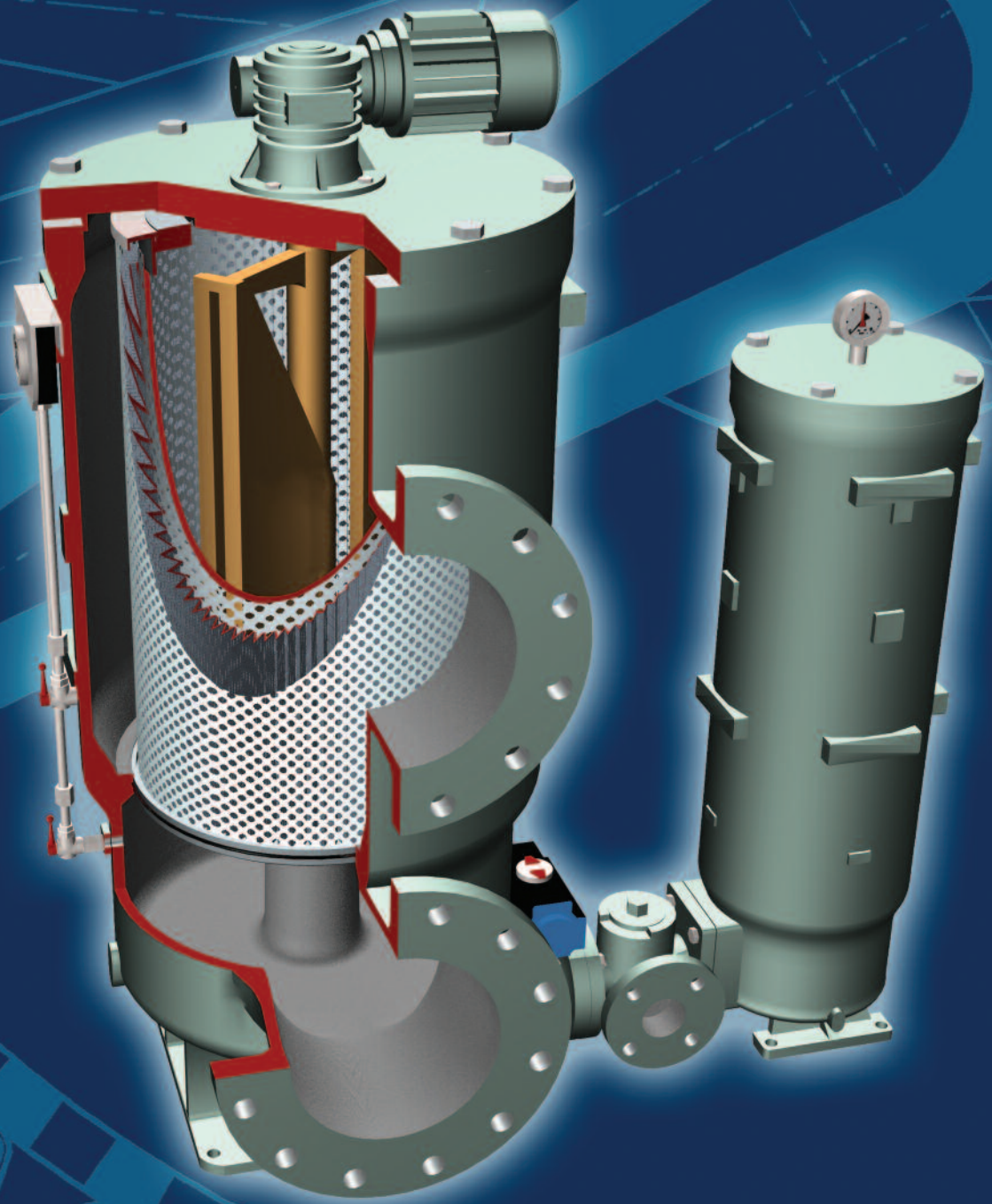
FILTREX®

type **ACX**

Automatic Backwashing Filter



LUBE OIL FILTERS

for Diesel Engines

FILTREX ACX *simply the best filter ever designed*

NO COMPETITION No other filter on the market can match or even come close to the performances of ACX for reliability, life span, easiness in operation and maintenance. Since 1982 thousands of ACX filters have been installed worldwide.

NO NECESSITIES No external medium for cleaning (like compressed air). No recurring cleaning of the filtering element, and of course no special cleaning tools or liquids.
No maintenance whatsoever.

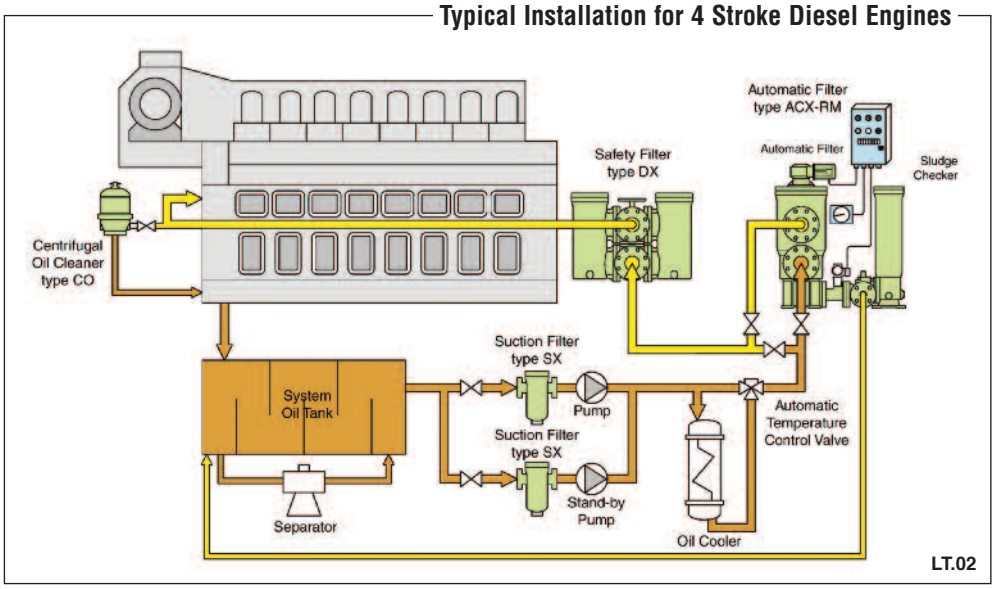
NO WEAKNESSES The filter operates continuously, with an accurate filtration degree (from 10 µm absolute). The filtering element is a stainless steel armoured unit capable of withstanding up to 10 bar (145 psi) differential pressure.
The body is manufactured from EN-GJS400-15 cast-iron under a strict quality system, and has been approved by all major Classification Societies and Navies.

NO POLLUTION Since it does not use compressed air for backwash, ACX does not produces algaes or muds and It does not pollutes the lube oil with condensate or additives precipitations. No used cartridges to dispose of.

NOT JUST A FILTER An extraordinary feature of the ACX filter is that it can be used as a **reliable monitor of the engine health** and alert the operator about any mechanical failure in the system.
See below how this unique feature of the ACX works.

FILTREX ACX *the Diesel engine protector*

Typical Installation for 4 Stroke Diesel Engines



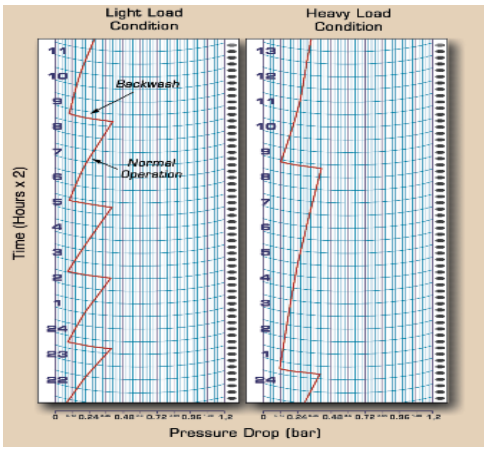
The task of an automatic filter is the trouble-free interception of all the impurities larger than specified for the main lubricating system. This is performed by the ACX filter better than any other equipment.

But only the ACX filter can also supervise the engine behavior.

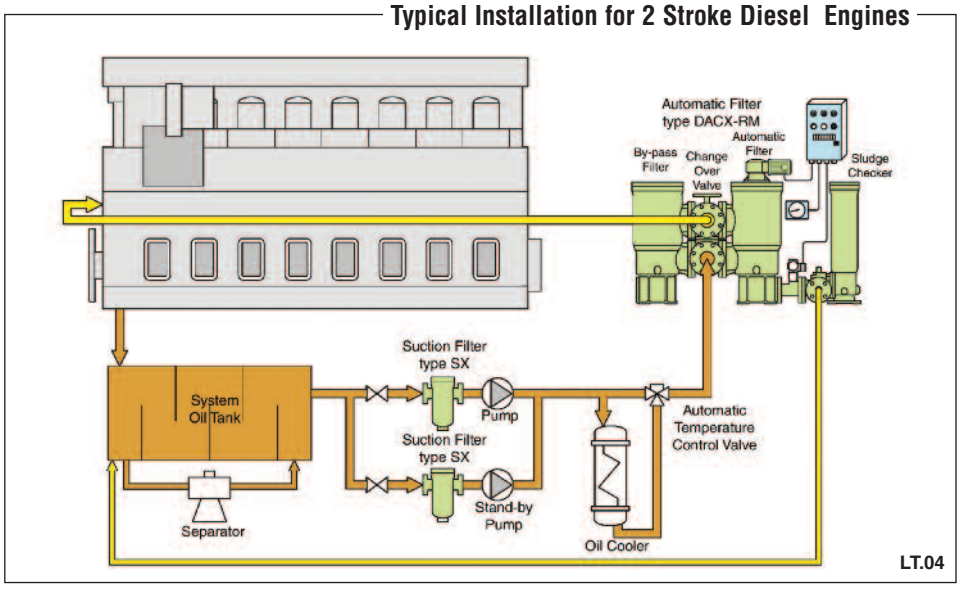
The frequency of the cleaning cycles is directly tied to the concentration of contaminants in the lube oil.

When the engine is working at light loads, the concentration of impurities is higher than when it is heavily loaded, consequently the ACX cleaning cycles are shorter. **Only the ACX filter guarantees cleaning cycles constantly proportional to the workload.**

This unique feature enables the monitoring of the concentration of impurities, any sudden increase of which is a clear indication of impending failure (e.g. of a mechanical component). By an alarm the ACX filter will warn the engineer of hazardous conditions, well in advance of any temperature related signal, allowing for a timely power reduction, possibly avoiding a crankshaft failure.



Typical Installation for 2 Stroke Diesel Engines



FILTREX ACX *choosing the size for the job*

Size	ND	Max Flowrate m³/h SAE 40 OIL						Volume (lt)	Weight (kg)
		4 Stroke Diesel Engine				2 Stroke			
		10μ	25μ	35μ	45μ	50μ	60μ		
704	50 65	13	24	31	41	46	54	12	76
705		17	32	42	56	62	73		
708	80 100 125	26	47	63	83	93	109	27	120
710		32	59	79	104	116	136		
730	150 200	46	84	111	147	164	193	50	190
735		61	112	149	196	219	257		
750	200 250	101	186	247	327	365	428	135	380
755		122	225	298	394	440	516		
780	300	152	280	371	490	547	642	210	580
790	300	185	341	452	596	666	782	320	750
799		228	420	557	735	821	963		
7120	400	366	674	893	1179	1317	1546	840	1950
7140		457	840	1113	1470	1641	1927		
7160		512	941	1248	1648	1840	2160		
Δp = 0.30 bar at 60 ÷ 80 °C - 4 Stroke **Δp = 0.35 bar at 50 ÷ 60 °C - 2 Stroke**									

FILTREX ACX *choosing the setup for the job*

ACX is a very flexible filtration system. According to the job requirements it may be supplied as a single unit or coupled to a by-pass filter, as full duplex changeover unit and equipped with a filtration unit for the backwash oil.






	Configuration	Self-Cleaning	Self-Cleaning with Sludge Checker	Self-Cleaning with By-Pass Filter	Self-Cleaning with Sludge Checker & By-Pass Filter	Self-Cleaning Duplex	Self-Cleaning Duplex with Sludge Checker
	Model	**ACX**	**ACX-RM**	**ACX-SX**	**ACX-RM-SX**	**DACX**	**DACX-RM**
AVAILABLE COMPONENTS	Sludge checker with 4-Way Valve		✓		✓		✓
	By-Pass Filter			✓	✓	✓	✓
	Change-Over Valve					✓	✓
Literature Code Number		01	02	01A	02A	03	04

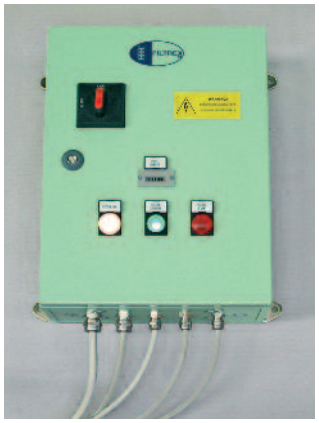
FILTREX ACX *technical information*

Application Area	2-stroke and 4-stroke Diesel engines, SAE 30 & 40 lube oil systems
Filter Type	Automatic
Filtration	Continuous
Cleaning Mode	On condition by Pressure Drop and/or Time
Cleaning System	Reversed flow backwashing, sector by sector
Cleaning Fluid	Same filtered fluid
Energy Supply	Electric and Pneumatic
Nominal Pressure	2 to 10 bar(g)
Connections Size Inlet/Outlet	ND 50 to ND 450 DIN NP 16
Nominal Temperature	100°C max
Housing Material	Ductile cast iron EN-GJS400-15
Construction Tolerances	EN 22768-1 class V
Gaskets Material	Buna N
Filtering Element Type	Cartridge with armoured construction sectors
Filtering Element Material	Stainless steel AISI 316L
Absolute Filtration Degree	Up to 10 μm

FILTREX ACX *at work*

4-Stroke Diesel Marine Engine WÄRTSILÄ 12V46
Ship “MOBY AKI”
ACX-RM Filter - Filtration 35 µm

2-Stroke Diesel Marine Engine
MAN B&W 6S35MC
Ship “TRANS EMERALD”
DACX-RM Filter
Filtration 40 µm



Electric Control Panel

2-Stroke Diesel Marine Engine MAN B&W 6S46MC-C
Ship 'SKY PRIDE'
ACX-RM-SX Filter - Filtration 40 µm

ACX filters may have threaded lateral fastenings on three sides for suspended vertical or horizontal installation, allowing a significant space saving and great flexibility.

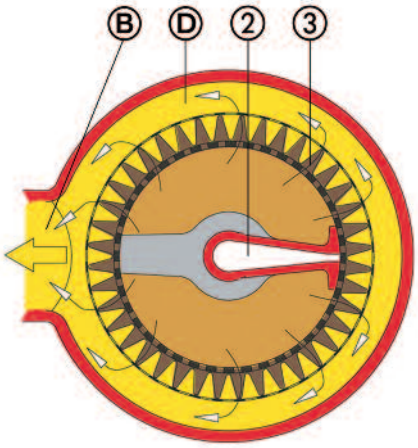
FILTREX ACX *easy accessibility*

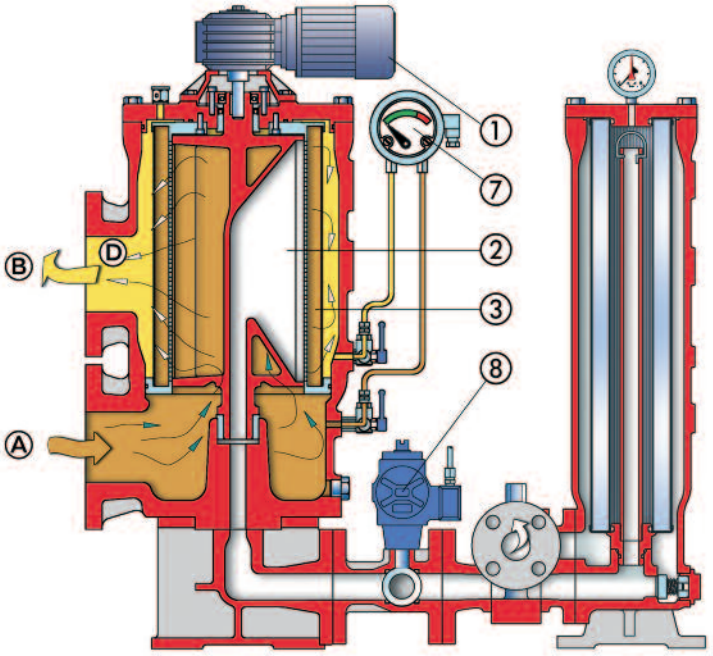
Maintenance of the ACX filter is minimal. The above sequence illustrates how simple and easy the access to the internal parts is, should a dismantling be needed for any reason. The filter consists of few modular parts (cartridge, backwashing nozzle and motor) that can be inspected or serviced in a few minutes without any special tool or equipment.

FILTREX ACX *the operation*

PHASE 1 - FILTRATION

STATUS:
- Present Δp < Set Point Δp
- Differential pressure indicator ⑦ in clean condition.
- Electric motor ① and nozzle ② are not operating.
- Backwash valve ⑧ is closed.

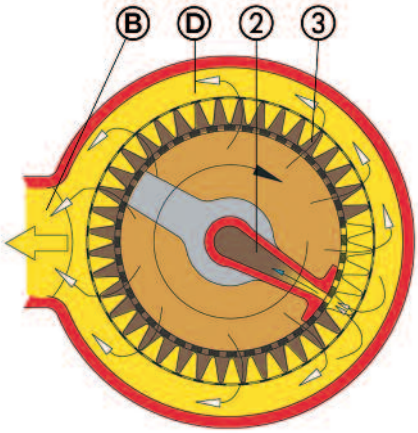


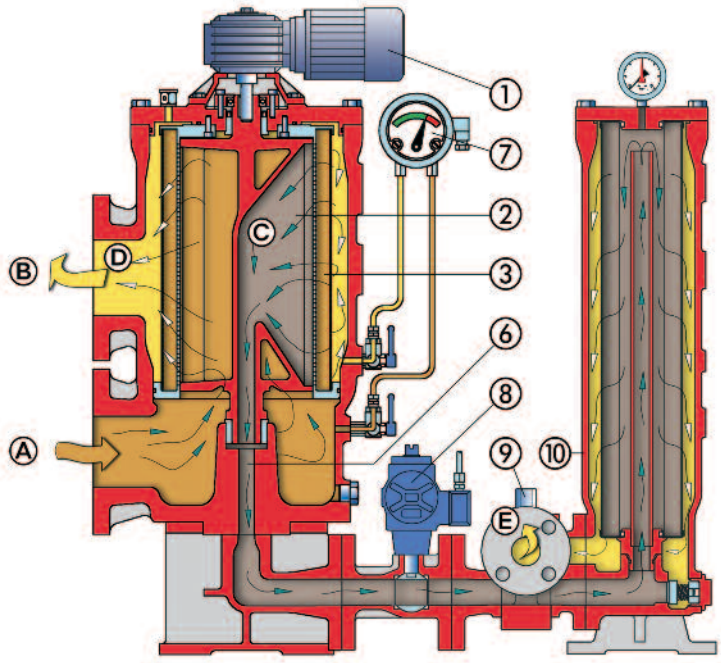


1 - FILTRATION:
The fluid enters from Ⓐ, and flows through the sectors of the filtering element ③ (inside to outside filtration).
The filtered fluid is collected in chamber Ⓓ and exits from Ⓑ.
During this phase the filter operates as a static filter and the cleaning of the filtering element is not operating.
As more and more impurities build up in the filtering element's sectors, the differential pressure Δp shown on the indicator ⑦ gradually increases with time until it reaches the set-point value starting the Phase 2 (backwash cleaning during filtration).

PHASE 2 - FILTRATION and CLEANING

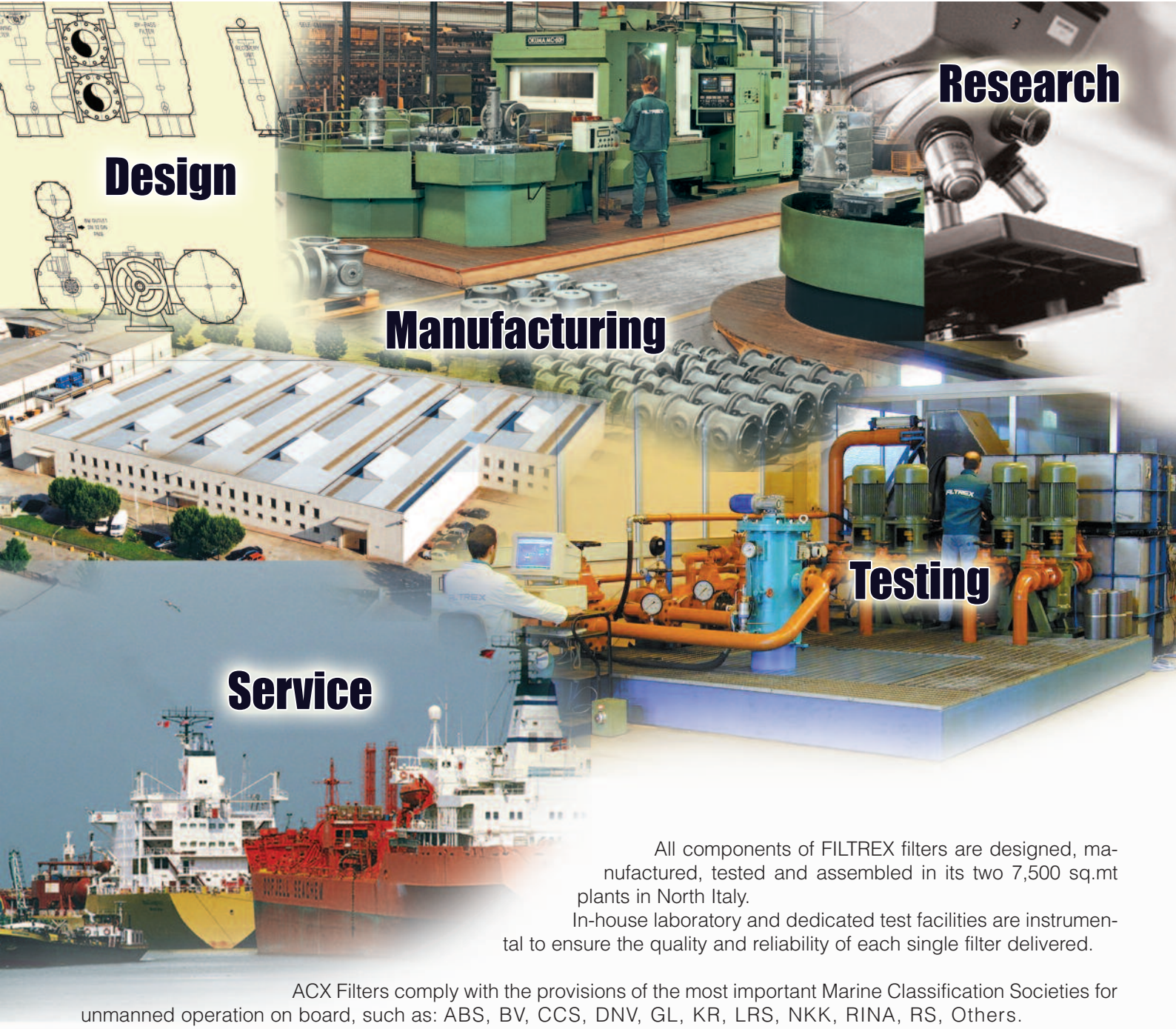
STATUS:
- Present Δp ≥ Set Point Δp
- Differential pressure indicator ⑦ at set point.
- Electric motor ① and nozzle ② are operating.
- Backwash valve ⑧ is open.





1 - FILTRATION:
Filtration is continuously ensured by all sectors except three of the filtering element ③ (inside to outside filtration).

2 - CLEANING OF THE FILTERING ELEMENT DURING FILTRATION:
While all the sectors except three of the filtering element ③ provide the filtration of the fluid, the sector in front of the nozzle ② is cleaned by the backwash flow spilled from the filtered fluid in chamber Ⓓ (outside to inside filtration).
The impurities are carried away by the same backwash fluid Ⓒ, through the duct ⑥ and the open valve ⑧ to the optional sludge checker ⑩, where the impurities are retained, and then to the backwash line Ⓔ. At the end of the backwash set time, the electric motor ① stops and the backwash valve ⑧ closes, thus returning the filter to static Phase 1. The sludge checker ⑩ may be isolated for maintenance by means of the 4-way valve ⑨ without affecting the self-cleaning filter's operation.



All components of FILTREX filters are designed, manufactured, tested and assembled in its two 7,500 sq.mt plants in North Italy.
In-house laboratory and dedicated test facilities are instrumental to ensure the quality and reliability of each single filter delivered.

ACX Filters comply with the provisions of the most important Marine Classification Societies for unmanned operation on board, such as: ABS, BV, CCS, DNV, GL, KR, LRS, NKK, RINA, RS, Others.

ACX is only one of the comprehensive range of filters manufactured by FILTREX.
Please contact us for details and documentation

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Certified Quality:

ISO 9001 - PED | AD-HP0 | NATIONAL BOARD | U-STAMP | NATO AQAP-110 | U.S. NAVY