0 Manual Contents

0.1 Log of Revisions

Rev no.	Pages	Reference	Revision Date
	0-1, 0-3, 0-4, 0-5, 0-6, 0-8, 0-11, 1-27, 3-4, 4-16, 4-19, 4-21, 10-2, 10-8, 11-2, 11-18, 11-20	TN 8017 Necessary changes to the power plant	Nov. 2010

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	10-9	April 2005			
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	4E01-02	26.05.2005			
	2E01-01	28.07.2005			

0.3 TABLE OF CONTENTS (continued)

1. SYSTEM DESCRIPTION AND ADJUSTMENT DATA (continued)

1.9 Propulsion System (continued)

1.9.7 Decompression valves

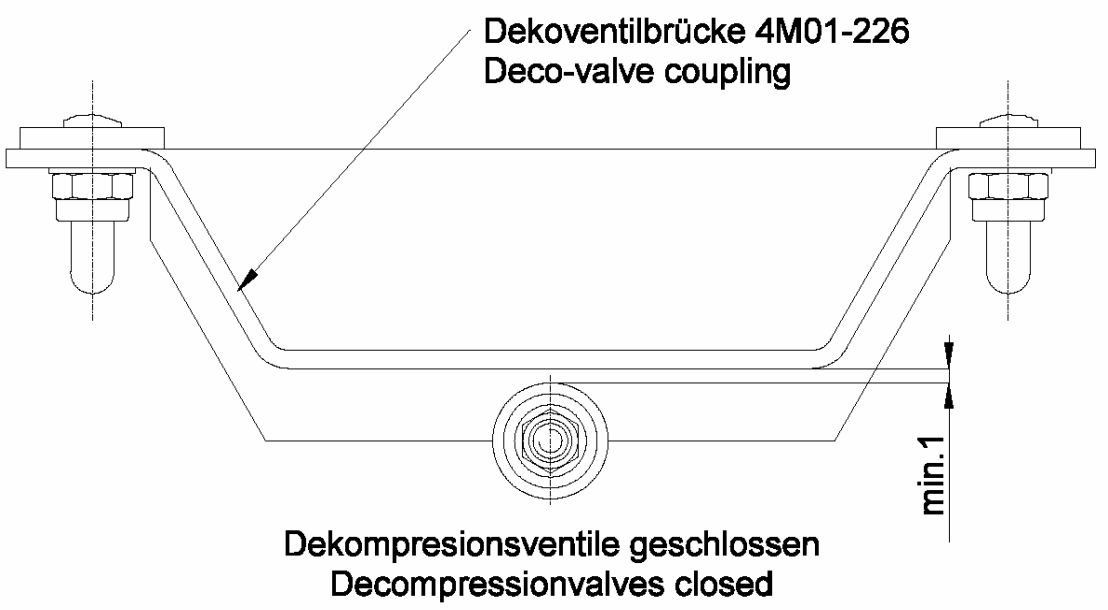
With the cockpit lever in "CLOSED" position, both decompression valves must be fully closed and between deco valve coupling ("-bridge") and operating roller a gap of at least 1 mm <0.04 in> must be existent. (See diagram 10.8 and sketch below).

With cockpit lever completely pulled back (position "OPEN"), both deco valves must be open resulting in easy turning of the propeller.

Adjustment of operating Bowden cable possible by use of adjuster at engine tower cable end as well as cable terminal at cockpit deco lever.

Keep an eye on the Bowden cable end at the engine tower. The Bowden outer must not leave the recessed adjuster end during engine extend-retract!

To prevent the Bowden outer slipping out of its recess in the adjustment screw, the Bowden outer must be secured to the thread of the adjustment screw (at the engine tower) with lock wire, see working instruction on page 11-20.



3.5 Engine Maintenance

Important note: Conserve engine according to SOLO 2350 manual; this is specified for two months out of service already. It is also valid for each sea transport.

3.5.1 25 hours Inspection

These maintenance and inspection items at the engine must be performed every 25 hours of engine time. Items No. 1, 2, 5, 6, 9, 10, 26 and 27 must be performed again at least 1 year after the related 25 hours inspection.
This inspection should then preferably be combined with the annual inspection. Inspection checklists for signing off and keeping in log are provided in section 11.

1. Clean engine and engine tower, general visual check. Look out for leakages and damage to engine housing and exhaust silencer.

Engine and fuel system

2. Turn engine by hand with deco valves open and closed and watch out for not normal noises, stiff operation etc.
3. Exchange spark plugs against new ones.
4. Remove spark plug caps, check condition and tight fit on plug. If need be, exchange cap too.
   When plugs only are exchanged, check tight fit on new plugs. With loose fit, plug caps must also be exchanged.
5. When deco valves are not tight, disassemble valves, check condition and use soft wire brush for cleaning.
6. Check exhaust silencer, exhaust manifold and fixings for cracks.
7. Check condition of deco valve operating Bowden cable. Check condition of lock wire, fixing the Bowden outer to the thread of the adjustment screw (at Engine tower), see the working instruction on page 11-20. Check deco bridge and connection of bridge to deco valves for tight fit. Deco valves in position closed must seal completely (no audible hissing noise when turning engine by hand). For adjustment see section 1.9.7.
8. Check all engine nuts and bolts for tight fit using torque wrench. (For torque moments see section 1.9.8). When bolts secured with securing fluid (Loctite) can be moved, these must be secured again (see also section 4.16).

4.7 Dismounting and Installation of Engine

Tools: Ratchet, 8, 10, 17, 19 mm inserts,
12 mm hex head key, 19mm ring spanner

Easiest dismounting and installation of engine with wings not rigged. See also diagrams section 10. Disassembly of propeller not required.

4.7.1 **Dismounting of engine**

(1) Empty main and feeder tanks completely. To accomplish this, disconnect the fuel supply line from the mechanical fuel pump on the engine mount and hold the hose end in a fuel container with a capacity of at least 17 litres. Then activate the main switch and switch on the ignition to empty both fuel tanks via the electrical fuel pump. The remainder of the fuel may be dumped via the drainer valve.
(2) Extend engine completely, thereafter retract for about 5 degrees and switch master “OFF”.
(3) Disassemble FRP-yoke for engine bay doors, mark fitting position and remove from bay.
(4) Dismount fuel supply line from membrane pump at tower, close with appropriate bolt and secure with TyRap.
(5) Disconnect engine retard cable.
(6) Disconnect deco-propstop-cable from propstop lever, remove cable guide from engine tower.
Caution – avoid kinking Bowden cable inner and outer!
(7) Open electrical plug for ignition and proximity switch (6-polar plug at engine tower near mechanical fuel pump), disconnect fuselage side electrical harness from engine tower (remove TyRaps). Make sure not to loose the seal between both plug halves!
(8) Take position switch cables away from lift cylinder (remove TyRaps) and disconnect plug for position switches.
(9) Open plug for electrical supply of lift cylinder.

4.7 Dismounting and Installation of Engine (continued)

4.7.2 **Installation of engine** (continued)

(15) Position clamp with gas strut for propeller stopper, switch rod and limit switches on lift cylinder marking and check or adjust for the following conditions:
   a) Firstly position clamp vertically on lift cylinder and check propeller stopper function according to section 1.9.6. The clamp must not be rotated; check that gas strut ends are not tilted in bearings and swivel freely!
   b) Secondly check operating points of position switches at clamp: When the extend limit switch is operated by the cam block, adjustment values for lift cylinder gas strut and retard cable described in section 1.11.4 apply. If this is not the case, adjust cam block position on switch rod.

(16) Connect 6-pole plug for ignition and proximity switch and fix cables to fuselage at engine tower with Ty-Raps.

(17) Connect decompression Bowden cable to deco lever; assemble Bowden cable outer adjuster at engine tower. Secure the decompression valve control Bowden outer to the thread of the adjustment screw (at the engine tower), using lock wire, see the working instruction on page 11-20. Check for: With cockpit deco handle in “CLOSED” position, deco lever must not touch deco bridge (minimum gap 1 mm) and both deco valves must be closed (No hissing noise when turning propeller by hand). With cockpit deco handle pulled “OPEN”, both valves must be open and stay open even during engine extend-retract. If this is not the case, check and reroute cable.

(18) Connect fuel line to membrane pump at engine tower and secure with cable clamp. Fix fuel line at engine tower against chafing with Ty-Raps.

(19) Install FRP-yoke (use original, marked position).

4.8 Disassembly and Assembly of Main Tank

Main tank disassembly and assembly are possible only with wings not in place.

4.8.1 **Disassembly of main tank**

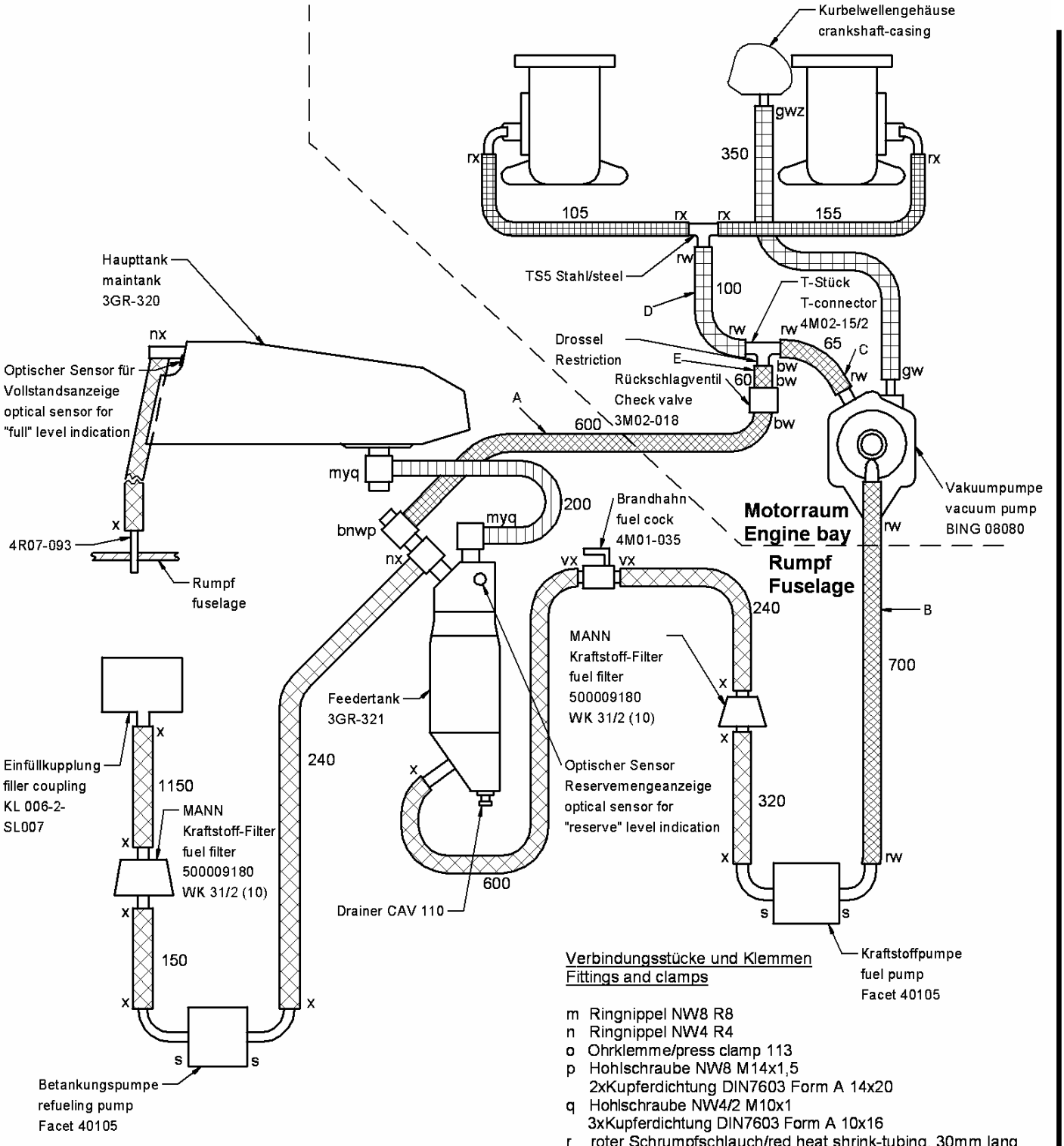
(1) Empty main and feeder tanks completely. To accomplish this, disconnect the fuel supply line from the mechanical fuel pump on the engine mount and hold the hose end in a fuel container with a capacity of at least 17 litres. Then activate the main switch and switch on the ignition to empty both fuel tanks via the electrical fuel pump. The remainder of the fuel may be dumped via the drainer valve.
(2) Remove rear baggage compartment cover.
(3) Open tube connection between both tanks at feeder tank by opening hollow bolt. Be prepared to collect residual fuel dripping out of tube. Close feeder tank opening using short piece of aluminium tube ø20x2x14 mm <◦ø0.787x0.079x0.551 in> instead of eye connector.
(4) Disconnect electrical plug of tank full sensor at tank front end.
(5) Disconnect ventilation tube at tank front end.
(6) Disconnect ground connection from main tank.
(7) Open forward tank fixture at main bulkhead.
(8) Take main tank out of fuselage to the front. Fix ground cable and ventilation tube on baggage compartment floor to avoid damage.
(9) Close main tank openings for storage to avoid foreign matter entering.

4.8.2 **Assembly of main tank**

Reverse steps as described under disassembly.

Especially check tightness of tank connection and ventilation tubes. If need be, use new copper sealing rings at eye connectors/hollow bolts. Check proper ground connection

Diagram 2: Fuel system up to serial no. L8526



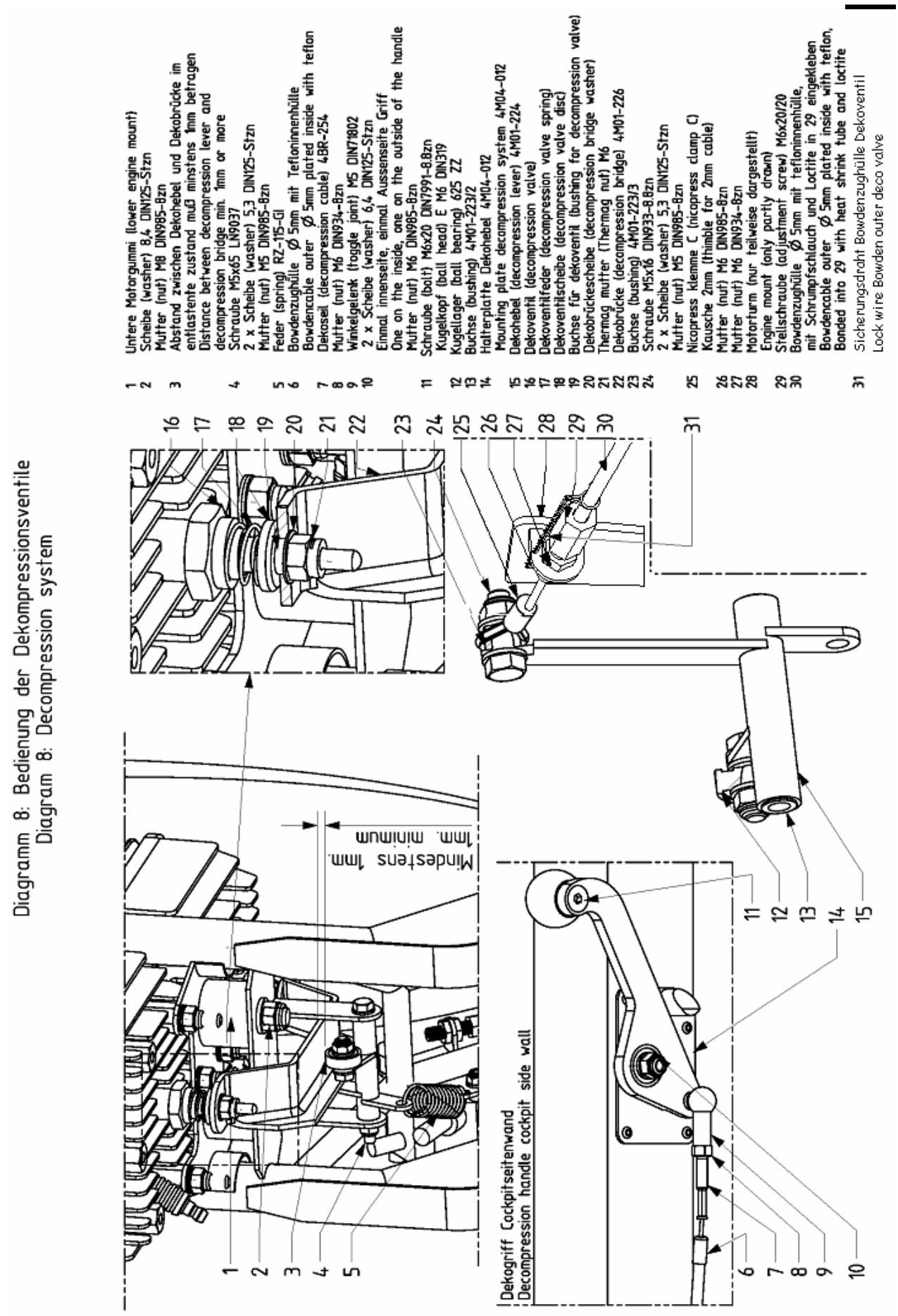
Verbindungsstücke und Klemmen
Fittings and clamps

m Ringnippel NW8 R8
n Ringnippel NW4 R4
o Ohrklemme/press clamp 113
p Hohlschraube NW8 M14x1,5
2xKupferdichtung DIN7603 Form A 14x20
q Hohlschraube NW4/2 M10x1
3xKupferdichtung DIN7603 Form A 10x16
r roter Schrumpfschlauch/red heat shrink-tubing, 30mm lang
g gelber Schrumpfschlauch/yellow heat shrink-tubing, 30mm lang
b blauer Schrumpfschlauch/blue heat shrink-tubing, 30mm lang
s Winkelstück/elbpw fitting WSAG 06 1/8" Messing/brass
u Einschraubnippel/nipple SAG 06/R 1/8"
v Einschraubnippel/nipple 1/4"
w Schlauchschelle/hose clamp S70/2
x Schlauchschelle/hose clamp S70/1
y Schlauchschelle/hose clamp S70/3
z Drahtsicherung (0,8mm Draht)/safety wire

Kraftstoffschläuche / fuel hoses

Alle PUR Schläuche hydrolyse und mikrobeständig
PUR 6x1,5x9mm Schlauch ohne Ummantelung/blank fuel hose
PUR 6x1,5x9mm mit Metallgeflecht überzogen/metal braided
Ø9,5 innen Textilgewebeschlauch/textile fabric fuel hose
PUR 5x1,5x8mm mit Metallgeflecht überzogen/metal braided
PUR 3x1,5x6mm mit Metallgeflecht überzogen/metal braided

Diagramm 8: Bedienung der Dekompressionsventile
Diagram 8: Decompression system



Equipment List 2 / 2

Serial No.:	Reg. Signs:	Year of Manuf.:

Equipment Engine System

	Type	Supplier	Serial No.	Position	Certificate	Function
Engine Tower Region						
Engine	Type 2350	SOLO		Tower		
Propeller	KS-1-G-079-L-050-W	Technoflug		Engine		
Carburettor		Tillotson	---	Engine		
Mech. Pump	80-203A	Bing	---	Tower		
Ignition Plug	W5AC / L82	Bosch / Champion	---	Engine		
Plug Cap	401 122 5 kΩ	PVL	---	Engine		
Fuel Lines	MT.PUR 786 5x1.5mm	DG	---	Translucent fuel Lines		
Tank Connec-tion Tube	Yarn shrouded fuel line Type B 9,0x3,0	DG	---	Betw.Tanks		
Fuel Lines	MT.PUR 786 3x1.5mm	DG	---	Translucent fuel Lines		
Fuel Lines	MT.PUR 786 6x1.5mm	DG	---	Translucent fuel Lines		
Metal braiding for fuel hose	Inside Ø 8 mm	DG	---	Fuel hose in engine bay		
Landing Gear Box Region						
Fuel Cock	373.01	Riegler	---	Right Shell	---	
El. Fuel Pump	Facet No. 40105	Facet		Feeder Tank	---	
El. Refuel. Pump	Facet No. 40105	Facet		Feeder Tank	---	
Drain Valve	CAV-110 1/8“	SAF-AIR	---	Feeder Tank	---	
Optical sensor	Sensortechnics	DG	---	Feeder Tank		
Optical sensor	Sensortechnics	DG	---	Main Tank		
Cockpit						
Press. switch Refuel. Pump	DJET-1XU	Dittel	---	Instr. Panel		
Pneumatic Switch	46.001	Kuhnke	---	Instr. Panel		

Place: _____ Date: _____ Stamp: _____ Signature: _____

Annual Inspection Checklist 4/4

Serial No.: | Reg. Signs: | Year of Manuf.:

	Propeller
	Technoflug KS-1-G-079-L-050-W
	S/N. _____
	Surface white
	Check for cracks:
	Single ones, cannot be felt, distance >5mm
	Spider webs, concentric, max.10mm Ø
	Surface dents, buckling <10mm
	Cracks/dents in erosion shield <5mm
	Erosion shield yellow - Exchange
	(Enter exchange into logbook)
	Lateral axle fixing
	Rubber locks for tilting
	Track, max. 5 mm allowed: _____
	Operating hours, 300 allowed according to TB P1 ( )
	Motor
	Solo 2350 **S/N**: _____
	Upper engine mount:
	Rubber mount height 27 ± 0,5 mm <1.063 ± 0,0197 in>
	Screwed connections / securing
	Deco-Valves: open – turning with little force
	Deco-Valves: closed – no hissing noise
	- Deco bridge gap to roller min. 1 mm
	Deco Bowden outer secured with lock wire at adjustment screw
	Deco bridge horizontally free movement
	Spark plugs condition, 0,5 mm electrode gap
	Pulling-off force of spark plug caps
	Ignition boxes
	Tank ventilation not clogged
	Fuel filter flow
	Drainer function
	Electrical pump function: Delivery rate: _____ Seconds per Litre (max.130)
	Re-fuelling pump function
	Fuel level sensors function Reserve/Full
	Fixing of cables and plugs against chafing
	Fixing of fuel lines
	Propeller stopper function
	Position switches function / fixing

	Motor (continued)
	Every 25h or 12 Months (whatever comes earlier):
	Fuel filter in pump - clean
	Check condition of fuel lines
	Exchange both fuel filters (paper filters)
	Electrical cables: Fixing, chafing
	Exhaust system: Fixing, cracks
	Disassemble DecoValves, clean, check wear
	Clean engine
	Special inspection at 200h or 5 years (whatever comes first) by manufact. / Repair shop
	Special inspection after forced stop by manufacturer / Repair shop
	Extend-Retract Mechanism
	Lift cylinder condition
	Connection lift cylinder-engine tower
	Gas strut condition
	Connection gas strut-engine tower
	Electrical cables: chafing, fixing
	Fixing of position switch clamp
	Engine Bay
	Engine tower attachment
	Retaining cable: condition, stop, retracting
	Retaining cable entering guide wire secured
	Doors: Condition, opener + bearings, closing
	Doors and yoke operating unobstructed
	Fixing of retract stop switch
	Heat resistant paint, drain orifice
	Both drain orifices free

Place: _____ Date: _____ Stamp: _____ Signature: _____

Working instruction for lock wire securing of the deco valve cable

1. Extend power plant, using manual switch (ignition off!).
2. Check the correct setting of the decompression valves and correct if necessary, see maintenance manual paragraph 1.9.7.
3. The decompression handle in the cockpit should be in the “closed” position.
4. The Bowden outer of the decompression control must be secured to the adjusting screw, using lock wire, see pictures below. This secures that the Bowden outer cannot slip out of the adjusting screw, during extension or retraction of the power plant. Hence this prevents jamming of the Bowden outer which may cause that the decompression valve don’tagain close.
5. Check again if the Bowden outer slips out of the adjustment screw during extension and retraction of the power plant.