

NANHAI

Marine Airbag

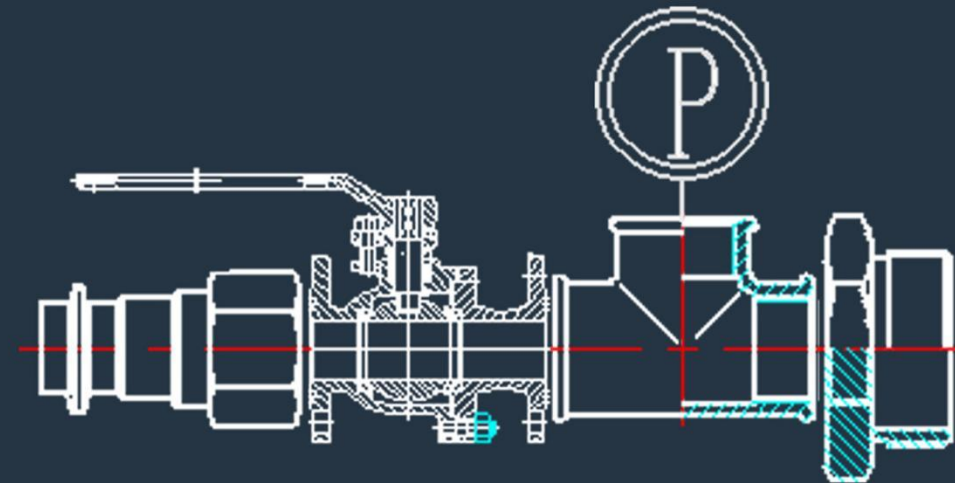
Inflated Process Manual

Developed by NANHAI R&D Department and Quality Inspection Department



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SUPERIOR GUARANTEE SUPREME GUARD
 Nanhai Standard 4P2S
 Define the new standard in global marine fender industry.

NANHAI STANDARD 4P2S
 Professional·Production·Performance·Personal
 Speeding·Service

NANHAI MARINE AIRBAG INFLATED PROCESS MANUAL INDEX



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1 Overview

1.1 About NANHAI

Shandong NANHAI Airbag Engineering Co., Ltd

was founded in 2003. As the leading brand of China marine fender and marine airbag technology, one manufacturing enterprise specializing in the development and promotion of marine fender and marine airbag technology.

Marine Fender

The marine fender series products developed by NANHAI are applied for the purpose of imparting safety to the port and vessels against collision with other vessels. These are special equipment designed to provide the cushion effect to ship, boats or other naval vessels when they experience collision against other vessels, wharves, piers and ports or berths. These are also referred as marine bumpers.

| Pneumatic Fender | Foam Fender | Rubber Fender

Marine Airbag

The marine airbags and engineering airbags developed by NANHAI are applied in the fields of ship launching, port construction and tunnel engineering; floating airbags is successfully used in underwater salvage, pipeline laying, box culvert installation and other domestic and foreign floating projects.

| Ship Launching Airbag | Buoyancy Airbags | Industrial Airbags

Technical Solution-Own High-Tech Marine Industry Technical Team.

- Complete Ship Launching/Upgrading Solution Provided
- Complete Ship To Ship Solution Provided
- Complete Buoyancy Project Solution Provided
- Complete Salvage Project Solutions Provided
- Complete Caisson Moving Project Solutions Provided

Important Case-Own Multi Huge Projects All Over The World.

- Salvage Case:"NANHAI ON.1" China Song Dynasty's shipwreck salvage
- Buoyancy Case:"GuoBao NO.1" marine farming buoyancy project.
- Salvage Case:Korea "SEWOL" Salvage Projects.
- STS Case:Brazil Petrobras Ship to Ship,25 Pcs huge pneumatic fenders case.
- Ship Launching Case: DWT 78,000 Tons "He Ming Ship" launching project.
- STS Case:Malaysia Petronas pneumatic fender cooperation.
- Several Countries Navy Cooperation.

16 YEARS EXPERIENCE



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1.2 Marine Airbag Introduction

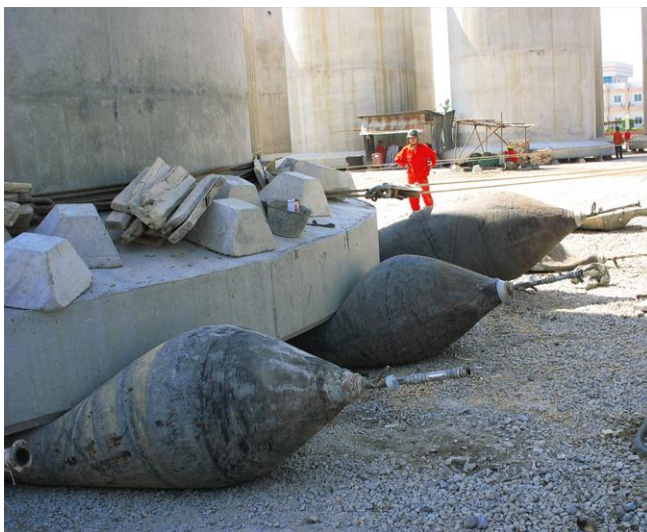
Ship Launching/Upgrading Airbag

Ship Airbag is a new product that R&D by China, they have been widely used in ship launching and ship upgrading working. During the 20 years of development and application, the ship airbags have been admitted by ship owners because of their short limited of using, no need for giant machinery, safety and high efficient, flexible operation and low cost such advantages.



Caisson Moving/Lifting Airbag

During the construction of deep water port, giant caisson technology have the characters that lowing workload, disposable water outlet, quick time of construction, great stability of port and such advantages. It's usually be used in gravity wharf. Currently, the weight of domestic caisson is from hundreds tons to thousands tons. Application in caisson moving and carrying such department, achieve the whole moving of giant goods.



Buoyancy/Salvage Airbag

Since 2008, NANHAI developed and manufactured various buoyancy airbags for salvaging shipwrecks and laying underwater pipelines. And install the box culvert. In 2013, our buoyancy airbag technology extended to the field of offshore oil engineering, and became a qualified supplier and strategic partner of CNOOC (China National Offshore Oil Corporation) airbags and related products.



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1.3 NANHAI Marine Airbag Advantages

☑ Bearing Capacity

Min Per Meter Bearing Capacity Exceed ISO14409 Requirements.

☑ Min Burst Pressure

Min Burst Pressure Performance Exceed ISO14409 Requirements.

☑ Safety Factor

NANHAI Safety Factor Standard Exceed ISO14409 Requirements.






☑ Best Gas Tightness

Gas Tightness Test 24 Hours, Pressure Loss Less Than 3%.

- | NANHAI Original Ultra-High Pressure Airbag (Unique)
- | Safety and Reliability
- | Natural Rubber Material-Supreme Strength & Stability
- | High Strength Synthetic Tyre Cord
- | Each Airbag Has Its ID for Traceability
- | Production Process Control in 6S Standard
- | Over 38 Production Process
- | Over 13 Quality Control Process
- | Customized in Any Size Airbag
- | No Deterioration or Variation in Performance
- | Most Cost Competitive System
- | Simple and Low Cost Installation
- | Low Maintenance Cost
- | Shipping Cost Minimization
- | Provide Complete Airbag Application Solutions



2 Inflated Accessories List

No.	Part Name	Spec.	Quantity.	Unit.	Drawings.
1	Reducing Joint	2"x1"	2	Set	
2	Pressure gauge	M14x1.5	1	Set	
3	Tee coupling	sus304	1	Set	
4	Ball valve	G1" (Extra Strength)	1	Set	
5	Quick connectors A	G1"	1	Set	




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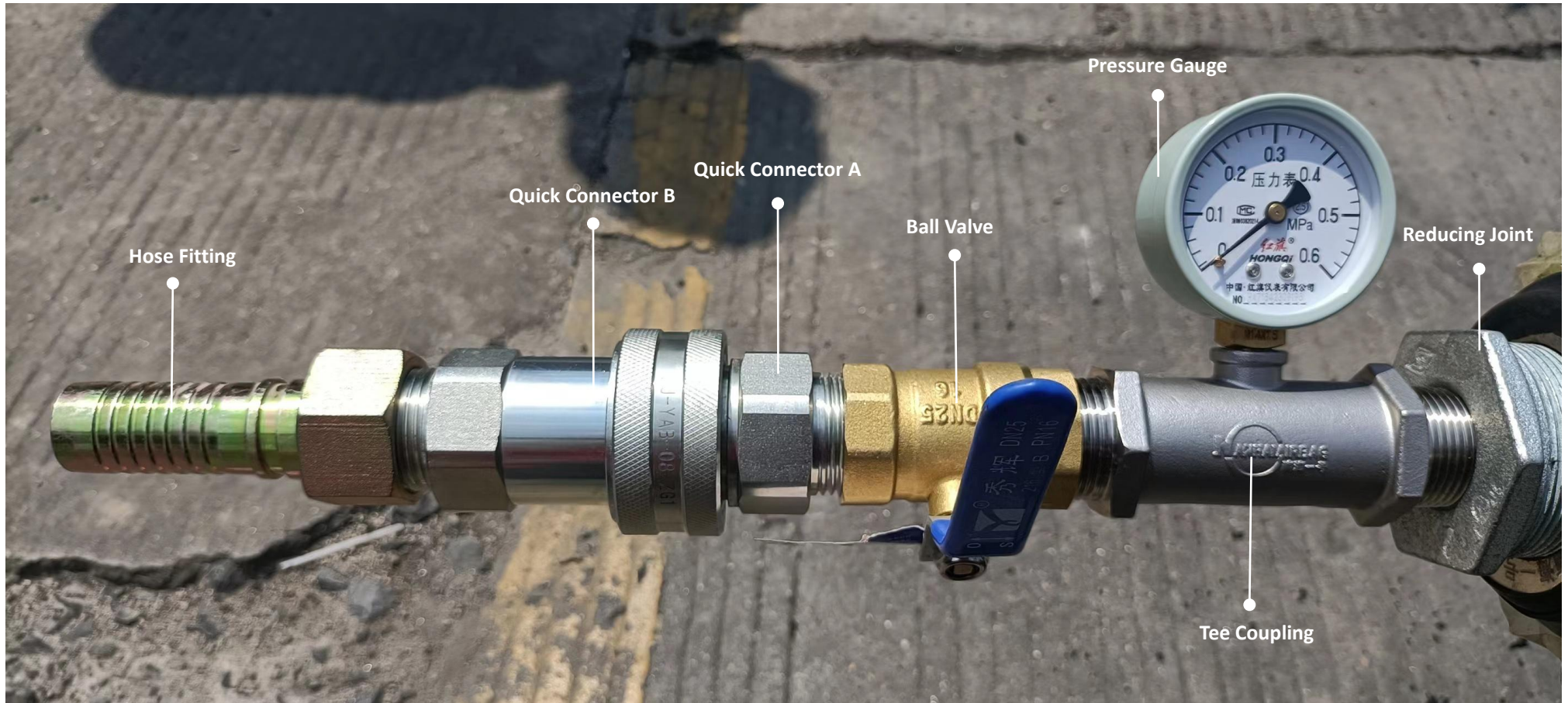
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No.	Part Name	Spec.	Quantity.	Unit.	Drawings.
6	Quick connector B	G1" 5 Airbags equipped 1 unit	1	Set	
7	Hose fitting	5 Airbags equipped 1 unit	2	Set	
8	Drag End Accessories		1	Set	
9	Hoop		2	Set	

3 Accessories Assembly Display



4 Inflated Process

4.1 Air Inflate End



Step 1 Twine sealing tape on Reducing Joint.



Step 2 Reducing Joint connect Tee Coupling, seal with sealing tape.



Step 3 Ball Valve connect to Tee Coupling, seal with sealing tape.



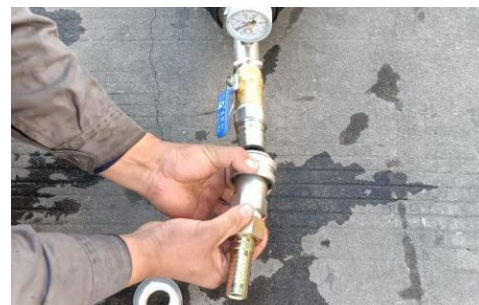
Step 4 Quick Connector A connect Ball Valve, seal with sealing tape.



Step 5 Install Pressure Gauge to Tee Coupling.



Step 6 Quick Connectors B connect with Hose Fitting. With sealing tape.



Step 7 Quick connectors B connect Quick Connector A.



Step 8 Hose Fitting connect with inflated soft rope seal with Hoop. Start inflating.

4.2 Drag End



Step 1 Drag End Accessories, Reducing Joint, Sealing tape



Step 2 Seal the Drag End Accessories with sealing tape.



Step 3 Drag end accessories connect to Reducing Joint.



Step 5 Reducing Joint connect to airbag end.



Step 4 Seal Reducing Joint with sealing tape.



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5 Inflated Accessories Package

Some of the main accessories have been assembled in the NANHAI factory. After receiving the accessories, users can inflate the airbag by simply assembling them. At the same time, it can also be assembled according to "PART 3 Accessories Assembly".

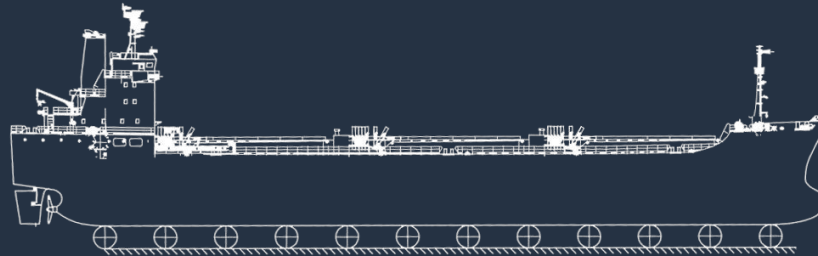


NANHAI MARINE AIRBAG INFLATE SYSTEM

PACKING TOOL BOX

Shandong NANHAI Airbag Engineering Co.,Ltd.

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Thank You For Using NANHAI Marine Airbags

We Are Looking Forwards The Cooperation With You Again.

If Have Any Question,Please Feel Free to Contact us by email or phone,

NANHAI Will be Your Best Marine Airbag & Fender Solution Partner.

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