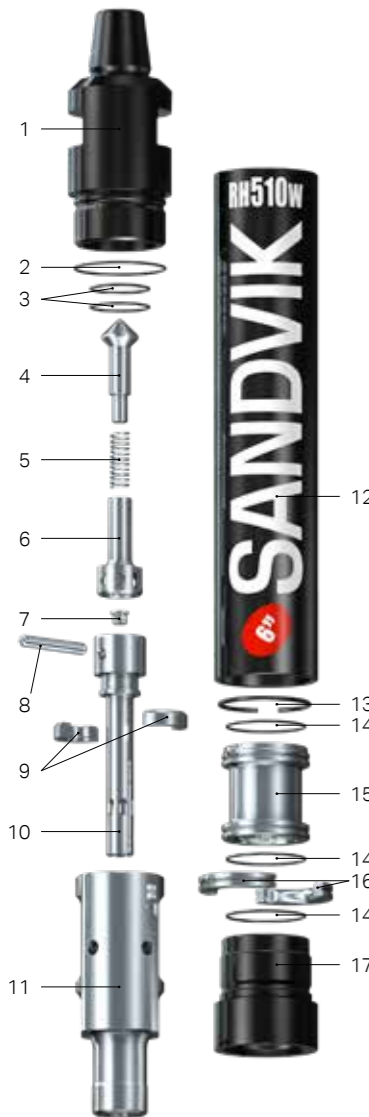
## Complete Hammer

3 1/2" API reg. pin

32-5160-WMA-04S

| WEIGHT |     | OUTSIDE DIAMETER |      | HAMMER LENGTH |      | HAMMER LENGTH WITH BIT |      |              |      |
|--------|-----|------------------|------|---------------|------|------------------------|------|--------------|------|
| kg     | lb  | mm               | inch | mm            | inch | Bit closed             |      | Bit extended |      |
|        |     |                  |      |               |      | mm                     | inch | mm           | inch |
| 72     | 158 | 142              | 5.6  | 922           | 36.3 | 1,008                  | 39.7 | 1,046        | 41.2 |

| AIR CONSUMPTION, CFM |         |         | AIR CONSUMPTION, M <sup>3</sup> /MIN |        |        |
|----------------------|---------|---------|--------------------------------------|--------|--------|
| 150 psi              | 250 psi | 350 psi | 10 bar                               | 18 bar | 24 bar |
| 395                  | 759     | 1,120   | 11.2                                 | 21.5   | 31.7   |
| Low volume option    |         |         |                                      |        |        |
| 345                  | 680     | 1,000   | 9.8                                  | 19.3   | 28.3   |



| REPLACEMENT PARTS ITEM DESCRIPTION                | Weight, kg | Weight, lb | Part No.     |
|---|------------|------------|--------------|
| 1. Top sub with 3 O-rings                         |            |            |              |
| 3 1/2" API reg. pin                               | 20         | 44         | 33-68N08/04A |
| 2. O-ring top sub OD (1)                          |            |            | In seal kit  |
| 3. O-ring top sub ID (2)                          |            |            | In seal kit  |
| 4. Check valve dart with spring                   | 0.3        | 0.66       | 25-99002A    |
| 5. Check valve dart spring                        | 0.02       | 0.044      | BG00348123   |
| 6. Check valve guide                              | 0.3        | 0.66       | 39-68001     |
| 7. Choke set, blank 1/8", 3/16", & 1/4"           | 0.12       | 0.264      | 29-68017A    |
| 8. Feed tube retainer pin                         | 0.2        | 0.44       | 12-99013     |
| 9. Tuning ring (optional)                         | 0.4        | 0.9        | 56-68552     |
| 10. Feed tube with retainer pin and blank choke   | 1          | 2.2        | 37-68301A    |
| 11. Piston  | 18         | 39.6       | BG00210384   |
| 12. Piston case with retainer ring                | 33         | 72.6       | BG00214914   |
| 13. Piston retainer ring                          | 0.1        | 0.22       | 23-99028     |
| 14. O-rings – guide sleeve, bit retainer (3 req.) |            |            | In seal kit  |
| 15. Guide sleeve with 2 O-rings (13)              | 4          | 8.8        | 26-68J10A    |
| 16. Bit retainer ring with O-ring (13)            | 1          | 2.2        | 27-68006A    |
| 17. Driver sub                                    | 6          | 13.2       | 34-68D69     |
| <b>Seal kit</b>                                   |            |            |              |
| 1 pieces of 2, 2 of 3 & 3 of 14                   | 0.25       | 0.5        | 38-68656     |
| <b>Rebuild kit</b>                                |            |            |              |
| 1 piece of 1, 1 of 12, 1 of 17 & seal kit         |            |            |              |
| 3 1/2" API reg. pin                               | 20         | 44         | BG00474824   |
| <b>Bit shank</b>                                  |            |            |              |
| M60   |            |            |              |

# RH510g

6"

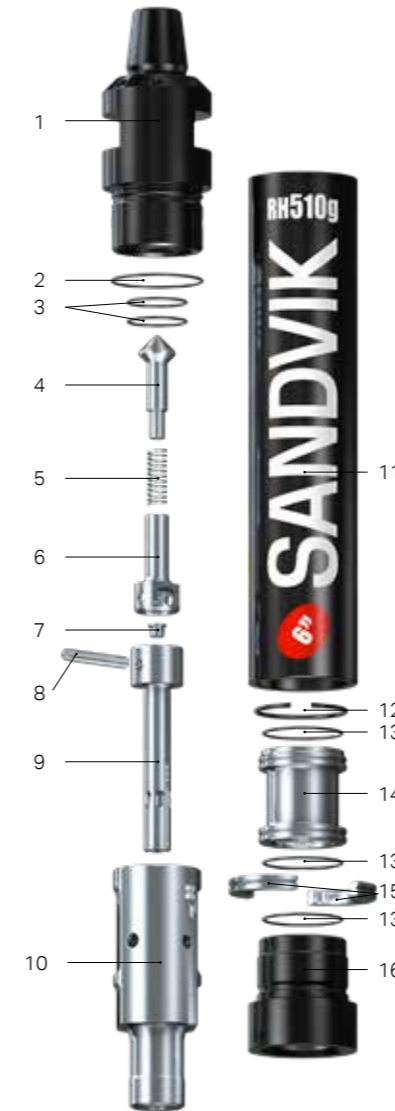
## Complete Hammer

3 1/2" API reg. pin top sub

32-5165-GMA-04C

| WEIGHT |     | OUTSIDE DIAMETER |      | HAMMER LENGTH |      | HAMMER LENGTH WITH BIT |      |              |      |
|--------|-----|------------------|------|---------------|------|------------------------|------|--------------|------|
| kg     | lb  | mm               | inch | mm            | inch | Bit closed             |      | Bit extended |      |
|        |     |                  |      |               |      | mm                     | inch | mm           | inch |
| 82     | 180 | 150              | 5.9  | 922           | 36.3 | 1,008                  | 39.7 | 1,046        | 41.2 |

| AIR CONSUMPTION, CFM |         |         | AIR CONSUMPTION, M <sup>3</sup> /MIN |        |        |
|----------------------|---------|---------|--------------------------------------|--------|--------|
| 150 psi              | 250 psi | 350 psi | 10 bar                               | 18 bar | 24 bar |
| 343                  | 659     | 972     | 9.8                                  | 18.7   | 27.5   |



| REPLACEMENT PARTS ITEM DESCRIPTION             | Weight, kg | Weight, lb | Part No.      |
|--|------------|------------|---------------|
| 1. Top sub with 3 O-rings                      |            |            |               |
| 3 1/2" API reg. pin                            | 22         | 48.4       | 33-6L009/04CA |
| 2. O-ring top sub OD (1)                       |            |            | In seal kit   |
| 3. O-ring top sub ID (2)                       |            |            | In seal kit   |
| 4. Check valve dart with spring                | 0.3        | 0.66       | 25-99002A     |
| 5. Check valve dart spring                     | 0.02       | 0.044      | BG00348123    |
| 6. Check valve guide                           | 0.3        | 0.66       | 39-68001      |
| 7. Choke set, blank 1/8", 3/16", & 1/4"        | 0.12       | 0.264      | 29-68017A     |
| 8. Feed tube retainer pin                      | 0.2        | 0.44       | 12-99013      |
| 9. Feed tube with retainer pin and blank choke | 1          | 2.2        | 37-68601A     |
| 10. Piston                                     | 18         | 39.6       | BG00210384    |
| 11. Piston case with retainer ring             | 33         | 72.6       | BG00465129    |
| 12. Piston retainer ring                       | 0.1        | 0.22       | 23-99028      |
| 13. O-rings – guide sleeve, bit retainer       |            |            | In seal kit   |
| 14. Guide sleeve with 2 O-rings (13)           | 4          | 8.8        | 26-68J10A     |
| 15. Bit retainer ring with O-ring (13)         | 1          | 2.2        | 27-68006A     |
| 16. Driver sub                                 | 6          | 13.2       | 34-6LD70      |
| <b>Seal kit</b>                                |            |            |               |
| 1 pieces of 2, 2 of 3 & 3 of 13                | 0.25       | 0.5        | 38-68656      |
| <b>Rebuild kit</b>                             |            |            |               |
| 1 piece of 1, 1 of 11, 1 of 16 & seal kit      |            |            |               |
| 3 1/2" API reg. pin                            | 62         | 136.4      | BG00474803    |
| <b>Bit shank</b>                               |            |            |               |
| M60  |            |            |               |

# RH510r

6"

## Complete Hammer

|                             |                 |
|-----------------------------|-----------------|
| 3 1/2" API reg. pin top sub | 32-5165-RMA-04C |
| #28 Cubex. pin top sub      | 32-5165-RMA-56C |

| WEIGHT |     | OUTSIDE DIAMETER |      | HAMMER LENGTH |      | HAMMER LENGTH WITH BIT |      |              |      |
|--------|-----|------------------|------|---------------|------|------------------------|------|--------------|------|
|        |     |                  |      |               |      | Bit closed             |      | Bit extended |      |
| kg     | lb  | mm               | inch | mm            | inch | mm                     | inch | mm           | inch |
| 82     | 180 | 150              | 5.9  | 922           | 36.3 | 1,008                  | 39.7 | 1,046        | 41.2 |

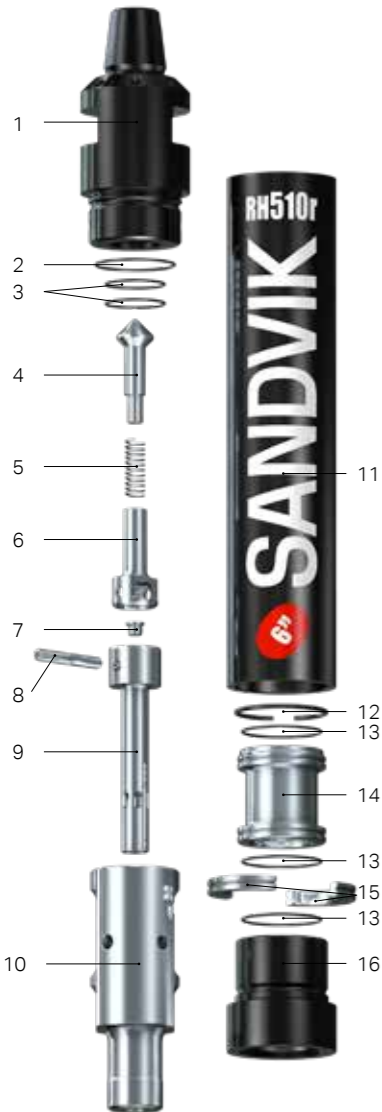
| AIR CONSUMPTION, CFM |         |         | AIR CONSUMPTION, M <sup>3</sup> /MIN |        |        |
|----------------------|---------|---------|--------------------------------------|--------|--------|
| 150 psi              | 250 psi | 350 psi | 10 bar                               | 18 bar | 24 bar |
| 343                  | 659     | 972     | 9.8                                  | 18.7   | 27.5   |

| REPLACEMENT PARTS ITEM DESCRIPTION             | Weight, kg | Weight, lb | Part No.      |
|--|------------|------------|---------------|
| 1. Top sub with 3 O-rings                      |            |            |               |
| 3 1/2" API reg. pin                            | 22         | 48.4       | 33-68602/04CA |
| #28 Cubex. pin                                 | 22         | 48.4       | 33-68602/56CA |
| 2. O-ring top sub OD (1)                       |            |            | In seal kit   |
| 3. O-ring top sub ID (2)                       |            |            | In seal kit   |
| 4. Check valve dart with spring                | 0.3        | 0.66       | 25-99002A     |
| 5. Check valve spring                          | 0.02       | 0.044      | BG00348123    |
| 6. Check valve guide                           | 0.3        | 0.66       | 39-68001      |
| 7. Choke set, blank 1/8", 3/16", & 1/4"        | 0.12       | 0.264      | 29-68017A     |
| 8. Feed tube retainer pin                      | 0.2        | 0.44       | 12-99013      |
| 9. Feed tube with retainer pin and blank choke | 1          | 2.2        | 37-68601A     |
| 10. Piston                                     | 18         | 39.6       | BG00210384    |
| 11. Piston case with retainer ring             | 33         | 72.6       | BG00143988    |
| 12. Piston retainer ring                       | 0.1        | 0.22       | 23-99028      |
| 13. O-rings – guide sleeve, bit retainer       |            |            | In seal kit   |
| 14. Guide sleeve with 2 O-rings (13)           | 4          | 8.8        | 26-68J10A     |
| 15. Bit retainer ring with O-ring (13)         | 1          | 2.2        | 27-68006A     |
| 16. Driver sub                                 | 6          | 13.2       | 34-68670      |

| Seal kit                        |      |     |          |
|---------------------------------|------|-----|----------|
| 1 pieces of 2, 2 of 3 & 3 of 13 | 0.25 | 0.5 | 38-68656 |

| Rebuild kit                               |    |       |            |
|---|----|-------|------------|
| 1 piece of 1, 1 of 11, 1 of 16 & seal kit |    |       |            |
| 3 1/2" API reg. pin                       | 62 | 136.4 | BG00195819 |
| #28 Cubex. pin                            | 62 | 136.4 | BG00474776 |

| Bit shank |  |  |  |
|-----------|--|--|--|
| M60       |  |  |  |



# RH510r

8"

## Complete Hammer

|                             |                 |
|-----------------------------|-----------------|
| 4 1/2" API reg. pin top sub | 32-5185-RMA-19C |
|-----------------------------|-----------------|

| WEIGHT |     | OUTSIDE DIAMETER |      | HAMMER LENGTH |      | HAMMER LENGTH WITH BIT |      |              |      |
|--------|-----|------------------|------|---------------|------|------------------------|------|--------------|------|
|        |     |                  |      |               |      | Bit closed             |      | Bit extended |      |
| kg     | lb  | mm               | inch | mm            | inch | mm                     | inch | mm           | inch |
| 173    | 380 | 181              | 7.12 | 1,219         | 48   | 1310                   | 51.6 | 1,354        | 53.3 |

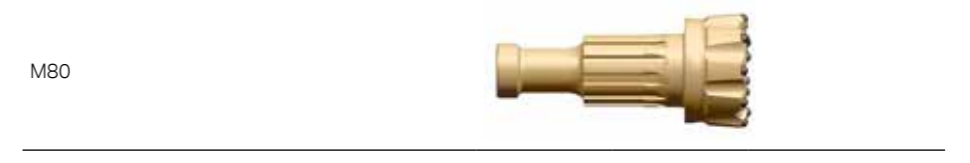
| AIR CONSUMPTION, CFM |         |         | AIR CONSUMPTION, M <sup>3</sup> /MIN |        |        |      |
|----------------------|---------|---------|--------------------------------------|--------|--------|------|
| 150 psi              | 250 psi | 350 psi | 10 bar                               | 18 bar | 24 bar |      |
| 460                  | 850     | 1,240   | 13                                   | 23.8   | 35.1   |      |
| Low volume option    | 300     | 560     | 830                                  | 8.1    | 15.9   | 23.5 |

| REPLACEMENT PARTS ITEM DESCRIPTION              | Weight, kg | Weight, lb | Part No.      |
|---|------------|------------|---------------|
| 1. Top sub with 3 O-rings                       |            |            |               |
| 4 1/2" API reg. pin                             | 42         | 92.4       | 33-88002/19CA |
| 2. O-ring top sub OD (1)                        |            |            | In seal kit   |
| 3. O-ring top sub ID (2)                        |            |            | In seal kit   |
| 4. Check valve dart (with spring)               | 0.5        | 1.1        | 38-11663A     |
| 5. Check valve spring                           | 0.1        | 0.22       | 38-1/1235-073 |
| 6. Check valve guide                            | 0.7        | 1.54       | 39-88001      |
| 7. Choke set, blank 1/8", 3/16", & 1/4"         | 0.12       | 0.264      | 29-68017A     |
| 8. Feed tube retainer pin                       | 0.2        | 0.44       | 12-99016      |
| 9. Tuning ring for low volume (optional)        | 0.8        | 1.76       | 56-88552      |
| 10. Feed tube with retainer pin and blank choke | 2.2        | 4.84       | 37-88001A     |
| 11. Piston                                      | 42         | 92.4       | BG00473429    |
| 12. Piston case with retainer ring              | 56         | 123.2      | BG00473546    |
| 13. Piston retainer ring                        | 0.2        | 0.44       | 23-99030      |
| 14. O-rings guide sleeve & bit ret.             |            |            | In seal kit   |
| 15. Guide sleeve with 2 O-rings (14)            | 11         | 24.2       | 26-88J10A     |
| 16. Bit retainer ring with O-ring (14)          | 1.9        | 4.18       | 27-88006A     |
| 17. Driver sub                                  | 17         | 37.4       | 34-88007      |

| Seal kit                       |      |      |          |
|--------------------------------|------|------|----------|
| 1 piece of 2, 2 of 3 & 3 of 14 | 0.25 | 0.55 | 38-88056 |

| Rebuild kit                               |     |     |            |
|---|-----|-----|------------|
| 1 piece of 1, 1 of 12, 1 of 17 & seal kit |     |     |            |
| 4 1/2" API reg. pin                       | 115 | 253 | BG00478483 |

| Bit shank |  |  |  |
|-----------|--|--|--|
| M80       |  |  |  |



### Complete Hammer

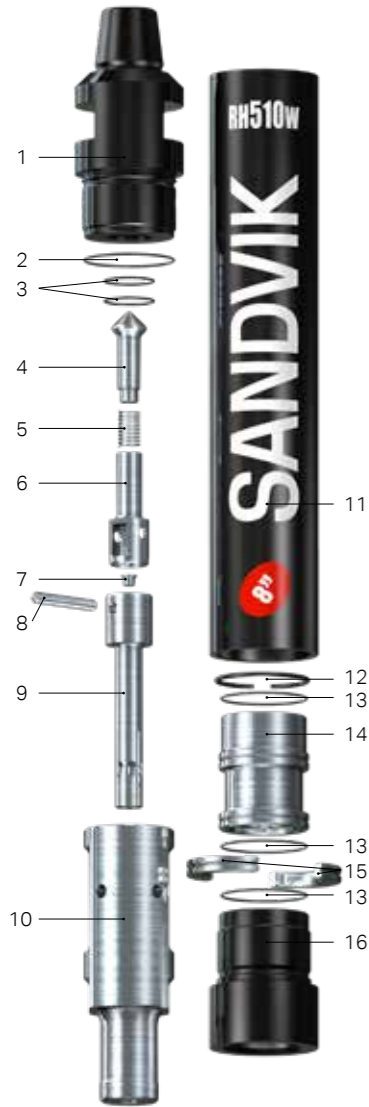
4 1/2" API reg. pin top sub

32-5185-WMA-19S

| WEIGHT |     | OUTSIDE DIAMETER |      | HAMMER LENGTH |      | HAMMER LENGTH WITH BIT |      |              |      |
|--------|-----|------------------|------|---------------|------|------------------------|------|--------------|------|
| kg     | lb  | mm               | inch | mm            | inch | Bit closed             |      | Bit extended |      |
| kg     | lb  | mm               | inch | mm            | inch | mm                     | inch | mm           | inch |
| 173    | 380 | 181              | 7.1  | 1,270         | 50   | 1361                   | 53.6 | 1,405        | 55.3 |

| AIR CONSUMPTION, CFM |         |         | AIR CONSUMPTION, M <sup>3</sup> /MIN |        |        |
|----------------------|---------|---------|--------------------------------------|--------|--------|
| 150 psi              | 250 psi | 350 psi | 10 bar                               | 18 bar | 24 bar |
| 525                  | 975     | 1,540   | 14.9                                 | 27.6   | 43.6   |



| REPLACEMENT PARTS ITEM DESCRIPTION             | Weight, kg | Weight, lb | Part No.      |
|--|------------|------------|---------------|
| 1. Top sub with 3 O-rings                      |            |            |               |
| 4 1/2" API reg. pin                            | 42         | 92.4       | 33-88302/19A  |
| 2. O-ring top sub OD (1)                       |            |            | In seal kit   |
| 3. O-ring top sub ID (2)                       |            |            | In seal kit   |
| 4. Check valve dart (with spring)              | 0.5        | 1.1        | 38-11663A     |
| 5. Check valve spring                          | 0.1        | 0.22       | 38-1/1235-073 |
| 6. Check valve guide                           | 0.7        | 1.54       | 39-88001      |
| 7. Choke set, blank 1/8", 3/16", & 1/4"        | 0.12       | 0.26       | 29-68017A     |
| 8. Feed tube retainer pin                      | 0.2        | 0.44       | 12-99016      |
| 9. Feed tube with retainer pin and blank choke | 2.2        | 4.84       | 37-88301A     |
| 10. Piston                                     | 42         | 92.4       | BG00473429    |
| 11. Piston case with retainer ring             | 56         | 123.2      | BG00473706    |
| 12. Piston retainer ring                       | 0.2        | 0.44       | 23-99030      |
| 13. O-rings guide sleeve & bit ret.            |            |            | In seal kit   |
| 14. Guide sleeve with 2 O-rings (14)           | 11         | 24.2       | 26-88J10A     |
| 15. Bit retainer ring with O-ring (14)         | 1.9        | 4.18       | 27-88006A     |
| 16. Driver sub                                 | 17         | 37.4       | 34-88007      |

| Seal kit                       |      |      |          |
|--------------------------------|------|------|----------|
| 1 piece of 2, 2 of 3 & 3 of 13 | 0.25 | 0.55 | 38-88056 |

| Rebuild kit                               |     |     |            |
|---|-----|-----|------------|
| 1 piece of 1, 1 of 11, 1 of 16 & seal kit |     |     |            |
| 4 1/2" API reg. pin                       | 115 | 253 | BG00478484 |

### Bit shank

M80





# RELIABLE PERFORMANCE WITH A ROCK SOLID DESIGN

The Sandvik RH460 hammer series has a proven track record of high reliability, performance and efficiency in varying ground conditions.

The design has been optimized to deliver high performance with maximum efficiency. The RH460 hammers are designed to operate at 24 bar (350 psi) and have the capability to drill in all directions.

- Key features:
- Industry standard shank
  - High reliability
  - Optimized air cycle

|                  |    |
|------------------|----|
| 4" RH460 HAMMERS | 46 |
| 5" RH460 HAMMERS | 47 |
| 6" RH460 HAMMERS | 49 |
| 8" RH460 HAMMERS | 51 |

# RH460

4"

## Complete Hammer


|                    |                 |
|--------------------|-----------------|
| 2 3/8" API reg pin | 32-4640-STA-16S |
| #24 Cubex pin      | 32-4640-STA-77S |

| WEIGHT |    | OUTSIDE DIAMETER |      | HAMMER LENGTH |      | HAMMER LENGTH WITH BIT |      |              |      |
|--------|----|------------------|------|---------------|------|------------------------|------|--------------|------|
|        |    |                  |      |               |      | Bit closed             |      | Bit extended |      |
| kg     | lb | mm               | inch | mm            | inch | mm                     | inch | mm           | inch |
| 40     | 88 | 97.5             | 3.8  | 985           | 38.8 | 1,075                  | 42.2 | 1,109        | 43.7 |

| AIR CONSUMPTION, CFM |         |         | AIR CONSUMPTION, M <sup>3</sup> /MIN, DIN 1343 |        |        | POWER OUTPUT (kW) |
|----------------------|---------|---------|--|--------|--------|-------------------|
| 150 psi              | 250 psi | 350 psi | 10 bar   | 18 bar | 24 bar | 24 bar            |
| 190                  | 395     | 565     | 5.4  | 11.2   | 16     | 25                |



| REPLACEMENT PARTS ITEM DESCRIPTION      | Weight, kg | Weight, lb | Part No.   |
|---|------------|------------|--|
| 1. Top sub                              |            |            |  |
| 2 3/8" API reg pin                      | 8.2        | 18         | BG00014822   |
| #24 Cubex pin                           | 7.9        | 17.4       | BG00242018   |
| 2. Check valve dart no choke            | 0.24       | 0.53       | BG00320005   |
| 3. Check valve spring                   | 0.02       | 0.04       | BG00876172   |
| 4. Make up ring                         | 0.1        | 0.22       | BG00014825   |
| 5. Air distributor with O-ring          | 2          | 4.4        | BG00056811   |
| 6. O-ring air distributor               |            |            | In seal kit  |
| 7. Inner cylinder                       | 2.1        | 4.62       | BG00110688   |
| 8. Piston QLX40                         | 7.7        | 16.9       | BG00242889   |
| 9. Piston case with retainer ring       | 15.4       | 33.9       | BG00050403   |
| 10. Piston retainer ring                | 0.1        | 0.22       | BG00014819   |
| 11. Bit retainer ring with O-ring QLX40 | 0.2        | 0.44       | BG00059039   |
| 12. O-ring bit retainer ring            |            |            | In seal kit  |
| 13. Driver sub                          | 2.8        | 6.16       | BG00058997   |
| <b>Optional</b>                         |            |            |  |
| Choke set, blank, 3 mm, 4.5 mm and 6 mm | 0.02       | 0.04       | BG00015430   |
| Check valve dart with choke hole        | 0.24       | 0.53       | BG00119068   |
| Driver sub hard faced QLX40             | 2.8        | 6.16       | BG00242001   |
| <b>Seal kit</b>                         |            |            |  |
| 1 piece of 6, 12                        | 0.02       | 0.04       | BG00014848   |
| <b>Rebuild kit</b>                      |            |            |  |
| 1 piece of 1, 9, 13 & seal kit          |            |            |  |
| 2 3/8" API reg pin                      | 27         | 59.4       | BG00242267   |
| #24 Cubex pin                           | 26.8       | 59         | BG00242295   |
| <b>Bit shank</b>                        |            |            |  |
| QLX40                                   |            |            |  |

# RH460

5"

## Complete Hammer


|                    |                 |
|--------------------|-----------------|
| 3 1/2" API reg pin | 32-4650-SQA-04S |
|--------------------|-----------------|

| WEIGHT |     | OUTSIDE DIAMETER |      | HAMMER LENGTH |      | HAMMER LENGTH WITH BIT |      |              |      |
|--------|-----|------------------|------|---------------|------|------------------------|------|--------------|------|
|        |     |                  |      |               |      | Bit closed             |      | Bit extended |      |
| kg     | lb  | mm               | inch | mm            | inch | mm                     | inch | mm           | inch |
| 66     | 145 | 120              | 4.7  | 1,067         | 42   | 1,156                  | 45.5 | 1,185        | 46.7 |

| AIR CONSUMPTION, CFM |         |         | AIR CONSUMPTION, M <sup>3</sup> /MIN, DIN 1343 |        |        | POWER OUTPUT (kW) |
|----------------------|---------|---------|--|--------|--------|-------------------|
| 150 psi              | 250 psi | 350 psi | 10 bar   | 18 bar | 24 bar | 24 bar            |
| 275                  | 544     | 756     | 7.8  | 15.4   | 21.4   | 32.3              |



| REPLACEMENT PARTS ITEM DESCRIPTION      | Weight, kg | Weight, lb | Part No.  |
|---|------------|------------|---|
| 1. Top sub                              |            |            |   |
| 3 1/2" API reg pin                      | 14.8       | 32.56      | BG00014995  |
| 2. Check valve dart no choke            | 0.45       | 0.99       | BG00319921  |
| 3. Check valve spring                   | 0.03       | 0.07       | BG00854876  |
| 4. Make up ring                         | 0.20       | 0.44       | BG00014994  |
| 5. Air distributor with O-ring          | 3.60       | 7.92       | BG00014996  |
| 6. O-ring air distributor               |            |            | In seal kit   |
| 7. Inner cylinder                       | 4.2        | 9.24       | BG00025161  |
| 8. Piston                               | 14.3       | 31.46      | BG00062889  |
| 9. Piston case with retainer ring       | 22         | 48.4       | BG00014999  |
| 10. Piston retainer ring                | 0.10       | 0.22       | BG00014998  |
| 11. O-ring guide sleeve                 |            |            | In seal kit   |
| 12. Guide sleeve with O-ring            | 1          | 2.2        | BG00014988  |
| 13. Bit retainer ring with O-ring       | 0.4        | 0.88       | BG00014989  |
| 14. O-ring bit retainer ring            |            |            | In seal kit   |
| 15. Driver sub                          | 5          | 11         | BG00014993  |
| <b>Optional</b>                         |            |            |   |
| Choke set, blank, 3 mm, 4.5 mm and 6 mm | 0.01       | 0.02       | BG00015430  |
| Check valve dart with choke hole        | 0.4        | 0.88       | BG00014985  |
| Driver sub hard faced                   | 5          | 11         | BG00162923  |
| <b>Seal kit</b>                         |            |            |   |
| 1 piece of 6, 14 & 2 of 11              | 0.01       | 0.02       | BG00015014  |
| <b>Rebuild kit</b>                      |            |            |   |
| 1 piece of 1, 9, 15 & seal kit          |            |            |   |
| 3 1/2" API reg pin                      | 41.5       | 91.3       | BG00081790  |
| <b>Bit shank</b>                        |            |            |   |
| QL50                                    |            |            |  |



# RH460g

5"

## Complete Hammer


|                    |                 |
|--------------------|-----------------|
| 3 1/2" API reg pin | 32-4655-GQA-04C |
| #24 Cubex pin      | 32-4655-GQA-77C |

| WEIGHT |     | OUTSIDE DIAMETER |      | HAMMER LENGTH |      | HAMMER LENGTH WITH BIT |      |              |      |
|--------|-----|------------------|------|---------------|------|------------------------|------|--------------|------|
|        |     |                  |      |               |      | Bit closed             |      | Bit extended |      |
| kg     | lb  | mm               | inch | mm            | inch | mm                     | inch | mm           | inch |
| 76     | 167 | 126              | 5    | 1,067         | 42   | 1,156                  | 45.5 | 1,185        | 46.7 |

| AIR CONSUMPTION, CFM |         |         | AIR CONSUMPTION, M <sup>3</sup> /MIN, DIN 1343 |        |        | POWER OUTPUT (kW) |  |
|----------------------|---------|---------|--|--------|--------|-------------------|--|
| 150 psi              | 250 psi | 350 psi | 10 bar   | 18 bar | 24 bar | 24 bar            |  |
| 275                  | 544     | 756     | 7.8  | 15.4   | 21.4   | 32.3              |  |



| REPLACEMENT PARTS ITEM DESCRIPTION      | Weight, kg | Weight, lb | Part No.   |
|---|------------|------------|--|
| 1. Top sub                              |            |            |  |
| 3 1/2" API reg pin                      | 15.5       | 34.1       | BG00068455   |
| #24 Cubex pin                           | 13.5       | 29.7       | BG00166404   |
| 2. Check valve dart no choke            | 0.45       | 0.99       | BG00319921   |
| 3. Check valve spring                   | 0.03       | 0.07       | BG00854876   |
| 4. Make up ring                         | 0.20       | 0.44       | BG00014994   |
| 5. Air distributor with O-ring          | 3.60       | 7.92       | BG00014996   |
| 6. O-ring air distributor               |            |            | In seal kit  |
| 7. Inner cylinder                       | 4.20       | 9.24       | BG00025161   |
| 8. Piston                               | 14.3       | 31.5       | BG00062889   |
| 9. Piston case with retainer ring       | 30.0       | 66.0       | BG00068439   |
| 10. Piston retainer ring                | 0.10       | 0.22       | BG00014998   |
| 11. O-ring guide sleeve                 |            |            | In seal kit  |
| 12. Guide sleeve with O-ring            | 1.00       | 2.20       | BG00014988   |
| 13. Bit retainer ring with O-ring       | 0.40       | 0.88       | BG00014989   |
| 14. O-ring bit retainer ring            |            |            | In seal kit  |
| 15. Driver sub hard faced               | 5.50       | 12.1       | BG00068435   |
| <b>Optional</b>                         |            |            |  |
| Choke set, blank, 3 mm, 4.5 mm and 6 mm | 0.01       | 0.02       | BG00015430   |
| Check valve dart with choke hole        | 0.40       | 0.88       | BG00014985   |
| <b>Seal kit</b>                         |            |            |  |
| 1 piece of 6, 14 & 2 of 11              | 0.01       | 0.02       | BG00015014   |
| <b>Rebuild kit</b>                      |            |            |  |
| 1 piece of 1, 9, 15 & seal kit          |            |            |  |
| 3 1/2" API reg pin                      | 51.0       | 112        | BG00081817   |
| #24 Cubex pin                           | 49.0       | 108        | BG00166783   |
| <b>Bit shank</b>                        |            |            |  |
| QL50                                    |            |            |  |

# RH460

6"

## Complete Hammer


|                    |                 |
|--------------------|-----------------|
| 3 1/2" API reg pin | 32-4660-SQA-04S |
|--------------------|-----------------|

| WEIGHT |     | OUTSIDE DIAMETER |      | HAMMER LENGTH |      | HAMMER LENGTH WITH BIT |      |              |      |
|--------|-----|------------------|------|---------------|------|------------------------|------|--------------|------|
|        |     |                  |      |               |      | Bit closed             |      | Bit extended |      |
| kg     | lb  | mm               | inch | mm            | inch | mm                     | inch | mm           | inch |
| 100    | 220 | 142              | 5.6  | 1,155         | 45.5 | 1,263                  | 49.7 | 1,304        | 51.3 |

| AIR CONSUMPTION, CFM |         |         | AIR CONSUMPTION, M <sup>3</sup> /MIN, DIN 1343 |        |        | POWER OUTPUT (kW) |  |
|----------------------|---------|---------|--|--------|--------|-------------------|--|
| 150 psi              | 250 psi | 350 psi | 10 bar   | 18 bar | 24 bar | 24 bar            |  |
| 307                  | 625     | 879     | 8.7  | 17.7   | 25     | 42.4              |  |



| REPLACEMENT PARTS ITEM DESCRIPTION      | Weight, kg | Weight, lb | Part No.  |
|---|------------|------------|---|
| 1. Top sub                              |            |            |   |
| 3 1/2" API reg pin                      | 24         | 52.8       | BG00014888  |
| 2. O-ring top sub                       |            |            | In seal kit   |
| 3. Check valve dart no choke            | 0.7        | 1.54       | BG00321398  |
| 4. Check valve spring                   | 0.1        | 0.22       | BG00854872  |
| 5. Make up ring                         | 0.4        | 0.88       | BG00014865  |
| 6. Air distributor with O-ring          | 6.2        | 13.6       | BG00054361  |
| 7. O-ring air distributor               |            |            | In seal kit   |
| 8. Inner cylinder                       | 6.4        | 14.1       | BG00123002  |
| 9. Piston                               | 21.4       | 47.1       | BG00243084  |
| 10. Piston case with retainer ring      | 32.4       | 71.3       | BG00054318  |
| 11. Piston retainer ring                | 0.1        | 0.22       | BG00055711  |
| 12. O-ring guide sleeve                 |            |            | In seal kit   |
| 13. Guide sleeve with O-ring            | 2.3        | 5.06       | BG00055719  |
| 14. Bit retainer ring with O-ring       | 0.6        | 1.32       | BG00014871  |
| 15. O-ring bit retainer ring            |            |            | In seal kit   |
| 16. Driver sub hard faced               | 6.5        | 14.3       | BG00014887  |
| <b>Optional</b>                         |            |            |   |
| Choke set, blank, 3 mm, 4.5 mm and 6 mm | 0.01       | 0.02       | BG00081800  |
| Check valve dart with choke hole        | 0.7        | 1.54       | BG00014869  |
| Driver sub hard faced                   | 6.50       | 14.3       | BG00242302  |
| <b>Seal kit</b>                         |            |            |   |
| 1 piece of 2, 7, 15 & 2 of 12           | 0.01       | 0.02       | BG00014894  |
| <b>Rebuild kit</b>                      |            |            |   |
| 1 piece of 1, 10, 16 & seal kit         |            |            |   |
| 3 1/2" API reg pin                      | 63.0       | 139        | BG00240392  |
| <b>Bit shank</b>                        |            |            |   |
| QL60                                    |            |            |  |

# RH460g

6"

## Complete Hammer

|                    |                 |
|--------------------|-----------------|
| 3 1/2" API reg pin | 32-4665-GQA-04C |
| #28 Cubex pin      | 32-4665-GQA-56C |

| WEIGHT |     | OUTSIDE DIAMETER |      | HAMMER LENGTH |      | HAMMER LENGTH WITH BIT |      |              |      |
|--------|-----|------------------|------|---------------|------|------------------------|------|--------------|------|
|        |     |                  |      |               |      | Bit closed             |      | Bit extended |      |
| kg     | lb  | mm               | inch | mm            | inch | mm                     | inch | mm           | inch |
| 117    | 257 | 150              | 5.9  | 1,155         | 45.5 | 1,263                  | 49.7 | 1,304        | 51.3 |

| AIR CONSUMPTION, CFM |         |         | AIR CONSUMPTION, M <sup>3</sup> /MIN, DIN 1343 |        |        | POWER OUTPUT (kW) |
|----------------------|---------|---------|--|--------|--------|-------------------|
| 150 psi              | 250 psi | 350 psi | 10 bar   | 18 bar | 24 bar | 24 bar            |
| 307                  | 625     | 879     | 8.7  | 17.7   | 25     | 42.4              |



| REPLACEMENT PARTS ITEM DESCRIPTION      | Weight, kg | Weight, lb | Part No.    |
|---|------------|------------|-------------|
| 1. Top sub                              |            |            |             |
| 3 1/2" API reg pin                      | 25.4       | 55.9       | BG00224812  |
| #28 Cubex pin                           | 26         | 57.2       | BG00237751  |
| 2. O-ring top sub                       |            |            | In seal kit |
| 3. Check valve dart no choke            | 0.7        | 1.54       | BG00321398  |
| 4. Check valve spring                   | 0.03       | 0.07       | BG00854872  |
| 5. Make up ring                         | 0.4        | 0.88       | BG00014865  |
| 6. Air distributor with O-ring          | 6.2        | 13.6       | BG00054361  |
| 7. O-ring air distributor               |            |            | In seal kit |
| 8. Inner cylinder                       | 6.4        | 14.1       | BG00123002  |
| 9. Piston                               | 21.4       | 47.1       | BG00243084  |
| 10. Piston case with retainer ring      | 46.4       | 102        | BG00224808  |
| 11. Piston retainer ring                | 0.1        | 0.22       | BG00055711  |
| 12. O-ring guide sleeve                 |            |            | In seal kit |
| 13. Guide sleeve with O-ring            | 2.3        | 5.06       | BG00055719  |
| 14. Bit retainer ring with O-ring       | 0.6        | 1.32       | BG00014871  |
| 15. O-ring bit retainer ring            |            |            | In seal kit |
| 16. Driver sub                          | 7.2        | 15.8       | BG00224798  |
| <b>Optional</b>                         |            |            |             |
| Choke set, blank, 3 mm, 4.5 mm and 6 mm | 0.01       | 0.02       | BG00081800  |
| Check valve dart with choke hole        | 0.7        | 1.54       | BG00014869  |
| <b>Seal kit</b>                         |            |            |             |
| 1 piece of 2, 7, 15 & 2 of 12           | 0.01       | 0.02       | BG00014894  |
| <b>Rebuild kit</b>                      |            |            |             |
| 1 piece of 1, 10, 16 & seal kit         |            |            |             |
| 3 1/2" API reg pin                      | 79         | 174        | BG00240400  |
| #28 Cubex pin                           | 80         | 176        | BG00240135  |

## Bit shank

QL60



# RH460

8"

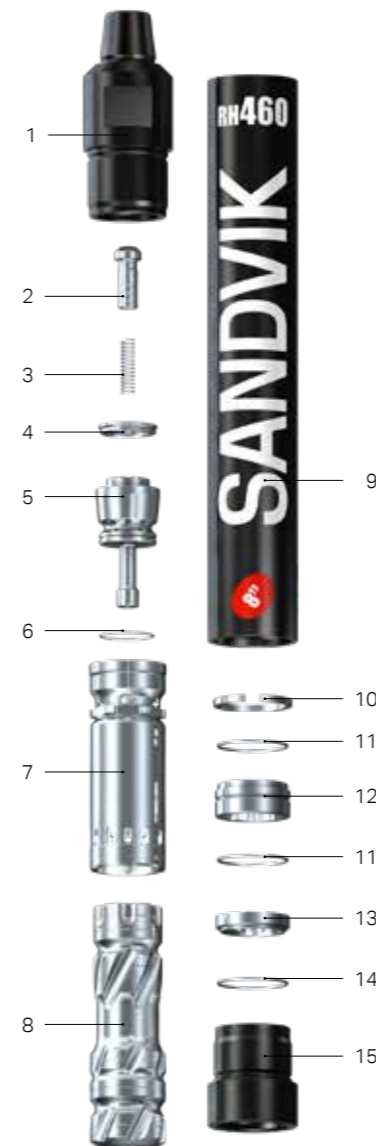
## Complete Hammer

|                    |                 |
|--------------------|-----------------|
| 4 1/2" API reg pin | 32-4680-SQA-19S |
|--------------------|-----------------|

| WEIGHT |     | OUTSIDE DIAMETER |      | HAMMER LENGTH |      | HAMMER LENGTH WITH BIT |      |              |      |
|--------|-----|------------------|------|---------------|------|------------------------|------|--------------|------|
|        |     |                  |      |               |      | Bit closed             |      | Bit extended |      |
| kg     | lb  | mm               | inch | mm            | inch | mm                     | inch | mm           | inch |
| 213    | 469 | 183              | 7.20 | 1,426         | 56.1 | 1,566                  | 61.7 | 1,608        | 63.3 |

| AIR CONSUMPTION, CFM |         |         | AIR CONSUMPTION, M <sup>3</sup> /MIN, DIN 1343 |        |        | POWER OUTPUT (kW) |
|----------------------|---------|---------|--|--------|--------|-------------------|
| 150 psi              | 250 psi | 350 psi | 10 bar   | 18 bar | 24 bar | 24 bar            |
| 365                  | 852     | 1,290   | 10.3   | 24.1   | 36.5   | 50                |



| REPLACEMENT PARTS ITEM DESCRIPTION | Weight, kg | Weight, lb | Part No.    |
|------------------------------------|------------|------------|-------------|
| 1. Top sub                         |            |            |             |
| 4 1/2" API reg pin                 | 55         | 121        | BG00096730  |
| 2. Check valve dart no choke       | 0.80       | 1.76       | BG00321984  |
| 3. Check valve spring              | 0.04       | 0.09       | BG00652827  |
| 4. Make up ring                    | 0.4        | 0.88       | BG00015380  |
| 5. Air distributor with O-ring     | 9.4        | 20.7       | BG00078615  |
| 6. O-ring air distributor          |            |            | In seal kit |
| 7. Inner cylinder                  | 10.5       | 23.1       | BG00057803  |
| 8. Piston                          | 50         | 110        | BG00277131  |
| 9. Piston case with retainer ring  | 64         | 141        | BG00057909  |
| 10. Piston retainer ring           | 0.2        | 0.44       | BG00096748  |
| 11. O-ring guide sleeve            |            |            | In seal kit |
| 12. Guide sleeve with O-ring       | 3          | 6.6        | BG00096749  |
| 13. Bit retainer ring with O-ring  | 1.4        | 3.08       | BG00096752  |
| 14. O-ring bit retainer ring       |            |            | In seal kit |
| 15. Driver sub                     | 13.6       | 29.9       | BG00096753  |

## Optional

|                                      |      |      |            |
|--------------------------------------|------|------|------------|
| Choke set, blank, 3mm, 4.5mm and 6mm | 0.01 | 0.02 | BG00081800 |
| Check valve dart with choke hole     | 0.8  | 1.76 | BG00015375 |
| Driver sub hard faced                | 13.6 | 29.9 | BG00367978 |

## Seal kit

|                       |      |      |            |
|-----------------------|------|------|------------|
| 1 piece of 6, 11 & 14 | 0.01 | 0.02 | BG00303706 |
|-----------------------|------|------|------------|

## Rebuild kit

|                                |     |     |            |
|--------------------------------|-----|-----|------------|
| 1 piece of 1, 9, 15 & seal kit |     |     |            |
| 4 1/2" API reg pin             | 134 | 295 | BG00305733 |

## Bit shank

QL80

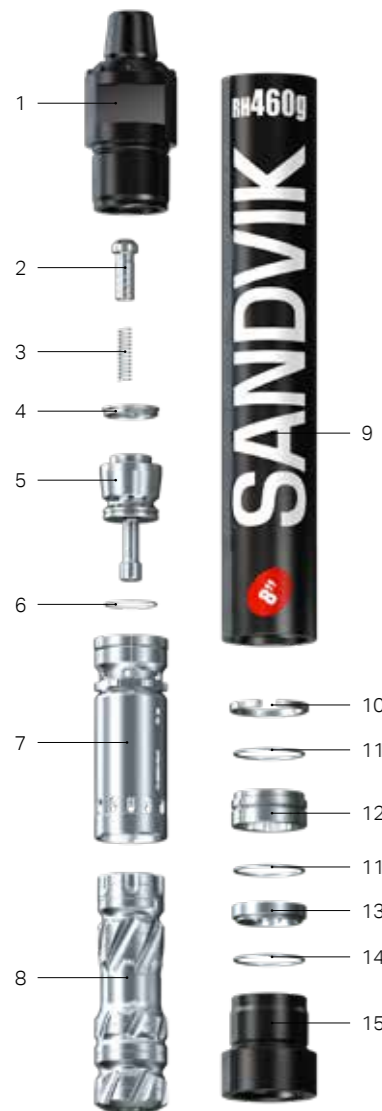


### Complete Hammer

|                    |                 |
|--------------------|-----------------|
| 4 1/2" API reg pin | 32-4685-GQA-19C |
| 4 1/2 BECO pin     | 32-4685-GQA-72C |

| WEIGHT |     | OUTSIDE DIAMETER |      | HAMMER LENGTH |      | HAMMER LENGTH WITH BIT |      |              |      |
|--------|-----|------------------|------|---------------|------|------------------------|------|--------------|------|
| kg     | lb  | mm               | inch | mm            | inch | Bit closed             |      | Bit extended |      |
|        |     |                  |      |               |      | mm                     | inch | mm           | inch |
| 244    | 537 | 194              | 7.6  | 1,426         | 56.1 | 1,566                  | 61.7 | 1,608        | 63.3 |

| AIR CONSUMPTION, CFM |         | AIR CONSUMPTION, M <sup>3</sup> /MIN, DIN 1343 |        |        |        | POWER OUTPUT (kW) |
|----------------------|---------|--|--------|--------|--------|-------------------|
| 150 psi              | 250 psi | 350 psi  | 10 bar | 18 bar | 24 bar | 24 bar            |
| 365                  | 852     | 1,290  | 10.3   | 24.1   | 36.5   | 50                |



| REPLACEMENT PARTS ITEM DESCRIPTION | Weight, kg | Weight, lb | Part No.    |
|------------------------------------|------------|------------|-------------|
| <b>1. Top sub</b>                  |            |            |             |
| 4 1/2" API reg pin                 | 57.0       | 125        | BG00365764  |
| 4 1/2 BECO pin                     | 57.0       | 125        | BG00278298  |
| 2. Check valve dart no choke       | 0.80       | 1.76       | BG00321984  |
| 3. Check valve spring              | 0.04       | 0.09       | BG00652827  |
| 4. Make up ring                    | 0.40       | 0.88       | BG00015380  |
| 5. Air distributor with O-ring     | 9.40       | 20.7       | BG00078615  |
| 6. O-ring air distributor          |            |            | In seal kit |
| 7. Inner cylinder                  | 10.5       | 23.1       | BG00057803  |
| 8. Piston                          | 50.0       | 110        | BG00277131  |
| 9. Piston case with retainer ring  | 94.2       | 207        | BG00278268  |
| 10. Piston retainer ring           | 0.20       | 0.44       | BG00096748  |
| 11. O-ring guide sleeve            |            |            | In seal kit |
| 12. Guide sleeve with O-ring       | 3.00       | 6.60       | BG00096749  |
| 13. Bit retainer ring with O-ring  | 1.40       | 3.08       | BG00096752  |
| 14. O-ring bit retainer ring       |            |            | In seal kit |
| 15. Driver sub hard faced          | 15.9       | 35.0       | BG00303677  |

### Optional

|                                      |      |      |            |
|--------------------------------------|------|------|------------|
| Choke set, blank, 3mm, 4.5mm and 6mm | 0.01 | 0.02 | BG00081800 |
| Check valve dart with choke hole     | 0.80 | 1.76 | BG00015375 |

### Seal kit

|                       |      |      |            |
|-----------------------|------|------|------------|
| 1 piece of 6, 11 & 14 | 0.01 | 0.02 | BG00303706 |
|-----------------------|------|------|------------|

### Rebuild kit

|                                |     |     |            |
|--------------------------------|-----|-----|------------|
| 1 piece of 1, 9, 15 & seal kit |     |     |            |
| 4 1/2" API reg pin             | 168 | 370 | BG00367721 |
| 4 1/2 BECO pin                 | 167 | 367 | BG00305742 |

### Bit shank

QL80





## INVEST IN LONG-TERM DRILLING CAPACITY

All drill bits are fitted with our cemented carbide inserts, which provide you with superior life and drilling productivity.

Drill bit bodies make use of precision hardened steel and compound curve body designs to maximize cutting efficiency and cuttings removal. Each bit is uniquely designed to maximize penetration and increase flushing. The Sandvik DTH button bit designs are well known and extensively used around the world. The bits in our new range have an optimized bit head, with maximized steel support for the cemented Carbide buttons, face grooves for excellent flushing and an aggressive cutting structure.

### OPTIMIZED HEAD DESIGN

Long wear life, and optimal balance between wear and energy transmission

### BALLISTIC OR SPHERICAL BUTTONS IN DIFFERENT CARBIDE GRADES

Allows you to make the best choice for different rock conditions

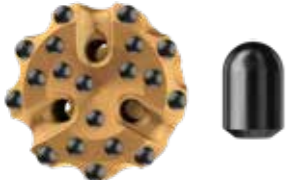
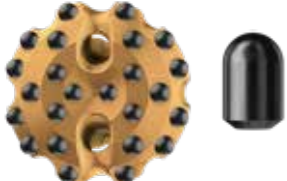

### OPTIMIZED CUTTING STRUCTURE

Gives good penetration and bit life in all rock formations

# STANDARD DTH BITS

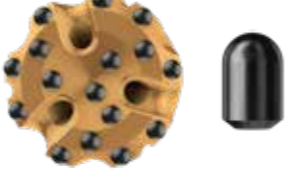
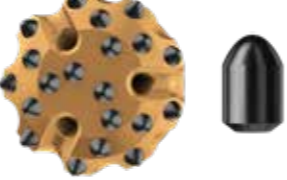
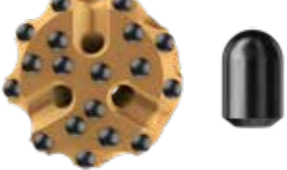
|                         |    |
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# DTH BITS / S6 SHANKS

| SANDVIK RH650  | Diameter                     |       | Air holes | Gauge buttons | Button dia. mm |       | Weight |      | Part No.       |
|--|------------------------------|-------|-----------|---------------|----------------|-------|--------|------|----------------|
|  | mm                           | inch  |           |               | gauge          | front | kg     | lb   |                |
| <b>S6</b>  |                              |       |           |               |                |       |        |      |                |
| Concave face / Spherical button  |                              |       |           |               |                |       |        |      |                |
|   | 165                          | 6 1/2 | 3         | 9             | 18             | 16    | 21,2   | 46,7 | 42-6SDD165-S69 |
|  | 165                          | 6 1/2 | 3         | 9             | 18             | 16    | 21,2   | 46,7 | 42-6SDD165-S48 |
|  | 172                          | 6 7/9 | 3         | 9             | 18             | 18    | 21,9   | 48,3 | 42-6SDE172-S69 |
| BD face / Spherical button   |                              |       |           |               |                |       |        |      |                |
|   | 172                          | 6 7/9 | 2         | 12            | 18             | 18    | 21,90  | 48,3 | 42-6SBV172-S48 |
|  | Flat Face / Spherical button |       |           |               |                |       |        |      |                |
|  | 165                          | 6 1/2 | 3         | 9             | 18             | 16    | 21,20  | 46,7 | 42-6S2D165-S69 |
|  | 172                          | 6 7/9 | 3         | 9             | 18             | 18    | 21,90  | 48,3 | 42-6S2E172-S69 |
|  | 190                          | 7 1/2 | 3         | 9             | 18             | 18    | 27,00  | 59,5 | 42-6S2E190-S69 |
|  | 203                          | 8     | 3         | 9             | 18             | 18    | 29,00  | 63,9 | 42-6S2E203-S69 |

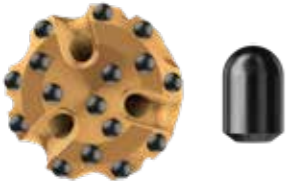
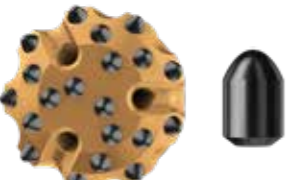
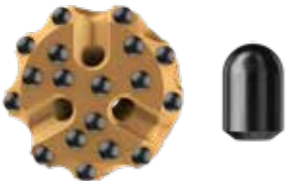
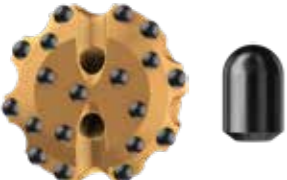
For all the bit pages, a generic bit front design has been used in our catalogue. Please read the specifications of every part number to get more details.

# DTH BITS / 560-3.5 SHANKS

| SANDVIK RH560  | Diameter                       |       | Air holes | Gauge buttons | Button dia. mm |       | Weight |      | Part No.       |
|--|--------------------------------|-------|-----------|---------------|----------------|-------|--------|------|----------------|
|  | mm                             | inch  |           |               | gauge          | front | kg     | lb   |                |
| <b>560-3.5 bits</b>  |                                |       |           |               |                |       |        |      |                |
| Concave face / Spherical button  |                                |       |           |               |                |       |        |      |                |
|   | 105                            | 4 1/8 | 2         | 8             | 13             | 12    | 7.0    | 15.4 | 42-3R13105-S48 |
|  | Convex face / Ballistic button |       |           |               |                |       |        |      |                |
|   | 95                             | 3 3/4 | 2         | 8             | 12             | 12    | 6.4    | 14.1 | 42-3R51095-R48 |
|  | 100                            | 3 7/8 | 2         | 8             | 13             | 12    | 6.6    | 14.5 | 42-3R53100-R48 |
| Flat face / Spherical button   |                                |       |           |               |                |       |        |      |                |
|  | 100                            | 3 7/8 | 2         | 8             | 13             | 12    | 6.8    | 15.0 | 42-3RF3100-S48 |
|  | 105                            | 4 1/8 | 2         | 8             | 13             | 13    | 7.0    | 15.4 | 42-3RF4105-S48 |

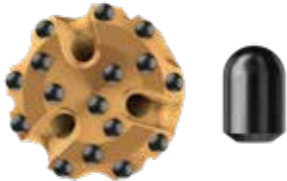
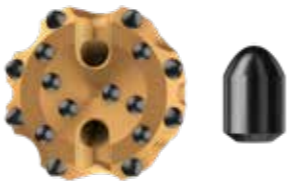
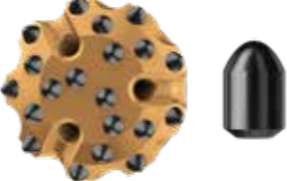
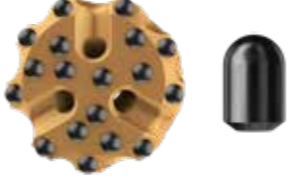
For all the bit pages, a generic bit front design has been used in our catalogue. Please read the specifications of every part number to get more details.

# DTH BITS / 560-4 SHANKS

| SANDVIK RH560   | Diameter |       | Air holes | Gauge buttons | Button dia. mm |       | Weight |      | Part No.        |
|---|----------|-------|-----------|---------------|----------------|-------|--------|------|-----------------|
|   | mm       | inch  |           |               | gauge          | front | kg     | lb   |                 |
| <b>560-4 bits</b>   |          |       |           |               |                |       |        |      |                 |
| Concave face / Spherical button   |          |       |           |               |                |       |        |      |                 |
|    | 115      | 4 1/2 | 2         | 8             | 14             | 13    | 9.8    | 21.6 | 42-4H1A115-S48K |
|   | 115      | 4 1/2 | 2         | 8             | 14             | 13    | 9.8    | 21.6 | 42-4H1A115-S69  |
|   | 127      | 5     | 2         | 8             | 14             | 13    | 10.4   | 22.9 | 42-4H1A127-S48  |
| Convex face / Ballistic button  |          |       |           |               |                |       |        |      |                 |
|    | 115      | 4 1/2 | 2         | 8             | 14             | 13    | 9.5    | 20.9 | 42-4H5A115-R48  |
| Flat face / Spherical button  |          |       |           |               |                |       |        |      |                 |
|   | 115      | FF    | 2         | 8             | 16             | 13    | 9.7    | 19.1 | 42-4HW8115-S48K |
|   | 115      | FF    | 2         | 8             | 16             | 13    | 9.7    | 19.1 | 72-4HW8115-S69K |
|   | 127      | 5     | 2         | 8             | 14             | 14    | 10.3   | 22.7 | 42-4HFB127-S48  |
|   | 140      | FF    | 2         | 8             | 16             | 13    | 9.9    | 21.8 | 42-4HF9140-S48C |
| Convex face / Spherical button  |          |       |           |               |                |       |        |      |                 |
|  | 127      | 5     | 2         | 8             | 14             | 13    | 9.1    | 20.1 | 42-4H5A127-S48  |

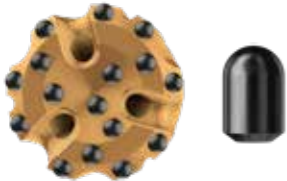
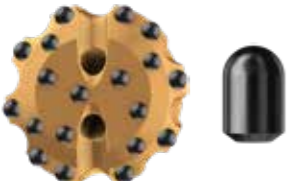
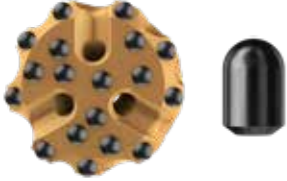
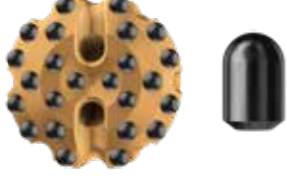
For all the bit pages, a generic bit front design has been used in our catalogue. Please read the specifications of every part number to get more details.

# DTH BITS / 560-5 SHANKS

| SANDVIK RH560   | Diameter |       | Air holes | Gauge buttons | Button dia. mm |       | Weight |      | Part No.       |
|---|----------|-------|-----------|---------------|----------------|-------|--------|------|----------------|
|   | mm       | inch  |           |               | gauge          | front | kg     | lb   |                |
| <b>560-5 bits</b>   |          |       |           |               |                |       |        |      |                |
| Concave face / Spherical button   |          |       |           |               |                |       |        |      |                |
|    | 140      | 5 1/2 | 2         | 8             | 16             | 14    | 16.2   | 35.6 | 42-5H19140-S48 |
|   | 140      | 5 1/2 | 2         | 8             | 16             | 14    | 16.2   | 35.6 | 42-5H19140-S65 |
|   | 146      | 5 3/4 | 2         | 8             | 16             | 14    | 16.6   | 36.5 | 42-5H19146-S48 |
|   | 152      | 6     | 2         | 8             | 18             | 16    | 16.8   | 37.0 | 42-5H1D152-S48 |
|   | 165      | 6 1/2 | 2         | 8             | 18             | 16    | 17.9   | 39.4 | 42-5H1D165-S48 |
| Concave face / Ballistic button   |          |       |           |               |                |       |        |      |                |
|    | 140      | 5 1/2 | 2         | 8             | 16             | 14    | 16.3   | 35.9 | 42-5H19140-R55 |
| Convex face / Ballistic button  |          |       |           |               |                |       |        |      |                |
|   | 140      | 5 1/2 | 3         | 9             | 16             | 16    | 16.1   | 35.4 | 42-5HLC140-R55 |
|   | 146      | 5 3/4 | 3         | 9             | 16             | 16    | 16.7   | 36.7 | 42-5HLC146-R55 |
| Flat face / Spherical button  |          |       |           |               |                |       |        |      |                |
|  | 140      | 5 1/2 | 3         | 9             | 16             | 14    | 16.5   | 36.3 | 42-5H29140-S48 |
|   | 152      | 6     | 3         | 9             | 18             | 16    | 17.2   | 37.8 | 42-5H2D152-S48 |

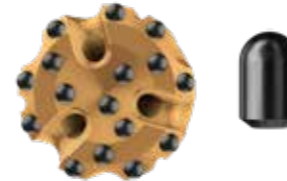
For all the bit pages, a generic bit front design has been used in our catalogue. Please read the specifications of every part number to get more details.

# DTH BITS / 560-6 SHANKS

| SANDVIK RH560   | Diameter |       | Air holes | Gauge buttons | Button dia. mm |       | Weight |      | Part No.        |
|---|----------|-------|-----------|---------------|----------------|-------|--------|------|-----------------|
|   | mm       | inch  |           |               | gauge          | front | kg     | lb   |                 |
| <b>560-6 bits</b>   |          |       |           |               |                |       |        |      |                 |
| Concave face / Spherical button   |          |       |           |               |                |       |        |      |                 |
|    | 165      | 6 1/2 | 3         | 9             | 18             | 18    | 24.1   | 53.0 | 42-63DE165-S48  |
|   | 165      | 6 1/2 | 3         | 9             | 16             | 16    | 24.5   | 54.0 | 42-63DC165-S48  |
|   | 165      | 6 1/2 | 3         | 9             | 16             | 16    | 24.5   | 54.0 | 42-63DC165-S69K |
|   | 165      | 6 1/2 | 3         | 9             | 18             | 18    | 24.1   | 53.0 | 42-63DE165-S65  |
| Convex face / Spherical button  |          |       |           |               |                |       |        |      |                 |
|    | 172      | 6 3/4 | 3         | 9             | 18             | 18    | 25.8   | 56.8 | 42-63GE172-W55  |
|   | 190      | 7 1/2 | 3         | 9             | 18             | 18    | 28.8   | 63.4 | 42-63GE190-W55  |
| Flat face / Spherical button  |          |       |           |               |                |       |        |      |                 |
|   | 165      | 6 1/2 | 3         | 9             | 18             | 18    | 25.2   | 55.4 | 42-632E165-S48  |
|   | 172      | 6 3/4 | 3         | 9             | 18             | 18    | 26.0   | 57.2 | 42-632E172-S48  |
|   | 203      | 8     | 3         | 9             | 18             | 18    | 31.4   | 69.1 | 42-632E203-S48  |
| Bulldog / Spherical button  |          |       |           |               |                |       |        |      |                 |
|  | 165      | 6 1/2 | 2         | 10            | 18             | 16    | 25.2   | 55.4 | 42-63ED165-S69K |
|   | 165      | 6 1/2 | 2         | 10            | 18             | 16    | 25.2   | 55.4 | 42-63ED165-S69  |

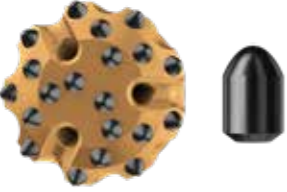
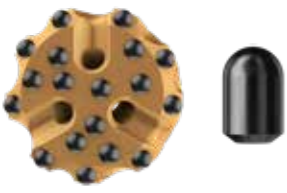
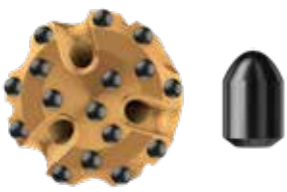
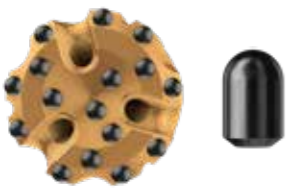
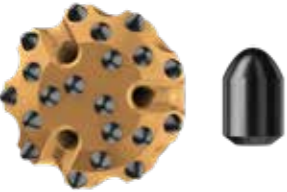
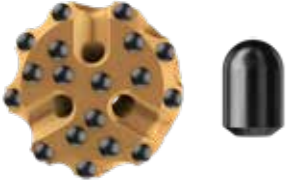
For all the bit pages, a generic bit front design has been used in our catalogue. Please read the specifications of every part number to get more details.

# DTH BITS / 560-9 SHANKS

| SANDVIK RH560   | Diameter |       | Air holes | Gauge buttons | Button dia. mm |       | Weight |     | Part No.       |
|---|----------|-------|-----------|---------------|----------------|-------|--------|-----|----------------|
|   | mm       | inch  |           |               | gauge          | front | kg     | lb  |                |
| <b>560-9 bits</b>   |          |       |           |               |                |       |        |     |                |
| Concave face / Spherical button   |          |       |           |               |                |       |        |     |                |
|  | 229      | 9     | 3         | 12            | 20             | 18    | 54.1   | 119 | 42-9H8P229-S65 |
|   | 241      | 9 1/2 | 3         | 12            | 20             | 18    | 54.5   | 120 | 42-9H8P241-S65 |
|   | 254      | 10    | 3         | 12            | 20             | 18    | 57.3   | 126 | 42-9H8E254-S69 |

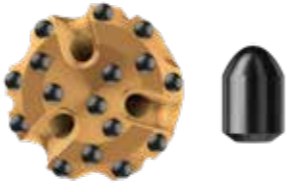
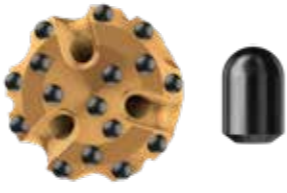
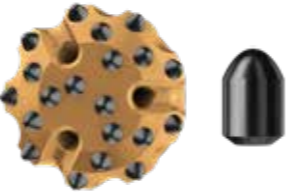
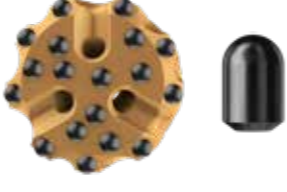
For all the bit pages, a generic bit front design has been used in our catalogue. Please read the specifications of every part number to get more details.

# DTH BITS/M SHANKS

| SANDVIK RH510   | Diameter |       | Air holes | Gauge buttons | Button dia. mm |       | Weight |      | Part No.       |
|---|----------|-------|-----------|---------------|----------------|-------|--------|------|----------------|
|   | mm       | inch  |           |               | gauge          | front | kg     | lb   |                |
| <b>M30</b>  |          |       |           |               |                |       |        |      |                |
| Convex face / Ballistic button  |          |       |           |               |                |       |        |      |                |
|    | 90       | 3 1/2 | 2         | 8             | 12             | 12    | 5.7    | 12.6 | 42-3A51090-R48 |
|   | 95       | 3 3/4 | 2         | 8             | 12             | 12    | 5.8    | 12.8 | 42-3A51095-R48 |
|   | 100      | 3 7/8 | 2         | 8             | 13             | 13    | 6.0    | 13.2 | 42-3A54100-R48 |
|   | 105      | 4 1/8 | 2         | 8             | 14             | 14    | 6.1    | 13.4 | 42-3A5B105-R48 |
| Flat face / Spherical button  |          |       |           |               |                |       |        |      |                |
|    | 90       | 3 1/2 | 2         | 8             | 11             | 11    | 5.7    | 12.6 | 42-3AF0090-S48 |
|   | 95       | 3 3/4 | 2         | 8             | 12             | 12    | 5.9    | 13.0 | 42-3AF1095-S48 |
|   | 100      | 3 7/8 | 2         | 8             | 13             | 13    | 6.1    | 13.4 | 42-3AF4100-S48 |
|   | 105      | 4 1/8 | 2         | 8             | 14             | 14    | 6.2    | 13.7 | 42-3AFB105-S48 |
| <b>M40</b>  |          |       |           |               |                |       |        |      |                |
| Concave face / Ballistic button   |          |       |           |               |                |       |        |      |                |
|   | 115      | 4 1/2 | 2         | 8             | 14             | 14    | 9.1    | 20.1 | 42-481B115-R48 |
|   | 115      | 4 1/2 | 2         | 8             | 14             | 14    | 9.1    | 20.1 | 42-481B115-R55 |
|   | 127      | 5     | 2         | 8             | 14             | 14    | 9.7    | 21.4 | 42-481B127-R48 |
|   | 127      | 5     | 2         | 8             | 14             | 14    | 9.7    | 21.4 | 42-481B127-R55 |
| Concave face / Spherical button   |          |       |           |               |                |       |        |      |                |
|  | 115      | 4 1/2 | 2         | 8             | 14             | 14    | 9.1    | 20.1 | 42-481B115-S48 |
|   | 115      | 4 1/2 | 2         | 8             | 14             | 14    | 9.1    | 20.1 | 42-481B115-S65 |
|   | 127      | 5     | 2         | 8             | 14             | 14    | 9.7    | 21.4 | 42-481B127-S48 |
|   | 127      | 5     | 2         | 8             | 14             | 14    | 9.7    | 21.4 | 42-481B127-S65 |
|   | 133      | 5 1/4 | 2         | 8             | 16             | 13    | 10.6   | 23.4 | 42-4818133-S48 |
| Convex face / Ballistic button  |          |       |           |               |                |       |        |      |                |
|  | 110      | 4 3/8 | 2         | 8             | 14             | 14    | 8.7    | 19.2 | 42-485B110-R48 |
|   | 115      | 4 1/2 | 2         | 8             | 14             | 14    | 8.8    | 19.4 | 42-485B115-R48 |
|   | 127      | 5     | 2         | 8             | 14             | 14    | 9.7    | 21.4 | 42-485B127-R48 |
| Flat face / Spherical button  |          |       |           |               |                |       |        |      |                |
|  | 110      | 4 3/8 | 2         | 8             | 14             | 14    | 8.8    | 19.4 | 42-48FB110-S48 |
|   | 115      | 4 1/2 | 2         | 8             | 14             | 14    | 9.0    | 19.8 | 42-48FB115-S48 |
|   | 127      | 5     | 2         | 8             | 14             | 14    | 9.7    | 21.4 | 42-48FB127-S48 |
|   | 130      | 5 1/8 | 2         | 8             | 16             | 14    | 10.4   | 22.9 | 42-48F9130-S48 |

For all the bit pages, a generic bit front design has been used in our catalogue. Please read the specifications of every part number to get more details.

# DTH BITS/M SHANKS

| SANDVIK RH510   | Diameter |       | Air holes | Gauge buttons | Button dia. mm |       | Weight |      | Part No.       |
|---|----------|-------|-----------|---------------|----------------|-------|--------|------|----------------|
|   | mm       | inch  |           |               | gauge          | front | kg     | lb   |                |
| <b>M50</b>  |          |       |           |               |                |       |        |      |                |
| Concave face / Ballistic button   |          |       |           |               |                |       |        |      |                |
|    | 140      | 5 1/2 | 2         | 8             | 16             | 14    | 14.8   | 32.6 | 42-5819140-R48 |
|   | 140      | 5 1/2 | 2         | 8             | 16             | 14    | 14.8   | 32.6 | 42-5819140-R55 |
| Concave face / Spherical button   |          |       |           |               |                |       |        |      |                |
|    | 140      | 5 1/2 | 2         | 8             | 16             | 14    | 14.7   | 32.4 | 42-5819140-S48 |
|   | 140      | 5 1/2 | 2         | 8             | 16             | 14    | 14.7   | 32.4 | 42-5819140-S65 |
|   | 146      | 5 3/4 | 2         | 8             | 16             | 14    | 15.0   | 33.1 | 42-5819146-S48 |
|   | 152      | 6     | 2         | 8             | 18             | 16    | 15.3   | 33.7 | 42-581D152-S48 |
|   | 165      | 6 1/2 | 2         | 8             | 18             | 16    | 16.3   | 35.9 | 42-581D165-S48 |
| Convex face / Ballistic button  |          |       |           |               |                |       |        |      |                |
|   | 140      | 5 1/2 | 3         | 9             | 16             | 16    | 14.6   | 32.2 | 42-58LC140-R48 |
|   | 140      | 5 1/2 | 3         | 9             | 16             | 16    | 14.6   | 32.2 | 42-58LC140-R55 |
| Flat face / Spherical button  |          |       |           |               |                |       |        |      |                |
|  | 140      | 5 1/2 | 3         | 9             | 16             | 14    | 15.0   | 33.0 | 42-5829140-S48 |
|   | 152      | 6     | 3         | 9             | 18             | 16    | 15.7   | 34.6 | 42-582D152-S48 |

For all the bit pages, a generic bit front design has been used in our catalogue. Please read the specifications of every part number to get more details.

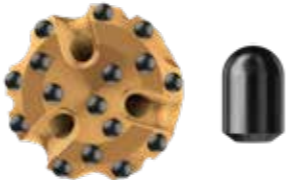
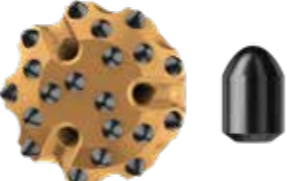
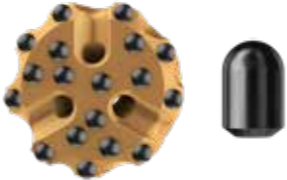



# DTH BITS / M SHANKS

| SANDVIK RH510   | Diameter |       | Air holes | Gauge buttons | Button dia. mm |       | Weight |       | Part No.        |
|---|----------|-------|-----------|---------------|----------------|-------|--------|-------|-----------------|
|   | mm       | inch  |           |               | gauge          | front | kg     | lb    |                 |
| <b>M60</b>  |          |       |           |               |                |       |        |       |                 |
| Concave face / Spherical button   |          |       |           |               |                |       |        |       |                 |
|    | 152      | 6     | 2         | 8             | 18             | 18    | 20.3   | 44.8  | 42-681E152-S48  |
|   | 155      | 6 1/8 | 2         | 8             | 18             | 18    | 20.4   | 45.0  | 42-681E155-S48  |
|   | 155      | 6 1/8 | 2         | 8             | 18             | 18    | 20.4   | 49.2  | 42-681E155-S65  |
|   | 165      | 6 1/2 | 3         | 9             | 18             | 18    | 22.3   | 49.2  | 42-68DE165-S48  |
|   | 165      | 6 1/2 | 3         | 9             | 18             | 18    | 22.3   | 49.2  | 42-68DE165-S65  |
|   | 172      | 6 3/4 | 3         | 9             | 18             | 18    | 22.9   | 50.5  | 42-68DE172-S48  |
|   | 172      | 6 3/4 | 3         | 9             | 18             | 18    | 22.9   | 50.5  | 42-68DE172-S65  |
|   | 203      | 8     | 3         | 9             | 18             | 18    | 28.6   | 63.1  | 42-68DE203-S48  |
| Convex face / Ballistic button  |          |       |           |               |                |       |        |       |                 |
|    | 165      | 6 1/2 | 3         | 9             | 18             | 18    | 21.1   | 46.5  | 42-68GE165-R48K |
|   | 165      | 6 1/2 | 3         | 9             | 18             | 18    | 22.1   | 48.7  | 42-68GE165-R55  |
|   | 172      | 6 3/4 | 3         | 9             | 18             | 18    | 22.3   | 49.2  | 42-68GE172-R48K |
|   | 172      | 6 3/4 | 3         | 9             | 18             | 18    | 22.8   | 50.3  | 42-68GE172-R55  |
| Convex face / Spherical button  |          |       |           |               |                |       |        |       |                 |
|   | 172      | 6 3/4 | 3         | 9             | 18             | 18    | 23.4   | 51.6  | 42-68GE172-W55  |
| Flat face / Spherical button  |          |       |           |               |                |       |        |       |                 |
|  | 165      | 6 1/2 | 3         | 9             | 18             | 18    | 22.3   | 49.2  | 42-682E165-S48  |
|   | 165      | 6 1/2 | 3         | 9             | 18             | 18    | 22.3   | 49.2  | 42-682E165-S65  |
|   | 172      | 6 3/4 | 3         | 9             | 18             | 18    | 22.9   | 50.5  | 42-682E172-S48  |
| Bulldog / Spherical button  |          |       |           |               |                |       |        |       |                 |
|  | 165      | 6 1/2 | 2         | 12            | 18             | 18/16 | 21.3   | 47.0  | 42-68BV165-S48  |
|   | 172      | 6 3/4 | 2         | 12            | 18             | 18/16 | 21.9   | 48.3  | 42-68BV172-S48  |
| <b>M80</b>  |          |       |           |               |                |       |        |       |                 |
| Concave face / Spherical button   |          |       |           |               |                |       |        |       |                 |
|  | 203      | 8     | 3         | 9             | 18             | 18    | 44.3   | 97.7  | 42-88PE203-S48  |
|   | 222      | 8 3/4 | 3         | 12            | 18             | 18    | 48.3   | 106.5 | 42-888E222-S48  |
|   | 254      | 10    | 3         | 12            | 18             | 18    | 57.9   | 127.6 | 42-888E254-S48  |

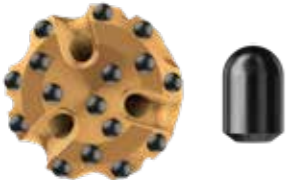
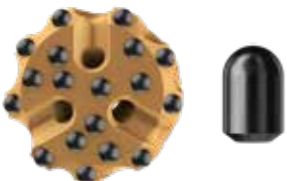

For all the bit pages, a generic bit front design has been used in our catalogue. Please read the specifications of every part number to get more details.

# DTH BITS / QLX40 SHANKS

| SANDVIK RH460   | Diameter |       | Air holes | Gauge buttons | Button dia. mm |       | Weight |      | Part No.        |
|---|----------|-------|-----------|---------------|----------------|-------|--------|------|-----------------|
|   | mm       | inch  |           |               | gauge          | front | kg     | lb   |                 |
| <b>QLX 40</b>   |          |       |           |               |                |       |        |      |                 |
| Concave face / Spherical button   |          |       |           |               |                |       |        |      |                 |
|    | 115      | 4 1/2 | 2         | 8             | 14             | 13    | 9.3    | 20.5 | 42-4G1A115-S48K |
|   | 115      | 4 1/2 | 2         | 8             | 14             | 13    | 9.3    | 20.5 | 42-4G1A115-S65  |
|   | 115      | 4 1/2 | 2         | 8             | 14             | 13    | 9.3    | 20.5 | 42-4G1A115-S69  |
|   | 115      | 4 1/2 | 2         | 8             | 14             | 13    | 9.3    | 20.5 | 42-4G1A115-S69K |
|   | 127      | 5     | 2         | 8             | 14             | 13    | 10.2   | 22.5 | 42-4G1A127-S48  |
|   | 127      | 5     | 2         | 8             | 14             | 13    | 10.2   | 22.5 | 42-4G1A127-S48K |
| Convex face / Ballistic button  |          |       |           |               |                |       |        |      |                 |
|    | 115      | 4 1/2 | 2         | 8             | 14             | 13    | 9.5    | 20.9 | 42-4G5A115-R48  |
| Flat face / Spherical button  |          |       |           |               |                |       |        |      |                 |
|   | 115      | 4 1/2 | 2         | 8             | 16             | 13    | 9.5    | 20.9 | 42-4GF8115-S65  |
|   | 127      | 5     | 2         | 8             | 14             | 13    | 10.3   | 22.7 | 42-4GFA127-S48  |
| Foot valve  |          |       |           |               |                |       |        |      |                 |
|  |          |       |           |               |                |       | 0.5    | 1.0  | 47-4G017        |

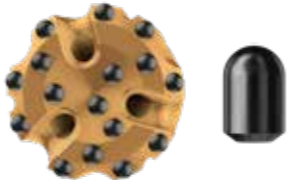
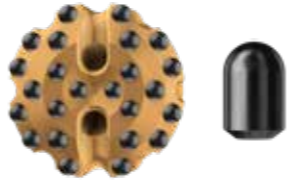
For all the bit pages, a generic bit front design has been used in our catalogue. Please read the specifications of every part number to get more details.

# DTH BITS / QL50 SHANKS

| SANDVIK RH460   | Diameter |       | Air holes | Gauge buttons | Button dia. mm |       | Weight |      | Part No.       |
|---|----------|-------|-----------|---------------|----------------|-------|--------|------|----------------|
|   | mm       | inch  |           |               | gauge          | front | kg     | lb   |                |
| <b>QL50</b>   |          |       |           |               |                |       |        |      |                |
| Concave face / Spherical button   |          |       |           |               |                |       |        |      |                |
|  | 140      | 5 1/2 | 2         | 8             | 16             | 14    | 16.5   | 36.4 | 42-5019140-S48 |
|   | 140      | 5 1/2 | 2         | 8             | 16             | 14    | 16.2   | 35.7 | 42-5019140-S65 |
|   | 140      | 5 1/2 | 2         | 8             | 16             | 14    | 16.5   | 36.4 | 42-5019140-S69 |
|   | 146      | 5 3/4 | 2         | 8             | 16             | 14    | 16.9   | 37.3 | 42-5019146-S65 |
|   | 152      | 6     | 2         | 8             | 18             | 16    | 17.2   | 37.9 | 42-501D152-S48 |
| Flat face / Spherical button  |          |       |           |               |                |       |        |      |                |
|  | 140      | 5 1/2 | 3         | 9             | 16             | 14    | 16.8   | 37.0 | 42-5029140-S48 |
|   | 146      | 5 3/4 | 3         | 9             | 16             | 14    | 17.2   | 37.9 | 42-5029146-S48 |
| Foot valve  |          |       |           |               |                |       |        |      |                |
|  |          |       |           |               |                |       | 0.5    | 1.2  | 47-50017       |




For all the bit pages, a generic bit front design has been used in our catalogue. Please read the specifications of every part number to get more details.

# DTH BITS / QL60 SHANKS

| SANDVIK RH460   | Diameter                     |       | Air holes | Gauge buttons | Button dia. mm |       | Weight |      | Part No.        |
|---|------------------------------|-------|-----------|---------------|----------------|-------|--------|------|-----------------|
|   | mm                           | inch  |           |               | gauge          | front | kg     | lb   |                 |
| <b>QL60</b>   |                              |       |           |               |                |       |        |      |                 |
| Concave face / Spherical button   |                              |       |           |               |                |       |        |      |                 |
|    | 165                          | 6 1/2 | 3         | 9             | 18             | 18    | 24.6   | 54.2 | 42-76DE165-S48  |
|   | 165                          | 6 1/2 | 3         | 9             | 18             | 18    | 24.6   | 54.2 | 42-76DE165-S65  |
|   | 172                          | 6 3/4 | 3         | 9             | 18             | 18    | 25.3   | 55.8 | 42-76DE172-S48  |
|   | 203                          | 8     | 3         | 9             | 18             | 18    | 31.5   | 69.4 | 42-76DE203-S48  |
|   | Flat face / Spherical button |       |           |               |                |       |        |      |                 |
|    | 165                          | 6 1/2 | 3         | 9             | 18             | 18    | 23.7   | 52.2 | 42-762E165-S48  |
|   | 165                          | 6 1/2 | 3         | 9             | 18             | 18    | 24.1   | 53.1 | 42-762E165-S65  |
| Bulldog face / Spherical button   |                              |       |           |               |                |       |        |      |                 |
|   | 165                          | 6 1/2 | 2         | 12            | 18             | 18/16 | 23.7   | 52.2 | 42-76BV165-S48K |
|   | 165                          | 6 1/2 | 2         | 10            | 18             | 18/16 | 23.7   | 52.2 | 42-76ED165-S69K |
|   | 172                          | 6 3/4 | 2         | 12            | 18             | 18/16 | 24.4   | 53.8 | 42-76BV172-S48K |
| Foot valve  |                              |       |           |               |                |       |        |      |                 |
|  |                              |       |           |               |                |       | 0.5    | 1.2  | 47-76017        |

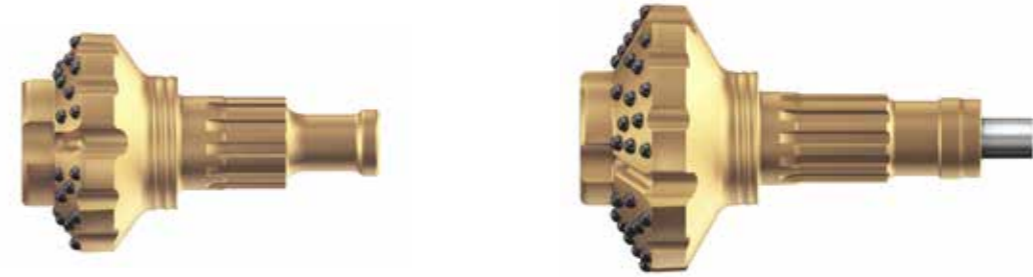
For all the bit pages, a generic bit front design has been used in our catalogue. Please read the specifications of every part number to get more details.

# DTH BITS / QL80 SHANKS

| SANDVIK RH460   | Diameter |       | Air holes | Gauge buttons | Button dia. mm |       | Weight |       | Part No.       |
|---|----------|-------|-----------|---------------|----------------|-------|--------|-------|----------------|
|   | mm       | inch  |           |               | gauge          | front | kg     | lb    |                |
| <b>QL80</b>   |          |       |           |               |                |       |        |       |                |
| Concave face / Spherical button   |          |       |           |               |                |       |        |       |                |
|  | 222      | 8 3/4 | 3         | 12            | 18             | 18    | 53.9   | 118.8 | 42-838E222-S48 |
|   | 229      | 9     | 3         | 12            | 18             | 18    | 56.0   | 123.5 | 42-838E229-S48 |
|   | 229      | 9     | 3         | 12            | 18             | 18    | 56.0   | 123.5 | 42-838E229-S65 |
|   | 229      | 9     | 3         | 12            | 18             | 18    | 56.0   | 123.5 | 42-838E229-S69 |
|   | 254      | 10    | 3         | 12            | 18             | 18    | 63.0   | 138.9 | 42-838E254-S69 |
| Bulldog / Spherical button  |          |       |           |               |                |       |        |       |                |
|  | 216      | 8 1/2 | 2         | 12            | 18             | 18    | 53.5   | 117.7 | 42-83BE216-S69 |
|   | 254      | 10    | 2         | 12            | 18             | 18    | 56.1   | 123.4 | 42-83BE254-S69 |
| <b>Foot valve</b>   |          |       |           |               |                |       |        |       |                |
|  |          |       |           |               |                |       | 0.5    | 1.2   | 47-83017       |

For all the bit pages, a generic bit front design has been used in our catalogue. Please read the specifications of every part number to get more details.

# HOLE OPENERS



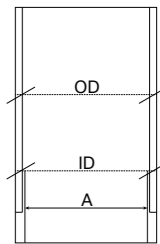
For further information, please contact your nearest Sandvik Mining and Rock Technology representative for a quote and delivery time.

# DTH TUBEX SYSTEMS



## TUBEX PRODUCT RANGE

| Tubex type | Casing, recom. size, mm |         | Min. wall thickness, mm | Max. drill diameter, mm A | Reaming diameter, mm |
|------------|-------------------------|---------|-------------------------|---------------------------|----------------------|
|            | Max. OD                 | Min. ID |                         |                           |                      |
| 90         | 115                     | 102     | 5                       | 90                        | 123                  |
| 115        | 142                     | 128     | 5                       | 115                       | 152                  |
| 140        | 171                     | 157     | 5                       | 140                       | 187                  |
| 165        | 196                     | 183     | 5.5                     | 165                       | 212                  |
| 180        | 219                     | 194     | 6.3                     | 180                       | 232                  |
| 190        | 222                     | 205     | 6.3                     | 190                       | 237                  |
| 240        | 273                     | 260     | 6.3                     | 240                       | 306                  |
| 280        | 327                     | 305     | 7.1                     | 280                       | 370                  |



| TUBEX         | Part             | Description                   | Weight (Kg) | Weight (lbs) | Part no.       |
|---------------|------------------|-------------------------------|-------------|--------------|----------------|
| <b>XL-90</b>  | Guide device     | DHD3,5 (Foot valve, 47-24017) | 7           | 15,4         | 80-2400-090D   |
|               | Pilot bit        | 1/8, 12/12, CV, DP65          | 3,6         | 7,9          | 81-090B-090A65 |
|               | Eccentric reamer |                               | 1,4         | 3            | 82-090B-123W65 |
|               | Casing shoe      |                               | 1,1         | 2,4          | 84-090D-00     |
|               | Locking kit      |                               | 0,5         | 1            | 85-090A-KT     |
| <b>XL-115</b> | Guide device     | DHD340 (Foot valve, 47-36017) | 12          | 26,4         | 80-3600-115D   |
|               | Guide device     | QLX40 (Foot valve, 47-4G017)  | 12          | 26,4         | 80-4G00-115D   |
|               | Pilot bit        | 2/8, 14/14, CV, DP65          | 8           | 17,6         | 81-115A-115A65 |
|               | Eccentric reamer |                               | 2,6         | 5,7          | 82-115A-152W65 |
|               | Casing shoe      |                               | 1,6         | 3,5          | 84-115D-00     |
|               | Locking kit      |                               | 0,5         | 1            | 85-115A-KT     |
| <b>XL-140</b> | Guide device     | QL50 (Foot valve, 47-55017)   | 21          | 46,3         | 80-5500-140D   |
|               | Guide device     | DHD350 (Foot valve, 47-69037) | 21          | 46,3         | 80-6900-140D   |
|               | Pilot bit        | 2/8, 14/14, CV, DP65          | 11          | 24,2         | 81-140A-140A65 |
|               | Eccentric reamer |                               | 4           | 8,8          | 82-140A-189W65 |
|               | Casing shoe      |                               | 2,4         | 5,3          | 84-140D-00     |
|               | Locking kit      |                               | 0,5         | 1            | 85-140A-KT     |

# DTH TUBEX SYSTEMS

| TUBEX         | Part             | Description                     | Weight (Kg) | Weight (lbs) | Part no.       |
|---------------|------------------|---------------------------------|-------------|--------------|----------------|
| <b>XL-165</b> | Guide device     | DHD360 (Foot valve, 47-73017-1) | 34          | 75           | 80-7300-165D   |
|               | Guide device     | QL60 (Foot valve, 47-76017)     | 34          | 75           | 80-7600-165D   |
|               | Pilot bit        | 2/8, 16/16, CV, DP65            | 17          | 37,5         | 81-165A-165A65 |
|               | Eccentric reamer |                                 | 7           | 15,4         | 82-165A-212W65 |
|               | Casing shoe      |                                 | 3,2         | 7            | 84-165D-00     |
|               | Locking kit      |                                 | 0,5         | 1            | 85-165A-KT     |
| <b>XL-180</b> | Pilot bit        | 2/8, 16/16, CV, DP65            | 24          | 53           | 81-180A-180A65 |
|               | Eccentric reamer |                                 | 10          | 22           | 82-180A-232W65 |
|               | Casing shoe      |                                 | 4           | 8,8          | 84-180D-00     |
|               | Locking kit      |                                 | 0,5         | 1            | 85-180A-KT     |
| <b>XL-190</b> | Guide device     | QL60 (Foot valve, 47-76017)     | 44          | 97           | 80-7600-190D   |
|               | Guide device     | DHD360 (Foot valve, 47-73017-1) | 44          | 97           | 80-7300-190D   |
|               | Pilot bit        | 3/8, 16/16, CV, DP65            | 29          | 64           | 81-190A-190A65 |
|               | Eccentric reamer |                                 | 10          | 22           | 82-190A-237W65 |
|               | Casing shoe      |                                 | 4           | 8,8          | 84-190D-00     |
|               | Locking kit      |                                 | 0,5         | 1,0          | 85-190A-KT     |
| <b>XL-240</b> | Guide device     | DHD 380 (Foot valve, 47-87017)  | 67          | 148          | 80-8700-240D   |
|               | Pilot bit        | 2/12, 16/16, CV, DP65           | 46          | 101          | 81-240B-240A65 |
|               | Eccentric reamer |                                 | 18          | 40           | 82-240B-308W65 |
|               | Casing shoe      |                                 | 7           | 15,4         | 84-240A-00     |
|               | Locking kit      |                                 | 1           | 2,2          | 85-240A-KT     |
| <b>XL-280</b> | Guide device     | SD10 (Foot valve, 47-10017)     | 160         | 353          | 80-1000-280A   |
|               | Pilot bit        | 3/12, 18/18, CV, DP65           | 88          | 194          | 81-280A-280A65 |
|               | Eccentric reamer |                                 | 43          | 94           | 82-280A-378W65 |
|               | Casing shoe      |                                 | 15          | 33           | 84-280A-00     |
|               | Locking kit      |                                 | 1,5         | 3,3          | 85-280A-KT     |



# HIGH-TECH DRILL PIPES FOR SMOOTH DRILLING

We offer a line of drill pipes which provides you with a great degree of compatibility between rigs and tools.

Cold-drawn seamless tubing material, N80, is used to ensure straightness, thickness and high strength. This gives a smoother drilling process and, consequently, a longer service life. The material also provides a smooth, fine surface that eliminates the risk of hammer failures caused by scaling. Furthermore, the tool joints are made out of micro alloy steel and are case-hardened for superior thread life.

#### COLD-DRAWN SEAMLESS TUBING MATERIAL

- Superior straightness
- High strength
- Uniform pipe wall thickness
- Less weight

#### FRICTION-WELDED END PIECES

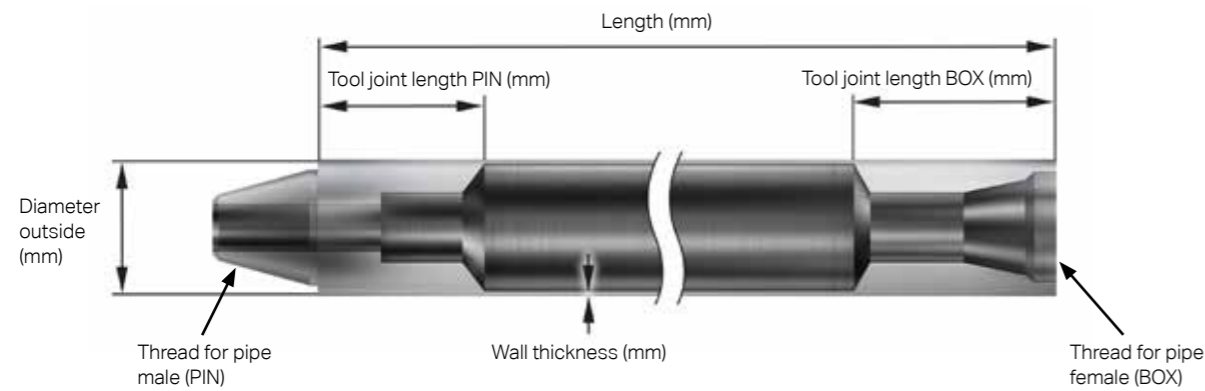
- High-strength, 100% metal-to-metal joint with parent metal properties
- Low-temperature process, gives a small HAZ (heat affected zone) that reduces the risk of failure

#### HEAVY-DUTY TOOL JOINTS

- Made of micro alloy steel
- Case-hardened for extra strength
- Offer superior thread life

|                                |    |
|--------------------------------|----|
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# SANDVIK DRILL PIPES

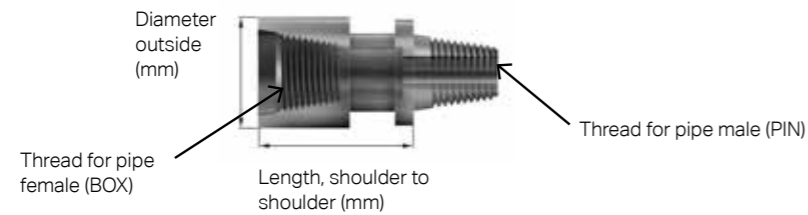


| Diameter outside | Wall thickness | Length | Thread for pipe male | Thread for pipe female | Spanner Flat | Internal Spline | Tool joint length Pin | Tool joint length Box | Weight | Part no. |                 |
|------------------|----------------|--------|----------------------|------------------------|--------------|-----------------|-----------------------|-----------------------|--------|----------|-----------------|
| mm               | mm             | mm     | Pin                  | Box                    |              |                 | mm                    | mm                    | kg     | lb       |                 |
| 76               | 4.0            | 3000   | API 2 3/8" Reg       | API 2 3/8" Reg         | Y            | N               | 107                   | 165                   | 24     | 53       | 52-076-101018   |
| 76               | 4.0            | 3000   | API 2 3/8" Reg       | API 2 3/8" Reg         | N            | N               | 190                   | 190                   | 31     | 68       | 52-076-10688900 |
| 76               | 6.3            | 3048   | API 2 3/8" Reg       | API 2 3/8" Reg         | Y            | N               | 190                   | 260                   | 39     | 86       | 52-076-102801   |
| 76               | 6.3            | 4000   | API 2 3/8" Reg       | API 2 3/8" Reg         | N            | N               | 190                   | 190                   | 46     | 101      | 52-076-10686408 |
| 76               | 6.3            | 5000   | API 2 3/8" Reg       | API 2 3/8" Reg         | N            | N               | 350                   | 350                   | 65     | 143      | 52-076-10508618 |
| 76               | 6.3            | 5000   | API 2 3/8" Reg       | API 2 3/8" Reg         | N            | N               | 190                   | 190                   | 58     | 128      | 52-076-10686990 |
| 79               | 6.3            | 1524   | CUBEX #21            | CUBEX #21              | Y            | Y               | 110                   | 190                   | 21     | 46       | 52-20340-111    |
| 79               | 6.3            | 1829   | CUBEX #21            | CUBEX #21              | Y            | Y               | 110                   | 190                   | 26     | 56       | 52-20340-109    |
| 89               | 4.0            | 1800   | API 2 3/8" Reg       | API 2 3/8" Reg         | Y            | N               | 107                   | 158                   | 20     | 44       | 52-089-101048   |
| 89               | 4.0            | 3000   | API 2 3/8" Reg       | API 2 3/8" Reg         | Y            | N               | 107                   | 158                   | 30     | 66       | 52-089-101051   |
| 89               | 4.0            | 4000   | API 2 3/8" Reg       | API 2 3/8" Reg         | N            | N               | 190                   | 190                   | 46     | 101      | 52-089-10686310 |
| 89               | 4.0            | 4500   | API 2 3/8" Reg       | API 2 3/8" Reg         | Y            | N               | 107                   | 158                   | 45     | 99       | 52-089-103231   |
| 89               | 6.3            | 1500   | API 2 3/8" Reg       | API 2 3/8" Reg         | Y            | N               | 107                   | 158                   | 24     | 53       | 52-089-101077   |
| 89               | 6.3            | 1800   | API 2 3/8" Reg       | API 2 3/8" Reg         | N            | N               | 300                   | 300                   | 31     | 68       | 52-089-102653   |
| 89               | 6.3            | 1829   | CUBEX #21            | CUBEX #21              | Y            | Y               | 110                   | 200                   | 28     | 62       | 52-20340-103    |
| 89               | 6.3            | 1829   | CUBEX #24            | CUBEX #24              | Y            | Y               | 110                   | 200                   | 29     | 64       | 52-20340-105    |
| 89               | 6.3            | 3000   | API 2 3/8" Reg       | API 2 3/8" Reg         | Y            | N               | 107                   | 158                   | 43     | 95       | 52-089-101079   |
| 89               | 6.3            | 5000   | API 2 3/8" Reg       | API 2 3/8" Reg         | N            | N               | 190                   | 190                   | 76     | 166      | 52-089-10686409 |
| 89               | 6.3            | 5000   | API 2 3/8" Reg       | API 2 3/8" Reg         | N            | N               | 350                   | 350                   | 82     | 181      | 52-089-10508619 |
| 89               | 6.3            | 6000   | API 2 3/8" Reg       | API 2 3/8" Reg         | N            | N               | 350                   | 350                   | 95     | 209      | 52-089-10505952 |
| 89               | 6.3            | 7500   | API 2 3/8" Reg       | API 2 3/8" Reg         | N            | N               | 350                   | 350                   | 114    | 251      | 52-089-103691   |
| 89               | 8.8            | 5000   | API 2 3/8" Reg       | API 2 3/8" Reg         | N            | N               | 350                   | 350                   | 90     | 198      | 52-089-102955   |
| 89               | 8.8            | 6000   | API 2 3/8" Reg       | API 2 3/8" Reg         | N            | N               | 350                   | 350                   | 112    | 247      | 52-089-10671706 |
| 89               | 8.8            | 6000   | API 2 3/8" Reg       | API 2 3/8" Reg         | N            | N               | 270                   | 270                   | 112    | 247      | 52-089-101833   |
| 89               | 12             | 6096   | CUBEX #24            | CUBEX #24              | N            | N               | 280                   | 280                   | 150    | 331      | 52-CP001500     |

# SANDVIK DRILL PIPES

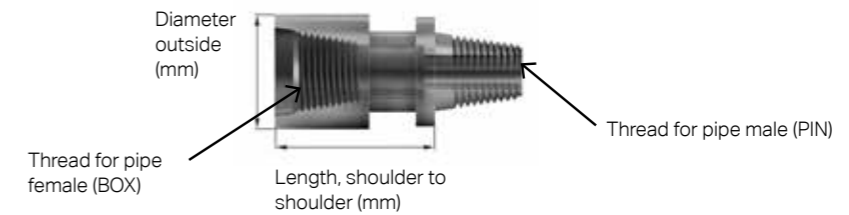
| Diameter outside | Wall thickness | Length | Thread for pipe male | Thread for pipe female | Spanner Flat | Internal Spline | Tool joint length Pin | Tool joint length Box | Weight | Part no. |                 |
|------------------|----------------|--------|----------------------|------------------------|--------------|-----------------|-----------------------|-----------------------|--------|----------|-----------------|
| mm               | mm             | mm     | Pin                  | Box                    |              |                 | mm                    | mm                    | kg     | lb       |                 |
| 102              | 6.3            | 1524   | CUBEX #24            | CUBEX #24              | Y            | Y               | 150                   | 220                   | 32     | 69       | 52-20830-132    |
| 102              | 6.3            | 1828   | CUBEX #24            | CUBEX #24              | Y            | Y               | 150                   | 220                   | 41     | 90       | 52-102-101393   |
| 102              | 6.3            | 4000   | API 2 7/8" Reg       | API 2 7/8" Reg         | N            | N               | 270                   | 270                   | 74     | 163      | 52-102-102778   |
| 102              | 6.3            | 5000   | API 2 7/8" Reg       | API 2 7/8" Reg         | N            | N               | 270                   | 270                   | 89     | 196      | 52-102-101266   |
| 102              | 6.3            | 5000   | API 2 7/8" Reg       | API 2 7/8" Reg         | N            | N               | 350                   | 350                   | 98     | 216      | 52-102-10508620 |
| 102              | 6.3            | 5000   | API 2 7/8" Reg       | API 2 7/8" Reg         | N            | N               | 270                   | 270                   | 85     | 187      | 52-102-10502702 |
| 102              | 6.3            | 6000   | API 2 7/8" Reg       | API 2 7/8" Reg         | N            | N               | 270                   | 270                   | 94     | 207      | 52-102-101618   |
| 102              | 6.3            | 6000   | API 2 7/8" Reg       | API 2 7/8" Reg         | N            | N               | 350                   | 350                   | 112    | 247      | 52-102-10506339 |
| 102              | 6.3            | 7500   | API 2 7/8" Reg       | API 2 7/8" Reg         | N            | N               | 350                   | 350                   | 136    | 300      | 52-102-103692   |
| 102              | 8.8            | 6100   | 3 1/8" DIBH          | 3 1/8" DIBH            | Y            | Y               | 150                   | 220                   | 132    | 291      | 52-102-102935   |
| 102              | 8.8            | 9144   | API 2 7/8" Reg       | API 2 7/8" Reg         | Y            | N               | 340                   | 315                   | 200    | 441      | 52-102-101914   |
| 102              | 12             | 6096   | CUBEX #24            | CUBEX #24              | N            | N               | 280                   | 280                   | 180    | 397      | 52-CP000458     |
| 114              | 6.3            | 1196   | CUBEX #28            | CUBEX #28              | Y            | Y               | 130                   | 220                   | 30     | 67       | 52-114-102298   |
| 114              | 6.3            | 3000   | API 3 1/2" Reg       | API 3 1/2" Reg         | Y            | N               | 140                   | 185                   | 60     | 132      | 52-114-101139   |
| 114              | 6.3            | 5000   | API 3 1/2" Reg       | API 3 1/2" Reg         | N            | N               | 350                   | 350                   | 115    | 254      | 52-114-10508621 |
| 114              | 6.3            | 5000   | API 3 1/2" Reg       | API 3 1/2" Reg         | N            | N               | 190                   | 260                   | 93     | 205      | 52-114-10504087 |
| 114              | 6.3            | 6000   | API 3 1/2" Reg       | API 3 1/2" Reg         | N            | N               | 350                   | 350                   | 132    | 291      | 52-114-10505147 |
| 114              | 6.3            | 6000   | API 3 1/2" Reg       | API 3 1/2" Reg         | N            | N               | 270                   | 260                   | 120    | 265      | 52-114-101238   |
| 114              | 6.3            | 7500   | API 3 1/2" Reg       | API 3 1/2" Reg         | N            | N               | 350                   | 350                   | 156    | 344      | 52-114-103693   |
| 114              | 8.8            | 6000   | API 3 1/2" Reg       | API 3 1/2" Reg         | N            | N               | 270                   | 260                   | 156    | 344      | 52-114-102072   |
| 114              | 8.8            | 7500   | API 3 1/2" Reg       | API 3 1/2" Reg         | N            | N               | 350                   | 350                   | 201    | 443      | 52-114-103719   |
| 114              | 8.8            | 7620   | API 3 1/2" Reg       | API 3 1/2" Reg         | Y            | N               | 310                   | 300                   | 187    | 412      | 52-114-101228   |
| 114              | 8.8            | 9144   | API 3 1/2" Reg       | API 3 1/2" Reg         | Y            | N               | 490                   | 225                   | 230    | 507      | 52-114-101597   |
| 114              | 8.8            | 9144   | API 3 1/2" Reg       | API 3 1/2" Reg         | Y            | N               | 310                   | 300                   | 222    | 489      | 52-114-101841   |
| 114              | 12             | 1219   | API 3 1/2" Reg       | API 3 1/2" Reg         | Y            | N               | 490                   | 350                   | 58     | 128      | 52-114-102738   |
| 114              | 12             | 2400   | API 3 1/2" Reg       | API 3 1/2" Reg         | Y            | N               | 490                   | 350                   | 95     | 209      | 52-114-102740   |
| 114              | 12             | 3000   | API 3 1/2" Reg       | API 3 1/2" Reg         | Y            | N               | 490                   | 362                   | 116    | 256      | 52-114-102520   |
| 114              | 12             | 9144   | API 3 1/2" Reg       | API 3 1/2" Reg         | Y            | N               | 490                   | 225                   | 305    | 672      | 52-114-101808   |
| 114              | 12             | 9144   | API 3 1/2" Reg       | API 3 1/2" Reg         | Y            | N               | 490                   | 362                   | 310    | 683      | 52-114-102521   |
| 114              | 12             | 9144   | BECO 3"              | BECO 3"                | Y            | N               | 490                   | 225                   | 308    | 678      | 52-114-102919   |
| 114              | 12             | 9144   | BECO 3"              | BECO 3"                | Y            | N               | 310                   | 300                   | 303    | 668      | 52-114-103183   |
| 114              | 12.5           | 7620   | API 3 1/2" Reg       | API 3 1/2" Reg         | Y            | N               | 490                   | 225                   | 231    | 509      | 52-114-101494   |
| 127              | 6.3            | 1524   | CUBEX #28            | CUBEX #28              | Y            | Y               | 170                   | 260                   | 47     | 104      | 52-20830-101    |
| 127              | 6.3            | 6000   | API 3 1/2" Reg       | API 3 1/2" Reg         | N            | N               | 350                   | 350                   | 154    | 340      | 52-127-10505190 |
| 127              | 6.3            | 7500   | API 3 1/2" Reg       | API 3 1/2" Reg         | N            | N               | 350                   | 350                   | 181    | 399      | 52-127-103694   |
| 127              | 8.8            | 1829   | CUBEX #28            | CUBEX #28              | Y            | Y               | 130                   | 220                   | 65     | 143      | 52-20830-117    |
| 127              | 8.8            | 6096   | CUBEX #28            | CUBEX #28              | N            | N               | 280                   | 280                   | 183    | 403      | 52-127-103201   |
| 127              | 8.8            | 7500   | API 3 1/2" Reg       | API 3 1/2" Reg         | N            | N               | 350                   | 350                   | 228    | 503      | 52-127-103720   |
| 127              | 10.0           | 1524   | CUBEX #28            | CUBEX #28              | Y            | Y               | 170                   | 260                   | 62     | 137      | 52-20830-101H   |
| 127              | 12             | 6096   | API 3 1/2" Reg       | API 3 1/2" Reg         | N            | N               | 280                   | 280                   | 239    | 527      | 52-127-102990   |
| 127              | 12             | 6096   | BECO 3 1/2"          | BECO 3 1/2"            | N            | N               | 280                   | 280                   | 239    | 527      | 52-CP002185     |
| 127              | 12             | 8077   | BECO 3 1/2"          | BECO 3 1/2"            | Y            | N               | 315                   | 315                   | 310    | 683      | 52-127-102394   |
| 127              | 12             | 9144   | BECO 3 1/2"          | BECO 3 1/2"            | Y            | N               | 315                   | 315                   | 353    | 778      | 52-127-102327   |
| 140              | 8.8            | 7500   | API 4 1/2" Reg       | API 4 1/2" Reg         | N            | N               | 350                   | 350                   | 257    | 567      | 52-140-103695   |

# SANDVIK ROTATION UNIT ADAPTERS



| Diameter outside<br>mm | Length shoulder to shoulder<br>mm | Thread for male connection<br>Pin | Thread for female connection<br>Box | Thread for male connection<br>Pin | Spanner Flats | Internal Splines | Weight |    | Part no.        |
|------------------------|-----------------------------------|-----------------------------------|-------------------------------------|-----------------------------------|---------------|------------------|--------|----|-----------------|
|                        |                                   |                                   |                                     |                                   |               |                  | kg     | lb |                 |
| 76                     | 215                               | M62×2                             | 2 3/8 Reg                           |                                   | Y             | N                | 7      | 14 | 52-076-11687703 |
| 76                     | 131                               | M62×2                             | 2 3/8 Reg                           |                                   | Y             | N                | 5      | 10 | 52-076-11516950 |
| 89                     | 215                               | M62×2                             | 2 3/8 Reg                           |                                   | Y             | N                | 9      | 20 | 52-089-11512674 |
| 89                     | 300                               | M80×3                             | 2 3/8 Reg                           |                                   | Y             | N                | 13     | 28 | 52-089-11516555 |
| 89                     | 89                                | M62×2                             |                                     | 2 3/8 Reg                         | Y             | N                | 6      | 13 | 52-089-11687217 |
| 102                    | 300                               | M80×3                             | 2 7/8 Reg                           |                                   | Y             | N                | 17     | 37 | 52-102-11517523 |
| 102                    | 215                               | M62×2                             | 2 7/8 Reg                           |                                   | Y             | N                | 13     | 28 | 52-102-11502994 |
| 114                    | 300                               | M80×3                             | 3 1/2 Reg                           |                                   | Y             | N                | 19     | 42 | 52-114-11505151 |
| 114                    | 215                               | M62×2                             | 3 1/2 Reg                           |                                   | Y             | N                | 13     | 29 | 52-114-11503612 |
| 114                    | 307                               | 3 1/2 Reg                         | 2 3/8 Reg                           |                                   | Y             | N                | 14     | 30 | 52-114-11518907 |
| 114                    | 307                               | 3 1/2 Reg                         | 3 1/2 Reg                           |                                   | Y             | N                | 21     | 47 | 52-114-11518332 |
| 114                    | 307                               | 3 1/2 Reg                         |                                     | 3 1/2 Reg                         | Y             | N                | 26     | 56 | 52-114-11518871 |
| 127                    | 307                               | 3 1/2 Reg                         | 3 1/2 Reg                           |                                   | Y             | N                | 27     | 60 | 52-127-11518872 |
| 127                    | 300                               | M80×3                             | 3 1/2 Reg                           |                                   | Y             | N                | 24     | 53 | 52-127-11516261 |

# SANDVIK SUBS



| Diameter outside<br>mm | Thread for male connection<br>Pin | Thread for female connection<br>Box | Length shoulder to shoulder<br>mm | Spanner Flats | Internal Splines | Weight |     | Part no.        |
|------------------------|-----------------------------------|-------------------------------------|-----------------------------------|---------------|------------------|--------|-----|-----------------|
|                        |                                   |                                     |                                   |               |                  | kg     | lb  |                 |
| 89                     | API 2 3/8" Reg                    | API 2 3/8" Reg                      | 305                               | N             | N                | 13     | 29  | 52-089-111202   |
| 102                    | CUBEX #24                         | API 2 3/8" Reg                      | 140                               | N             | N                | 9      | 20  | 52-102-112648   |
| 102                    | API 2 7/8" Reg                    | API 2 3/8" Reg                      | 130                               | Y             | N                | 7      | 15  | 52-102-111029   |
| 114                    | CUBEX #24                         | API 3 1/2" Reg                      | 160                               | Y             | N                | 10     | 22  | 52-114-112649   |
| 114                    | CUBEX #24                         | API 3 1/2" Reg                      | 160                               | Y             | Y                | 9      | 20  | 52-114-112269   |
| 114                    | CUBEX #28                         | API 3 1/2" Reg                      | 160                               | Y             | Y                | 11     | 24  | 52-114-111059   |
| 114                    | API 2 3/8" Reg                    | API 3 1/2" Reg                      | 160                               | Y             | N                | 9      | 19  | 52-114-111053   |
| 114                    | API 2 7/8" Reg                    | API 3 1/2" Reg                      | 160                               | Y             | N                | 9      | 20  | 52-114-111056   |
| 114                    | API 3 1/2" Reg                    | API 2 3/8" Reg                      | 120                               | Y             | N                | 9      | 20  | 52-114-111031   |
| 114                    | API 3 1/2" Reg                    | API 2 3/8" Reg                      | 223                               | Y             | N                | 10     | 22  | 52-114-11518177 |
| 114                    | API 3 1/2" Reg                    | API 2 7/8" Reg                      | 150                               | Y             | N                | 11     | 24  | 52-114-111039   |
| 114                    | API 3 1/2" Reg                    | API 3 1/2" Reg                      | 160                               | Y             | N                | 11     | 23  | 52-114-111061   |
| 114                    | API 3 1/2" Reg                    | API 3 1/2" Reg                      | 228                               | Y             | N                | 15     | 33  | 52-114-111352   |
| 114                    | API 3 1/2" Reg                    | API 3 1/2" Reg                      | 230                               | Y             | N                | 14     | 32  | 52-114-112668   |
| 114                    | API 3 1/2" Reg                    | API 3 1/2" Reg                      | 305                               | N             | N                | 21     | 46  | 52-114-111578   |
| 114                    | API 3 1/2" Reg                    | API 3 1/2" Reg                      | 500                               | Y             | N                | 32     | 70  | 52-114-112537   |
| 114                    | DIBH 3 1/8"                       | API 3 1/2" Reg                      | 260                               | Y             | N                | 17     | 36  | 52-114-112700   |
| 114                    | BECO 3"                           | API 3 1/2" Reg                      | 160                               | Y             | N                | 10     | 22  | 52-114-112637   |
| 127                    | CUBEX #28                         | API 3 1/2" Reg                      | 132                               | Y             | Y                | 11     | 23  | 52-127-111060   |
| 127                    | BECO 3 1/2"                       | API 3 1/2" Reg                      | 228                               | Y             | N                | 20     | 44  | 52-127-111897   |
| 127                    | BECO 3 1/2"                       | API 3 1/2" Reg                      | 228                               | Y             | N                | 20     | 44  | 52-127-111943   |
| 127                    | BECO 3 1/2"                       | API 3 1/2" Reg                      | 410                               | Y             | N                | 36     | 79  | 52-127-112572   |
| 127                    | BECO 3 1/2"                       | API 3 1/2" Reg                      | 609                               | Y             | N                | 55     | 121 | 52-127-111524   |
| 127                    | API 3 1/2" Reg                    | BECO 3"                             | 228                               | Y             | N                | 19     | 41  | 52-127-112543   |
| 127                    | DIBH 3 1/8"                       | API 3 1/2" Reg                      | 260                               | Y             | N                | 21     | 46  | 52-127-11-2675  |
| 127                    | DIBH 3 1/8"                       | DIBH 3 1/8"                         | 260                               | Y             | N                | 15     | 32  | 52-127-112674   |
| 140                    | BECO 3 1/2"                       | API 4 1/2" Reg                      | 228                               | Y             | N                | 21     | 46  | 52-140-111948   |
| 146                    | API 4 1/2" Reg                    | API 3 1/2" Reg                      | 132                               | Y             | N                | 17     | 36  | 52-146-111067   |
| 150                    | API 4" IF                         | API 3 1/2" Reg                      | 280                               | N             | N                | 37     | 82  | 52-150-112621   |
| 164                    | API 3 1/2" Reg                    | BECO 3 1/2"                         | 311                               | Y             | N                | 33     | 73  | 52-164-112616   |
| 164                    | API 4 1/2" Reg                    | CUBEX #24                           | 310                               | Y             | N                | 24     | 53  | 52-164-112592   |
| 164                    | API 4 1/2" Reg                    | CUBEX #28                           | 310                               | Y             | N                | 26     | 57  | 52-164-112667   |
| 171                    | API 5 1/2" Reg                    | API 3 1/2" Reg                      | 406                               | Y             | N                | 42     | 93  | 52-171-112396   |
| 171                    | API 5 1/2" Reg                    | API 3 1/2" Reg                      | 406                               | Y             | N                | 43     | 95  | 52-171-112065   |
| 171                    | API 5 1/2" Reg                    | API 3 1/2" Reg                      | 406                               | Y             | N                | 45     | 99  | 52-171-112402   |

# ACCESSORIES

Sandvik has recently developed and manufactured a comprehensive range of accessories to further increase safety.

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PRODUCTS AND TOOLS FOR MORE EFFICIENT, SAFE WORK

80

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SANDVIK ROCK DRILL PERFORMANCE FLUIDS

82

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# PRODUCTS AND TOOLS FOR SAFE AND EFFICIENT WORK

In order to best facilitate service and enable you to work efficient and safely, we supply many products and tools which work perfectly with our hammers. These accessories include Hammer lifting bails, foot valve assembly and disassembly tools, and a comprehensive hammer service kit. Our range of accessories optimizes your safety and productivity, and also reduces down-time, giving you better reliability.



Bit lifter

## BIT LIFTERS

| Hammer   | Description | Weight |     | Part no.   |
|----------|-------------|--------|-----|------------|
|          |             | kg     | lb  |            |
| RH460-6" | QL60        | 3.7    | 8.2 | BG00880852 |
| RH460-8" | QL80        | 4.2    | 9.2 | BG00880289 |
| RH560-9" | 560-9       | 3.7    | 8.2 | BG00880287 |

## AIR DISTRIBUTOR REMOVAL TOOL

| Hammer     | Hammer code         | Weight |      | Part no.   |
|------------|---------------------|--------|------|------------|
|            |                     | kg     | lb   |            |
| RH460-3.5" | 32-4635-SDA-XXX     | 2,8    | 6,2  | BG00916087 |
| RH460-4"   | 32-4640-XXA-XXX     | 3,9    | 8,6  | BG00909609 |
| RH460-4"   | Single lead thread  | 3,9    | 8,6  | BG01648029 |
| RH460-4"   | Tripple lead thread | 3,9    | 8,6  | BG01648065 |
| RH460-5"   | 32-465X-XQA-XXX     | 7,2    | 15,9 | BG00909715 |
| RH460-6"   | 32-466X-XQA-XXX     | 8,6    | 19   | BG00810644 |
| RH460-8"   | 32-468X-XXA-XXX     | 19,8   | 43,7 | BG00812342 |
| RH560-3.5" | 32-5665-SRA-XXX     | 2,9    | 6,4  | BG01037472 |
| RH560-4.5" | 32-5645-XTA-XXX     | 4,3    | 9,5  | BG00909479 |
| RH560-5.5" | 32-5655-GQA-XXX     | 6,7    | 14,8 | BG01126401 |
| RH560-5.5" | 32-5655-GQB-XXX     | 6,7    | 14,8 | BG01671406 |
| RH560-6.5" | 32-5665-GQA-XXX     | 8,6    | 19   | BG00909469 |
| RH560-6.5" | 32-5665-GQB-XXX     | 8,6    | 19   | BG01305403 |
| RH560-6.5" | 32-5665-GQC-XXX     | 8,6    | 19   | BG00810644 |
| RH560-9"   | 32-5665-XRA-XXX     | 24,2   | 53,4 | BG00909116 |

## FOOT VALVE ASSEMBLY TOOL

| Description | Weight |     | Part no.  |
|-------------|--------|-----|-----------|
|             | kg     | lb  |           |
| QLX40       | 0.3    | 0.7 | 62-4G017A |
| DHD35       | 0.2    | 0.4 | 62-24017A |
| DHD340      | 0.3    | 0.7 | 62-36017A |
| QL50        | 0.4    | 0.8 | 62-50017A |
| QL60        | 0.4    | 0.8 | 62-76017A |
| QL80        | 0.6    | 1.3 | 62-83017A |

## FOOT VALVE DISASSEMBLY TOOL

| Description         | Weight |      | Part no.  |
|---------------------|--------|------|-----------|
|                     | kg     | lb   |           |
| DHD35 / DHD340      | 1.8    | 3.9  | 63-010KTA |
| QLX4 / QL5 / DHD350 | 2.5    | 5.5  | 63-020KTA |
| QL6 / DHD 360       | 3.2    | 7    | 63-030KTA |
| QL8 / DHD380        | 4.9    | 10.9 | 63-040KTA |

Air distributor removal tool



Foot valve assembly tool



Foot valve disassembly tool



Bit assembly tool

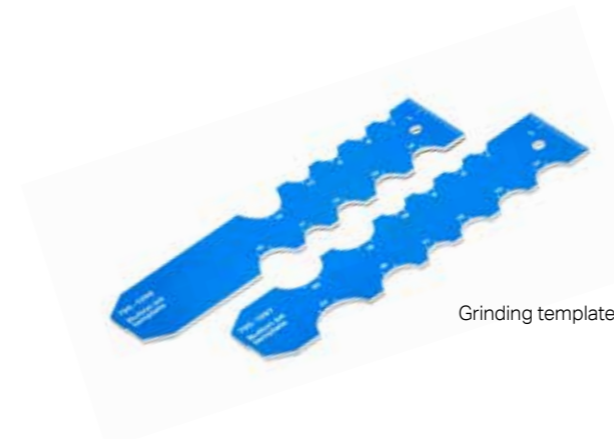
Driver sub lifter



Hammer lifting bail



Hammer service kit



Grinding templates

## BIT ASSEMBLY TOOL

| Hammer     | Hammer code     | Part no.   |
|------------|-----------------|------------|
| RH560-5.5" | 32-5655-GQX-XXX | BG01683534 |
| RH560-6.5" | 32-5665-GQX-XXX | BG01683377 |

## DRIVER SUB LIFTERS

| Hammer   | Hammer code     | Weight |      | Part no.   |
|----------|-----------------|--------|------|------------|
|          |                 | kg     | lb   |            |
| RH460-8" | 32-468X-XXA-XXX | 4.8    | 10.6 | BG00668428 |
| RH560-9" | 32-5665-XRA-XXX | 4.8    | 10.6 | BG00821070 |

## HAMMER LIFTING BAIL 3600 KG

|                 |     |      |            |
|-----------------|-----|------|------------|
| 2-3/8" Reg box  | 5.1 | 11.2 | BG00016425 |
| 2-7/8" Reg box  | 8   | 17.6 | BG00016426 |
| 3-1/2" Reg box  | 14  | 30.8 | BG00016427 |
| 3-1/2" IF box   | 10  | 22   | BG00016428 |
| 4-1/2" Reg box  | 19  | 41.8 | BG00016429 |
| CUBEX #24 box   | 13  | 28.6 | BG00294441 |
| CUBEX #21 box   | 13  | 28.6 | BG00294442 |
| CUBEX #28 box   | 13  | 28.6 | BG00294450 |
| 4 1/2" BECO box | 25  | 55   | BG00294443 |

## HAMMER SERVICE KIT

| Hammer     | Hammer code         | Weight |      | Part no.   |
|------------|---------------------|--------|------|------------|
|            |                     | kg     | lb   |            |
| RH460-3.5" | 32-4635-SDA-XXX     | 3,8    | 8,2  | BG01671422 |
| RH460-4"   | 32-4640-XXA-XXX     | 5,2    | 11,5 | BG00303552 |
| RH460-4"   | Single lead thread  | 5,2    | 11,5 | BG01648028 |
| RH460-4"   | Tripple lead thread | 5,2    | 11,5 | BG01648063 |
| RH460-5"   | 32-465X-XQA-XXX     | N/A    | N/A  | BG00274811 |
| RH460-6"   | 32-466X-XQA-XXX     | N/A    | N/A  | BG00275989 |
| RH460-8"   | 32-468X-XXA-XXX     | N/A    | N/A  | BG00324800 |
| RH560-3.5" | 32-5665-SRA-XXX     | 5,8    | 12,9 | BG01669911 |
| RH560-4.5" | 32-5645-XTA-XXX     | 7,2    | 15,9 | BG00995594 |
| RH560-5.5" | 32-5655-GQA-XXX     | 10,4   | 22,9 | BG01670792 |
| RH560-5.5" | 32-5655-GQB-XXX     | 10,4   | 22,9 | BG01671405 |
| RH560-6.5" | 32-5665-GQA-XXX     | 12,3   | 27,1 | BG01671039 |
| RH560-6.5" | 32-5665-GQB-XXX     | 12,3   | 27,1 | BG01671390 |
| RH560-6.5" | 32-5665-GQC-XXX     | 12,3   | 27,1 | BG01671397 |
| RH560-9"   | 32-5665-XRA-XXX     | 33     | 73,2 | BG01671257 |
| RH650-6"   | 32-6565-GSA-XXX     | 3,5    | 7,7  | BG01640017 |

## GRINDING TEMPLATES

|                                      |     |     |          |
|--------------------------------------|-----|-----|----------|
| Grinding template, spherical buttons | 0.1 | 0.2 | 795-1397 |
| Grinding template, ballistic buttons | 0.1 | 0.2 | 795-1398 |

# SANDVIK PERFORMANCE FLUIDS HEAVY-DUTY ROCK DRILL LUBRICATION OIL

Sandvik heavy-duty rock drill lubrication oils are specially engineered for your Sandvik rock tools that operate under harsh mining conditions. With different viscosity classes for colder and warmer climates, this oil will increase the service life of your rock tools and maximize your return on investment.

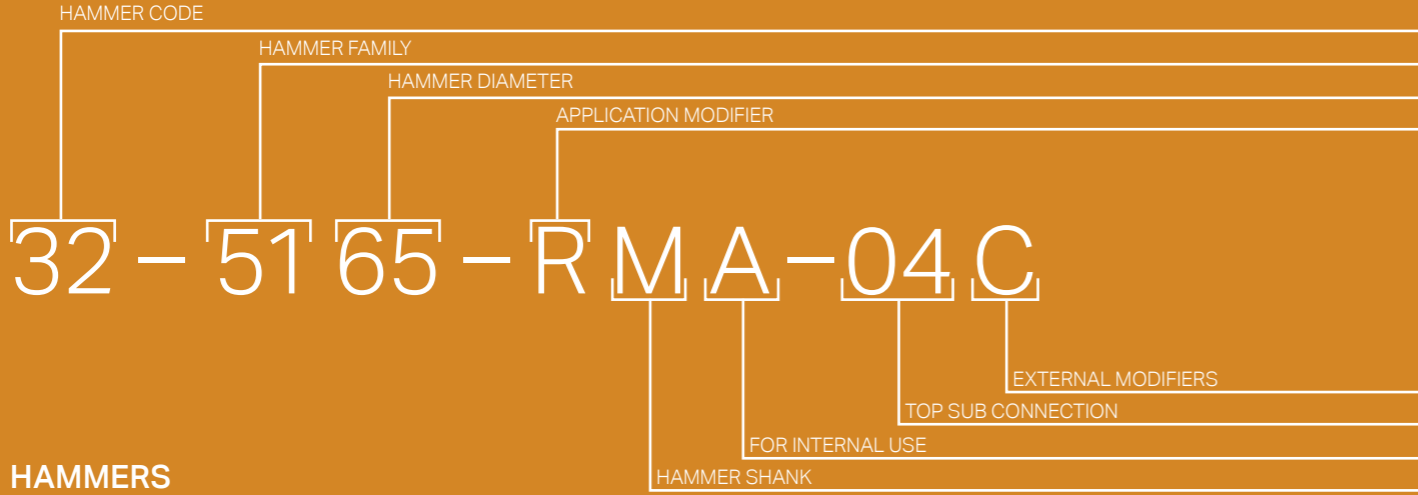
## SANDVIK ROCK DRILL PERFORMANCE FLUIDS HEAVY-DUTY SHANK LUBRICATION OIL

| Product name  | Viscosity grade | Item number | Size  |
|---------------|-----------------|-------------|-------|
| Sandvik OS32  | ISO VG32        | BG00636017  | 205 L |
| Sandvik OS32  | ISO VG32        | BG00636016  | 5 L e |
| Sandvik OS46  | ISO VG46        | BG00861758  | 205 L |
| Sandvik OS46  | ISO VG46        | BG00861769  | 5 L e |
| Sandvik OS68  | ISO VG68        | BG00861806  | 205 L |
| Sandvik OS68  | ISO VG68        | BG00861807  | 5 L e |
| Sandvik OS100 | ISO VG100       | BG00636013  | 205 L |
| Sandvik OS100 | ISO VG100       | BG00636014  | 5 L e |
| Sandvik OS150 | ISO VG150       | BG00861808  | 205 L |
| Sandvik OS150 | ISO VG150       | BG00861809  | 5 L e |
| Sandvik OS220 | ISO VG220       | BG00861810  | 205 L |
| Sandvik OS220 | ISO VG220       | BG00861811  | 5 L e |
| Sandvik OS320 | ISO VG320       | BG00861812  | 205 L |
| Sandvik OS320 | ISO VG320       | BG00861813  | 5 L e |

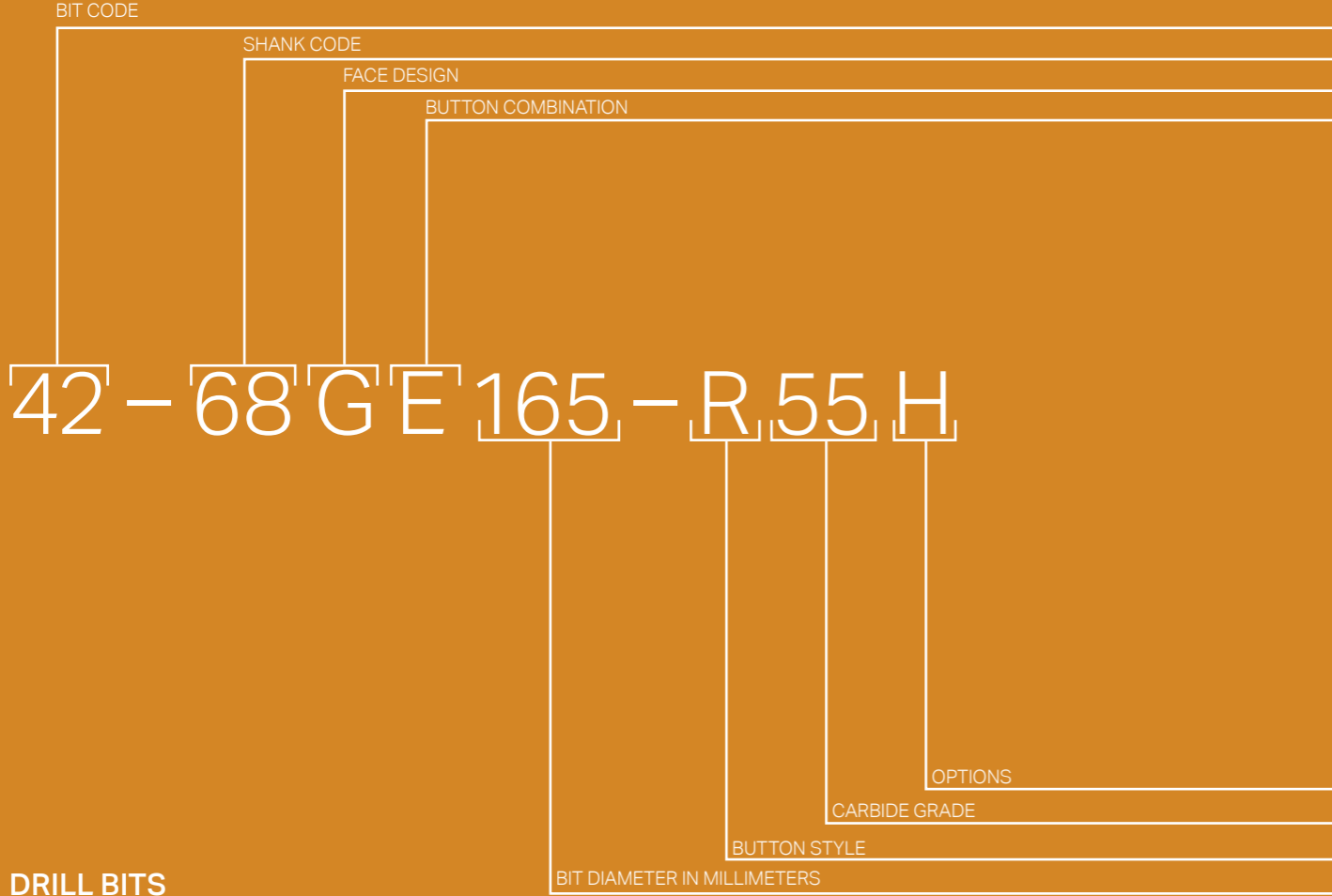
Sandvik reserves the right to make changes to the information on this data specification without prior notification to users. Please contact a Sandvik representative for clarification on specifications and options.



# PART NO. KEYS



## HAMMERS



## DRILL BITS

### HAMMER CODE

| APPLICATION MODIFIER      | HAMMER DIAMETER       | HAMMER FAMILY |
|---------------------------|-----------------------|---------------|
| R Reversible              | 30 = 3" 70 = 7" HD    | 65 = RH650    |
| G HD (Large OD)           | 35 = 3.5" 80 = 8"     | 56 = RH560    |
| W Deep hole               | 40 = 4" 85 = 8.5" HD  | 51 = RH510    |
| H Horizontal              | 50 = 5" 10 = 10"      | 46 = RH460    |
| S Standard                | 55 = 5.5" HD 12 = 12" |               |
| E expanded pressure range | 60 = 6" 15 = 15"      |               |
|                           | 65 = 6.5" HD 18 = 18" |               |

| HAMMER SHANK        | FOR INTERNAL USE | TOP SUB CONNECTION     | EXTERNAL MODIFIERS            |
|---------------------|------------------|------------------------|-------------------------------|
| S Sandvik for RH650 |                  | 04 = 3 1/2 API REG PIN | S Standard                    |
| M Mission           |                  | 11 = 2 7/8 API REG PIN | C Retract carbides in top sub |
| Q QL                |                  | 16 = 2 3/8 API REG PIN |                               |
| D DHD               |                  | 19 = 4 1/2 API REG PIN |                               |
| T QLX               |                  | 39 = 6 5/8 API REG PIN |                               |
|                     |                  | 25 = 3 1/2 API REG BOX |                               |
|                     |                  | 74 = 3 1/2 API IF PIN  |                               |
|                     |                  | 55 = 3 1/2 BECO PIN    |                               |
|                     |                  | 72 = 4 1/2 BECO PIN    |                               |
|                     |                  | 77 = #24 CUBEX PIN     |                               |
|                     |                  | 63 = #21 CUBEX PIN     |                               |
|                     |                  | 56 = #28 CUBEX PIN     |                               |
|                     |                  | 84 = 5 1/4" BECO PIN   |                               |

| BUTTON COMBINATION      | FACE DESIGN                            | SHANK CODE               | BIT CODE   |
|-------------------------|--|--------------------------|--|
| 0 = 11 / 11 B = 14 / 14 | Face code Flushing holes Gauge buttons | 6S = 650-6 3H = DHD3.5HD | 42 = Generic code for DTH bits                     |
| 1 = 12 / 12 C = 16 / 16 | Concave face                           | 3R = 560-3.5 36 = DHD340 | 72 = D shape button with ring at buttonhole bottom |
| 3 = 13 / 12 D = 18 / 16 | 1 2 8                                  | 4H = 560-4 4G = QLX40    |  |
| 4 = 13 / 13 E = 18 / 18 | D 3 9                                  | 5H = 560-5 50 = QL50     |  |
| 8 = 16 / 13 L = 22 / 18 | T 2 10                                 | 63 = 560-6 76 = QL60     |  |
| 9 = 16 / 14 M = 22 / 22 | 8 3 12                                 | 9H = 560-9 83 = QL80     |  |
| A = 14 / 13 P = 20 / 18 | Flat face                              | 3A = M30                 |  |
|                         | A 2 10                                 | 48 = M40                 |  |
|                         | F 2 8                                  | 58 = M50                 |  |
|                         | 2 3 9                                  | 68 = M60                 |  |
|                         | Convex face                            | 88 = M80                 |  |
|                         | 3 2 7                                  |                          |  |
|                         | 5 2 8                                  |                          |  |
|                         | 6 2 10                                 |                          |  |
|                         | C 3 12                                 |                          |  |
|                         | L 3 9                                  |                          |  |
|                         | G 1-4 HD                               |                          |  |
|                         | Bulldog                                |                          |  |
|                         | 9 3 9                                  |                          |  |
|                         | B 2 12                                 |                          |  |
|                         | 6 2 10                                 |                          |  |

| BIT DIAMETER IN MM | BUTTON STYLE                   | CARBIDE GRADE | OPTIONS                 |
|--------------------|--------------------------------|---------------|-------------------------|
|                    | Shape Std With wear protection | 48 = XT48     | H = Extra hard body     |
|                    | Spherical S W                  | 55 = DP55     | F = Rope fishing thread |
|                    | Ballistic R U                  | 65 = DP65     | K = Wear resistant      |
|                    | Spherical gauge                | D2 = Diamond  |                         |
|                    | Ballistical face L T           | 69 = SH69     |                         |



