

By: Lindsay M. A. 31 MARCH 2009  
Approved: Pat Cox 31 MAR 2009

Issued: 31 March 2009

**KI-193-2 R44 II Gascolator Assembly Upgrade Field Installation Kit Instructions**  
(for compliance with R44 Service Bulletin SB-69)

KIT CONTENTS:

3 feet	B161-8	Spirap
1 ea	B330-25	Palnut
1 ea	D454-6	retainer
1 ea	KI-193-2 INSTR	Kit Instructions
1 ea	KI-193-3	top assembly, includes:
	1 ea B402-3	top
	1 ea B416-1	collar
	1 ea B416-2	ring
	1 ea 10536-1	gasket
	1 ea 10543-2	screen
	1 ea MS27769D2	plug
1 ea	AN833-6	elbow
1 ea	MS29512-06	packing
10 ea	MS3367-5-9	ty-rap
1 ea	6505-04-06-SS	adapter

CONSUMABLES REQUIRED:

A257-6 fuel-resistant grease (Fuelube, ref R44 Maintenance Manual (MM) Section 1.470)  
B270-6 sealant & lubricant, thread (Titesal 55, ref MM Section 1.480)

INSTRUCTIONS:

1. Verify kit contents match above list. Contact RHC Customer Service if parts are missing or damaged ([customerservice@robinsonheli.com](mailto:customerservice@robinsonheli.com)).
2. Review instructions before installation. Contact RHC Technical Support if you have any questions.
3. Turn MASTER switch and fuel shut-off valve OFF, remove engine right cowling, and drain gascolator.
4. Clean exterior of A666-1 gascolator assembly, D743 electric (aux) fuel pump, attached fittings, C741-1 line assembly, and B283-3 hose assembly.
5. Refer to R44 Illustrated Parts Catalog Figures 8-1, 8-3, and 8-9B dated JUL 2008 (or subsequent). Remove ty-raps as required and disconnect D745-1 vacuum switch and aux fuel pump motor wiring from airframe electrical harness at connectors. Mark and disconnect wires from B426-2 fuel pressure switch.

(OVER)

By: *Lincoln M. Al* 31 MARCH 2009  
Approved: *Pat Cox* 31 MAR 2009

Issued: 31 March 2009

6. Disconnect B283-3 hose assembly from aux fuel pump tee and protect hose inlet and tee outlet. Disconnect C741-1 line assembly from gascolator inlet nipple.
7. Detach aux fuel pump's drain tube clamp from vertical firewall. Open HTM-300 clamp securing aux fuel pump to D742-1 support and clip on firewall. Remove and retain nut and washer(s) securing gascolator to A454-1 support. Remove aux fuel pump and attached gascolator. Protect outlet of C741-1 line assembly.
8. Separate gascolator from pump by disconnecting adapter from elbow. Remove sediment bowl, vacuum switch, A455-1 plug, and AN816-6D nipple from gascolator assembly and clean. Discard gascolator top, gasket, screen, and attached aluminum adapter.
9. Remove MS27769D2 plug from new B402-3 top and discard plug. Apply B270-6 sealant sparingly to tapered pipe threads of vacuum switch, A455-1 plug, nipple, and new 6505-04-06-SS steel adapter (do not apply sealant to first thread of fittings). Install nipple in port marked "IN" on B402-3 top and torque to 170 in.-lb. Install A455-1 plug in center hole of top and special torque to 120 in.-lb. Install new adapter in top's outlet port and torque to 170 in.-lb. Install vacuum switch in remaining port and torque to 120 in.-lb. Wipe off excess sealant.
- 10.(a) From aux fuel pump, remove aluminum elbow with attached palnut, D452-6 nut, MS28773 retainer, & o-ring packing. Retain & clean D452-6 nut. Discard elbow, palnut, retainer, & packing.
  - (b) Install new B330-25 palnut followed by D452-6 nut (counterbore facing outboard) on inboard threads of new AN833-6 steel elbow. Install new D454-6 retainer on smooth area between threads and press retainer completely into counterbore of nut. Lubricate new MS29512-06 packing with A257-6 grease and install between threads adjacent to retainer.
  - (c) Rotate combined nut & retainer until packing is pushed against outboard threads. Screw elbow into pump until packing contacts pump boss, indicated by a sudden increase in torque. Hold nut with wrench and tighten elbow no more than one full turn until elbow points away from motor and parallels long axis of pump. Hold elbow and special torque D452-6 nut to 150 in.-lb, special torque palnut to 75 in.-lb, and torque stripe per MM Figure 2-1.
  - (d) Connect B402-3 top's adapter to pump elbow, align A455-1 plug to point parallel with pump inlet, special torque adapter nut to 285 in.-lb, and torque stripe per MM Figure 2-1.
11. Position B402-3 top's A455-1 plug in A454-1 support with pump motor firmly resting on D742-1 support. Note any gap between bottom of A454-1 support and shoulder of A455-1 plug; fill gap as required by installing NAS1149F0432P washers on plug. Install retaining washer and nut on plug, special torque to 70 in.-lb, and torque stripe per MM Figure 2-1.

(OVER)

By: [Signature] 31 MAR 2009  
Approved: [Signature] 31 MAR 2009

Issued: 31 March 2009

12. Ensure HTM-300 clamp goes through clip on vertical firewall and slot in D742-1 support. Connect clamp around pump motor and torque to 100 in.-lb. Secure pump drain tube and clamp to firewall.
13. Connect C741-1 line assembly to gascolator inlet nipple, special torque nut to 285 in.-lb, and torque stripe per MM Figure 2-1. Connect B283-3 hose assembly to aux fuel pump tee. Special torque nut to 120 in.-lb and torque stripe per MM Figure 2-1.
14. Verify two 10.5/10.0-inch long layers of B161-8 spirap insulation covering C741-1 line assembly between firewall and nut. Install new spirap as required.
15. Connect wires to fuel pressure switch, and vacuum switch and pump motor to airframe electrical harness. Install ty-raps as required.
16. Remove B416-1 collar, B416-2 ring (ring is pre-lubricated with A257-6 grease and may stick to collar nut inner flange), 10536-1 gasket, and 10543-2 screen from B402-3 top.
17. (a) Electrically ground the helicopter.  
(b) Defuel helicopter thru B402-3 top into an approved, electrically grounded container until LOW FUEL light illuminates then turn fuel shut-off valve OFF.  
(c) Electrically ground to helicopter a container of known volume, as listed below. Turn fuel valve on and fill container thru B402-3 top. Verify filling time does not exceed maximum listed.

<u>Quantity</u>	<u>Maximum Time</u>
1 U.S. Gallon	90 seconds
4 Liters	95 seconds
1 Imperial Gallon	108 seconds

  
(d) If fuel flow is insufficient (maximum time is exceeded), check for obstructions in fuel tank vents, fuel tank outlet strainer, fuel line, and hoses (ref R44 SB-68).
18. Reinstall new screen and gasket in B402-3 top. Verify large diameter of ring is contacting inner flange of collar. Slide combined ring and collar over bottom of sediment bowl so small diameter of ring engages groove in underside of bowl flange. With sediment bowl drain positioned thru hole in belly, hand-tighten collar, ring, and bowl onto B402-3 top until snug. Safety collar to outlet fitting (adapter) using 0.032-inch diameter lockwire.

**NOTE**

As required, lightly lubricate collar threads and collar/ring mating surface with A257-6 grease during subsequent screen and sediment bowl inspections.

(OVER)

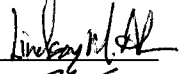

**ROBINSON  
HELICOPTER COMPANY**

KI-193-2 Rev A

Page 4 of 4

2901 Airport Drive, Torrance, California 90505

Phone (310) 539-0508 Fax (310) 539-5198

By:  31 MARCH 2009  
Approved:  31 MAR 2009

Issued: 31 March 2009

19. Turn fuel shut-off valve ON. Verify mixture control is in idle-cutoff position and rotor brake is engaged. Turn MASTER switch on and turn key switch to PRIME position. Hold key switch in PRIME for minimum 10 seconds after AUX FUEL PUMP light extinguishes. Release key switch and turn MASTER switch off. Verify no fuel leaks.
20. Run-up helicopter per Pilot's Operating Handbook.
21. Verify no fuel leaks. Install engine right cowling assembly.
22. Make appropriate maintenance record entries (no change in weight and balance).