

**R44-series & R44 II-series Electronic Ignition System (EIS) Upgrade Kit Instructions**

*Kit replaces retard TCM magneto with EIS. Use KI-272-2A on R44-series S/N 2625 thru 2704 (except 2703) and Cadet S/N 30071 thru 30087. Use KI-272-2B on R44 II-series S/N 14412 thru 14572.*

**NOTE**

Visit [www.robinsonheli.com](http://www.robinsonheli.com) to verify kit instructions are current revision. Review instructions before installation; contact RHC Technical Support with questions. Verify kit contents match list; contact RHC Customer Service if parts are missing or damaged.

**NOTE**

Kit installation requires Lycoming Service Instruction No. 1569. Visit [www.lycoming.com](http://www.lycoming.com) for current revision of noted technical publication.

ITEM	PART NUMBER	KIT CONTENTS	QTY PER KI-272-2A	QTY PER KI-272-2B
1	KI-272-2Instr.	Kit Instructions . . . . .	1	1
2	A130-35	Spacer . . . . .	1	1
3	B049-14	Harness Assembly . . . . .	1	1
4	B049-15	Harness Assembly . . . . .	1	1
5	B158-4-1IN	Heat Shrink, 1 inch diameter (1-inch length) . . . . .	4	4
6	D260-4	Relay . . . . .	0	1
7	B263-4	Socket . . . . .	1	1
8	B263-31	Housing . . . . .	1	1
9	D275-210	Fuse . . . . .	1	1
10	01F29428-CT	Screws (Lycoming part number) . . . . .	3	3
11	66K6D3SN-01	EIS (Lycoming part number) . . . . .	0	1
12	66K6D3SN-02	EIS (Lycoming part number) . . . . .	1	0
13	67U20649	Ignition Harness (Lycoming part number) . . . . .	1	1
14	MS3367-4-9+	Ty-Rap (Note: "+" in part number indicates 20-qty pack) . . . . .	1	1
15	MS3367-5-9+	Ty-Rap (Note: "+" in part number indicates 20-qty pack) . . . . .	1	1
16	MS21919WDG7	Clamp . . . . .	0	1
17	MS25171-1S	Nipple . . . . .	1	1
18	MS27039C1-08	Screw . . . . .	0	1
19	MS27039C1-14	Screw . . . . .	0	1
20	MS35206-227+	Screw (Note: "+" in part number indicates 10-qty pack) . . . . .	1	1
21	MS35333-37	Lockwasher . . . . .	2	2

**Special Tools**

- Wire stripping and crimping tools
- Heat gun

**Kit Instructions**

1. Turn BATTERY switch OFF. Disconnect battery per Refer to R44 Maintenance Manual (MM) § 37-10.

**NOTE**

Parenthetic dash numbers, such as (-166), indicate number marked on wiring insulation (if single conductor), or jacket (if multi-conductor and/or shielded).

2. **R44-series and Cadet only:**

Refer to R44 Illustrated Parts Catalog (IPC) Figure 96-63B. Gain access to, and remove magneto start booster. Slide B158-4-1IN heat shrink over receptacles on wires (-166) & (-584). Apply heat using heat gun. While heat shrink is hot, pinch and close the open end using smooth jaw pliers. Verify wire is insulated and heat shrink is secure. Secure covered wires using appropriately-sized ty-raps.

**R44 II-series only:**

Refer to IPC Figure 96-63B. Gain access to, and remove magneto start booster. Slide B158-4-1IN heat shrink over receptacles on wires (-1523), (-1525) & (-1527). Apply heat using heat gun. While heat shrink is hot, pinch and close the open end using smooth jaw pliers. Verify wire is insulated and heat shrink is secure. Secure covered wires using appropriately-sized ty-raps.

3. **R44 II-series only:**

Refer to Figure 1. Install D260-4 relay onto C296-3 bulkhead using MS27039C1-08 screw. Connect airframe harness wires to relay as marked and secure using MS27039C1-14 screw, MS21919WDG7 clamp, and A130-35 spacer.

4. Refer to IPC Figures 53-1 and 53-5. Remove D040-1, C377 (LH), and C378 (RH) cowling assemblies.
5. Refer to IPC Figure 71-9. Remove LH (retard) magneto from engine per Lycoming Service Instruction (SI) No. 1569; retain mounting hardware and discard magneto gasket.
6. Refer to Figure 2. Install B049-14 and B049-15 harness assemblies to 66K6D3SN-01 or -02 EIS as shown. Internally time EIS per SI 1569.
7. Install EIS using retained hardware and time to engine per SI 1569.
8. Refer to Figures 3A or 3B. Locate B304-21 or -22 fuse assembly adjacent to B415 battery relay. Cut ty-raps as required and install D275-210 (10A) fuse; secure using appropriately-sized ty-raps.
9. **R44 Helicopter S/N 2625 thru 2670, Cadet S/N 30071 thru 30085 and RII 14412 thru 14520 only:**  
Refer to Figures 3A or 3B, and 4. Locate stowed wire (-3086) covered with black heat shrink. Trim wire five inches from ring terminal end. Strip wire (-3086) and crimp B263-4 socket on wire. Inspect crimp per MM §23-84. Verify security of socket. Install socket into B263-31 housing. Verify security of socket in housing.
10. Refer to Figures 3A or 3B, and 4. Install existing p-lead and shield drain wires to EIS as shown. Locate and connect wire (-3086) to B049-14 harness assembly assembly. Slide B158-4-1IN heat shrink over terminal on unused retard wire. Apply heat using heat gun. While heat shrink is hot, pinch and close the open end using smooth jaw pliers. Verify wire is insulated and heat shrink is secure. Secure terminal by securing to adjacent wire bundle using appropriately-sized ty-raps.

## Kit Instructions (continued)

11. Install 67U20649 ignition harness using (3) 01F29428-CT screws and special torque screws per SI 1569. Route ignition leads as marked.
12. Install D040-1, C377 (LH), and C378 (RH) cowling assemblies.
13. Connect battery per MM § 37-10.
14. Perform operational check per SI 1569.
15. Revise helicopter's Weight and Balance Record in Pilot's Operating Handbook (POH) Section 6 to reflect this installation by incorporating the following data:

### **Remove:**

(R44 and Cadet only):

Item	Weight	Long. Arm	Long. Moment	Lat. Arm	Lat. Moment
Retard Magneto Ignition System	-5.90 lb	94.69 in	-558.692 in-lb	4.41 in	-26.05 in-lb

**OR**

(R44 II only):

Item	Weight	Long. Arm	Long. Moment	Lat. Arm	Lat. Moment
Retard Magneto Ignition System	-6.12 lb	93.80 in	-574.052 in-lb	4.25 in	-26.05 in-lb

### **Install:**

(R44 and Cadet only):

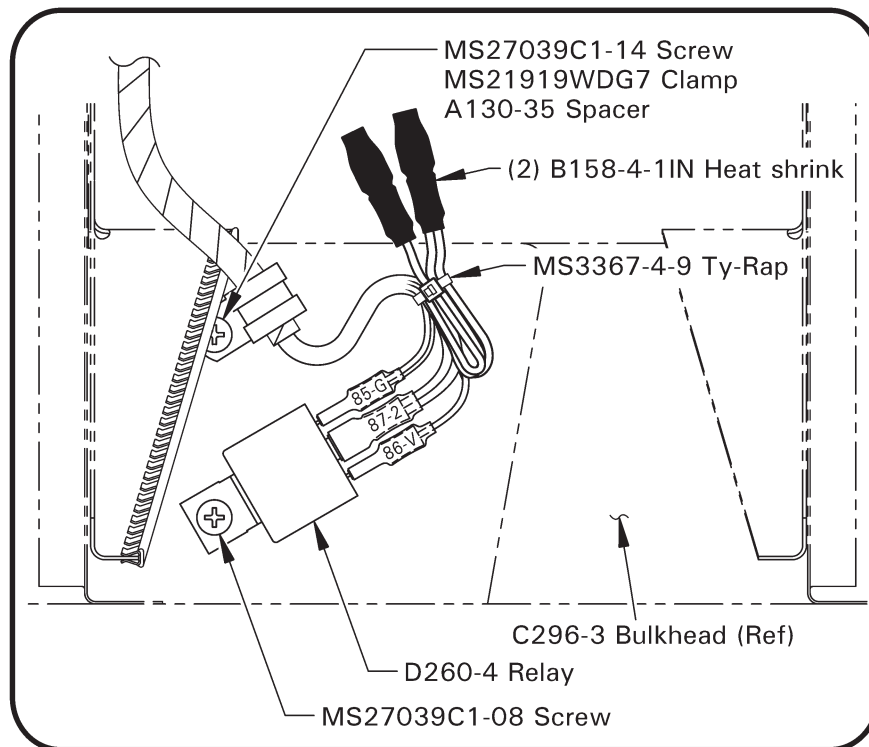
Item	Weight	Long. Arm	Long. Moment	Lat. Arm	Lat. Moment
Electronic Ignition System (Engine LH)	+5.19 lb	97.88 in	+507.997 in-lb	4.98 in	25.85 in-lb

**OR**

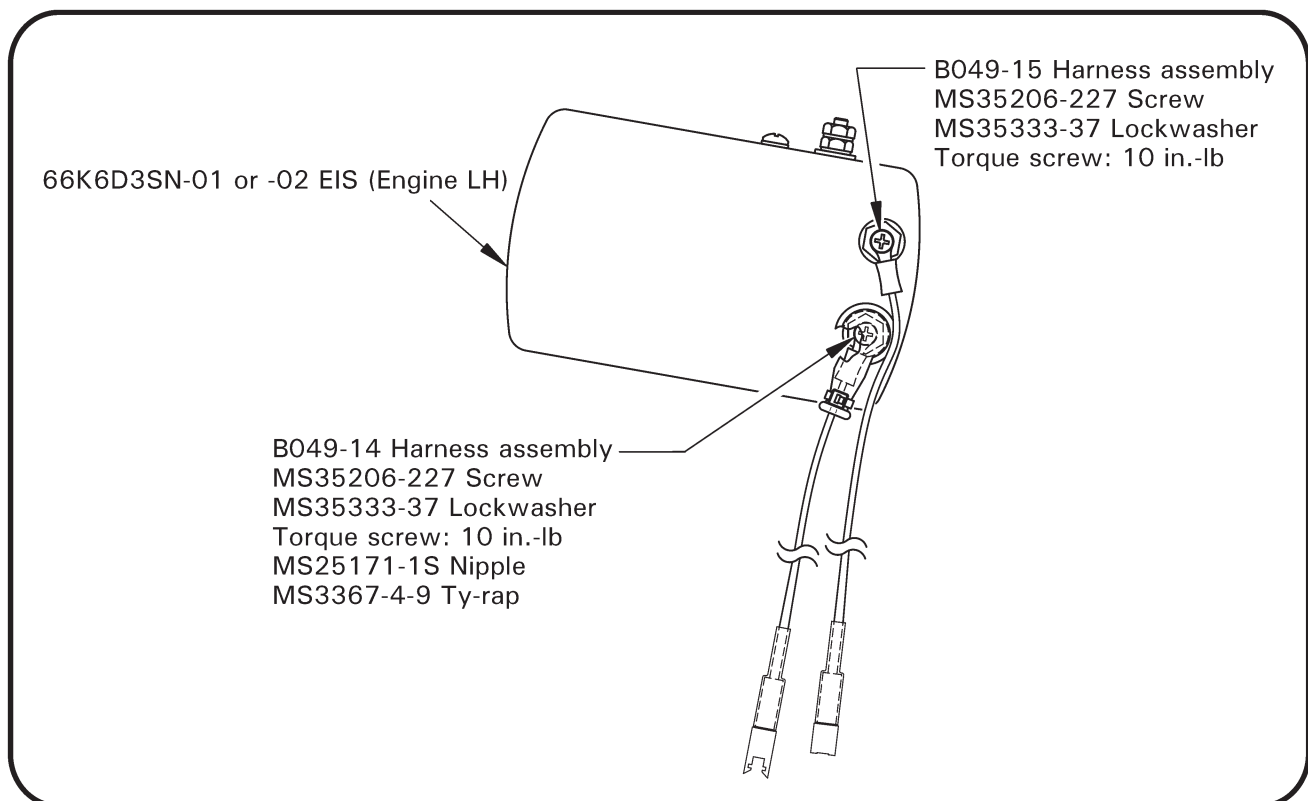
(R44 II only):

Item	Weight	Long. Arm	Long. Moment	Lat. Arm	Lat. Moment
Electronic Ignition System (Engine LH)	+5.24 lb	97.45 in	+510.646 in-lb	4.90 in	25.70 in-lb

16. Make appropriate maintenance record entries.



**Figure 1 D260-4 Relay installation**  
(View looking forward)



**Figure 2 Harness installations**

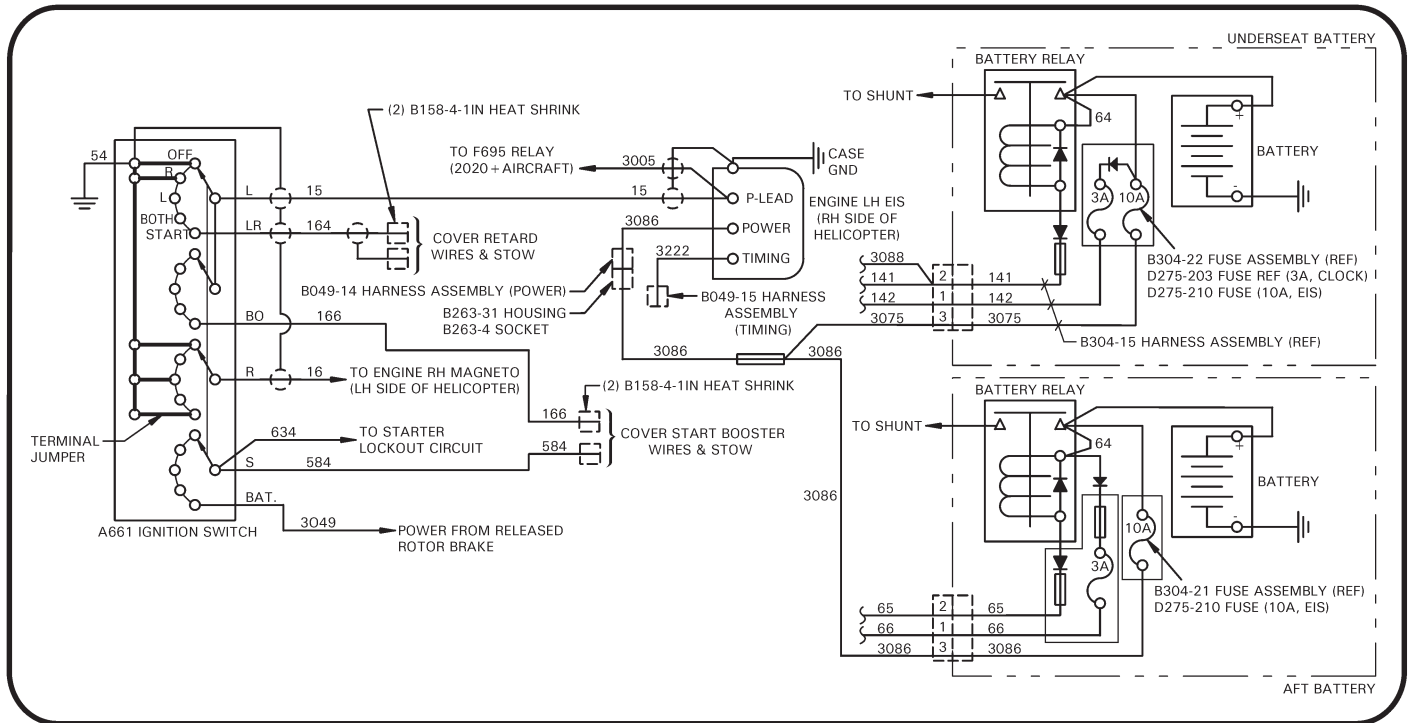


Figure 3A R44-series and Cadet EIS schematic

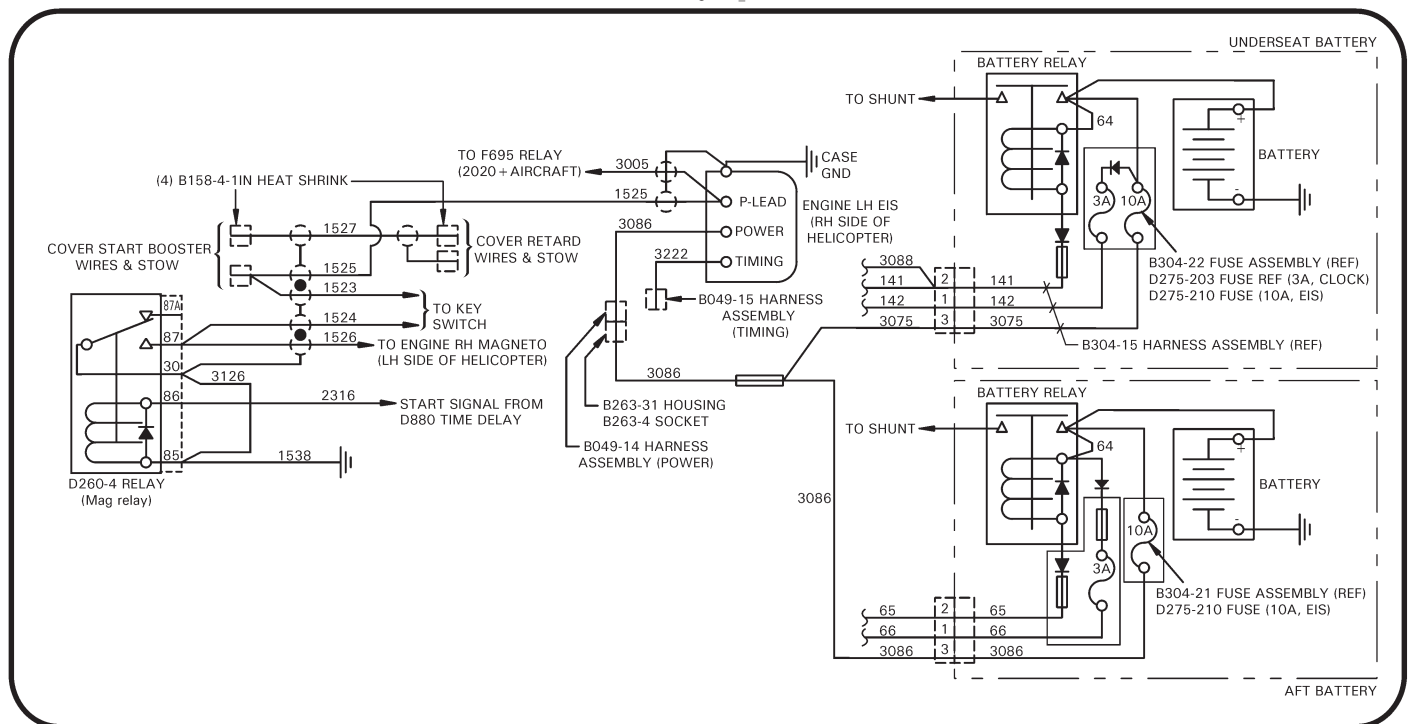
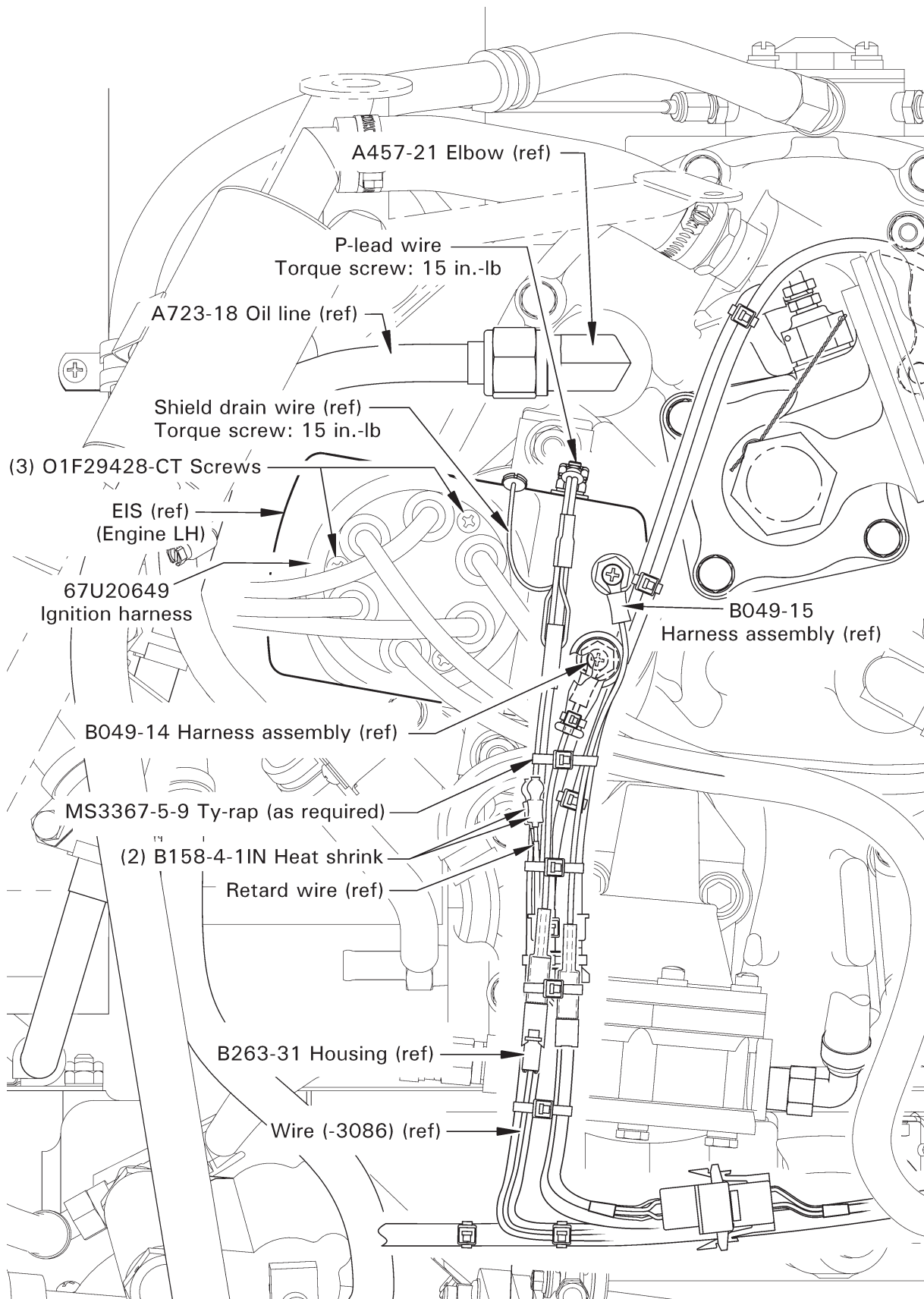


Figure 3B R44 II-series EIS schematic



**Figure 4 R44-II series EIS installation, engine LH shown**  
(View looking aft, R44-series similar)