## COMS

## Determination of probe lengths and installation positions from FAFNIR sludge and tank probes in oil separators

Reproduction and translation are permitted only with the written consent of the FAFNIR GmbH. The FAFNIR GmbH reserves the right to make product alterations without prior notice.

## FAFNIR"

Table of contents
1 Oil separator in side view ..... 1
2 Oil separator in top view ..... 2
3 Calculation of probe length for VISY-Stick Oil Separators ..... 2
4 Positioning of the VISY-Sludge sensor ..... 3
5 Calculation of the maximum oil volume ..... 3
6 Example type plate for light liquid separator ..... 4

## FAFNIR' ${ }^{\text {" }}$

## 1 Oil separator in side view

Based on a schematic representation of an oil separator (single-chamber system), the installation of the probes VISY-Stick Oil Separator and VISY-Sludge and the calculation of the required probe length is shown. In a two-chamber system, the VISY-Sludge probe is installed in the sludge trap and the VISY-Stick Oil Separator probe in the coalescence separator in front of the coalescence filter.

The oil separator is Ex zone. Observe safety regulations!


FAFNIR

## 2 Oil separator in top view



## 3 Calculation of probe length for VISY-Stick Oil Separators

Note: There is also an Excel spreadsheet for determining the probe length "Formula-COMS-probe-length"

## Maximum length

$L_{\text {max }}=a_{1}-a_{3}-a_{4}$
$\mathrm{L}_{\max }=\mathrm{a}_{1}-240 \mathrm{~mm}-100 \mathrm{~mm}$
$\mathrm{L}_{\text {max }}=\mathrm{a}_{1}-340 \mathrm{~mm}$

## Choice of probe length:

Please check if one of our standard lengths can be used for the calculated range between L min and L max. Standard lengths for the probes are: $1500 \mathrm{~mm} ; 1900 \mathrm{~mm} ; 2300 \mathrm{~mm} ; 2800 \mathrm{~mm} ; 3200$ mm . If the standard lengths do not fit between $L_{\text {min }}$ and $L_{\text {max }}$, other lengths can be ordered for a surcharge.

## FAFNIR'

## 4 Positioning of the VISY-Sludge sensor

The membrane of the VISY-Sludge sensor must be below the maximum permissible oil layer thickness $\mathbf{O}_{\text {max }}$ and at least 100 mm above the maximum permissible mud layer thickness $\mathbf{S}_{\text {max }}$.

The distance of the VISY-Sludge membrane to the oil separator bottom must not exceed 1400 mm .

## 5 Calculation of the maximum oil volume

Since almost all current oil separators are standing, round cylinders, the maximum oil volume $\mathbf{V O}_{\text {max }}$ can be calculated as follows, for this there is also the Excel calculation form "COMS-oil-layer-table":

$$
\mathrm{VO}_{\max }=\mathrm{r}^{2} \times \pi \times \mathrm{O}_{\max } \quad \text { or } \quad \mathrm{VO}_{\max }=\frac{d^{2}}{4} \times \pi \times \mathrm{O}_{\max } \quad \pi=3,14
$$

$\mathbf{O}_{\text {max }}$ is usually stated on the type plate or in the corresponding documentation of the oil separator.

If only the maximum oil volume $\mathbf{V O}_{\text {max }}$ is specified, $\mathbf{O}_{\text {max }}$ is calculated according to the formula:

$$
\ddot{\mathrm{O}}_{\max }=\frac{V \ddot{\mathrm{O}}_{\text {max }}}{r^{2} \pi} \quad \text { or } \left.\quad \quad \ddot{\mathrm{O}}_{\max }=\frac{V \ddot{\mathrm{O}}_{\max } x 4}{d^{2} \pi} \quad \right\rvert\, \pi=3,14
$$

# FAFNIR' ${ }^{\prime \prime}$ 

## 6 Example type plate for light liquid separator

## ABSCHEIDERANLAGE FÜR LEICHTFLÜSSIGKEITEN nach DIN EN 858 und DIN 1999-100 <br> Abscheider Klasse I und Schlammfang (Kompaktanlage: Koaleszenzabscheider mit integriertem Schlammfang)



| Typ: | 3A-SK seglam |
| :--- | ---: |
| ® |  |
| Nenngröße: | NS 15 |
| Nenninhalt Schlammfang: | 5.000 Liter |
| max. Ölspeichermenge: | 575 Liter |
| max. zul. Ölschichtdicke: | $40,0 \mathrm{~cm}$ |
| max. Schlammhöhe: | $76,0 \mathrm{~cm}$ |
| Behältervolumen (ohne S): | 2.230 Liter |
| Tragfähigkeit: | SLW 60 |
| Baujahr: | 2006 |

3A Wassertechnik GmbH \& Co. KG, Augsburg

## FAFNIR GmbH

Schnackenburgallee 149 c
22525 Hamburg, Germany
Tel.: +49 / 40 / 3982 07-0
Fax: +49 / 40 / 3906339
E-mail: info@fafnir.com
Web: www.fafnir.com

