Gewerbepark 13 85402 Kranzberg
Tel 08166 - 6784 0
Fax 08166 - 6784 20
E-Mail info@dosieren.de

# Operating Instructions

# Material Pressure Vessel Type MDG / LDG

**CONTENTS:**

## 2. TECHNICAL DATA

| | |
|---|---|
| Type designation: | MDG 3 |
| Specified use: | Material pressure vessel |
| Assembly drawing: | 44-0000-3257 i |
| Tank materials: | 1.4301/FPM |
| Category and method for compatibility evaluation as per directive 2014/68/EU (Pressure Equipment Directive): | C0 / Modul A |
| Indication as per directive 2014/34/EU (Directive Atex): | |

| **Operating Data:** | | **Inside space** | |
|---|---|---|---|
| Design pressure: | (bar) | 6,0 | |
| Permissible operating pressure: ① | (bar) | 6,0 | |
| Test pressure: | (bar) | 8,6 | |
| Safety valve set pressure: | (bar) | no data | |
| Safety valve inspection number: | | no data | |
| Max. input pressure (pressure regulator): | (bar) | 10,0 | |
| Min. permissible operating temperature: | (°C.) | +10 | |
| Max. permissible operating temperature: | (°C.) | +50 | |
| Internal volume: | (lit.) | 3,2 | |
| Usable volume (max.): ② | (lit.) | 2,5 | |
| Filling mass (max.): | (kg) | no data | |
| Corrosion allowance: | (mm) | 0 | |
| Material/operating medium: | | Fluid group 1 | |

① The pressure device is designed for <= 1000 variations of load between lack of pressure state and the admissible working pressure and/or deviations in the pressure < 10% of the admissible working pressure. Depending on the application a different number of the admissible operations for variation of load as per AD2000 data sheet S1 can be specified.

② The usable volume refers to the stationary use of the pressure tank. This value does not include any reduction in volume due to internal fittings and/or the use of internal containers (e.g. cans or insert buckets). Depending on the operating conditions, the usable volume must be reduced by the operator if necessary in order to avoid damage to the fittings and internal parts (air inlet, safety devices, agitators, etc.) caused by penetration by the operating-medium.

## 3. RULES AND REGULATIONS FOR THE USE OF PRESSURE TANKS

The following information applies only to pressure tanks within the scope of the Pressure Equipment Directive 2014/68/EU. Material pressure tanks that fall below the limit values of Category 1 ("C0", product of pressure PS and volume V lower than 25 bar L) are not covered by the Directive.

From 01.01.2003, the operation of pressure equipment is regulated by the German Regulations on Industrial Safety (Betriebssicherheitsverordnung - BetrSichV). Furthermore, operators must observe and comply with all safety regulations and other rules and regulations relevant for the specific application as well as for the place of use, in particular those regulations imposed by trade and industry law, transport law and water protection law. Before the pressure tank is used for the first time, the operator must contact an authorised inspection agency ("notified body") approved to supervise pressure equipment of the corresponding category in order to determine the rules and regulations covering the specific application and to coordinate further procedures.

The rules and regulations on the use of pressure equipment are very extensive. The following information represents only an excerpt of the rules that must be observed by the operator.

The pressure tank has been designed, approved and marked by the manufacturer in accordance with the EU Pressure Equipment Directive 2014/68/EU and the German regulations on pressure equipment (14. GSGV). The category in which the equipment is classified, the scope of the assessment (vessel or assembly) and the applied conformity assessment module can be found in the Section *Technical Data* and in the *Declaration of Conformity*.

All pressure equipment within the scope of the Pressure Equipment Directive is subject to surveillance in accordance with legislation governing the safety of equipment and industrial safety (e.g. German Regulations on Industrial Safety - BetrSichV).

Any person using equipment within the scope of the Regulations on Industrial Safety (BetrSichV) is required to perform an assessment of the dangers involved in using the equipment and to determine the measures necessary to ensure the safe installation and operation of the equipment. In particular, this includes those dangers relating to the operation of the equipment itself as well as any dangers at the workplace resulting from interaction with other equipment or with working materials or with the working environment.

Any person using pressure equipment is required to keep the equipment in an orderly condition, to operate the equipment in accordance with the rules and regulations, to monitor the condition of the equipment, to perform any necessary maintenance work without delay and to ensure that all the relevant safety measures relating to the specific application have been taken. If the equipment is found to have defects that might endanger its safe operation, it must be taken out of operation immediately.

Pressure equipment is subject to prescribed tests before being put into operation, during operation and after any refitting or maintenance work has been carried out.

### 3.1 Inspection Agencies

Pressure equipment classified in Categories CI + CII or in Categories CIII + CIV (provided that the max. allowable pressure PS is not more than 1 bar) may be inspected by a qualified person. In all other cases, inspection of the pressure equipment must be performed by an authorised inspection agency ("notified body").

### 3.2 Inspection Before First Use

The pressure tank may be used for the first time only after it has been inspected by an approved inspection agency and has been judged to be in an orderly condition with regard to its assembly, installation, mounting conditions and safe operation.

### 3.3 Recurrent Inspections

The pressure equipment must be periodically monitored by the inspection agency at specified intervals to ensure that it is in an orderly condition. These inspections consist of internal inspections and strength tests. The scope and intervals of these recurrent inspections are stipulated in § 15 BetrSichV.

Unless otherwise stipulated in § 15 BetrSichV, internal inspections must be carried out by the inspection agency as soon as half the number of loadings specified in the Section *Technical Data* have been reached, or at the latest every 5 years, and strength tests must be performed at the latest every 10 years. It is the responsibility of the operator to record the number of loadings in a suitable manner and to inform the inspection agency as soon as an inspection is necessary.

If the operating conditions at the place of application deviate from those that were assumed when the inspection intervals and permissible number of loadings were specified, or if severe operating conditions (corrosion, abrasion, dirt contamination, unfavourable environmental influences, etc.) are likely to cause damage or impair the function of the equipment even before the end of the normal inspection interval, the operator must reduce the inspection intervals in consultation with the notified body insofar as this is in the interests of the safety of employees or third parties.

If the thickness of the pressure-bearing walls of the tank falls below the minimum permissible wall thickness (material thickness as specified in the drawings minus the corrosion allowance), the pressure tank must be taken out of operation immediately.

### 3.4 Inspection in Special Cases

If the pressure tank has been modified in any way, it must not be put into operation again until it has been checked by the notified body and its operation found to be fault-free, insofar as it is influenced by the modification

As soon as the specified number of loadings has been reached, the operator must contact the notified body to coordinate further procedures.

If the allowable operating parameters (maximum allowable operating pressure, maximum allowable operating temperature) have been exceeded due to the specific application or as a result of external influences, or if the values have fallen below the minimum levels, the pressure tank must not be put into operation again until it has been checked by the notified body and has been found to be in a fault-free condition. This also applies if the tank has been exposed to fire.

### 3.5. Rules and Regulations on Using the Pressure Tank Outside Germany

If the pressure tank is used outside Germany, the operator must observe and apply the rules and regulations valid in the respective country in addition to those set out in these Operating Instructions. If the regulations in the respective country call for measures that go beyond the regulations in force in Germany or beyond the rules set out in these

Operating Instructions, these measures must be coordinated with a supervisory authority in the respective country before the tank is put into operation.

## 4. FUNCTIONAL DESCRIPTION

In the standard design, a WALTHER-PILOT material pressure tank consists of a container with a removable lid, a compressed air inlet fitting assembly comprising a air inlet valve, a pressure regulator with back pressure control, a component-tested safety valve and manometer, a material inlet sealing cap located on the lid and a material outlet valve (also on the lid) consisting of a pipe to the material outlet and a outlet ball valve. All standard material pressure tanks can alternatively be supplied with a material outlet at the bottom.

Liquid or paste-like media are transported to the user device, for example a spray gun, by the effect of the static pressure of an air cushion. The spraying performance, for example of a spray gun, is considerably increased by the use of a material pressure tank, since it allows the optimum fineness and width of the spray jet. Apart from their use for spraying purposes, WALTHER-PILOT material pressure tanks are also suitable for numerous other applications, for example for mixing and dosing, in machine and plant engineering, etc..

The required delivery pressure is adjusted by a pressure regulator with back pressure control on the air input side. Once the operating pressure has been set, the tank ensures an absolutely even flow of the medium to the user device.

Material pressure tanks can also be equipped with agitators as an optional extra. Agitators ensure constant material consistency and prevent the material from settling. Agitators can be fitted to tanks with a capacity of 4 litres and above. Manually operated, air-powered or electric agitators in different versions are available.

Furthermore, material pressure tanks can also be equipped with various gauges, such as level or temperature indicators.

## 5. INSTRUCTIONS

### 5.1. General Instructions

Read carefully this operation manual before handling the device and before putting it into operation.

The operation manual is part of the product and is kept in close of it. The service staff must be trained.

Observance of the instructions of this and other manuals regarding the use of equipment elements as mixers and fill level indicators as well as elements for consumption, for example, spray gun. This is absolutely necessary in order to avoid risks and damages. The observance of the valid national, local and specific for equipment regulations and requirements of the respective country is also compulsory.

The field of application of the pressure device is specified in this operation manual in chapter *functional use*.

For the installation, putting into operation and maintenance of the pressure device, the respective chapters of these operation manual shall be observed.

The specific modifications and constructions might differ in their technical details. In case of eventual unclear matters we insist you to contact WALTHER-PIILOT, specifying the part number and type designation of the device.

For damages that have occurred in result of non-observance of the instructions for use or as a result of inappropriate repair as well as the use of non-original spare parts, no responsibility is undertaken.

In case you do not understand the contents of this operation manual, please, address WALTHER-PILOT!

### 5.2. Safety and Instruction Signs

Please, pay attention to the following safety and instruction signs:


**Danger!**
**Danger for the person's life, danger of injuries**


**Danger!**
**Important instructions for anti-explosion protection**

**Attention!**
**Possible machine damages**

**Instruction!**
**Useful Information!**

### 5.3. Safety Instructions


In the execution of all activities **for assembly and maintenance,** as for example transport, warehouse storage, installation, connection to the electric power supply or compressed air supply, putting into operation, maintenance and technical service, there must be no **explosive atmosphere**.
In processing inflammable materials (lacquers, adhesives, detergents) the risks for health damage and explosion an fire are higher.


All **activities for assemby and maintenance,** must be performed only by qualified, specialised personnel who is familiar with the respective regulations for maintenance and technical service of the devices.

Assembly and maintenance activities must be performed only with the device off.

The compressed air fitting must be detached from the grid and deaerated.
The electric connection should be not under voltage, it must be safed against switching on through carelessness.

Observe all safety instructions of this operation manual as well as the operation manuals for the elements of the equipment. Besides that all national or other safety and preventive protection regulations must be observed.

The electrostatic charge during the pressure device operation may result in the formation of sparks and current rushes. That is why the pressure device, the parts of its equipment, the air and the material lines, the consumable unit and the electric conducting surfaces within the working section must be earthed.

### 5.4. Conditions for Use

Before fill of the operating medium, subject of processing, it must be checked whether the substance is dangerous. The information about the product and eventually the safety technical data sheet of the manufacturer must be taken into consideration. In case this information is not available, data shall be requested from the manufacturer, the supplier or the importer. Observe the instructions for processing and safety of the manufacturer of the operating medium and the detergent agents. The aggressive and corrosive materials harm your health.

The premises where hazardous materials are stored, refilled or processed, should be sufficiently aired, eventually the installation of mechanical ventilation might be necessary. At failure of the ventilation, work should be immediately ceased and the entire device brought to a halt.

Compatibility between feeder, tank materials and seals is checked and guaranteed by the operator, by paying attention to corrosion and abrasion.

The pressure device may only be used if, in compliance with the regulations for each injection chamber, the necessary safety devices are available (safety valves, pressure gauges, etc.) and are ready for operation. As a result of the security valve release, risky substances might be released in the atmosphere. For this reasons certain conditions of use, respectively mediums for use require security installations, deviating from the standard!

The reducing valve of the construction must be selected in a way that the capacity of flow is less than the capacity of release of the safety valve.

In case the permissible working parameters can not be attained, or respectively exceeded, in operating for example, pumps for filling or emptying, the constructor must guarantee through the respective controlling, measuring and restrictive equipment, that inadmissibly high pressure and vacuum shall not occur.

The useful information on the plate of the pressure device manufacturer and the specified fill weight on it, must not be exceeded.

The environment temperature of the envisaged mounting site must not exceed or be below the norm of the specified working temperature.

At operation with water we firmly recommend the use of an appropriate material for protection against corrosion and icing of the outer casing of the double-walled tank!

First and foremost the security equipment and the locking elements must be protected from pollution and damage during operation.

With applications, where the failure of the device or one of its equipment parts cab result in injury of people, the constructor should take relevant security measures.

If while operating you notice something unusual, bring the device to a halt and consult WALTHER-PILOT.

Serious injuries of people and material damages may be caused as a result of inexpedient installation, use of the device out of purpose, wrong service, non-observance of the safety instructions, inadmissible removal of parts from the body or of the protection covers, inappropriate repair and putting into operation, as well as changes in the construction of the device.

## 6. DEVICE SPECIFIC INSTRUCTIONS

### 6.1. Instructions on Pressure Device Use Within Another Product

**If the pressure device is envisaged to be built in in another product, this operation manual may only provide basic issues in relation to assembly, the work, the maintenance and the putting into operation. The manufacturer of the end product is obliged to take also into consideration these basic issues in the documentation to be issued by him.**

**Anyway, putting into operation is prohibited to the moment the compatibility of the end product with all important directives and regulations is confirmed. The same is valid for the case when the safety equipment necessary for the operation are not included in the scope of the WALTHER-PILOT delivery.**

### 6.2. Other Instructions

no data

## 7. PROPER USE

Material pressure tanks are designed to be used exclusively for delivering liquid or paste-like media that are put under pressure by a gas cushion (compressed air and other non-toxic, non-aggressive and non-flammable gases).

The type of media to be used is determined by the materials specified on the rating plate and in the chapter *Technical Data* (see also Directive 2014/68/EU Article 9 Paragraph 1), as well as by the material compatibility and by possible dangers that might additionally exist.

The tank must be used only with the operating parameters specified on the rating plate and in Chapter 1 (maximum permissible operating pressure, maximum permissible operating temperature, usable volume, filling material, filling mass, etc.).

WALTHER Spritz- und Lackierungssysteme GmbH undertakes the responsibility for the device subject of the delivery, i.e. for the pressure device and eventually for the other elements of the equipment. The operator is obliged, observing the applicable for the concrete place, regulations and instructions, and being personally responsible, to take care for the suitability of the device for the concrete purpose of application. WALTHER Spritz- und Lackierungssysteme GmbH are not responsible for property damages and injuries of persons as a result of non-observance of the existing regulations, wrong service and/or wrong re-equipment or equipment of the device.

Proper use also implies that the operator has read, understood and observed all the instructions set out in these Operating Instructions. If you require further information (in particular with regard to safety measures), please contact WALTHER Spritz- und Lackiersysteme GmbH.

## 8. IMPROPER USE

The pressure tank must not be operated solely with liquid pressure (i.e. without a gas cushion).

The pressure tank must not be pressurised using a toxic, flammable or aggressive gas. In particular, pressurising the tank using pure oxygen is strictly prohibited, since the valve fittings in particular are coated with a thin film of grease: **RISK OF EXPLOSION!** The pressure tank must not be operated with nitrogen unless suitable safety devices have been fitted.

Material pressure tanks must not be used for transporting materials. Exceptions are permissible only if suitable measures have been taken by the customer to allow the tank to be used at various locations within a single plant.

The pressure tank must not be used for the long-term storage of materials.

The pressure tank must not be used for materials that are incompatible with the tank or sealing materials and/or which cause corrosion or abrasion particularly at the pressure-bearing walls of the tank.

The type plate attached to the tank and the information markings must not be removed or be made completely or partially illegible.

No changes or modifications may be made to the pressure-bearing tank components or accessories.

The accessories with a safety function fitted to the tank (safety valves, manometers, etc.) must not be changed or deactivated. The adjustment lead seal and the cap of the safety valve must not be damaged or removed. The safety devices must be protected against dirt and contamination.

## 9. PRESSURE DEVICE USE IN EXPLOSION-HAZARDOUS ZONES

### 9.1. Explosion-Hazardous Zones

Solely the operator or, in case there is a doubt in defining the explosion-hazardous zones, the competent control office, shall decide which zones in the open or in closed premises shall be specified as explosive-hazardous as per the regulations or the provisions in effect.

### 9.2. Suitability of the Pressure Device for Explosion-Hazardous Zones

With **the actual pressure tank it is not a question of a device as per directive 2014/34/EU (directive ATEX)!** Depending on the environment of operation it is possible the pressure tank to indicate internal explosive atmosphere in accordance with the instructions. As a result certain elements of the equipment of the pressure tank as, for example, electric or pneumatic mixer mechanisms, indicators for the level of filling, etc., may be considered as autonomous devices as per the directive stated above.

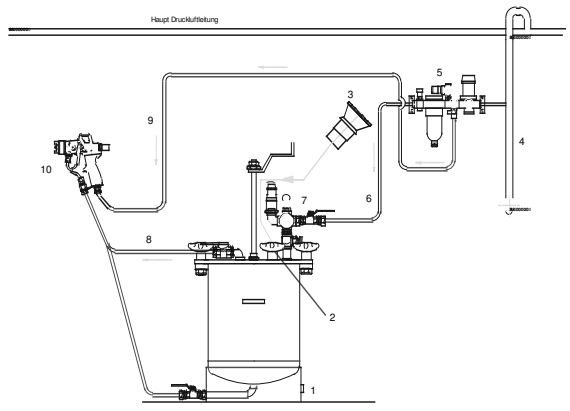
If the use of the pressure tank is necessary in explosion-hazardous zone and/or incendiary, inflammable or explosive environment, the operator must check and quarantee that all technical data and indications as per ATEX correspond to the required instructions for anti-explosion protection.

## 10. INSTALLING THE PRESSURE TANK

**There must be no explosive-hazardous environment during installation.**

a) Pressure tanks must be installed and fixed in such a way that they are not allowed to change their position and impair their safe operation. They must be sufficiently accessible to allow them to be operated, maintained and checked. They must be installed in such a way that employees or third parties are not put at risk in the event of a leakage or a malfunction. The necessary protective zones must be maintained.
b) Fire, naked flames and smoking are strictly prohibited within a radius of at least five metres from the tank. If highly flammable materials (e.g. cleaning agents) are used, there is an increased risk of explosion and fire in the working area.
c) The tank must be earthed by the customer to protect against the build-up of electrostatic charge.
d) Connections for electrically powered agitators, measurement and control devices must be provided by the customer. If necessary, explosion-protection regulations must be observed. Such work may be carried out only by authorised specialist companies. *The instructions and directions given in the instruction manual of the equipment manufacturer must be observed at all times!*
*e)* Before using the tank for the first time, ensure that there is a suitable pressure-reducing valve in the pressure feed line and that the required safety devices are properly installed and are fully functional.
*f)* All tank connections must be properly installed by trained personnel, and any connections that are not required must be permanently and securely sealed and be pressure-proof.
*g)* Connection lines, pipes, hoses and screw fittings provided by the customer must be designed and manufactured in such a way that they comply with the existing regulations and are able to safely withstand the expected mechanical, chemical and thermal stresses resulting from the operation of the tank.
h) A possible connection configuration is shown below.
i) Before the tank is used for the first time, all components of the tank that come into contact with material must be cleaned (or rinsed through) with a suitable cleaning agent. For this purpose, please refer to the chapter on *Cleaning the Tank.*

### 10.1 Possible Connection Configuration




*Description of the Connection Configuration:*

1. Earth (ground) connection
2. Material filling valve (if available)
3. Filling funnel (overfilling protection Part Number V4422064000) – not included as part of the standard equipment of the pressure tank
4. Compressed air connection (customer installation)
5. Filter pressure regulator (customer installation) – please ensure that the maximum admission pressure of the pressure tank pressure regulator (see Technical Data) is not exceeded!
6. Compressed air connection hose (electrically conductive) – not included as part of the standard equipment. Can be ordered from WALTHER-PILOT.
7. Compressed air reduction valve
8. Material connection hose – not included as part of the standard equipment. Various hose versions can be ordered from WALTHER-PILOT.
9. Compressed air connection hose to user device (e.g. spray gun) – if required.

## 11. USING THE PRESSURE TANK

**Safety Instructions:**

- **Before refilling, cleaning, maintenance and repair work is carried out, the entire unit must be depressurised. Please refer to the chapter *Taking the Tank Out Of Operation* !**
- **WARNING: Risk of burns!. All parts of the vessel may become hot when the pressure vessel is in operation. Always wear suitable protective clothing (gloves, etc.).**
- If solvents or cleaning agents on the basis of halogenated hydrocarbons, such as 1,1,1,-trichloroethane or methylene chloride (dichloromethane) are used, chemical reactions might occur at aluminium or galvanised parts. This may cause the parts to oxidise and in extreme cases an explosion-like reaction may occur. Therefore, use only those solvents and cleaning agents that do not contain these components.
- Equipment components with a safety function (e.g. safety valves and manometers) must be regularly checked to ensure that they are fully functional. Please refer to the chapter *Maintenance.*.
- The tank must on no account be opened until it has been completely depressurised – **RISK OF INJURY!**
- Dangerous substances might escape from the tank. For that reason, always wear the regulation protective clothing and breathing protection when carrying out any work whatsoever on the tank.

### 11.1 Filling

Before opening the tank, ensure that all pressure-bearing lines are closed and that the tank has been completely depressurised (see Safety Instructions!).

Ensure that the pressure tank is not filled beyond the usable volume.

The easiest way of filling the tank is through the filler opening in the lid (from Type MDG 12) using the filling funnel V4422064000 which is available as an optional extra. This rules out the possibility of overfilling the tank:

1. Turn the star grip clamp of the material inlet sealing cap counter-clockwise until the cap can be lifted and withdrawn from the opening.
2. Insert the filling funnel into the opening until the collar rests firmly on the O-ring on the lid.
3. Ensure that the bleed valve and the material outlet valve are closed.
4. The tank can now be filled with material until material becomes visible in the funnel. The air cushion that remains in the tank prevents the tank from being overfilled.
5. Lift the filling funnel slightly to allow the air cushion to escape. The material left in the funnel will then flow into the tank.
6. Clean the seating surface of the material inlet sealing cap, ensure that the O-ring is correctly seated in the lid

of the sealing cap and insert the sealing cap into the opening.
7. Close the material inlet sealing cap by turning the star grip clamp clockwise to its limit.

The material to be processed can either be filled directly into the tank or be put into the tank in appropriately-sized non-reusable cans or insert buckets (available as an optional extra). The tank types MDG 22 and MDG 45 are especially suited for the use of original Euro-cans (10-litre can for the MDG 22, 30-litre can for the MDG 45). Proceed as follows:

1. To remove the lid from the tank, first unscrew the star grip clamps. Hold the lid by two star grip clamps and pull it upwards, removing it from the tank.
2. Place the can or insert bucket into the tank or fill the tank with material up to approximately 5 cm below the upper edge of the flange.
3. Ensure that the seal and the sealing surfaces are clean and that the lid seal is seated in the groove.
4. Place the lid on the tank.
5. Tighten the star grip clamps cross-wise and evenly. The clamps must be screwed hand-tight without the use of excessive force. The lid seal is a toroidal sealing ring and not an axial squeeze seal!

### 11.2 Putting the Tank Into Operation

1. Check the tank connections (especially the compressed air and material connections) to ensure that they are fitted tightly.
2. All star grip clamps on the tank lid must be present and be firmly tightened. The star grip clamp of the material inlet sealing cap (if fitted) must be firmly tightened.
3. Ensure that all safety devices (safety valve, manometer, etc.) are in a fault-free condition and are fully functional.
4. The air bleed valve, the air inlet valve and the material outlet valve must be closed.
5. The regulator screw of the pressure regulator must be turned so far counter-clockwise that the pressure spring is completely unloaded.
6. Ensure that the user equipment (e.g. spray gun) is properly connected and ready to operate.
7. Open the air inlet valve.
8. Turn the pressure regulator screw clockwise until the required material pressure is indicated on the manometer. If the admission pressure of the safety valve is exceeded, the valve will open! If this occurs, the pressure must be reduced by turning the regulator screw counter-clockwise.
9. Open the material outlet valve. For information on the correct use of the user equipment (e.g. spray gun), consult the operating manual of the corresponding manufacturer.

*Note:*

*In order to avoid problems in setting the operating pressure, the desired pressure value should always be approached from a lower pressure level. If you later want to adjust the pressure to a new, lower value, first adjust the pressure to a level that is lower than the desired new operating pressure. Reducing the operating pressure at the regulator screw has the effect that air escapes from the tank via the pressure regulator.*

### 11.3 Taking the Tank Out of Operation

*Note:*

**The pressure in the tank must be released only via the air bleed valve. On no account may the pressure be released via the safety valve or by loosening the star grip clamps or the filler sealing cap!**

1. All pressure-bearing lines and hoses must be blocked off. In particular, the air inlet valve and the material outlet valve must be closed. If necessary, remove the air and material connection hoses.
2. Open the air bleed valve by turning it counter-clockwise.
3. The pressure tank must on no account be opened until all of the compressed air has completely escaped.

## 12. CLEANING THE TANK

**Safety Instructions:**

- Cleaning work may be carried out only on a tank which has been completely depressurised and from which all pressure-bearing lines and hoses have been disconnected. See the chapter *Taking the Tank Out of Operation* !
- Observe the safety instructions provided by the manufacturers of the cleaning agent. In particular, aggressive and corrosive cleaning agents can be harmful to health.
- Always wear proper protective clothing and breathing protection when carrying out cleaning work.
- When carrying out cleaning work, ensure that material residues and caked material are not ignited by the tools being used or by sources of heat or other causes of ignition.
- The use of highly flammable materials means that there is an increased risk of explosion and fire in the working area.

**Cleaning Instructions:**

- For cleaning the tank, use only those cleaning agents which do not contain the following components: halogenated hydrocarbons (such as 1,1,1,-trichloroethane, methylene chloride, etc.), acids and acidic cleaning agents, regenerated solvents (so-called cleaning solvents) or paint removers. These components cause chemical reactions on galvanic parts and result in corrosion damage.
- Do not use hard or sharp objects to clean the tank (especially for tanks with special linings such as Vetrodur, Teflon, etc.) in order to avoid scratching the surface.
- Use only those cleaning agents which do not cause chemical or thermal reactions on contact with the actual spraying materials.
- Never immerse the complete tank in solvent or any other cleaning agent. The fault-free operation of the equipment components, in particular the operation of equipment components with a safety function (safety valves, etc.), can otherwise no longer be guaranteed.
- When cleaning the pressure-bearing parts of the tank, do not use methods which cause corrosion or which reduce the thickness of the walls (e.g. mechanical sanding or sand blasting).

**Procedure:**

1. Remove the lid from the tank by releasing the star grip clamps and holding the lid by two star grip clamps and pulling it upwards.
2. Remove any material residues if necessary.
3. Wipe the tank walls with a clean cloth, if necessary soaked in cleaning agent.
4. Clean the tank sealing surfaces and the lid gasket in the same way.

Ideally – and if possible due to the installation and use of the pressure tank – the tank and the material connection lines should be rinsed with cleaning agent. Proceed as follows:

1. Fill the tank with a cleaning agent that is compatible with the operating medium up to a level that also reaches the outlet fittings.
2. Replace the tank lid and put the tank into operation (see chapter *Putting the Tank Into Operation*).
3. Rinse the whole system until only clean cleaning agent is seen to arrive at the user equipment.
4. Take the tank out of operation (see chapter *Taking the Tank Out of Operation*) and, if necessary, remove any cleaning agent residues from the tank.

### 12.1 Cleaning the Tank for Use in the Food or Pharmaceutical Industry

If the tank is used in the production process in the food or pharmaceutical industry, special attention must be paid to maintaining absolute hygiene when filling, operating and cleaning the tank.
Observe the regulations for processing food and pharmaceutical products. Improper or insufficient cleaning represents a health risk and may result in illness or infection by the food or pharmaceutical product being processed.
Use only appropriate cleaning agents that are harmless to health and which have been approved for contact with the respective product.
When cleaning the tank, ensure that no cleaning agent residues whatsoever remain in the tank. Only those tanks may be used which are not subject to corrosive influences.

### 12.2 Waste Disposal

Waste materials produced as a result of cleaning and maintenance work must be properly disposed of in accordance with the existing laws and regulations.

*Warning:*

Observe in particular the instructions given by the manufacturer(s) of the operating media and the cleaning agent. Waste material that is disposed of incorrectly or illegally poses a risk to the health of human beings and animals.

## 13. MAINTENANCE AND INSPECTION

**Safety Instructions:**

- Maintenance and repair work may be carried out only on a tank which has been completely depressurised and from which all pressure-bearing lines and hoses have been disconnected. See the chapter *Taking the Tank Out of Operation* !
- When carrying out maintenance work, ensure that material residues are not ignited by the tools being used or by sources of heat or other causes of ignition.

The use of processed (i.e. cleaned and filtered) compressed air and regular maintenance will ensure that serious faults will hardly ever occur.

**Maintenance Work**

*a)* Accessory components which have a safety function (e.g. safety valves and manometers) must, at regular intervals, be routinely checked, tested for accuracy and serviced. *The frequency of the checks and the degree of accuracy required are based on the user's experience and the respective application. However, these checks must be carried out every 3 months at the latest. If you have any doubts about your ability to assess the reliability yourself, do not hesitate to consult an expert for advice.*
   - Check the function of the safety valve as follows: with the tank under pressure (at least 80-90 % of the set pressure), either activate the valve test lever or turn the valve test screw counter-clockwise by a few turns (depending on the type of tank) until the valve blows. Afterwards, turn the valve test screw clockwise to its final position. The valve is then sealed again.
   - Ensure that the adjustment lead seal (if necessary also the lead seal disk or cap) of the safety valve are undamaged.
   - The manometer can be removed for the necessary inspection using a reference unit.

   *Damaged or inadequately functioning safety fittings must be replaced without delay by parts of the same standard.*

b) If fitted, the pressure regulator must be checked at regular interval to ensure that it is fully functional. During this check, apply a light coating of grease to the thread of the pressure regulator screw. For this purpose, use a non-acidic, non-resinous grease.

c) The functional reliability of the shut-off valves (air inlet and material outlet valves) must be checked regularly.

d) All pressure-bearing walls must be regularly checked for corrosion. The corrosion allowance given in the chapter *Technical* Data is taken into account in the design of the tank. If this allowance has been used up on one of the walls of the tank, the tank must be taken out of operation.

All equipment components with a safety function (safety valves, manometers, etc.) and all pressure-bearing equipment components must, if they have been supplied by WALTHER-PILOT, be replaced only by original replacement parts! Lists of replacement parts can be found in the Appendix. Wearing parts are marked in bold type in the parts list. If you require replacement parts, please state the serial number, the type and the year of manufacture of the pressure tank.

**Inspection (periodic checks)**

a) Observe the intervals for periodic checks (see chapter Operating Regulations). Contact the notified body in good time..

b) The notified body must be informed immediately as soon as the number of loadings given in the chapter *Technical Data* has been reached.

## 14. OVERHAUL / REFITTING / REPLACEMENT OF MAJOR COMPONENTS

**Safety Instructions:**

- Overhaul and refitting work may be carried out only on a tank which has been completely depressurised and from which all pressure-bearing lines and hoses have been disconnected. See the chapter *Taking the Tank Out of Operation* !
- When carrying out overhaul and refitting work, ensure that material residues are not ignited by the tools being used or by sources of heat or other causes of ignition.

Detailed overhaul and refitting work (e.g. installation of an agitator or measuring devices, conversion of the air inlet or material outlet fittings) or the replacement of major components should be carried out by WALTHER-PILOT.

WALTHER-PILOT should at least be informed of the type and extent of the work in order to decide whether the work may be carried out by the customers themselves or by a third party.

In any event, the relevant supervisory body (notified body) is to be informed whenever detailed overhaul, refitting or the replacement of major components is to be carried out, since inspections that have already taken place may have to be repeated.

WALTHER-PILOT will not accept any liability for injury to persons or damage resulting from failure to observe the above-mentioned rules and regulations and/or from improperly executed work.

## 15. POSSIBLE FAULTS AND THEIR CORRECTION

**Safety Instructions:**

- Maintenance and repair work may be carried out only on a tank which has been completely depressurised and from which all pressure-bearing lines and hoses have been disconnected. See the chapter *Taking the Tank Out of Operation* !
- When carrying out repair work, ensure that material residues are not ignited by the tools being used or by sources of heat or other causes of ignition.

All equipment components with a safety function (safety valves, manometers, etc.) and all pressure-bearing equipment components must, if they have been supplied by WALTHER-PILOT, be replaced only by original replacement parts! Lists of replacement parts can be found in the Appendix. If you require replacement parts, please state the serial number, the type and the year of manufacture of the pressure tank.

*Air side:*

a) Safety valve does not open when the set pressure is reached:
   - Check the function of the safety valve (see chapter *Maintenance)*.
   - If necessary, replace the safety valve.

b) Manometer indicates incorrect value:
   - Check the manometer using a reference manometer (see chapter *Maintenance)*.
   - If necessary, replace the manometer.

c) Leakage between the tank flange and the lid:
   - Clean the tank flange, lid sealing surfaces and seal groove. Do not use sharp or pointed objects for this purpose, as these may scratch and damage the sealing surfaces.
   - If necessary, replace the lid seal.
   - Tighten the star grip clamps cross-wise and evenly. Please note that the lid seal is a toroidal sealing ring and not an axial squeeze seal.

d) Leakage in the air supply:
   - Tighten the air connection piece.
   - Tighten the leaking fitting connections (if necessary, replace seals).
   - Replace defective fittings and connections (observe safety instructions).
   - Compressed air fitting is defective: overhaul or replace compressed air fitting.
   - Agitator mounting leaks: overhaul or replace agitator mounting.

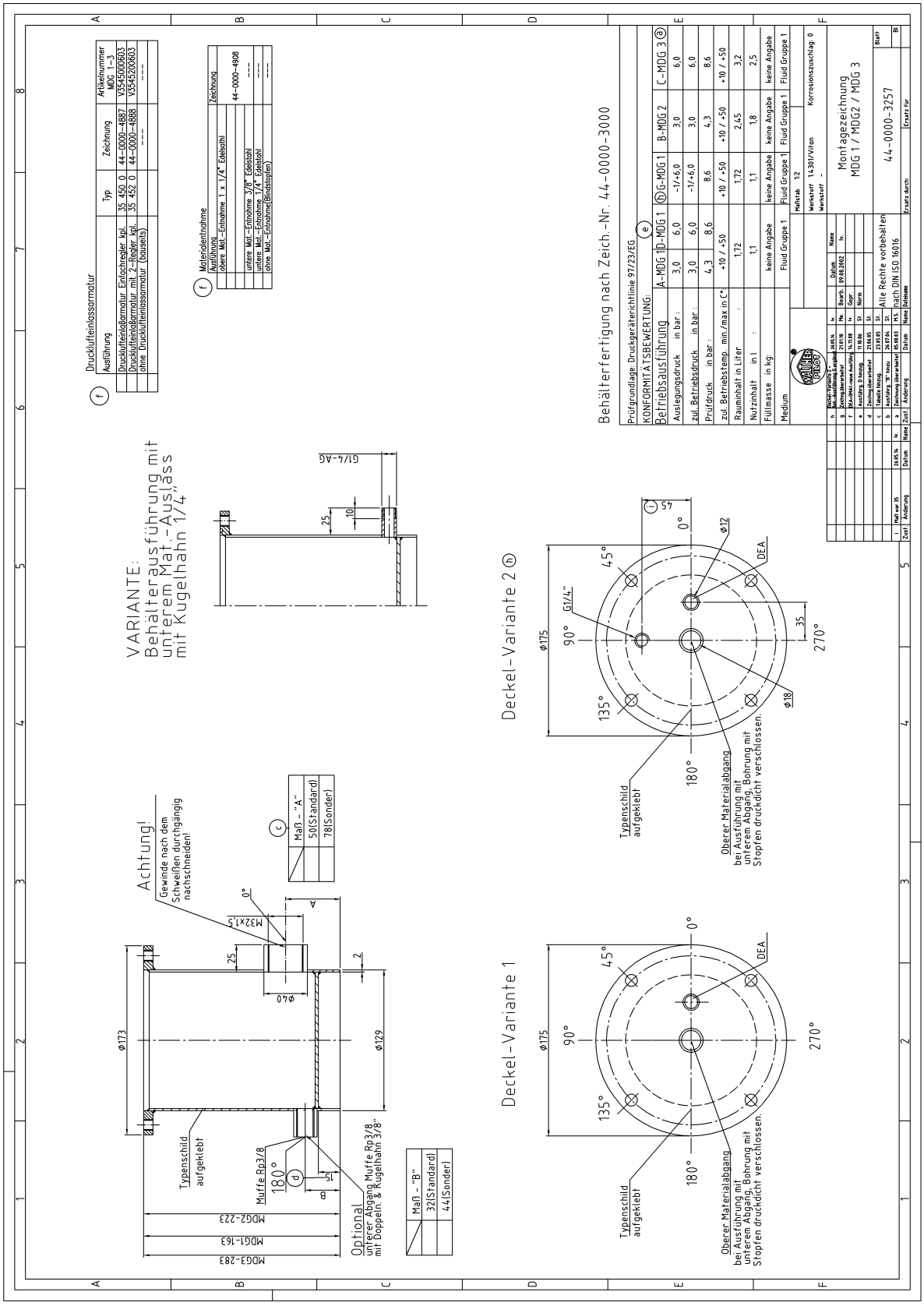
*Material side:*

e) Leakage at material outlet.
   - Tighten the material hose connection.
   - Tighten the leaking fitting connections (if necessary, replace seals).
   - Replace defective fittings and/or connections.

## 16. WARRANTY

1. It is the duty of the Customer to inspect the goods immediately in accordance with §§ 377, 378 HGB and, in the event of defects, to make any complaints in writing. Complaints must be made within a period of three working days after receipt of the goods.
2. The above provisions also apply in the case of excess delivery or if the delivery is short..
3. We do not accept any liability for damage resulting from unsuitable or improper use, defective installation or operation by the Customer or by third parties, normal wear and tear, incorrect or careless treatment, the use of unsuitable operating fluids, substitute materials, defective construction work and unsuitable construction locations or from chemical, electrochemical or electrical influences, unless they are the result of our negligence. We will accept liability for damage to electric motors supplied by us only if the motors have been connected via a protective motor switch that conforms to the VDE guidelines and if this switch has been adjusted to the rated current of the motor before the motor is put into operation.
4. In the event of a warranty claim, we are entitled to choose whether to repair the defect at our own expense or to provide a replacement within an appropriate period. If we are not prepared or not able to do so, or if the repair or replacement is delayed for reasons within our control, or if we refuse to repair the defect or provide a replacement, or if this should fail for other reasons, the Customer is entitled to cancel the order or to demand a corresponding reduction in the purchase price.
5. The period of warranty is six months.
6. We do not accept liability for any damage other than to the delivery item itself.
7. The afore-mentioned limitation of liability does not apply if the damage is caused with intent or is the result of gross negligence on our part, or if the warranty liability is based on the lack of an assured property, which includes the risk of consequential damage. Furthermore, the limitation of liability does not apply if we are found responsible for infringing an essential contractual obligation.
8. In the event that liability has not been excluded, our liability to provide compensation is limited to the foreseeable damage; this does not apply if the cause of the damage is the result of wilful action.
9. In the case of second-hand goods, we will accept liability only if these have been overhauled by us and brought to a technical state which approaches the technical state of new goods in accordance with the justified expectation of the Customer.

**17. DRAWING(S)**

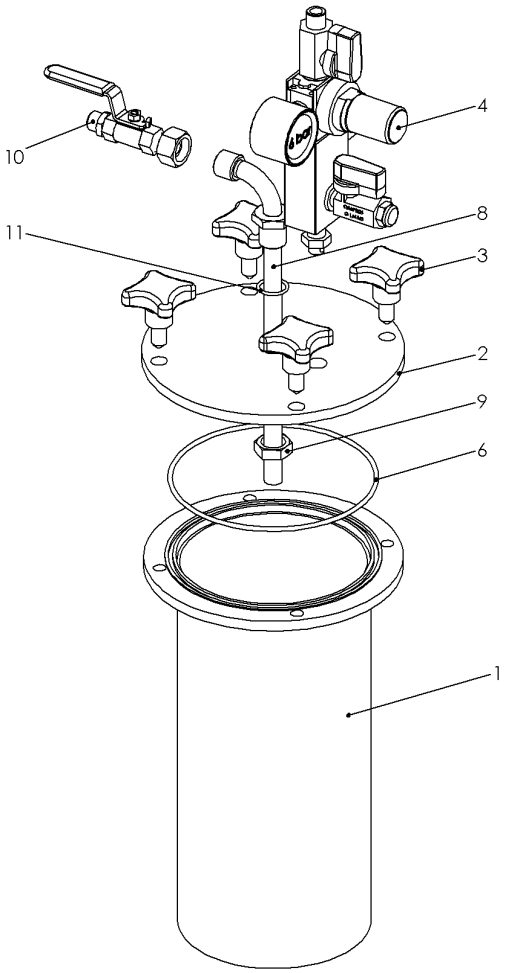

Behälterfertigung nach Zeich.-Nr. 44-0000-3000
Montagezeichnung MDG 1 / MDG2 / MDG 3
44-0000-3257
VARIANTE: Behälterausführung mit unterem Mat.-Auslass mit Kugelhahn 1/4"
Deckel-Variante 2 ⓑ
Deckel-Variante 1
Achtung! Gewinde nach dem Schweißen durchgängig nachschneiden!
Typenschild aufgeklebt
Muffe Rp3/8
Optional unterer Abgang Muffe Rp3/8" mit Doppelm. & Kugelhahn 3/8"
Oberer Materialabgang bei Ausführung mit unterem Abgang Bohrung mit Stopfen druckdicht verschlossen.
Alle Rechte vorbehalten
nach DIN ISO 16016

**18. APPENDIX**

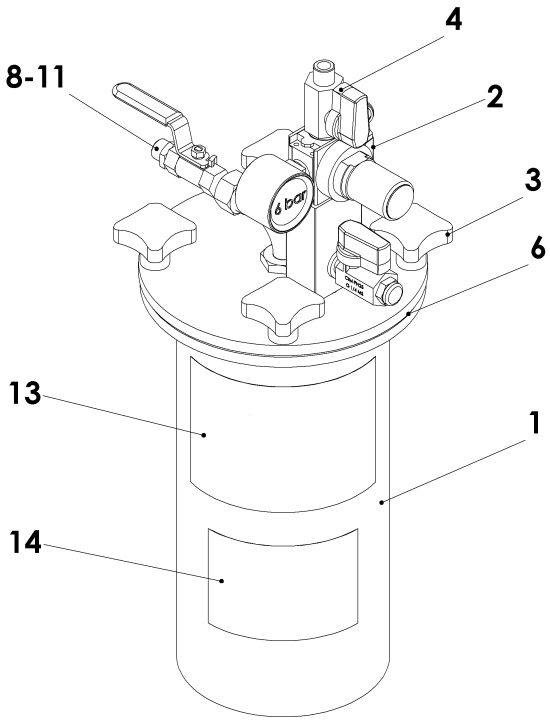
**Ersatzteilliste Materialdruckgefäße Typen MDG 1 / MDG 2 / MDG 3 / MDG 4**
Replacment-Parts-List Material-Pressure-Vessel Type MDG 1 / MDG 2 / MDG 3 / MDG 4

- **Bei Bestellung von Ersatzteilen bitte unbedingt Typenbezeichnung, Fabriknummer, Betriebsdruck und Baujahr mit angeben. /**
  **When ordering replacment parts please make sure to state the type-designation, fabrication-number, operating- pressure-rating and year of contrcution.**
- Wir empfehlen, die gekennzeichneten Ersatzteile (Verschleißteile) auf Lager zu halten. /
  It is recommended to keep in stock all faced parts (wear-parts).
- Sonderausführungen und Bauvarianten können in technischen Details abweichen. Bei eventuellen Unklarheiten wird dringend empfohlen, unter Angabe der Fabriknummer und der Typenbezeichnung Rücksprache mit WALTHER-PILOT zu nehmen. /
  The technical details of the specific modifications and construction variants may differ. In case of eventual unclear issues we firmly recommend to contact WALTHER-PILOT, specifying the pressure-vessel type and serial-number of the device.

**Explosionsansicht / Exploded-view:**




**Detailansicht (Einbauzustand) /**
**Detail-view (installation-situation)**




-

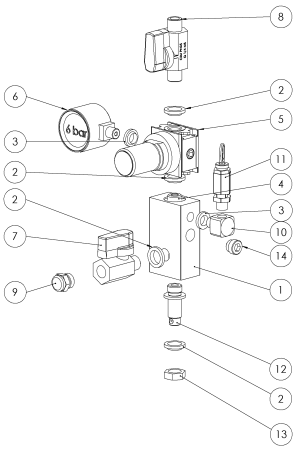
| Pos./ Item | Bezeichnung/ Description | Artikelnummer/ Ident-No. |
|---|---|---|
| 1 | **Behälter / Vessel** | kein Ersatzteil / no spare-part |
| 2 | **Deckelronde / Cover-Plate** | kein Ersatzteil / no spare-part |
| 3 | **Sterngriff kpl. / Star-Grip** | |
| | Behältertyp / Vessel-type MDG 1 - MDG 3 (3 bar-Version) / (4 Stck. / 4 Pcs.) | V 44 102 01 025 |
| | Behältertyp / Vessel-type MDG 1 - MDG 3 (6 bar-Version) / (4 Stck. / 4 Pcs.) | V 44 102 01 026 |
| | Behältertyp / Vessel-type MDG 4 / (4 Stck. / 4 Pcs.) | V 44 250 04 000 |
| 4 | **Drucklufteinlassarmatur Einfachregler kpl. / Air-inlet-mounting single regulator compl.** | |
| | *Behälteranschluss Messing / Vessel-connection brass* | |
| | Ausführung für Behälter-Betriebsdruck / Version for vessel-working-pressure: 4,0 bar | V 35 450 00 404 |
| | *Behälteranschluss Edelstahl / Vessel-connection stainless-steel* | |
| | Ausführung für Behälter-Betriebsdruck / Version for vessel-working-pressure: 3,0 bar | V 35 450 00 303 |
| | Ausführung für Behälter-Betriebsdruck / Version for vessel-working-pressure: 4,0 bar | V 35 450 00 403 |
| | Ausführung für Behälter-Betriebsdruck / Version for vessel-working-pressure: 6,0 bar | V 35 450 00 603 |
| | **Ersatzteile der Drucklufteinlassarmaturen sind auf einer separaten Ersatzteilliste aufgeführt! Replacment-parts of the air-inlet-mountings are listed on a seperate replacement-part-list!** | |
| 6 ② | **Deckeldichtung / Cover-seal** | |
| | Behältertyp / Vessel-type MDG 1 – MDG 3 Version Viton | V 09 103 13 000 |
| | Behältertyp / Vessel-type MDG 4 Version Perbunan | V 09 102 82 000 |
| | Behältertyp / Vessel-type MDG 4 Version Viton | V 09 102 82 001 |
| | *alternative Dichtungswerkstoffe sind in der Zubehörliste aufgeführt / alternative seal-materials are listed in the accessories-table* | |
| 8 | **Steigrohr / Suction-tube** | |
| | für Behältertyp / for vessel-type MDG 1 | V 44 220 09 203 |
| | für Behältertyp / for vessel-type MDG 2 | V 44 220 09 213 |
| | für Behältertyp / for vessel-type MDG 3 | V 44 220 09 223 |
| | für Behältertyp / for vessel-type MDG 4 | V 44 220 09 213 |
| 9 | **Kontermutter / Lock-nut** | |
| | Ausführung Messing / Version brass | V 44 220 09 164 |
| | Ausführung Edelstahl / Version stainless-steel | V 44 220 09 163 |
| 10 | **Materialentnahmekugelhahn kompl. / Material-outlet-ball-valve** | |
| | Aussengewinde-Anschluss / External-thread G1/4“ DN6 Messing / brass | V 44 220 09 085 |
| | Aussengewinde-Anschluss / External-thread G1/4“ DN5 Edelstahl / stainless-steel | V 44 220 09 083 |
| | Innengewinde-Anschluss / Internal-thread G1/4“ DN6 Messing / brass | V 44 220 09 095 |
| | Innengewinde-Anschluss / Internal-thread G1/4“ DN5 Edelstahl / stainless-steel | V 44 220 09 093 |
| 11 ② | **O-Ring / Seal** | |
| | Ausführung/Version Perbunan | V 09 103 97 000 |
| | Ausführung/Version Viton | V 09 103 97 001 |
| 12 | **Behälterversionen mit unterem Materialauslaß / Vessel-version with lower material-outlet:** Die Deckelbohrung wird mit den nachfolgenden Einzelteilen verschlossen. / The following parts ar used to seal the through-bore in the cover. | |
| | Blindstopfen / Blind-plug | V 44 220 09 193 |
| | O-Ring / Seal Version Perbunan | V 09 103 97 000 |
| | O-Ring / Seal Version Viton | V 09 103 97 001 |
| | Kontermutter Ausführung Messing / Lock-nut version brass | V 44 220 09 164 |
| | Kontermutter Ausführung Edelstahl / Lock-nut version stainless-steel | V 44 220 09 163 |
| 13 | **Aufkleber Warnhinweise / Label warning notices** | AUFKLMDG001 |
| 14 | **Aufkleber Hinweise Sterngriffe/O-Ringe / Label notices star-grip/o-ring** | AUFKLMDG002 |

② Verschleissteile / wear-parts

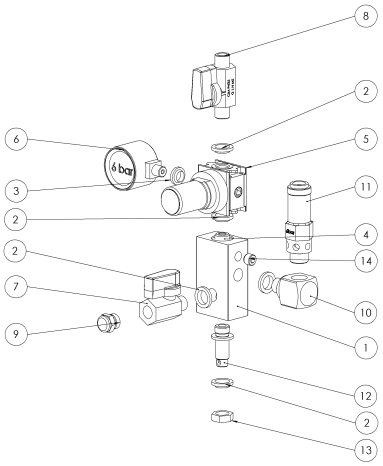
**Ersatzteilliste Drucklufteinlassarmatur**
Replacment-parts-list Air-inlet-mounting

*Drucklufteinlassarmatur Einfachregler / Air-inlet-mounting single regulator*

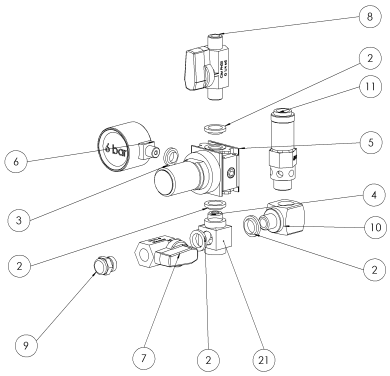
*für Behältertyp / for vessel-type*
*MDG 1 – MDG 4*




*für Behältertyp / for vessel-type*
*MDG 8 & LDG 5 – LDG 20*

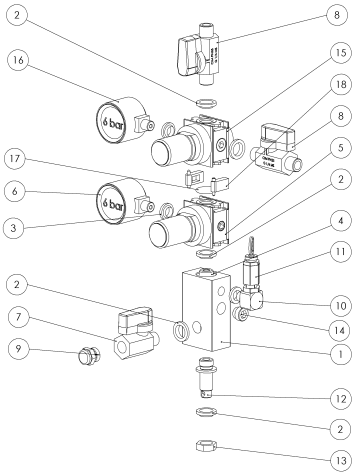



*für Behältertyp / for vessel-type*
*MDG 5 LB – MDG 19 LB*

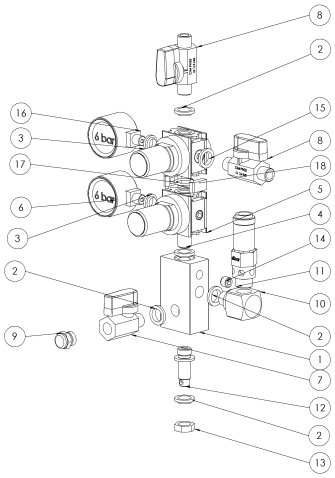



*Drucklufteinlassarmatur mit 2.-Regler / Air-inlet-mounting with 2.-regulator*

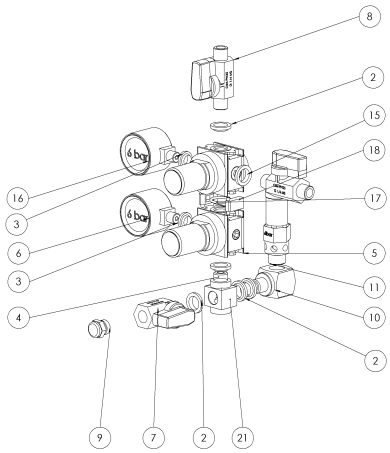
*für Behältertyp / for vessel-type*
*MDG 1 – MDG 4*




*für Behältertyp / for vessel-type*
*MDG 8 & LDG 5 – LDG 20*

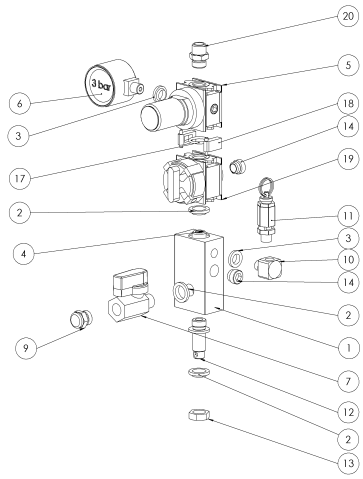



*für Behältertyp / for vessel-type*
*MDG 5 LB – MDG 19 LB*

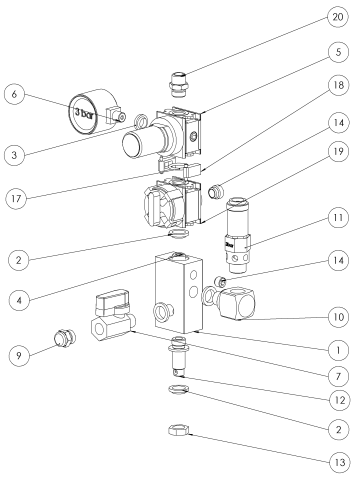



*Drucklufteinlassarmatur Signierausführung / Air-inlet-mounting marking-version*

*für Behältertyp / for vessel-type*
*MDG 1 – MDG 4*




*für Behältertyp / for vessel-type*
*MDG 8 & LDG 5 – LDG 20*



| Pos./ Item | Bezeichnung/ Description | Artikelnummer/ Ident-No. |
|---|---|---|
| 1 | **Zwischenblock / Distributor-block** | V 35 450 00 001 |
| 2 | **Dichtung / Seal 1/4"** | V 09 001 54 000 |
| 3 | **Dichtung / Seal 1/8“** | V 09 001 57 000 |
| 4 | **Gewindenippel / Thread-nipple** | V 44 220 05 001 |
| 5 | **Druckregler (für Behälter) / Air-regulator (for vessel)** | |
| | Regelbereich / Adjustment-range 0,1 – 3,0 bar | V 35 450 00 000 |
| | Regelbereich / Adjustment-range 0,5 – 10,0 bar | V 35 451 00 000 |
| | Reparatursatz f. Druckregler / Repairing-set for pressure-regulator V 35 450 00 000 | Bitte sprechen Sie unsere Vertriebsabteilung an / please contact our sales-department |
| | Reparatursatz f. Druckregler / Repairing-set for pressure-regulator V 35 451 00 000 | |
| 6 | **Manometer (Behälterdruck) / Pressure-gauge (vessel-pressure)** | |
| | Ø 40 mm, Anschluss/Connection 1/8“ 1) | |
| | Ausführung für Behälter-Betriebsdruck / Version for vessel working pressure: 3,0 bar | V 12 140 04 304 |
| | Ausführung für Behälter-Betriebsdruck / Version for vessel working pressure: 4,0 bar | V 12 140 06 404 |
| | Ausführung für Behälter-Betriebsdruck / Version for vessel working pressure: 6,0 bar | V 12 140 10 604 |
| | Ausführung für Behälter-Betriebsdruck / Version for vessel working pressure: 10,0 bar | V 12 140 16 004 |
| 7 | **Kugelhahn / Ball-valve 1/4"** | V 03 200 20 009 |
| 8 | **Kugelhahn / Ball-valve 1/4"** | V 03 200 20 000 |
| 9 | **Schalldämpfer / Silencer** | V 35 400 00 134 |
| 10 | **Aufnahme Sicherheitsventil / Adapter safety-valve** | |
| | Ausführung für Sicherheitsventil / Version for safety-valve *M16x1,5* | V 35 400 00 104 |
| | Ausführung für Sicherheitsventil / Version for safety-valve *G1/8”* | V 35 450 00 104 |
| 11 | **Sicherheitsventil bauteilgeprüft / Safety-valve type-approved** 1) | |
| | Messing / brass; Anschluss/Connection *M16x1,5*; D/G; DN8 | |
| | Ausführung für Behälter-Betriebsdruck / Version for vessel working pressure: 3,0 bar | V 11 001 60 304 |
| | Ausführung für Behälter-Betriebsdruck / Version for vessel working pressure: 4,0 bar | V 11 001 60 404 |
| | Ausführung für Behälter-Betriebsdruck / Version for vessel working pressure: 6,0 bar | V 11 001 60 604 |
| | Ausführung für Behälter-Betriebsdruck / Version for vessel working pressure: 10,0 bar | V 11 001 61 004 |
| | **Sicherheitsventil / Safety-valve** 1) | |
| | Messing / brass; Anschluss/Connection *G1/8”;* D/G; DN6 | |
| | Ausführung für Behälter-Betriebsdruck / Version for vessel working pressure: 3,0 bar | V 11 001 80 304 |
| | Ausführung für Behälter-Betriebsdruck / Version for vessel working pressure: 4,0 bar | V 11 001 80 404 |
| | Ausführung für Behälter-Betriebsdruck / Version for vessel working pressure: 6,0 bar | V 11 001 80 604 |
| 12 | **Behälteranschlussnippel / Vessel-connection-nipple** | |
| | Ausführung Messing / Version brass | V 35 450 00 133 |
| | Ausführung Edelstahl / Version stainless-steel | V 35 450 00 134 |
| 13 | **Kontermutter / Lock-nut** | |
| | Ausführung Messing / Version brass | V 35 450 00 144 |
| | Ausführung Edelstahl / Version stainless-steel | V 35 450 00 143 |
| 14 | **Verschluss-Stopfen / Plug** | |
| | Ausführung / Version G1/8“ | V 35 450 00 164 |
| | Ausführung / Version G1/4“ | V 35 450 00 154 |
| 15 | **Druckregler (für 2. Verbraucher) / Air-regulator (for 2. load)** | |
| | Regelbereich / Adjustment-range 0,2 – 6,0 bar | V 35 452 00 000 |
| 16 | **Manometer f. 2.-Regler / Pressure-gauge for 2.-regulator** | |
| | Ø 40 mm, Anschluss/Connection 1/8“ | V 12 140 06 004 |
| 17-18 | **Verbindungsbausatz kompl. / Clamp-connection-kit compl.** | V 35 450 00 003 |
| 19 | **Absperrhahn / Gate-valve** | V 35 450 00 005 |
| 20 | **Doppelnippel / Double-nipple** | V 00 101 01 000 |
| 21 | **Kreuzstück / Crosspiece** | X 00 000 01 161 |

Bemerkungen / Remarks:

1) Die Armaturenausführung ist entsprechend dem max. zulässigen Betriebsdruck des Behälters auszuwählen/ The armature version is to be selected according to the max. allowable working pressure of the vessel.

**Zubehör Materialdruckgefäße Typenreihe MDG (optional)**
Accessories material-pressure-vessel type MDG (optionally)

| | **Bezeichnung/ Description** | **Artikelnummer/ Ident-No.** |
|---|---|---|
| | **Deckeldichtung / Cover-seal** | |
| | Behältertyp / Vessel-type MDG 1 - MDG 3 Version EPDM | V 09 103 13 002 |
| | Behältertyp / Vessel-type MDG 1 - MDG 3 Version FEP | V 09 103 13 004 |
| | Behältertyp / Vessel-type MDG 4 Version EPDM | V 09 102 82 002 |
| | Behältertyp / Vessel-type MDG 4 Version FEP | V 09 102 82 004 |
| | **Drucklufteinlassarmatur kpl. mit 2. Regler für Verbraucher / Air-inlet-mounting with pressure-regulator for 2. consumer** | |
| | Ausführung für Behälter-Betriebsdruck / Version for vessel-working-pressure: 3,0 bar | V 35 452 00 303 |
| | Ausführung für Behälter-Betriebsdruck / Version for vessel-working-pressure: 4,0 bar | V 35 452 00 403 |
| | Ausführung für Behälter-Betriebsdruck / Version for vessel-working-pressure: 6,0 bar | V 35 452 00 603 |
| | **Materialverteilerblock / Material-distributor-block Edelstahl / stainless-steel** | |
| | zum Anschluss von 2 Mat.-Entnahmehähnen / for connection of 2 material-outlett-ball-valves | V 44 220 09 133 |
| | **Ansaugsieb kompl. mit Befest.-Material / Suction-sieve compl. Kunststoff/Edelstahl / plastics/stainless-steel** | |
| | Maschenweite / mesh-width 1,3mm | V 44 220 09 570 |
| | **Einsatzeimer / Bucket** | |
| | Behältertyp / Vessel-type MDG 4 verzinkt / galvanized Inhalt / Capacity 2,3 Ltr. | V 43 000 40 002 |
| | Behältertyp / Vessel-type MDG 4 Edelstahl / stainless-steel Inhalt / Capacity 2,3 Ltr. | V 43 000 40 003 |
| | **Handrührwerk / Manual-agitator** | |
| | Behältertyp / Vessel-type MDG 1 Ausf. Edelstahl / Version stainless-steel | V 44 220 30 013 |
| | Behältertyp / Vessel-type MDG 2 Ausf. Edelstahl / Version stainless-steel | V 44 220 30 023 |
| | Behältertyp / Vessel-type MDG 3 Ausf. Edelstahl / Version stainless-steel | V 44 220 30 033 |
| | Behältertyp / Vessel-type MDG 4 Ausf. verzinkt / Version galvanized | V 44 220 30 042 |
| | Behältertyp / Vessel-type MDG 4 Ausf. Edelstahl / Version stainless-steel | V 44 220 30 043 |
| | **Druckluftgetrieberührwerk ölfrei ex-geschützt / Pneumatic-agitator non lubricated ex-proved** | |
| | Leistung/Performance: 0,36 kW, max. 200 1/min. | |
| | Ex-Kennzeichnung/-Designation: II 1/2 G c T4 | |
| | (Bei Bedarf an ölgeschmierten Rührwerken sprechen Sie bitte unsere Vertriebsabteilung an/ If oil-lubricated agitators are required, please contact our selling-department) | |
| | Behältertyp / Vessel-type MDG 1 Ausf. Edelstahl / Version stainless-steel | V 44 220 40 013 |
| | Behältertyp / Vessel-type MDG 2 Ausf. Edelstahl / Version stainless-steel | V 44 220 40 023 |
| | Behältertyp / Vessel-type MDG 3 Ausf. Edelstahl / Version stainless-steel | V 44 220 40 033 |
| | Behältertyp / Vessel-type MDG 4 Ausf. verzinkt / Version galvanized | V 44 220 40 042 |
| | Behältertyp / Vessel-type MDG 4 Ausf. Edelstahl / Version stainless-steel | V 44 220 40 043 |

**wichtiger Hinweis: Für die nachträgliche Ausrüstung mit Rührwerken muß der Behälterdeckel ausgetauscht werden! Sprechen Sie hierzu bitte unsere Vetriebsabteilung an / In case of re-fitting with agitators, the cover-plate of the vessel must to be exchange! For this, please contact our selling-department.**

| | **Schläuche (Meterware) & Schlauchzubehör / Hoses (cut goods) & hose-accessories** | |
|---|---|---|
| | **Druckluftschlauch 8 mm innen – elektrisch leitfähig / Compressed-air-hose** | V 20 008 30 144 |
| | Schlauchanschluß Messing 8 mm für dto. / hose-connection brass 8 mm | V 00 101 02 000 |
| | Überwurfmutter 1/4“ für dto. / cap-nut 1/4" | V 00 101 03 000 |
| | Schlauchklemme 13/15 für dto. / hose-clip 13/15 | V 70 131 50 000 |
| | **Materialschlauch 8 mm innen – 8 x 3,5 grün / Material-hose 8 mm inside** | V 20 009 35 644 |
| | Schlauchanschluß Edelstahl 8 mm für dto. / hose-connection stainless-steel 8 mm | V 00 101 02 003 |
| | Schlauchanschluß Messing 8 mm für dto. / hose-connection brass 8 mm | V 00 101 02 000 |
| | Überwurfmutter 1/4“ für dto. / cap-nut 1/4" | V 00 101 03 000 |
| | Schlauchklemme 13/15 für dto. / hose-clip 13/15 | V 70 131 50 000 |
| | **Materialschlauch 6 mm innen – FEP / Material-hose 6 mm inside** | V 20 006 32 100 |
| | Schlauchanschluß Edelstahl 6 mm für dto. / hose-connection stainless-steel 6 mm | V 00 101 63 003 |
| | Überwurfmutter 1/4“ für dto. / cap-nut 1/4" | V 00 101 03 000 |
| | Schlauchklemme 11/13 für dto. / hose-clip 11/13 | V 70 111 30 000 |
| | **Kleberschlauch 8 mm innen – Synflex / Adhesive-hose 8 mm inside** | V 08 041 00 010 |
| | Schlauchanschluß Edelstahl 8 mm für dto. / hose-connection stainless steel 8 mm | V 00 101 02 003 |
| | Schlauchanschluß Messing 8 mm für dto. / hose-connection brass 8 mm | V 00 101 02 000 |
| | Überwurfmutter 1/4“ für dto. / cap-nut 1/4" | V 00 101 03 000 |
| | Schlauchklemme 9/11 für dto. / hose-clip 9/11 | V 70 091 10 000 |