



HYDAC INTERNATIONAL



HYDAC
LowViscosity Housings:
Highest diesel quality
on the whole
transport route

Play safe with diesel: any time, any place

Stricter emissions directives and increased power output in motors have raised the standards for diesel fuels. As a consequence, suppliers must guarantee that there is significantly less contamination and lower water content in their fuel. In addition, the increasing share of biogenic fuels has the effect that existing systems need to be retrofitted with diesel fuel conditioning systems.

In order to meet the requirements, it is not sufficient to condition the diesel just prior to usage in the machine. The fuel needs to be filtered and dewatered at any time and at any stop along the supply chain: from production in the refinery to the end consumer. To comply with the high quality requirements, it is essential to monitor particle contamination and water content.

The HYDAC product range comprises appropriate filters, fluid conditioning units and sensors. For every step of the process – from production to consumption – HYDAC provides specific products for safe and reliable fluid monitoring and conditioning.

Products for high flow rates are added to the on-board products for smaller quantities of diesel in the consumption equipment during transport between different handling and storage facilities, at filling stations and on vehicles.

Guaranteed HYDAC quality



for housings
and elements

High product variability

through a great selection
of housing materials, port sizes,
housing sizes and housing orientations

Wide range of applications

through high product variability

Simple system integration

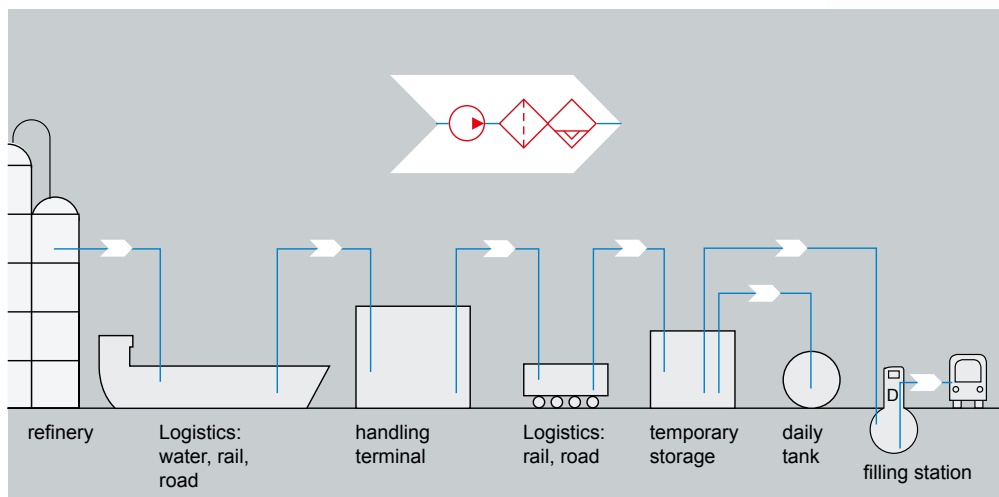
through housings flange-mounted
on each other

High filtration efficiency

through very fine filtration

Optimisation of operating costs

through low life cycle costs



Development on a scientific basis

In developing filter solutions to suit specific applications, HYDAC leaves nothing to chance. In addition to using the most up-to-date programs from CAD to FEM to make its designs, HYDAC invests heavily in research and test facilities. On the basis of scientifically established results, even more efficient solutions for fluid conditioning can be practically tested.

Development of housings and elements to suit the specific application

Tensiometers, Karl Fischer titration equipment, extraction equipment to determine component cleanliness, test benches for multipass tests and water separation efficiency are in use on a daily basis. These are just some of our in-house capabilities for testing and improving products constantly in addition to numerous other test and measuring equipment. As a customer, play it safe with the products from our testing labs.



HYDAC laboratory and test bench to determine water separation efficiency



Fluid analysis in the HYDAC laboratory



HYDAC multipass test bench

Diesel LowVisco: all the best qualities in one product

High product variability

Customer-specific system integration is additionally supported by a great selection of housing materials, port sizes, housing sizes and housing orientations (vertical and horizontal).

Wide range of applications

Thanks to high product variability, the housings cover a wide range of applications.

Worldwide usability

Although the customer's goal is the measure of all solutions, the standards AD2000 or ASME are the foundation of the sizing of our housings.

Simple system integration

The international standards and the constructionally and individually definable components from flange to periphery make upgrading existing customer systems easier.

Optimisation of operating costs

The long service life of the HYDAC Optimicron® diesel elements is obtained through high packing density and an adjusted housing and element design. These allow for extended maintenance intervals and suitably low life cycle costs.

Low maintenance costs

The integrated HYDAC Quality Protection not only rules out any incorrect installation of the elements, but also makes the change easier, faster and safer.

Conservation of resources and environmental protection

The long service life of the filter elements and the lack of wear of the coalescing and separation elements minimise the use of material and thus protect resources. The possibility of incinerating and recycling elements protects the environment along with reduced emissions through improved diesel quality.



High performance stability

The high contamination retention capacity with stable Δp and the effective and constant water separation offer high performance stability over the entire operating time.

Better than standard market diesel purity



Typical temporary storage tank

Worldwide Fuel Charter

Obtainable with HYDAC ON-DF in a single pass

3 separation stages in a single pass:

For the best possible purity, the diesel fuel runs through 3 separation stages in a single pass.

1st stage:

Solid particle separation in LowViscosity Housing Filter LVH-F

The Optimicron® filter elements ON-DF manufactured in HELIOS geometry offer constant reliable filtration at high contamination retention capacity and low pressure loss.

2nd stage:

Water separation in LowViscosity Housing-Coalescer Diesel LVH-CD – coalescence

Years of dewatering experience ensure sophisticated Optimicron® coalescing elements ON-DC with high separation rates, even with great quantities of water in diesel.

3rd stage:

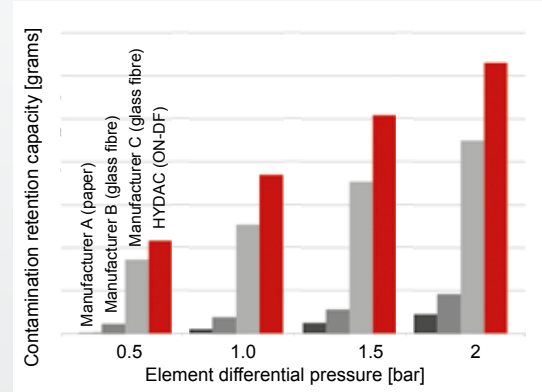
Water separation in LowViscosity Housing-Coalescer Diesel LVH-CD – separation

The Optimicron® separation elements ON-DS complete the dewatering of the ON-DC coalescing elements by reliably removing small and finely distributed quantities of water.

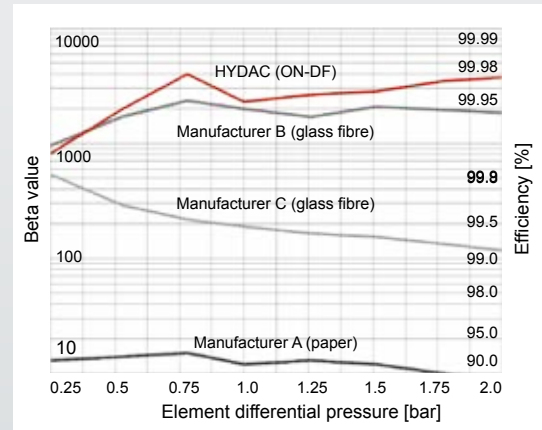
in quantity and quality – great in technology and

1st stage HYDAC Optimicron® ON-DF: The filter element for optimal particle filtration

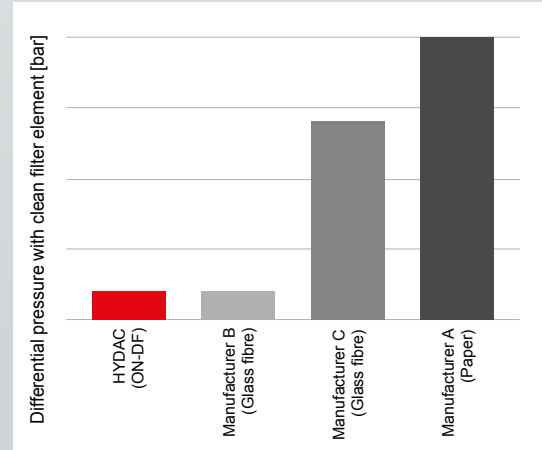
Filter efficiency



Contamination retention capacity via element differential pressure
(Comparison of filter elements of various manufacturers)



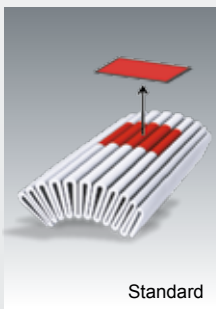
Beta value / efficiency via element differential pressure
(Comparison of filter elements of various manufacturers
with 10 µm filtration rating)



Differential pressure at start

Comparison of standard and HELIOS filter elements:

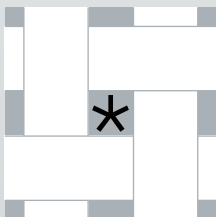
Unobstructed area
of incident flow



Cellulose fibre structure

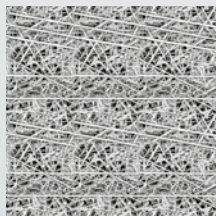


Microscopic image

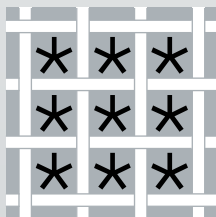


Cellulose fibres (white) –
used as in numerous stan-
dard market filter elements
– result in a smaller open
filter area (grey).
This leads to a smaller
contamination retention
capacity (black), a lower
separation efficiency and
a higher initial
differential pressure.

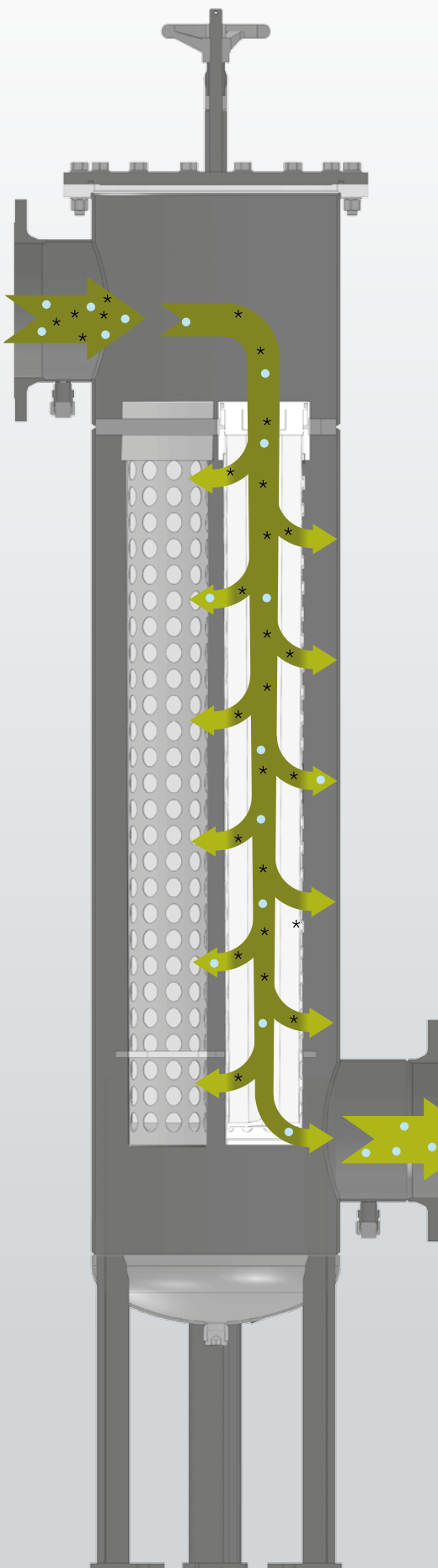
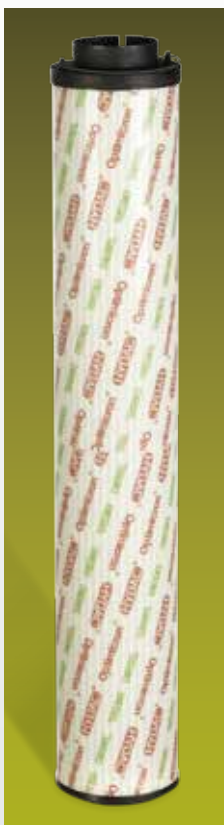
HYDAC Filter layer ON-DF



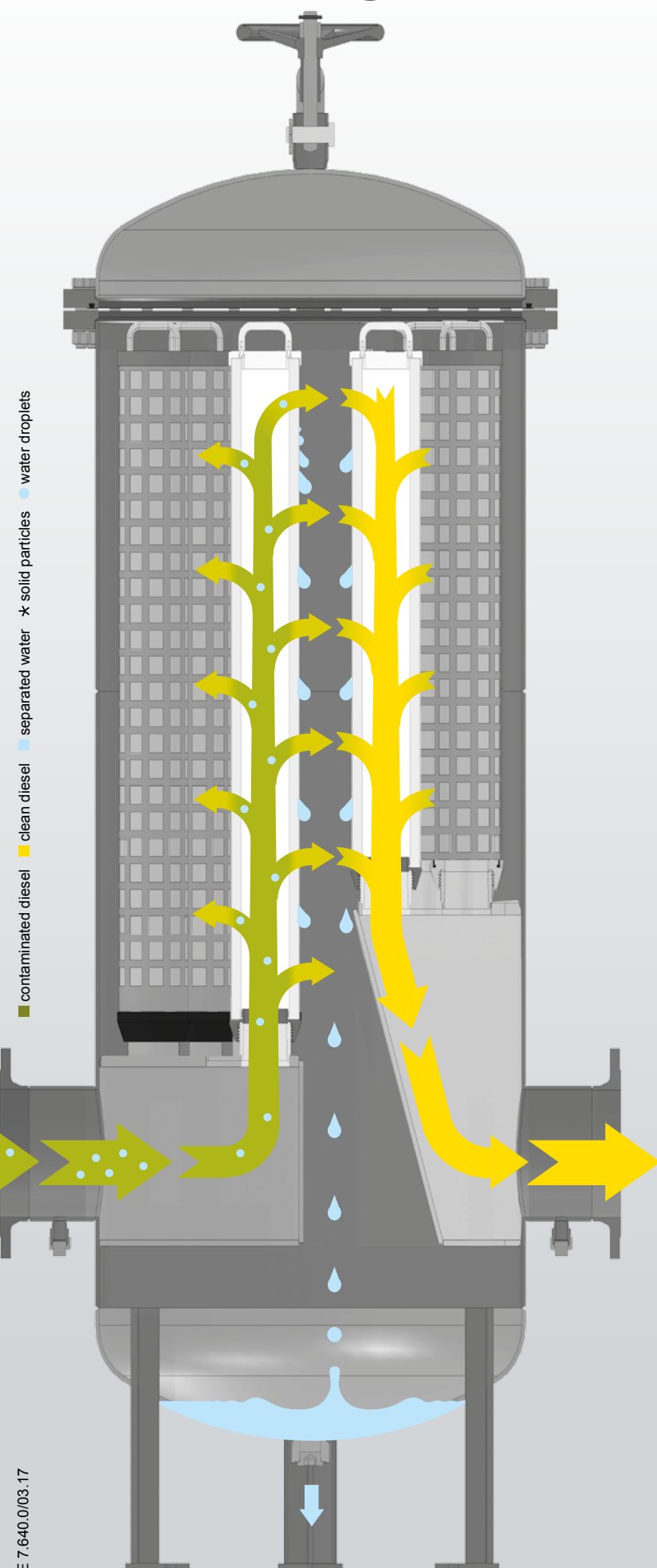
Microscopic image



Fine fibres (white)
allow for a
large filter area (grey).
Through more open pores,
a high contamination
retention capacity (black)
and high filtration rating
can be conducted.



innovation – great in customer focus and ease of

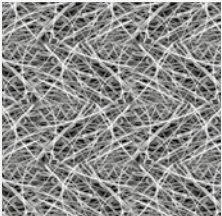


2nd stage HYDAC Optimicron® ON-DC:

The coalescing element for the optimal formation of water droplets



HYDAC Coalescing layer ON-DC



100 µm
Microscopic image

Cellulose fibre structure



100 µm
Microscopic image

Through fine fibres, HYDAC ON-DC elements allow for a high number of agglomeration threads for small water droplets and thus a higher dewatering rate than with cellulose fibres.



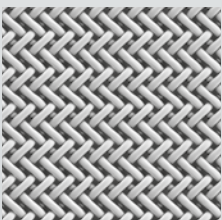
Coalescence takes place through water agglomeration on single fibres. The small water droplets connect at fibre intersections and can then be removed through force of gravity and separation.

3rd stage HYDAC Optimicron® ON-DS:

The separation element for optimal water removal

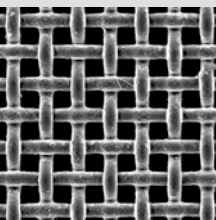


HYDAC Separation layer ON-DS



100 µm
Microscopic image

Coated wire mesh



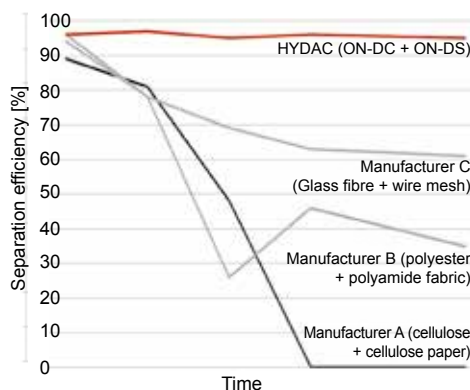
100 µm
Microscopic image

HYDAC ON-DS elements, in comparison to standard market separation elements with coated wire mesh, have a finer pore structure and thus ensure a more efficient separation.

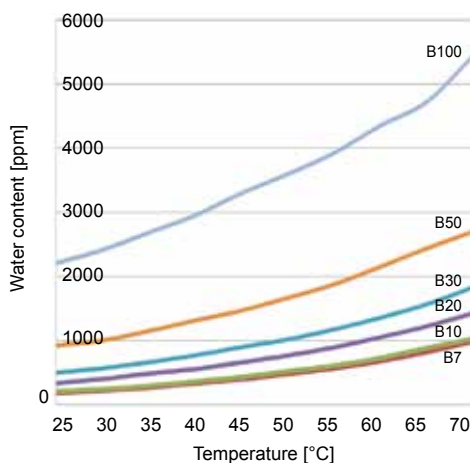


The HYDAC separation layer prevents the penetration of even the most finely dispersed water droplets.

Water separation performance

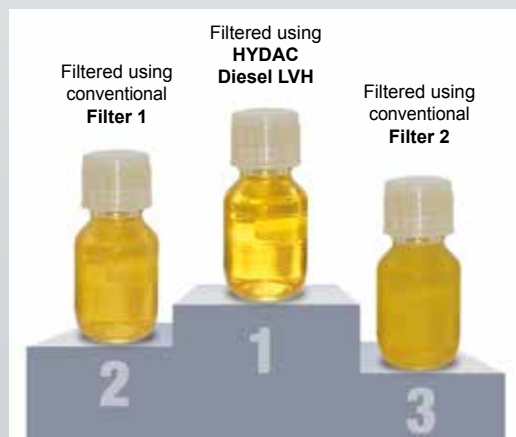


Water separation efficiency over time
(comparison of the elements of various manufacturers)



Saturation curves of various diesel blends

Diesel LowVisco – The result



The evidence is a comparison between three diesel samples after filtration and dewatering. The particular purity of the diesel dewatered and filtered with HYDAC LowViscosity Housings (LVH) is already evident with the naked eye.

Great range for individual solutions and complete purity

HYDAC has developed and manufactured suitable elements and housings for every fluid conditioning task for more than 50 years. Today, already millions of individual solutions can be realised. Even the complete all-round protection of diesel fuel from the refinery to the motor relies on a field-tested range of mobile and stationary products.

Stationary diesel fuel conditioning with HYDAC Diesel LowViscosity



LowViscosity Housing Filter LVH-F
LowViscosity Housing Coalescer Diesel LVH-CD



LowViscosity Unit Coalescer Diesel LVU-CD 10
LowViscosity Unit Coalescer Diesel LVU-CD 40

On-board diesel fuel conditioning



Diesel Precare BestCost
Diesel Precare HighTech



Diesel Precare BestCost
with integrated electric fuel pump

Diesel monitoring



FluidControl Unit
FCU 1315 (Diesel)



ContaminationSensor
Module Economy CSM-E

technologies for a safe supply chain



Low maintenance costs

due to simple element change

Worldwide usability

through sizing in line with the international standards AD2000 or ASME

Excellent water separation

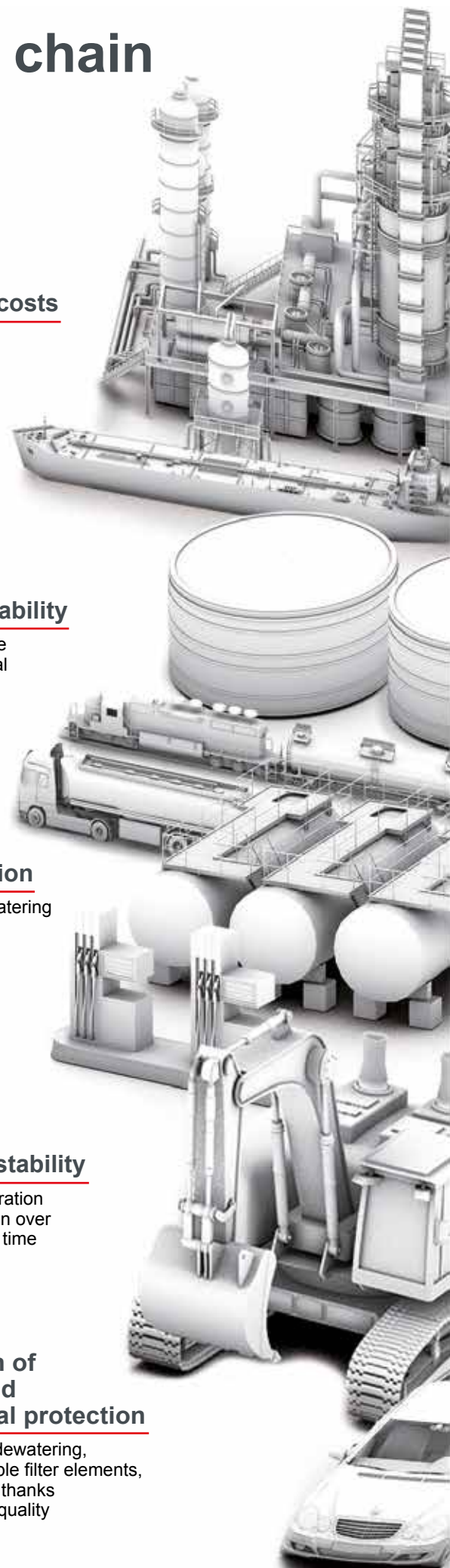
through 2-step dewatering by coalescence and separation

High performance stability

through effective filtration and water separation over the entire operating time

Conservation of resources and environmental protection

through wear-free dewatering, incinerable/recyclable filter elements, reduced emissions thanks to improved diesel quality





Accumulator Technology 30.000



Filter Technology 70.000



Process Technology 77.000



Filter Systems 79.000



Compact Hydraulics 53.000



Accessories 61.000

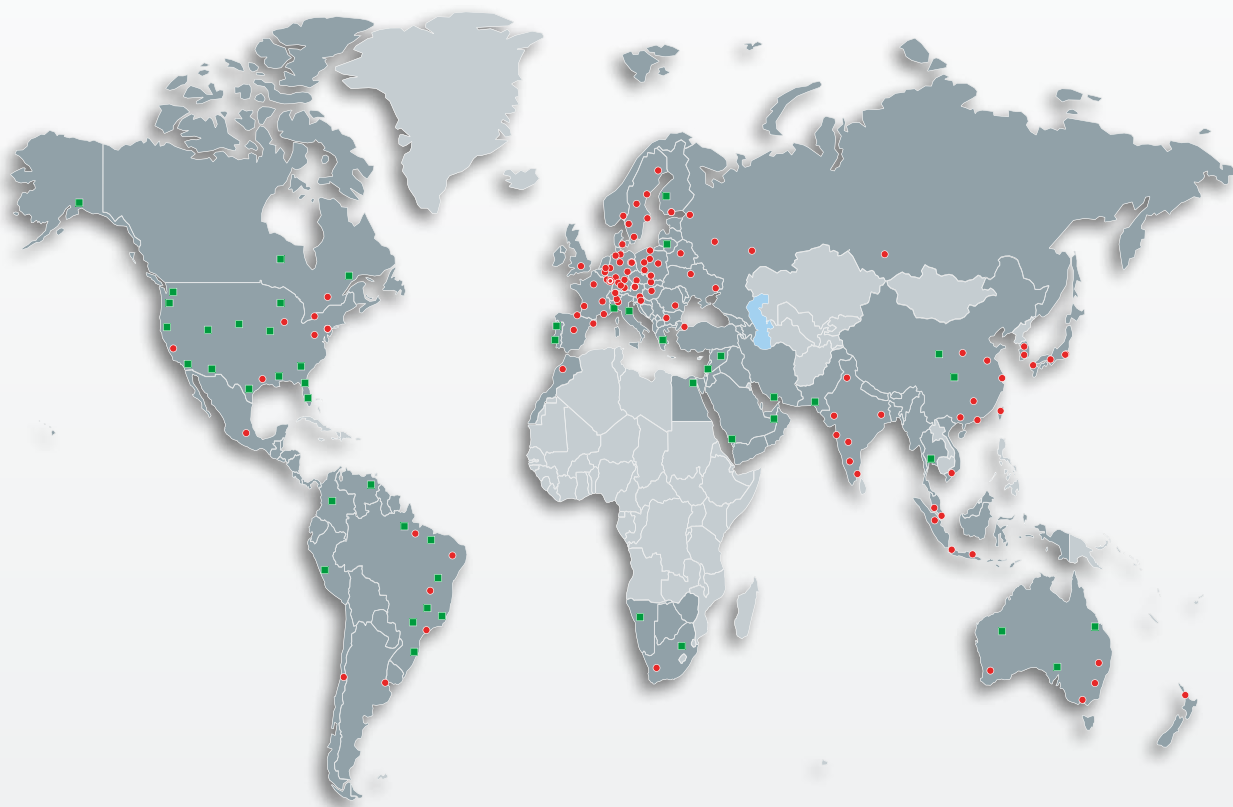


Electronics 180.000



Cooling Systems 5.700

Global presence Local expertise www.hydac.com



- HYDAC Headquarters
- HYDAC Companies
- HYDAC Sales and Service Partners

HYDAC INTERNATIONAL

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