Design of Quenching Oil Filter

Technical data:

Considered tank capacity.
Immersed load weight,
(Including supporting assembly)
Number of process cycles per hour.

Calculation:

Evaluate the capacity in liter per kg and hour.

Example:
7500-liter tank
Immersed weight (parts and supporting assay): 225 kg
Number of process cycles per hour: 2
A / immersed weight per hour:
225 Kg x 2 = 450 Kg
B / oil volume:
7500 liter
C / calculation of capacity:
7500 Liter / 450 kg/h = 16.7 l/kg/h

Calculation of the purification factor « Ce » = 1 / (Capacity/10)
In the above example a load of 16.7 l/kg/h results in a « CE » factor of 0.6.
This is the number of tank recycling per hour.

For a "standard quality" result the LEFCO process is based on a 10-l/kg/h-purification factor

To satisfy with this factor the full oil volume must be processed within <u>one hour</u>.

For a twice larger oil load for each kg parts + supporting assay and per hour (i.e. 20 l/kg/h) the tank should be processed in <u>two hours</u> and for a twice smaller oil load (5 l/kg/h) the tank should be filtered within <u>half an hour</u>.

Summarized in:

10 l/kg/h	processed in 1 hour	« CE » factor = 1
20 l/kg/h	processed in 2 hours	« CE » factor = 0.5
5 l/kg/h	processed in ½ hour	« CE » factor = 2

In the above example a load of 16.7 l/kg/h results in a « CE » factor of 0.6.
The flow rate in liter / hour should then equal the tank volume x CE,
i.e. 7500 x 0.6 = 4500 liter / hour.

The NL 4416 92SS or NL 4416 SS type cartridges offer a process capacity of 500 liter/hour. The required filter should then contain 4500/500 = 7.5 cartridges, the next standard design should be selected from system range.

| **Contact us for capacity calculation.** The design calculation will be supplied together with the quotation for appropriate filter body and cartridge number.