PT. SMART CAKRAWALA AVIATION

WORK ORDER

Form: SCA/MTC/030

Subject : **ASB EC130-05A040**	No.	WO/067-PK-SNX/V/2023
	Date	29-May-2023
	A/C Reg.	PK-SNX EC130T2-8829
Reference : ASB No. EC130-05A040 Rev. 0	Prepared By	TS
	Checked By	CI
	Approved By	TM

To : Engineer In Charge

Description :

1. Perform ASB EC130-05A040 due at : not more than 1160:14 FH
2. Make an entry in Maintenance Log.
3. Return the Completed Work Order and Form to PPC.

#If any finding, please close the routine card, and transferred to inspection card.

Additional Work :

Compliance Statement	Sign & Date Company Lic. No.: (Engineer In Charge)	Signature (Technical Manager)

AIRCRAFT CHECK WORK SUMMARY
(Form: SCA/MTC/051)

DATE OF ISSUED	JO/WO #	TYPE OF MAINTENANCE	DATE OF ACCOMPLISHED
29 May 2023	WO/067-PK-SNX/V/2023	ASB	

A/C Type	Mfg. Serial Number	A/C Registration
EC130T2	8829	PK-SNX

AIRCRAFT DATA

Subject	Pos #	Serial Number (SN)	TTSN/TCSN
Engine	#1	53467	
	#2	-	
Propeller/Rotor	#1		
	#2	-	
Landing Gear	NLG		
	LH MLG		
	RH MLG		

PACKAGE COVERED

No	Subject	Qty	Remark
1	Non-Routine Card	-	
2	Inspection Card	-	
3	Work Order	1	
4	Summary Inspection List	1	
5	Material and Tool List	-	
6	Escalation form	-	
7	CRS (SMI / Unscheduled Maintenance)	1	

INSPECTION CARD (IC) LIST (Finding during maintenance)

No	Taskcard Ref	Subject	Status		Name/ Sign & Stamp
			Open	Close	
IC-001					
IC-002					
IC-003					
IC-004					
IC-005					
IC-006					

IC-007					
IC-008					
IC-009					
IC-010					
IC-011					
IC-012					
IC-013					
IC-014					
IC-015					

Prepared by :	Checked by :	Verified by :	Approved by :
Technical Support	Chief Maintenance	Chief Inspector	Technical Manager
			
.....	.....	.....	.....
Hani	Dodit	Yanuar	Istiono

SUMMARY INSPECTION ITEMS
(Form: SCA/MTC/050)

WO Ref: WO/066-SNX/V/2023

NO.	TASK CARD NO.	DESCRIPTION	DATE	EST MHR	NAME	STAMP
1	EI-019	ASB EC130-05A040				

smartaviation	**INSPECTION CARD** **(Form: SCA/MTC/ 048)**	TECHNICAL DEPARTMENT

1. CARD #	2. JO/WO #	3. ORIGINATOR	4. CARD REF	5. DATE
6. A/C REG/MSN	7. A/C TYPE	8. TRADE	12. VENDOR ORDER #	
9. ZONE	10. STA	11. MTC TYPE		

13. DESCRIPTION/DEFECT-IF FINDING OF CPCP INSPECTION, PLEASE COMPLETE SET. 20	14 PPC/ENG	15 DATE

16. CORRECTIVE ACTION		17 MECH	18 ENG. LIC	19 DATE
Performed at A/C TT : ..... A/C TC /LDG :				
20. CORROSION INFORMATION				
LOCATION	CAUSE OF DAMAGE			
	☐ Environment			
	☐ Internal Leakage			
CORROSION ☐ Isolated ☐ Widespread	☐ Chemical Spill			
CORROSION LVL ☐ 1 ☐ 2 ☐ 3	☐ LAV/Galley Spill			
PROPOSED ACTION ☐ Doublers	☐ Blocked Drain			
☐ Others	☐ Wet Insulation Blanket			
.....	☐ Other			
21. If the defect is RII, Please Sign this card finally by RII Inspector			INSP	DATE
NOTICE OF INSPECTOR				

22. PARTS REQUIRED						
PART DESCRIPTION	PART NO	QTY	SERIAL NO		STATUS	
			ON	OFF	CLOSE	OPEN

23. TOOLS REQUIRED			
DESCRIPTION	PART NO. / MODEL	NEXT CALIBRATION DATE	STATUS

PT. SMART CAKRAWALA AVIATION

CERTIFICATE RETURN TO SERVICE

SCHEDULED MAINTENANCE INSPECTION
(CRS-SMI)

A/C TYPE	: EC 130 T2	TTSN	:
A/C REG	: PK-SNX	TCSN	:
MSN	: 8829	DATE	:

TYPE OF INSPECTION : ALERT SERVICE BULLETIN
DUE AT : 1160:14 FH
REFF : ASB No. EC130-05A040 Rev. 0

EXCEPTION

AUTHORIZED PERSON

I hereby certify that this aircraft has been maintained accordance with CASR and Maintenance Program. Aircraft safe and airworthy for flight

NAME	CAT	AMEL/OTR NO	SIGN&STAMP	DATE
	AIRFRAME & POWER PLANT			
	EIRA			

THE NEXT DUE TYPE OF INSPECTION :

DUE AT :

Form: SCA/MTC/049

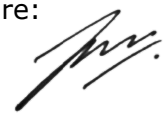
ENGINEERING INSTRUCTION

019/TEK-TS/V/2023

Alert Service Bulletin (ASB) EC130-05A040

TIME LIMITS - MAINTENANCE CHECKS - Main rotor drive
Check of the Main Gear Box (MGB) bevel wheel

PT. SMART CAKRAWALA AVIATION

Prepared	Checked	Approved
Technical Support	**Technical Manager**	**Chief Inspector**
Signature: 	Signature: 	Signature: 
Name: Dwi M	Name: Istiono	Name: Yanuar A. F.
Date: 29 May 2023	Date: 29 May 2023	Date: 29 May 2023

SMART AVIATION
ENGINEERING INSTRUCTION

Aircraft Reg.:	Make/Model:	No. EI:	Rev. No. :
PK-SNX (8829)	**EC130T2**	**019/TEK-TS/V/2023**	**Original**
Total Flight Hours:	Total Flight Cycle:	Date Issued : **29 May 2023**	

Task Description :

The ALERT SERVICE BULLETIN includes the work steps that follow:

- **Do a visual inspection of the MGB bevel wheel with a boroscope.**
- **Make sure that there are no particles on the MGB bevel wheel.**
- **If necessary, collect the particles on the MGB bevel wheel with a vacuum pump.**
- **Analyze the results, refer to the flow chart.**

Technical Data Reference :

ASB No. EC130-05A040

Effectivity :

Airbus EC130T2 (PK-SNX)
Helicopters EC130 version T2 and B4 that have MGB planet gears bearing MP/N 350A32-1082-03 or MP/N 350A32-1114-00.

SMART AVIATION
ENGINEERING INSTRUCTION

1. Description.

The purpose of this ALERT SERVICE BULLETIN is to improve the detection of particles in the MGB by introduction of a periodic visual inspection of the bevel wheel or in case of particles detection during scheduled check of the Magnetic Plugs (MP) of the MGB.

The effectivity of this ASB is MGB that have planet gears bearing MP/N 350A32-1082-03 or MP/N 350A32-1114-00.

Airbus Helicopters is proactively reassessing its maintenance policy with respect to particle detection in MGBs for its entire product range. These analyses have been expanded to include the MGB of the Ecureuil family.

As a precautionary measure and to enhance safety of the product, the purpose of this ALERT SERVICE BULLETIN is to improve the detection of particles in the MGB by introduction of a periodic visual inspection of the bevel wheel or in case of particles detection during scheduled check of the Magnetic Plugs (MP) of the MGB.

The ALERT SERVICE BULLETIN includes the work steps that follow:
- Do a visual inspection of the MGB bevel wheel with a boroscope.
- Make sure that there are no particles on the MGB bevel wheel.
- If necessary, collect the particles on the MGB bevel wheel with a vacuum pump.
- Analyze the results, refer to the flow chart.

2. Aircraft Effectivity.

REGISTRATION	SERIAL NUMBER
PK-SNX	8829

DISTRIBUTION :

TECHNICAL MANAGER	[√]	MATERIAL SUPPORT	[√]
SAFETY & QUALITY MANAGER	[√]	TECHNICAL SUPPORT	[√]
CHIEF INSPECTOR	[√]	FILE	[√]

SMART AVIATION
ENGINEERING INSTRUCTION

3. Compliance.

The operator must do the work on the helicopter Not more than 330 FH after you received this ALERT SERVICE BULLETIN. (25 Jan 2023) or in case of particles characterized as scale, flake or splinter found on a MGB magnetic plug during compliance with Task 60-00-00,6-2A (AMM).

Non-installed equipment or parts:

For non-installed MGB or when you install a MGB on helicopter:

- If the MGB is more or equal to 330 FH since the last Time Since Overhaul (TSO) and since Time since New (TSN) and since last boroscopic inspection of the bevel wheel:
  - · Comply with paragraph 3. before installation of the MGB on the helicopter.
- If the MGB is less than 330 FH since the last Time Since Overhaul (TSO) or since Time since New (TSN) or since last boroscopic inspection of the bevel wheel:
  - · No action is required immediately.
  - · After you install the MGB on the helicopter:
    .. Comply with paragraph 3. before you reach 330 FH.
    Then,
    .. Refer to table No.1 for periodicity (installed equipment or parts).

4. Material.

Material

Key Word (Qty)	CM	P/N
Cleaning agent (1 L)	CM 296	Commercial P/N
Oil (0.3 L)	CM 125	ECS2199.10

Special Tools

Key Word	P/N	Item
Boroscope	Olympus Iplex rx/rt type iv9420RX or equivalent	zz
Magnet	Commercial P/N	yy
8L pneumatic oil extractor vacuum pump	GEPCO 8L Air Powered Oil Removing & Filling Tool for Cars transmissions ref. AT0754 or equivalent	xx
Tank	Vacuum pump sub-assembly	xx1
Top	Vacuum pump sub-assembly	xx2
Flexible hose	Vacuum pump sub-assembly	xx3
Semi rigid hose	Vacuum pump sub-assembly	xx4
Pistol grip	Vacuum pump sub-assembly	xx5

Connection	Vacuum pump sub-assembly	xx6
Safety valve	Vacuum pump sub-assembly	xx7
Connection	Vacuum pump sub-assembly	xx8
Connection	Vacuum pump sub-assembly	xx9
Connection	Vacuum pump sub-assembly	xx10
Syringe	Commercial P/N	xw
Container of light color	Commercial P/N	vv
Transparent adhesive tape and transparent support sheet	KA0225-3	uu

5. Publications Affected.

None.

6. Accomplishment Instructions.

Description	Eng.	RII	Remarks
3.B.1. Preliminary steps			
Disconnect all the electrical power supplies refer to the Work Card 20-07-03-406 (MTC).			
Install the access equipment.			
Remove and/or open all cowlings, panels, doors and all equipment items to enable adequate access to the various work areas.			
3.B.2. Visual inspection of the bevel wheel (Figure 1 and Figure 2)			
CAUTION COMPLY WITH THIS PARAGRAPH AT ROOM TEMPERATURE.			
Open the filler plug (a1) of the MGB (a).			

SMART AVIATION
ENGINEERING INSTRUCTION

Remove the strainer (a2).			
Position the boroscope (zz) above the bevel wheel (a3) without contact with oil.			

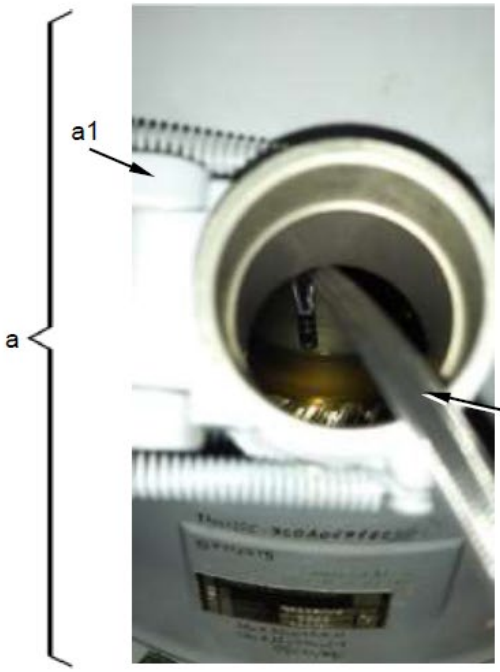


Figure 1

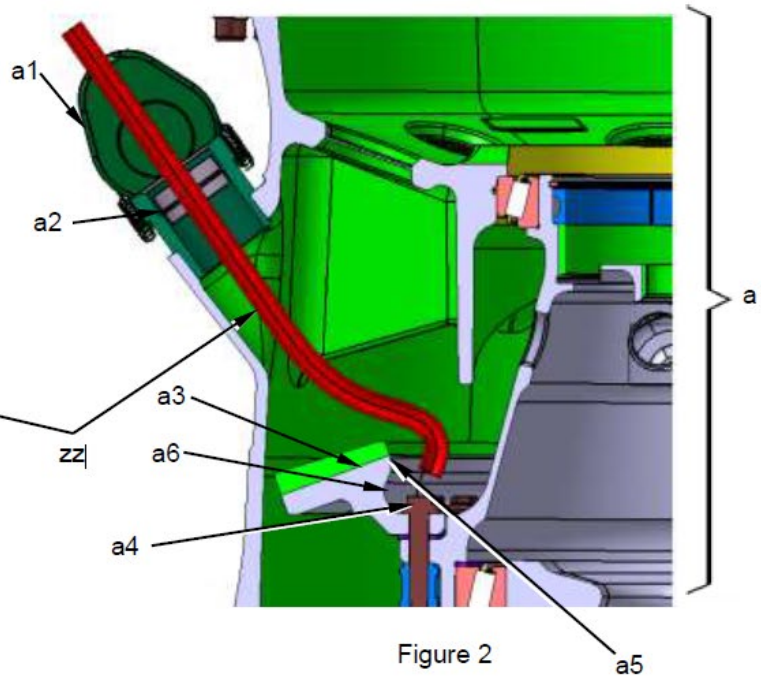


Figure 2

CAUTION

TURN THE TAIL ROTOR SLOWLY TO DO THE VISUAL INSPECTION WITH THE BOROSCOPE (zz).

If the MGB is installed on the helicopter: Turn the main rotor (c) (not shown) clockwise slowly 2 times minimum with the tail rotor (b) (not shown).			
If the MGB is not installed on the helicopter or when you install a MGB on helicopter: Turn the MGB engine input flange (d) (not shown) clockwise slowly 12 times minimum with the hand.			

SMART AVIATION
ENGINEERING INSTRUCTION

NOTE 1

Do the visual inspection with 2 mechanical technicians (or 1 mechanical technician and 1 crew member), one to inspect with the boroscope (zz) and one to turn the tail rotor (b) or MGB engine input flange (d).

NOTE 2

If the bottom of the radius (a6) of the bevel wheel (a3) and/or head screws (a4) (see Figure 2) are not clearly visible, contact Airbus Helicopters for further instructions to the address that follow:
https://airbusworld.helicopters.airbus.com

Make sure that there is no particle on the bevel wheel (a3) (Figure 3 and Figure 4).			

Figure 3

SMART AVIATION
ENGINEERING INSTRUCTION

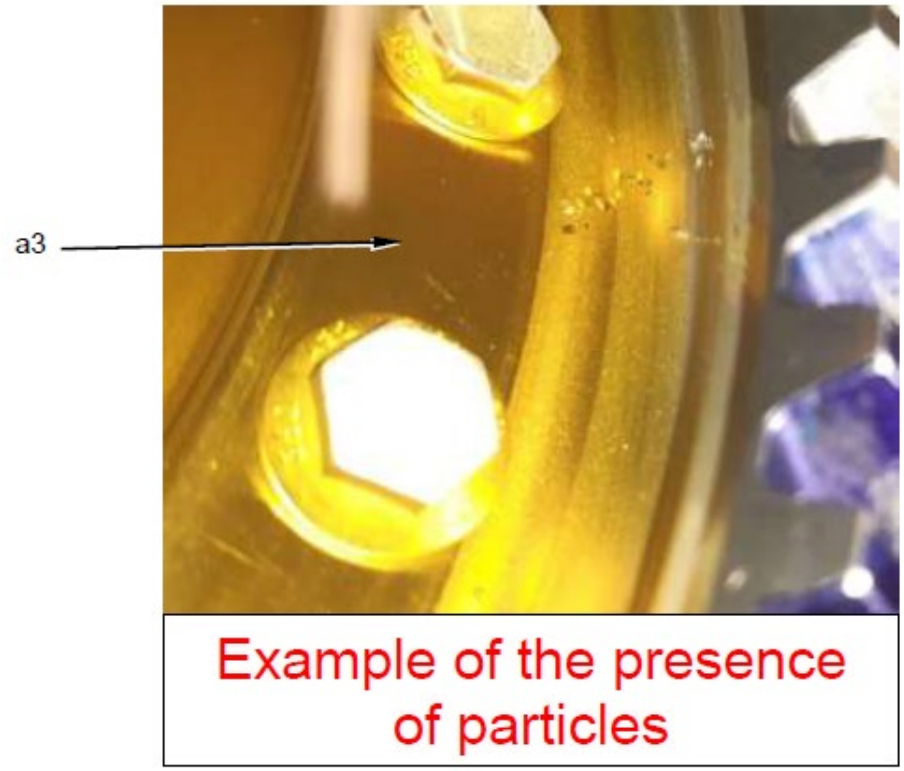


Figure 4

CAUTION

MAKE SURE YOU DO NOT LEAVE ANYTHING INSIDE THE MGB (a).

NOTE 3

Examine precisely the specific area of the radius (a6) under the teeth (a5) of the bevel wheel (a3) (Figure 2).

If there is no particle on the bevel wheel (a3): - Remove the boroscope (zz). - Install the strainer (a2). - Close the filler plug (a1) of the MGB (a). - Comply with paragraph 3.B.5.			
If there are particles on the bevel wheel (a3): - Comply to paragraph 3.B.3.			

SMART AVIATION
ENGINEERING INSTRUCTION

3.B.3. Collect of the particles on the bevel wheel

CAUTION
COMPLY WITH THIS PARAGRAPH AT ROOM TEMPERATURE.

Cut the semi rigid hose (xx4) of the vacuum pump (xx) to a length of 400 mm (15.74 in) (Figures 5 and 6).			

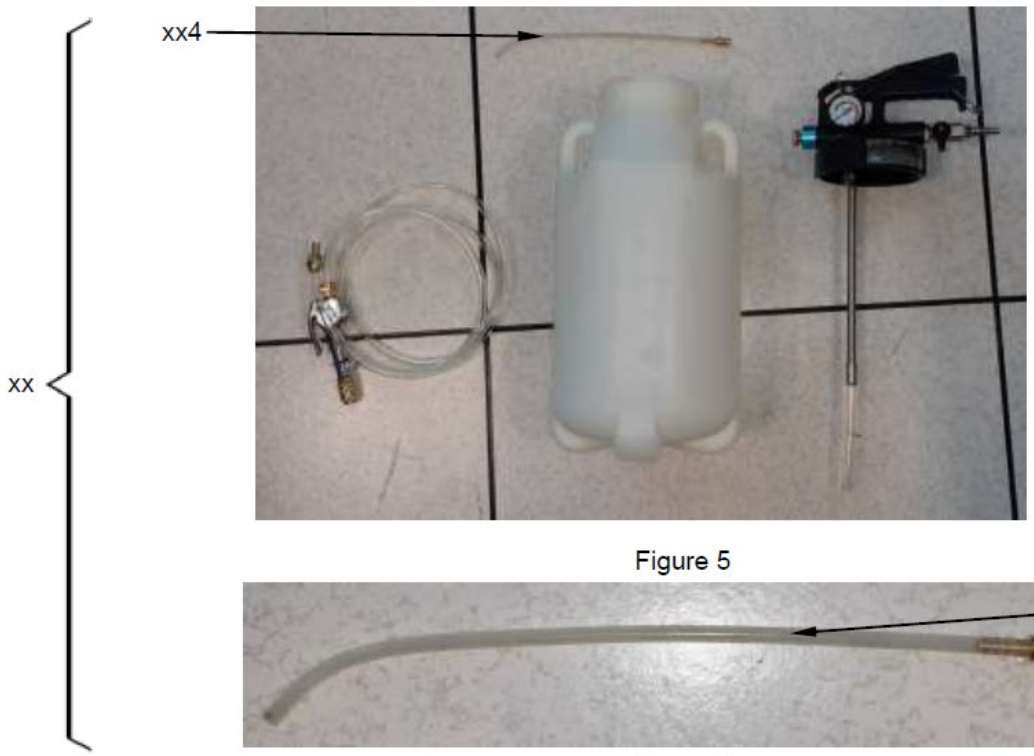


Figure 5

Figure 6

Make a 45 degree angle with the semi rigid hose (xx4) of the vacuum pump (xx) (Figure 7).			

SMART AVIATION
ENGINEERING INSTRUCTION

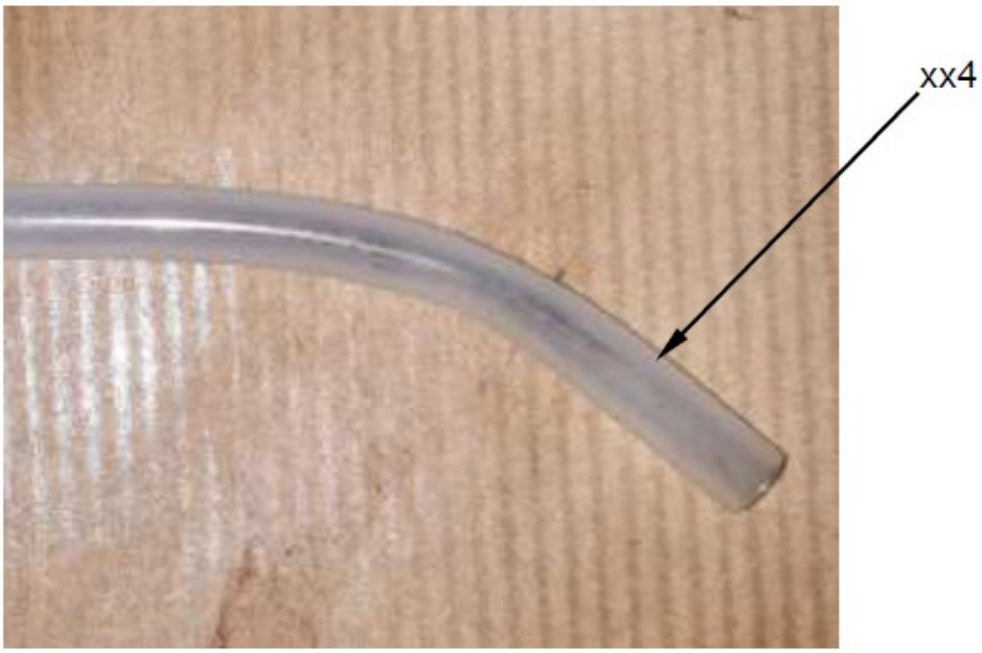


Figure 7

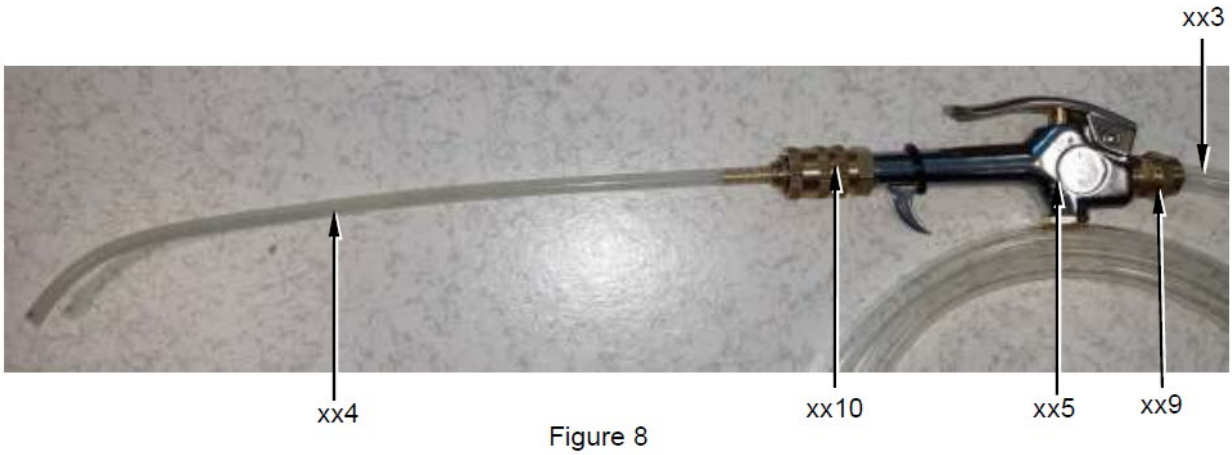


Figure 8

To limit the risk of particles blocked in the pistol grip (xx5), disconnect (Figure 8): - The pistol grip (xx5). - The connection (xx10). - The connection (xx9).			
Connect directly the rigid hose (xx4) in the flexible hose (xx3) (Figure 9).			

SMART AVIATION
ENGINEERING INSTRUCTION

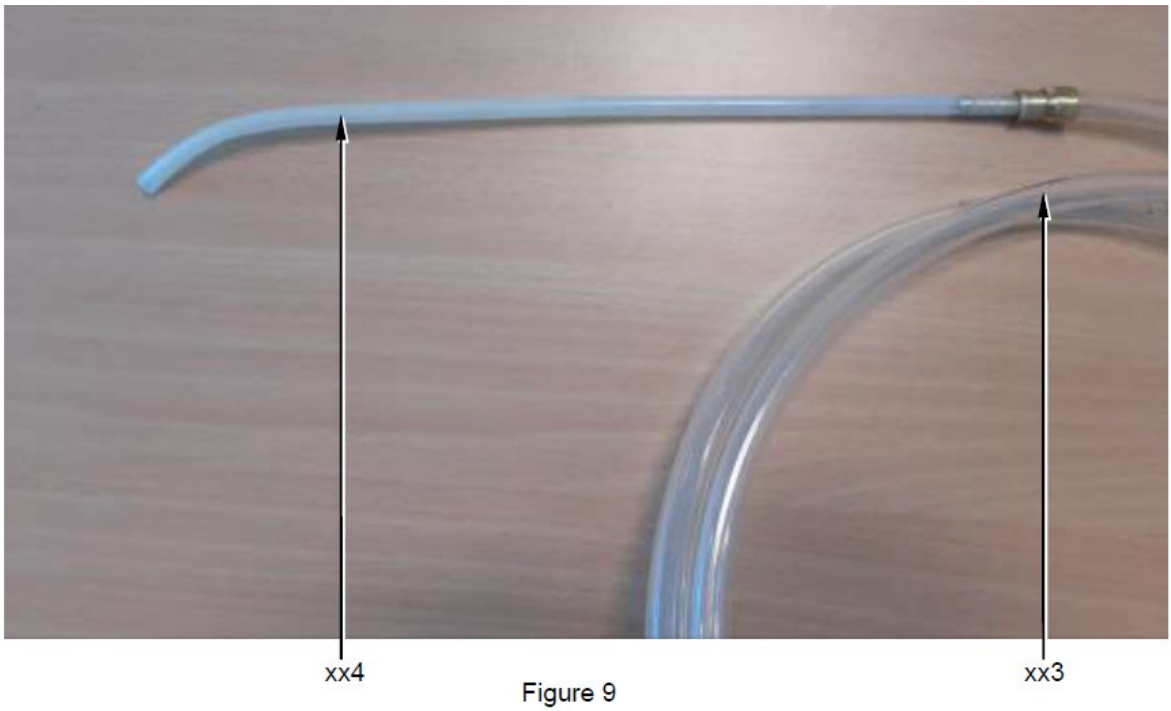


Figure 9

Position the boroscope (zz) above the bevel wheel (a3) without contact with oil (Figure 10).			

SMART AVIATION
ENGINEERING INSTRUCTION

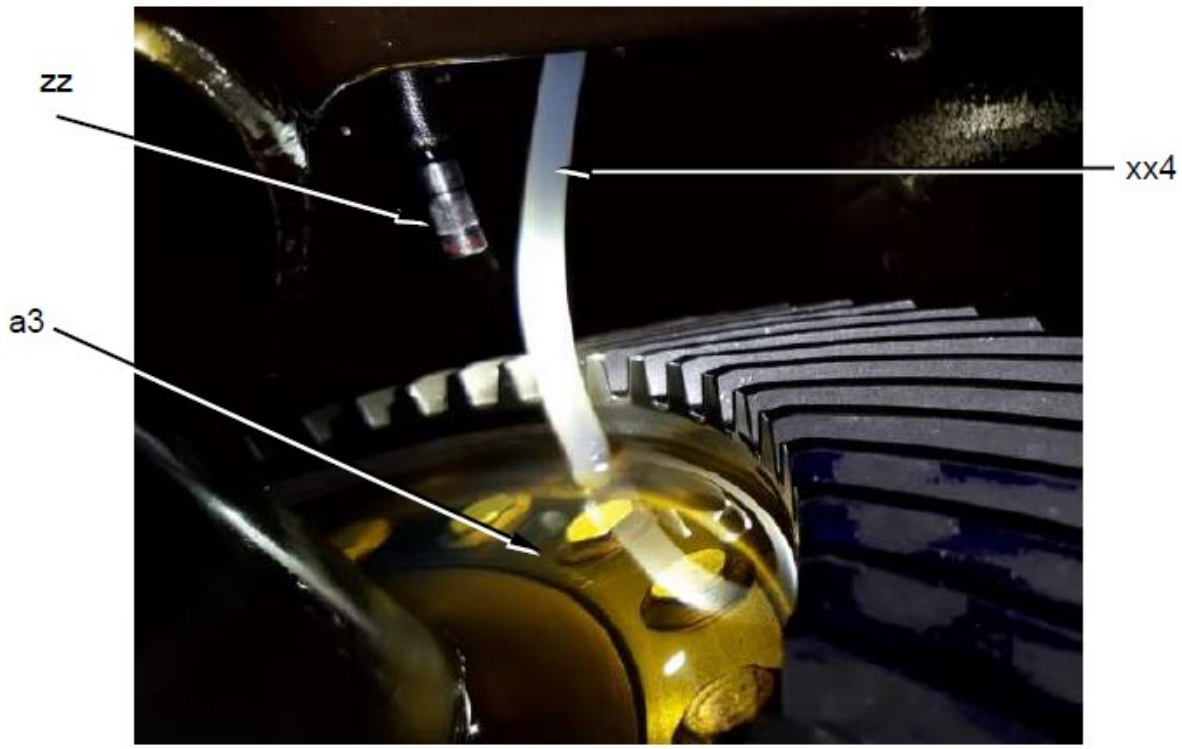


Figure 10

Connect the vacuum pump (xx) to a source of compressed air (not shown).			
Put the vacuum pump (xx) in suction mode (Figure 11).			

NOTE 4

If another vacuum pump is used as an alternative to vacuum pump (xx), adapt the procedure of this paragraph.

SMART AVIATION
ENGINEERING INSTRUCTION

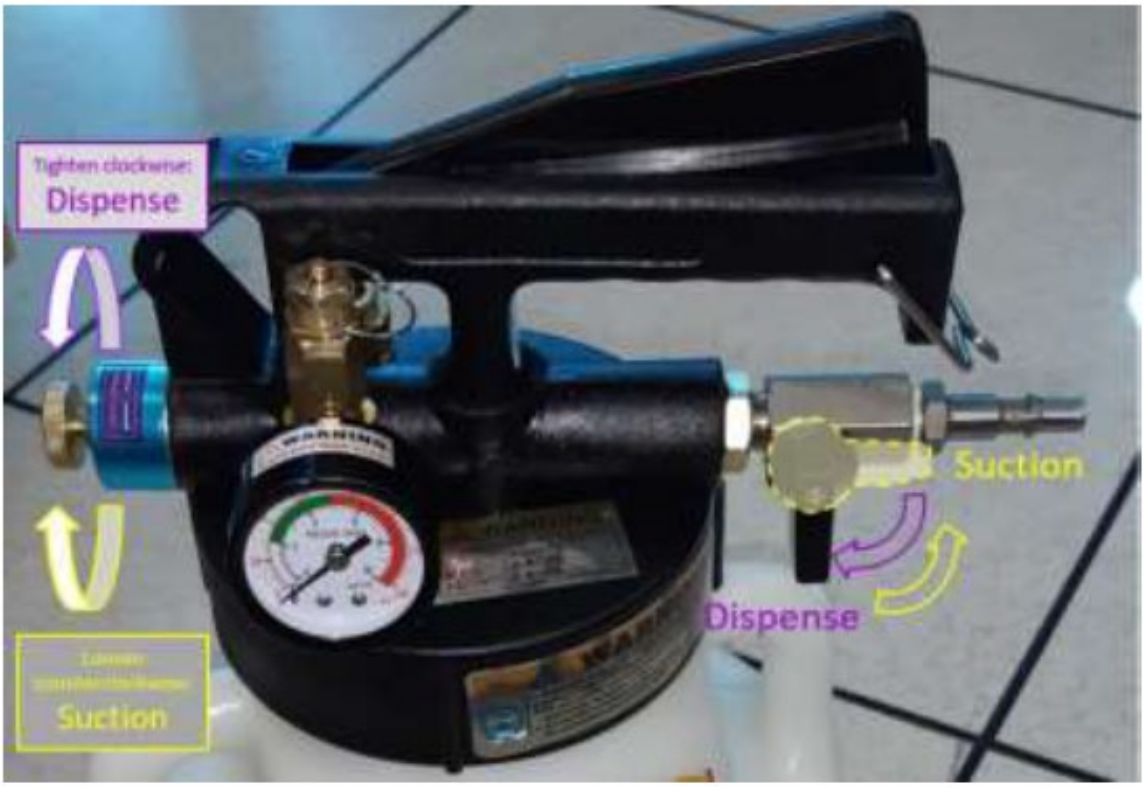


Figure 11

Position the semi rigid hose (xx4) of the vacuum pump (xx) on the bevel wheel (a3) (Figures 10 and 12)			

SMART AVIATION
ENGINEERING INSTRUCTION

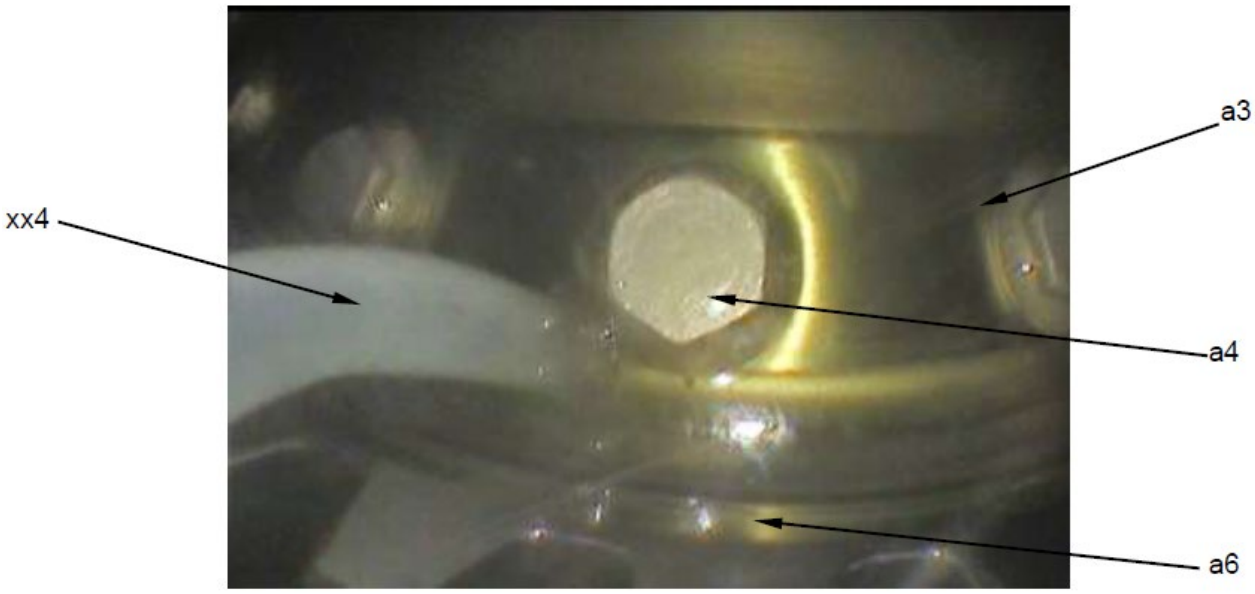


Figure 12

Refer to Figures 2 and 13:

- If the MGB is installed on the helicopter:
  Turn the main rotor (c) (not shown) clockwise slowly 2 times minimum with the tail rotor (b) (not shown).
- If the MGB is not installed on the helicopter or when you install a MGB on helicopter:
  Turn the MGB engine input flange (d) (not shown) clockwise slowly 12 times minimum with the hand.
- Use suction while oil is present or particles visible:
  . Around the heads of the screws (a4).
  . In the radius (a6) under the teeth (a5) of the bevel wheel (a3).

SMART AVIATION
ENGINEERING INSTRUCTION

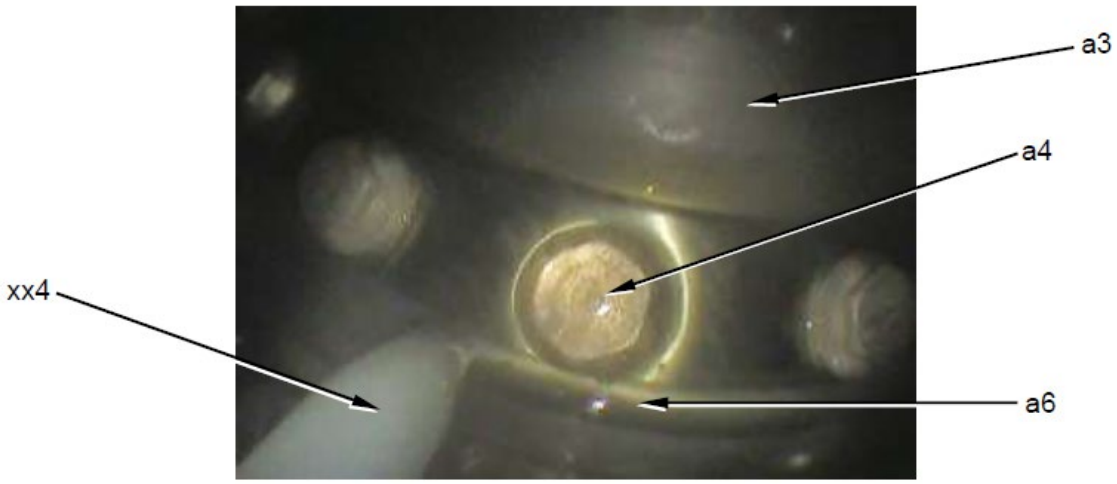


Figure 13

NOTE 5

Examine precisely the specific area of the radius (a6) under the teeth (a5) of the bevel wheel (a3) (Figure 13).

CAUTION

MAKE SURE YOU DO NOT LEAVE ANYTHING INSIDE THE MGB (a).

Remove the semi rigid hose (xx4) from the MGB (a).			
Install the strainer (a2).			
Close the filler plug (a1) of the MGB (a).			
To drain particles stuck: Do the suction of 0.3 L minimum of new oil (2) with the vacuum pump (xx)			
Disconnect the vacuum pump (xx) from the source of compressed air (not shown).			

SMART AVIATION
ENGINEERING INSTRUCTION

Make sure that there is no remaining pressure with the safety valve (xx7) of the vacuum pump (xx) (Figure 14).			

Figure 14

Figure 15

Disconnect (Figures 15 and 16): The flexible hose (xx3) from the connection (xx6) of the vacuum pump (xx)			

SMART AVIATION
ENGINEERING INSTRUCTION

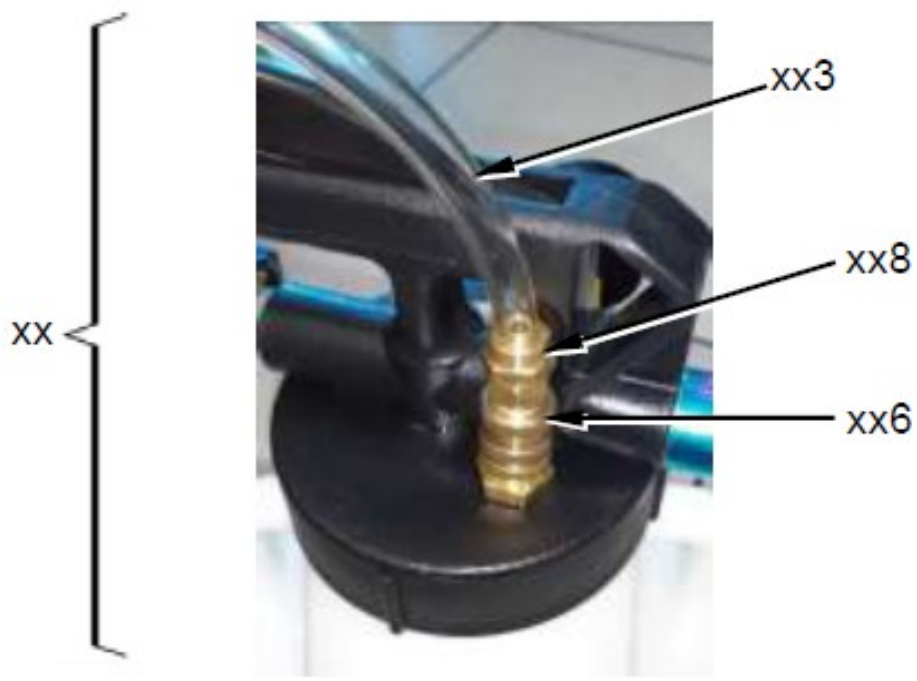


Figure 16

The flexible hose (xx3) from the rigid hose (xx4).			
And the connection (xx8) from the flexible hose (xx3).			
CAUTION A LARGE QUANTITY OF PARTICLES CAN STAY IN THE DIFFERENT PARTS OF THE TOOL (xx), DRAIN THE DIFFERENT PARTS OF THE TOOL (xx) CAREFULLY.			
Opposite to the suction direction of the vacuum pump (xx), flush with the syringe (ww) and cleaning agent (1) to collect particles which possibly stay inside: • The flexible hose (xx3). • And the semi rigid hose (xx4).			

SMART AVIATION
ENGINEERING INSTRUCTION

Collect the oil and cleaning agent (1) from the semi rigid hose (xx4) and the flexible hose (xx3) in a clean container of light color (vv) and appropriate capacity (Figure 20).			
Tap lightly the connection (xx10) above the container of light color (vv) to collect particles which possibly stayed inside.			
Refer to Figure 15 and disconnect the top (xx2) of the vacuum pump (xx) from its tank (xx1).			
Connect the semi rigid hose (xx4) on the connection (xx6) of top (xx2) of the vacuum pump (xx) (Figure 17).			

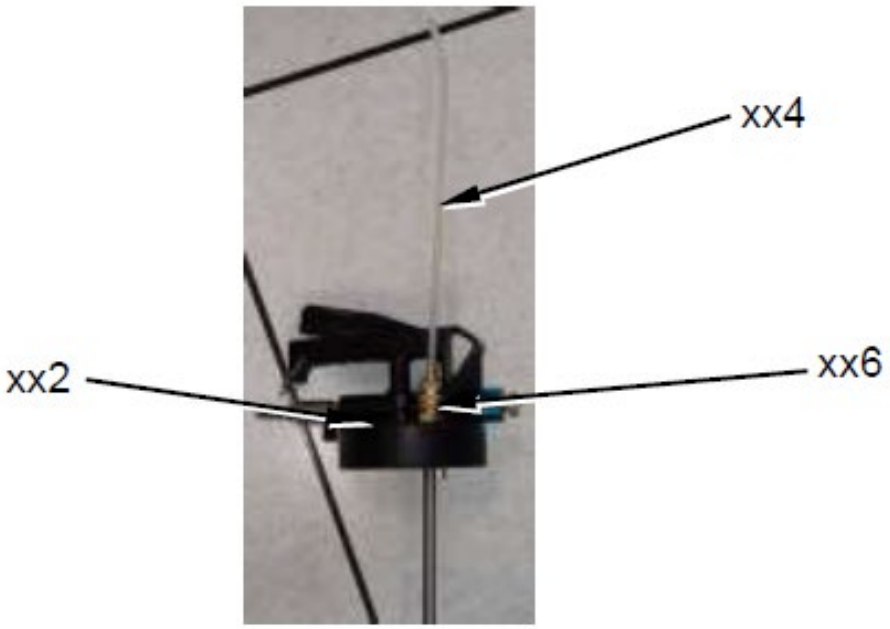


Figure 17

Flush with the syringe (ww) and cleaning agent (1) to collect particles which possibly remained inside the connection (xx6) in the container (vv).			

SMART AVIATION
ENGINEERING INSTRUCTION

Collect all the particles with the magnet (yy) (Figure 18, Figure 19 and Figure 20) in: • The tank (xx1) of the vacuum pump (xx) • The container (vv).			
Make sure that all the particles are collected in the tank (xx1) of the vacuum pump (xx) and in the container (vv).			
Collect the particles with the transparent adhesive tape and transparent support sheet (uu) (not shown), refer to paragraph 3.B.4.			

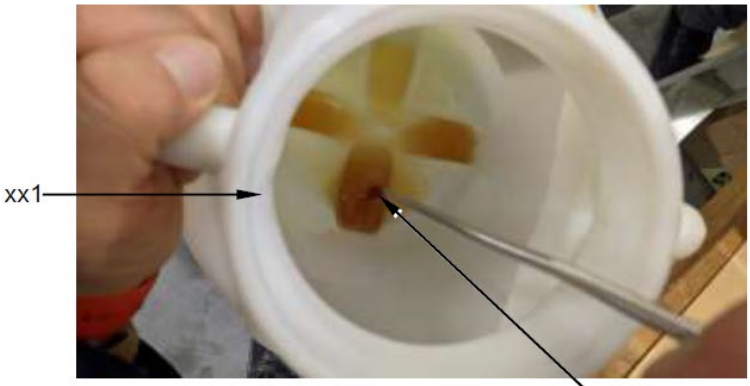


Figure 18

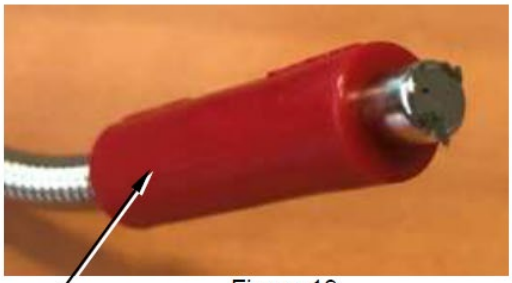
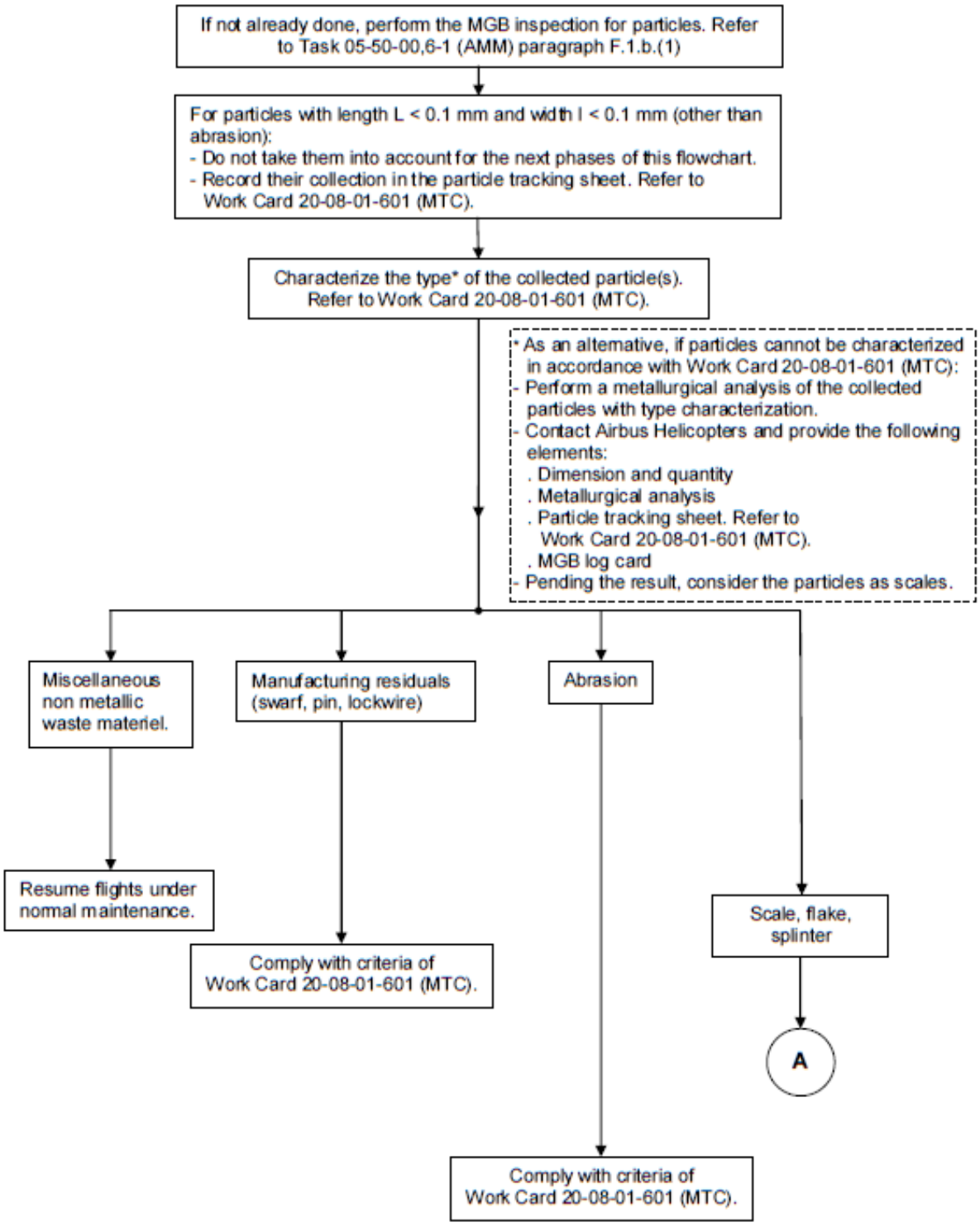


Figure 19

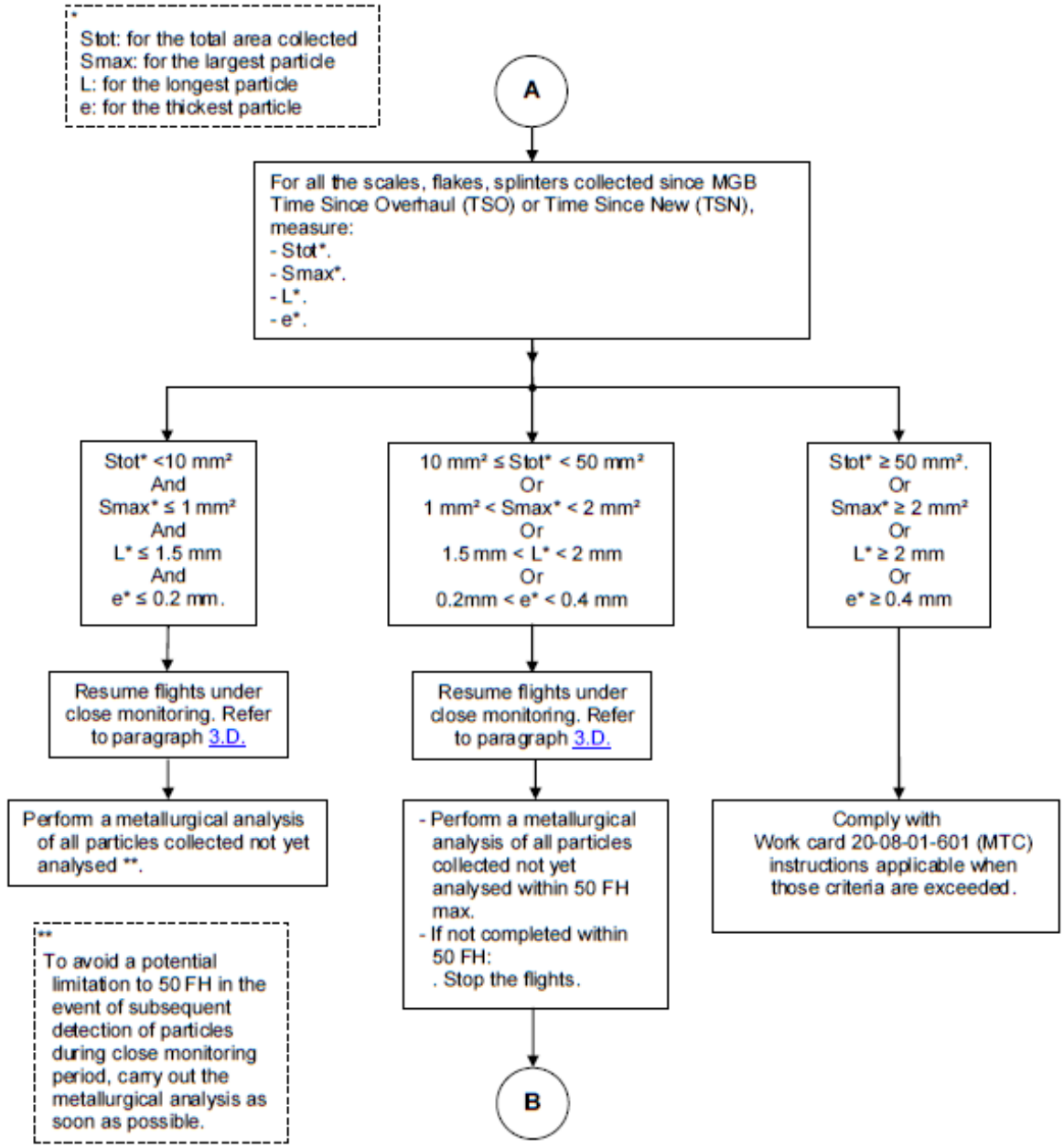
Figure 20

3.B.4. Analysis of the results

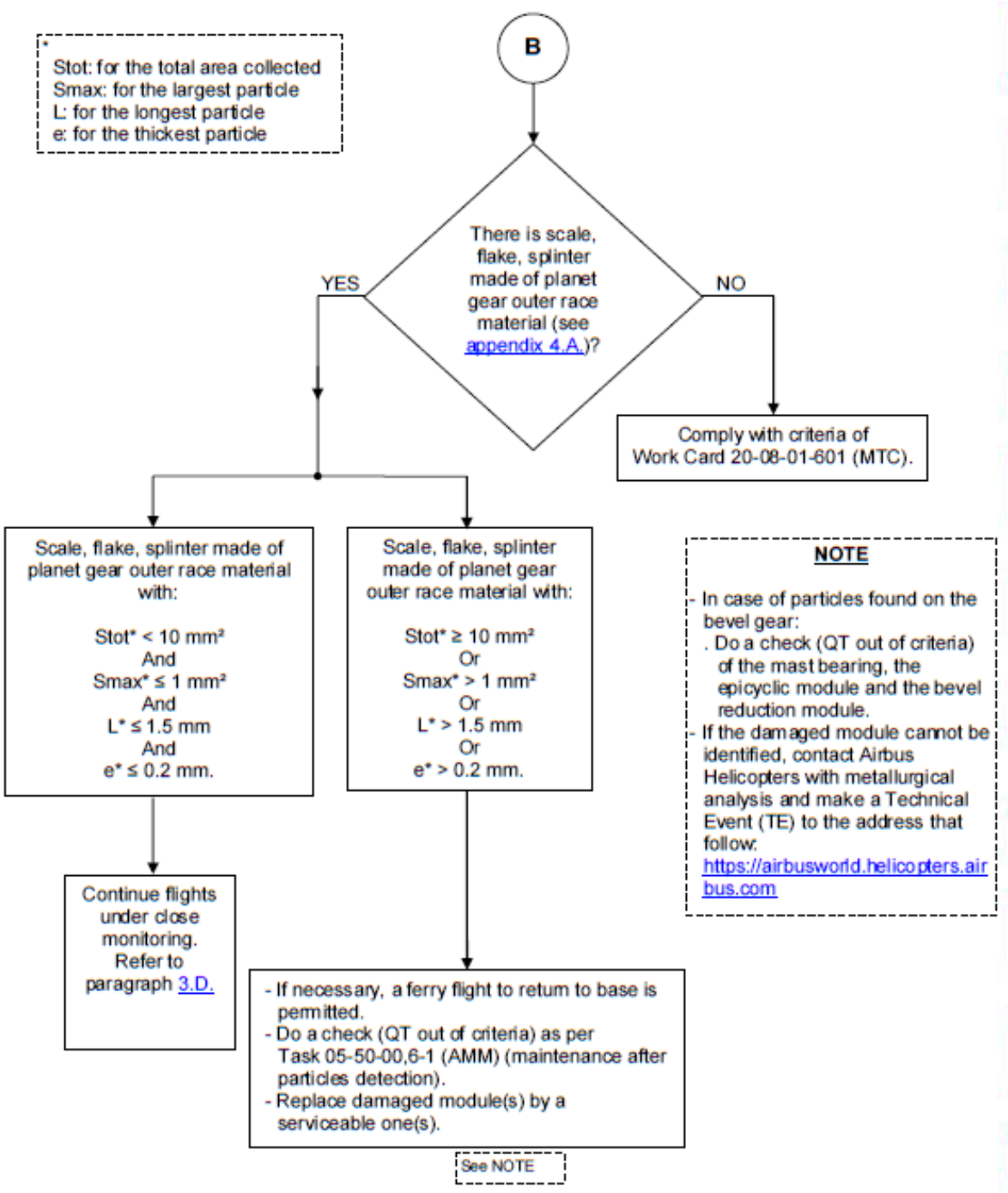
SMART AVIATION
ENGINEERING INSTRUCTION



SMART AVIATION
ENGINEERING INSTRUCTION



SMART AVIATION
ENGINEERING INSTRUCTION



SMART AVIATION
ENGINEERING INSTRUCTION

3.B.5. Final steps			
Do an aspect check on the helicopter after inspection or repair, refer to the Work Card 20-07-03-408 (MTC).			
Install again or close all cowlings, panels, doors and equipment removed and/or opened during preliminary steps (paragraph 3.B.1. of this ALERT SERVICE BULLETIN).			
Connect all the electrical power supplies, refer to the Work Card 20-07-03-406 (MTC).			
Check the oil level of the MGB before the first flight.			
Remove the access equipment.			
3.B.6. Ground run-up / flight test			
Check the oil level of the MGB after the first flight.			

***** END OF THE TASK *****

RETURN TO SERVICE

I hereby certify that the aircraft has been modified in accordance with the Doc. ASB EC130-05A040 with applicable Approved Data and met the requirements as set forth with the Indonesia Civil Aviation Safety Regulation and it is approved for return to service.

Name : _____ Place / Date : _____

Sign & Stamp : _____

- END -

Additional Work Sheet
ASB EC130-05A040

Aircraft Registration: **PK-SNX**

WO# Nr: **WO/067-PK-SNX/V/2023**

Parts Used Sheet

Special Tool Used

No.	Description	Due Date	Engineer

Additional Work Sheet
ASB EC130-05A040

Aircraft Registration: **PK-SNX**

WO# Nr: **WO/067-PK-SNX/V/2023**

Parts Used Sheet

Part Used

Date	Part Nr.	Serial Nr.	Description	Qty	Engineer

smartaviation

Additional Work Sheet
ASB EC130-05A040
Parts Used Sheet

Aircraft Registration: **PK-SNX**

WO# Nr: **WO/067-PK-SNX/V/2023**

Part Used

Date	Part Nr.	Serial Nr.	Description	Quantity	Engineer