

# HUBER Container ventilation and air filtration

► aeration/deaeration plant

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## Process description of aeration / deaeration plant L251, max. throughput 250 m<sup>3</sup>/h



*The figure shown here may contain special accessories*

Aeration and deaeration of drinking water reservoirs is necessary for pressure equalisation as the water level in the water chamber varies. The air streaming into the reservoir must be filtered sufficiently to ensure it is free of dust, pollen and other pollutants.

This is achieved by means of an air filter unit charged on both sides with natural air exchange. A prerequisite is air exchange exclusively via the provided aeration and deaeration plant. This means the water chamber must be separated from the operation building and also all other air openings to the water chamber must be reliably closed.

The air sucked in is ambient air that is routed through a pipeline into the operation building where it is cleaned by the air filter unit prior to being discharged directly into the water chamber.

The plant must be easily accessible for filter replacement. Measures must be taken for discharge of condensate and protection of the structure in case of operational troubles.

The plant design must be in accordance with DVGW Worksheet W 300-1.

### The individual components of the aeration / deaeration plant L251:

The ambient air is sucked in, or the displaced air blown out respectively, via an **attack-proof louvre** or a **supply air chimney**. The sturdy design provides a protection against wilful damage and vandalism. The louvre anchors are accessible from the building inside only.

The **air line** is airtight, buckling resistant and distortion-free and laid with a slight slope towards the air filter unit so that the produced condensate runs off via the condensate outlet. All connections are **flexible connections** for easier installation.

If required, a **safety valve** can be used to protect the structure in case of operational troubles, for example a pipe break.

The **air filter unit** is installed into the air line. The air filter unit houses the filter for suspended matter; it is filter class H13 and achieves a separation degree of up to 99.99 % in accordance with DIN EN 1822 for optimal supply air purification. The filter consists of a germ-killing material that ensures the drinking water hygiene even under high loads and air moisture. The condensate is reliably discharged via a condensate drain with ball valve installed in the air filter unit.

A pressure transducer controls filter pollution. The pressure differential is measured upstream and downstream of the filter and shown as a four-digit display value. The permissible working pressure is reported by a potential-free changeover contact. Connection to a telecontrol plant or alarm system is optionally possible.

All parts (except the filter material) are made of austenitic **1.4307 stainless steel**. All welding work is executed in the supplier's factory under an inert gas atmosphere with subsequent pickling and passivation in an acid bath.

The design of the entire construction is such that only easy to mount screw connections have to be used on site. Filter replacement and potential cleaning work can easily be carried out.



## Layout and performance data of the aeration / deaeration plant L251, max. throughput 250 m<sup>3</sup>/h

Project: \_\_\_\_\_

Feed line ①: DN \_\_\_\_\_  
 Extraction line ②: DN \_\_\_\_\_  
 Maximum flow velocity ③: v \_\_\_\_\_ m/s  
 Maximum inflow ④: Q \_\_\_\_\_ m<sup>3</sup>/h  
 Maximum extraction ⑤: Q \_\_\_\_\_ m<sup>3</sup>/h  
 Inspection window: W \_\_\_\_\_ x H \_\_\_\_\_ mm  
 Access door: W \_\_\_\_\_ x H \_\_\_\_\_ mm  
 Max. pressure differential: Δ p \_\_\_\_\_ Pa

The type and size of the filter plant depend on the maximum inflow ④, or maximum extraction ⑤ respectively. The specified **maximum throughput** of a filter plant in m<sup>3</sup>/h (see table 1) must be maximum inflow ④, or extraction ⑤ [Q in m<sup>3</sup>/h] respectively, the higher value being decisive. **If there are any inspection windows or access doors to the tank, make sure the maximum pressure differential does not become too high.**

Type	Maximum throughput at Δ p = 200 Pa	Minimum louvre size	Air line	Filter size	Filter unit
	in m <sup>3</sup> /h	W x H in mm	in mm	Diameter in mm	Flange outside diameter and L in mm (without socket)
L251	250	500 x 300	DN 100 – DN 200	Suspended solids filter Ø 200	Ø 340 Length 500

Table 1

The safety valve is an additional overpressure and underpressure protection in case of a pipe break.

Sicherheitsventil, Ansprechdruck p = 1000 Pa					
Type	DN	Maximum air throughput		Δ p	Connection
		Aerotation	Deaeration		
170 - 1	100 (DA = 110)	600 m <sup>3</sup> /h	600 m <sup>3</sup> /h	1000	Clamp connection

Table 2



## Aeration / deaeration plant L251, max. throughput 250 m<sup>3</sup>/h

**Natural aeration / deaeration plant** with air connections on both sides to improve the hygiene in drinking water reservoirs.

### Comprising:

#### Item 1.0

**Louvre**, attack-proof, pre-finished, rigid design, with a stable frame, slats and 1 x 1 mm insect screen. The insect screen serves as first filter stage and prevents the ingress of small animals, insects and organic coarse material.

louvre welded under inert gas, pickled in an immersion bath and passivated.

For clear wall opening W x H = \_\_\_\_\_

#### Item 2.0

**Air line** in partial lengths according to the specific local conditions, made of stainless steel material no. 1.4307 (AISI 304 L), with a connecting plate designed to suit the louvre for air-tight bolted fixing to the interior structure wall, with pipe connection piece. Pipeline DN, longitudinal welded seam stainless steel pipe, bends as required, flexible joints, including fixing material, foam rubber gasket and mounting brackets.

Air line welded under inert gas, pickled in an immersion bath and passivated.

#### Item 3.0

**Cylindrical air filter unit L251**, with connection pieces on both sides, suitable for the air line, made of stainless steel material no. 1.4307 (AISI 304 L), with filter for suspended matter H13, with central 1/2" condensate drain and ball valve for connection to the customer's drain pipe.

The cylindrical air filter unit is designed for installation directly into the air line. The air filter unit houses a filter for suspended matter that achieves a separation degree of up to 99.99% in accordance with DIN EN 1822 for optimal supply air purification. The inspection opening in the casing ensures easy filter replacement. Completely made of 1.4307 stainless steel except the filter material.

A pressure transducer controls filter pollution. The pressure is measured upstream and downstream of the filter, the pressure differential is shown as a four-digit display value and additionally as an analogue value 0 ... 10 V, 4 ... 20 mA.

Standard measuring range: 0 ..... 1000 Pa,  
 preset to 500 Pa

Supply voltage: 24 V AC/DC

Linearity: ± 1.5 %

Temperature drift: 0.1 % per K

Cable screw connection: M 12

Protection grade: IP 65

Relay output: potential-free changeover contact

Connection to a telecontrol plant or alarm system is possible.

A connection for power must be available.

Maximum throughput: 250 m<sup>3</sup>/h

### Dimensions without connection piece:

Plant length = 500 mm

Outside flange diameter = 340 mm

### Dimensions with connection piece:

Plant length = 825 mm

Both connection pieces ≥ DN 130 are equipped with condensation drain and ball valve.

DN = \_\_\_\_\_

Outside diameter DA = \_\_\_\_\_

#### Item 4.0

**Safety valve type 170-1** as an additional overpressure/underpressure protection for the structure in case of malfunctions. The reaction pressure is 1000 Pa. Safety valve made of aluminium, coated red (RAL 3000) on the outside.

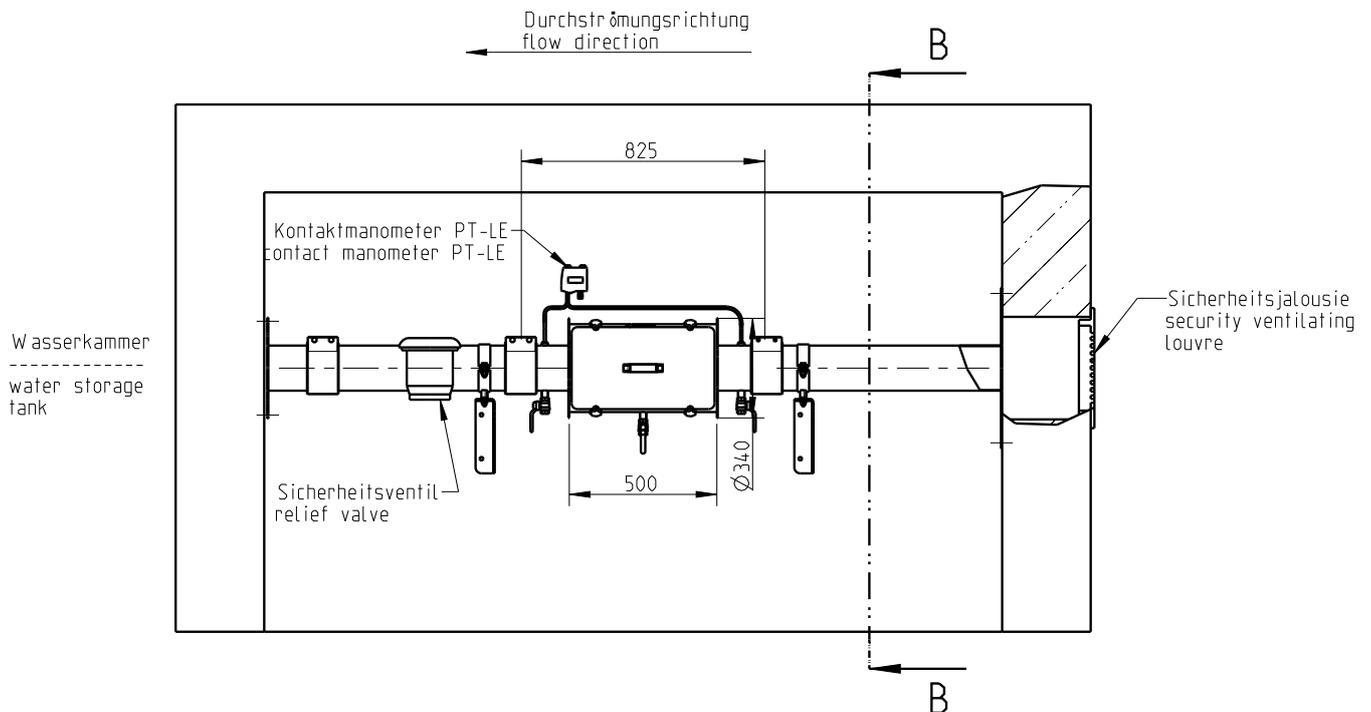


**Note:**

**Tank stability must be guaranteed under any usual and exceptional operating conditions. Only with sufficient dimensioning of the structure and all components the customer is permitted, on his own risk, to do without a safety valve after consultation of the stress analyst on the customer's own responsibility.**

**Options:**

- ▶ 1.4404 (AISI 316 L) stainless steel (Exception: safety valve)
- ▶ Radial pipe ventilator for installation in air line for forced ventilation
- ▶ With power supply unit for regulating the pressure transducer from 230 V to 24 V.
- ▶ Connection pipe with flange PN 10
- ▶ Condensation water drain with non-return valve



## Process description of aeration / deaeration plant L252, max. throughput 300 m<sup>3</sup>/h



*The figure shown here may contain special accessories*

Aeration and deaeration of drinking water reservoirs is necessary for pressure equalisation as the water level in the water chamber varies. The air streaming into the reservoir must be filtered sufficiently to ensure it is free of dust, pollen and other pollutants.

This is achieved by means of an air filter unit charged on both sides with natural air exchange. A prerequisite is air exchange exclusively via the provided aeration and deaeration plant. This means the water chamber must be separated from the operation building and also all other air openings to the water chamber must be reliably closed.

The air sucked in is ambient air that is routed through a pipeline into the operation building where it is cleaned by the air filter unit prior to being discharged directly into the water chamber.

The plant must be easily accessible for filter replacement. Measures must be taken for discharge of condensate and protection of the structure in case of operational troubles.

The plant design must be in accordance with DVGW Worksheet W 300-1.

### The individual components of the aeration / deaeration plant L252:

The ambient air is sucked in, or the displaced air blown out respectively, via an **attack-proof louvre** or a **supply air chimney**. The sturdy design provides a protection against wilful damage and vandalism. The louvre anchors are accessible from the building inside only.

The **air line** is airtight, buckling resistant and distortion-free and laid with a slight slope towards the air filter unit so that the produced condensate can run off. All connections are **flexible connections** for easier installation.

If required, a **safety valve** can be used to protect the structure in case of operational troubles, for example a pipe break.

The **air filter unit** is installed into the air line. The air filter unit houses the filter for suspended matter; it is filter class H13 and achieves a separation degree of up to 99.99 % in accordance with DIN EN 1822 for optimal supply air purification. The filter consists of a germ-killing material that ensures the drinking water hygiene even under high loads and air moisture. The condensate is reliably discharged via a condensate drain with ball valve installed in the air filter unit.

A pressure transducer controls filter pollution. The pressure differential is measured upstream and downstream of the filter and shown as a four-digit display value. The permissible working pressure is reported by a potential-free changeover contact. Connection to a telecontrol plant or alarm system is optionally possible.

All parts (except the filter material) are made of austenitic **1.4307 stainless steel**. All welding work is executed in the supplier's factory under an inert gas atmosphere with subsequent pickling and passivation in an acid bath.

The design of the entire construction is such that only easy to mount screw connections have to be used on site. Filter replacement and potential cleaning work can easily be carried out.



## Layout and performance data of the aeration / deaeration plant L252, max. throughput 300 m<sup>3</sup>/h

Project: \_\_\_\_\_

Feed line ①: DN \_\_\_\_\_  
 Extraction line ②: DN \_\_\_\_\_  
 Maximum flow velocity ③: v \_\_\_\_\_ m/s  
 Maximum inflow ④: Q \_\_\_\_\_ m<sup>3</sup>/h  
 Maximum extraction ⑤: Q \_\_\_\_\_ m<sup>3</sup>/h  
 Inspection window: W \_\_\_\_\_ x H \_\_\_\_\_ mm  
 Access door: W \_\_\_\_\_ x H \_\_\_\_\_ mm  
 Max. pressure differential: Δ p \_\_\_\_\_ Pa

The type and size of the filter plant depend on the maximum inflow ④, or maximum extraction ⑤ respectively. The specified **maximum throughput** of a filter plant in m<sup>3</sup>/h (see table 1) must be maximum inflow ④, or extraction ⑤ [Q in m<sup>3</sup>/h] respectively, the higher value being decisive. **If there are any inspection windows or access doors to the tank, make sure the maximum pressure differential does not become too high.**

Type	Maximum throughput at Δ p = 200 Pa	Minimum louvre size	Air line	Filter size	Filter unit
	in m <sup>3</sup> /h	W x H in mm	in mm	Diameter in mm	Flange outside diameter and L in mm (without socket)
L252	300	500 x 300	DN 200	Suspended solids filter Ø 200	Ø 340 Length 900

Table 1

The safety valve is an additional overpressure and underpressure protection in case of a pipe break.

Sicherheitsventil, Ansprechdruck p = 1000 Pa					
Type	DN	Maximum air throughput		Δ p	Connection
		Aeretation	Deaeration		
170 - 1	100 (DA = 110)	600 m <sup>3</sup> /h	600 m <sup>3</sup> /h	1000	Clamp connection

Table 2



## Aeration / deaeration plant L252, max. throughput 300 m<sup>3</sup>/h

**Natural aeration / deaeration plant** with air connections on both sides to improve the hygiene in drinking water reservoirs.

### Comprising:

#### Item 1.0

**Louvre**, attack-proof, pre-finished, rigid design, with a stable frame, slats and 1 x 1 mm insect screen. The insect screen serves as first filter stage and prevents the ingress of small animals, insects and organic coarse material.

louvre welded under inert gas, pickled in an immersion bath and passivated.

For clear wall opening W x H = \_\_\_\_\_

#### Item 2.0

**Air line** in partial lengths according to the specific local conditions, made of stainless steel material no. 1.4307 (AISI 304 L), with a connecting plate designed to suit the louvre for air-tight bolted fixing to the interior structure wall, with pipe connection piece. Pipeline DN, longitudinal welded seam stainless steel pipe, bends as required, flexible joints, including fixing material, foam rubber gasket and mounting brackets.

Air line welded under inert gas, pickled in an immersion bath and passivated.

#### Item 3.0

**Cylindrical air filter unit L252**, with connection pieces on both sides, suitable for the air line, made of stainless steel material no. 1.4307 (AISI 304 L), with filter for suspended matter H13, with central 1/2" condensate drain and ball valve for connection to the customer's drain pipe.

The cylindrical air filter unit is designed for installation directly into the air line. The air filter unit houses a filter for suspended matter that achieves a separation degree of up to 99.99 % in accordance with DIN EN 1822 for optimal supply air purification. The inspection opening in the casing ensures easy filter replacement. Completely made of 1.4307 stainless steel except the filter material.

A pressure transducer controls filter pollution. The pressure is measured upstream and downstream of the filter, the pressure differential is shown as a four-digit display value and additionally as an analogue value 0 ... 10 V, 4 ... 20 mA.

Standard measuring range: 0 ..... 1000 Pa,  
 preset to 500 Pa

Supply voltage: 24 V AC/DC

Linearity: ± 1.5 %

Temperature drift: 0.1 % per K

Cable screw connection: M 12

Protection grade: IP 65

Relay output: potential-free changeover contact

Connection to a telecontrol plant or alarm system is possible.

A connection for power must be available.

Maximum throughput: 300 m<sup>3</sup>/h

### Dimensions without connection piece:

Plant length = 900 mm

Outside flange diameter = 340 mm

### Dimensions with connection piece:

Plant length = 1225 mm

Both connection pieces ≥ DN 130 are equipped with condensation drain and ball valve.

DN = \_\_\_\_\_

Outside diameter DA = \_\_\_\_\_

#### Item 4.0

**Safety valve type 170-1** as an additional overpressure/underpressure protection for the structure in case of malfunctions. The reaction pressure is 1000 Pa. Safety valve made of aluminium, coated red (RAL 3000) on the outside.

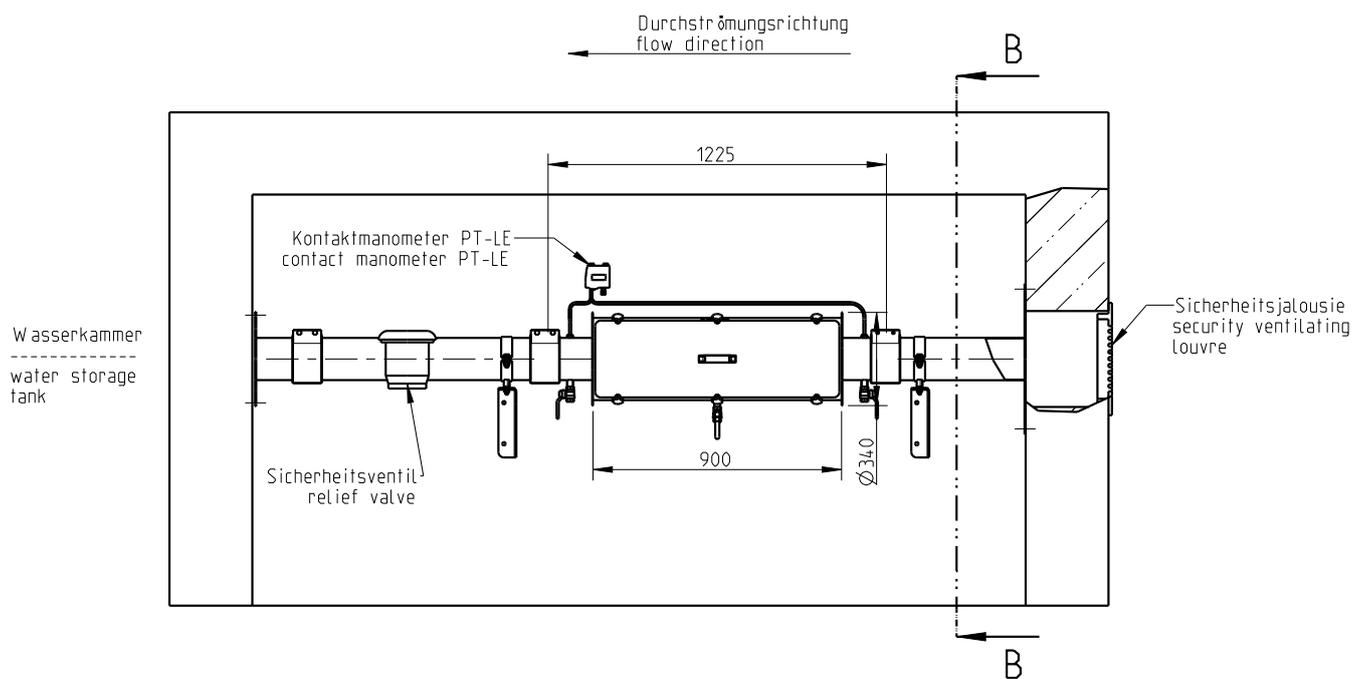


**Note:**

**Tank stability must be guaranteed under any usual and exceptional operating conditions. Only with sufficient dimensioning of the structure and all components the customer is permitted, on his own risk, to do without a safety valve after consultation of the stress analyst on the customer's own responsibility.**

**Options:**

- ▶ 1.4404 (AISI 316 L) stainless steel (Exception: safety valve)
- ▶ Radial pipe ventilator for installation in air line for forced ventilation
- ▶ With power supply unit for regulating the pressure transducer from 230 V to 24 V.
- ▶ Connection pipe with flange PN 10
- ▶ Condensation water drain with non-return valve



## Process description of aeration / deaeration plant 361, max. throughput 720 m<sup>3</sup>/h



The figure shown here may contain special accessories

Aeration and deaeration of drinking water reservoirs with filtered air is achieved by means of a three-stage ventilation system charged on both sides with natural air exchange. A prerequisite is air exchange exclusively via the provided aeration and deaeration plant. This means the water chamber must be separated from the operation building and all other air openings to the water chamber must be reliably closed.

The plant design must be in accordance with DVGW Worksheet W 300-1.

The air sucked in is ambient air. The plant must be installed in the operator building and be easily accessible. Measures must be taken for discharge of condensate and protection of the structure in case of operational troubles.

### The individual components of the aeration / deaeration plant L361:

The ambient air is sucked in, or the displaced air blown out respectively, **via an attack-proof louvre or a supply air chimney**. The sturdy design provides a protection against wilful damage and vandalism. The louvre anchors are accessible from the building inside only. The insect screen serves as first filter stage and prevents the ingress of small animals, insects and organic coarse material, such as tree leaves. The louvre or supply air chimney and following air line are **flexibly connected** for easier installation.

The air line is airtight, buckling resistant and distortion-free and laid with a slight slope towards the air filter unit so that the produced condensate can run off.

The air filter unit is installed into the air line. The pre-filter installed in the air line is filter class ISO ePM10 75 % in compliance with EN ISO 16890 and serves as second filter stage. The pre-filter is required to increase the lifetime of the subsequent **suspended material filter** as third filter stage. This filter is filter class H13 with a separation class H13 of at least 99.99 % in compliance with DIN EN 1822. Both filters consist of a germ-killing material that ensures the drinking water hygiene even under high loads and air moisture.

A pressure transducer controls filter pollution. The pressure differential is measured upstream and downstream of the filter and shown as a four-digit display value. The permissible working pressure is reported by a potential-free changeover contact so that connection to a telecontrol plant or alarm system is optionally possible.

The condensate from the air line and air filter unit is discharged by two condensation water drains with ball valve.

If required, a **safety valve** can be used to protect the structure in case of operational troubles, for example a pipe break.

All parts (except the filter material) are made of austenitic **1.4307 stainless steel**. All welding work is executed in the supplier's factory under an inert gas atmosphere with subsequent pickling and passivation in an acid bath.

The design of the entire construction is such that only easy to mount screw connections have to be used on site. Filter replacement and potential cleaning work can easily be carried out.



## Layout and performance data of the aeration / deaeration plant 361, max. throughput 720 m<sup>3</sup>/h

Project: \_\_\_\_\_

Feed line ①: DN \_\_\_\_\_  
 Extraction line ②: DN \_\_\_\_\_  
 Maximum flow velocity ③: v \_\_\_\_\_ m/s  
 Maximum inflow ④: Q \_\_\_\_\_ m<sup>3</sup>/h  
 Maximum extraction ⑤: Q \_\_\_\_\_ m<sup>3</sup>/h  
 Inspection window: W \_\_\_\_\_ x H \_\_\_\_\_ mm  
 Access door: W \_\_\_\_\_ x H \_\_\_\_\_ mm  
 Max. pressure differential: Δ p \_\_\_\_\_ Pa

The type and size of the filter plant depend on the maximum inflow ④, or maximum extraction ⑤ respectively. The specified **maximum throughput** of a filter plant in m<sup>3</sup>/h (see table 1) must be maximum inflow ④, or extraction ⑤ [Q in m<sup>3</sup>/h] respectively, the higher value being decisive. **If there are any inspection windows or access doors to the tank, make sure the maximum pressure differential does not become too high.** Overdimensioning of the Aeration and Deaeration Plant must be avoided as this might affect filter function.

Type	Maximum throughput Δ p = 120 Pa	Minimum louvre size	Minimum air line	Filter size		Filter unit
	in m <sup>3</sup> /h	W x H in mm	in mm	D x W x H in mm		L x W x H in mm
L361	720	600 x 400	DN 200 – DN 300	Pre-filter	60 x 610 x 610	520 x 640 x 725
				Suspended solids filter	78 x 610 x 610	

Table 1

The safety valve is an additional overpressure and underpressure protection in case of a pipe break. The applicable valve type (table 2) depends on the nominal width of the extraction line ②.

Safety valve, response pressure p = 1000 Pa					
Type	DN	Maximum air throughput		Δ p	Connection
		Aeration	Deaeration		
170 - 1	100 (DA = 110)	600 m <sup>3</sup> /h	600 m <sup>3</sup> /h	1000	Clamp connection
81 - 180 - E	250	3100 m <sup>3</sup> /h	3100 m <sup>3</sup> /h	1000	Flansch PN 10

Table 2



## Aeration / deaeration plant 361, max. throughput 720 m<sup>3</sup>/h

**Natural aeration / deaeration plant** with air connections on both sides to improve the hygiene in drinking water reservoirs.

### Comprising:

#### Item 1.0

**Louvre**, attack-proof, pre-finished, made of stainless steel material no. 1.4307 (AISI 304 L), rigid design, with a stable frame, slats and 1 x 1 mm insect screen. The insect screen serves as first filter stage and prevents the ingress of small animals, insects and organic coarse material.

louvre welded under inert gas, pickled in an immersion bath and passivated.

For clear wall opening W x H = \_\_\_\_\_

#### Item 2.0

**Air line** in partial lengths according to the specific local conditions, made of stainless steel material no. 1.4307 (AISI 304 L), with a connecting plate designed to suit the louvre for air-tight bolted fixing to the interior structure wall, with pipe connection piece. Pipeline DN, longitudinal welded seam stainless steel pipe, bends as required, flexible joints, including fixing material, foam rubber gasket and mounting brackets.

Air line welded under inert gas, pickled in an immersion bath and passivated.

#### Item 3.0

**Air filter unit L361** with connection pieces on both sides, suitable for the air line, made of stainless steel material no. 1.4307 (AISI 304 L), with fine filter and filter for suspended matter, with two DN 1/2" stainless steel condensate drains upstream and downstream of the filter package, each with check valve, including wall mounting brackets.

The air filter unit is designed for installation directly into the air line. The fine material filter installed in the air line is filter class ISO ePM10 75 % according to EN ISO 16890 and serves as second filter stage.

The fine filter is required to increase the lifetime of the subsequent suspended material filter as third filter stage. This filter is filter class H13 with a separation class H13 of at least 99.99% in compliance with DIN EN 1822. Both filters consist of a germ-killing material that ensures the drinking water hygiene even under high loads and air moisture. Completely made of 1.4307 stainless steel except the filter material.

A pressure transducer controls filter pollution. The pressure is measured upstream and downstream of the filter package, the pressure differential is shown as a four-digit display value and additionally as an analogue value 0 ... 10 V, 4 ... 20 mA.

Standard measuring range: 0 ..... 1000 Pa,  
 preset to 500 Pa

Supply voltage: 24 V AC/DC

Linearity: ± 1.5 %

Temperature drift: 0.1 % per K

Cable screw connection: M 12

Protection grade: IP 65

Relay output: potential-free changeover contact

Connection to a telecontrol plant or alarm system is possible.

A connection for power must be available.

#### Type L361

**Air filter tank L x W x H = 520 x 640 x 725 mm**

#### Item 4.0

Safety valve as an additional overpressure/underpressure protection to protect the structure in case of malfunctions. The reaction pressure 1000 Pa. Safety valve made of aluminium, coated red (RAL 3000) on the outside.

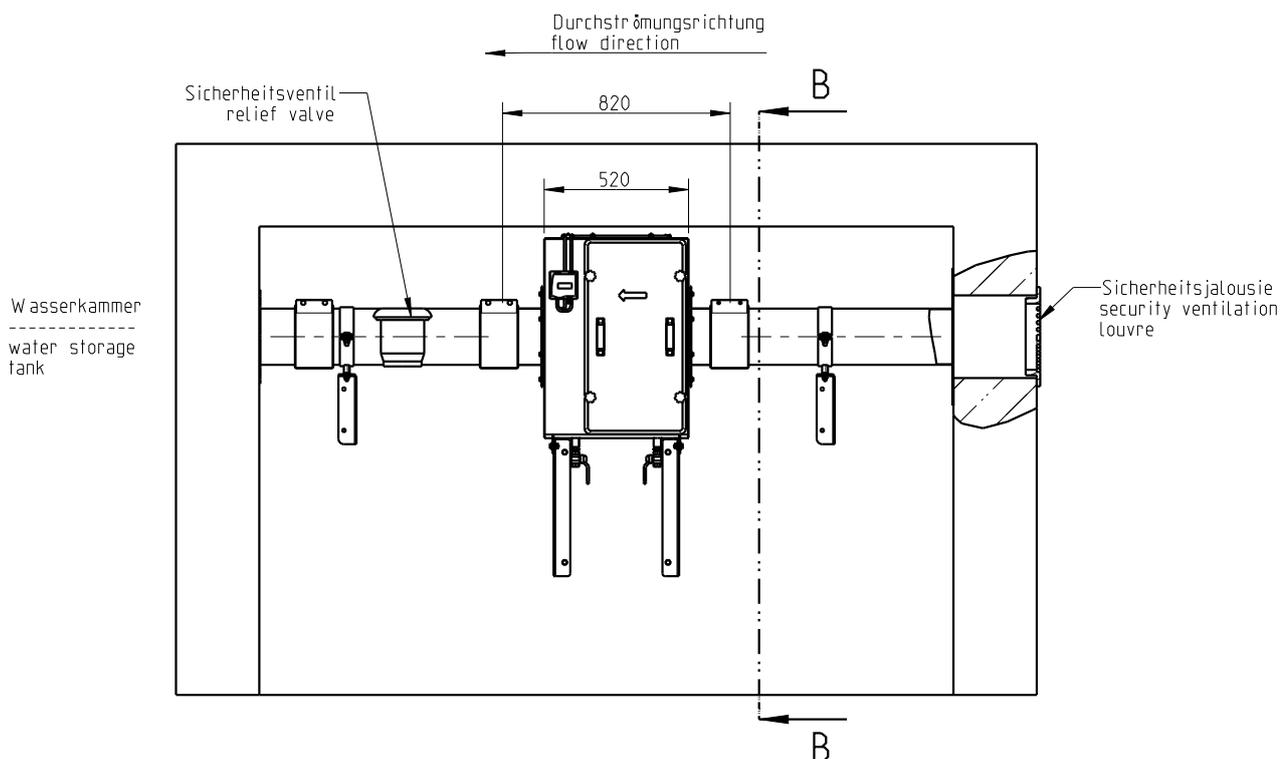


**Note:**

**Tank stability must be guaranteed under any usual and exceptional operating conditions. Only with sufficient dimensioning of the structure and all components the customer is permitted, on his own risk, to do without a safety valve after consultation of the stress analyst on the customer's own responsibility.**

**Options:**

- ▶ 1.4404 (AISI 316 L) stainless steel (Exception: safety valve)
- ▶ Radial pipe ventilator for installation in air line for forced ventilation
- ▶ With power supply unit for regulating the pressure transducer from 230 V to 24 V.
- ▶ Connection pipe with flange PN 10
- ▶ Condensation water drain with non-return valve



Aeration / deaeration plant 361, max. throughput 720 m<sup>3</sup>/h

Subject to technical modification | Drawing No. 190.046, 6.2024

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## Process description of aeration / deaeration plant 661, max. throughput 3000 m<sup>3</sup>/h



The figure shown here may contain special accessories

Aeration and deaeration of drinking water reservoirs with filtered air is achieved by means of a three-stage ventilation system charged on both sides with natural air exchange. A prerequisite is air exchange exclusively via the provided aeration and deaeration plant. This means the water chamber must be separated from the operation building and all other air openings to the water chamber must be reliably closed.

The plant design must be in accordance with DVGW Worksheet W 300-1.

The air sucked in is ambient air. The plant must be installed in the operator building and be easily accessible. Measures must be taken for discharge of condensate and protection of the structure in case of operational troubles.

### The individual components of the aeration / deaeration plant L661:

The ambient air is sucked in, or the displaced air blown out respectively, **via an attack-proof louvre** or a **supply air chimney**. The sturdy design provides a protection against wilful damage and vandalism. The louvre anchors are accessible from the building inside only. The insect screen serves as first filter stage and prevents the ingress of small animals, insects and organic coarse material, such as tree leaves. The louvre or supply air chimney and following air line are **flexibly connected** for easier installation.

The **air line** is airtight, buckling resistant and distortion-free and laid with a slight slope towards the air filter unit so

that the produced condensate can run off.

The **air filter unit** is installed into the air line. The **prefilter** installed in the air line is filter class ISO ePM10 75 % in compliance with EN ISO 16890 and serves as second filter stage. The pre-filter is required to increase the lifetime of the subsequent **suspended material filter** as third filter stage. This filter is filter class H13 with a separation class H13 of at least 99.99 % in compliance with DIN EN 1822. Both filters consist of a germ-killing material that ensures the drinking water hygiene even under high loads and air moisture.

A pressure transducer controls filter pollution. The pressure differential is measured upstream and downstream of the filter and shown as a four-digit display value. The permissible working pressure is reported by a potential-free changeover contact so that connection to a telecontrol plant or alarm system is optionally possible.

The condensate from the air line and air filter unit is discharged by two condensation water drains with ball valve.

If required, a **safety valve** can be used to protect the structure in case of operational troubles, for example a pipe break.

All parts (except the filter material) are made of austenitic **1.4307 stainless steel**. All welding work is executed in the supplier's factory under an inert gas atmosphere with subsequent pickling and passivation in an acid bath. The design of the entire construction is such that only easy to mount screw connections have to be used on site. Filter replacement and potential cleaning work can easily be carried out.



## Layout and performance data of the aeration / deaeration plant 661, max. throughput 3000 m<sup>3</sup>/h

Project: \_\_\_\_\_

Feed line ①: DN \_\_\_\_\_  
 Extraction line ②: DN \_\_\_\_\_  
 Maximum flow velocity ③: v \_\_\_\_\_ m/s  
 Maximum inflow ④: Q \_\_\_\_\_ m<sup>3</sup>/h  
 Maximum extraction ⑤: Q \_\_\_\_\_ m<sup>3</sup>/h  
 Inspection window: W \_\_\_\_\_ x H \_\_\_\_\_ mm  
 Access door: W \_\_\_\_\_ x H \_\_\_\_\_ mm  
 Max. pressure differential: Δ p \_\_\_\_\_ Pa

The type and size of the filter plant depend on the maximum inflow ④, or maximum extraction ⑤ respectively. The specified **maximum throughput** of a filter plant in m<sup>3</sup>/h (see table 1) must be maximum inflow ④, or extraction ⑤ [Q in m<sup>3</sup>/h] respectively, the higher value being decisive. **If there are any inspection windows or access doors to the tank, make sure the maximum pressure differential does not become too high.** Overdimensioning of the Aeration and Deaeration Plant must be avoided as this might affect filter function.

Type	Maximum throughput Δ p = 120 Pa	Minimum louvre size	Minimum air line	Filter size		Filter unit
	in m <sup>3</sup> /h	W x H in mm	in mm	D x W x H in mm		L x W x H in mm
L661	3000	1000 x 800	DN 300 – DN 600	Pre-filter	60 x 610 x 610	720 x 640 x 725
				Suspended solids filter	292 x 610 x 610	

Table 1

The safety valve is an additional overpressure and underpressure protection in case of a pipe break. The applicable valve type (table 2) depends on the nominal width of the extraction line ②.

Safety valve, response pressure p = 1000 Pa					
Type	DN	Maximum air throughput		Δ p	Connection
		Aeration	Deaeration		
170 - 1	100 (DA = 110)	600 m <sup>3</sup> /h	600 m <sup>3</sup> /h	1000	Clamp connection
81 - 180 - E	250	3100 m <sup>3</sup> /h	3100 m <sup>3</sup> /h	1000	Flansch PN 10

Table 2



## Aeration / deaeration plant 661, max. throughput 3000 m<sup>3</sup>/h

**Natural aeration / deaeration plant** with air connections on both sides to improve the hygiene in drinking water reservoirs.

### Comprising:

#### Item 1.0

**Louvre**, attack-proof, pre-finished, made of stainless steel material no. 1.4307 (AISI 304 L), rigid design, with a stable frame, slats and 1 x 1 mm insect screen. The insect screen serves as first filter stage and prevents the ingress of small animals, insects and organic coarse material.

louvre welded under inert gas, pickled in an immersion bath and passivated.

For clear wall opening W x H = \_\_\_\_\_

#### Item 2.0

**Air line** in partial lengths according to the specific local conditions, made of stainless steel material no. 1.4307 (AISI 304 L), with a connecting plate designed to suit the louvre for air-tight bolted fixing to the interior structure wall, with pipe connection piece. Pipeline DN, longitudinal welded seam stainless steel pipe, bends as required, flexible joints, including fixing material, foam rubber gasket and mounting brackets.

Air line welded under inert gas, pickled in an immersion bath and passivated.

#### Item 3.0

**Air filter unit L661** with connection pieces on both sides, suitable for the air line, made of stainless steel material no. 1.4307 (AISI 304 L), with fine filter and filter for suspended matter, with two DN 1/2" stainless steel condensate drains upstream and downstream of the filter package, each with check valve, including wall mounting brackets.

The air filter unit is designed for installation directly into the air line. The fine material filter installed in the air line is filter class ISO ePM10 75 % according to EN ISO 16890 and serves as second filter stage.

The fine filter is required to increase the lifetime of the subsequent suspended material filter as third filter stage. This filter is filter class H13 with a separation class H13 of at least 99.99 % in compliance with DIN EN 1822. Both filters consist of a germ-killing material that ensures the drinking water hygiene even under high loads and air moisture. Completely made of 1.4307 stainless steel except the filter material.

A pressure transducer controls filter pollution. The pressure is measured upstream and downstream of the filter package, the pressure differential is shown as a four-digit display value and additionally as an analogue value 0 ... 10 V, 4 ... 20 mA.

Standard measuring range: 0 ..... 1000 Pa,  
 preset to 500 Pa

Supply voltage: 24 V AC/DC

Linearity: ± 1.5 %

Temperature drift: 0.1 % per K

Cable screw connection: M 12

Protection grade: IP 65

Relay output: potential-free changeover contact

Connection to a telecontrol plant or alarm system is possible.

A connection for power must be available.

### Type L361

**Air filter tank L x W x H = 720 x 640 x 725 mm**

#### Item 4.0

Safety valve as an additional overpressure/underpressure protection to protect the structure in case of malfunctions. The reaction pressure 1000 Pa. Safety valve made of aluminium, coated red (RAL 3000) on the outside.

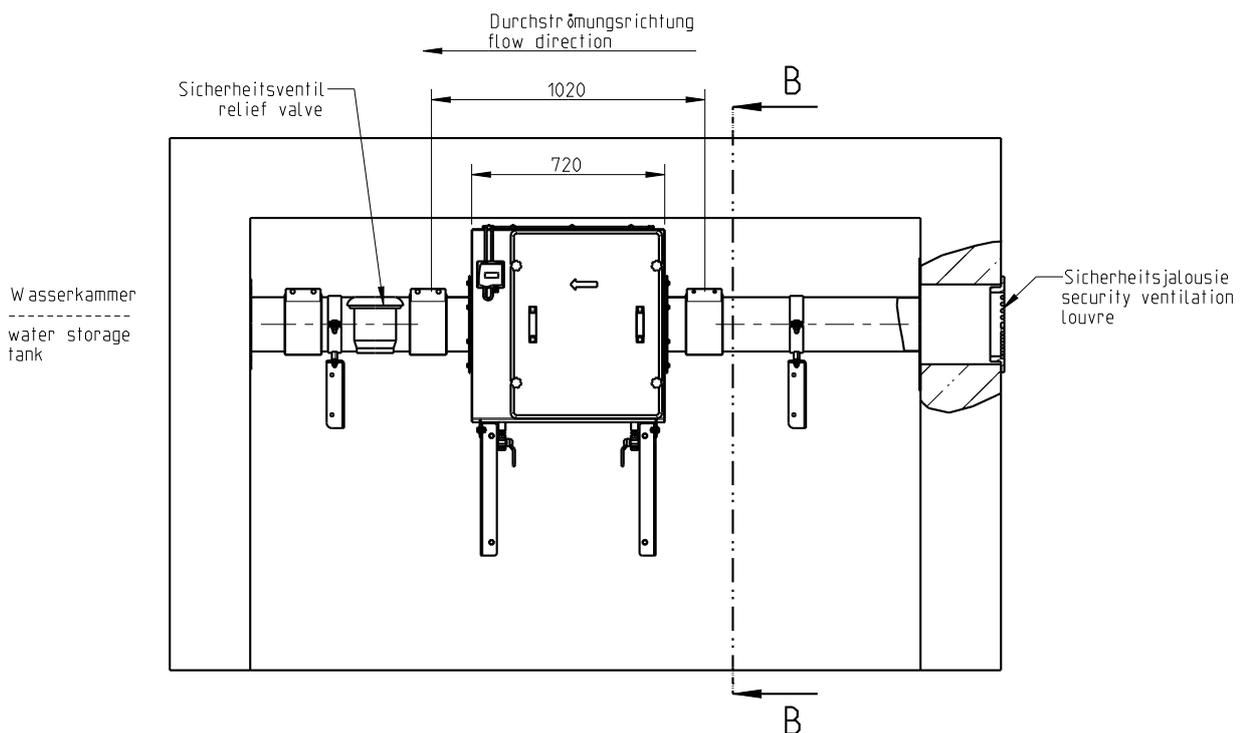


**Note:**

**Tank stability must be guaranteed under any usual and exceptional operating conditions. Only with sufficient dimensioning of the structure and all components the customer is permitted, on his own risk, to do without a safety valve after consultation of the stress analyst on the customer's own responsibility.**

**Options:**

- ▶ 1.4404 (AISI 316 L) stainless steel (Exception: safety valve)
- ▶ Radial pipe ventilator for installation in air line for forced ventilation
- ▶ With power supply unit for regulating the pressure transducer from 230 V to 24 V.
- ▶ Connection pipe with flange PN 10
- ▶ Condensation water drain with non-return valve



## Further stainless steel equipment from HUBER:



### Manhole equipment:

Manholes serve an important function in water supply and wastewater disposal. The applications are very diverse, but they all have one thing in common: the plant operator is responsible for safe access. Highest quality and reliability are our benchmark.

- ▶ Manhole Covers
- ▶ Safety Climbing Systems
- ▶ Entrance Aids
- ▶ Finished Manholes



### Technical doors:

Customised doors guarantee security. The perfect HUBER door for your individual requirements, whether in a new construction project or for retrofitting. Our technical doors are pressure-tight, flood-proof and burglar-resistant.

- ▶ Stainless steel doors
- ▶ Security doors
- ▶ Chlorine room doors
- ▶ Flood-proof door
- ▶ Pressure-tight doors
- ▶ Access/Inspection Cover
- ▶ Louvre
- ▶ Windows

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