



BOLLETTINO TECNICO

The technical content of this document is approved
under the authority of DOA nr. EASA.21J.005

N° **139-269**

DATE September 30, 2011

REV. /

Compliance with
this bulletin is:

MANDATORY

SUBJECT: OPERATIONAL CHECK OF NR.1 AND NR.2 HYDRAULIC SYSTEMS

REASON: to confirm correct functionality of both hydraulic systems and then to introduce a periodicity.

HELICOPTERS AFFECTED: all AB139/AW139 helicopters S/N 31005 and subsequent (except the S/N's 31007, 31094, 31293, 31301, 31303, 31313 and 31329) that have not accomplished a Flight Control Hydraulic System ground functional test procedure or a main Hydraulic System operational check within the last fifty (50) flight hours prior to the receipt of this Bollettino.

COMPLIANCE: within fifty (50) flight hours or two (2) months from the receipt of this Bollettino, whichever occurs first.

Note

Operational Checks of the Hydraulic Systems shall be repeated periodically. Refer to the approved AMPI schedule and AMP procedures for the subsequent repetitions.

An appropriate entry should be made in the aircraft log book upon accomplishment.
If ownership of aircraft has changed, please, forward to new owner.

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DESCRIPTION: a recent reassessment of the hydraulic systems has indentified the need for the introduction of a periodical Operational Check.

REQUIRED MANPOWER: it is estimated that in order to accomplish this Bollettino two (2) man-hours (MMH) are necessary.

Man-hours are based on hands-on time and may vary with personnel and facilities available.

WARRANTY: N.A.

REQUIRED MATERIALS: N.A.

SPECIAL TOOLS: Refer to ITEP for the special tools required to comply with the AMP DM referenced in this Bollettino.

WEIGHT AND BALANCE CHANGES: N.A.

REFERENCES:

- ✓ AW139 Aircraft Fault Isolation Publication (AFIP)
- ✓ AW139 Aircraft Maintenance Publication (AMP)
- ✓ AW139 Illustrated Tools and Equipment Publication (ITEP)

PUBLICATIONS AFFECTED:

- ✓ AW139 Aircraft Maintenance Planning Information (AMPI)
- ✓ AW139 Aircraft Maintenance Publication (AMP)

COMPLIANCE INSTRUCTIONS:

1. Prepare the helicopter for a safe ground maintenance. Disconnect the battery and all the electrical power sources and/or the external power supply.

NOTE

Performing following steps 2 thru 4, do not decrease the pressure of the Number 1 and Number 2 main-hydraulic systems to zero at the end of the single procedures as required by the applicable DM.

Do not disconnect external hydraulic power and external electrical power and do not perform the related "Requirements after job completions".

2. Do the operational check of the Number 1 power-control module. Refer to AMP, see DM no. 39-A-29-11-01-00A-321A-A.
3. Do the operational check of the Number 2 power-control module. Refer to AMP, see DM no. 39-A-29-12-01-00A-321A-A.
4. Do the operational check of the Tail shutoff valve (4). Refer to AMP, see DM no. 39-A-29-12-04-00A-321A-A.
5. With reference to figures 2 and 3, do the operational check of the PCM2 Flight control shutoff valve as follows:
 - 5.1 On HCP (8) select the SOV2-CLOSE position to depressurize the circuit 2.
 - 5.2 Check that F/C CIRCUIT 2 has been shut off. Make sure that:
 - on the instrument panel the MASTER CAUTION (6) illuminates;
 - on the HCP (8) the light HYD2 **PRESS** illuminates;
 - on MFD (CAS area) (7) the caution message **2 HYD PRESS** and **2 SERVO** are displayed;
 - on MFD HYDRAULIC SYNOPTIC page the closure of SOV 2 is indicated. Verify that the MAIN ROTOR / TAIL ROTOR actuators section 2 depressurization is indicated;

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- on MFD (HYD page) the displayed CIRCUIT 2 pressure value remains stable at 207 bar (3000 psi);

If, on MFD HYDRAULIC SYNOPTIC page, no caution messages are in view, SOV 2 remains open, see AFIP DM no. 39-A-29-12-00-00A-421C-A (Number 2 main hydraulic system - Fault Code 2912-03).

5.3 Reset the MASTER CAUTION.

5.4 On the HCP (8) select the SOV2-OPEN position to pressurize the circuit.

5.5 Check that F/C circuit 2 has been pressurized. Make sure that:

- On the instrument panels the MASTER CAUTION goes OFF.
- On the HCP the light HYD2 PRESS goes OFF.
- On MFD (CAS area), the caution message **2 HYD PRESS** and **2 SERVO** go out of view.
- On MFD HYDRAULIC SYNOPTIC page, the SOV 2 must be indicated OPEN. Verify that the MAIN ROTOR / TAIL ROTOR actuators section 2 pressurization is indicated.

5.6 If the **2 SERVO** caution message stays in view, see AFIP DM no. 39-A-29-12-00-00A-421E-A (Number 2 main hydraulic system - Fault Code 2912-05).

5.7 If the **2 HYD PRESS** caution message stays in view, see AFIP DM no. 39-A-29-32-00-00A-421A-A (Indicating - Fault Code 2932-01).

5.8 If, on MFD HYDRAULIC SYNOPTIC page, the closure of SOV 2 is indicated, replace the Number 2 power-control module (3). Refer to AMP, see DM no. 39-A-29-12-01-00A-520A-A and DM no. 39-A-29-12-01-00A-520A-A.

6. With reference to figures 1 and 3, do the operational check of the PCM1 Flight control shutoff valve as follows:

6.1 On HCP (8) raise the guard and move the three-position SOV switch to SOV1-CLOSE position to depressurize the CIRCUIT 1.

6.2 Check that F/C CIRCUIT 1 has been shut off. Make sure that:

- on the instrument panel the MASTER CAUTION (6) illuminates;

- on the HCP (8) the light HYD1 **PRESS** illuminates;
- on MFD (CAS area) (7), the caution message **1 HYD PRESS** and **1 SERVO** appear.
- on the MFD HYDRAULIC SYNOPTIC page, the closure of the SOV 1 valve is indicated. Verify that the MAIN ROTOR / TAIL ROTOR actuators section 1 depressurization is indicated.
- Make sure that on MFD (HYD page) the displayed CIRCUIT 1 pressure value remains stable at 207 bar (3000 psi).

If on MFD HYDRAULIC SYNOPTIC page no caution messages are in view, SOV 1 remains open, replace the Number 1 power-control module (1). Refer to AMP, see DM no. 39-A-29-11-01-00A-520A-A and DM no. 39-A-29-11-01-00A-520A-A.

- 6.3 Reset the MASTER CAUTION (6).
- 6.4 On the HCP (8) select the SOV1-OPEN position to pressurize the circuit.
- 6.5 Check that F/C circuit 1 has been pressurized. Make sure that:
 - On the instrument panels the MASTER CAUTION must be OFF.
 - On the HCP the light HYD1 PRESS must be OFF.
 - On MFD (CAS area), the caution message **1 HYD PRESS** and **1 SERVO** go out of view.
 - On MFD HYDRAULIC SYNOPTIC page, the SOV 1 must be indicated OPEN. Verify that the MAIN ROTOR / TAIL ROTOR actuators section 1 pressurization is indicated.
- 6.5 If the **1 SERVO** caution message stays in view, see AFIP DM no. 39-A-29-11-00-00A-421B-A (Number 1 main hydraulic system - Fault Code 2911-02).
- 6.6 If the **1 HYD PRESS** caution message stays in view, see AFIP DM no. 39-A-29-31-00-00A-421A-A (Indicating - Fault Code 2931-01).

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- 6.7 If On MFD HYDRAULIC SYNOPTIC page the closure of SOV 1 is indicated, replace the Number 1 power-control module (1). Refer to AMP, see DM no. 39-A-29-11-01-00A-520A-A and DM no. 39-A-29-11-01-00A-520A-A.
7. With reference to figures 1, 3 and 4, do the operational check of the Emergency landing gear shutoff valve as follows:
 - 7.1 On the PCM1 (1), manually turn and maintain the TEST LEVER (2) in the UP TEST position. See Figure 4 for details.
 - 7.2 Check for the emergency L/G shut off valves closure as follows:
 - 7.2.1 Make sure that on the hydraulic synoptic page the emergency L/G shutoff valves indications are in the closed position. If they are not, replace the Number 1 power-control module (1). Refer to AMP, see DM no. 39-A-29-11-01-00A-520A-A and DM no. 39-A-29-11-01-00A-520A-A.
 - 7.2.2 In the MFD (CAS area) (7), make sure that the caution messages **EMERG L/G PRESS** and **1 HYD MIN** illuminate.
 - 7.2.3 Make sure that on the instrument panel the MASTER CAUTION (6) comes on.
 - 7.2.4 Reset the MASTER CAUTION.
 - 7.2.5 Make sure that on the HCP no change is seen.
 - 7.3 Release the TEST LEVER (2) and make sure that:
 - The TEST LEVER (2) returns automatically in the DOWN NORM position.
 - The emergency shut off valve automatically re-opens.
 - 7.4 Make sure that on the MFD (CAS area) (7), the caution messages EMERG L/G PRESS and 1 HYD MIN go out of view.
 - 7.5 If the **EMERG L/G PRESS** stays in view, see AFIP DM no. 39-A-29-31-00-00A-421B-A (Indicating - Fault Code 2931-02).

- 7.6 If the **1 HYD MIN** caution message stays in view, see AFIP DM no. 39-A-29-31-00-00A-421E-A (Indicating - Fault Code 2931-05).
- 7.7 If the caution messages stay in view, replace the Number 1 power-control module (1). Refer to AMP, see DM no. 39-A-29-11-01-00A-520A-A and DM no. 39-A-29-11-01-00A-520A-A.
- 8. On the hydraulic test bench, decrease the pressure of the Number 1 and Number 2 main-hydraulic systems to zero.
- 9. Disconnect the external hydraulic power from the helicopter. Refer to AMP, see DM no. 39-A-12-42-00-00A-510A-A.
- 10. Disconnect the external electrical power from the helicopter. Refer to AMP, see DM no. 39-A-12-41-00-00A-510A-A.
- 11. Remove all the tools and the other items from the work area. Make sure that the work area is clean.
- 12. Close the access door 473AL. Refer to AMP, see DM no. 39-A-06-41-00-00A-010A-A.
- 13. Remove the platforms from the left and right sides of the fuselage.
- 14. Return helicopter to flight configuration and record for compliance with this bollettino on the helicopter logbook.

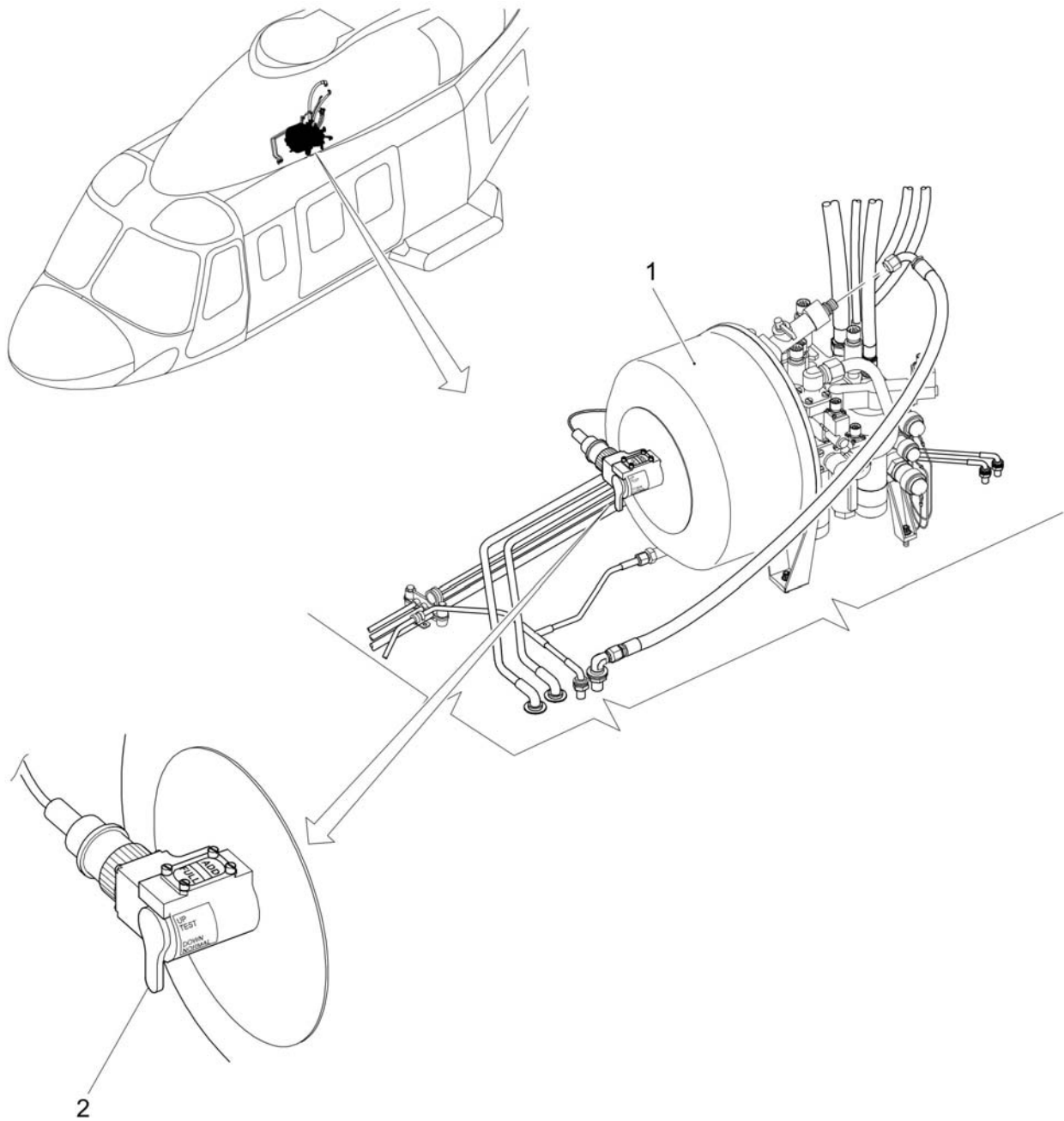


Figure 1

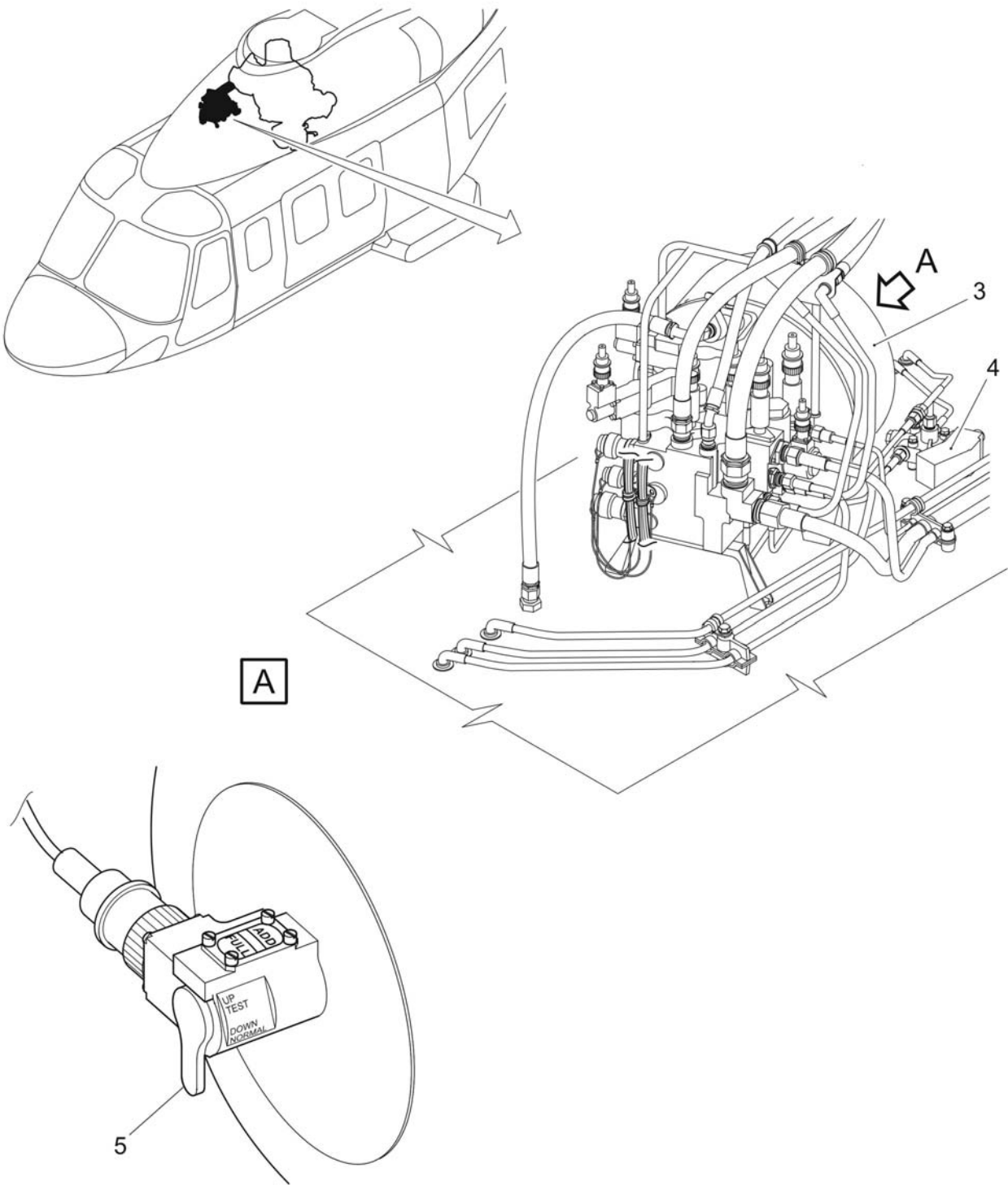


Figure 2

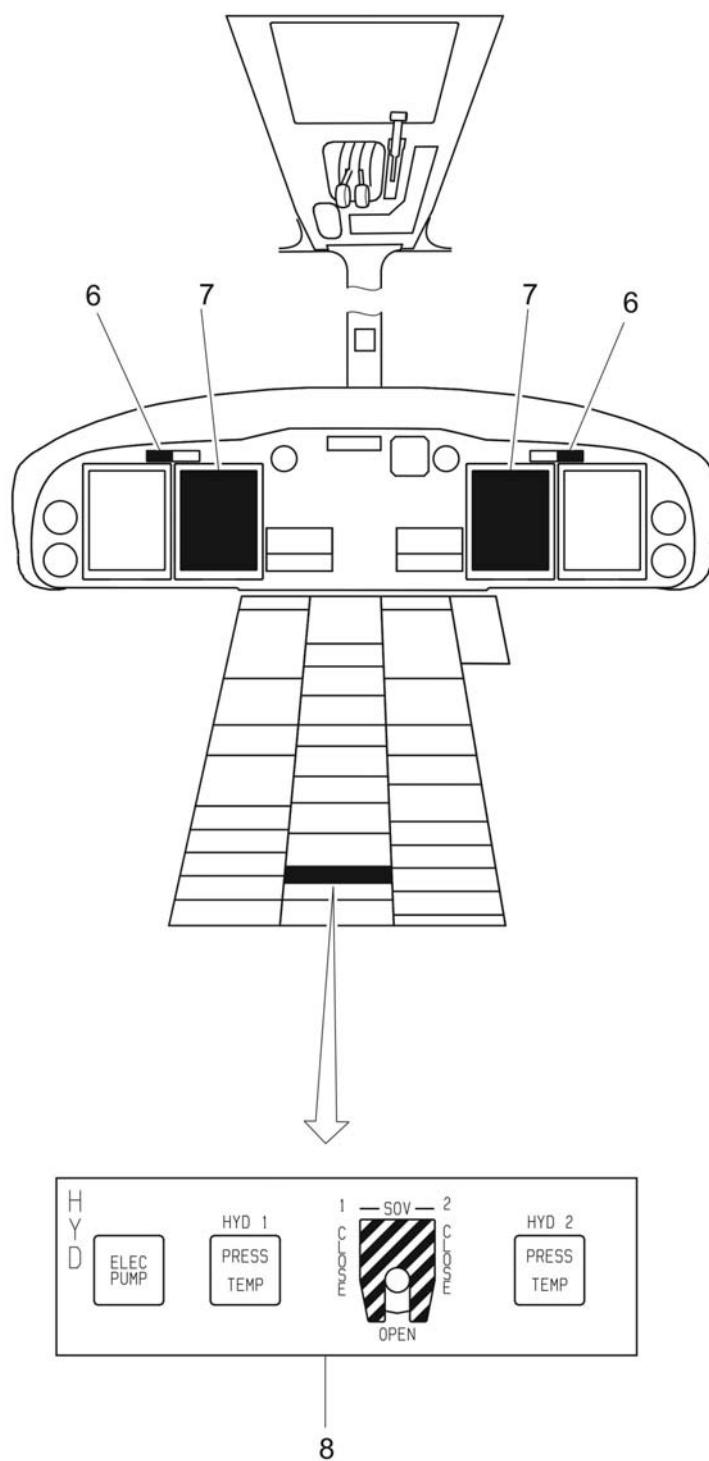
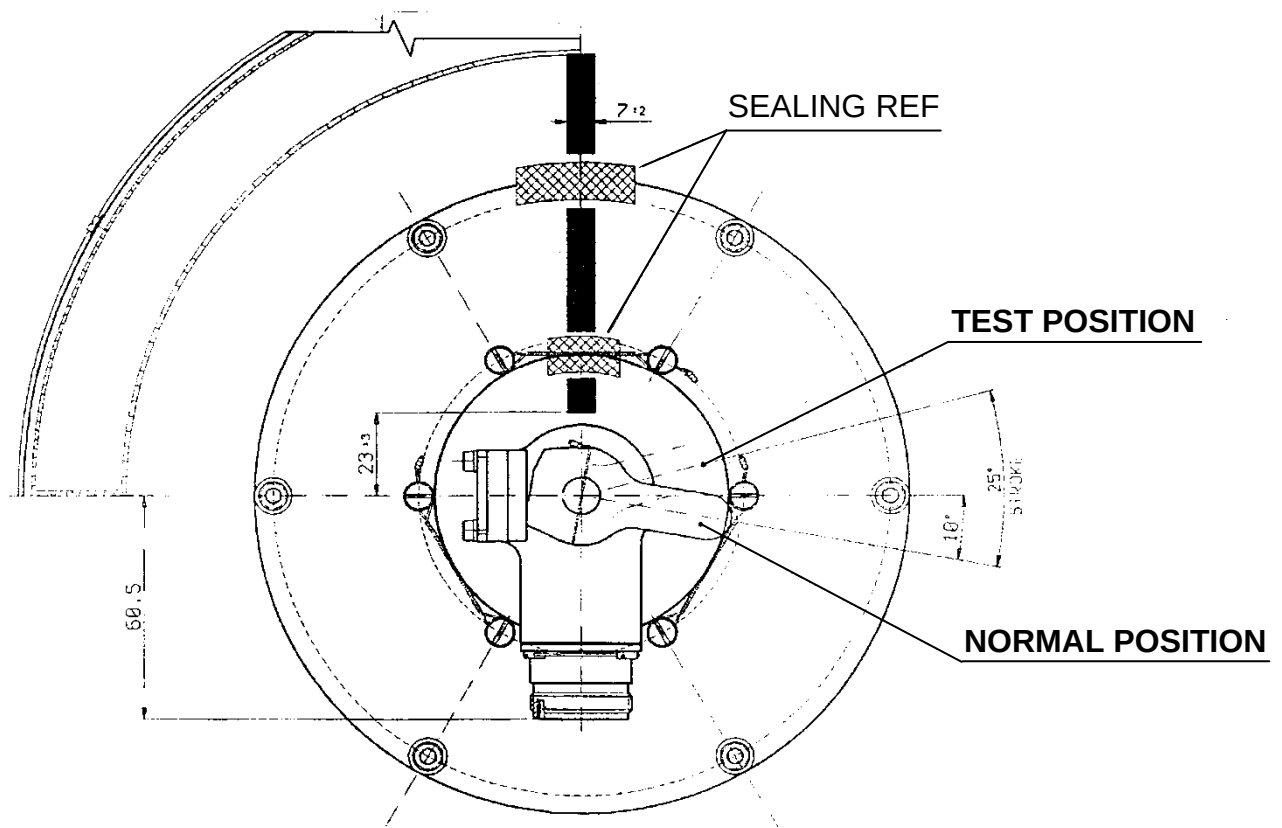


Figure 3



TEST LEVER
Refer to Figure 1 item (2)
and to Figure 2 item (5)

Figure 4

Prego spedire a questo indirizzo: Please send to the following address: AGUSTA s.p.A. CUSTOMER SUPPORT & SERVICES - ITALY PRODUCT SUPPORT ENGINEERING DPT. Via del Gregge, 100 21015 Lonate Pozzolo (VA) - ITALY Tel.: +39 0331 664600 Fax: +39 0331 664684		MODULO APPLICAZIONE BOLLETTINO TECNICO TECHNICAL BULLETIN COMPLIANCE FORM		Data: Date:	
		Numero: Number:			
		Revisione: Revision:			
Denominazione Cliente ed Indirizzo: Customer Name and Address:			Telefono: Telephone:		
			Fax:		
			Data Applicazione B.T.: B.T. Compliance Date:		
Modello Elicottero <i>Helicopter Model</i>	S/N	Matricola <i>Tail Number</i>	Ore Totali <i>Total Hours</i>	Ore D.U.R. <i>T.S.O.</i>	
Note: Remarks:					
Informazioni: Information: Al fine di gestire le varianti alla configurazione base, in relazione all'emissione del Bollettino Tecnico, preghiamo di voler compilare il presente modulo in tutte le sue parti e spedirlo all'indirizzo sopra indicato. Si ringrazia per la gentile collaborazione data. We request your cooperation in filling this form, in order to keep out statistical data relevant to aircraft configuration up-to-date. The form should be filled in all its parts and sent to the above address. We thank you beforehand for the information given.					