

**0 Manual Contents****0.1 Log of Revisions**

No.	Page	Description	Date
1	0-1, 0-3, 0-6, 1-1, 1-6, 1-10, 1-11, 8-3	TN8019, wheel brake actuated by airbrake handle.	Feb. 2011

**0.2 List of Effective Pages**

Chapter	Page	Edition	Replaced	Replaced	Replaced
0	Title page	April 2005			
	0-1	April 2005	Feb. 2011		
	0-2	April 2005			
	0-3	April 2005	Feb. 2011		
	0-4	April 2005			
	0-5	April 2005			
	0-6	April 2005	Feb. 2011		
	0-7	April 2005			
	0-8	April 2005			
	0-9	April 2005			
	0-10	April 2005			
	0-11	April 2005			
1	1-1	April 2005	Feb. 2011		
	1-2	April 2005			
	1-3	April 2005			
	1-4	April 2005			
	1-5	April 2005			
	1-6	April 2005	Feb. 2011		
	1-7	April 2005			
	1-8	April 2005			
	1-9	April 2005			
	1-10	April 2005	Feb. 2011		
	1-11	April 2005	Feb. 2011		
	1-12	April 2005			
	1-13	April 2005			
	1-14	April 2005			
	1-15	April 2005			
	1-16	April 2005			
	1-17	April 2005			
	1-18	April 2005			
	1-19	April 2005			
	1-20	April 2005			

**0.2 List of Effective Pages** (continued)

Chapter	Page	Edition	Edition	Edition	Edition
8	8-1	April 2005			
	8-2	April 2005			
	8-3	April 2005	Feb. 2011		
9	9-1	April 2005			
	9-2	April 2005			
10	10-1	April 2005			
11	11-1	April 2005			
	11-2	April 2005			
	11-3	April 2005			
	11-4	April 2005			
	11-5	April 2005			
	11-6	April 2005			
	11-7	April 2005			
	11-8	April 2005			
	11-9	April 2005			
	11-10	April 2005			
	11-11	April 2005			
	11-12	April 2005			
	11-13	April 2005			
	11-14	April 2005			
	11-15	April 2005			

## 1. SYSTEM DESCRIPTION AND ADJUSTMENT DATA

### 1.1 Summary

#### Wings

Wing span variable by exchange of 15m winglets against 18m tips with winglets.

#### Aileron Controls

Aileron system activated via pushrods, connection of system by automatic coupling during rigging. Dynamic aileron mass balance in wing, aileron at 18m wingspan in two parts.

#### Elevator Controls

Elevator system activated via pushrods, automatic coupling of system during rigging. 100% mass balance in vertical tail fin pushrod.

#### Rudder Controls

Rudder system activated via cables, 100% mass balance at rudder.

#### Wheel Brake

Feet operated, activated by Bowden cable from rudder pedals.

**If TN8019 is executed:** The wheel brake Bowden cable is connected to the airbrake drive instead of the rudder pedals.

#### Air Brakes

Activated via pushrods. Automatic connection of system during rigging. Locking mechanism in wings. Upper surface double height air brakes with spring loaded cover blades. Friction damper in box to prevent oscillations during extension.

#### Water Ballast System

Two integral tanks per wing, maximum capacity per wing 95 Litres <25.1 US gallons, 20.9 Imp. gal.>. Two valves at under side of wing for loading and dumping operated by one root rib pin. Automatic connection during rigging. Ventilation of both wing integral tanks at root-rib.

Integral ballast tank in the vertical tail fin for mandatory C.G. movement compensation due to wing water ballast as well as compensation for weight of heavy pilots. Maximum permissible compensation allowed for in tables.

Capacities:

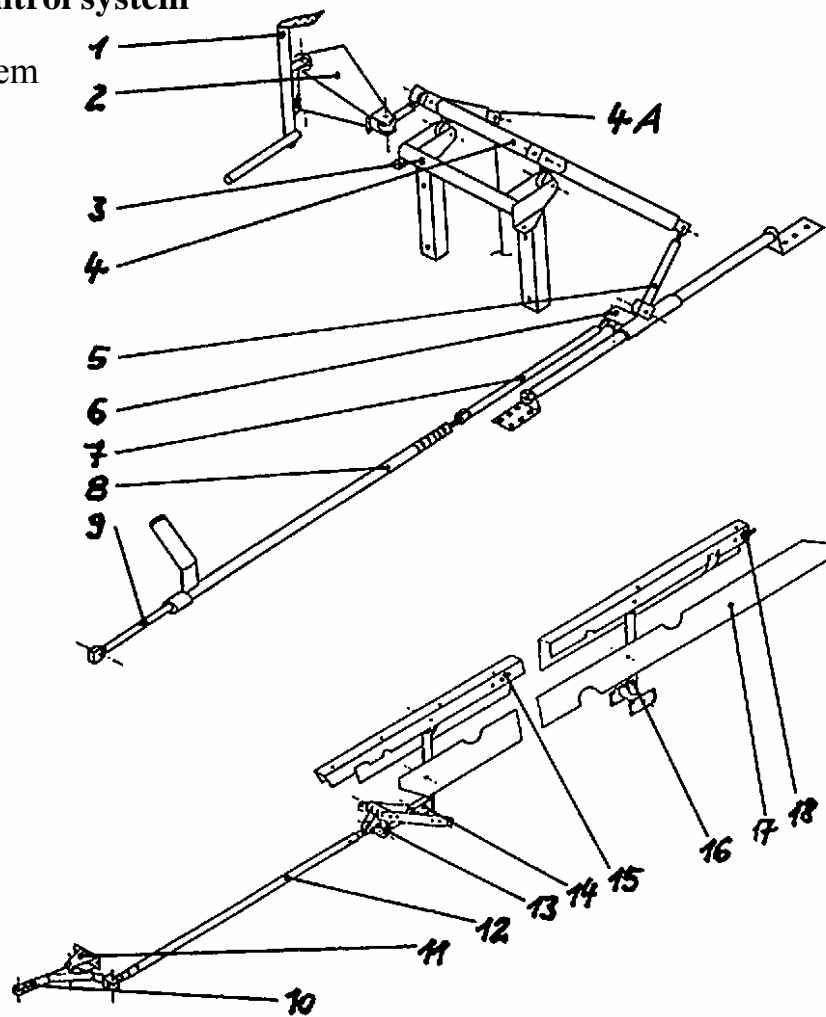
**LS8-s:** 12 Litres <3,17 US gallons, 2,64 Imp. gallons>.

**LS8-sb:** 7.5 Litres <1.98 US gallons, 1.65 Imp. gallons>.

**1. SYSTEM DESCRIPTION AND ADJUSTMENT DATA** (continued)

**1.3 Air Brake Control system**

1.3.1 Control System



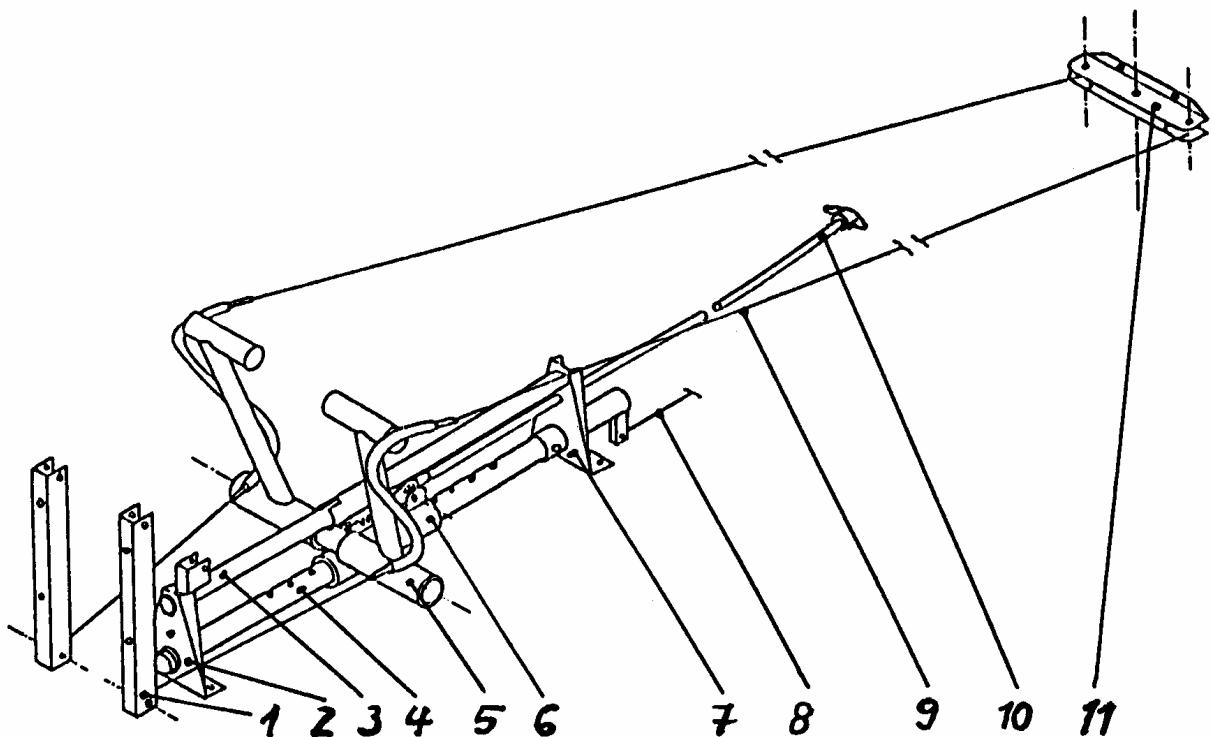
<u>Fuselage</u>			<u>Wings</u>		
No.	Denomination	Drawing	No.	Denomination	Drawing
1	Automatic connector bearing	3R10-119	10	Root rib drive lever or	3F4-64 3F4-71
2	Automatic air brake connector at fuselage	3R6-44	11	Root rib bracket	4F3-76
3	Air brake drive bracket	3R6-78	12	Wing pushrod	4F4-63
4	Air brake drive	3R6-50	13	Locking lever	4F4-53
<b>With TN8019 executed:</b>			14	Inner lever	3F4-51
4	Air brake drive shaft	9St13	15	Upper blade	3F4-60
4A	Bowden cable attachment for wheel brake		16	Outer lever	3F4-52
5	Intermediate rod	4R10-77	17	Lower blade	3F4-54
6	Sliding connector	4R6-47	18	Friction brake	
7	Air brake rod	4R6-59			
8	Air brake handle	3R6-74			
9	Handle guide tube	4R6-31			

**1. SYSTEM DESCRIPTION AND ADJUSTMENT DATA** (continued)

**1.5 Rudder Control System, Wheel Brake**

1.5.1 Control System

No.	Denomination	Drawing
1	Canopy opener bracket	4R8-67
2	Forward pedal guide bracket	3R14-14
3	Upper pedal guide tube	4R14-18
4	Lower pedal guide tube	4R14-19
5	Rudder pedal	1R14-21
6	Pedal support	3R14-16
7	Rear pedal guide bracket	3R14-15
8	Wheel brake cable	
8	<b>Not installed with TN8019 executed</b>	
9	Rudder cable	
10	Pedal adjustment cable	4R14-31
11	Rudder drive bracket	4S1-10



**1. SYSTEM DESCRIPTION AND ADJUSTMENT DATA** (continued)**1.5 Rudder Control System, Wheel Brake** (continued)

## 1.5.2 Deflections and Tolerances

<u>Rudder:</u>	To both sides	26° - 30°
----------------	---------------	-----------

For easier checking, measured angles may be converted to mm / in deflection values, using the actual local radius of the defined measuring place. See also table below.

Limit values for aileron deflections in Millimetres/Inches

<u>Rudder</u>		
Measured value = Distance from lower trailing edge to centre of cable bolt		
Measured Value mm / in	Local Radius mm / in	26° to 30° mm / in
395 / 15.551	390 / 15.354	175 to 202 / 6.890 to 7.953
396 / 15.591	391 / 15.394	176 to 202 / 6.929 to 7.953
397 / 15.630	392 / 15.433	176 to 203 / 6.929 to 7.992
398 / 15.669	393 / 15.472	177 to 203 / 6.969 to 7.992
399 / 15.709	394 / 15.512	177 to 204 / 6.969 to 8.031
400 / 15.748	395 / 15.551	178 to 204 / 7.008 to 8.031

## 1.5.3 Stops

Rudder stops are fibre glass plates at lower rudder end against vertical tail shell.

## 1.5.4 Wheel Brake


Wheel brake adjustment by Bowden cable adjusters at both cable ends – under seat and at landing gear wheel fork.

Stop for wheel brake operation at lower guide tube of pedal support.


**With TN8019 executed:**

Wheel brake adjustment by Bowden cable adjusters at both cable ends – at the back of the landing gear box and at landing gear wheel fork.

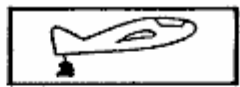
8. Markings and Placards (continued)



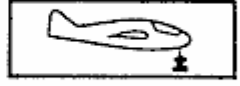
⑥ Retracted in front of lever




⑦ Landing gear Extended behind lever




⑧ Trim tail heavy near trim lever



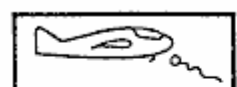
⑨ Trim nose heavy near trim lever



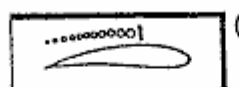
⑩ Canopy opening at left lever



⑪ Canopy opening and emergency release at right lever

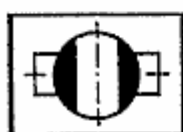


⑫ Tow cable release left cockpit side

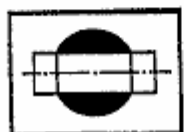


⑬ Air brakes left cockpit side

**With TN8019 executed:**  
Air brakes and wheel brake left cockpit side

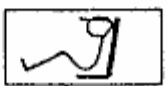


⑭ Closed




⑮ Open


Water ballast valve at right cockpit side



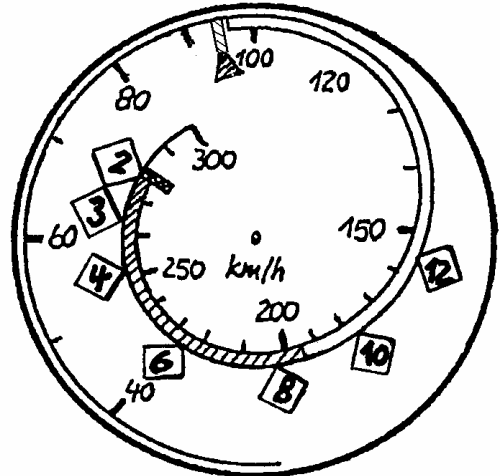
⑯ Backrest adjustment at main bulkhead








⑰ Ventilation at instrument panel



⑱ Pedal adjustment at lower edge of instrument panel



	Green
	Yellow
	Red
	Blue
	Red VNE