Vetter High Pressure Air Bags
Daily Care & Preventive Maintenance

How to keep your VETTER Air bags in perfect condition

Preventive Maintenance and Testing of Vetter Air Bags

Introduction

Vetter High Pressure Air Bags (8/10 Bar – 116/145 psi) are designed to apply the greatest power with millimetre precision on flat or sloping surfaces. They can lift, push, press, prise and support the heaviest of loads. They are robust, powerful tools, ideal in countless applications. They act as lifesavers in rescue situations and natural disasters. They can lift and adjust heavy duty machines as well as a range of industrial applications.

Lifting bags may only be operated with compressed air. In exceptional circumstances they can be inflated using water using additional accessories. The lifting bags can only be operated using original Vetter fittings and in accordance with Vetter operating guidelines.

Air bags are manufactured from elastic rubber and are subject to an ageing process. The actual ageing of the bag is dependent on a number of factors:

- Type of use in operation
- Storage Conditions
- Heat
- Humidity
- Light and radiation.

Regular testing of air bags is important to ensure correct and safe operation.

All new air bags are pressure tested after manufacture. Vetter recommends that a full pressure test should take place after 5 years of use irrespective of the condition of the bag.

Life of airbags

Manufacturers statement

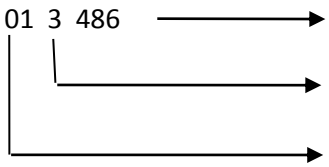
"Mini Lifting Bags are constructed of rubber and are subject to natural aging processes. Even if the bags show no visible signs of wear or damage they should be replaced after 15 years since invisible aging may have taken place in the composite material".

How to identify age of airbag

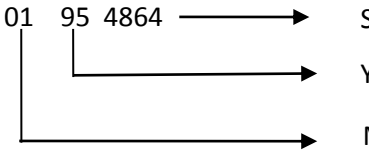
Air Bags Manufactured Prior to 09/1980

1 2 3 4 → No Date System within No.

Air Bags Manufactured From 09/1980 to 08/1994



Air Bags Manufactured Since 08/1994



If the serial No cannot be read other features can be used to identify the age of the bag

Bags Manufactured prior to 09/1980

- *One part Brass Valve Connection*

Bags Manufactured from 09/1980 to 08/1994

- *Two part Steel valve connection*
- *Label with round corners*
- *Printed technical details*
- *Safety instructions in 2 languages*

Bags Manufactured since 08/1994

- *Two Part steel valve connection*
- *Vulcanised technical data*
- *Safety instructions in 4 languages*
- *Aramide Label*

Preventive Maintenance

The purpose of preventative maintenance is to ensure the safe operation of the air bags and associated equipment. Different levels of maintenance need to be undertaken:

1. *Test following operation consisting of a Visual & Functional Checks*
2. *Hydrostatic Testing of Air Bags*

VISUAL CHECKS

This series of visual check should be conducted after each use of the bags prior to stowage.

Regulator

STEP	*DESCRIPTION*	*INSPECTION*	*CHECK OK ?*
1	O Ring On cylinder connection (Inlet seal)	Free from wear and damage	
2	DIN Thread (on cylinder connection)	Runs freely, no visual damage	
3	Pressure gauges	Free from visual damage	
4	Pressure gauge protective cap	Free from visual damage	
5	Pressure adjusting valve	Moves smoothly / Look for signs of abrasion	
6	Flow control valve	Moves smoothly / Look for signs of abrasion	
7	Regulator hose	Free from cracks, kinks, cuts, abrasion, hardening effects of chemicals heat etc	
8	Hose connector	Free from visual damage	

Inflation hoses

STEP	DESCRIPTION	INSPECTION	CHECK OK ?
1	Couplings	Free from damage	
2	Hose	Free from cracks, kinks, cuts, abrasion, punctures, hardening effects of chemicals heat etc	
3	Coupling & nipple connection	Firm positive coupling Easy connection and disconnection	

Controller (F Type) (D Type deadman)

F Type

F Type

D Type

STEP	DESCRIPTION	INSPECTION	CHECK OK ?
1	Entry coupling	Free from damage, working freely	
2	Shut off valve (F) or control stick (D)	Working smoothly	
3	Pressure gauge	Free from damage	
4	Pressure gauge (F) protective cap	Free from damage	
5	Pressure gauge	Check WP = 8/10 bar max	
6	Safety valve (F)	Free from damage Top cap seal intact?	

Air Bags

Dirty Bags should be cleaned with warm soapy water after use.

STEP	DESCRIPTION	INSPECTION	CHECK OK ?
1	Airbag connecting nipple	Free from damage	
2	Airbag surface and edges	Free from cuts, cracks punctures, abrasions, heat marks, traces of acid	
3	Carry loops	Intact	

FUNCTIONAL CHECKS

Set up the air bags and accessories in accordance with standard operating procedures. When connecting hoses to controller and bags ensure the couplings are working correctly and couple with a firm and positive action.

Perform the following functional checks.

Regulator

STEP	DESCRIPTION	INSPECTION/ACTION	CHECK OK?
1	Inlet pressure gauge	Works correctly and shows pressure of air in cylinder	
2	Discharge pressure gauge	Works correctly and shows set pressure	
3	Pressure adjusting valve	Adjustable over range?, Set discharge pressure at 8/10 Bar	
4	Flow control shut-off valve	Works correctly. Close so no air is flowing. Ensure there is no pressure movement after 5 mins,	
5	Flow control shut- off valve	Open so air can flow.	

Controller (F Type) (D Type deadman)

F Type

F Type

D Type

STEP	DESCRIPTION	INSPECTION/ACTION	CHECK OK?
1	Shut off valve (F) or control stick (D)	Ensure smooth action of the valve or control sticks. Close valves	
2	Air Leaks	With valves in the closed position listen for air leaks. Ensure there are no leaks.	
3	Gauges	Ensure correct operation of gauges	

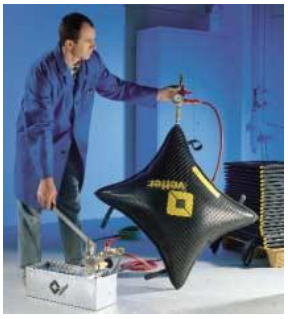
Air Bags

STEP	DESCRIPTION	INSPECTION/ACTION	CHECK OK?
1	Airbag (half Working Pressure)	Inflate air bag until 4 bar is showing on the controller gauge. Check for uncommon dents	
2	Airbag surface and edges	Free from opening cuts, punctures, cracks and bulges	
3	Airbag (full Working Pressure)	Inflate air bag until 8/10 bar is showing on the controller gauge. Check again for opening cuts punctures cracks, bulges and uncommon dents.	

OVERPRESSURE HYDROSTATIC TEST by PT HYDRAULICS AUSTRALIA

The purpose of this test is to examine the lifting bags resistance against a pressure 1.3 times the maximum allowable working pressure and to ensure no deformation occurs indicating failure of the lifting bags structural components. Once charged the lifting bag is maintained at the elevated pressure for a period of 5 minutes to check for failure.

Airbags successfully tested hydrostatically to 1.3 times WP can, after thorough drying, be safely returned to normal service.



Care & Stowage

The lifting bags and equipment should be cleaned after each operation. Cleaning is normally carried out with warm water and a detergent.

Cleaning must never be carried out with a chemical cleaning agent or a high pressure cleaner device.

Airbags and equipment should be stowed away from petroleum products and other corrosive liquids.

Stowage areas should be dry and damp free

Ensure airbags are dry before stowing in vehicle