Subject : Fuel hoses, new types, increase of life time

Effectivity : Type: DG-800, variants: DG-800A,LA, DG-800B
Type: DG-500, variants: DG-500M, DG-500MB
Type: DG single seaters, variants: DG-400, DG-600M

Accomplishment : Instruction 1: Inspection within 4 weeks after publication of this TN. Replacement of the fuel hoses if needed latest within 2 weeks after the inspection.

Instruction 2 and 3: Latest when the installed fuel hoses have reached their life time limit and must be exchanged.

Instruction 4: Annually after fuel hoses according to instructions 2 and 3 have reached a life time of 6 years resp. 3 years concerning the fuel hoses which are routed in front of the cylinder heads in variants DG-400 and DG-800A,LA.

Instruction 5: Prior to exchanging fuel hoses, latest February 28. 2017.

Reason :
1. During service and annual inspections DG found that some fuel hoses with textile fabric covering installed from beginning of the year 2015 became weak or untight with time. This type of fuel hoses is installed inside the fuselage, not in the engine area where hoses with metal fabric shields are used.
   Weak hoses may kink and limit the fuel supply rate.
2. Fuel hoses type DIN 73379-2A are of much better quality and easier to inspect as they have no lining. With this type of hoses DG has very good experience with the DG-1000M. When exchanging the textile fabric covered hoses against this type of hoses combined with periodically inspections the life time of the hoses may be increased to 10 years.
3. Problems as described under 1. have not been found with fuel hoses with metal fabric shield used in the engine area. However these hoses may be replaced by fire resistant fuel hoses ISO 7840-A1 without lining to increase the life time to 10 years similar to item 2.

Instructions :
1. Inspection of the fuel hoses in the fuselage if installed from beginning of 2015 on. To accomplish this baggage compartment floors and rear wall must be removed.
   Check for kinked fuel hoses and wet fabric covering of the hoses. If one or both of these failures are found all fuel hoses with textile fabric covering must be replaced.
2. Replace all fuel hoses in the fuselage by fuel hoses DIN 73379-2A according to the fuel system diagrams issued with this TN. If there are any plastic hose connectors replace them by metal hose connectors as given in the diagrams. Life time of these hoses may be increased to 10 years, see instruction 4.
   DG-500M, DG-500MB, DG-600M and DG-800A,LA, DG-800B up to serial No. 8-102: Replace the 6mm fitting at the inlet of the electrical fuel pump by an 8mm fitting SAG08/R 1/8" MS.
   DG-800B with permanently installed refuelling pump and fuel return line: Replace further fuel lines and hose connectors according to installation plan 8EP29 (attached to the MM) in addition to the above mentioned diagrams.
3. Replace all fuel hoses at the engine by fire resistant fuel hoses ISO 7840-A1 according to the fuel system diagrams issued with this TN. If there are any plastic hose connectors replace them by metal hose connectors as given in the diagrams. Life time may be increased to 10 years, see instruction 4.
   DG-800B: For installation of these hoses see working instruction No. 1 for TN 800-44 in addition to the manual diagrams.
   DG-800B and DG-500M: Enlarge the holes for the fuel hoses in the fire wall to dia. 19 mm. Install rubber sleeves DG part No. 60510523 in the holes.
   Note for instruction 2 and 3: Any springs which may have been installed to prevent kinking of the hoses are no more necessary.

4. Increase life time of fuel hoses according to instructions 2 and 3 to 10 years. Change the "Summary of operating hours" of your motorglider accordingly. Inspect thoroughly and completely all fuel hoses visually for any damage especially fissures, kinks or leaks after the fuel hoses have reached a life time of 6 years resp. 3 years concerning the fuel hoses which are routed in front of the cylinder heads in variants DG-400 and DG-800A,LA. For the check switch on the ignition to run the electric fuel pump to demonstrate operating fuel pressure. Repeat this inspection every following year.
5. Exchange the following manual pages against new pages issued October 2016 marked with TN800/44, 500/10 resp. DG-SS-02. Respect the changes marked in the right hand margin.
   MM DG-800 (for DG-800A,LA): 0.1, 0.3 – 0.6, 0.8, 0.11, 3.4, 3.7, 3.8, 8.2, diagram 11
   MM DG-800B (Solo engine): 0.1, 0.3 - 0.7, 0.12, 0.13, 3.6, 3.10, 8.2, 8.3, diagrams 11, 11a, 11b, 11d, 8EP29 (file behind 8EP25), working instruction No. 1 for TN 800/44 (file at the end of the MM)
   MMDG-800B (MW engine): 1 - 5, 43, 44, 47, 92, diagram 11
   MM DG-500M: 0.1, 0.3, 0.4, 0.6, 0.10, 0.11, 3.4, 3.6, 3.9, diagram 14
   MM DG-500MB: 0, 1a, 2 - 5, 48, 52, 92, diagram 14
   MM DG-400: 0.1, 0.3 – 0.6, 0.9, 0.12, 3.3, 3.6, 3.7, 8.2, diagram 8, delete diagram 8a
   MM DG-600M: 0.1, 0.3 – 0.6, 0.11, 3.4, 3.7, 8.2, diagram 11

Material : Manual pages see instruction 5

Fuel hoses and hose clamps as given in the respective fuel system diagrams. Material sets see MM section 8.

In addition if necessary: Metal hose connectors to replace plastic hose connectors as given in the respective fuel system diagrams:

GS6 St	DG part No. 60000220
GRS 8-6 St	DG part No. 60000221
TS6 St	DG part No. 60000222
TRS 8-6-8 St	DG part No. 60000225
TSV8 St	DG part No. 60000226
Nipple SAG08/R 1/8" MS	DG part No. 60507563

DG-800B and DG-500M: 2 rubber sleeves DG part No. 60510523

DG-800B with permanently installed refuelling pump and fuel return line:
TRS 6-8-6 St DG part No. 60507566

Weight and balance : influence negligible

Remarks : Instructions No. 1 and 5 may be executed by the pilot/owner himself.
The correct implementation of instructions xxxx is to be inspected and entered in the aircraft logs by the pilot/owner.

Instruction No. 2, 3 and 4:

1. EASA countries: The actions have to be performed according to the regulations of the Part M in an approved maintenance organisation and released according to M.A.801.
2. Non EASA countries: The actions have to be performed in a licensed workshop. All instructions are to be inspected and entered in the aircraft logs by a licensed inspector.

Bruchsal, date:
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Author:

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under Approval No. 10060297

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