User Manual

2,5 Liter Compensator

Document No

AD86-User Manual

KD Drawing Ref.

AD86-1000M01, AD86-2000M01

Client Equipment No.

KYSTDESIGN

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1 INTRODUCTION

This document contains general data, and describes how to use and do the maintenance and preservation of KD-AD86 2.5 L compensator.

2 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.
The AD86-1000M01 version without sensor has visual monitoring through slots in the compensator housing.

Key data:

Manufacturer	Kystdesign AS
Model code	AD86
Manufacturers Drawing Number	AD86-1000M01, AD86-2000M01
Weight in air (AB89-1037M01, with sensor)	4,4 kg without fluid
Weight in air (AB89-1037M01-b, without sensor)	3,4 kg without fluid
Active Volume	2,45 L
Standard Spring Pressure	0,25-0,60 Bar
Max. relief pressure	1.5 Bar
Depth rate compensator	Full ocean depth
Depth rate linear sensor	3000 msw (6000 msw optional*)

*Available within 6-7 weeks delivery time

3 PREPARATIONS AND CONNECTION

The compensator has seven 3/8” BSPP hydraulic connection ports, normally blinded with plastic plugs prior to shipment. Before installing the compensator, remove all the plastic plugs and blind the connection ports not used with 3/8” VSTI ED71 blanking plugs or other 3/8” BSPP plugs.

The compensator can be installed to external structure by clamps around the cylindrical housing.

4 MAINTENANCE

4.1 REPLACING THE LINEAR SENSOR

The linear sensor (pos 11) can be replaced without opening the reservoir. Drain the compensator and unscrew the sensor.
When the linear sensor is disassembled, it is recommended to replace the o-rings (pos 11.2 & 11.3) with new ones. Lubricate the o-rings with Molycote 111 or similar.

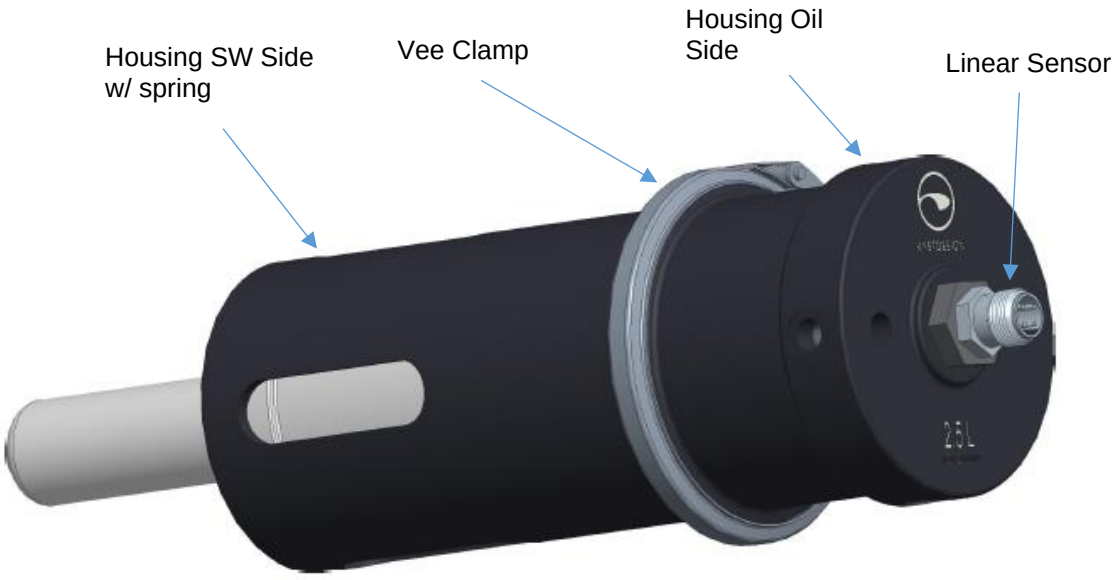
4.2 DISASSEMBLY OF COMPENSATOR FOR REPLACEMENT OF DIAPHRAGM

WARNING !

The compensator contains a compressed spring with the following spring force:
Empty compensator (assembly / disassembly mode): ~340 N, spring compressed 168mm
Full compensator: ~743 N, spring compressed 368mm

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

1. Depressurize and drain compensator
2. Disconnect compensator from the hydraulic circuit and move it to a clean maintenance area.
3. Remove the linear sensor (applies only for AD86-2000M01, sensor version).
4. Ensure that the separation force of ~340N between housings can be controlled while the Vee-clamp is loosened and removed.
5. Loosen and remove Vee-clamp.
6. Remove Oil Side Housing



7. Unscrew M6 countersunk bolts (pos.9) and remove the diaphragm disc (pos5).
   (Applies only for AD86-2000M01, sensor version)

8. Replace diaphragm (pos 8) and O-ring (pos.4) with new one. Lubricate diaphragm flange with Molycote 111 or similar.

9. Make sure that the new diaphragm and O-ring is clean and not damaged.

4.3 ASSEMBLY OF COMPENSATOR

Assembly of the compensator to be done in reverse order of the steps in section 4.2.

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.

4.4 BOLT PRETENSION AND TORQUE

Bolts and hudraulic fittings shall be pre tensioned with the following torque values:

M6 bolts for diaphragm disc	3,5Nm
M6 bolt for tightening the Vee-clamp	10,0Nm
Linear Sensor	16,0Nm
Hydraulic connections 3/8” BSPP	10,0Nm

5 PRESERVATION

1. Drain compensator
2. Ensure that all connection ports are properly blinded.
3. Clean outside with lukewarm fresh water and dry with a clean rag.

6 STORAGE

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