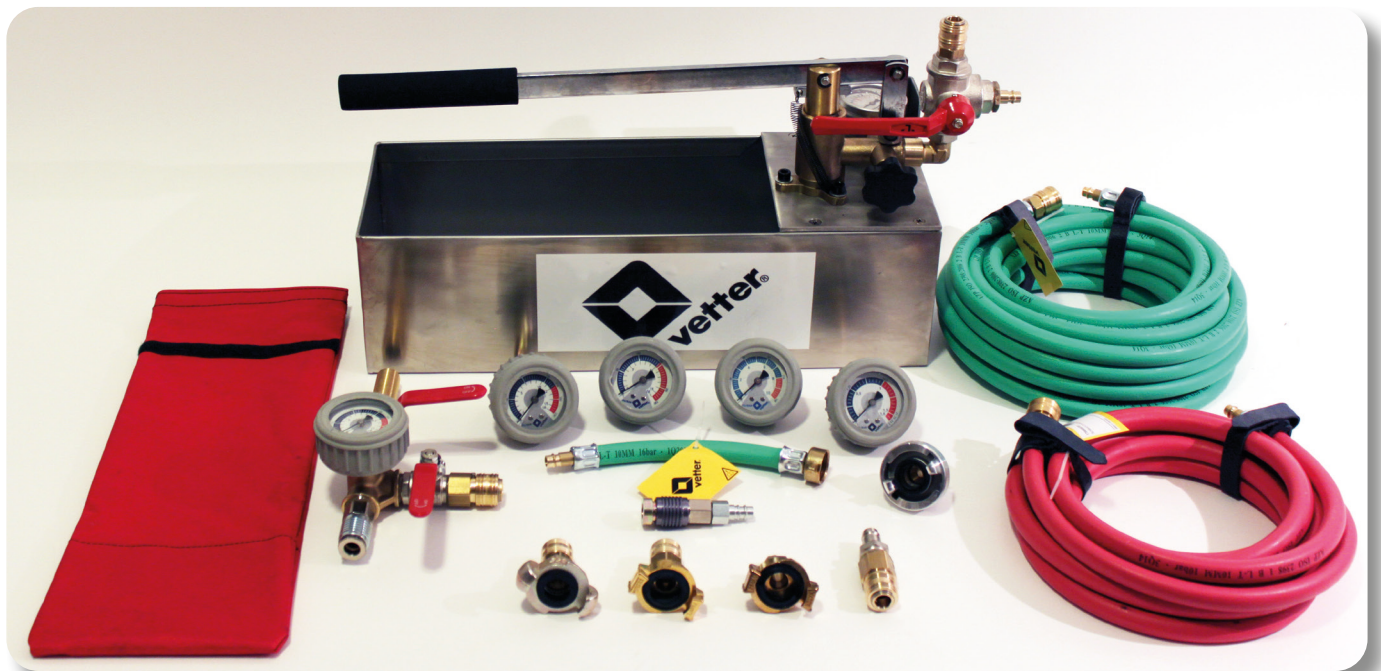


Operating Instructions

VETTER Test Equipment for Lifting Bags



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1. Important preliminary remarks

The test equipment for lifting bags is used for the correct and professional execution of repetitive tests on:

- ✓ Vetter Lifting bags 0.5 bar
- ✓ Vetter Lifting bags 1 bar
- ✓ Vetter Wedge lifting bags 1 bar
- ✓ Vetter Ultra Flat Bags 8 bar
- ✓ Vetter Mini lifting bags 8 bar
- ✓ Vetter S.Tec lifting bags 10 bar
- ✓ Vetter Ultra Flat Bags S.Tec 10 bar
- ✓ Vetter Connectable Bags C.Tec 10 bar
- ✓ Vetter S.Tec 12 Lifting Bags 12 bar
- ✓ Vetter Connectable Bags C.Tec 12 12 bar
- ✓ VEPRO pressure bags 0.5 bar
- ✓ VEPRO pressure bags 1 bar
- ✓ VEPRO mini lifting bags 8 bar








The 5 yearly pressure test according to DGUV-G 305-002 for lifting bags 0.5 bar and 1bar is stipulated to be carried out by the manufacturer.


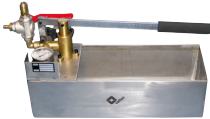

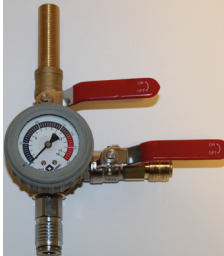


The implementation of the visual test and function test according to DGUV-G 305-002 must only be carried out by a specialist according to DGUV-G 305-002. This assignment must normally be made in writing.

The inspector is responsible for carrying out his test assignment and to abide by the regulations valid on the day of the test.

1.1 Inventory check

Article No.	Description	
1700006803 Test equipment with test pump		
1700005400	Blind coupling 0.5 bar (claw)	
0350006500	Blind coupling 1 bar (bayonet)	
0350006501	Blind coupling 1 bar (quick action)	

Article No.	Description	
0350006300	Test manometer 0.5/1 bar	
0800008000	Test manometer 8 bar	
1000006600	Test manometer 10 bar	
1200004600	Test manometer 12 bar	
1700014300	Connector nipple/bayonet	
1700006501	Adapter, hasp, 3/4"	
1700010200	Test and measurement hose adapter	

Article No.	Description	
1600013601	Air supply hose, 10 m, green with shut-off unit	
1700005501	Hand pump for water test with integrated 10 l tank	
1700005701	Inflation hose, 5 m, red, brass	
1700006101	Test and ventilation head with manometer and 2 ball valves	
1000006300	Adapter 8 bar / 10 bar S.Tec	
1520002500	Bag, red, for transportation	

1.2 Correct handling and usage

The test equipment for lifting bags must only be used for the visual test and function test as well as the pressure test according to the operating instructions. Any other ulterior application must be excluded.

1.3 Safety instructions

Due to the fact that when testing pressure containers failure of the wall supports must be taken into account, then a certain distance to persons, objects and buildings must be maintained.

A pressure test must only be carried out after a visual test and function test has been carried out without any defects being found. Basically, pressure testing should be carried out in outside open spaces. The pre-specified personal protection equipment/clothing is to be worn according to UVV.



2. Preparations for the test

Check the test equipment to see if the individual parts are complete and in perfect condition.

If necessary clean the lifting bags with warm soapy water and dry at room temperature.

Check the bag kits to see if the individual parts are complete and in perfect condition.

3. Testing the lifting bags 0.5 bar and 1 bar

3.1 Test intervals

- ✓ **After each operation/period of use**
Visual test by the user
- ✓ **Yearly test**
Visual test and function test by a specialist according to the preliminary stipulations in DGUV-G 305-002
- ✓ **at least every 5 years, after repair or if there is any doubt about safety**
Pressure test according to DGUV-G 305-002 Section 4.1.1.2 (only to be made by the manufacturer)

3.2 Function test of the inflation device

3.2.1 Required test equipment

- ✓ Blind coupling 0.5 bar
- ✓ Blind coupling 1 bar
- ✓ Test manometer 0.5/1 bar

3.2.2 Preparations for testing

Connect the air source, e.g. pressure regulator 200/300 bar, to the input coupling of the controller. Adjust the output pressure on the regulator to approximately 2-3 bar.

Connect inflation hose to the output of the controller and close the open end with a blind coupling 1/0.5 bar and couple the test manometer 0.5/1 bar.

3.2.3 Operation

Open the shutoff valve on the pressure regulator. Carefully open the piston valve or ball valve. Monitor and compare the pressure increase on the manometer of the controller and the test manometer. Increase the pressure until the safety valve activates (permissible tolerance according to DGUV-G 305-002, +/- 10 %). Close the piston valve or ball valve and check to see if the safety valve perfectly closes.

3.2.4 Pressure test for lifting bags 0.5 bar/1 bar

The required pressure test is, in connection with the manufacturer's test, carried out by the manufacturer or his mobile inspection service. Therefore a pressure test made by a specialist of the user is not made.

4.1.1.2 Five yearly test

Pneumatic lifters (without compressed air bottle) are to be inspected if there is any doubt about safety or reliability but at least every 5 years by the manufacturer.

Excerpt from DGUV-G 305-002

4. Testing the mini lifting bags 8 bar

4.1 Test intervals

- ✓ **After each operation/period of use**
Visual test by the user
- ✓ **Yearly test**
Visual test and function test by a specialist according to the preliminary stipulations in DGUV-G 305-002
- ✓ **Every 5 years, after repair or if there is any doubt about safety**
Pressure test only to be made by a specialist according to the preliminary stipulations in DGUV-G 305-002 with the addition training according to DGUV-G 305-002, section 4.2.1.2.

4.2.1.2 Five yearly test

Pneumatic lifters (without compressed air bottle) are to be inspected if there is any doubt about safety or reliability but at least every 5 years according to Section 4.2.3 by a specialist (see preliminary remarks) having additional training or by an authorized trainer or the manufacturer himself

Excerpt from DGUV-G 305-002

4.2 Function test of the inflation device

4.2.1 Required test equipment

- ✓ Test manometer 8 bar

4.2.2 Preparations for testing

Connect the air source, e.g. pressure regulator 200/300 bar, to the input coupling of the controller. Adjust the output pressure on the regulator to approximately 10 bar.





Connect inflation hose to the output of the controller and connect the manometer 8 bar to the open end.

4.2.3 Operation

Open the shutoff valve on the pressure regulator. Carefully open the piston valve or ball valve. Monitor and compare the pressure increase on the manometer of the controller and the test manometer. Increase the pressure until the safety valve activates (permissible tolerance according to DGUV-G 305-002, +/- 10 %). Close the piston valve or ball valve and check to see if the safety valve perfectly closes.

4.2.4 Pressure test of the mini lifting bags 8 bar

The pressure test must only be carried out after a function test has been made without establishing any defects. Due to the fact that with this test the bag could burst, a distance to persons, buildings and objects must be maintained. Basically, the test should be carried out in outside open spaces.



5. Pressure testing of lifting bags 8 bar

5.1 with the aid of existing pressure water sources (min. 11 bar)

5.1.1 Material

- ✓ Test and measurement hose adapter
- ✓ Test and ventilation head
- ✓ Air supply hose, 10 m, green

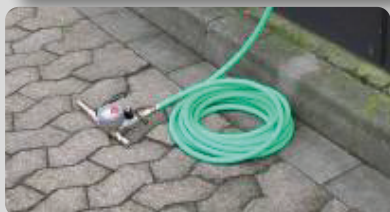
5.1.2 Preparations for the test

The test and measurement hose adapter is coupled with the Storz-D-coupling to a corresponding water connection.

The outlet pressure of the water supply must be at least 11 bar.

The air supply hose, 10 m, green, is connected to the test and measurement hose adapter on one side and to the test and ventilation head on the other side.

After the test and ventilation head has been connected to the safety coupling on the mini lifting bag, both ball valves should be closed.



5.1.3 Carrying out the test

Open the shutoff valve on the pressure water source. Open the water supply valve (A). The mini lifting bag to be tested is now completely filled with water. If the manometer clearly indicates an increase in pressure then the mini lifting bag must be ventilated.

For ventilation, the water supply valve (A) is closed and the mini lifting bag must be positioned so that the valve connection is pointing upwards.

If the ventilation valve „B“ is now opened then the air remaining inside the bag escapes. By alternately operating the ball valves „A“ and „B“ it can be ensured that there is no more air in the bag.

Only when it is certain that the bag is completely ventilated can the pressure be carefully and evenly increased to the pre-specified test pressure.

Mini lifting bags 8.0 bar = 10.4 bar test pressure/water

Close the water supply valve (A).

The bag which is now under pressure should remain for a

**minimum of 3 minutes but a
maximum of 5 minutes**

under pressure.

During this period the specialist can carry out a test for leaks, deformations or other types of damage. In order to empty the bag after the test has been completed, the bag is drained. To do this completely open the ventilation valve (B). Uncouple the test and ventilation head.

Position the bag for complete emptying so that the nipple is pointing downwards. The weight of the bag must not be resting on the connection nipple.

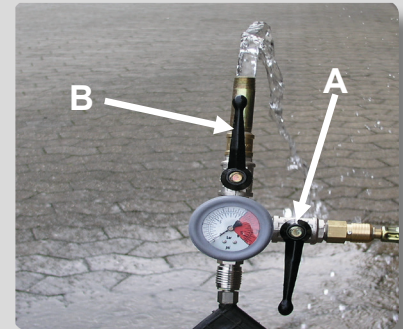
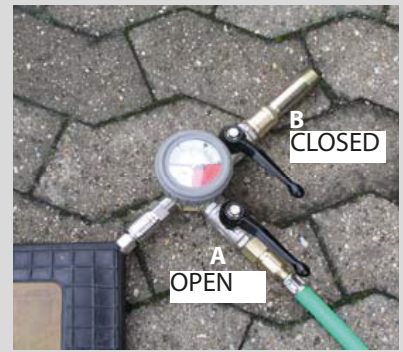
Blow the fittings with compressed air after use.

5.2 with the aid of a hand pump

If there is no water source is available with a minimum pressure of 11 bar then the hand pump must be used in order to reach the test pressure.

5.2.1 Material

- ✓ Test und measurement hose adapter
- ✓ Test and ventilation head
- ✓ Air supply hose, 10 m, green
- ✓ Adapter nipple/bayonet
- ✓ Adapter, hasp, 3/4"
- ✓ Inflation hose, 5 m, red, brass
- ✓ Hand pump for water test with integrated 10 l tank

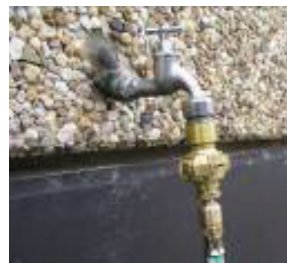


5.2.2 Preparations for testing

The corresponding adapter is used between the water valve and the air supply hose (10 m, green) depending on the water connection.



Test and measurement adapter with air supply hose



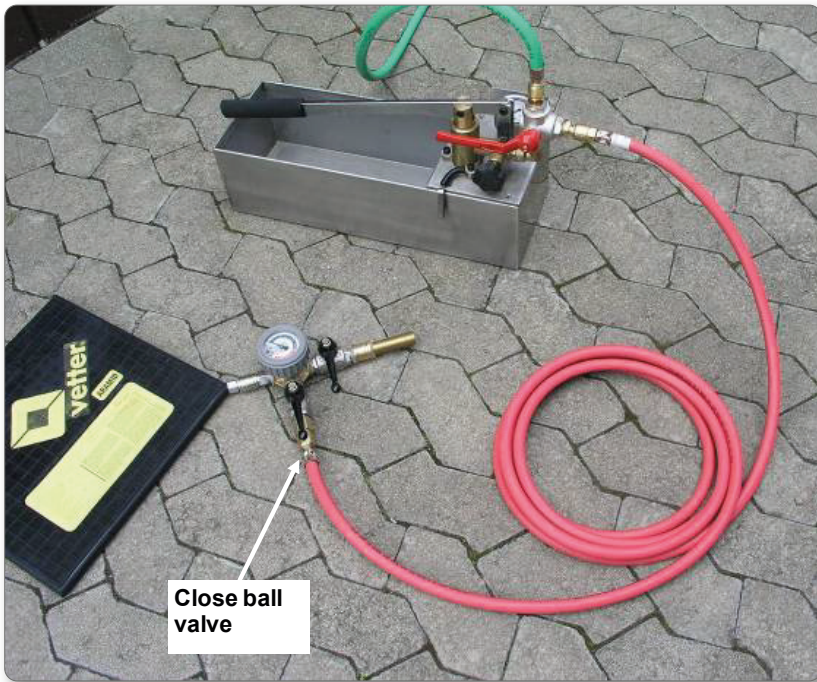
Adapte nipple/bayonet with air supply hose



Adapter, hasp, 3/4" with air supply hose

The air supply hose is connected with the nipple to the inlet coupling of the hand pump.

The 5 m long, red inflation hose is connected to the outlet nipple of the hand pump on the one side and on the other side to the test and ventilation head. After the test and ventilation head has been connected with the safety coupling to the nipple of the 8.0 bar mini lifting bag to be tested then the system is ready for the test. Close both ball valves on the test and ventilation head.



5.2.3 Carrying out the test

Before beginning the water pressure test the reserve tank of the hand pump should be filled to at least 75 %.

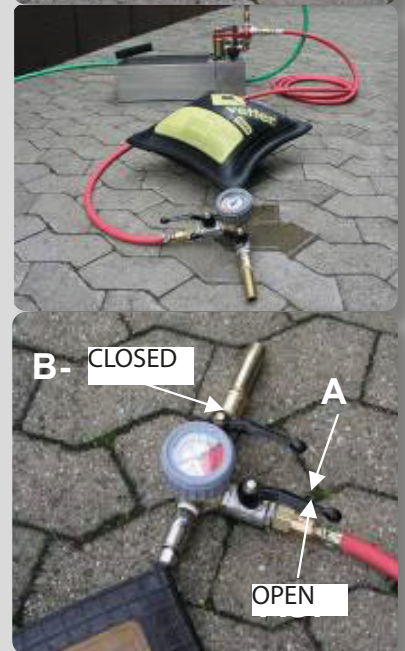
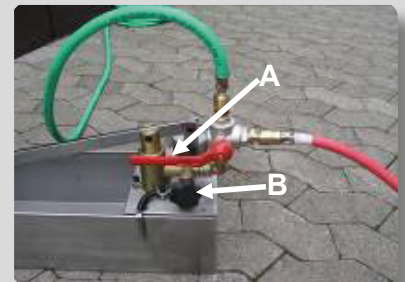
Close back-flow valve using the black hand wheel (B). Position the ball valve (A) of the hand pump horizontally and open the blocking valve on the water supply location. If the ball valve (A) is positioned vertically then the water will flow to the test and ventilation head.

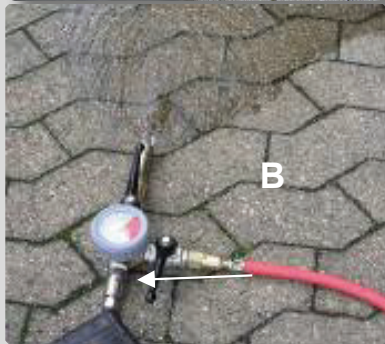
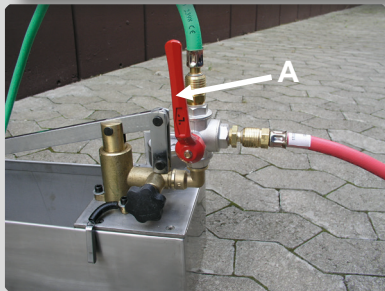
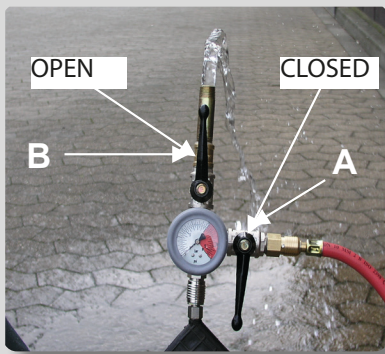
ATTENTION! Fill the bag only when it is in the laying position. If it is in the standing position and it falls then the manometer could be damaged.



Open the water supply valve (A). The mini lifting bag is now completely filled with water. If the manometer clearly indicates an increase in pressure then the mini lifting bag must be ventilated.

The water supply valve is closed for ventilation and the mini lifting bag must be positioned so that the valve connection is pointing upwards.





If the ventilation valve (B) is now opened then the air remaining in the bag can escape. By alternating between the ball valves (A and B) it can be ensured that there is no air remaining in the bag.

If the bag to be tested is completely ventilated then the bag can be filled to the maximum possible water pressure (network pressure) after opening the water supply valve (A) on the test and ventilation head. Fill the bag to the test pressure by connecting the hand pump.

To do this position the red ball valve (A) vertically and operate the lever on the pump. Slowly and evenly build up a pressure.

Lifting bag 8 bar = 10.4 bar test pressure/water

Close the water supply valve (A).

The bag under pressure should remain like this for a

minimum of 3 minutes but a maximum of 5 minutes

Within this time the specialist can test the bag for leaks, deformations or other forms of damage.

The water can be drained in order to empty the bag after the test has finished. To do this completely open the ventilation valve (B). Couple the test and ventilation head. Position the bag vertically to completely empty making sure that the nipple is pointing downwards. However the connection nipple must not be loaded down by the weight of the bag.

Blow the fixtures out with compressed air after use.

6. Testing the Lifting bags 10 bar and 12 bar

6.1 Function test of the inflation device

6.1.1 Required test equipment

- ✓ Test manometer 10 bar or 12 bar

6.1.2 Preparation and implementation of the test

Corresponds to the visual test and function test 8 bar. Adjust the working pressure of the pressure regulator to approx. 12 bar (Lifting Bags 10 bar) or to approx. 14 bar (Lifting Bags 12 bar).

6.2 Pressure testing of Lifting bags 10 bar / 12 bar with the aid of a hand pump

If there is no water source available with a minimum pressure of 13 respectively 15.6 bar then the hand pump must be used in order to reach the test pressure.

The pressure test corresponds to the pressure test for the mini lifting bag 8 bar in individual points. The S.Tec test adapter must be connected between the lifting bag 10 bar and the test and ventilation head.

Lifting bag 10 bar = 13 bar test pressure of water

Lifting bag 12 bar = 15.6 bar test pressure of water

6.3 Pressure testing of Connectable Bags VCB C.Tec 10 bar / 12 bar with the aid of a hand pump

If there is no water source available with a minimum pressure of 13 respectively 15.6 bar then the hand pump must be used in order to reach the test pressure.

The pressure test corresponds to the pressure test for the mini lifting bag 8 bar in individual points. The S.Tec test adapter must be connected between the VCB C.Tec 10 bar and the test and ventilation head.

VCB C.Tec 10 bar = 13 bar test pressure of water

VCB C.Tec 12 bar = 15.6 bar test pressure of water

Position the bag vertically to completely empty making sure that the nipple is pointing downwards. However the connection nipple must not be loaded down by the weight of the bag.

Apply 2 times compressed air (< 6 bar / less than 6 bar) to the VCB C.Tec 12 lifting bags 12 bar, to remove the remaining water out of the bag.



tested:	
retested after 5 years	
retested after 10 years	
retested after 15 years	

← Info fields for the tests carried out

7. Final remarks

The operating instructions for the test equipment was compiled according to the latest state of technology and the legal regulations.

The specialist inspector is to make the test at his own responsibility according to the regulations valid at the time the test was made.

The test requirements represent a guideline of the manufacturer. They are intended to help the specialist.

All rights are reserved for technical changes to the test equipment!

For the pressure test of lifting bags 8 bar / 10 bar / 12 bar it is, according to DGUV-G 305-002, required that the training for specialist be made by

additional training by the manufacturer

Refer to the Vetter website for information concerning training dates.

Place your trust in emergency pneumatics!

We are the company who can help you, find a solution to your problem!

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Inspection record

Lifting bags

0,5 bar / 7,25 psi | 1 bar / 14,5 psi

Reason for inspection:

Annual Inspection
(Page 1-5)

(Expert according to preliminary remark
DGUV-G 305-002)



This test regulation was written based on the state-of-the-art technology at the time of publication and the legal stipulations. If these regulations have changed, the tester is obligated to perform the test in accordance with the regulations and standards applicable on the day of the test.

In case of doubt, please contact the manufacturer.

Date of test			
Inspector (Expert according to preliminary remark DGUV-G 305-002):			
Date of last test:			
Operator:			
Equipment under test:	Lifting bag 0,5 bar / 7,25 psi	Lifting bag 1 bar / 14,5 psi	

1. Test for completeness

(manually note the inventory of the equipment | fill test report per pressure stage)

No.	Product	Serial no.	Year of manufacture	Comments
Inspection book or test record				
Operating instructions				

Comments:

Inspection record

Lifting bags

0,5 bar / 7,25 psi | 1 bar / 14,5 psi

2. Visual inspection filling device

If heavily soiled, clean the bag and its accessories before starting the visual inspection. The lifting bags are normally washed off with a hand-warm soap solution.

Never use a high-pressure cleaner!

2.1 Lifting bag without pressure

- 2.1.1 After visual check, bags are free of damages
- 2.1.2 Sidewall material free of cracks, cuts, punctures, splits or other damages, e.g.: hardening, acid traces, etc.
- 2.1.3 Floor and cover plates free of cracks, cuts, punctures, splits or other damages, e.g.: hardening, acid traces, etc.
- 2.1.4 Glue seams and overlapping zones free of damage and detachments.
- 2.1.5 Fastening devices (loops) for ropes present
- 2.1.6 Inflation nozzle with connection free of visible damage

YES	NO	unnecessary

2.2 Pressure regulator

- 2.2.1 Inlet seal present
- 2.2.2 Bottle connection thread not damaged
- 2.2.3 Both manometers free of visible damage and are marked with the marking of the max. operating pressure
- 2.2.4 Manometer protective caps present
- 2.2.5 Pressure setting operates smoothly
- 2.2.6 Shut-off valve undamaged and operates smoothly
- 2.2.7 Air hose free of cracks, cuts, punctures, splinters or other damages, e.g., hardenings, acid traces, etc.
- 2.2.8 Connection nipple does not have any visible damage
- 2.2.9 Hose assembly fixated

2.3 Filling hose 0,5 bar/7,25 psi | 1 bar/14,5 psi; 5 m | 10 m; yellow | red

- 2.3.1 Connection nipple undamaged and functionally operational
- 2.3.2 Nipple undamaged
- 2.3.3 Coupling and nipple assembly fixated
- 2.3.4 Hose free of cracks, cuts, punctures, splinters or other damages, e.g., hardenings, acid traces, etc.

2.4 Controller (F = Fitting design, K = Dead-man switching)

- 2.4.1 Inlet coupling (plug coupling) undamaged and functional
- 2.4.2 Inlet manometer without visual damage (only Air CU deadman with plastic housing)
- 2.4.3 Shut-off valves (F), control levers / push buttons (K) free of external damages and operate smoothly
- 2.4.4 Manometer protective caps (F) present
- 2.4.5 Manometer with marking at maximum operating overpressure (12 bar/174 psi)
- 2.4.6 Safety valves (F) free of visible damage and furnished with lead seals

Inspection record

Lifting bags

0,5 bar / 7,25 psi | 1 bar / 14,5 psi

- 2.4.7 Housing (K) is free of visual damage
- 2.4.8 Labels of the controller (K) are available and can be clearly read
- 2.4.9 Output couplings undamaged and functionally operational
- 2.4.10 Switch, LEDs and battery connector free of visual damage (only controller with lighting)

YES	NO	unnecessary

Caution! If any kind of doubts concerning the safety arise at this time or at any later time during the test, abort the test and send the bag including the equipment to the manufacturer for further testing.

Inspection record

Lifting bags

0,5 bar / 7,25 psi | 1 bar / 14,5 psi

3. Function test filling device

Caution! Perform only if the visual inspection in Point 2 and the test of the equipment did not result in any complaints.

3.1 Connect pressure regulator to the compressed-air bottle. Close the shut-off valve on the pressure reducer. Open the compressed-air bottle valve.		YES	NO	unnecessary
3.1.1	Inlet pressure manometer indicates (pressure in the compressed-air bottle)			
3.1.2	Outlet pressure manometer indicates (possibly increase pressure on the control knob)			
3.1.3	Pressure can be regulated across the entire adjustment range			
3.1.4	Safety valve remains leakproof at the set maximum pressure			
3.1.5	Shut-off valve on the pressure-reducer outlet seals tight			
3.1.6	At a set pressure of approx. 5 bar/72,5 psi, the pressure does not increase significantly within 5 min.			
Connect the pressure reducer to the controller with an air hose. Open the pressure reducer shut-off valve. Set the pressure to 2 bar/29 psi.				
3.2 Inflation hose and inlet coupling are leakproof				
Connect the inflation hoses to the dual controller. Close the hoses at the other end alternately with the blind coupling claw (Art.-No.: 1700005400) or blind coupling bayonet (Art.-No.: 0350006500). Open ball valve or piston valve carefully and slowly.				
3.3 Both couplings (controller and test manometer) can be coupled without difficulty				
3.3.1	Inlet manometer indicates the same pressure as manometer of the pressure reducer (only deadman controller with plastic housing)			
3.3.2	When opening the blocking valve/piston valve, the manometer on the controller indicates the same pressure as indicated on the test manometer			
3.3.3	Both couplings are sealed			
3.3.4	Safety valve opens completely at +/- 10 %			
3.3.5	After closing the ball valve/piston valve, the safety valve closes within the 10 % tolerance			
3.3.6	Only controller with lighting: After pressing the switch the 3 LEDs and both manometers are lighting			
4. Visual inspection of the lifting bags				
Connect the bags outdoors to the controller using the inflation hose. Inflate the internal bag-pressure to 0.2 times of the permissible operating pressure.				
4.1 Bags free of atypical bulges, pricks, cuts, tears or other damage				
5. Perform a functional test of the lifting bags				
5.1 Increase the internal bag-pressure to 0.5 times of the permissible operating pressure.				
5.1.1	Pressure drop after 60 minutes < 10%.			
5.2 Increase the internal pressure of the bag to the maximum operating pressure (max 5 min.) Caution! Please observe the safety precautions (ear defenders/ safety glasses).				
5.2.1	Bag is free of atypical bulges			

Inspection record

Lifting bags

8 bar / 116 psi | 10 bar / 145 psi | 12 bar / 174 psi

2. Visual inspection filling device

If heavily soiled, clean the bag and its accessories before starting the visual inspection. The lifting bags are normally washed off with a hand-warm soap solution.

Never use a high-pressure cleaner!

2.1 Pressure regulator

- 2.1.1 Inlet seal present
- 2.1.2 Bottle connection thread not damaged
- 2.1.3 Both manometers free of visible damage and are marked with the marking of the max. operating pressure
- 2.1.4 Manometer protective caps present
- 2.1.5 Pressure setting operates smoothly
- 2.1.6 Shut-off valve undamaged and operates smoothly
- 2.1.7 Air hose free of cracks, cuts, punctures, splinters or other damages, e.g., hardenings, acid traces, etc.
- 2.1.8 Connection nipple does not have any visible damage
- 2.1.9 Hose assembly fixated

YES	NO	unnecessary

2.2 Filling hose 8 bar/116 psi | 10 bar/145 psi | 12 bar/174 psi; 5 m | 10 m; yellow | red

- 2.2.1 Connection nipple undamaged and functionally operational
- 2.2.2 Nipple undamaged
- 2.2.3 Coupling and nipple assembly fixated
- 2.2.4 Hose free of cracks, cuts, punctures, splinters or other damages, e.g., hardenings, acid traces, etc.

2.3 Controller (F = Fitting design, K = Dead-man switching)

- 2.3.1 Inlet coupling (plug coupling) undamaged and functional
- 2.3.2 Inlet manometer without visual damage (only Air CU deadman with plastic housing)
- 2.3.3 Shut-off valves (F), control levers / push buttons (K) free of external damages and operate smoothly
- 2.3.4 Manometer protective caps (F) present
- 2.3.5 Manometer with marking at maximum operating overpressure (12 bar/174 psi)
- 2.3.6 Safety valves (F) free of visible damage and furnished with lead seals
- 2.3.7 Housing (K) is free of visual damage
- 2.3.8 Labels of the controller (K) are available and can be clearly read
- 2.3.9 Output couplings undamaged and functionally operational
- 2.3.10 Switch, LEDs and battery connector free of visual damage (only controller with lighting)

Caution! If any kind of doubts concerning the safety arise at this time or at any later time during the test, abort the test and send the bag including the equipment to the manufacturer for further testing.

Inspection record

Lifting bags

8 bar / 116 psi | 10 bar / 145 psi | 12 bar / 174 psi

3. Function test filling device

Caution! Perform only if the visual inspection in Point 2 and the test of the equipment did not result in any complaints.

3.1 Connect pressure regulator to the compressed-air bottle. Close the shut-off valve on the pressure reducer. Open the compressed-air bottle valve.		YES	NO	unnecessary
3.1.1	Inlet pressure manometer indicates (pressure in the compressed-air bottle)			
3.1.2	Outlet pressure manometer indicates (possibly increase pressure on the control knob)			
3.1.3	Pressure can be regulated across the entire adjustment range			
3.1.4	Safety valve remains leakproof at the set maximum pressure			
3.1.5	Shut-off valve on the pressure-reducer outlet seals tight			
3.1.6	At a set pressure of approx. 5 bar/72,5 psi, the pressure does not increase significantly within 5 min.			
Connect the pressure regulator (PR) to the control element with an air hose. Open the PR shut-off valve. Set pressure to: Operating pressure (OP) 8 bar/116 psi = 10 bar/145 psi PR OP 10 bar/145 psi = 12 bar/174 psi PR OP 12 bar/174 psi = 14 bar/203 psi PR				
3.2 Air hose and inlet coupling are leakproof				
Connect filling hose to the controller. Alternately connect inflation hoses at the other end with the VETTER test manometer. Carefully and slowly open the ball valve or the piston valve.				
3.3 Both couplings (controller and test manometer) can be coupled without difficulty				
3.3.1	Inlet manometer indicates the same pressure as manometer of the pressure reducer (only deadman controller with plastic housing)			
3.3.2	When opening the blocking valve/piston slide valve, the manometer on the controller indicates the same pressure as that indicated on the test manometer			
3.3.3	Both couplings are sealed			
3.3.4	Safety valve opens completely at +/- 10 %			
3.3.5	After closing the ball valve/piston valve, the safety valve closes within the 10 % tolerance			
3.3.6	Only controller with lighting: After pressing the switch the 3 LEDs and both manometers are lighting			
4. Visual inspection of the lifting bags				
Connect the bags to the control element using the inflation hose outdoors. Inflate the internal bag-pressure to 0.2 times of the permissible operating pressure.				
4.1 Bags free of atypical bulges, pricks, cuts, tears or other damage				
5. Perform a functional check of the lifting bags				
5.1 Increase the internal bag-pressure to 0.5 times of the permissible operating pressure.				
5.1.1	Bags free of atypical bulges, pricks, cuts, tears or other damage			
5.2 Increase the internal pressure of the bag to the maximum operating pressure. Caution! Please observe the safety precautions (ear defenders/ safety glasses).				
5.2.1	Bag is free of atypical bulges			
5.2.2	The pressure drop must be less than 10 % after 3 minutes			

Inspection record

Lifting bags

8 bar / 116 psi | 10 bar / 145 psi | 12 bar / 174 psi

Pressure test of lifting bags 8 bar / 116 psi | 10 bar / 145 psi | 12 bar / 174 psi

Note!

This test only applies to the pressure test required after 5 years, respectively 10 years. This test is only to be carried out by a specialist having additional training from the manufacturer or it is to be carried out by the manufacturer himself!

Copy the pressure test report according to the number of bags to be tested. A separate sheet must be filled in for each lifting bag with reference to the serial number.

Bag type	Serial no.	Year of manufacture

1. Visual inspection

If heavily soiled, first clean the bag with a hand-warm soap solution

Inflate the internal bag-pressure to 0.2 times of the permissible operating pressure (OP)

1.1 The inflation connection is free of mechanical damage

1.2 The surface of the bag, including the edge areas, are free of punctures, cuts, tears or any other types of damage

YES	NO

2. Pressure testing with water Remember: test time from 3 to a max. of 5 minutes

Inflate the bag-pressure to 0.5 times of the permissible operating pressure (OP)
Vent several times via test head

2.1 Bag is free of atypical bulges on both sides

Increase internal bag pressure to max. test pressure (TP) with the manual test pump, 3 to max. 5 min.

OP 8 bar/116 psi = TP 10.4 bar/150 psi

OP 10 bar/145 psi = TP 13 bar/188 psi

OP 12 bar/174 psi = TP 15.6 bar/226 psi

2.2 The bag is free of atypical bulges, tears, cuts or any other forms of damage as well as having a nipple connection which is perfectly sealed

YES	NO

After the test time has elapsed, relieve the pressure via the test head and completely evacuate. Do not stress nipples during evacuation and drying.

The bag is in perfect order

Bag is to be taken out of commission permanently

Reason for decommissioning:

Place/Date: _____

Inspector: _____ Signature of inspector: _____

Inspection record
Lifting bags VCB C.Tec
10 bar / 145 psi | 12 bar / 174 psi

Reason for inspection:

Annual Inspection (Page 1-4)	<input type="checkbox"/>
<small>(Expert according to preliminary remark DGUV-G 305-002)</small>	
Pressure test every 5 years (Page 5)	<input type="checkbox"/>
<small>(Expert according to preliminary remark DGUV-G 305-002 + additional training of the manufacturer)</small>	

This test regulation was written based on the state-of-the-art technology at the time of publication and the legal stipulations. If these regulations have changed, the tester is obligated to perform the test in accordance with the regulations and standards applicable on the day of the test.

In case of doubt, please contact the manufacturer.

Date of test				
Inspector <small>(Expert according to preliminary remark DGUV-G 305-002):</small>				
Date of last test				
Operator				
Equipment under test		VCB C.Tec 10 bar / 145 psi		VCB C.Tec 12 bar / 174 psi

1. Test for completeness
(manually note the inventory of the equipment | fill test report per pressure stage)

No.	Product	Serial no.	Year of manufacture	Comments
Inspection book or test record				
Operating instructions				

Comments:

Inspection record

Lifting bags VCB C.Tec

10 bar / 145 psi | 12 bar / 174 psi

2. Visual inspection filling device

If heavily soiled, clean the bag and its accessories before starting the visual inspection. The lifting bags are normally washed off with a hand-warm soap solution.

Never use a high-pressure cleaner!

2.1 Pressure regulator

- 2.1.1 Inlet seal present
- 2.1.2 Bottle connection thread not damaged
- 2.1.3 Both manometers free of visible damage and are marked with the marking of the max. operating pressure
- 2.1.4 Manometer protective caps present
- 2.1.5 Pressure setting operates smoothly
- 2.1.6 Shut-off valve undamaged and operates smoothly
- 2.1.7 Air hose free of cracks, cuts, punctures, splinters or other damages, e.g., hardenings, acid traces, etc.
- 2.1.8 Connection nipple does not have any visible damage
- 2.1.9 Hose assembly fixated

YES	NO	unnecessary

2.2 Filling hose 10 bar/145 psi | 12 bar/174 psi; 5 m | 10 m; yellow | red

- 2.2.1 Connection nipple undamaged and functionally operational
- 2.2.2 Nipple undamaged
- 2.2.3 Coupling and nipple assembly fixated
- 2.2.4 Hose free of cracks, cuts, punctures, splinters or other damages, e.g., hardenings, acid traces, etc.

2.3 Controller (F = Fitting design, K = Dead-man switching)

- 2.3.1 Inlet coupling (plug coupling) undamaged and functional
- 2.3.2 Inlet manometer without visual damage (only Air CU deadman with plastic housing)
- 2.3.3 Shut-off valves (F), control levers / push buttons (K) free of external damages and operate smoothly
- 2.3.4 Manometer protective caps (F) present
- 2.3.5 Manometer with marking at maximum operating overpressure (12 bar/174 psi)
- 2.3.6 Safety valves (F) free of visible damage and furnished with lead seals
- 2.3.7 Housing (K) is free of visual damage
- 2.3.8 Labels of the controller (K) are available and can be clearly read
- 2.3.9 Output couplings undamaged and functionally operational
- 2.3.10 Switch, LEDs and battery connector free of visual damage (only controller with lighting)

Caution! If any kind of doubts concerning the safety arise at this time or at any later time during the test, abort the test and send the bag including the equipment to the manufacturer for further testing.

Inspection record

Lifting bags VCB C.Tec

10 bar / 145 psi | 12 bar / 174 psi

3. Function test filling device

Caution! Perform only if the visual inspection in Point 2 and the test of the equipment did not result in any complaints.

3.1 Connect pressure regulator to the compressed-air bottle. Close the shut-off valve on the pressure regulator. Open the compressed-air bottle valve.		YES	NO	unnecessary
3.1.1	Inlet pressure manometer indicates (pressure in the compressed-air bottle)			
3.1.2	Outlet pressure manometer indicates (possibly increase pressure on the control knob)			
3.1.3	Pressure can be regulated across the entire adjustment range			
3.1.4	Safety valve remains leakproof at the set maximum pressure			
3.1.5	Shut-off valve on the pressure-reducer outlet seals tight			
3.1.6	At a set pressure of approx. 5 bar/72,5 psi, the pressure does not increase significantly within 5 min.			
Connect the pressure regulator (PR) to the control element with an air hose. Open the PR shut-off valve. Set pressure to: Operating pressure (OP) 10 bar/145 psi = 12 bar/174 psi PR OP 12 bar/174 psi = 14 bar/203 psi PR				
3.2 Air hose and inlet coupling are leakproof				
Connect filling hose to the controller. Alternately connect inflation hoses at the other end with the VETTER test manometer. Carefully and slowly open the ball valve or the piston valve.				
3.3 Both couplings (controller and test manometer) can be coupled without difficulty				
3.3.1	Inlet manometer indicates the same pressure as manometer of the pressure reducer (only deadman controller with plastic housing)			
3.3.2	When opening the blocking valve/piston slide valve, the manometer on the controller indicates the same pressure as that indicated on the test manometer			
3.3.3	Both couplings are sealed			
3.3.4	Safety valve opens completely at +/- 10 %			
3.3.5	After closing the ball valve/piston valve, the safety valve closes within the 10 % tolerance			
3.3.6	Only controller with lighting: After pressing the switch the 3 LEDs and both manometers are lighting			
4. Visual inspection of the lifting bags				
Connect the bags to the control element using the inflation hose outdoors. Inflate the internal bag-pressure to 0.2 times of the permissible operating pressure.				
4.1	Bags free of atypical bulges, pricks, cuts, tears or other damage			
4.2	Metal plates free of damage			
5. Perform a functional check of the lifting bags				
5.1 Increase the internal bag-pressure to 0.5 times of the permissible operating pressure.				
5.1.1	Bags free of atypical bulges, pricks, cuts, tears or other damage			
5.2 Increase the internal pressure of the bag to the maximum operating pressure. Caution! Please observe the safety precautions (ear defenders/ safety glasses).				
5.2.1	Bag is free of atypical bulges			
5.2.2	The pressure drop must be less than 10 % after 3 minutes			

Inspection record

Lifting bags VCB C.Tec

10 bar / 145 psi | 12 bar / 174 psi

Test result of lifting bag system (Lifting bags and accessories)

No. *	OK	not OK	Defects	Release granted until:	Shortening of inspection period:

*Reference on page 1

Legend on shortening of inspection period

01 =	Change in material due to use
02 =	Material condition of rubber
03 =	Condition of bonds
04 =	Reaching the age limit
05 =	(further)

Comments:

Place/Date: _____

Inspector: _____ Signature of inspector: _____

Inspection record

Lifting bags VCB C.Tec

10 bar / 145 psi | 12 bar / 174 psi

Pressure test of lifting bags VCB C.Tec 10 bar / 145 psi | 12 bar / 174 psi

Note!

This test only applies to the pressure test required after 5 years, respectively 10 years. This test is only to be carried out by a specialist having additional training from the manufacturer or it is to be carried out by the manufacturer himself!

Copy the pressure test report according to the number of bags to be tested. A separate sheet must be filled out for each lifting bag with reference to the serial number.

Bag type	Serial no.	Year of manufacture

1. Visual inspection

If heavily soiled, first clean the bag with a hand-warm soap solution

Inflate the internal bag-pressure to 0.2 times of the permissible operating pressure (OP)

		YES	NO
1.1	The inflation connection is free of mechanical damage		
1.2	The surface of the bag, including the edge areas, are free of punctures, cuts, tears or any other types of damage		

2. Pressure testing with water Remember: test time from 3 to a max. of 5 minutes

Inflate the bag-pressure to 0.5 times of the permissible operating pressure
Vent several times via test head

		YES	NO
2.1	Bag is free of atypical bulges on both sides		
Increase internal bag pressure to max. test pressure (TP) with the manual test pump, 3 to max. 5 min. OP 10 bar/145 psi = TP 13 bar/188 psi OP 12 bar/174 psi = TP 15.6 bar/226 psi			
2.2	The bag is free of atypical bulges, tears, cuts or any other forms of damage as well as having a nipple connection which is perfectly sealed		

After the test time has elapsed, relieve the pressure via the test head and completely evacuate. Do not stress nipples during evacuation and drying.

The bag is in perfect order

Bag is to be taken out of commission permanently

Reason for decommissioning:

Place/Date: _____

Inspector: _____ Signature of inspector: _____