





EMERGENCY

ALERT SERVICE BULLETIN

PROTECTIVE MEASURE
TAIL ROTOR DRIVE – Tail Gear Box (TGB)
Checking there is no oil retention in the recess of the TGB housing

For the attention of	
	

HELICOPTER(S) CONCERNED	NUMBER	Version(s)	
		Civil	Military
AS365	65.00.19	N1, N2, N3	F, Fi, K, K2
AS565	65.00.09		MA, MB, MBe, SA, SB, UB
SA366	65.06		GA
EC155	65A008	B, B1	

Revision No.	Date of issue
Revision 0	2019-07-10

Summary:

The purpose of this ALERT SERVICE BULLETIN is to make sure that the oil duct of the control bearing in the TGB is not obstructed by a foreign object.

Compliance:

Compliance with this ALERT SERVICE BULLETIN is mandatory.

1 PLANNING INFORMATION

1.A. EFFECTIVITY

1.A.1. Helicopters/installed equipment or parts

Helicopters equipped with TGB all P/Ns.

1.A.2. Non-installed equipment or parts

On all TGB P/Ns.

1.B. ASSOCIATED REQUIREMENTS

Not applicable.

1.C. REASON

During a routine inspection, a technician discovered a foreign object (FOD) that was obstructing the oil duct of the TGB control bearing.

A lack of lubrication on this bearing can affect the correct operation of the TGB.

Consequently, Airbus Helicopters makes compliance with this ALERT SERVICE BULLETIN mandatory, to make sure that the oil duct of the TGB control bearing is not obstructed by a foreign object.

1.D. DESCRIPTION

This ALERT SERVICE BULLETIN consists in:

- opening the cover of the oil filter plug or removing the TGB oil filter plug,
- making sure that there is no oil retention in the recess of the TGB housing,
- if there is oil retention:
 - . Remove the foreign object from the lubrication duct,
 - . Install a new bearing.
- if there is no oil retention:
 - . Close the cover of the oil filter plug or install the TGB oil filter plug,
 - . Resume flights.

1.E. COMPLIANCE

1.E.1. Compliance at H/C manufacturer level

Helicopters/installed equipment or parts:

Airbus Helicopters makes it mandatory to comply with the instructions of [paragraph 3.](#) except [paragraph 3.B.6.](#) of this ALERT SERVICE BULLETIN before the delivery of the helicopter.

Non-installed equipment or parts:

Comply with [paragraph 3.B.6.](#) before installing the TGB on the helicopter.

1.E.2. Compliance in service

The work must be performed on the helicopter by the operator.
The work must be performed on non-installed equipment by the operator.

Helicopters/installed equipment or parts:

Comply with paragraph 3. except [paragraph 3.B.6.](#) within 55 flight hours from receipt of this ALERT SERVICE BULLETIN issued on the date indicated in the page footer without exceeding January 01, 2020.

Non-installed equipment or parts:

Before installing the TGB on the helicopter or at the latest on January 01, 2020, comply with [paragraph 3.B.6.](#)

1.F. APPROVAL

Approval of modifications:

Not applicable.



Approval of this document:

The technical information contained in this ALERT SERVICE BULLETIN revision 0 was approved on July 10, 2019 under the authority of EASA Design Organization Approval No. 21J.700 for civil version helicopters subject to an Airworthiness Certificate.

The technical information contained in this ALERT SERVICE BULLETIN revision 0 was approved on July 10, 2019 by the Airbus Helicopters Airworthiness Department for export military versions.

The technical information contained in this ALERT SERVICE BULLETIN revision 0 was approved on July 10, 2019 under the prerogatives of the recognition of design capability FRA21J-002-DGA for French Government helicopters.

1.G. MANPOWER



For compliance with this ALERT SERVICE BULLETIN, Airbus Helicopters recommends the following staff qualifications:

Qualification: - 2 Mechanical Technicians,
- 1 Pilot.



The Estimated Man-hours are indicated for reference purposes only and based on a standard helicopter configuration.

Estimated Man-hours: - approximately 1 hours for the 2 Mechanical Technicians, for checking only.
- approximately 7 hours for the Mechanical Technician for the replacement of the bearing.
- approximately 1 hour for the pilot to perform a ground run-up.



Estimated helicopter downtime is indicated for reference purposes only, based on a standard helicopter configuration.

Helicopter downtime is estimated at approximately 1 day (excluding time for curing) to replace the bearing.

1.H. WEIGHT AND BALANCE

Not applicable.

1.I. POWER CONSUMPTION

Not applicable.

1.J. SOFTWARE UPGRADES/UPDATES

Not applicable.

1.K. REFERENCES

The following documents are required for compliance with this ALERT SERVICE BULLETIN.

Standard Practices Manual (MTC):

- MTC: 20-04-01-402: Cleaning of removed individual parts with liquid solvents - Cleaning.
- MTC: 20-05-01-222: Application of PR 1771 B2 sealant - General sealing procedures.
- MTC: 20-07-03-406: Instructions applicable when working on an aircraft electrical circuit and power generating systems - Technical instructions.
- MTC: 20-07-03-408 : Appearance checks on an aircraft after an inspection or repair - Technical instructions.

Maintenance Manual (MET) for AS365 helicopter versions N1, N2, N3, F, Fi, K and K2:

- MET: 60-00-00-300: General mechanical instructions - Rotors.
- MET: 65-21-00-401 : TGB fairings: Removal/Installation - Tail gearbox.

Maintenance Manual (MET) for AS565 helicopter versions MA, MB, SA, SB and UB:

- MET: 60-00-00-300: General mechanical instructions - Rotors.
- MET: 65-21-00-401: Removal/Installation – Tail gear box.

Maintenance Manual (MET) for SA366 helicopter version GA:

- MET: 60-00-00-300: General mechanical instructions - Rotors.
- MET: 65-21-00-402: Tail rotor and gear box assy (Rotor-TGB-Servo-Control): Removal/Installation.

Aircraft Maintenance Manual (AMM) for EC155 helicopter versions B and B1:

- AMM: 60-00-00-911: General Safety Instructions.
- AMM: 65-20-01-061: Removal/Installation – Tail gear box.
- AMM: 65-20-01-066: Removal / Installation - Control Shaft / Rod Assembly of the TGB.
- AMM: 65-20-01-961: Replacement of the Tail Rotor's Control Shaft Bearing.

Mechanical Repair Manual (MRM) for AS365 helicopter versions N1, N2, N3, F, Fi, K and K2:

- MRM : 65-21-00-701 : Removal/Installation - Control rod assembly - Tail gear box.
- MRM : 65-21-00-702 : Replacement - Bearing of the control rod - Tail gear box.

Mechanical Repair Manual (MRM) for AS565 helicopter versions MA, MB, SA, SB and UB:

- MRM: 65-21-00-701: Removal - Installation of control rod assy - Tail gear box.
- MRM: 65-21-00-702: Replacement of control rod bearing - Tail gear box.

Mechanical Repair Manual (MRM) for SA366 helicopter version GA:

- MRM: 65-21-00-701: Removal - Installation of control rod assy.
- MRM: 65-21-00-702: Replacement of control rod bearing.

1.L. OTHER AFFECTED PUBLICATIONS

Not applicable.

1.M. PART INTERCHANGEABILITY OR MIXABILITY

Not applicable.

2 EQUIPMENT OR PARTS INFORMATION

2.A. EQUIPMENT OR PARTS: PRICE - AVAILABILITY - PROCUREMENT

Price

For any information on the price of modification kits and/or components or for assistance, contact the Airbus Helicopters Network Sales and Customer Relations Department.

Availability

Delivery lead times will be indicated by the Sales and Customer Relations Department on the operator's request.

Procurement

Order the required quantity from the Airbus Helicopters Network Sales and Customer Relations Department:

Airbus Helicopters
Etablissement de Marignane
Direction Ventes et Relations Client
13725 MARIGNANE CEDEX
FRANCE

NOTE 1

On the purchase order, please specify the mode of transport, the destination and the serial numbers of the helicopters to be modified.

NOTE 2

*For ALERT SERVICE BULLETINS, order by:
Telex: HELICOP 410 969F
Fax: +33 (0)4.42.85.99.96*

2.B. LOGISTIC INFORMATION

Not applicable.

2.C. EQUIPMENT OR PARTS REQUIRED PER HELICOPTER/COMPONENT

Equipment or parts to be ordered separately:

Key Word	Qty	New P/N	Item	Old P/N →	Instruction
Bearing	1	GB10947S3 (704A33-6512-46)	1		Replace if necessary.
O-ring	1	M83248/1-015	2		Replace if necessary.

NOTE 3

The bearing P/N FAG594508 (704A33-651-245) can be used as an alternative if bearing P/N GB10947S3 (704A33-6512-46) is not available.

Consumables to be ordered separately:

As per Work Cards and Tasks indicated in this ALERT SERVICE BULLETIN and the following list:

Key Word	Qty	Consumable P/N	CM	Item
Lockwire	AR	EN3628-0.50	CM777	3
Sealant	AR	ECS2039.xx	CM6068	4

The consumables can be ordered separately from BDSI.

Website: <https://www.boeingdistribution.com>
 Telephone: +1.305.925.2600
 Fax: +1.305.507.7191
 AOG: +1.305.471.8888
 AOG email: AOGdesk@Boeingdistribution.com

Special tools:

Key Word	Qty	Hardware or equivalent P/N	Item
Endoscope with adjustable head Ø6 mm minimum Or	1	commercial	zz
Endoscope with fixed head Ø6 mm minimum	1	commercial	ss
Syringe(20 ml minimum)	1	commercial	yy
Hose	1	commercial	xx
Shim ø45mm(1.771 in) and 80mm (3.15 in) in length	1	Local manufacture	ww
Shim ø100mm(3.93 in) and 80mm (3.15 in) in length	1	Local manufacture	vv
Flat Screwdriver	1	commercial	uu
Adhesive tape	On req.	commercial	tt
Indelible red pen	1	commercial	rr

2.D. EQUIPMENT OR PARTS TO BE RETURNED

Return the equipment or parts described in the Information Notice No. 2832-I-00.

3 ACCOMPLISHMENT INSTRUCTIONS

3.A. GENERAL

- As per Work Card 60-00-00-300 (MET), read and comply with the general mechanical instructions.
- As per Task 60-00-00-911 (AMM), read and comply with the general safety instructions.

3.B. WORK STEPS



CAUTION

**TO PREVENT ANY RISK OF CONTAMINATION,
MAKE SURE THAT NO FOREIGN OBJECTS WERE
INTRODUCED INTO THE TGB DURING THE
CHECKING PROCEDURE.**

3.B.1. Preliminary steps

- Disconnect all electrical power supplies as per Work Card 20-07-03-406 (MTC).
- Install appropriate means of access.
- Remove and/or open all the cowlings, panels, doors and all equipment necessary for access to the various work zones.
- Comply with paragraph 3.B.1.a. using an endoscope with adjustable head.
- Comply with paragraph 3.B.1.b. using an endoscope with fixed head.

3.B.1.a. Opening of the filter plug cover (Figure 1)

- If necessary, remove the lockwire (d) (not shown)
- Open the cover (b) of the TGB (c) oil filter plug (h).
- Remove the strainer (e) using the screwdriver (uu).

3.B.1.b. Removal of the filter plug (Figure 1)

- Remove the sealing compound (not shown) at the base of the filter plug (h).
- Make a mark on the filter plug (h) and on the TGB (c) using the pen (rr).
- Remove the TGB (c) filter plug (h).
- Clean the filter plug (h) and its location on the TGB (c) as per Work Card 20-04-01-402 (MTC).

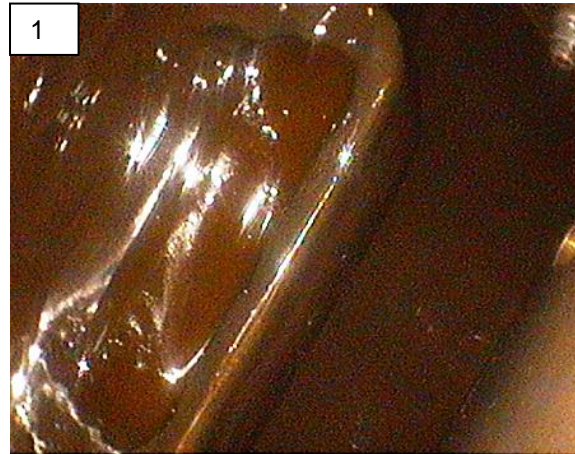
3.B.2. Checking there is no oil retention in the recess of the TGB housing (Figures [1](#) and [2](#))

3.B.2.a. Oil recess check

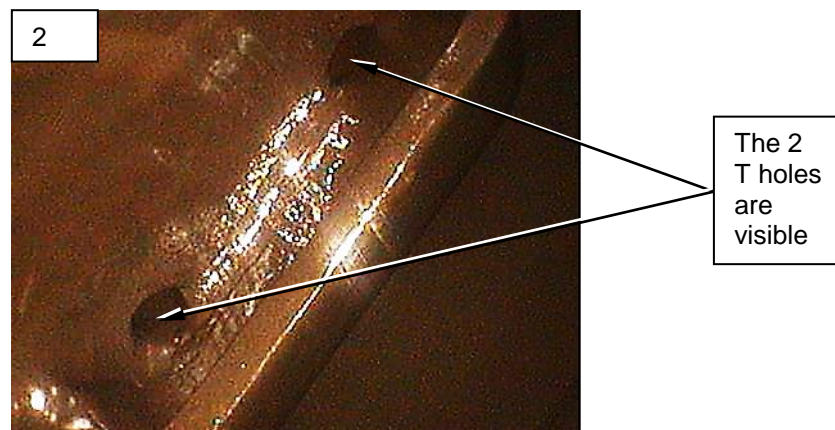
- Insert the head of the endoscope (zz) or (ss) in the TGB (c).
- Position the head of the endoscope (zz) or (ss) towards the TGB (c) oil housing recess (g) (towards the rear of the helicopter) ([Figure 2](#), Section C-C).
- Make sure there is no oil retention in the TGB (c) housing recess (g) (Photo 2).
- Interpret the results as per paragraph 3.B.2.b.
- Remove the head of the endoscope (zz) or (ss) from the TGB (c).

3.B.2.b. Interpretation of the results

- Oil retention in the recess of the TGB oil housing (The 2 T holes are not visible as per Photo 1):
 - . Comply with paragraph 3.B.3.



- No oil retention in the recess of the TGB oil housing (The 2 T holes are visible as per Photo 2):
 - . Comply with [paragraph 3.B.4.](#)



3.B.3. Search for a foreign object

3.B.3.a. In the TGB

- Remove the TGB control rod as per the Work Card 65-21-00-701 (MRM) or Task 65-20-01-066 (AMM).
- Inspect the TGB (c) oil duct (k) ([Figure 2](#), Detail D).
- Remove any foreign object visible in the oil duct (k) ([Figure 2](#), Detail D).
- Wait for 15 seconds to make sure that the oil housing (g) empties its operating oil.
- Insert the endoscope head (zz) or (ss) in the TGB (c).
- Position the endoscope head (zz) or (ss) towards the TGB (c) oil housing recess (g) (towards the rear of the helicopter) ([Figure 2](#), Section C-C).
- Make sure there is no oil retention in the TGB (c) housing recess (g) (Photo 2).

- If there is oil retention in the TGB (c) oil housing recess (g) (Photo 1):
 - .. Remove the head of the endoscope (zz) or (ss) from the TGB (c).
 - .. Mark the TGB as not fit for helicopter installation and return it to Airbus Helicopters as per [paragraph 2.D.](#)
 - .. Replace the TGB as per [paragraph 3.B.3.c.](#)
- . If there is no oil retention in the TGB (c) housing recess (g) (Photo 2) :
 - .. Remove the head of the endoscope (zz) ou (ss) from the BTA (c).
 - .. Continue the procedure as per paragraph 3.B.3.b.

3.B.3.b. For the TGB cover

- Remove all visible foreign objects from the oil duct (k) ([Figure 3](#), Section E-E).
- Fill the syringe (yy) with at least 20ml of TGB operating oil (c) (Photo 3).
- Connect the hose(xx) to the syringe (yy) (Photo 3).



- Connect the hose (xx) to the end (n) of the oil duct (k) of the TGB cover (q) ([Figure 3](#), Section E-E).
- Fill the duct (k) using the syringe (yy) with operating oil.
- Make sure that the operating oil flows at the end (p) of the oil duct (k) BTP (q) cover ([Figure 3](#), Section E-E).
- If the operating oil does not flow at the end (p) of the oil duct (k) BTP (q) cover:
 - . Mark the TGB as not fit for helicopter installation.
 - . Replace the TGB as per [paragraph 3.B.3.c.](#) or contact Airbus Helicopters to plan a field intervention (operations will be performed on field by seconding Airbus Helicopters specialists qualified for this operation).
- If the operating oil flows at the end (p) of the oil duct (k) BTP (q) cover:
 - . Replace the TGB control rod bearing (m) (not shown) with a new bearing (1) (not shown) as per Work Card 65-21-00-702 (MRM) or Task 65-20-01-961 (AMM).
- Continue the procedure as per [paragraph 3.B.4.](#)

3.B.3.c. Replacement of the TGB

- Remove the TGB (c) as per the Work Card 65-21-00-401 or 65-21-00-402 (MET) or Task 65-20-01-061 (AMM).
- Install a TGB fit for helicopter installation, of the type P/N 365A33-6005-09 as per Work Card 65-21-00-401 or 65-21-00-402 (MET) or Task 65-20-01-061 (AMM).
- Comply with [paragraph 3.B.5.](#)

3.B.4. Final steps

- Comply with paragraph 3.B.4.a. using an endoscope with adjustable head.
- Comply with paragraph 3.B.4.b. using an endoscope with fixed head.

3.B.4.a. Closing of the filter plug cover ([Figure 1](#))

- Make sure that the O-ring (a) is in good condition.
 - . If the O-ring (a) is not in good condition:
 - .. Discard the O-ring (a).
 - .. Install a new O-ring (2) on the cover (b).
 - . If the O-ring (a) is in good condition:
 - .. leave it as is.
- Install the strainer (e).
- Close the oil filter plug (h) cover (b) on the TGB (c).
- If necessary, safety the cover with lockwire (3) (not shown).

3.B.4.b. Installation of the filter plug ([Figure 1](#))

- Fill the chamfer (not shown) of the TGB (c) with sealant (4) as per Work Card 20-05-01-222 (MTC).
- Install the oil filter plug (h) on the TGB (c).
- Tighten the oil filter plug (h) up to the mark made previously ([paragraph 3.B.1.b.](#)).
- Perform a visual check of the aircraft after an inspection or intervention as per Work Card 20-07-03-408 (MTC).
- Install and/or close all the cowlings, panels and doors and all equipment removed and/or opened during the preliminary steps ([paragraph 3.B.1.](#)).
- Connect all electrical power sources as per Work Card 20-07-03-406 (MTC).
- Remove the means of access.

3.B.5. Ground run-up / flight test

Perform a ground run-up as per the flight manual or other.

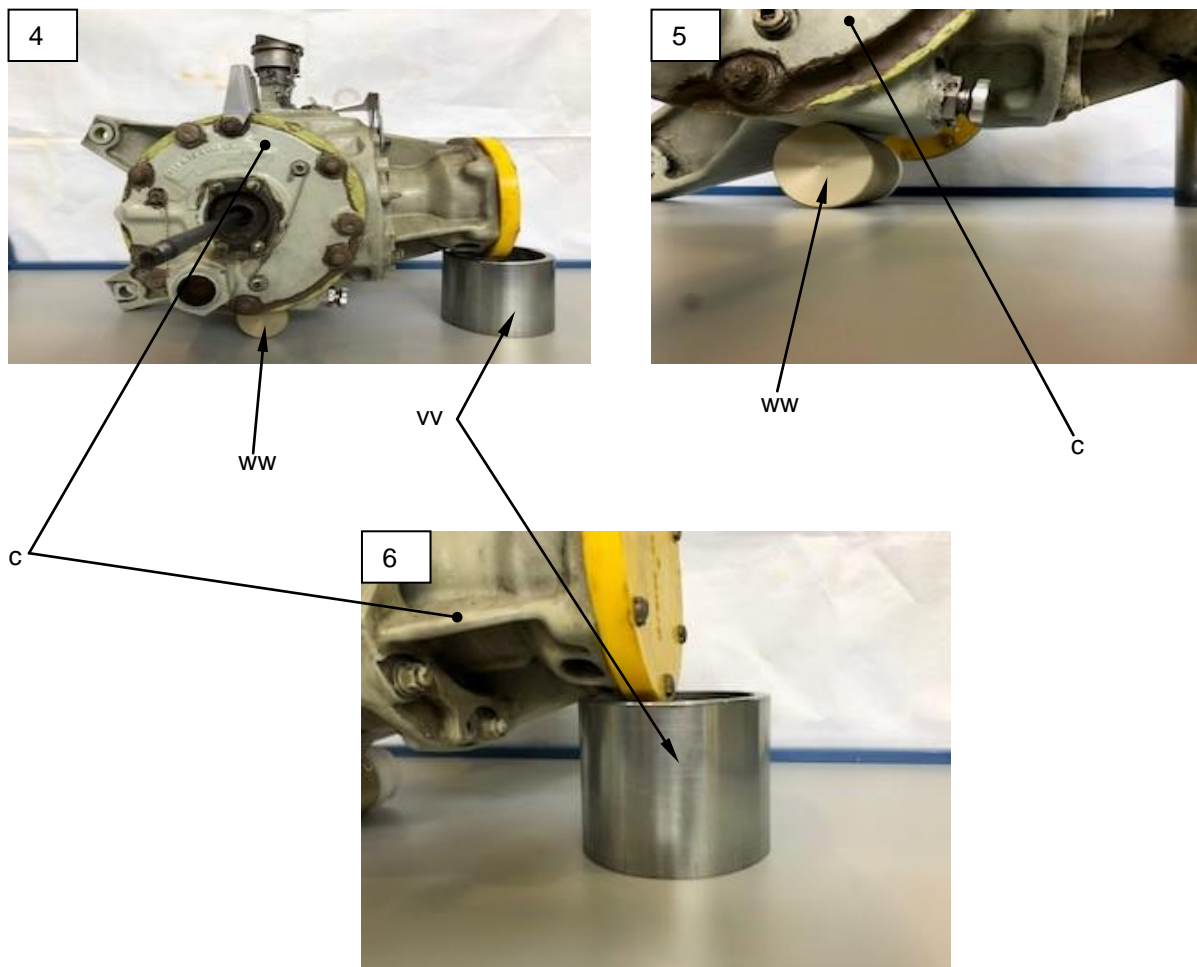
3.B.6. Work steps for non-installed equipment or parts

NOTE

The procedure for non-installed equipment or parts requires an endoscope with an adjustable head (zz).

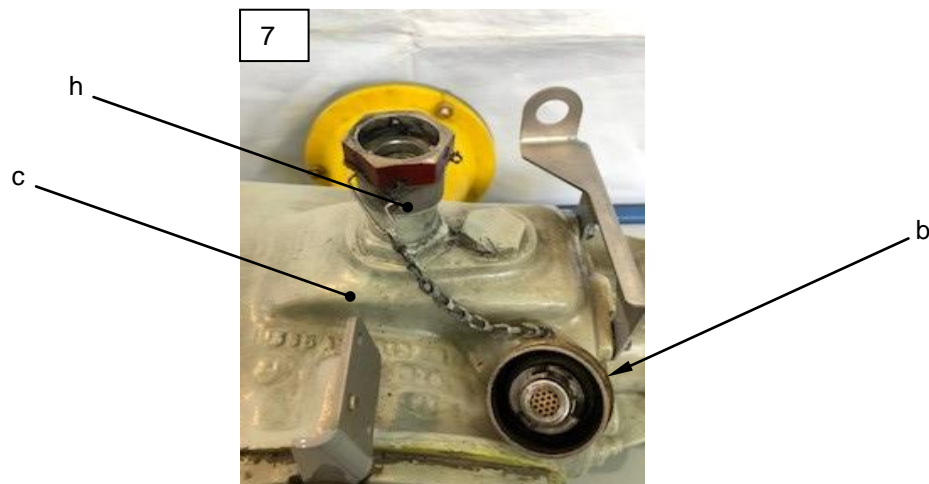
3.B.6.a. Preliminary steps

- Install the TGB (c) level using the shims (ww) and (vv) (Photos 4, 5 and 6).

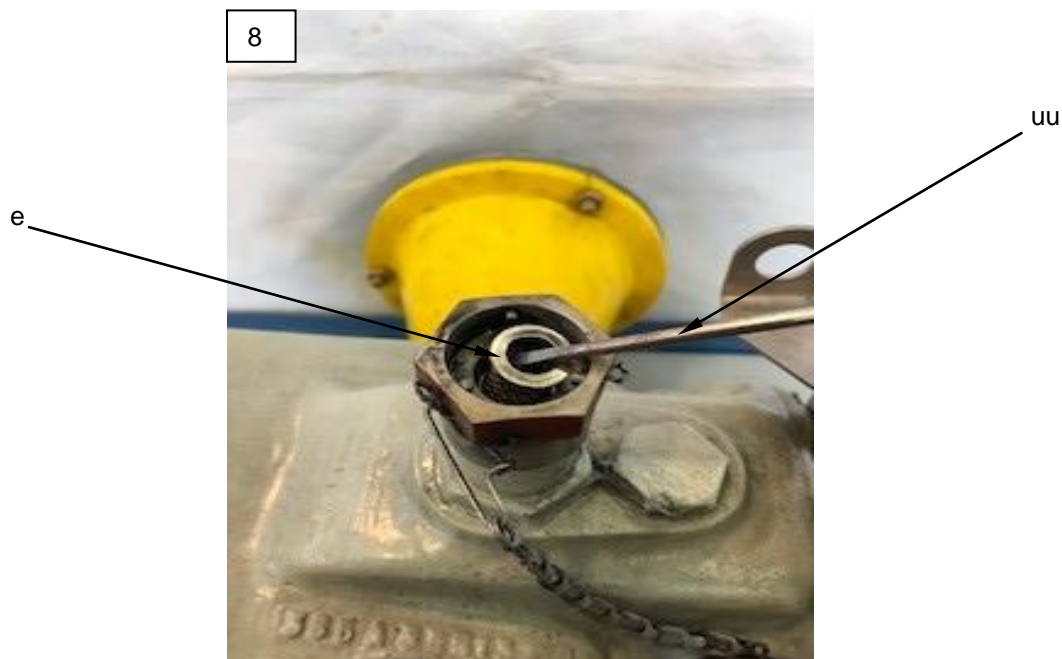


- If necessary, remove the lockwire (d) (not shown) from the cover (b) of the TGB oil filter plug (h).

- Remove the cover (b) from the TGB (c) oil filter plug (h) (Photo 7)



- Remove the strainer (e) using a screwdriver (uu) (Photo 8).



3.B.6.b. Checking there is no oil retention in the recess of the housing

- Fill the syringe (yy) using at least 20 ml of TBG (c) operating oil (Photo 9).
- Degrease the hose (xx) and the head of the endoscope (zz) to make sure that the adhesive tape adheres correctly.

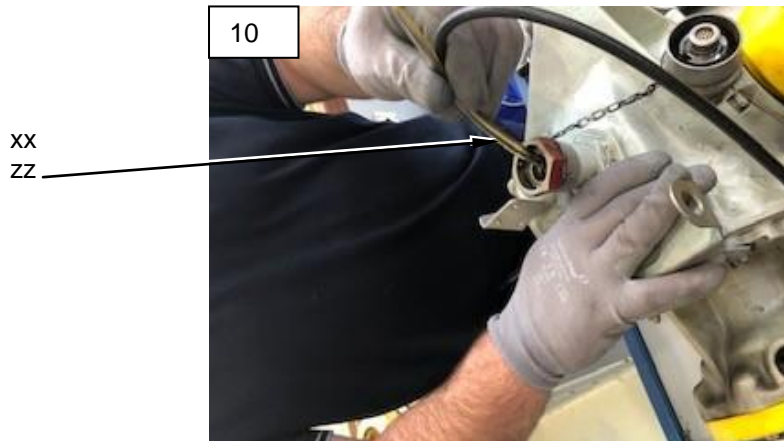


**MAKE SURE THAT THE ADHESIVE IS BONDED
CORRECTLY (tt) (NOT SHOWN).**

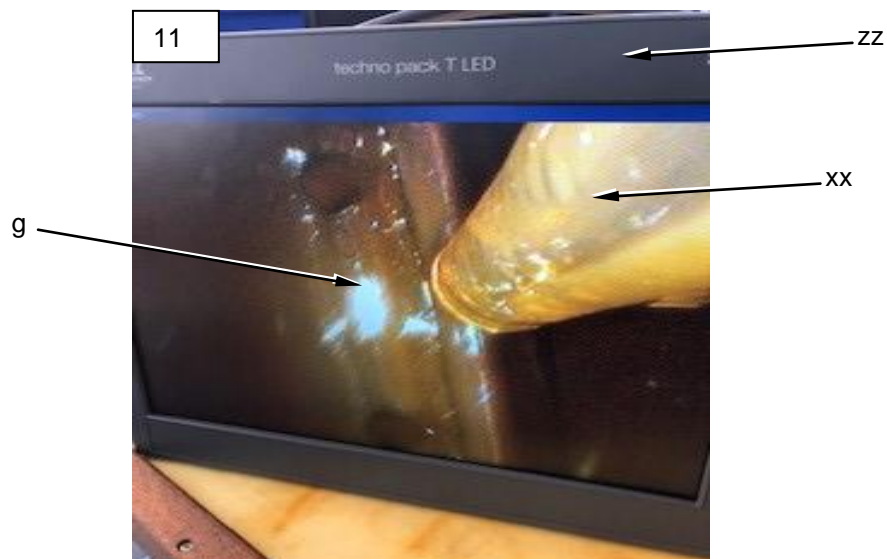
- Use the adhesive tape (tt) (not shown) to hold in place the hose (xx) of the syringe (yy) with the endoscope head (zz) (not shown) (Photo 9).



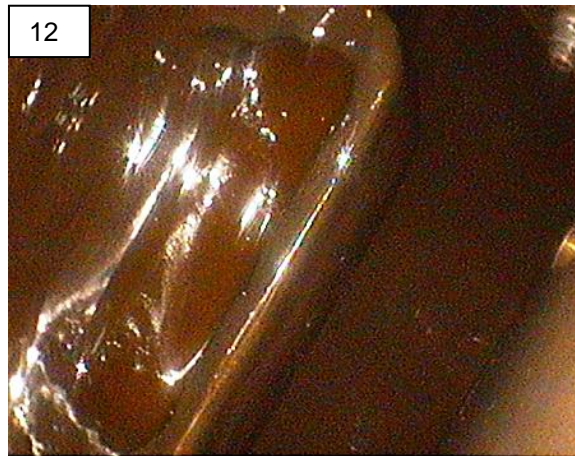
- Insert the endoscope head (zz) with the hose (xx) in the TGB (c) (Photo 10).



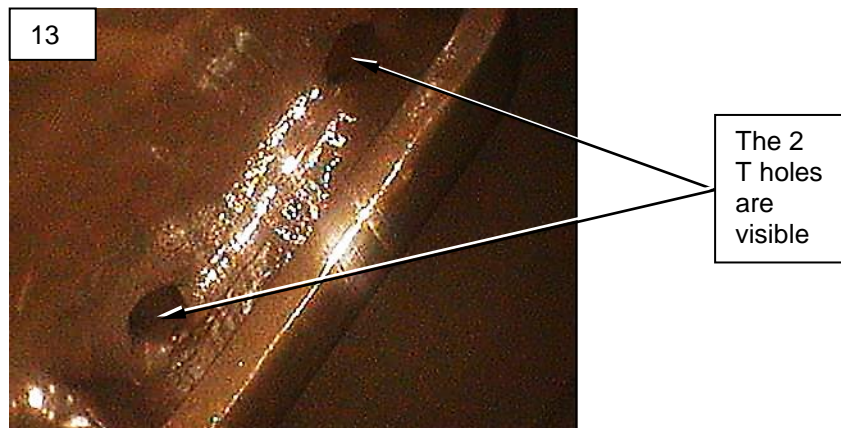
- Position the endoscope head (zz) with the hose (xx) opposite the input flange towards the TGB (c) oil housing recess (g) (Photo 11).



- Fill the housing recess with operating oil (g) using the syringe (yy) (Photo 12).



- Wait for 15 seconds to make sure that the oil housing (g) empties its operating oil. (Photo 13).
- Check that the oil housing (g) is empty using the endoscope (zz).
 - . If there is no oil retention in the TGB (c) housing recess (g) (The 2 T holes are visible as per Photo 13):
 - .. Remove the endoscope (zz).
 - .. Make sure that the adhesive tape (tt) is still correctly positioned on the hose (xx) and the head of the endoscope (zz).
 - .. Remove the adhesive tape (tt) and the hose (xx) from the endoscope.
 - .. Comply with [paragraph 3.B.6.d.](#)



- . If there is oil retention in the TGB (c) housing recess (g) (The 2 T holes are not visible as per Photo 12):
 - .. Remove the endoscope (zz).
 - .. Make sure that the adhesive tape (tt) is still correctly positioned on the hose (xx) and the head of the endoscope (zz).
 - .. Remove the adhesive tape (tt) and the hose (xx) from the endoscope.
 - .. Comply with [paragraph 3.B.6.c.](#)

3.B.6.c. Search for a foreign object

3.B.6.c.1. In the TGB:

- Remove the TGB control rod as per the Work Card 65-21-00-701 (MRM) or Task 65-20-01-066 (AMM).
- Inspect the TGB (c) oil duct (k) ([Figure 2](#), Detail D).
- Remove any foreign objects visible from the oil duct (k) ([Figure 2](#), Detail D).
- Wait for 15 seconds to make sure that the oil housing (g) empties its operating oil.
- Check that the oil housing (g) is empty by re-inserting the endoscope (zz).
 - . If there is oil retention in the TGB (c) housing recess (g) (Photo 12):
 - .. Mark the TGB as not fit for helicopter installation and return it to Airbus Helicopters as per [paragraph 2.D.](#)
 - . If there is no oil retention in the TGB (c) housing recess (g) (Photo 13):
 - .. Remove the head of the endoscope (zz) from the TGB (c).
 - .. Continue the procedure as per paragraph 3.B.6.c.2.

3.B.6.c.2. For the TGB cover:

- Remove any foreign objects visible from the oil duct (k) ([Figure 3](#), Section E-E).
- Fill the syringe (yy) with at least 20 ml of TGB (c) operating oil (Photo 9).
- Connect the hose (xx) to the end (n) of the oil duct (k) of the TGB cover (q) ([Figure 3](#), Section E-E).
- Fill the duct (k) with operating oil, using the syringe (yy).
- Make sure that the operating oil flows from the end (p) of the oil duct (k) of the TGB cover (q) ([Figure 3](#), Section E-E).
- If the operating oil does not flow from the end (p) of the oil duct (k) of the TGB cover (q):
 - . Mark the TGB as not fit for helicopter installation and return it to Airbus Helicopters as per [paragraph 2.D.](#)
- If the operating oil flows from the end (p) of the oil duct (k) of the TGB cover (q) :
 - in the case that the TSN of the bearing (m) (not shown) is strictly greater than 0 flight hours:
 - .. Replacer the bearing (m) (not shown) of the TGB control rod with a new bearing (1) (not shown) as per Work Card 65-21-00-702 (MRM) or Task 65-20-01-961 (AMM).
 - ..Comply with [paragraph 3.B.6.d.](#)
 - in the case that the TSN of the bearing (not shown) is equal to 0 flight hours:
 - .. Install the TGB control rod as per Work Card 65-21-00-701 (MRM) or Task 65-20-01-066 (AMM).
 - ..Comply with [paragraph 3.B.6.d.](#)

3.B.6.d. Final steps

- Make sure that the O-ring (a) is in good condition.
 - . If the O-ring (a) is not in good condition:
 - .. Discard the O-ring (a).
 - .. Install a new O-ring (2) on the cover (b) ([Figure 1](#)).
 - . If the O-ring (a) is in good condition:
 - ..take no further action.
- Install the strainer (e).
- Close the oil filter plug (h) cover (b) on the TGB (c).
- If necessary, safety the cover with lockwire (3) (not shown in the figure).

3.C. RECORD OF COMPLIANCE

Compliance with this document:

Record compliance with this document with the revision number on the TGB Log Card (FM).

3.D. OPERATING AND MAINTENANCE INSTRUCTIONS

Not applicable.

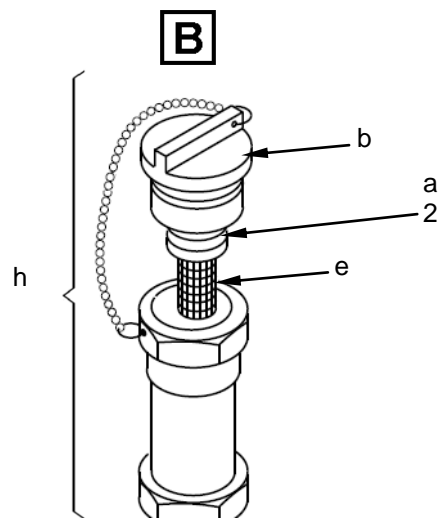
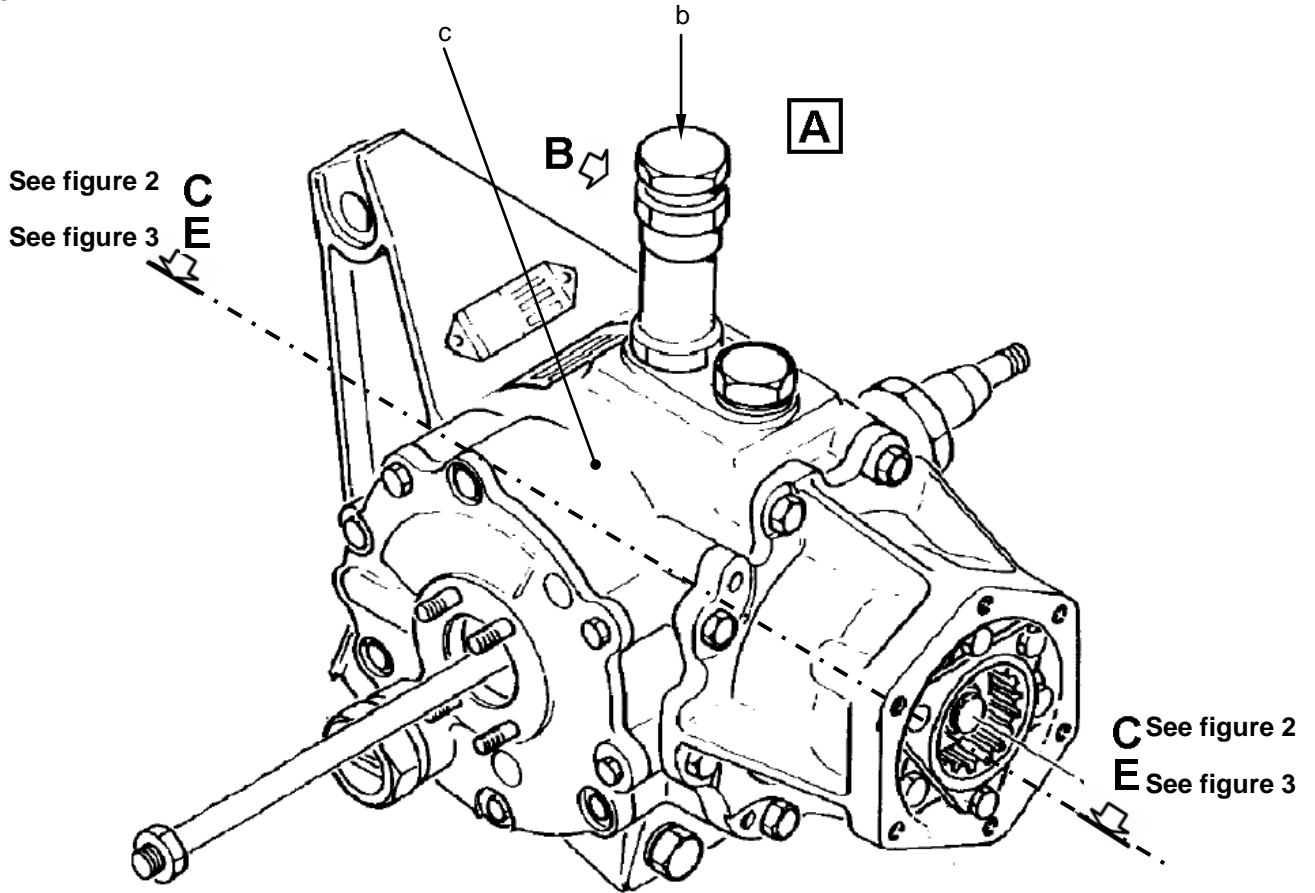
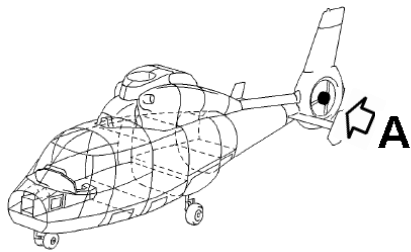
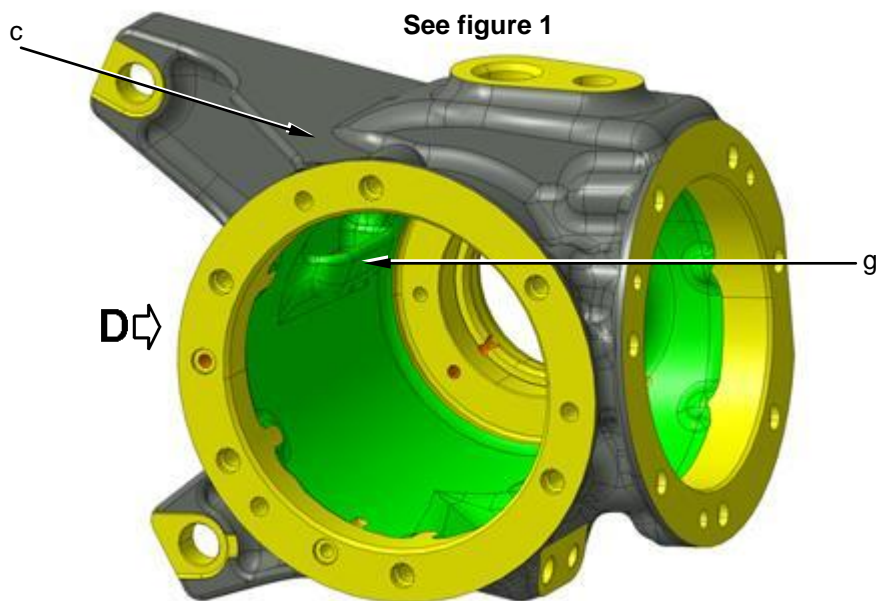


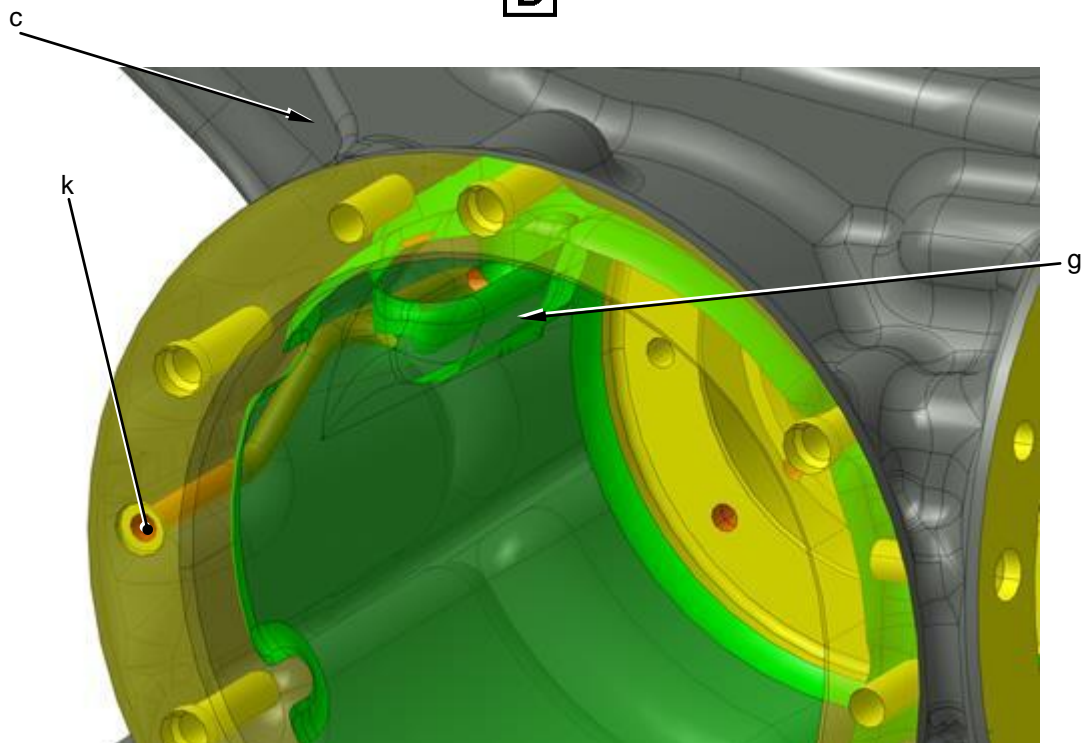
Figure 1

Return to [paragraph 3.B.2.](#)

SECTION
C-C
See figure 1



D



Return to [paragraph 3.B.2.](#)

Figure 2

SECTION
E - E
See figure 1

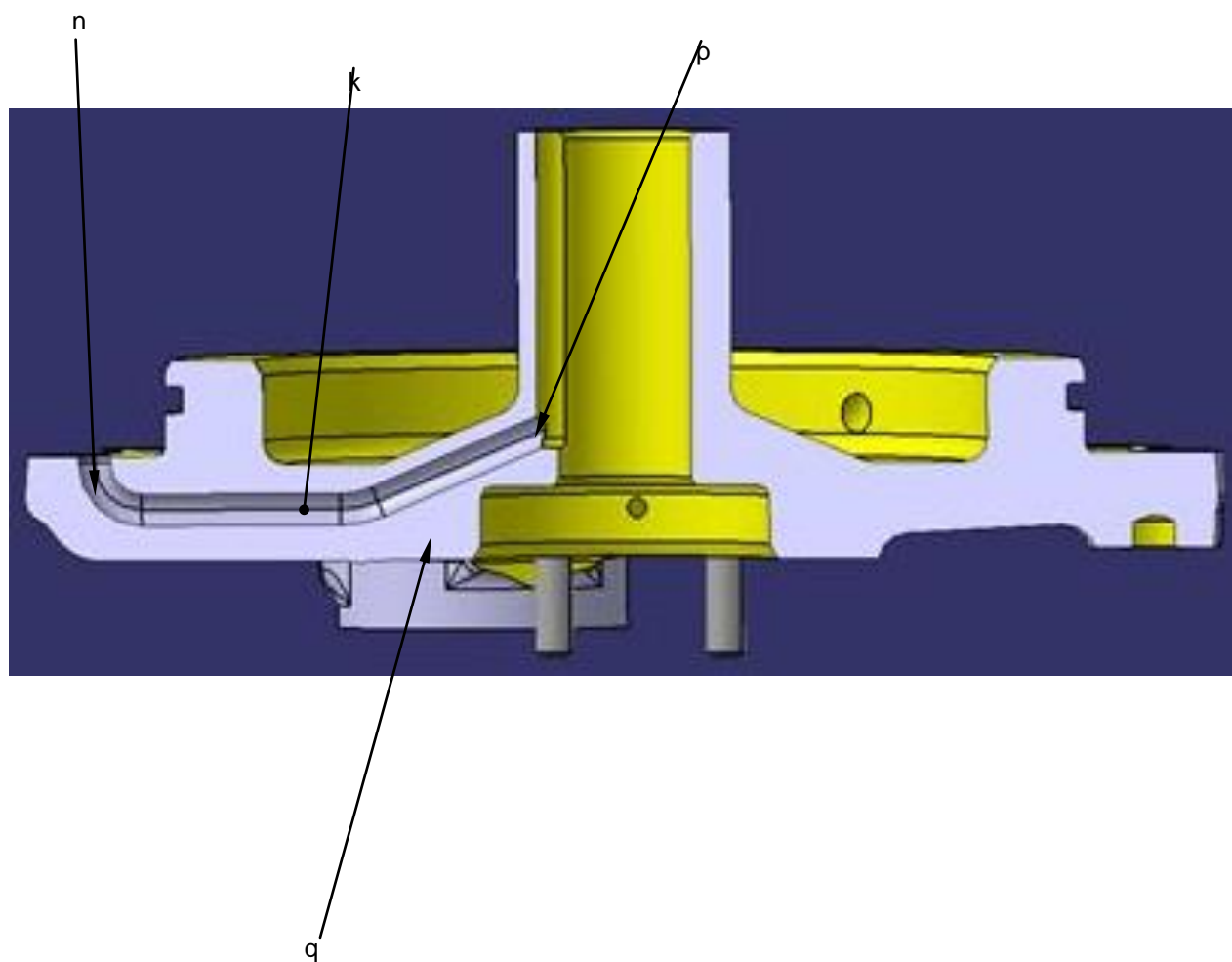


Figure 3