

# HUS Hydraulic double-piston rotary

Operating and maintenance instructions DKSE

## 1.0 Putting into operation

### 1.1 General

HUS double-piston rotary actuators are usually supplied ready for operation. A safety mechanism for transport is not fitted.

### 1.2 Direction of rotation and of actuation

#### DKSE double-acting

When looking at the top of the actuator, the direction of rotation is clockwise for closing. By default, the operating shaft for effecting actuation is mounted "lengthwise to the pipe axis" and is indicated by the position of the flat-head or the keyway at the upper end of the shaft. The operating shaft can be installed rotated through 90° for actuation "transverse to the pipeline axis".

### 1.3 Fitting the actuator to a valve

HUS double-piston rotary units have the standard connection interface for valves according to DIN/ISO 5211.

The actuation movement onto the corresponding valves is generally effected with a lantern piece and coupling according to the NAMUR recommendation, but can also be effected as a special custom actuation solution by request as far as this is technically feasible.

### 1.4 Fitting the actuator control line

Size DKSE025.090 comes with a G1/8" pressure connection as standard.

Sizes DKSE040.090 and DKSE032-A2 to DKSE080-A2 are fitted with a G1/4" pressure connection as standard.

Size DKSE100-A2 comes with a G3/8" pressure connection as standard.

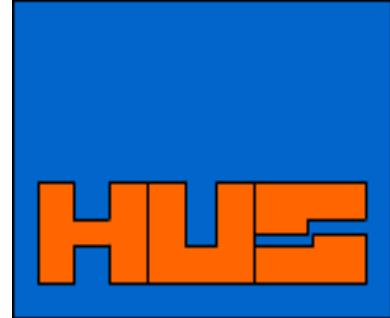
The DKSE032-A2 to DKSE100-A2 series also have a M10x1 vent connection for each switching direction.

### 1.5 Fitting actuator signal devices

By default, HUS double-piston rotary actuators are prepared for the fitting of signal devices.

The interface corresponds approximately to the design according to VDI/VDE 3845, with the only difference that the hole patterns on the top of the actuator have a pitch circle according to DIN/ISO 5211. The thread sizes are M6 for DKSE025.090 to DKSE040.090 and for DKSE032-A2 to DKSE080-A2, and M8 for DKSE100-A2.

Lanterns conforming to the standard are used as intermediate components, the upper hole pattern of which is always F05. The height of versions DKSE025.090 and DKSE040.090 is 60mm, and 80 mm for versions DKSE032-A2 to DKSE100-A2.



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## Operating and maintenance instructions DKSE

### 2.0 Maintenance and servicing

#### 2.1 General

Complying with the limit values specified for pressures, temperatures and torques and following the instructions are prerequisites for the proper functioning of the rotary actuators and must therefore be ensured by the user.

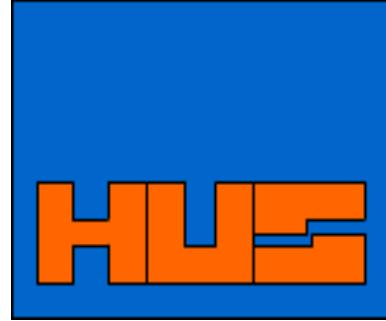
Proper fitting of the rotary units onto the valve, a perfectly prepared control medium and controllable ambient conditions are prerequisites for long-term operation without special maintenance.

2.2 Technical data	Standard version	
Control pressure range	up to 160 bar	up to 250 bar possible
Control medium	Mineral oil-based pressure fluid according to group HLP, DIN 51525	
Sealing elements	NBR	
Ambient temperature	-30 to +80 °C	
Lubrication	Long term lubrication KLÜBER – POLYLUB WH2	

#### 2.3 Tools for disassembly and assembly

DKSE size	1 x Allen key	1 x Allen key	1 x open-end spanner	1 x plastic rod
025.090	A/F 5		A/F 11	12 x 150
040.090	A/F 6		A/F 17 or 19 (old)	12 x 150
032-A2	A/F 5	A/F 6	A/F 22	12 x 150
040-A2	A/F 6	A/F 8	A/F 36	15 x 200
050-A2	A/F 6	A/F 8	A/F 36	15 x 200
060-A2	A/F 8	A/F 1 0	A/F 36	20 x 250
080-A2	A/F 8	A/F 1 0	A/F 36	25 x 300
100-A2	A/F 1 0	A/F 1 4	A/F 36	30 x 350

With the above tools, the rotary units can be disassembled and assembled by qualified personnel (skilled metalworkers + basic hydraulic knowledge). The work may only be carried out on unpressurised rotary units.



# HUS Hydraulic double-piston rotary

### **3.0 Disassembly and assembly of rotary units**

### **3.1 General**

## **Important information**

Do not carry out any work on actuators that are under auxiliary power. Work may only be performed on unpressurised actuators, i.e. the hydraulic and electrical supply lines must be disconnected before disassembly. Any necessary work may only be carried out by qualified personnel familiar with the product.

**All applicable accident prevention regulations must be observed.**

All attachments on the actuator must be removed before disassembly. Actuators must be cleaned with appropriate cleaning agents before disassembly. Mechanical damage to the outer parts must be repaired where necessary.

## 3.2 Disassembly

DKSE

**double-acting**

Remove hydraulic piping and the cover screws.

Carefully turn the operating shaft at the outer flat-head connection towards the covers until they are pushed out of the seal seat, then push the other pair of covers out of the seal seat in the opposite direction. The covers can now be pulled out of the housing by hand. Continue turning the operating shaft until the piston seal is in front of the housing.

Now remove the bearing flanges of the operating shaft and pull the operating shaft out of the housing to either side. You can then pull the pistons carefully out of the housing.

**Mark components so that the end position setting (DKSE032-A2 to DKSE100-A2) remains available.**

Clean all the parts and check for damage. Replace where necessary. The sealing elements should always be replaced except for those of the stroke adjustment.

### 3.3 Fitting of DKSE double-acting

DKSE

## **double-acting**

Mount the connection cover on the housing and screw it in place. Place the housing upright on the connection cover. Grease the cylinder running surface and both pistons.

Insert both pistons into the cylinders in the correct position, using one hand to guide them over the centre of the housing to avoid damaging the seal.

Mount the adjusting cover on the housing and screw it in place. Mount the connecting flange.

Place the housing flat on the connection flange with the connection covers facing forward and use a plastic rod to push towards the opposite covers (right piston towards the rear adjusting cover, left piston towards the front connection cover) and align the gear teeth perpendicular to the operating shaft.

Insert the operating shaft from the counter-flange side into the piston gear teeth in the "AUF" (OPEN) position, moving the shaft slightly back and forth over the flat-bed connection to bring the piston gear teeth into parallel alignment.

Slide the counter-flange over the operating shaft and screw it to the housing. Attach the hydraulic screw connection.

Check the switch position, correct if necessary.

Test activation only after ensuring that all screws and screw connections are tight