

Swivel angle sensor, installation and calibration of SYDFE. systems with integrated electronics

Type ASSEMBLY KIT VT-SWA-1

RE 30268-R

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H20559 (similar figure)

General

The magnetic holder is a sensitive component and must therefore be handled with care. It must not be subjected to hard shocks and must be kept away from magnetizable or magnetic parts. The original packaging is the safest storage place until the device is installed in the pump housing.

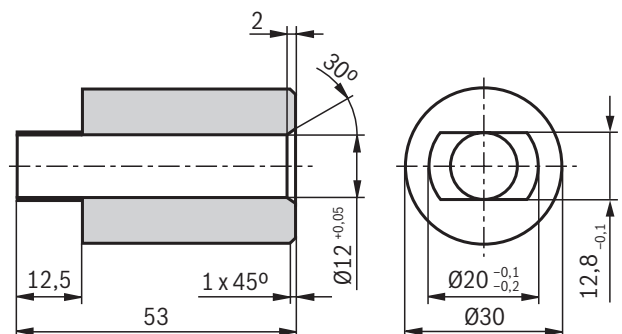
With pump assemblies that were produced prior to 10/97 a spacer may have had to be placed under the magnetic holder for height compensation. This spacer must be reinstalled if the "old" swivel cradle is used. If new parts are installed, the spacer is no longer necessary.

Installation of the magnetic holder

- Installation direction of pumps with clockwise direction of rotation:
locating pin of magnetic holder points towards the subplate of the pump (away from the drive motor). The bore for the locating pin is marked by a colored point.
- Place the magnetic holder in the bushing in the housing of the A10 pump intended for this purpose. A special tool (plastic installation sleeve, material no. **R900846331**) is required to insert and tighten the countersunk screw! If this installation sleeve is not available, a suitable non-magnetic material tool must be used to insert the mounting screw and to enable the insertion of the screwdriver between the poles of the solenoid.
- Tighten countersunk screw M6 x 12 using a torque of 9 Nm
- After the magnetic holder has been installed use your fingers to check whether the solenoids adhere tightly to the holder.

Mounting the VT-SWA-1-1X swivel angle sensor

- "Paste" the seal ring of the assembly kit into the groove using some grease.
- Tighten mounting screws M6 x 35 with washers using a torque of 9 Nm.


Plastic installation sleeve

Check "zero" swivel angle (while system is on)

1. Close all directional valves
2. Set a swivel angle command value >5 V and/or >50 %
3. Set a pressure command value of 20 bar (if this is technically impossible, set 0 V)

Notice:

If an external pilot oil supply is used, the pressure command value must be > 2 bar.

4. Switch on hydraulics and let pump warm up (approx. 5 min.)
5. Verify whether the actual swivel angle value (α_{actual}) is 0 V ± 0.01 V and/or 0 % ± 0.1 %. (With analog electronics at the central connector of the pilot valve, pin 6, violet; with digital electronics via WIN-PED and/or IndraWorks)

Analog systems:

In case of variations, use potentiometer (1) to calibrate; the potentiometer is marked with "O" (=Offset) on the swivel angle sensor

Digital systems:

Start swivel angle - zero point / swivel angle - offset calibration via the WIN-PED software or IndraWorks.

Check "100 %" swivel angle (while system is on)

1. Swivel angle command value greater than 10.5 V and/or 105 %, pressure command value approx. 100 bar. (With SYDFED valve command value >50 % via the valve direct control)
2. Let the full volume flow via the actuator, e.g. activate hydraulic motor or set pressure relief valve to approx. 20 bar; this causes a deliberate error message by the pilot valve (control deviation too high)
3. Verify whether the actual swivel angle value (α_{actual}) is 10.05 V ± 0.01 V and/or +100.5 % ± 0.1 %. (With analog electronics at the central connector of the pilot valve, pin 6, violet; with digital electronics via WIN-PED and/or IndraWorks)

Analog systems:

In case of variation, use potentiometer (2) to calibrate; the potentiometer is marked with "G" (= Gain) on the swivel angle sensor

Digital systems:

Start swivel angle - factor calibration via the WIN-PED software or IndraWorks.

Check "100 %" swivel angle (while drive motor is off)

1. Switch off the hydraulics and wait for approx. 5 min. until the pump is mechanically swiveled out (wait until pressure is completely reduced).
2. Verify whether the actual swivel angle value (α_{actual}) is $10.05 \text{ V} \pm 0.01 \text{ V}$ and/or $+100.5 \% \pm 0.1 \%$. (With analog electronics at the central connector of the pilot valve, pin 6, violet; with digital electronics via WIN-PED and/or IndraWorks)

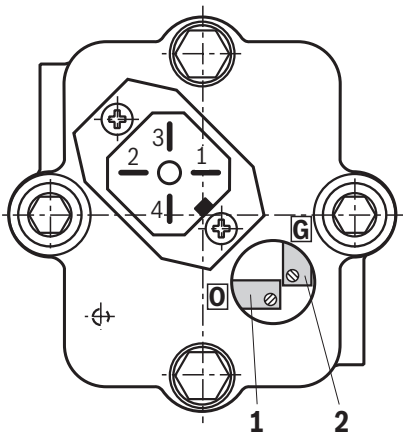
Analog systems:

In case of variation, use potentiometer (2) to calibrate; the potentiometer is marked with "G" (= Gain) on the swivel angle sensor

Digital systems:

Start swivel angle - factor calibration via the WIN-PED software or IndraWorks.

3. The pump sometimes does not swivel to the stop. Thus, shortly switch on the motor, switch off the motor again, wait until the pump is swiveled out and measure the actual swivel angle value. If a higher voltage is measured, correct the value.
4. Repeat this process several times.



Lage der Potentiometer bei Sensoren des Typs VT-SWA-1-1X/DFEE

Notice:

With the digital systems SY(H)DFEC and SY(H)DFEn, zero point and gain can be calibrated in a digital and analog manner at the potentiometers of the swivel angle sensor.

Notice:

- If the swivel angle sensor fails, the SYDFE. system cannot be properly operated.

For the safety instructions and more information regarding the calibration refer to the operating instructions of the corresponding control system:

Control system	Operating instructions
SY(H)DFEE	30012-B
SY(H)DFEC	30027-B
SY(H)DFEn	30014-B
SY(H)DFED	30017-B

Data sheet for swivel angle sensor: RE 30268

Notes

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