

# PAT-Drill 301

Part no 31 1 1000-diesel, 31 1 1000-petrol

## DTH-Hammer and Rotary Drilling Machine

PAT-Drill 301 is a compact and portable hydraulic drilling rig for both DTH-Hammer in rock formations, or rotary drilling in sedimentary deposits. Able to drill up to depths in excess of 100 metres.



The PAT-Drill 301 remains a popular PAT model having been developed and refined through 10 years of continuous production and deployment on a wide variety of international drilling projects. Through the years built in oil line lubricators, swing aside rotary head and casing clamp system and super efficient and robust hydraulic system make this one of the most versatile, portable and compact drilling rig of its category currently available anywhere in the world.

This design focuses on addressing the challenges whilst drilling in the most remote areas by integrating the concepts of a light fully modular kit, easy to operate and maintain.



*The PAT-Drill Rigs are popular choice for Government, United Nations, and Non-Government organizations (NGO) looking for appropriate and low cost drilling equipment to provide domestic water supplies to rural village communities at an economical price.*

# PAT-Drill 301

## Technical Data, Specifications

### Technical Specification

#### MAST

3.15 m high, steelwork, weighing 320 kg, 2.25 m drill head stroke, 1800 kg. pullup capacity, with a break-out table that opens to 200 mm diameter. 2-wheel axle aids erecting the mast to a vertical position for drilling and aids moving the unit around site or loading/unloading the unit from a vehicle.

#### CONTROL PANEL

The control panel is mounted on the mast, and is equipped with 4 main levers for control of rotation head, pull and feed; 2 regulators for rotation and feed speed, and 3 system pressure gauges.

#### ROTATION HEAD

Hydraulic motor, driven via 3.875 : 1 reduction gearbox speed range: 0-40 rpm, torque: 1320 Nm

Swivel spindle 40 mm inside diameter, with V-packing seal suitable for air, foam and mud flushing. Safe working pressure of 20 bar. The unit is able to swing-a-side for easy casing installation.

#### HYDRAULIC POWER PACK

Hydraulic system is operated from a skid mounted engine, driven power pack with flexible hydraulic hoses with self sealing couplings to connect with the rig.

- Standard Engine: 10 HP 3600 rpm diesel engine, hand starting, air-cooled (optional 13 HP 3600 rpm petrol engine)
- Hydraulic system: VANE pump, max pressure 250 bar, 60 litres tank capacity.
- Hydraulic hose line: 2 pieces supply & return. 6 m long with quick release self-sealing type couplings to connect to the rig.
- Weight: 169 kg (diesel engine)  
160 kg (petrol engine)

#### AIR LUBRICATION SYSTEM

Fitted lubricator of Venturi-type for DTH-Hammer drip-fully adjustable-lubrication. Built into mast unit with pipe control manifold for water, air & foam connections.

Max. pressure 20 bar  
Oil tank capacity 4.5 litres

#### RIG ACCESSORIES

Accessories set include required tools for the rig installation and drilling operation comprises: Rig supporters bars, break-out table, drill pipe wrenches, ground anchorages, and hand auger to make anchorage holes, casing clamps and drill pipe rack.

WEIGHT : 700 kg (complete drilling unit)

### Drilling Capacity

Hard rock, DTH-Hammer drilling operation:  
4" - 6" (100-150 mm) borehole diameter

Alluvial deposits, rotary drilling operation:  
4" - 8" (100-200 mm) borehole diameter

