# Автоматические фильтры типа 6, 8, KSS 6.64, aquaBoll BWT

Технические характеристики

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# Automatic filter compact low-cost backflushing type 6.04



- Simple installation, reliable operation
- "Plug & Play" fully functional unit
- High quality materials
- Low capital outlay

- High filtration area

- On−line flushing

#### **Technical Specifications**

	BOLLFILTER 6.04 Automatic Filter
Filter sizes	40mm N/B.
Flow rates	Up to 18 m³/hr (5 l/s).
Filtration levels	25μm to 500μm mesh or 50μm to 500μm wedge-wire.
Materials of construction	Aluminium housing hard coated.
Internals/Lining	Stainless steel element, high performance plastic.
Design pressure	2 to 10 bar (16 bar available).
Design temperature	0 to 60°C.
Filter elements	Wedge wire elements as standard $/$ Foulex $^{ exttt{TM}}$ coated as an option.
Typical applications	Irrigation, Domestic, HVAC, Machine Tools, Cooling, Spray Wash, Sealing Water and Final Effluent Washwater.
"Plug & Play"	Supplied ready to use. Filter with hard coated aluminium housing, mating flanges drilled G1 0.5 inch, stainless steel wedge wire candle filter elements. All other internal parts are plastic. Electric drive motor, differential switch / indicator type 4.46.2, backflush valve & integrated 24V DC control.

# Automatic oil and coolant filter type 6.64 + 6.72 + 6.21/6.22









The 6.64/6.72 plus 6.21/6.22 series are compact automatic self-cleaning filters offering large filtration areas with highly effective filter stored compressed air assisted backflushing.

- **⊘** Low maintenance automatic operation

- Low operating costs

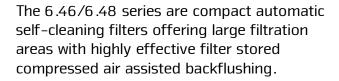
#### **Technical Specifications**

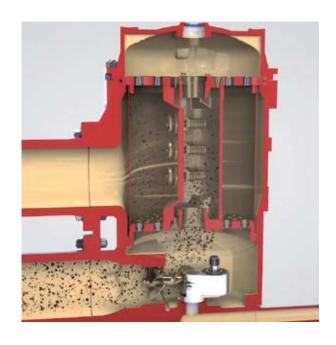
	BOLLFILTER 6.64 & 6.72 plus 6.21/6.22 Automatic Filters	
Filter sizes	40mm up to 400mm N/B.	
Flow rates	Dependent on liquid type and viscosity.	
Filtration levels	5 μm up to 2 mm.	
Materials of construction	Ductile iron.	
Internals/Lining	Ductile iron/nickel-plated lining (for aqueous applications).	
Working pressure	0.5 bar up to 16 bar (as standard).	
Design temperature	-10 to 160°C (other temperatures available on request).	
Filter elements	Cylindrical screw-in candle type with special weave mesh.	
Typical applications	Lubricating Oils, Machining Coolants, Industrial Washing Liquids,	
	HFO, Fuel Oils, Diesel Oils.	
Options include	Backflushed liquid recycling unit.  Manual standby filter complete with manual changeover valve.  Control panel type 2300 universal controller.	



# Automatic filter Lube Oil type 6.46 + 6.48







- ✓ Low maintenance automatic operation

- Low operating costs

#### **Technical Specifications**

	BOLLFILTER 6.46 & 6.48 Automatic Lube Oil Filters
Filter sizes	40mm up to 300mm N/B.
Flow rates	16 m³/hr Up to 780 m³/hr.
Filtration levels	10 μm up to 48 μm.
Materials of construction	Ductile iron.
Internals/Lining	Ductile iron/nickel-plated lining.
Working pressure	2 bar up to 10 bar
Design temperature	-10 to 160°C (other temperatures available on request).
Filter elements	Cylindrical screw-in candle type with special weave mesh.
Typical applications	Lubricating Oils.
Options include	Backflushed liquid recycling unit.  Manual standby filter complete with manual changeover valve.  Control panel type 2300 universal controller.

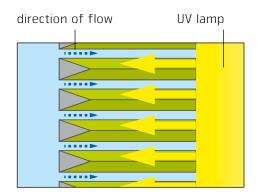
## **BOLLFILTER Automatic Type 6.03 AOT**

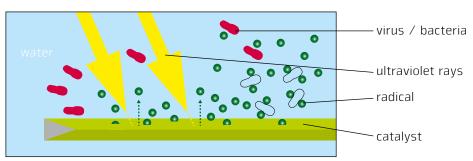
## Chemical free disinfection using UV light

The disinfection of water using UV light is performed by

- · killing the contained organisms and germs using direct radiation with UV light and
- oxidation of the contained chemical compounds using photocatalysis, AOT-method (Advanced Oxidation Technology).

To make the photocatalysis procedure possible, the surface of the filter element in the BOLLFILTER Automatic Type 6.03 is coated with a catalyst. When this surface is exposed to UV light, reactive radicals are formed, which oxidise the impurities contained in the water. When a radical from a water molecule hits the cell wall of a microorganism in the water, a hydrogen atom is removed from the cell wall. Many radicals repeating this procedure destroy the microorganism. Afterwards, the radicals turn back to the water molecules and so the complete process does not leave any contaminating residuals.





The Details

# Data and figures at a glance



BOLLFILTER Automatic Type 6.03 AOT	
Nominal width	G11/2
Flow rate	15 m <sup>3</sup> /h
Grade of filtration	50 μm or 100 μm
Permissible operating overpressure	10 bar
Permissible operating temperature	max. 60°C
Operating voltage	2 ph 230 V
Frequence	50 Hz
Control voltage	230 V
Backflushing fluid	Own medium and compressed air
Control medium	clean, dry air 4-6 bar
Flushing time	3 sec.

Filter element	
Type of element filter	Wedge wire or mesh candle from CrNi-steel
Number of elements	1

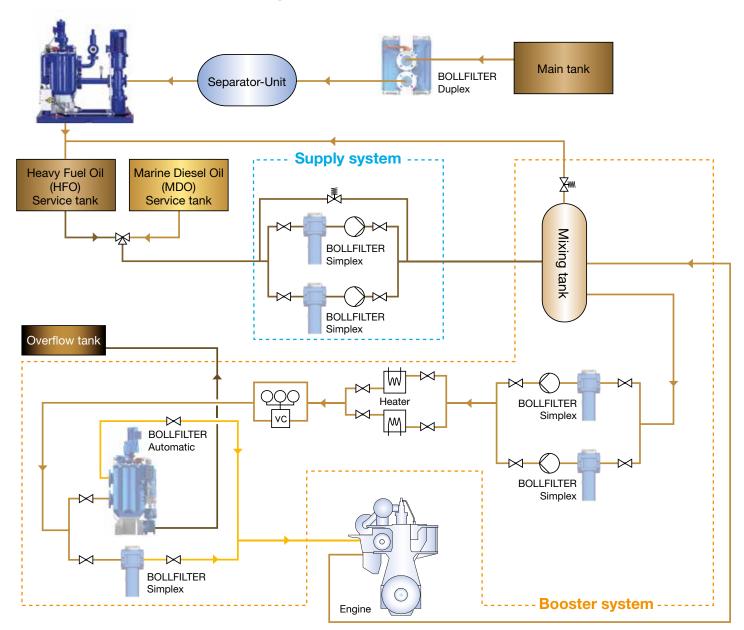
#### **BOLL Filtrator TYPE 8.64**

Installed in front of the day tank, the Filtrator has the following tasks:

- Post-cleaning of the clean fuel discharge from the separator. The Filtrator effectively removes those solids which the separators cannot due to physical reasons or fluid dynamics.
- The Filtrator removes those particles that have passed the separator due to incorrect setting of the separator or because of changing operating conditions.
- Reduction of filtration area load and extension of service life of seals as a result of low operating temperature.



### Installation before the day tank/service tank



Due to their compact design, BOLL Filtrators are particularly suitable for retrofitting.

The backflushing is carried out within fixed time periods. If the differential pressure exceeds the maximum permissible value within the time period due to increasing amounts of solids, the backflushing will be initiated and signaled at the same time.

#### The details

# Data and facts at a glance

#### Flow rates

		Filtration grade		
		6 μm abs.	10 μm abs.	
BOLL-Filtrator		flow rate	flow rate	
Type	Size	[m³/h]	[m³/h]	
8.72	DN 65	1,5	2,5	
8.72	DN 80	2,5	4,2	
8.64	DN 100	4,5	7,5	
8.64	DN 125	7,5	12	
8.64	DN 150	10	17	

Filtrator sizes and standard flow rates of heavy fuel oil not considering the specific operating conditions.

Operating pressure:	1 – 16 bar
Air pressure:	5-7bar
Heating:	Steam or thermal oil
Consumption of compressed air:	$0.02 - 0.13  \text{Nm}^3 / \text{h}$
Filter elements	6 μm absolute, 10 μm absolute

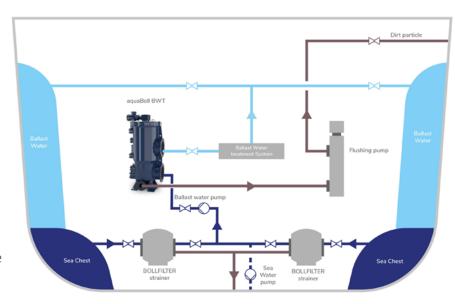
# aquaBoll® BWT

#### The priority: Protection of your BWMS

As an automatic pre-filter, the aquaBoll® BWT offers solid protection for ballast water management systems.

The compact series is matched to the system performance and pump capacities of the treatment systems on board.

An ample screening surface and a new type of back-wash arrangement allow safe operation with a wide range of water qualities and high dirt loads.









Security



Tailor-made



#### Efficiency

#### Advantages

- Providing the required filtration efficiency
- Maintaining reliable backflush efficiency
- Easy to install, operate and maintain / Plug & Play
- Combining the required filter fineness with high flow rates and long service life
- High grade alloy wire mesh suitable for seawater
- Small footprint / Compact design





The aquaBoll® BWT applies in BWMS with IMO and USCG type approvals.

# High performance is our standard



Modern ballast water treatment systems require a good pre-filtration to meet the strict discharge requirements. The aquaBoll® BWT was developed for these requirements with a filtration degree down to 20  $\mu$ m and simultaneous large flow rates of up to 3.200 m³/h seawater.



#### Facts and figures

Filtration grade	20 μm or 25 μm
Filter	Available in a wide range of sizes
Nominal size	DN 80 to DN 600 / 3"-24"
Max flow	3.200 m³/h
Low pressure loss	0.1-0.3 bar
Housing material	Nodular cast iron with rubber lining

#### Bronze Basket

High-precision inner basket which ensures an outstanding backflushing capability.



# **BOLLFILTER Automatic Type 6.64**

#### THE CONCEPT

#### Several filters in one

The BOLLFILTER Automatic Type 6.64 is conceived to fill all these criteria to the full. The key to solving the task is in the concept, the filter is designed to enable simultaneous filtering and backflushing independently of one another and without interrupting operation. The compact filter body houses a number of individual filter chambers. Each chamber is fitted with its own filter element assembly providing a large filtration surface area and high free cross-sections giving a very low clean pressure drop. Due to their robust construction the filter elements will withstand high operating differential pressure and the individual filter chambers with different filter elements work together as an integrated unit providing consistent quality and security. The concept of the multi-chamber filter resulted in a cyclic mode of operation during the filtration process - one chamber containing a dirt loaded filter is isolated from the process and backflushed whilst simultaneously a filter chamber with clean elements (earlier backflushed and held in standby)



takes over the task of the isolated chamber. The individual filter chambers are subjected to the filtering and backflushing process one after the other in sequence. As a result, filters never reach critical contamination levels.

Backflushing can be actuated in accordance with differential pressure and/or time. The cleaning (backflushing) process is ex-

tremely fast, thorough and places less pressure on the fabric used for the mesh by utilizing compressed air. System pressure remains almost constant throughout and the unit only requires a minimal amount of cleaning fluid.

#### THE SERIES

#### The right size for all needs

# Nominal specifications and technical data Series BOLLFILTER Automatic Type 6.64

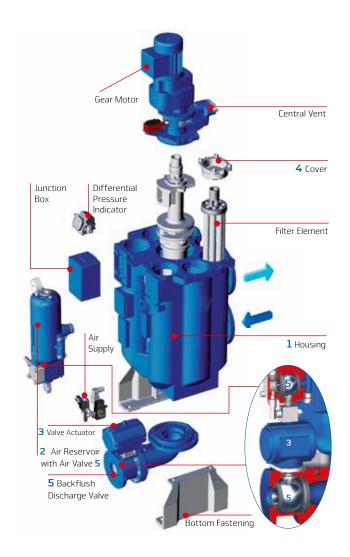
Inlet/outlet		DN 100	DN 125	DN 150	DN 200	DN 250	DN 350	DN 400	
Pressure stag	e	PN 16	PN 10						
Number of	Total	4	6	8	4	6	8	10	
chambers	In operation	3	5	7	3	5	7	9	
Total no. of fi	lter candles	32	48	64	124	186	248	310	
Filtration area	in use in cm²	8832	14720	20608	34224	57040	79856	102672	
Weight, empt	y (kg)	298	391	464	784	1035	1400	1763	
Internal volun	ne (liter)	44	64	113	192	318	500	664	

#### THE BENEFITS

#### A persuasive tick list

A whole host of new innovative developments enable the BOLLFILTER Automatic Type 6.64 to deliver superior performance, reliability and economy. Key among these is:

- 1 Space savings due to the one-piece cast housing
- 2 More durable thanks to the reduced number of assemblies, moving parts and piping
- 3 Perfect synchronization of the backflushing process due to component integration
- 4 Easy access to the filter elements thanks to the quickrelease covers
- 5 Less upkeep due to the use of virtually maintenance-free ball valves for the backflushing system.



#### THE DETAILS

#### Data and facts at a glance

Range of application	Lubricating oil, diesel oil, heavy fuel oil, coolants, emulsions, industrial wash liquids
Differential pressure resistance	Up to operating pressure
Operating temperature	Up to 150 °C
Housing material	Nodular cast iron / Nickel liningon request
Grade of filtration	Up to 10 µm abs.
Filter candle type/ mesh type	Cylindrical screw-in candles or star pleated candles with woven mesh or fibre felt
Cleaning method	Sequential reverse-flow backflushing, assisted by compressed air
Backflushing control	Differential pressure-dependent or time-dependent

# **BOLLFILTER Automatic Type 6.18.3**

#### THE COMPLETE OFFER

## Quality thanks to specialization

At BOLL & KIRCH, we concentrate exclusively on the design and fabrication of filters for fluids. BOLLFILTER products are the result of our own research and development and many are protected by patent. Customers can take advantage of our specialist knowhow by involving BOLL & KIRCH engineers in their projects right from the earliest stages. The combination of expertise on both sides in a simultaneous engineering will ensure perfect results.

Economic manufacturing on CNC and DNC controlled machine tools

Our various stores and logistics systems underpin speedy and efficient production.







BOLL & KIRCH's global presence in all important industrial centres guarantees customers anywhere in the world, service of the scope and reliability they have a right to expect from a supplier of technologically sophisticated filter systems. A component of this service system is the promise that BOLLFILTER Genuine Parts will be dispatched to any part of the world within 24 hours.

BOLLFILTER Genuine Parts leave the central warehouse within 24 hours of order.

# THE DETAILS In summary form

	Type 6.18	Type 6.19
	backflushing with filtrate fluid	backflushing with external medium
Areas of application	filtration of water and emulsions	filtration of water and emulsions
Max. flow rate	9000 m <sup>3</sup> /h	2500 m <sup>3</sup> /h
Max. filter fineness	50 microns	50 microns
Nominal diameter of connection flange	50 - 900 mm	50 – 400 mm
Operating pressures	from 0 to 16 bar (higher pressures on request)	from 0 to 16 bar (higher pressures on request)
Housing material	gray cast iron casting or welded steel	gray cast iron or welded steel
Backflushing medium	filtrate fluid	external medium
Backflushing control	as function of time or differential pressure	as function of time or differential pressure
Filter candle type	cylindrical candles open at both ends	cylindrical candles open at both ends
Candle types	lateral or longitudinal wedge or wire mesh	lateral or longitudinal wedge or wire mesh
Optional accessories	dirt pump in the sludge removal line	dirt pump in the sludge removal line
		booster pump

## Examples of areas of application for BOLLFILTERs Automatic

#### TYPE 6.18 and TYPE 6.19:



















- 1. Chemical and petrochemical industry
- · Process water
- Cooling water for production, air conditioning systems and power stations
- · Fire protection
- 2. Sewage treatment plants
- For filtering of treated effluent for use as process water
- For filtering of effluent to be discharged into open bodies of water
- 3. Paper industry
- · Process water
- Washing (injection) water for the paper machine
- 4. Offshore industry
- · Injection water for oil rigs
- 5. Heating, refrigerating and air-conditioning systems
- Cooling water for building systems (e.g. for air-conditioning plant, computer room)

#### 6. Mining

- Process water
- · Cooling water

#### 7. Automobile industry

- Process water, cooling water for welding shops, air-conditioning systems and power stations
- · Fire extinguishing water

#### 8. Steelworks

- Cooling water for rolling mills, skin-pass stands, heat treatment systems
- Quenching water for continuous casting lines
- 9. Artificial snow
- Operating water for snow-making machines

Power stations (see photo on page 2)

- Cooling water for turbines and oil circuits
- Sealing water for the axial face seal of the turbine shaft





# BOLLFILTER Automatic Type 8.36

#### **THE DETAILS**

#### Data and facts summarised

	TOPSYSTEMS, Typ 8.35	TOPSYSTEMS, Typ 8.36
	Pre-coat filter with dry discharge	Candle pressure filter
Areas of application	Low-viscosity cutting oil, grinding oil, rolling oil,	Coolants/lubricants in processes with cake-for-
	honing oil, grinding coolants, petroleum washes, oils	ming solids (coarse and medium grinding)
	for gears, steel-hardening oils, dielectrics	
Operating pressures	5 - 10 bar (high pressures on request)	5 - 10 bar (high pressures on request)
Max. differential pressure	up to operating pressure	up to operating pressure
Operating temperature	up to 120°C	up to 120°C
Housing material	cast iron, steel, stainless steel	Cast iron, steel, stainless steel
Flange connections	DN 50 - DN 150	DN 50 - DN 150
Max. flow rate	3,000 l/min	5,000 l/min
Max. grade of filtration	5 micron	5 - 10 micron
Max. filter surface	30 m²	5 m²
Filter aids	e.g. diatomite, cellulose, rice ash or maize waste	
Filter cake thickness	6 - 12 mm	8 - 20 mm
With additional dosing	basic deposit from 3 mm	
filter candle type	candles made from CrNi steel	candles made from CrNi steel
Filter type	Radial wedge wire	Radial wedge wire
Cake removal method	sequential cleaning of individual candles	sequential cleaning of individual candles
Control of cleaning interval	dependent on differential pressure	dependent on differential pressure
Regeneration time	15 minutes	5 - 15 minutes

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