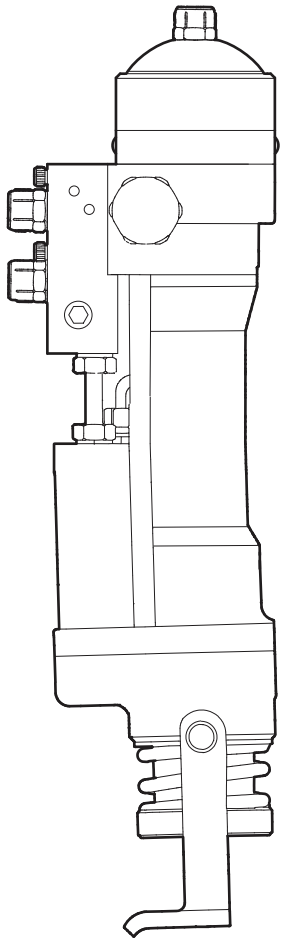
Chicago Pneumatic

# Safety and operating instructions

## Rock drills
## RDR 48 R



# Contents

# Introduction

Thank you for choosing Chicago Pneumatic brand products. For over a century, the Chicago Pneumatic brand has represented performance and innovation in the pneumatic tool industry.

Today the brand is found around the world on a range of pneumatic and hydraulic tools that includes breakers, rock drills, chipping hammers, clay-diggers, picks and busters, scabblers, pumps and a whole lot more.

The Chicago Pneumatic brand is associated with powerful and reliable products that are easy to maintain and that give good value for the money.

For more information please visit www.cp.com

Construction Tools EOOD
7000 Rousse
Bulgaria

# About the Safety and operating instructions

The aim of the instructions is to provide you with knowledge of how to use the rock drill in an efficient, safe way. The instructions also give you advice and tell you how to perform regular maintenance on the rock drill.

Before using the rock drill for the first time you must read these instructions carefully and understand all of them.

# Safety instructions

To reduce the risk of serious injury or death to yourself or others, read and understand the Safety and operating instruction before installing, operating, repairing, maintaining, or changing accessories on the machine.

Post this Safety and operating instruction at work locations, provide copies to employees, and make sure that everyone reads the Safety and operating instruction before operating or servicing the machine.

In addition, the operator or the operator's employer must assess the specific risks that may be present as a result of each use of the machine.

# Safety signal words

The safety signal words Danger, Warning and Caution have the following meanings:

| | |
|---|---|
| **DANGER** | Indicates a hazardous situation which, if not avoided, will result in death or serious injury. |
| **WARNING** | Indicates a hazardous situation which, if not avoided, could result in death or serious injury. |
| **CAUTION** | Indicates a hazardous situation which, if not avoided, could result in minor or moderate injury. |

# Personal precautions and qualifications

Only qualified and trained persons may operate or maintain the machine. They must be physically able to handle the bulk, weight, and power of the tool. Always use your common sense and good judgement.

### Transport

Transport of the machine may only be undertaken by persons who:

- are authorised to operate a crane or fork-lift truck in conformity with the applicable national directives,
- are aware of all the relevant national safety instructions and accident prevention instructions
- and have read and understood the sections "Safety instructions" and "Transport" in this manual.

### Installation, storage, maintenance and disposal

Installation, storage, maintenance and disposal of the machine may only be undertaken by persons who:

- are aware of all the relevant national safety instructions and accident prevention instructions
- and have read and understood the Safety and operating instructions.

### Operation

Operation of the machine may only be undertaken by qualified carrier operators. Carrier operators are qualified if they:

- are trained to operate a carrier in conformity with national directives,
- are aware of all the relevant national safety instructions and accident prevention instructions
- and have read and understood the Safety and operating instructions.

### Testing

Testing of the hydraulic installation must only be carried out by professional technicians. The technicians must be authorised to approve a hydraulic installation in accordance with national directives.

### Personal protective equipment

Always use approved protective equipment. Operators and all other persons in the working area must wear protective equipment, including at a minimum:

- Protective helmet
- Hearing protection
- Impact resistant eye protection with side protection
- Respiratory protection when appropriate
- Protective gloves
- Proper protective boots
- Appropriate work overall or similar clothing (not loose-fitting) that covers your arms and legs.

### Drugs, alcohol or medication

**⚠ WARNING Drugs, alcohol or medication**

Drugs, alcohol or medication may impair your judgment and powers of concentration. Poor reactions and incorrect assessments can lead to severe accidents or death.

- ► Never use the machine when you are tired or under the influence of drugs, alcohol or medication.
- ► No person who is under the influence of drugs, alcohol or medication may operate the machine.

## Carrier, precautions

Before using or transporting the carrier with the machine attached, carefully read the carrier manufacturer's safety regulations and operating instructions.

The machine is to be mounted on a carrier or device with sufficient load capacity. Carriers without sufficient load capacity will not provide the required degree of stability and could even fall over during machine use, causing injury and damage.

## Installation, precautions

**⚠ WARNING Involuntary start**

An involuntary start of the machine can lead to severe injuries.

- ► Follow the instructions in the carrier manual and the drill rig manual to prevent involuntary start of the machine.

**⚠ WARNING Whipping hose**

Hoses under pressure can whip uncontrollably if screws loosen or are loosened. A whipping hose can cause severe injuries. To reduce this risk:

- ► Depressurise the system before loosening the connection of a hose.
- ► Tighten the nuts on the connections of the hoses to required torque.
- ► Check that the hose and the connections are not damaged.
- ► Never carry the machine by the hoses.

**⚠ WARNING Moving or slipping insertion tool**

An incorrect dimension of the inserted tool's shank can result in that the inserted tool is lost or is slipping out during operation. Risk of severe injury or crushed hands and fingers.

- ► Check that the insertion tool has the shank length and dimensions that the machine is intended for.
- ► Never use an insertion tool without a collar.

**⚠ DANGER Compressed gas, explosion hazard**

The accumulator is pressurized even when the hydraulic system is shut off. To dismount the accumulator without first releasing the nitrogen gas can cause serious personal injury or death.

- ► Fill the high-pressure accumulator with nitrogen ($N_2$) only.
- ► Only authorised personnel are qualified to work with the accumulator.

**⚠ WARNING Hydraulic oil at high pressure**

Thin jets of hydraulic oil under high pressure can penetrate the skin and cause permanent injury.

- ► Immediately consult a doctor if hydraulic oil has penetrated the skin.
- ► Never use your fingers to check for hydraulic fluid leaks.
- ► Keep your face away from any possible leaks.

**⚠ WARNING Hydraulic oil**

Spilled hydraulic oil can cause burns, accidents due to slippery conditions and will also harm the environment.

- ► Take care of all spilled oil and handle it according to your safety and environmental regulations.
- ► Never dismount the hydraulic machine when the hydraulic oil is hot.
- ► Never run any hydraulic lines for attachment of the hydraulic machine through the drivers cab.

**⚠ CAUTION Skin eczema**

Hydraulic oil can cause eczema if it comes in contact with the skin.

- ► Avoid getting hydraulic oil on your hands.
- ► Always use protective gloves when working with hydraulic oil.
- ► Wash hands after contact with hydraulic oil.

**⚠ CAUTION Moving parts**

Risk for crushed hands and fingers.

- ► Never check bores or passages with hands or fingers.

# Operation, precautions

**⚠ DANGER Explosion hazard**

If a warm insertion tool comes into contact with explosives, an explosion could occur. During operation with certain materials as well as use of certain materials in machine parts, sparks and ignition can occur. Explosions will lead to severe injuries or death.

- ► Never operate the machine in any explosive environment.
- ► Never use the machine near flammable materials, fumes or dust.
- ► Make sure that there are no undetected sources of gas or explosives.
- ► Never drill in an old hole.

**⚠ WARNING Operating pressure**

If the maximum operating pressure for the hydraulic machine is exceeded, the accumulator can be over charged which can result in material damage and personal injury.

- ► Always run the hydraulic machine with the correct operating pressure. See "Technical data".

**⚠ WARNING Dust and fume hazard**

Dusts and/or fumes generated or dispersed when using the machine may cause serious and permanent respiratory disease, illness, or other bodily injury (for example, silicosis or other irreversible lung disease that can be fatal, cancer, birth defects, and/or skin inflammation).

Some dusts and fumes created by drilling, breaking, hammering, sawing, grinding and other construction activities contain substances known to the State of California and other authorities to cause respiratory disease, cancer, birth defects, or other reproductive harm. Some examples of such substances are:

- > Crystalline silica, cement, and other masonry products.
- > Arsenic and chromium from chemically-treated rubber.
- > Lead from lead-based paints.

Dust and fumes in the air can be invisible to the naked eye, so do not rely on eye sight to determine if there is dust or fumes in the air.

To reduce the risk of exposure to dust and fumes, do all of the following:

- ► Perform site-specific risk assessment. The risk assessment should include dust and fumes created by the use of the machine and the potential for disturbing existing dust.
- ► Use proper engineering controls to minimize the amount of dust and fumes in the air and to minimize build-up on equipment, surfaces, clothing, and body parts. Examples of controls include: exhaust ventilation and dust collection systems, water sprays, and wet drilling. Control dusts and fumes at the source where possible. Make sure that controls are properly installed, maintained and correctly used.
- ► Wear, maintain and correctly use respiratory protection as instructed by your employer and as required by occupational health and safety regulations. The respiratory protection must be effective for the type of substance at issue (and if applicable, approved by relevant governmental authority).
- ► Work in a well ventilated area.
- ► If the machine has an exhaust, direct the exhaust so as to reduce disturbance of dust in a dust filled environment.
- ► Operate and maintain the machine as recommended in the operating and safety instructions

- Select, maintain and replace consumables/ working tools/ other accessories as recommended in the operating and safety instructions. Incorrect selection or lack of maintenance of consumables/ inserted tools/ other accessories may cause an unnecessary increase in dust or fumes.
- Wear washable or disposable protective clothes at the worksite, and shower and change into clean clothes before leaving the worksite to reduce exposure of dust and fumes to yourself, other persons, cars, homes, and other areas.
- Avoid eating, drinking, and using tobacco products in areas where there is dust or fumes.
- Wash your hands and face thoroughly as soon as possible upon leaving the exposure area, and always before eating, drinking, using tobacco products, or making contact with other persons.
- Comply with all applicable laws and regulations, including occupational health and safety regulations.
- Participate in air monitoring, medical examination programs, and health and safety training programs provided by your employer or trade organizations and in accordance with occupational health and safety regulations and recommendations. Consult with physicians experienced with relevant occupational medicine.
- Work with your employer and trade organization to reduce dust and fume exposure at the worksite and to reduce the risks. Effective health and safety programs, policies and procedures for protecting workers and others against harmful exposure to dust and fumes should be established and implemented based on advice from health and safety experts. Consult with experts.
- Residues of hazardous substances on the machine can be a risk. Before undertaking any maintenance on the machine, clean it thoroughly.

**⚠ WARNING Projectiles**

Failure of the work piece, of accessories, or even of the machine itself may generate high velocity projectiles. During drilling, splinters, or other particles may become projectiles and cause bodily injury by striking the operator or other persons. Also, breakage of the work piece, accessories, or the insertion tool may generate high velocity projectiles that can cause bodily injury. In addition, objects falling from a height can cause bodily injury. To reduce risks:

- Close off the working area.
- Before starting, make sure that no persons are in the danger area, 5 meters both horizontally and vertically from the machine.
- Immediately switch off the machine when persons are present in the danger area.
- Never operate unless the inserted tool is retained in the machine with a proper tool retainer.

**⚠ WARNING Splinters hazard**

Using the insertion tool as a hand struck tool can result in splinters hitting the operator and can cause personal injury.

- Never use an insertion tool as a hand struck tool. They are specifically designed and heat-treated to be used only in a machine.

**⚠ DANGER Electrical hazard**

The machine is not electrically insulated. If the machine comes into contact with electricity, serious injuries or death may result.

- Never operate the machine near any electric wire or other source of electricity.
- Make sure that there are no concealed wires or other sources of electricity in the working area.

**⚠ WARNING Concealed object hazard**

During operating, concealed wires and pipes constitute a danger that can result in serious injury.

- Check the composition of the material before operating.
- Watch out for concealed cables and pipes for example electricity, telephone, water, gas and sewage lines etc.
- If the inserted tool seems to have hit a concealed object, switch off the machine immediately.
- Make sure that there is no danger before continuing.

**⚠ WARNING Noise hazard**

High noise levels can cause permanent and disabling hearing loss and other problems such as tinnitus (ringing, buzzing, whistling or humming in the ears). To reduce risk and prevent an unnecessary increase in noise levels:

- ▶ Risk assessment of these hazards and implementation of appropriate controls is essential.
- ▶ Operate and maintain the machine as recommended in these instructions.
- ▶ Select, maintain and replace the insertion tool as recommended in these instructions.
- ▶ If the machine has a muffler, check that it is in place and in good working condition.
- ▶ Always use hearing protection.
- ▶ Use damping material to prevent work pieces from "ringing".

# Maintenance, precautions

**⚠ WARNING Machine modification**

Any machine modification may result in bodily injuries to yourself or others.

- ▶ Never modify the machine. Modified machines are not covered by warranty or product liability.
- ▶ Always use original parts, cutting blades/working tools, and accessories.
- ▶ Change damaged parts immediately.
- ▶ Replace worn components in good time.

**⚠ CAUTION Hot machine**

The machine can become hot when used. Touching it can lead to burns.

- ▶ Never touch a hot machine.
- ▶ Wait until the machine has cooled down before carrying out maintenance work.

**⚠ CAUTION Hot working tool**

The tip of the working tool can become hot and sharp when used. Touching it can lead to burns and cuts.

- ▶ Never touch a hot or sharp working tool.
- ▶ Wait until the working tool has cooled down before carrying out maintenance work.

# Storage, precautions

- ♦ Keep the machine and tools in a safe place, out of the reach of children and locked up.

# Overview

**To reduce the risk of serious injury or death to yourself or others, read the Safety instructions section found on the previous pages of this manual before operating the machine.**

# Design and function

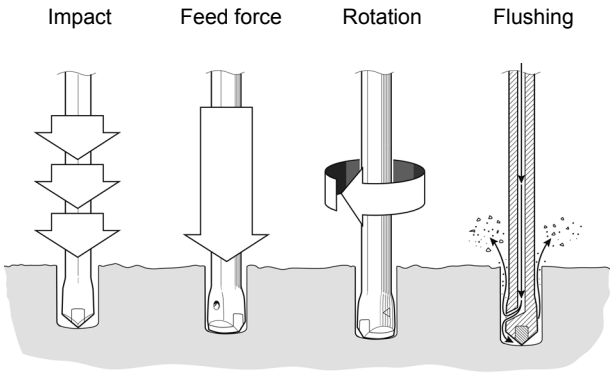
The RDR 48 R is a rig-mounted hydraulic rock drill designed for drilling blast holes, anchor holes, and for test drilling in for example granite and concrete. It can be connected to a remote control that can be steered from a control desk. The rock drill is suited for hole diameters from Ø 25-50 mm (1-2 in.). No other use is permitted. The power tool must not be used as a rotation movement supplier for other equipment.

There are no limitations to the ambient temperature of the workplace as long as the hydraulic fluid used remains within the stated parameters. The rock drill requires an oil flow of 20-25 l.p.m. at a working pressure of 100-140 bar (1,450-2,030 PSI).

The rock drill can rotate in both directions, depending on the way of the way the connections are made.

When using hollow drill steels from the ISO 11-17 series, the rock drill works efficiently down to a maximum depth of 6 m (19.7 ft), depending on the material. To choose the correct drill steel, see the spare part list.

### Working principle of a rock drill

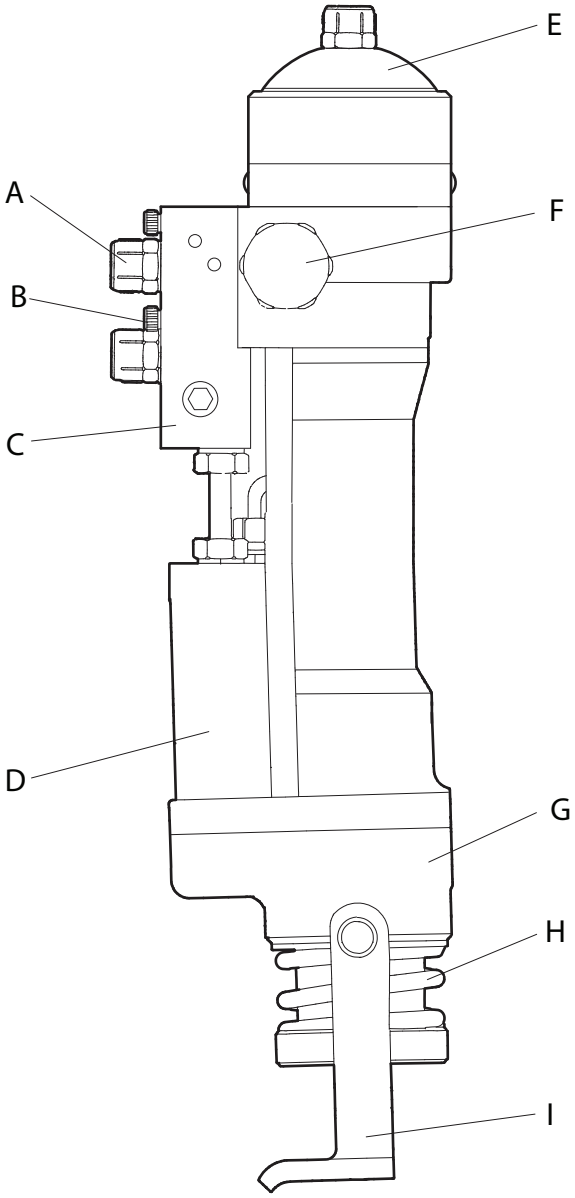



### Flushing

The drilling dust is removed from the drill hole by means of compressed air, fluids must not be used. Flushing is ducted through an air inlet nipple. This means that flushing air is provided as soon as the compressed air is switched on.

*NOTICE* Fluids must not be used to flush the drill steel.

# Main parts

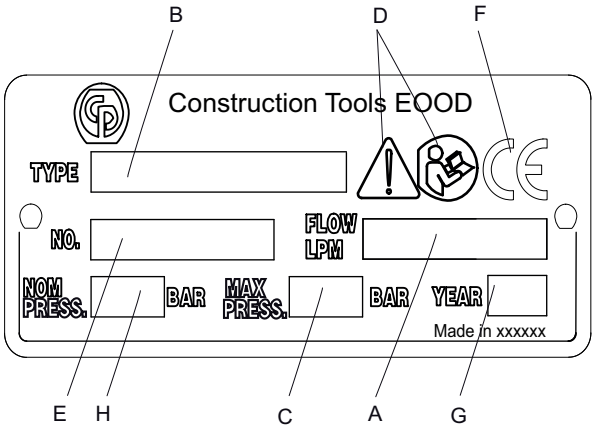



A. Hydraulic port
B. Air port
C. Hydraulic block
D. Hydraulic motor
E. Accumulator
F. Sockets
G. Gear flange
H. Spring
I. Tool retainer

# Labels

The machine is fitted with labels containing important information about personal safety and machine maintenance. The labels must be in such condition that they are easy to read. New labels can be ordered from the spare parts list.

### Data plate




A. Maximum permitted hydraulic oil flow

B. Machine type

C. Maximum relief valve setting

D. The warning symbol together with the book symbol means that the user must read the safety and operating instructions before the machine is used for the first time.

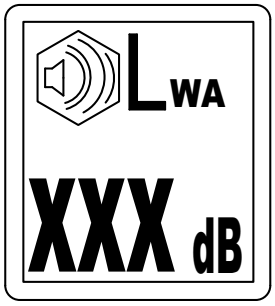
E. Serial number (is also stamped in the valve housing).

F. The CE symbol means that the machine is EC-approved. See the EC declaration which is delivered with the machine for more information.

G. Year of manufacture.

H. Maximum nominal operating pressure

### Noise level label




The label indicates the guaranteed noise level corresponding to EC-directive 2000/14/EC. See "Technical data" for accurate noise level.

### EHTMA

The European Hydraulic Tool Manufacturers Association (EHTMA) has categorised hydraulic power packs and tools in terms of flow rate and working pressure. See section "Technical data".

### EHTMA category

The machine is clearly marked with EHTMA categories. It is important that any power source used is in a compatible category. If any doubt, consult an authorised supervisor.


### Accumulator


The accumulator must only be charged with Nitrogen.

*NOTICE* Only certified personnel are allowed to work with the accumulator.

### Safety label

# Installation

Before installing or operating the hydraulic attachment on the carrier, read the operation manual and safety instructions provided by the carrier manufacturer. Follow all instructions.

The carrier must have the appropriate hydraulic system for operation of the machine.

If the carrier is too large for the hydraulic attachment it may lead to broken insertion tools and increased wear. See section "Technical data" for choosing a suitable carrier.

The safety equipment in the hydraulic system must be checked for quality (CE mark, etc.), suitability and functionality by a professional or authorised supervisor before use.

# Hoses

For connection on the machine, the hydraulic hose must be approved for a working pressure of at least 172 bar (2,500 psi) and have a 12.7 mm (½ in.) inner diameter. To resist exterior wear and tear, we recommend using a 2-layer hydraulic hose. The machine connection marked P (pump) is the oil inlet, and the connection marked T (tank) is the oil outlet. Always connect both hoses and make sure that all hose connections are tight. Never carry the machine by the hose.

| Hose connections | | |
|---|---|---|
| | Tank, oil outlet | Pump, oil inlet |
| Symbol |  |  |
| RDR 48 R | Standard ½ in. BSP (alternatively ¾ in. JIC) | Standard ½ in. BSP (alternatively ¾ in. JIC) |

| Part | Tightening torque | Remark |
|---|---|---|
| Pump (P), oil inlet | 100 Nm (74 lbf/ft) | |
| Tank (T), oil outlet | 100 Nm (74 lbf/ft) | |
| Screw M10 x 30 mm | 70 Nm (52 lbf/ft) | Use LOCTITE® 245™ |
| Screw M8 x 50 mm | 27 Nm (20 lbf/ft) | Use LOCTITE® 245™ |
| Nut M14 x 1.5 mm | 120 Nm (89 lbf/ft) | |

LOCTITE is a registered trademark of Henkel Corporation. 245 is a trademark of Henkel Corporation.

**⚠ WARNING Whipping hose**

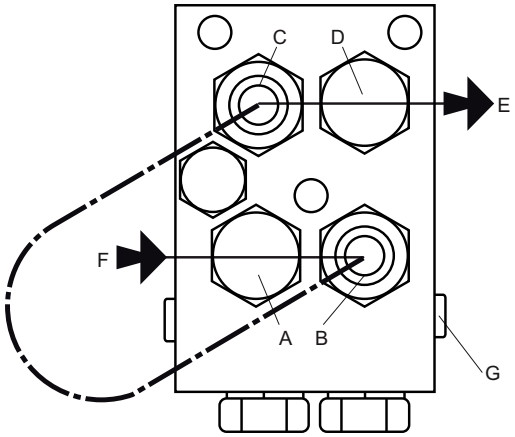
Hoses under pressure can whip uncontrollably if screws loosen or are loosened. A whipping hose can cause severe injuries. To reduce this risk:

- ► Depressurise the system before loosening the connection of a hose.
- ► Tighten the nuts on the connections of the hoses to required torque.
- ► Check that the hose and the connections are not damaged.
- ► Never carry the machine by the hoses.

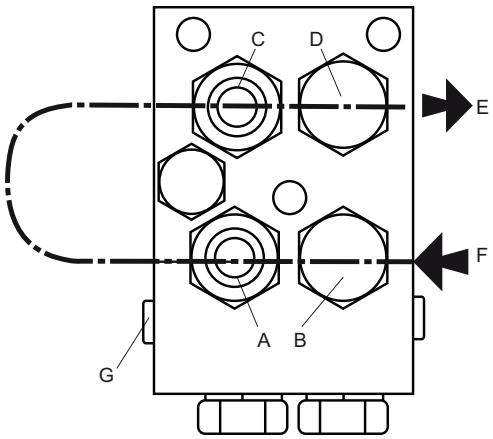
# Connections

*Connection for rotation in one direction*

- For **counter-clockwise** rotation direction (when seeing the rock drill from above), connect a hose between the hydraulic ports B and C.



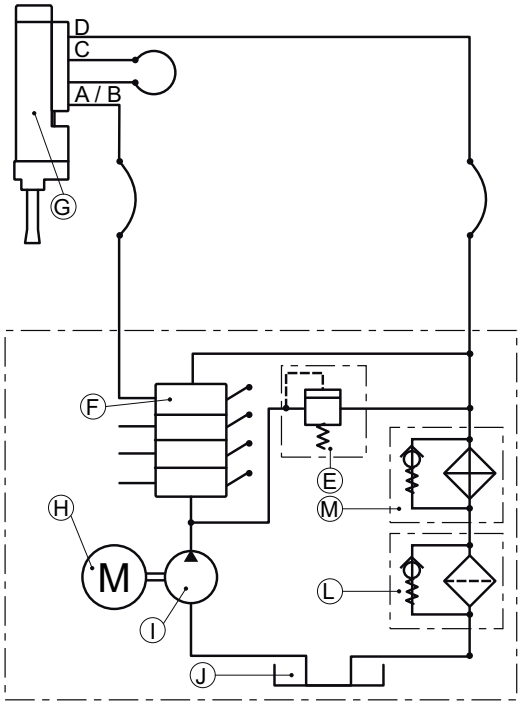

- For **clockwise** rotation direction (when seeing the rock drill from above), connect a hose between the hydraulic ports A and C.



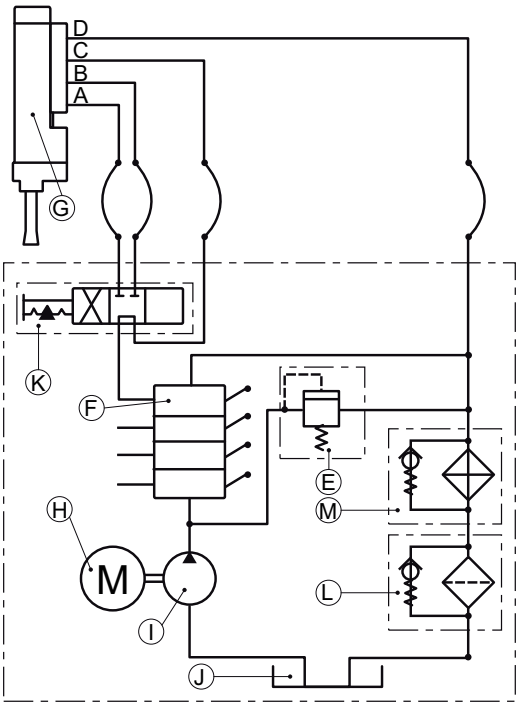

A. Hydraulic port, lower and left
B. Hydraulic port, lower and right
C. Hydraulic port, upper and left
D. Hydraulic port, upper and right
E. To tank
F. From pump
G. Active torque limiter

*Connection with remote control*

- For one direction of rotation, connect without an operating valve (K).




- For reversible direction of rotation, connect with an operating valve (K).




A. Hydraulic port
B. Hydraulic port
C. Hydraulic port
D. Hydraulic port
E. Pressure relief valve
F. Valve block
G. Rock drill
H. Motor
I. Pump
J. Oil tank
K. Operating valve
L. Oil filter (with a filter rating of 10-25µ)
M. Oil cooler

*NOTICE* To ensure that the accumulator and rock drill are not overloaded, the pressure relief valve must be set in accordance with the technical data. If that is not possible, a separate pressure relief valve must be installed. In case of doubt, contact an authorized dealer.

*NOTICE* Oil coolers must be able to stand a pressure of minimum 10 bar and must be provided with a by-pass valve opening at a pressure of 2 bar in case of pulsations in the return line.

# Hydraulic oil

In order to protect the environment, use of biologically degradable hydraulic oil is recommended. No other fluids must be used.

- Viscosity (preferred) 20-40 cSt.
- Viscosity (permitted) 15-100 cSt.
- Viscosity index minimum 100.

Standard mineral or synthetic oil can be used. Make sure to only use clean oil and filling equipment.

When the machine is used continuously, the oil temperature will stabilise at a level which is called the working temperature. This will, depending on the type of work and the cooling capacity of the hydraulic system, be between 20-40°C (68-104°F) above the ambient temperature. At working temperature, the oil viscosity must be within the preferred limits. The viscosity index indicates the connection between viscosity and temperature. A high viscosity is therefore preferred, because the oil can then be used within a wider temperature range. The machine must not be used, if oil viscosity fails to remain within the permitted area, or if the working temperature of the oil does not fall between 20°C (68°F) and 70°C (158°F).

# Assembly

**⚠ WARNING Falling machine**

A falling machine can cause injuries.

► Place the machine in a safe position where it can not fall over and cause damage.

**⚠ CAUTION Moving parts**

Risk for crushed hands and fingers.

► Never check bores or passages with hands or fingers.

*Connecting the rock drill to the carrier*

1. Carefully lower the stick of the boom into the adapter. An assistant must direct the movement of the dipper arm until the bores in the dipper arm are flush with those in the adapter. Agree with the assistant on clear hand signals for use during the mounting procedure.
2. Insert the pin and lock.
3. Extend the bucket cylinder until the bore in the toggle is flush with those in the adapter. Insert toggle pin and lock.

   *NOTICE* After mounting the rock drill, carefully extend and retract the bucket cylinder to its full extent in each direction. It is important that the cylinder can be fully extended and retracted without any difficulty.

*Connecting the hydraulic hoses*

4. Circulate the hydraulic oil before connecting the hoses to the hydraulic rock drill. This is to make sure that the hydraulic oil is clean. Use the same routine when changing the hydraulic oil hoses. For further information see section "Hydraulic oil".
5. Connect the pump (P) and tank (T) hoses on the hydraulic rock drill according to section "Connections".
6. Tighten the hoses with the correct tightening torque, see section "Hoses".
7. Run the hydraulic oil through the carrier's oil filter for approximately 3 minutes to make sure that the hoses are clean.

# Drill steel

**⚠ WARNING Running engine**

Changing the drill steel or accessories while the carrier's engine is running can cause serious injury.

► Shut off the carrier's engine during mounting or dismounting of the drill steel or accessories.

► Secure the carrier against involuntary activation.

**⚠ CAUTION Hot working tool**

The tip of the working tool can become hot and sharp when used. Touching it can lead to burns and cuts.

► Never touch a hot or sharp working tool.

► Wait until the working tool has cooled down before carrying out maintenance work.

*NOTICE* Never cool a hot insertion tool in water, it can result in brittleness and early failure.

### Before fitting the drill steel

Check that the tool shank is of the correct size and length for the chuck used. The tool shank must be clean and the drill steel must be in good condition. Tool shanks which are chipped, rounded, out of square, or too hard on the striking end will operate inefficiently and cause premature piston failure.

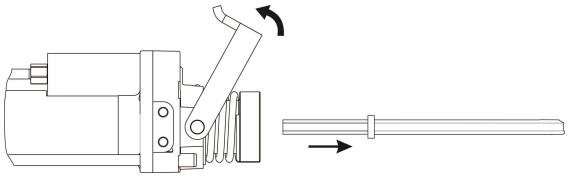
Inspect the drill steel:
A dull drill steel will slow down the drilling speed and overstrain the drill mechanism. When changing drill steel make sure that the new one is of the correct size to follow the previous bore.

Before drilling, check that the flushing hole in the drill steel is not blocked.

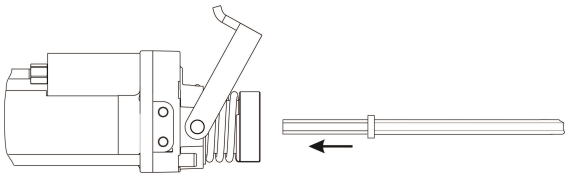
### Changing drill steel

Whenever changing a drill steel the following instructions must be observed:

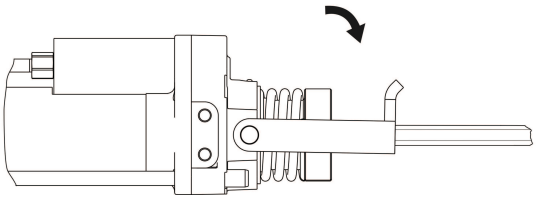
1. When removing the drill steel. Push the tool retainer outwards, ensure that the tool retainer is fully up.



2. Insert the drill steel in the chuck.



3. When the drill steel bottoms, push back the tool retainer to lock it.



# Operation

## Preparations before operating

The following checks must be made before you start using the rock drill. All these checks concern the serviceability of the rock drill. Some concern your safety:

- Ensure that the carrier is compatible with the rock drill, see section "Technical data".
- Clean all labels. Replace any that are missing or cannot be read.
- Inspect the hoses generally for signs of damage, change if necessary.
- Ensure that the hydraulic couplings are clean and fully serviceable.
- Inspect the drill steel for wear and damage, change if necessary. Always use a sharp drill steel in order to work efficiently, a worn drill steel will cause increased working time.
- Check that the drill steel is pushed fully home in the nose of the rock drill and that the tool retainer is locked, so that the drill steel does not fall out.
- Check that the flushing holes in the drill steel and drill bit are not blocked, and that the flushing air flows through without obstruction.
- Check that the direction of rotation is as wanted, the rotation direction depends on the way the hoses are connected.

*NOTICE* If different lengths of drill steels are used in the same drill hole, the drill steels must be from the same ISO-series.

### Connection to air compressor

Air flushing is required and the rock drill can be connected to most air compressors. The required minimum compressor capacity will in most cases depend on the working situation. If the holes to be drilled are not deep, and the drilling dust is dry, a small compressor capacity will often be sufficient, while drilling deeper holes with moist dust will require a higher compressor capacity in order to achieve sufficient air flushing.

Independent of the working situation, the following compressor capacity is required:

- Q (air flow) 0.4-1.2 $m^3$/min (14.1-42.4 $foot^3$/min).
- P (pressure) 5-10 bar (73-145 psi).

Connection can be made by means of standard air components and hoses approved for minimum 10 bar. The hose diameter should not be less than ½ in. in order to prevent pressure loss.

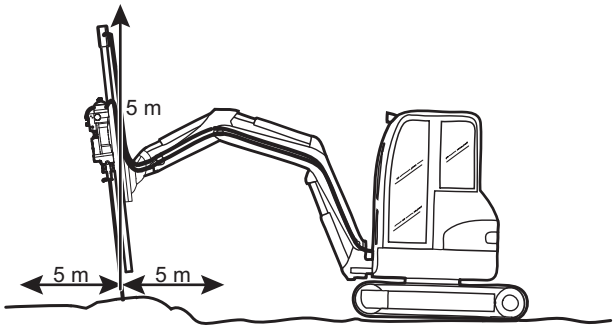
# Operating

*NOTICE* The rock drill or the drill steel is not to be used as a lifting device. When lifting heavy components use the hook on the carrier arm.

*NOTICE* The rock drill must not be used as a rotation movement supplier for other equipment.

### Risk area

Before starting the machine, make sure that no persons are in the risk area, 5 meters both horizontally and vertically from the machine.




### Starting the rock drill

- The rock drill needs to be mounted in a small appropriate drill rig, like the one in the picture, that will assure a constant angle and normal direction of the feed force over the tool during work. Then the rock drill can work at any angles.
- Use the correct feed pressure. When the feed pressure is correct, the rock drill is working at its best and the wear on the drill steel and hydraulic attachment is kept to a minimum.
- Place the rock drill vertically at an angle of 90° on the surface, in which the hole is to be drilled. Avoid small irregularities on the surface. These will break easily and cause either a wrong working angle or blank firing.
- Never run the rock drill with the boom cylinders at their end positions. It may cause damage to the carrier.
- Avoid idling strokes, it causes wear on the drill steel and the tool retainer.

# Maintenance

Regular maintenance is a basic requirement for the continued safe and efficient use of the machine. Follow the maintenance instructions carefully.

- Before starting maintenance on the machine, clean it in order to avoid exposure to hazard substances.
- Use only authorised parts. Any damage or malfunction caused by the use of unauthorised parts is not covered by warranty or product liability.
- When cleaning mechanical parts with solvent, comply with appropriate health and safety regulations and ensure there is satisfactory ventilation.
- For major service to the machine, contact your nearest authorised workshop.

## Every day

- Clean and inspect the machine and its functions each day before you start working.
- Check the tool retainer for wear and function.
- Conduct a general inspection for leaks and damage and wear.
- Change damaged parts immediately.
- Replace worn components in good time.
- Make sure that all the attached and related equipment, such as hoses and flow dividers are properly maintained.
- The tool drive system may not rotate without being lubricated. It must therefore be filled with the recommended grease through the grease nipple every 8 hours of operation.

## Every three month

- Check tightness of nuts, bolts, screws, and hose fittings. When retightening, see the correct torque in the spare part list.
- Check the bushing in the nose for wear and damage.

## Every 600 hours of operation or every year

- The rock drill must be dismantled and all parts be cleaned and checked. This work must be performed by authorised staff, trained for this task.
- Check moving parts, seals, bushing, and bolts for wear and cracks. Replace if necessary.
- Check the function of the rock drill.
- The accumulator is checked and re-charged.

# Storage

**⚠ WARNING Falling machine**

A falling machine can cause injuries.

► Place the machine in a safe position where it can not fall over and cause damage.

If the machine is not used for a long time, the following points have to be considered to protect the machine from corrosion:

- Clean the machine carefully.
- Spray with a protective thin oil through the chisel bushing to protect the surface of the piston from rust or push the piston until it is inside the housing when hoses are connected.
- Store the machine in a dry place.

# Disposal

A used machine must be treated and scrapped in such a way that the greatest possible portion of the material can be recycled and any negative influence on the environment is kept as low as possible.

Before a used machine is scrapped it must be emptied and cleaned from all hydraulic oil. The remaining hydraulic oil must be deposited and any negative influence on the environment is to be kept as low as possible.

# Troubleshooting

| Problem | Cause | Solution |
|---|---|---|
| Rock drill does not work. Pressure is not built up when started. | No or incorrect flow or pressure. | Check flow and pressure with test equipment. |
| | P and T hoses interchanged. | Check connection. Standard connection has oil flowing from male quick-release coupling (the tail-hose of the P connection is fitted with female coupling). |
| | Main spool jammed or damaged. | Remove and check. |
| | Striker piston seized. | Remove and check for 'pick-up' on piston feeder or barrel. Replace any damaged parts. |
| Rock drill lacks drilling power. | Insufficient available pressure. | Check main relief valve. |
| | Low accumulator gas pressure (normally associated with violent shaking of hoses). | Re-charge the accumulator. |
| Rock drill runs weakly or irregularly. | Insufficient flow. | Check flow and pressure. |
| | Cold oil. | Warm up the oil supply. Optimum temperature 20–70° C (68–158° F). |
| | Incorrect oil. | Use only specified hydraulic oil. |
| | Back pressure too high. | Make direct tank connection. Maximum back pressure 10-15 bar (150-200 psi) measured at rock drill. |
| | Quick-release coupling in return line defective. | Locate and replace defective coupling. |
| Rock drill runs hot. | Inadequate cooling of hydraulic oil. | Check oil supply has adequate cooling. Temperature must not exceed 80° C (176° F). |

# Technical data

## Machine data

| | RDR 48 R |
|---|---|
| Weight including hoses, kg (lb) | 24 (53) |
| Oil flow, l/min (gal/min) | 20-25 (5.3 - 6.6) |
| Working pressure, bar (psi) | 100-140 (1,450 - 2,030) |
| Maximum pressure relief valve setting, bar (psi) | 172 (2,495) |
| Minimum pressure relief valve setting, bar (psi) | 150 (2,175) |
| Maximum back pressure, bar (psi) | 15 (218) |
| Impact rate, b.p.m. | 2,550 |
| Revolutions, r.p.m. | 320-400 |
| Torque at 100 - 140 bar, Nm (lbf) | 90 (66.38) |
| Accumulator pressure, bar (psi) | 40 (580) |
| EHTMA class | C |
| Shank size, mm (in.) | Hexagon 22 x 108<br>(Hexagon ⅞ x 4¼) |

## Noise declaration statement

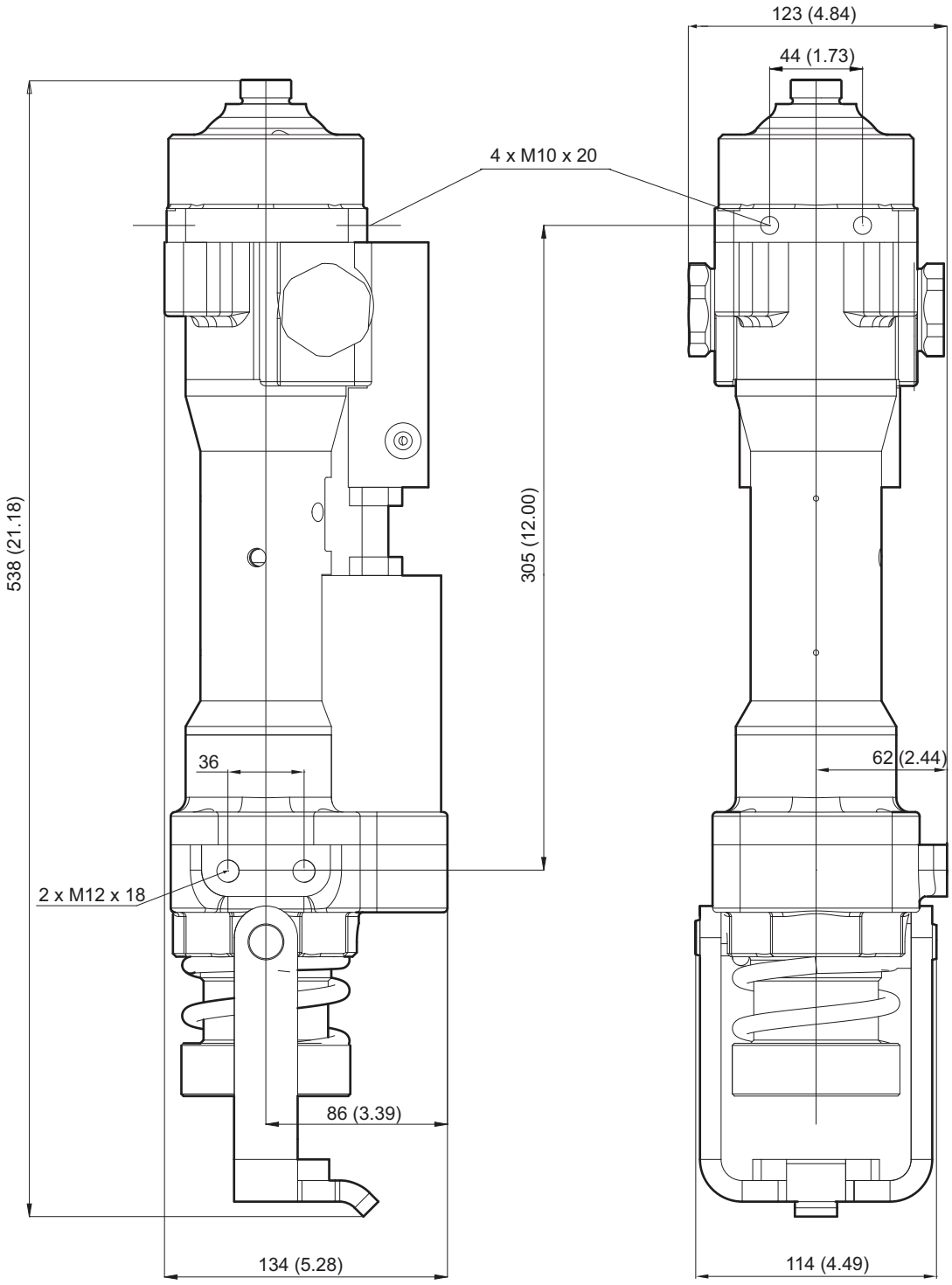
| | RDR 48 R |
|---|---|
| Sound pressure [1] dB(A) | 104 |
| Sound power [2] dB(A) | 115 |

[1] Sound pressure level according to EN ISO 3744 in accordance with directive 2000/14/EC at 10 metres distance.
[2] Guaranteed sound power according to EN ISO 3744 in accordance with directive 2000/14/EC inclusive spread in production.

These declared values were obtained by laboratory type testing in accordance with the stated directive or standards and are suitable for comparison with the declared values of other tools tested in accordance with the same directive or standards. These declared values are not adequate for use in risk assessments and values measured in individual work places may be higher. The actual exposure values and risk of harm experienced by an individual user are unique and depend upon the way the user works, in what material the machine is used, as well as upon the exposure time and the physical condition of the user, and the condition of the machine.

We, Construction Tools EOOD, cannot be held liable for the consequences of using the declared values, instead of values reflecting the actual exposure, in an individual risk assessment in a work place situation over which we have no control.

mm (in.)


123 (4.84)
44 (1.73)
4 x M10 x 20
538 (21.18)
305 (12.00)
36
62 (2.44)
2 x M12 x 18
86 (3.39)
134 (5.28)
114 (4.49)

# EC Declaration of Conformity

## EC Declaration of Conformity (EC Directive 2006/42/EC)

We, Construction Tools EOOD, hereby declare that the machines listed below conform to the provisions of EC Directive 2006/42/EC (Machinery Directive).

| Rock drills | Guaranteed sound power level [dB(A)] | Measured sound power level [dB(A)] | Pmax (bar) |
|---|---|---|---|
| RDR 48 R | 118 | 115 | 140 |

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Chicago Pneumatic

**2015-01 | No. 3392 5224 01a**