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Service Technician Instructions		ST-082
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Type 6: Scavenging flap Fackert RZ-26/4 and scavenging flap drive Rotork ROM-3

ST-082 contains general information with respect to the mentioned subjects and detailed instructions for setting the limit switches of the flap drive.

Affected: Engines of Type 6 which are or will be equipped with the following scavenging flap drive:

- Manufacturer: *Rotork*
- Type: *ROM-3*
- GEJ part number: *474944*

General: Through improvements in the machining, mounting and gland sealing our supplier succeeded in significantly further-developing the scavenging flap RZ-26/4. Proof of reliable tightness and ease of operation was furnished in several tests, when all tests on landfill gas plants also yielded the desired success.

The new scavenging flap can be exchanged 1:1 with the predecessor model. The old already installed Rotork ROM-3 drive can still be used in the future. With new engines, this drive is meanwhile exclusively equipped with external control board which is located in the interface cabinet. In the event of a still drive-internal board arrangement, the conversion to the external version according to ST-076 should be carried out upon a change of flap, drive and/or board.

Relevant part numbers:

OLD ¹⁾	NEW ²⁾	Description
531662 ³⁾	567035 ⁴⁾	Flap complete with drive, without board
576634	576635	Only flap, without drive, without board
474944	474944	Only drive, without board
545613	545613	Only board (including housing for installation in interface cabinet) with additional loose terminal strip (This part number to be used by the Service!)
531676	531676	Only board (including housing for installation in interface cabinet) without additional loose terminal strip (This part number is used in Jenbach, NOT for field installation!)

¹⁾ currently standard for natural gas applications, no longer used in future

²⁾ currently standard for special gas and in the future also for natural gas applications

³⁾ consists of 576634 (flap) and 474944 (drive)

⁴⁾ consists of 576635 (flap) and 474944 (drive)

Instructions for setting the limit switches of the scavenging flap drive Rotork ROM-3:

- Pull both scavenging flap control relays in the interface cabinet from the relay base (see wiring diagram)
 - Digital output SPKAUF (open scavenging flap)
 - Digital output SPKZU (close scavenging flap)
- Open lid of flap drive (see Figure 1)

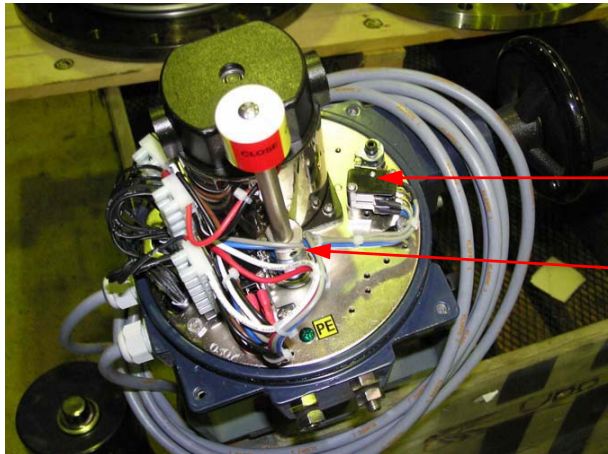


Figure 1: Flap drive with opened lid

Torque switches

Limit switches LS1, LS2, LS3 and LS4

- Put flap in the *close* end position by means of the hand wheel on the drive (see Figure 2)

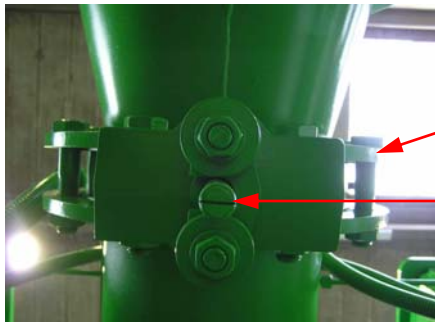


Figure 2: Flap shaft in the *close* position
Indicator slot approx. parallel to the flanges

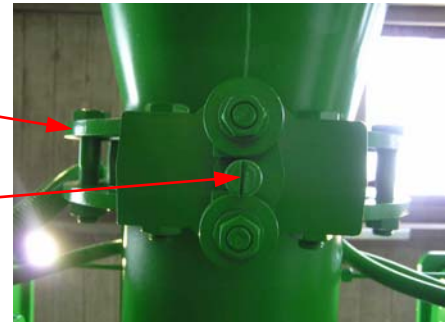


Figure 3: Flap shaft in the *open* position
Indicator slot approx. 90° offset relative to the flanges

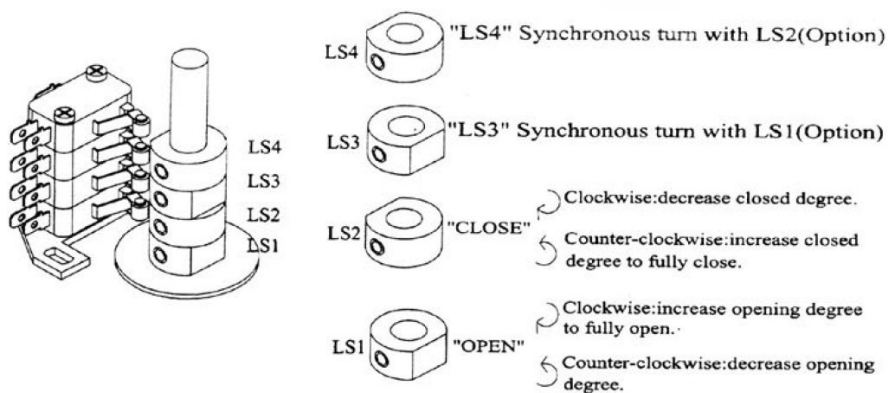


Figure 4: Limit switches LS1, LS2, LS3 and LS4

- LS1upon reaching of the *open* position, interrupts the circuit to the drive motor
- LS2upon reaching of the *close* position, interrupts the circuit to the drive motor
- LS3upon reaching of the *open* position, sends a feedback signal to the engine management system (DIA.NE)
- LS4upon reaching of the *close* position, sends a feedback signal to the engine management system (DIA.NE)

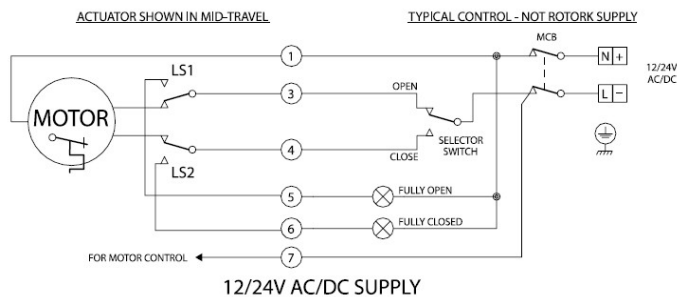


Figure 5: LS1/LS2 in wiring diagram

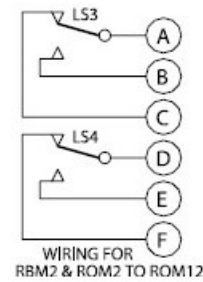


Figure 6: LS3/LS4 in wiring diagram

IMPORTANT: The torque switches (see Figure 1) must not be adjusted!

➤ Setting the *close* position

With completely closed scavenging flap, set the limit switches LS2 and LS4 so that....

-they are almost positioned in the same angle of rotation position (see Figure 4)
-LS4 switches before LS2 (approx. 5° difference)
-the contact of LS2 is opened (voltage 24VDC on Terminal 6, see Figure 5)
-the contact of LS4 is closed (voltage 24VDC on Terminal E, see Figure 6)

➤ Put flap in the *open* end position using the hand wheel on the drive (see Figure 3)

➤ Setting the *open* position

With completely opened scavenging flap, set the limit switches LS1 and LS3 so that....

-they are almost positioned in the same angle of rotation position (see Figure 4)
-LS3 switches before LS1 (approx. 5° difference)
-the contact of LS1 is opened (voltage 24VDC on Terminal 5, see Figure 5)
-the contact of LS3 is closed (voltage 24VDC on Terminal B, see Figure 6)

➤ Put flap in the *close* end position using the hand wheel on the drive (see Figure 2)

➤ Checking and readjusting the limit switches

- Replace the scavenging flap control relay SPKAUF in the interface cabinet on the relay base
- Open flap with manual actuation on relay SPKAUF and check limit switches LS1 and LS3
LS1 must stop the drive before the torque switch becomes effective. Otherwise the limit switches LS1 and LS3 have to be readjusted so that their contacts trigger (a few degrees) BEFORE the torque switch.
- Pull scavenging flap control relay SPKAUF in the interface cabinet from the relay base in order to stop feedback to the engine management system (DIA.NE)
- Replace scavenging flap control relay SPKZU in the interface cabinet on the relay base
- Close flap with manual actuation on relay SPKZU and check limit switches LS2 and LS4
LS2 must stop the drive before the torque switch becomes effective. Otherwise the limit switches LS2 and LS4 have to be readjusted so that their contacts trigger (a few degrees) BEFORE the torque switch. The switching point of LS2 should be as close as possible to the torque actuation so that tightness of the flap is ensured.
- Replace scavenging flap control relay SPKAUF in the interface cabinet on the relay base

➤ Close flap drive lid