

## RESPONSIBILITY FOR THE ENVIRONMENT

The innovative ENERGETIC<sup>®</sup> system helps OE manufacturers meet the growing environmental needs and regulations!



For environmental sustainability!

# ENERGETIC® series

## Conserving resources



### ENERGETIC®

Up to 90 % less waste!

### Environmentally friendly

Innovative engine manufacturers benefit from the resource-efficient ENERGETIC® system. Conventional spin-on filters waste resources and impact the environment when it comes to disposal. As the oil filter has to be replaced regularly, this environmentally friendly technology from Hengst helps in protecting the environment. The amount of waste is reduced by 90 % with the ENERGETIC® system, while the oil is automatically separated from the filter material during service.

The ENERGETIC® system has a lifetime filter housing that includes all functionally relevant parts and is mounted to the engine.

**The only serviceable part is the filter element, which is replaced regularly.**

The ENERGETIC® filter element consists of:

- Filter medium (cellulose)
- End discs (recycled PA material)

The filter element can be disposed of or incinerated in an environmentally friendly way since it does not include any metal.

**Energy can be regained during incineration!**



### Spin-on filter

The complete spin-on filter cartridge is replaced during service and needs to be disposed of. The various components in the cartridge are wasted and pollute the environment unless they are properly dismantled.

- Painted filter housing and threaded steel plate
- Valves, springs and elastomer seals
- Filter element made from cellulose with steel discs and sealing compound
- Up to two quarts of residual oil remain in the filter housing after service

**Over 1 billion spin-on filters pollute the environment every year – a serious issue facing our planet!**



# ENERGETIC® series

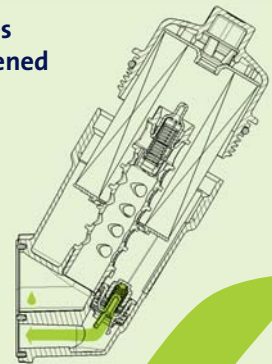
## Convincing reasons for a clean service



### Easy to service

The resource-efficient ENERGETIC® system enables a clean oil filter change! The service time is shortened through good accessibility of the oil filter.

- Faster and cleaner filter change from the top
- When unscrewing the cap, an integrated drain valve allows the oil in the filter housing to drain back into the oil sump.
- With the drain valve located on the dirty oil side, no contamination can enter the clean oil side during service.
- The filter element is clipped to the cap and is removed from the housing without skin contact during service.



No oil spill or mess during the filter element change!

## ENERGETIC®

Cleaner oil filter change due to automatic oil drain!

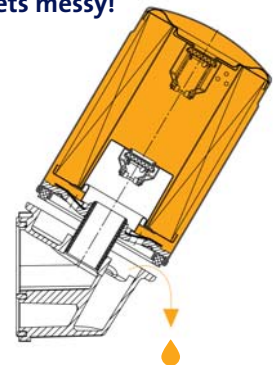


### Spin-on filter

A special tool and considerable effort are required in order to remove the spin-on filter. In addition, it often gets messy!

- The oil drains into the engine compartment in an uncontrolled manner.
- The anti-drain valve typically retains only part of the old oil in the filter housing.
- The engine compartment must be cleaned of oil residue.

Used oil filters must be dismantled into their components for proper disposal – a very time consuming and costly process!



# ENERGETIC® series

## Space-saving integration of functions at lower cost

### Cost reductions

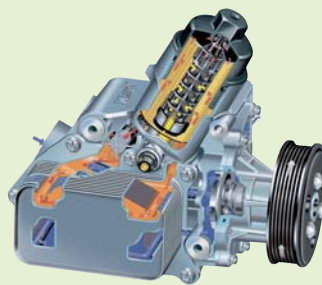
Various functions for fluid management can be integrated into a single multi-functional module through an innovative and efficient utilization of the available package space.

The elimination of interfaces and connecting lines and tubes are the basis for package space and weight reductions. This also decreases material handling and assembly time.

**Increased performance at lower cost!**

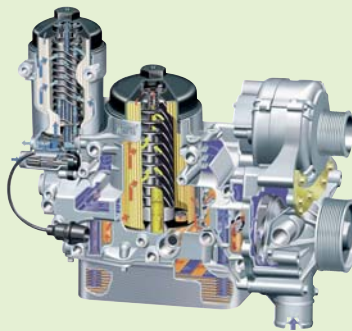
# ENERGETIC®

**Cost reduction = environmental care**



#### Passenger car module

- ENERGETIC® oil filter system
- Oil cooler
- Coolant pump
- Integrated fluid channels
- Sensors



#### Commercial vehicle module

- ENERGETIC® oil filter system
- Oil cooler
- Coolant pump
- Integrated fluid channels
- ENERGETIC® micro fuel filter element
- Fuel heater
- Generator mounting
- Control module mounting



### Many separate single-function components in the engine compartment contribute to weight and cost!

The engine fluids have to be cleaned and thermally controlled for the different engine functions.

- Main flow oil filter
- Bypass oil centrifuge
- Oil cooler
- Coolant pump
- Coolant thermostat
- Coolant service system
- Fuel filter
- Fuel heater

**Multiple sealed joints and connecting parts add to material handling and assembly cost!**

