

LIFTING BAGS

Operating Instructions



LIFTING BAGS Instructions for Use

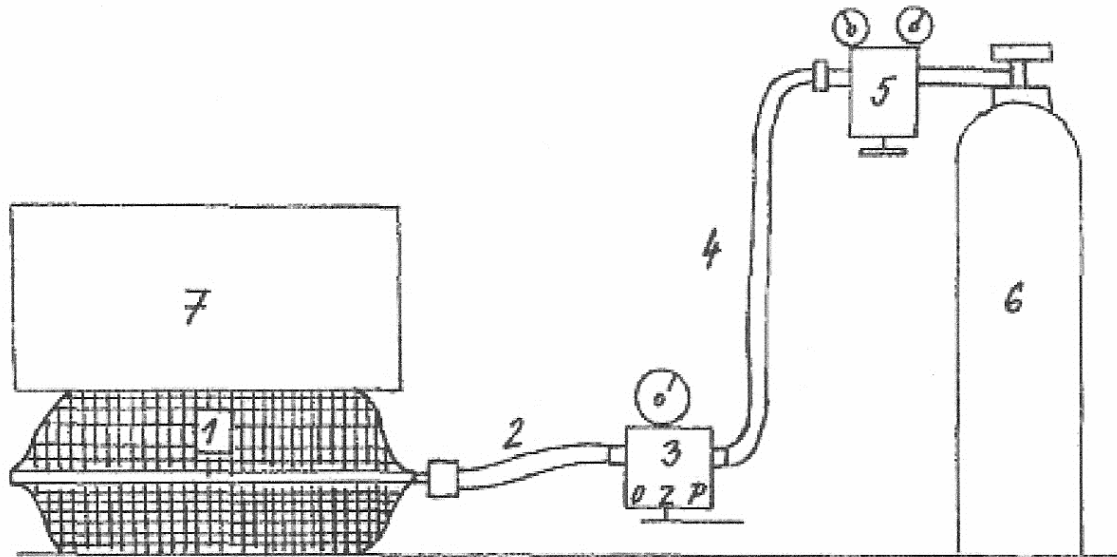
Lifting bags are indispensable almost everywhere where there is a need to lift or push something, i.e. mainly in the construction and other industries, in mines, stone quarries or at rescue operations. The basic ZP model line consists of five Kevlar-reinforced bags. The lifting force ranges from 3 to 30 metric tons and the lift ranges from 120 to 350 millimetres. All bags are pressure-tested by the manufacturer and their safety coefficient is 4 to 6.

Basic Model Line – ZP

Model		ZP 3	ZP 6	ZP 10	ZP 20	ZP 30
Lifting Force	kN	30	60	100	200	300
	t	3	6	10	20	30
Lifting Height	mm	120	160	210	300	350
Dimensions	mm	230x230	300x300	390x390	530x530	640x640
Thickness	mm	25	25	25	25	25
Weight	kg	1.5	2.4	4.3	7.6	11.2
Nominal Volume	l	1,6	4,1	10	25	50
Air Volume (0,8MPa)	l	14	40	80	230	420
Filling Time	s	1	6	13	29	36
Operating Overpressure	MPa	0.8	0.8	0.8	0.8	0.8
Test Pressure	MPa	1.2	1.2	1.2	1.2	1.2
Destruction Pressure	MPa	5.7	6.5	5.6	4.5	3.2

Connection Diagram

1. Lifting Bag
2. Hose with End Piece and Quick Coupler
3. Control Unit
4. Hose with Quick Couplers
5. Cylinder Pressure Regulator
6. Pressure Cylinder
7. Load



- If there are sharp edges on the surfaces or holes in the surfaces that come into contact with the lifting bag, the bag surface must be protected e.g. with a wooden board (recommended) having sufficient stiffness and loading capacity.
- Insert the lifting bag under the load in such a manner that the filling end of the hose is not damaged.
- If there is a need of using two lifting bags, one on the other, inflate the lower bag first, then inflate the upper one and increase pressure slowly in both of them.
- When inflating the bag, do not stay close to it.

It is strictly forbidden:

- to use a different pressure medium than air;
- to work under a load lifted with the lifting bag only. The load must always be additionally secured in position (supported)
- to use damaged bags, hoses or fittings ;
- to change the setting of the safety valve on the control unit;
- to use the lifting bag without the control unit;
- to use different hoses, fittings or valves from those approved by the manufacturer.
- to admix oil with the filling air; if a compressor is used, the system must be provided with an oil separator.

Maintenance

Check all parts of the set after each use and make sure that they are undamaged. Remove dirt from the surface of the bag and wash it with water. The bag including all its accessories should be clean and dry when stored. It should be stored in a dark and dry room. Check regularly (after each use) whether the safety valve on the control unit "cracks" at 0.8 MPa. Should any problems occur, contact the manufacturer for after-sales servicing (both during and after the warranty period).

Accessories

- A 10-metre-long hose with an end piece and quick coupler;
- A 5-metre-long hose with an end piece and quick coupler;
- A 3-metre-long hose with quick couplers;
- A control unit with a 0.8 MPa safety valve;
- A dual control unit with a 0.8 MPa safety valve;
- A 15/0.8 MPa cylinder pressure regulator;
- A pressure cylinder (7 lt. or 5 lt.).

Putting the Bag into Operation

First, check whether the lifting bag(s) and accessories are undamaged. Special attention should be paid to:

- The surface of the bag(s) - it (they) must not be damaged mechanically (the textile layer must not be exposed) or chemically (the surface must not show any signs of swelling and must be free of cracks);
- The filling end piece on the bag must be undamaged and firmly tightened;
- The control valve or the control unit must be undamaged;
- The air hoses including the respective quick couplers and end pieces must be undamaged.

Operation

Insert the lifting bag under the load to be lifted and connect it with the control unit ("O" marking) using the air hose. Check whether the control lever of the control unit is in the "Z" position. Attach the pressure regulator to the pressure cylinder and check whether the regulator is closed. Now open the pressure cylinder. The high-pressure gauge shows the pressure in the cylinder. Use the adjusting screw to set the pressure to 0.8 MPa on the reducing gauge. Then connect the control unit ("P" marking) with the reducing valve using the air hose. After opening the reduction valve, the set is ready for use. Put the control lever on the control unit into the "P" position for inflation of the bag and into the "O" position for its deflation. If the pressure in the bag exceeds 0.8 MPa, the safety valve will "crack" to reduce the pressure in the bag automatically. Do not attempt to inflate the lifting bag with any other gas than air.

Inspections and Service Life

**The manufacturer recommends to inspect the bags regularly every 5 years.
The service life of the bags is 15 years**