URGENT

***TB 1–1520–243–20–31**

DEPARTMENT OF THE ARMY TECHNICAL BULLETIN

OIL DEBRIS DETECTION SYSTEM (ODDS) CHIP DETECTOR FOR ALL AH–1 AND UH–1 SERIES AIRCRAFT

Headquarters, Department of the Army, Washington, D. C.
15 May 2002

NOTE

THIS PUBLICATION IS EFFECTIVE UNTIL RESCINDED OR SUPERSEDED.

1. Priority Classification. URGENT.

a. Aircraft in Use. Upon receipt of subject Technical Bulletin (TB), the condition status symbol of the cited aircraft will be changed to a **RED HORIZONTAL DASH** //–//. The **RED HORIZONTAL DASH** //–// may be cleared when the inspection of paragraph 8 below is completed. The affected aircraft shall be inspected as soon as practical but no later than the task/inspection suspense date. Failure to comply with the requirements of this TB within the time frame specified will cause the status symbol to be upgraded to a **RED *//X//***.

b. Aircraft in Depot Maintenance Facility. Aircraft will not be issued until compliance with this TB has been completed.

c. Aircraft Undergoing Maintenance. Aircraft will not be released until compliance with this TB has been completed.

d. Aircraft In Transit.

(1) Surface/Air Shipment. Same as paragraph 2.

(2) Ferry Status. Inspection at final destination.

e. Maintenance Trainers (Category A and B). Not applicable.

f. Component/Parts in Stock at All Levels (Depot and Others) Including War Reserves. Not applicable.

2. Task/Inspection Suspense Date. Complete the inspection IAW paragraph within the next 30 flight hours or 60 days, whichever occurs first.

3. TAMMS Reporting Compliance Suspense Date. Not applicable.

4. Summary of the Problem.

a. Aviation Safety Action message UH–1–98–ASAM–01 with TB 1–1520–243–20–25 required an inspection to measure 42 and 90 degree gearbox ODDS Chip Detector wear and incorporate the inspection into TM 55–1520–210–PM (150 hour interval). It is unclear whether the initial inspection occurred but the recurring inspection was never incorporated into the phase manual to be performed every 150 hrs. A Category I quality deficiency reported 42 and 90 degree gearbox ODDS Chip Detector, P/N 1B833, NSN 1650–01–322–6652, has experienced wear at the bottom of the detent located in the three mounting grooves. Further investigation revealed that additional ODDS Chip Detectors at the same unit location were also experiencing wear beyond the acceptance limits. This progressive wear permits the probe to back out of the valve far enough to allow oil to pass by the probe's "o–ring", thus leaking oil from the gearbox oil reservoir.

b. For Manpower/Downtime and Funding Impacts. See paragraph 12.

c. The Purpose of this TB is to reiterate the inspection requirements identified in UH–1–98–ASAM–01/TB 1–1520–243–20–25 which is to perform an initial and recurring phase maintenance inspection of all suspect 42 degree and 90 degree ODDS Chip Detectors. In addition, provide guidance to obtaining the Improved Chip Detector Assembly, installation instructions, inspection criteria for TM 55–1520–210–23 and TM 55–1520–210–PM.

5. End Items to be inspected. All UH–1 and AH–1 series aircraft equipped with ODDS (reference 13.d. and 13.j.).

6. Assembly Components to be Inspected. Not applicable.

7. Parts to be Inspected.

NOMENCLATURE	PART NUMBER	NATIONAL STOCK NUMBER
ODDS Chip Detector Probe	1B833P	1650–01–322–6652
ODDS Chip Detector Valve	1B833V	4810–01–322–6652

8. Inspection Procedures. Inspect 42 and 90 degree gearbox ODDS Chip Detectors as follows:

a. Disconnect electrical wire or cable plug from Chip Detector Probe.

b. Press in and turn counter–clockwise to remove Chip Detector Probe.

c. Inspect the three mounting grooves of probe for wear at the detent (detent is located in the probe where the pins of the valve rest, when installed). Using a caliper, or similar measuring device, measure the wall thickness at the bottom of the detent. The minimum wall thickness at the bottom of the detent should be 0.030 inch. If the wall thickness is less than 0.030 inch, it must be replaced. See paragraph 9.

d. Inspect the three pins located in the Chip Detector Valve. If pins are loose, the valve must be replaced. See paragraph 9.

9. Corrective Procedures. Replace ODDS Chip Detectors that fail the inspection referenced in paragraph 8. If you do not have an ODDS Chip Detector (Valve or Probe) in stock, you must contact the vendor in paragraph 10 to procure the new, redesigned Chip Detector Assembly P/N VM2451001 (valve and probe). The improved design Chip Detector Assembly is comprised of a Self–Closing Valve P/N VM4151003, NSN 4820–01–493–3571, and a Chip Detector Probe P/N VM2101003, NSN 1615–01–492–5715.

a. Install the Self–Closing Valve, P/N VM4151003, into the appropriate port on the tail rotor or intermediate transmission. Make sure the correct crush gasket is installed under the valve hex. Torque the valve hex to 65–70 in–lbs.

NOTE

Do not lockwire the valve to the aircraft at this time.

b. Install the Chip Detector Probe, P/N VM20101003, into the valve by lining up the "blades" (see Figure 2) on the probe with its corresponding slot in the valve. Push the probe into the valve until it will rotate in the clockwise direction. Rotate the probe 90 degrees in this direction until the probe "snaps back" and locks into place. Without pushing down, try to rotate the probe in either direction. The probe should be locked in place and move only slightly.

c. Check to make sure the probe's connector is orientated in the 12 to 3 o'clock position (see Figure 3) on the transmission in order to facilitate the wiring harness installation.

d. If the probe's connector is not orientated in the 12 to 3 o'clock position, remove the probe from the valve by pushing it into the valve until it rotates in the counterclockwise direction. Rotate the probe 90 degrees in this direction until it releases itself from the valve.

e. Reinstall the probe (per paragraph 9.b. above) 180 degrees (see Figure 3) from the first installation tried in paragraph 9.b. above.

f. Check to make sure the probe's connector is orientated in the 12 to 3 o'clock position on the transmission in order to facilitate the wiring harness installation.

g. If the probe's connector is not orientated in the 12 to 3 o'clock position, decide which probe installation (either 9.b. or 9.d. above) would required the minimal amount of additional tightening (torque) on the valve hex (clockwise direction only) in order to bring the probe's connector into the 12 to 3 o'clock position.

NOTE

The valve hex must be torqued to a minimum of 65 in–lbs. This torque may be increased up to 150 in–lbs. in order to bring the probe into the 12 to 3 o'clock position but the torque cannot be reduced below 65 in–lbs. in order to achieve this goal.

h. Remove the probe from the valve. Apply the minimal amount of torque necessary to the valve hex (clockwise direction) in order to bring the probe's connector into the 12 to 3 o'clock position. Do not torque the value above 50 in–lbs.

i. Install the probe (per paragraph 9.b. above) into the valve and verify that the probe's connector is in the 12 to 3 o'clock position. Make sure the wiring harness will reach with the probe's connector by mating it to the connector.

j. Disconnect the wiring harness and remove the probe per paragraph 9.d. above. Lockwire the valve hex to the aircraft.

k. Reinstall the probe per paragraph 9.b. above and attach the mating wiring harness to the probe's connector.

l. At next phase inspect Chip Detector Assembly.

m. Inspect probe (Figure 2) blades and Chip Detector Valve (Figure 1) locking surface for wear. If either measure less than 0.027 inches, replace worn probe or valve.

n. Repeat this inspection at each Phase Inspection.

10. Supply Parts and Disposition.

a. Parts Required. Items cited in paragraphs 6 and 7 may be required to replace defective items.

b. Requisitioning Instructions. Units shall contact Meggitt Avionics Inc. (address below) and use the impact card to procure the new Chip Detector Assembly direct. Units will receive both the valve and probe as an assembly. Future procurements will be through normal requisitioning of parts by NSN. Meggitt Avionics, Inc., Vibro–meter, Fluid Monitoring Division, 10 Ammon Drive, Manchester, NH 03103–7406, telephone (603) 669–0940, extension 235, Fax (603) 669–3692, ATTN: Tom Dolan.

c. Bulk and Consumable Materials.

NOMENCLATURE	PART NUMBER	NATIONAL STOCK NUMBER
Gasket	MS35769–11	5330–01–354–2531

d. Disposition. Dispose of removed parts/components using normal supply procedures. A QDR is not required.

e. Disposition of Hazardous Materiel. Not applicable.

11. Special Tools and Fixtures Required. As required.

12. Application

a. Category of Maintenance. AVUM. Aircraft downtime will be charged to AVUM.

b. Estimated Time Required.

(1) Maximum total of 8 man–hours using 1 person.

(2) Total of 8 hours downtime for one end item.

c. Estimated Cost Impact to the Field.

NOMENCLATURE	PART NUMBER	QTY	COST EA	TOTAL
Chip Detector Assembly	VM2451001	1	$964.83	$963.83

d. TB/MWOs to be Applied Prior to or Concurrently with this Inspection. Not Applicable.

e. Publications which Require Change as a Result of this Inspection. The following publications shall be changed to reflect this TB. A copy of this TB shall be inserted in the appropriate TM as authority to implement the change until the printed change is received.

(1) TM 55–1520–210–23P series.

(2) TM 55–1520–210–23 series.

(3) TM 55–1520–210–PM.

(4) TM 55–1520–236–23P series.

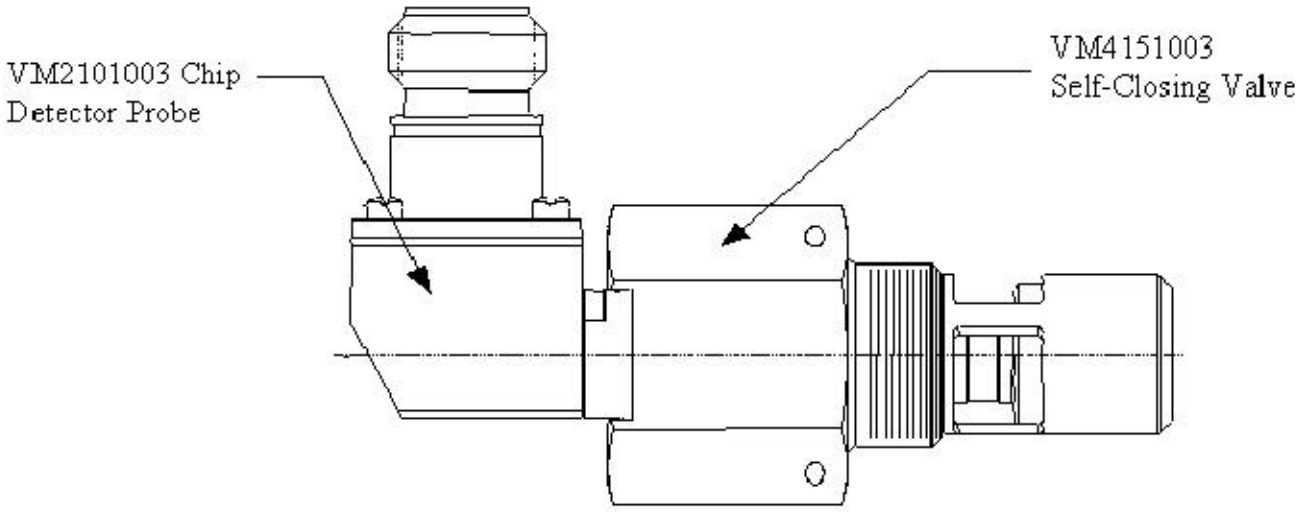


Figure 1. VM2451001 Chip Detector with Self-Closing Valve Assembly

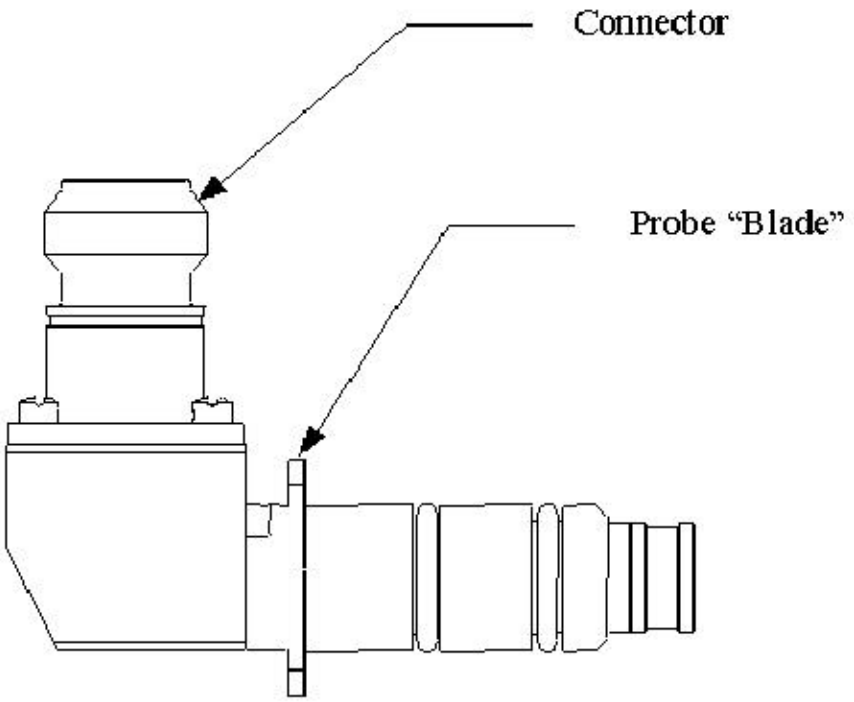


Figure 2. VM2101003 Chip Detector Probe

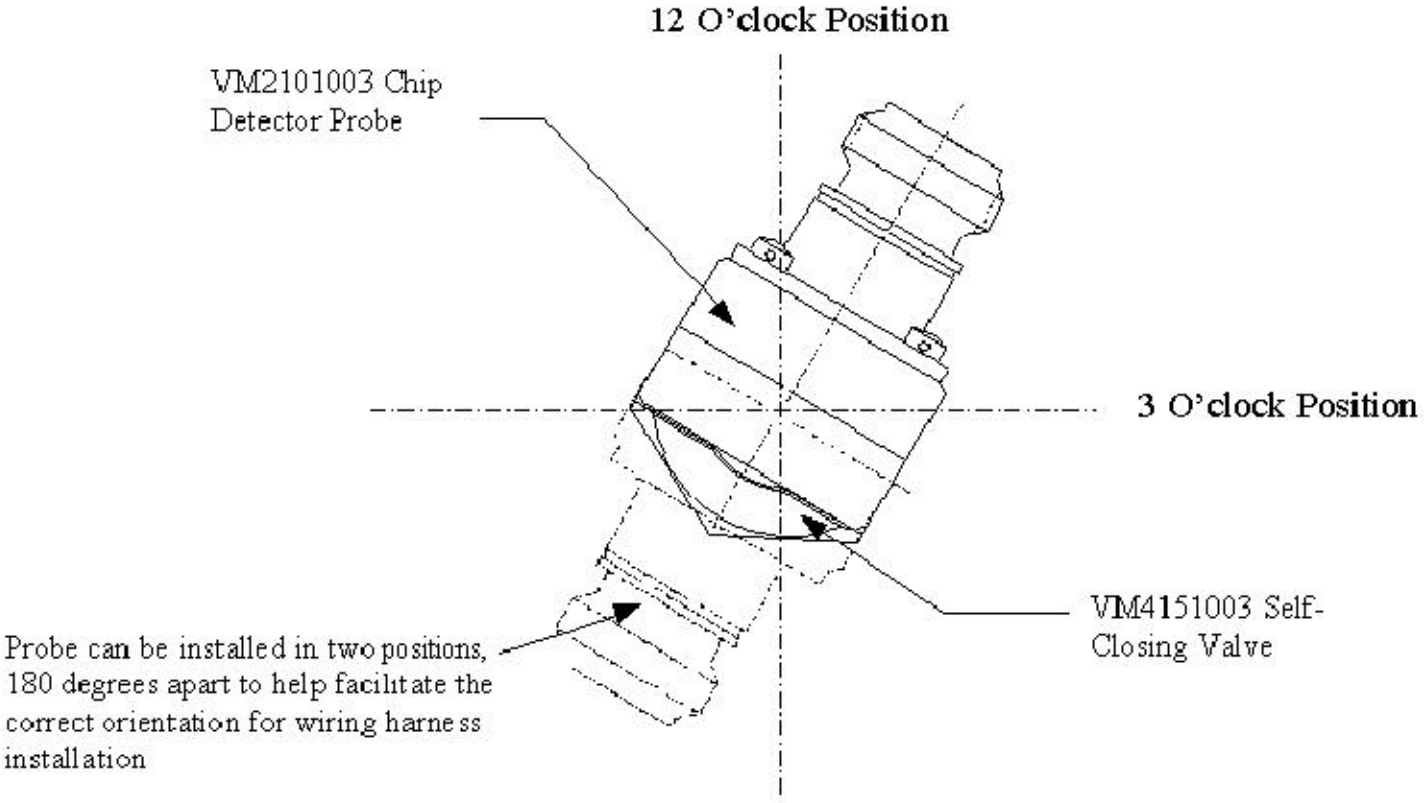


Figure 3. Chip Detector Probe Installation (probe shown in 12 to 3 o'clock positions)

(5) TM 55–1520–236–23 series.

(6) TM 55–1520–244–PM.

13. References.

a. TM 55–1520–210–23P series.

b. TM 55–1520–210–23–1.

c. TM 55–1520–210–PM.

d. TM 55–1520–236–23P series.

e. TM 55–1520–236–23 series.

f. TM 55–1520–244–PM.

g. TB 1–1520–243–20–23.

14. Recording and Reporting Requirements.

a. TAMMS Reporting Compliance Suspense (Aircraft). Not applicable.

b. Task/Inspection Reporting Suspense (Aircraft). Not applicable.

c. Reporting Message Receipt (Spares). Not applicable.

d. Task/Inspection Reporting Suspense Date (Spares) for Materiel in Wholesale Depot or Retail/Storage. Not applicable.

e. The Following Forms are Applicable and are to be Completed in Accordance with DA Pamphlet 738-751, dated 15 March 1999:

NOTE

Unit Level Logistics System–Aviation (ULLS–A) users will use applicable electronic “E” forms.

(1) DA Form 2408–13, Aircraft Status Information Record.

(2) DA Form 2408-13-1, Aircraft Inspection and Maintenance Record.

(3) DA Form 2408–15, Historical Record for Aircraft.

15. Weight and Balance. Not applicable.

16. Points of Contact.

a. Technical points of contact for this TB are:

(1) UH–1 point of contact is Mr. Darrell Hutson, AMSAM–RD–AE–I–D–U, DSN 897–2350, extension 9720 or Commercial (256) 705–9720. Datafax is DSN 897–9896 or Commercial (256) 705–9896. E–mail is <darrell.hutson@rdec.redstone.army.mil>.

(2) AH–1 point of contact is Ms. Denise Bouchard, AMSAM–DR–AE–I, DSN 897–9819 or Commercial (256) 705–9819. E–mail is <denise.bouchard@rdec.redstone.army.mil>.

b. Logistical points of contact for this TB is Mr. Charlie Elkins, SFAE–AV–UH–L, DSN 645–0073 or (256) 955–0073. Datafax is DSN 897–3762 or Commercial (256) 313–3762. E–mail is <charlie.elkins@uh.redstone.army.mil>.

c. Forms and Records point of contact for this TB is Ms. Ann Waldeck, AMSAM–MMC–RE–F, DSN 746–5564 or Commercial (256) 876–5564. Datafax is DSN 746–4904 or (256) 876–4904. E–mail is <ann.waldeck@redstone.army.mil>.

d. Foreign Military Sales recipients requiring clarification of action advised by this TB should contact Mr. Ronnie W. Sammons, AMSAM–SA–CS–NF, DSN 897–0869 or Commercial (256) 313–0869. Datafax is DSN 897–0411 or (256) 313–0411. E–mail is <ronnie.sammons@redstone.army.mil>.

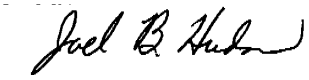
e. After hours contact the AMCOM Command Operations Center (COC) DSN 897–2066/2067 or Commercial (256) 313–2066/2067.

17. Reporting of Errors and Recommending Improvements. You can improve this TB. If you find any mistakes or if you know of a way to improve these procedures, please let us know. Mail your letter or DA Form 2028 (Recommended Changes to Publications and Blank Forms) directly to: Commander, US Army Aviation and Missile Command, ATTN: AMSAM–MMC–MA–NP, Redstone Arsenal, Alabama 35898–5230. A reply will be furnished to you. You may also send in your comments electronically to our E–mail address at <2028@redstone.army.mil>, or by datafax at DSN 788–6546 or commercial (256) 842–6546, or the World Wide Web. Instructions for sending a DA Form 2028 by E–mail may be found at the back of most Technical Manuals. For the World Wide Web, use: https://amcom2028.redstone.army.mil.

By Order of the Secretary of the Army:

Official:

ERIC K. SHINSEKI
General, United States Army
Chief of Staff



JOEL B. HUDSON
Administrative Assistant to the
Secretary of the Army
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