PROFESSIONAL ENVIRONMENTAL PROTECTION PRODUCTS

PLEASE READ AND UNDERSTAND THIS MANUAL BEFORE USING SAVA LIFTING BAGS

PNEUMATIC MEDIUM PRESSURE HEAVY LIFTING BAGS

& INFLATION ACCESSORIES

SAFETY, OPERATION AND MAINTENANCE INSTRUCTIONS

SAVA PROFESSIONAL EMERGENCY MANAGEMENT PRODUCTS

NON-COMPLIANCE WITH INSTRUCTIONS AND WARNINGS FOR SAFE OPERATION OF LIFT BAGS CAN DAMAGE PRODUCTS, PROPERTY AND CAUSE SERIOUS BODILY INJURIES.

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For sizing, pricing, and technical information see
www.savatrade.com

SAVA MEDIUM PRESSURE HEAVY LIFT BAGS INSTRUCTION MANUAL

WARNING!

Before using Lifting Air Bags, carefully read these instructions. Non-compliance with recommendations can result in product damage and personal injury.

We do not recommend Sava air bags for underwater floatation and recovery. Freshwater and saltwater will not harm the bag or attached components; however the bags are not designed to self-regulate potentially damaging internal pressures that can build up during ascent. The use and/or modifications of Sava air bags for this type of recovery are solely up the discretion of the user.

- Never work under a load without additional safety support.
- Never exceed the recommended inflation pressure printed on the bag
- Never stack lifting air bags one upon another.

Information

This booklet contains technical information about lifting air bags and basic instructions for use. The selection and application of air bags depend on various factors such as lifting requirements, capacity, lifting height, and shape of objects. The manufacturer doesn't assume any responsibility for personal injuries or material damages arising from improper use or misuse of lifting air bags and their constituents. The figures beside the text are shown for information only. Actual conditions of lifting techniques and characteristics depend on the particular application.

Recommendations for safe and efficient work

When using air bags, always wear protective clothing. Firemen and rescue-team members must be equipped completely in accordance with all requirements; other users should wear safety helmet, safety glasses and gloves or other equipment if required.

When the surface temperature of the object to be lifted exceeds 55°C (131°F), the part of the air bag in contact with the object is to be protected by means of a fiberboard. Heat and temperatures exceeding the permissible level can damage the air bag. Alternatively, in cold conditions, air bags have been tested and proven to perform as specified to at least -20°C (-4°F)

Even though it is simple to place and to inflate the air bag in the dark, it can be dangerous. The work area should be well illuminated. Sometimes, when due to the effect of shading or poor visibility during the day it is recommended to use additional sources of light.

Proper safety techniques are no accident.

Cribbing and lateral load stabilizer use is mandatory. “Lift and inch-crib an inch.” A bag failure should never cause a lift failure. Do not use bags where an overhead load could fall on it while in use. Stabilize the surrounding area or structure before entering an area of risk.

Insure sidewall is folded inwards before the lift.

Upper and lower flat surfaces of the airbag must remain nearly parallel to each other during the lift.

Do not use a portion of the bag to lift the object, use the entire surface. If this is impractical or impossible, use a smaller bag and lift in increments, using cribbing to hold the load while repositioning the bag to a higher level.

Use the “three-point lift technique” whenever possible. When lifting a car or object, use two bags on one end and let the other end remain in contact with the ground for stability. Lateral stabilizing equipment as well as cribbing must always be used.

Use only Sava inflation accessories or identical specified equipment.

Do not use hoses or valve stem to lift, drag or move air bags. Use the web loops on the side of the bag to lift or adjust position of the bag. Attach ropes (if necessary) to the loops to gain more reach.

High pressure cylinders and pressure regulators

Every time the pressure regulator is attached to a high-pressure cylinder the following safety and operating precautions must be used. Deviation from the following safety and operating instructions may result in fire, explosion, damage to the regulator or injury to the operator.

High-pressure cylinder/regulator care

1. Before removing the protective cap, secure the cylinder to a wall, post or cart to prevent it from falling.
2. Inspect the cylinder valve for damaged threads, dirt, dust, oil or grease. Remove contamination with a clean cloth.
3. Crack open the cylinder valve for an instant to blow out dust and foreign matter that could clog or damage the regulator. Do not place any part of your body near the airflow, as high-pressure air-jets-even at relatively low velocity-have been known to tip the cylinder over, accelerate projectiles, penetrate skin, dislocate eyeballs and cause other serious injury.
4. Inspect regulator and clean if foreign matter is present. Regulators do not require regular periodic maintenance unless they show signs of malfunction. If there is a problem noticed, remove the regulator from service and return to Sava Trade Inc. for inspection and servicing.
5. If you have a piston regulator, no user adjustments are necessary, ignore steps 6-11
6. If you have a diaphragm regulator, turn the regulator adjusting handle counter-clockwise until the adjusting spring pressure is released (off position) then install the regulator onto the cylinder valve. Do not use grease, Teflon tape or sealants, as the compression fitting is self-sealing.
7. **Carefully and slowly,** slightly open the high-pressure valve on the cylinder turning counter-clockwise. Check for leaks.
8. **To check for leaks,** open the low-pressure regulator-adjusting handle one turn clockwise (pressure should be indicated on the low pressure gauge). Then close the high-pressure cylinder valve.
9. If the high pressure gauge reading drops then there is a leak in cylinder valve, inlet fitting or high pressure gauge. If the low pressure gauge reading drops then there is a leak in the output fitting. If there are no leaks present close the low-pressure regulator-adjusting handle and connect the output hose, controller(s), and lifting apparatus.
10. Open high-pressure valve only if leaks or malfunctions are not present. Open valve completely (to the valve stop) to seal the valve packing.
11. Test entire apparatus before actual use to determine proper operation and sealing of connections and apparatus.
12. It is remotely possible for a slight amount of air to continually flow from a connected high-pressure source even if control valves are off. Do not leave equipment unattended. Continuously monitor pressure levels.

OPERATIONAL USE

1. Think and plan the lift operation carefully before use.
2. Plan for all contingencies such as bag failure and load shifting before starting to lift.
3. Protect the bag from heat sources such as exhaust pipes, catalytic converters, flames, sparks.
4. Ensure electrical wires cannot be damaged as to cause a spark while lifting.
5. Protect the bag from extreme cold such as cryogenic transport pipes.
6. Protect the bag from sharp objects such as rocks, gravel, bolts, sheared metal, etc.
7. Use cribbing timber to support the load in case of failure or shifting of the bag or load.
8. Add cribbing incrementally as you lift.
9. As with any lifting device, never climb under the load unless it is fully supported with cribbing.
10. During lifting the top and bottom of the bag should be parallel to each other and perpendicular to the sides. This is most important when the bag is fully inflated. Unequal stretching of the internal webbing restraints can cause damage to the bag.

Sava Low Pressure air bags are especially designed for fire service use. They are mainly intended for the rescue of trapped persons in a variety of operational situations. Air bags can be used in situations encountered at road accidents, aircraft crashes, collapsed tunnels and trenches. Air bags can be used where conventional lifting mechanisms are impossible to use. Air bags are particularly useful of soft, irregular, rubble-strewn ground or during snowy or icy conditions.

Low pressure and medium pressure air bag systems are complimentary to high-pressure air bag systems; each having their own particular advantages. The broad surface area of low pressure and medium pressure air bag systems makes them particularly suitable for exerting uniformly distributed lift pressure on the weaker parts of vehicles and aircraft. The extra height of these cushions makes them suitable for lifting stranded animals out of mud bogs and ponds.

Sava Low Pressure Delivery Hoses and Double Fitting Controllers are designed for use with only Sava Low Pressure Air Bags. Proprietary inflation hardware cannot be accidentally used with other types of Air Bags as they will not fit together. Double Fitting Controllers can be used with one or two bags at once. Double Fitting Controllers only need one air source.

Single stage diaphragm regulators are the most reliable and economic regulators available. Sava regulators are matched to SCBA type fittings so existing tanks can be used with this system. Please specify output style, CGA 346, CGA 347 or universal. CGA 347 is standard. Two stage regulators are

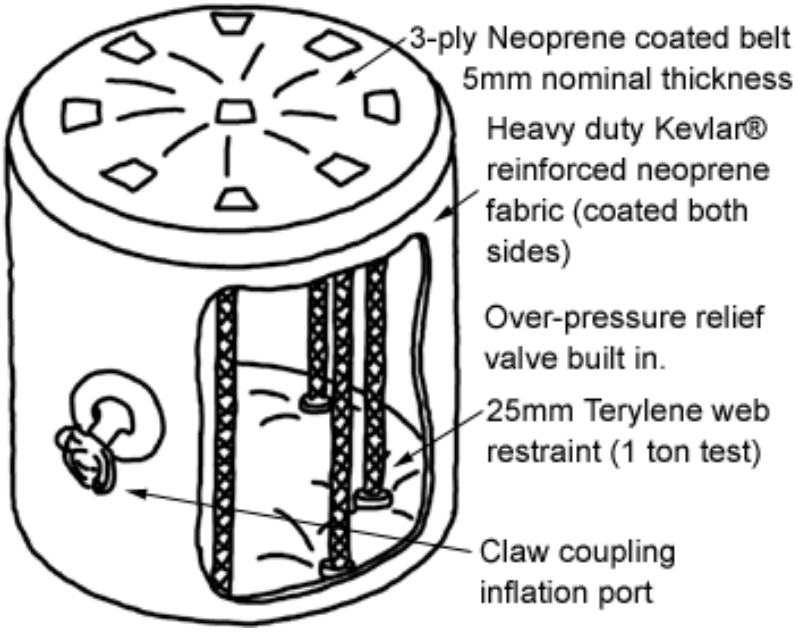
available where accuracy and foolproof operation are required. Two stage regulators need not adjustments or tools to operate over a wide range of supply pressures.

Maintenance and repair

Sava lifting bags are warranted against any manufacturing defect for one year from date of purchase. Patch kits are available from your Sava distributor. The 10-year expected lifetime is further insured by the fire resistant outer fabric and the built-in over- pressure relief valve.

Check inflation assembly before use or every three months. Check for damaged, rotten or missing o-rings, rubber seals, and clean any contamination. Check the pressure relief valve for proper operation at the specified pressure.

Clean bags and inflation accessories after use using mild detergent solution and water. Inflate the bag to 2 PSI and scrub with a soft brush if necessary. Check for leaks at the same time with the soapy water. Although the bag sidewall is Kevlar reinforced, it is still susceptible to punctures. If tears or deep abrasions are greater than 1 inch in length, or reinforcement cording is visible, remove the bag from service and consult your Sava representative for repair instructions.



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TECHNICAL DATA - Medium pressure heavy lifting air bags					
Type	SHOW METRIC	A	B	C	D
Diameter	inch	24"	30"	36"	48"
Max Capacity	Lbs	6560 Lbs	10,252 Lbs	14,758 Lbs	26,240 Lbs
Max Pressure	PSI	14.5 PSI	14.5 PSI	14.5 PSI	14.5 PSI
Max height	inch	17"	23"	24"	40"
Deflated Height	inch	2"	2"	2"	4"
Volume	cu/ft	11ft²	22 ft²	32 ft²	106 ft²
Weight	Lbs	13 Lbs	16 Lbs	17 Lbs	22 Lbs
Nylon Tote Bag (holds 2)					