

Subject : Additional and optional tow release mechanism for aerotows.

Effectivity : DG 400, optional.

Accomplishment: At manufacturing stage.

Reason : On request, additional to the CG tow release mechanism a tow release mechanism for aerotows only can be installed. The place of installation is located under the instrument tower.

Instructions : 1. Installation of tow release TOST E 75 or E 85 in accordance with installation plan EFK, drawing R 83, R 84 and 4R 100.  
In accordance with drawing R 84, the left sidewall of the instrument tower base receives a cut-out, in order to allow glueing-in the FRP-wall R 85. It is to be noted that the glueing edges of the side wall must, as well, be grinded away.  
The tow hook bulkheads R 81 and R 82 are mounted temporarily unto the towhook, in order to mark their respective glueing surface location in the fuselage, as well as the circular cut-out of 53mm, according to drawing R 83, for the ring of the tow release. The tow release has to be installed in the precise centre of the fuselage.

As well, the routing of static and pitot pressure lines must be accomplished at this time, given in installation plan ED/1.

For the rubber-seal membrane a 2 mm deep cut-out seat must be routed out of the fuselage shell in accordance with drawing R 86.

The nylon tube for the pitot pressure must be bent to the left, after some heating, so that the applied hose can be led without hindrance alongside the tow release.

To avoid kinking of the nylon tube during the bending process, a piece of rudder cable 3.2mm diameter should be inserted. The pitot pressure hose must be elongated by 130mm, relative to the original version. The length of the hoses, measured from the point of origin to the T-joint of the static pressure must be 140mm on the left and 120mm on the right.

To avoid chafing of the hoses on the tow release, they are passed through a hose clamp 22 x 15 diam., which is to be installed on the upper left fastening screw of the rudder pedal guide. The original screw has to be replaced with one screw M 6 x 30 DIN 912-8.8.

Roughen glueing surfaces on bulkheads, fuselage and FRP wall R 85. Complete assembly of tow release with bellcrank R 79/1 and bulkheads.

Mix 50 gram resin GE 162 and 19 gr hardener Laromin C260. Apply resin to all glueing surfaces. Mix a portion of the resin with cottonflocks and apply to glueing surfaces. Glue in place the FRP wall, then the bulkheads, already assembled to the tow release.

As opposed to the original method of the DG 400, the cable pulleys are now omitted, so that the Bowden cable envelopment for the propellerbrake-pull is led up into the base of the instrument tower, in accordance with drawing 4 R 100. Nylon tubes and Bowden cable hull are fastened according to drawing 4 R 100 with 2 layers of 92125 cloth.

Bellcrank R 80 is mounted temporarily with fork end and adjusting screw R 79/3. Screw R 79/3 is set to produce an axle distance of 75 mm. Cables with thimbles and Nicopress sleeves are inserted and marked following plan EFK. Bellcrank R 80 is removed and cables, thimbles and sleeves are pressed with Nico-press pliers (opening M). Bellcrank is now installed permanently.

Adjusting screw R 79/3 is now set so that the cable which leads to the CG tow release is just beginning to tense, then the forked end counter nuts are fastened.

Due to the installation of the FRP wall R 85 the battery case on the left side of the instrument tower cannot be accommodated. Therefore this battery is installed in the compartment of the control stick according to drawing 4 R 102. Cable routing shall follow drawing 4 R 101.

Following the completion of the above-mentioned work, the normal electric cable routing of the DG 400 can be accomplished.

The rubber seal membrane is installed with contact cement Pattex, following drawing R 86 and covered with thin adhesive tape.

2. Function test.

The testing of the function must be carried out at the CG and forward tow releases. For the testing a towrope with original TOST double rings LN 65091 shall be used.

The rope is pulled forward, parallel to the fuselage bottom, with a force approximating 50 daN. The rope is then released in the cockpit. The release of each tow release must be ensured.

3. Manual amendments.

The following manual pages, issue Oct.89, marked with TN 826/21 shall be added, or respectively exchanged:

Flight manual : 0.1 Manual amendments  
23 Aerotow release  
36 Aerotow  
61 Aerotow release

Maintenance manual: 0.2 Manual amendments  
2 Listing of contents  
3a Aerotow release  
12 Aerotow release  
EFK Installation plan for  
optional aerotow release.

MATERIAL:

1 Tow release TOST E 75 or E 85 (special version for DG-single seaters) with part No. 79/2 and bolt M 6 x 85 DIN 931-8.8 zn.  
1 Bellcrank R 79/1  
1 Adjusting screw R 79/3  
1 Bellcrank R 80  
1 Forkend G 6 x 12 DIN 71752 left hand thread  
1 Forkend G 6 x 24 DIN 71752  
1 Nut DIN 439-8 M 6 left hand thread  
1 Nut DIN 439-8 M 6  
2 Split pins bolt 6 x 18/16.5 DIN 1434 zn  
2 Split pins 1.5 x 12  
600 mm aircraft ruddercable 3.2 diam. LN 9374  
1 screw M 6 x 30 LN 9037  
2 Screws M 6 x 60 DIN 912-8.8 zn  
5 Nuts M 6 DIN 985-8 zn  
9 Washers 6.4 DIN 125 St zn  
3 Nicopress sleeves 28-3-M Copper zincpl.  
2 Thimbles 3 mm DIN 6899 A  
1 Hose clamp diam.22 x 1.5  
1 Rubber seal membrane R 86(innertube rubber 2mm thick)  
Contact cement PATTEX  
Fiberglas cloth 92125 approx. 100 x 100 mm  
Epoxy resin GE 162, 50 gram  
Epoxy hardener Laromin C 260, 19 gram  
Cottonflocks

Materials : 2 Tow hook bulkheads, one each R 81 and R 82  
(continued) 1 FRP wall R 85  
1 False bulkhead for battery cover 4 R 104  
1 Battery cover 4 R 103  
1 Piece foamrubber 40 x 40 x 15 for 4 R 103  
4 Screws M 6 x 16 DIN 933-8.8 zn  
4 Washers 6.4 DIN 9021 St zn  
4 Nut fasteners RIVTI M 6 (Rivnuts)

Drawings: R83, R84, R86, 4R100, 4R101, and 4R102.  
Installation plans: EFK and ED/1

Remarks : 1. Accomplishment of aforementioned proceedings only at  
the manufacturer at production.  
2. The VHF transceiver must be installed in the instrument  
panel. Instead of the transceiver in the base below  
the instrument tower, an instrument with 58 mm diam.  
can be installed in the base of the tower.

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The German original of this  
TN has been approved by the  
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18, 1989 and is signed by  
Mr. M. Glaser. The trans-  
lation into English has been  
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