



PNEUMATIC PICK HAMMER

PH-90

OPERATION MANUAL

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Equipment

Do not blindly follow the rules.



Read through the chapter to learn why personal protective equipment is important.

LABOUR SAFETY - WARNINGS

Every person to work with or service the hammer must read or be familiarized with these instructions so as to understand them completely.

Always wear safety shoes, goggles, ear defenders, gloves and other safety equipment prescribed for the given task.

⚠ WARNING Noise and vibrations hazard

Prolonged exposure to noise and vibrations produced by hammer operation puts the operator at risk of health issues. Do not stay in a noisy environment without effective ear defenders.

⚠ WARNING Electricity

The design of the product does not provide protection from electric shock hazard.

⚠ WARNING Dust hazard

Operation may be accompanied by high dust nuisance.

- The product has been designed and constructed to comply with EN 1127-2+A1 and CLC/TR 60079-32-1 standards on use in locations of dangerous atmospheric conditions 2, category M2, group I (mines).
- The construction of the product complies with requirements of Directive 98/37/EC of the European Parliament and of the Council, as amended by technical regulation – Government Regulation No. 24/2003 Coll., as amended, requirements of harmonized technical standards EN ISO 12100, standards on group I (mines), category M2 machinery in accordance with Directive 94/9/EC of the European Parliament and of the Council, as amended by technical regulation – Government Regulation No. 23/2003 Coll., as amended, and harmonized technical standards EN 13 463-1, and conforms to standards on use in „dangerous atmospheric conditions 2“ in compliance with EN 1127-2+A1 to the extent limited by national regulation - CBU Decree No. 22/1989 Coll., § 232, section (1) c) of up to 1,5% methane concentration.
- Source of the supplied compressed air must be stationed in a nonhazardous area.

Supply hoses

- Fire-technical properties of hoses used for supplying compressed air must comply with CBU Decree No. 22/1989 Coll., § 185, section (1), as amended.
- Supply hoses used in group I (mines) areas of higher explosion risk I M2 must meet requirements set by CBU Decree No. 22/1989 Coll., § 232, section c), as amended, and comply with requirements of enactments EN 1127-1 and EN 1127-2+A1 6.4.7, EN 13 463-1 7.4.3, CSN 33 2030.

SAFETY INSTRUCTIONS

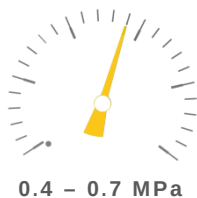
As the following instructions cannot cover all possibly occurring cases, sound common sense must be employed when working with the hammer and in the vicinity of this machine.

- ▶ Do not touch the trigger until you are ready to operate.
- ▶ Always hold the hammer with both hands while operating.
- ▶ Stay on a safe and stable platform while operating.
- ▶ Do not put the hammer close to your face and do not rest it on your leg.
- ▶ Do not use your leg to push the hammer down while operating. The tool can break and cause serious injury.
- ▶ Stand with your legs safe out of the way of the tool while maintaining balance.
- ▶ Compressed air is dangerous! Do not aim an air hose at yourself or other people. Do not use pressurized air to clean the site or your clothing.
- ▶ Make sure all hose connections are firm and airtight and secure hoses to prevent loss of air or injury if a hose gets loose or bursts.
- ▶ Secure hoses using the prescribed number of recommended hose clips and sockets prescribed for the type of hose.
- ▶ Do not release any joints that are under pressure.
- ▶ Always switch off the air supply and bleed hoses first.

- Only operate the hammer with recommended, approved tools. Work with the recommended air pressure and avoid heavy impacts.
- Do not get distracted – risk of accident is always present.
- Make sure there is no plumbing or wiring (electricity, gas, ...) in place of operation.
- If you come across a foreign object while operating, put the hammer aside and uncover the object carefully to identify it.
- If you cannot produce sufficient thrust on the hammer (e.g. while operating horizontally or upward), choose another type of machine or technology. Insufficient thrust increases vibrations and risk of injury.

Air pressure

The hammers are constructed for operating air pressure of 0.4 – 0.7 MPa.



MATERIAL AND CONSTRUCTION

Main parts of the hammer are constructed of SAE grade 11, 12 and 14 carbon steels. No materials susceptible to ignition spark formation are used on external parts. The hammer is also free of materials with hazardous electrostatic charging properties. The galvanized steel surface also meets all of the requirements above.

APPLICATION

Pneumatic pick hammer is a versatile tool. It is designed for breaking up low to medium strength rock and material (concrete, bituminous roadways, coal etc.), in construction works and mining or surface operations.

Technical data and main dimensions	ISO unit	PH-90 Ø25x75	PH-90 #22x82
Weight	kg	9.5	9.5
Impact energy	J	26	
Impact frequency	Hz	28	
Air consumption	m ³ min ⁻¹	1.1	
Operating air pressure	MPa	0.4 – 0.7	
Effective value of weighted acceleration	m.s ⁻²	9.1	
Measured sound power level	dB	104.2	100.8
Guaranteed sound power level	dB	105	102
Length	mm	470	
Width	mm	180	
Supply hose	mm	Js 13, 16, 20	
Connecting thread	"	G 3/4"	
Tool shank size	mm	Ø25x75	#22x82

Mean values (±10% tolerance) at 0.6 MPa air pressure.

TECHNICAL DESCRIPTION

The hammer is constructed for operating air pressure of 0.4 - 0.7 MPa. Compressed air is in turns filling spaces below and above floating piston head in hammer cylinder, setting piston into linear reciprocating motion. In power stroke, piston transfers its kinetic energy to a tool that disrupts material. The tool is retained by screw retainer Exhaust air leaves through a series of holes in silencer. Silencer can be rotated into arrested positions, directing exhaust air to ensure safety and comfort.

MODEL LABELLING

Machines are fitted with labels containing important information. Keep these labels clean and readable at all times and order new ones as necessary.

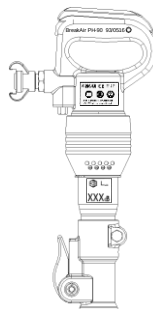


The main label should be found on the handle.

- The 'CE' symbol states that the product is EC-approved (see EC-Declaration of conformity).
- Maximum permitted compressed air pressure is stated in the top right corner.
- The opened book symbol states that user has to read and understand the manual before using the machine for the first time.
- The headset symbol reminds user to wear effective ear defenders.
- The last symbol reminds user to wear safety goggles.

Guaranteed noise level in accordance with Directive 2000/14/EC is indicated by a label under silencer, and a mark on the silencer marks the group and category the machinery falls under in accordance with Directive 94/9/EC – ATEX.

Machine type and serial number are embossed on the handle.



Thrust

With regards to vibrations and manipulation of the hammer, the optimal thrust is between 150 – 200 N. The thrust must prevent the hammer from working idly, which increases wear and chance of breakdown.

Tool insertion

Unscrew retainer with ring. Always check the state of rubber ring. Insert tool into cylinder and screw retainer back on.

Never start a hammer without a tool inserted!

MAINTENANCE PRINCIPLES

Only personnel properly acquainted with the structure and function of the hammer can service the tool.

All repairs are to be performed by the manufacturer or authorized trained personnel.

- ▶ Dry, clear air of the appropriate overpressure (see Technical data) must be available in sufficient volumes.
- ▶ Supply hose must match the prescribed dimensions. To avoid excessive frictional pressure loss, do not use hoses of over 15 meters in length (in case of a Js16 hose). If necessary, hose of a larger diameter can be used over greater distances.
- ▶ Protect the hammer from dirt and other harmful particles getting in. Always keep the input and output openings clean.
- ▶ Blow the hose clear to get rid of potentially harmful particles before attaching it to the hammer.
- ▶ Properly tighten all joints and re-tighten after 3-5 hours of first operation.
- ▶ Check-up on the state of the hammer regularly.
- ▶ Hexagonal chuck in PH90 #22x82 makes use of chisel type tools possible. The open screw retainer can be used for wider chisels and facilitates faster tool replacement. If the hammer operates without sufficient thrust, the screw retainer can crack under heavy impacts of the tool!

LUBRICATING

The hammer must be in good condition and lubricated properly to provide maximum performance, service life and proper functionality. Ensure sufficient lubrication with an oiler or a water-separator/oiler unit.

Alternatively, pour about 100 cm³ of oil into the air supply hose (at the entry point) by the compressor unit and 5 cm³ into the air inlet at the beginning of each work shift and repeat every 2-3 hours of operating.

- ◆ Do not use hydraulic oils or unstabilized colseed oils for lubrication.
- ◆ Before storing the tool for over three weeks, conserve it using mineral oil (see Storing).
- ◆ Do not use ecological oils for conservation.

Recommended ecological oils:

BP BIOHYD SE 46, ÖMV BIOHYD M 32,
TOTAL HYDROBIO 46

Recommended mineral oils:

PARAMO PNEUMAT 46

STORING

Before storing the tool for over three weeks, it needs to be conserved.

- ◆ Conserve the hammer by pouring cca. 50 cm³ (0.5 dcl) of mineral oil into the air inlet and running it shortly to coat its internal parts with oil.
- ◆ Store the hammer in dry conditions – protected from weather factors and relative humidity below 75%.
- ◆ Do not store the hammer close to corrosive chemicals or gases.

In proper storage conditions, the hammer can be stored for a year and spare parts for a year and a half without re-conservation.

DELIVERING

The hammer is delivered separately, including this manual and a certificate of warranty.

By default, we deliver the ¾" **Quick Coupling** as the joint for the supply hose. Alternatively, the quick coupling can be replaced by a cap nut with a socket, which can be attached to the ¾" threaded socket.

The cap nut (item no. 319 257) can be combined with:

- Ø13 socket (item no. 319 264)
- Ø16 socket (item no. 319 255)
- Ø20 socket (item no. 319 256)

Following items are also for sale:

- tools
- oilers, water separators
- recommended ecological oils
- hoses and hose ends, adapters, nuts, sockets, clips

Low temperatures

Presence of condensate in air coupled with low temperatures can cause the hammer to freeze up.



Add a water separator or before the hammer and as far away from the compressor unit as possible (min. 20 m).

Ordering spare parts

All hammers are manufactured in accordance with drawing documentation to ensure interchangeability of all components.

Please state the hammer type, name, quantity and item no. of the desired component in your order form.

Pos.	Item No.	Title	Qty	Standard
	9410 350	BreakAir PH-90 Ø27x75		
	9410 360	BreakAir PH-90 #22x82		
1	8323 590	Cylinder Assy. Ø25x75	1	J
1	5095 572	Cylinder	1	J
2	2005 280	Chuck Ø25x75	1	J
1	8323 600	Cylinder Subassy. # 22x82	1	J
1	5095 572	Cylinder	1	J
2	2090 220	Chuck #22x82	1	J
3	273 123	Rubber Sealing 4202-050	1	J
4	273 129	Rubber Ring 4201-311	1	J
5A	8042 291	Closed Screw Retainer	1	J
5B	8042 300	Open Screw Retainer	1	N
15	5003 475	Piston	1	J
16	3908 060	Distribution Ring	1	J
17	1511 281	Cover	1	J
18	3051 011	Pin	1	J
19	273 406	Silencer	1	J
20	4771 050	Safety Ring	1	J
21	8040 140	Handle Assy.	1	N
22	5259 483	Handle	1	J
23	1411 172	Trigger	1	J
24	311 038	Spring Pin 8 x 28	1	J
25	722 094	Ball 17 (plastic)	1	J
26	315 007	Spring 4500-240	1	J
27	311 376	Plug	1	J
28	319 282	Threaded Socket G 3/4"-3/4"	1	J
29	414 259	Quick Coupling 3/4"	1	J
30	3081 271	Trigger Pin	1	J
*	319 264	Socket Js 13	1	N
31*	316 255	Socket Js 16	1	N
*	319 256	Socket Js 20	1	N
32*	319 257	Cap Nut 3/4"	1	N
-	8040 160	Handle Assy. (bottom triggering)	1	N
-	5259 591	Handle	1	N
-	562 015	Trigger	1	N
-	311 377	Spring Pin 6 x 28	1	N
25	722 094	Ball 17 (plastic)	1	N
26	315 007	Spring 4500-240	1	N
27	311 376	Plug	1	N
28	319 282	Threaded Socket G 3/4"-3/4"	1	N
29	414 259	Quick Coupling 3/4"	1	N
30	3081 271	Trigger Pin	1	N

J = Standard N = On Demand * = Replaces Quick Coupling (29)

BreakAir PH-90

