



# TECHNICAL BULLETIN

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## CONVERSION FROM PRESSURE SWITCH ACTIVATED TO EPO ACTIVATED AUTO-REIGNITION SYSTEM

### 1. PLANNING INFORMATION

#### A. MODELS AFFECTED:

All 369I-I Series helicopters equipped with 250-C18 engine and 369H90118, 369H90118-501 or 369H90118-503 auto-reignition

#### B. PREFACE:

This Service Information Notice lists a procedure to install the M50033 N/NR engine out warning kit and to convert the 369H90118, 369H90118-501 or 369H90118-503 pressure switch activated auto-reignition system to 369H90118-505 EPO activated auto-reignition system on helicopters equipped with 250-C18 engine. Conversion will result in faster reaction time.

#### C. TIME OF COMPLIANCE:

At owner and operator discretion.

#### D. FAA APPROVAL:

FAA/DER APPROVED 23 July 1980

#### E. WEIGHT AND BALANCE:

Weight and balance not affected

#### F. REFERENCE:

500 Model 369 Series Basic HMI, Issued 1 October 1972; Revision No. 7, 15 December, 1976

500 Model 369 Series Appendix A to Basic HMI, Issued 1 October 1972; Revision No. 4, 15 December 1974

#### G. TOOLS AND EQUIPMENT:

TOOLS AND EQUIPMENT	
Nomenclature	Source
Drill motor-portable	
Drill bit- No. 26	

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## H. PARTS LIST:

PARTS LIST			
Nomenclature	Part No.	Qty.	Source
Engine out warning kit	M50033	1	HH
Engine auto-reignition modification kit	369H90118 – 61	1	HH
Engine auto-reignition modification kit	369 H90118 – 71	1	HH
Bracket	369H2505-111	1	HH
Ignition exciter assy*	6870885	1	Allison
Igniter**	6843984	1	Allison
Pin	MPCM20M-H2	2	Burndy
Splice	32445	4	Commercial
Terminal	MS25036-149	7	Commercial
Terminal	MS25036-102	3	Commercial
Switch	MS35059 -22	1	Commercial
Screw	MS35206-203	2	Commercial
Nut	MS21042L04	2	Commercial
Washer	NAS620C6	2	Commercial
Screw	MS35206 – 213	2	Commercial
Washer	AN960 C4 L	4	Commercial
Sleeving	#	AR	Commercial
Wire-AWG 20	##	AR	Commercial

\*If not previously installed. Alternate Allison Part No. 6870891 or 6895573.

\*\*If not previously installed Alternate Allison Part No. 6874Z71 or 6877518.

#MIL-I-631, No. 20

##M/L-W-16878/4, Type E



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## 2. PROCEDURE

a. Install M50033 N1/NR engine out warning kit as follows: (refer to Group 12 of Basic HMI Appendix A):

1. Remove fairing from right side of instrument panel.
2. Disconnect and remove existing EPO unit, amplifier and wire harness.
3. Install new 369A4514-3 control unit using existing hardware. Connect 369H4520 wire harness as shown and secure with tie-strap.
4. Remove controls access door (refer to Section 2 of Basic HMI).
5. Install NR disable switch (S199) and actuating arm to inboard collective stick socket housing and gas producer bellcrank as follows (refer to Group 2 of Basic HMI/Appendix A):
  - (a). Remove nuts and washers securing two upper bolts to inboard collective stick socket. Insert slotted attaching bracket under bolt heads and washers. Install -3 clip under existing nut and washer (2 places) and tighten bolts.
  - (b). Install NR switch with JM-5 roller leaf attaching bracket and attach plate. Use two MS35275-208 screws, two MS35338-39 washers and two NAS620-2 washers. Do not tighten screws until final adjustment of switch.

**NOTE:** Actuating cam is used in place of slotted actuating arm for later NR disable switch installations.

- (c). Remove bolt, washers, nut and cotter pin securing link assembly to bellcrank next to housing cap. Reinstall bolt without washer under bolt head-and insert slotted actuating arm under bolt head. Install washer and nut. Tighten bolt and secure nut with cotter pin.

6. Install and connect wiring for N1/NR engine out warning system as shown in wiring diagram in Basic HMI Appendix A.

**NOTE:**

Do not tie wires from SI99 to wires to PI9 connector or to removable collective stick. Allow sufficient slack in wires to permit movement of controls.

Cover knife splices with fiberglass sleeving and tie sleeving in place. Cut existing wire two inches from S199 switch position NC and heat shrink TC4003 end cap in place. Secure switch wiring to -3 clips with tie-straps and bend clips to suit.

7. Install TC-814 tie base to inner side of inboard partition of right hand seat assembly and back-to-back with existing tie base. Use MS20600AD4W3 rivet and AN960PD6L washer.

8. Adjust NR disable switch (refer to Basic HMI Appendix A).

b. Rework auto-reignition system as follows:

1. Remove 369H92025-3 or 369H92040 pressure switch from AN783C3 tee.
2. Plug tee with 369H90118-61 assembly. (See Figure 1).
3. Remove wire No. J503A20 and J502B20, 369H90118-31 angle and CA3100E10SL-35F80 connector (J302).

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4. Install 369H90118-71 relay assembly as follows (See Figure 1):

(a). Remove fairing from left side of instrument panel. (Refer to Section 2 of Basic HMI) As required, drill four 0.140 to 0.152 inch diameter holes. Use No. 26 drill.

(b). Install 369H2505-111 bracket on left side of instrument panel as shown.

(c). Install 369A4557 relay (K104) on bracket as shown.

5. Remove MS25224-1 switch guard and MS24509-7 1/2 circuit breaker (CB124) located on auto-reignition switch panel.

6. Install MS35059-22 switch (S11) in hole where circuit breaker was.

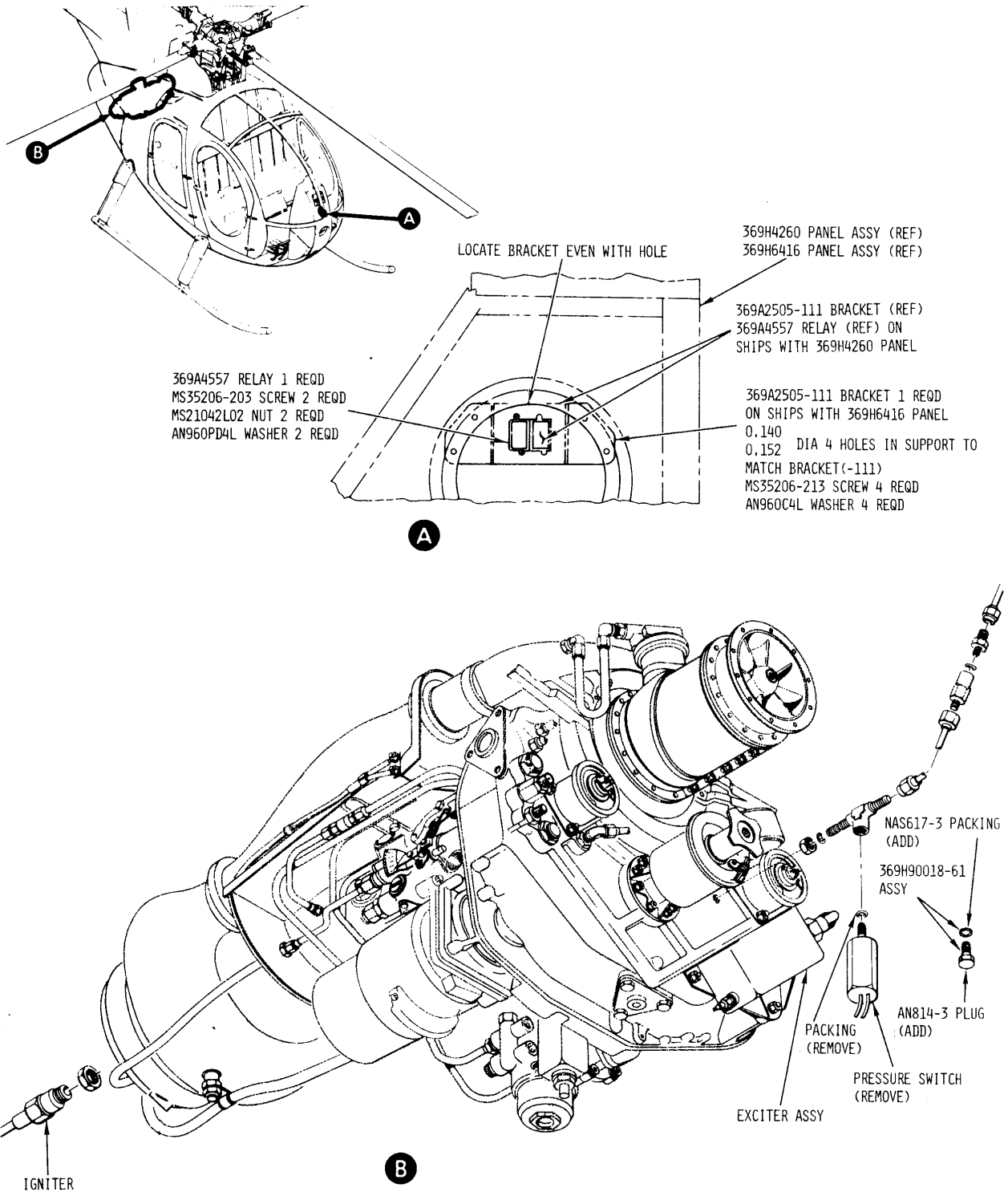
**NOTE:** The following changes to auto-reignition wiring result in reidentification of 369H90118-11 diode isolator assembly and 369H90118-21 switch panel assembly to 369H90118-51 and 369H90118-81 respectively.

7. Install wiring as shown in wiring diagram (Figure 2) and wire table (Figure 3). Cover jumpers with insulation sleeving.

c. Reinstall fairing on left and right sides of instrument panel, center seat cover and controls access door. (Refer to Section 2 of Basic HMI)

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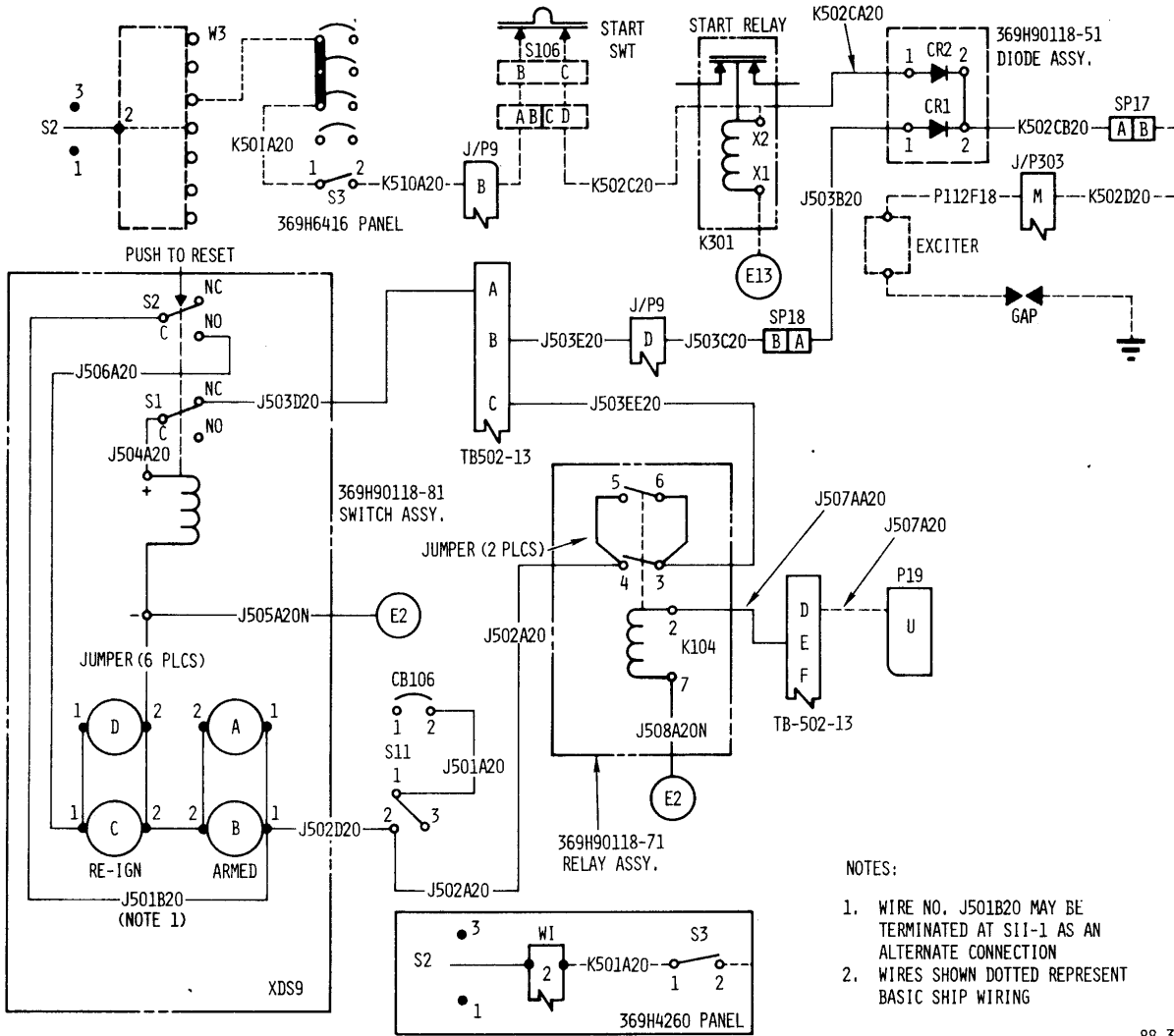
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**Figure 1. Installation of 369H90118-61 and 369H90118-71 Assemblies**

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**Figure 2. Wiring Diagram**

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NOTES:

1. COVER JUMPERS WITH INSULATION SLEEVING, MIL-1-631 NO. 20
2. MIL-W 5086 TYPE II WIRE OR MIL-W-16878/4 (19STRD) WIRE MAY BE LISTED AS AN ALTERNATE FOR GENERAL CABLE CO. WIRE NO. 47108-B
3. HARDWARE SUPPLIED WITH IN3210 DIODE

J503E20		TB502-13C	MPCM20M-H2	K104-3	SOLDER	NOTE 2		
JUMPER	NOTE 1	K104-4		K104-5				
		K104-3		K104-6				
		XDS9-C1		XDS-D1				
		-D2		-C2				
		-C2		-B2				
		-B2		-A2				
		-A1		-B1				
JUMPER	NOTE 1	XDS9-D2	SOLDER	XDS9-(-)	SOLDER	BUS WIRE		
J507A20		P19-u		K104-2	SOLDER			
J503E20		TB502-13-B	MPCM20M-H2	J/P9-D	CRIMP	NOTE 2		
J507AA20		TB502-13E	MPCM20M-H2	K104-2	SOLDER	NOTE 2		
J508A20		K104-7	SOLDER	E2	MS25036-103	NOTE 2		
J503D20		TB502-13A	MPCM20M-H2	XDS9-51-NC	SOLDER	NOTE 2		
J503020		J9-D	CRIMP	S11-1	32445	MIL-W-7139		
J501A20		CB106-2	MS25036-149	CB124-1	MS25036-149	NOTE 2		
J501B20		XDS9-B1	SOLDER	XDS9-S2-C	SOLDER	NOTE 2		
J502E20		S11-2	MS25036-149	XDS9-B1	SOLDER	NOTE 2		
J502A20		CB124-2	MS25036-105	K104-4	SOLDER	NOTE 2		
J503B20		CR1-1	MS25036-107	SP18-A	32445	MIL-W-7139		
K502CA20		CR2-1	MS25036-107	K301-X2	MS25036-102	MIL-W-7139		
K502CK20		CR1-2	NOTE 3	SP17-A	32445	MIL-W-7139		
K502D20		J303-M	CRIMP	SP17-B	32445	MIL-W-7139		
J505A20N		XDS9(-)	SOLDER	E2	MS25036-103	NOTE 2		
J504A20		XDS9(+)		XDS9-S1-C	SOLDER	NOTE 2		
J506A20		XDS9-S2-NO	SOLDER	XDS9-S1	SOLDER	NOTE 2		
WIRE NO.	LENGTH	FROM	TERMINATION	TO	TERMINATION	REMARKS		
WIRE TABLE								

Figure 3. Wire Table