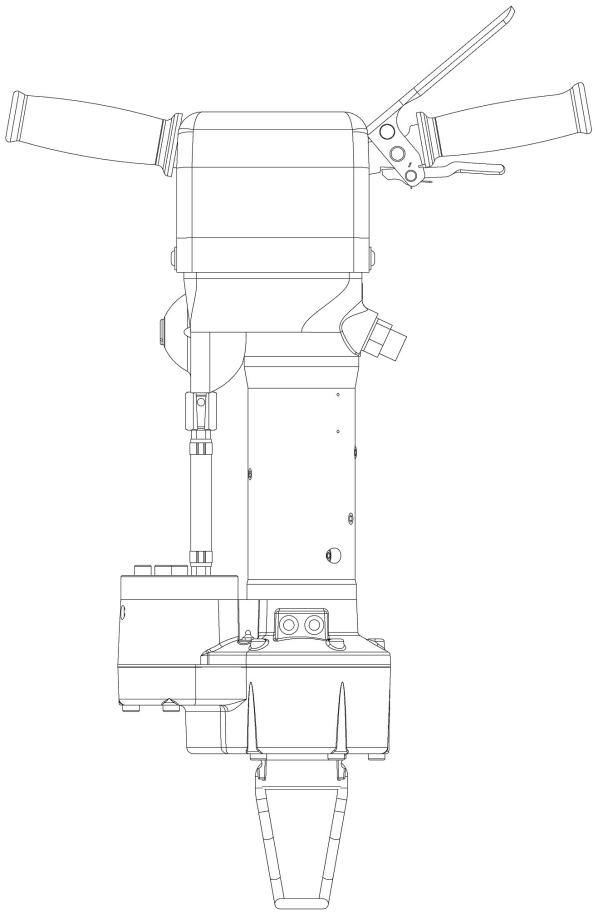
Operating Manual

Hydraulic Rock Drill
HRD28X

From serial
number 19461

Revised
28.02.2022



Prior to Operation

We thank you for choosing a HYCON rock drill.

To ensure smooth operation and long-lasting performance of your new tool, we recommend you to study this operating manual carefully and pay special attention to the chapters about

Safety and Service Precautions

and

Service/Maintenance

We hope you will be satisfied with your new HYCON rock drill.

Best regards
HYCON A/S

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Safety Precautions

- Read the rock drill and power source operating manuals prior to use.
- Only use the rock drill in accordance with the local working regulations on allowed working time
- Check the oil flow to the rock drill. The oil flow may not exceed 30 l.p.m.
- A fine jet of oil at pressure can penetrate the skin. It is therefore important never to use your fingers to check for oil leaks and never to hold your face close to suspected leaks – use a piece of cardboard instead. If oil has penetrated the skin, you should get medical treatment immediately.
- Never leave the rock drill when connected to the powerpack.
- Always use correct tool
- Make sure that the tool is firmly fastened
- Always use approved hoses. Contact your dealer, if necessary.
- The operator must pay extra attention and show caution when working in difficult working areas, such as slopes and other dangerous nature of the ground. Do not reach too far with the rock drill, but always maintain a good footing and keep your balance.
- The operator must be properly trained in using the rock drill or under supervision of a qualified instructor.
- The operator must always use protective goggles, earplugs, hardhat and shoes when operating the rock drill.
- Never wear loose clothing as it may get entangled in the moving parts of the rock drill.
- Inspection or cleaning of the rock drill, change of tool or disconnection of hoses may never be done while the rock drill is connected to the powerpack, as unintentional activation can cause severe damage.
- Always connect hoses to the rock drill before starting the powerpack. Be sure that all couplings are tight.

- The rock drill may not be operated if the oil temperature is above 70 C°. Operation at higher temperatures may result in the rock drill getting warmer than normal and the operator risks getting burnt on it.

- To avoid all personal injury and damage to material, all repair, maintenance and service work must be carried out by authorized or properly trained persons only.

IMPORTANT

- A rock drill not in use should always be kept in a safe and dry place.

- The rock drill may never be operated without tool, or without being held against the working surface, as this may result in overload of the rock drill.

- Always make sure that the rock drill labels and warning signs are legible.

- Always use hoses, couplings and spares as such recommend by HYCON A/S.

- Repairs may only be carried out by experienced personnel.

- Make sure that all couplings are cleaned before connection.

- Always disconnect the hydraulic circuit before connecting or disconnecting the rock drill. If this is not done, there is a risk of damage to the quick release couplings or the hydraulic system getting superheated.

- Using the rockdrill releases large amounts of dust into the air, this dust exposure can cause health issues, and damage to the rock drill. We recommend using vacuum systems to keep this dust exposure to a minimum. The operator should always use proper safety equipment when using the rock drill.

Oil Flow and Pressure

Your new HYCON rock drill is designed for a certain oil flow, working pressure and maximum pressure. A too high oil flow and/or a too high pressure results in overload of the rock drill, meaning that the lifetime of your new HYCON tool will not be as expected, and that your service and repair costs will be too high.

It is important to check that the rock drill is not supplied with an oil flow beyond its design capacity, that the working pressure is correct and that the maximum allowed pressure is not exceeded.

On page 5 you will find a complete survey of the technical data, and on page 7 there is a guide to connection to hydraulic power sources and how to ensure that the rock drill is not overloaded.

Starting Instructions

START

- Insert tool.
- Connect hoses – clean couplings before connection.
- Set the power source on ”ON”.
- Turn on air supply
- Get a good footing before you start drilling to avoid stumbling during operation.
- Press the drill end against the material to be drilled, then press the control lever down towards the handle and the rock drill will start drilling.

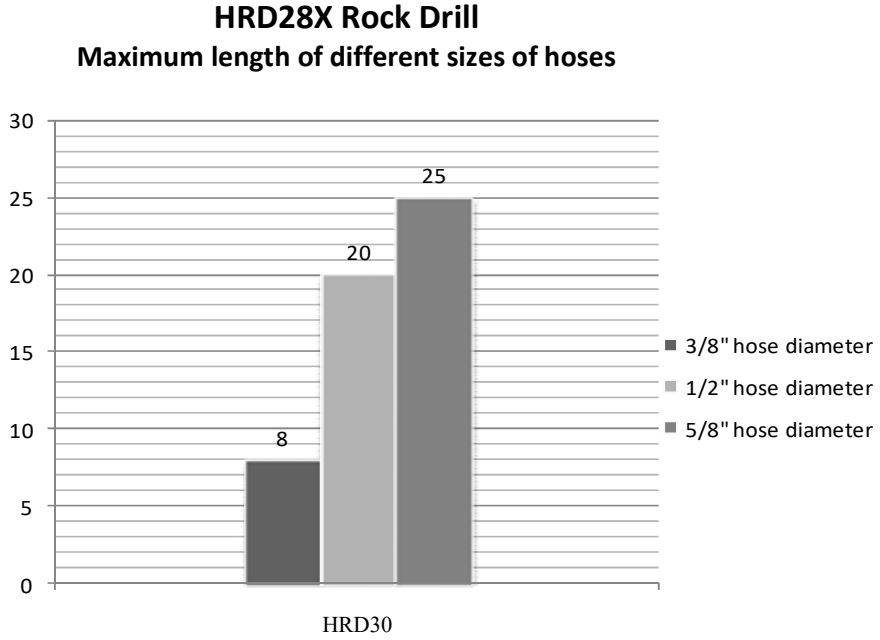
STOP

- Let go of the trigger lever, and the rock drill will stop working.

Technical Data

Weight w/o hoses and lubricants	27,5 kg
Service weight	30 kg
Dimension	Total length: 722 mm Total width: 460 mm
Oil flow	Max. 30 l.p.m.
Rotation speed	320 rpm
Rotation direction (seen from the top)	**CCW**
Rotation torque	45 Nm
Striking energy	55 Joule
Blow frequency	40 Hz
Working pressure	150 bar
Max return pressure	15 bar
Pressure relief valve on power source	Max. 172 bar
Max. oil temperature	70° C
Tool chuck size	22x108 mm
Required air supply	200 liter/min
Vibration level 3 axis (ISO 20643) **Uncertainty (K)**	13.0 m/s² 2.5 m/s²
Sound power level L_{WA} guaranteed	105 dB

Performance Chart



Pressure from power pack: 150 bar., Flow: 30 l.p.m., zero elevation, 2 set couplings per 10 m hose.

External Air Supply

The drill needs an external air supply for flushing.

Inadequate air flushing will significantly reduce the drilling performance and reduce lifespan of drill rods. An air compressor with a flow of 200 liters per minute / 7 cfm will be enough for smaller drilling jobs.

Connection to Hydraulic Power Sources

The rock drill can be connected to various hydraulic power sources, such as excavators, trucks, loaders, tractors etc., and of course HYCON powerpacks, the design of which ensures your new HYCON rock drill the absolute best working conditions.

It is important that the rock drill is not subjected to an oil flow and a working pressure beyond its design capability.

Check the oil flow and the working pressure by means of test equipment. The test equipment should comprise a pressure gauge, a flow meter and a valve for adjustment of pressure.

Make sure that:

- the oil supply is not too high
- the working pressure is not too high
- the return pressure is not too high
- the pressure relief valve is not set higher than 172 bar
- the internal diameter of the hoses is sufficient (min. ½")
- all couplings are clean
- the power source is equipped with an oil filter of min. 25 Micron

Hoses with too small internal diameter and/or defect couplings cause the rock drill to work with incorrect working pressure.

Your dealer can help you check this.

If the output of the power source is too high:

- the power source must be adjusted to correct output
- or you can choose to mount a HYCON oil flow divider to protect the rock drill against overload
- or you can choose one of our HYCON powerpacks. Your dealer can guide you in choosing the right powerpack.

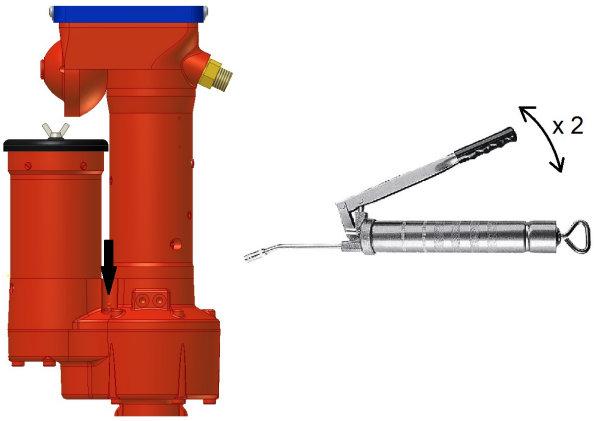
In case of doubt, please contact your dealer or HYCON A/S.

Service and Maintenance

Service/Maintenance	Daily	Monthly
Check couplings and clean carefully	X	
Check hoses	X	
Grease gearbox	X	

MAINTENANCE

1) Check hydraulic oil on a regular basis to ensure it is always clean. If the oil sticks or changes the colour, replace it.
2) Before starting, check if oil volume is sufficient on the power source:
3) Grease gear box with EP2 grade grease.



Service

Your HYCON dealer must carry out the following service jobs:

Inspection point \ Inspection time	200 hours or 1 year	400 hours or 2 years	Over 3 years
Accumulator gas pressure check	O		
Replacement of accumulator diaphragm		O	
Replacement of every seals and o-rings			O

Oil Types

The HYCON power packs use standard hydraulic oil, i.e. all types of mineral oil and biodegradable oil, which comply with the following values:

Ambient temperature range	Below 10°C 50°F	10 … 30°C 50 … 68°F	Above 30°C 68°F
Recommended oil viscosity grade	VG 32	VG 46	VG 68

Recommended oil cleanliness		ISO 4406 /19/16 / NAS 1638 10
Permitted viscosity	cSt	10 – 600
Viscosity index	Minimum	100
Oil temperature area	°C /°F	-20 to 70 / -4 to 158

If using biodegradable oil, we recommend the use of oil based on rape. Other types of oil can be aggressive towards the seals. If you are in doubt, please ask your dealer.

EC-Declaration of Conformity

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We hereby declare that **HRD28X hydraulic rock drill**

From serial No. 19461

(service weight 30 kg)

is manufactured in conformity with the EC Directive 2006/42/EC.

HYCON A/S
Juelstrupparken 11
DK-9530 Støvring
Denmark

Martin Møller
Managing Director

Warranty Terms

We grant 12 months warranty from the first date of operation – however, not more than 18 months from the date of delivery.

The warranty applies to faults that can be related to construction and production errors.

Faults caused by incorrect operation, incorrect handling, lack of maintenance or the like, will not be accepted as warranty.

The warranty covers the parts necessary for repair and the suggested average time needed for repair.

For further warranty details, please contact your local dealer.