BOOMARINE SUPPLIES

BOOMARINE SUPPLIES LTD.

VESSEL LAUNCHING AIR BAG

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INTRODUCTION

Airbag for ship launching and landing is an extremely promising mature technology, it overcomes restrictions of traditional methods, which limited by the building and repairing capability of small ship factories, and developed in to an extremely flexible technology, which have the advantage of labor-saving, time-saving, economical saving, flexible and a prominent economic benefit. Our airbag widely used in ship launching or landing, heavy lifting and conveying, sunken ship salvage and stranded ship saving.

Features

- labor-saving, time-saving, economical saving,
- flexible and a prominent economic benefit.

Application

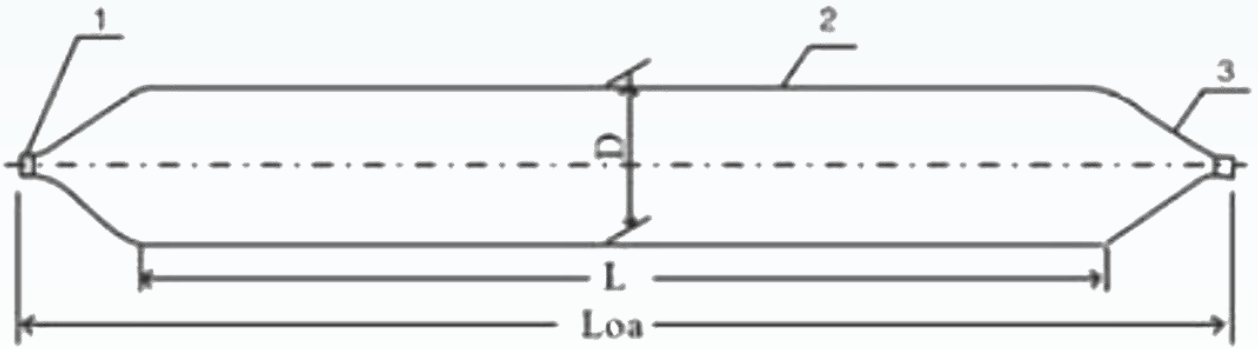
-ship launching and landing

-heavy lifting and conveying

- sunken ship salvage and stranded ship saving

STRUCTURE

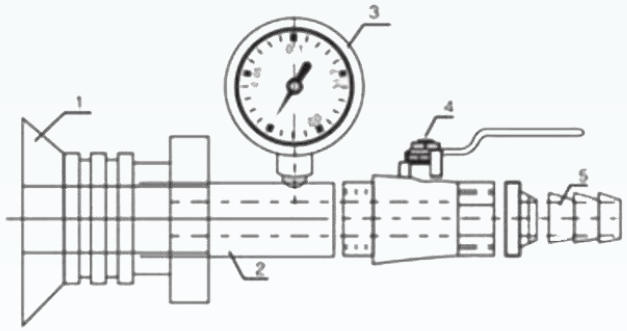
1. Air-bag skeleton material is nylon-6 dipped tire cord fabric. Density of nylon-6 dipped tire cord fabric ≥90 piece /10cm breaking strength of nylon. Tire cord≥313KN/piece
2. Air inlet is a metal casting
3. Processing method: integrative twine technology



1. End ironworks
2. Cylindrical bag body
3. Cone shaped bag body

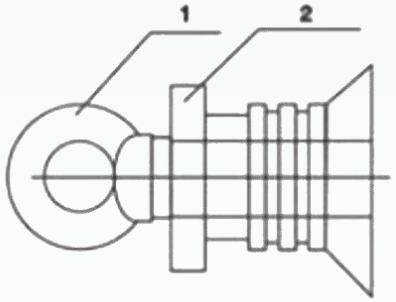
D-airbag diameter L-airbag's effective length Loa- total length of airbag

Pipe fitting at the inflation end



1. End ironworks
2. Three-way connecting tube
3. Pressure gauge
4. Valve
5. Hose joint

Pull ring at the sealing end



1. Pulling ring
2. End ironwork

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SPECIFICATIONS

	Number of Cord layers	Weight of unit area Kg/㎡	Air leaking ration at work pressure: pressure drop/h	Main uses
Medium pressure Air-bag (P4, P5)	4-5	6-7	≤5%	Suitable for the small ships
High pressure Air-bag (P6, P7,P8)	6,7,8	8-9	≤4%	Suitable for the large ships

PERFORMANCE PARAMETERS

type	Dia. (m)	Initial Internal Pressure Kpa	Rated Working Pressure Kpa	Bearing capacity per meter in length when 70% deformation and the inner pressure reaches the rated working pressure Kn/M	Minimum Burst Pressure Kpa
3	0.8	25	130	114	390
	1.0	18	100	110	330
	1.2	15	85	112	260
	1.5	13	70	115	210
	1.8	11	60	118	180
P4	0.8	35	170	149	510
	1.0	25	130	143	390
	1.2	20	110	145	330

	1.5	16	90	148	270
	1.8	14	80	158	240
P5	0.8	48	210	184	630
	1.0	35	170	186	510
	1.2	28	140	185	420
	1.5	20	11	181	330
	1.8	16	90	178	270
P6	0.8	56	245	215	740
	1.0	45	200	219	600
	1.2	32	165	217	490
	1.5	25	130	215	390
	1.8	20	110	218	330
P7	0.8	67	265	228	850
	1.0	58	230	253	710
	1.2	47	180	237	580
	1.5	32	150	235	460
	1.8	25	130	255	410
P8	0.8	78	300	264	850
	1.0	69	270	297	800
	1.2	56	200	263	640
	1.5	38	180	282	520
	1.8	30	150	296	480

*Rated working pressure may deviate ±5%, compress deformation may deviate ±2%; initial internal pressure is the reference value

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STORAGE GUIDANCE

1. If the air bag will not be used for quite a long time, it shall washed and dried, filled with French chalk inside and coated with French chalk outside as well as put in dry, shady and ventilated place in the room.
2. Place storing the air bag shall be far away from the heat source.
3. The air bag can't be stretched flat when not used. It's not allowed to pile up and stack heavy
4. The air bag should be far away from oil, acid, alkali, and other organic solvent

SPECIAL ATTENTIONS DURING USING

1.Control the working pressure strictly and it's not allowed to exceed the working pressure.

2.There shall be no sharp and protruding hard objection on the contact surface with the air bag

3.To avoid distortion happened to the length direction of the air bag

4.Empty charge test shall be performed if the air bag is not used for a long time or reused. Inspector shall be at least 3m away from the airbag. If air bag recovered from large damage, its working pressure shall be reduced reasonably. Besides, annual check shall be conducted on air bags which are used often.

5.Do not drag the air bag on the ground

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QUALITY GUARANTEE

The product is up to the quality requirements of GB/T3795-1996 “air bags for the up-to-slipway and launching of the ship”.
Should quality problem happen within a year, it is guaranteed to change or refund on the condition that the transportation, storage, and working conditions are up to the regulations.

REPAIRING GUIDANCE

If the air bag is damaged, it can be repaired as long as the rubber does not age seriously (without crack and stickiness on the surface) and the cord fabric is not loose and rotten. Repair can be made by hot vulcanization and auto-vulcanization. The tool and repair material utilized in the former are quote easy. the hot vulcanization is recommended to user and the introduction is as follows:

1. Wash the air bag to make sure it is clean both inside and outside, then dry the surface.
   Notes: the immersion time while washing can’t be more than 10 minutes.
2. Mark the repair symbol visibly. Mark out the repair area and the mark area is allowed to expand 15mm. Don’t omit the concealed damage.
3. Manufacturing backing
   The material of backing is the same as the airbag and the arrangement angle of the cord fabric is consistent with the air bag.

The first layer of the backing is a vertical line. Length x 2

The second layer of the backing is oblique line whose angle is opposite to and crossed with the second layer. It is 20mm larger than the periphery of the second layer. The fourth, fifth, and sixth layer may be deduced by analog. The fillet transition with the radius of 40-50mm is required for the backing periphery of every layer.If the fault is a nail hole within 100mm or scar of 50-700mm, cross backing shall be prepared. Nylon cross backing is made by gluing two layers of coated nylon with the cross of 90 degree. Its size is 200x200mm and others are the same as the backing.

4. Filling the fault

   File the fault with steel files of flexible shaft filling machine. The file pattern on the surface shall be delicate and even as well as without floating glue. File stubble is within the range of 0.5-1mm. the periphery is 20mm larger than the backing. Break and line loose is not allowed for filed cord fabric. After the filling blow clean the gule foam by brush and compressed air.

5. Brush glue and dry

   The whole process shall be kept clean. Brush thin glue for the first time. The glue shall be without sediment and caking and shall be uniform. Forcibly gluing is required to be uniform and can't have obvious scaffold erecting phenomenon.

6. Viscose

   Firstly, brush a layer of base glue with the thickness of 1±0.2mm on the periphery of the fault. Cool down till not gluing hand. Paste and press and the glue should not be too tight in case glue failure happens after the new glue contact. The paste the backing. The center of the backing shall be pointed at fault center. The angle of the backing shall be in consistent with the thylakoid line layer. For crack larger than 1m, a layer of coated cord fabric shall be pasted I n the fault to cover the 25m fault, and then paste the fill pad. In the end, cross paste the sealing glue with the thickness of 0.8-1mm to the junction between the backing edge and thylakoid.

7. Vulcanization

   For normal shipbuilding, the following simple method can be adopted. Set up a frame (as shown in the figure) and provide plate, sand bag, jack and heated plate. Jack bag to be repaired shall be pointed ate the center in accordance with the position shown in the figure. First vulcanize the hold and then the scar. If the large fault to be vulcanized exceeds the effective length of the vulcanization, the center shall be vulcanized first and then re-vulcanization. The vulcanization shall be finished within 40-50 minutes when the temperature rises to 135±5℃ and the pressure is 0.8-0.12Mpa.

8. Check whether the repair is bound tightly. Faults such as void, delaminating or sponge and so on are not allowed. Charge test will be conducted if the repair is qualified.

1. Jack
2. Plancon
3. Heated steel plate
4. Pad cloth
5. Air bag
6. Sand bag
7. Iron plate
8. Frame