
INSTRUCTION MANUAL

LW 100 B

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LW 100 E

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LW 100 E1



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 to operation and 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.
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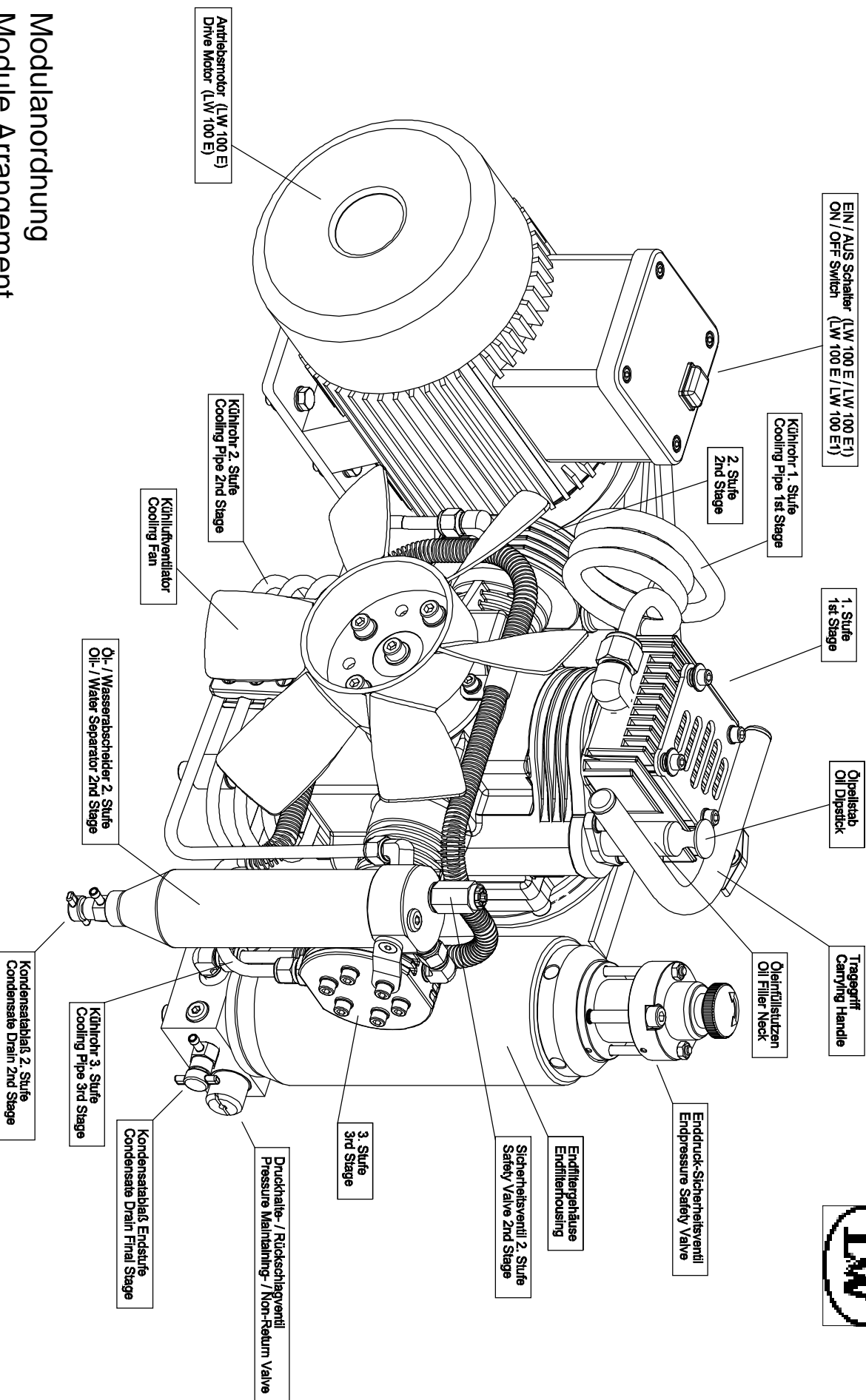
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Technical Data	LW 100 B	LW 100 E	LW 100 E1
Capacity:	100 l/min (3.5 cfm)		
Max. working pressure:	330 bar (4,850 psi)		
RPM:	2.300 min ⁻¹		
No of stages/cylinders:	3		
Bore 1st Stage:	60 mm		
Bore 2nd Stage:	30 mm		
Bore 3rd Stage:	12 mm		
Stroke:	24 mm		
Medium:	Breathing Air		
Oil capacity (Compressor):	500 ml		
Air inlet temperature min/max:	0 < +45°C	0 < +45°C	0 < +45°C
Operating temperature min/max:	+5 < +45°C	+5 < +45°C	+5 < +45°C
Cooling air requirment:	> 660 m ³ /h	> 660 m ³ /h	> 660 m ³ /h
Prime mover:	Briggs & Stratton 4-stroke engine, 182 cc Type: Vanguard 118400	E-Motor 3 x 400 V 50/60 Hz (other voltages available)	E-Motor / 230 V AC (other voltages available)
IP Protection class (motor):	-	IP 55	IP 55
Fuel tank capacity:	3.6 Litre	-	-
Max. power:	4.5 kW	2.2 kW	2.2 kW
Nominal current (@ 200 bar):	-	14.5 Amps	14.5 Amps
Prime mover RPM:	3,600 min ⁻¹	2,860 min ⁻¹	2,860 min ⁻¹
Noise level (at 1m distance):	93 dB[A]	82 dB[A]	82 dB[A]
Breathing air filter capacity:	108 m ³ (approx. 18 running hours @ +20°C)		
Breathing air quality:	In accordance with EN 12021		

Dimensionens:			
Length:	780 mm	670 mm	670 mm
Width:	380 mm	400 mm	390 mm
Height:	440 mm	400 mm	400 mm
Weight:	45 Kg	43 Kg	46 Kg



Modulanordnung Module Arrangement

BREATHING AIR COMPRESSOR LW 100 B / LW 100 E / LW 100 E1

Application:

Portable high pressure breathing air compressor for mobile or light filling applications.

Prime Movers

LW 100 B:

Powerful Vanguard 4 stroke motor (4.5 kW) with integrated fuel tank.
Hand pull start with low oil level cut off

LW 100 E:

2.2 kW E-Motor / 400V / 3 Phase / 50 Hz (or 60 Hz).
Start/Stop switch.
Ready to connect with cable and 16A CEE plug.

LW 100 E1:

2.2 kW E-Motor / 230 V AC / 50 Hz (or 60 Hz).
Start/Stop switch.
Ready to connect with cable and CE Schuko plug.

Equipment:

- Carrying frame in stainless steel
- 3 stage 3 cylinder compressor block
- All pistons with steel piston rings
- Oil/water separators
- Safety valve for each stage of compression
- Pressure maintaining / non-return valve
- Filling hose with stainless steel fittings
- Filling valve with pressure gauge
- Filling connection (DIN 200 bar with Yoke adapter or DIN 300 bar)
- Carrying handles
- Breathing air purification in accordance with EN 12021 / DIN 3188 / ISP 2533
- Filter cartridge capacity: ca. 108 m³ (@ +20°C)

OPTIONS

Extra filling hose with filling valve and tank connection

2nd filling pressure, switch over device for 300 or 200 bar including 2nd safety valve, selector valve and 2nd filling hose/valve/connection

Automatic Stop at final pressure

Special voltages/frequencies

Filling

Before the first filling operation, check the compatibility of the final pressure safety valve and/or the filling connection for compatibility with the working pressure and (if fitted) the correct operation of the automatic stop

This is done by closing the filling valve and starting the compressor. Let the compressor build up pressure, the pressure gauge will not show any pressure increase until after the pressure maintaining valve opens (approx 1 minute after start). The pressure will increase until the safety valve blows off or the automatic stop cuts the compressor off.

If the safety valve does not blow off and the compressor exceeds the working pressure, switch off the compressor manually and consult a technician.

Do no tamper with safety valves.

Option Automatic Stop at final pressure:

The pressure switch will cut the compressor off at final pressure before the safety valve opens. Do not adjust the pressure switch to cut off after the safety valve has started to open, as this may cause premature failure of the safety valve.

After the above operation, connect the closed filling valve to the cylinder to be filled.

Warning:

Only cylinders that fulfill the following requirements may be filled

- Cylinders with a valid hydrostatic stamp
- Cylinders with remaining pressure (not completely empty)
- Cylinders and valves free of mechanical damage or corrosion
- Without any traces of moisture or contaminants inside the cylinder.

Breathing air must be dry. Moisture in the air can lead to mechanical failure through corrosion and/or icing of the pressure reducer, this can in turn lead to serious injury or even death.

Procedure for filling cylinders:

- Connect the filling valve to the cylinder to be filled
- Open the condensation drain valves on the compressor
- Close the filling valve
- Start the compressor
- Close the condensation drain valves
- Open the filling valve
- Open the cylinder valve
- When the desired working pressure is reached, close the cylinder valve
- Close the filling valve

- Shut off the compressor (units without automatic Stop)
- Vent the filling valve (small hand wheel) and remove the filling valve from the cylinder



Breathing Air Compressor **LW 100 B**



Inlet filter

A paper cartridge element filters the inlet air.
This element should be checked regularly and if replaced if contaminated.

Warning:

A contaminated inlet filter will reduce the flow of air into the compressors causing damage to the valves and decreasing the performance of the compressor. There is a danger that the compressor will overheat.

The paper element can be carefully cleaned with compressed air. Damaged filters are to be replaced immediately.



ill.: Crankcase breather hose and inlet filter housing

Inspection and replacement of the inlet filter cartridge:



Ill.: 1
Remove the crankcase breather hose.



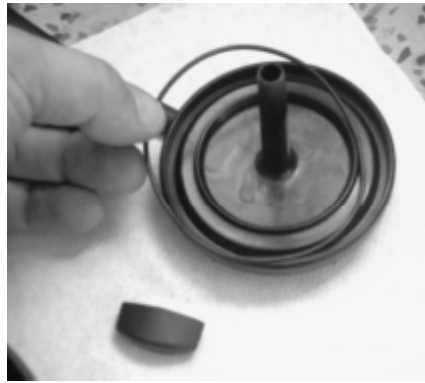
Ill.: 2
Unscrew the wing nut and remove the housing



Ill.: 3
Inlet filter housing components and element



Ill.: 4
Clean the housing and inspect for damage (*cracks etc.*).
Inspect the O Ring for damage



Ill.: 5
Fit the O Ring in the housing cover



Ill.: 6
Fit the filter cartridge on the cover and place the housing over the element.
Fit the O-Ring in the O Ring groove



Ill.: 7
Fit the inlet filter housing carefully onto the 1st stage head and check the correct position
(Air inlet up and vertical, crancase breather to the left)



Ill.: 8
Fit and tighten the wing nut and refit the crankcase breather hose to the inlet filter housing and the oil filling neck

Valve heads and valves

Combined suction and pressure valves are mounted between the cylinder and the valve head of each stage on the compressor.

The suction valves open when the piston goes down the cylinder and closes when the piston travel back up. The pressure valves open during the upward stroke of the piston when the correct compression is reached.

The valves are built for long life and constant performance but will reduce in efficiency over time. For this reason, the combined pressure and suction valves must be replaced with new units at regular intervals (every 1000 running hours).



Combined suction and pressure valve dismantled

Pistons and Cylinders

To ensure long life and optimum performance, the cylinders of the LW 100 are fitted with hardened steel liners.

The liners are pressed into the compressor block and secured with the valve head screws. The sleeves are sealed with special O Rings.



Hardened steel cylinder liners

The pistons are all equipped with steel piston rings resulting in a high capacity that is constant over a long period of time even under arduous operating conditions.

The 1st and 2nd stage pistons are one piece, the 3rd stage piston has a separate compressor piston with rings and a guide piston.



Floating compression piston and guide piston 3rd stage

Cooling

The cooling pipes are made of non-corroding material and provide excellent cooling for the air after each stage of compression.

The effective cooling system ensures that the air entering the final filter and separator housing is as low as possible. The air increases only 6° from inlet to outlet (at +20°C ambient temperature).

This low temperature increase creates long filter times.

The free access to sufficient cooling air must be guaranteed. Keep to the minimum distances given on the installation diagram.

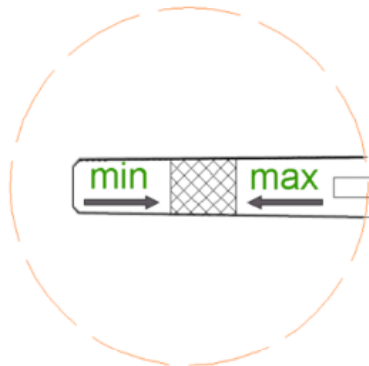
Ensure the cooling pipes and the ribs on them are cleaned and free of dirt/dust.

General notice

The compress should only be operated by persons who are familiar with the operating procedures!

Before commision the compressor, the following Stepps are to be undertaken:

- ✓ Ensure the compressor is placed on a firm surface free from contaminants and with sufficinet access to cooling air
- ✓ Check the oil level in the compressor block



- ✓ Ensure that the rotating parts are free to move without restriction
- ✓ Ensure that the inlet air is not contaminated
- ✓ Ensure enough cooling air is available
- ✓ Close the filling valves
- ✓ Open the drain valves (unlaods the compressor and makes starting easier)

STARTING THE COMPRESSOR

LW 100 B

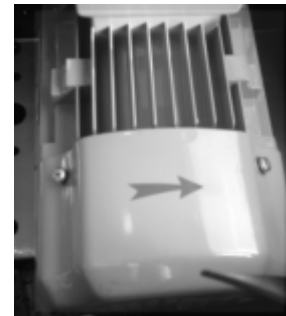
- Ensure that the inlet air is not contaminated, the air inlet should be upwind and higher than the exhaust outlet of the petrol engine
- Ensure that the exhaust gases will not harm or burn anyone or anything
- Check the fuel level
- Check the oil level in the prime mover
- Open the fuel cock
- If necessary (cold motor) use the choke accordingly
- Switch the motor switch to 1 (ignition switch)
- Using the hand pull rope, start the motor
- Close the drain valves

LW 100 E / LW 100 E1

- Switch on the compressor using the switch on the motor

Only LW 100 E:

Immediately after starting the compressor, check the direction of rotation. 3 phases motors may turn left or right depending on the connection. If the direction is wrong, turn off the compressor immediately and switch over the phases (use a qualified electrician).



Prime mover LW 100 E
Standard model:
3-Phase / 400Volt / 50 Hz

- Close the drain valves

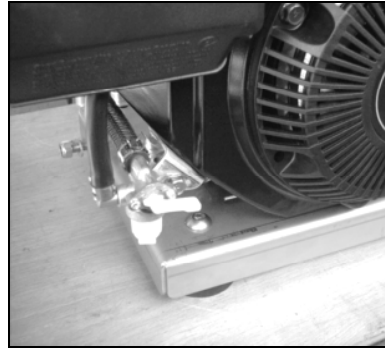
STOPPING THE COMPRESSOR

LW 100 B

- Switch off the motor at the ignition switch
- Close the fuel cock



Speed control, ignition switch & hand starter



Fuel cock **LW 100 B**

LW 100 E / LW 100 E1

- Switch off the compressor using the switch on the motor
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Safety Valves

Each stage of compression is fitted with a safety (pressure blow off) valve. Safety valves prevent the pressure in each stage exceeding the safe maximum limit, the final stage safety valves controls the maximum working pressure of the compressor.

Safety valve factory settings:

1st Stage: 8 bar

2nd Stage: 40 bar

3rd Stage: set at the maximum working pressure

(e.g. 225 or 330 bar)

The safety valve housing are stamped with the set pressure.



*Safety valves
(1st Stage / 2nd Stage / 3rd Stage)*

To ensure safety operation and prevent manipulation, the safety valves are factory set and sealed with L&W seals.

If the safety valve(s) has a damaged or removed seal, these valve are to be replaced immediately with factory set valves safety valves.

The final stage safety valves are equipped with a venting mechanism for ventin the final stage including the filter housing. (knurled knob on top of the safety valve).

If this knob is screwed in clockwise, the valve is opened thus vanting any pressure in the final stage and filter housing. The valve must be completed screwed in clockwise to ensure all remaining pressure is vented.

For normal operation, the venting knob should be unscrewed anti-clockwise. A ring inside the valve prevents the know from unscrewing from the housing.

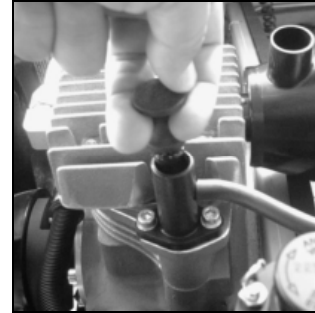
Do not tamper with safety valves, defective or manipulated safety valves are to be replaced immediately

Compressor lubrication

All pistons, cylinders, main and connecting rod bearings are lubricated by splash oil lubrication.

Checking the oil level:

The level of oil in the compressor block is checked by using the oil dipstick.
The optimum oil level is the max mark on the dipstick.
Oil should be added when the level is at or below the mark between min and max..

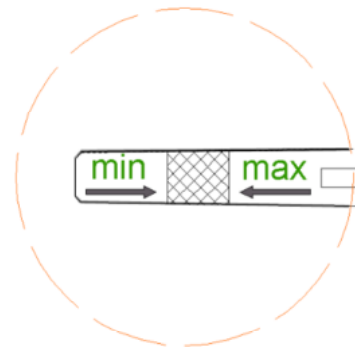


Oil quantity:

Approx. 500 ml of oil is required for an oil change.

L&W Order number: 000001 (1 Litre bottle)

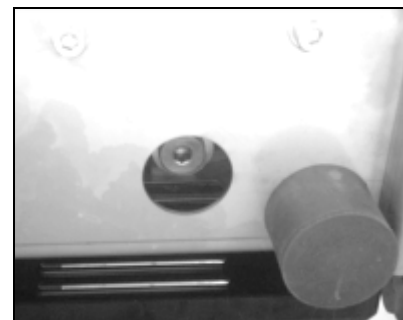
The compressor needs a special fully synthetic oil for breathing air compressors. Damage to the compressor may and personal injury or health damage may occur if the wrong oil is used.



Oil level (shaded area)

Oil change:

- Run the compressor for approx. 2 mins to warm up the oil. Turn off the compressor and vent all the stages (drain valves)
- Tilt the compressor to the side max 45°
- Place a suitable container (flat but min 600 ml) under the oil drain plug (hole in the frame)
- Carefully open and remove the oil drain plug and drain off the oil
- Refit and retighten the oil drain plug, place the compressor back on it's feet.
- Remove the dip stick and refill the compressor with clean suitable oil with the help of a funnel
- Do not overfill the compressor with oil
- Check the oil level with the dipstick
- Inspect the O Ring on the dipstick and refit the dip stick in the filling neck.



Oil drain plug

Oil change intervals

- 1st oil change after 25 Running hours** (*all total running time*)
- 2nd oil change after 75 Running hours** (*all total running time*)
- 3rd oil change after 275 Running hours** (*all total running time*)
- all subsequent oil changes after each **500 running hours**.

Independent of the running hours accumulated, we recommend an oil change every 12 calendar months.

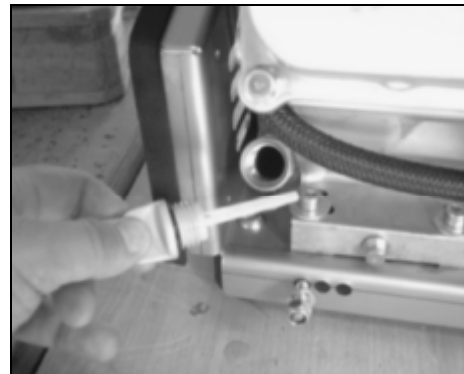
Check the oil level before each use!

LW 100 B only

**Prime mover Briggs & Stratton
VANGUARD 118400**

See manufacturers hand book for oil change intervals

Oil capacity: 600 ml



Oil level dipstick Vanguard 118400

Oil and water separators

An oil and water separator is fitted after the 2nd and the 3rd stages.
The separators collect condensation in liquid form that needs to be drained of manually at regular intervals (very 15 minutes).



Hand drain valves for the 2nd (left) and 3rd (right) stages

The separators need to be serviced as follows:

- Replace the sintered filter every 1000 running hours
(2nd stage separator)
- Clean and inspect the separator housings every 1000 running hours

Final separator and filter housing

A Molecarbon filter cartridge needs to be fitted inside the final filter housing to purify the air to breathing air quality. If a filter is not placed inside the filter housing, the air will not pass through to the filling hose/valve, but will escape and vent from a hole in the base of the filter housing. This is a safety precaution and prevents cylinders from being filled if there is no filter fitted.

The compressors are supplied without a filter in the housing, fit the correct filter cartridge into the housing before use (see below)



Filter cartridge & components of the filter housing

Operation

First the air entering the housing is forced through a jet and directed on to the inside of the housing wall. This circulation of the air provokes the oil and water condensation in the air to form droplets and flow down to the bottom of the

housing where it can be drained off manually by opening the drain valve.

The air then enters the filter cartridge where a final purification takes place. The filter cartridge is fitted in the centre of the housing and sealed with O Rings. The air then exits the filter cartridge through the central nipple and passes through a pressure maintaining and non return valve to the filling valve (see flow diagram).

The standard cartridge (order number 000644) removes oil and odour and dries the air in accordance with EN 12021



Filter cartridge

The filter cartridge contains molecular sieve and active charcoal.

The cartridge capacity at 20°C air temperature (filter inlet) is 108m³ of breathing air. This gives a filter duration of 18 hours.

If the temperature increases, the capacity of the filter reduces dramatically. At 35°C air temperature, the filter capacity is only 33 m³ or 5 hours running time.

The Molecarbon cartridges are vacuum packed immediately after manufacturing. Only use cartridges that are freshly opened to ensure breathing air in accordance with EN 12021.

Breathing air in accordance with EN 12021

Contaminant	Max level in accordance with EN 12021
CO ₂	500 ppm
CO	15 ppm
Öl	0.3 mg/m ³
H ₂ O	25 mg/m ³



Filter cartridge LW 100

Order-No.: 000644

The shelf life of a packed cartridge is 18 Months. The expiry date is written on the packing as a Month and Year.

Replacing the filter cartridge

After stopping the compressor and venting the filter housing, wait until the filter housing is completely pressure free. This may take 1-2 minutes.

When no more air escapes from the drain valve, then it can be assumed that the filter housing is pressure free.

The top of the filter housing can now be removed. If the housing is pressure free, this can usually be done by hand, the special tool included with the compressor may be used if preferred. If the cover cannot be easily unscrewed, then make sure the housing is completely pressure free, if necessary use the venting knob on the final safety valve.

Once the cover is removed, the filter cartridge can be pulled out using the plastic ring in the top of cartridge.

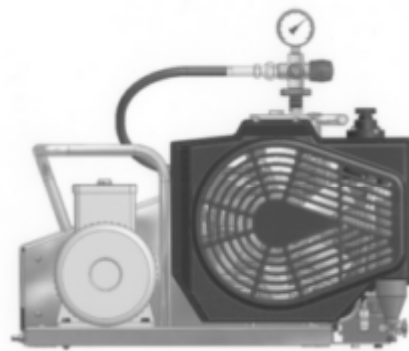
Unpack the new filter cartridge and fit it into the orifice in the bottom the filter housing (the cartridge needs to be pushed down slightly).

Refit the filter housing cover and screw the cover down to the end of the threads. Unscrew the cover $\frac{1}{4}$ of a turn.

Capacity

To ensure efficient operation, the compressor needs to be cooled a sufficient quantity of air. The cooler the air going in the inlet and the air cooling the compressor, the more capacity the compressor has.

Optimum operating temperature: $+5^{\circ}\text{C} < +20^{\circ}\text{C}$



LW 100 E
Capacity: 100 l/min



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 out 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 10 mins (control the flow with the filling valve to maintain the pressure).
 - ✓ Replace the oil with new oil.
 - ✓ Open the 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.
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De-conservation, commissioning:

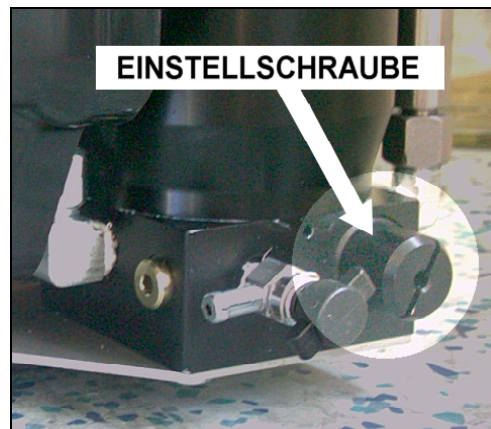
After the compressor has been stored, the following Steps are to be taken:

- ✓ 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 filling 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.

Pressure maintaining and non-return valve

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



3rd stage drain valve and setting screw for 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 - 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 – 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.

The LW 100 series compressors come as standard with one filling pressure, set at the final pressure safety valve.

If required, an optional switch over device can be added to provide two filling pressures (usually 200 and 300 bar). Each pressure is equipped with a filling hose, a pressure gauge, a tank connection and is secured with a final pressure safety valve.

The operator must choose either 200 or 300 bar filling pressure. When the 300 bar pressure is selected, the 200 bar filling hose cannot be used. When the 200 bar pressure is selected both filling valves can be used but the pressure will not exceed 225 bar.

If the compressor is to be fitted with a final pressure automatic shut down, this can either be the higher pressure only (the compressor will not shut down automatically when 200 bar is selected) or two pressure switches are required.

Warning:

The switch over device should only be operated when the pressure is vented from the filling valves/hoses. If the switch over device is difficult to operate, check that the filling lines (both) are vented and pressure free.

To visually separate the different filling connections (DIN); the hand wheels have the following colours:

200/232 bar: black

300 bar: red



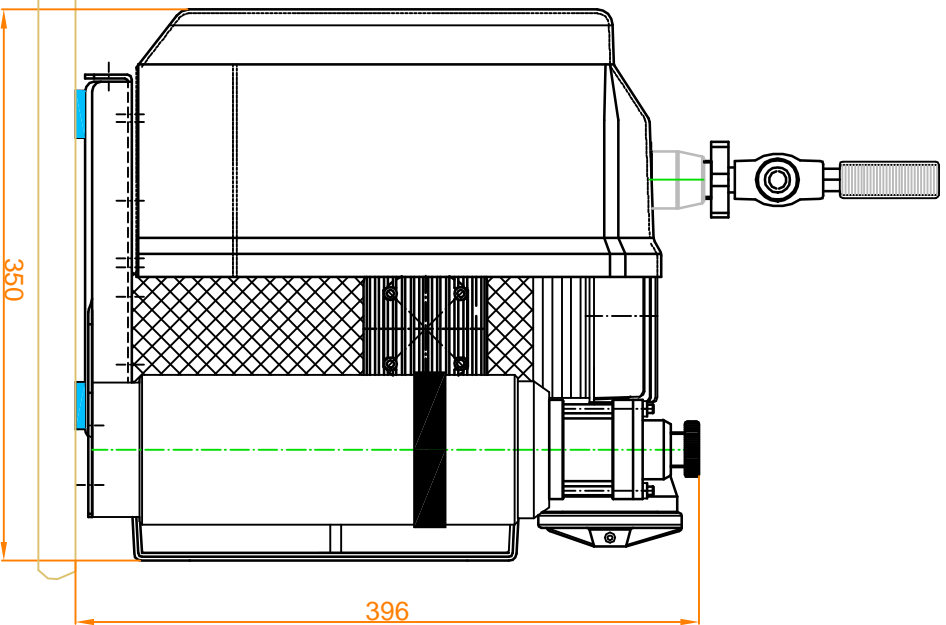
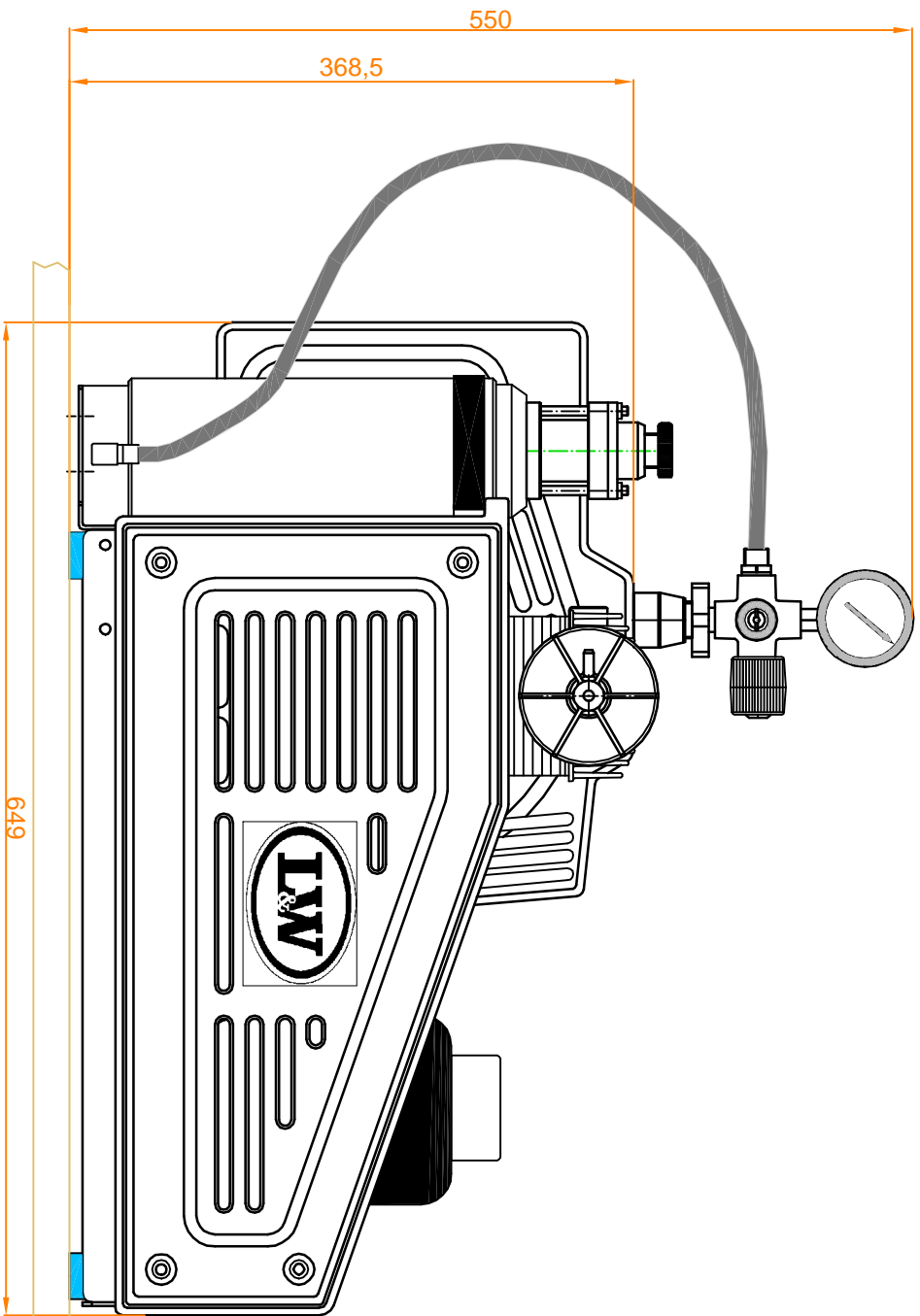
Filling connections DIN 300 bar & DIN 200 bar



Symptom	Problem	Remedy
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	Vee belt not tensioned	Re-tension vee belt
	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 (LW 100 E only)	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	Molecular carbon filter needs replacing	Replace
	Incorrect compressor oil	Use only authorised oil type
	Non conform type of filter	Replace with correct filter
	Cylinder sleeve/piston rings worn	Replace



Symptom	Problem	Remedy
Delivery rate too low	Suction/pressure valve blocked	Clean and/or replace
	Cylinder sleeve/piston rings worn	Replace
	Vee belt slipping	Re-tension
	See section „final pressure is not reached“	siehe Rubrik „Enddruck wird nicht erreicht“
Automatic condensation drain not functioning (Option)	Solendoids 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 (Option)	Pilot pressure for pneumatic valve too low (2nd stage pressure)	Replace suction/pressure valve / safety valve
	Piston seat in the pneumatic valve damaged/contaminated	Clean / Replace
	Timer settings incorrect	Set default settings
	Timer defective	Replace
Compressor switches off before final pressure is reached (Option)	Final pressure switch not propely set	Reset
	Pressure maintaining valve set too high	Reset
	Fuse/breaker tripped <i>Only for E models</i>	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 llife 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 sleeve/piston rings worn	Replace
Excessive oil consumption	Cylinder sleeve/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 espacially shaft seal and replace/re-tighten

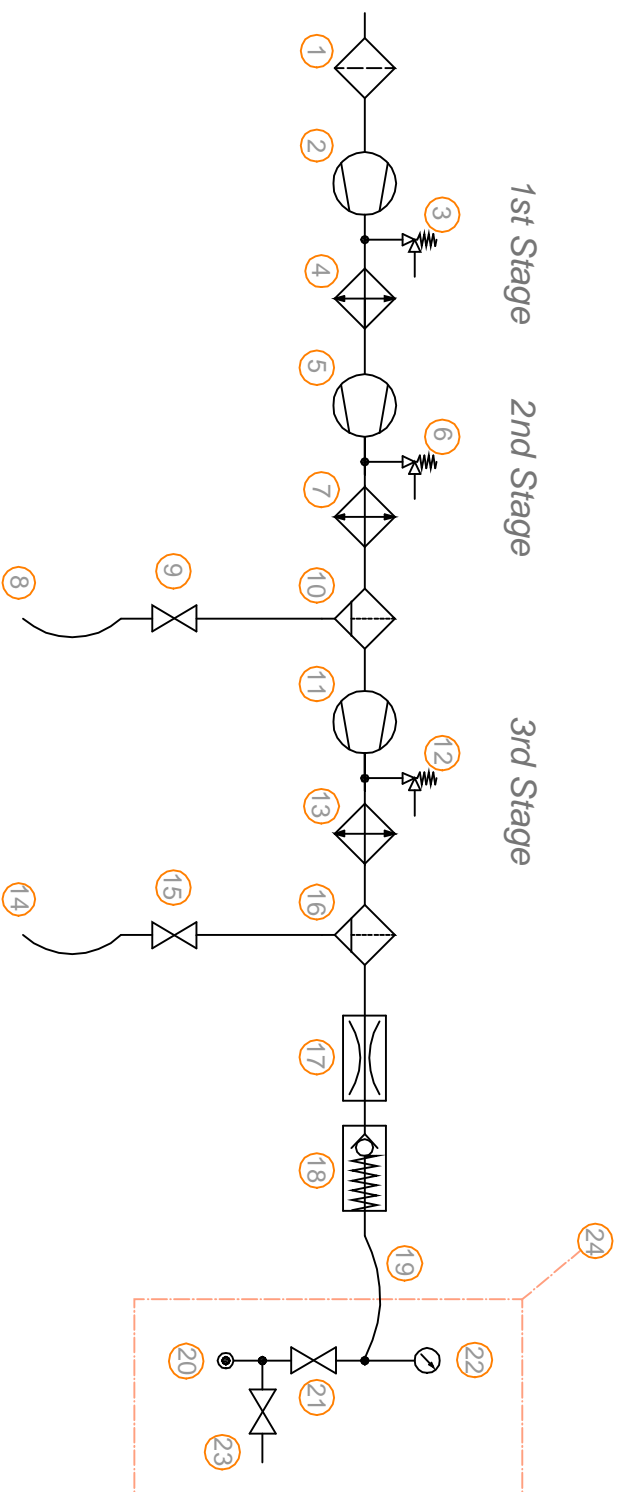


Overall Dimension

LW 100 E

Required Cooling Air Flow:

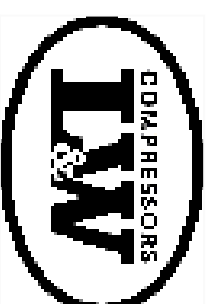
660 m³/h





FLOW DIAGRAM

- 1 Air Intake Filter
- 2 1st Pressure Stage
- 3 Safety Valve 1st Stage
- 4 Cooling Pipe 1st Stage
- 5 2nd Pressure Stage
- 6 Safety Valve 2nd Stage
- 7 Cooling Pipe 2nd Stage
- 8 Condensate Release Hose
- 9 Condensate Release Valve
- 10 Oil-/Water Separator
- 11 3rd Pressure Stage
- 12 Endpressure-Safety Valve
- 13 Cooling Pipe Final Stage
- 14 Condensate Release Hose
- 15 Condensate Release Valve
- 16 Oil-/Water Separator
- 17 Pressure Maintaining Valve
- 18 Non-Return Valve
- 19 Filling Hose
- 20 Filling Connector
- 21 Filling Valve
- 22 Pressure Gauge (Filling Pressure)
- 23 Vent Valve
- 24 Unit Filling Valve "Cross Design"

LW 100 B / LW 100 E / LW 100 E1
 LENHARDT & WAGNER GMBH



MAINTENANCE LIST		LW 100 B / LW 100 E / LW 100 E1		
Work to be carried out	Interval	Qty	Order No	
Replace final filter cartridge (temperature refer to the filter housing temperature)	+20°C: every 18 hours +35°C: every 6 hours	1	000644	
Replace the final filter housing O ring	every 1,000 hours	2	001769	
Check oil level	Daily / before each use			
Replace oil in compressor block	1st oil change after 25 (<i>total</i>) hours 2nd oil change after 75 (<i>total</i>) hours 3rd oil change after 275 (<i>total hours</i>) Then every 200 running hours or annually	500 ml pro Füllung	000001	
Replace inlet filter cartridge	Depending on ambient operating conditions, at least every 2 years	1	001708	
Check vee belt tension	every 200 running hours or after changing prime mover	1		
Replace suction/pressure valves <i>1st stage</i> <i>2nd stage</i> <i>3rd stagee</i>	every 1,000 running hours	1 1 1	001722 001855 001856	
Check the pressure maintaining /non-return valve	every 200 running hours			
Safety devices (safety valves)	At least once annually. This work should only be carried out by a qualified person!!			

MAINTENANCE LIST			LW 100 B / LW 100 E / LW 100 E1	
Work to be carried out	Interval	Qty	Order No	

Check all pressure lines for leaks/damage	Every 200 running hours		
Clean the surface of all cooling pipes/surfaces)	Depending on the operating conditions, at least once annually		
Check all flexible hoses for leaks/damage	Before each use by the operator. At least annually by a qualified person		
Replace the sintered filter of the pneumatic condensation valve (option)	nach 1,000 Betriebsstunden - fortlaufend alle 2000 Betriebsstunden	1	000188
Clean and inspect the water separators for damage/corrosion	Every 1,000 hours or at least every 5 years		
Replace the sintered filter of the 2nd stage water separator	every 1,000 running hours	1	001735
Replace silencer on final stage collector (only with option auto condensation drain)	Every 500 running hours	1	
Check the tightness of all connections	after first 15 running hours - then every 500 running hours		

ERSATZTEILLISTE - SPARE PART LIST

LW 100 B / LW 100 E / LW 100 E1



Benennung	Description	Bestell Nr. / Order No.
Gehäuse Füllventil	Housing Filling Valve	LW160/190 240
Entlüftungsspindel	Vent Spindle	LW160/190 246
Oberspindel	Upper Spindle	LW160/190 247
Klemmverschraubung	Clamping Connection	LW160/190 248
Schlitzmutter	Slotted Nut	LW160/190 249
Handrad Füllspindel	Handwheel Filling Spindle	LW160/190 250
Entlüftungshandrad	Vent Wheel	LW160/190 251
Unterspindel	Lower Spindle	LW160/190 255
Anlaufscheibe	Thrust Washer	LW160/190 256
Kupferdichtscheibe	Copper Seal Ring	LW160/190 257
Madenschraube	Worm Screw	LW160/190 259
O-Ring	O-Ring	LW160/190 260
O-Ring	O-Ring	LW160/190 261
O-Ring	O-Ring	LW160/190 262
Anlaufscheibe	Thrust Washer	000386
Feder	Spring	000387
Unterlegscheibe	Washer	000498
Druckfeder	Pressure Spring	000506
Dichtscheibe	Seal Washer	000508
Dichtring Druckhalteventil	Sealring Pressure Maintaining Valve	000516
Feder	Spring	000517
Messingscheibe	Brass Washer	000518
Kolben Druckhalteventil	Piston Pressure Maintaining Valve	000519
Enddruck Sicherheitsventil 225 bar <i>TÜV-Ausführung</i>	Endpressure Safety Valve 225 bar <i>TÜV-Version</i>	000553
Enddruck Sicherheitsventil 250 bar <i>TÜV-Ausführung</i>	Endpressure Safety Valve 250 bar <i>TÜV-Version</i>	000554
Enddruck Sicherheitsventil 330 bar <i>TÜV-Ausführung</i>	Endpressure Safety Valve 330 bar <i>TÜV-Version</i>	000556
Entwässerungsventil	Drain Tap	000567
Filterpatrone (Atemluft)	Filter Cartridge (Breathing Air)	000644
Druckmanometer 0-400 bar	Pressure Gauge 0-400 bar	000665
Manometer Gummischutz	Rubber Protection Pressure Gauge	000666
Gerade Verschraubung	Straight Connection	000738
Verschraubung	Connection	000749
Winkelverschraubung	Elbow Connection	000761
Schneidring	Olive Seal	000765
Überwurfmutter	Union Nut	000766
Verschraubung	Connection	000794
Winkelverschraubung	Elbow Connection	000796
Überwurfmutter	Union Nut	000801

ERSATZTEILLISTE - SPARE PART LIST

LW 100 B / LW 100 E / LW 100 E1



Benennung	Description	Bestell Nr. / Order No.
Schneidring	Olive Seal	000802
Verschlußstopfen	Plug	000837
Madenschraube	Worm Screw	000941
Zylinderschraube	Allen Bolt	001009
Ventilkopfschraube	Valve Head Bolts	001012
Zylinderschraube	Allen Bolt	001029
Zylinderschraube	Allen Bolt	001030
Zylinderschraube	Allen Bolt	001039
Zylinderschraube	Allen Bolt	001041
Zylinderschraube	Allen Bolt	001042
Zylinderschraube	Allen Bolt	001043
Zylinderschraube <i>für TÜV-Ausführung</i>	Allen Bolt <i>for TÜV-Version</i>	001050
Zylinderschraube <i>für CE-Ausführung</i>	Allen Bolt <i>for CE-Version</i>	001055
Schraube	Bolt	001080
Schraube	Bolt	001153
Mutter M8	Nut M8	001158
Mutter	Nut	001159
Unterlegscheibe	Washer	001178
Unterlegscheibe	Washer	001181
Unterlegscheibe	Washer	001182
O-Ring	O-Ring	001244
Dichtring	Seal Ring	001322
Sicherungsring Kurbelwelle	Circlip Crankshaft	001342
Sicherungsring Kolben 2. / 3. Stufe	Circlip Piston 2 nd & 3 rd Stage	001351
Entwässerungshahn	Drain Tap	001456
Zylinderlaufbuchse 3. Stufe	Cylinder Liner 3rd Stage	001691
Zylinderlaufbuchse 2. Stufe	Cylinder Liner 2nd Stage	001692
Zylinderlaufbuchse 1. Stufe	Cylinder Liner 1st Stage	001694
Kolben 2. Stufe	Piston 2 nd Stage	001695
Kolben 1. Stufe	Piston 1 st Stage	001696
Kurbelwelle	Crankshaft	001697
Ventilkopf 1. Stufe	Valve Head 1st Stage	001698
Ventilkopf 2. Stufe	Valve Head 2nd Stage	001699
Ventilkopf 3. Stufe	Valve Head 3rd Stage	001700
Kurbelgehäuse	Crankcase	001702
Kühlrohr	Cooling Pipe	001703
Kühlrohr 2. Stufe	Cooling Pipe 2 nd Stage	001704
Ventildichtung 1. Stufe	Valve Gasket 1st Stage	001705
Lüfterrad	Impeller	001706

ERSATZTEILLISTE - SPARE PART LIST

LW 100 B / LW 100 E / LW 100 E1



Benennung	Description	Bestell Nr. / Order No.
Ansaugfiltergehäuse	Air Intake Filterhousing	001707
Ansaugfilter	Air Intake Filter	001708
Ölpeilstab	Dipstick	001709
Öleinfüllstutzen	Oil Filler Neck	001710
Gegengewicht Kurbelwelle	Counterweight Crankshaft	001711
Kühlrohr	Cooling Pipe	001712
Standfuß	Rubber Stand	001713
Rohrklemme - Al	Tubing Clamp - alloy	001714
Rohrklemmen - Al	Tubing Clamps - alloy	001715
Verschlußstopfen Filtergehäuse	Plug Filter Housing	001716
Sockel Filtergehäuse	Base Filter Housing	001717
Innenrohr Filtergehäuse	Inner Tube Filter Housing	001718
Rohr Filtergehäuse	Tube Filter Housing	001719
Oberteil Wasserabscheider	Top Water Separator	001720
Wasserabscheider Rohr	Water Separator Tube	001721
Ventil 1. Stufe	Valve 1 st Stage	001722
Schwungrad	Flywheel	001723
Keilriemenscheibe LW 100 E	Pulley LW 100 E	001724
Nabe Keilriemenscheibe	Pulley Hub	001725
Lagerdeckel	Bearing Cover	001726
Gehäusedeckel	Crankcase Cover	001727
Radial Wellendichtring	Crankshaft Seal	001728
Hauptlager	Main Bearing	001729
Pleuel 1. Stufe (inkl. Lagerring & Kolbenbolzenlager)	Connection Rod 1 st Stage (incl. Bearing Ring & Small End Bush)	001730
Pleuel 2. / 3. Stufe (inkl. Lagerring & Kolbenbolzenlager)	Connection Rod 2 nd / 3 rd Stage (incl. Bearing Ring & Small End Bush)	001731
Pleuellager 2. / 3. Stufe	Connection Rod Bearing 2 nd / 3 rd Stage	001734
Sinterfilter Wasserabscheider	Sintered Filter Water Separator	001735
Kunststoffscheibe Wasserabweiser	Plastic Disk Water Deflector	001736
Wasserabweiser Sinterfilter	Water Deflector	001737
Befestigungsbolzen Sinterfilter	Mounting Bolt Sinter Filter	001738
Anlaufscheibe klein	Thrust Washer small	001739
Anlaufscheibe 2	Thrust Washer 2	001740
Anlaufscheibe 1	Thrust Washer 1	001741
Druckstift	Pressure Pin	001742
Einlaßverschraubung	Inlet Connection	001743
Einstellschraube	Adjusting Screw	001744
Einlaßdüse	Inlet Jet	001745

ERSATZTEILLISTE - SPARE PART LIST

LW 100 B / LW 100 E / LW 100 E1



Benennung	Description	Bestell Nr. / Order No.
Gewindebolzen Ansaugfiltergehäuse	Mounting Bolt Air Intake Housing	001748
Stift	Pin	001753
Paßfeder Kurbelwelle	Woodruff Key Crankshaft	001754
Kolbenbolzen 2. & 3. Stufe	Piston Pin 2 nd & 3 rd Stage	001755
Kolbenbolzen 1. Stufe	Piston Pin 1 st Stage	001756
Sicherungsring Kolben 1. Stufe	Circlip Piston 1 st Stage	001757
Schraube	Bolt	001758
Führungskolben 3. Stufe	Guide Piston 3 rd Stage	001763
Kompressionskolben 3. Stufe	Compression Piston 3 rd Stage	001764
Kolbenringe 3. Stufe (<i>kompl. Satz</i>)	Piston Rings 3 rd Stage (<i>compl. Set</i>)	001765
O-Ring	O-Ring	001766
O-Ring	O-Ring	001767
O-Ring	O-Ring	001768
O-Ring Filtergehäuse	O-Ring Filter Housing	001769
O-Ring	O-Ring	001771
Flügelmutter Ansaugfiltergehäuse	Wing Nut	001772
O-Ring	O-Ring	001775
O-Ring	O-Ring	001776
O-Ring	O-Ring	001778
O-Ring	O-Ring	001779
O-Ring	O-Ring	001780
O-Ring	O-Ring	001781
O-Ring	O-Ring	001782
Druckscheibe	Thrust Washer	001788
Unterlegscheibe	Washer	001790
Distanzscheibe	Spacer	001791
Paßfeder LW 100 B	Woodruff Key LW 100 B	001793
Abstandsbolzen	Spacer	001794
Motorspannschraube	Tensioning Bolt	001796
Motor-Spannschraube	Motor Tensioning Bolt	001797
Senkschraube	Countersunk Screw	001798
Verschlußstopfen Tragegriff	Plug Carrying Handle	001800
Aufstecksockel	Plug-on Base	001801
Riemenscheibe LW 100 B	Pulley LW 100 B	001802
Keilriemen LW 100 B	V-Belt LW 100 B	001803
Distanzstück	Spacer	001804
Motorklemmleiste	Motor Strip	001805
Halteband Filtergehäuse	Jubilee Clip Filter Housing	001806

ERSATZTEILLISTE - SPARE PART LIST

LW 100 B / LW 100 E / LW 100 E1



Benennung	Description	Bestell Nr. / Order No.
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Schlauch Kurbelgehäuseentlüftung	Crankcase Relief Hose	001807
Enddruck Sicherheitsventil 330 bar <i>CE-Ausführung</i>	Endpressure Safety Valve 330 bar <i>CE-Version</i>	001808
Sicherheitsventil 1. Stufe	Safety Valve 1st Stage	001809
O-Ring	O-Ring	001810
Düse Wasserabscheider	Jet Water Separator	001811
Haltestrebe Wasserabscheider	Bracket Water Separator	001812
Sicherheitsventil 2. Stufe	Safety Valve 2nd Stage	001813
Deckel Ansaugfiltergehäuse	Cover Air Intake Filterhousing	001829
Abdeckung Riementrieb	Belt Drive Cover	001830
Ventilatorschutzabdeckung	Fan Protective Cover	001831
Tragegriff	Carrying Handle	001832
Antriebsmotor LW 100 E, 400V / 50 Hz	Drive Motor LW 100 E, 400V / 50 Hz	001833
Relais	Relais	001835
Schraube	Bolt	001836
Sicherungshalter	Fuse Bracket	001837
Sicherung	Fuse	001838
Deckel E-Motor	Cover E-Motor	001839
Schutzkappe Ein / Aus Schalter	Cover Start/Stop Switch	001840
Ein / Aus Schalter	Start/Stop Switch	001841
Keilriemen LW 100 E / LW 100 E1	V-Belt	001842
Keilriemenscheibe LW 100 E1	Pulley LW 100 E1	001843
Paßfeder	Woodruff Key	001844
Tragebügel LW 100 B	Carrying Handle LW 100 B	001845
Tragebügel LW 100 E / E1	Carrying Handle LW 100 E / E1	001846
Kompressorkonsole	Compressor Console	001847
Kühlrohrklemme	Cooling Pipe Clamp	001848
Antriebsmotor LW 100 B	Drive Engine LW 100 B	001849
Distanzröhrchen	Spacer	001850
Senkschraube	Countersunk Screw	001851
Antriebsmotor LW 100 E1, 230V / 50 Hz	Drive Motor LW 100 E1, 230V / 50 Hz	001852
Kolbenringe 1. Stufe (<i>kompl. Satz</i>)	Piston Rings 1 st Stage (<i>compl. Set</i>)	001853
Kolbenringe 2. Stufe (<i>kompl. Satz</i>)	Piston Rings 2 nd Stage (<i>compl. Set</i>)	001854
Ventil 2. Stufe	Valve 2 nd Stage	001855
Ventil 3. Stufe	Valve 3 rd Stage	001856
Gummitüllen	Rubber Sleeves	001857
Zahnscheibe	Toothed Washer	001858
Befestigungsschrauben	Fixing Screws	001859
Dichtgummistreifen	Sealing Rubber Stripe	001860
Aluminium Dichtring	Alloy Seal Ring	001861

ERSATZTEILLISTE - SPARE PART LIST

LW 100 B / LW 100 E / LW 100 E1



Benennung	Description	Bestell Nr. / Order No.
Schraube	Bolt	001862
Schraube	Bolt	001863
Nabe Riemenscheibe LW 100 B	Pulley Hub LW 100 B	001864
Enddruck Sicherheitsventil 225 bar <i>CE-Ausführung</i>	Endpressure Safety Valve 225 bar <i>CE-Ausführung</i>	002135
Enddruck Sicherheitsventil 250 bar <i>CE-Ausführung</i>	Endpressure Safety Valve 250 bar <i>CE-Version</i>	002136
Füllstutzen DIN 200 bar	Filling Neck DIN 200 bar	4044
Handrad G5/8" DIN 200 bar (schwarz)	Handwheel G5/8" (black)	4045
Handrad G5/8" DIN 300 bar (rot)	Handwheel G5/8" (red)	4046
Füllstutzen DIN 300 bar	Filling Neck DIN 300 bar	4048
Verschraubung	Connection	450 3016

Kompressor: LW 100 E
Kompressor: LW 100 E
Ansicht: Kompressor (Komplette Einheit)
View: Kompressor (Complete Unit)

Bg: Ansaugfilter
Ass: Intake Filter

Bg: Filling Hose
Ass: Füllschlauch

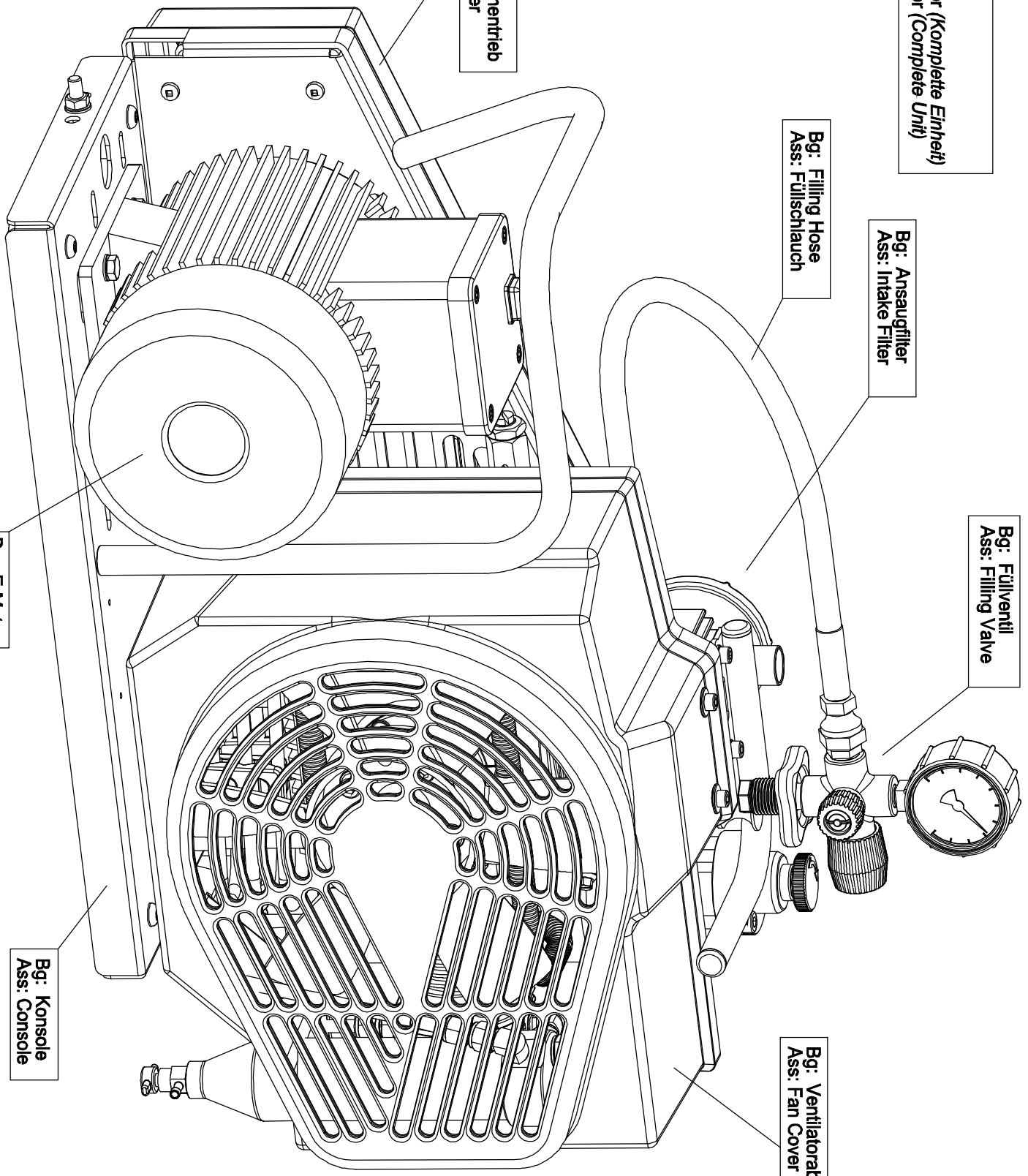
Bg: Füllventil
Ass: Filling Valve

Bg: Ventilatorabdeckung
Ass: Fan Cover

Bg: Abdeckung Riementrieb
Ass: Drive Gear Cover

Bg: E-Motor
Ass: E-Motor

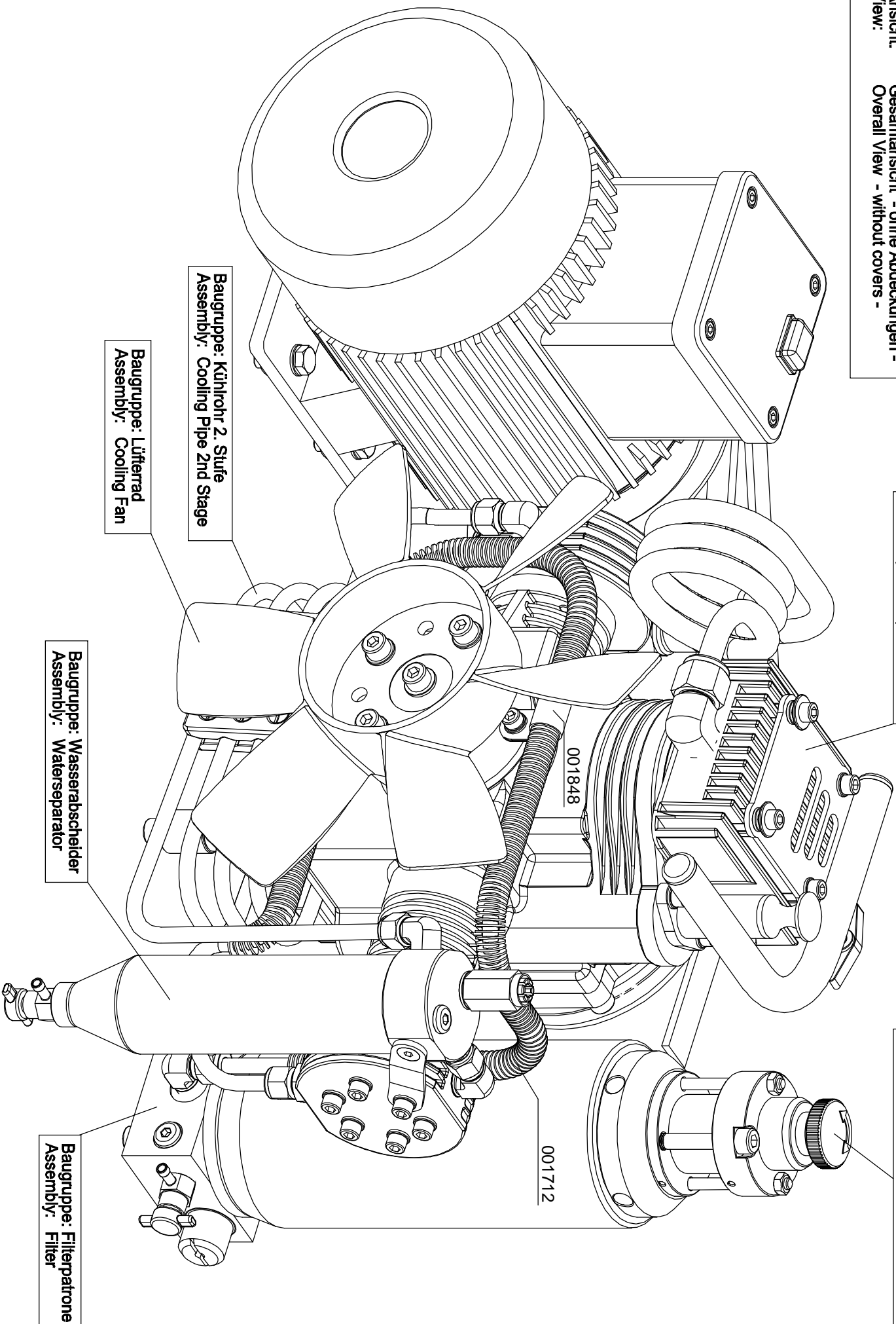
Bg: Konsole
Ass: Console



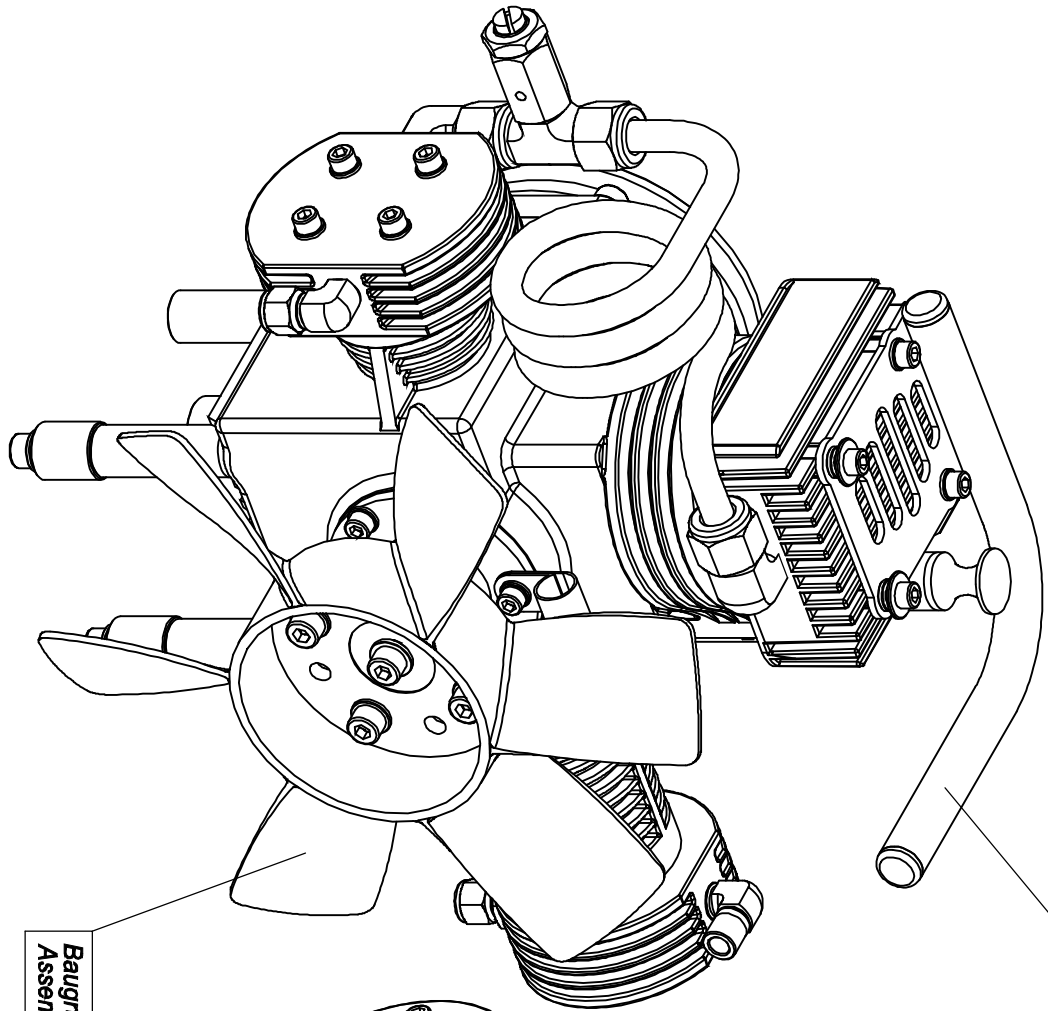
Kompressor: LW 100
Gesamtansicht - ohne Abdeckungen -
View: Overall View - without covers -

Baugruppe: Kompressorblock
Assembly: Compressorblock

Baugruppe: Enddruck-Sicherheitsventil
Assembly: Endpressure Safety Valve

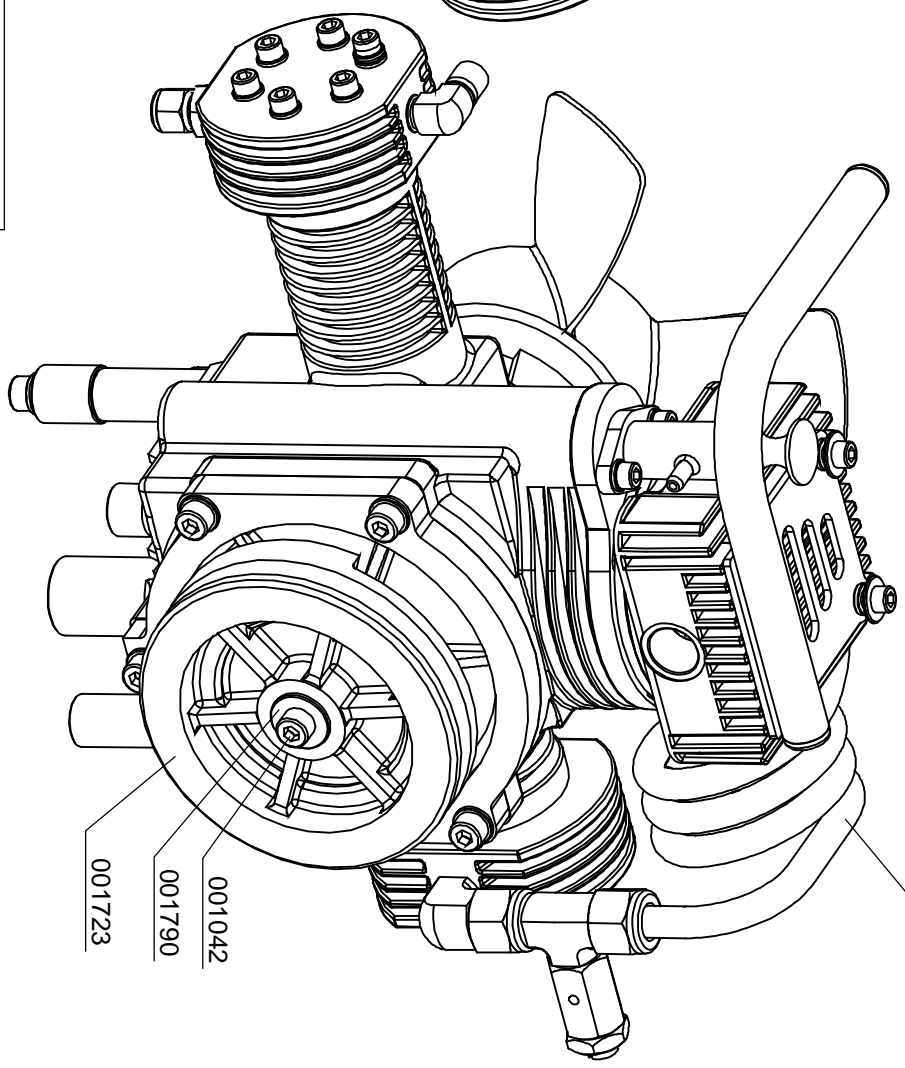


Kompressor: LW 100
Baugruppe: Kompressorblock
Assembly: Compressor Block



001832

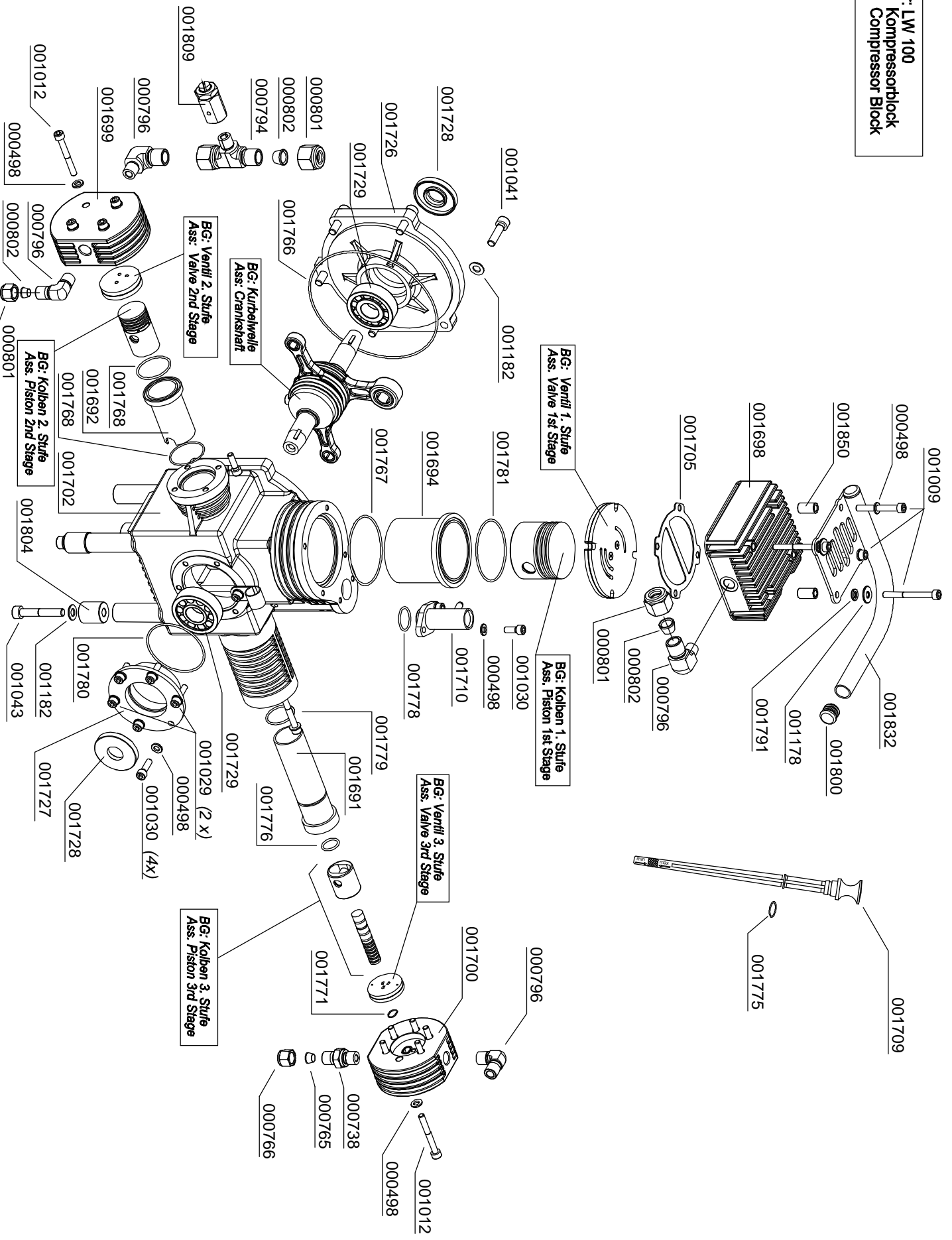
Baugruppe: Lüfterrad
Assembly: Cooling Fan



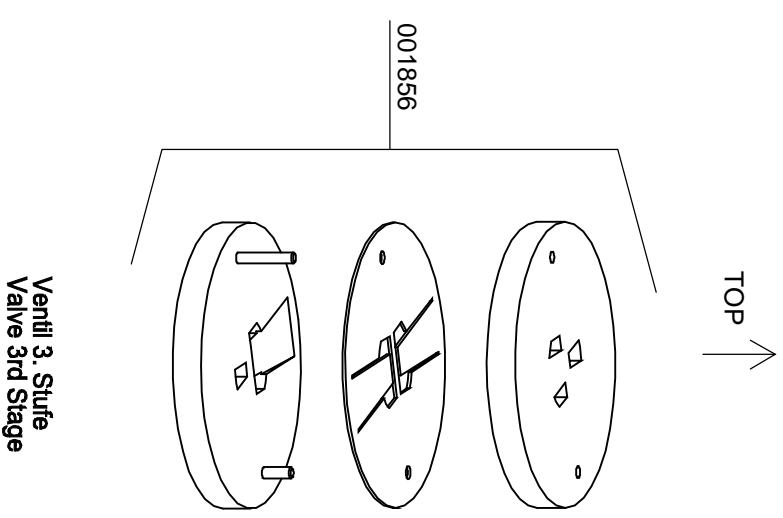
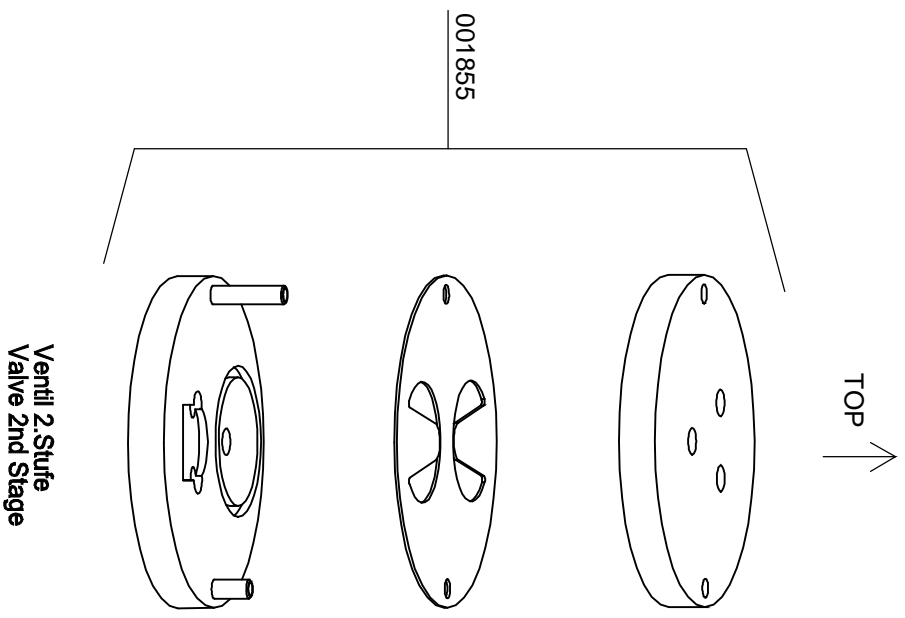
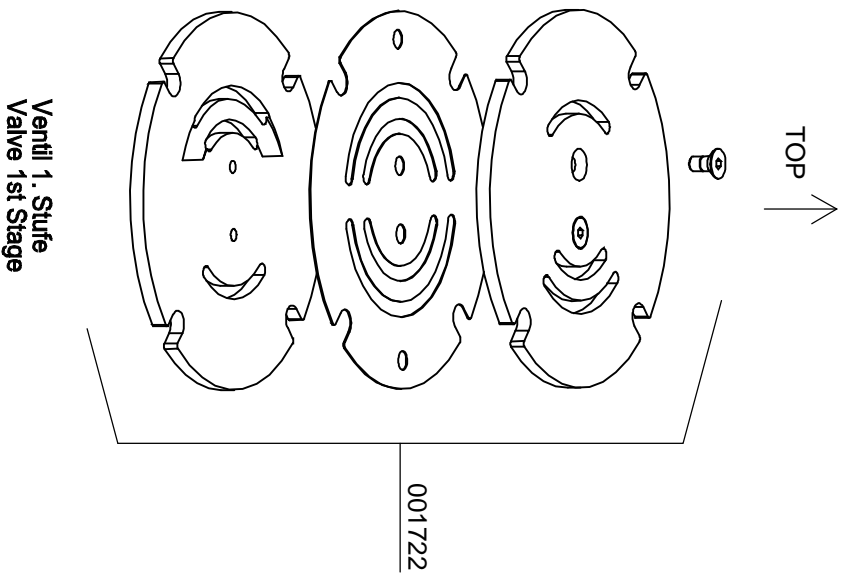
001703

001042
001790
001723

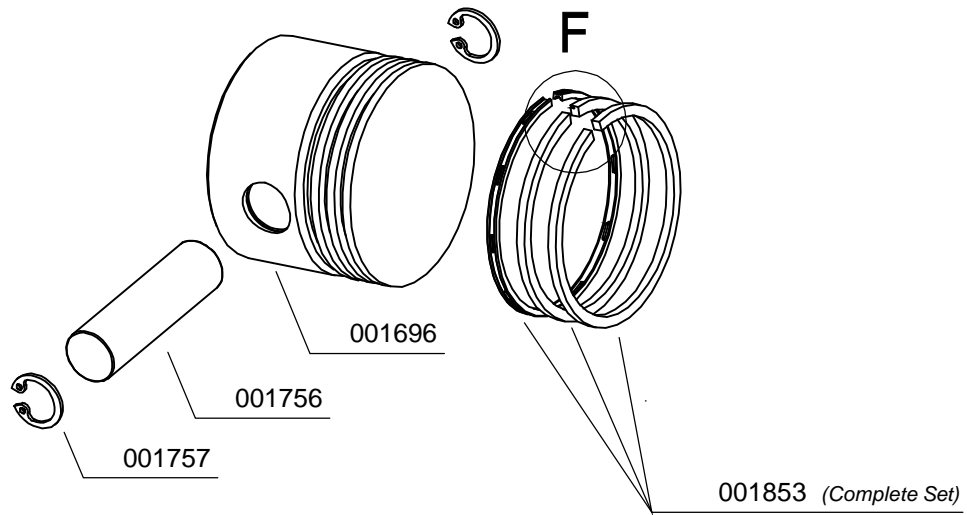
Kompressor LW 100
Ansicht: Kompressorblock
View: Compressor Block



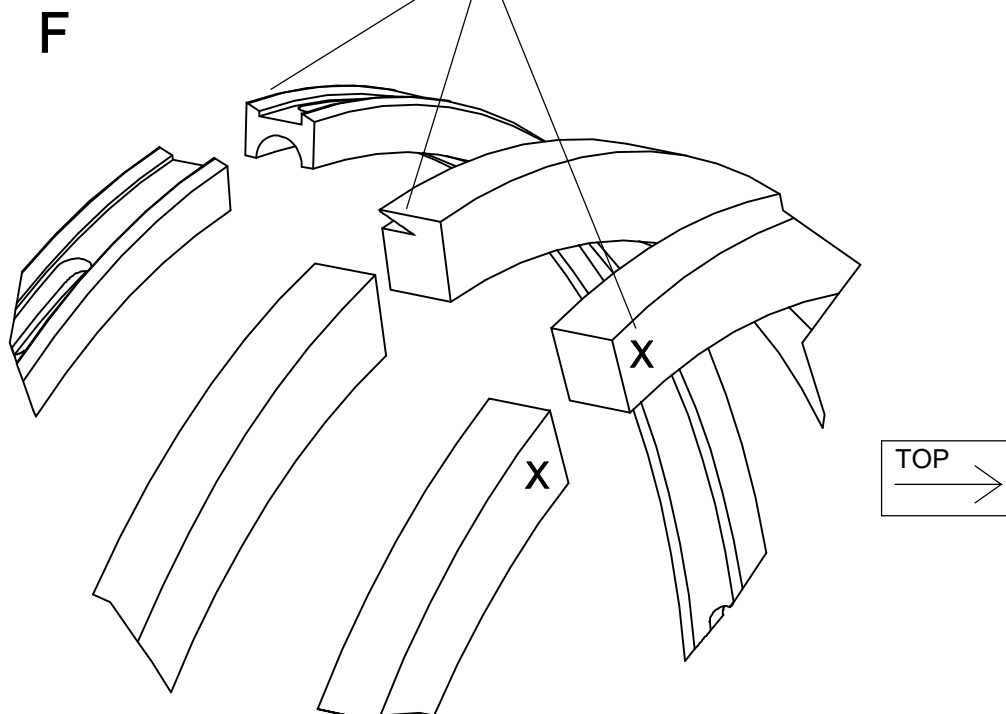
Kompressor: LW 100
Baugruppen: Saug- & Druckventile
Assembles: Suction & Pressure Valves



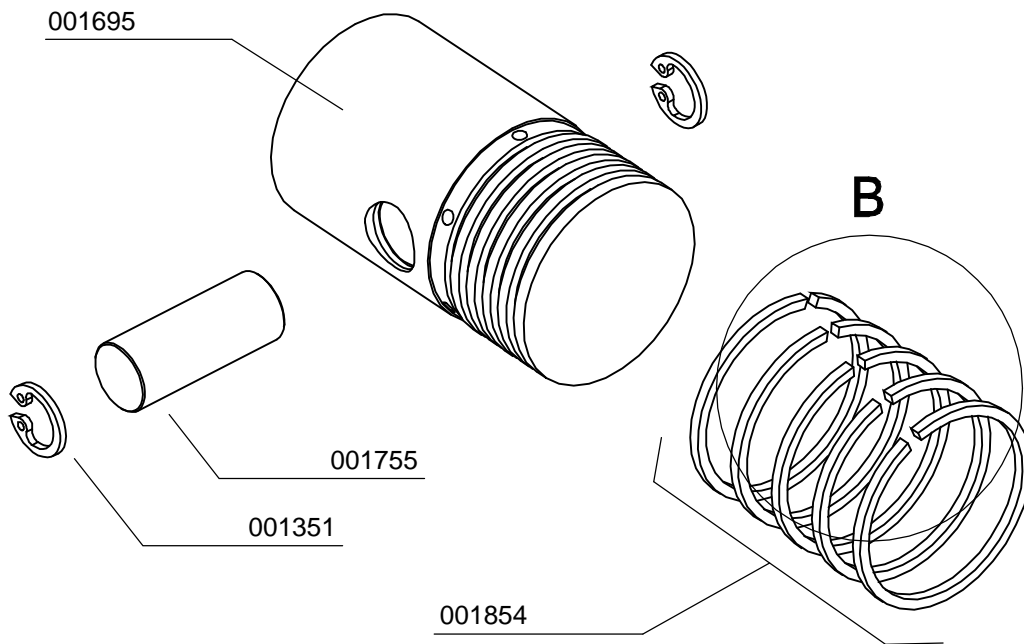
Kompressor: LW 100
Baugruppe: Kolben komplett - 1. Stufe (Ø60 mm)
Assembly: Piston complete - 1st Stage (Ø60 mm)



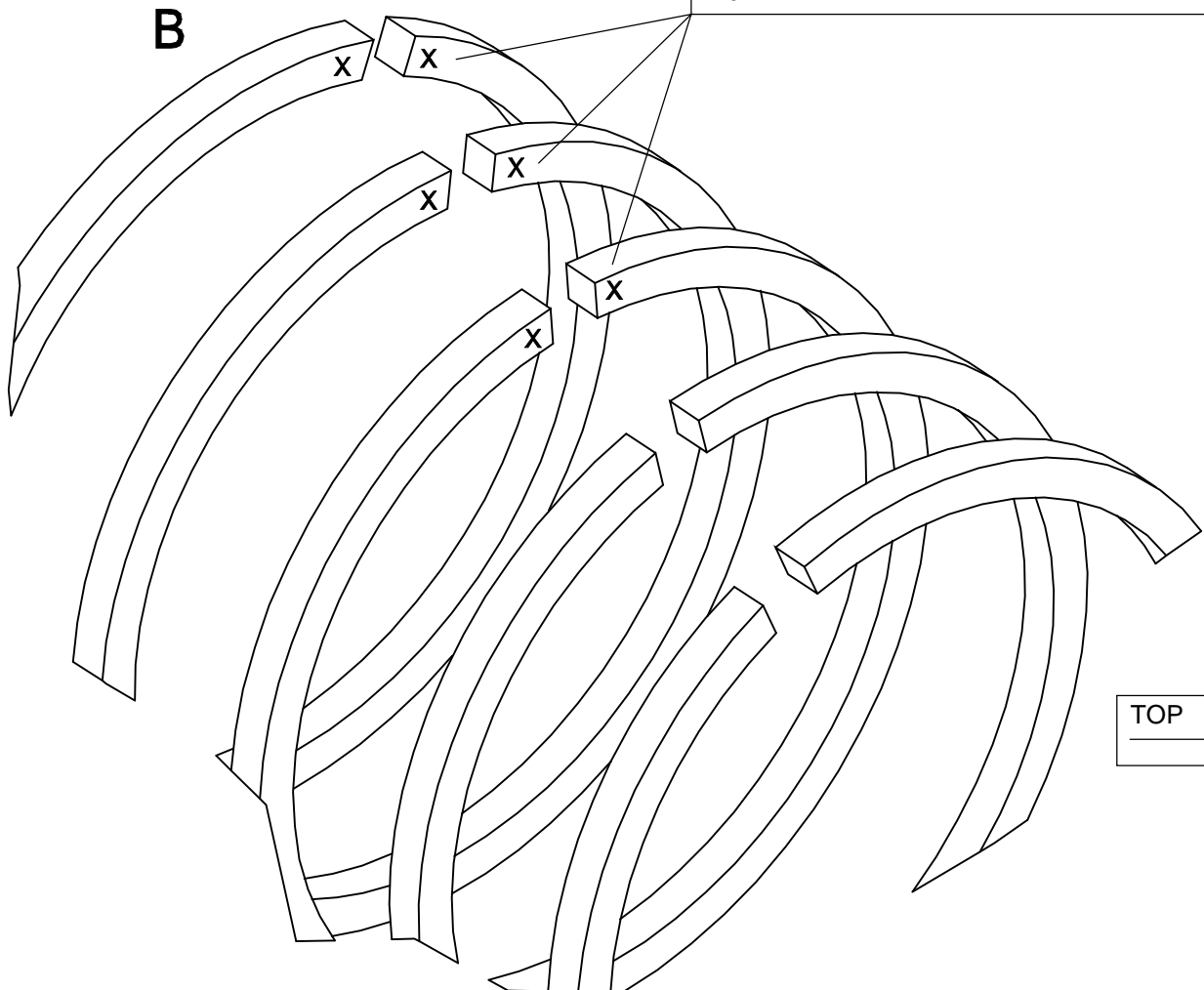
Wichtig: Auf korrekte Einbauposition achten
Important: Check correct position



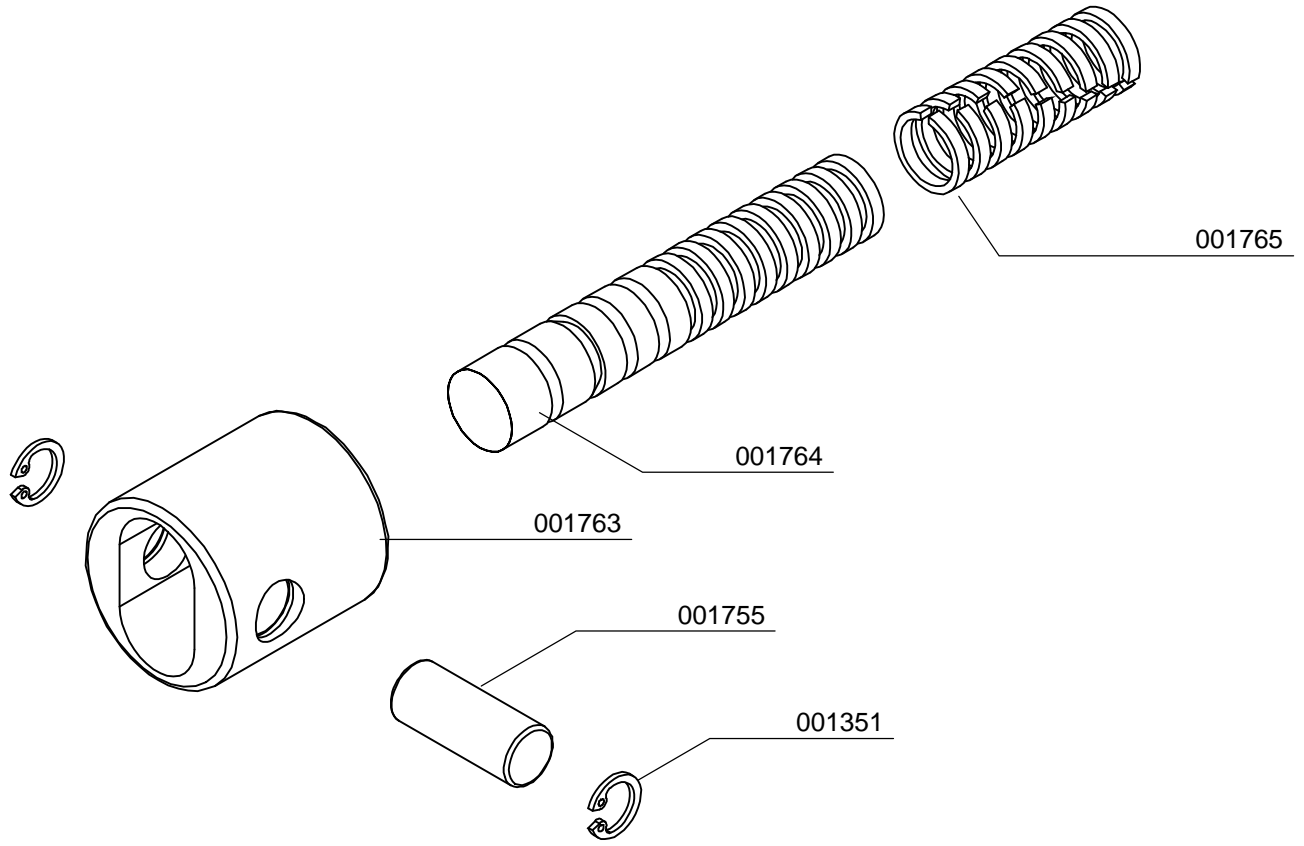
Kompressor: LW 100
Baugruppe: Kolben-komplett 2. Stufe (Ø30 mm)
Assembly: Piston-complete 2nd Stage (Ø30 mm)



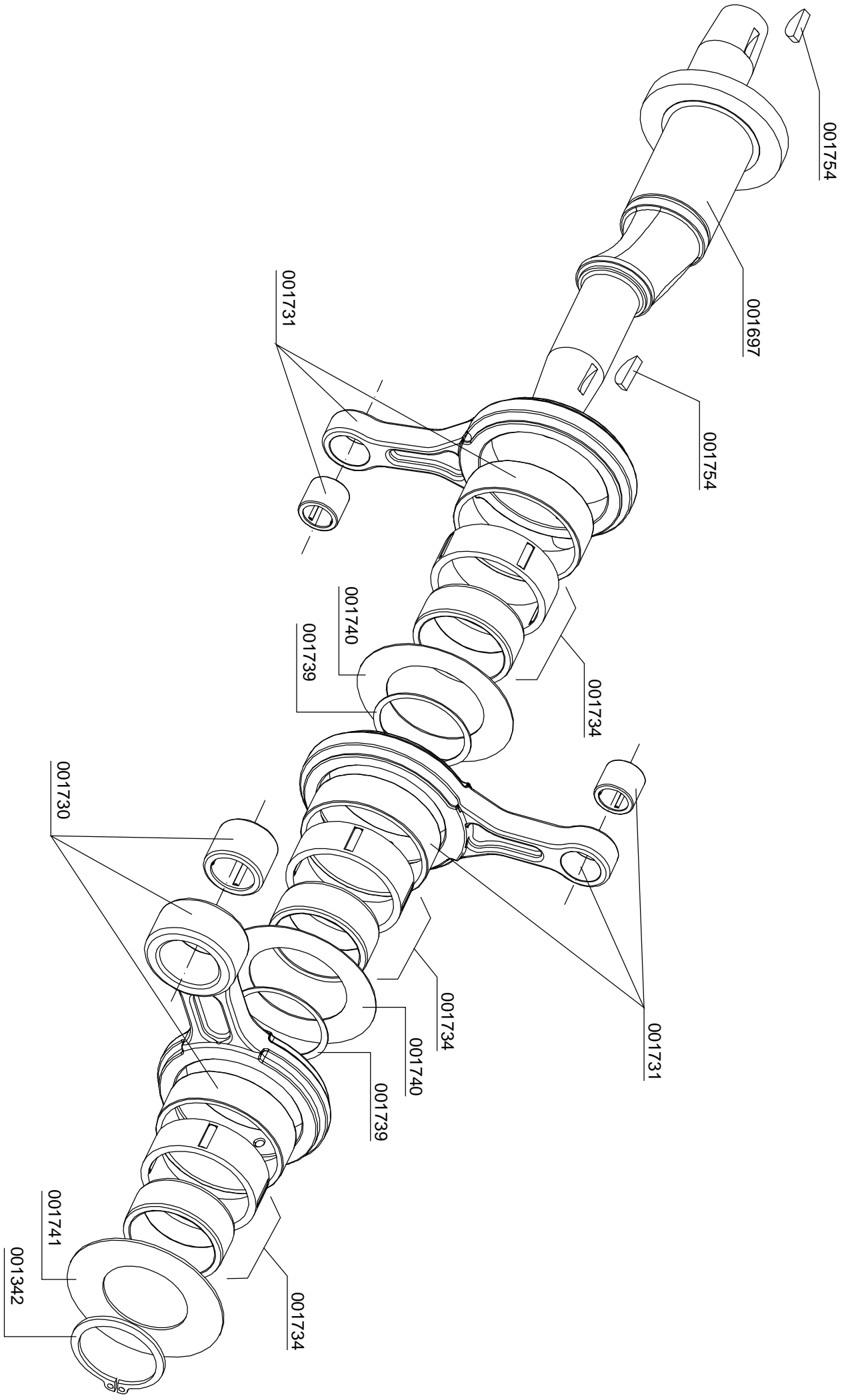
Wichtig: Auf korrekte Einbauposition achten!
Important: Check correct Position

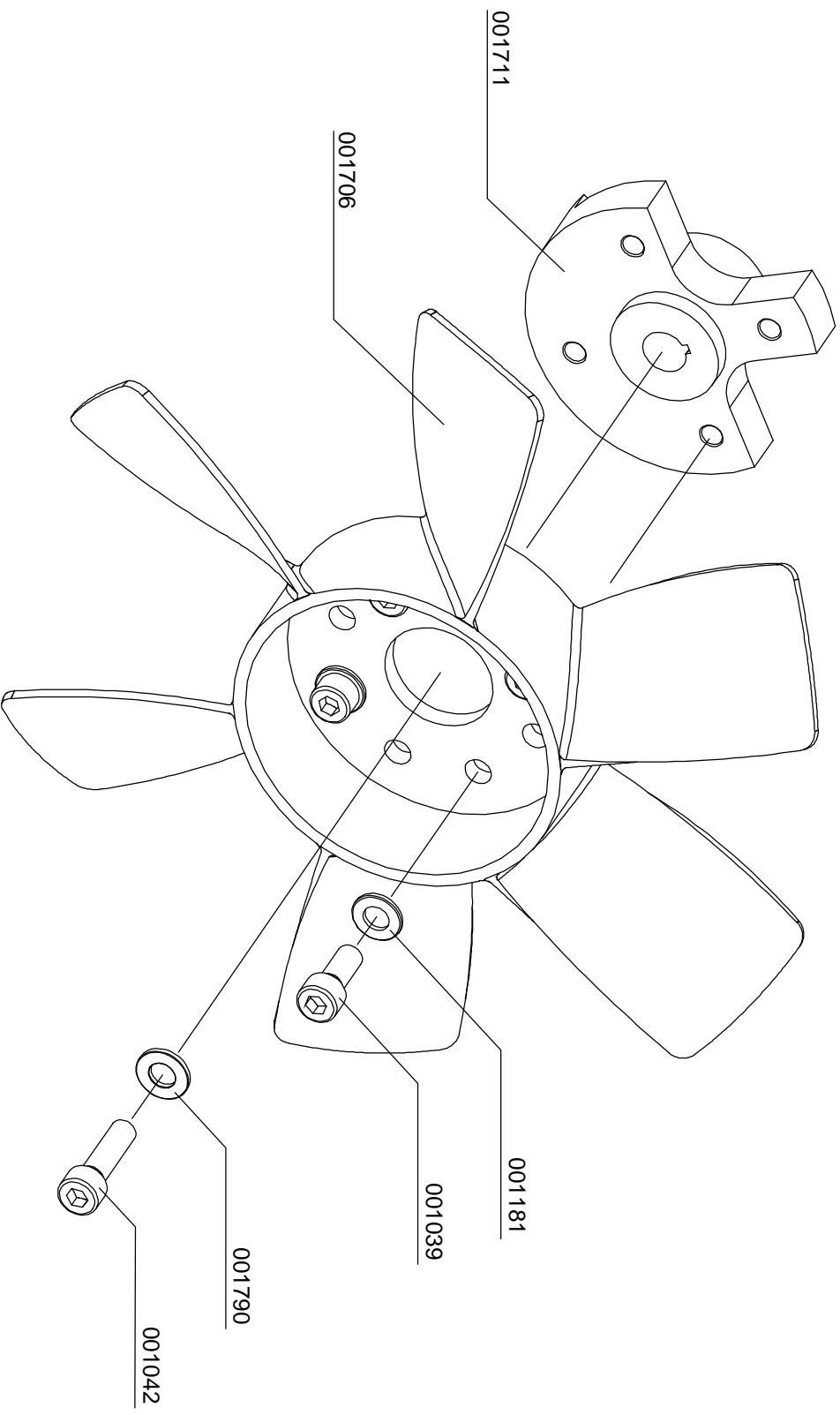


Kompressor: LW 100
Baugruppe: Kolben 3. Stufe
Assembly: Piston 3rd Stage

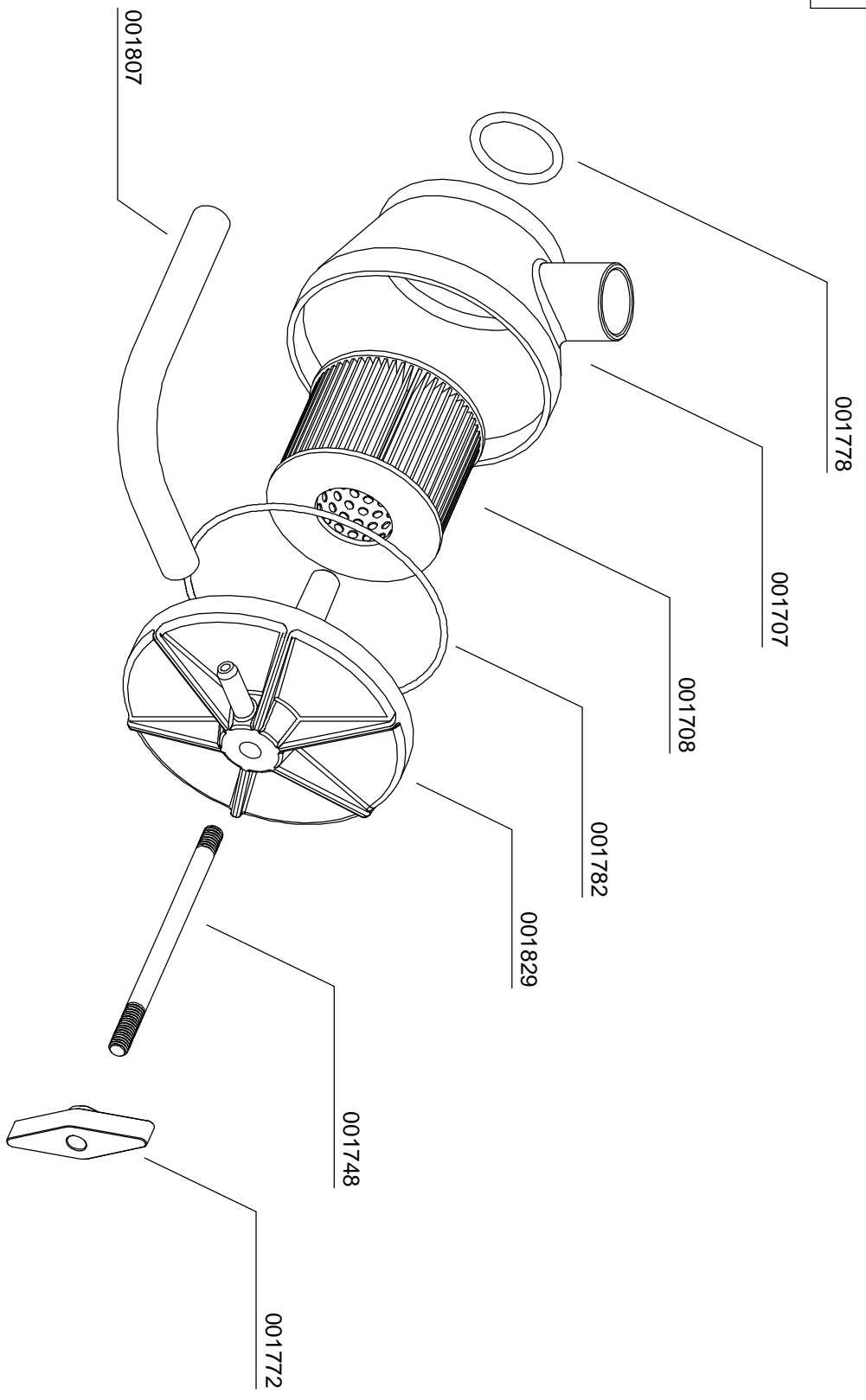


Kompressor: LW 100
Baugruppe: Kurbelwelle
Assembly: Crankshaft

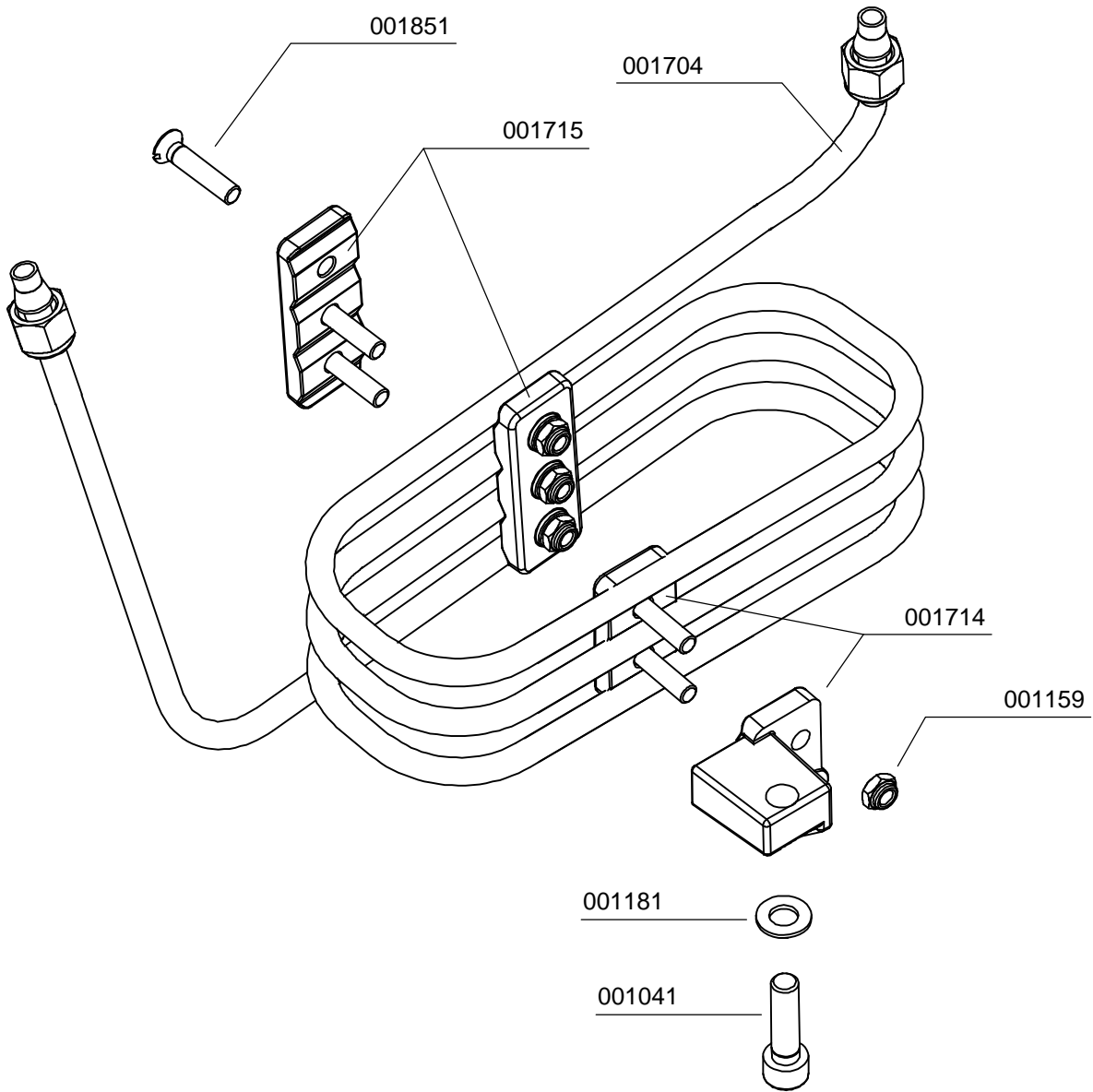




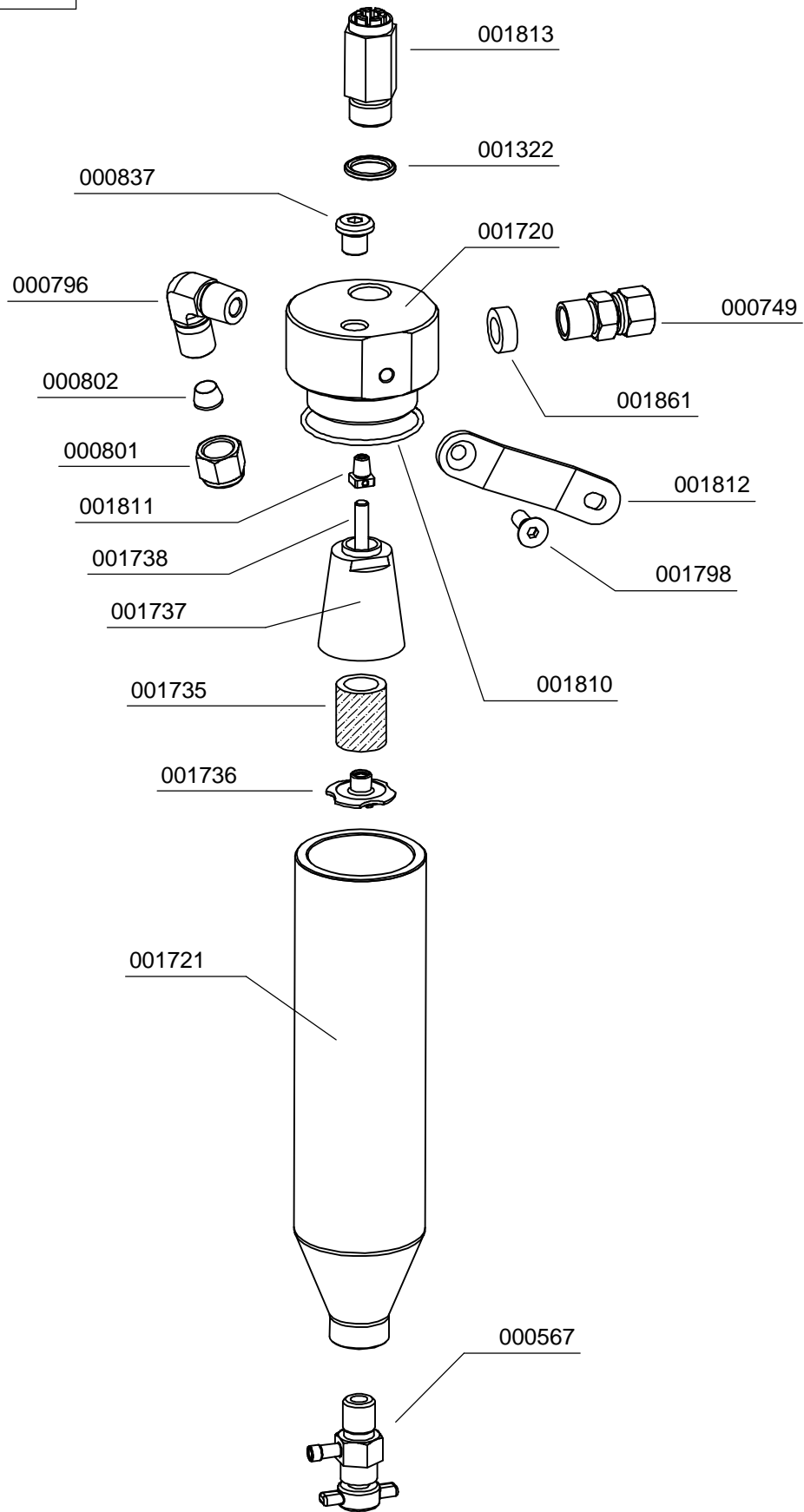
Kompressor: LW 100
Baugruppe: Ansaugfilter
Assembly: Intake Filter



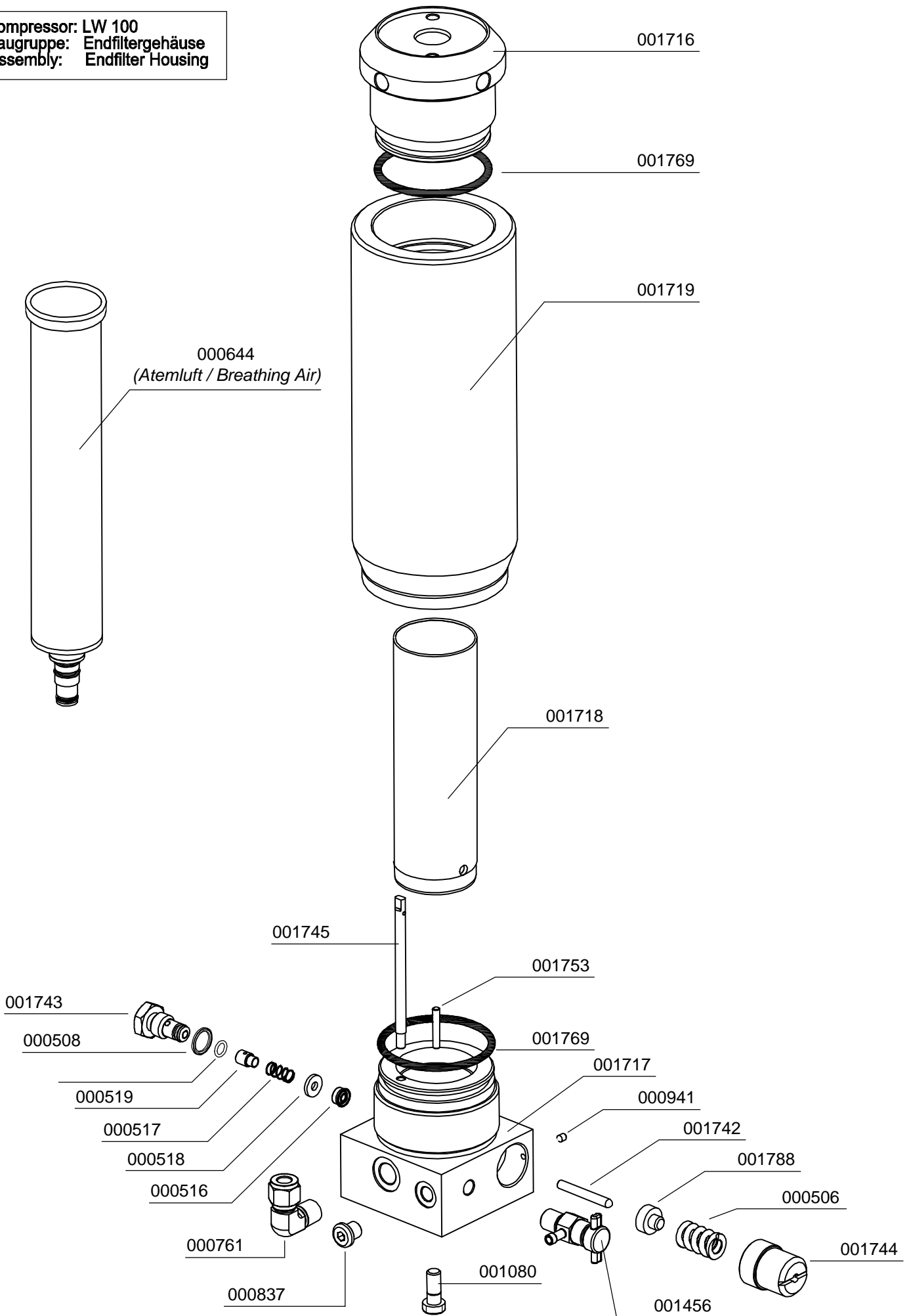
Kompressor: LW 100
Baugruppe: Kühlrohr 2. Stufe
Assembly: Cooling Pipe 2nd Stage



Kompressor: LW 100
Baugruppe: Wasserabscheider
Assembly: Waterseparator



Kompressor: LW 100
Baugruppe: Endfiltergehäuse
Assembly: Endfilter Housing



Kompressor: LW 100
Baugruppe: Enddruck-Sicherheitsventil
Assembly: Final Pressure Safety Valve

CE-Version: 001055
TÜV-Version: 001050

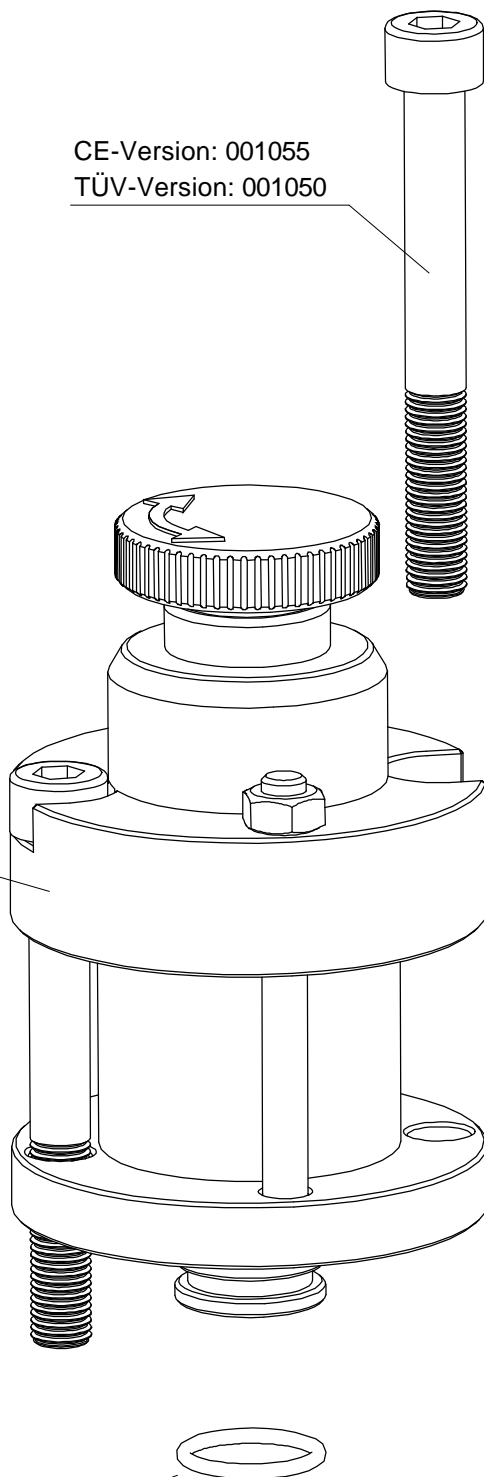
CE-Version:

225 bar: 002135
250 bar: 002136
330 bar: 001808

TÜV-Version:

225 bar: 000553
250 bar: 000554
330 bar: 000556

001244



Kompressor: LW 100
Baugruppe: Konsole
Assembly: Console

LW 100 B

001845

LW 100 E / LW 100 E1

001846

001860

001806

001847

001758

001801

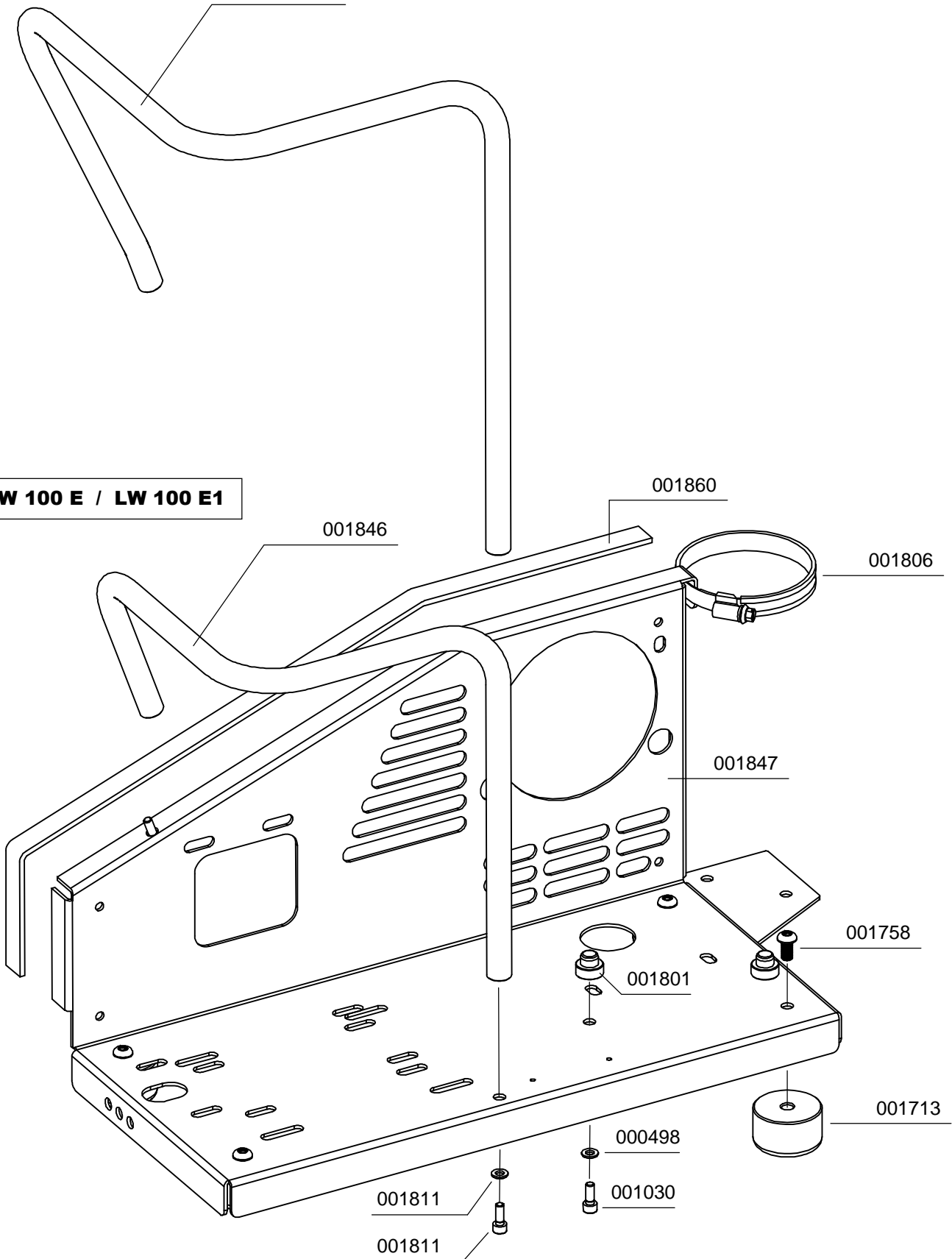
001713

000498

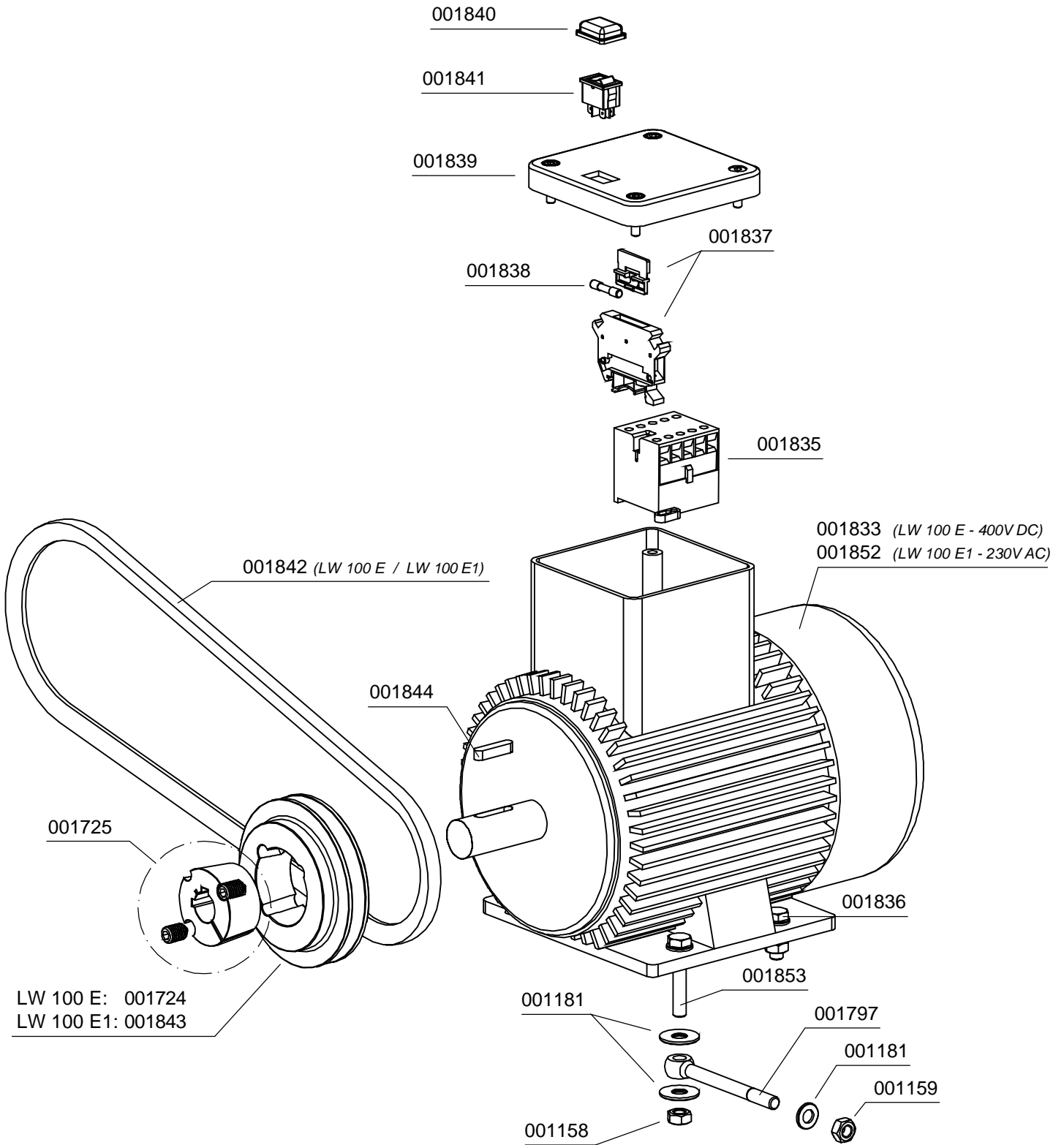
001030

001811

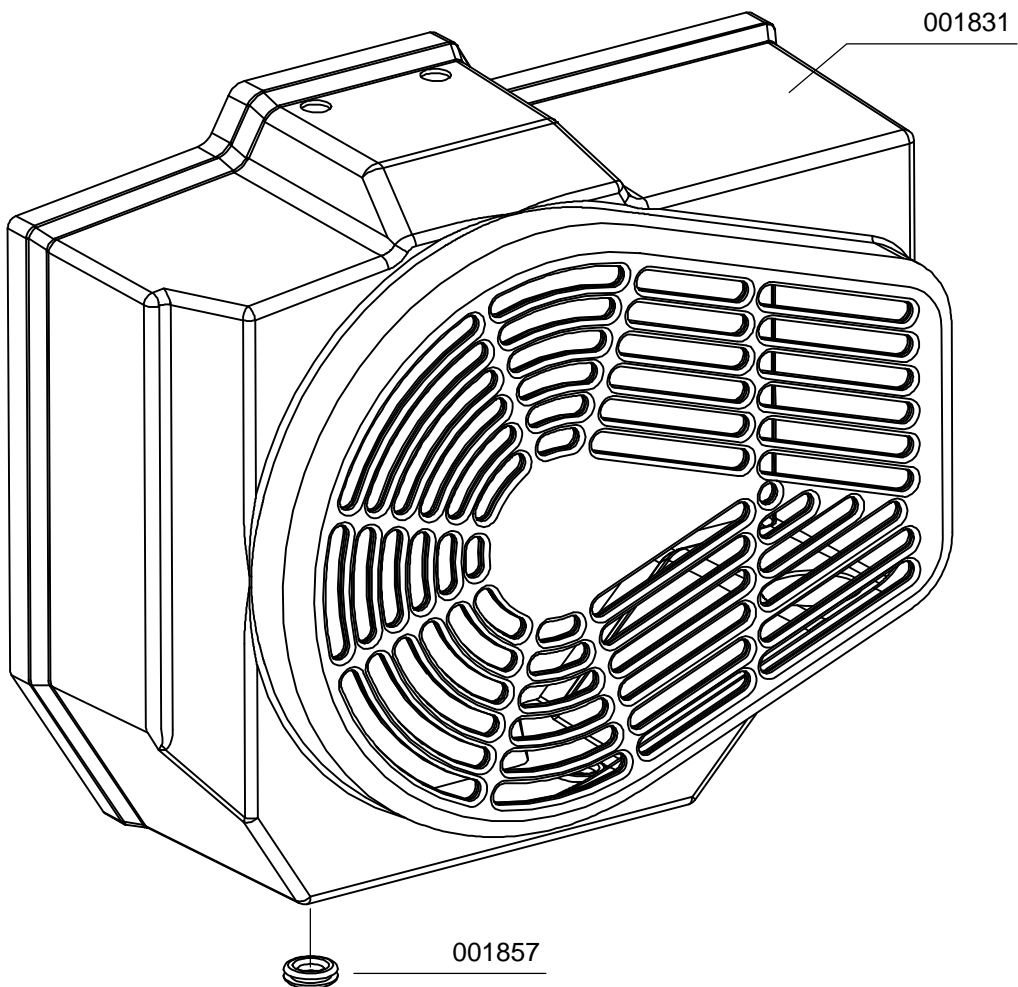
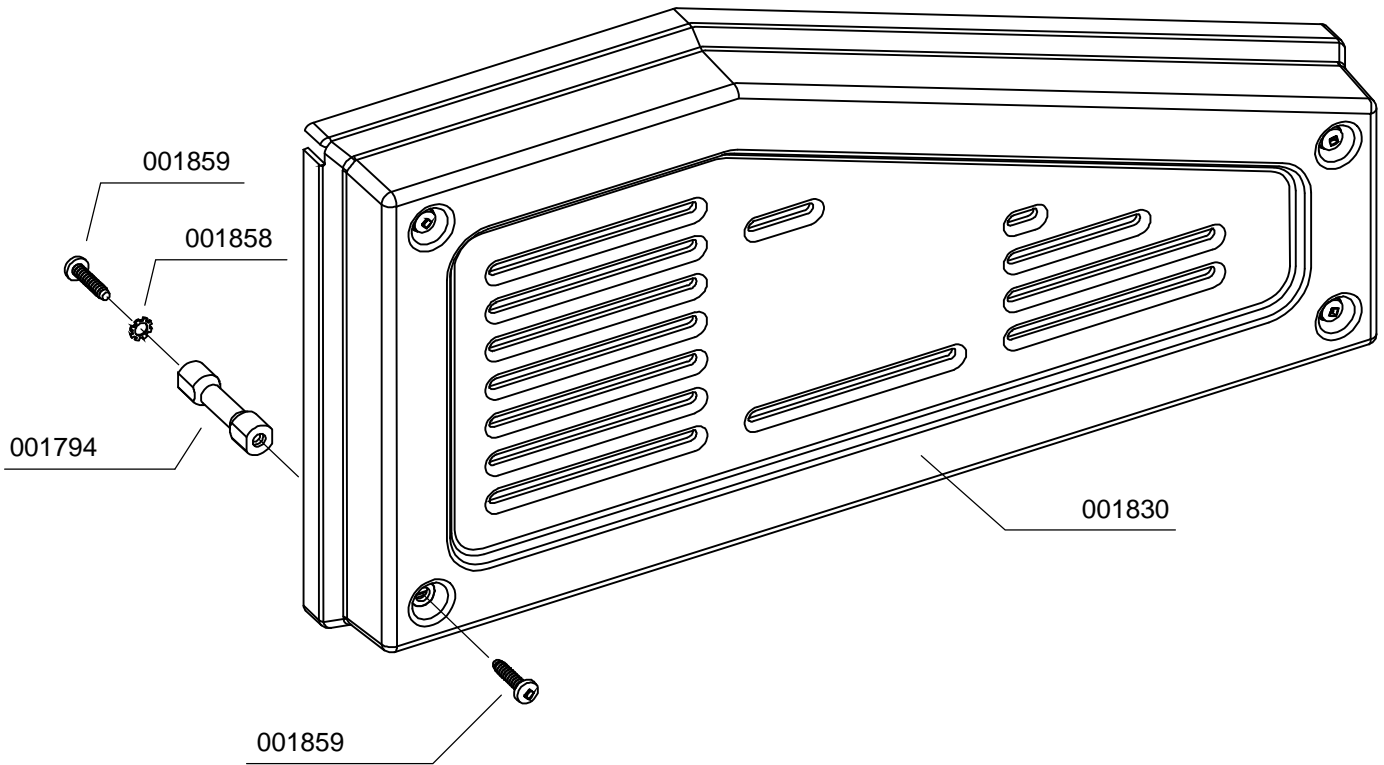
001811



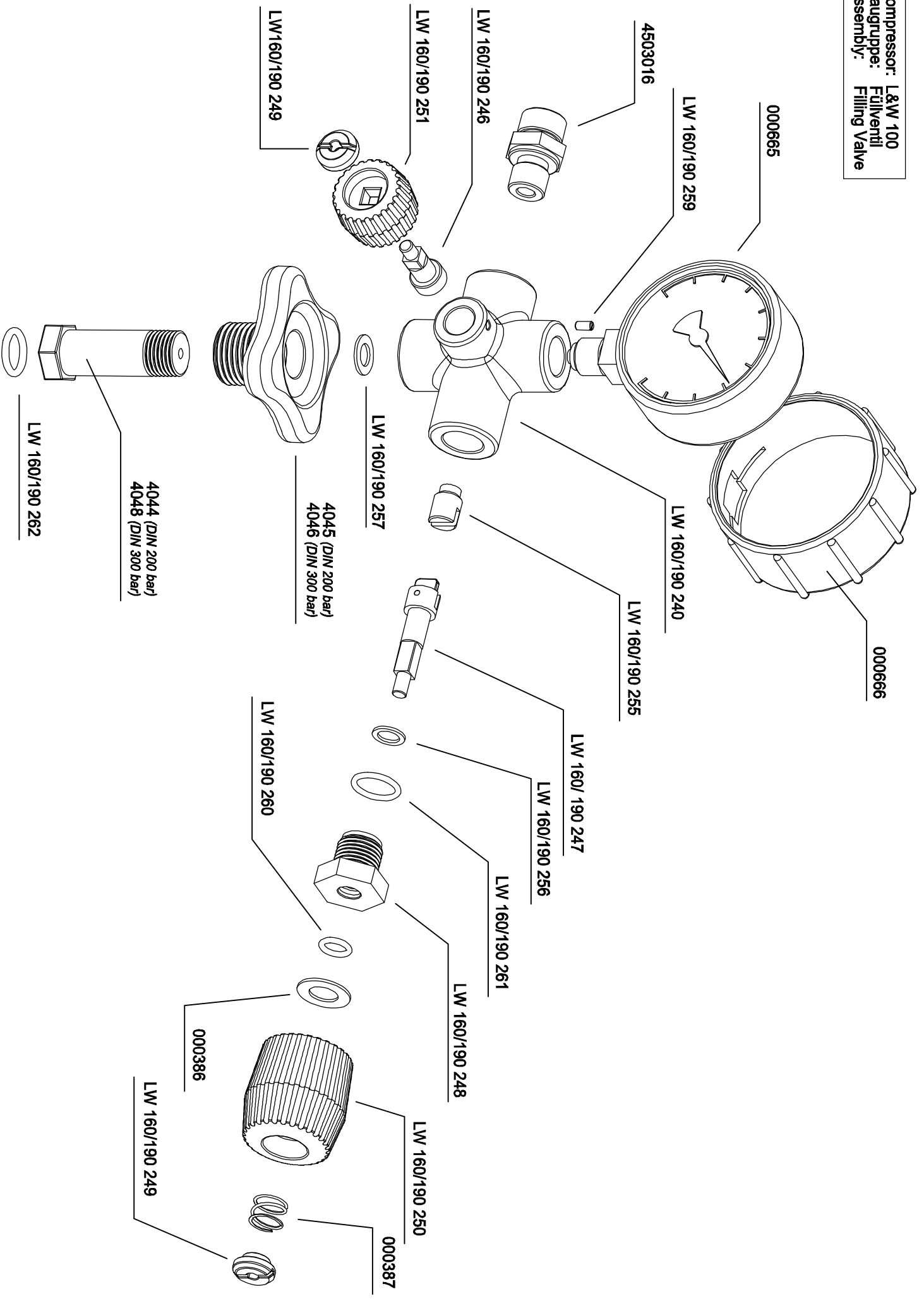
Kompressor: LW 100 E
Baugruppe: E-Motor
Assembly: E-Motor



Kompressor: LW 100
Baugruppe: Antriebsabdeckung
Assembly: Fan Guard / Drive Cover



Kompressor: L&W 100
Baugruppe: Füllventil
Assembly: Filling Valve



Kompressor: LW 100 B
Baugruppe: 4-Takt Motor
Assembly: 4-Stroke Engine

001849 (Komplette Einheit / Complete Unit)

