

Maintenance manual DG-500MB

Manual amendments

No.	Page	Description	Date
10	0, 1a, 2 - 5, 48, 52, 92, diagram 14	Fuel hoses TN500/10	Oktober 2016
11	1a, 2 - 6, 10, 13, 17, 21, 23, 24, 37, 38, 42-51, 69, 91, 93, diagrams 9, 12	Manual revision, TN500/11	July 2017
12	0, 1a, 2, 4, 6, 34, 37, 92	TN500/13 Canopy lock, rear locking rods, manual revision	July 2019
13	Title, 1a, 3, 4, 5, 6, 19, 49 – 54, 91	TN500/14 Life time of the drive belt, manual revision	May 2023
14	1a, 2, 8, 9	TN500/17 adjustment of elevator free play	December 2023

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0	Airworthiness limitations	5	May 2023
		6	May 23
1.	System description and adjustment data		issued
1.1	Wing and tailplane setting data	7	Nov. 98
1.2	Elevator control and trim system	8	Dec. 23
	" "	9	Dec. 23
1.3	Rudder control	10	July 2017
1.4	Aileron and wing flaps control	11	Jan. 01
	" "	12	Nov. 98
	" "	13	July 2017
1.5	Airbrake control and wheel brake	14	Nov. 98
1.6	Undercarriage	15	" "
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1.7	Tow hooks	17	July 2017
1.8	Water ballast system	18	Nov. 98
1.9	Massbalance and weights of control surfaces	19	May 23
1.10	Fore and aft play of the wings	20	Nov. 98
1.11	Power plant	21	July 2017
	" "	22	Nov. 98
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1.12	Retraction-extension mechanism	24	July 2017
1.13	Fuel system	25	March 04
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	" "	27	" "
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1.14	Electrical system	30	July 02
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	" "	35	Nov. 98
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1.15	Canopy operating handles	36a	July 02
2.	Inspections		
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2.4	Inspection procedure for increase of service	42	July 2017

1.2 Elevator control and trim system

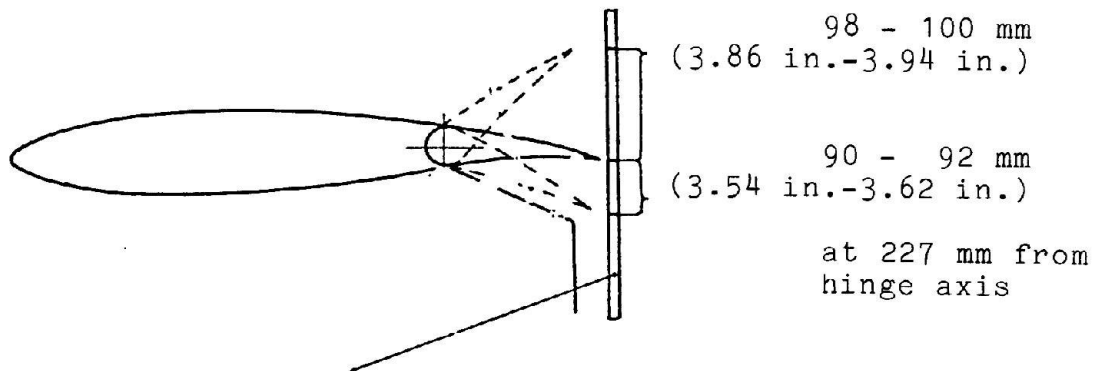
1.2.1 Control system see diagram 1

1.2.2 Elevator deflections and tolerances

Up	25.5° - 26°
Down	23.5° - 24°
measured at	227 mm (8.94 in.) from hinge axis.

Measurement:

Hold a measuring stick with one end on the floor. Set the elevator to zero by using a pattern. A drawing for the zero-pattern is available from the manufacturer. Mark the 0-point on the stick. Then measure the up and down deflections.



measuring stick one end on the floor

1.2.3 Elevator stops

The elevator stops are located at the rear control column and can be adjusted with a 10 mm open end wrench.

1.2.4 Elevator control circuit free play

With the elevator held fixed in the zero position, the free play at the top of the control column can be ± 2 mm (± 0.08 in.). Within the automatic elevator connection there should be no free play noticeable in the zero position when the elevator is moved at its trailing edge.

Warning: In case the adjustment screw was turned in too far, the roller will jam inside the funnel and can't be moved or only with larger force to the front of the funnel. Moving the horizontal tailplane backwards for rigging might not be possible or only with large effort. Each time a bending force will act on the rod end which might lead to failure of the rod end with time.

For this reason after adjusting the free play it is necessary to check if the roller can be moved without force in the funnel.

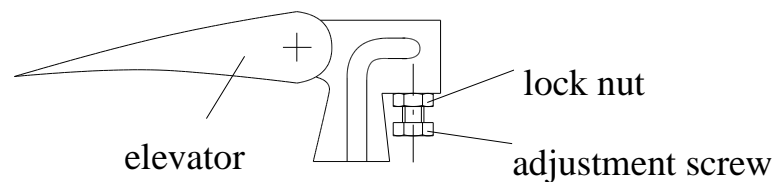
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To accomplish this, remove the complete rod end with the roller or remove the roller from the rod end and stick it on an 8 mm f7 pin and move the roller in the funnel. Prior to removal of the rod end mark its position.

If the roller can't be moved without force completely to the front you must turn back the adjustment screw and bend back the sheet metal which was bent by the adjustment screw. Then adjust the free play again.

In case the roller has too much free play on the rod end or if the roller is no more round you must replace the roller by a new one 5St95/3.

In case the glider was operated for a longer time with the adjustment screw turned in too far the rod end must be replaced by a new one 5St94.

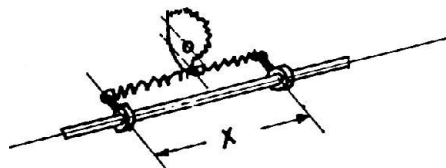


After completion of this work check the elevator displacements and adjust if necessary.

1.2.5 Trim

The trim mechanism should be adjusted so that with full forward (nose down) trim the control column is in the maximum forward position. The tensioning of the trim mechanism springs is adjusted as shown in the sketch. $x = 340$ mm (13.4 in.)

The springs are located in the rear cockpit on the left hand side.



1.2.6 Pilot force reducing rubbercord

The rubber cord produces an elevator stick force in push direction. If the trim efficiency of your DG-500MB in push direction is reduced, you have to inspect the rubber cord. The rubber cord is located on the left hand side behind the main bulkhead below the baggage compartment floor. The rubber cord runs from bellcrank 5St19 to a fork at the main bulkhead. The length of the rubber cord when loose should be 500 mm (19.7 in.).

If the cord is longer or worn it must be replaced. The cord must be replaced at least every 6 years.