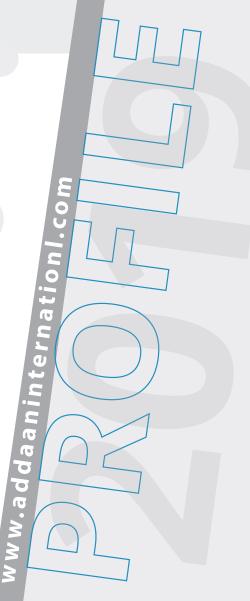




6 Our earnest effort to build your dream.



عداًن العالمية للتجارة ADDAAN INTERNATIONAL TRADING COMPANY LTD.



| NO PA | RTICULARS                                      | PAGI |
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# 6 6 Our earnest effort to build your Success. 9 9 About

**Addaan Trading Company LTD (AITC)** 

AITC Ltd is a global Trading company specialized in the procurement of spare parts and equipment used in the Mining.

We are agent for many brands and are providing drilling tools, bits, rods, machines, mud pumps. We are exclusive distribution agents for dozens of companies.

Our comprehensive range of services & products provide the customer with, innovative, effective, strategic as well as cost effective solutions.

#### VISION

To be a modern distribution company utilizing high technology, develop our solid network, providing our society value-adding services with high quality consumer goods.

#### MISSION

Is a journey to a sustainable and profitable growth, expand the reach creating long-term value for our customers, our people and our business partners, while maintaining our values and integrity.

#### Our Products •

- 1. Drilling Machines
- 1.1 DESCO Drill Rig:

DESCO manufacturers a complete line of premium mance in some of the world's most the biggest Korean producers for drilling rigs. They sold over 5000 units during factory production line.



## 1.1.1. SP6500SA-RC & DD

(Most Standard)

As one of the most standard drills upto RC 4" -350M. HO-700M depth for exploration drilling (RC & Diamond).

SP6500SA-RC surface coring drill is an advanced addition to the SP-SA-RC series featuring a telescopic and dump mast.

SP6500SA-RC is capable multi-purpose of both reverse circulation & diamond coring well as DTH, rotary drilling methods with pullback capacity of 16 ton and a torque can be increased.

SP6500SA-RC can also include advanced rod management system that ensures safe and efficient operation.

The reverse circulation (RC) drilling method utilizes to collect rock samples quickly and efficiently.

The high drilling speed and low cost of RC drilling makes it an ideal method for exploration project.

- SP6500SA-RC for exploration RC & diamond drilling.
- Design for drilling up to RC 350M & HQ 400M.
- Multi-purpose (reverse circulation & diamond drilling methods).
- Wireline system
- Percussion & rotary' drilling methods (Additional).
- Vertical. Angle Drilling (45 degree go degree) capability.
- Foot clamping system.
- All instrument & control levers are concentrated.
- Mounted full package on drill rig.
- Self-loading system.
- Installed major hyd. Parts so easy to find spare parts in the market.
- Options inverter. auto rod changer. pre-heating system.
   wireless remote control and so on.

## 1.1.2. SP5500SA-RC & DD

## (Most simple & compact)

As one of the most standard drills upto RC 4" -250M. HQ-400M depth for exploration drilling (RC & Diamond). SP5500SA-RC surface coring drill is an advanced addition to the SP-SA-RC series featuring a telescopic and dump mast.

SP5500SA-RC is capable mu If-purpose of both reverse circulation & diamond coring as well as DTH, rotary drilling methods with pullback capacity of 12 ton and a torque can be increased SP5500SA-RC can also include a advanced rod management system that ensures safe and efficient operation The reverse circulation (RC) drilling method utilizes to collect rock samples quickly and efficiently The high drilling speed and low cost of RC drilling makes it an ideal method for exploration project.



- SP5500SA-RC for exploration RC & diamond drilling.
- Design for drilling up to RC 250M & HQ 400M.
- Multi-purpose (reverse circulation & diamond drilling methods) .
- Wireline system.
- Percussion & rotary drilling methods (Additional).
- Vertical, Angle Drilling (45 degree 90 degree) capability .
- Foot clamping system.
- All instrument & control levers are concentrated.
- Mounted full package on drill rig.
- Self-loading system.
- Installed major hyd Parts so easy to find spare parts in the market.
- Options inverter, auto rod changer, pre-heating system, wireless remote control and so on



## 1.1.3. SP7500SA-RC & DD

## (Deep exploration diamond drilling)

As one of the most standard drills upto RC 4" -600M. PQ-1000M depth for exploration drilling (RC & Diamond). SP7500SA-RC surface coring drill is an advanced addition to the SP-SA-RC series featuring a telescopic and dump mast.

SP7500SA-RC is capable multi-purpose of both reverse circulation & diamond coring as well as DTH, rotary drilling methods with pullback capacity of 30 ton and a torque can be increased.

SP7500SA-RC can also include advanced rod management system that ensures safe and efficient operation.

The reverse circulation (RC) drilling method utilizes to collect rock samples quickly and efficiently.

The high drilling speed and low cost of RC drilling makes it an ideal method for exploration project of deeper RC & diamond drilling.

- SP7000SA-RC for exploration RC & diamond drilling5.
- Design for drilling up to RC- 600M & PQ 1000M.
- Multi-purpose (reverse circulation & diamond drilling methods).
- Wireline system.
- Percussion & rotary drilling methods (Additional).
- Vertical. Angle Drilling (45 degree go degree) capability .
- Foot clamping system.
- All instrument & control levers are concentrated.
- Mounted full package on drill rig.
- Self-loading system.
- Installed major hyd Parts so easy to find spare parts in the market.
- Options inverter. auto rod changer. pre-heating system.
   wireless remote control and so on.

# 1.2. BARKOM Drill Rig

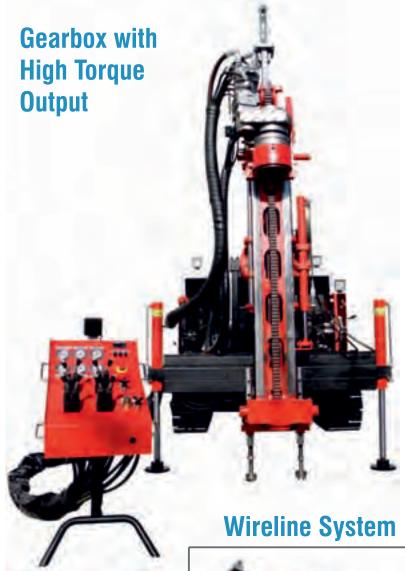
Barkom has a big market share for many years in diamond core drilling and as well as its own drilling equipment.

Barkom Group manufactures Underground Drill Rigs. BDU 400X specifically designed for underground diamond core drilling. Its modular structure enables it to fit narrow and confined areas of underground galleries. BDU 600 is designed to improve the performance of BDU 400X as well as adding new features to it. One of the major differences is the diesel engine and track system added to the rig.

# 1.2.1. BDU 600 Underground Drill Rig







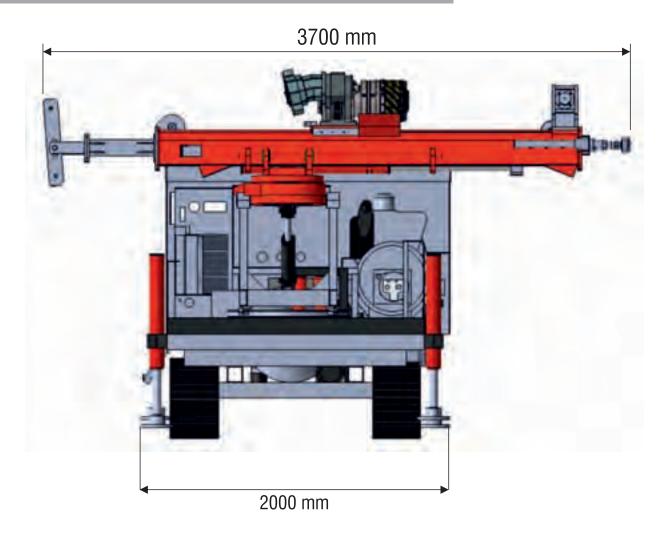


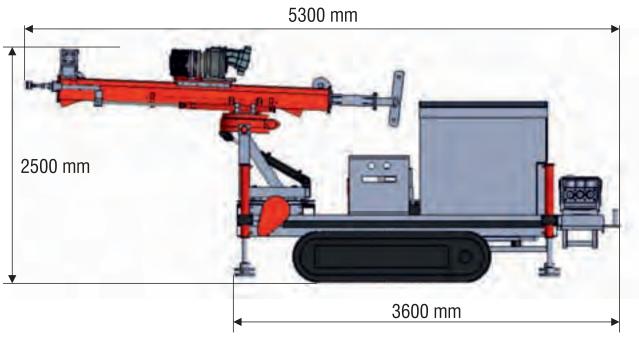


# **360° Rotating Mast**



# **BDU 600 Underground Drill Rig**



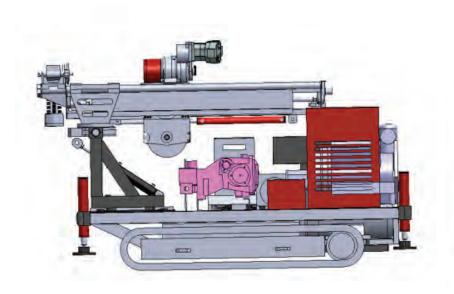


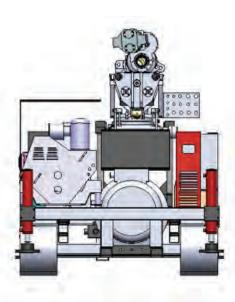
# **BDU 600 Technical Information**

|                                | Length                                     |  | 5,30                |  |  |  |  |  |  |  |  |
|--------------------------------|--|--|---------------------|--|--|--|--|--|--|--|--|
|                                | Width                                      | <del> </del> <del> </del>  <br>  m   | 2,00                |  |  |  |  |  |  |  |  |
| DIMENSIONS & WEIGHT            | Height                                     | <del>-</del>   |                     |  |  |  |  |  |  |  |  |
| DIMENSIONS & WEIGHT            | Mast Height                                | <del> </del>   m   | 3,70                |  |  |  |  |  |  |  |  |
|                                | Weight                                     | Top  |                     |  |  |  |  |  |  |  |  |
|                                | Model                                      | Ton  | GAMAK GM2E          |  |  |  |  |  |  |  |  |
|                                |  |  |                     |  |  |  |  |  |  |  |  |
| ELECTRIC MOTOR                 | Power                                      | kW   | 55                  |  |  |  |  |  |  |  |  |
|                                | Cooling System                             |  | Air Cooling         |  |  |  |  |  |  |  |  |
|                                | Model                                      |  | BEINEI/DEUTZ F3L912 |  |  |  |  |  |  |  |  |
| DIESEL MOTOR                   | Power                                      | kW kW  |                     |  |  |  |  |  |  |  |  |
|                                | Fuel Tank Capacity                         | Liter  | 30                  |  |  |  |  |  |  |  |  |
|                                | Coolin System                              |  | Air Cooling         |  |  |  |  |  |  |  |  |
|                                | Reduction                                  |  | Spur Gear 3.3/1     |  |  |  |  |  |  |  |  |
|                                | Maximum Rotation                           |  | 2000                |  |  |  |  |  |  |  |  |
| ROTARY HEAD                    | Maximum Torque                             | Nm į   | 1400                |  |  |  |  |  |  |  |  |
|                                | Travel Distance                            | i mm i   | 1600                |  |  |  |  |  |  |  |  |
|                                | Maximum Pipe Diameter                      | , mm   | 90                  |  |  |  |  |  |  |  |  |
|                                | Rotary head driven by hydraulic cylinders  | through heavy duty chair   |                     |  |  |  |  |  |  |  |  |
|                                | Mast Movement (Sliding / Table)            | mm   | 800 / 900           |  |  |  |  |  |  |  |  |
| FEED SYSTEM                    | Mast Rotation (Tilting / Rotating)         | mm   | 0-95° / 360°        |  |  |  |  |  |  |  |  |
|                                | Pull Capacity                              | Ton  | 12                  |  |  |  |  |  |  |  |  |
|                                | Push Capacity                              | Ton  | 7                   |  |  |  |  |  |  |  |  |
|                                | Model                                      |  | Bosch Rexroth       |  |  |  |  |  |  |  |  |
|                                | System                                     |  | 4 pump open loop    |  |  |  |  |  |  |  |  |
|                                | Working Pressure                           | Bar  | 280                 |  |  |  |  |  |  |  |  |
| HYDRAULIC SYSTEM               | Hydraulic Oil Tank Capacity                | Liter  | 280                 |  |  |  |  |  |  |  |  |
|                                | Filtration                                 | Micron   | 10                  |  |  |  |  |  |  |  |  |
|                                | Cooling System                             | <del>-</del>   | Water Cooling       |  |  |  |  |  |  |  |  |
|                                | Ambient Temperature Range                  | °C   | <b>-20</b> ∼ 45     |  |  |  |  |  |  |  |  |
| CLAMP                          | Maximum Diameter                           | mm   | 90                  |  |  |  |  |  |  |  |  |
|                                | Hydraulic motors are attached to the drivi | ing gear of the crawler sys  | stem                |  |  |  |  |  |  |  |  |
| TRAVEL SYSTEM                  | Model                                      |  | S4/17 (SC426B)      |  |  |  |  |  |  |  |  |
|                                | Maximum Travel Speed                       | Km/hour  | 2                   |  |  |  |  |  |  |  |  |
|                                | Maximum Ground Pressure                    | Mpa  | 0,15                |  |  |  |  |  |  |  |  |
|                                | Control Panel                              |  | 1 x 10 lux          |  |  |  |  |  |  |  |  |
| LIGHTING AND ELECTRICAL SYSTEM | Machine                                    |  | 2 x 10 lux          |  |  |  |  |  |  |  |  |
| HYDRAULIC JACKS                |  | Four hydraulic jacks are fitted to the outer corners of the rig for easy and |                     |  |  |  |  |  |  |  |  |
|                                | BWL  |  | 800                 |  |  |  |  |  |  |  |  |
| DOULING DEPTH CAPACITY         | NWL  | <del> </del> <del> ''</del> <del> </del><br>  m                              | 600                 |  |  |  |  |  |  |  |  |
| DRILLING DEPTH CAPACITY        |  |  |                     |  |  |  |  |  |  |  |  |
|                                | HWL Line Disposets                         | m  | 300                 |  |  |  |  |  |  |  |  |
| WIDELINE OVOTEM                | Line Diameter                              | <del> </del> mm  |                     |  |  |  |  |  |  |  |  |
| WIRELINE SYSTEM                | Capacity                                   | <u>H</u>   | 600                 |  |  |  |  |  |  |  |  |
|                                | Line Pull                                  | Kg   | 100                 |  |  |  |  |  |  |  |  |
|                                | Model                                      |  | Hydraulic Triplex   |  |  |  |  |  |  |  |  |
| MUD MUMP                       | Maximum Flow                               | Liters / Minute  | 135                 |  |  |  |  |  |  |  |  |
|                                | Maximum Pressure                           | Bar  | 60                  |  |  |  |  |  |  |  |  |
|                                | Valve Type                                 |  | Steel               |  |  |  |  |  |  |  |  |

# 1.2.2. BDU 400 Underground Drill Rig







# **Technical Specifications (BDU 400)**

|                                | Length   | m                           | 5,20              |
|--------------------------------|--|-----------------------------|-------------------|
|                                | Width  | <del> </del> m              | 1,35              |
| DIMENSIONS & WEIGHT            | Height   | <del> </del> m              | 2,30              |
|                                | Mast Height  | m ;                         | 2,65              |
|                                | Weight   | Ton                         | 3                 |
|                                | Model  |                             | GAMAK GM2E        |
| ELECTRIC MOTOR                 | Power  | kW ;                        | 55                |
|                                | Cooling System   | <del></del>                 | Air Cooling       |
|                                | Reduction  |                             | Spur Gear 5.6/1   |
|                                | Maximum Rotation   | rpm                         | 2000              |
| ROTARY HEAD                    | Maximum Torque   | Nm                          | 1200              |
|                                | Travel Distance  | mm                          | 1300              |
|                                | Maximum Pipe Diameter  | mm                          | 70                |
|                                | Rotary head driven by hydraulic cylinders                                  | through heavy duty chain    |                   |
|                                | Mast Movement (Sliding / Table)  | mm                          | 280 / 250         |
| FEED SYSTEM                    | Mast Rotation (Tilting / Rotating)   | mm                          | 0-95° / 360°      |
|                                | Pull Capacity  | Ton                         | 6,5               |
|                                | Push Capacity  | Ton                         | 6,5               |
|                                | Model  | f 1<br>1 1                  | Bosch Rexroth     |
|                                | System   |                             | 3 pump open loop  |
|                                | Working Pressure   | Bar                         | 280               |
| HYDRAULIC SYSTEM               | Hydraulic Oil Tank Capacity  | Liter                       | 220               |
|                                | Filtration   | Micron                      | 10                |
|                                | Cooling System   |                             | Water Cooling     |
|                                | Ambient Temperature Range  | °C                          | <b>-20</b> ∼ 45   |
| CLAMP                          | Maximum Diameter   | mm                          | 70                |
|                                | Hydraulic motors attached to the front wh                                  | neels provide the necessar  | y drive torque    |
| FRAVEL SYSTEM                  | Number of Wheels   |                             | 2 front & 2 back  |
|                                | Wheel Weight Capacity  | Kg                          | 800               |
|                                | Maximum Walk Speed   | Km / hour                   | 2                 |
| LIGHTING AND ELECTRICAL SYSTEM | Control Panel  |                             | 1 x 10 lux        |
| EIGITING AND ELECTRICAL STOTEM | Machine  |                             | 1 x 10 lux        |
| HYDRAULIC JACKS                | Four hydraulic jacks are fitted to the outer accurate leveling of the rig. | corners of the rig for easy | y and             |
| DOULING DEDTH CADACITY         | BWL  | m                           | 600               |
| DRILLING DEPTH CAPACITY        | NWL  | m                           | 400               |
| OPTIONS                        |  |                             |                   |
|                                | Model  |                             | Hydraulic Triplex |
| MUD PUMP                       | Maximum Flow Rate  | Liters / Minute             | 135               |
|                                | Maximum Pressure   | Bar                         | 60                |
|                                | Valve Type   | T                           | Steel Valve       |

# 1.4. American Mfg Company

American Mfg Company is a quality manufacturer of replacement parts for the wide variety of mud pumps, centrifugal pumps, rig parts, and swivel parts found on the World market today. American Mfg Company's plant is located in beautiful St. Joseph, Minnesota in America's heartland. A highly trained staff uses state-of-the-art equipment and proven quality control methods to produce the finest pump replacement parts found in the market today.

## 1- American AW1122D Piston Pump

| Specifications                 |                               |
|--------------------------------|-------------------------------|
| Pump Model                     | AW1118, AW1122                |
| Configuration                  | Horizontal Triplex Piston     |
| Number of Pistons              | 3                             |
| Stroke Length                  | 2.75 Inches (69.9 mm)         |
| Frame Load Rating              | lbs. (2,721 kg)               |
| Pump Weight                    | lbs. (197 kg)                 |
| Direction of Rotation          | Top of Shaft away from head   |
| Internal Gear Rotation         | 3.6:1                         |
| Intermittent Duty Speed Rating | RPM (Jackshaft)               |
| Continuous Duty Speed Rating   | RPM (Jackshaft)               |
| Ball Valve Max Speed Rating    | RPM (Jackshaft)               |
| Minimum Speed                  | RPM                           |
| Mechanical Efficiency          | 85%                           |
| Lubrication System             | Splash, Gravity Return        |
| Lube Oil Capacity              | Gallon                        |
| Lube Oil Type                  | SAE 30                        |
| Maximum Fluid Temperature      | 140°F (250° Capability)       |
| Minimum Fluid Temperature      | 0°F (-20° Capability)         |
| Standard Suction Size          | 2.00 Inch NPT (50.8 mm)       |
| Standard Discharge Size        | 1.25 Inch NPT (31.8 mm)       |
| Fluid End Material             | Ductile Iron                  |
| Valve Type                     | Disc Valves/Ball Valves       |
| Hydraulic Motor Mount          | SAE C - 4 Bolt with 1.25"-14T |



| Performa      | nce Rat                  | ing  |                     |       |  |                    |      |      |      |      |      |      |      |     |      |       |
|---------------|--------------------------|------|---------------------|-------|--|--------------------|------|------|------|------|------|------|------|-----|------|-------|
| Pump<br>Model | Piston Displacement/ REV |      | Maximum<br>Pressure |       | Pump Capacity @ Input Speed (RPM) 350 RPM 500 RPM 635 RPM 750 RPM 900 RP |                    |      |      |      |      |      |      |      | RPM |      |       |
|               | Inch                     | mm   | Gallon              | Liter | PSI  | kg/cm <sup>2</sup> | gpm  | lpm  | gpm  | lpm  | gpm  | lpm  | gpm  | lpm | gpm  | lpm   |
| AW1118        | 2.25                     | 57.2 | 0.0394              | 0.149 | 1,000  | 70.3               | 13.8 | 52.2 | 19.7 | 74.6 | 25   | 94.6 | 29.6 | 112 | 35.5 | 134.4 |
| AW1122        | 2.75                     | 69.9 | 0.0589              | 0.223 | 1,000  | 70.3               | 20.6 | 78   | 29.5 | 112  | 37.4 | 142  | 44.2 | 167 | 53   | 201   |

## 2- American AW1122BCD Piston Pump

# AW11 Piston Pump Data 30 BHP Continuous Duty (36 BHP Intermittent Duty)

| Pump Model AW1118, AW1122  Configuration Horizontal Triplex Piston  Number of Pistons 3  Stroke Length 2.75 Inches (69.9 mm)  Frame Load Rating Ibs. (2,721 kg)  Pump Weight Ibs. (197 kg)  Direction of Rotation Top of Shaft away from head  Internal Gear Rotation 3.6:1  Intermittent Duty Speed Rating RPM (Jackshaft)  Continuous Duty Speed Rating RPM (Jackshaft)  Minimum Speed RPM RPM (Jackshaft)  Mechanical Efficiency 85%  Lubrication System Splash, Gravity Return  Lube Oil Capacity Gallon  Lube Oil Type SAE 30  Maximum Fluid Temperature 140°F (250° Capability)  Minimum Fluid Temperature 0°F (-20° Capability)  Standard Suction Size 2.00 Inch NPT (50.8 mm)  Standard Discharge Size 1.25 Inch NPT (31.8 mm)  Fluid End Material Ductile Iron  Valve Type Disc Valves/Ball Valves  Hydraulic Motor Mount SAE C - 4 Bolt with 1.25"-14T |                                |                               |
|--|--------------------------------|-------------------------------|
| Configuration  Number of Pistons  3  Stroke Length  2.75 Inches (69.9 mm)  Frame Load Rating  Pump Weight  Direction of Rotation  Internal Gear Rotation  Intermittent Duty Speed Rating  Ball Valve Max Speed Rating  Minimum Speed  Mechanical Efficiency  Lube Oil Capacity  Lube Oil Type  Maximum Fluid Temperature  Standard Suction Size  Standard Discharge Size  Fluid End Material  Valve Type  Disc Valves/Ball Valves  | Specifications                 |                               |
| Number of Pistons  Stroke Length  2.75 Inches (69.9 mm)  Frame Load Rating  Pump Weight  Direction of Rotation  Internal Gear Rotation  Intermittent Duty Speed Rating  Ball Valve Max Speed Rating  Minimum Speed  Lubrication System  Lube Oil Capacity  Lube Oil Type  Maximum Fluid Temperature  Minimum Fluid Temperature  Standard Suction Size  Standard Discharge Size  Fluid End Material  Valve Type  Disc Valves/Ball Valves  | Pump Model                     | AW1118, AW1122                |
| Stroke Length 2.75 Inches (69.9 mm) Frame Load Rating Ibs. (2,721 kg)  Pump Weight Ibs. (197 kg)  Direction of Rotation Top of Shaft away from head Internal Gear Rotation 3.6:1  Intermittent Duty Speed Rating RPM (Jackshaft)  Continuous Duty Speed Rating RPM (Jackshaft)  Ball Valve Max Speed Rating RPM (Jackshaft)  Minimum Speed RPM RPM (Jackshaft)  Mechanical Efficiency 85%  Lubrication System Splash, Gravity Return  Lube Oil Capacity Gallon  Lube Oil Type SAE 30  Maximum Fluid Temperature 140°F (250° Capability)  Minimum Fluid Temperature 0°F (-20° Capability)  Standard Suction Size 2.00 Inch NPT (50.8 mm)  Standard Discharge Size 1.25 Inch NPT (31.8 mm)  Fluid End Material Ductile Iron  Valve Type Disc Valves/Ball Valves  | Configuration                  | Horizontal Triplex Piston     |
| Frame Load Rating   Ibs. (2,721 kg)   Pump Weight   Ibs. (197 kg)   Direction of Rotation   Top of Shaft away from head   Internal Gear Rotation   3.6:1   Intermittent Duty Speed Rating   RPM (Jackshaft)   Continuous Duty Speed Rating   RPM (Jackshaft)   Ball Valve Max Speed Rating   RPM (Jackshaft)   Minimum Speed   RPM   Mechanical Efficiency   85%   Lubrication System   Splash, Gravity Return   Lube Oil Capacity   Gallon   Lube Oil Type   SAE 30   Maximum Fluid Temperature   140°F (250° Capability)   Minimum Fluid Temperature   0°F (-20° Capability)   Standard Suction Size   2.00 Inch NPT (50.8 mm)   Standard Discharge Size   1.25 Inch NPT (31.8 mm)   Fluid End Material   Ductile Iron   Valve Type   Disc Valves/Ball Valves  | Number of Pistons              | 3                             |
| Pump Weight Direction of Rotation Top of Shaft away from head Internal Gear Rotation Intermittent Duty Speed Rating Continuous Duty Speed Rating RPM (Jackshaft)  Ball Valve Max Speed Rating RPM (Jackshaft)  Minimum Speed RPM Mechanical Efficiency Lubrication System Splash, Gravity Return  Lube Oil Capacity Gallon  Lube Oil Type SAE 30  Maximum Fluid Temperature Judo F (250° Capability)  Minimum Fluid Temperature Standard Suction Size J.20 Inch NPT (50.8 mm)  Standard Discharge Size Lubrication Fluid End Material Ductile Iron  Valve Type Disc Valves/Ball Valves   | Stroke Length                  | 2.75 Inches (69.9 mm)         |
| Direction of Rotation  Internal Gear Rotation  Intermittent Duty Speed Rating  RPM (Jackshaft)  Continuous Duty Speed Rating  RPM (Jackshaft)  Ball Valve Max Speed Rating  RPM (Jackshaft)  Minimum Speed  RPM  Mechanical Efficiency  Lubrication System  Splash, Gravity Return  Lube Oil Capacity  Gallon  Lube Oil Type  SAE 30  Maximum Fluid Temperature  Minimum Fluid Temperature  O°F (-20° Capability)  Standard Suction Size  2.00 Inch NPT (50.8 mm)  Standard Discharge Size  Fluid End Material  Ductile Iron  Valve Type  Disc Valves/Ball Valves  | Frame Load Rating              | lbs. (2,721 kg)               |
| Internal Gear Rotation  Intermittent Duty Speed Rating  Continuous Duty Speed Rating  RPM (Jackshaft)  RPM (Jackshaft)  RPM (Jackshaft)  Minimum Speed  RPM  Mechanical Efficiency  Lubrication System  Lube Oil Capacity  Gallon  Lube Oil Type  SAE 30  Maximum Fluid Temperature  Minimum Fluid Temperature  O°F (-20° Capability)  Standard Suction Size  2.00 Inch NPT (50.8 mm)  Standard Discharge Size  Fluid End Material  Ductile Iron  Valve Type  Disc Valves/Ball Valves  | Pump Weight                    | lbs. (197 kg)                 |
| Intermittent Duty Speed Rating RPM (Jackshaft)  Continuous Duty Speed Rating RPM (Jackshaft)  Ball Valve Max Speed Rating RPM (Jackshaft)  Minimum Speed RPM RPM (Jackshaft)  Mechanical Efficiency 85%  Lubrication System Splash, Gravity Return  Lube Oil Capacity Gallon  Lube Oil Type SAE 30  Maximum Fluid Temperature 140°F (250° Capability)  Minimum Fluid Temperature 0°F (-20° Capability)  Standard Suction Size 2.00 Inch NPT (50.8 mm)  Standard Discharge Size 1.25 Inch NPT (31.8 mm)  Fluid End Material Ductile Iron  Valve Type Disc Valves/Ball Valves  | Direction of Rotation          | Top of Shaft away from head   |
| Continuous Duty Speed Rating RPM (Jackshaft)  Ball Valve Max Speed Rating RPM (Jackshaft)  Minimum Speed RPM  Mechanical Efficiency 85%  Lubrication System Splash, Gravity Return  Lube Oil Capacity Gallon  Lube Oil Type SAE 30  Maximum Fluid Temperature 140°F (250° Capability)  Minimum Fluid Temperature 0°F (-20° Capability)  Standard Suction Size 2.00 Inch NPT (50.8 mm)  Standard Discharge Size 1.25 Inch NPT (31.8 mm)  Fluid End Material Ductile Iron  Valve Type Disc Valves/Ball Valves  | Internal Gear Rotation         | 3.6:1                         |
| Ball Valve Max Speed Rating RPM (Jackshaft)  Minimum Speed RPM  Mechanical Efficiency 85%  Lubrication System Splash, Gravity Return  Lube Oil Capacity Gallon  Lube Oil Type SAE 30  Maximum Fluid Temperature 140°F (250° Capability)  Minimum Fluid Temperature 0°F (-20° Capability)  Standard Suction Size 2.00 Inch NPT (50.8 mm)  Standard Discharge Size 1.25 Inch NPT (31.8 mm)  Fluid End Material Ductile Iron  Valve Type Disc Valves/Ball Valves  | Intermittent Duty Speed Rating | RPM (Jackshaft)               |
| Minimum Speed RPM  Mechanical Efficiency 85%  Lubrication System Splash, Gravity Return  Lube Oil Capacity Gallon  Lube Oil Type SAE 30  Maximum Fluid Temperature 140°F (250° Capability)  Minimum Fluid Temperature 0°F (-20° Capability)  Standard Suction Size 2.00 Inch NPT (50.8 mm)  Standard Discharge Size 1.25 Inch NPT (31.8 mm)  Fluid End Material Ductile Iron  Valve Type Disc Valves/Ball Valves   | Continuous Duty Speed Rating   | RPM (Jackshaft)               |
| Mechanical Efficiency  Lubrication System  Splash, Gravity Return  Lube Oil Capacity  Gallon  Lube Oil Type  SAE 30  Maximum Fluid Temperature  140°F (250° Capability)  Minimum Fluid Temperature  0°F (-20° Capability)  Standard Suction Size  2.00 Inch NPT (50.8 mm)  Standard Discharge Size  1.25 Inch NPT (31.8 mm)  Fluid End Material  Ductile Iron  Valve Type  Disc Valves/Ball Valves   | Ball Valve Max Speed Rating    | RPM (Jackshaft)               |
| Lubrication System  Lube Oil Capacity  Gallon  Lube Oil Type  SAE 30  Maximum Fluid Temperature  Minimum Fluid Temperature  O°F (-20° Capability)  Standard Suction Size  2.00 Inch NPT (50.8 mm)  Standard Discharge Size  1.25 Inch NPT (31.8 mm)  Fluid End Material  Ductile Iron  Valve Type  Disc Valves/Ball Valves   | Minimum Speed                  | RPM                           |
| Lube Oil CapacityGallonLube Oil TypeSAE 30Maximum Fluid Temperature140°F (250° Capability)Minimum Fluid Temperature0°F (-20° Capability)Standard Suction Size2.00 Inch NPT (50.8 mm)Standard Discharge Size1.25 Inch NPT (31.8 mm)Fluid End MaterialDuctile IronValve TypeDisc Valves/Ball Valves  | Mechanical Efficiency          | 85%                           |
| Lube Oil Type  SAE 30  Maximum Fluid Temperature  140°F (250° Capability)  Minimum Fluid Temperature  0°F (-20° Capability)  Standard Suction Size  2.00 Inch NPT (50.8 mm)  Standard Discharge Size  1.25 Inch NPT (31.8 mm)  Fluid End Material  Ductile Iron  Valve Type  Disc Valves/Ball Valves   | Lubrication System             | Splash, Gravity Return        |
| Maximum Fluid Temperature140°F (250° Capability)Minimum Fluid Temperature0°F (-20° Capability)Standard Suction Size2.00 Inch NPT (50.8 mm)Standard Discharge Size1.25 Inch NPT (31.8 mm)Fluid End MaterialDuctile IronValve TypeDisc Valves/Ball Valves  | Lube Oil Capacity              | Gallon                        |
| Minimum Fluid Temperature 0°F (-20° Capability)  Standard Suction Size 2.00 Inch NPT (50.8 mm)  Standard Discharge Size 1.25 Inch NPT (31.8 mm)  Fluid End Material Ductile Iron  Valve Type Disc Valves/Ball Valves   | Lube Oil Type                  | SAE 30                        |
| Standard Suction Size 2.00 Inch NPT (50.8 mm)  Standard Discharge Size 1.25 Inch NPT (31.8 mm)  Fluid End Material Ductile Iron  Valve Type Disc Valves/Ball Valves  | Maximum Fluid Temperature      | 140°F (250° Capability)       |
| Standard Discharge Size 1.25 Inch NPT (31.8 mm) Fluid End Material Ductile Iron  Valve Type Disc Valves/Ball Valves  | Minimum Fluid Temperature      | 0°F (-20° Capability)         |
| Fluid End Material  Ductile Iron  Valve Type  Disc Valves/Ball Valves  | Standard Suction Size          | 2.00 Inch NPT (50.8 mm)       |
| Valve Type Disc Valves/Ball Valves   | Standard Discharge Size        | 1.25 Inch NPT (31.8 mm)       |
|  | Fluid End Material             | Ductile Iron                  |
| Hydraulic Motor Mount SAE C - 4 Bolt with 1.25"-14T  | Valve Type                     | Disc Valves/Ball Valves       |
|  | Hydraulic Motor Mount          | SAE C - 4 Bolt with 1.25"-14T |



| Performa | Performance Rating |      |           |           |       |                    |      |      |                |                 |           |      |          |     |      |       |
|----------|--------------------|------|-----------|-----------|-------|--------------------|------|------|----------------|-----------------|-----------|------|----------|-----|------|-------|
| Pump     |                    |      |           |           | Maxi  |                    |      |      | Pump Ca<br>RPM | pacity @<br>635 | Input Spe |      | )<br>RPM |     |      |       |
| Model    | Pis                | ton  | Displacer | ment/ REV | Pres  | sure               | 350  | RPM  |                |                 |           |      |          |     | 900  | RPM   |
|          | Inch               | mm   | Gallon    | Liter     | PSI   | kg/cm <sup>2</sup> | gpm  | lpm  | gpm            | lpm             | gpm       | lpm  | gpm      | lpm | gpm  | lpm   |
| AW1118   | 2.25               | 57.2 | 0.0394    | 0.149     | 1,000 | 70.3               | 13.8 | 52.2 | 19.7           | 74.6            | 25        | 94.6 | 29.6     | 112 | 35.5 | 134.4 |
| AW1122   | 2.75               | 69.9 | 0.0589    | 0.223     | 1,000 | 70.3               | 20.6 | 78   | 29.5           | 112             | 37.4      | 142  | 44.2     | 167 | 53   | 201   |

## 3- American AL0918B Piston Pump

## AL0918 Piston Pump Data

## 11.6 BHP Continuous Duty (13.8 BHP Intermittent Duty)

| Specifications                 |                               |
|--------------------------------|-------------------------------|
| -,                             |                               |
| Pump Model                     | AL0918                        |
| Configuration                  | Horizontal Triplex Piston     |
| Number of Pistons              | 3                             |
| Stroke Length                  | 2.25 Inches (57.2 mm)         |
| Frame Load Rating              | 2800 lbs. (1,270 kg)          |
| Pump Weight                    | 200 lbs. (90.7 kg)            |
| Direction of Rotation          | Top of Shaft away from head   |
| Internal Gear Rotation         | 3.6:1                         |
| Intermittent Duty Speed Rating | 890 RPM (Jackshaft)           |
| Continuous Duty Speed Rating   | 750 RPM (Jackshaft)           |
| Ball Valve Max Speed Rating    | 625 RPM                       |
| Minimum Speed                  | 360 RPM                       |
| Mechanical Efficiency          | 85%                           |
| Lubrication System             | Splash, Gravity Return        |
| Lube Oil Capacity              | 2.25 Quarts                   |
| Lube Oil Type                  | SAE 30                        |
| Maximum Fluid Temperature      | 140 °F (250 °F Capability)    |
| Minimum Fluid Temperature      | 0 °F (-20 °F Capability)      |
| Standard Suction Size          | 1.50 Inch NPT (38.1 mm)       |
| Standard Discharge Size        | 1.00 Inch NPT (25.4 mm)       |
| Fluid End Material             | Cast Iron                     |
| Valve Type                     | Disc Valve / Ball Valve       |
| Hydraulic Motor Mount          | SAE C - 4 Bolt with 1.25"-14T |



| AL091 | AL0918B Performance Rating |            |         |           |                    |      |         |      |             |          |           |      |           |      |     |
|-------|----------------------------|------------|---------|-----------|--------------------|------|---------|------|-------------|----------|-----------|------|-----------|------|-----|
|       |                            |            |         |           |                    |      |         |      |             | pacity @ | Input Spe |      |           |      |     |
| Diam  | eter                       | Displaceme | ent/REV | Maximum P | Maximum Pressure   |      | 350 RPM |      | 625 RPM 700 |          | RPM 750   |      | RPM 890 R |      | RPM |
| Inch  | mm                         | Gallon     | Liter   | PSI       | kg/cm <sup>2</sup> | gpm  | lpm     | gpm  | lpm         | gpm      | lpm       | gpm  | lpm       | gpm  | lpm |
| 2.25  | 57.2                       | 0.0323     | 0.122   | 700       | 49.2               | 11.3 | 43      | 20.2 | 76          | 22.6     | 86        | 24.2 | 92        | 28.7 | 109 |

## 4-American AME0413HD Piston Pump

# AME0413HD Piston Pump Data 6.7 BHP Continuous Duty (8.5 BHP Intermittent Duty)

| Specifications                 |                            |
|--------------------------------|----------------------------|
| Pump Model                     | AME0413HD                  |
| Configuration                  | Vertical Quadruplex Piston |
| Number of Pistons              | 4                          |
| Stroke Length                  | 1.0 Inches (25.4 mm)       |
| Frame Load Rating              | lbs. (562.455 kg)          |
| Pump Weight (Average)          | lbs. (36.29 kg)            |
| Direction of Rotation          | Either                     |
| Internal Gear Rotation         | 1:1                        |
| Intermittent Duty Speed Rating | RPM                        |
| Continuous Duty Speed Rating   | RPM                        |
| Minimum Speed                  | RPM                        |
| Mechanical Efficiency          | 85%                        |
| Lubrication System             | Splash, Gravity Return     |
| Lube Oil Capacity              | Quart                      |
| Lube Oil Type                  | SAE 30                     |
| Maximum Fluid Temperature      | 140°F                      |
| Minimum Fluid Temperature      | 0°F                        |
| Standard Suction Size          | 1.25 Inch NPT              |
| Standard Discharge Size        | 0.75 Inch NPT              |
| Fluid End Material             | Cast Iron                  |
| Valve Type                     | Disc Valve                 |



| Performance F | Rating |       |           |           |     |        |          |     |       |                      |                       |       |       |       |       |       |
|---------------|--------|-------|-----------|-----------|-----|--------|----------|-----|-------|----------------------|-----------------------|-------|-------|-------|-------|-------|
| Maximum       |        |       |           |           |     |        |          |     |       | Pump Ca<br>Input Spe | pacity @<br>eed (RPM) | )     |       |       |       |       |
| Pump Model    | Diar   | neter | Displacem | nent/ REV | Pr  | essure | 390 RPIV | 1   | 400   | RPM                  | 425                   | RPM   | 450   | RPM   | 575   | RPM   |
|               | Inch   | mm    | Gallon    | Liter     | PSI | kg/cm² | gpm      | lpm | gpm   | lpm                  | gpm                   | lpm   | gpm   | lpm   | gpm   | lpm   |
| AME0413HD     | 1.625  | 41.27 | 0.036     | 0.12      | 550 | 38.6   | 14.01    | 53  | 14.36 | 54.35                | 15.26                 | 57.77 | 16.16 | 61.17 | 20.65 | 78.17 |

## 5-American 470 Piston Pump

## AL11 Piston Pump Data

## 37 BHP Continuous Duty (52 BHP Intermittent Duty)

| Specifications                 |                               |
|--------------------------------|-------------------------------|
| Pump Model                     | AL1118, AL1122                |
| Configuration                  | Horizontal Triplex Piston     |
| Number of Pistons              | 3                             |
| Stroke Length                  | 2.75 Inches (69.9 mm)         |
| Frame Load Rating              | lbs. (2.724 kg)               |
| Pump Weight                    | lbs. (209 kg)                 |
| Direction of Rotation          | Top of Shaft away from head   |
| Internal Gear Rotation         | 3.6:1                         |
| Intermittent Duty Speed Rating | 1,275 RPM (Jackshaft)         |
| Continuous Duty Speed Rating   | RPM (Jackshaft)               |
| Ball Valve Max Speed Rating    | RPM (Jackshaft)               |
| Minimum Speed                  | RPM                           |
| Mechanical Efficiency          | 85%                           |
| Lubrication System             | Splash, Gravity Return        |
| Lube Oil Capacity              | Gallon                        |
| Lube Oil Type                  | SAE 30                        |
| Maximum Fluid Temperature      | 140°F (250° Capability)       |
| Minimum Fluid Temperature      | 0°F (-20° Capability)         |
| Standard Suction Size          | 2.50 Inch NPT (63.5 mm)       |
| Standard Discharge Size        | 1.25 Inch NPT (31.8 mm)       |
| Fluid End Material             | Ductile Iron                  |
| Valve Type                     | Disc Valves/ Ball Valves      |
| Hydraulic Motor Mount          | SAE C - 4 Bolt with 1.25"-14T |



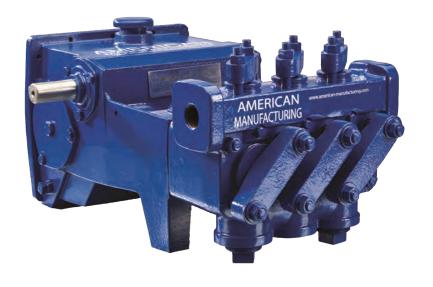
| Performance Rating |      |      |           |           |       |                    |      |      |         |       |      |           |      |              |         |       |
|--------------------|------|------|-----------|-----------|-------|--------------------|------|------|---------|-------|------|-----------|------|--------------|---------|-------|
| Pump<br>Model      | Pis  | ton  | Displacer | nent/ REV |       | mum<br>ssure       | 350  | RPM  | 690 RPI |       |      | Input Spe |      | )<br>000 RPM | 1275 RF | PM    |
|                    | Inch | mm   | Gallon    | Liter     | PSI   | kg/cm <sup>2</sup> | gpm  | lpm  | gpm     | lpm   | gpm  | lpm       | gpm  | lpm          | gpm     | lpm   |
| AL1118             | 2.25 | 57.2 | 0.0394    | 0.149     | 1,500 | 105.5              | 13.8 | 52.2 | 27.2    | 102.9 | 31.6 | 119.6     | 35.5 | 134.4        | 50.3    | 190.4 |
| AL1122             | 2.75 | 69.9 | 0.0589    | 0.223     | 1,000 | 70.3               | 20.6 | 78   | 40.7    | 154   | 47.1 | 179       | 53   | 201          | 75.1    | 285   |

## 6- American AL0918D Piston Pump

## AL0918 Piston Pump Data

## 11.6 BHP Continuous Duty (13.8 BHP Intermittent Duty)

| Specifications                 |                               |
|--------------------------------|-------------------------------|
| Pump Model                     | AL0918                        |
| Configuration                  | Horizontal Triplex Piston     |
| Number of Pistons              | 3                             |
| Stroke Length                  | 2.25 Inches (57.2 mm)         |
| Frame Load Rating              | 2800 lbs. (1,270 kg)          |
| Pump Weight                    | 200 lbs. (90.7 kg)            |
| Direction of Rotation          | Top of Shaft away from head   |
| Internal Gear Rotation         | 3.6:1                         |
| Intermittent Duty Speed Rating | 890 RPM (Jackshaft)           |
| Continuous Duty Speed Rating   | 750 RPM (Jackshaft)           |
| Ball Valve max speed rating    | 625 RPM                       |
| Minimum Speed                  | 360 RPM                       |
| Mechanical Efficiency          | 85%                           |
| Lubrication System             | Splash, Gravity Return        |
| Lube Oil Capacity              | 2.25 Quarts                   |
| Lube Oil Type                  | SAE 30                        |
| Maximum Fluid Temperature      | 140 °F (250 °F Capability)    |
| Minimum Fluid Temperature      | 0 °F (-20 °F Capability)      |
| Standard Suction Size          | 1.50 Inch NPT (38.1 mm)       |
| Standard Discharge Size        | 1.00 Inch NPT (25.4 mm)       |
| Fluid End Material             | Cast Iron                     |
| Valve Type                     | Disc Valves / Ball Valves     |
| Hydraulic Motor Mount          | SAE C - 4 Bolt with 1.25"-14T |



| Performa | erformance Rating |      |        |           |     |        |      |     |      |     |      |              |      |     |      |     |
|----------|-------------------|------|--------|-----------|-----|--------|------|-----|------|-----|------|--------------|------|-----|------|-----|
| Pump     |                   |      |        |           |     | imum   |      |     |      |     | (RI  | Speed<br>PM) |      |     |      |     |
| Model    | Diame             | 1    | Gallon | ment/ REV | Pre | ssure  |      | RPM | 1    | RPM | 1    | RPM          | 1    | RPM | 1    | RPM |
|          | Inch              | mm   |        |           | P31 | kg/cm² | gpm  | lpm | gpm  | lpm | gpm  | lpm          | gpm  | lpm | gpm  | lpm |
| AL0918   | 2.25              | 57.2 | 0.0323 | 0.122     | 700 | 49.2   | 11.3 | 43  | 20.2 | 76  | 22.6 | 86           | 24.2 | 92  | 28.7 | 109 |

## **Diamond Drilling Tools**

## 1-Diamond Drilling

For Drillers who Demand the Best

EHWA Diamond Industrial Co. Ltd and General Tool have developed a family of Drilling Tools to achieve maximum performance for all drilling applications.

#### These tools include:

- Impregnated core bits
- Reaming shells
- Casing shoes
- Thin wall core bits
- Diamond blades for cutting core samples



#### **MINING CORE BITS**



EHWA offers two grades of bits for all drilling applications. Each bit has a standard diamond depth of 13mm, controlled distribution of diamond, a pre - conditioned matrix for reduced break - in time, advanced engineered waterways for enhanced flow, and precise placement of natural diamonds, TC pads, and TSP diamond for ID and OD wear protection.

## • Explorer Series

The Explorer Series of Impregnated Core Bits is a unique blend of components and ultra high quality diamonds designed for the most demanding drilling applications. Each core bit is manufactured under controlled conditions to ensure consistency and repeatability. The Explorer Series provides a variety of matrices for all rock formations.



## Pro Series

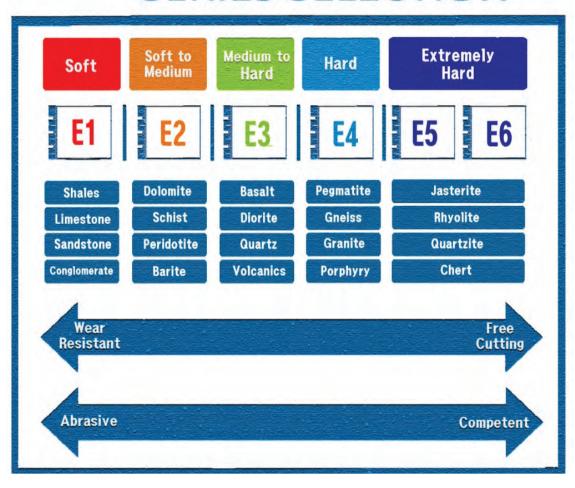


The Geo - Pro Series of Impregnated Core Bits is manufactured with the same precise high quality standards as the Explorer Series. These bits were developed for the Drilling Contractor that demands consistency of product and performance under the severest ground conditions. Available in four (4) distinct series.

#### Pie Type

- Other crown profiles available upon request.
- All crown profiles available for both Explorer and Geo - Pro Seriesipsum

# SERIES SELECTION



# Wireline Core Barrel

## BWL CORE BARREL (1.5 & 3 M)

| ITEM | PART NUMBER | DESCRIPTION                         |
|------|-------------|-------------------------------------|
|      | AD-036411   | BWL CORE BARREL 1,5M                |
|      | AD-5342999  | BWL INNER TUBE GROUP 1.5M           |
|      | AD-036412   | BWL CORE BARREL 3M                  |
|      | AD-5343000  | BWL INNER TUBE GROUP 3M             |
| 1    | AD-5342292  | BWL HEAD ASSEMBLY                   |
| 2    | AD-42356    | BWL INNER TUBE 1,5M                 |
|      | AD-42356CR  | BWL INNER TUBE 1,5M Cr. Plated      |
|      | AD-42339    | BWL INNER TUBE 3M                   |
|      | AD-42339CR  | BWL INNER TUBE 3M Cr. Plated        |
| 3    | AD-42831    | BWL STOP RING                       |
| 4    | AD-42342    | BWL CORE LIFTER                     |
| 5    | AD-42830    | BWL CORE LIFTER CASE                |
| 6    | AD-5345400  | BWL LOCKING COUPLING FULL HOLE TANG |
|      | AD-5345398  | BWL TC* LOCKING COUPLING            |
| 7    | AD-42833    | BWL ADAPTER COUPLING                |
| 8    | AD-42345    | BWL LANDING RING                    |
| 9    | AD-42357    | BWL OUTER TUBE 1,5M                 |
|      | AD-42357CR  | BWL OUTER TUBE 1,5M Cr. Plated      |
|      | AD-42346    | BWL OUTER TUBE 3M                   |
|      | AD-42346CR  | BWL OUTER TUBE 3M Cr. Plated        |
| 10   | AD-44406    | BWL INNER TUBE STABILIZER           |
| 11   | AD-534060   | BWL TC* REAMING SHELL               |



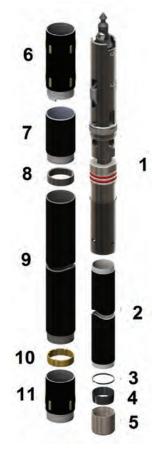
## **BWLU CORE BARREL 1,5M & 3M**

| ITEM     | PART NUMBER | DESCRIPTION                         |
|----------|-------------|-------------------------------------|
| I I LIVI | AD-5344018  | BWLU CORE BARREL 1,5M               |
|          | AD-5344030  | BWLU INNER TUBE GROUP 1.5M          |
|          |             |                                     |
|          | AD-5344024  | BWLU CORE BARREL 3M                 |
|          | AD-5344036  | BWLU INNER TUBE GROUP 3M            |
| 1        | AD-5344012  | BWLU HEAD ASSEMBLY                  |
| 2        | AD-42356    | BWL INNER TUBE 1,5M                 |
|          | AD-42356CR  | BWL INNER TUBE 1,5M Cr. Plated      |
|          | AD-42339    | BWL INNER TUBE 3M                   |
|          | AD-42339CR  | BWL INNER TUBE 3M Cr. Plated        |
| 3        | AD-42831    | BWL STOP RING                       |
| 4        | AD-42342    | BWL CORE LIFTER                     |
| 5        | AD-42830    | BWL CORE LIFTER CASE                |
| 6        | AD-5345400  | BWL LOCKING COUPLING FULL HOLE TANG |
|          | AD-5345398  | BWL TC* LOCKING COUPLING            |
| 7        | AD-42833    | BWL ADAPTER COUPLING                |
| 8        | AD-42345    | BWL LANDING RING                    |
| 9        | AD-42357    | BWL OUTER TUBE 1,5M                 |
|          | AD-42357CR  | BWL OUTER TUBE 1,5M Cr. Plated      |
|          | AD-42346    | BWL OUTER TUBE 3M                   |
|          | AD-42346CR  | BWL OUTER TUBE 3M Cr. Plated        |
| 10       | AD-44406    | BWL INNER TUBE STABILIZER           |
| 11       | AD-534060   | BWL TC* REAMING SHELL               |



## NWL CORE BARREL (1.5 & 3 M)

| ITEM     | PART NUMBER | DESCRIPTION                         |
|----------|-------------|-------------------------------------|
| 11 - 171 | AD-036001   | NWL CORE BARREL 1,5M                |
|          |             | -                                   |
|          | AD-5342920  | NWL INNER TUBE GROUP 1.5M           |
|          | AD-036002   | NWL CORE BARREL 3M                  |
|          | AD-5342921  | NWL INNER TUBE GROUP 3M             |
| 1        | AD-5342751  | NWL HEAD ASSEMBLY                   |
| 2        | AD-42909    | NWL INNER TUBE 1,5M                 |
|          | AD-42909CR  | NWL INNER TUBE 1,5M Cr. Plated      |
|          | AD-42891    | NWL INNER TUBE 3M                   |
|          | AD-42891CR  | NWL INNER TUBE 3M Cr. Plated        |
| 3        | AD-42893    | NWL STOP RING                       |
| 4        | AD-42894    | NWL CORE LIFTER                     |
| 5        | AD-42892    | NWL CORE LIFTER CASE                |
| 6        | AD-5345405  | NWL LOCKING COUPLING FULL HOLE TANG |
|          | AD-26764    | NWL TC* LOCKING COUPLING            |
| 7        | AD-42896    | NWL ADAPTER COUPLING                |
| 8        | AD-42897    | NWL LANDING RING                    |
| 9        | AD-42910    | NWL OUTER TUBE 1,5M                 |
|          | AD-42910CR  | NWL OUTER TUBE 1,5M Cr. Plated      |
|          | AD-42898    | NWL OUTER TUBE 3M                   |
|          | AD-42898CR  | NWL OUTER TUBE 3M Cr. Plated        |
| 10       | AD-44407    | NWL INNER TUBE STABILIZER           |
| 11       | AD-534061   | NWL TC* REAMING SHELL               |



## **NWLU CORE BARREL 1,5M & 3M**

| ITEN/    | PART NUMBER | DESCRIPTION  |
|----------|-------------|--|
| I I ⊏IVI |             | DESCRIPTION NAME OF THE PROPERTY OF THE PROPER |
|          | AD-5344020  | NWLU CORE BARREL 1,5M  |
|          | AD-5344032  | NWLU INNER TUBE GROUP 1.5M   |
|          | AD-5344026  | NWLU CORE BARREL 3M  |
|          | AD-5344038  | NWLU INNER TUBE GROUP 3M   |
| 1        | AD-5348625  | NWLU HEAD ASSEMBLY   |
| 2        | AD-42909    | NWL INNER TUBE 1,5M  |
|          | AD-42909CR  | NWL INNER TUBE 1,5M Cr. Plated   |
|          | AD-42891    | NWL INNER TUBE 3M  |
|          | AD-42891CR  | NWL INNER TUBE 3M Cr. Plated   |
| 3        | AD-42893    | NWL STOP RING  |
| 4        | AD-42894    | NWL CORE LIFTER  |
| 5        | AD-42892    | NWL CORE LIFTER CASE   |
| 6        | AD-5345405  | NWL LOCKING COUPLING FULL HOLE TANG  |
|          | AD-26764    | NWL TC* LOCKING COUPLING   |
| 7        | AD-5346706  | NWL ADAPTER COUPLING   |
| 8        | AD-42897    | NWL LANDING RING   |
| 9        | AD-42910    | NWL OUTER TUBE 1,5M  |
|          | AD-42910CR  | NWL OUTER TUBE 1,5M Cr. Plated   |
|          | AD-42898    | NWL OUTER TUBE 3M  |
|          | AD-42898CR  | NWL OUTER TUBE 3M Cr. Plated   |
| 10       | AD-44407    | NWL INNER TUBE STABILIZER  |
| 11       | AD-534061   | NWL TC* REAMING SHELL  |



## NWLTK/NWL2" CORE BARREL 1,5M & 3M

| ITEM | PART NUMBER | DESCRIPTION                         |
|------|-------------|-------------------------------------|
|      | AD-036012   | NWLTK CORE BARREL 1,5M              |
|      | AD-5342922  | NWLTK INNER TUBE GROUP 1.5M         |
|      | AD-036013   | NWLTK CORE BARREL 3M                |
|      | AD-5342923  | NWLTK INNER TUBE GROUP 3M           |
| 1    | AD-5342752  | NWLTK HEAD ASSEMBLY                 |
| 2    | AD-44663    | NWLTK INNER TUBE 1,5M               |
|      | AD-44663CR  | NWLTK INNER TUBE 1,5M Cr. Plated    |
|      | AD-34601    | NWLTK INNER TUBE 3M                 |
|      | AD-34601CR  | NWLTK INNER TUBE 3M Cr. Plated      |
| 3    | AD-92210    | NWLTK STOP RING                     |
| 4    | AD-16416    | NWLTK CORE LIFTER                   |
| 5    | AD-92209    | NWLTK CORE LIFTER CASE              |
| 6    | AD-5345405  | NWL LOCKING COUPLING FULL HOLE TANG |
|      | AD-26764    | NWL TC* LOCKING COUPLING            |
| 7    | AD-42896    | NWL ADAPTER COUPLING                |
| 8    | AD-92214    | NWLTK LANDING RING                  |
| 9    | AD-42910    | NWL OUTER TUBE 1,5M                 |
|      | AD-42910CR  | NWL OUTER TUBE 1,5M Cr. Plated      |
|      | AD-42898    | NWL OUTER TUBE 3M                   |
|      | AD-42898CR  | NWL OUTER TUBE 3M Cr. Plated        |
| 10   | AD-34812    | NWLTK INNER TUBE STABILIZER         |
| 11   | AD-534061   | NWL TC* REAMING SHELL               |



## **HWL CORE BARREL 1,5M & 3M**

| ITEM | PART NUMBER | DESCRIPTION                         |
|------|-------------|-------------------------------------|
|      | AD-5342946  | HWL CORE BARREL 1,5M                |
|      | AD-5342942  | HWL INNER TUBE GROUP 1.5M           |
|      | AD-5342947  | HWL CORE BARREL 3M                  |
|      | AD-5342943  | HWL INNER TUBE GROUP 3M             |
| 1    | AD-0501440  | HWL HEAD ASSEMBLY                   |
| 2    | AD-52258    | HWL INNER TUBE 1,5M                 |
|      | AD-52258CR  | HWL INNER TUBE 1,5M Cr. Plated      |
|      | AD-52236    | HWL INNER TUBE 3M                   |
|      | AD-52236CR  | HWL INNER TUBE 3M Cr. Plated        |
| 3    | AD-52238    | HWL STOP RING                       |
| 4    | AD-03489    | HWL CORE LIFTER                     |
| 5    | AD-52237    | HWL CORE LIFTER CASE                |
| 6    | AD-5345409  | HWL LOCKING COUPLING FULL HOLE TANG |
|      | AD-26765    | HWL TC* LOCKING COUPLING            |
| 7    | AD-52241    | HWL ADAPTER COUPLING                |
| 8    | AD-52242    | HWL LANDING RING                    |
| 9    | AD-52259    | HWL OUTER TUBE 1,5M                 |
|      | AD-52259CR  | HWL OUTER TUBE 1,5M Cr. Plated      |
|      | AD-52243    | HWL OUTER TUBE 3M                   |
|      | AD-52243CR  | HWL OUTER TUBE 3M Cr. Plated        |
| 10   | AD-44408    | HWL INNER TUBE STABILIZER           |
| 11   | AD-534062   | HWL TC* REAMING SHELL               |



## PWL CORE BARREL 1,5M & 3M

| ITEM | PART NUMBER  | DESCRIPTION                         |
|------|--------------|-------------------------------------|
|      | AD-5343865   | PWL CORE BARREL 1,5M                |
|      | AD-5343863   | PWL INNER TUBE GROUP 1.5M           |
|      | AD-5343866   | PWL CORE BARREL 3M                  |
|      | AD-5343864   | PWL INNER TUBE GROUP 3M             |
| 1    | AD-0501444   | PWL HEAD ASSEMBLY                   |
| 2    | AD-62159     | PWL INNER TUBE 1,5M                 |
|      | AD-62159CR   | PWL INNER TUBE 1,5M Cr. Plated      |
|      | AD-62534     | PWL INNER TUBE 3M                   |
|      | AD-62534CR   | PWL INNER TUBE 3M Cr. Plated        |
| 3    | AD-62161     | PWL STOP RING                       |
| 4    | AD-62162     | PWL CORE LIFTER                     |
| 5    | AD-25172     | PWL CORE LIFTER CASE                |
| 6    | AD-011343    | PWL LOCKING COUPLING FULL HOLE TANG |
|      | AD-011105    | PWL TC* LOCKING COUPLING            |
| 7    | AD-5343808   | PWL ADAPTER COUPLING                |
| 8    | AD-5343814   | PWL LANDING RING                    |
| 9    | AD-5343802   | PWL OUTER TUBE 1,5M                 |
|      | AD-5343802CR | PWL OUTER TUBE 1,5M Cr. Plated      |
|      | AD-5343801   | PWL OUTER TUBE 3M                   |
|      | AD-5343801CR | PWL OUTER TUBE 3M Cr. Plated        |
| 10   | AD-44923     | PWL INNER TUBE STABILIZER           |
| 11   | AD-534063    | PWL TC* REAMING SHELL               |
|      |              |                                     |



## NWL3 CORE BARREL (1.5 & 3 M)

| ITEM | PART NUMBER | DESCRIPTION                         |
|------|-------------|-------------------------------------|
|      | AD-5340572  | NWL3 CORE BARREL 1,5M               |
|      | AD-5342924  | NWL3 INNER TUBE GROUP 1.5M          |
|      | AD-5340573  | NWL3 CORE BARREL 3M                 |
|      | AD-5342925  | NWL3 INNER TUBE GROUP 3M            |
| 1    | AD-5342751  | NWL HEAD ASSEMBLY                   |
| 2    | AD-6532     | NWL3 PUMP OUT ADAPTER ASSEMBLY      |
| 3    | AD-62662    | NWL3 PISTON PLUG                    |
| 4    | AD-62134    | NWL3 PISTON O-RING                  |
| 5    | AD-62526    | NWL3 CORE EJECTION PISTON           |
| 6    | AD-62527    | NWL3 SPLIT TUBE 1,5M                |
|      | AD-62528    | NWL3 SPLIT TUBE 3M                  |
| 7    | AD-42909    | NWL INNER TUBE 1,5M                 |
|      | AD-52891    | NWL INNER TUBE 3M                   |
| 8    | AD-62530    | NWL3 STOP RING                      |
| 9    | AD-62531    | NWL3 CORE LIFTER                    |
| 10   | AD-62529    | NWL3 CORE LIFTER CASE               |
| 11   | AD-5345405  | NWL LOCKING COUPLING FULL HOLE TANG |
|      | AD-26764    | NWL TC* LOCKING COUPLING            |
| 12   | AD-42896    | NWL ADAPTER COUPLING                |
| 13   | AD-42897    | NWL LANDING RING                    |
| 14   | AD-42910    | NWL OUTER TUBE 1,5M                 |
|      | AD-42910CR  | NWL OUTER TUBE 1,5M Cr. Plated      |
|      | AD-42898    | NWL OUTER TUBE 3M                   |
|      | AD-42898CR  | NWL OUTER TUBE 3M Cr. Plated        |
| 15   | AD-44407    | NWL INNER TUBE STABILIZER           |
| 16   | AD-534061   | NWL TC* REAMING SHELL               |



## PWL CORE BARREL 1,5M & 3M

| ITEM | PART NUMBER | DESCRIPTION                         |
|------|-------------|-------------------------------------|
|      | AD-5342948  | HWL3 CORE BARREL 1,5M               |
|      | AD-5342944  | HWL3 INNER TUBE GROUP 1.5M          |
|      | AD-5342949  | HWL3 CORE BARREL 3M                 |
|      | AD-5342945  | HWL3 INNER TUBE GROUP 3M            |
| 1    | AD-0501440  | HWL HEAD ASSEMBLY                   |
| 2    | AD-62517    | HWL3 PUMP OUT ADAPTER ASSEMBLY      |
| 3    | AD-62662    | HWL3 PISTON PLUG                    |
| 4    | AD-02651    | HWL3 PISTON O-RING                  |
| 5    | AD-62510    | HWL3 CORE EJECTION PISTON           |
| 6    | AD-62512    | HWL3 SPLIT TUBE 1,5M                |
|      | AD-62513    | HWL3 SPLIT TUBE 3M                  |
| 7    | AD-52258    | HWL INNER TUBE 1,5M                 |
|      | AD-52236    | HWL INNER TUBE 3M                   |
| 8    | AD-62515    | HWL3 STOP RING                      |
| 9    | AD-62516    | HWL3 CORE LIFTER                    |
| 10   | AD-62514    | HWL3 CORE LIFTER CASE               |
| 11   | AD-5345409  | HWL LOCKING COUPLING FULL HOLE TANG |
|      | AD-26765    | HWL TC* LOCKING COUPLING            |
| 12   | AD-52241    | HWL ADAPTER COUPLING                |
| 13   | AD-52242    | HWL LANDING RING                    |
| 14   | AD-52259    | HWL OUTER TUBE 1,5M                 |
|      | AD-52259CR  | HWL OUTER TUBE 1,5M Cr. Plated      |
|      | AD-52243    | HWL OUTER TUBE 3M                   |
|      | AD-52243CR  | HWL OUTER TUBE 3M Cr. Plated        |
| 15   | AD-44408    | HWL INNER TUBE STABILIZER           |
| 16   | AD-534062   | HWL TC* REAMING SHELL               |



## NWL3 CORE BARREL (1.5 & 3 M)

| ITEM     | PART NUMBER  | DESCRIPTION                         |
|----------|--------------|-------------------------------------|
| I I LIVI | AD-5343869   | PWL3 CORE BARREL 1,5M               |
|          | AD-5343867   | PWL3 INNER TUBE GROUP 1.5M          |
|          |              | i                                   |
|          | AD-5343870   | PWL3 CORE BARREL 3M                 |
|          | AD-5343868   | PWL3 INNER TUBE GROUP 3M            |
| 1        | AD-0501444   | PWL HEAD ASSEMBLY                   |
| 2        | AD-62182     | PWL3 PUMP OUT ADAPTER               |
| 3        | AD-62662     | PWL3 PISTON PLUG ASSEMBLY           |
| 4        | AD-62178     | PWL3 PISTON O-RING                  |
| 5        | AD-62179     | PWL3 CORE EJECTION PISTON           |
| 6        | AD-62180     | PWL3 SPLIT TUBE 1,5M                |
|          | AD-62710     | PWL3 SPLIT TUBE 3M                  |
| 7        | AD-62159     | PWL INNER TUBE 1,5M                 |
|          | AD-62534     | PWL INNER TUBE 3M                   |
| 8        | AD-62176     | PWL3 STOP RING                      |
| 9        | AD-62177     | PWL3 CORE LIFTER                    |
| 10       | AD-62160     | PWL3 CORE LIFTER CASE               |
| 11       | AD-011343    | PWL LOCKING COUPLING FULL HOLE TANG |
|          | AD-011105    | PWL TC* LOCKING COUPLING            |
| 12       | AD-5343808   | PWL ADAPTER COUPLING                |
| 13       | AD-5343814   | PWL LANDING RING                    |
| 14       | AD-5343802   | PWL OUTER TUBE 1,5M                 |
|          | AD-5343802CR | PWL OUTER TUBE 1,5M Cr. Plated      |
|          | AD-5343801   | PWL OUTER TUBE 3M                   |
|          | AD-5343801CR | PWL OUTER TUBE 3M Cr. Plated        |
| 15       | AD-44923     | PWL INNER TUBE STABILIZER           |
| 16       | AD-534063    | PWL TC* REAMING SHELL               |



## **CORE BARREL 1.5M & 3M CONVERSION KITS**

#### **NWL3 CORE BARREL 1.5M & 3M CONVERSION KIT**

| ITEM | PART NUMBER | DESCRIPTION               |
|------|-------------|---------------------------|
| 1    | AD-653201   | WL3 ADAPTER COUPLING      |
| 2    | AD-6532     | NWL3 PUMP OUT ADAPTER     |
| 3    | AD-62662    | WL3 PISTON PLUG           |
| 4    | AD-6266201  | WL3 FLANGE NUT            |
| 5    | AD-6266202  | WL3 HEX NUT               |
| 6    | AD-62134    | NWL3 PISTON O-RING        |
| 7    | AD-62526    | NWL3 CORE EJECTION PISTON |
| 8    | AD-62530    | NWL3 STOP RING            |
| 9    | AD-62531    | NWL3 CORE LIFTER          |
| 10   | AD-62529    | NWL3 CORE LIFTER CASE     |
| 11   | AD-62527    | NWL3 SPLIT TUBE 1,5M      |
|      | AD-62528    | NWL3 SPLIT TUBE 3M        |



#### **HWL3 CORE BARREL 1.5M & 3M CONVERSION KIT**

| ITEM | PART NUMBER | DESCRIPTION               |
|------|-------------|---------------------------|
| 1    | AD-6251701  | WL3 ADAPTER COUPLING      |
| 2    | AD-62517    | HWL3 PUMP OUT ADAPTER     |
| 3    | AD-62663    | WL3 PISTON PLUG           |
| 4    | AD-6266301  | WL3 FLANGE NUT            |
| 5    | AD-6266302  | WL3 HEX NUT               |
| 6    | AD-02651    | HWL3 PISTON O-RING        |
| 7    | AD-62510    | HWL3 CORE EJECTION PISTON |
| 8    | AD-62515    | HWL3 STOP RING            |
| 9    | AD-62516    | HWL3 CORE LIFTER          |
| 10   | AD-62514    | HWL3 CORE LIFTER CASE     |
| 11   | AD-62512    | HWL3 SPLIT TUBE 1,5M      |
|      | AD-62513    | HWL3 SPLIT TUBE 3M        |



#### **PWL3 CORE BARREL 1.5M & 3M CONVERSION KIT**

| ITEM | PART NUMBER | DESCRIPTION               |
|------|-------------|---------------------------|
| 1    | AD-6218201  | WL3 ADAPTER COUPLING      |
| 2    | AD-62182    | PWL3 PUMP OUT ADAPTER     |
| 3    | AD-62664    | WL3 PISTON PLUG           |
| 4    | AD-6266401  | WL3 FLANGE NUT            |
| 5    | AD-6266402  | WL3 HEX NUT               |
| 6    | AD-62178    | PWL3 PISTON O-RING        |
| 7    | AD-62179    | PWL3 CORE EJECTION PISTON |
| 8    | AD-62176    | PWL3 STOP RING            |
| 9    | AD-62177    | PWL3 CORE LIFTER          |
| 10   | AD-62160    | PWL3 CORE LIFTER CASE     |
| 11   | AD-62180    | PWL3 SPLIT TUBE 1,5M      |
|      | AD-62710    | PWL3 SPLIT TUBE 3M        |



## **B SINGLE TUBE CORE BARREL**



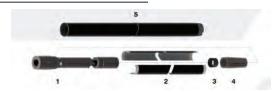
|   | SINGLE TUBE CORE<br>BARREL | B-56        | B-66        | B-76        | B-86        | B-101       | B-116       | B-131   |
|---|----------------------------|-------------|-------------|-------------|-------------|-------------|-------------|---------|
|   | ITEM DESCRIPTION           | PART        | PART        | PART        | PART        | PART        | PART        | PART    |
| 1 | HEAD                       | AD-B560-011 | AD-B660-011 | AD-B760-011 | AD-B860-011 | AD-B101-011 | AD-B116-011 | AD-B131 |
| 2 | OUTER TUBE 3M              | AD-B560-030 | AD-B660-030 | AD-B760-030 | AD-B860-030 | AD-B101-030 | AD-B116-030 | AD-B131 |
|   | OUTER TUBE 1.5M            | AD-B560-015 | AD-B660-015 | AD-B760-015 | AD-B860-015 | AD-B101-015 | AD-B116-015 | AD-B131 |
| 3 | CORE LIFTER                | AD-B560-012 | AD-B660-012 | AD-B760-012 | AD-B860-012 | AD-B101-012 | AD-B116-012 | AD-B131 |
| 4 | REAMING SHELL TC*          | AD-B560-017 | AD-B660-017 | AD-B760-017 | AD-B860-017 | AD-B101-017 | AD-B116-017 | AD-B131 |
| 5 | CORE BARREL 3M             | AD-B560-018 | AD-B660-018 | AD-B760-018 | AD-B860-018 | AD-B101-018 | AD-B116-018 | AD-B131 |
|   | CORE BARREL 1.5M           | AD-B560-019 | AD-B660-019 | AD-B760-019 | AD-B860-019 | AD-B101-019 | AD-B116-019 | AD-B131 |

## T DOUBLE TUBE CORE BARREL



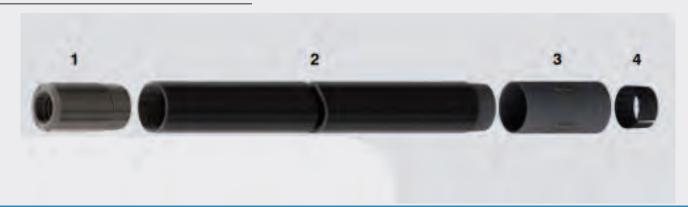
|   | DOUBLE TUBE CORE<br>BARREL | B-56        | B-66        | B-76        | B-86        | B-101       |
|---|----------------------------|-------------|-------------|-------------|-------------|-------------|
|   | ITEM DESCRIPTION           | PART        | PART        | PART        | PART        | PART        |
| 1 | HEAD                       | AD-T560-011 | AD-T660-011 | AD-T760-011 | AD-T860-011 | AD-T101-011 |
| 2 | INNER TUBE 3M              | AD-T560-063 | AD-T660-063 | AD-T760-063 | AD-T860-063 | AD-T101-063 |
|   | INNER TUBE 1,5M            | AD-T560-065 | AD-T660-065 | AD-T760-065 | AD-T860-065 | AD-T101-065 |
| 3 | EXTENTION TUBE             | AD-T560-014 | AD-T660-014 | AD-T760-014 | AD-T860-014 | AD-T101-014 |
| 4 | CORE LIFTER                | AD-T560-012 | AD-T660-012 | AD-T760-012 | AD-T860-012 | AD-T101-012 |
| 5 | CORE LIFTER CASE           | AD-T560-013 | AD-T660-013 | AD-T760-013 | AD-T860-013 | AD-T101-013 |
| 6 | OUTER TUBE 3M              | AD-T560-030 | AD-T660-030 | AD-T760-030 | AD-T860-030 | AD-T101-030 |
|   | OUTER TUBE 1,5M            | AD-T560-015 | AD-T660-015 | AD-T760-015 | AD-T860-015 | AD-T101-015 |
| 7 | REAMING SHELL TC*          | AD-T560-017 | AD-T660-017 | AD-T760-017 | AD-T860-017 | AD-T101-017 |
| 8 | CORE BARREL 3M             | AD-T560-018 | AD-T660-018 | AD-T760-018 | AD-T860-018 | AD-T101-018 |
|   | CORE BARREL 1,5M           | AD-T560-019 | AD-T660-019 | AD-T760-019 | AD-T860-019 | AD-T101-019 |

## **T6 S DOUBLE TUBE SPLIT CORE BARREL**



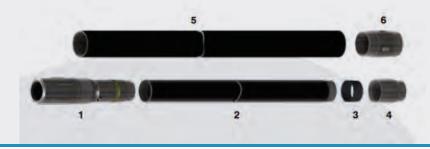
|   | DOUBLE TUBE SPLIT<br>CORE BARREL | T6 S-86      | T6 S-101     | T6 S-116     | T6 S-131     |
|---|----------------------------------|--------------|--------------|--------------|--------------|
|   | ITEM DESCRIPTION                 | PART         | PART         | PART         | PART         |
| 1 | HEAD                             | AD-T6086-000 | AD-T6101-000 | AD-T6116-000 | AD-T6131-000 |
| 2 | SPLIT INNER TUBE 1,5M            | AD-T6086-S02 | AD-T6101-S02 | AD-T6116-S02 | AD-T6131-S02 |
| 3 | CORE LIFTER                      | AD-T6086-S03 | AD-T6101-S03 | AD-T6116-S03 | AD-T6131-S03 |
| 4 | CORE LIFTER CASE                 | AD-T6086-S04 | AD-T6101-S04 | AD-T6116-S04 | AD-T6131-S04 |
| 5 | OUTER TUBE 1,5M                  | AD-T6086-S05 | AD-T6101-S05 | AD-T6116-S05 | AD-T6131-S05 |
| 6 | CORE BARREL 1,5M                 | AD-T6086-S06 | AD-T6101-S06 | AD-T6116-S06 | AD-T6131-S06 |

## WG SINGLE TUBE CORE BARREL



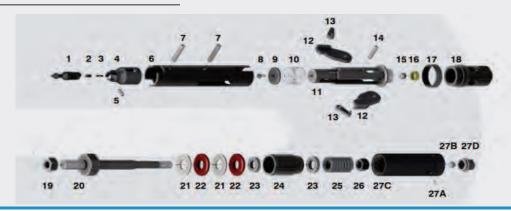
|      | WG SINGLE TUBE CORE<br>BARREL | BWG        | BWG CORE<br>DIAMETER | BWG HOLE<br>DIAMETER | NWG        | NWG CORE<br>DIAMETER | NWG HOLE<br>DIAMETER |
|------|-------------------------------|------------|----------------------|----------------------|------------|----------------------|----------------------|
| ITEM | ITEM DESCRIPTION              | PART       |                      |                      | PART       |                      |                      |
| 1    | HEAD                          | AD-BWG-011 |                      |                      | AD-NWG-011 |                      |                      |
| 2    | OUTER TUBE 3M                 | AD-BWG-030 |                      |                      | AD-NWG-030 |                      |                      |
|      | OUTER TUBE 1.5M               | AD-BWG-015 |                      |                      | AD-NWG-015 |                      |                      |
| 3    | REAMING SHELL TC*             | AD-BWG-013 | 42mm                 | 60mm                 | AD-NWG-013 | 54.7mm               | 75.6mm               |
| 4    | CORE LIFTER                   | AD-BWG-014 |                      |                      | AD-NWG-014 |                      |                      |
| 5    | CORE BARREL 3M                | AD-BWG-016 |                      |                      | AD-NWG-016 |                      |                      |
|      | CORE BARREL 1.5M              | AD-BWG-017 |                      |                      | AD-NWG-017 |                      |                      |

## WM DOUBLE TUBE CORE BARREL



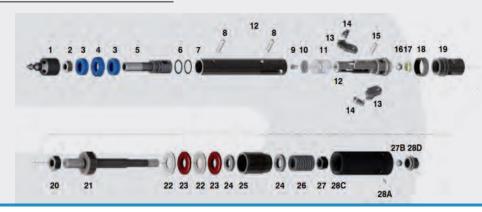
|      | WG SINGLE TUBE CORE<br>BARREL | BWG                      | BWG CORE<br>DIAMETER | BWG HOLE<br>DIAMETER | NWG                      | NWG CORE<br>DIAMETER | NWG HOLE<br>DIAMETER |
|------|-------------------------------|--------------------------|----------------------|----------------------|--------------------------|----------------------|----------------------|
| ITEM | ITEM DESCRIPTION              | PART                     |                      |                      | PART                     |                      |                      |
| 1    | HEAD                          | AD-BWM-011               |                      |                      | AD-NWM-011               |                      |                      |
| 2    | INNER TUBE 1.5M               | AD-BWM-063<br>AD-BWM-065 |                      |                      | AD-NWM-063<br>AD-NWM-065 |                      |                      |
| 3    | CORE LIFTER                   | AD-BWM-013               |                      |                      | AD-NWM-013               |                      |                      |
| 4    | CORE LIFTER CASE              | AD-BWM-014               | 42mm                 | 60mm                 | AD-NWM-014               | 54.7mm               | 75.6mm               |
| 5    | OUTER TUBE 3M                 | AD-BWM-030               | 72111111             | Oomin                | AD-NWM-030               | J4.7111111           | 70.011111            |
|      | OUTER TUBE 1.5M               | AD-BWM-015               |                      |                      | AD-NWM-015               |                      |                      |
| 6    | REAMING SHELL TC*             | AD-BWM-016               |                      |                      | AD-NWM-016               |                      |                      |
| 7    | CORE BARREL 3M                | AD-BWM_017               |                      |                      | AD-NWM-017               |                      |                      |
|      | CORE BARREL 1.5M              | AD-BWM-018               |                      |                      | AD-NWM-018               |                      |                      |

## **BWL INNER TUBE ASSEMBLY**



| ITEM | PART NUMBER | DESCRIPTION                  | QTY |
|------|-------------|------------------------------|-----|
| 1    | AD-24913    | WL SPEARHEAD POINT           | 11  |
| 2    | AD-24914    | WL DETENT PLUNGER            | 1   |
| 3    | AD-51141    | WL COMPRESSION SPRING        | 1   |
| 4    | AD-5344135  | BWL SPEARHEAD BASE           | 1   |
| 5    | AD-24905    | WL SPRING PIN                | 1   |
| 6    | AD-5341647  | BWL LATCH RETRACTING CASE    | 1   |
| 7    | AD-32941    | BWL SPRING PIN               | 2   |
| 8    | AD-5341932  | WL BOLT                      | 1   |
| 9    | AD-036427   | BWL WASHER                   | 1   |
| 10   | AD-5343180  | BWL LATCH COMPRESSION SPRING | 1   |
| 11   | AD-5341621  | BWL UPPER LATCH BODY         | 1   |
| 12   | AD-036417   | BWL LATCH                    | 2   |
| 13   | AD-036418   | BWL LINK                     | 2   |
| 14   | AD-32944    | BWL SPRING PIN               | 1   |
| 15   | AD-26374    | WL STEEL BALL                | 1   |
| 16   | AD-26380    | WL LANDING INDICATOR BUSHING | 1   |
| 17   | AD-036421   | BWL LANDING SHOULDER         | 1   |
| 18   | AD-036578   | BWL LOWER LATCH BODY         | 1   |
| 19   | AD-44601    | BWL HEX NUT                  | 1   |
| 20   | AD-42331    | BWL SPINDLE                  | 1   |
| 21   | AD-42335    | BWL VALVE ADJUSTING WASHER   | 2   |
| 22   | AD-44208    | BWL SHUT OFF VALVE, HARD     | 2   |
| 23   | AD-42030    | BWL THRUST/HANGER BEARING    | 2   |
| 24   | AD-42336    | BWL SPINDLE BUSHING          | 1   |
| 25   | AD-42031    | BWL COMPRESSION SPRING       | 1   |
| 26   | AD-013144   | BWL NYLOC NUT                | 1   |
| 27   | AD-04655    | BWL INNER TUBE CAP ASSEMBLY  |     |
| 27A  | AD-71447    | GREASE FITTING               | 1   |
| 27B  | AD-42943    | STEEL BALL                   | 1   |
| 27C  | AD-04676    | BWL INNER TUBE CAP           | 1   |
| 27D  | AD-04656    | BWL CHECK VALVE BODY         | 1   |

## **BWLU INNER TUBE ASSEMBLY**

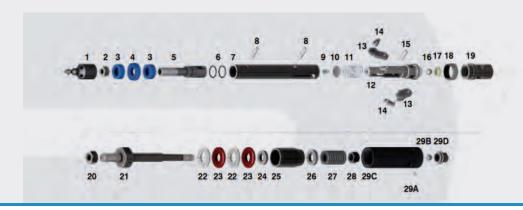


| ITEM | PART NUMBER | DESCRIPTION                 | QTY |
|------|-------------|-----------------------------|-----|
| 1    | AD-534431   | BWLU SPEARHEAD POINT        | 1   |
| 2    | AD-44691    | BWLU HEX NUT                | 1   |
| 3    | AD-46603    | BWLU PUMP-IN SEAL WASHER    | 2   |
| 4    | AD-46683    | BWLU PUMP-IN SEAL           | 1   |
| 5    | AD-534432   | BWLU SPAREHEAD BASE         | 1   |
| 6    | AD-44619    | BWLU O-RING                 | 2   |
| 7    | AD-5347671  | BWLU LATCH RETRACTING CASE  | 1   |
| 8    | AD-32941    | BWL SPRING PIN              | 2   |
| 9    | AD-5341933  | BWLU BOLT                   | 1   |
| 10   | AD-0364271  | BWLU WASHER                 | 1   |
|      |             | BWLU LATCH COMPRESSION      |     |
| 11   | AD-5341836  | SPRING                      | 1   |
| 12   | AD-5341622  | BWLU UPPER LATCH BODY       | 1   |
| 13   | AD-0364171  | BWLU LATCH                  | 2   |
| 14   | AD-0364181  | BWLU LINK                   | 2   |
| 15   | AD-329441   | BWLU SPRING PIN             | 1   |
| 16   | AD-263741   | BWLU STEEL BALL             | 1   |
|      |             | BWLU LANDING INDICATOR      |     |
| 17   | AD-5343905  | BUSHING                     | 1   |
| 18   | AD-0364211  | BWLU LANDING SHOULDER       | 1   |
| 19   | AD-0365781  | BWLU LOWER LATCH BODY       | 1   |
| 20   | AD-44601    | BWL HEX NUT                 | 1   |
| 21   | AD-42331    | BWL SPINDLE                 | 1   |
| 22   | AD-42335    | BWL VALVE ADJUSTING WASHER  | 2   |
| 23   | AD-44208    | BWL SHUT OFF VALVE, HARD    | 2   |
| 24   | AD-42030    | BWL THRUST/HANGER BEARING   | 1   |
| 25   | AD-42336    | BWL SPINDLE BUSHING         | 1   |
| 26   | AD-42031    | BWL COMPRESSION SPRING      | 1   |
| 27   | AD-013144   | BWL NYLOC NUT               | 1   |
| 28   | AD-04655    | BWL INNER TUBE CAP ASSEMBLY |     |
| 28A  | AD-71447    | GREASE FITTING              | 1   |
| 28B  | AD-42943    | STEEL BALL                  | 1   |
| 28C  | AD-04676    | BWL INNER TUBE CAP          | 1   |
| 28D  | AD-04656    | BWL CHECK VALVE BODY        | 1   |

## **BWLU INNER TUBE ASSEMBLY**

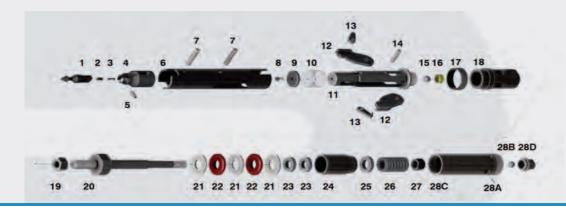


| ITEM | PART NUMBER | DESCRIPTION                  | QTY |
|------|-------------|------------------------------|-----|
| 1    | AD-24913    | WL SPEARHEAD POINT           | 1   |
| 2    | AD-24914    | WL DETENT PLUNGER            | 1   |
| 3    | AD-51141    | WL COMPRESSION SPRING        | 1   |
| 4    | AD-5340329  | NWL SPEARHEAD BASE           | 1   |
| 5    | AD-24905    | WL SPRING PIN                | 1   |
| 6    | AD-036455   | NWL LATCH RETRACTING CASE    | 1   |
| 7    | AD-42305    | NWL SPRING PIN               | 2   |
| 8    | AD-5341932  | WL BOLT                      | 1   |
| 9    | AD-036022   | NWL WASHER                   | 1   |
| 10   | AD-5343812  | NWL LATCH COMPRESSION SPRING | 1   |
| 11   | AD5341778   | NWL UPPER LATCH BODY         | 1   |
| 12   | AD-014816   | NWL LATCH                    | 2   |
| 13   | AD-036454   | NWL LINK                     | 2   |
| 14   | AD-42548    | NWL SPRING PIN               | 1   |
| 15   | AD-26374    | WL STEEL BALL                | 1   |
| 16   | AD-26380    | WL LANDING INDICATOR BUSHING | 1   |
| 17   | AD-036009   | NWL LANDING SHOULDER         | 1   |
| 18   | AD-036008   | NWL LOWER LATCH BODY         | 1   |
| 19   | AD-24885    | NWL HEX NUT                  | 1   |
| 20   | AD-42886    | NWL SPINDLE                  | 1   |
| 21   | AD-42888    | NWL VALVE ADJUSTING WASHER   | 2   |
| 22   | AD-44209    | NWL SHUT OFF VALVE, HARD     | 2   |
| 23   | AD-81298    | NWL HANGER BEARING           | 1   |
| 24   | AD-42889    | NWL SPINDLE BUSHING          | 1   |
| 25   | AD-42312    | NWL THRUST BEARING           | 1   |
| 26   | AD-42313    | NWL COMPRESSION SPRING       | 1   |
| 27   | AD-22918    | NWL NYLOC NUT                | 1   |
| 28   | AD-04664    | NWL INNER TUBE CAP ASSEMBLY  |     |
| 28A  | AD-71447    | GREASE FITTING               | 1   |
| 28B  | AD-42943    | STEEL BALL                   | 1   |
| 28C  | AD-04677    | NWL INNER TUBE CAP           | 1   |
| 28D  | AD-73382    | NWL CHECK VALVE BODY         | 1   |
|      |             |                              |     |



## **NWLU INNER TUBE ASSEMBLY**

| ITEM | PART NUMBER | DESCRIPTION                  | QTY |
|------|-------------|------------------------------|-----|
| 1    | AD-534433   | NWLU SPEARHEAD POINT         | 1   |
| 2    | AD-42895    | NWLU HEX NUT                 | 1   |
| 3    | AD-46392    | NWLU PUMP-IN SEAL WASHER     | 2   |
| 4    | AD-46302    | NWLU PUMP-IN SEAL            | 1   |
| 5    | AD-534434   | NWLU SPAREHEAD BASE          | 1   |
| 6    | AD-42985    | NWLU O-RING                  | 2   |
| 7    | AD-0364551  | NWLU LATCH RETRACTING CASE   | 1   |
| 8    | AD-42305    | NWL SPRING PIN               | 2   |
| 9    | AD-5341932  | NWL BOLT                     | 1   |
| 10   | AD-036022   | NWL WASHER                   | 1   |
| 11   | AD-5343136  | NWL LATCH COMPRESSION SPRING | 1   |
| 12   | AD-5341778  | NWL UPPER LATCH BODY         | 1   |
| 13   | AD-014816   | NWL LATCH                    | 2   |
| 14   | AD-014817   | NWL LINK                     | 2   |
| 15   | AD-42307    | NWL SPRING PIN               | 1   |
| 16   | AD-263741   | NWLU STEEL BALL              | 1   |
|      |             | NWLU LANDING INDICATOR       |     |
| 17   | AD-5343906  | BUSHING                      | 1   |
| 18   | AD-033009   | NWL LANDING SHOULDER         | 1   |
| 19   | BR-036008   | NWL LOWER LATCH BODY         | 1   |
| 20   | AD-42885    | NWL HEX NUT                  | 1   |
| 21   | AD-42886    | NWL SPINDLE                  | 1   |
| 22   | AD-42888    | NWL VALVE ADJUSTING WASHER   | 2   |
| 23   | AD-44209    | NWL SHUT OFF VALVE, HARD     | 2   |
| 24   | AD-81298    | NWL HANGER BEARING           | 1   |
| 25   | AD-42889    | NWL SPINDLE BUSHING          | 1   |
| 26   | AD-42312    | NWL THRUST BEARING           | 1   |
| 27   | AD-42313    | NWL COMPRESSION SPRING       | 1   |
| 28   | AD-22918    | NWL NYLOC NUT                | 1   |
| 29   | AD-04664    | NWL INNER TUBE CAP ASSEMBLY  |     |
| 29A  | AD-71447    | GREASE FITTING               | 1   |
| 29B  | AD-26374    | STEEL BALL                   | 1   |
| 29C  | AD-04677    | NWL INNER TUBE CAP           | 1   |
| 29D  | AD-73382    | NWL CHECK VALVE BODY         | 1   |



## **NWLTK/NWL2" INNER TUBE ASSEMBLY**

| ITEM | PART NUMBER | DESCRIPTION                   | QTY |
|------|-------------|-------------------------------|-----|
| 1    | AD-24913    | WL SPEARHEAD POINT            | 1   |
| 2    | AD-24914    | WL DETENT PLUNGER             | 1   |
| 3    | AD-51141    | WL COMPRESSION SPRING         | 1   |
| 4    | AD-5344136  | NWL SPEARHEAD BASE            | 1   |
| 5    | AD-24905    | WL SPRING PIN                 | 1   |
| 6    | AD-036455   | NWL LATCH RETRACTING CASE     | 1   |
| 7    | AD-42305    | NWL SPRING PIN                | 2   |
| 8    | AD-5341932  | WL BOLT                       | 1   |
| 9    | AD-036022   | NWL WASHER                    | 1   |
| 10   | AD-5343812  | NWL LATCH COMPRESSION SPRING  | 1   |
| 11   | AD-5341778  | NWL UPPER LATCH BODY          | 1   |
| 12   | AD-014816   | NWL LATCH                     | 2   |
| 13   | AD-036454   | NWL LINK                      | 2   |
| 14   | AD-42548    | NWL SPRING PIN                | 1   |
| 15   | AD-26374    | WL STEEL BALL                 | 1   |
| 16   | AD-26380    | WL LANDING INDICATOR BUSHING  | 1   |
| 17   | AD-036026   | NWL LANDING SHOULDER          | 1   |
| 18   | AD-036008   | NWL LOWER LATCH BODY          | 1   |
| 19   | AD-24885    | NWL HEX NUT                   | 1   |
| 20   | AD-42886    | NWL SPINDLE                   | 1   |
| 21   | AD-42888    | NWL VALVE ADJUSTING WASHER    | 2   |
| 22   | AD-44209    | NWL SHUT OFF VALVE, HARD      | 2   |
| 23   | AD-81298    | NWL HANGER BEARING            | 1   |
| 24   | AD-42889    | NWL SPINDLE BUSHING           | 1   |
| 25   | AD-42312    | NWL THRUST BEARING            | 1   |
| 26   | AD-42313    | NWL COMPRESSION SPRING        | 1   |
| 27   | AD-22918    | NWL NYLOC NUT                 | 1   |
| 28   | AD-43604    | NWLTK INNER TUBE CAP ASSEMBLY |     |
| 28A  | AD-71447    | GREASE FITTING                | 1   |
| 28B  | AD-26374    | STEEL BALL                    | 1   |
| 28C  | AD-34602    | NWLTK INNER TUBE CAP          | 1   |
| 28D  | AD-73382    | NWL CHECK VALVE BODY          | 1   |



## **PWL INNER TUBE ASSEMBLY**

| ITEM | PART NUMBER | DESCRIPTION                  | QTY |
|------|-------------|------------------------------|-----|
| 1    | AD-24913    | WL SPEARHEAD POINT           | 1   |
| 2    | AD-24914    | WL DETENT PLUNGER            | 1   |
| 3    | AD-51141    | WL COMPRESSION SPRING        | 1   |
| 4    | AD-5340330  | HWL SPEARHEAD BASE           | 1   |
| 5    | AD-24905    | WL SPRING PIN                | 1   |
| 6    | AD-5340151  | HWL LATCH RETRACTING CASE    | 1   |
| 7    | AD-42524    | HWL SPRING PIN               | 2   |
| 8    | AD-5341932  | WL BOLT                      | 1   |
| 9    | AD-014953   | HWL WASHER                   | 1   |
| 10   | AD-5343619  | HWL LATCH COMPRESSION SPRING | 1   |
| 11   | AD-5340156  | HWL UPPER LATCH BODY         | 1   |
| 12   | AD-014818   | HWL LATCH                    | 2   |
| 13   | AD-036216   | HWL LINK                     | 2   |
| 14   | AD-42305    | HWL SPRING PIN               | 1   |
| 15   | AD-26374    | WL STEEL BALL                | 1   |
| 16   | AD-26380    | WL LANDING INDICATOR BUSHING | 1   |
| 17   | AD-5343797  | PWL LANDING SHOULDER         | 1   |
| 18   | AD-5348072  | HWL LOWER LATCH BODY         | 1   |
| 19   | AD-73475    | HWL HEX NUT                  | 1   |
| 20   | AD-5348073  | PWL SPINDLE                  | 1   |
| 21   | AD-5345206  | PWL VALVE ADJUSTING WASHER   | 3   |
| 22   | AD-5340308  | PWL SHUT OFF VALVE, HARD     | 2   |
| 23   | AD-5340299  | PWL TAPERED SHUT OFF WASHER  | 1   |
| 24   | AD-4252901  | PWL HANGER BEARING           | 2   |
| 25   | AD-5340794  | PWL SPINDLE BUSHING          | 1   |
| 26   | AD-71447    | GREASE FITTING               | 1   |
| 27   | AD-42528    | PWL THRUST BEARING           | 1   |
| 28   | AD-5340755  | PWL COMPRESSION SPRING       | 1   |
| 29   | AD-013062   | PWL NYLOC NUT                | 1   |
| 30   | AD-42943    | STEEL BALL                   | 1   |
| 31   | AD-5340745  | PWL CHECK VALE BODY          | 1   |
| 32   | AD-010865   | PWL SPRING PIN               | 1   |
| 33   | AD-5343804  | PWL INNER TUBE CAP           | 1   |

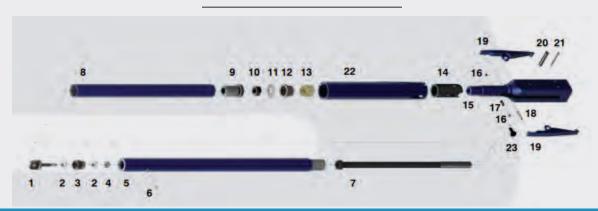


## **HWL INNER TUBE ASSEMBLY**

| ITEM | PART NUMBER  | DESCRIPTION                  | QTY |
|------|--------------|------------------------------|-----|
| 1    | AD-24913     | WL SPEARHEAD POINT           | 1   |
| 2    | AD-24914     | WL DETENT PLUNGER            | 1   |
| 3    | AD-51141     | WL COMPRESSION SPRING        | 1   |
| 4    | AD-5340330   | HWL SPEARHEAD BASE           | 1   |
| 5    | AD-24905     | WL SPRING PIN                | 1   |
| 6    | AD-5340151   | HWL LATCH RETRACTING CASE    | 1   |
| 7    | AD-42524     | HWL SPRING PIN               | 2   |
| 8    | AD-5341932   | WL BOLT                      | 1   |
| 9    | AD-014953    | HWL WASHER                   | 1   |
| 10   | AD-5343619   | HWL LATCH COMPRESSION SPRING | 1   |
| 11   | AD-R-5340156 | HWL UPPER LATCH BODY         | 1   |
| 12   | AD-014818    | HWL LATCH                    | 2   |
| 13   | AD-036216    | HWL LINK                     | 2   |
| 14   | AD-42305     | HWL SPRING PIN               | 1   |
| 15   | AD-26374     | WL STEEL BALL                | 1   |
| 16   | AD-26380     | WL LANDING INDICATOR BUSHING | 1   |
| 17   | AD-014958    | HWL LANDING SHOULDER         | 1   |
| 18   | AD-014957    | HWL LOWER LATCH BODY         | 1   |
| 19   | AD-44574     | HWL HEX NUT                  | 1   |
| 20   | AD-25231     | HWL SPINDLE                  | 1   |
| 21   | AD-52233     | HWL VALVE ADJUSTING WASHER   | 3   |
| 22   | AD-34513     | HWL SHUT OFF VALVE, HARD     | 2   |
| 23   | AD-42312     | HWL HANGER BEARING           | 2   |
| 24   | AD-52234     | HWL SPINDLE BUSHING          | 1   |
| 25   | AD-42528     | HWL THRUST BEARING           | 1   |
| 26   | AD-42529     | HWL COMPRESSION SPRING       | 1   |
| 27   | AD-013465    | HWL NYLOC NUT                | 1   |
| 28   | AD-04678     | HWL INNER TUBE CAP ASSEMBLY  |     |
| 28A  | AD-71447     | GREASE FITTING               | 1   |
| 28B  | AD-26374     | STEEL BALL                   | 1   |
| 28C  | AD-04401     | HWL INNER TUBE CAP           | 1   |
| 28D  | D-73382      | HWL CHECK VALVE BODY         | 1   |

# Overshot

#### **OVERSHOT SURFACE**



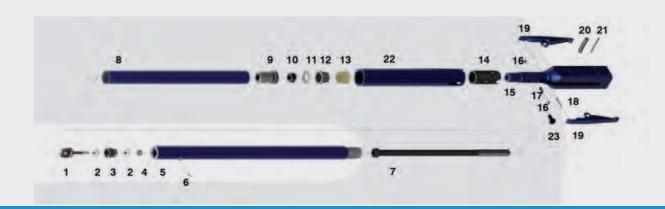
## **BWL / BWLTK E-ZY LOCK OVERSHOT**

| ITEM | PART NUMBER | DESCRIPTION                        | QTY |
|------|-------------|------------------------------------|-----|
| 1    | AD-52991    | BOLT CABLE SWIVEL EYE              | 1   |
| 2    | AD-52986    | THRUST BEARING                     | 2   |
| 3    | AD-52990    | CABLE SWIVEL COLLAR                | 1   |
| 4    | AD-52985    | NYLOC NUT                          | 1   |
| 5    | AD-44434    | BWL CABLE SWIVEL BODY              | 1   |
| 6    | AD-71447    | BWL GREASE FITTING                 | 1   |
| 7    | AD-5346821  | BWL JAR STAFF                      | 1   |
| 8    | AD-44435    | BWL JAR TUBE                       | 1   |
| 9    | AD-5346820  | BWL JAR STAFF SEAT                 | 1   |
| 10   | AD-26904    | BWL HEX NUT                        | 1   |
| 11   | AD-5348184  | BWL WASHER                         | 1   |
| 12   | AD-5346823  | BWL CAP, E-ZY LOCK                 | 1   |
| 13   | AD-5344104  | BWL SPRING, E-ZY LOCK              | 1   |
| 14   | AD-5346883  | BWL SLEEVE, E-ZY LOCK              | 1   |
| 15   | AD-5346825  | BWL OVERSHOT HEAD, E-ZY LOCK       | 1   |
| 16   | AD-5343772  | BWL STEEL BALL                     | 2   |
| 17   | AD-5345053  | BWL COMPRESSION SPRING             | 1   |
| 18   | AD-9651     | BWL LIFTING DOG COMPRESSION SPRING | 1   |
| 19   | AD-9650     | BWL LIFTING DOG                    | 2   |
| 20   | AD-24941    | BWL LIFTING DOG SPRING PIN         | 1   |
| 21   | AD-92073    | BWL SPRING PIN                     | 1   |
| 22   | AD-51575    | BWL LOCKING SLEEVE                 | 1   |
| 23   | AD-5345073  | BWL BOLT, LOCKING SLEEVE           | 1   |



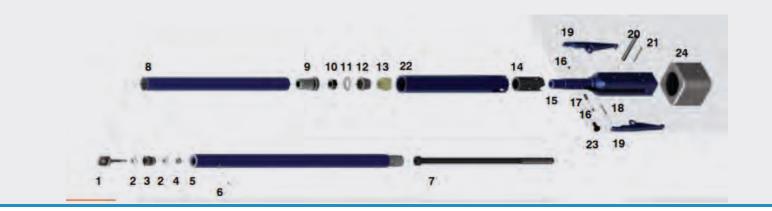
#### NWL /NWLTK / NWL3 E-ZY LOCK OVERSHOT

| ITEM | PART NUMBER | DESCRIPTION                       | QTY |
|------|-------------|-----------------------------------|-----|
| 1    | AD-52991    | BOLT CABLE SWIVEL EYE             | 1   |
| 2    | AD-52986    | THRUST BEARING                    | 2   |
| 3    | AD-52990    | CABLE SWIVEL COLLAR               | 1   |
| 4    | AD-52985    | NYLOC NUT                         | 1   |
| 5    | AD-44444    | WL CABLE SWIVEL BODY              | 1   |
| 6    | AD-71447    | WL GREASE FITTING                 | 1   |
| 7    | AD-5340516  | WL JAR STAFF                      | 1   |
| 8    | AD-5340515  | WL JAR TUBE                       | 1   |
| 9    | AD-5340514  | WL JAR STAFF SEAT                 | 1   |
| 10   | AD-44524    | WL HEX NUT                        | 1   |
| 11   | AD-5348178  | WL WASHER                         | 1   |
| 12   | AD-5344103  | WL CAP, E-ZY LOCK                 | 1   |
| 13   | AD-5344105  | WL SPRING, E-ZY LOCK              | 1   |
| 14   | AD-5346745  | WL SLEEVE, E-ZY LOCK              | 1   |
| 15   | AD-5346746  | NWL OVERSHOT HEAD, E-ZY LOCK      | 1   |
| 16   | AD-5343772  | WL STEEL BALL                     | 2   |
| 17   | AD-9651     | WL COMPRESSION SPRING             | 1   |
| 18   | AD-5342027  | WL LIFTING DOG COMPRESSION SPRING | 1   |
| 19   | AD-5340529  | WL LIFTING DOG                    | 2   |
| 20   | AD-42906    | NWL LIFTING DOG SPRING PIN        | 1   |
| 21   | AD-73394    | NWL SPRING PIN                    | 1   |
| 22   | AD-51965    | WL LOCKING SLEEVE                 | 1   |
| 23   | AD-5345073  | WL BOLT, LOCKING SLEEVE           | 1   |



#### **NWL /NWLTK / NWL3 E-ZY LOCK OVERSHOT**

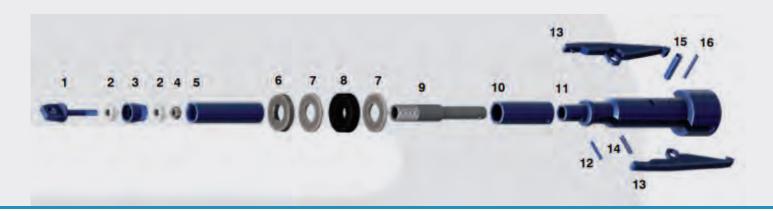
| ITEM | PART NUMBER | DESCRIPTION                       | QTY |
|------|-------------|-----------------------------------|-----|
| 1    | AD-52991    | BOLT CABLE SWIVEL EYE             | 1   |
| 2    | AD-52986    | THRUST BEARING                    | 2   |
| 3    | AD-52990    | CABLE SWIVEL COLLAR               | 1   |
| 4    | AD-52985    | NYLOC NUT                         | 1   |
| 5    | AD-44444    | WL CABLE SWIVEL BODY              | 1   |
| 6    | AD-71447    | WL GREASE FITTING                 | 1   |
| 7    | AD-5340516  | WL JAR STAFF                      | 1   |
| 8    | AD-5340515  | WL JAR TUBE                       | 1   |
| 9    | AD-5340514  | WL JAR STAFF SEAT                 | 1   |
| 10   | AD-44524    | WL HEX NUT                        | 1   |
| 11   | AD-5348178  | WL WASHER                         | 1   |
| 12   | AD-5344103  | WL CAP, E-ZY LOCK                 | 1   |
| 13   | AD-5344105  | WL SPRING, E-ZY LOCK              | 1   |
| 14   | AD-5346745  | WL SLEEVE, E-ZY LOCK              | 1   |
| 15   | AD-5346748  | HWL OVERSHOT HEAD, E-ZY LOCK      | 1   |
| 16   | AD-5343772  | WL STEEL BALL                     | 2   |
| 17   | AD-9651     | WL COMPRESSION SPRING             | 1   |
| 18   | AD-5342027  | WL LIFTING DOG COMPRESSION SPRING | 1   |
| 19   | AD-5340529  | WL LIFTING DOG                    | 2   |
| 20   | AD-5340527  | HWL LIFTING DOG SPRING PIN        | 1   |
| 21   | AD-42307    | HWL SPRING PIN                    | 1   |
| 22   | AD-51965    | WL LOCKING SLEEVE                 | 1   |
| 23   | AD-5345073  | WL BOLT, LOCKING SLEEVE           | 1   |



#### **PWL / PWL3 E-ZY LOCK OVERSHOT**

| ITEM | PART NUMBER | DESCRIPTION                       | QTY |
|------|-------------|-----------------------------------|-----|
| 1    | AD-52991    | BOLT CABLE SWIVEL EYE             | 1   |
| 2    | AD-52986    | THRUST BEARING                    | 2   |
| 3    | AD-52990    | CABLE SWIVEL COLLAR               | 1   |
| 4    | AD-52985    | NYLOC NUT                         | 1   |
| 5    | AD-44444    | WL CABLE SWIVEL BODY              | 1   |
| 6    | AD-71447    | WL GREASE FITTING                 | 1   |
| 7    | AD-5340516  | WL JAR STAFF                      | 1   |
| 8    | AD-5340515  | WL JAR TUBE                       | 1   |
| 9    | AD-5340514  | WL JAR STAFF SEAT                 | 1   |
| 10   | AD-44524    | WL HEX NUT                        | 1   |
| 11   | AD-5348178  | WL WASHER                         | 1   |
| 12   | AD-5344103  | WL CAP, E-ZY LOCK                 | 1   |
| 13   | AD-5344105  | WL SPRING, E-ZY LOCK              | 1   |
| 14   | AD-5346745  | WL SLEEVE, E-ZY LOCK              | 1   |
| 15   | AD-5346746  | NWL OVERSHOT HEAD, E-ZY LOCK      | 1   |
| 16   | AD-5343772  | WL STEEL BALL                     | 2   |
| 17   | AD-9651     | WL COMPRESSION SPRING             | 1   |
| 18   | AD-5342027  | WL LIFTING DOG COMPRESSION SPRING | 1   |
| 19   | AD-5340529  | WL LIFTING DOG                    | 2   |
| 20   | AD-5340528  | PWL LIFTING DOG SPRING PIN        | 1   |
| 21   | AD-423071   | PWL SPRING PIN                    | 1   |
| 22   | AD-51965    | WL LOCKING SLEEVE                 | 1   |
|      | AD-5345073  | WL BOLT, LOCKING SLEEVE           | 1   |
| 24   | AD-5341072  | PWL LOCKING SLEEVE RING           | 1   |

#### **OVERSHOT SURFACE**



#### **BWLU OVERSHOT**

| ITEM | PART NUMBER | DESCRIPTION                        | QTY |
|------|-------------|------------------------------------|-----|
| 1    | AD-52991    | BOLT CABLE SWIVEL EYE              | 1   |
| 2    | AD-52986    | THRUST BEARING                     | 2   |
| 3    | AD-52990    | CABLE SWIVEL COLLAR                | 1   |
| 4    | AD-52985    | NYLOC NUT                          | 1   |
| 5    | AD-4443501  | WLU CABLE SWIVEL BODY              | 1   |
| 6    | AD-4668301  | BWLU THUMB NUT                     | 1   |
| 7    | AD-4668302  | BWLU WASHER                        | 1   |
| 8    | AD-46683    | BWLU SEAL                          | 1   |
| 9    | AD-5346896  | WLU JAR STAFF                      | 1   |
| 10   | AD-4443502  | WLU JAR TUBE                       | 1   |
| 11   | AD-5346895  | BWLU OVERSHOT HEAD                 | 1   |
| 12   | AD-5345053  | WLU CONNECTION SPRING PIN          | 1   |
| 13   | AD-9650     | BWL LIFTING DOG                    | 2   |
| 14   | AD-9651     | BWL LIFTING DOG COMPRESSION SPRING | 1   |
| 15   | AD-42906    | WLU LIFTING DOG SPRING PIN         | 1   |
| 16   | AD-73394    | WLU SPRING PIN                     | 1   |



#### **NWLU OVERSHOT**

| ITEM | PART NUMBER | DESCRIPTION                       | QTY |
|------|-------------|-----------------------------------|-----|
| 1    | AD-52991    | BOLT CABLE SWIVEL EYE             | 1   |
| 2    | AD-52986    | THRUST BEARING                    | 2   |
| 3    | AD-52990    | CABLE SWIVEL COLLAR               | 1   |
| 4    | AD-52985    | NYLOC NUT                         | 1   |
| 5    | AD-4443501  | WLU CABLE SWIVEL BODY             | 1   |
| 6    | AD-4630201  | NWLU THUMB NUT                    | 1   |
| 7    | AD-4630202  | NWLU WASHER                       | 1   |
| 8    | AD-46302    | NWLU SEAL                         | 1   |
| 9    | AD-5346896  | WLU JAR STAFF                     | 1   |
| 10   | AD-4443502  | WLU JAR TUBE                      | 1   |
| 11   | AD-5346897  | NWLU OVERSHOT HEAD                | 1   |
| 12   | AD-5345053  | WLU CONNECTION SPRING PIN         | 1   |
| 13   | AD-5340529  | WL LIFTING DOG                    | 2   |
| 14   | AD-5342027  | WL LIFTING DOG COMPRESSION SPRING | 1   |
| 15   | AD-42906    | WLU LIFTING DOG SPRING PIN        | 1   |
| 16   | AD-73394    | WLU SPRING PIN                    | 1   |



### **HWLU OVERSHOT**

| PART NUMBER | DESCRIPTION  | QTY  |
|-------------|--|--|
| AD-52991    | BOLT CABLE SWIVEL EYE  | 1  |
| AD-52986    | THRUST BEARING   | 2  |
| AD-52990    | CABLE SWIVEL COLLAR  | 1  |
| AD-52985    | NYLOC NUT  | 1  |
| AD-4443501  | WLU CABLE SWIVEL BODY  | 1  |
| AD-4668501  | HWLU THUMB NUT   | 1  |
| AD-4668502  | HWLU WASHER  | 1  |
| AD-46685    | HWLU SEAL  | 1  |
| AD-5346896  | WLU JAR STAFF  | 1  |
| AD-4443502  | WLU JAR TUBE   | 1  |
| AD-5346899  | HWLU OVERSHOT HEAD   | 1  |
| AD-5345053  | WLU CONNECTION SPRING PIN  | 1  |
| AD-5340529  | WL LIFTING DOG   | 2  |
| AD-5342027  | WL LIFTING DOG COMPRESSION SPRING  | 1  |
| AD-42906    | WLU LIFTING DOG SPRING PIN   | 1  |
| AD-73394    | WLU SPRING PIN   | 1  |
|             | AD-52991<br>AD-52986<br>AD-52990<br>AD-52985<br>AD-4443501<br>AD-4668501<br>AD-4668502<br>AD-46685<br>AD-5346896<br>AD-5346899<br>AD-5345053<br>AD-5340529<br>AD-5342027<br>AD-42906 | AD-52991 BOLT CABLE SWIVEL EYE AD-52986 THRUST BEARING AD-52990 CABLE SWIVEL COLLAR AD-52985 NYLOC NUT AD-4443501 WLU CABLE SWIVEL BODY AD-4668501 HWLU THUMB NUT AD-4668502 HWLU WASHER AD-46685 HWLU SEAL AD-5346896 WLU JAR STAFF AD-4443502 WLU JAR TUBE AD-5346899 HWLU OVERSHOT HEAD AD-5345053 WLU CONNECTION SPRING PIN AD-5340529 WL LIFTING DOG COMPRESSION SPRING AD-42906 WLU LIFTING DOG SPRING PIN |

# **Over Shot Spare Kit**



#### **BWL / BWLTK OVERSHOT SPARE KIT**

| ITEM | PART NUMBER | DESCRIPTION                        | QTY |
|------|-------------|------------------------------------|-----|
| 1    | AD-52986    | THRUST BEARING                     | 1   |
| 2    | AD-52985    | NYLOC NUT                          | 1   |
| 3    | AD-71447    | BWL GREASE FITTING                 | 1   |
| 4    | AD-26904    | BWL HEX NUT                        | 1   |
| 5    | AD-5343772  | BWL STEEL BALL                     | 2   |
| 6    | AD-5345053  | BWL COMPRESSION SPRING             | 2   |
| 7    | AD-9651     | BWL LIFTING DOG COMPRESSION SPRING | 1   |
| 8    | AD-9650     | BWL LIFTING DOG                    | 2   |
| 9    | AD-24941    | BWL LIFTING DOG SPRING PIN         | 1   |
| 10   | AD-92073    | BWL SPRING PIN                     | 1   |
| 11   | AD-5345073  | BWL BOLT, LOCKING SLEEVE           | 1   |



#### **NWL / NWLTK / NWL3 OVERSHOT SPARE KIT**

| ITEM | PART NUMBER | DESCRIPTION                       | QTY |
|------|-------------|-----------------------------------|-----|
| 1    | AD-52986    | THRUST BEARING                    | 1   |
| 2    | AD-52985    | NYLOC NUT                         | 1   |
| 3    | AD-71447    | WL GREASE FITTING                 | 1   |
| 4    | AD-44524    | WL HEX NUT                        | 1   |
| 5    | AD-5343772  | WL STEEL BALL                     | 2   |
| 6    | AD-9651     | WL COMPRESSION SPRING             | 2   |
| 7    | AD-5342027  | WL LIFTING DOG COMPRESSION SPRING | 1   |
| 8    | AD-5340529  | WL LIFTING DOG                    | 2   |
| 9    | AD-42906    | NWL LIFTING DOG SPRING PIN        | 1   |
| 10   | AD-73394    | NWL SPRING PIN                    | 1   |
| 11   | AD-5345073  | WL BOLT, LOCKING SLEEVE           | 1   |



#### HWL / HWL3 / PWL / PWL3 OVERSHOT SPARE KIT

| ITEM | PART NUMBER | DESCRIPTION                       | QTY |
|------|-------------|-----------------------------------|-----|
| 1    | AD-52986    | THRUST BEARING                    | 1   |
| 2    | AD-52985    | NYLOC NUT                         | 1   |
| 3    | AD-71447    | WL GREASE FITTING                 | 1   |
| 4    | AD-44524    | WL HEX NUT                        | 1   |
| 5    | AD-5343772  | WL STEEL BALL                     | 2   |
| 6    | AD-9651     | WL COMPRESSION SPRING             | 2   |
| 7    | AD-5342027  | WL LIFTING DOG COMPRESSION SPRING | 1   |
| 8    | AD-5340529  | WL LIFTING DOG                    | 2   |
| 9    | AD-5340527  | HWL LIFTING DOG SPRING PIN        | 1   |
|      | AD-5340528  | PWL LIFTING DOG SPRING PIN        | 1   |
| 10   | AD-42307    | HWL SPRING PIN                    | 1   |
|      | AD-423071   | PWL SPRING PIN                    | 1   |
| 11   | AD-5345073  | WL BOLT, LOCKING SLEEVE           | 1   |



#### **BWLU OVERSHOT SPARES KIT**

| ITEM | PART NUMBER | DESCRIPTION                        | QTY |
|------|-------------|------------------------------------|-----|
| 1    | AD-52986    | THRUST BEARING                     | 1   |
| 2    | AD-52985    | NYLOC NUT                          | 1   |
| 3    | AD-4668302  | BWLU WASHER                        | 1   |
| 4    | AD-46683    | BWLU SEAL                          | 1   |
| 5    | AD-5345053  | WLU CONNECTION SPRING PIN          | 1   |
| 6    | AD-9651     | BWL LIFTING DOG COMPRESSION SPRING | 1   |
| 7    | AD-9650     | BWL LIFTING DOG                    | 2   |
| 8    | AD-42906    | WLU LIFTING DOG SPRING PIN         | 1   |
| 9    | AD-73394    | WLU SPRING PIN                     | 1   |



#### **NWLU OVERSHOT SPARE KIT**

| ITEM     | PART NUMBER | DESCRIPTION                       | QTY |
|----------|-------------|-----------------------------------|-----|
| I I ⊏IVI | PART NUMBER |                                   | QII |
| 1        | AD-52986    | THRUST BEARING                    | 1   |
| 2        | AD-52985    | NYLOC NUT                         | 1   |
| 3        | AD-4630202  | NWLU WASHER                       | 1   |
| 4        | ADR-46302   | NWLU SEAL                         | 1   |
| 5        | AD-5345053  | WLU CONNECTION SPRING PIN         | 1   |
| 6        | AD-5342027  | WL LIFTING DOG COMPRESSION SPRING | 1   |
| 7        | AD-5340529  | WL LIFTING DOG                    | 2   |
| 8        | AD-42906    | WLU LIFTING DOG SPRING PIN        | 1   |
| 9        | AD-73394    | WLU SPRING PIN                    | 1   |



#### **HWLU OVERSHOT SPARE KIT**

| ITEM | PART NUMBER | DESCRIPTION                       | QTY |
|------|-------------|-----------------------------------|-----|
| 1    | AD-52986    | THRUST BEARING                    | 1   |
| 2    | AD-52985    | NYLOC NUT                         | 1   |
| 3    | AD-4668502  | HWLU WASHER                       | 1   |
| 4    | AD-46685    | HWLU SEAL                         | 1   |
| 5    | AD-5345053  | WLU CONNECTION SPRING PIN         | 1   |
| 6    | AD-5342027  | WL LIFTING DOG COMPRESSION SPRING | 1   |
| 7    | AD-5340529  | WL LIFTING DOG                    | 2   |
| 8    | AD-42906    | WLU LIFTING DOG SPRING PIN        | 1   |
| 9    | AD-73394    | WLU SPRING PIN                    | 1   |



|              | BWL DRILL ROD SPECIFICATIONS     |              |                |             |                  |                 |  |
|--------------|----------------------------------|--------------|----------------|-------------|------------------|-----------------|--|
|              |                                  | WEIGHT       |                |             |                  | PIN LENGTH      |  |
| ITEM#        | DESCRIPTION                      | (kg)         | OD (mm)        | ID (mm)     | PITCH (TP        | , , ,           |  |
| BR-5348206   | DRILL ROD 1.5M                   | 9.7          | 55.6           | 46.1        | 3                | 44.4            |  |
| BR-5348208   | DRILL ROD 3.0M                   | 19.4         | 55.6           | 46.1        | 3                | 44.4            |  |
|              |                                  |              | NDLE SPECIF    |             |                  |                 |  |
| ROD TYPE     | CONTENT (pcs)                    | WEIGHT       | LENGTH         | WIDTH       |                  | VOLUME (m3)     |  |
| BWL 1.5M     | 40                               | (kg)<br>392  | (mm)<br>1600   | (mm)<br>480 | (mm)<br>420      | 0.32            |  |
| BWL 3.0M     | 40                               | 781          | 3150           | 480         | 420              | 0.64            |  |
| BVVL 3.0W    | 40                               |              | L ROD SPECI    |             |                  | 0.04            |  |
|              |                                  | WEIGHT       | L ROD SPECI    | FICATIONS   |                  | PIN LENGTH      |  |
| ITEM#        | DESCRIPTION                      | (kg)         | OD (mm)        | ID (mm)     | PITCH (TP        |                 |  |
| BR-5348210   | DRILL ROD 1.5M                   | 11.9         | 69.9           | 60.3        | 3                | 44.4            |  |
| BR-5348212   | DRILL ROD 3.0M                   | 23.8         | 69.9           | 60.3        | 3                | 44.4            |  |
|              |                                  | NWL BU       | NDLE SPECIF    | CATIONS     |                  |                 |  |
|              |                                  | WEIGHT       | LENGTH         | WIDTH       | HEIGHT           |                 |  |
| ROD TYPE     | CONTENT (pcs)                    | (kg)         | (mm)           | (mm)        | (mm)             | VOLUME (m3)     |  |
| NWL 1.5M     | 19                               | 230          | 1600           | 380         | 330              | 0.2             |  |
| NWL 3.0M     | 19                               | 457          | 3150           | 380         | 330              | 0.4             |  |
|              |                                  |              | L ROD SPECI    | FICATIONS   | 5                |                 |  |
| ITENA 44     | DECODIDATION                     | WEIGHT       | OD (*****)     | ID ()       | DITOLI (TD       | PIN LENGTH      |  |
| ITEM #       | DESCRIPTION                      | (kg)         | OD (mm)        | ID (mm)     | PITCH (TP        | , , ,           |  |
| BR-5348214   | DRILL ROD 1.5M<br>DRILL ROD 3.0M | 17.5<br>34.9 | 89.9<br>89.9   | 77.8        | 3                | 44.4<br>44.4    |  |
| BR-5348216   | DRILL ROD 3.0W                   |              | NDLE SPECIF    | 77.8        | 3                | 44.4            |  |
|              |                                  | WEIGHT       | LENGTH         | WIDTH       | HEIGHT           |                 |  |
| ROD TYPE     | CONTENT (pcs)                    | (kg)         | (mm)           | (mm)        | (mm)             | VOLUME (m3)     |  |
| HWL 1.5M     | 19                               | 337          | 1600           | 480         | 420              | 0.32            |  |
| HWL 3.0M     | 19                               | 668          | 3150           | 480         | 420              | 0.64            |  |
|              |                                  | PWL / HWT D  | RILL ROD SPI   | ECIFICATION | DNS              |                 |  |
|              |                                  | WEIGHT       |                |             |                  | PIN LENGTH      |  |
| ITEM#        | DESCRIPTION                      | (kg)         | OD (mm)        | ID (mm)     | PITCH (TP        | , , ,           |  |
| BR-5341743   | DRILL ROD 1.5M                   | 26.3         | 114.3          | 101.6       |                  | 63              |  |
| BR-5342314   | DRILL ROD 3.0M                   | 52.4         | 114.3          | 101.6       |                  | 63              |  |
|              |                                  |              | BUNDLE SPE     |             |                  |                 |  |
| ROD TYPE     | CONTENT (pcs)                    | WEIGHT       | LENGTH<br>(mm) | WIDTH       | H HEIGHT<br>(mm) | VOLUME (m3)     |  |
| HWL 1.5M     | 7                                | (kg)<br>188  | 1650           | (mm)<br>360 | 340              | 0.2             |  |
| HWL 3.0M     | 7                                | 372          | 3150           | 360         | 340              | 0.39            |  |
| 110VL 3.01VI | '                                | 372          | 3130           |             | 340              | 0.55            |  |
|              |                                  |              | ROD SPECIF     |             |                  |                 |  |
| ITEM#        | DESCRIPTION                      | WEIGHT (kg   | , , ,          | ` ,         | PITCH (TPI)      | PIN LENGTH (mm) |  |
| AD-AW15-00   | AW 1.5m                          |              | 0.6 44         | 30.9        | 3                | 49              |  |
| AD-AW30-00   | AW 3.0m                          |              | 3.4 44         | 30.9        | 3                | 49              |  |
|              |                                  | BW DRILL     | ROD SPECIF     |             |                  |                 |  |
| ITEM#        | DESCRIPTION                      | WEIGHT (kg   | , , ,          |             | PITCH (TPI)      | PIN LENGTH (mm) |  |
| AD-BW15-00   | BW 1.5m                          |              | 5.8 54         | 39          | 3                | 59              |  |
| AD-BW30-00   | BW 3.0m                          | 28           | 3.7 54         | 39          | 3                | 59              |  |
|              |                                  | NW DRILL     | ROD SPECIF     | ICATIONS    |                  |                 |  |
| ITEM#        | DESCRIPTION                      | WEIGHT (kg   | ) OD (mm)      | ID (mm)     | PITCH (TPI)      | PIN LENGTH (mm) |  |
| AD-NW15-00   | NW 1.5m                          | 13           | 8.2 66.7       | 57          | 3                | 59              |  |
| AD-NW30-00   | NW 3.0m                          | 26           | 66.7           | 57          | 3                | 59              |  |
|              |                                  |              |                |             |                  |                 |  |



|          | CASINGS & BUNDLE SPECIFICATIONS |        |             |         |             |                 |  |  |
|----------|---------------------------------|--------|-------------|---------|-------------|-----------------|--|--|
|          |                                 | CASIN  | G SPECIFICA | TIONS   |             |                 |  |  |
|          |                                 | WEIGHT |             |         |             |                 |  |  |
| ITEM#    | DESCRIPTION                     | (kg)   | OD (mm)     | ID (mm) | PITCH (TPI) | PIN LENGTH (mm) |  |  |
| AD-66531 | AW CASING 1.5M                  | 10.3   | 57.1        | 48.4    | 4           | 57.15           |  |  |
| AD-66533 | AW CASING 3.0M                  | 18     | 57.1        | 48.4    | 4           | 57.15           |  |  |
| AD-66537 | <b>BW CASING 1.5M</b>           | 15.8   | 73          | 60.3    | 4           | 63.5            |  |  |
| AD-66539 | BW CASING 3.0M                  | 31.3   | 73          | 60.3    | 4           | 63.5            |  |  |
| AD-66543 | NW CASING 1.5M                  | 17.1   | 88.9        | 77.8    | 4           | 69.85           |  |  |
| AD-66545 | NW CASING 3.0M                  | 33.9   | 88.9        | 77.8    | 4           | 69.85           |  |  |
| AD-66549 | HW CASING 1.5M                  | 26     | 114.3       | 101.6   | 4           | 76.2            |  |  |
| AD-66551 | HW CASING 3.0M                  | 51.7   | 114.3       | 101.6   | 4           | 76.2            |  |  |
| AD-66730 | PW CASING 1.5M                  | 37.7   | 139.7       | 127     | 4           | 82.55           |  |  |
| AD-66731 | PW CASING 3.0M                  | 75.1   | 139.7       | 127     | 4           | 82.55           |  |  |

|         | CASING BUNDLE SPECIFICATIONS |        |        |       |        |             |  |  |
|---------|------------------------------|--------|--------|-------|--------|-------------|--|--|
| ROD     |                              | WEIGHT | LENGTH | WIDTH | HEIGHT |             |  |  |
| TYPE    | CONTENT (pcs)                | (kg)   | (mm)   | (mm)  | (mm)   | VOLUME (m3) |  |  |
| AW 1.5M | 40                           | 416    | 1600   | 480   | 420    | 0.32        |  |  |
| AW 3.0M | 40                           | 725    | 3100   | 480   | 420    | 0.62        |  |  |
| BW 1.5M | 19                           | 304    | 1600   | 380   | 330    | 0.2         |  |  |
| BW 3.0M | 19                           | 600    | 3100   | 380   | 330    | 0.39        |  |  |
| NW 1.5M | 19                           | 329    | 1600   | 480   | 420    | 0.32        |  |  |
| NW 3.0M | 19                           | 649    | 3150   | 480   | 420    | 0.64        |  |  |
| HW 1.5M | 7                            | 186    | 1600   | 360   | 340    | 0.2         |  |  |
| HW 3.0M | 7                            | 367    | 3150   | 360   | 340    | 0.39        |  |  |
| PW 1.5M | 7                            | 268    | 1600   | 480   | 420    | 0.33        |  |  |
| PW 3.0M | 7                            | 531    | 3150   | 480   | 420    | 0.64        |  |  |







| BUPSET ® - WJ DRILL RODS & BUNDLE SPECIFICATIONS |                       |        |         |         |                |             |            |  |
|--|-----------------------|--------|---------|---------|----------------|-------------|------------|--|
| BUPSET DRILL ROD SPECIFICATIONS                  |                       |        |         |         |                |             |            |  |
|  |                       | WEIGHT |         |         | Joint Diameter |             | PIN LENGTH |  |
| ITEM#  | DESCRIPTION           | (kg)   | OD (mm) | ID (mm) | (mm)           | PITCH (TPI) | (mm)       |  |
| AD-04959   | NWL 3,0M              | 20.6   | 69.9    | 62      | 60.3           | 3           | 44.4       |  |
| AD-04960   | HWL 3,0M<br>PWL / HWT | 26.8   | 88.9    | 81      | 77.8           | 3           | 44.4       |  |
| AD-04961   | 3,0M                  | 39.7   | 114.3   | 104.5   | 101.6          | 2.5         | 63         |  |

|                       |         | BUPSET DRI | LL ROD BUND | LE SPECIFICA | ATIONS          |  |
|-----------------------|---------|------------|-------------|--------------|-----------------|--|
| DOD TVDE              | CONTENT | WEIGHT     | LENGTH      | WIDTH        | LIEIOLIT (mass) | \(\(\O\) \\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\ |
| ROD TYPE              | (pcs)   | (kg)       | (mm)        | (mm)         | HEIGHT (mm)     | VOLUME (m3)                              |
| NWL 3.0M              | 19      | 396        | 3150        | 380          | 330             | 0.4                                      |
| HWL 3.0M<br>PWL / HWT | 19      | 514        | 3150        | 480          | 420             | 0.64                                     |
| 3.0M                  | 7       | 283        | 3200        | 360          | 340             | 0.39                                     |

|          | AWJ DRILL ROD SPECIFICATIONS |        |         |         |             |            |  |  |
|----------|------------------------------|--------|---------|---------|-------------|------------|--|--|
|          |                              | WEIGHT |         |         |             | PIN LENGTH |  |  |
| ITEM#    | DESCRIPTION                  | (kg)   | OD (mm) | ID (mm) | PITCH (TPI) | (mm)       |  |  |
| AD-36468 | AWJ 1.5M                     | 7.8    | 44      | 32      | 3           | 44.45      |  |  |
| AD-36467 | AWJ 3.0M                     | 15.3   | 44      | 32      | 3           | 44.45      |  |  |

| BWJ DRILL ROD SPECIFICATIONS |             |        |         |         |             |            |  |
|------------------------------|-------------|--------|---------|---------|-------------|------------|--|
|                              |             | WEIGHT |         |         |             | PIN LENGTH |  |
| ITEM#                        | DESCRIPTION | (kg)   | OD (mm) | ID (mm) | PITCH (TPI) | (mm)       |  |
| AD-5344731                   | BWJ 1.5M    | 10     | 54      | 44      | 5           | 50.8       |  |
| AD-5344732                   | BWJ 3.0M    | 19.6   | 54      | 44      | 5           | 50.8       |  |

|          | NWJ DRILL ROD SPECIFICATIONS |        |         |         |             |            |  |  |
|----------|------------------------------|--------|---------|---------|-------------|------------|--|--|
|          |                              | WEIGHT |         |         |             | PIN LENGTH |  |  |
| ITEM#    | DESCRIPTION                  | (kg)   | OD (mm) | ID (mm) | PITCH (TPI) | (mm)       |  |  |
| AD-36738 | NWJ 1.5M                     | 12.5   | 67      | 57      | 4           | 63.5       |  |  |
| AD-36739 | NWJ 3.0M                     | 23.8   | 67      | 57      | 4           | 63.5       |  |  |

# **Auxliliary Equipment**

# ADAPTORS OVERVIEW DRILL ROD ADAPTORS

| PART NUMBER   | DESCR  | IPTION  |
|---|--|---|
| AD-AN001 AD-AH001 AD-BN001 AD-BH001 AD-NH001 AD-AN002 AD-AH002 AD-BH002 AD-BH002 AD-BH003 AD-AN003 AD-AN003 AD-NH003 AD-BA004 AD-BB004 AD-BB004 AD-NA004 AD-NA004 AD-NA004 AD-HA004 AD-HA004 AD-HA005 AD-HA005 AD-BN005 AD-NA005 AD-NA006 AD-BA006 AD-BA006 AD-BA006 AD-BA006 AD-BB006 AD-BB006 AD-BB006 | AW ROD PIN AW ROD PIN BW ROD PIN BW ROD PIN NW ROD PIN AW ROD BOX AW ROD BOX BW ROD BOX BW ROD BOX AW ROD BOX NW ROD PIN BWL ROD PIN BWL ROD PIN NWL ROD PIN NWL ROD PIN NWL ROD PIN HWL ROD PIN HWL ROD PIN HWL ROD PIN BWL ROD PIN HWL ROD BOX AWL ROD BOX BWL ROD BOX BWL ROD BOX BWL ROD BOX BWL ROD BOX | NW ROD PIN HW ROD PIN HW ROD PIN HW ROD PIN HW ROD BOX HW ROD PIN NW ROD PIN NW ROD PIN AW ROD PIN AW ROD PIN AW ROD PIN NW ROD PIN NW ROD PIN AW ROD BOX BW ROD BOX NW ROD BOX BW ROD BOX AW ROD PIN BW ROD PIN AW ROD PIN |
| AD-NA006<br>AD-NB006<br>AD-NN007  | NWL ROD BOX<br>NWL ROD BOX<br>NWL ROD BOX  | AW ROD PIN<br>BW ROD PIN<br>NW ROD PIN  |
| AD-NH007<br>AD-HA007<br>AD-HB007<br>AD-HN007  | NWL ROD BOX<br>HWL ROD BOX<br>HWL ROD BOX<br>HWL ROD BOX   | HW ROD PIN<br>AW ROD PIN<br>BW ROD PIN<br>NW ROD PIN  |
| AD-HH007  | HWL ROD BOX  | HW ROD PIN  |



# **Casing Cutters Overview**

| CASING CUTTER & SPARES |                     |          |  |  |  |  |  |
|------------------------|---------------------|----------|--|--|--|--|--|
| PART NUMBER            | DESCRIPTION         | QUANTITY |  |  |  |  |  |
| AD-5046951             | PLUNGER CASE        | 1        |  |  |  |  |  |
| AD-5046952             | O-RING              | 1        |  |  |  |  |  |
| AD-5046953             | PLUNGER             | 1        |  |  |  |  |  |
| AD-5046954             | CUTTER ARMS         | 1        |  |  |  |  |  |
| AD-5046955             | DIAMOND CUTTER      | 1        |  |  |  |  |  |
| AD-5046956             | SCREW               | 1        |  |  |  |  |  |
| AD-5046957             | SPIROL PIN          | 1        |  |  |  |  |  |
| AD-5046958             | SPRING              | 1        |  |  |  |  |  |
| AD-5046900             | BODY                | 1        |  |  |  |  |  |
| AD-5046960             | SETTING NUT         | 1        |  |  |  |  |  |
| AD-5046961             | SETTING BOLT        | 1        |  |  |  |  |  |
| AD-5046900             | NWL CASING CUTTER   |          |  |  |  |  |  |
| AD-5046950             | NW/HWL CASING CUTTE | R        |  |  |  |  |  |
| AD-5046970             | HW/PWL CASING CUTTE | ER .     |  |  |  |  |  |
| AD-5046980             | PW CASING CUTTER    |          |  |  |  |  |  |



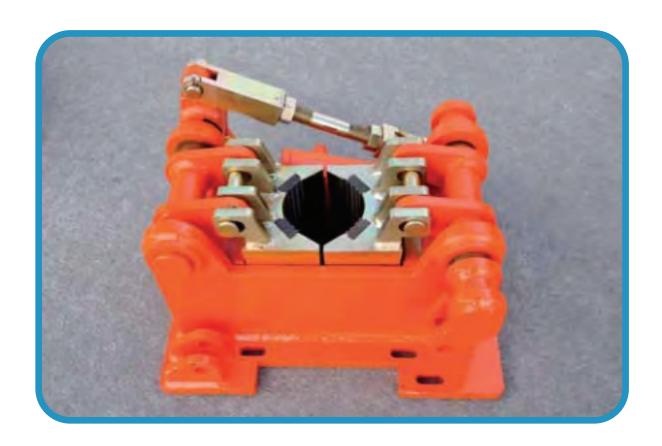


| CASING CUTTER SPARE KIT (PART # AD-S5046900) |                |          |  |  |  |  |
|--|----------------|----------|--|--|--|--|
| PART NUMBER                                  | DESCRIPTION    | QUANTITY |  |  |  |  |
| AD-5046954                                   | CUTTER ARMS    | 1        |  |  |  |  |
| AD-5046955                                   | DIAMOND CUTTER | 1        |  |  |  |  |
| AD-5046956                                   | SCREW          | 1        |  |  |  |  |
| AD-5046952                                   | O-RING         | 1        |  |  |  |  |
| AD-5046957                                   | SPIROL PIN     | 1        |  |  |  |  |
| AD-5046958                                   | SPRING         | 1        |  |  |  |  |

# **Manuel Foot Clamp**



# **Hydraulic Foot Clamp**



# **Water Swivel Overview**

| STA            | ANDARD DUTY WATER SV    | VIVEI    |
|----------------|-------------------------|----------|
| PART NUMBER    | DESCRIPTION             | QUANTITY |
| I AIXI NOMBLIX | DESCINI HON             | QUANTITI |
|                |                         |          |
| AD-5346951     | HOISTING CAP            | 1        |
| AD-5346952     | SWIVEL PACKING          | 1        |
| AD-5346953     | SPINDLE EXTENTION       | 1        |
| AD-5346954     | SWIVEL BODY CAP         | 1        |
| AD-5346955     | BEARING                 | 2        |
| AD-5346956     | SWIVEL BODY             | 1        |
| AD-5346957     | GREASE FITTING          | 1        |
| AD-5346958     | SEAL                    | 1        |
| AD-5346900     | SWIVEL                  | 1        |
| AD-5346960     | BOLT                    | 1        |
| AD-5346961     | NUT                     | 1        |
| AD-5346962     | HOSE ADAPTER            | 1        |
| AD-5346950     | <b>BWL WATER SWIVEL</b> |          |
| AD-5346970     | NWL WATER SWIVEL        |          |
| AD-5346980     | HWL WATER SWIVEL        |          |
| AD-5346990     | PWL WATER SWIVEL        |          |
|                |                         |          |

|                          | HEAVY DUTY WATER SWIVEL    |          |
|--------------------------|----------------------------|----------|
| PART NUMBER              | DESCRIPTION                | QUANTITY |
| AD-5246951               | HOISTING CAP               | 1        |
| AD-5246952               | COMPRESSION SPRING         | 1        |
| AD-5246953               | SWIVEL PACKING             | 1        |
| AD-5246954               | O-RING                     | 1        |
| AD-5246955               | PACKAGE HOUSING            | 1        |
| AD-5246955<br>AD-5246956 | SPINDLE NUT                | 1        |
| AD-5246956<br>AD-5246957 | LOCK WASHER                | 1        |
| ,                        | RETAINING RING             | 1        |
| AD-5246958               | 112171111110               | 1        |
| AD-5246900               | BALL BEARING               | 1        |
| AD-5246960               | SPINDLE EXTENSION          | 1        |
| AD-5246961               | SPINDLE                    | 1        |
| AD-5246962               | BALL THRUST BEARING        | 1        |
| AD-5246963               | SWIVEL BODY                | 1        |
| AD-5246964               | GREASE FITTING             | 1        |
| AD-5346965               | HOSE ADAPTER               | 1        |
| AD-5346966               | ADAPTER                    | 1        |
| AD-5246950               | BWL HEAVY DUTY WATER SWIVE | EL       |
| AD-5246970               | NWL HEAVY DUTY WATER SWIVE | EL       |
| AD-5246980               | HWL HEAVY DUTY WATER SWIVE | EL       |
| AD-5246990               | PWL HEAVY DUTY WATER SWIVE | EL       |



# **Hoisting Plug Overview**

| ST          | ANDARD HOISTING PLUG     |          |
|-------------|--------------------------|----------|
| PART NUMBER | DESCRIPTION              | QUANTITY |
| AD-5346851  | LOCK NUT                 | 1        |
| AD-5346852  | WASHER                   | 1        |
| AD-5346853  | THRUST BEARING           | 1        |
| AD-5346854  | HOISTING PLUG BODY       | 1        |
| AD-5346855  | GREASE FITTING           | 2        |
| AD-5346856  | HANGER BEARING           | 1        |
| AD-5346857  | DRILL ROD ADAPTER        | 1        |
| AD-5346850  | <b>BWL HOISTING PLUG</b> |          |
| AD-5346870  | NWL HOISTING PLUG        |          |
| AD-5346880  | HWL HOISTING PLUG        |          |
| AD-5346890  | PWL HOISTING PLUG        |          |



# **Loading Chamber & Spares**

| BWL/NWL/HWL | LOADING CHAMBER (PART # A | D-5342493) |
|-------------|---------------------------|------------|
| PART NUMBER | DESCRIPTION               | QUANTITY   |
| AD-5341817  | PACKING PLUG              | 1          |
| AD-5341816  | CABLE GUIDE WASHER 3/16"  | 3          |
| AD-52546    | CABLE PACKING             | 2          |
| AD-014597   | QUICK COUPLER TIP 16NPT   | 1          |
| AD-5342495  | LOADING CHAMBER BODY      | 1          |





# **Recovery Tools**

|             | RECOVERY TAP               |
|-------------|----------------------------|
| PART NUMBER | DESCRIPTION                |
| AD-BL001    | BWL DRILL ROD RECOVERY TAP |
| AD-NL001    | NWL DRILL ROD RECOVERY TAP |
| AD-HL001    | HWL DRILL ROD RECOVERY TAP |
| AD-PL001    | PWL DRILL ROD RECOVERY TAP |
| AD-BW001    | BW DRILL ROD RECOVERY TAP  |
| AD-NW001    | NW DRILL ROD RECOVERY TAP  |
| AD-BC001    | BW CASING RECOVERY TAP     |
| AD-NC001    | NW CASING RECOVERY TAP     |
| AD-HC001    | HW CASING RECOVERY TAP     |
| AD-PC001    | PW CASING RECOVERY TAP     |

|             | RECOVERY BELL               |
|-------------|-----------------------------|
| PART NUMBER | DESCRIPTION                 |
| AD-BL002    | BWL DRILL ROD RECOVERY BELL |
| AD-NL002    | NWL DRILL ROD RECOVERY BELL |
| AD-HL002    | HWL DRILL ROD RECOVERY BELL |
| AD-PL002    | PWL DRILL ROD RECOVERY BELL |
| AD-BW002    | BW DRILL ROD RECOVERY BELL  |
| AD-NW002    | NW DRILL ROD RECOVERY BELL  |
| AD-BC002    | BW CASING RECOVERY BELL     |
| AD-NC002    | NW CASING RECOVERY BELL     |
| AD-HC002    | HW CASING RECOVERY BELL     |
| AD-PC002    | PW CASING RECOVERY BELL     |
|             |                             |





# Inner Tube & Outer Tube Wrenches

|      | WEIGHT                  | (kg.)                   | DIAM                    | IETER                   | INNED TUDE                            | OUTED TUDE                            |
|------|-------------------------|-------------------------|-------------------------|-------------------------|---------------------------------------|---------------------------------------|
| SIZE | Inner<br>Tube<br>Wrench | Outer<br>Tube<br>Wrench | Inner<br>Tube<br>Wrench | Outer<br>Tube<br>Wrench | INNER TUBE<br>WRENCHES<br>PRODUCT NO. | OUTER TUBE<br>WRENCHES<br>PRODUCT NO. |
| BWL  | 1.5                     | 1.9                     | 43 mm                   | 56 mm                   | ITW-B43-1500                          | OTW-B56-1900                          |
| NWL  | 1.9                     | 3.4                     | 56 mm                   | 73 mm                   | ITW-N56-1900                          | OTW-N73-3400                          |
| HWL  | 3.4                     | 4.4                     | 73 mm                   | 92 mm                   | ITW-H73-3400                          | OTW-H92-4400                          |
| PWL  | 4.3                     | 7.3                     | 95 mm                   | 117 mm                  | ITW-P95-4300                          | OTW-P117-7300                         |
| T46  | 1.3                     | 1.5                     | 37 mm                   | 45 mm                   | ITW-T46-1300                          | OTW-T46-1500                          |
| T56  | 1.6                     | 1.9                     | 47 mm                   | 56 mm                   | ITW-T56-1600                          | OTW-T56-1900                          |
| T66  | 1.9                     | 2.4                     | 56 mm                   | 65 mm                   | ITW-T66-1900                          | OTW-T66-2400                          |
| T76  | 2.5                     | 3.5                     | 67 mm                   | 76 mm                   | ITW-T76-2500                          | OTW-T76-3500                          |
| T86  | 3.6                     | 4                       | 77 mm                   | 85 mm                   | ITW-T86-3600                          | OTW-T86-4000                          |



# **Geotechnical And Soil Improvement**

#### **Split Tube Sampler**

SPT Split tube sampler is utilized in the 'Standard Test Method for Standard Penetration Test (SPT) and Split-Barrel Sampling of Soils', used for determining the bearing capacity of the material. SPT Split tube sampler is designed for non-cohesive soil formation such as sands and gravels from which it is virtually impossible to obtain undisturbed samples, where samples taken this way are considered disturbed. SPT Split Tube Sampler is manufactured from high tensile alloy steel tube and SPT Shoe is heat treated to be hardened in order to give an optimum wear resistance.

|             | OUTER DIAMETER of | Rod        |
|-------------|-------------------|------------|
| PART#       | Sampler           | Connection |
| AD-ST001-01 | 2" (50,8mm)       | AW-BW      |
| AD-ST002-01 | 2 ½ " (60,3mm)    | AW-BW      |
| AD-ST003-01 | 3" (76mm)         | AW-BW      |
| AD-ST004-01 | 3 1/2" (88,9mm)   | AW-BW      |



Other diameters and rod connections can also be manufactured according to client request. Both rod connections are available at each SPT Split Tube Sampler as AW-BW rod.

### **Shelby Tube Sampler**

Shelby Tube Sampler is utilized in the 'Standard Practice for Thin-Walled Tube Sampling of Soils for Geotechnical Purposes', used for sampling undisturbed samples of cohesive silts and soft clays. This sampler should be forced into the soil by pressing under steady pressure in order to take sample.

| PART#       | OUTER DIAMETER of Sampler | Rod<br>Connection |
|-------------|---------------------------|-------------------|
| AD-SB001-01 | 2" (50,8mm)               | AW                |
| AD-SB002-01 | 2 ½ " (63,5mm)            | AW                |
| AD-SB003-01 | 3" (76mm)                 | NW                |
| AD-SB004-01 | 3 1/2" (88,9mm)           | NW                |



#### **SPT Hammer**

We are supplying Automatic SPT Hammer and Hydraulic SPT Hammer that are of high quality for reasoneable price, Standard Penetration Test (SPT).

Usage of Automatic SPT Hammer; SPT Drive Rods and a Split Tube Sampler are connected to base of the anvil of Automatic SPT Hammer and driven into the ground by the falling weight of 63.5 kg complete mechanism by automatically.

The overall length of the hammer is 2.6 m extended and 1.8 m when no extended. The total weight of the hammer is 107 kg.

Additionally to Automatic SPT Hammer, Hydraulic SPT Hammer is designed to be operated by hydraulic driven of machine. Hammer weight is 63.5kg (140lbs) and hammer travel distance is 76.2cm.

#### **Automatic SPT Hammer**

AITC provides our clients high quality Automatic Drive Hammer for Standard Penetration Test (SPT).

SPT Drive Rods and a Split Tube Sampler are connected to base of the anvil of Automatic Drive Hammer and driven into the ground by the falling weight of 63.5 kg to complete mechanism by automatically.

The overall length of the hammer is 2.6 m extended and 1.8 m when no extended. The total weight of the hammer is 107 kg.



#### SPT HYDRAULIC HAMMER

Hammer Weight: 63.5 kg - 140 lbs Hammer Travel Distance: 76.2 cm - 30"



#### **DRIVE HAMMER**

There is another options for drive hammer, Barkom offers 63,5 kg Drive Hammer made from high quality cast iron forged steel eyebolts and extra heavy provide safety and wearing qualities.



#### NOTE:

Motor Requirement for Hydraulic SPT Hammer; Maximum Flow Rate: 60 l/min = 15.85 gpm Maximum Pressure: 140 bar = 2030.5 psi Motor can work with open spool control valve also.

### Auger

AITC offers best quality auger and auger bit for geotechnical drilling application to clients. Following standard sizes are available in product range;

| PART#      | HOL   | E SIZE | DIAME | ETER | PIT      | СН  | HE<br>CON  |    |      | OCK<br>NGHT | WEIG   | GHT   |
|------------|-------|--------|-------|------|----------|-----|------------|----|------|-------------|--------|-------|
|            | in    | mm     | in    | mm   | in       | mm  | in         | mm | ft   | m           | lb     | kg    |
| AD-0002-90 | 2 1/2 | 64     | 2 3/8 | 60   | 2        | 51  | 13/16      | 21 | 3    | 0.91        | 12.00  | 5.40  |
| AD-0002-15 | 2 1/2 | 04     | 2 3/0 | 00   |          | 31  | 13/10      | 21 | 5    | 1.50        | 18.00  | 8.20  |
| AD-0003-90 | 3     | 76     | 2 5/8 | 67   | 2        | 51  | 13/16      | 21 | 3    | 0.91        | 14.00  | 6.40  |
| AD-0003-15 | 3     | 70     | 2 3/0 | 07   |          | 31  | 13/10      | 21 | 5    | 1.50        | 22.00  | 10.00 |
| AD-0032-90 |       |        |       |      | 3        |     |            |    | 3    | 0.91        | 18.00  | 8.20  |
| AD-0032-15 | 3 1/2 | 89     | 3 1/4 | 83   | 1/3      | 85  | 1 1/8      | 29 | 5    | 1.50        | 30.00  | 13.60 |
| AD-0032-31 |       |        |       |      |          |     |            |    | 10   | 3.10        | 61.00  | 27.70 |
| AD-0033-90 | 3 3/4 | 95     | 3 1/2 | 89   | 3<br>1/3 | 85  | 13/16      | 21 | 3    | 0.91        | 18.00  | 8.20  |
| AD-0042-90 |       |        |       |      | 2        |     |            |    | 3    | 0.91        | 22.00  | 10.00 |
| AD-0042-15 | 4 1/2 | 114    | 4     | 102  | 3<br>1/3 | 85  | 1 1/8   29 | 5  | 1.50 | 34.00       | 15.40  |       |
| AD-0042-31 |       |        |       |      | 1/3      |     |            |    | 10   | 3.10        | 70.00  | 31.80 |
| AD-0005-90 | 5     | 127    | 4 1/2 | 114  | 4        | 102 | 1 1/8      | 29 | 3    | 0.91        | 27.00  | 12.20 |
| AD-0005-15 | 5     | 127    | 4 1/2 | 114  | 4        | 102 | 1 1/0      | 29 | 5    | 1.50        | 36.00  | 16.30 |
| AD-0006-90 | 6     | 152    | 5 1/2 | 140  | 5        | 127 | 1 1/8      | 29 | 3    | 0.91        | 26.00  | 11.80 |
| AD-0006-15 | 0     | 102    | 0 1/2 | 140  | 3        | 121 | 1 1/0      | 23 | 5    | 1.50        | 40.00  | 18.10 |
| AD-0043-90 |       |        |       |      | 3        |     |            |    | 3    | 0.91        | +      | +     |
| AD-0043-15 | 4 1/2 | 114    | 4     | 102  | 1/3      | 85  | 1 5/8      | 41 | 5    | 1.50        | 54.00  | 24.50 |
| AD-0043-31 |       |        |       |      | 1/0      |     |            |    | 10   | 3.00        | 104.00 | 47.20 |
| AD-0052-15 | 5     | 127    | 4 1/2 | 114  | 4        | 102 | 1 5/8      | 41 | 5    | 1.50        | 54.00  | 24.50 |
| AD-0052-31 | 3     | 121    | 4 1/2 | 114  | 7        | 102 | 1 3/0      | 71 | 10   | 3.00        | 106.00 | 48.10 |
| AD-0061-15 | 6     | 152    | 5 1/2 | 140  | 5        | 127 | 1 5/8      | 41 | 5    | 1.50        | 58.00  | 26.30 |
| AD-0061-31 | 0     | 132    | 3 1/2 | 140  | 3        | 121 | 1 3/0      | 41 | 10   | 3.00        | 115.00 | 50.30 |
| AD-0007-10 | 7     | 178    | 6     | 152  | 5        | 127 | 1 5/8      | 41 | 5    | 1.50        | 64.00  | 29.00 |
| AD-0008-15 | 8     | 203    | 7     | 178  | 7        | 178 | 1 5/8      | 41 | 5    | 1.50        | 72.00  | 32.70 |
| AD-0008-31 | O     | 203    | /     | 170  | ′        | 170 | 1 3/0      | 41 | 10   | 3.00        | 138.00 | 63.00 |
| AD-0010-15 | 10    | 254    | 8 1/2 | 225  | 7        | 178 | 1 5/8      | 41 | 5    | 1.50        | +      | +     |
| AD-0012-15 | 12    | 305    | 10    | 254  | 8        | 203 | 1 5/8      | 41 | 5    | 1.50        | +      | +     |



#### **Drill pipes**

A drill pipe is a high-strength steel pipe used in drilling. Depending on the drilling method and purpose of drilling, pipes come in different thickness and lengths, with the most common lengths being 3-10 meters. Drill pipes are joined together one by one as the drill progresses deeper into the bedrock. Together, the pipes form a drill string, which can extend several kilometers down into the ground.

Each drill pipe consists of three parts welded together, a central portion and two end pieces. The end piece contains either a male ("pin") or a female ("box") thread, which permits interconnection of two drill pipes. The entire drill string is subjected to extremely high loads during drilling, and the thread is always the most critical part in each pipe. If for any reason the male and female thread do not fit exactly into each other, the thread will most probably break and you will lose your entire drill string.

Driconeq focuses on this critical point. We have the experience and knowledge to customize your drill pipe to match the conditions you are drilling in. Our end pieces are manufactured in a high-quality steel which is then tempered to achieve a superior durability. Our technique extends the thread's lifespan by over 50% compared with steel grade 4140 that is frequently used.

#### **Drilling accessories**

In a drilling operation you need more than drill pipes to obtain a complete drill string, from the drilling rig to the drill bit. The construction of a drill string varies depending on the drilling method used, requirements on hole quality and the ground conditions.

Regardless of which drilling method you use, or what accessories you need, Driconeq will customise a complete solution for you. Our accessories have the same high quality as our drill pipes, so we can ensure maximum life for your entire drill string. Our meticulous production and delivery processes ensure that each part fits with the next, providing a reliable complete solution tailored to your wishes.

#### **Hdd Drilling**

Directional boring, commonly called horizontal directional drilling or HDD, is a steerable trenchless method of installing underground pipe, conduit, or cable in a shallow arc along a prescribed bore path by using a surface-launched drilling rig, with minimal impact on the surrounding area.

Directional boring is used when trenching or excavating is not practical. It is suitable for a variety of soil conditions and jobs including road, landscape and river crossings. Directional boring is not practical if there are voids in the rock or incomplete layers of rock. The best material is solid rock or sedimentary material. Soils with cobblestone are not recommended. There are different types of heads used in the pilot-hole process, and they depend on the geological material.



### **DTH Drilling - Efficiency and Flexibility**

When you need to drill high quality holes with diameters between 100-254 mm, DTH (Down The Hole) drilling is by far the best and most effective method. DTH drilling can be performed in most types of rock, hard or soft. It's a commonly used method in the mining industry (blast hole drilling), waterwell drilling, construction, and in the oil and gas industry.

#### **RC Drilling - Fast and Reliable Results**

We don't always know a lot about what is hidden in the bedrock beneath our feet. There is therefore a lot we can learn, and using specialist methods we can improve our knowledge significantly. For example, with RC drilling (reversed circulation) you can find out if the bedrock is strong enough to support construction or if you can extract materials from it.



#### **DTH Drill Pipes and Adaptors**

AITC always sources high quality DTH Drill pipes and adaptors that are carefully selected seamless steel pipe and high quality alloy steel for joint tools and are precisely friction welded to ensure straightness and concentricity. These have multiple precisely heat-treated tool joints. Internally and externally upset drill rods are available.



| Outer diameter |       | Thread        | Wall thickness | Length               |             |   |             |
|----------------|-------|---------------|----------------|----------------------|-------------|---|-------------|
| mm             | inch  |               | mm             | mm                   |             |   |             |
|                |       | API 2 3/8 REG | 6.3            | 1000-4000mm          |             |   |             |
| 76             | 3     | API 2 7/8 REG | 8              | 4000 <b>-</b> Б000mm |             |   |             |
| 76             | 3     | API 3 1/2 REG |                |                      |             |   |             |
|                |       | API 4 1/2 REG |                |                      |             |   |             |
| 89             | 3 1/2 | API 2 3/8 IF  | 6.3            | 1000-4000mm          |             |   |             |
| 89             | 3 1/2 | API 2 7/8" IF | 8.8            | 4000-6000mm          |             |   |             |
| 102            | 4     | API 3 1/2" IF | 6.3            | 1500-4000mm          |             |   |             |
| 102            | 4     | API 4 1/2" IF | 8.8            | 4000-6000mm          |             |   |             |
|                |       | API 5 1/2" IF | 7.5            | 1500-4500mm          |             |   |             |
| 114            | 4 1/2 | 4 1/2         | 4 1/2          | 4 1/2                | BECO 3 1/2" | 8 | 4500-9000mm |
|                |       |               | 10             |                      |             |   |             |
|                |       |               | 8              | 1500-5000mm          |             |   |             |
| 127            | 5     |               | 10             | 5000-9000mm          |             |   |             |
|                |       |               | 12             |                      |             |   |             |
|                |       |               | 8              | 1000-4000mm          |             |   |             |
| 133            | 5 1/4 |               | 10             | 4000-12000mm         |             |   |             |
|                |       |               | 12             |                      |             |   |             |
| 140            | 5 1/2 |               | 14             | 3000-9000mm          |             |   |             |
| 140            | J 1/2 |               | 19             | 9000-12000mm         |             |   |             |

### **Eccentric Overburden Drilling System**

AITC's solution for Eccentric Overburden Drilling System is as follows:

- Rapid removal of cuttings; High penetration rate, especially in resistant rock formation.
- Easy soil and groundwater sampling during drilling.
- Possible to measure yield estimate at selected depth in the formation.
- Advantageous in unconsolidated formations with a high risk of caving.

Eccentric Overburden Drilling System Consist of Guide device, Casing shoe, Reamer, Pilot bit, Guide sleeve and Locking kits.

|         | Cas<br>siz | -          | Min.<br>inner       | Reaming |                            | Drill pipe     |      |                |
|---------|------------|------------|---------------------|---------|----------------------------|----------------|------|----------------|
| Model   | Max.<br>OD | Min.<br>ID | dia. Of casing shoe | Dia.    | Hammer shank               | Thread         | O.D. | Wrench<br>Flat |
| ODEX90  | 115        | 102        | 90                  | 123     | DHD3.5/COP32/QL30          | API 2 3/8" REG | 76   | 65             |
| ODEX115 | 142        | 128        | 115                 | 152     | DHD340/COP44/SD4/QL40/M40  | API 2 3/8" REG | 76   | 65             |
| ODEX140 | 171        | 157        | 140                 | 187     | DHD350R/COP54/SD5/QL50/M50 | API 2 3/8" REG | 89   | 65             |
| ODEX165 | 196        | 183        | 165                 | 211     | DHD360/COP64/SD6/QL60/M60  | API 2 3/8" REG | 114  | 95             |
| ODEX190 | 222        | 205        | 190                 | 237     | DHD360/COP64/SD6/QL60/M60  | API 3 1/2" REG | 114  | 95             |
| ODEX240 | 273        | 261        | 240                 | 308     | DHD380/COP84/SD8/QL80/M80  | API 3 1/2" REG | 114  | 95             |
| ODEX280 | 324        | 305        | 280                 | 378     | DHD1120/SD10/NUMA100       | API 4 1/2" REG | 114  | 95             |



# **Introduction To DTH**

DTH drilling tool is a kind of drilling system which uses compressed air as motivation, makes drilling impact motivation parts down the hole, to control the piston reciprocating motion by the distribution device in the hammer, and then impacts the DTH bit in the front of the hammer to transit the impacting power to the bit. The DTH bit in the front of the hammer breaks the rock to drill hole. At present, DTH drilling tool is widely used in underground mining, quarries, hydraulic and Hydro-Power Engineering, water well drilling, Mineral exploration, anchoring hole drilling, geothermal engineering, Subway excavation, another civil engineering. It has the advantage of high flatness, smooth hole wall, high rigidity of drill rod and hammer, independent of high axial thrust, no limit of drilling depth, low cost of devices and easiness to maintain. At the drilling hole of dia.105mm dia. 254mm, a plenty of the DTH drilling tools are used.

| HBR1, HBR2 & HBR3 DTH hammer |             |             |                |  |  |  |  |  |
|------------------------------|-------------|-------------|----------------|--|--|--|--|--|
| PARTS                        |             |             |                |  |  |  |  |  |
| Shank                        | BR1         | BR2         | BR3            |  |  |  |  |  |
| Length (without BIT)         | 760mm       | 880mm       | 889mm          |  |  |  |  |  |
| External diameter            | 54          | 62          | 82             |  |  |  |  |  |
| Top Sub Thread               | RD40 BOX    | RD50 Box    | API 2 3/8" REG |  |  |  |  |  |
| Weight (without BIT)         | 10          | 14.5        | 26             |  |  |  |  |  |
| Hole range                   | 64mm-76mm   | 70mm-90mm   | 90-110mm       |  |  |  |  |  |
| Working Pressure             | 0.7-1.75Mpa | 0.7-1.75Mpa | 0.7-1.75Mpa    |  |  |  |  |  |
| Impact rate at 1.4Mpa        | 27Hz        | 27Hz        | 25Hz           |  |  |  |  |  |
| Recommended rotation speed   | 25-40r/min  | 25-40r/min  | 25-40r/min     |  |  |  |  |  |
| Air consumption 0.7Mpa       | 1.5 m³/min  | 2.5 m³/min  | 4 m³/min       |  |  |  |  |  |
| Air consumption 1.0Mpa       | 2.5 m³/min  | 4 m³/min    | 6 m³/min       |  |  |  |  |  |
| Air consumption 1.4Mpa       | 3.0 m³min   | 5 m³min     | 8m³min         |  |  |  |  |  |

| PART LIST         |             |             |             |
|-------------------|-------------|-------------|-------------|
|                   | PART NUMBER | PART NUMBER | PART NUMBER |
| PARTS             | HBR1        | HBR2        | HBR3        |
| Shank             | BR1         | BR2         | BR3         |
| Top Sub           | BR1001      | BR2001      | BR3001      |
| Check Valve       | BR1002      | BR2002      | BR3002      |
| Spring            | BR1003      | BR2003      | BR3003      |
| Air Distributor   | BR1004      | BR2004      | BR3004      |
| Internal Cylinder | BR1005      | BR2005      | BR3005      |
| Piston            | BR1006      | BR2006      | BR3006      |
| External Cylinder | BR1007      | BR2007      | BR3007      |
| Guide Sleeve      | BR1008      | BR2008      | BR3008      |
| "O" Ring of Stop  |             |             |             |
| Ring              | BR1009      | BR2009      | BR3009      |
| Stop Ring         | BR1010      | BR2010      | BR3010      |
| Drive Chuck       | BR1011      | BR2011      | BR3011      |
| Drill Bit         | BR1012      | BR2012      | BR3012      |



Available Shanks BR1/BR2/BR3

### **HD 35 DTH hammer**

| Hammer overview            |                |  |
|----------------------------|----------------|--|
| PARTS                      | SPECIFICATIONS |  |
| Shank                      | DHD3.5         |  |
| Length (without BIT)       | 930mm          |  |
| External diameter          | 82mm           |  |
| Top Sub Thread             | API 2 3/8" REG |  |
| Weight (without BIT)       | 24.4kg         |  |
| Hole range                 | 90mm-105mm     |  |
| Working pressure           | 1.0-1.5Mpa     |  |
| Impact rate at 1.5Mpa      | 28Hz           |  |
| Recommended rotation speed | 25-40r/min     |  |
| Air consumption 1.0Mpa     | 4.5 m³/min     |  |
| Air consumption 1.5Mpa     | 9.0m³min       |  |
|                            | PART LIST      |  |
| PARTS                      | PART NUMBER    |  |
| Top Sub                    | HD3501         |  |
| "O" Ring of Top Sub        | HD3502         |  |
| Check Valve                | HD3503         |  |
| Spring                     | HD3504         |  |
| Compression Buffer         | HD3505         |  |
| Air Distributor            | HD3506         |  |
| Internal Cylinder          | HD3507         |  |
| Piston                     | HD3508         |  |
| External Cylinder          | HD3509         |  |
| "O" Ring of Stop Ring      | HD3510         |  |
| Stop Ring                  | HD3511         |  |
| Drive Chuck                | HD3512         |  |
| Drill Bit                  | HD3513         |  |



### **HD 45 DTH hammer**

| Hammer overview            |                |  |
|----------------------------|----------------|--|
| PARTS                      | SPECIFICATIONS |  |
| Shank                      | DHD340/COP44   |  |
| Length (without BIT)       | 1030mm         |  |
| External diameter          | 99mm           |  |
| Top Sub Thread             | API 2 3/8" REG |  |
| Weight (without BIT)       | 39kg           |  |
| Hole range                 | 110mm-135mm    |  |
| Working pressure           | 1.0-2.5Mpa     |  |
| Impact rate at 1.7Mpa      | 27Hz           |  |
| Recommended rotation speed | 25-40r/min     |  |
| Air consumption 1.0Mpa     | 6m³/min        |  |
| Air consumption 1.8Mpa     | 10m³/min       |  |
| Air consumption 2.4Mpa     | 15m³/min       |  |
| PART LIST                  |                |  |
| PARTS                      | PART NUMBER    |  |
| Top Sub                    | HD4501         |  |
| "O" Ring of Top Sub        | HD4502         |  |
| Check Valve                | HD4503         |  |
| Spring                     | HD4504         |  |
| Compression Buffer         | HD4505         |  |
| Air Distributor            | HD4506         |  |
| Internal Cylinder          | HD4507         |  |
| Piston                     | HD4508         |  |
| External Cylinder          | HD4509         |  |
| "O" Ring of Stop Ring      | HD4510         |  |
| Stop Ring                  | HD4511         |  |
| Drive Chuck                | HD4512         |  |
| Drill Bit                  | HD4513         |  |



#### **HSD4 DTH hammer**

| Hammer overview            |                |
|----------------------------|----------------|
| PARTS                      | SPECIFICATIONS |
| Shank                      | SD4            |
| Length (without BIT)       | 1084mm         |
| External diameter          | 99mm           |
| Top Sub Thread             | API 2 3/8" REG |
| Weight (without BIT)       | 40.5kg         |
| Hole range                 | 110mm-135mm    |
| Working pressure           | 1.0-2.5Mpa     |
| Impact rate at 1.7Mpa      | 27Hz           |
| Recommended rotation speed | 25-40r/min     |
| Air consumption 1.0Mpa     | 6m³/min        |
| Air consumption 1.8Mpa     | 10m³/min       |
| Air consumption 2.4Mpa     | 15m³/min       |
| PART LIST                  |                |
| PARTS                      | PART NUMBER    |
| Top Sub                    | HSD401         |
| "O" Ring of Top Sub        | HSD402         |
| Check Valve                | HSD403         |
| Spring                     | HSD404         |
| Compression Buffer         | HSD405         |
| Air Distributor            | HSD406         |
| Internal Cylinder          | HSD407         |
| Piston                     | HSD408         |
| External Cylinder          | HSD409         |
| "O" Ring of Stop Ring      | HSD410         |
| Stop Ring                  | HSD411         |
| Drive Chuck                | HSD412         |
| Drill Bit                  | HSD413         |



# **HQL40 DTH hammer**

| Hammer overview   |   |  |
|---|---|--|
| PARTS   | SPECIFICATIONS  |  |
| Shank   | QL40  |  |
| Length (without BIT)  | 1097mm  |  |
| External diameter   | 99mm  |  |
| Top Sub Thread  | API 2 3/8" REG  |  |
| Weight (without BIT)  | 41kg  |  |
| Hole range  | 110mm-135mm   |  |
| Working pressure  | 1.0-2.5Mpa  |  |
| Impact rate at 1.7Mpa   | 27Hz  |  |
| Recommended rotation speed  | 25-40r/min  |  |
| Air consumption 1.0Mpa  | 6m³/min   |  |
| Air consumption 1.8Mpa  | 10m³/min  |  |
| Air consumption 2.4Mpa  | 15m³/min  |  |
| PART LIST   |   |  |
| PARTS   | PART NUMBER   |  |
| Top Sub   | HQL4001   |  |
| "O" Ring of Top Sub   | HQL4002   |  |
| Check Valve   | HQL4003   |  |
| Spring  | HQL4004   |  |
|   |   |  |
| Compression Buffer  | HQL4005   |  |
| Air Distributor   | HQL4005<br>HQL4006  |  |
|   | 1   |  |
| Air Distributor   | HQL4006   |  |
| Air Distributor Internal Cylinder   | HQL4006<br>HQL4007  |  |
| Air Distributor Internal Cylinder Piston External Cylinder Guide Sleeve                                 | HQL4006<br>HQL4007<br>HQL4008   |  |
| Air Distributor Internal Cylinder Piston External Cylinder  | HQL4006<br>HQL4007<br>HQL4008<br>HQL4009                                  |  |
| Air Distributor Internal Cylinder Piston External Cylinder Guide Sleeve "O" Ring of Stop Ring Stop Ring | HQL4006<br>HQL4007<br>HQL4008<br>HQL4009<br>HQL4010<br>HQL4011<br>HQL4011 |  |
| Air Distributor Internal Cylinder Piston External Cylinder Guide Sleeve "O" Ring of Stop Ring           | HQL4006<br>HQL4007<br>HQL4008<br>HQL4009<br>HQL4010<br>HQL4011            |  |



#### **HD55 DTH hammer**

| Hammer overview            |                               |  |
|----------------------------|-------------------------------|--|
| PARTS                      | SPECIFICATIONS                |  |
| Shank                      | DHD350R/COP54                 |  |
| Length (without BIT)       | 1214mm                        |  |
| External diameter          | 125mm                         |  |
| Top Sub Thread             | API 2 3/8" REG API 3 1/2" REG |  |
| Weight (without BIT)       | 77.5kg                        |  |
| Hole range                 | 135mm-155mm                   |  |
| Working pressure           | 1.0-2.5Mpa                    |  |
| Impact rate at 1.7Mpa      | 25Hz                          |  |
| Recommended rotation speed | 20-35r/min                    |  |
| Air consumption 1.0Mpa     | 9m³/min                       |  |
| Air consumption 1.8Mpa     | 15m³/min                      |  |
| Air consumption 2.4Mpa     | 23m³/min                      |  |
| F                          | PART LIST                     |  |
| PARTS                      | PART NUMBER                   |  |
| Top Sub                    | HD5501                        |  |
| "O" Ring of Top Sub        | HD5502                        |  |
| Check Valve                | HD5503                        |  |
| Spring                     | HD5504                        |  |
| Ring                       | HD5505                        |  |
| Compression Buffer         | HD5506                        |  |
| Compression Buffer Seat    | HD5507                        |  |
| Air Distributor            | HD5508                        |  |
| Internal Cylinder          | HD5509                        |  |
| Piston                     | HD5510                        |  |
| External Cylinder          | HD5511                        |  |
| "O" Ring of Stop Ring      | HD5512                        |  |
| Stop Ring                  | HD5513                        |  |
| Drive Chuck                | HD5514                        |  |
| Drill Bit                  | HD5515                        |  |



# **HSD5 DTH hammer**

| Hammer overview            |                |
|----------------------------|----------------|
| PARTS                      | SPECIFICATIONS |
| Shank                      | SD5            |
| Length (without BIT)       | 1175mm         |
| External diameter          | 125mm          |
| Top Sub Thread             | API 3 1/2" REG |
| Weight (without BIT)       | 72.5kg         |
| Hole range                 | 135mm-155mm    |
| Working pressure           | 1.0-2.5Mpa     |
| Impact rate at 1.7Mpa      | 25Hz           |
| Recommended rotation speed | 20-35r/min     |
| Air consumption 1.0Mpa     | 9m³/min        |
| Air consumption 1.8Mpa     | 15m³/min       |
| Air consumption 2.4Mpa     | 23m³/min       |
| PART LI                    | ST             |
| PARTS                      | PART NUMBER    |
| Top Sub                    | HSD501         |
| "O" Ring of Top Sub        | HSD502         |
| Breakout Ring of Top Sub   | HSD503         |
| Check Valve                | HSD504         |
| Spring                     | HSD505         |
| Compression Buffer         | HSD506         |
| Air Distributor            | HSD507         |
| Internal Cylinder          | HSD508         |
| Piston                     | HSD509         |
| External Cylinder          | HSD510         |
| "O" Ring of Stop Ring      | HSD511         |
| Stop Ring                  | HSD512         |
| Drive Chuck                | HSD513         |
| Drill Bit                  | HSD514         |



### **HQL50 DTH Hammer**

| Hammer  | overview  |
|---|---|
| PARTS   | SPECIFICATIONS  |
| Shank   | QL50  |
| Length (without BIT)  | 1156mm  |
| External diameter   | 125mm   |
| Top Sub Thread  | API 3 1/2" REG  |
| Weight (without BIT)  | 73kg  |
| Hole range  | 135mm-155mm   |
| Working pressure  | 1.0-2.5Mpa  |
| Impact rate at 1.7Mpa   | 25Hz  |
| Recommended rotation speed  | 20-35r/min  |
| Air consumption 1.0Mpa  | 9m³/min   |
| Air consumption 1.8Mpa  | 15m³/min  |
| Air consumption 2.4Mpa  | 23m³/min  |
| PART LIST   |   |
| PARTS   | PART NUMBER   |
| Top Sub   | HQL5001   |
|   | TIQLOOOT  |
| "O" Ring of Top Sub   | HQL5002   |
|   |   |
| "O" Ring of Top Sub   | HQL5002   |
| "O" Ring of Top Sub<br>Check Valve  | HQL5002<br>HQL5003  |
| "O" Ring of Top Sub Check Valve Spring Ring Compression Buffer  | HQL5002<br>HQL5003<br>HQL5004   |
| "O" Ring of Top Sub<br>Check Valve<br>Spring<br>Ring  | HQL5002<br>HQL5003<br>HQL5004<br>HQL5005  |
| "O" Ring of Top Sub Check Valve Spring Ring Compression Buffer  | HQL5002<br>HQL5003<br>HQL5004<br>HQL5005<br>HQL5006   |
| "O" Ring of Top Sub Check Valve Spring Ring Compression Buffer Compression Buffer Seat  | HQL5002<br>HQL5003<br>HQL5004<br>HQL5005<br>HQL5006<br>HQL5007  |
| "O" Ring of Top Sub Check Valve Spring Ring Compression Buffer Compression Buffer Seat Air Distributor Internal Cylinder Piston   | HQL5002<br>HQL5003<br>HQL5004<br>HQL5005<br>HQL5006<br>HQL5007<br>HQL5008   |
| "O" Ring of Top Sub Check Valve Spring Ring Compression Buffer Compression Buffer Seat Air Distributor Internal Cylinder Piston External Cylinder                       | HQL5002<br>HQL5003<br>HQL5004<br>HQL5005<br>HQL5006<br>HQL5007<br>HQL5008<br>HQL5009                                  |
| "O" Ring of Top Sub Check Valve Spring Ring Compression Buffer Compression Buffer Seat Air Distributor Internal Cylinder Piston   | HQL5002<br>HQL5003<br>HQL5004<br>HQL5005<br>HQL5006<br>HQL5007<br>HQL5008<br>HQL5009<br>HQL5010                       |
| "O" Ring of Top Sub Check Valve Spring Ring Compression Buffer Compression Buffer Seat Air Distributor Internal Cylinder Piston External Cylinder                       | HQL5002<br>HQL5003<br>HQL5004<br>HQL5005<br>HQL5006<br>HQL5007<br>HQL5008<br>HQL5009<br>HQL5010<br>HQL5010            |
| "O" Ring of Top Sub Check Valve Spring Ring Compression Buffer Compression Buffer Seat Air Distributor Internal Cylinder Piston External Cylinder "O" Ring of Stop Ring | HQL5002<br>HQL5003<br>HQL5004<br>HQL5005<br>HQL5006<br>HQL5007<br>HQL5008<br>HQL5009<br>HQL5010<br>HQL5011<br>HQL5011 |



#### **HD65 DTH hammer**

| Hammer overview            |                |  |
|----------------------------|----------------|--|
| PARTS                      | SPECIFICATIONS |  |
| Shank                      | DHD360 / COP64 |  |
| Length (without BIT)       | 1248mm         |  |
| External diameter          | 148mm          |  |
| Top Sub Thread             | API 3 1/2" REG |  |
| Weight (without BIT)       | 100kg          |  |
| Hole range                 | 155mm-190mm    |  |
| Working pressure           | 1.0-2.5Mpa     |  |
| Impact rate at 1.7Mpa      | 23Hz           |  |
| Recommended rotation speed | 20-30r/min     |  |
| Air consumption 1.0Mpa     | 10m³/min       |  |
| Air consumption 1.8Mpa     | 20m³/min       |  |
| Air consumption 2.4Mpa     | 28.5m³/min     |  |
| PART LIST                  | Γ              |  |
| PARTS                      | PART NUMBER    |  |
| Top Sub                    | HD6501         |  |
| "O" Ring of Top Sub        | HD6502         |  |
| Check Valve                | HD6503         |  |
| Spring                     | HD6504         |  |
| Compression Buffer         | HD6505         |  |
| Air Distributor            | HD6506         |  |
| Internal Cylinder          | HD6507         |  |
| Piston                     | HD6508         |  |
| External Cylinder          | HD6509         |  |
| "O" Ring of Stop Ring      | HD6510         |  |
| Stop Ring                  | HD6511         |  |
| Guide Sleeve               | HD6512         |  |
| Drive Chuck                | HD6513         |  |
| Drill Bit                  | HD6514         |  |



#### **HSD6 DTH hammer**

| Hammer overview        |                |  |
|------------------------|----------------|--|
| PARTS                  | SPECIFICATIONS |  |
| Shank                  | SD6            |  |
| Length (without BIT)   | 1261mm         |  |
| External diameter      | 148mm          |  |
| Top Sub Thread         | API 3 1/2" REG |  |
| Weight (without BIT)   | 100kg          |  |
| Hole range             | 155mm-190mm    |  |
| Working pressure       | 1.0-2.5Mpa     |  |
| Impact rate at 1.7Mpa  | 23Hz           |  |
| Recommended rotation   |                |  |
| speed                  | 20-30r/min     |  |
| Air consumption 1.0Mpa | 10m³/min       |  |
| Air consumption 1.8Mpa | 20m³/min       |  |
| Air consumption 2.4Mpa | 28.5m³/min     |  |
| PART I                 | LIST           |  |
| PARTS                  | PART NUMBER    |  |
| Top Sub                | HSD601         |  |
| "O" Ring of Top Sub    | HSD602         |  |
| Check Valve            | HSD603         |  |
| Spring                 | HSD604         |  |
| Compression Buffer     | HSD605         |  |
| Air Distributor        | HSD606         |  |
| Internal Cylinder      | HSD607         |  |
| Piston                 | HSD608         |  |
| External Cylinder      | HSD609         |  |
| "O" Ring of Stop Ring  | HSD610         |  |
| Stop Ring              | HSD611         |  |
| Guide Sleeve           | HSD612         |  |
| Drive Chuck            | HSD613         |  |
| Drill Bit              | HSD614         |  |



Available Shanks SD6

## **HQL60 DTH hammer**

| Hammer overview            |                |
|----------------------------|----------------|
| PARTS                      | SPECIFICATIONS |
| Shank                      | QL60           |
| Length (without BIT)       | 1212mm         |
| External diameter          | 148mm          |
| Top Sub Thread             | API 3 1/2" REG |
| Weight (without BIT)       | 95kg           |
| Hole range                 | 155mm-190mm    |
| Working pressure           | 1.0-2.5Mpa     |
| Impact rate at 1.7Mpa      | 23Hz           |
| Recommended rotation speed | 20-30r/min     |
| Air consumption 1.0Mpa     | 10m³/min       |
| Air consumption 1.8Mpa     | 20m³/min       |
| Air consumption 2.4Mpa     | 28.5m³/min     |
| PART LIST                  |                |
| PARTS                      | PART NUMBER    |
| Top Sub                    | HQL6001        |
| "O" Ring of Top Sub        | HQL6002        |
| Check Valve                | HQL6003        |
| Spring                     | HQL6004        |
| Compression Buffer         | HQL6005        |
| Air Distributor            | HQL6006        |
| Internal Cylinder          | HQL6007        |
| Piston                     | HQL6008        |
| External Cylinder          | HQL6009        |
| Guide Sleeve               | HQL6010        |
| "O" Ring of Stop Ring      | HQL6011        |
| <del></del>                | HQL6012        |
| Stop Ring                  | 11020012       |
| Stop Ring Drive Chuck      | HQL6013        |



Available Shanks QL60

#### **HD85 DTH hammer**

| Hammer overview            |                |  |
|----------------------------|----------------|--|
| PARTS                      | SPECIFICATIONS |  |
| Shank                      | DHD380/Cop84   |  |
| Length (without BIT)       | 1492mm         |  |
| External diameter          | 185mm          |  |
| Top Sub Thread             | API 4 1/2" REG |  |
| Weight (without BIT)       | 187kgs         |  |
| Hole range                 | 195mm-254mm    |  |
| Working pressure           | 1.0-2.5Mpa     |  |
| Impact rate at 1.7Mpa      | 20Hz           |  |
| Recommended rotation speed | 20-30r/min     |  |
| Air consumption 1.0Mpa     | 15 m³/min      |  |
| Air consumption 1.8Mpa     | 26 m³/min      |  |
| Air consumption 2.4Mpa     | 34 m³/min      |  |
| PART L                     | IST            |  |
| PARTS                      | PART NUMBER    |  |
| Top Sub                    | HD8501         |  |
| "O" Ring of Top Sub        | HD8502         |  |
| Breakout Ring of Top Sub   | HD8503         |  |
| Check Valve                | HD8504         |  |
| Spring                     | HD8505         |  |
| Compression Buffer         | HD8506         |  |
| Air Distributor            | HD8507         |  |
| Internal Cylinder          | HD8508         |  |
| Piston                     | HD8509         |  |
| External Cylinder          | HD8510         |  |
| "O" Ring of Stop Ring      | HD8511         |  |
| Stop Ring                  | HD8512         |  |
| Drive Chuck                | HD8513         |  |
| Drill Bit                  | HD8514         |  |



Available Shanks DHD380/COP84

#### **HSD8 DTH hammer**

| Hammer overview            |                |  |
|----------------------------|----------------|--|
| PARTS                      | SPECIFICATIONS |  |
| Shank                      | SD8            |  |
| Length (without BIT)       | 1463mm         |  |
| External diameter          | 185mm          |  |
| Top Sub Thread             | API 4 1/2" REG |  |
| Weight (without BIT)       | 192kg          |  |
| Hole range                 | 195mm-254mm    |  |
| Working pressure           | 1.0-2.5Mpa     |  |
| Impact rate at 1.7Mpa      | 20Hz           |  |
| Recommended rotation speed | 15-25r/min     |  |
| Air consumption 1.0Mpa     | 15 m³/min      |  |
| Air consumption 1.8Mpa     | 26 m³/min      |  |
| Air consumption 2.4Mpa     | 34 m³/min      |  |
| PART LIS                   | PART LIST      |  |
| PARTS                      | PART NUMBER    |  |
| Top Sub                    | HSD801         |  |
| "O" Ring of Top Sub        | HSD802         |  |
| Breakout Ring of Top Sub   | HSD803         |  |
| Check Valve                | HSD804         |  |
| Spring                     | HSD805         |  |
| Compression Buffer         | HSD806         |  |
| Air Distributor            | HSD807         |  |
| Internal Cylinder          | HSD808         |  |
| Piston                     | HSD809         |  |
| External Cylinder          | HSD810         |  |
| "O" Ring of Stop Ring      | HSD811         |  |
| Stop Ring                  | HSD812         |  |
| Guide Sleeve               | HSD813         |  |
| Drive Chuck                | HSD814         |  |
| Drill Bit                  | HSD815         |  |



Available Shanks SD8

### **HQL80 DTH hammer**

| Hammer over                  | erview         |
|------------------------------|----------------|
| PARTS                        | SPECIFICATIONS |
| Shank                        | QL80           |
| Length (without BIT)         | 1465mm         |
| External diameter            | 185mm          |
| Top Sub Thread               | API 4 1/2" REG |
| Weight (without BIT)         | 182kgs         |
| Hole range                   | 195mm-254mm    |
| Working pressure             | 1.0-2.5Mpa     |
| Impact rate at 1.7Mpa        | 20Hz           |
| Recommended rotation speed   | 15-25r/min     |
| Air consumption 1.0Mpa       | 15 m³/min      |
| Air consumption 1.8Mpa       | 26 m³/min      |
| Air consumption 2.4Mpa       | 34 m³/min      |
| PART LI                      | ST             |
| PARTS                        | PART NUMBER    |
| Top Sub                      | HQL8001        |
| "O" Ring of Top Sub          | HQL8002        |
| Breakout Ring of Top Sub     | HQL8003        |
| Check Valve                  | HQL8004        |
| Spring                       | HQL8005        |
| Compression Buffer           | HQL8006        |
| Air Distributor              | HQL8007        |
| Internal Cylinder            | HQL8008        |
| Piston                       | HQL8009        |
| External Cylinder            | HQL8010        |
| Guide Sleeve                 | HQL8011        |
| "O" Ring of Stop Ring        | HQL8012        |
| Stop Ring                    | HQL8013        |
| Breakout Ring of Drive Chuck | HQL8014        |
| Drive Chuck                  | HQL8015        |
| Drill Bit                    | HQL8016        |



Available Shanks QL80

#### **HSD10 DTH hammer**

| Hammer overview              |                               |
|------------------------------|-------------------------------|
| PARTS                        | SPECIFICATIONS                |
| Shank                        | SD10                          |
| Length (without BIT)         | 1502mm                        |
| External diameter            | 225mm                         |
|                              | API 4 1/2" REG API 5 1/2" REG |
| Top Sub Thread               | API 6 5/8" REG                |
| Weight (without BIT)         | 290kg                         |
| Hole range                   | 254mm-311mm                   |
| Working pressure             | 1.0-2.5Mpa                    |
| Impact rate at 1.7Mpa        | 18Hz                          |
| Recommended rotation speed   | 15-25r/min                    |
| Air consumption 1.0Mpa       | 22 m³/min                     |
| Air consumption 1.8Mpa       | 40 m³/min                     |
| Air consumption 2.4Mpa       | 55 m³/min                     |
| PART LIST                    |                               |
| PARTS                        | PART NUMBER                   |
| Top Sub                      | HSD1001                       |
| "O" Ring of Top Sub          | HSD1002                       |
| Breakout Ring of Top Sub     | HSD1003                       |
| Check Valve                  | HSD1004                       |
| Spring                       | HSD1005                       |
| Air Distributor              | HSD1006                       |
| Internal Cylinder            | HSD1007                       |
| Piston                       | HSD1008                       |
| External Cylinder            | HSD1009                       |
| Piston Retaining Ring        | HSD1010                       |
| "O" Ring of Stop Ring        | HSD1011                       |
| Stop Ring                    | HSD1012                       |
| Guide Sleeve                 | HSD1013                       |
| Breakout Ring of Drive Chuck | HSD1014                       |
| Drive Chuck                  | HSD1015                       |
| Drill Bit                    | HSD1016                       |



#### **HN100 DTH hammer**

| Hammer overview              |                |
|------------------------------|----------------|
| PARTS                        | SPECIFICATIONS |
| Shank                        | NUMA100        |
| Length (without BIT)         | 1510mm         |
| External diameter            | 225mm          |
| Top Sub Thread               | API 6 5/8"REG  |
| Weight (without BIT)         | 288kg          |
| Hole range                   | 254mm-311mm    |
| Working pressure             | 1.0-2.5Mpa     |
| Impact rate at 1.7Mpa        | 18Hz           |
| Recommended rotation speed   | 15-25r/min     |
| Air consumption 1.0Mpa       | 22 m³/min      |
| Air consumption 1.8Mpa       | 45 m³/min      |
| Air consumption 2.4Mpa       | 60 m³/min      |
| PART LI                      | ST             |
| PARTS                        | PART NUMBER    |
| Top Sub                      | HN10001        |
| "O" Ring of Top Sub          | HN10002        |
| Breakout Ring of Top Sub     | HN10003        |
| Check Valve                  | HN10004        |
| Spring                       | HN10005        |
| Air Distributor              | HN10006        |
| Internal Cylinder            | HN10007        |
| Piston                       | HN10008        |
| External Cylinder            | HN10009        |
| Piston Retaining Ring        | HN10010        |
| "O" Ring of Stop Ring        | HN10011        |
| Stop Ring                    | HN10012        |
| Breakout Ring of Drive Chuck | HN10013        |
| Drive Chuck                  | HN10014        |
| Drill Bit                    | HN10015        |



Available Shanks NUMA100

#### **HSD12 DTH hammer**

| Hammer overviev          | V              |
|--------------------------|----------------|
| PARTS                    | SPECIFICATIONS |
| Shank                    | SD12           |
| Length (without BIT)     | 1880mm         |
| External diameter        | 275mm          |
| Top Sub Thread           | API 6 5/8" REG |
| Weight (without BIT)     | 487kg          |
| Hole range               | 305mm-445mm    |
| Working pressure         | 1.0-2.5Mpa     |
| Impact rate at 1.7Mpa    | 16Hz           |
| Recommended rotation     |                |
| speed                    | 15-25r/min     |
| Air consumption 1.0Mpa   | 30 m³/min      |
| Air consumption 1.8Mpa   | 56 m³/min      |
| Air consumption 2.4Mpa   | 78 m³/min      |
| PART LIST                |                |
| PARTS                    | PART NUMBER    |
| Top Sub                  | HSD1201        |
| "O" Ring of Top Sub      | HSD1202        |
| Breakout Ring of Top Sub | HSD1203        |
| Check Valve              | HSD1204        |
| Spring                   | HSD1205        |
| Air Distributor          | HSD1206        |
| Internal Cylinder        | HSD1207        |
| Piston                   | HSD1208        |
| External Cylinder        | HSD1209        |
| Piston Retaining Ring    | HSD1210        |
| "O" Ring of Stop Ring    | HSD1211        |
| Stop Ring                | HSD1212        |
| Guide Sleeve             | HSD1213        |
| Breakout Ring of Drive   |                |
| Chuck                    | HSD1214        |
| Drive Chuck              | HSD1215        |
| Drill Bit                | HSD1216        |



Available Shanks SD12

#### **HD1120 DTH hammer**

| Hammer overview              |                |
|------------------------------|----------------|
| PARTS                        | SPECIFICATIONS |
| Shank                        | DHD1120        |
| Length (without BIT)         | 1900mm         |
| External diameter            | 275mm          |
| Top Sub Thread               | API 6 5/8"REG  |
| Weight (without BIT)         | 480kgs         |
| Hole range                   | 305mm-445mm    |
| Working pressure             | 1.0-2.5Mpa     |
| Impact rate at 1.7Mpa        | 16Hz           |
| Recommended rotation speed   | 15-25r/min     |
| Air consumption 1.0Mpa       | 30 m³/min      |
| Air consumption 1.8Mpa       | 56 m³/min      |
| Air consumption 2.4Mpa       | 78 m³/min      |
| PART LIST                    |                |
| PARTS                        | PART NUMBER    |
| Top Sub                      | HD12001        |
| "O" Ring of Top Sub          | HD12002        |
| Breakout Ring of Top Sub     | HD12003        |
| Check Valve                  | HD12004        |
| Spring                       | HD12005        |
| Compression Buffer           | HD12006        |
| Air Distributor              | HD12007        |
| Internal Cylinder            | HD12008        |
| Piston                       | HD12009        |
| External Cylinder            | HD12010        |
| Guide Sleeve                 | HD12011        |
| "O" Ring of Stop Ring        | HD12012        |
| Stop Ring                    | HD12013        |
| Breakout Ring of Drive Chuck | HD12014        |
| Drive Chuck                  | HD12015        |
| Drill Bit                    | HD12016        |



#### **HN120 DTH hammer**

| Hammer overview              |                |
|------------------------------|----------------|
| PARTS                        | SPECIFICATIONS |
| Shank                        | NUMA120        |
| Length (without BIT)         | 1900mm         |
| External diameter            | 275mm          |
| Top Sub Thread               | API 6 5/8"REG  |
| Weight (without BIT)         | 487kg          |
| Hole range                   | 305mm-445mm    |
| Working pressure             | 1.0-2.5Mpa     |
| Impact rate at 1.7Mpa        | 16Hz           |
| Recommended rotation speed   | 15-25r/min     |
| Air consumption 1.0Mpa       | 30 m³/min      |
| Air consumption 1.8Mpa       | 56 m³/min      |
| Air consumption 2.4Mpa       | 78 m³/min      |
| PART LIST                    |                |
| PARTS                        | PART NUMBER    |
| Top Sub                      | N12001         |
| "O" Ring of Top Sub          | N12002         |
| Breakout Ring of Top Sub     | N12003         |
| Check Valve                  | N12004         |
| Spring                       | N12005         |
| Compression Buffer           | N12006         |
| Air Distributor              | N12007         |
| Internal Cylinder            | N12008         |
| Piston                       | N12009         |
| External Cylinder            | N12010         |
| Guide Sleeve                 | N12011         |
| "O" Ring of Stop Ring        | N12012         |
| Stop Ring                    | N12013         |
| Breakout Ring of Drive Chuck | N12014         |
| Drive Chuck                  | N12015         |
| Drill Bit                    | N12016         |



Available Shanks NUMA120

#### **HN125 DTH hammer**

| Hammer overview              |                |
|------------------------------|----------------|
| PARTS                        | SPECIFICATIONS |
| Shank                        | NUMA125        |
| Length (without BIT)         | 1900mm         |
| External diameter            | 275mm          |
| Top Sub Thread               | API 6 5/8"REG  |
| Weight (without BIT)         | 480kg          |
| Hole range                   | 305mm-445mm    |
| Working pressure             | 1.0-2.5Mpa     |
| Impact rate at 1.7Mpa        | 16Hz           |
| Recommended rotation speed   | 15-25r/min     |
| Air consumption 1.0Mpa       | 30m³/min       |
| Air consumption 1.8Mpa       | 56m³/min       |
| Air consumption 2.4Mpa       | 78m³/min       |
| PART LIST                    |                |
| PARTS                        | PART NUMBER    |
| Top Sub                      | HN12501        |
| "O" Ring of Top Sub          | HN12502        |
| Breakout Ring of Top Sub     | HN12503        |
| Check Valve                  | HN12504        |
| Spring                       | HN12505        |
| Compression Buffer           | HN12506        |
| Air Distributor              | HN12507        |
| Internal Cylinder            | HN12508        |
| Piston                       | HN12509        |
| External Cylinder            | HN12510        |
| "O" Ring of Stop Ring        | HN12511        |
| Stop Ring                    | HN12512        |
| Breakout Ring of Drive Chuck | HN12513        |
| Drive Chuck                  | HN12514        |
| Drill Bit                    | HN12515        |



# **HIGH AIR PRESSURE DTH**

### **HD35A DTH hammer**

| Hammer overview            |                |
|----------------------------|----------------|
| PARTS                      | SPECIFICATIONS |
| Shank                      | DHD3.5         |
| Length (without BIT)       | 888mm          |
| External diameter          | 82mm           |
| Top Sub Thread             | API 2 3/8" REG |
| Weight (without BIT)       | 25kg           |
| Hole range                 | 90mm-105mm     |
| Working pressure           | 1.0-1.5Mpa     |
| Impact rate at 1.5Mpa      | 25Hz           |
| Recommended rotation speed | 25-40r/min     |
| Air consumption 1.0Mpa     | 3.8m³/min      |
| Air consumption 1.5Mpa     | 7.5m³/min      |
| PART LIST                  |                |
| PARTS                      | PART NUMBER    |
| Top Sub                    | HD35A01        |
| "O" Ring of Top Sub        | HD35A02        |
| Check Valve                | HD35A03        |
| Spring                     | HD35A04        |
| Air Distributor            | HD35A05        |
| Internal Cylinder          | HD35A06        |
| Piston                     | HD35A07        |
| External Cylinder          | HD35A08        |
| Guide Sleeve               | HD35A09        |
| "O" Ring of Stop Ring      | HD35A10        |
| Stop Ring                  | HD35A11        |
| Drive Chuck                | HD35A12        |
| Drill Bit                  | HD35A13        |



Available Shanks DHD3.5

### **HM30A DTH hammer**

| Hammer overview            |                |
|----------------------------|----------------|
| PARTS                      | SPECIFICATIONS |
| Shank                      | Mission30      |
| Length (without BIT)       | 888mm          |
| External diameter          | 82mm           |
| Top Sub Thread             | API 2 3/8" REG |
| Weight (without BIT)       | 25kg           |
| Hole range                 | 90mm-105mm     |
| Working pressure           | 1.0-1.5Mpa     |
| Impact rate at 1.5Mpa      | 25Hz           |
| Recommended rotation speed | 25-40r/min     |
| Air consumption 1.0Mpa     | 3.8m³/min      |
| Air consumption 1.5Mpa     | 7.5m³/min      |
| PART LIST                  |                |
| PARTS                      | PART NUMBER    |
| Top Sub                    | M30A01         |
| "O" Ring of Top Sub        | M30A02         |
| Check Valve                | M30A03         |
| Spring                     | M30A04         |
| Air Distributor            | M30A05         |
| Internal Cylinder          | M30A06         |
| Piston                     | M30A07         |
| External Cylinder          | M30A08         |
| Guide Sleeve               | M30A09         |
| "O" Ring of Stop Ring      | M30A10         |
| Stop Ring                  | M30A11         |
| Drive Chuck                | M30A12         |
| Drill Bit                  | M30A13         |



### **HD45A DTH hammer**

| Hammer overview            |                    |
|----------------------------|--------------------|
| PARTS                      | SPECIFICATIONS     |
| Shank                      | DHD340/COP44       |
| Length (without BIT)       | 1011mm             |
| External diameter          | 92mm/99mm(optiond) |
| Top Sub Thread             | API 2 3/8" REG     |
| Weight (without BIT)       | 39kg               |
| Hole range                 | 110mm-130mm        |
| Working pressure           | 1.0-2.5Mpa         |
| Impact rate at 1.7Mpa      | 30Hz               |
| Recommended rotation speed | 22-35r/min         |
| Air consumption 1.0Mpa     | 6m³/min            |
| Air consumption 1.8Mpa     | 10m³/min           |
| Air consumption 2.4Mpa     | 15m³/min           |
| PART LIS                   | Т                  |
| PARTS                      | PART NUMBER        |
| Top Sub                    | HD45A01            |
| "O" Ring of Top Sub        | HD45A02            |
| Check Valve                | HD45A03            |
| Spring                     | HD45A04            |
| Air Distributor            | HD45A05            |
| Internal Cylinder          | HD45A06            |
| Piston                     | HD45A07            |
| External Cylinder          | HD45A08            |
| Guide Sleeve               | HD45A09            |
| "O" Ring of Stop Ring      | HD45A10            |
| Stop Ring                  | HD45A11            |
| Drive Chuck                | HD45A12            |
| Drill Bit                  | HD45A13            |



Available Shanks DHD340/COP44

## **HSD4A DTH hammer**

| Hammer overview            |                |
|----------------------------|----------------|
| PARTS                      | SPECIFICATIONS |
| Shank                      | SD4            |
| Length (without BIT)       | 1012mm         |
| External diameter          | 99mm           |
| Top Sub Thread             | API 2 3/8" REG |
| Weight (without BIT)       | 40.50kg        |
| Hole range                 | 110mm-135mm    |
| Working pressure           | 1.0-2.5Mpa     |
| Impact rate at 1.7Mpa      | 30Hz           |
| Recommended rotation speed | 25-40r/min     |
| Air consumption 1.0Mpa     | 6m³/min        |
| Air consumption 1.8Mpa     | 9m³/min        |
| Air consumption 2.4Mpa     | 14m³/min       |
| PART LIST                  | •              |
| PARTS                      | PART NUMBER    |
| Top Sub                    | HSD4A01        |
| "O" Ring of Top Sub        | HSD4A02        |
| Check Valve                | HSD4A03        |
| Spring                     | HSD4A04        |
| Air Distributor            | HSD4A05        |
| Internal Cylinder          | HSD4A06        |
| Piston                     | HSD4A07        |
| External Cylinder          | HSD4A08        |
| Guide Sleeve               | HSD4A09        |
| "O" Ring of Stop Ring      | HSD4A10        |
| Stop Ring                  | HSD4A11        |
| Drive Chuck                | HSD4A12        |
| Drill Bit                  | HSD4A13        |



## **HQL40A DTH hammer**

| Hammer overview            |                |  |
|----------------------------|----------------|--|
| PARTS                      | SPECIFICATIONS |  |
| Shank                      | QL40           |  |
| Length (without BIT)       | 1070mm         |  |
| External diameter          | 99mm           |  |
| Top Sub Thread             | API 2 3/8" REG |  |
| Weight (without BIT)       | 40kg           |  |
| Hole range                 | 110mm-130mm    |  |
| Working pressure           | 1.0-2.5Mpa     |  |
| Impact rate at 1.7Mpa      | 30Hz           |  |
| Recommended rotation speed | 25-40r/min     |  |
| Air consumption 1.0Mpa     | 5m³/min        |  |
| Air consumption 1.8Mpa     | 9m³/min        |  |
| Air consumption 2.4Mpa     | 14m³/min       |  |
| PART LIST                  |                |  |
| PARTS                      | PART NUMBER    |  |
| Top Sub                    | HQL40A01       |  |
| "O" Ring of Top Sub        | HQL40A02       |  |
| Check Valve                | HQL40A03       |  |
| Spring                     | HQL40A04       |  |
| Air Distributor            | HQL40A05       |  |
| Internal Cylinder          | HQL40A06       |  |
| Piston                     | HQL40A07       |  |
| External Cylinder          | HQL40A08       |  |
| Guide Sleeve               | HQL40A09       |  |
| "O" Ring of Stop Ring      | HQL40A10       |  |
| Stop Ring                  | HQL40A11       |  |
| Drive Chuck                | HQL40A12       |  |
| Drill Bit                  | HQL40A13       |  |



Available Shanks QL40

## **HM40A DTH hammer**

| Hammer ov                  | rerview        |
|----------------------------|----------------|
| PARTS                      | SPECIFICATIONS |
| Shank                      | Mission40      |
| Length (without BIT)       | 1005mm         |
| External diameter          | 99mm           |
| Top Sub Thread             | API 2 3/8" REG |
| Weight (without BIT)       | 40kg           |
| Hole range                 | 110mm-130mm    |
| Working pressure           | 1.0-2.5Mpa     |
| Impact rate at 1.7Mpa      | 30Hz           |
| Recommended rotation speed | 25-40r/min     |
| Air consumption 1.0Mpa     | 5m³/min        |
| Air consumption 1.8Mpa     | 9m³/min        |
| Air consumption 2.4Mpa     | 14m³/min       |
| PART L                     | IST            |
| PARTS                      | PART NUMBER    |
| Top Sub                    | HM40A01        |
| "O" Ring of Top Sub        | HM40A02        |
| Check Valve                | HM40A03        |
| Spring                     | HM40A04        |
| Air Distributor            | HM40A05        |
| Internal Cylinder          | HM40A06        |
| Piston                     | HM40A07        |
| Guide Sleeve               | HM40A08        |
| External Cylinder          | HM40A09        |
| "O" Ring of Stop Ring      | HM40A10        |
| Stop Ring                  | HM40A11        |
| Drive Chuck                | HM40A12        |
| Drill Bit                  | HM40A13        |



Available Shanks Mission40

## **HD55A DTH hammer**

| Hammer overview            |                        |
|----------------------------|------------------------|
| PARTS                      | SPECIFICATIONS         |
| Shank                      | DHD350R/COP54          |
| Length (without BIT)       | 1110mm                 |
| External diameter          | 116mm/125mm (Optional) |
|                            | API 2 3/8"REG API 3    |
| Top Sub Thread             | 1/2"REG API 2 7/8" REG |
| Weight (without BIT)       | 66kg                   |
| Hole range                 | 127mm-155mm            |
| Working pressure           | 1.0-2.5Mpa             |
| Impact rate at 1.7Mpa      | 28Hz                   |
| Recommended rotation speed | 20-35r/min             |
| Air consumption 1.0Mpa     | 7m³/min                |
| Air consumption 1.8Mpa     | 13-14m³/min            |
| Air consumption 2.4Mpa     | 18-19m³/min            |
| PART                       | LIST                   |
| PARTS                      | PART NUMBER            |
| Top Sub                    | HD55A01                |
| "O" Ring of Top Sub        | HD55A02                |
| Check Valve                | HD55A03                |
| Spring                     | HD55A04                |
| Air Distributor            | HD55A05                |
| Internal Cylinder          | HD55A06                |
| Piston                     | HD55A07                |
| External Cylinder          | HD55A08                |
| Guide Sleeve               | HD55A09                |
| "O" Ring of Stop Ring      | HD55A10                |
| Stop Ring                  | HD55A11                |
| Drive Chuck                | HD55A12                |
| Drill Bit                  | HD55A13                |



Available Shanks DHD350R/COP54

## **HSD5A DTH hammer**

| Hammer overview            |                              |  |
|----------------------------|------------------------------|--|
| PARTS                      | SPECIFICATIONS               |  |
| Shank                      | SD5                          |  |
| Length (without BIT)       | 1090mm                       |  |
| External diameter          | 125mm                        |  |
| Top Sub Thread             | API 2 3/8" REG API 3 1/2"REG |  |
| Weight (without BIT)       | 70kg                         |  |
| Hole range                 | 135mm-155mm                  |  |
| Working pressure           | 1.0-2.5Mpa                   |  |
| Impact rate at 1.7Mpa      | 28Hz                         |  |
| Recommended rotation speed | 20-35r/min                   |  |
| Air consumption 1.0Mpa     | 7m³/min                      |  |
| Air consumption 1.8Mpa     | 14m³/min                     |  |
| Air consumption 2.4Mpa     | 19m³/min                     |  |
| PART                       | LIST                         |  |
| PARTS                      | PART NUMBER                  |  |
| Top Sub                    | HSD5A01                      |  |
| "O" Ring of Top Sub        | HSD5A02                      |  |
| Check Valve                | HSD5A03                      |  |
| Spring                     | HSD5A04                      |  |
| Air Distributor            | HSD5A05                      |  |
| Internal Cylinder          | HSD5A06                      |  |
| Piston                     | HSD5A07                      |  |
| External Cylinder          | HSD5A08                      |  |
| Guide Sleeve               | HSD5A09                      |  |
| "O" Ring of Stop Ring      | HSD5A10                      |  |
| Stop Ring                  | HSD5A11                      |  |
| Drive Chuck                | HSD5A12                      |  |
| Drill Bit                  | HSD5A13                      |  |



Available Shanks SD5

## **HQL50A DTH hammer**

| Hammer overview            |                      |
|----------------------------|----------------------|
| PARTS                      | SPECIFICATIONS       |
| Shank                      | QL50                 |
| Length (without BIT)       | 1090mm               |
| External diameter          | 125mm                |
|                            | API 2 3/8" REG API 3 |
| Top Sub Thread             | 1/2"REG              |
| Weight (without BIT)       | 64.4kg               |
| Hole range                 | 135mm-155mm          |
| Working pressure           | 1.0-2.5Mpa           |
| Impact rate at 1.7Mpa      | 28Hz                 |
| Recommended rotation speed | 20-35r/min           |
| Air consumption 1.0Mpa     | 7m³/min              |
| Air consumption 1.8Mpa     | 14m³/min             |
| Air consumption 2.4Mpa     | 19m³/min             |
| PART                       |                      |
| PARTS                      | PART NUMBER          |
| Top Sub                    | HQL50A01             |
| "O" Ring of Top Sub        | HQL50A02             |
| Check Valve                | HQL50A03             |
| Spring                     | HQL50A04             |
| Air Distributor            | HQL50A05             |
| Internal Cylinder          | HQL50A06             |
| Piston                     | HQL50A07             |
| External Cylinder          | HQL50A08             |
| Guide Sleeve               | HQL50A09             |
| "O" Ring of Stop Ring      | HQL50A10             |
| Stop Ring                  | HQL50A11             |
| Drive Chuck                | HQL50A12             |
| Drill Bit                  | HQL50A13             |



Available Shanks QL50

## **HM50A DTH hammer**

| Hammer o                   | verview                     |
|----------------------------|-----------------------------|
| PARTS                      | SPECIFICATIONS              |
| Shank                      | Mission50                   |
| Length (without BIT)       | 1110mm                      |
| External diameter          | 125mm                       |
|                            | API 2 3/8"REG API 3         |
|                            | 1/2"REG API 2 3/8" IF API 2 |
| Top Sub Thread             | 7/8" REG                    |
| Weight (without BIT)       | 66kg                        |
| Hole range                 | 135mm-155mm                 |
| Working pressure           | 1.0-2.5Mpa                  |
| Impact rate at 1.7Mpa      | 28Hz                        |
| Recommended rotation speed | 20-35r/min                  |
| Air consumption 1.0Mpa     | 7m³/min                     |
| Air consumption 1.8Mpa     | 14m³/min                    |
| Air consumption 2.4Mpa     | 19m³/min                    |
| PART                       |                             |
| PARTS                      | PART NUMBER                 |
| Top Sub                    | HM50A01                     |
| "O" Ring of Top Sub        | HM50A02                     |
| Check Valve                | HM50A03                     |
| Spring                     | HM50A04                     |
| Air Distributor            | HM50A05                     |
| Internal Cylinder          | HM50A06                     |
| Piston                     | HM50A07                     |
| External Cylinder          | HM50A08                     |
| Guide Sleeve               | HM50A09                     |
| "O" Ring of Stop Ring      | HM50A10                     |
| Stop Ring                  | HM50A11                     |
| Drive Chuck                | HM50A12                     |
| Drill Bit                  | HM50A13                     |



## **HD65A DTH hammer**

| Hammer overview            |                |
|----------------------------|----------------|
| PARTS                      | SPECIFICATIONS |
| Shank                      | DHD360/ COP64  |
| Length (without BIT)       | 1238mm         |
| External diameter          | 148mm          |
| Top Sub Thread             | API 3 1/2" REG |
| Weight (without BIT)       | 105kg          |
| Hole range                 | 155mm-190mm    |
| Working pressure           | 1.0-2.5Mpa     |
| Impact rate at 1.7Mpa      | 25Hz           |
| Recommended rotation speed | 20-30r/min     |
| Air consumption 1.0Mpa     | 9m³/min        |
| Air consumption 1.8Mpa     | 18m³/min       |
| Air consumption 2.4Mpa     | 26m³/min       |
| PART LIS                   | Т              |
| PARTS                      | PART NUMBER    |
| Top Sub                    | HD65A01        |
| "O" Ring of Top Sub        | HD65A02        |
| Check Valve                | HD65A03        |
| Spring                     | HD65A04        |
| Air Distributor            | HD65A05        |
| Internal Cylinder          | HD65A06        |
| Piston                     | HD65A07        |
| External Cylinder          | HD65A08        |
| Guide Sleeve               | HD65A09        |
| "O" Ring of Stop Ring      | HD65A10        |
| Stop Ring                  | HD65A11        |
| Drive Chuck                | HD65A12        |
| Drill Bit                  | HD65A13        |



Available Shanks DHD360/COP64

## **HSD6A DTH hammer**

| Hammer overview            |                |
|----------------------------|----------------|
| PARTS                      | SPECIFICATIONS |
| Shank                      | SD6            |
| Length (without BIT)       | 1182mm         |
| External diameter          | 148mm          |
| Top Sub Thread             | API 3 1/2" REG |
| Weight (without BIT)       | 90kg           |
| Hole range                 | 155mm-190mm    |
| Working pressure           | 1.0-2.5Mpa     |
| Impact rate at 1.7Mpa      | 25Hz           |
| Recommended rotation speed | 20-30r/min     |
| Air consumption 1.0Mpa     | 9m³/min        |
| Air consumption 1.8Mpa     | 18m³/min       |
| Air consumption 2.4Mpa     | 26m³/min       |
| PART LI                    | ST             |
| PARTS                      | PART NUMBER    |
| Top Sub                    | HSD6A01        |
| "O" Ring of Top Sub        | HSD6A02        |
| Check Valve                | HSD6A03        |
| Spring                     | HSD6A04        |
| Air Distributor            | HSD6A05        |
| Internal Cylinder          | HSD6A06        |
| Piston                     | HSD6A07        |
| External Cylinder          | HSD6A08        |
| Guide Sleeve               | HSD6A09        |
| "O" Ring of Stop Ring      | HSD6A10        |
| Stop Ring                  | HSD6A11        |
| Guide Sleeve               | HSD6A12        |
| Drive Chuck                | HSD6A13        |
| Drill Bit                  | HSD6A14        |



# **HQL60A DTH hammer**

| Hammer overview            |                |
|----------------------------|----------------|
| PARTS                      | SPECIFICATIONS |
| Shank                      | QL60           |
| Length (without BIT)       | 1183mm         |
| External diameter          | 148mm          |
| Top Sub Thread             | API 3 1/2" REG |
| Weight (without BIT)       | 92kg           |
| Hole range                 | 155mm-190mm    |
| Working pressure           | 1.0-2.5Mpa     |
| Impact rate at 1.7Mpa      | 25Hz           |
| Recommended rotation speed | 20-30r/min     |
| Air consumption 1.0Mpa     | 9m³/min        |
| Air consumption 1.8Mpa     | 18m³/min       |
| Air consumption 2.4Mpa     | 26m³/min       |
| PART L                     | IST            |
| PARTS                      | PART NUMBER    |
| Top Sub                    | HQL60A01       |
| "O" Ring of Top Sub        | HQL60A02       |
| Check Valve                | HQL60A03       |
| Spring                     | HQL60A04       |
| Air Distributor            | HQL60A05       |
| Internal Cylinder          | HQL60A06       |
| Piston                     | HQL60A07       |
| External Cylinder          | HQL60A08       |
| Guide Sleeve               | HQL60A09       |
| "O" Ring of Stop Ring      | HQL60A10       |
| Stop Ring                  | HQL60A11       |
| Drive Chuck                | HQL60A12       |
| Drill Bit                  | HQL60A13       |



Available Shanks QL60

## **HM60A DTH hammer**

| Hammer overview            |                |
|----------------------------|----------------|
| PARTS                      | SPECIFICATIONS |
| Shank                      | Mission60      |
| Length (without BIT)       | 1161mm         |
| External diameter          | 148mm          |
| Top Sub Thread             | API 3 1/2" REG |
| Weight (without BIT)       | 96kg           |
| Hole range                 | 155mm-190mm    |
| Working pressure           | 1.0-2.5Mpa     |
| Impact rate at 1.7Mpa      | 25Hz           |
| Recommended rotation speed | 20-30r/min     |
| Air consumption 1.0Mpa     | 9m³/min        |
| Air consumption 1.8Mpa     | 18m³/min       |
| Air consumption 2.4Mpa     | 26m³/min       |
| PART LIS                   | Т              |
| PARTS                      | PART NUMBER    |
| Top Sub                    | M60A01         |
| "O" Ring of Top Sub        | M60A02         |
| Check Valve                | M60A03         |
| Spring                     | M60A04         |
| Air Distributor            | M60A05         |
| Internal Cylinder          | M60A06         |
| Piston                     | M60A07         |
| External Cylinder          | M60A08         |
| Guide Sleeve               | M60A09         |
| "O" Ring of Stop Ring      | M60A10         |
| Stop Ring                  | M60A11         |
| Drive Chuck                | M60A12         |
| Drill Bit                  | M60A13         |



Available Shanks Mission60

## **HD85A DTH hammer**

| Hammer overview            |                |
|----------------------------|----------------|
| PARTS                      | SPECIFICATIONS |
| Shank                      | DHD380/COP84   |
| Length (without BIT)       | 1359mm         |
| External diameter          | 185mm          |
| Top Sub Thread             | API 4 1/2" REG |
| Weight (without BIT)       | 175kg          |
| Hole range                 | 195mm-254mm    |
| Working pressure           | 1.0-3.0Mpa     |
| Impact rate at 1.7Mpa      | 22Hz           |
| Recommended rotation speed | 15-25r/min     |
| Air consumption 1.0Mpa     | 12 m³/min      |
| Air consumption 1.8Mpa     | 22 m³/min      |
| Air consumption 2.4Mpa     | 28 m³/min      |
| PART LIST                  |                |
| PARTS                      | PART NUMBER    |
| Top Sub                    | HD85A01        |
| "O" Ring of Top Sub        | HD85A02        |
| Check Valve                | HD85A03        |
| Spring                     | HD85A04        |
| Air Distributor            | HD85A05        |
| Internal Cylinder          | HD85A06        |
| Piston                     | HD85A07        |
| External Cylinder          | HD85A08        |
| Guide Sleeve               | HD85A09        |
| "O" Ring of Stop Ring      | HD85A10        |
| Stop Ring                  | HD85A11        |
| Drive Chuck                | HD85A12        |
| Drill Bit                  | HD85A13        |



Available Shanks DHD380/COP84

## **HSD8A DTH hammer**

| Hammer overview            |                |  |  |  |
|----------------------------|----------------|--|--|--|
| PARTS                      | SPECIFICATIONS |  |  |  |
| Shank                      | SD8            |  |  |  |
| Length (without BIT)       | 1330mm         |  |  |  |
| External diameter          | 185mm          |  |  |  |
| Top Sub Thread             | API 4 1/2" REG |  |  |  |
| Weight (without BIT)       | 174kgs         |  |  |  |
| Hole range                 | 195mm-254mm    |  |  |  |
| Working pressure           | 1.0-3.0Mpa     |  |  |  |
| Impact rate at 1.7Mpa      | 22Hz           |  |  |  |
| Recommended rotation speed | 15-25r/min     |  |  |  |
| Air consumption 1.0Mpa     | 12 m³/min      |  |  |  |
| Air consumption 1.8Mpa     | 22 m³/min      |  |  |  |
| Air consumption 2.4Mpa     | 28 m³/min      |  |  |  |
| PART                       | LIST           |  |  |  |
| PARTS                      | PART NUMBER    |  |  |  |
| Top Sub                    | HSD8A01        |  |  |  |
| "O" Ring of Top Sub        | HSD8A02        |  |  |  |
| Breakout Ring of Top Sub   | HSD8A03        |  |  |  |
| Check Valve                | HSD8A04        |  |  |  |
| Spring                     | HSD8A05        |  |  |  |
| Air Distributor            | HSD8A06        |  |  |  |
| Internal Cylinder          | HSD8A07        |  |  |  |
| Piston                     | HSD8A08        |  |  |  |
| External Cylinder          | HSD8A09        |  |  |  |
| Guided Sleeve              | HSD8A10        |  |  |  |
| "O" Ring of Stop Ring      | HSD8A11        |  |  |  |
| Stop Ring                  | HSD8A12        |  |  |  |
| Guide Case                 | HSD8A13        |  |  |  |
| Drive Chuck                | HSD8A14        |  |  |  |
| Drill Bit                  | HSD8A15        |  |  |  |



Available Shanks SD8

# **HQL80A DTH hammer**

| Hammer overview              |                |  |  |  |
|------------------------------|----------------|--|--|--|
| PARTS                        | SPECIFICATIONS |  |  |  |
| Shank                        | QL80           |  |  |  |
| Length (without BIT)         | 1330mm         |  |  |  |
| External diameter            | 185mm          |  |  |  |
| Top Sub Thread               | API 4 1/2" REG |  |  |  |
| Weight (without BIT)         | 171kgs         |  |  |  |
| Hole range                   | 195mm-254mm    |  |  |  |
| Working pressure             | 1.0-3.0Mpa     |  |  |  |
| Impact rate at 1.7Mpa        | 22Hz           |  |  |  |
| Recommended rotation speed   | 15-25r/min     |  |  |  |
| Air consumption 1.0Mpa       | 12 m³/min      |  |  |  |
| Air consumption 1.8Mpa       | 22 m³/min      |  |  |  |
| Air consumption 2.4Mpa       | 28 m³/min      |  |  |  |
| PART LIST                    | Γ              |  |  |  |
| PARTS                        | PART NUMBER    |  |  |  |
| Top Sub                      | HQL80A01       |  |  |  |
| "O" Ring of Top Sub          | HQL80A02       |  |  |  |
| Breakout Ring of Top Sub     | HQL80A03       |  |  |  |
| Check Valve                  | HQL80A04       |  |  |  |
| Spring                       | HQL80A05       |  |  |  |
| Air Distributor              | HQL80A06       |  |  |  |
| Internal Cylinder            | HQL80A07       |  |  |  |
| Piston                       | HQL80A08       |  |  |  |
| External Cylinder            | HQL80A09       |  |  |  |
| Guided Sleeve                | HQL80A10       |  |  |  |
| "O" Ring of Stop Ring        | HQL80A11       |  |  |  |
| Stop Ring                    | HQL80A12       |  |  |  |
| Breakout Ring of Drive Chuck | HQL80A13       |  |  |  |
| Drive Chuck                  | HQL80A14       |  |  |  |
| Drill Bit                    | HQL80A15       |  |  |  |



Available Shanks QL80

## **HSD10A DTH hammer**

| Hammer overview              |                |  |  |  |
|------------------------------|----------------|--|--|--|
| PARTS                        | SPECIFICATIONS |  |  |  |
| Shank                        | SD10           |  |  |  |
| Length (without BIT)         | 1525mm         |  |  |  |
| External diameter            | 226mm          |  |  |  |
| Top Sub Thread               | API 6 5/8"REG  |  |  |  |
| Weight (without BIT)         | 316kg          |  |  |  |
| Hole range                   | 254mm-311mm    |  |  |  |
| Working pressure             | 1.0-3.0Mpa     |  |  |  |
| Impact rate at 1.7Mpa        | 20Hz           |  |  |  |
| Recommended rotation speed   | 15-25r/min     |  |  |  |
| Air consumption 1.0Mpa       | 22 m³/min      |  |  |  |
| Air consumption 1.8Mpa       | 40 m³/min      |  |  |  |
| Air consumption 2.4Mpa       | 65 m³/min      |  |  |  |
| PART LIST                    |                |  |  |  |
| PARTS                        | PART NUMBER    |  |  |  |
| Top Sub                      | HSD10A01       |  |  |  |
| "O" Ring of Top Sub          | HSD10A02       |  |  |  |
| Breakout Ring of Top Sub     | HSD10A03       |  |  |  |
| Check Valve                  | HSD10A04       |  |  |  |
| Spring                       | HSD10A05       |  |  |  |
| Air Distributor              | HSD10A06       |  |  |  |
| Internal Cylinder            | HSD10A07       |  |  |  |
| Piston                       | HSD10A08       |  |  |  |
| External Cylinder            | HSD10A09       |  |  |  |
| Guided Sleeve                | HSD10A10       |  |  |  |
| "O" Ring of Stop Ring        | HSD10A11       |  |  |  |
| Stop Ring                    | HSD10A12       |  |  |  |
| Guide Case                   | HSD10A13       |  |  |  |
| Breakout Ring of Drive Chuck | HSD10A14       |  |  |  |
| Drive Chuck                  | HSD10A15       |  |  |  |
| Drill Bit                    | HSD10A16       |  |  |  |



Available Shanks SD10

## **HN100A DTH hammer**

| Hammer overview              |                           |  |  |  |
|------------------------------|---------------------------|--|--|--|
| PARTS                        | SPECIFICATIONS            |  |  |  |
| Shank                        | NUMA100                   |  |  |  |
| Length (without BIT)         | 1545mm                    |  |  |  |
| External diameter            | 225mm                     |  |  |  |
|                              | API 4 1/2" REG API 5 1/2" |  |  |  |
| Top Sub Thread               | REG API 6 5/8" REG        |  |  |  |
| Weight (without BIT)         | 290kg                     |  |  |  |
| Hole range                   | 254mm-311mm               |  |  |  |
| Working pressure             | 1.2-3.0 Mpa               |  |  |  |
| Impact rate at 1.7Mpa        | 20 Hz                     |  |  |  |
| Recommended rotation speed   | 15-25 r/min               |  |  |  |
| Air consumption 1.0Mpa       | 22 m³/min                 |  |  |  |
| Air consumption 1.8Mpa       | 45 m³/min                 |  |  |  |
| Air consumption 2.4Mpa       | 60 m³/min                 |  |  |  |
| PAR                          | T LIST                    |  |  |  |
| PARTS                        | PART NUMBER               |  |  |  |
| Top Sub                      | HN100A01                  |  |  |  |
| "O" Ring of Top Sub          | HN100A02                  |  |  |  |
| Breakout Ring of Top Sub     | HN100A03                  |  |  |  |
| Check Valve                  | HN100A04                  |  |  |  |
| Spring                       | HN100A05                  |  |  |  |
| Air Distributor              | HN100A06                  |  |  |  |
| Internal Cylinder            | HN100A07                  |  |  |  |
| Piston                       | HN100A08                  |  |  |  |
| External Cylinder            | HN100A09                  |  |  |  |
| Piston Retaining Ring        | HN100A10                  |  |  |  |
| Guided Sleeve                | HN100A11                  |  |  |  |
| "O" Ring of Stop Ring        | HN100A12                  |  |  |  |
| Stop Ring                    | HN100A13                  |  |  |  |
| Breakout Ring of Drive Chuck | HN100A14                  |  |  |  |
| Drive Chuck                  | HN100A15                  |  |  |  |
| Drill Bit                    | HN100A16                  |  |  |  |



Available Shanks NUMA100

## **HSD12A DTH hammer**

| Hammer o                     | overview       |
|------------------------------|----------------|
| PARTS                        | SPECIFICATIONS |
| Shank                        | SD12           |
| Length (without BIT)         | 1860mm         |
| External diameter            | 275mm          |
| Top Sub Thread               | API 6 5/8" REG |
| Weight (without BIT)         | 480kg          |
| Hole range                   | 305mm-445mm    |
| Working pressure             | 1.0-3.0Mpa     |
| Impact rate at 1.7Mpa        | 20Hz           |
| Recommended rotation speed   | 15-25 r/min    |
| Air consumption 1.0Mpa       | 28 m³/min      |
| Air consumption 1.8Mpa       | 50 m³/min      |
| Air consumption 2.4Mpa       | 71 m³/min      |
| PART                         | LIST           |
| PARTS                        | PART NUMBER    |
| Top Sub                      | HSD12A01       |
| "O" Ring of Top Sub          | HSD12A02       |
| Breakout Ring of Top Sub     | HSD12A03       |
| Check Valve                  | HSD12A04       |
| Spring                       | HSD12A05       |
| Air Distributor              | HSD12A06       |
| Internal Cylinder            | HSD12A07       |
| Piston                       | HSD12A08       |
| External Cylinder            | HSD12A09       |
| Guided Sleeve                | HSD12A10       |
| "O" Ring of Stop Ring        | HSD12A11       |
| Stop Ring                    | HSD12A12       |
| Guide Case                   | HSD12A13       |
| Breakout Ring of Drive Chuck | HSD12A14       |
| Drive Chuck                  | HSD12A15       |
| Drill Bit                    | HSD12A16       |



Available Shanks SD12

## **HD120A DTH hammer**

| Hammer overview              |                |
|------------------------------|----------------|
|                              |                |
| Shank                        | DHD1120        |
| Length (without BIT)         | 1880mm         |
| External diameter            | 275mm          |
| Top Sub Thread               | API 6 5/8" REG |
| Weight (without BIT)         | 474kgs         |
| Hole range                   | 305mm-445mm    |
| Working pressure             | 1.0-3.0Mpa     |
| Impact rate at 1.7Mpa        | 20Hz           |
| Recommended rotation speed   | 15-25r/min     |
| Air consumption 1.0Mpa       | 28m³/min       |
| Air consumption 1.8Mpa       | 50m³/min       |
| Air consumption 2.4Mpa       | 71m³/min       |
| PART LIST                    |                |
| PARTS                        | PART NUMBER    |
| Top Sub                      | HD120A01       |
| "O" Ring of Top Sub          | HD120A02       |
| Breakout Ring of Top Sub     | HD120A03       |
| Check Valve                  | HD120A04       |
| Spring                       | HD120A05       |
| Air Distributor              | HD120A06       |
| Internal Cylinder            | HD120A07       |
| Piston                       | HD120A08       |
| External Cylinder            | HD120A09       |
| Piston Retaining Ring        | HD120A10       |
| Guided Sleeve                | HD120A11       |
| "O" Ring of Stop Ring        | HD120A12       |
| Stop Ring                    | HD120A13       |
| Breakout Ring of Drive Chuck | HD120A14       |
| Drive Chuck                  | HD120A15       |
| Drill Bit                    | HD120A16       |



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## **HN120A DTH hammer**

| Hammer over                  | view           |  |  |
|------------------------------|----------------|--|--|
| PARTS                        | SPECIFICATIONS |  |  |
| Shank                        | NUMA120        |  |  |
| Length (without BIT)         | 1880mm         |  |  |
| External diameter            | 275mm          |  |  |
| Top Sub Thread               | API 6 5/8"REG  |  |  |
| Weight (without BIT)         | 475kg          |  |  |
| Hole range                   | 305mm-445mm    |  |  |
| Working pressure             | 1.0-2.5Mpa     |  |  |
| Impact rate at 1.7Mpa        | 20Hz           |  |  |
| Recommended rotation speed   | 15-25r/min     |  |  |
| Air consumption 1.0Mpa       | 28 m³/min      |  |  |
| Air consumption 1.8Mpa       | 50 m³/min      |  |  |
| Air consumption 2.4Mpa       | 71 m³/min      |  |  |
| PART LIS                     | T              |  |  |
| PARTS                        | PART NUMBER    |  |  |
| Top Sub                      | HN120A01       |  |  |
| "O" Ring of Top Sub          | HN120A02       |  |  |
| Breakout Ring of Top Sub     | HN120A03       |  |  |
| Check Valve                  | HN120A04       |  |  |
| Spring                       | HN120A05       |  |  |
| Air Distributor              | HN120A06       |  |  |
| Internal Cylinder            | HN120A07       |  |  |
| Piston                       | HN120A08       |  |  |
| External Cylinder            | HN120A09       |  |  |
| Guided Sleeve                | HN120A10       |  |  |
| "O" Ring of Stop Ring        | HN120A11       |  |  |
| Stop Ring                    | HN120A12       |  |  |
| Breakout Ring of Drive Chuck | HN120A13       |  |  |
| Drive Chuck                  | HN120A14       |  |  |
| Drill Bit                    | HN120A15       |  |  |



## **HN125A DTH hammer**

| Hammer overview              |                               |  |  |  |
|------------------------------|-------------------------------|--|--|--|
| PARTS                        | SPECIFICATIONS                |  |  |  |
| Shank                        | NUMA125                       |  |  |  |
| Length (without BIT)         | 1960mm                        |  |  |  |
| External diameter            | 275mm                         |  |  |  |
| Top Sub Thread               | API 6 5/8" REG API 7 5/8" REG |  |  |  |
| Weight (without BIT)         | 470kgs                        |  |  |  |
| Hole range                   | 305mm-445mm                   |  |  |  |
| Working pressure             | 1.2-3.0Mpa                    |  |  |  |
| Impact rate at 1.7Mpa        | 20Hz                          |  |  |  |
| Recommended rotation speed   | 15-25r/min                    |  |  |  |
| Air consumption 1.0Mpa       | 28m³/min                      |  |  |  |
| Air consumption 1.8Mpa       | 50m³/min                      |  |  |  |
| Air consumption 2.4Mpa       | 71m³/min                      |  |  |  |
| PAR                          | TLIST                         |  |  |  |
| PARTS                        | PART NUMBER                   |  |  |  |
| Top Sub                      | HN125A01                      |  |  |  |
| "O" Ring of Top Sub          | HN125A02                      |  |  |  |
| Breakout Ring of Top Sub     | HN125A03                      |  |  |  |
| Check Valve                  | HN125A04                      |  |  |  |
| Spring                       | HN125A05                      |  |  |  |
| Air Distributor              | HN125A06                      |  |  |  |
| Internal Cylinder            | HN125A07                      |  |  |  |
| Piston                       | HN125A08                      |  |  |  |
| External Cylinder            | HN125A09                      |  |  |  |
| Guided Sleeve                | HN125A10                      |  |  |  |
| "O" Ring of Stop Ring        | HN125A11                      |  |  |  |
| Stop Ring                    | HN125A12                      |  |  |  |
| Breakout Ring of Drive Chuck | HN125A13                      |  |  |  |
| Drive Chuck                  | HN125A14                      |  |  |  |
| Retainer                     | HN125A15                      |  |  |  |
| Drill Bit                    | HN125A16                      |  |  |  |



Available Shanks NUMA125

# **Available DTH BIT selection**

## **Face Shape Selection**

Concave



Suitable for all-round rock formation, especially for medium hard and homogeneous rock formations. Excellent control over hole deviation.

Convex



Suitable for soft to a medium hard rock formation. Non-abrasive rock formations. High penetration rate.

Flat Face



Suitable for hard and abrasive rock formations. Hard penetration rates and resistance to steel wash.

## **Carbide Button Shape Selection**



Domed/Spherical buttons Suitable for Abrasive and hard formation.



Parabolic/Semi Ballistic buttons for medium abrasive and hard formation.



Ballistic buttons Suitable for medium abrasive and medium hard formation. They also can be used as gauge buttons for soft rock.

# 3 inch DTH bit- The data is referenced by DHD3.5 flat face bit.



| B<br>DIAM | IT<br>ETER  | Flushing holes No. x Button | No. x Button Dia. mm |                  | Weight | Part No      |
|-----------|-------------|-----------------------------|----------------------|------------------|--------|--------------|
| mm        | inch        | Dia (mm)                    | Gauge<br>Buttons     | Front<br>Buttons | (kg)   | Part NO      |
| 90        | 3 1/2"      | 2 x Ø 14                    | 6 x Ø 14             | 4 x Ø 12         | 4.5    | HD35-90      |
| 92        | 3 5/8"      | 2 x Ø 14                    | 6 x Ø 14             | 4 x Ø 12         | 4.6    | HD35-92      |
| 95        | 3 3/4"      | 2 x Ø 14                    | 6 x Ø 14 4 x Ø 13    |                  | 4.7    | HD35-95      |
| 100       | 3<br>15/16" | 2 x Ø 14                    | 6 x Ø 14             | 5 x Ø 13         | 4.8    | HD35-<br>100 |
| 105       | 4 1/8"      | 2 x Ø 14                    | 6 x Ø 14             | 5 x Ø 13         | 5      | HD35-<br>105 |
| 100       | 4           | 2 / 2   1                   |                      | 0 / 0 10         |        | HD35-        |
| 110       | 5/16"       | 2 x Ø 14                    | 8 x Ø 14             | 5 x Ø 13         | 5.5    | 110          |

# 4 inch DTH bit - The data is referenced by DHD340A flat face bit.



| DIA | BIT No. x Butt |                                   |                     | NA/- 1-1-4 |                |          |  |
|-----|----------------|-----------------------------------|---------------------|------------|----------------|----------|--|
| mm  | inch           | holes<br>No. x Button<br>Dia (mm) | Gauge Front Buttons |            | Weight<br>(kg) | Part No  |  |
| 105 | 4 1/8"         | 2 x Ø 18                          | 6 x Ø 14            | 5 x Ø 13   | 7.5            | HD45-105 |  |
| 110 | 4 5/16"        | 2 x Ø 18                          | 7 x Ø 14            | 6 x Ø 13   | 7.8            | HD45-110 |  |
| 115 | 4 1/2"         | 2 x Ø 18                          | 7 x Ø 14            | 7 x Ø 13   | 8.5            | HD45-115 |  |
| 120 | 4 3/4"         | 2 x Ø 18                          | 8 x Ø 14            | 7 x Ø 13   | 8.8            | HD45-120 |  |
| 125 | 4 15/16"       | 2 x Ø 18                          | 8 x Ø 14            | 7 x Ø 13   | 9              | HD45-125 |  |
| 130 | 5 1/8"         | 2 x Ø 18                          | 8 x Ø 14            | 7 x Ø 14   | 9.4            | HD45-130 |  |

# 5 inch DTH bit - The data is referenced by DHD350R flat face bit.



| BIT<br>DIAMETER |        | Flushing<br>holes        | No. x Button Dia.<br>mm |                  | Wei         | <b>D</b> (1) |
|-----------------|--------|--------------------------|-------------------------|------------------|-------------|--------------|
| mm              | inch   | No. x Button<br>Dia (mm) | Gauge<br>Buttons        | Front<br>Buttons | ght<br>(kg) | Part No      |
| 130             | 5 1/8" | 2 x Ø 20                 | 7 x Ø 16                | 7 x Ø 14         | 15          | HD55-130     |
| 135             | 5 1/4" | 2 x Ø 20                 | 7 x Ø 18                | 7 x Ø 14         | 15.5        | HD55-135     |
| 140             | 5 1/2" | 2 x Ø 20                 | 8 x Ø 16                | 8 x Ø 14         | 16          | HD55-140     |
| 146             | 5 3/4" | 2 x Ø 20                 | 8 x Ø 18                | 8 x Ø 15         | 16.5        | HD55-146     |
| 150             | 5 7/8" | 2 x Ø 20                 | 8 x Ø 18                | 8 x Ø 15         | 16.7        | HD55-150     |
| 152             | 6"     | 2 x Ø 20                 | 8 x Ø 18                | 8 x Ø 15         | 16.8        | HD55-152     |
| 156             | 6 1/8" | 2 x Ø 20                 | 8 x Ø 18                | 8 x Ø 16         | 17          | HD55-156     |

# 6 inch DTH bit - The data is referenced by DHD360 concave face bit.



| BIT DIA | METER    | Flushing                          | No. x            | No. x Button Dia. mm |                |          |
|---------|----------|-----------------------------------|------------------|----------------------|----------------|----------|
| mm      | inch     | holes<br>No. x Button<br>Dia (mm) | Gauge<br>Buttons | Front Buttons        | Weight<br>(kg) | Part No  |
| 152     | 6"       | 2 x Ø 26                          | 8 x Ø 18         | 4 x Ø 16 + 4 x Ø 14  | 23             | HD65-152 |
| 156     | 6 1/8"   | 2 x Ø 26                          | 8 x Ø 18         | 4 x Ø 16 + 4 x Ø 14  | 23.5           | HD65-156 |
| 160     | 6 5/1 6" | 2 x Ø 26                          | 8 x Ø 18         | 4 x Ø 16 + 4 x Ø 14  | 23.5           | HD65-160 |
| 165     | 6 1/2"   | 2 x Ø 26                          | 8 x Ø 18         | 8 x Ø 16             | 24             | HD65-165 |
| 171     | 6 3/4"   | 2 x Ø 26                          | 8 x Ø 18         | 10 x Ø 16            | 25             | HD65-171 |
| 185     | 7 1/4"   | 3 x Ø 22                          | 9 x Ø 18         | 10 x Ø 16            | 27             | HD65-185 |
| 190     | 7 1/2"   | 2 x Ø 26                          | 10 x Ø 18        | 13 x Ø 16            | 28             | HD65-190 |
| 203     | 8"       | 2 x Ø 26                          | 10 x Ø 18        | 14 x Ø 16            | 31             | HD65-203 |

# 8 inch DTH bit - The data is referenced by DHD380 concave face bit.



| DIA | BIT<br>METER | Flushing<br>holes           | No. x            | Button Dia. mm       | VA / - 1 - 4   |          |
|-----|--------------|-----------------------------|------------------|----------------------|----------------|----------|
| mm  | inch         | No. x<br>Button Dia<br>(mm) | Gauge<br>Buttons | Front Buttons        | Weight<br>(kg) | Part No  |
| 200 | 7 7/8"       | 2 x Ø 30                    | 10 x Ø 18        | 8 x Ø 18 + 6 x Ø 16  | 46             | HD85-200 |
| 203 | 8"           | 2 x Ø 30                    | 10 x Ø 18        | 8 x Ø 18 + 6 x Ø 16  | 47             | HD85-203 |
| 216 | 8 1/2"       | 2 x Ø 30                    | 10 x Ø 18        | 8 x Ø 18 + 6 x Ø 16  | 53             | HD85-216 |
| 219 | 8 5/8"       | 2 x Ø 30                    | 10 x Ø 18        | 8 x Ø 18 + 6 x Ø 16  | 54             | HD85-219 |
| 222 | 8 3/4"       | 2 x Ø 30                    | 10 x Ø 18        | 8 x Ø 18 + 6 x Ø 16  | 55             | HD85-222 |
| 225 | 8 7/8"       | 2 x Ø 30                    | 10 x Ø 18        | 8 x Ø 18 + 6 x Ø 16  | 56             | HD85-225 |
| 229 | 9"           | 2 x Ø 30                    | 10 x Ø 18        | 8 x Ø 18 + 7 x Ø 16  | 57             | HD85-229 |
| 235 | 9 1/4"       | 2 x Ø 30                    | 10 x Ø 18        | 20 x Ø 16            | 58             | HD85-235 |
| 241 | 9 1/2"       | 2 x Ø 30                    | 12 x Ø 18        | 20 x Ø 16            | 58             | HD85-241 |
| 254 | 10"          | 2 x Ø 30                    | 12 x Ø 19        | 8 x Ø 18 + 18 x Ø 16 | 61             | HD85-254 |
| 270 | 10 5/8"      | 2 x Ø 30                    | 12 x Ø 19        | 8 x Ø 18 + 19 x Ø 16 | 62             | HD85-270 |
| 280 | 11"          | 3 x Ø 26                    | 12 x Ø 19        | 9 x Ø 18 + 21 x Ø 16 | 67             | HD85-280 |

# 10 inch DTH bit - The data is referenced by SD10 concave face bit.



| BIT DIA | METER | Flushing                             | No.              | x Button Dia. mm     |                 |          |
|---------|-------|--------------------------------------|------------------|----------------------|-----------------|----------|
| mm      | inch  | holes<br>No. x<br>Button<br>Dia (mm) | Gauge<br>Buttons | Front Buttons        | Weigh<br>t (kg) | Part No  |
| 254     | 10"   | 2 x Ø 30                             | 12 x Ø 19        | 8 x Ø 18 + 18 x Ø 16 | 85              | HD10-254 |
| 280     | 11"   | 3 x Ø 26                             | 12 x Ø 19        | 9 x Ø 18 + 20 x Ø 16 | 91              | HD10-280 |
|         | 11    |                                      |                  |                      |                 |          |
| 295     | 5/8"  | 3 x Ø 26                             | 15 x Ø 19        | 27 x Ø 18 + 9 x Ø 16 | 95              | HD10-295 |
| 305     | 12"   | 3 x Ø 26                             | 15 x Ø 19        | 27 x Ø 18 + 9 x Ø 16 | 97              | HD10-305 |
|         | 12    |                                      |                  |                      |                 |          |
| 311     | 1/4"  | 3 x Ø 26                             | 15 x Ø 19        | 27 x Ø 18 + 9 x Ø 16 | 98              | HD10-311 |
|         | 12    |                                      |                  |                      |                 |          |
| 315     | 3/8"  | 3 x Ø 26                             | 15 x Ø 19        | 27 x Ø 18 + 9 x Ø 16 | 101             | HD10-315 |
| 330     | 13"   | 3 x Ø 26                             | 15 x Ø 19        | 27 x Ø 18 + 9 x Ø 16 | 114             | HD10-330 |

# 12 inch DTH bit- The data is referenced by SD12 concave face bit.



#### SPECIFICATIONS -

| BIT | DIAMETER | Flushing                             | No. x Butte           | on Dia. mm            |                |          |
|-----|----------|--------------------------------------|-----------------------|-----------------------|----------------|----------|
| mm  | inch     | holes<br>No. x<br>Button<br>Dia (mm) | Gauge Buttons         | Front Buttons         | Weight<br>(kg) | Part No  |
| 305 | 12"      | 3 x Ø 32                             | 15 x Ø 19             | 27 x Ø 18 + 9 x Ø 16  | 130            | HD12-305 |
| 311 | 12 1/4"  | 3 x Ø 32                             | 15 x Ø 19             | 27 x Ø 18 + 9 x Ø 16  | 132            | HD12-311 |
| 330 | 13"      | 3 x Ø 32                             | 15 x Ø 19 + 12 x Ø 19 | 27 x Ø 18 + 16 x Ø 16 | 145            | HD12-330 |
| 350 | 13 3/4"  | 3 x Ø 32                             | 15 x Ø 19 + 12 x Ø 19 | 28 x Ø 18 + 20 x Ø 16 | 158            | HD12-350 |
| 356 | 14"      | 4 x Ø 28                             | 16 x Ø 19 + 16 x Ø 19 | 28 x Ø 18 + 20 x Ø 16 | 162            | HD12-356 |
| 381 | 15"      | 4 x Ø 28                             | 16 x Ø 19 + 12 x Ø 19 | 42 x Ø 18             | 187            | HD12-381 |

# **DTH drill pipe**

| OUTER | DIAMETER | Thread         | Wall thickness | Wall thickness | Length       |
|-------|----------|----------------|----------------|----------------|--------------|
| mm    | inch     |                | mm             | mm             | mm           |
| 76    | 3"       | API 2 3/8" REG | 6.3mm          | 8mm            | 1000-6000mm  |
| 89    | 3 1/2"   | API 2 7/8" REG | 6.3mm          | 8mm            | 1000-6000mm  |
| 102   | 4"       | API 3 1/2" REG | 6.3mm          | 8mm            | 1500-6000mm  |
| 114   | 4 1/2"   | API 4 1/2" REG | 8mm            | 10mm           | 1500-9000mm  |
| 127   | 5"       | 2 3/8" IF      | 10mm           | 12mm           | 1500-9000mm  |
| 140   | 5 1/2"   | 2 7/8" IF      | 14mm           | 19mm           | 3000-12000mm |
|       |          | 3 1/2" IF      |                |                |              |
|       |          | 3 1/2" BECO    |                |                |              |
|       |          | 4 1/2" BECO    |                |                |              |

## **RC HAMMERS**

#### **Features & Characteristics**

Reverse Circulation hammer (RC hammer) is our most advanced product, used in deep hole exploration drilling and mining ore grade control, etc.

- Reference the design and production experience of conventional DTH hammer and combine the operating characteristics of RC hammer; internal structure design is optimized to ensure ideal energy transfer and high drilling speed as well as steady sampling.
- Simple internal structure and rigid components ensure long using life and easy maintenance of the hammer.
- Sample tube is integrative designed and can be placed without disassembling of the hammer.
  With carburizing treatment, the sample tube has good wear resistance.
- RC bit has patented design. One hammer could drill different size of holes just by replacing different size bits, and ensure no contamination of the sample as well.
- In difficult conditions such as loose soil, hard rock formation or plenty of water exists, sampling can be done well.



| Hammer   | Bit Shank | Hole<br>Range | External<br>Diameter | Length<br>(without<br>bit) | Weight | Connection<br>Thread | Working<br>Pressure |
|----------|-----------|---------------|----------------------|----------------------------|--------|----------------------|---------------------|
|          |           | (mm)          | (mm)                 | (mm)                       | (Kg)   | (Inch)               | (Mpa)               |
| RC3-E531 | RE531     | 84-100        | 81                   | 1069                       | 29     | 3" Remet             | 1.5-3.5Mpa          |



| Hammer  | Hammer Bit Shank |        | External<br>Diameter | Length<br>(without<br>bit) | Weight | Connection<br>Thread | Working<br>Pressure |
|---------|------------------|--------|----------------------|----------------------------|--------|----------------------|---------------------|
|         |                  | (mm)   | (mm)                 | (mm)                       | (Kg)   | (Inch)               | (Mpa)               |
| RC3.5-Y | RC3.5Y           | 98-115 | 94                   | 1184                       | 44     | 3" Remet             | 1.5-3.5Mpa          |



| Hammer       | Bit<br>Shank | Hole<br>Range | External<br>Diameter | Length<br>(without<br>bit) | Weight | Connection<br>Thread            | Working Pressure |
|--------------|--------------|---------------|----------------------|----------------------------|--------|---------------------------------|------------------|
|              |              | (mm)          | (mm)                 | (mm)                       | (Kg)   | (Inch)                          | (Mpa)            |
| RC4-<br>E004 | RE004        | 111-<br>127   | 107                  | 1252                       | 52     | 3.5" / 4"<br>Remet<br>4" Metzke | 1.5-3.5Mpa       |



| Hammer         | Bit<br>Shank | Hole<br>Range | External<br>Diameter | Length<br>(without<br>bit) | Weight | Connection<br>Thread            | Working Pressure |
|----------------|--------------|---------------|----------------------|----------------------------|--------|---------------------------------|------------------|
|                |              | (mm)          | (mm)                 | (mm)                       | (Kg)   | (Inch)                          | (Mpa)            |
| RC4.5-<br>E542 | RE542        | 113-<br>130   | 109.5                | 1191                       | 57     | 3.5" / 4"<br>Remet<br>4" Metzke | 1.5-3.5Mpa       |



| Hammer         | Bit<br>Shank | Hole<br>Range | External<br>Diameter | Length<br>(without<br>bit) | Weight | Connection<br>Thread            | Working Pressure |
|----------------|--------------|---------------|----------------------|----------------------------|--------|---------------------------------|------------------|
|                |              | (mm)          | (mm)                 | (mm)                       | (Kg)   | (Inch)                          | (Mpa)            |
| RC4.5-<br>E543 | RE543        | 120-<br>135   | 116                  | 1191                       | 63     | 3.5" / 4"<br>Remet<br>4" Metzke | 1.5-3.5Mpa       |



| Hammer         | Bit<br>Shank | Hole<br>Range | Extern<br>al<br>Diame<br>ter | Length<br>(without<br>bit) | Weight | Connection<br>Thread                | Working Pressure |
|----------------|--------------|---------------|------------------------------|----------------------------|--------|-------------------------------------|------------------|
|                |              | (mm)          | (mm)                         | (mm)                       | (Kg)   | (Inch)                              | (Mpa)            |
| RC4.5-<br>E545 | RE545        | 122-135       | 117.5                        | 1261                       | 65     | 4" / 4.5" Remet<br>4" / 4.5" Metzke | 1.5-3.5Mpa       |



| Hammer      | Bit<br>Shank | Hole<br>Range | Extern<br>al<br>Diame<br>ter | Length<br>(without<br>bit) | Weight | Connection<br>Thread                  | Working Pressure |
|-------------|--------------|---------------|------------------------------|----------------------------|--------|---------------------------------------|------------------|
|             |              | (mm)          | (mm)                         | (mm)                       | (Kg)   | (Inch)                                | (Mpa)            |
| RC5-<br>P40 | PR40         | 124-142       | 120.5                        | 1362                       | 80.5   | 3.5" / 4.5"Remet<br>3.5" / 4.5"Metzke | 1.5-3.5Mpa       |



| Hammer                 | Bit<br>Shank   | Hole<br>Range | Extern<br>al<br>Diame<br>ter | Length<br>(without<br>bit) | Weight | Connection<br>Thread              | Working Pressure |
|------------------------|----------------|---------------|------------------------------|----------------------------|--------|-----------------------------------|------------------|
|                        |                | (mm)          | (mm)                         | (mm)                       | (Kg)   | (Inch)                            | (Mpa)            |
| RC5.5-<br>P52/P52<br>R | PR52/P<br>R52R | 126-142       | 121                          | 1227                       | 68.5   | 4" / 4.5"Remet<br>4" / 4.5"Metzke | 1.5-3.5Mpa       |



| Hammer     | Bit<br>Shank | Hole<br>Range | Extern<br>al<br>Diame<br>ter | Length<br>(without<br>bit) | Weight | Connection<br>Thread     | Working Pressure |
|------------|--------------|---------------|------------------------------|----------------------------|--------|--------------------------|------------------|
|            |              | (mm)          | (mm)                         | (mm)                       | (Kg)   | (Inch)                   | (Mpa)            |
| RC5.5-E547 | RE547        | 130-146       | 124.5                        | 1270                       | 74     | 4.5" Remet<br>4.5"Metzke | 1.5-3.5Mpa       |



| Hammer         | Bit<br>Shank | Hole<br>Range | Extern<br>al<br>Diame<br>ter | Length<br>(without<br>bit) | Weight | Connection<br>Thread    | Working Pressure |
|----------------|--------------|---------------|------------------------------|----------------------------|--------|-------------------------|------------------|
|                |              | (mm)          | (mm)                         | (mm)                       | (Kg)   | (Inch)                  | (Mpa)            |
| RC5.5-P54/P54R | PR54         | 135-150       | 130                          | 1294                       | 84.5   | 4.5"Remet<br>4.5"Metzke | 1.5-3.5Mpa       |



| Hammer      | Bit Shank | Hole<br>Range | Extern<br>al<br>Diame<br>ter | Length<br>(without<br>bit) | Weight | Connection Thread    | Working<br>Pressure |
|-------------|-----------|---------------|------------------------------|----------------------------|--------|----------------------|---------------------|
|             |           | (mm)          | (mm)                         | (mm)                       | (Kg)   | (Inch)               | (Mpa)               |
| RC5.5-M5456 | MX5456    | 136-150       | 132                          | 1362                       | 90     | 4.5"Remet 4.5"Metzke | 1.5-3.5Mpa          |

# **RC BITS**

#### **Features & Characteristics**

Uses higher grade carbides for longer life Minimizes hole erosion in fragile formations Drills faster through soft formations with less blockages Drills straighter through consolidated and unconsolidated formations.

|      |          | RC b            | its Model            | RC3-E53         | l for shan        | k RE531       |        |                    |
|------|----------|-----------------|----------------------|-----------------|-------------------|---------------|--------|--------------------|
| Dian | actor    | No. x Butto     | n diameter           |                 |                   | Shroud<br>Dia | Weight |                    |
| Dian | ietei    | m               | m                    | Button<br>angle | Flushing<br>holes | mm            | (kg)   | Part No.           |
| mm   | inch     | Gauge<br>Button | Front<br>Button      | arigie          | 110163            |               |        |                    |
| 86   | 3 3/8    | 6 x 12mm        | 5 x 12mm             | 35              | 2                 | 84            | 6      | RC3-E531-86        |
| 89   | 3 1/2    | 8 x 12mm        | 5 x 12mm             | 35              | 2                 | 87            | 6.1    | RC3-E531-89        |
| 95   | 3 3/4    | 8 x 12mm        | 6 x 12mm             | 35              | 2                 | 93            | 6.3    | RC3-E531-95        |
| 102  | 4        | 8 x 12mm        | 6 x 12mm             | 35              | 2                 | 100           | 6.5    | RC3-E531-102       |
|      |          | RC k            | its Model            | RC3.5-Y         | for shank         |               |        |                    |
| Dian | neter    | No. x Butto     | n diameter           |                 |                   | Shroud<br>Dia | Weight |                    |
|      |          | m               | m                    | Button angle    | Flushing<br>holes | mm            | (kg)   | Part No.           |
| mm   | inch     | Gauge<br>Button | Front<br>Button      | arigio          | 110100            |               |        |                    |
| 92   | 3 5/8    | 6 x 14mm        | 6 x 12mm             | 35              | 2                 | 90            | 6.1    | RC3.5Y-92          |
| 95   | 3 3/4    | 6 x 14mm        | 6 x 12mm             | 35              | 2                 | 93            | 6.3    | RC3.5Y-95          |
|      |          | RC b            | its Model            | RC4-E004        | for shan          | k RE004       |        |                    |
| Dian | Diameter |                 | No x Button diameter |                 |                   | Shroud<br>Dia | Weight |                    |
| Dian | 10101    | m               | m                    | Button<br>angle | Flushing<br>holes | mm            | (kg)   | Part No.           |
| mm   | inch     | Gauge<br>Button | Front<br>Button      | arigie          | 110163            |               |        |                    |
| 114  | 4 1/2    | 8 x 14mm        | 8 x 13mm             | 35              | 2                 | 112           | 11.8   | RC4-E004-114       |
| 118  | 4 5/8    | 8 x 14mm        | 8 x 13mm             | 35              | 2                 | 116           | 12     | RC4-E004-118       |
| 121  | 4 3/4    | 8 x 14mm        | 8 x 13mm             | 35              | 2                 | 119           | 12.4   | RC4-E004-121       |
| 127  | 5        | 8 x 14mm        | 8 x 13mm             | 35              | 2                 | 125           | 12.8   | RC4-E004-127       |
|      |          | RC bi           | ts Model I           | RC4.5-E54       | 2 for shar        |               |        |                    |
| Dian | neter    | No x Butto      | n diameter           |                 |                   | Shroud<br>Dia | Weight |                    |
|      |          | m               | m                    | Button<br>angle | Flushing<br>holes | mm            | (kg)   | Part No.           |
| mm   | inch     | Gauge<br>Button | Front<br>Button      | arigio          | 110100            |               |        |                    |
| 121  | 4 3/4    | 8 x 14mm        | 8 x 13mm             | 35              | 2                 | 119           | 10.7   | RC4.5-E542-<br>121 |
| 124  | 4 7/8    | 8 x 14mm        | 8 x 13mm             | 35              | 2                 | 122           | 10.9   | RC4.5-E542-<br>124 |
| 127  | 5        | 8 x 14mm        | 8 x 14mm             | 35              | 2                 | 125           | 11.2   | RC4.5-E542-<br>127 |
| 130  | 5 1/8    | 8 x 16mm        | 8 x 14mm             | 35              | 2                 | 128           | 11.5   | RC4.5-E542-<br>130 |

|      |        | RC b                 | its Model       | RC4.5-E5  | 43 for sha        | ınk RE543        | }      |                |
|------|--------|----------------------|-----------------|-----------|-------------------|------------------|--------|----------------|
| D:   |        | No x Butto           |                 |           |                   |                  | Weight |                |
| Dian | neter  | m                    | m               | Button    | Flushing          | Shroud           | (kg)   | Part No.       |
| mm   | inch   | Gauge<br>Button      | Front<br>Button | angle     | holes             | Dia mm           |        | T dit No.      |
| 124  | 4 7/8  | 8 x 14mm             | 8 x 13mm        | 35        | 2                 | 122              | 11     | RC4.5-E543-124 |
| 127  | 5      | 8 x 14mm             | 8 x 14mm        | 35        | 2                 | 125              | 11.2   | RC4.5-E543-127 |
| 130  | 5 1/8  | 8 x 16mm             | 8 x 14mm        | 35        | 2                 | 128              | 11.4   | RC4.5-E543-130 |
| 133  | 5 1/4  | 8 x 16mm             | 9 x 14mm        | 35        | 2                 | 131              | 11.7   | RC4.5-E543-133 |
|      |        | RC I                 | oits Mode       | RC5-E54   | 5 for shar        | nk RE545         |        |                |
| Dian | neter  | No x Butto           | n diameter      |           |                   |                  | Weight |                |
| 2.0  |        | m                    | m               | Button    | Flushing<br>holes | Shroud<br>Dia mm | (kg)   | Part No.       |
| mm   | inch   | Gauge<br>Button      | Front<br>Button | angle     | noies             | Dia IIIIII       |        |                |
| 124  | 4 7/8  | 8 x 14mm             | 8 x 13mm        | 35        | 2                 | 122              | 11     | RC5-E545-124   |
| 127  | 5      | 8 x 14mm             | 8 x 14mm        | 35        | 2                 | 125              | 11.2   | RC5-E545-127   |
| 133  | 5 1/4  | 8 x 16mm             | 9 x 14mm        | 35        | 2                 | 131              | 11.7   | RC5-E545-133   |
| 136  | 5 3/8  | 8 x 16mm             | 6x16+3x14       | 35        | 2                 | 134              | 12     | RC5-E545-136   |
|      |        | RC                   | bits Mod        | el RC5-P4 | 0 for shar        |                  | l .    | I              |
| Dian | neter  | No x Button diameter |                 |           |                   | Shroud<br>Dia    | Weight |                |
| Dian | notoi  | m                    | m               | Button    | Flushing holes    | mm               | (kg)   | Part No        |
| mm   | inch   | Gauge<br>Button      | Front<br>Button | angle     | noies             |                  |        |                |
| 124  | 4 7/8  | 8 x 14mm             | 8 x 13mm        | 35        | 2                 | 122              | 14.5   | RC5-P40-124    |
| 127  | 5      | 8 x 14mm             | 8 x 14mm        | 35        | 2                 | 125              | 14.7   | RC5-P40-127    |
| 130  | 5 1/8  | 8 x 16mm             | 8 x 14mm        | 35        | 2                 | 128              | 14.9   | RC5-P40-130    |
| 133  | 5 1/4  | 8 x 16mm             | 6x14+3x14       | 35        | 2                 | 131              | 15     | RC5-P40-133    |
| 138  | 5 7/16 | 8 x 16mm             | 6x16+3x14       | 35        | 2                 | 136              | 15.8   | RC5-P40-138    |
| 140  | 5 1/2  | 8 x 16mm             | 6x16+3x14       | 35        | 2                 | 138              | 16     | RC5-P40-140    |
|      | F      | RC bits Mo           | del RC5.5       | 5-P52/P52 | R for shar        |                  | R52R   |                |
| Dian | neter  |                      | n diameter      | Button    | Flushing          | Shroud<br>Dia    | Weight | _              |
|      |        |                      | m E (           | angle     | holes             | mm               | (kg)   | Part No.       |
| mm   | inch   | Gauge<br>Button      | Front<br>Button |           |                   |                  |        |                |
| 133  | 5 1/4  | 8 x 16mm             | 6x14+3x14       | 35        | 2                 | 131              | 16.9   | RC5.5-P52-133  |
| 136  | 5 3/8  | 8 x 16mm             | 6x16+3x14       | 35        | 2                 | 134              | 17.1   | RC5.5-P52-136  |
| 140  | 5 1/2  | 8 x 16mm             | 6x16+3x14       | 35        | 2                 | 138              | 17.2   | RC5.5-P52-140  |
| 143  | 5 5/8  | 8 x 16mm             | 6x16+3x14       | 35        | 2                 | 141              | 17.3   | RC5.5-P52-143  |

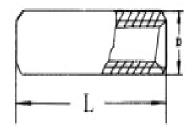
|      |        | RC b             | its Model        | RC5.5-E5  | 47 for sha  | nk RE547         | )      |                |
|------|--------|------------------|------------------|-----------|-------------|------------------|--------|----------------|
| Dian | neter  | No x Butto       | n diameter       |           |             |                  | Weight |                |
| Dian |        | m                | im               | Button    | Flushing    | Shroud<br>Dia mm | (kg)   | Part No        |
| mm   | inch   | Gauge<br>Button  | Front<br>Button  | angle     | angle holes |                  |        |                |
| 136  | 5 3/8  | 8 x 16mm         | 6x16+3x14        | 35        | 2           | 134              | 14.2   | RC5.5-E547-136 |
| 140  | 5 1/2  | 8 x 16mm         | 6x16+3x14        | 35        | 2           | 138              | 14.5   | RC5.5-E547-140 |
| 143  | 5 5/8  | 8 x 16mm         | 6x16+3x14        | 35        | 2           | 141              | 14.7   | RC5.5-E547-143 |
| 146  | 5 3/4  | 8 x 16mm         | 6x16+3x14        | 35        | 2           | 144              | 15     | RC5.5-E547-146 |
|      | F      | RC bits Mo       | del RC5.5        | 5-P54/P54 | R for shar  | nk PR54/P        | R54R   |                |
| Dian | neter  | No x Butto       | n diameter       |           |             |                  | Weight |                |
| Dian | nietei | m                | ım               | Button    | Flushing    | Shroud           | (kg)   | Part No        |
| mm   | inch   | Gauge<br>Buttons | Front<br>Buttons | angle     | holes       | Dia mm           |        |                |
| 136  | 5 3/8  | 8 x 16mm         | 6x16+3x14        | 35        | 2           | 134              | 19     | RC5.5-P54-136  |
| 140  | 5 1/2  | 8 x 16mm         | 6x16+3x14        | 35        | 2           | 138              | 19.3   | RC5.5-P54-140  |
| 143  | 5 5/8  | 8 x 16mm         | 6x16+3x14        | 35        | 2           | 141              | 19.5   | RC5.5-P54-143  |
| 146  | 5 3/4  | 8 x 16mm         | 6x16+3x14        | 35        | 2           | 144              | 19.6   | RC5.5-P54-146  |



| T38 Drill<br>bits  | Di | iameter | Т     | ip Size (mı | m)              |      | ng Hole<br>lo. | Weight | Part No.       |
|--|----|---------|-------|-------------|-----------------|------|----------------|--------|----------------|
| DILS   | mm | inch    | Front | Gauge       | Angle           | Side | Front          |        |                |
|  |    |         |       | NORI        | <b>1AL THRE</b> | AD   |                |        |                |
|  |    |         |       |             |                 |      |                |        |                |
|  | 64 | 2 1/2"  | 11x3  | 12x6        | 35°             | 3    |                | 1.8    | N64T38-311/612 |
| -  | 64 | 2 1/2"  | 10x4  | 10x8        | 40°             | 2    |                | 1.6    | N64T38-410/810 |
| - Carlin   | 64 | 2 1/2"  | 10x4  | 11x6        | 35°             | 3    |                | 1.7    | N64T38-410/611 |
|  | 70 | 2 3/4"  | 11x4  | 11x8        | 40°             | 2    |                | 1.9    | N70T38-411/811 |
|  | 70 | 2 3/4"  | 10x5  | 11x8        | 30°             | 4    |                | 1.9    | N70T38-510/811 |
|  | 70 | 2 3/4"  | 10x4  | 12x6        | 35°             | 3    |                | 1.8    | N70T38-411/612 |
| 3.00   | 76 | 3"      | 11x4  | 11x8        | 40°             | 2    |                | 2.4    | N76T38-411/811 |
|  | 76 | 3"      | 11x5  | 13x8        | 35°             | 2    | 1              | 2.4    | N76T38-511/813 |
|  | 76 | 3"      | 11x4  | 12x6        | 35°             | 3    | 1              | 2.6    | N76T38-411/612 |
| 3000   | 76 | 3"      | 11x5  | 12x8        | 35°             | 4    |                | 2.6    | N76T38-511/812 |
| 2 .00  | 76 | 3"      | 11x5  | 11x8        | 40°             | 4    |                | 2.6    | N76T38-511/811 |
|  | 89 | 3 1/2"  | 13x4  | 13x8        | 40°             | 4    |                | 3.3    | N89T38-413/813 |
| 9 00 00  | 89 | 3 1/2"  | 13x5  | 13x8        | 35°             | 2    |                | 3.3    | N89T38-513/813 |
| 3  | 89 | 3 1/2"  | 11x6  | 12x8        | 35°             | 2    |                | 3.3    | N89T38-611/812 |
|  | 89 | 3 1/2"  | 11x5  | 13x6        | 35°             | 3    | 1              | 3.3    | N89T38-511/613 |
|  | 89 | 3 1/2"  | 11x5  | 13x8        | 35°             | 4    |                | 3.3    | N89T38-511/813 |
|  | 89 | 3 1/2"  | 13x5  | 13x8        | 35°             | 4    |                | 3.3    | N89T38-513/813 |
|  |    |         |       | RETR        | AC THRE         | AD   |                |        |                |
|  |    |         |       |             |                 |      |                |        |                |
| D 49/0   | 64 | 2 1/2"  | 10x4  | 10x8        | 30°             | 2    |                | 2.2    | R64T38-410/810 |
| 100  | 64 | 2 1/2"  | 10x4  | 11x6        | 35°             | 3    |                | 2.2    | R64T38-410/611 |
|  | 70 | 2 3/4"  | 11x4  | 13x6        | 40°             | 2    |                | 2.4    | R70T38-411/613 |
|  | 70 | 2 3/4"  | 10x4  | 11x8        | 35°             | 3    |                | 2.4    | R70T38-410/811 |
|  | 70 | 2 3/4"  | 10x5  | 11x8        | 35°             | 4    |                | 2.4    | R70T38-510/811 |
| 30,00  | 76 | 3"      | 11x4  | 11x8        | 40°             | 2    |                | 3.3    | R76T38-411/811 |
| 100  | 76 | 3"      | 11x5  | 11x8        | 35°             | 4    |                | 3.3    | R76T38-511/811 |
| The state of the s | 76 | 3"      | 11x5  | 12x8        | 35°             | 4    |                | 3.3    | R76T38-511/812 |
|  | 89 | 3 1/2"  | 13x4  | 13x8        | 40°             | 2    |                | 4.8    | R89T38-413/813 |
|  | 89 | 3 1/2"  | 13x5  | 13x8        | 35°             | 2    |                | 4.8    | R89T38-513/813 |
| -  | 89 | 3 1/2"  | 11x5  | 13x8        | 35°             | 4    |                | 4.8    | R89T38-511/813 |
|  | 89 | 3 1/2"  | 13x5  | 13x8        | 35°             | 4    |                | 4.8    | R89T38-513/813 |

|     | X-BITS |        |          |            |     |   |   |     |              |  |  |  |
|-----|--------|--------|----------|------------|-----|---|---|-----|--------------|--|--|--|
|     | 64     | 2 1/2" |          | 25x13      |     | 2 |   | 1.6 | X64T38-25/13 |  |  |  |
| 400 | 76     | 3"     |          | 25x13      |     | 3 |   | 1.7 | X76T38-25/13 |  |  |  |
|     | 89     | 3 1/2" |          | 25x13      |     | 2 |   | 1.9 | X89T38-25/13 |  |  |  |
|     |        | Do     | med bits | for reamin | g   |   |   |     |              |  |  |  |
|     | 102    | 4      | 13x1     | 13x16      | 35° | 2 | 2 | 3.8 | 102T38       |  |  |  |
|     | 127    | 5      | 13x1     | 13x18      | 35° | 1 | 3 | 5.2 | 127T38       |  |  |  |

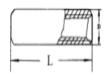
| T38       | L   | ength  | D  | iameter | THREAD | Weight | Part No.   |  |
|-----------|-----|--------|----|---------|--------|--------|------------|--|
| Couplings | mm  | inch   | mm | inch    | INCEAD | weight | Fait No.   |  |
|           | 190 | 7 1/2" | 55 | 2 5/32" | T38    | 2.1    | 55T38-L190 |  |



|  | Diali | neter     | Tip Size (mm) |         |      |          | hing<br>No. | Weight | Part No.         |
|--|-------|-----------|---------------|---------|------|----------|-------------|--------|------------------|
| T45 Drill bits   | mm    | inch      | Front         | Gauge   |      |          | Front       | weight | i dit ivo.       |
| ·  |       |           |               | DRMAL T |      |          |             |        |                  |
|  |       | 2         |               |         |      |          |             |        |                  |
| -  | 70    | 3/4"      | 11 x 4        | 11x8    | 40°  | 2        |             | 2.3    | N70T45-411/811   |
|  |       | 2         | 11 x 3, 9 x   |         |      |          |             |        |                  |
|  | 70    | 3/4"      | 1             | 11x6    | 35°  | 3        |             | 2.2    | N70T45-411/611   |
|  |       | 2         |               |         |      |          |             |        |                  |
| -  | 70    | 1/2"      | 10 x 5        | 11x8    | 35°  | 4        |             | 2.2    | N70T45-510/811   |
|  | 76    | 3"        | 11 x 4        | 11x8    | 40°  | 2        |             | 2.6    | N76T45-411/811   |
| 3000   | 76    | 3"        | 11 x 5        | 12x8    | 35°  | 2        | 1           | 2.6    | N76T45-511/812   |
|  | 76    | 3"        | 11 x 4        | 13x6    | 35°  | 3        |             | 2.4    | N76T45-511/613   |
| 3 A.   | 76    | 3"        | 11 x 5        | 12x8    | 35°  | 4        |             | 2.6    | N76T45-511/812   |
|  |       | 3         |               |         |      |          |             |        |                  |
|  | 89    | 1/2"      | 13 x 4        | 13x8    | 40°  | 2        |             | 4.6    | N89T45-413/813   |
|  |       | 3         |               |         |      |          |             | 4.0    |                  |
|  | 89    | 1/2"      | 11 x 5        | 13x6    | 35°  | 2        |             | 4.6    | N89T45-511/613   |
|  | 00    | 3         | 44 5          | 400     | 0.50 |          | 4           | 4.4    | NIOOTAE E44/040  |
| 3 40   | 89    | 1/2"      | 11 x 5        | 13x6    | 35°  | 3        | 1           | 4.1    | N89T45-511/613   |
|  | 89    | 3<br>1/2" | 11 v 5        | 1270    | 35°  |          |             | 16     | NIQOTAS 511/010  |
| 3  | 09    | 3         | 11 x 5        | 12x8    | J)   | 4        |             | 4.6    | N89T45-511/812   |
|  | 89    | 3<br>1/2" | 13 x 4        | 13x8    | 35°  | 4        |             | 4.6    | N89T45-413/813   |
| 4.0  | 102   | 4         | 14 x 5        | 14x8    | 40°  | 2        |             | 5      | N102T45-514/814  |
|  | 102   | 4         | 13 x 6        | 16x8    | 40°  | 2        | 1           | 5      | N102T45-613/816  |
|  | 102   | 4         | 13 x 5        | 14x6    | 35°  | 3        | 1           | 4.5    | N102T45-513/614  |
|  | 102   | 4         | 13 x 5        | 14x8    | 35°  | 4        | '           | 4.5    | N102T45-513/814  |
|  | 102   | 4         | 13 x 6        | 13x8    | 35°  | 4        | 1           | 4.5    | N102T45-613/813  |
|  | 102   | <u>'</u>  |               | ETRAC T |      |          | ·           | 1.0    | 11102110 010/010 |
| The second second  |       | 2         |               |         |      |          |             |        |                  |
| 4,00   | 70    | 3/4"      | 11 x 4        | 11x8    | 40°  | 2        |             | 2.5    | R70T45-411/811   |
|  |       | 2         | 11 x 3, 9 x   |         |      |          |             |        |                  |
|  | 70    | 3/4"      | 1             | 11x6    | 35°  | 3        |             | 2.5    | R70T45-411/611   |
|  |       | 2         |               |         |      |          |             |        |                  |
|  | 70    | 3/4"      | 10 x 5        | 11x8    | 35°  | 4        |             | 2.5    | R70T45-510/811   |
| 3  | 76    | 3"        | 11 x 4        | 11x8    | 40°  | 2        |             | 3.2    | R76T45-411/811   |
| 0 00 0   | 76    | 3"        | 11 x 5        | 12x8    | 35°  | 2        | 1           | 3.2    | R76T45-511/812   |
| 3 80   | 76    | 3"        | 11 x 4        | 13x6    | 35°  | 3        |             | 3.2    | R76T45-411/613   |
|  | 76    | 3"        | 11 x 5        | 11x8    | 35°  | 4        |             | 3.2    | R76T45-511/811   |
|  | 76    | 3"        | 11 x 5        | 12x8    | 35°  | 4        |             | 3.2    | R76T45-511/812   |
| 4000   | _     | 3         |               |         |      |          |             | _      |                  |
|  | 89    | 1/2"      | 13 x 4        | 13x8    | 40°  | 2        |             | 5.4    | R89T45-413/813   |
| - 40   | 00    | 3         | 44 0          | 40.0    | 0.50 |          |             | - A    | D00T45 044/040   |
| - 1 40   | 89    | 1/2"      | 11 x 6        | 12x8    | 35°  | 2        |             | 5.4    | R89T45-611/812   |
| 2 00000  | 00    | 3<br>1/2" | 11 v E        | 1276    | 35°  | 2        | 4           | E 1    | D00T45 544/640   |
| 0000   | 89    | 3         | 11 x 5        | 13x6    | 33   | 3        | 1           | 5.4    | R89T45-511/613   |
| - 00   | 89    | 3<br>1/2" | 11 x 5        | 13x6    | 35°  | 3        | 1           | 5.4    | R89T45-511/613   |
|  | 03    | 3         | 11 \ \        | 13/0    | 55   | <u> </u> |             | J.4    | 1/071707011/010  |
| - 40   | 89    | 1/2"      | 11 x 5        | 12x8    | 35°  | 4        |             | 5.4    | R89T45-511/812   |
| 2 00000  |       | 3         | 1170          | 12/0    |      |          |             | 5.7    |                  |
| 9000   | 89    | 1/2"      | 13 x 5        | 13x8    | 35°  | 4        |             | 5.4    | R89T45-513/813   |
| - 00   | 102   | 4         | 14x5          | 14x8    | 40°  | 2        |             | 6.8    | R102T45-514/814  |
|  | 102   | 4         | 13x6          | 18x8    | 40°  | 2        | 1           | 6.8    | R102T45-613/816  |
|  | 102   | 4         | 13x3,13x2     | 14x6    | 35°  | 3        | 1           | 6.8    | R102T45-513/614  |
| 7 69 76  | 102   | 4         | 13x4,13x1     | 14x8    | 35°  | 4        | -           | 6.8    | R102T45-513/814  |
| The same of the sa |       |           | ,             |         |      |          |             |        |                  |
| 400  | 102   |           | 13x4,13x2     | 13x8    | 35°  |          | 1           |        | R102T45-613/813  |



| Domed bits for reaming |   |      |       |     |   |   |      |        |  |  |
|------------------------|---|------|-------|-----|---|---|------|--------|--|--|
| 127                    | 5 | 13x1 | 13x18 | 35° | 3 | 1 | 6    | 127T45 |  |  |
| 152                    | 6 | 14x2 | 14x18 | 35° | 3 | 1 | 10.6 | 152T45 |  |  |

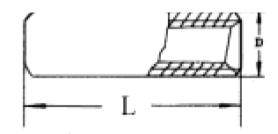


| T45       | Length |        | Diameter |          | THREAD  | Weight | Part No.   |  |
|-----------|--------|--------|----------|----------|---------|--------|------------|--|
| Couplings | mm     | inch   | mm       | inch     | ITINEAD | weight | Fait No.   |  |
|           | 210    | 8 1/4" | 63       | 2 33/64" | T45     | 3      | 63T45-L210 |  |
|           | 210    | 8 1/4" | 66       | 2 37/64" | T45     | 3.3    | 66T45-L210 |  |

| T51 Drill | Dia      | meter  |                        |              |        | 1    | hing  |        |                                  |
|-----------|----------|--------|------------------------|--------------|--------|------|-------|--------|----------------------------------|
| bits      | Dia      |        |                        | ize (mm      |        |      | No.   | Weight | Part No.                         |
| ыно       | mm       | inch   | Front                  | Gauge        |        | Side | Front |        |                                  |
|           |          | ı      |                        | NORMA        | L THRE | AD   |       |        |                                  |
| 3.53      | 00       | 2 4/0" | 1241                   | 10,40        | 40°    | 2    |       | 4.0    | NOOTE1 412/012                   |
|           | 89<br>89 | 3 1/2" | 13x4<br>13x5           | 13x8         | 35°    | 2    | 1     | 4.9    | N89T51-413/813<br>N89T51-513/813 |
|           | 89       | 3 1/2" |                        | 13x8<br>13x6 | 35°    | 4    | ı     | 4.9    | N89T51-513/613                   |
|           | 89       | 3 1/2" | 11x3,11x2              | 13x8         | 35°    | 4    |       |        | N89T51-511/813                   |
|           | 89       | 3 1/2" | 11x4,11x1<br>13x4,13x1 | 13x8         | 35°    | 4    |       | 4.9    | N89T51-513/813                   |
|           | 102      | 4"     | 14x4                   | 14x8         | 40°    | 2    |       | 5.8    | N102T51-414/814                  |
|           | 102      | 4"     | 13x6                   | 16x8         | 35°    | 2    | 1     | 5.8    | N102T51-414/814                  |
|           | 102      | 4"     | 13x3,13x2              | 14x6         | 35°    | 3    | 1     | 5.8    | N102T51-513/614                  |
|           | 102      | 4"     | 13x4,13x1              | 14x8         | 35°    | 4    | 1     | 5.8    | N102T51-513/814                  |
|           | 102      | 4"     | 13x4,13x1              | 13x8         | 35°    | 4    | 1     | 5.8    | N102T51-513/813                  |
| 3         | 115      | 4 1/2" | 14x6                   | 14x8         | 35°    | 2    | I     | 6.8    | N115T51-614/814                  |
|           | 115      | 4 1/2" | 14x6                   | 16x8         | 35°    | 2    |       | 6.8    | N115T51-614/816                  |
|           | 115      | 4 1/2" | 13x4,13x2              | 14x8         | 35°    | 4    |       | 6.8    | N115T51-613/814                  |
| 3.43      | 115      | 4 1/2" | 13x4,13x3              | 14x8         | 35°    | 4    |       | 6.8    | N115T51-713/814                  |
|           | 115      | 4 1/2" | 14x4,14x2              | 16x8         | 35°    | 4    |       | 6.8    | N115T51-715/814                  |
|           | 127      | 5"     | 14x8                   | 16x8         | 35°    | 2    | 1     | 7.5    | N127T51-814/816                  |
| 3,500     | 127      | 5"     | 16x4,13x2              | 16x8         | 35°    | 4    | - 1   | 7.5    | N127T51-616/816                  |
|           | 127      | 5"     | 14x4,14x3              | 14x8         | 35°    | 4    |       | 7.5    | N127T51-010/814                  |
|           | 121      | J      | 1424,1420              |              | C THRE |      |       | 7.0    | 14127131-714/014                 |
|           | 89       | 3 1/2" | 13x4                   | 13x8         | 40°    | 2    |       | 5.3    | R89T51-413/813                   |
|           | 89       | 3 1/2" | 13x5                   | 13x8         | 35°    | 2    | 1     | 5.3    | R89T51-513/813                   |
|           | 89       | 3 1/2" | 11x3,11x2              | 13x6         | 35°    | 4    | - '   | 5.3    | R89T51-511/613                   |
|           | 89       | 3 1/2" | 11x4,11x1              | 13x8         | 35°    | 4    |       | 5.3    | R89T51-511/813                   |
| 7.53      | 89       | 3 1/2" | 13x4,13x1              | 13x8         | 35°    | 4    |       | 5.3    | R89T51-513/813                   |
|           | 102      | 4"     | 14x4                   | 14x8         | 40°    | 2    |       | 7.3    | R102T51-414/814                  |
|           | 102      | 4"     | 13x6                   | 16x8         | 35°    | 2    | 1     | 7.3    | R102T51-613/816                  |
| 3 40      | 102      |        | 13x4,13x1              | 14x8         | 35°    | 4    |       |        | R102T51-513/814                  |
|           | 102      | 4"     | 13x4,13x2              | 13x8         | 35°    | 4    | 1     | 7.3    | R102T51-613/813                  |
| - 40      | 102      | 4"     | 13x4,13x1              | 14x8         | 35°    | 4    | 1     | 7.3    | R102T51-513/814                  |
|           | 115      | 4 1/2" | 14x6                   | 14x8         | 35°    | 2    |       | 9.8    | R115T51-614/814                  |
|           | 115      | 4 1/2" | 14x6                   | 16x8         | 35°    | 2    |       | 9.8    | R115T51-614/816                  |
| 7.65      | 115      | 4 1/2" | 13x4,13x2              | 14x8         | 35°    | 4    |       | 9.8    | R115T51-613/814                  |
|           | 115      | 4 1/2" | 13x4,13x3              | 14x8         | 35°    | 4    |       | 9.8    | R115T51-713/814                  |
|           | 115      | 4 1/2" | 14x4,14x2              | 16x8         | 35°    | 4    |       | 9.8    | R115T51-614/816                  |
| 2 44 1    | 127      | 5"     | 14x8                   | 16x8         | 35°    | 2    | 1     | 12     | R127T51-814/816                  |
|           | 127      | 5"     | 16x4,13x2              | 16x8         | 35°    | 4    |       | 12     | R127T51-616/816                  |
|           | 127      | 5"     | 14x4,14x3              | 14x8         | 35°    | 4    |       | 12     | R127T51-714/814                  |

| Domed bits for reaming |     |   |      |       |     |  |     |      |        |
|------------------------|-----|---|------|-------|-----|--|-----|------|--------|
|                        | 152 | 6 | 14x2 | 14x18 | 35° |  | 3 1 | 10.6 | 152T51 |

| T51       | Ler | ngth   | Diar | meter    | THREAD | Weight  | Part No.   |
|-----------|-----|--------|------|----------|--------|---------|------------|
| Couplings | mm  | inch   | mm   | inch     | INCAU  | vveigni | Part No.   |
|           | 225 | 8 7/8" | 71   | 2 51/64" | T51    | 4.6     | 71T51-L225 |
|           | 225 | 8 7/8" | 76   | 3"       | T51    | 4.8     | 76T51-L225 |
|           | 235 | 9 1/4" | 72   | 2 7/8"   | T51    | 4.7     | 72T51-L235 |
|           | 235 | 9 1/4" | 77   | 3 1/32"  | T51    | 4.9     | 77T51-L235 |



| T60 Drill bits | Diameter |        | Tip Size (mm) |       |       | Flushing<br>Hole No. |       | Weight | Part No.        |
|----------------|----------|--------|---------------|-------|-------|----------------------|-------|--------|-----------------|
|                | mm       | inch   | Front         | Gauge | Angle | Side                 | Front |        |                 |
| NORMAL THREAD  |          |        |               |       |       |                      |       |        |                 |
| A 44           | 92       | 3 5/8" | 13x4,13x1     | 13x8  | 35°   | 4                    |       | 5.3    | N92T60-513/813  |
|                | 96       | 3 3/4" | 13x4,13x1     | 14x8  | 35°   | 4                    |       | 5.6    | N92T60-513/814  |
| 200            | 102      | 4"     | 11x9          | 13x9  | 35°   | 3                    |       | 6      | N102T60-911/913 |
|                | 115      | 4 1/2" | 12x10         | 14x9  | 35°   | 3                    |       | 6.8    | N115T60-012/914 |
| -2.42          | 127      | 5"     | 13x10         | 14x9  | 35°   | 3                    |       | 7.5    | N127T60-013/914 |
| - 5 B B        | 140      | 5 1/2" | 14x10         | 16x9  | 35°   | 3                    |       | 9      | N140T60-014/916 |
|                | 152      | 6"     | 14x12         | 16x9  | 35∘   | 3                    |       | 10.6   | N152T60-214/916 |

|          |     |        | F     | RETRAC | THREA | ) |     |                 |
|----------|-----|--------|-------|--------|-------|---|-----|-----------------|
| -        | 92  | 3 5/8" | 12x9  | 12x9   | 40°   | 2 | 5.4 | R92T60-912/912  |
|          | 96  | 3 3/4" | 12x9  | 12x9   | 40°   | 2 | 6.3 | R92T60-912/912  |
| 10       | 102 | 4"     | 12x10 | 13x9   | 40°   | 2 | 7.3 | R102T60-012/913 |
| 7.40     | 115 | 4 1/2" | 12x10 | 14x9   | 35°   | 3 | 9.8 | R115T60-012/914 |
| A office | 118 | 4 5/8" | 13x6  | 16x9   | 35°   | 3 | 10  | R118T60-613/916 |
| D 0      | 127 | 5"     | 13x10 | 14x9   | 35°   | 3 | 12  | R127T60-013/914 |
| 1000     | 140 | 5 1/2" | 14x10 | 16x9   | 35°   | 3 | 14  | R140T60-014/916 |
| 7 7 7    | 152 | 6"     | 14x12 | 16x9   | 35°   | 3 | 16  | R152T60-214/916 |

| ST58 Drill | Dia           | ımeter | Tip      | Size (mm | n)          |       | shing<br>e No. | Weight | Part No.        |
|------------|---------------|--------|----------|----------|-------------|-------|----------------|--------|-----------------|
| bits       | mm            | inch   | Front    | Gauge    | Angle       | Side  | Front          | · ·    |                 |
|            | NORMAL THREAD |        |          |          |             |       |                |        |                 |
|            |               |        |          |          |             |       |                |        |                 |
| 3          | 89            | 3 1/2" | 12x6     | 12x8     | 35°         | 2     | 1              | 4.1    | N89T58-513/813  |
|            | 89            | 3 1/2" | 13x6     | 13x8     | 35°         | 2     | 1              | 4.1    | N89T58-613/813  |
|            |               |        | 13x4,13x |          |             |       |                |        |                 |
| - 48       | 89            | 3 1/2" | 1        | 13x8     | 35°         | 4     |                | 4.1    | N89T58-513/813  |
|            |               |        | 12x4,12x |          |             |       |                |        |                 |
| 2          | 89            | 3 1/2" | 2        | 12x8     | 35°         | 4     |                | 4.1    | N89T58-612/812  |
| 41.24      |               |        | 13x4,13x |          |             |       |                |        |                 |
|            | 95            | 3 3/4" | 1        | 14x8     | 35°         | 4     |                | 4.6    | N95T58-513/814  |
|            | 102           | 4"     | 14x6     | 14x8     | 35°         | 2     |                | 6      | N102T58-614/814 |
|            | 102           | 4"     | 13x6     | 16x8     | 35°         | 2     | 1              | 6      | N102T58-613/816 |
|            | 115           | 4 1/2" | 14x6     | 16x8     | 35°         | 2     |                | 7      | N115T58-614/816 |
|            |               | ı      | ı        | RETRA    | AC THRE     | AD    |                |        |                 |
|            | 0.0           | 0.4/0" | 40.0     | 4.4.0    | 0.50        |       | 4              | = 4    | D00750 040/044  |
|            | 89            | 3 1/2" | 12x6     | 14x8     | 35°         | 2     | 1              | 5.1    | R89T58-612/814  |
| •••        | 00            | 0.4/0" | 13x4,13x | 40.0     | 0.50        |       |                | E 4    | D00750 540/040  |
|            | 89            | 3 1/2" | 1        | 13x8     | 35°         | 4     | 4              | 5.1    | R89T58-513/813  |
| 1000       | 102           | 4"     | 12x7     | 14x8     | 35°         | 2     | 1              | 6.5    | R102T58-712/814 |
|            | 115           | 4 1/2" | 14x6     | 16x8     | 35°         | . 2   |                | 8.5    | R115T58-614/816 |
|            |               |        |          | Domed b  | its for rea | aming |                |        |                 |
| - A (1)    | 150           |        | 10,40    | 16.0     | 250         |       | a              | 40     | 150T50 010/010  |
|            | 152           | 6      | 16x6     | 16x9     | 35°         | 2     | 1              | 13     | 152T58-616/916  |
| 4.         | 152           | 6      | 14x2     | 14x8     | 35°         | 2     | 1              | 10.4   | 152T58-214/1814 |

| ST68 Drill<br>bits | Dia           | ameter |           | Tip Size (mm) Flushi |            | e No. | Weight | Part No. |                 |
|--------------------|---------------|--------|-----------|----------------------|------------|-------|--------|----------|-----------------|
| Dits               | mm            | inch   | Front     | Gauge                | Angle      | Side  | Front  |          |                 |
|                    | NORMAL THREAD |        |           |                      |            |       |        |          |                 |
|                    | 102           | 4"     | 14x6      | 14x8                 | 35°        | 2     |        | 8.7      | N102T68-614/814 |
|                    | 102           | 4"     | 12x4,12x4 | 12x10                | 35°        | 4     |        | 8.7      | N102T68-612/012 |
|                    | 105           | 4 1/8" | 14x6      | 14x8                 | 35°        | 2     |        | 8.9      | N105T68-614/814 |
| - 40.              | 105           | 4 1/8" | 14x4,12x2 | 14x8                 | 35°        | 4     |        | 8.9      | N105T68-612/814 |
|                    | 110           | 4 3/8" | 14x6      | 16x8                 | 35°        | 2     |        | 9.4      | N110T68-614/816 |
| <b>3</b> (% 9 )    | 110           | 4 3/8" | 14x4,14x2 | 16x8                 | 35°        | 4     |        | 8.9      | N110T68-614/816 |
| 7                  | 115           | 4 1/2" | 14x6      | 16x8                 | 35°        | 2     |        | 9.6      | N115T68-614/816 |
|                    | 115           | 4 1/2" | 14x4,14x2 | 16x8                 | 35°        | 4     |        | 9.5      | N115T68-714/816 |
| - C                | 115           | 4 1/2" | 14x4,14x4 | 14x10                | 35°        | 4     |        | 9.5      | N115T68-614/014 |
|                    | 127           | 5"     | 14x8      | 16x9                 | 35°        | 3     |        | 11       | N127T68-814/916 |
|                    |               |        |           | RETRA                | C THRI     | EAD   |        |          |                 |
|                    | 102           | 4"     | 12x4,12x4 | 12x10                | 35°        | 4     |        | 9.3      | R102T68-612/814 |
|                    | 102           | 4"     | 14x4,12x2 | 14x8                 | 35°        | 4     |        | 9.3      | R102T68-612/814 |
|                    | 110           | 4 3/8" | 14x6      | 16x8                 | 35°        | 2     |        | 10       | R110T68-614/816 |
|                    | 115           | 4 1/2" | 14x6      | 16x8                 | 35°        | 2     |        | 10       | R115T68-614/816 |
|                    | 127           | 5"     | 14x8      | 16x9                 | 35°        | 3     |        | 15       | R127T68-814/916 |
|                    | 140           | 5 1/2" | 14x9      | 16x9                 | 35°        | 3     |        | 17.8     | R140T68-914/916 |
|                    |               |        |           | Domed b              | its for re | aming |        |          |                 |
|                    | 152           | 6      | 16x6      | 16x9                 | 35°        | 3     |        | 13       | 152T68-616/916  |
| A                  | 152           | 6      | 14x2      | 14x18                | 35°        | 3     | 3      | 10.4     | 152T68-214/1814 |

## **Button Bits**

| SKIRT:           | Straight (Regular skirt), Retrac and Straightrac (Sprial skirt) |
|------------------|---|
| BITS DIAMETER    | 45mm-152mm  |
| THREAD           | R22, R25, R28, R32, R35, R38, T38, T45, T51, T60, ST58,T68      |
| FACE DESIGN      | Flat face, drop center, uniform face                            |
| BUTTON SELECTION | Spherical and ballistic   |



## **Cross Bits and X Bits**

| SKIRT:       | Straight (Regular skirt) and Retrac                         |
|--------------|---|
| BIT DIAMETER | 45mm-127mm  |
| THREAD       | R22, R25, R28, R32, R35, R38, T38, T45, T51, T60, ST58, T68 |



# **Tapered Bits**

| BITS DIAMETER | 28mm-70mm                            |
|---------------|--------------------------------------|
| DEGREE        | 4°,6°,7°,11°and 12°                  |
| TYPE          | Chisel bit, Cross bit and Button bit |
| SKIRT:        | Short or Long Skirt                  |



# **Coupling Sleeves**

**THREAD** R22-R38, SR28-SR35, T38-T51, GT60, ST58/68

# **Integral Drill Steel**

| DIAMETER | 28mm-41mm            |
|----------|----------------------|
| SHANK    | H22x108mm, H25x159mm |
| LENGTH   | 400mm-4345mm         |



# **Core Orientation**

#### 1. DeviCore BBT

#### Continuous core orientation

The DeviCore BBT is the latest core orientation innovation from Devico. Unlike competing products the DeviCore BBT can be supplied with a patent pending scribing system adding a continuous scribe line to the core sample as it enters the inner tube. The DeviCore BBT was developed to be user friendly and efficient, keeping the influence on the daily production rates at a minimum. The kit includes two DeviCore BBT probes with changeable survey tools and a core barrel extension, and is ready to be assembled on the drilling equipment on site. The probes have a valve system in front securing that pump-in time is not affected.

## Applications

- Diamond Drilling core orientation
- Down hole orientation
- Geotechnical investigation
- Exploration



#### **Benefits**

- Available for sales or rental
- Cost effective core orientation system
- Transferable electronics to other running gear sizes
- Inclination data recorded
- Highly robust and reliable
- High precision system
- Digital results with archived data, no manual results transcription
- QA check
- DeviSoft software easy to manage



## Technical Specifications:

#### **SURVEY TOOL**

| WEIGHT               | 3.9kg/8.6lbs |
|----------------------|--------------|
| LENGTH               | 410mm/16.1"  |
| MAGNETIC             | No           |
| RUNNING GEAR         | Integrated   |
| INCLINATION ACCURACY | ±0.1°        |
| ORIENTATION ACCURACY | ±0.5°        |

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|----|-----|

| FUA               |                  |
|-------------------|------------------|
| TYPE              | Nomad            |
| SOFTWARE          | DeviSoft         |
| BATTERY LIFE/TYPE | 15 hours/Lithium |
| IP RATING         | IP67             |

#### 2. DeviHead Head

#### **Assembly core orientation tool**

The DeviHead is the new and unique core orientation system by Devico. Consisting of a miniature survey instrument small enough to fit inside a core barrel head assembly, the DeviHead offers a revolutionary system fully integrated with the drilling equipment. With the DeviHead no core barrel ajustments are neccessary, and core orientation may started or ended at any time without having to retrieve the drill string and core barrel from the drill hole. Utilizing the Devico BBT technology the DeviHead communicates wirelessly with a handheld device without the need of opening any threads. The kit includes two DeviHead units with changeable survey tools and spindle assemblies, and is ready to be used with any standard head assembly on site.

#### Applications

- Diamond Drilling core orientation
- Down hole orientation
- Geotechnical investigation
- Exploration

#### Benefits

- Available for sales or rental
- Cost effective core orientation system
- Transferable electronics to other running gear sizes
- Inclination data recorded
- Highly robust and reliable
- High precision system
- Digital results with archived data, no manual results transcription
- OA check
- DeviSoft software easy to manage

## Technical Specifications: 📑

#### SURVEY TOOL

| NO               |
|------------------|
| Integrated       |
| ±0.5°            |
| ±0.5°            |
| ±0.2°            |
| -90 to +90°      |
| -15° to +70°C    |
| Approx. 45 days  |
| 1xCR123a Lithium |
| 300bar/4350ps    |
| 3000m /9842.52Ft |
|                  |

| PDA               |                  |
|-------------------|------------------|
| TYPE              | Smartphone       |
| SOFTWARE          | DeviSoft         |
| BATTERY LIFE/TYPE | 15 hours/Lithium |
| IP RATING         | IP67             |



# **Survey Instruments**

#### 1- DeviShot

#### Magnetic Single/ MultiShot

Magnetic Single/ MultiShot High precision instrument with superior strength DeviShot is available in the standard 35mm diameter or in 30 mm for smaller diameter requirements projects. This rugged instrument measures the drill hole path, in a non-magnetic environment. Magnetically affected data points are flagged red within the software, alerting the user after download of the survey data. Bluetooth communication provides fast data transfer and download. DeviSoft software is both simple and intuitive and is used with both the DeviShot, DeviCore BBT and DeviFlex survey instruments. A long life internal replaceable battery means the DeviShot instrument can remain at the drill site without needing to be charged. The battery is expected to last up to 6 months before it needs to be exchanged.

#### Applications

- Diamond Drilling Wireline,
   Pump down or conventional
- Surface Diamond Drilling Wireline
- Pilot holes
- Directional drilling
- Exploration
- Grade Control
- Resource Definition
- Geotechnical Investigation
- Blast holes
- Grout and control holes

#### Benefits

- Highly robust, repeatable and reliable
- Simple and intuitive software
- High accuracy
- QA check Azimuth data at the rig
- More cost effective and robust than gyro instruments
- Independent azimuth and dip reading at each station
- Long life battery lasts up to 6 months

  Backed by the unbeatable Devico Repair
- Guarantee:

www.devico.com/warranty

## Technical Specifications: 🕛

#### **SURVEY TOOL**

| WEIGHT               | 5.6kg/12.60lbs   |
|----------------------|------------------|
| DIAMETER             | 35mm/1.38"       |
| LENGTH               | 1170mm/46.1"     |
| MAGNETIC             | Yes              |
| RUNNING GEAR         | Integrated       |
| INCLINATION ACCURACY | ±0.1°            |
| AZIMUTH ACCURACY     | ±0.5°            |
| TOOL FACE ACCURACY   | ±0.2°            |
| INCLINATION RANGE    | -90 to +90°      |
| TEMP RANGE           | -15° to +70°C    |
| BATTERY LIFE         | 1200hrs          |
| BATTERY TYPE         | 2X 3.6V Lithium  |
| PRESSURE             | 300bar/4350ps    |
| MAXIMUM DEPTH        | 3000m /9842.52Ft |



## 2- DeviFlex Rapid

#### **Continuous High Speed Non-Magnetic Survey**

Gone are the days when the survey tool had to stand still at each survey station to log data. The DeviFlex Rapid can be moved continuously without stopping from start to end of hole, and back again. DeviFlex Rapid is a package consisting the highly popular non-magnetic DeviFlex Auto-Rotate survey instrument, the smart DeviCounter and QA processing software. With these three technologies combined, the user can perform high accuracy surveys at a fraction of the time previously needed. This non-magnetic strain gauge survey tool is not affected by magnetics making it ideal for in-rod surveying, eliminating the guess-work associated with magnetic single/multishot survey instruments.

## Applications •

- Underground Diamond Drilling Wireline, Pump down or conventional
- Surface Diamond Drilling Wireline
- Pilot holes
- Exploration
- Grade Control
- Resource Definition
- Geotechnical Investigation
- Suits a large variety of coring rods
- Dip Range (+85° to -85°)

#### Benefits

- Improved driller safety
- Continuous survey operation
- Inrod surveying not affected by magnetics
- 17 stage quality assurance check
- Monthly battery recharge (400 hrs use)

# More cost effective and robust than gyro instruments

- Highly robust and reliable
- Simple and intuitive software
- High accuracy
- Zero drift over time
- Pause mid survey for up to 12 hours
- Backed by the unbeatable Devico Repair Guarantee: www.devico.com/warranty



# Technical Specifications:

| SURVEY TOOL          |                          |
|----------------------|--------------------------|
| WEIGHT               | 20kg /44lbs              |
| DIAMETER             | 40mm /1.57"              |
| LENGTH               | 4000mm /13.1ft           |
| MAGNETIC             | NO                       |
| RUNNING GEAR         | Integrated               |
| SURVEY MODES         | Continuous and multishot |
| AUTO-ROTATE          | ~90°/4m                  |
| INCLINATION ACCURACY | ±0.2°                    |
| DIRECTION ACCURACY   | ±0.01° per station       |
| TOOL FACE ACCURACY   | ±0.2°                    |
| INCLINATION RANGE    | -90 to +90°              |
| TEMP RANGE           | -15° to +70°C            |
| BATTERY LIFE         | 400hrs                   |
| BATTERY TYPE         | 1xCR123a Lithium         |
| PRESSURE             | 300bar/4350ps            |
| SURVEY ACCURACY      | 0.3%                     |

| PDA               |                  |
|-------------------|------------------|
| TYPE              | Nomad            |
| SOFTWARE          | DeviSoft         |
| BATTERY LIFE/TYPE | 15 hours/Lithium |
| IP RATING         | IP67             |



# Rig Alignment

#### 1- DeviSight Surface

True North Azimuth Alignment System The DeviSight is a portable battery operated system designed to make and record highly accurate measurements of True North azimuth, tilt and roll planes at drill sites.

## **Applications**

- Diamond Drilling Surface
- Reverse Circulation Surface
- Geotechnical investigation
- Exploration



#### **Benefits**

- Available for sales or rental
- The most cost effective Azimuth finder for surface use north seeking gyro alignment systems are significantly more expensive
- Export coordinates as digital data, no manual transcription
- PDF report for archives and QA
- High precision longitude, latitude and UTM coordinates
- Highly robust and reliable
- High precision system covering all Northern and Southern latitudes
- Glonass and GPS satellites

## Technical Specifications:

| OLIDVEN TO OL |  |
|---------------|--|

| SURVEY TOOL            |   |
|------------------------|---|
| DIMENSIONS             | 32.0 cm x 24.9 cm x 21.7 cm/12.6" x 9.8" x 8.5" |
| AZIMUTH ACCURACY       | 0.5° (capable to 0.4°)                          |
| TILT AND ROLL ACCURACY | 10 sampling per sec.                            |
| TYPICAL BATTERY LIFE   | 11-12 hours (depend on Wi-Fi usage)             |
| CHARGE TIME            | 3 hours   |
| CHARGER                | 100-240 VAC                                     |

| PDA               |                   |
|-------------------|-------------------|
| TYPE              | Rugged smartphone |
| SOFTWARE          | None required     |
| BATTERY LIFE/TYPE | 15 hours/Lithium  |
| IP RATING         | IP67              |

#### **ONBOARD MANAGEMENT SOFTWARE**

| POSITION (LAT./LONG.) | 30cm             |
|-----------------------|------------------|
| TEMPERATURE RANGE     | -40°C to 70°C    |
| MEMORY                | 8 GB             |
| SATELLITE CONSTELLA   | GPS and GLOONASS |
| TIONS                 | (GNSS)           |
| WI-FI CONNECTION      | Android, iOS     |
| SUPPORTS              | MS compatible    |



# 2- DeviAligner

#### **Surface & Underground Alignment System**

#### **Applications**

- Diamond Drilling
- Reverse Circulation
- Geotechnical investigation
- Exploration



#### **Benefits**

- Available for sales or rental
- Extremely high accuracy on both azimuth and inclination
- Same accuracy both on surface and underground
- Among the fastest alignment rate in the industry
- No recalibration required over service life
- Report for archives and QA
- Controlled by Android app or web browser
- Highly robust and reliable
- High precision system covering all Northern and Southern latitudes

### Technical Specifications:

#### **ALIGNMENT TOOL**

| DIMENSIONS             | 32.0 cm x 24.9 cm x 21.7 cm/12.6" x 9.8" x 8.5"           |
|------------------------|---|
| AZIMUTH ACCURACY       | 0.23° sec lat   |
| TILT AND ROLL ACCURACY | 0.1°  |
| TYPICAL BATTERY LIFE   | 6-12 hours (depen on temperature and number of batteries) |
| SETTING TIME           | 5 minutes   |
| BATTERY TYPE           | Lithium   |
| CHARGE TIME            | 3 hours   |
| CHARGER                | 100-240 VAC   |
| TEMPERATURE (OPERATE)  | -20°C to 55°C   |
| TEMPERATURE (STORAGE)  | -40°C to 80°C   |
| POSITION               | Required  |
| CONNECTION             | Android app or web interface                              |

| HANDHELD [ | )EV | ICE |
|------------|-----|-----|
|------------|-----|-----|

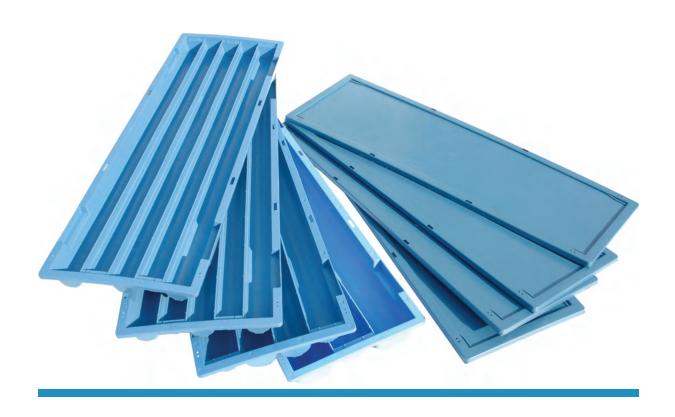
| TYPE              | Rugged smartphone |
|-------------------|-------------------|
| SOFTWARE          | DeviAligner App   |
| BATTERY LIFE/TYPE | 15 hours/Lithium  |
| IP RATING         | IP68              |

# **Core Tray**

Core tray uses highly UV stabilized polypropylene leading to excellent long lasting efficiency which is proven in fields since 2000. Core tray has a resistance of 2,5 years against the sunbeam.

Each core tray is given with a lid and 5 pieces of separators where separators can be easily labeled with a marker.

Easy to carry, Core trays and lids can be easily fit to each other. Beside this, core tray can be stocked and packed easily for transportation.



| CORE TRAY |               |                          |              |                   |  |  |
|-----------|---------------|--------------------------|--------------|-------------------|--|--|
| ITEM      | PRODUCT NO    | DESCRIPTION              | CAPACITY (M) | DIMENSION (CM)    |  |  |
| 1         | AD-BL2002     | <b>BWL CORE TRAY SET</b> | 6 M          | 5.0X34X106 CM     |  |  |
| 2         | AD-NL2003     | NWL CORE TRAY SET        | 5 M          | 6.0X34X106 CM     |  |  |
| 3         | AD-HL2004     | HWL CORE TRAY SET        | 4 M          | 8.0X34X106 CM     |  |  |
| 4         | AD-PL2005     | PWL CORE TRAY SET        | 3 M          | 10X34X106 CM      |  |  |
| PACKING   |               |                          |              |                   |  |  |
| ITEM      | DESCRIPTION   | PACKING SIZE             | QTY (PC)     | GROSS WEIGTH (KG) |  |  |
| 1         | BWL CORE TRAY | 35X75X110                | 35PC         | 52KG              |  |  |
| 2         | NWL CORE TRAY | 35X80X110                | 25PC         | 40KG              |  |  |
| 3         | HWL CORE TRAY | 35X85X110                | 25PC         | 40KG              |  |  |
| 4         | PWL CORE TRAY | 35X85X110                | 20PC         | 45KG              |  |  |
| 5         | CORE TRAY LID | 35X40X110                | 25PC         | 29KG              |  |  |































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