INSTRUCTION MANUAL

# LW 450 D

## DIESEL

-

## BREATHING AIR COMPRESSOR

LENHARDT & WAGNER GMBH

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| **Technical Data** | **LW 450 D** |
|---|---|
| **Delivery Capacity:** | 450 l/min |
| **Max. Pressure:** | 350 bar |
| **RPM Compressor:** | 1,100 $min^{-1}$ |
| **No of Pressure Stages:** | 3 |
| **Cylinder Bore 1st Stage::** | Ø 95 mm |
| **Cylinder Bore 2nd Stage:** | Ø 42 mm |
| **Cylinder Bore 3rd Stage:** | Ø 18 mm |
| **Medium:** | Air |
| **Intake Pressure:** | atmospheric |
| **Oil Pressure:** | +2.0 bar |
| **Oil Capacity:** | 2.2 ltr |
| **Intake Temperature:** | 0 < +45°C |
| **Ambient Temperature:** | +5 < +45°C |
| **Cooling Air Requirement:** | > 3,300 m³/h |
| **Drive Motor** | Hatz Diesel 1 D 81 C |
| **Protection Class Drive Motor** | IP 54 |
| **Motor Power / Capacity:** | 10.5 kW / 667cc |
| **RPM Motor:** | 3,600 $min^{-1}$ |
| Engine oil capacity: | 1.9 litre *incl. oil filter* |
| Dimensions: | length: 1,280 mm<br>height: 100 mm<br>width: 740 mm<br>weight: 430 kg |

| | |
|---|---|
| Capacity Filter Housing: | 1.7 ltr. |

# S A F E T Y  P R E C A U T I O N S

## General Notice

This instruction manual contains the operation and maintenance procedures necessary to safely run your L&W compressor.
We strongly recommend to read this manual thoroughly prior operation and to follow all the safety precautions precisely.

Damage resulting from any deviation from these instructions is excluded from warranty and liability for this product.
Be sure to pay attention to the following points:

- Fill only tanks with a valid hydrostatic test date
- Never exceed the working-pressure rating indicated on the tank
- Carry out proper maintenance on the compressor and filtration system
- Care must be taken to avoid the intake of contaminated air in to the compressor
- Do not exceed maximum operating temperatures

## Safety Precautions

- Read the operation manual of your compressor carefully
- Allow only qualified personnel to run the compressor
- Do not place any objects on compressor while in operation
- Make sure no person or object can accidentally touch any moving parts while running
- Take care that the intake-air is pure and free of toxic gases
- All work on compressor must be carried out while compressor is disconnected for the power supply and depressurized
- Check unit regularly for air- & oil leaks
- Never weld damaged high-pressure tubes
- Filling-hoses must be in perfect condition; special attention should be paid to the connecting fittings
- Do not touch any hot compressor / engine parts while doing maintenance work as these may cause injury by burning. Wait until unit has cooled down.

## Method of Operation

Air comes through a micro filter into the first stage, is compressed and leaves trough the heat exchanger into a water /oil separator.
A short pipe leads the air into the second cylinder and is further compressed, leaving again through a heat exchanger and the second water /oil separator and then compressed in the third stage to the final pressure.
The air then goes through the after cooler and into the mole carbon filter.
The purified air goes through a safety valve and into the pressure maintaining valve, there to the air manifold and filling hoses or, if required, into an external filling panel.

## Drive Engine

The drive engine is a sound isolated 10.5 kW Hatz Diesel (Type: 1D81C) It is mounted on special rubber engine mountings to a 2-piece base plate.

For maintenance and operation please also refer to the original Hatz instruction manual


**Hatz Diesel Engine Type 1D81C & Battery**

## V-Belt Tension

A correctly adjusted V-belt does just not slip when starting the compressor.
To adjust the V-belt tension loose the four mounting screws and adjust the V-belt by means of the tension screw.
Over tightening of the V-belt can cause damage to the electric motor and compressor bearings.

## Installation

Don’t place compressor closer than 0.5 m to any wall and ensure good ventilation.
**NOTE: Pure air intake is very important!**

## Filling process

Fill only air tanks which are:

-suitable for final pressure.
-hydro static tested (check last testing date).

The automatic switch off, or safety valve, has to be checked before tanks can be filled:

- Close filling valves.
- Start compressor by ignition key and drive to maximum pressure.
The compressor should automatically switch back to idle speed, to prevent overcharging
(if failing to do so, the faulty parts have to be replaced before proceeding).
- Connect tanks to compressor. Filling valve and tank are still closed.
- First slowly open filling valve.
- Carefully open tank valve.
- Engine will switch back to max. revs if pressure falls below 280 bar.
- The compressor will automatically return to idle speed, once the tanks are filled with max. pressure.
- First close tank valve.
- Close filling valve.
- Release pressure between tank and filling valve by rotating the vent screw (hissing sound can be heard.
- Disconnect tank from compressor.
- Turn off compressor by ignition key.

## Automatic Condensation Dump System

The L&W 450 D Diesel compressor comes as standard with an auto dump system. Solenoids are open (and drain all water separators) when the compressors runs at idle speed. If the filling process takes longer than 20 minutes the blue button on the dash panel has to be pushed for about 5 seconds.

## Intake Filter

A micro filter cartridge is used as an air intake filter. We recommend that the filter cartridge should be replaced after 60 to 100 working hours.
A dirty, contaminated filter restricts the airflow, reduces the compressor’s capacity and causes overheating.

## Cylinder Heads and Valves

Inlet and outlet valves are located in the cylinder heads. The inlet valve opens on the down stroke. The outlet valve opens on the upstroke. The valves should be replaced after 1,000 working hours due to normal wear and tear. To replace the valves the cylinder heads have to be removed. All three valves are combinated valves. Inlet and outlet valves form one unit. The first and second stage valves are plate valves. The third stage valve uses a spring operated piston in a brass cylinder. This valve sits loose with an O-ring seal in the cylinder head. To change valves no special tools are required.

## Safety Valves

Every compression stage features a separate safety valve to protect the compressor unit from overpressure.

LW 450 D/E/ES safety valves are adjusted to the following relief pressures:

**1st Stage: 8 bar**
**2nd Stage: 50 bar**
**3rd Stage: final pressure**

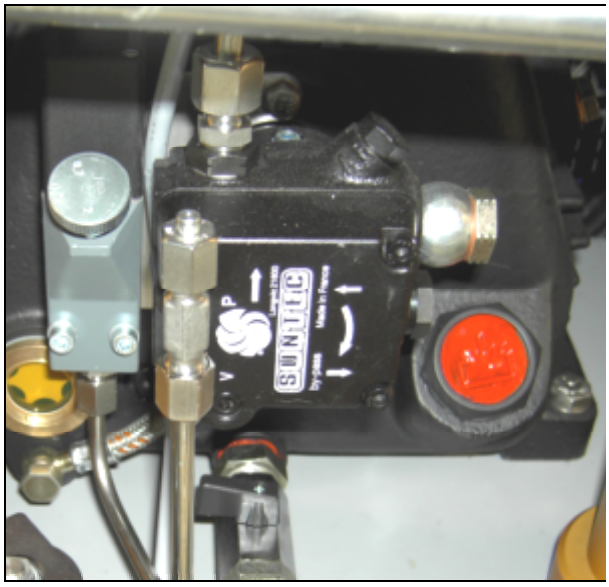
If a safety valve starts leaking, this indicates problems with either inlet or outlet valve of the next following compression stage.

**NOTE: Faulty safety valves should always be replaced!**

## Lubrication

The crankshaft is lubricated by an oil slinger.
1st and 2nd Stages are lubricated by spray oil.
The 3rd Stage is lubricated by a mechanical oil pump.

2.2 litre of synthetic oil (order no. L&W 000001) is required for an oil change.
**NOTE:** The oil level never should be lower than the red marking on the oil level indicator glass (located on the left hand side of the compressor crankcase).



**Oil Pressure Switch & Oil Pump**

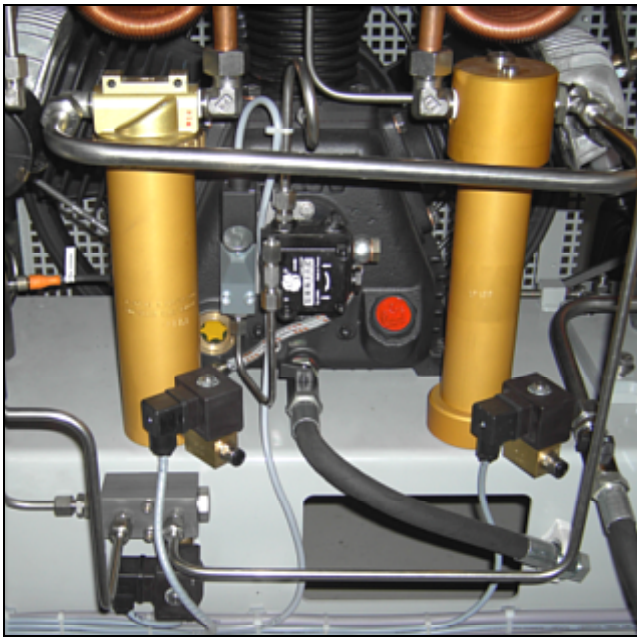
## Starting the compressor for the first time

- Place the compressor in a distance of at least 50 cm to any walls (Ambient temperature max. +45°C).
- Make sure your location is properly vented due to exhaust gases
- Check oil level on Hatz engine.
- Check fuel level
- Check battery fluid level and connections
- Check oil level on compressor.
- Check if air filter cartridge is in place.
- Make sure all filling valves are closed.
- Position speed switch to **0** (idle speed).
- Start engine by ignition key.
- Turn speed switch to **1** (full speed) after about 5 seconds (depending on air temperature).
- Watch oil pressure warning lamp.
- Run compressor to max. pressure.
- Check if safety valve opens at max. pressure.
- Check compressor unit for air leaks.
- Check auto dump valves for function by pushing the blue switch on the dash panel.
- Turn off compressor by start switch.
- Release pressure by filling valves.

## Oil / water separator

There are oil / water separators (condensation separators) fitted after every compression stage.
These were automatically drained every 15 minutes by solenoid valves (auto dumps).
L&W condensation separators are maintenance free.
However, we do recommend, to have them cleaned every 200 working hours.

Also check condition of the O-rings and replace them if necessary.

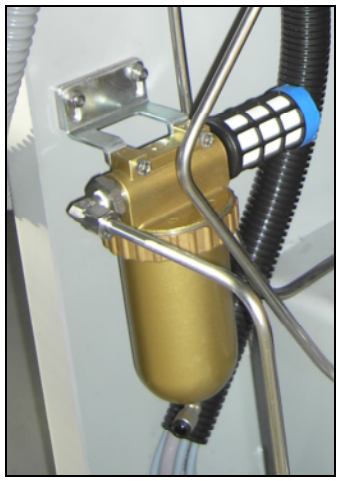


**1st & 2nd Stage Water Separators**

## Auto Drain System

Condensate will be separated after every stage of compression. All three separators are fitted with solenoid valves which are controlled by an electric timer.
The timer is located in the electro box and activates the dump valves every 15 minutes to release the condensate through plastic hoses.

We recommend to use of a 20 litre container to collect the liquid condensate.
It can then be deposed of like discarded oil.
The drain noise is kept to a minimum with a silencer.



**Final Stage Water Separator with Silencer**

## Operation Panel

**1) Start switch**

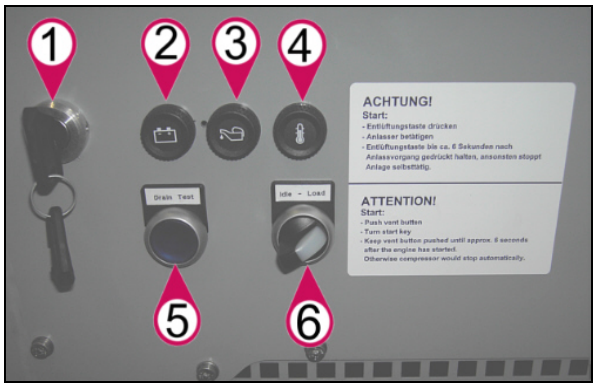
**2) Battery load indication lamp**

**3) Oil pressure gauge for diesel engine**

**4) Temperature control lamp (diesel engine)**

**5) Condensate drain test-button**

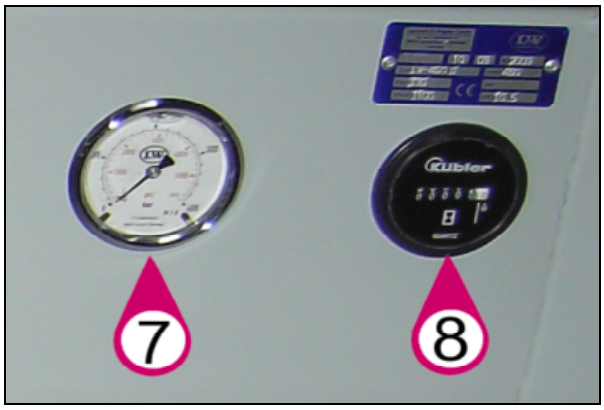
**6) Selector switch (idle / load)**




**Operating panel LW 450 D**

**7) Pressure gauge**

**8) Hours counter**



## Safety Switch (Cover Lid)

**LW 450 D compressors are equipped with a cover lid safety switch.**

**It cuts-off the drive engine and /or prevents starting the compressor unit when the cover lid is being opened / open.**

**Safety Switch Cover Lid LW 450 D**

## Oil Pump Service

The oil pump has an integrated plastic filter which needs to be cleaned every 1,000 working hours

***How to clean the oil filter:***

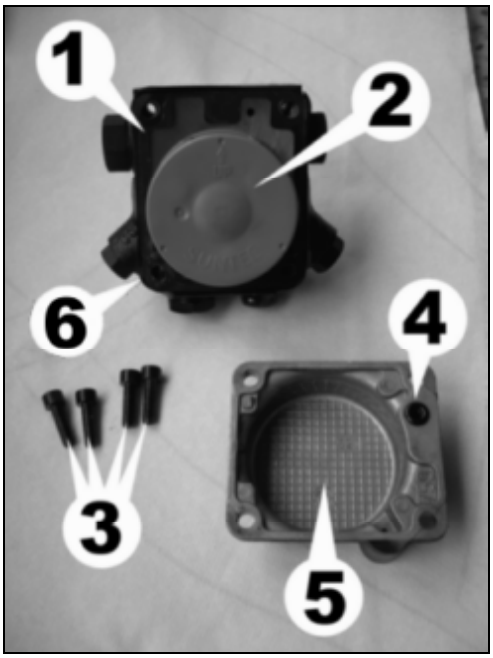
- Remove 4 bolts securing the oil pump cover *(see picture)*
- Remove oil pump cover
- Remove blue plastic oil sieve
- Clean oil sieve with compressed air
- Check if oil sieve is undamaged *(replace if necessary)*
- Clean sealing surfaces of main housing and cover
- Check cover gasket *(replace if necessary)*
- Check O-ring *(replace if necessary)*
- Place gasket and O-ring on top cover
- Place oil sieve on main housing *(make sure* **UP** *marking is facing upwards)*
- Reassemble oil pump and fasten cover bolts


**Remove 4 bolts of top cover**

**Oil Sieve**

***Parts of Oil Pump:***

***1) Oil Pump Main Housing***
***2) Oil Sieve (blue coloured plastic)***
***3) Cover bolts***
***4) O-Ring***
***5) Oil Pump Cover***
6) ***Cover Gasket***



## Pressure maintaining and non-return valve

*The combined pressure maintaining / non-return valve is located in the system directly after the final filter housing*

*Pressure Maintaining Valve*

### Pressure maintaining valve

The pressure maintaining valve serves to keep the pressure in the final filter housing at a minimum of 150 to 180 bar. This high pressure creates more condensation in the separator/housing that can be mechanically removed (opening the drain valve) before the air is finally purified in the final filter, thus extending the life of the filter cartridge.

When the compressor is started, the pressure will build up in each stage as the compressor runs. The pressure in the final filter housing will increase until the pressure maintaining valve set pressure is reached. As a result of this function, the filling pressure gauge will not show any pressure for approx 1 min after the compressor is started and no air will flow out of the filling valve if opened.

Once the pressure maintaining valve opens, the pressure gauge will respond by climbing quite rapidly (within a few seconds) to the set pressure of the pressure maintaining valve (default 150 to 180 bar).

## Adjusting the pressure maintaining valve:

- Open the filling valve to vent the system completely, close the filling valve *(Pressure gauge reads 0 bar)*
- Start the compressor
- Monitor the pressure gauge
- The valve will open and the pressure the gauge climbs to quickly to the set pressure, this should be 150 – 180 bar
- If the pressure setting is outside this valve, adjust the pressure maintaining valve as follows:

**Increase the pressure setting:**

- Stop the compressor and open the drain valves
- Open the filling valve to vent the system after the pressure maintaining valve *(Pressure gauge reads 0 bar)*
- Loosen the locking screw on the pressure maintain valve
- Using a suitable tool, screw the valve setting screw clockwise to increase the spring tension
- Start the compressor and check the pressure setting, adjust as necessary
- Re-tighten the locking screw
- Check the pressure maintaining opening pressure once again

**Decrease the pressure setting:**

- Stop the compressor and open the drain valves
- Open the filling valve to vent the system after the pressure maintaining valve *(Pressure gauge reads 0 bar)*
- Loosen the locking screw on the pressure maintain valve
- Using a suitable tool, screw the valve setting screw anti-clockwise to decrease the spring tension
- Start the compressor and check the pressure setting, adjust as necessary
- Re-tighten the locking screw
- Check the pressure maintaining opening pressure once again

***Warning:***

If the pressure maintaining valve is set at a higher pressure than the maximum working pressure, the final safety valve will blow off before the pressure maintaining valve opens, the pressure gauge will read 0 bar!
After repair work where the pressure maintaining valve is not yet adjusted, the basic setting is the setting screw approx 3 turns in to the housing.

## Non-return valve

The non-return valve is located in the system after the pressure maintaining valve and prevent air from flowing back from the filling lines into the final filter housing/compressor block. The non-return valve is operating correctly if the pressure gauge on the filling valve remains constant when the drain valves on the compressor are opened.

## V-Belt

The compressor block is driven by the engine via V-belt.
Check V-belt condition / tension at least once a month.

*In case of high V-belt wear, check the following:*

- V-belt tension
- Check pulley grooves for marks / scratches / damage
- Check if pulley grooves are free from oil / grease

### *How to tension the V-belt*

Attention: Do not work on hot compressors / engines

- Stop compressor and wait until it has cooled down
- Slightly loose nuts of motor flange *(use 19mm spanner / socket)*
- Adjust motor tensioning bolt until correct V-belt tension is achieved
  *(located next to the motor flange)*
  - use 19mm spanner / socket
- Tighten nuts of motor flange
- Check tension of V-belt *(readjust if necessary)*

---

**ATTENTION:**

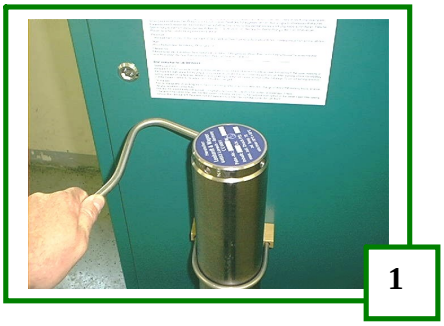
Insufficient V-belt tension leads to higher vibrations and increases the noise level of the compressor unit.
Replace faulty V-belts immediately.
Always use V-belts of right length / specification.
Make sure V-belt groove is free of oil / moisture and undamaged

# FILTERCHANGE
# Stationary L&W Compressors

## Filter cartridge change

- Unscrew the filter housing cap anti-clockwise, first with the special cartridge key and later by hand (1)
- Place the other end of the cartridge key in the filter cartridge in the filter housing (2)
- Unscrew the filter cartridge anti-clockwise and pull the cartridge out of the housing (3)
- Check O-ring for wear and grease thread of top cap
- Open the sealing of the new filter cartridge and use the cartridge key to place it in the filter housing (3)
- Screw in the new filter cartridge clockwise with the cartridge key hand tight (2)
- Refit the cap of the filter housing clockwise, first by hand and than by the filter key, hand tight (1)
- Close the drain valve of the separator / filter housing if only the hand operated drain is mounted.

The filter cartridge replacement is now completed, ensure that the saturated filter cartridge is disposed of correctly at an approved waste point.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# L&W PURACON
# Humidity Controller

## Contents




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## *For your safety*

For correct, effective and safe use of the equipment and to avoid hazards it is essential to read and adhere to the following recommendations.

## Strictly follow the instructions for use

Any use of the equipment requires full understanding and strict adherance of these instructions. The apparatus is only to be used for purposes specified here. Attention is drawn to the specific instructions for use of compressor and/or compressed air acoordingly.

## Maintenance

The apparatus must be inspected, calibrated and serviced by specialists at regular intervals (and a record kept). We recommend obtaining a service contract with our authorized Service. Repair or calibration should only be carried out by authorized Service technicians

## Liability for correct function or damage

The liability for the correct function of apparatus is irrevocably transferred to the owner or operator to the extent that if the equipment has been serviced or repaired by personnel not employed or authorised by Lenhardt & Wagner or when the equipment was used in a manner incompatible with the intended use. Lenhardt & Wagner cannot be held responsible for damage caused by non-compliance with the recommendations given above. The warranty and liability provisions of the terms of sale and delivery of Lenhardt & Wagner are affected by the recommendations given above.

Lenhardt & Wagner GmbH

## *Intended Use*

The instrument is for monitoring the humidity of air/gas in a filling system such as a breathing air filling station using high pressure compressors.

Correctly installed and connected, the instrument monitors and displays the moisture content in a high pressure pipeline. The instrument can be used as a visual reference for the state of purification filters, as an audio alarm for exceeding pre-set moisture levels, or as a safety device for cutting out off a compressor when a pre-set moisture level is exceeded.

## *Regulations*

Regulations for the quality of breathing are relavant, as are regulations for the installation and operation of high pressure gas installations and cylinders. In particular, the EN 12021 stipulates a limit of 25 mg/m³ moisture in breathing air as measured from a compressor.

## *Description*

The instrument consists of the following components which make up the standard scope of delivery:

## Display unit

The display unit consists of a housing with an LCD display, 3 quick reference LEDs, a mains power cable, an orange sensor cable and two button on the front for Mode and Rest.


The orange sensor cable should only be connected / disconnected when the power supply is off (unplugged). Cables up to 30m length are available as accessories.

The power supply cable is for use with a standard 230V CE socket with Earth. Other voltages available on request.

The LCD display shows the present moisture level in mg/m³ and/or self test and alarm messages.

The 3 quick refernce LEDs give a visual indication of the moisture level (factory settings):

- Green <20 mg/m³
- Yellow 21-25 mg/m³
- Red >25 mg/m³ (cut-off or alarm relay is activated)

## Sensor housing

The cylindrical sensor housing consists of two halves screwed into each other and sealed with an O ring. The sensor housing contains the highly sensitive sensor that monitors the moisture content. If a filter is not changed when the display indicates, then water droplets may enter the sensor housing causing faults in the system.

## Blind plug

The stainless steel blind plug that is sealed with an o-ring is used to block the lower housing body when the upper body is removed for repair/service. This ensures that the filling station can still function without the humidity controller.

## Instructions for use

These instruction form part of the scope of delivery

### *Installation*

***Warning:*** Before any work is carried out, isolate the power supply to prevent injury.

The puracon may be already installed in a compressor or a filling station, or may need to be installed in an existing system as follows:

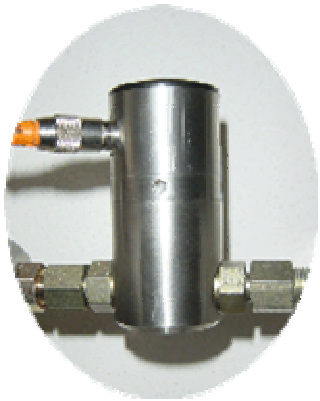
## Display

Remove the two plastic covers from the front of the display, unscrew the four screws which join the front cover and the rear cover.

When the display is opened, the two cables can be unplugged from the printed circuit board (PCB) and the front cover including PCB placed in a safe place.

The rear cover can now be mounted onto a wall or panel with 4 screws (not included). The two cables are located on the left hand side.

Plug in the cables onto the PCB without using excessive force and refit the front cover and the two plastic strips.



## *Sensor*

The sensor housing should be vertically mounted in the high pressure pipeline after a non return/pressure maintaining valve. A non return valve is recommended in the outlet of the housing towards the filling panel. The connections should be made with suitable ermeto connections by a qualified technician. There is no particular direction of flow.

Care is to be taken that no burrs or debris remains in the pipeline.

## Sensor cable

The sensor cable plug has a guide inside for the sensor housing socket to prevent incorrect connections. Do not use excessive force when plugging the cable in, and screw down the plug finger tight.

***Warning*:** Do not connect/disconnect the sensor cable when the power supply is on.

## Power supply

If the Puracon is to be connected to a standard electric socket, simply plug in the CE plug into an earthed socket. The standard units require 210 – 250V AC, 40-60 Hz. Other voltages available on request.

If the Puracon is to be connected into a compressor´s power supply, the cable in the electrical distibution box of the compressor is to be shielded, the shielding can be connected to a suitable metal connection. A qualified electrician is recommended for carrying out this work.

## Electrical connections

1 PE Earth green/yellow cable)
2 L1 240V AC or +12V / +24V (special version)
3 Neutral or Return in -12V / -24V (special version)
4 Free
5 Off (Relay switched. Motor off)
6 On (Relay switched, motor can be started) Relay voltage <40V AC or <2V DC
7 Common connection

## *Operation*

When the power supply is turned on, or when the compressor is turned on, the puracon will start a self test sequence.

## Language selection

Press Reset

Press and hold Mode, press Reset

When a Peep is heard and the display goes blank, release Mode

**"Language**" will appear in the display

After hearing a peep, press Mode and keep it pressed

When the desired language appears in the display, release Mode

A long peep signal the end of the selection.

## Display

The display will show the actual humidity in the system and display the value in mg/m³ on the LCD accompanied by an LED as follows.

After the compressor has been standing for some time or after a filter change, there will be remaining moisture in the system that will be displayed as a value higher than 20 mg/m³ with a yellow or red LED. When the compressor air starts to flow through the system, the remaining moisture will be flushed out of the system and the moisture level will reduce.

## Errors

If and error is shown in the display, the unit can be re-set by pressing and then releasing the Reset button. The system will restart and carry out a self test. Pressing Reset at any time will return the unit to the normal monitoring mode.

The following errors may appear in the display:

Error 1 Mositure, defective or contaminated sensor

Error 2 Mositure, value outside normal parameters or out of calibration

Error 3 -

Error 4 Default is missing, data loss in memory, cross connection

Error 5 Senasor cable is defective or broken, no monitoring

If this error remains, replace the sensor cable.

Error 10 Voltage for sensor supply <7 volt> 10 volt

Error 11 Voltage for processor supply <4.7 volt>5.3 volt

Error 12 12V DC Supply <10 volt> 14 volt

Error 13 15V AC/DC transformer <13 volt> 17 volt

If the error remains on the display after reset, then the unit must be returned to an authorised repair facility.

## *Sensor calibration*

The sensor is subject to a natural aging process with an expected life of approx. 6 years. The sensor should be calibrated every 2 years. This calibration requirement is not necessary if independent air/gas quality assurance measures are taken (at least once a year).

## *Removal of sensor and display for return*

For the regular calibration or if the unit has a defect and must be sent back for repair, the unit can be dismantled as follows:

## Sensor cable

Ensure the power supply is isolated and unplug the sensor cable from the sensor housing.

## Sensor housing

Ensure that the sensor hosuing is vented and pressure free. The upper part of the sensor housing can be unscrewed from the lower housing using a suitable “C” spanner.

Fit the blanking plug into the lower housing to seal the system and allow continued use (without humidity monitoring).

## Display

Remove the two plastic strips from the front of the display, remove the 4 screws and pull the front display half away from the rear halve carefully.

Unplug the two (or three) cables from the PCB.

Return the front half of the display and the upper sensor unit to an authorised repair facility or to a Lenhardt & Wagner facility. It is not necessary to include the cables with the returned unit.

## *Technical data*

### Display

| | |
|---|---|
| Dimensions (L x W x H): | 120 x 120 x 60 mm |
| Installation dimensions: | 150 x 120 x 60 mm |
| Weight | approx. 800 g |
| Voltage (standard unit) | 210 - 250 V AC 6VA |
| Frequency | 40 - 60Hz |
| Protection class | IP65 |
| Relay | <40V DC/<2A DC |

### Sensor

| | |
|---|---|
| Dimensions ( L x Ø): | 95 x 45 mm |
| Installation dimensions: | 95 x 100 mm |
| Weight: | approx. 800 g |
| Maximum pressure: | 330bar |
| Protection class: | IP65 |
| Working temperature | +5 - +50°C |

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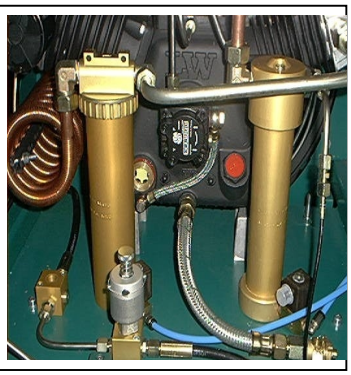
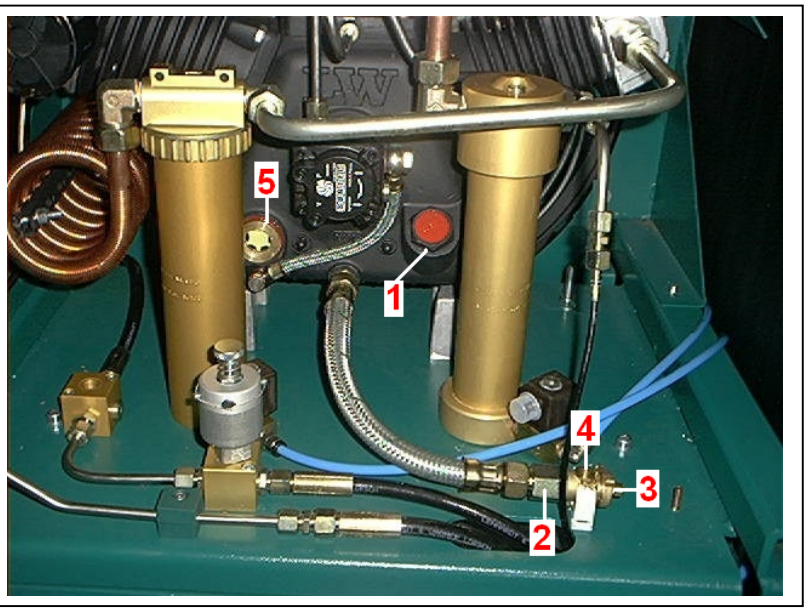
# OIL CHANGE INSTRUCTIONS
# LW 300 / LW 450 / LW 570 / LW 720 / LW 1300

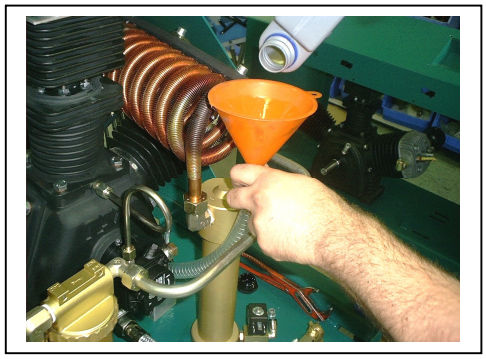


For the periodic oil change, please follow the time schedule of the instruction manual;
Only use original L&W synthetic oil type 9001 (1 ltr bottle, order no.: 000001).

Before changing the oil, be sure the compressor is switched off and cannot be inadvertantly started. Disconnect it from the power supply or by switch off the starter of the gasoline or Diesel engine.

To conduct an oil change, the temperature of the oil must be at least +20°C to allow it to flow easily. In cold climates, the compressor should run first for about 15 minutes, dependent on the ambient temperature.



The picture above is showing the easy way of oil refilling by using a funnel placed on the oil drain hose.

**Oil change**

- Unscrew the filling cap anti-clockwise (1)
- Remove the oil drain hose from its holder (2)
- Unscrew the drain hose cap anti-clockwise (3)
- Hold the drain hose over a container for waste oil and open the drain valve (4)
- Let the oil drain completely, close valve (4), screw on plug (3) and relocate the hose
- Refill the block with original L&W compressor oil (approx. 1.8 ltr) by using a funnel
- The indicator glass (5) should be filled up to the top level - **DO NOT OVERFILL WITH OIL!!**
- Refit the oil filler cap

The oil change is now completed, **ensure the filling cap (1) is securely refitted.**
The schedule in the maintenance manual will indicate the next oil change or the ECC display.
Ensure the waste oil is disposed of correctly at an approved waste oil point.

## Service, Repair and Maintenance

All repair, service and maintenance work is to be carried out when the compressor is stopped, isolated from the power supply and pressure free.
The unit is to be regularly checked for leaks of air/oil, air leaks can be localised using a leak detector or spray

It is recommended that only authorised L&W service technicians carry our repair and service on the bearing of the compressor (crankshaft and connecting rods)

**Conservation / storage of the compressor:**
If the compressor is not to be used for an extended period of time, we recommend the following conservation work is carried out before the storage:

- ✓ Run the compressor at 200 bar for approx ten minutes
  (control the flow with the filling valve to maintain the pressure).
- ✓ Replace oil.
- ✓ Open filling valve(s) and run the compressor for a few minutes.
- ✓ Stop the compressor and open the drain valves.
- ✓ Close the filling valves.
- ✓ Open the final filter housing and lubricate the O-Ring with a food grade grease or silicone grease.
- ✓ Store the compressor in a cool dry place free from dust and contamination. A cover is recommended as long as condensation can be avoided.

- ✓ Fuel Driven Units only: Fill up fuel tank to top level to avoid corrosion.

**De-conservation, commissioning:**
*After the compressor has been stored, the following steps are to be taken:*

- ✓ If the compressor has been stored for more than 12 Months, we recommend replacing the oil before use.
- ✓ Replace the final purification filter.
- ✓ Check oil level.
- ✓ Inspect the condition of the vee belts, replace if necessary
- ✓ Inspect the filling hoses visually for signs of deterioration, replace as necessary.
- ✓ Open the filling valves and run the compressor for approx 10 minutes with the filling valves open.
- ✓ Close the filing valves and allow the compressor to build up to working pressure.
- ✓ Check the correct safety valve setting and/or pressure switch setting (option).
- ✓ Check all connections and pipe work for leaks.

Once the above steps are completed to satisfaction, the unit is ready to use.

MAINTENANCE LIST

# LW 450 D

| Routine Service | Intervals | Qty. | Order No. |
|---|---|---|---|
| Replace filter cartridge | every 33 working hours (@ +20°C) | 1 | 000002 |
| Check oil level | before each day of use | | |
| Oil changes | 1st after 25 working hours<br>2nd after 50 working hours<br>3rd after 200 working hours<br>thereafter every 200 working hours - but at least once a year | 2200 ml | 000001<br><br>(1 litre) |
| Replacing air inlet filter | Depends on degree of pollution - but at least once a year | 1 | 000170 |
| Check V-belt | every 200 working hours | 1 | |
| Replace in- & outlet valves | every 6,000 working hours | 1st stage: 1<br>2nd stage: 1<br>3rd stage: 1 | 000259<br>000256<br>000510 |
| Check pressure maintaining / non-return valve | every 200 working hours | | |
| Check safety devices | at least once a year | | |
| Check pressure pipes for air leaks | every 200 working hours | | |
| Clean pressure pipes | Depends on degree of pollution - but at least once a year | | |
| Check filling hoses for damage | before each use -<br>once a year by an expert | | |
| Replace oil suction hose | every 5,000 working hours | 1 | 003109 |
| Clean sieve of oil pump | every 1,000 working hours | | |
| Replace sintered filter of condensate valve | after 1,000 working hours - thereafter every 5,000 working hours | 1 | 000188 |
| Replace sintered filter of water-separators | every 1,000 working hours | 2<br>1 | 000184<br>000173 |

MAINTENANCE LIST

# LW 450 D

| Routine Service | Intervals | Qty. | Order No. |
|---|---|---|---|
| Clean oil / water-separators and check for corrosion | every 1,000 working hours | | |
| Check connections and fixings for correct torque | after 15 working hours - thereafter every 500 working hours | | |
| Replace 2nd and 3rd stage small end roller bearings | every 4,000 hours | 2 | 003836 |

| Symptom | Problem | Trouble Shooting |
|---|---|---|
| **Final pressure is not reached** | Connections leaking | Re-tighten, clean and/or replace |
| | Final pressure safety valve blows off | Replace |
| | Cooling pipe leaking | Replace |
| | Condensation drain valves | Check tightness, clean and/or replace |
| | Final pressure switch cuts off (option) | Re-set final pressure cut off |
| **Compressor vibrates excessively** | V-Belt tension in sufficient | Tighten V-Belts |
| | Compressor block and/or prime mover mounting screws loose | Re-tighten |
| | Shock absorbing feet worn down | Replace |
| | Uneven surface | Move compressor accordingly |
| **Compressor overheats** | Inlet filter cartridge blocked | Replace |
| | Ambient temperature too high | Improve ambient conditions or run for shorter periods |
| | Cooling air feed/exhaust not sufficient | Adhere to the installation data |
| | Inlet hose too long | Reduce the length and/or increase the diameter |
| | Inlet hose diameter too small | Increase diameter |
| | Compressor turning in the wrong direction | Ensure correct rotation (phase) |
| | Suction/pressure valve blocked | Clean and/or replace |
| **Safety valve blows off** | Suction / pressure valve in the following stage defect | Clean and/or replace |
| | Sinter filter in the following stage blocked | Replace |
| | Safety valve leaks | Replace (do not tamper) |
| **Air tastes of oil** | Molecarbon filter needs replacing | Replace |
| | Incorrect compressor oil | Use only authorised oil type |
| | Non conform type of filter | Replace with correct filter |
| | Cylinders and / or piston rings worn | Replace |
| **Delivery rate too low** | Suction/pressure valve blocked | Clean and/or replace |
| | Cylinder / piston rings worn | Replace |
| | Also see section „final pressure is not reached“ | |
| **Automatic condensation drain not functioning** ***(Option)*** | Solenoids defect | Replace |
| | Cable/wiring defect | Repair |
| | Timer defect | Replace |
| | Sinter filter from pneumatic valve blocked | Replace |
| | Piston in the pneumatic valve blocking | Dismantle pneumatic valve |
| **Automatic condensation drain operates between cycles** | Pilot pressure for pneumatic valve too low | Replace suction/pressure valve / safety valve |
| | Piston seat in the pneumatic valve damaged/contaminated | Clean / Replace |
| | Timer settings incorrect | Set default settings |

| Symptom | Problem | Trouble Shooting |
|---|---|---|
| ***(Option)*** | Timer defective | Replace |
| **Compressor switches off before final pressure is reached** ***(Option)*** | Final pressure switch not properly set | Reset |
| | Pressure maintaining valve set too high | Reset |
| | Fuse/breaker tripped | Refer to the correct fuse ratings for the supply |
| **Filter cartridges times too short** | Pressure maintain valve set too low | Reset to 170 bar |
| | Non conform type of filter | Use only correct filters |
| | Shelf life exceeded | Adhere to date of expiry |
| | Packing damaged and / or filter packing opened too long before use | Store properly and open immediately before use |
| | Ambient temperature too high | Ensure correct and sufficient cooling air feed and exhaust |
| | Cylinder / piston rings worn | Replace |
| **Excessive oil consumption** | Cylinder / piston rings worn | Replace |
| | Incorrect compressor oil | Use only authorised oil type |
| | Operating temperature too high | Adhere to operating parameters |
| | Oil leak in the compressor block | Check relevant components especially shaft seal and replace/re-tighten |

## *Tightening Torques*

| LW 160 E | LW 190 B | LW 225 E V3 | LW 245 B V3 |
|---|---|---|---|
| LW 170 D - *Nautic* | LW 170 E - *Nautic* | LW 200 E - *Nautic* | |

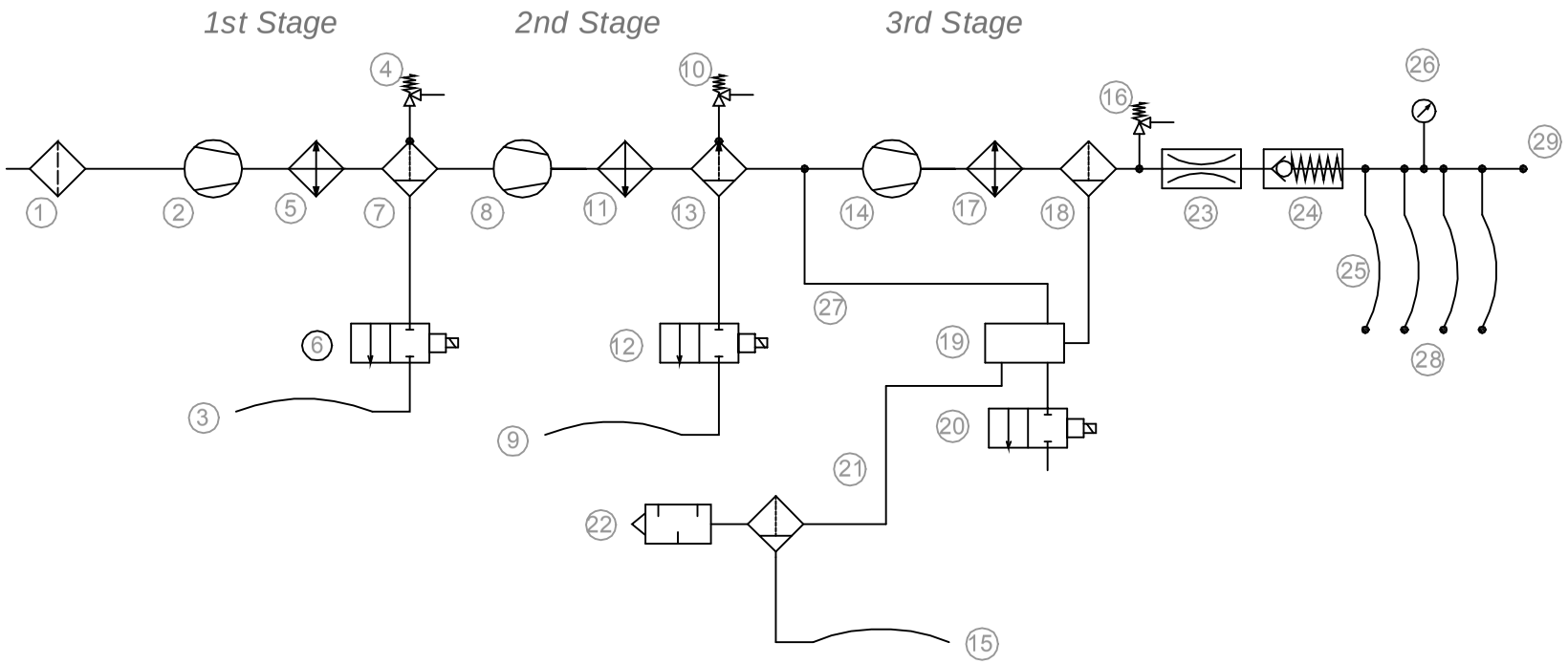
| | | |
|---|---|---|
| **Cylinder Head Bolts** | 1st Stage | 22 - 24 Nm |
| **Cylinder Head Bolts** | 2nd & 3rd Stage | 28 Nm |
| **Nuts M10** | (8.8) | 44 Nm |
| **Cooling Fan Bolts** | (8.8) | 20 Nm |
| **Slider Guide Bolt** | | 10 Nm |

| LW 230 E / ES | LW 280 E / ES |
|---|---|

| | | |
|---|---|---|
| **Cylinder Head Bolts** | 1st Stage | 37.5 Nm |
| **Cylinder Flange Bolts** | 1st Stage | 35 Nm |
| **Cylinder Head Bolts** | 2nd Stage | 30 Nm |
| **Cylinder Head Bolts** | 3rd Stage | 30 Nm |
| **Guide Cylinder Flange Bolts** | 2nd & 3rd Stage | 41 Nm |
| **Block Fixing Bolts M10** | (8.8) | 44 Nm |

| **LW 450 D** / E / ES | LW 570 E / ES |
|---|---|

| | | |
|---|---|---|
| **Cylinder Head Bolts** | 1st Stage | 37.5 Nm |
| **Cylinder Head Bolts** | 2nd Stage | 32 Nm |
| **Cylinder Head Bolts** | 3rd Stage | 32 Nm |
| **Cylinder Head Bolts** | 4th Stage | 32 Nm |
| **Cylinder Flange Bolts** | 1st Stage | 35 Nm |
| **Cylinder Flange Bolts** | 2nd Stage | 35 Nm |
| **Cylinder Flange Bolts** | 3rd Stage | 35 Nm |
| **Block Fixing Bolts M10** | (8.8) | 44 Nm |

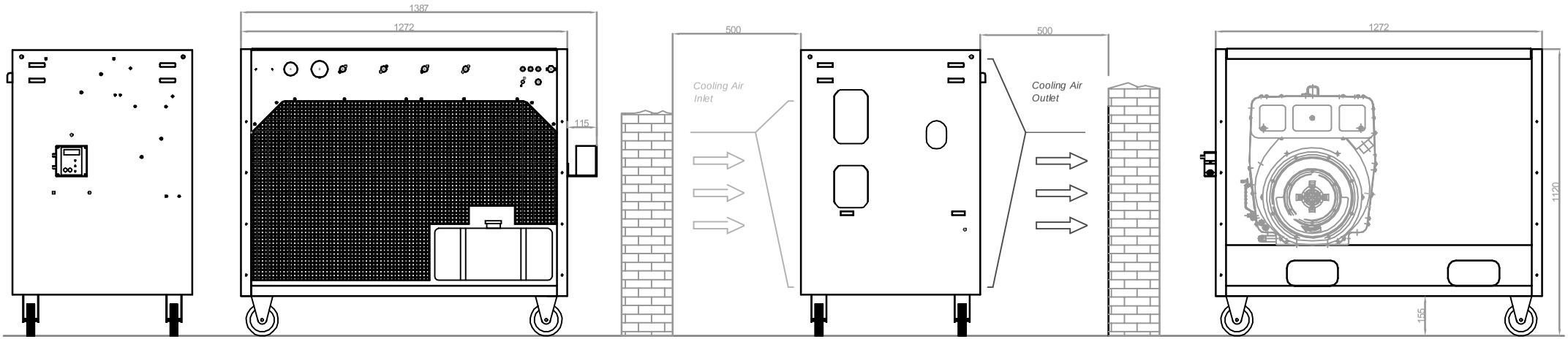


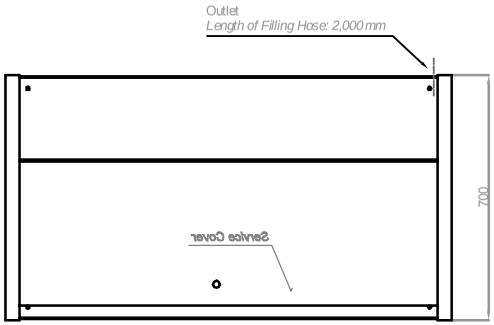

## Flow Diagram

1 Intake Filter
2 1st Pressure Stage
3 Condensate Drain Hose
4 Safety Valve 1st Stage
5 Heat Exchanger
6 Condensate Valve
7 Oil- / Waterseparator
8 2nd Pressure Stage
9 Condensate Drain Hose
10 Safety Valve 2nd Stage
11 Heat Exchanger
12 Condensate Valve
13 Oil- / Waterseparator
14 3rd Pressure Stage
15 Condensate Drain Hose
16 Safety Valve 3rd Stage
17 Heat Exchanger
18 Oil- / Waterseparator
19 Pneumatic Condensate Valve
20 Solenoid
21 Condensate Release Final Stage
22 Silencer
23 Pressure Maintaining Valve
24 Non-return Valve
25 High Pressure Hoses
26 Pressure Gauge
27 Control Pressure 2nd Stage
28 Tank Connectors
29 High Pressure Outlet Hose *(Option)*

**LW 450 D**

Lenhardt & Wagner GmbH

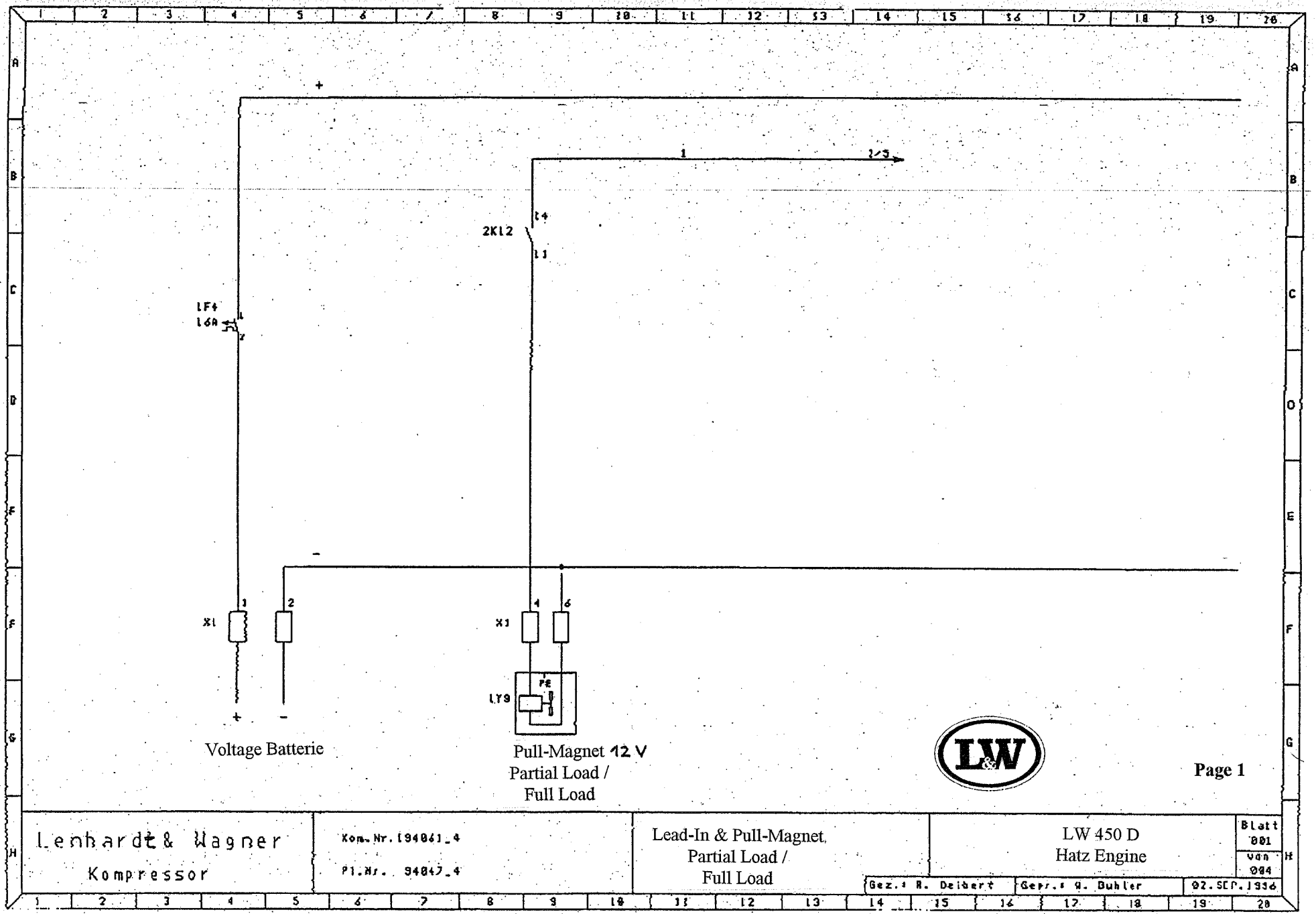


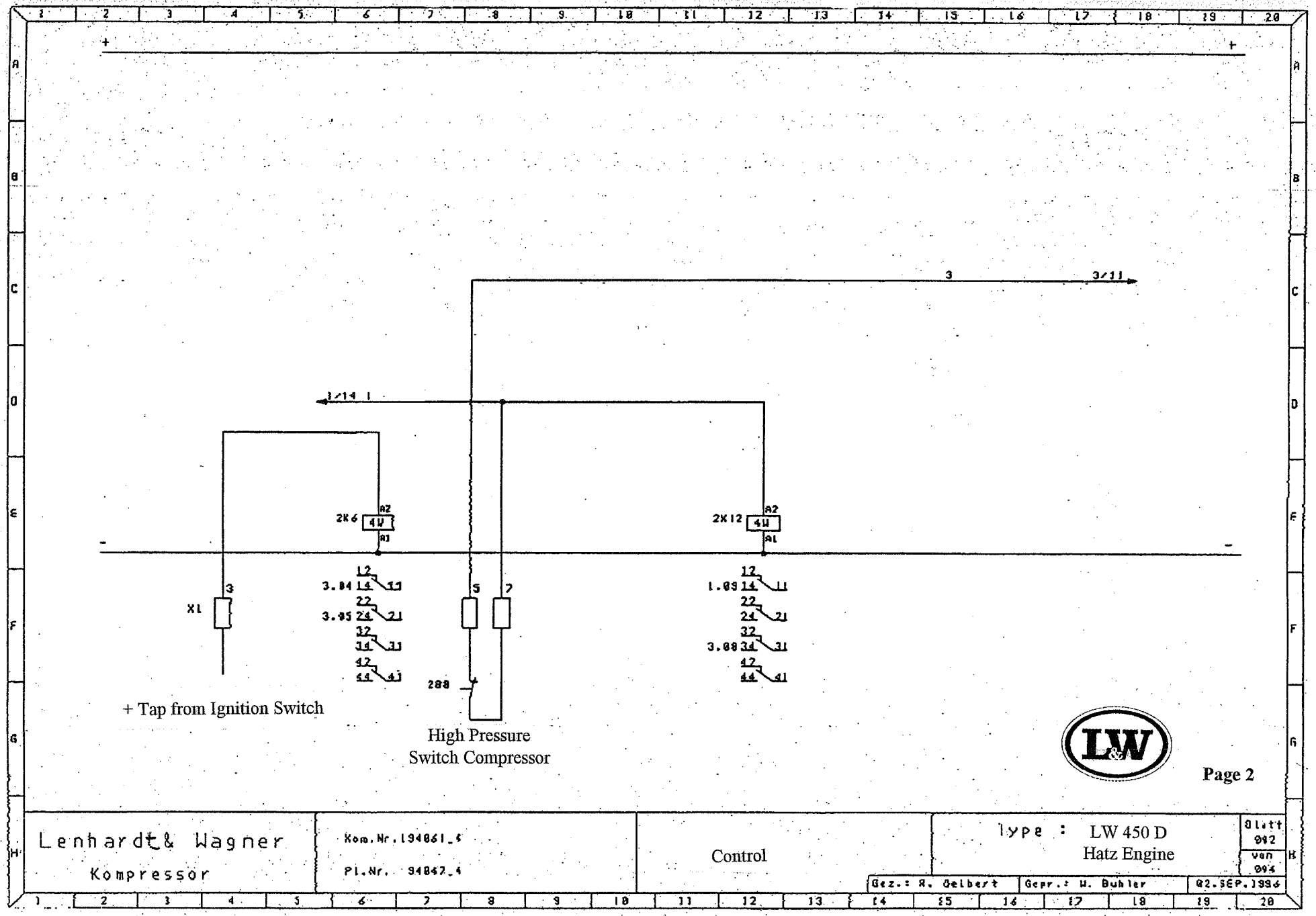



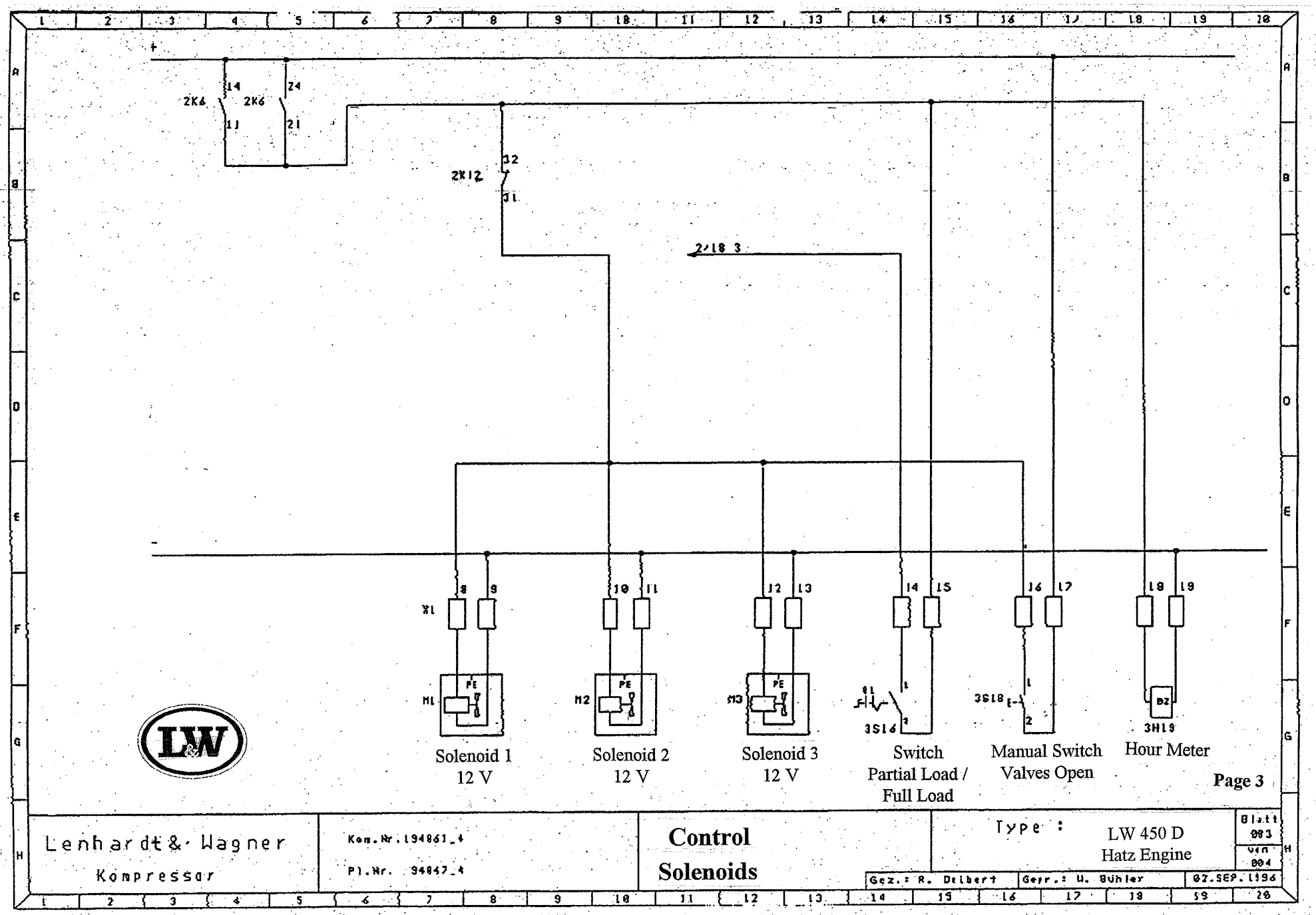

# LW 450 D

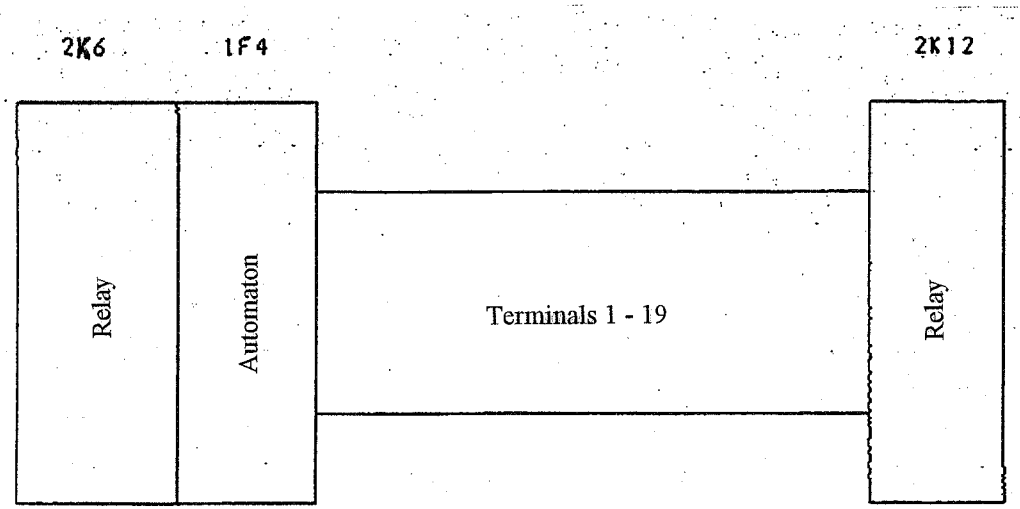
*Overall Dimensions*

LENHARDT & WAGNER GMBH


+
-
1
2/5
2K12
t4
t1
LF4
16A
X1
1
2
X1
4
6
LY9
PE
+
-
Voltage Batterie
Pull-Magnet 12 V
Partial Load /
Full Load
LW
Page 1
Lenhardt & Wagner
Kompressor
Kom.-Nr. 194061_4
Pl.Nr. 94047_4
Lead-In & Pull-Magnet
Partial Load /
Full Load
LW 450 D
Hatz Engine
Blatt
001
von
004
Gez.: R. Deibert
Gepr.: G. Buhler
02. SEP. 1996


+
-
3
3/11
3/14 1
2K6
A2
4W
A1
2K12
A2
4W
A1
XL
3
3.04
3.05
1.09
3.08
5
7
288
+ Tap from Ignition Switch
High Pressure
Switch Compressor
Page 2
Lenhardt & Wagner
Kompressor
Kom.Nr.194861_6
Pl.Nr. 94847_4
Control
type : LW 450 D
Hatz Engine
Blatt 002
von 004
Gez.: R. Gelbert
Gepr.: W. Buhler
02.SEP.1996

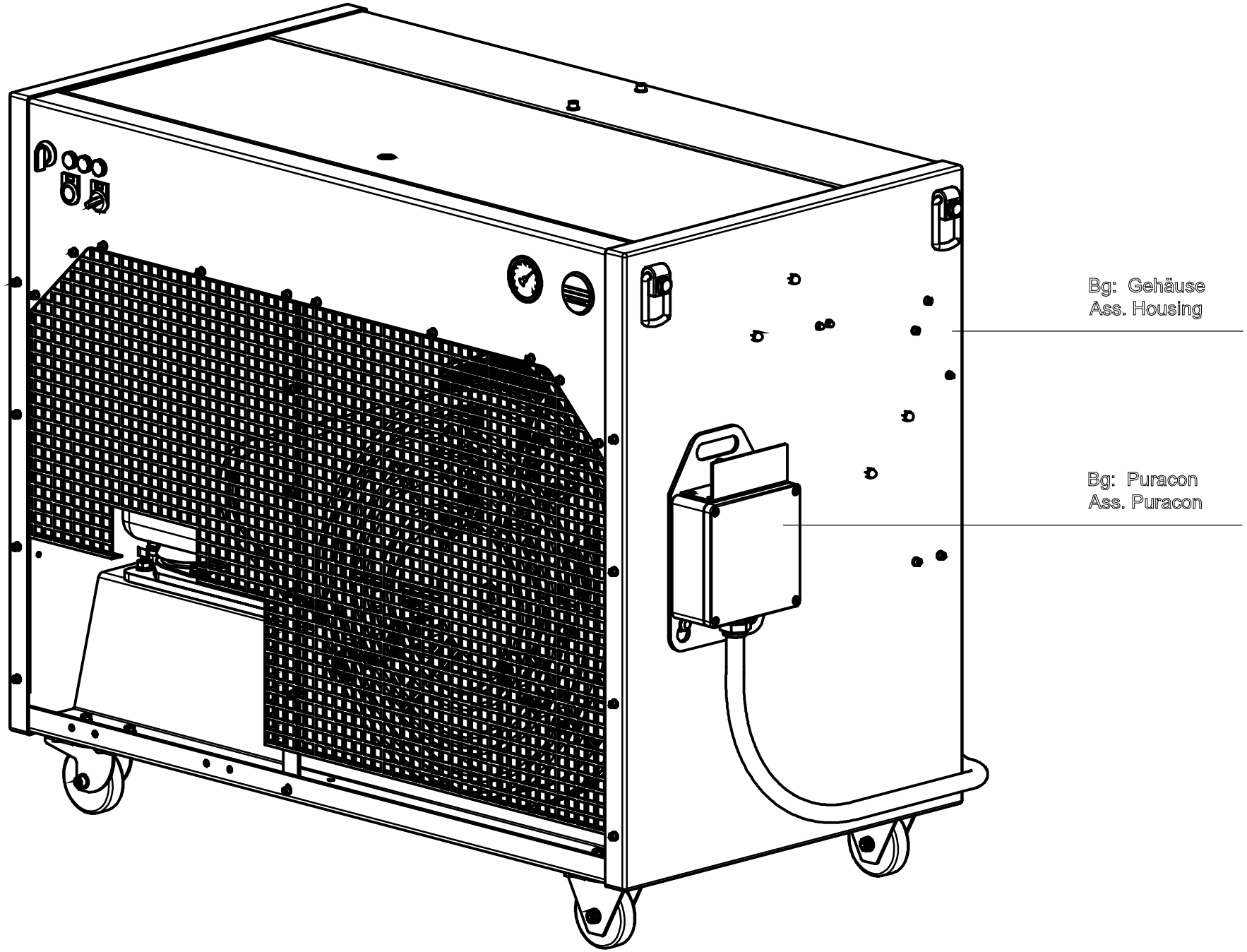

+
2K6
14
24
2K6
11
21
2K12
12
11
2K18 3
-
X1
8
9
10
11
12
13
14
15
16
17
18
19
M1
M2
S13
PE
Q1
3S16
3S18
BZ
3H19
Solenoid 1
12 V
Solenoid 2
12 V
Solenoid 3
12 V
Switch
Partial Load /
Full Load
Manual Switch
Valves Open
Hour Meter
Page 3
Lenhardt & Wagner
Kompressor
Kom.Nr.194861_4
Pl.Nr. 94847_4
Control
Solenoids
Type :
LW 450 D
Hatz Engine
Blatt 003
Ges.: R. Delbert
Gepr.: U. Buhler
02.SEP.1996

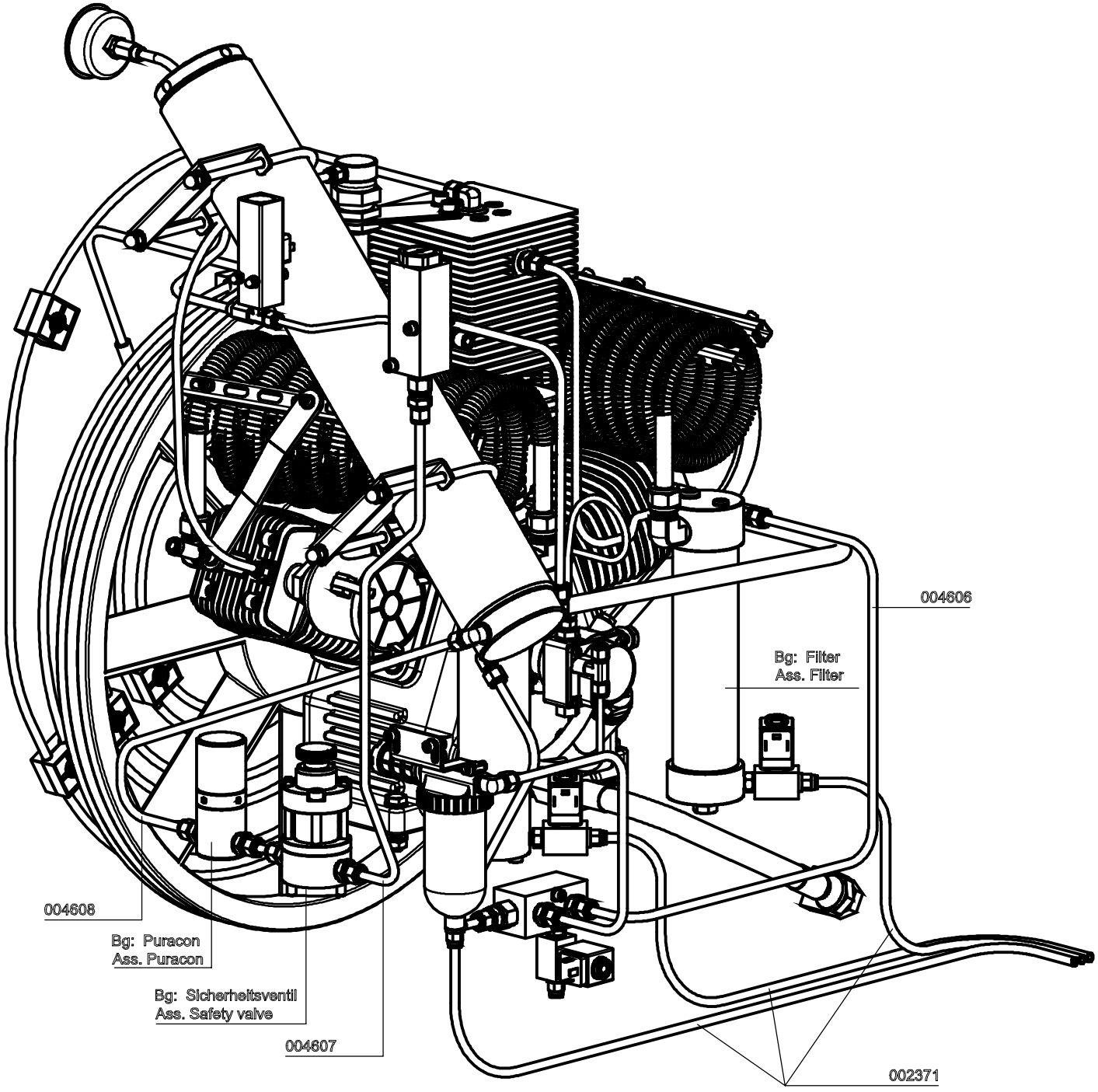


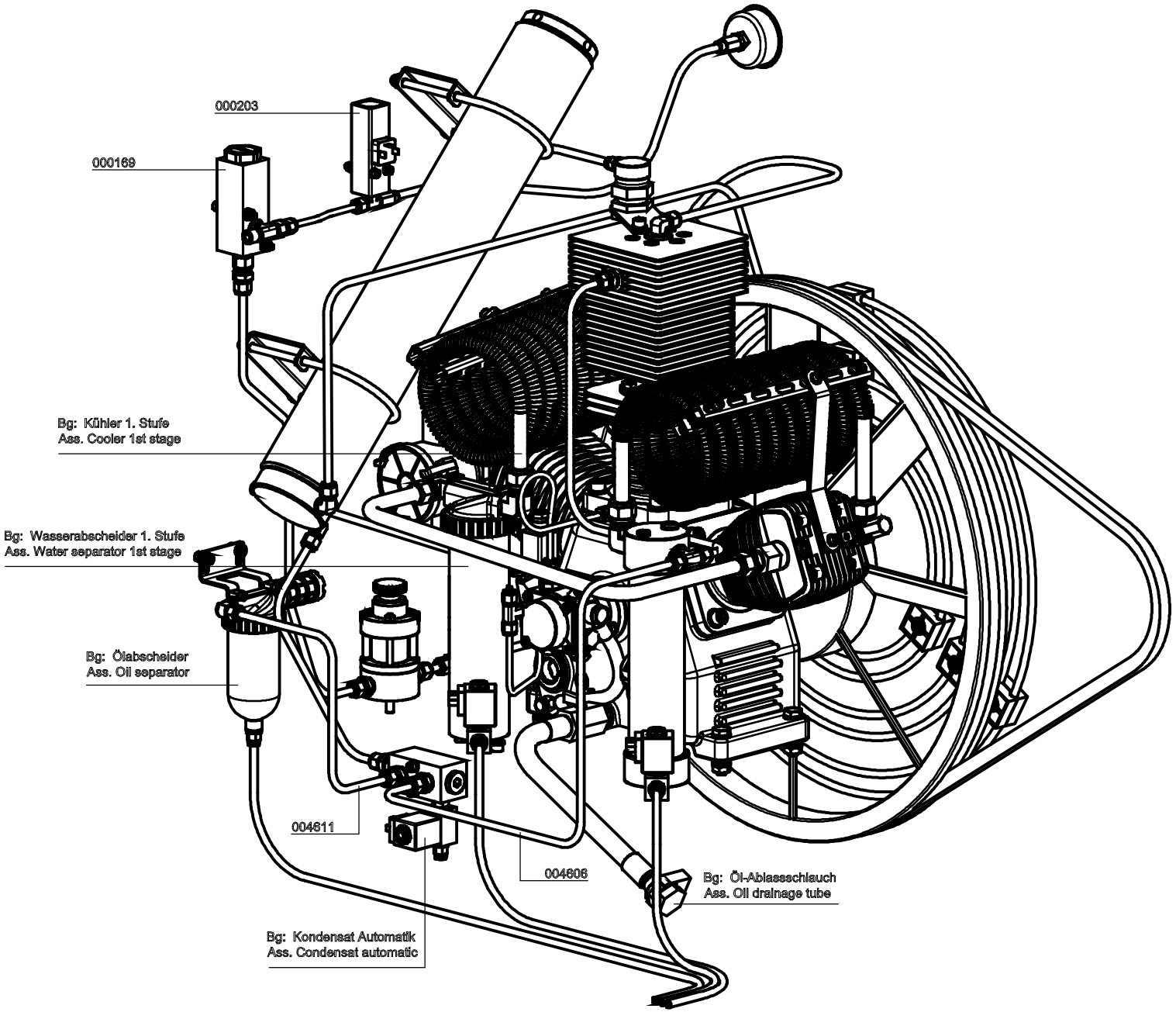

Page 4

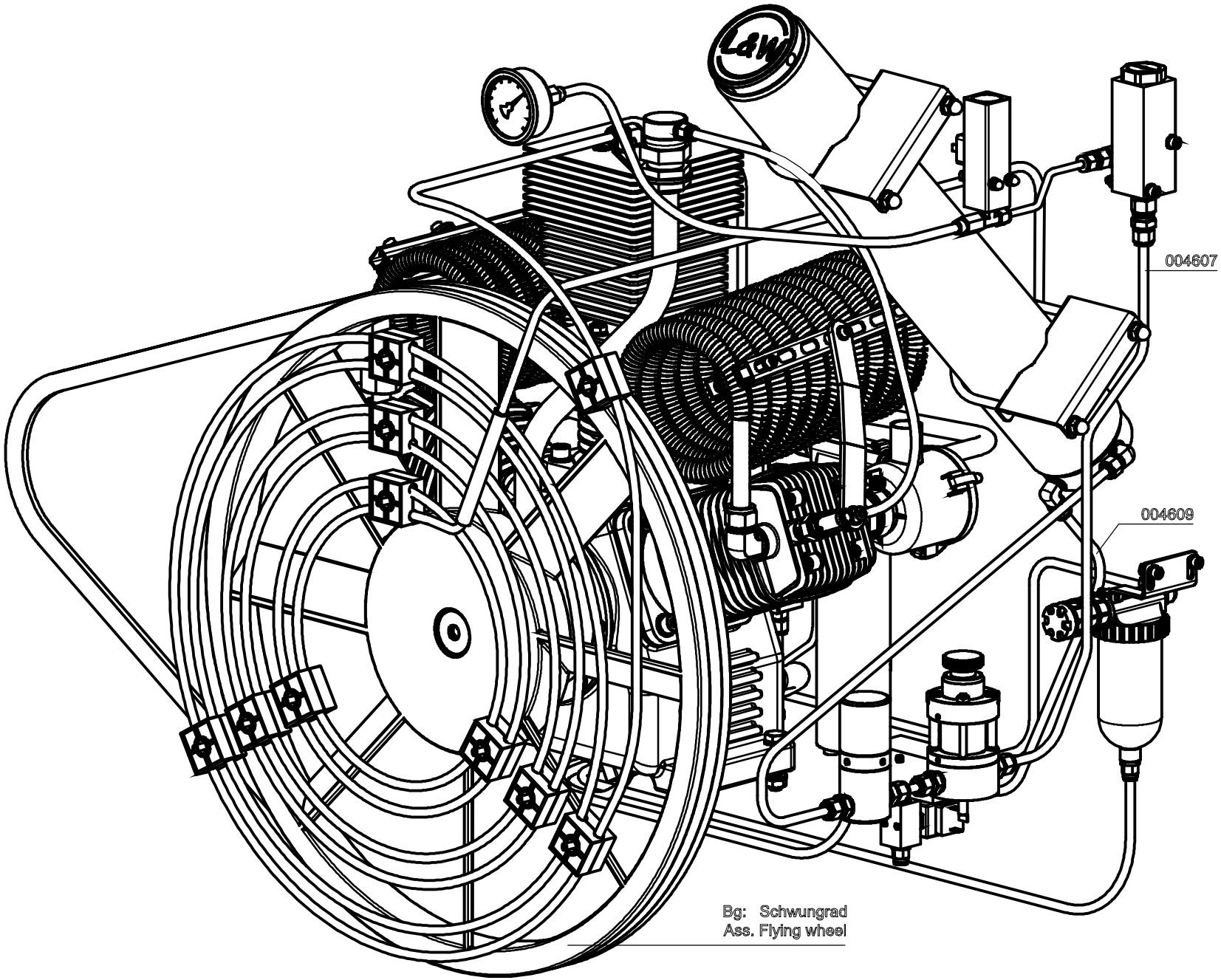
| | | | | |
|---|---|---|---|---|
| Lenhardt & Wagner<br>Kompressor | Kom.Nr.194861_4<br>Pl.Nr. 94847_4 | Bestuckung | Type : LW 450 D<br>Hatz Engine | Blatt 004<br>von 004 |
| | | | Gez.: R. Delbert | Gepr.: H. Buhler 02.SEP.1996 |

Kompressor: LW 450 D
Compressor: LW 450 D

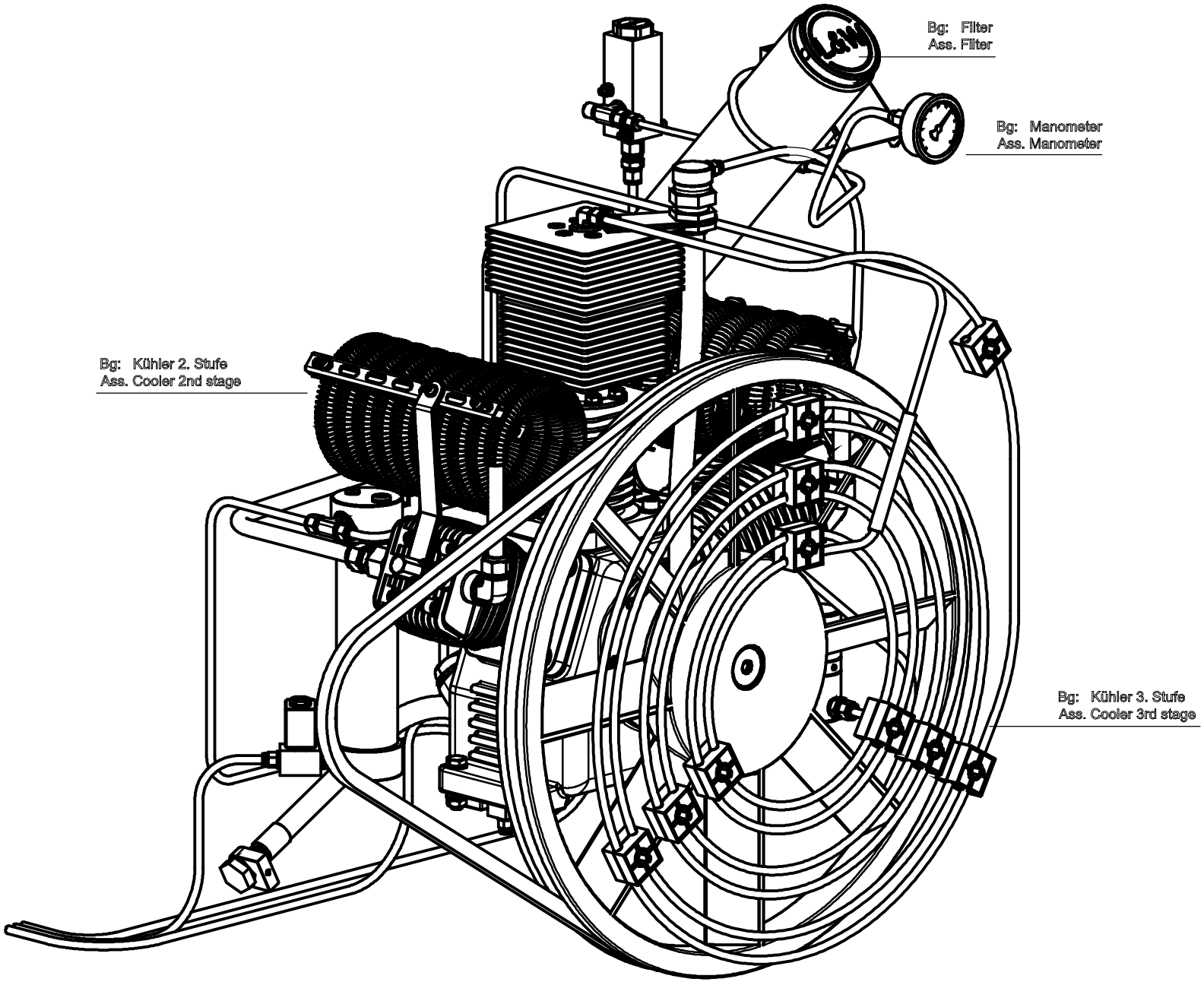



004606
Bg: Filter
Ass. Filter
004608
Bg: Puracon
Ass. Puracon
Bg: Sicherheitsventil
Ass. Safety valve
004607
002371

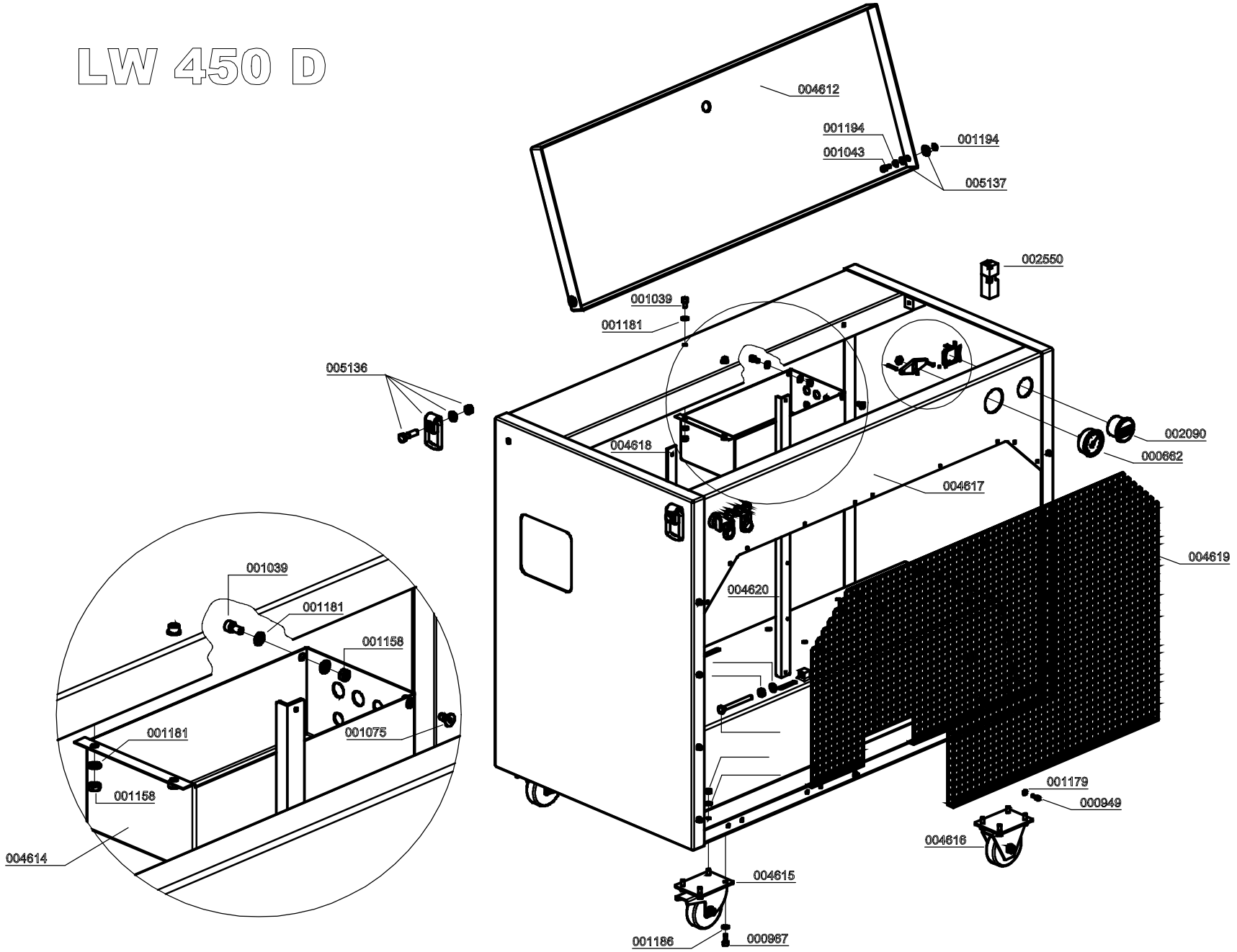

000203
000169
Bg: Kühler 1. Stufe
Ass. Cooler 1st stage
Bg: Wasserabscheider 1. Stufe
Ass. Water separator 1st stage
Bg: Ölabscheider
Ass. Oil separator
004611
004606
Bg: Öl-Ablassschlauch
Ass. Oil dralnage tube
Bg: Kondensat Automatik
Ass. Condensat automatic



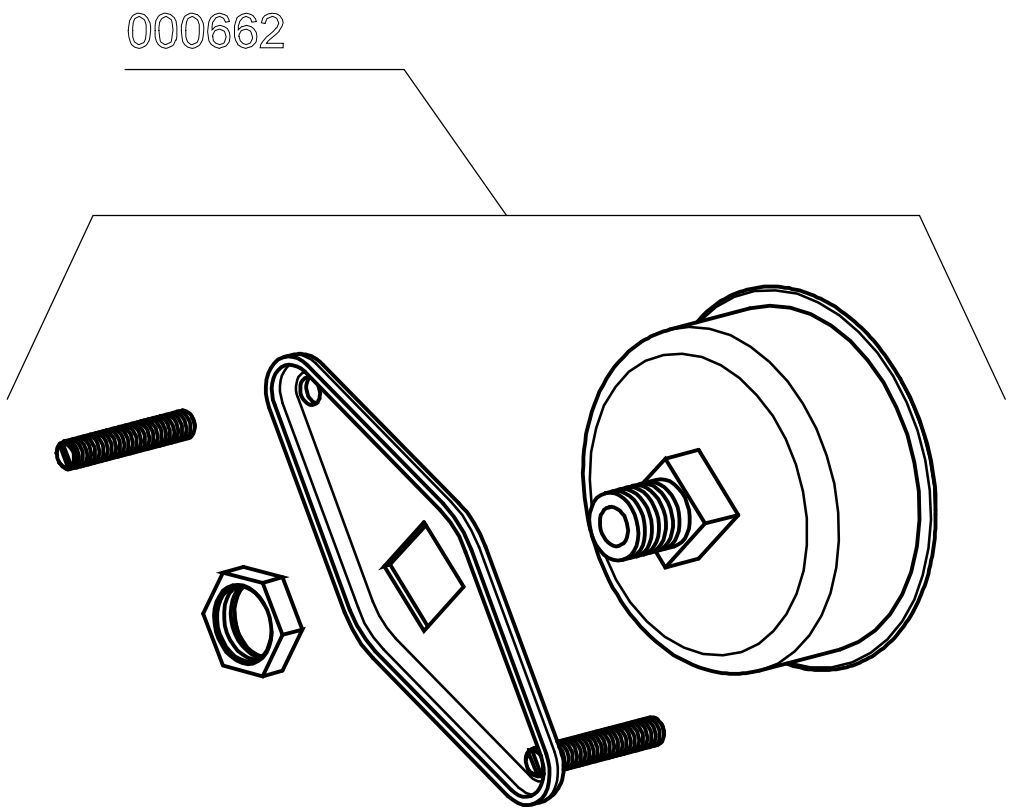

Bg: Schwungrad
Ass. Flying wheel


Bg: Filter
Ass. Filter
Bg: Manometer
Ass. Manometer
Bg: Kühler 2. Stufe
Ass. Cooler 2nd stage
Bg: Kühler 3. Stufe
Ass. Cooler 3rd stage

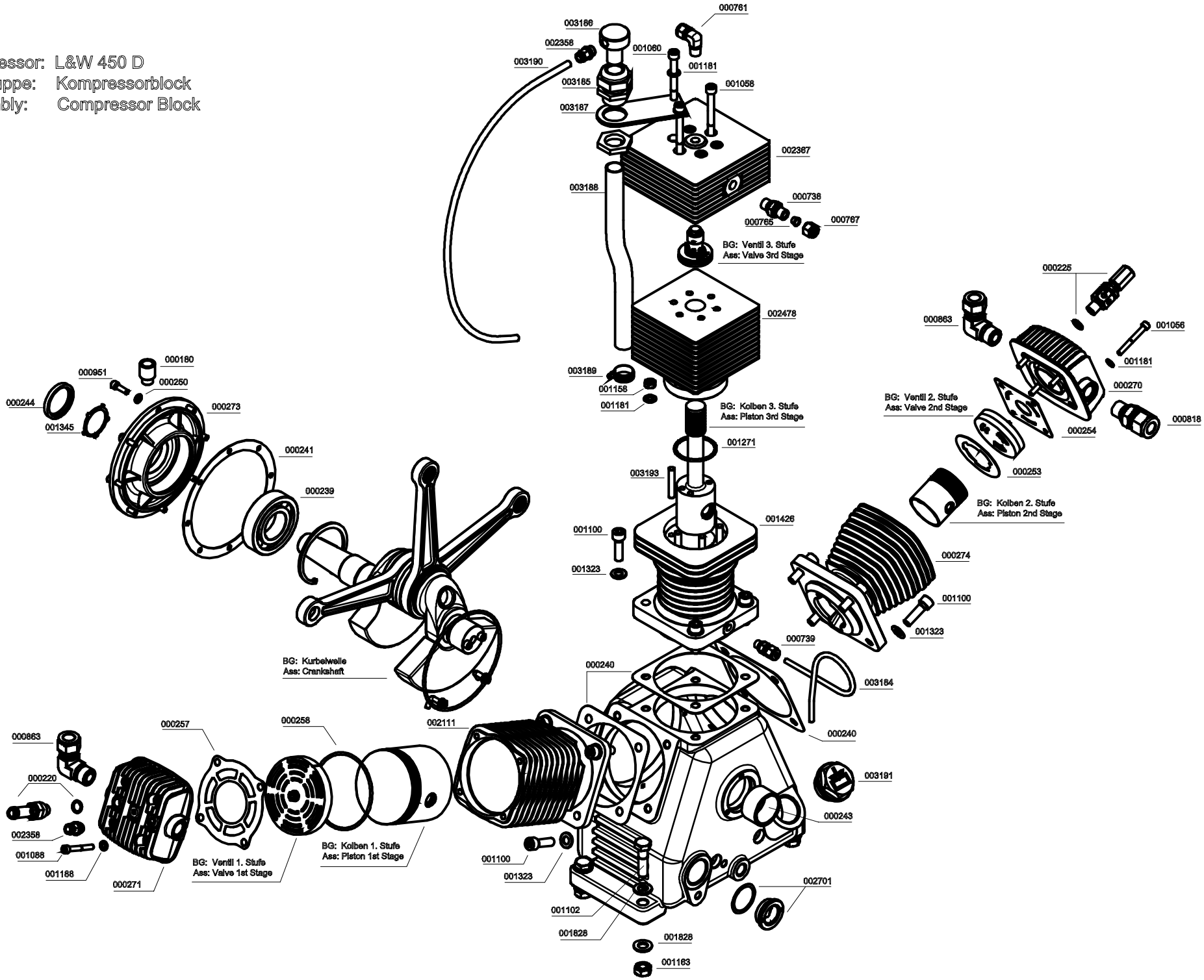
# LW 450 D


004612
001194
001043
001194
005137
002550
001039
001181
005136
002090
000662
004618
004617
004619
004620
001039
001181
001158
001181
001075
001158
004614
001179
000949
004616
004615
001186
000867

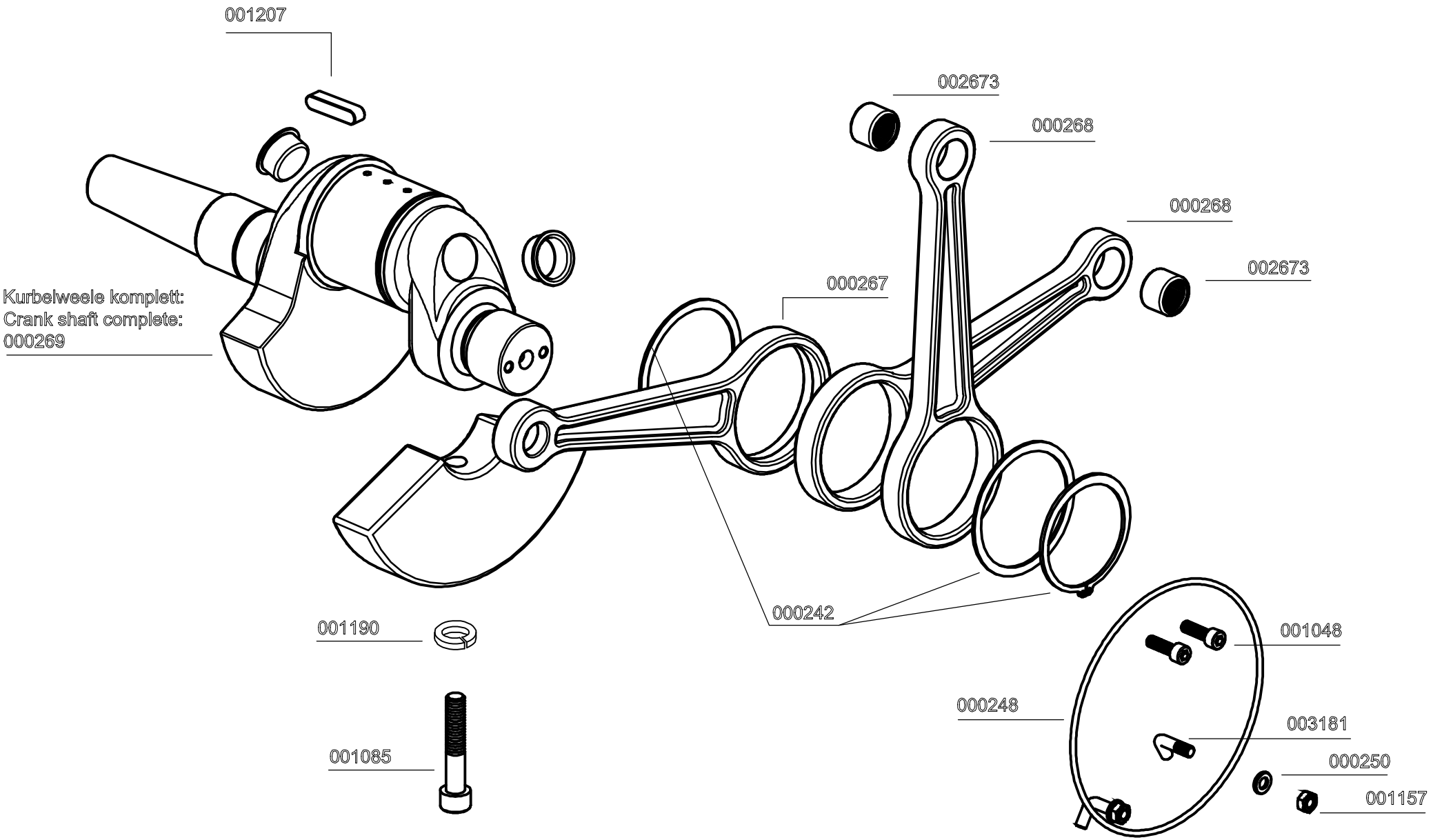
Kompressor: LW 450 D
Baugruppe: Manometer (0-400 bar)
Assembly: Pressure gauge (0-400 bar)



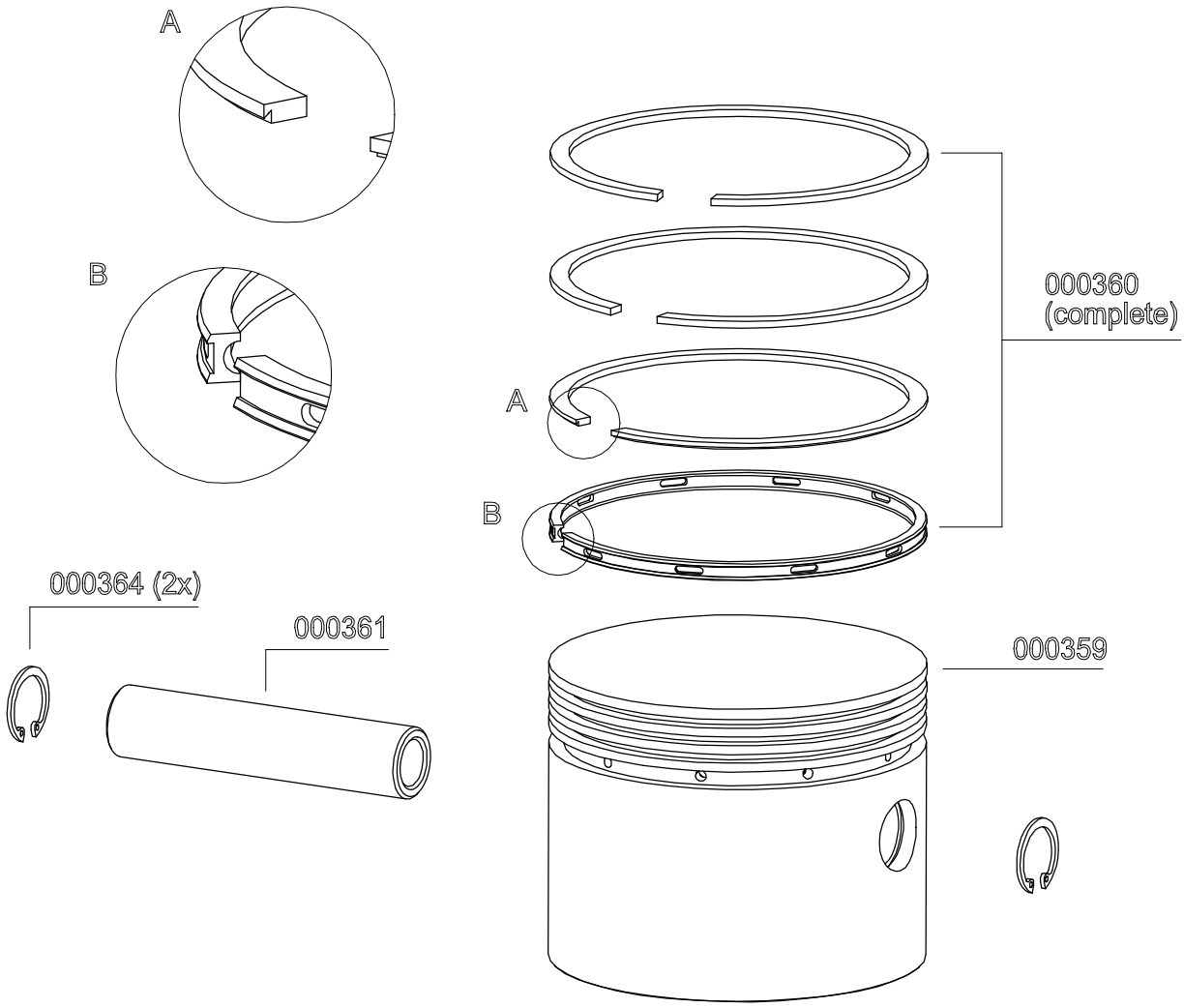
Kompressor: L&W 450 D
Baugruppe: Kompressorblock
Assembly: Compressor Block



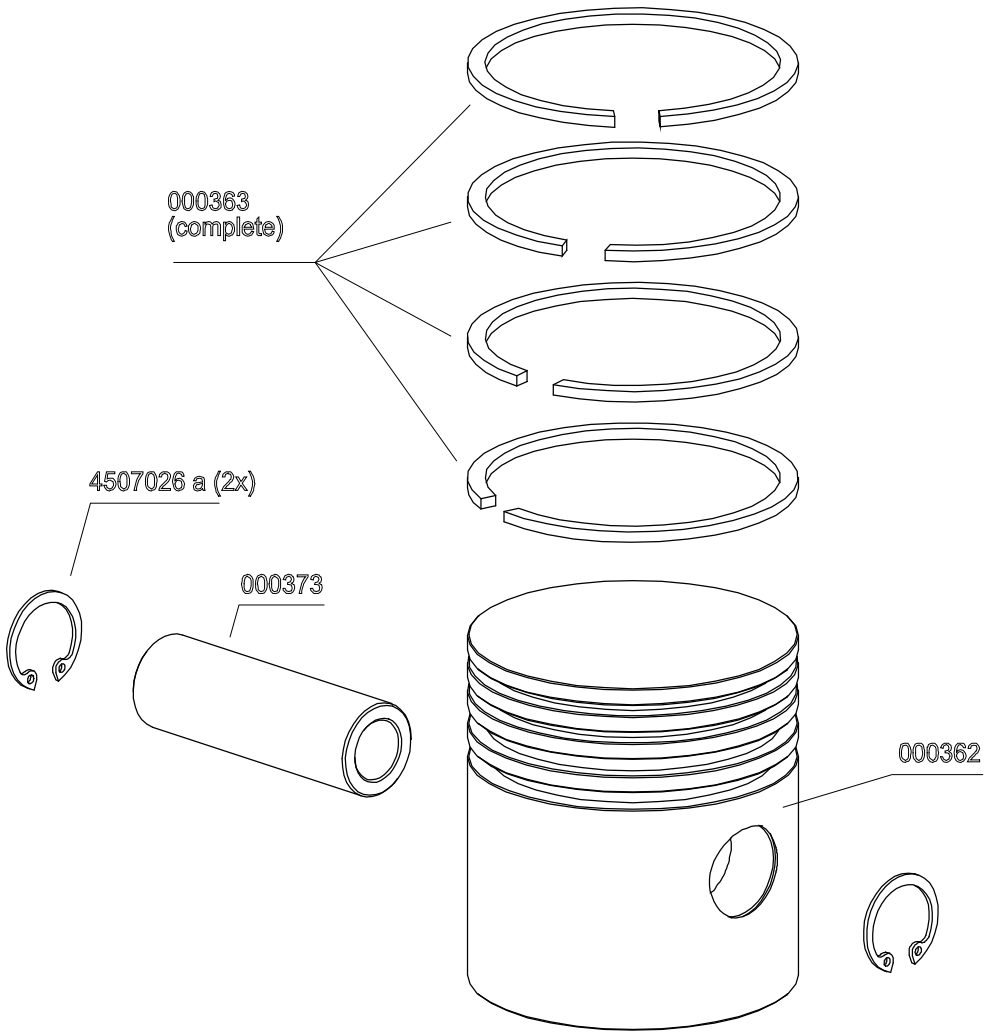
Kompressor: L&W 450 D
Baugruppe: Kurbelwelle
Assembly: Crankshaft



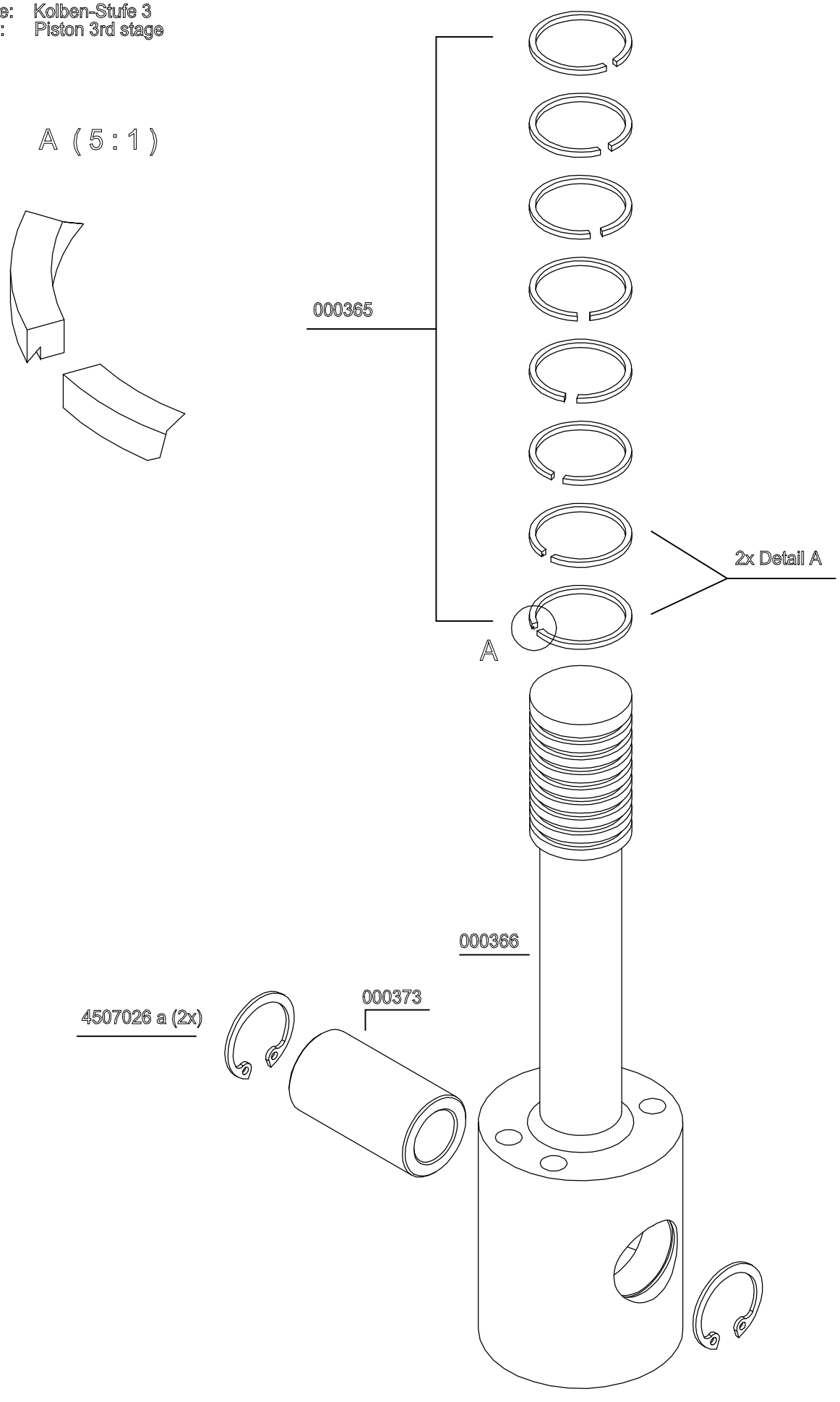
Kompressor: LW 450 D
Baugruppe: Kolben komplett 1. Stufe
Assembly: Piston complete 1st stage



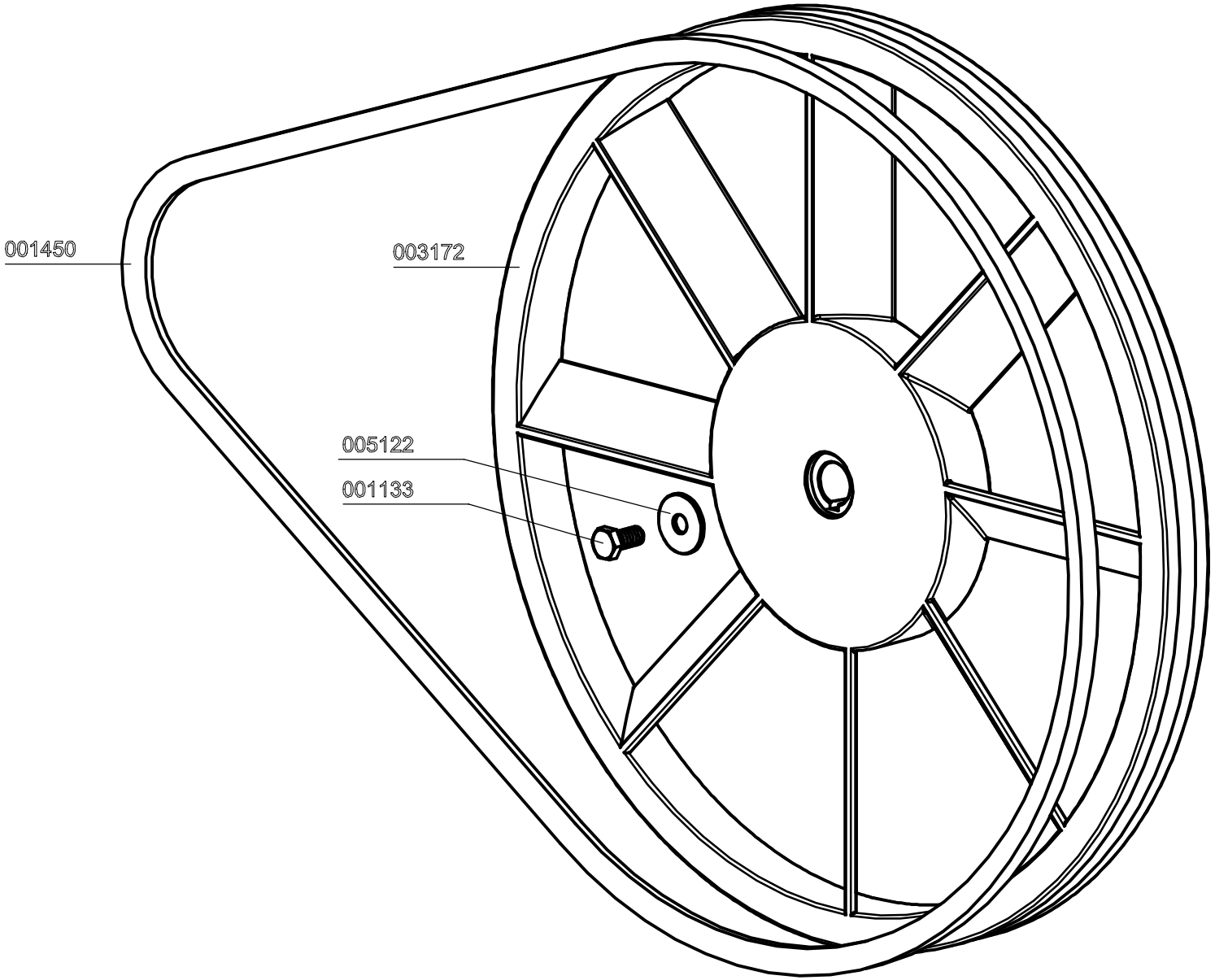
Kompressor: L&W 450 D
Baugruppe: Kolben Stufe 2
Assembly: Piston 2nd Stage



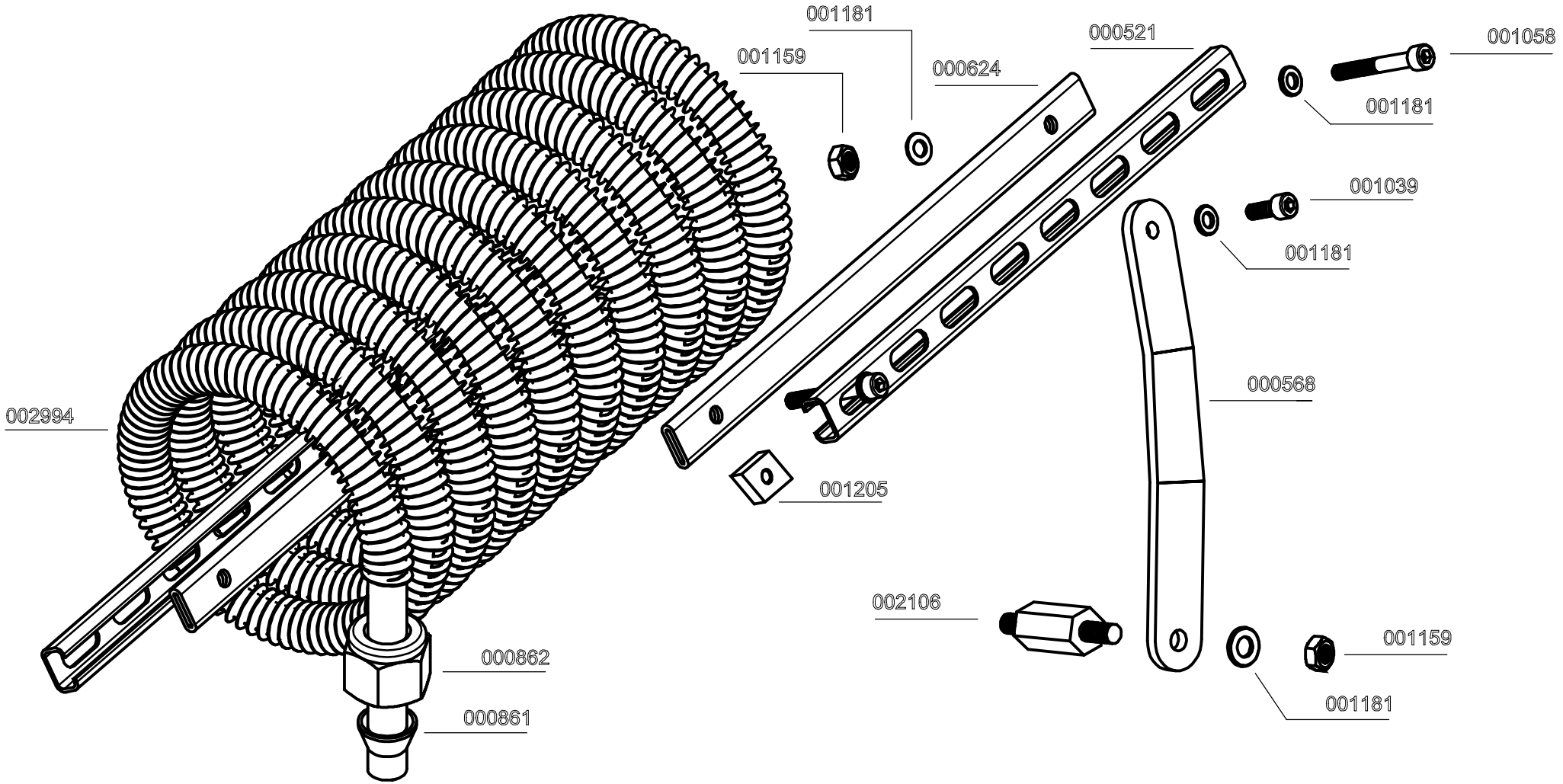
Kompressor: L&W 450 D
Baugruppe: Kolben-Stufe 3
Assembly: Piston 3rd stage



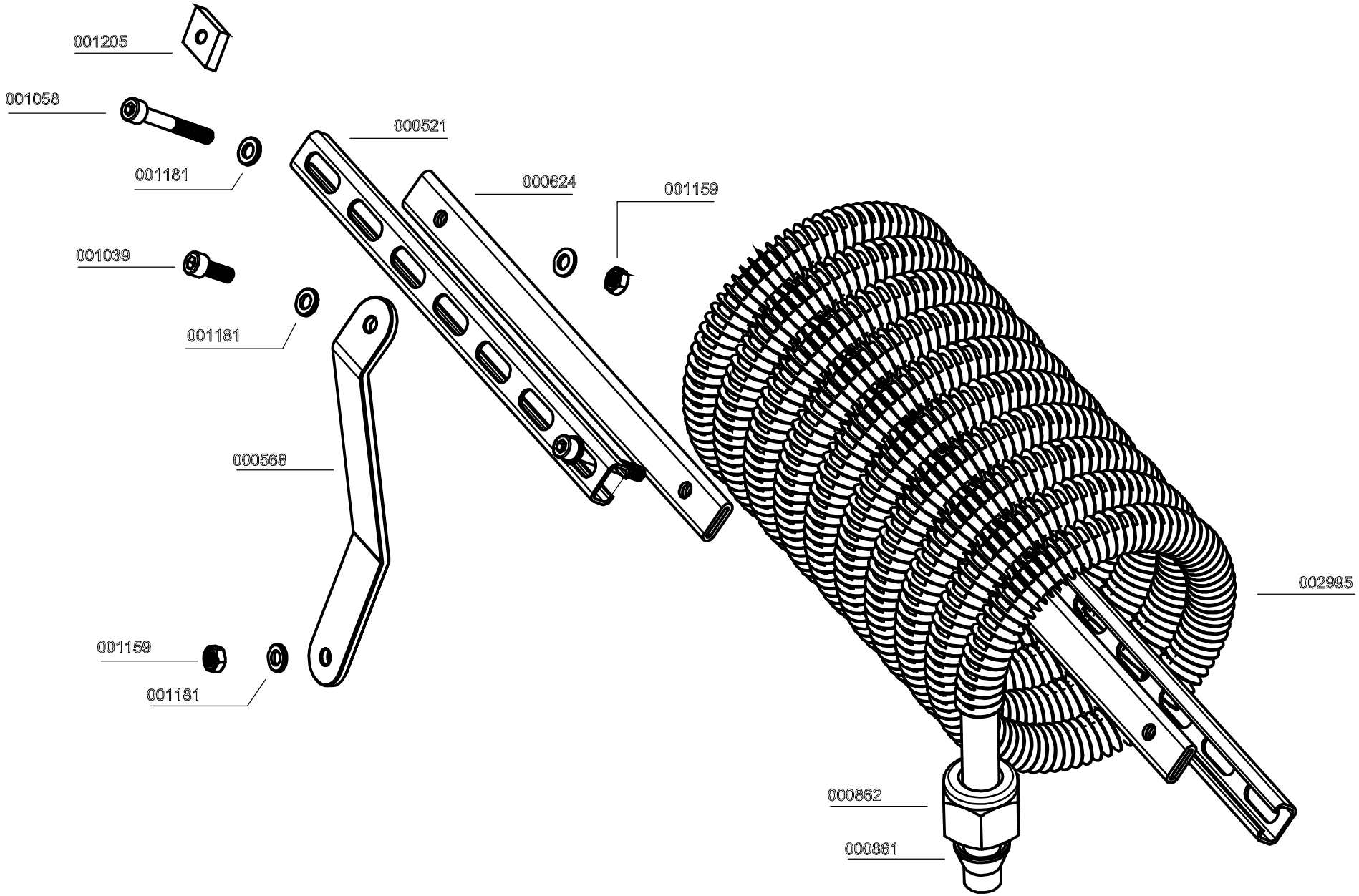
Kompressor: LW 450 D
Baugruppe: Schwungrad
Assembly: Flywheel



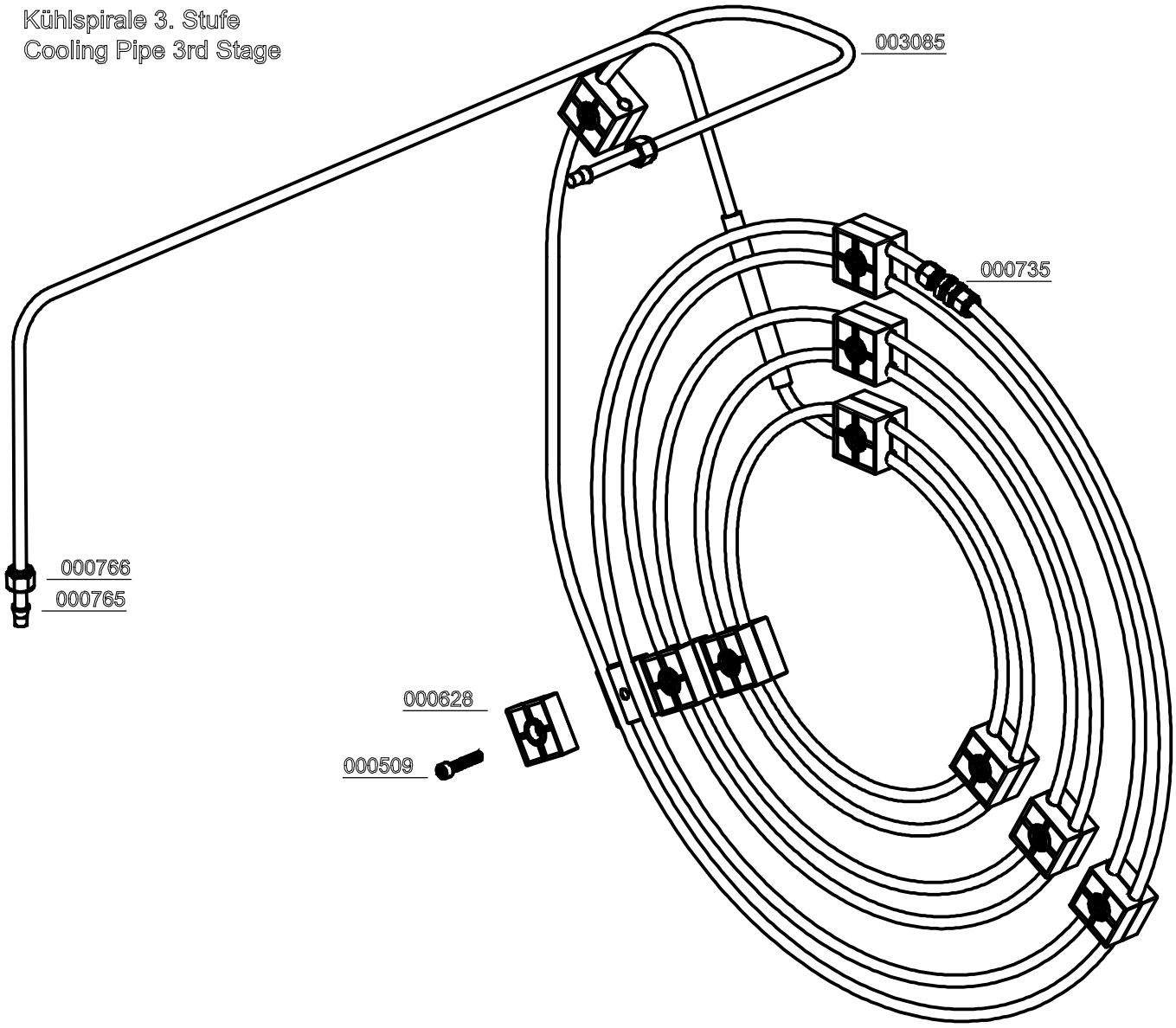
Kompressor: L&W 450 D
Baugruppe: Kühler 1. Stufe
Assembly: Cooler 1st Stage



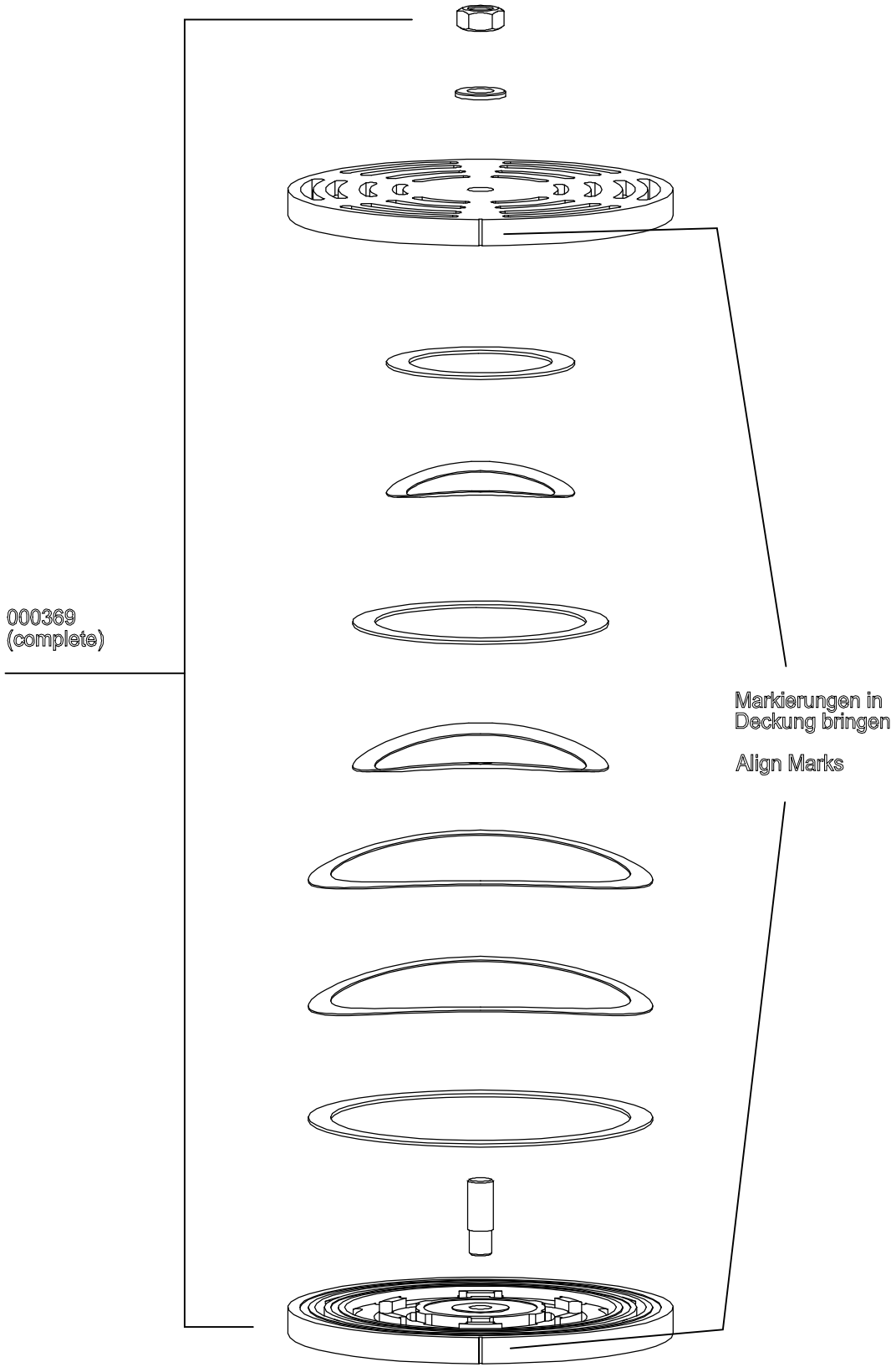
Kompressor: L&W 450 D
Baugruppe: Kühler 2. Stufe
Assembly: Cooler 2nd stage



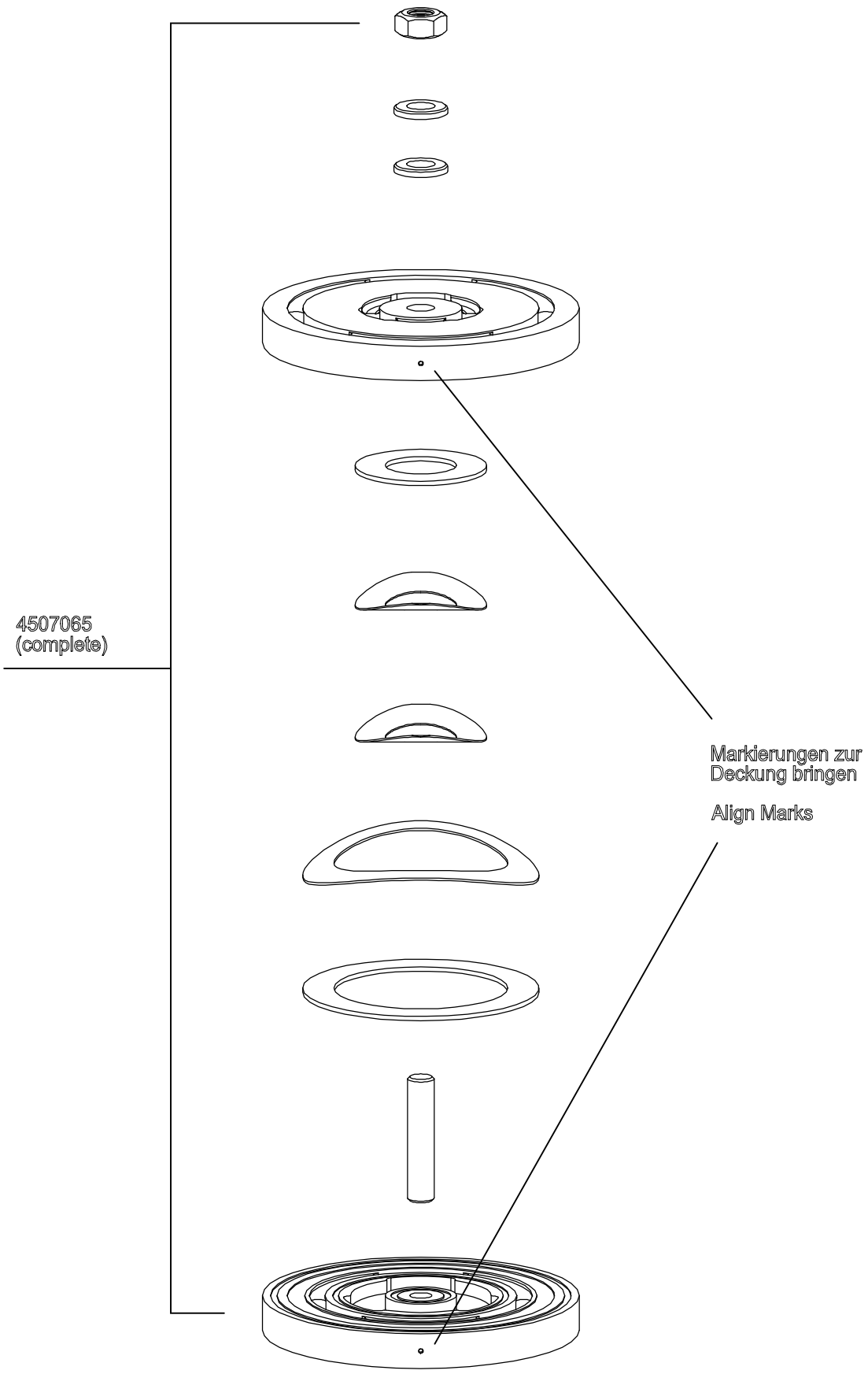
Kühlspirale 3. Stufe
Cooling Pipe 3rd Stage



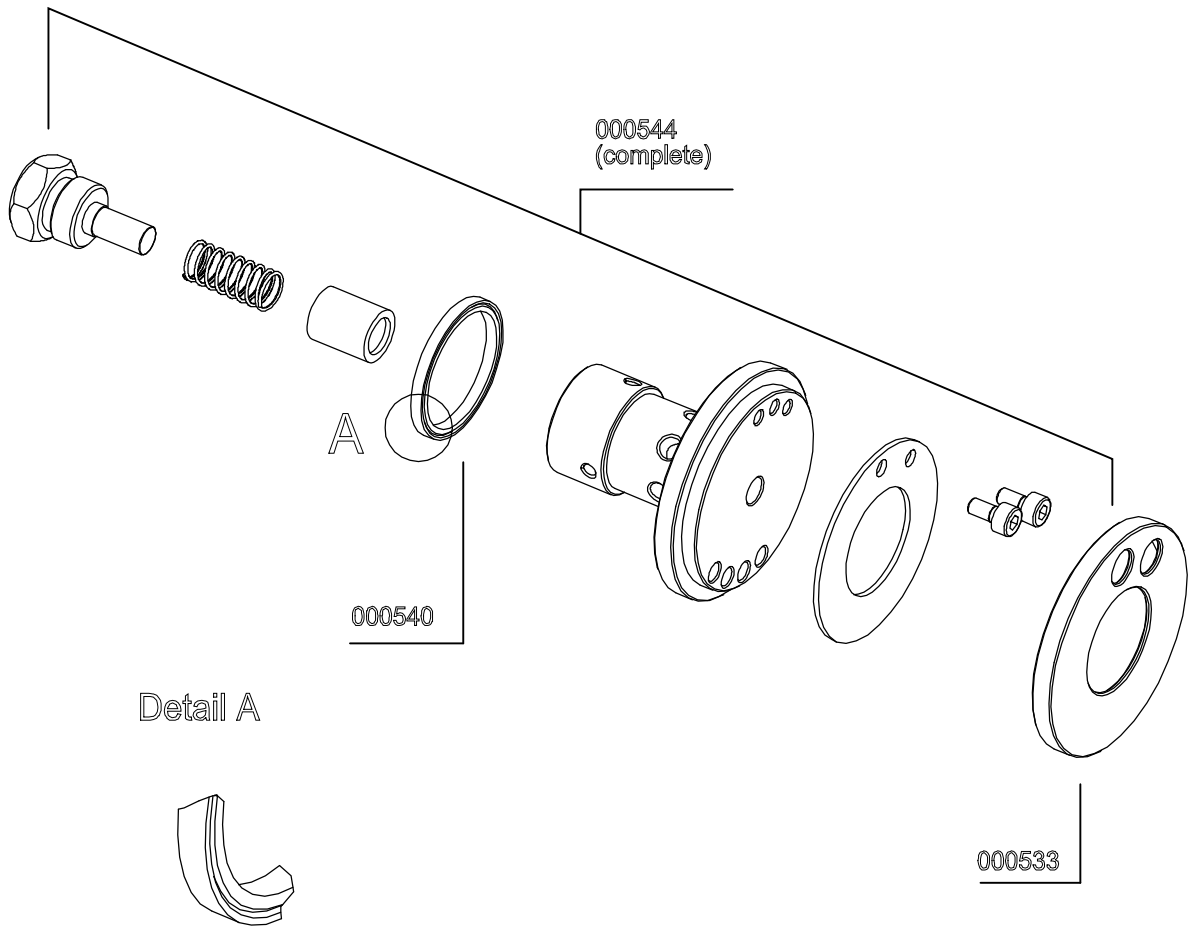
Kompressor: L&W 450 D
Baugruppe: Ventil 1. Stufe
Assembly: Valve 1st Stage



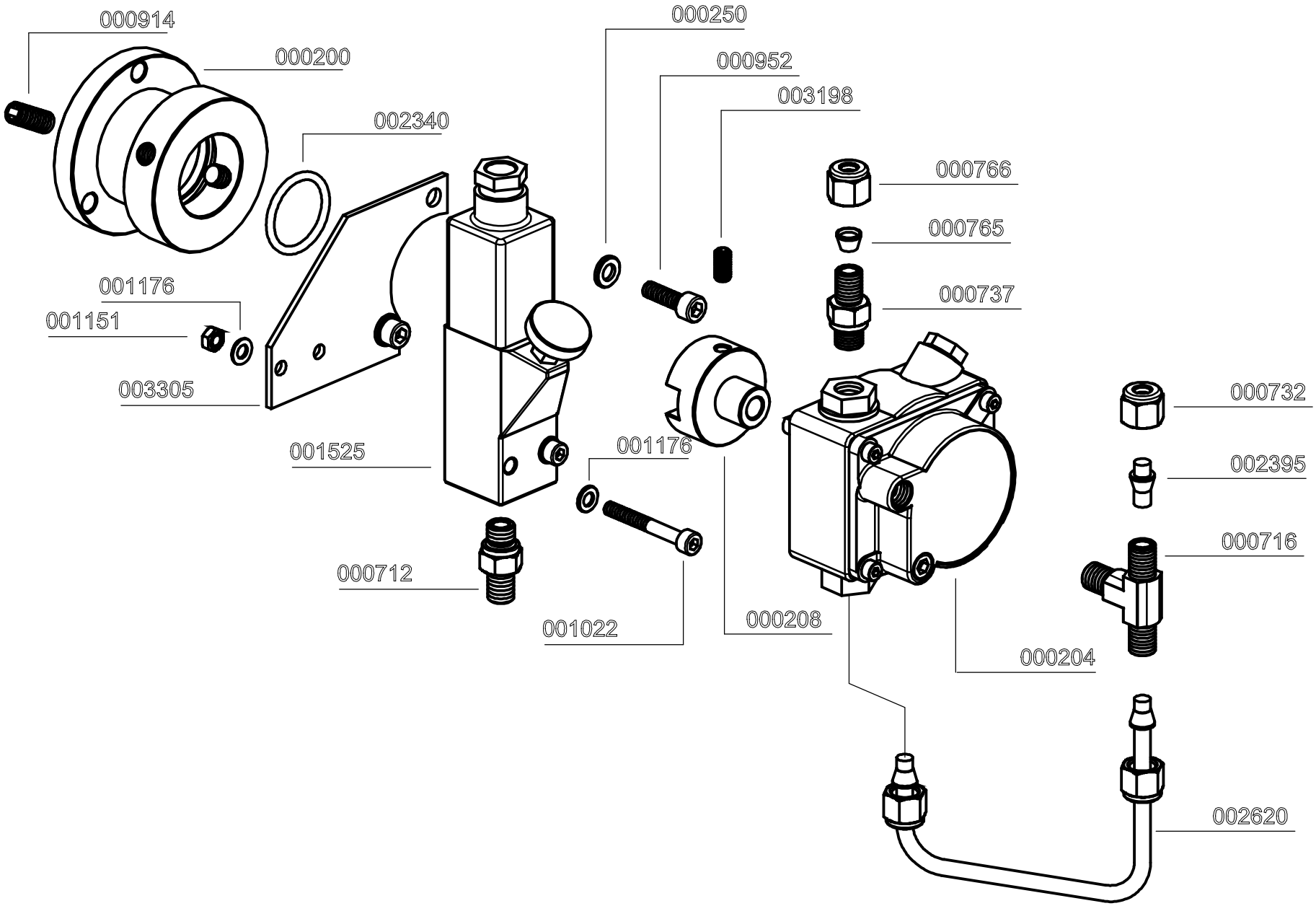
Kompressor: L&W 450 D
Baugruppe: Ventil 2. Stufe
Assembly: Valve 2nd Stage



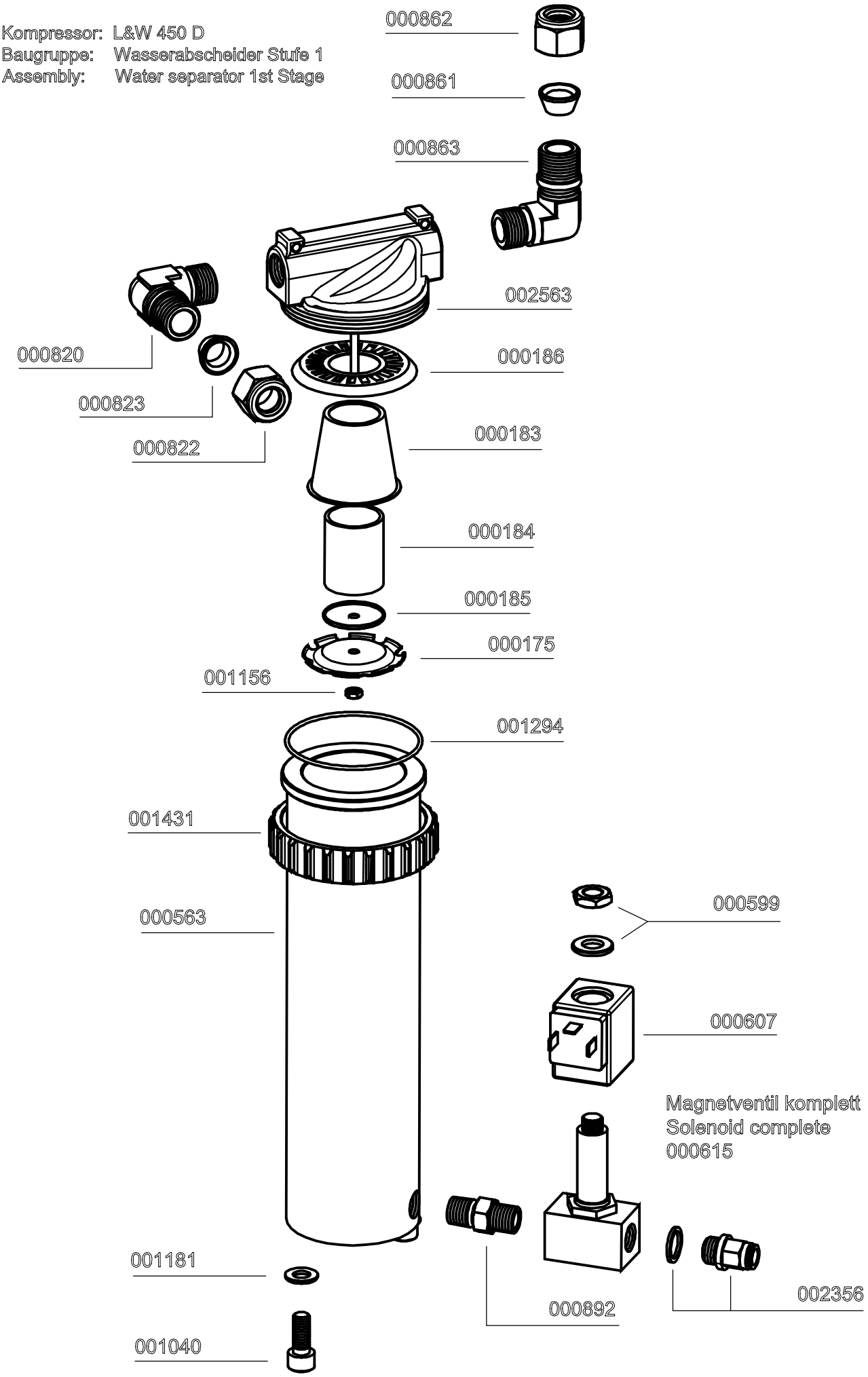
Kompressor: L&W 450 D
Baugruppe: Ventil 3. Stufe
Assembly: Valve 3rd Stage



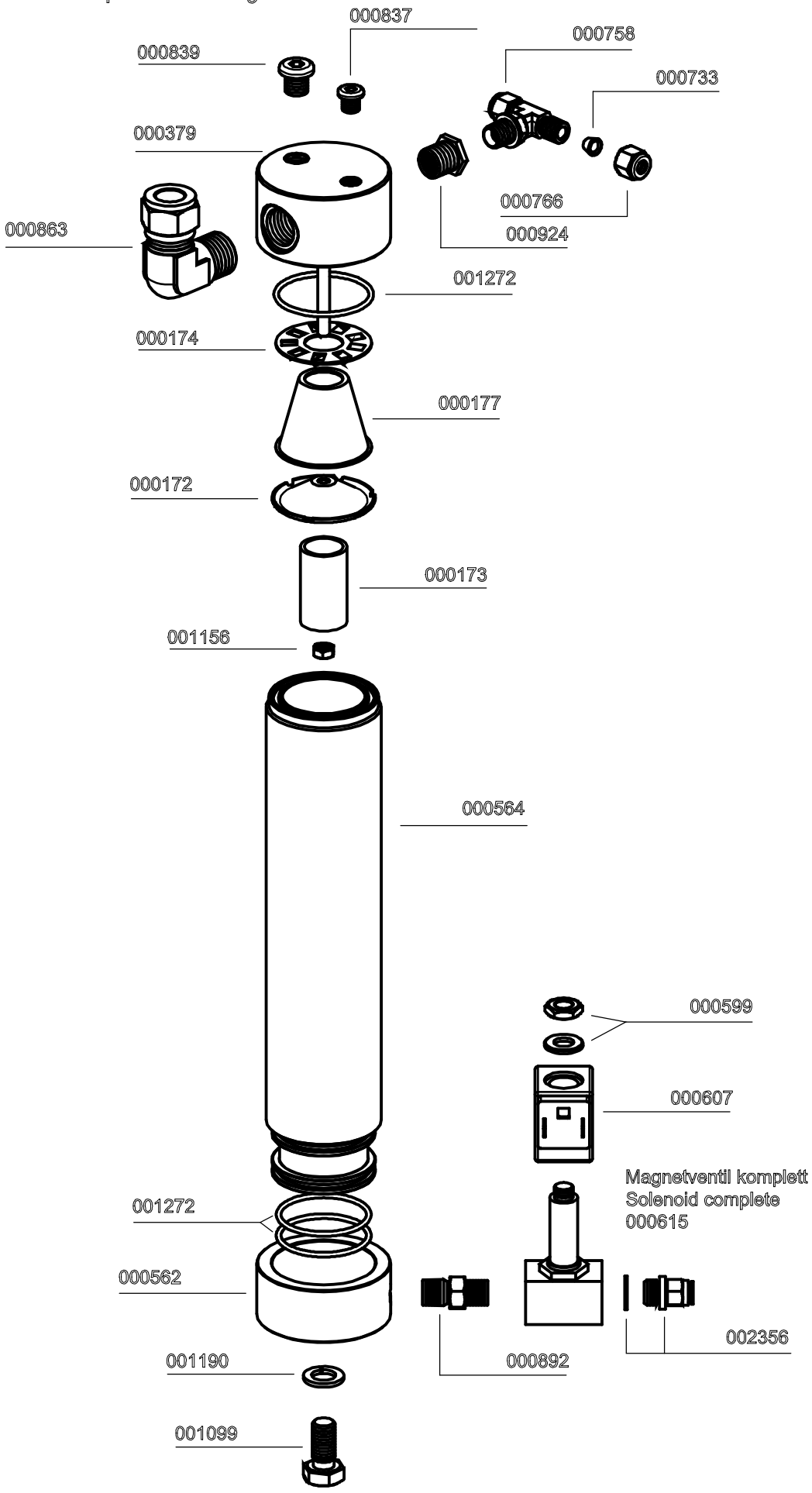
Kompressor: LW 450 D
Baugruppe: Ölpumpe
Assembly: Oil pump



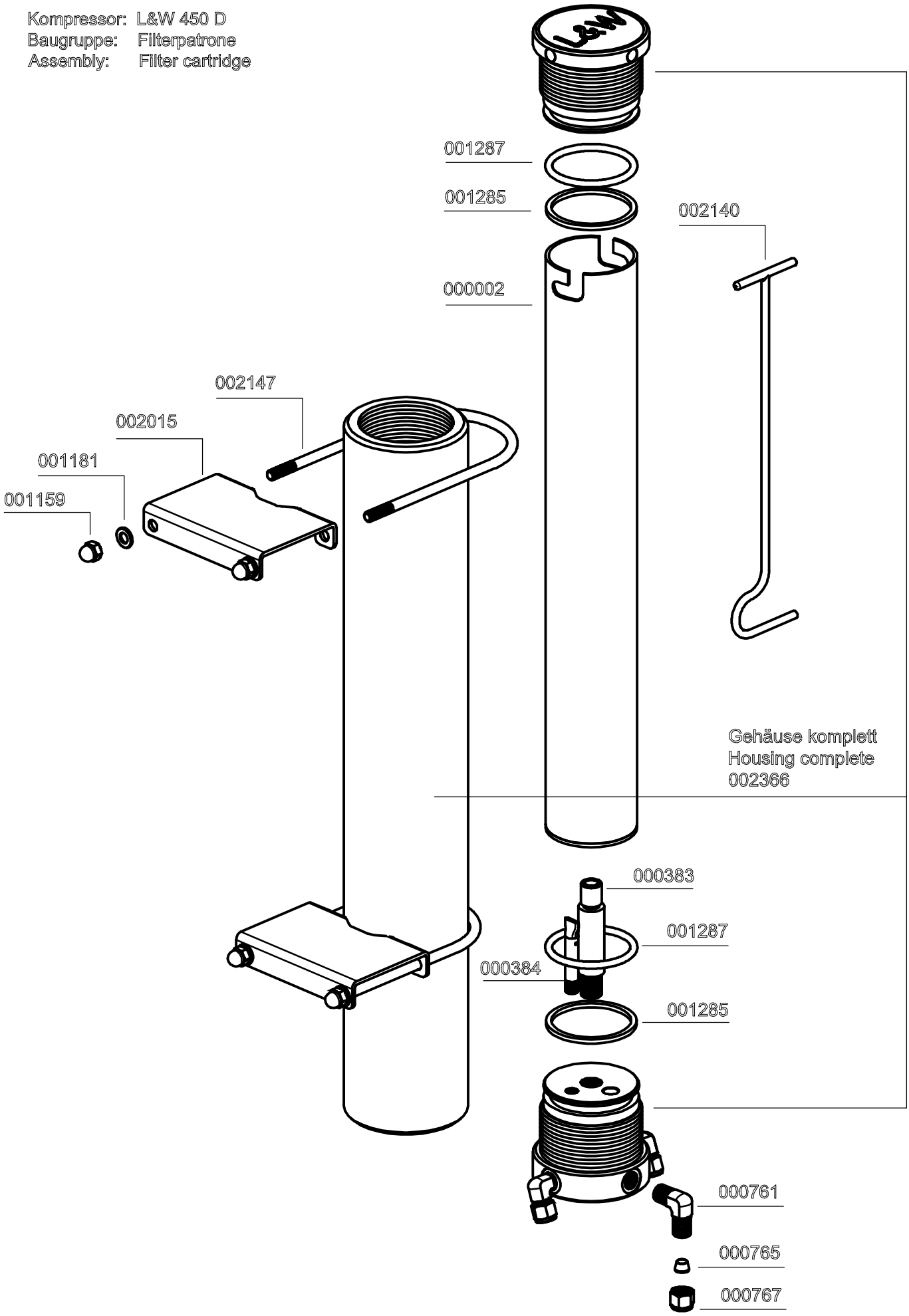
Kompressor: L&W 450 D
Baugruppe: Wasserabscheider Stufe 1
Assembly: Water separator 1st Stage



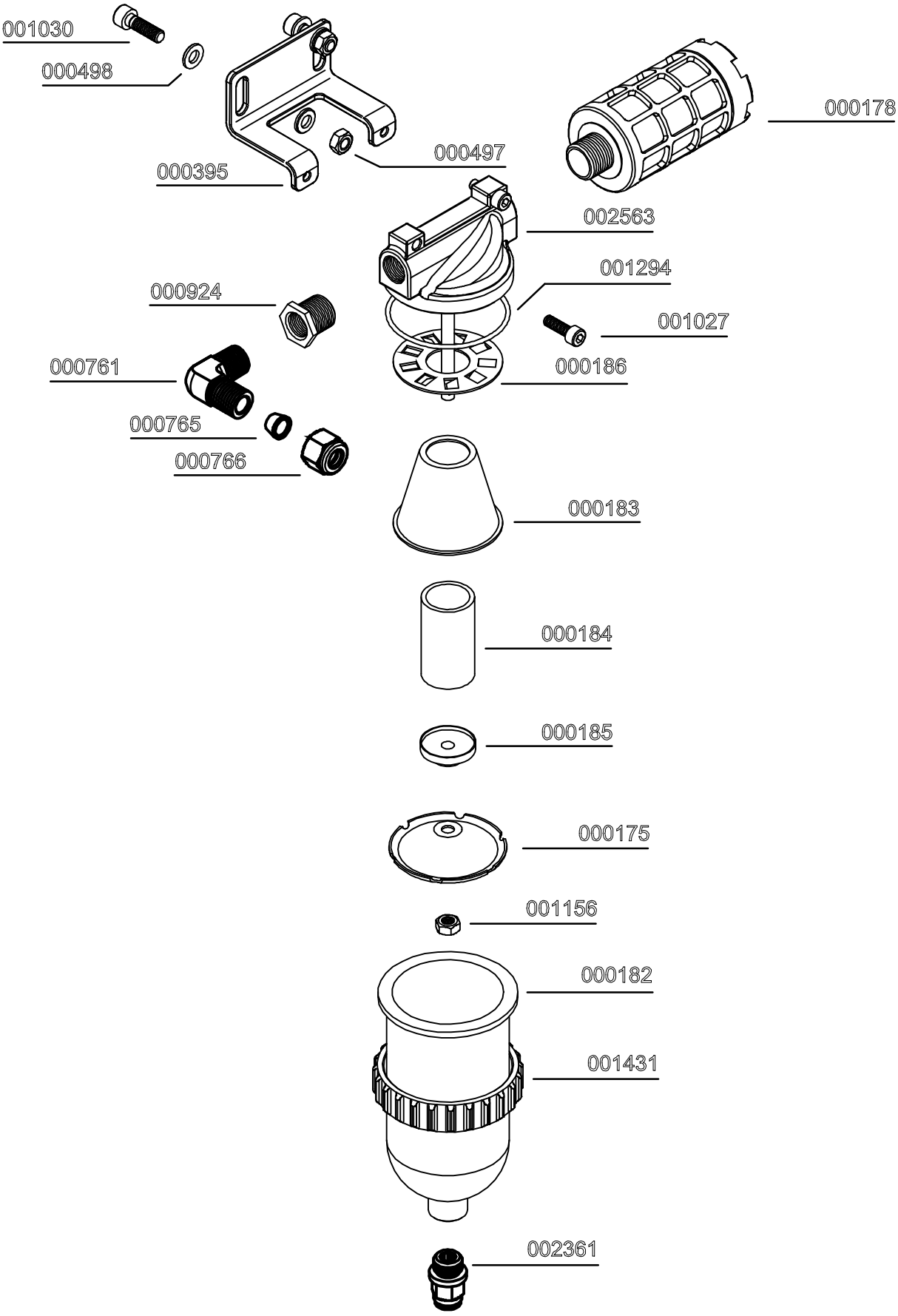
Kompressor: L&W 450 D
Baugruppe: Wasserabscheider 2. Stufe
Assembly: Water separator 2nd Stage



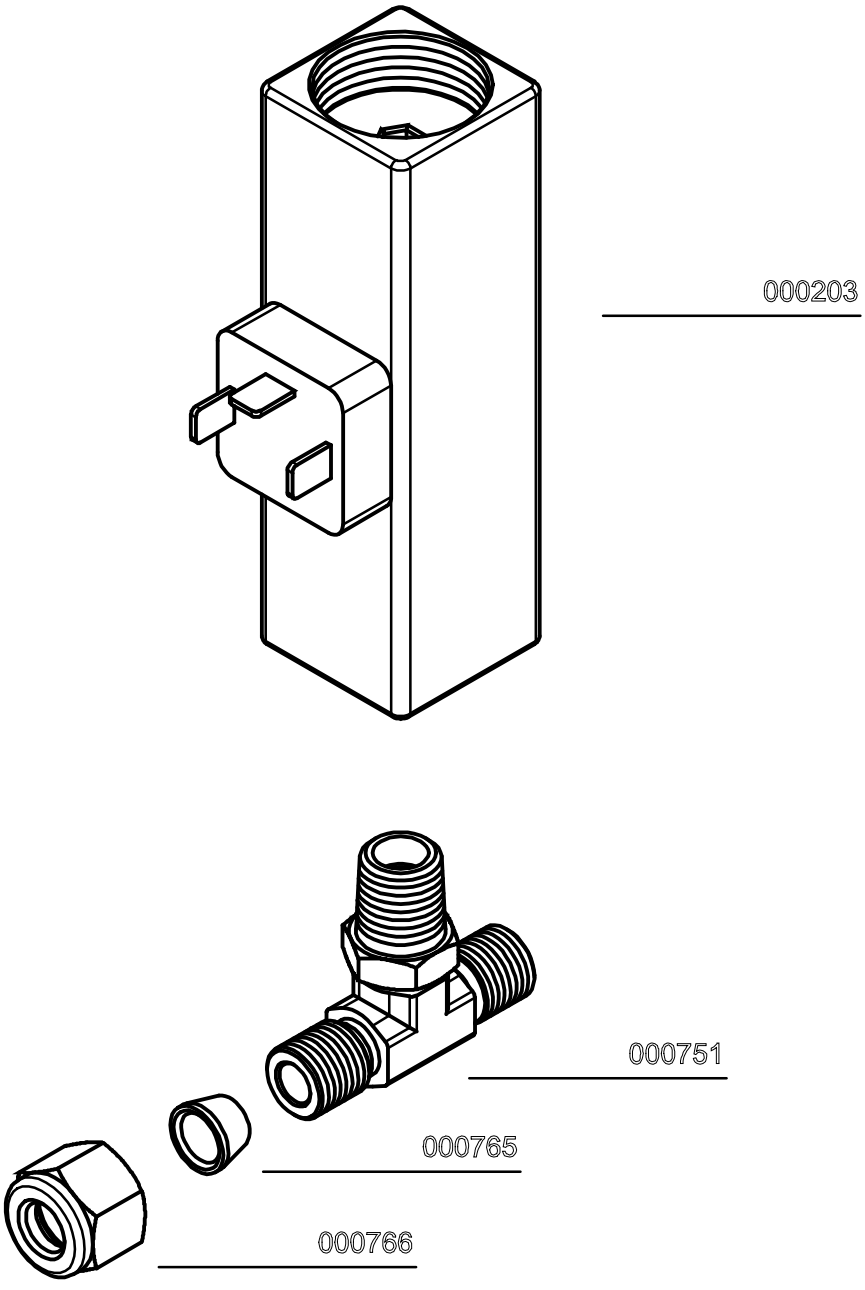
Kompressor: L&W 450 D
Baugruppe: Filterpatrone
Assembly: Filter cartridge

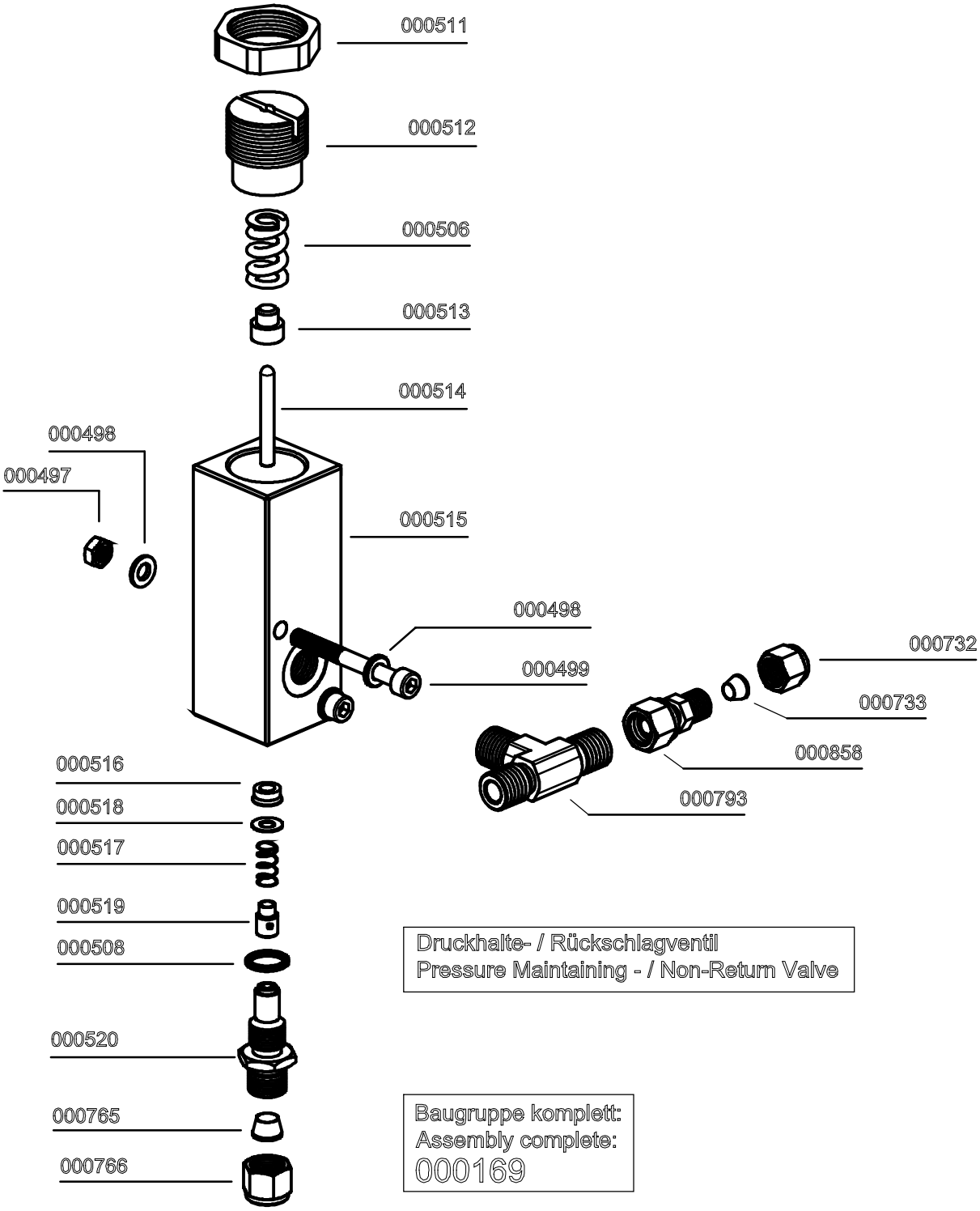


Kompressor: L&W 450 D
Baugruppe: Öl-/ Wasserabscheider Stufe 3
Assembly: Oil-/ Water separator 3rd Stage



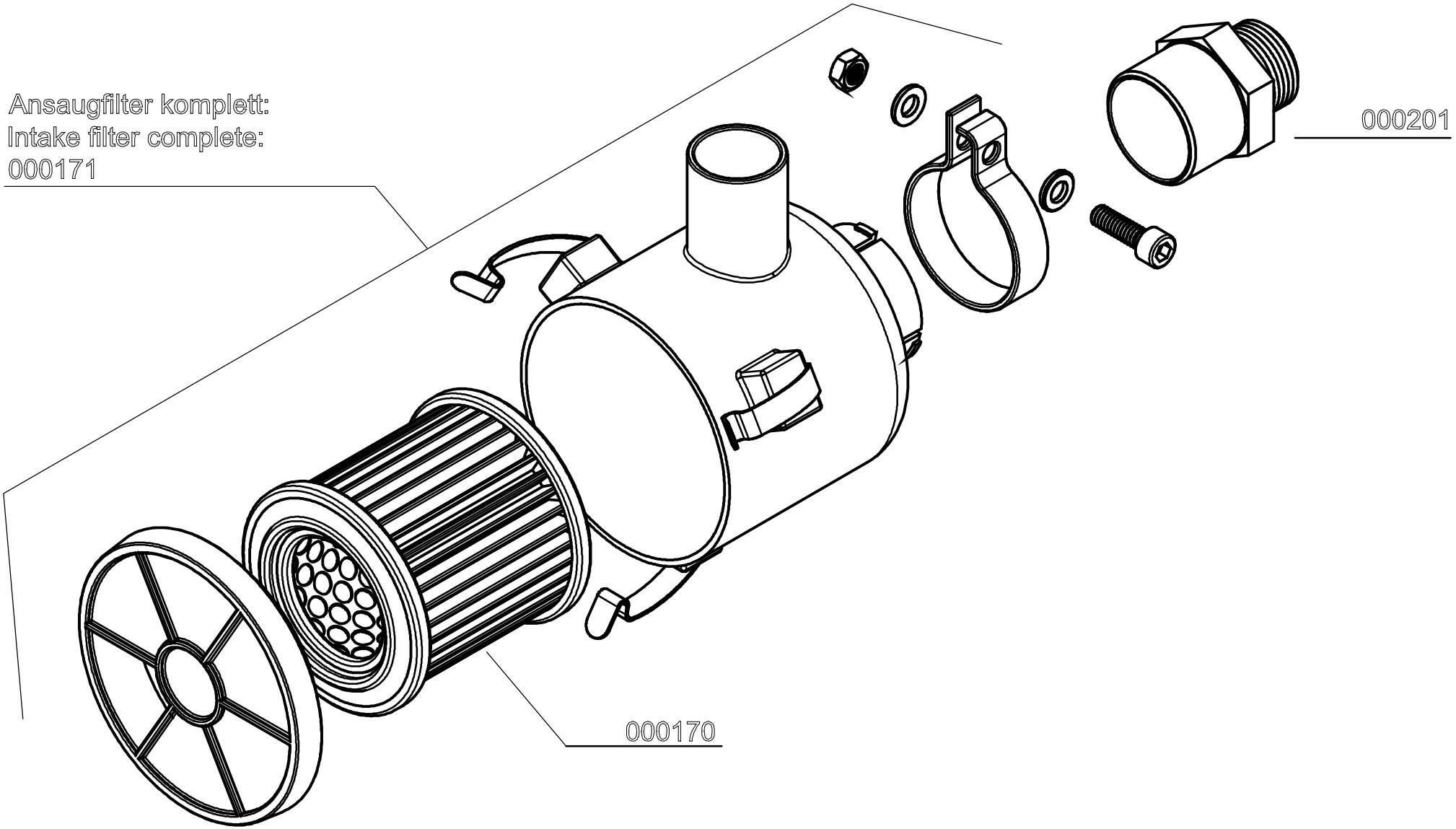
Kompressor: L&W 450 D
Baugruppe: Druckschalter
Assembly: Pressure Switch



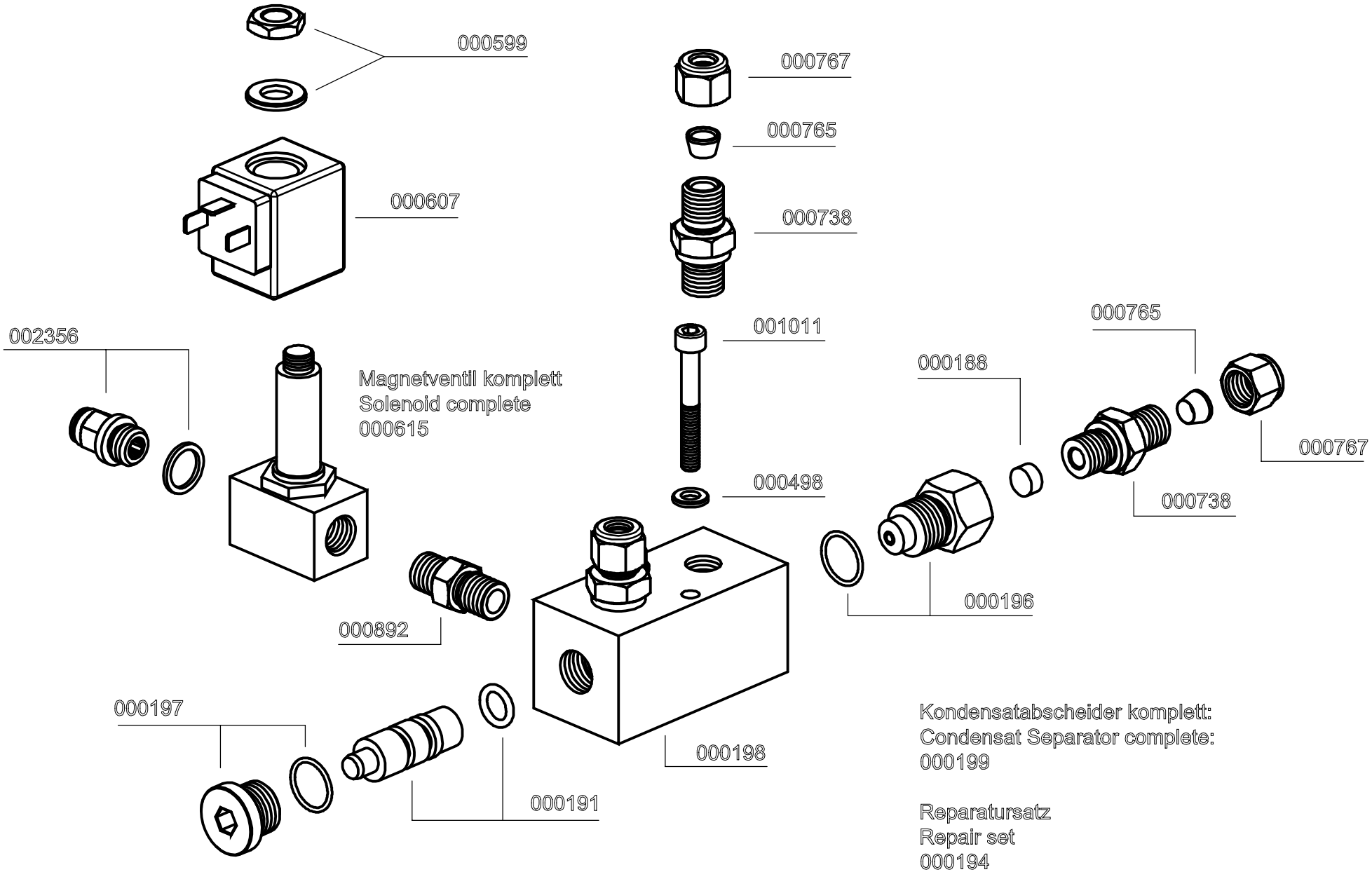



Druckhalte- / Rückschlagventil
Pressure Maintaining - / Non-Return Valve

Baugruppe komplett:
Assembly complete:
000169


Ansaugfilter komplett:
Intake filter complete:
000171
000201
000170

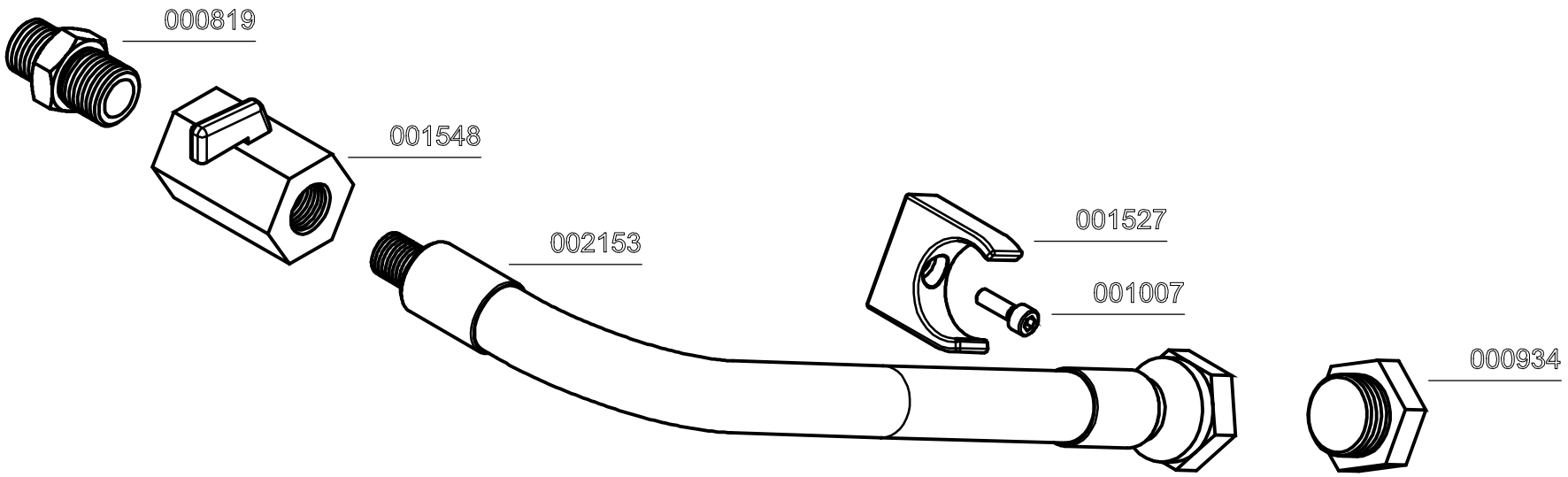
Kompressor: L&W 450 D
Baugruppe: Kondensat Ablassventil
Assembly: Condensat drainage valve



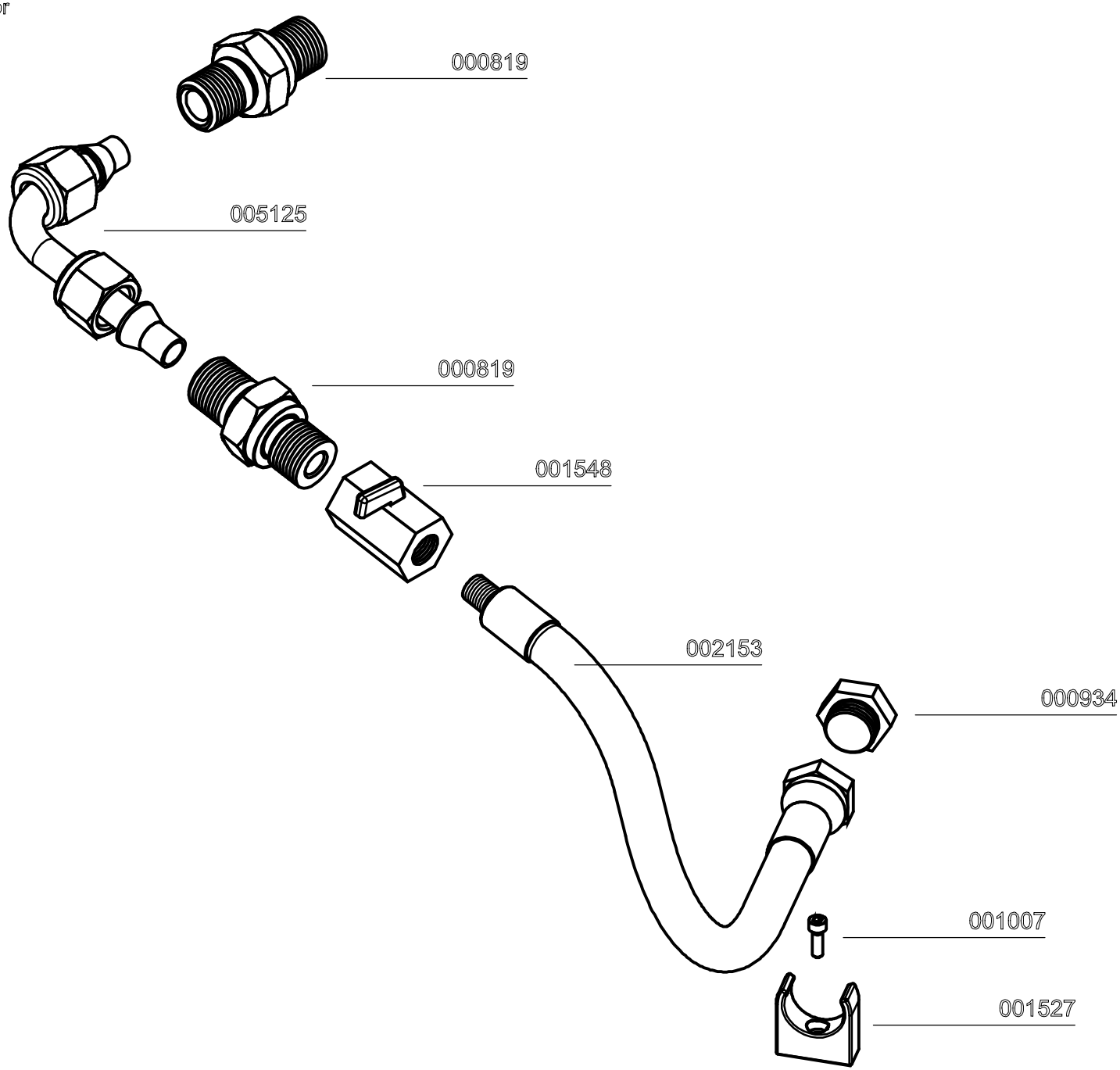

Kondensatabscheider komplett:
Condensat Separator complete:
000199

Reparatursatz
Repair set
000194

Kompressor: LW 450 D
Baugruppe: Ölablassschlauch - Kompressor
Assembly: Oil Drain Hose - Compressor

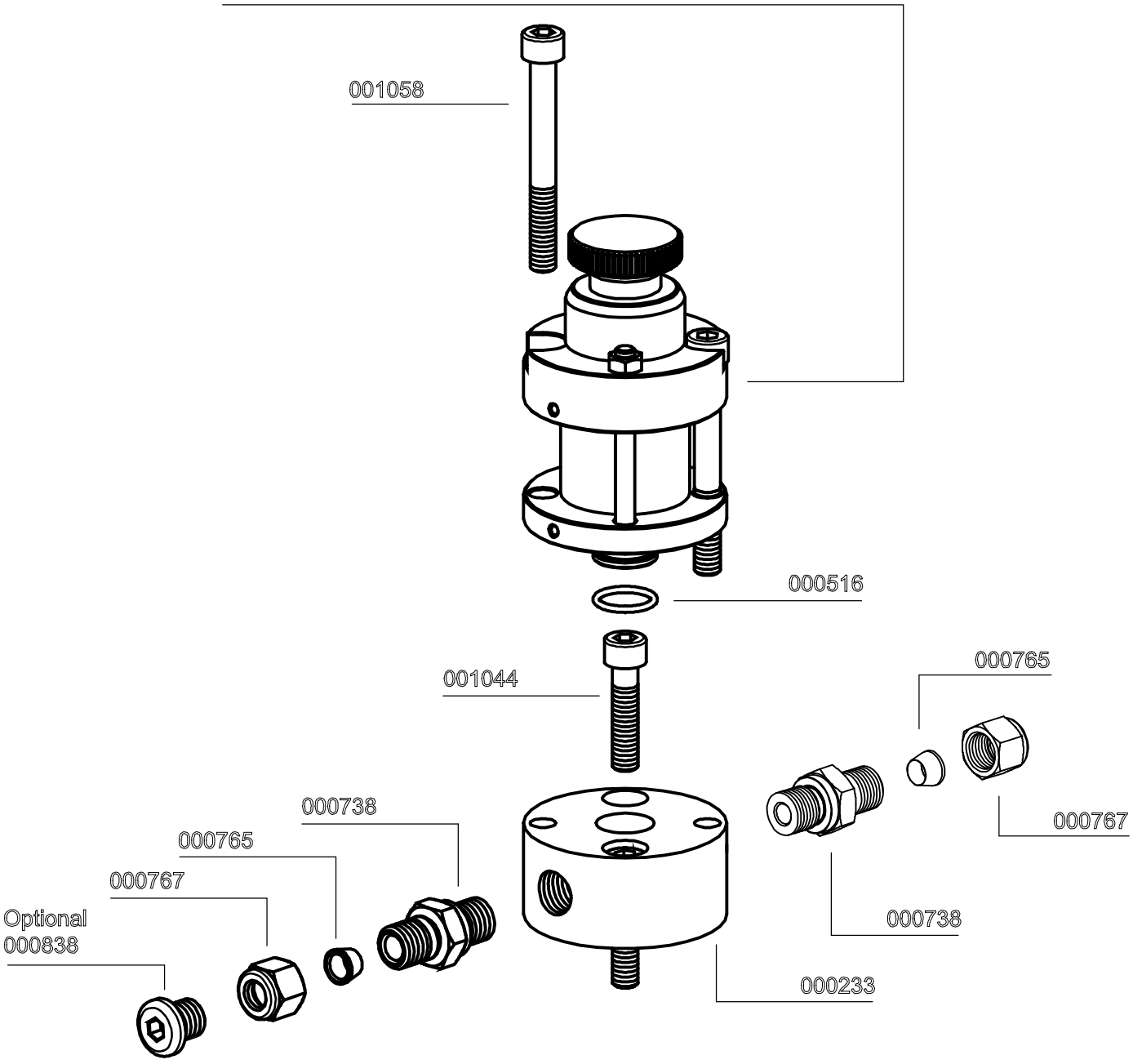


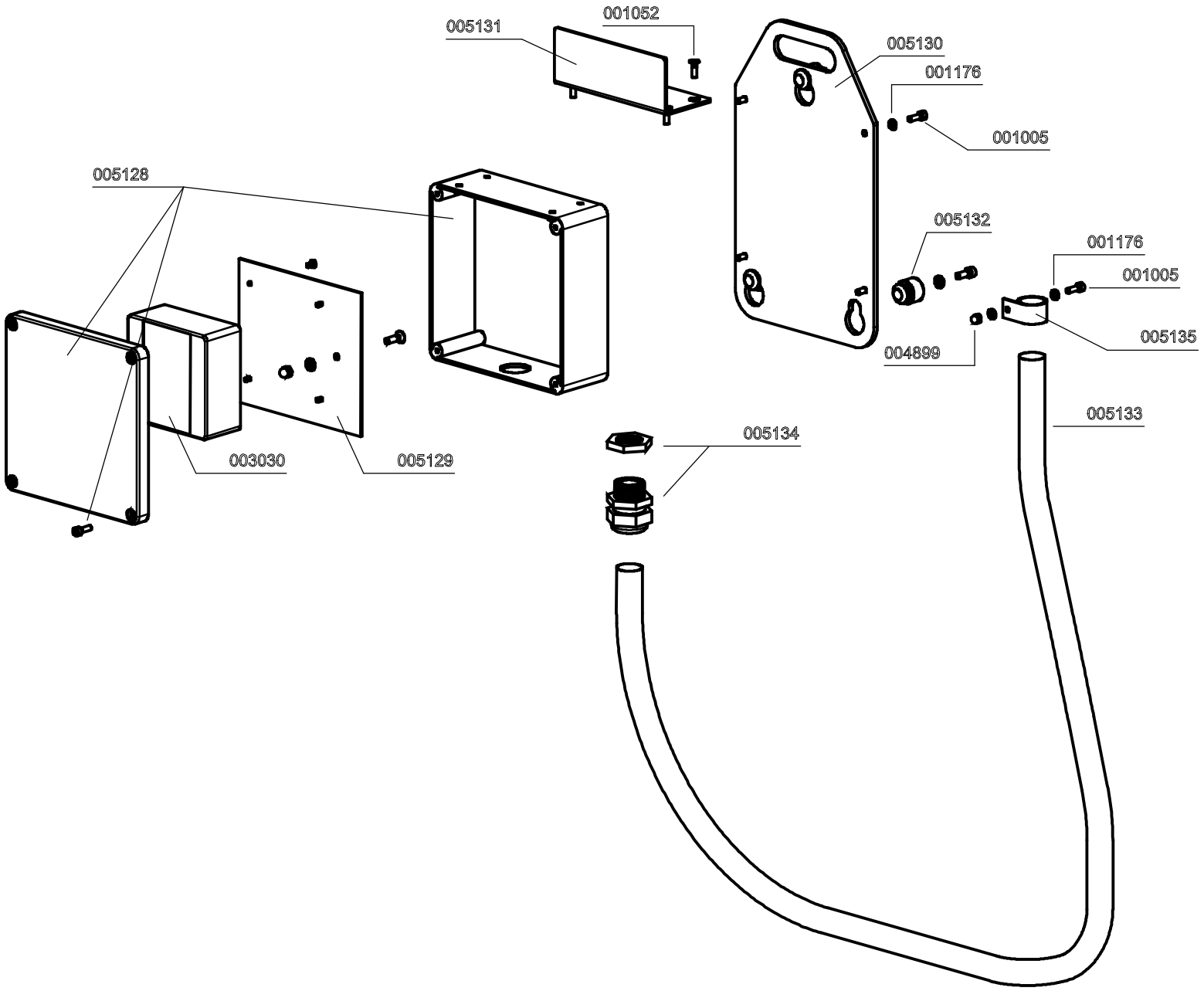
Kompressor: LW 450 D
Baugruppe: Ölablassschlauch - Motor
Assembly: Oil Drain Hose - Engine



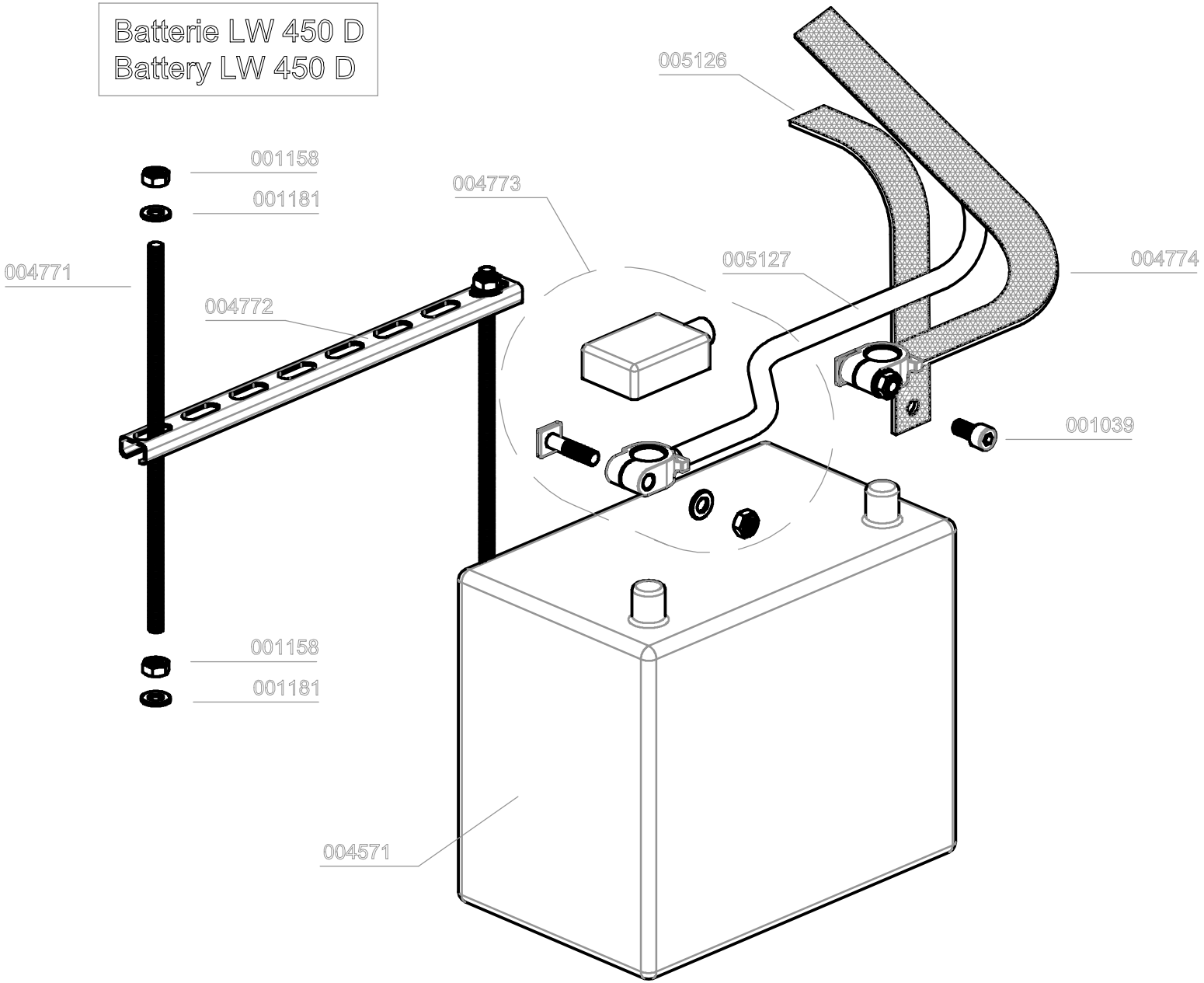
Kompressor: L&W 450 D
Baugruppe: Sicherheitsventil
Assembly: Safety valve

| Druck | SV-Ventil mit CE-Prüfung | SV-Ventil mit TÜV-Prüfung |
|---|---|---|
| 225 bar | 001814 | 000553 |
| 250 bar | 001815 | 000554 |
| 285/300 bar | ---------- | 000555 |
| 330 bar | 001816 | 000556 |
| 350 bar | 001817 | 000557 |

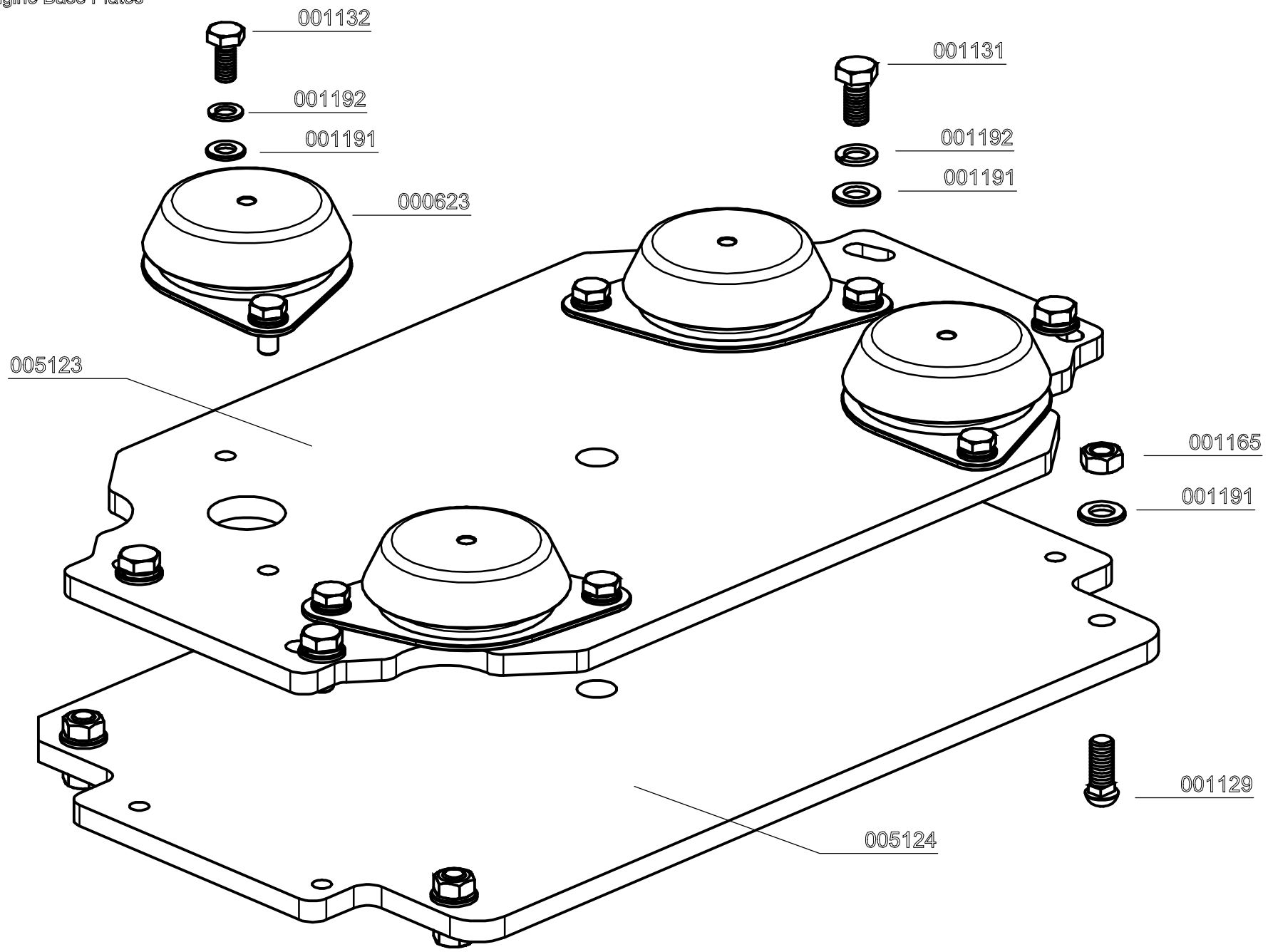



005131
001052
005130
001176
001005
005128
005132
001176
001005
005135
004899
005133
005134
003030
005129

Batterie LW 450 D
Battery LW 450 D



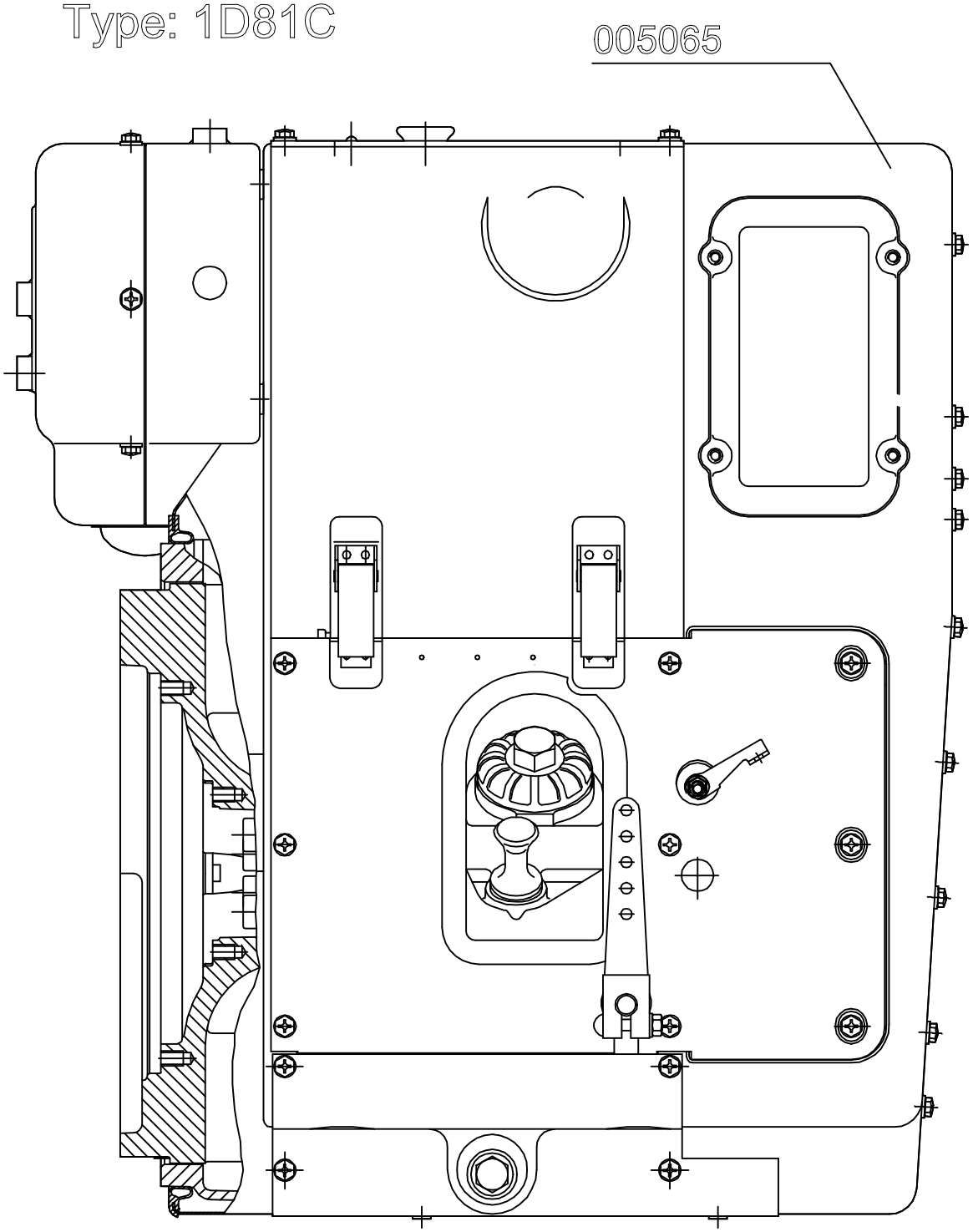
Baugruppe: Motorplatten
Assembly: Engine Base Plates



# LW 450 D

## HATZ Diesel Engine

## Type: 1D81C



# Spare Part List / Ersatzteilliste LW 450 D

| Description | Benennung | Order No.<br>Bestell-Nr. |
|---|---|---|
| **Synthetic Compressor Oil, Volume: 1 Litre** | **L&W synthetisches Kompressoren Öl<br>Inhalt: 1 Liter -** | **000001** |
| **Filter Cartridge (Breathing Air)<br>Active Carbon / Molecular Sieve** | **Filterpartone (Atemluft)<br>Molekularsieb / Aktivkohle** | **000002** |
| **Pressure Maintaining Valve** | **Druckhalte-/ Rückschlagventil** | **000169** |
| **Air Intake Cartridge** | **Ansaugfilterpatrone** | **000170** |
| **Intake Filter Housing c/w filt** | **Ansaugfilter kompl. mit Filtereinsatz** | **000171** |
| **Plastic Air Deflector** | **Halteteller** | **000172** |
| **Sintered Filter** | **Sinterfilter** | **000173** |
| **Twist Disk** | **Drallscheibe** | **000174** |
| **Cover** | **Deckel** | **000175** |
| **Water Deflector, Plastic** | **Wasserabweiser** | **000177** |
| **Silencer** | **Schalldämpferelement Wasserabscheider 3. Stufe** | **000178** |
| **Water Separator c/w bracket** | **Filtergehäuse kompl. mit Halterung** | **000182** |
| **Filter Protector** | **Wasserabweiser** | **000183** |
| **Siltered Filter** | **Sinterfilter** | **000184** |
| **Plate** | **Halteteller** | **000185** |
| **Twist Disk** | **Drallscheibe** | **000186** |
| **Sintered Filter** | **Sinterfilter für Kondensatventil** | **000188** |

# Spare Part List / Ersatzteilliste LW 450 D

| Description | Benennung | Order No. Bestell-Nr. |
|---|---|---|
| **Piston c/w O-Ring** | **Steuerkolben mit O-Ring Pneumatisches Kondensatablassventil** | **000191** |
| **Repair Kit Condensate Valve** | **Reparatursatz Pneumatisches Kondensatablaßventil** | **000194** |
| **Inlet Jet Screw c/w O-Ring** | **Düsenschraube mit O-Ring Pneumatisches Kondensatablassventil** | **000196** |
| **Plug c/w Seal Ring** | **Stopfen mit Dichtung Pneumatisches Kondensatventil** | **000197** |
| **Body PCV** | **Gehäuse Pneumatisches Kondensatablassventil** | **000198** |
| **Pneumatic Condensate Valve** | **Kondensatablassventil, komplette Baueinheit** | **000199** |
| **Adapter Flange Oil Pump** | **Ölpumpenhalteflansch zur Befestigung der Ölpumpe am Kompressor** | **000200** |
| **Adapter Inlet Filter Housing** | **Adapter für Luftansaugfilter** | **000201** |
| **Pressure Switch 50-350bar** | **Enddruck Druckschalter, Pmax: 350 bar** | **000203** |
| **Oil Pump, complete unit** | **Ölpumpe kompl.** | **000204** |
| **Drive Flange Oil Pump** | **Ölpumpenantriebsflansch** | **000208** |
| **Safety Valve 1st Stage, 8 bar** | **Sicherheitsventil kompl. G3/8" 1. Stufe** | **000220** |
| **Safety Valve 2nd Stage, 50 bar** | **Sicherheitsventil kompl. G3/8" 2. Stufe** | **000225** |
| **Base for Safety Valve** | **Sockel für Sicherheitsventil** | **000233** |
| **Ball Bearing, Type 6308** | **Rillenkugellager 6308** | **000239** |

# Spare Part List / Ersatzteilliste LW 450 D

| Description | Benennung | Order No. Bestell-Nr. |
|---|---|---|
| **Gasket, Guide cylinder** | **Dichtung Führungszylinder** | **000240** |
| **Gasket** | **Dichtung für Kurbelwellen - Flanschdeckel** | **000241** |
| **Thrust Washer & Circlip** | **Sicherungen & Scheiben** | **000242** |
| **Bearing Bush** | **Lagerring** | **000243** |
| **Shaft Seal** | **Wellendichtring** | **000244** |
| **Oil Splash Ring** | **Ölring** | **000248** |
| **Copper Washer** | **Dichtring** | **000250** |
| **Lower Valve Gasket, Copper** | **Untere Ventildichtung 2. Stufe (Kupfer)** | **000253** |
| **Upper Valve Gasket, Paper** | **Obere Ventildichtung 2. Stufe (Papier)** | **000254** |
| **Valve assembly 2nd Stage** | **Ventil 2. Stufe** | **000256** |
| **Upper Valve Gasket 1st Stage** | **Obere Dichtung Ventilplatte 1. Stufe** | **000257** |
| **Lower Valve Gasket 1st Stage** | **Untere Dichtung Ventilplatte 1. Stufe** | **000258** |
| **Conrod 1st Stage, compl.** | **Pleuel 1. Stufe kompl.** | **000267** |
| **Conrod 2nd & 3rd Stage, c/w bearing** | **Pleuel 2. & 3. Stufe kompl. mit Lager; ∅ 16 x 22mm** | **000268** |
| **Crankshaft complete** | **Kurbelwelle kompl.** | **000269** |
| **Valve Head 2nd Stage** | **Ventilkopf 2. Stufe** | **000270** |
| **Valve Head 1st Stage** | **Ventilkopf1. Stufe** | **000271** |
| **Main Bearing Flange** | **Lagerdeckel** | **000273** |

# Spare Part List / Ersatzteilliste LW 450 D

| Description | Benennung | Order No. Bestell-Nr. |
|---|---|---|
| **Compression Cylinder 2nd Stage Ø42 mm** | **Zylinder 2. Stufe ∅ 42 mm** | **000274** |
| **Piston 1st Stage ∅105mm** | **Kolben 1.Stufe, ∅105mm, LW 570** | **000359** |
| **Set Piston Rings ∅105mm** | **Kolbenringsatz∅105mm, LW 570 1.Stufe** | **000360** |
| **Piston Pin ∅25x90mm** | **Kolbenbolzen LW 570, 1.Stufe ∅25x90mm** | **000361** |
| **Piston 2nd Stage ∅50mm** | **Kolben 2.Stufe, ∅50mm, LW 570** | **000362** |
| **Set Piston Rings ∅50mm 4pcs** | **Kolbenringsatz∅50mm (4 Stück)** | **000363** |
| **Retaining Ring** | **Sicherungsring** | **000364** |
| **Set Piston Rings 3rd Stage** | **Kolbenringsatz 3.Stufe** | **000365** |
| **Piston ∅25mm** | **Kolben ∅25mm, LW570, Stufe 3** | **000366** |
| **In-&Outlet Valve ∅122 mm** | **Saug- Druckventil ∅122mm LW 570, LW 720, 1.Stufe** | **000369** |
| **Piston Pin ∅20x40 mm** | **Kolbenbolzen LW 570, 2.Stufe ∅20x40mm** | **000373** |
| **Oil House** | **Rohrleitung Ölpumpe Einlass** | **000376** |
| **Top Cap Water Separator** | **Wasserabscheider Oberteil** | **000379** |
| **Brass Filter Adapter** | **Messing Adapter für Filterpatrone, 1,7/2,3Liter** | **000383** |
| **Jet Filter Housing** | **Düse Filtergehäuse** | **000384** |
| **Bracket Water Separator** | **Blechhalter Kondensatabscheider** | **000395** |
| **Nut M6** | **Mutter M6** | **000497** |
| **Washer A6** | **Unterlegscheibe, DIN 125 A6** | **000498** |

# Spare Part List / Ersatzteilliste LW 450 D

| Description | Benennung | Order No. Bestell-Nr. |
|---|---|---|
| **Bolt M6x55mm** | **Zylinderschraube, M6x55 DIN912** | **000499** |
| **Spring** | **Feder für Druckhalteventil** | **000506** |
| **Cap PMV** | **Kappe für Druckhalteventil** | **000507** |
| **Gasket Ring USIT** | **USIT Ring, 13,7x∅20x1,5** | **000508** |
| **Allen Bolt** | **Innen-Sechskantschraube** | **000509** |
| **Lock Nut PMV** | **Mutter, Druckhalte-Rückschlagventil** | **000511** |
| **Set Bolt PMV** | **Schraube, Druckhalte-Rückschlagventil** | **000512** |
| **Spring Adapter PMV, alloy** | **Druckstück für Druckhalteventil, Alu, Federadapter Druckhalteventil** | **000513** |
| **Stud** | **Stift** | **000514** |
| **Main Body PMV, black** | **Gehäuse, Druckhalte-Rückschlagventil** | **000515** |
| **Seal Ring PMV** | **Nutring, 5x10x5/2,5 90° blau** | **000516** |
| **Coil Spring PMV** | **Feder, Druckhalte-/Rückschlagventil** | **000517** |
| **Brass Washer** | **Unterlegscheibe, Messing, 10x6x1** | **000518** |
| **Plastic Seal Piston PMV** | **Dichtkappe, Druckhalte-Rückschlagventil, Kunststoff schwarz** | **000519** |
| **Banjo Bolt PMV** | **Hohlschraube, Druckhalte-Rückschlagventil** | **000520** |
| **Bracket Heat Exchanger** | **Klemmschiene Wärmetauscher** | **000521** |
| **Lower Valve Gasket** | **Alu Dichtung, Saug- u. Druckventil unten, 3.Stufe LW** | **000533** |

# Spare Part List / Ersatzteilliste LW 450 D

| Description | Benennung | Order No. Bestell-Nr. |
|---|---|---|
| | **570** | |
| **Upper Alloy Seal Ring** | **Alu Dichtring / Dichtung, Saug- & Druckventil oben 3.Stufe 450/570** | **000540** |
| **In-&Outlet Valve** | **Saug-Druckventil, komplett 570 3.Stufe** | **000544** |
| **Safety Valve TÜV 225 bar** | **Sicherheitsventil, TÜV Einstellbescheinigung Einstelldruck 225bar** | **000553** |
| **Safety Valve TÜV 250 bar** | **Sicherheitsventil, TÜV Einstellbescheinigung Einstelldruck 250bar** | **000554** |
| **Safety Valve TÜV 300 bar** | **Sicherheitsventil, TÜV Einstellbescheinigung Einstelldruck 300bar** | **000555** |
| **Safety Valve TÜV 330 bar** | **Sicherheitsventil, TÜV Einstellbescheinigung Einstelldruck 330bar** | **000556** |
| **Safety Valve TÜV 350 bar** | **Sicherheitsventil, TÜV Einstellbescheinigung Einstelldruck 350bar** | **000557** |
| **Ring Water Separator** | **Ring** | **000562** |
| **Container Water Separator** | **Druckbehälter** | **000563** |
| **Container Water Separator** | **Wasserabscheider-Behälter, 2.Stufe LW450** | **000564** |
| **Bracket** | **Halterung** | **000568** |
| **Repair Kit Solenoid** | **Reparatursatz** | **000594** |
| **Lock Nut, Solenoid** | **Klemmmutter Magnetventil** | **000599** |

# Spare Part List / Ersatzteilliste LW 450 D

| Description | Benennung | Order No. Bestell-Nr. |
|---|---|---|
| **Solenoid Coil NC 230V AC 40bar** | **Magnetspule NC 230V AC 40bar, ohne Stecker, TM30** | **000607** |
| **Solenoid NC 80 G1/4 230V** | **Magnetventil 2x1/4" 40bar, 230 V 50/60 Hz NC, Messing** | **000616** |
| **Engine Mounting** | **Gummi - Motorhalterungen** | **000623** |
| **PVC Hose for Bracket** | **PVC Schlauch, transparent, für Wärmetauscher** | **000624** |
| **Pipe Clamp 8mm –single, 1pair PVC** | **PVC - Rohrschelle für 8mm Rohr (einfach)** | **000628** |
| **Pressure Gauge, 0-400 bar** | **Manometer mit Befestigungsbügel, 0 - 400 bar** | **000662** |
| **Connection** | **Verschraubung GE 06PLR ¼" ED** | **000712** |
| **T-piece Connection** | **Verschraubung TE 06 L, TE G1/8" / 6L** | **000716** |
| **Nut 06L** | **Mutter 06L** | **000732** |
| **Olive Seal 6mm** | **Schneidring SR 06 (∅6mm)** | **000733** |
| **Connection** | **Verschraubung gerade** | **000735** |
| **Connection** | **Verschraubung Oil Pumpe Druckseite** | **000737** |
| **Connection** | **Einschraubverbindung gerade - Eingang** | **000738** |
| **Connection** | **Verschraubung, GE 08 L/1/4"kegelig** | **000739** |
| **Connection** | **Verschraubung, TE 08 LR/1/4"kegelig** | **000751** |
| **Connection** | **Verschraubung LE 08 LR T-Stück mit Einschraubgewinde G¼" seitlich** | **000758** |
| **Connection** | **Verschraubung WE 08 PLR CFX, Einschraubverschraubung ¼"** | **000761** |

# Spare Part List / Ersatzteilliste LW 450 D

| Description | Benennung | Order No. Bestell-Nr. |
|---|---|---|
| **Olive Seal 8 mm** | **Schneidring 8 mm** | **000765** |
| **Nut 08L** | **Mutter für Verschraubung 8 L** | **000766** |
| **Nut 08S** | **Mutter M 08 S A3C** | **000767** |
| **Connection** | **Verschraubung TE 10L R1/4"** | **000793** |
| **Connection** | **Einschraubverbindung gerade - Eingang** | **000818** |
| **Connection** | **Verschraubung GE 15L M18x1,5** | **000819** |
| **Connection** | **$90^0$ Winkelverschraubung Auslassseite** | **000820** |
| **Nut 15L** | **Mutter für Verschraubung 15 L** | **000822** |
| **Olive Seal 15 mm** | **Schneidring 15 mm** | **000823** |
| **Plug** | **Verschlussstopfen VSTI R1/8" ED** | **000837** |
| **Plug** | **Verschlussstopfen VSTI R1/4" ED CFX** | **000838** |
| **Plug** | **Verschlussstopfen VSTI R3/8" ED** | **000839** |
| **Reducer** | **Reduzierung RED 10/06L, mit fester Mutter** | **000858** |
| **Olive Seal 18 mm** | **Schneidring 18 mm** | **000861** |
| **Nut 18L** | **Mutter für Verschraubung 18 L** | **000862** |
| **Ellbow Connection** | **$90^0$ Winkelverschraubung Ausgang** | **000863** |
| **Double Nipple** | **Doppelnippel G1/8"-1/4", 4F3MK4S** | **000892** |
| **A-Lock Connection** | **A-Lok Verschraubung ETM8-316, T-Stück für ∅8mm** | **000914** |

# Spare Part List / Ersatzteilliste LW 450 D

| Description | Benennung | Order No.<br>Bestell-Nr. |
|---|---|---|
| | **Rohr** | |
| **Reducer** | **Reduzierung, R1/4"xR1/8"** | **000924** |
| **Plug** | **Ölablassstopfen** | **000934** |
| **Pan Head Bolt** | **Flachkopfzylinderschraube<br>M6x12mm DIN6912 8.8 ZN** | **000949** |
| **Hexagon Bolt** | **Sechskantschraube, M6x16, DIN933 8.8** | **000951** |
| **Hexagon Bolt** | **Sechskantschraube, M6x20, DIN933 8.8** | **000952** |
| **Allen Bolt** | **Zylinderschraube, M10x30mm DIN912 8.8 ZN** | **000967** |
| **Allen Screw** | **Zylinderschraube, M5x16mm DIN912 8.8 ZN** | **001005** |
| **Allen Screw** | **Zylinderschraube, M5x25mm DIN912 8.8 ZN** | **001007** |
| **Allen Screw** | **Zylinderschraube, M6x60mm DIN912 8.8 ZN** | **001011** |
| **Allen Bolt** | **Zylinderschraube, M5x45mm DIN912 8.8 ZN** | **001022** |
| **Allen Bolt** | **Zylinderschraube, M6x30mm DIN912 8.8 ZN** | **001027** |
| **Allen Bolt** | **Zylinderschraube, M6x16mm DIN912 8.8 ZN** | **001030** |
| **Allen Bolt** | **Zylinderschraube, M8x16mm DIN912 8.8 ZN** | **001039** |
| **Allen Screw** | **Zylinderschraube, M8x20mm DIN912 8.8 ZN** | **001040** |
| **Allen Screw** | **Zylinderschraube, M8x35mm DIN912 8.8 ZN** | **001043** |
| **Allen Screw** | **Zylinderschraube, M8x40mm DIN912 8.8 ZN** | **001044** |
| **Allen Screw** | **Befestigungsschrauben für Luftverteilerleiste** | **001048** |

| DESCRIPTION | BENENNUNG | Order No.<br>Bestell-Nr. |
|---|---|---|
| **Slotted Counter Sunk Screw** | **Senkkopfschraube mit Schlitz<br>M5x16mm DIN963** | **001052** |
| **Allen Bolt** | **Zylinderschraube** | **001056** |
| **Allen Bolt** | **Innen-Sechskantschraube** | **001058** |
| **Allen Bolt** | **Innen-Sechskantschraube** | **001060** |
| **Counter Sunk Screw** | **Senkschraube, M6x20mm DIN7991 8.8 ZN** | **001075** |
| **Allen Bolt** | **Zylinderschraube** | **001085** |
| **Allen Bolt** | **Zylinderschraube** | **001088** |
| **Hexagon Screw** | **6-kant Schraube, M10x20mm DIN933 8.8 ZN** | **001099** |
| **Allen Bolt** | **Zylinderschraube** | **001100** |
| **Hexagon Screw** | **6-kant Schraube, M10x40mm DIN933 8.8 ZN** | **001102** |
| **Hexagon Bolt** | **Keilriemenspannschraube kompl. mit Mutter** | **001107** |
| **Fixing Bolt** | **Befestigungsschrauben für Motorgrundplatte** | **001129** |
| **Fixing Bolt** | **Befestigungsschrauben für Wasserabscheider 2. Stufe** | **001131** |
| **Hexagon Screw** | **6-kant Schraube, M12x25mm DIN933 8.8 ZN** | **001132** |
| **Hexagon Screw** | **Sechskantschraube für Riemenscheibe** | **001133** |
| **Nut M5** | **Mutter M5** | **001151** |
| **Lock Nut** | **Mutter M6** | **001156** |

# Spare Part List / Ersatzteilliste LW 450 D

| Description | Benennung | Order No. Bestell-Nr. |
|---|---|---|
| **Domed Nut M6** | **Hutmutter, M6 DIN1587 ZN** | **001157** |
| **Nut M8** | **Mutter M8** | **001158** |
| **Nut M8** | **Mutter M8** | **001159** |
| **Nut M10** | **Mutter M10** | **001163** |
| **Nut M12** | **Mutter M12** | **001165** |
| **Washer M5** | **Unterlegscheibe M5** | **001176** |
| **Washer A6** | **U-Scheibe A6 M0030 ZN** | **001179** |
| **Washer M8** | **Unterlegscheibe M8** | **001181** |
| **Washer M10** | **Unterlegscheibe M10** | **001186** |
| **Washer A10** | **U-Scheibe A10 DIN 125 ZN** | **001188** |
| **Spring Washer A10** | **Federring A10 DIN127 ZN** | **001190** |
| **Washer M12** | **Unterlegscheibe M12** | **001191** |
| **Spring Washer A12** | **Federring A12 DIN127 ZN** | **001192** |
| **Shaft Washer** | **Federscheiben** | **001194** |
| **Square Nut M8** | **Vierkantmutter M8** | **001205** |
| **Woodruff Key** | **Passfeder** | **001207** |
| **O-Ring** | **O-Ring** | **001271** |
| **O-Ring** | **O-Ring** | **001272** |

# Spare Part List / Ersatzteilliste LW 450 D

| Description | Benennung | Order No. Bestell-Nr. |
|---|---|---|
| **Back-up Ring Filter Housing** | **Stützring für Filtergehäuse** | **001285** |
| **O-Ring Filter Housing** | **O-Ring für Filtergehäuse** | **001287** |
| **O-Ring** | **O-Ring** | **001294** |
| **Copper Gasket** | **Kupferdichtung** | **001323** |
| **Circlip A39** | **Sicherungsring A39 DIN471** | **001345** |
| **Circlip I22** | **Sicherungsring I22 DIN472** | **001356** |
| **Guide Cylinder 3rd Stage** | **Führungszylinder 3. Stufe ∅ 42 mm** | **001426** |
| **Lock Ring** | **Befestigungsring** | **001431** |
| **V-Belt** | **Keilriemen LW 450 D, SPA2532** | **001450** |
| **Oil Pressure Switch 0.5-5bar** | **Druckschalter 0,5-5bar, Öldruckschalter** | **001525** |
| **Oil Drain Hose Clamp** | **Klemmhalter für Ölablassschlauch, LW720 EG VD8** | **001527** |
| **Oil Drain Valve** | **Ölablassventil, Kugelhahn** | **001548** |
| **Endpressure Safety Valve CE** | **Enddrucksicherheitsventil - bauteilgeprüft CE Einstelldruck 225bar** | **001814** |
| **Endpressure Safety Valve CE** | **Enddrucksicherheitsventil - bauteilgeprüft CE Einstelldruck 250bar** | **001815** |
| **Endpressure Safety Valve CE** | **Enddrucksicherheitsventil - bauteilgeprüft CE Einstelldruck 330bar** | **001816** |
| **Endpressure Safety Valve CE** | **Enddrucksicherheitsventil - bauteilgeprüft** | **001817** |

# Spare Part List / Ersatzteilliste LW 450 D

| Description | Benennung | Order No. Bestell-Nr. |
|---|---|---|
| | **CE Einstelldruck 350bar** | |
| **Washer A10.5** | **U-Scheibe A10,5 DIN6340 ZN** | **001828** |
| **Bracket Filter Tower 450 E** | **Halteblech Filtergehäuse LW 450 E** | **002015** |
| **Counter for working hours** | **Betriebsstundenzähler 10-80 V mit Halteklammer** | **002090** |
| **Spacer Bolt** | **Distanzschraube (Zylinderkopf 1. Stufe)** | **002106** |
| **Cylinder 1st Stage** | **Zylinder 1. Stufe ∅ 95 mm** | **002111** |
| **T-shaped Filter Cartridge Tool** | **Filterschlüssel 1,7 & 2,3 Liter Behälter** | **002140** |
| **U-Clamp Filter Housing** | **Haltebügel Filtergehäuse** | **002147** |
| **Drain Hose for Oil** | **Ölablassschlauch** | **002153** |
| **O-Ring** | **O-Ring Ölpumpenflansch, 32,2x3 NBR70** | **002340** |
| **Quick Release Coupling Straight G1/8" / 8 for condensate hose** | **Schnellkupplung gerade G1/4"-8mm für Kondensatschlauch** | **002356** |
| **Quick Release Coupling G1/8" / 6 mm** | **Schnellkupplung G1/8" / 6mm Schlauch** | **002358** |
| **Quick Release Coupling, straight G1/8" / 8 mm** | **Schnellkupplung gerade G1/8"-8mm Schlauch, 45.018-8** | **002361** |
| **Filter Assembly, c/w integrated oil-/water separator, Pmax: 350 bar, volume: 1.7 ltr** | **Hochdruckfiltergehäuse 1,7 Ltr. mit Wasserabscheider Pmax: 350 bar** | **002366** |
| **Valve Head 3rd Stage** | **Ventilkopf 3. Stufe** | **002367** |
| **Drain Hose for Condensate** | **Kondensatablassschlauch** | **002371** |

# Spare Part List / Ersatzteilliste LW 450 D

| Description | Benennung | Order No. Bestell-Nr. |
|---|---|---|
| **Cone Plug** | **Verschlusskegel 06mm, Dichtkegel VK6** | **002395** |
| **Compression Cylinder 3rd Stage** | **Hochdruckzylinder 3. Stufe ∅ 18 mm** | **002478** |
| **Safety Switch, Cover Lid** | **Türschalter Sicherheitsschalter für ES Kompressoren** | **002550** |
| **Water Separator** | **Wasserabscheider Oberteil** | **002563** |
| **Tube** | **Rohr ∅6x1mm Ölpumpe / Druckschalter, inkl. Muttern & Schneidringe** | **002620** |
| **Needle Bearing** | **Nadellager ∅28x∅22x16mm Oberes Pleuellager LW 720 4.Stufe** | **002673** |
| **Oil Level Indicator, c/w gasket** | **Ölschauglas LW 1300 / 570 / 450 kompl. mit Dichtung** | **002701** |
| **Crankcase with lead/bronze bearing** | **Kurbelgehäuse mit Bleibronze - Lagerbuchse** | **002991** |
| **Heat Exchanger 1st Stage** | **Wärmetauscher von Ausgang 1. Stufe** | **002994** |
| **Heat Exchanger 2nd Stage** | **Wärmetauscher 2. Stufe** | **002995** |
| **Cooling Tube outlet 3rd stage to filter housing** | **Kühlrohr von Ausgang 3. Stufe zum Mole-Carbon - Filtergehäuse (Frontgitter)** | **003004** |
| **Puracon Moisture Controller 12V or 24V DC Version** | **Puracon Feuchtewächter, 12 od. 24V DC Version** | **003030** |
| **Cooling Tube** | **Kühlspirale Frontgitter Diesel** | **003085** |
| **Fan Pulley** | **Ventilator – Keilriemenscheibe (12,5 x ∅ 620 mm)** | **003172** |

# Spare Part List / Ersatzteilliste LW 450 D

| Description | Benennung | Order No. Bestell-Nr. |
|---|---|---|
| **Holding Screw** | **Halteschrauben Ölschleuderring** | **003181** |
| **Tube Oil Pump outlet** | **Rohrleitung Ölpumpe Auslass** | **003184** |
| | **Verschraubung Öleinfüllstutzen Kompressorenöl** | **003185** |
| **Oil Filler Compressor Oil** | **Verschlussstopfen Öleinfüllstutzen Kompressorenöl** | **003186** |
| **Bracket** | **Halter Öleinfüllstutzen Kompressorenöl** | **003187** |
| **Oil Filler** | **Öleinfüllstutzen Kompressorenöl** | **003188** |
| **Hose Clamp** | **Schelle** | **003189** |
| **Crankcase Vent Hose** | **Entlüftungsschlauch** | **003190** |
| **Plug Screw** | **Verschlussschraube** | **003191** |
| **Worm Screw** | **Gewindestift** | **003193** |
| **Worm Screw** | **Gewindestift** | **003198** |
| **Bracket** | **Halter, Öldruckschalter** | **003305** |
| **Woodruff Key** | **Passfeder** | **0003626** |
| **Battery** | **Batterie LW 450 / 570 D, 12V 45Ah 190A** | **004571** |
| **Control Cable** | **Steuerleitung Kondensatventil LW 450 Rohrleitung Inkl. Muttern & Schneidringen** | **004606** |
| **Pipe** | **Rohrleitung SV / DHRV LW 450 D inkl. Muttern & Schneidringen** | **004607** |
| **Tube** | **Rohrleitung Puracon / Filter, LW 540 D** | **004608** |

# Spare Part List / Ersatzteilliste LW 450 D

| Description | Benennung | Order No. Bestell-Nr. |
|---|---|---|
| | **Inkl. Muttern & Schneidringen** | |
| **Tube** | **Rohrleitung Kondensat LW 450 D inkl. Muttern & Schneidringen** | **004609** |
| **Pipe** | **Rohrleitung Kondensat LW 450 D, inkl. Muttern & Schneidringen** | **004611** |
| **Cover Lid** | **Kappdeckel LW 450 D Edelstahl** | **004612** |
| **Switch Box** | **Elektroschaltkasten LW 450 D Edelstahl** | **004614** |
| **Steering Roller** | **Lenkrolle mit Feststeller ∅125mm, Flanschbefestigung** | **004615** |
| **Fixed Roller** | **Bockrolle ∅125mm, Flanschbefestigung** | **004616** |
| **Compressor Housing (s/s version)** | **Kompressorgehäuse LW 450 D Edelstahl** | **004617** |
| **Strip Terminal** | **Klemmleiste LW 450 D Edelstahl** | **004618** |
| **Front Grating** | **Frontgitter LW 450 D, Edelstahl** | **004619** |
| **Bar** | **Verstärkungsleiste, Edelstahl** | **004620** |
| **Fixing Stud for Battery** | **Gewindestange Batterie M8 ZN** | **004771** |
| **Battery Bracket** | **Halteschiene Batterie LW 450 D, chromatiert** | **004772** |
| **Cover Cap** | **Abdeckkappe +Batteriepol, rot, LW 450 D/ LW 570 D** | **004773** |
| **Earth Strap** | **Masseband mit Polklemme LW 450 D, Batterie / Motor** | **004774** |
| **Domed Nut M5** | **Hutmutter, M5 DIN1587 ZN** | **004899** |
| **Engine Hatz Diesel, Type: 1D81C 10,5kW** | **Motor Hatz Diesel, Typ: 1D81C 10,5kW** | **005065** |

# Spare Part List / Ersatzteilliste LW 450 D

| Description | Benennung | Order No. Bestell-Nr. |
|---|---|---|
| **Washer** | **U-Scheibe 12,5x34,5mm, Kurbelwelle LW 450** | **005122** |
| **Upper Engine Base Plate** | **Obere Motorplatte LW 450 D** | **005123** |
| **Lower Engine Base Plate** | **Untere Motorplatte LW 450 D** | **005124** |
| **Elbow Pipe** | **Rohrbogen Ölablass LW 450 D, 15mm, inkl. Muttern & Schneidringe** | **005125** |
| **Earth Strap** | **Masseband LW 450 D TCG, Motor / Rahmen, Länge:325mm** | **005126** |
| **Battery Cable** | **Batteriekabel, rot, ohne Polklemme, LW 450 D** | **005127** |
| **Protection Box** | **Schutzkasten Puracon, 182x180x90mm** | **005128** |
| **Mounting Plate** | **Montageplatte für Schutzkasten 005128, verzinkt, 150x150mm** | **005129** |
| **Bracket plate, alloy** | **Alu Befestigungsplatte Puracon** | **005130** |
| **Angle Plate** | **Alu Winkelblech für Puracon-Kabel, LW 450 D TCG** | **005131** |
| **Sheet Bracket for Puracon** | **PVC Halter für Puracon Halteblech, grau, LW 450 D TCG** | **005132** |
| **Cable Protection Hose** | **Kabel Schutzschlauch LW 450 D, Seewasserbeständig, TCG** | **005133** |
| **Cable Clamp PG29** | **PG Verschraubung PG29, kompl. mit Klemmmutter** | **005134** |
| **Hose Clamp** | **Schlauchschelle LW 450 D, f. Kabel-Schutzschlauch** | **005135** |
| **Ring Bolt** | **Transportöse LW 450 D TCG, rosa, klappbar** | **005136** |

| DESCRIPTION | BENENNUNG | Order No.<br>Bestell-Nr. |
|---|---|---|
| **Cover Lid Brass Bushes** | **Klappdeckelhülsen Messing (1 Paar)**<br>**LW 280E, LW 450 D/E, LW 570 D/E** | **005137** |

- O r i g i n a l -

# E G - K O N F O R M I T Ä T S E R K L Ä R U N G

CE

**Lenhardt & Wagner GmbH**
**An der Tuchbleiche 39**
**D-68623 Lampertheim - Hüttenfeld**
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**EG-KONFORMITÄTSERKLÄRUNG IM SINNE DER EG-MASCHINENRICHTLINIE 2006/42/EG ANHANG II A UND IM SINNE DER EG-DRUCKGERÄTERICHTLINIE 97/23/EG ANHANG VII**

**EC-CONFORMITY DECLARATION IN ACCORDANCE WITH EC-MACHINERY DIRECTIVE 2006/42/EC APPENDIX II A EC PRESSURE EQUIPMENT DIRECTIVE 97/23/EC APPENDIX VII**

| | | |
|---|---|---|
| Hiermit erklären wir, | | Herewith we |
| **Lenhardt & Wagner GmbH**<br>**An der Tuchbleiche 39**<br>**D-68623 Lampertheim-Hüttenfeld**<br>**Germany** | | |
| dass die nachfolgend bezeichnete Baueinheit aufgrund ihrer Konzipierung und Bauart sowie in der von uns in Verkehr gebrachten Ausführung, den einschlägigen grundlegenden Sicherheits- und Gesundheitsanforderungen der EG-Richtlinien entspricht. Für die Druckgeräte der Baueinheit liegt eine EG-Baumusterprüfung mit der Prüfnummer 0248/02 vor. Die Qualitätssicherung der Produktion der Baueinheit wurde einem Konformitätsbewertungsverfahren nach **Modul C1** durch den TÜV Technische Überwachung Hessen GmbH, benannte Stelle, Kennnummer 0091, unterzogen. Die Baueinheit fällt in die **Kategorie II** nach Diagramm 2 der DGRL 97/23/EG Anhang II.<br>Bei einer nicht mit uns abgestimmten Änderung der Baueinheit verliert diese Erklärung ihre Gültigkeit. | | confirm that the below mentioned unit complies with the basic safety and health requirements of the EC directives concerning design, construction and putting the model into circulation. For the pressure vessels of the unit exists an EC type examination certificate with the report no. 0248/02. The production quality assurance of the unit was inspected by TÜV Technische Überwachung Hessen GmbH, notified body, No. 0091. Conformity Assessment Procedure **Module C1** was applied. For the unit comes within the limits of **category II** to table 2 of PED 97/23/EC Annex II.<br>This declaration is no longer valid if the unit has been modified without our agreement. |
| **Bezeichnung der Baueinheit:**<br>**Description of Unit:** | | **Atemluftkompressor**<br>**Breathing Air Compressor** |
| **Typ der Baueinheit:**<br>**Type of Unit:** | | **LW 450 D** |
| **Einschlägige EG-Richtlinien** | | **Relevant EC-Directives** |

- O r i g i n a l -

# E G - K O N F O R M I T Ä T S E R K L Ä R U N G

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| | |
|---|---|
| • 2006/42/EG - Maschinenrichtlinie<br>• 97/23/EG - Druckgeräterichtlinie<br>• 2003/10/EG - Gefährdung durch physikalische Einwirkungen (Lärm)<br>• 2000/14/EG - RL Umweltlärm von Maschinen | • 2006/42/EC - Machinery Directive<br>• 97/23/EC - Pressure Equipment Directive<br>• 2003/10/EC - Risks arising from physical agents (noise)<br>• 2000/14/EC - Directive relating to the noise emission in the environment by equipment for use outdoors |
| **Angewandte harmonisierte Normen – insbesondere:**<br>**EN ISO 12100:2010, DIN EN 12021:1998, DIN EN 1012-1:2010, DIN EN ISO 13850:2008, DIN EN ISO 13857:2008, DIN EN 60204-1:2006** | **Applicable and adapted Norms - particulary:**<br>**EN ISO 12100:2010, DIN EN 12021:1998, DIN EN 1012-1:2010, DIN EN ISO 13850:2008, DIN EN ISO 13857:2008, DIN EN 60204-1:2006** |
| **Angewandte nationale Normen und technische Spezifikationen - insbesondere:**<br>**1) AD 2000 Merkblätter**<br>**2) Technische Regeln Druckgase (TRG): TRG 400, 401, 402 (ohne Betriebsstätte) und TRG 790)** | **Applicable national Norms and technical Specification – particulary:**<br>**1) AD 2000 Bulletins**<br>**2) Technical Rules for compressed Gas (TRG 400, 401, 402 (without manufacturing facility) and TRG 790)** |

Lampertheim - Hüttenfeld, den: 08 Juni 2011

| | | |
|---|---|---|
| **LENHARDT & WAGNER GMBH**<br>B. Wagner<br>Bernd Wagner<br>**Geschäftsführer / Managing Director** | L&W COMPRESSORS | |