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| <h1>User Manual</h1> <h2>10 litre Compensator</h2> | |  KYSTDESIGN |
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| <i>KD Drawing Ref.</i> | AF44-1000M01, AF44-2000M01 & AF44-2000M02 | |
| <i>Client Equipment No.</i> | | |



Revision Description

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Signature Legend

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1 GENERAL

The compensator compensates for variations in oil volume by a spring loaded piston which compresses a rolling diaphragm. Variations in oil volume can be monitored by an analogue linear sensor.

Key data:

| | |
|------------------------------|---|
| Manufacturer | Kystdesign AS |
| Model code | AF44 |
| Manufacturers Drawing Number | AF44-1000M01 - Side manifold version AF44-2000M01 - BSPP version w/ sensor AF44-2000M02 - BSPP version wo/ sensor |
| Weight in air | 19 to 23.5kg without fluid |
| Active Volume | 9.43L |
| Spring Pressure | 0,25 – 0,35 Bar |
| Max. peak pressure | 0.8 Bar |
| Max. test pressure | 0.8 Bar |
| Depth rate compensator | Full ocean depth |
| Depth rate linear sensor | 3000m (6000m on request) |

2 MAINTENANCE

WARNING !

The compensator contains a compressed spring with the following spring force:


Empty compensator (assembly / disassembly mode): ~1200 N

Full compensator: ~2000 N

Do NOT remove V-Clamp or Spring Retainer Plate before reading the below procedure. To unfasten these items without controlling the spring force can result in serious injuries to personnel and equipment.

2.1 REPLACING THE LINEAR SENSOR

The linear sensor can be replaced without opening the reservoir. Just drain the compensator and unscrew the sensor.

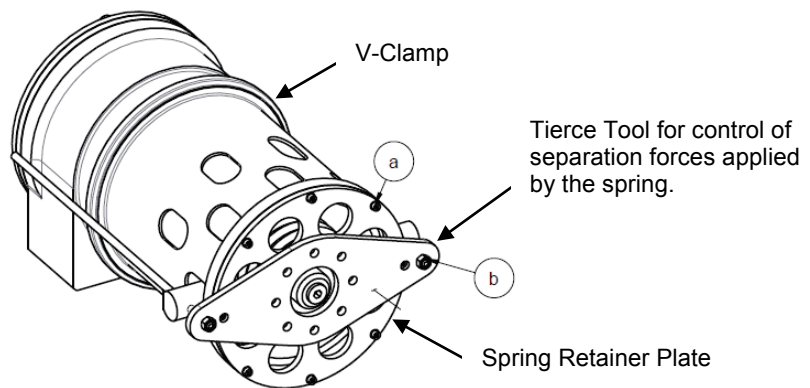
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2.2 DISASSEMBLY OF COMPENSATOR FOR REPLACEMENT OF DIAPHRAGM AND O-RINGS

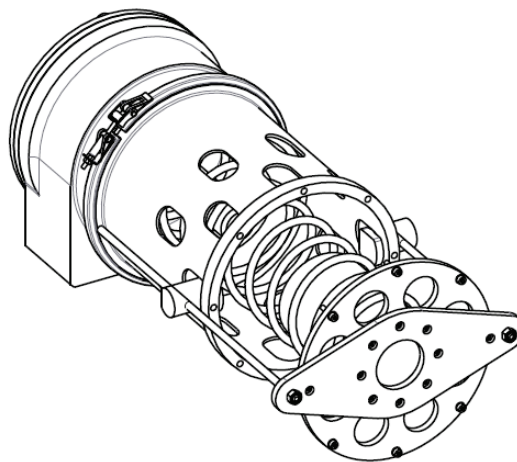
NB! When loosening the bolts in the Spring Retainer Plate, the spring will push this plate by a force of ~1200N. The spring is fully extended after 350mm from “empty comp mode”.

The below procedure is based on the use of a purpose made tool to control the separation force applied by the spring. This tool as shown on the below figures can be supplied by KYSTDESIGN.


1. Drain the compensator
2. Disconnect compensator from the hydraulic circuit and move it to a clean maintenance area.
3. Install tool as shown on the below figure.



4. Tighten up Tierce Rods (b).
5. Remove eight bolts (a) holding the Spring Retainer Plate.
6. Carefully untighten the Tierce Rods (b) while keep the spring retainer plate as parallel as possible with the bottom of the compensator to avoid buckling of the spring. Continue until the spring is fully extended.



7. Remove the tool and the spring.
8. Note the position of the V-Clamp lock. It is important to reinstall the V-Clamp with the lock in the same direction and position.
9. The V clamp can now be removed.

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Note! When the compensator is disassembled, it is recommended to replace diaphragm and all o-rings by new ones.

10. Make sure that the new diaphragm and o-rings are clean and not damaged.
11. Grease o-rings and diaphragm flange with Molycote 111 or similar.

2.3 ASSEMBLY OF COMPENSATOR

Assembly of the compensator to be done in reverse order of the steps in section 2.2.

Installation of the V-Clamp shall be according to the following instruction:

Make sure that both the inner surface of the V-Clamp and the mating flange is clean. Then lubricate the flange surface with a thin film of Molycote 111. Install the V-Clamp and torque up the locking nut to 10Nm. Use a lightweight hammer to tap gently on the surface of the V-Clamp while tightening the nut. This to overcome the static friction.

3 PRESERVATION

1. Drain compensator
2. Ensure that all connection ports are properly blinded.
3. Clean outside with fresh water.

4 STORAGE

It is recommended to store the compensator in a dry and dark area.