

Manufacturer of pneumatic impact tools and hydraulic tools for mines, quarries, construction industry, steelworks and foundries.

PNEUMATIC RAMMER

PK 9, 11 OPERATION MANUAL

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CZE obraťte

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 rammer must provably 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 hazard

Prolonged exposure to noise produced by rammer operation puts the operator at risk of health issues.

Do not stay in a noisy environment without effective ear defenders.

WARNING Vibrations

Frequent use of hand-held vibrating tools may trigger onset of the Hand-Arm Vibration Syndrome (HAVS).

- Take short breaks from work and always keep your hands warm.
- Immediately report any issues like numbness in fingers to your superior.

WARNING Dust hazard

The rammer operation may be accompanied by high dust nuisance.

Use respirators where dust nuisance exceeds levels prescribed by relevant hygienic regulations.

A WARNING Flying debris

Rock chips and debris can be projected in at high velocities as the rammer operates.

Wear safety goggles.

A CAUTION Heavy object

Assure that the rammer will not harm anyone by falling and always keep in mind its weight to prevent injury.

SAFETY INSTRUCTIONS

The priority of labour safety always prevails over any other operation demands.

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

- Do not touch the trigger until you are ready to operate.
- Always hold the rammer with both hands while operating.
- Stay on a safe and stable platform while operating.
- Do not put the rammer close to your face and do not rest it on your leg.
- 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 for the type of hose.
- Do not release any joints that are under pressure. Always switch off the air supply and bleed hoses first.
- If you use a cleaning agent or a solvent to clean the rammer, make sure it meets all relevant safety regulations and that its application does not cause environmental damage.
- When cleaning, observe instructions provided by the manufacturer of the cleaning agent.

Tips

 Do not get distracted – risk of accident is always present.

Air pressure

PK Pneumatic rammers are constructed for operating air pressure of 0.4 – 0.6 MPa.



0.4 - 0.6 MPa

TECHNICAL DESCRIPTION

The rammers feature an effective vibration damping mechanism to protect operator's hands. They are designed to ensure maximum parts interchangeability for both types. A supply hose feeding compressed air attaches to the top part of the rammer. By pressing down the control lever, compressed air is distributed, filling in turns spaces below and above a floating piston head in the cylinder, setting piston into linear reciprocating motion. In power stroke, piston transfers its kinetic energy to a rubber butt that is used for ramming the material.

The new rubber butt is attached by sliding the threaded piston in, not screwing it in.

APPLICATION

Rammers are used for ramming bulk materials, namely in sand molded casting, a metal casting process used in foundries. The PK pneumatic rammers are characterized by easy manipulation and effective, failure-free operation.

Technical data and main dimensions	ISO unit	РК 9	PK 11	
Weight	kg	9	10	
Impact energy	J	25	43.5	
Impact rate	Hz	14.5	13	
Air consumption	m ³ min ⁻¹	0.55	0.6	
Operating air pressure	MPa	0.4 - 0.6		
Effective value of weighted acceleration	m.s⁻²	3.3	5	
Measured sound power level	dB	95.4	95.4	
Guaranteed sound power level	dB	97	97	
Length	mm	1280	1345	
Piston stroke	mm	170	223	
Piston diameter	mm	32	36	
Supply hose	mm	Js 13		
Connecting thread		G 1/2''		
Ordering code		9440-100	9440-110	

Mean values (±10% tolerance) at 0.5 MPa air pressure.

MODEL LABELLING

Rammers 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 silencer.

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

The label containing the L_{WA} value indicates guaranteed noise level in accordance with Directive 2000/14/EC.

See Technical data for more information.

Machine type and serial number are embossed on the head.



The label containing the L_{WA} value and the main label should be found on the silencer.

Low temperatures

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



Add the AOV 6 water separator before the rammer and as far away from the compressor unit as possible (min. 20 m).

MAINTENANCE PRINCIPLES

Always observe all relevant hygiene and safety regulations.

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

All repairs are to be performed by the manufacturer or authorised 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 metres in length. If necessary, hose of a larger diameter can be used over greater distances.
- Protect the rammer 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 rammer.
- Properly tighten all joints and re-tighten after 3-5 hours of first operation.
- Check-up on the state of the rammer regularly and secure repairs when necessary.

LUBRICATING

The rammer must be in good condition and lubricated properly to provide maximum performance, service life and proper functionality.

Achieve sufficient lubrication with the LR 1 oiler or the LR 3, connected to the supply hose 5 m before the rammer and configured to minimal oil consumption – continuous operation requires 10 ml of oil per hour.

It is also possible to lubricate the rammer manualy during shifts. To do this, pour 2 ml of oil into the supply elbow of the rammer – taking care not to pour in too much. Lubricate the rammer this way 4 times per shift. This method can negatively influence the service life of the hammer.

- Do not use hydraulic oils or unstabilized coleseed 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.

STORING

Recommended ecological oils:

BP BIOHYD SE 46, ÖMV BIOHYD M 32, TOTAL HYDROBIO 46, TopOil BIO UNI

Recommended mineral oils:

PARAMO PNEUMAT 46, Olej PERMON Zimní P22

STORING

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

- Conserve the rammer by pouring cca. 5 ml of mineral oil into the air inlet and running it shortly to coat its internal parts with oil.
- Store the rammer in dry conditions protected from weather factors and relative humidity below 75%.
- Do not store the rammer close to corrosive chemicals or gases.

In proper storage conditions, the rammer can be stored for a year and spare parts for a year and a half without reconservation.

DELIVERING

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

Following items are also for sale:

- rubber butts
 - Rubber butt 273 137
 - AP Butt Ø 60 M18: 5540-180
 - Al Butt Ø 60 M18: 5540-181
 - AP Butt Ø 120 M18: 5540-190
 - Nut 311 013
 - Washer 311 457
 - Threaded piston 5003-830 (PK9)
 - Threaded piston 5003-840 (PK11)
- LR 1, SOOR 1, AOV 6 water separator
- recommended ecological oils
- hoses and hose ends, adapters, nuts, sockets, clips

Ordering spare parts

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

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

Example: PK 9 Piston 5003-830 1pc

Pos.	Item No.		Name	Qty	Standard
	9440 100		PK 9 Pneumatic rammer		
		9440 110	PK 11 Pneumatic rammer		
1	5003 830	5003 840	Piston	1	J
2	5095 520	5095 530	Cylinder	1	J
3	5436 060	5436 070	Upper Valve Seat	1	J
4	5435 040	5435 050	Bottom Valve Seat	1	J
5	0900 432	0900 492	Distribution Plate	1	J
6	5250 280	5250 290	Head	1	J
7	0802 040	0802 050	Nut	1	J
8	722 010	722 019	Guide Bushing	1	J
9	8042	280	Bottom Head	1	j
10	4200 760		Stop	1	J
11	273 137		Rubber Butt	1	j
12	1730 300		Silencer	1	J
13	311 483		Nut	1	j
14	8019 402		Inner Pipe Assy.	1	j
15	2005	271	Guide	- 1	1
16	2017	190	Bushing	1	J
17	8122	401	Outer Pipe 600 mm	- 1	1
17*	8122 401		Outer Pipe 700 mm	1	N
17*	8122 551		Outer Pipe 360 mm	1	N
18	5225 142		Closing Body	1	1
19	4071	080	Plug	1	J
20	324 060		Pin	1	1
21	1418 010		Trigger Lever	1	J
22	4474 201		Supply Elbow	1	J
23	0640 260		Can Nut	1	J
24	4023	480	Socket Is 13	1	J
25	315	008	Spring 4500-290	1	J
26	315	108	Spring 4501-790	1	J
20	315	109	Spring 4501-800	1	J
28	321	019	Pin 6x27 3040-740	1	J
29	273	326	Dust Sealing	1	J
30	311	220	Pin Cylindrical	1	J
31	311	221	Pin Cylindrical	1	J
32	315	110	Ring Ø18	1	J
33	324	397	Plastic Ball 3/8"	1	J
34	324	393	Ball 3/16"	16	J
35	273	090	Ring O	1	J
36	273 050		Ring O	2	J
37	273 081	273 109	Ring O	1	J
38	273 031	273 103	Ring O	1	J
30	273 032	075	Ring O	1	1
40	275	273 078	Rubber Stop 0901-730	1	L L
-+0 ⊿1	272	005	II-Packing Seal 16v25v5	1	J
41 42	2/5	003	Ring 18v1/v2	1	L L
42	5ZI 211	003	NUL NUL TOYTAYS	1	L L
43	211	126	Insert 19	1	L L
	311	L = Dof	nisere 15	-	5





