



KNVvL Gliding Dept.
KNVvL safety commission (CVZ)

Investigation Report (English):

Incident 2020-005

**Failure gear operating mechanism Duo
Discus XLT**

(Possibly also of relevance to other Duo Discus and Arcus aircraft)

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Failure gear operating mechanism Duo Discus XLT - 1st of June 2020

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Description of the incident

After take-off the pilot noticed abnormal behavior of the landing gear operating mechanism during landing gear retraction. The pilot prepared for a landing on the grass and selected the gear handle to the gear extend and locked position.

During landing the landing gear collapsed. The glider sustained damage (scratches) on the fuselage and the landing gear doors.

Initial inspection revealed a broken pushrod of the gear mechanism.

A part of the broken pushrod had also ruptured the fuel line at the fuel shut-off valve, causing a fuel leakage into the fuselage.

This Duo Discus XLT, serial number 212, was manufactured in 2009.

During the ARC inspection by the end of 2019 the glider had logged 1241 flight hours in 1017 flights.

Inspection

The glider was transported to Service Center Terlet (SCT) for insurance expertise and repair. SCT is a EASA approved Maintenance Organisation and Continuing Airworthiness Maintenance Organisation (CAMO)

The insurance expertise also involved an inspection of the broken pushrod. This inspection revealed a weak welding connection.

SCT reported this to the manufacturer Schempp-Hirth Flugzeug-Vertriebs GmbH (SH).

SH reported that they received similar notifications and would supply replacement parts free of charge.

Position Schempp-Hirth (Manufacturer)

A member of KNVvL safety commission discussed this technical incident with Schempp-Hirth (SH) Chief Technical Officer (CTO) during a visit on June 25.

- Before this incident SH has received 2 other notifications on similar cases. These are undocumented.
- SH is not convinced that the weak welding connection was the primary cause of this incident. Insufficient maintenance and /or hard landing(s) could be a contributing factor according to SH.
- In 2013 SH drafted a special welding protocol to prevent reoccurrence.

Request for information

Because this failure occurred 3 times, the question comes up if more gliders of all types of Duo Discus are affected. Maybe also Arcus?

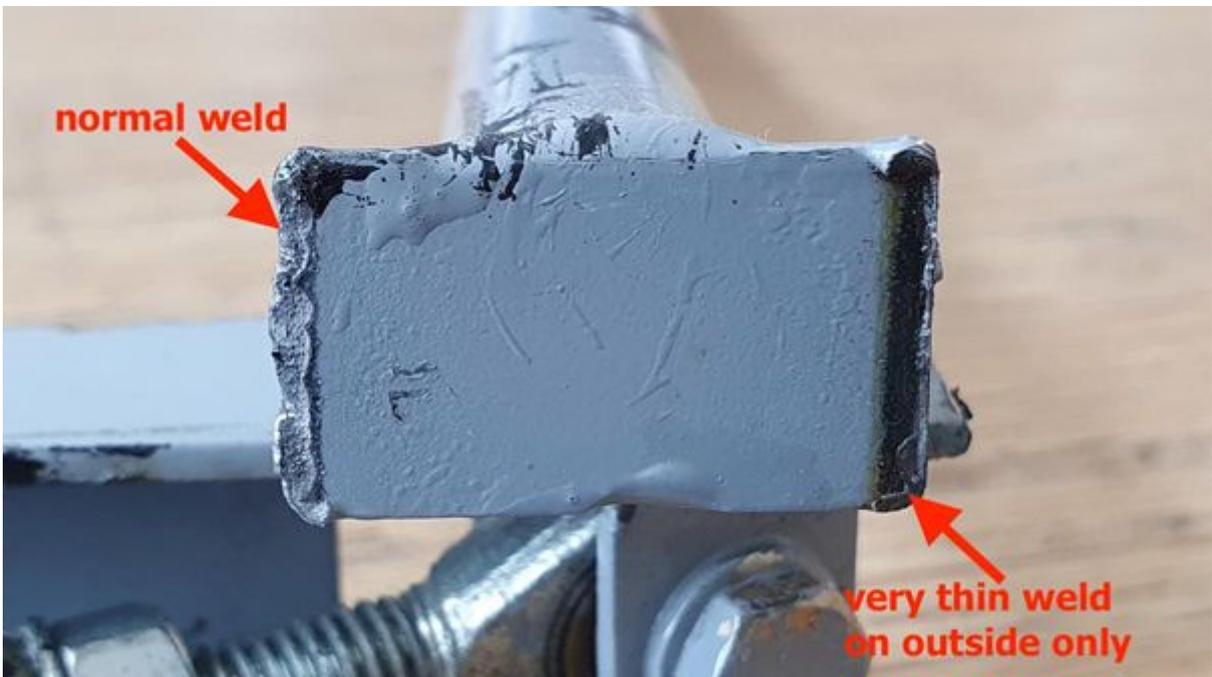
Maybe small cracks in the construction are already visible before failure of the welding connection?

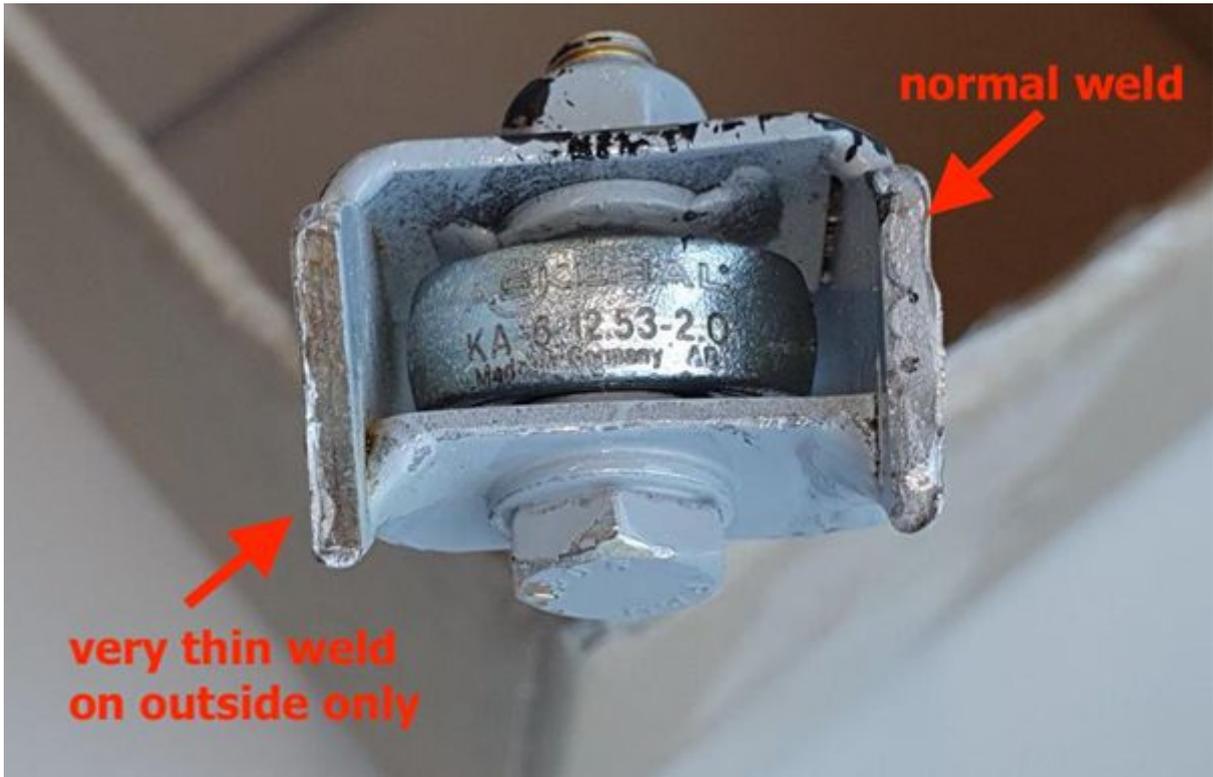
Should inspection be recommended?

When the wings are removed the area can easily be inspected by mirror or camera via the opening for the wing spar on the right hand side of the fuselage.

Photos







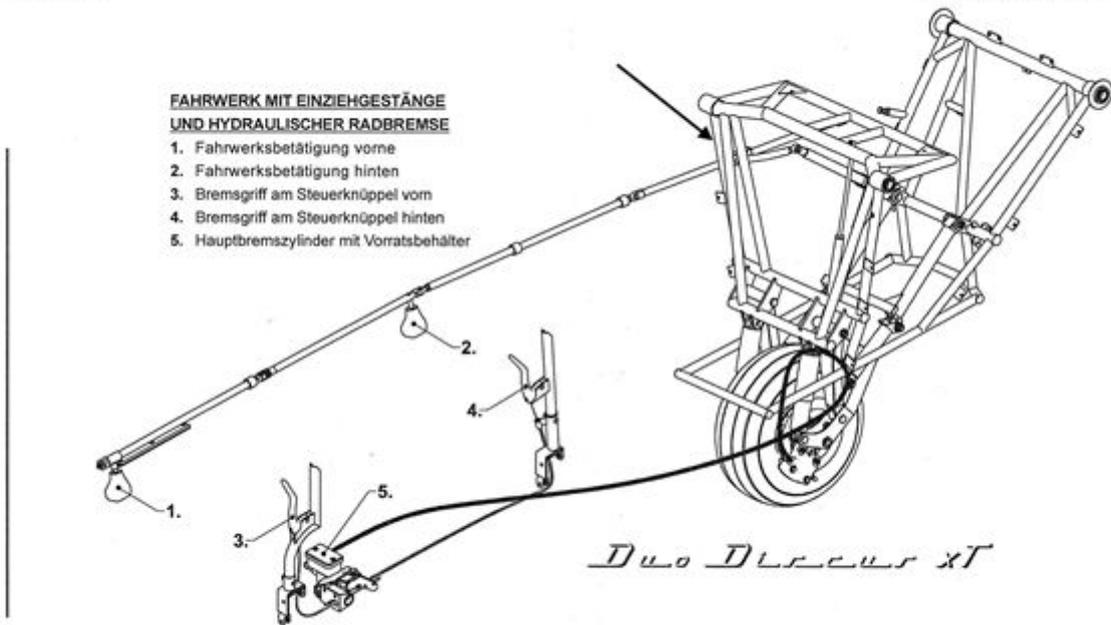
SCHEMP-HIRTH FLUGZEUGBAU GmbH., KIRCHHEIM/TECK

Duo Discus T

WARTUNGSHANDBUCH

**FAHRWERK MIT EINZIEHGESTÄNGE
UND HYDRAULISCHER RADBREMSE**

1. Fahrwerksbetätigung vorne
2. Fahrwerksbetätigung hinten
3. Bremsgriff am Steuerknüppel vorn
4. Bremsgriff am Steuerknüppel hinten
5. Hauptbremszylinder mit Vorratsbehälter



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DIAGRAMM 4

