



**HUGHES
SERVICE INFORMATION
NOTICE**

NOTICE NO. HN-141.1*

DATE 26 November 1979

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*Supersedes Service Information

Notice No. HN-141, Dated

29 June 1979

SUBJECT: INSTALLATION OF VOLTAGE TRANSIENT SUPPRESSORS

MODELS AFFECTED: All 500 Model 369H Series Helicopters

The following optional kits installed on helicopter or in Spares Inventory at date of this Notice:

TIME OF COMPLIANCE: PN 369H90148 Basic/ -501 Engine Air Particle Separator Filter
PN 369H90142 Basic/ -501 Manually Operated Searchlight
PN 369H90121 Basic/ -505/ -509/ -511 Emergency Floats

TIME OF COMPLIANCE: At owners and operators discretion.

PREFACE: Part I of this Service Information Notice lists a procedure for installing voltage transient suppressors to the helicopter electrical system at the main bus and at the start relay, to reduce the possibility of voltage spikes damaging solid state circuits, including the reversing circuit in the longitudinal and lateral trim actuator assemblies installed on the helicopter.

Part II of this Notice provides instructions for installing additional suppressors, if the helicopter is equipped with optional engine air particle separator filter kit, manually operated searchlight kit, and/or emergency float kit.

Reference

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

500 Series - HMI Appendix A, Issued 1 October 1972; Revision No. 4, December 1974

(■) Denotes portion of text added or revised

Customer Service Department - Hughes Helicopters - Culver City, California



PARTS LIST

<u>Nomenclature</u>	<u>Part No.</u>	<u>Qty</u>	<u>Mfg</u>
Transient suppressor	IN6055 Tranzorb or	2*	General Semiconductor Industries
	V47ZA7 Varistor	2*	GE
Terminal	MS25036-101	2	Commercial
Terminal	MS25036-102	2	Commercial
Nut	MS21042-3	1	Commercial
Washer	AN960D10L	4	Commercial
Screw	NAS1096-3-8	1	Commercial
Tubing, thermofit	0.25x(RNF-100)	AR	Raychem
Wire, jumper	22GA	AR**	Commercial
Sleeving, insulation	No. 20	AR**	Commercial
Tie straps	MS17821-4-9 or	AR**	Commercial
	MS3367-4-0	AR**	Commercial

*One each additional required if particle separator and/or searchlight kit installed; three each additional required if emergency float kit installed.

**Required if emergency float kit installed.

MATERIALS

Solder

SN60WRP2

TOOLS AND EQUIPMENT

Drill motor, portable

Drill bit - 0.190/0.194 inch diameter

Soldering iron

PART I - INSTALLATION OF VOLTAGE TRANSIENT SUPPRESSORS
(Applicable all Model 369H Helicopters)

- a. Install suppressor to main bus as follows:
 1. Check that all electrical power is OFF.
 2. Remove instrument console fairing, as applicable, to gain access to TB101 (369HS/HE helicopters) or TB10 (369HM helicopters).

3. Drill 0.190/0/194 inch diameter hole for ground stud in instrument panel support at location shown in Figure 1.
 4. Install new ground stud as shown; connect suppressor to terminal board TB101 for 369 HS/HE helicopters, or TB10 for 369HM helicopters, and ground stud.
 5. Reinstall fairing as applicable.
- b. Install suppressor to start relay as follows:
1. Open engine access door.
 2. Disconnect and remove start relay (Section 19, Basic HMI).
 3. Connect suppressor to terminals X1 and X2 of start relay, as shown in Figure 2.
 4. Reinstall start relay per Basic HMI.
 5. Close engine access door.

PART II - INSTALLATION OF VOLTAGE TRANSIENT SUPPRESSORS
(Applicable all helicopters equipped with engine air particle separator filter kit, searchlight kit, and/or emergency float kit.)

- a. If particle separator filter kit is installed, install suppressor as follows:
1. Check that all electrical power is OFF.
 2. Remove interior trim and access panels to gain access to scavenge air solenoid at forward side of canted firewall. (See referenced HMI, Appendix A.)
 3. Disconnect plug (P206) from solenoid valve connector; install suppressor to solenoid plug (P206) as shown in Figure 3.
 4. Connect plug to solenoid valve connector.
 5. Reinstall access panels and interior trim.

b. If manually operated searchlight kit is installed, install suppressor as follows:

1. Check that all electrical power is OFF.
2. Remove access cover to gain access to K302 and K303 relays. (See referenced HMI, Appendix A.)
3. Remove existing diode and install new suppressor to K302 terminals X1 and X2, as shown in Figure 4.
4. Reinstall access cover.

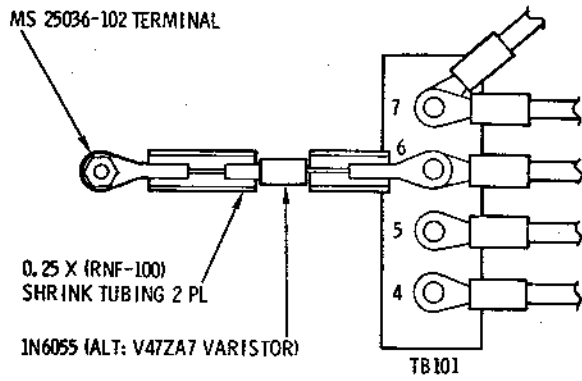
c. If emergency float kit (with solenoid valves) is installed, install suppressor as follows:

1. Check that all electrical power is OFF.
2. If floats are stowed, unsnap containment cover and loosen restraining lacing to gain access to solenoid valve and wire splices on RH and LH floats. (See referenced HMI, Appendix A.)
3. Install suppressor with jumper wires to LH and RH float solenoid valve wire splices, as shown in Figure 5; use tie straps to secure sleeving at both ends of each suppressor.
4. Remove pilot left floor access cover; disconnect and remove relay from floor support forward bulkhead.
5. Remove existing diode between terminals X1 and X2 of relay; install suppressor as shown in Figure 5.
6. Reinstall access cover; as applicable, tighten restraining lacing and secure float snap fasteners.

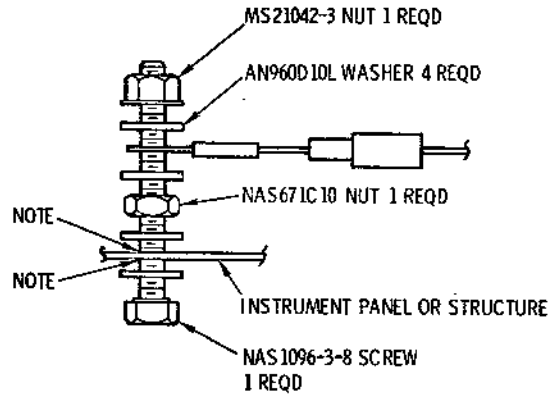
WEIGHT AND BALANCE DATA

Weight and balance not affected.

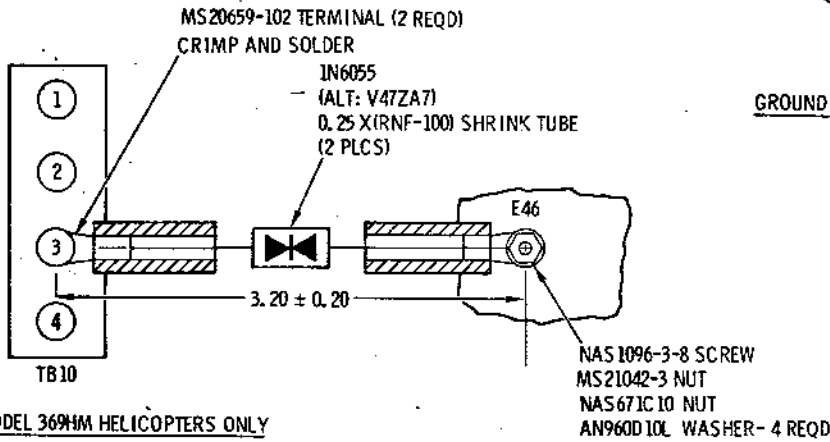
FAA APPROVED



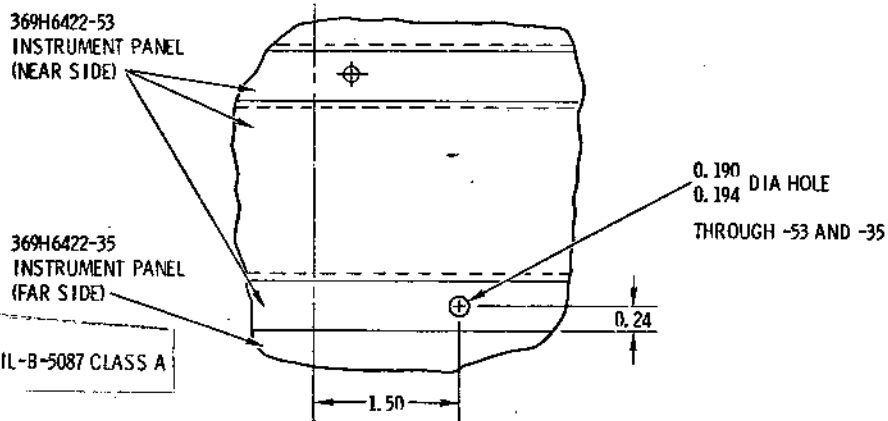
MODEL 369H, 369HS AND 369HE HELICOPTERS



GROUND STUD (TYPICAL)



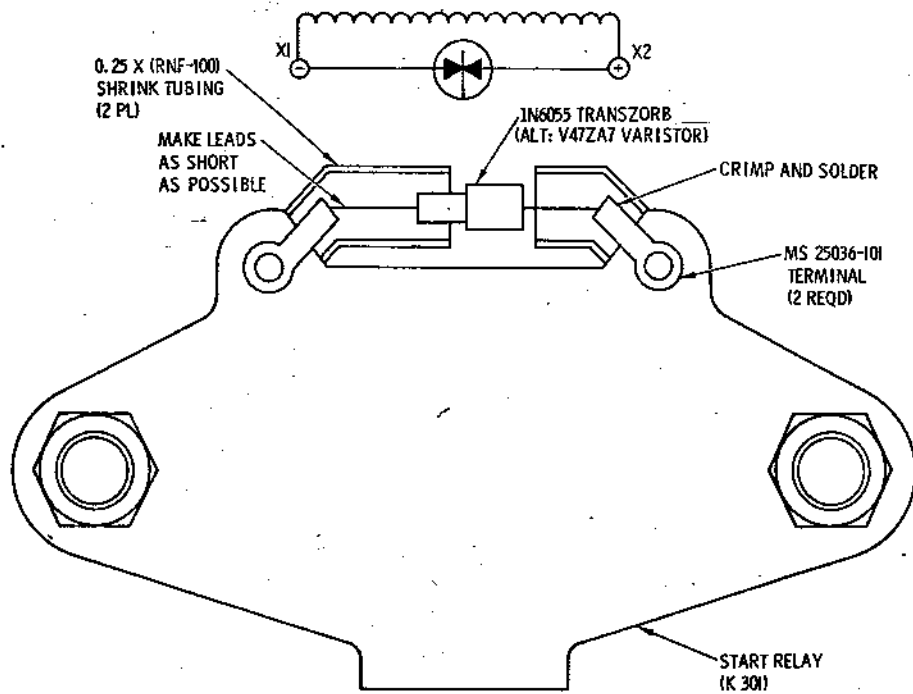
MODEL 369HM HELICOPTERS ONLY



NOTE:
ELECTRICAL BOND PER MIL-B-5087 CLASS A

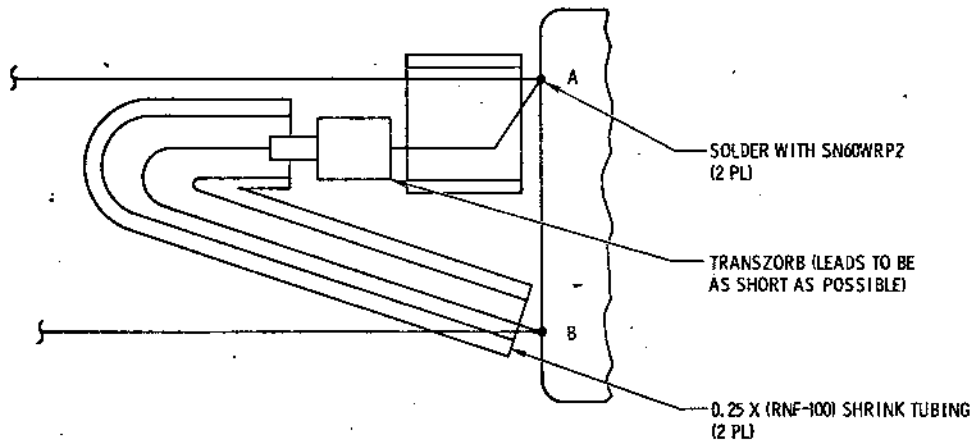
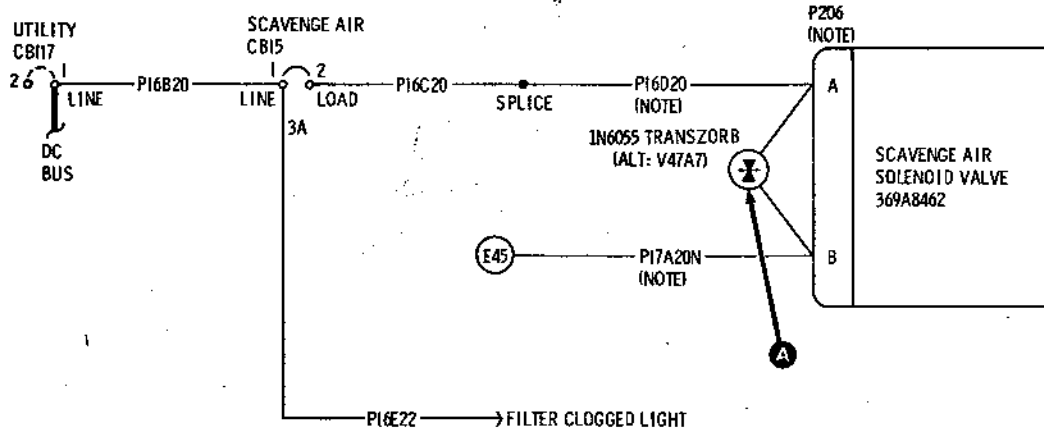
MODEL 369H, 369HS AND 369HE HELICOPTERS

Figure 1. Installation of transient suppressor and ground stud - main bus



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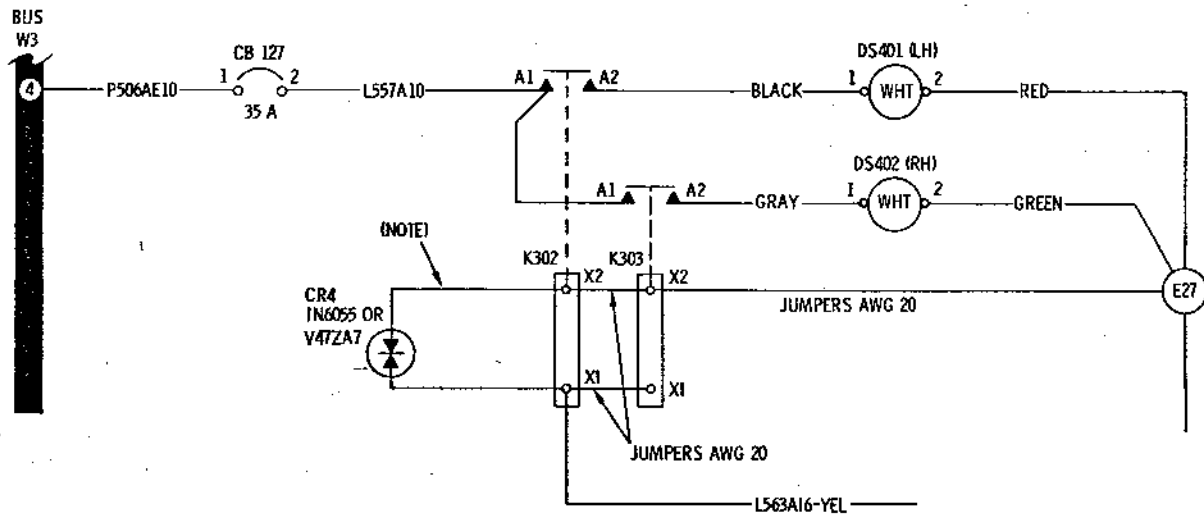
Figure 2. Installation of transient suppressor - start relay (K301)



NOTE: PART OF WIRE HARNESS 369A4163

A

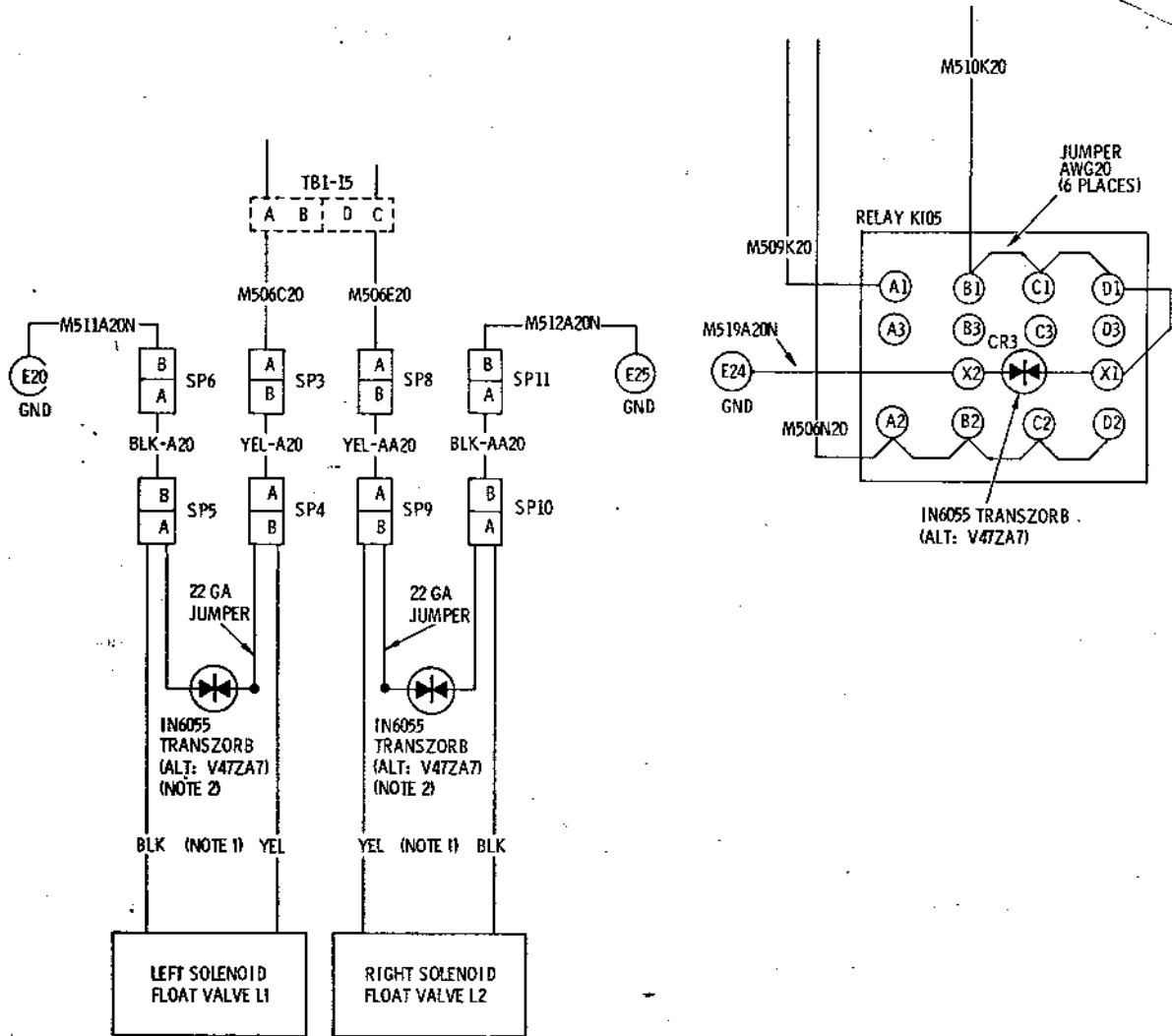
Figure 3. Installation of transient suppressor - scavenge air solenoid valve, particle separator filter



NOTE:
MAKE LEADS AS SHORT AS POSSIBLE

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Figure 4. Installation of transient suppressor - manually operated searchlight



NOTES:

1. PART OF SOLENOID FLOAT VALVE
2. INSTALL BETWEEN SPLICES WITH NO. 2 SLEEVE AND SECURE SLEEVE 2 PLACES (TYP) WITH THE STRAPS

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Figure 5. Installation of transient suppressor - solenoid float valves and relay assembly



REFERENCE SHEET

SERVICE INFORMATION NOTICES AND LETTERS

Action Reference

When performing maintenance or inspection of helicopter electrical system and start relay, refer to Service Information Notice No. HN-141 for installation of voltage transient suppressors to prevent voltage spikes from damaging reversing circuitry of lateral and longitudinal trim actuator assemblies.

HMI Reference

Insert this sheet in 500 Series Basic HMI, Section 19, page 19-16.

This reference sheet shall be kept as a part of the manual until the data is incorporated at the next revision of the Basic HMI. (Refer to Service Information Summary, Basic HMI, page i.)



REFERENCE SHEET

SERVICE INFORMATION NOTICES AND LETTERS

Action Reference

When performing maintenance or inspection of manually operated searchlight system electrical components, refer to Service Information Notice No. HN-141 for installation of voltage transient suppressors to prevent voltage spikes from damaging reversing circuitry of lateral and longitudinal trim actuator assemblies.

HMI Reference

Insert this sheet in 500 Series HMI Appendix A, Group 4, page 4-19.

This reference sheet shall be kept as a part of the manual until the data is incorporated at the next revision of HMI Appendix A. (Refer to Service Information Summary, HMI Appendix A, page i.)

REFERENCE SHEET

SERVICE INFORMATION NOTICES AND LETTERS

Action Reference

When performing maintenance or inspection of emergency float-extended landing gear kit electrical components, refer to Service Information Notice No. HN-141 for installation of voltage transient suppressors to prevent voltage spikes from damaging reversing circuitry of lateral and longitudinal trim actuator assemblies.

HMI Reference

Insert this sheet in 500 Series HMI Appendix A, Group 8, page 8-10.

This reference sheet shall be kept as a part of the manual until the data is incorporated at the next revision of HMI Appendix A. (Refer to Service Information Summary, HMI Appendix A, page i.)

REFERENCE SHEET

SERVICE INFORMATION NOTICES AND LETTERS

Action Reference

When performing maintenance or inspection of engine air particle separator filter system electrical components, refer to Service Information Notice No. HN-141 for installation of voltage transient suppressors to prevent voltage spikes from damaging reversing circuitry of lateral and longitudinal trim actuator assemblies.

HMI Reference

Insert this sheet in 500 Series HMI Appendix A, Group 12, page 12-29.

This reference sheet shall be kept as a part of the manual until the data is incorporated at the next revision of HMI Appendix A. (Refer to Service Information Summary, HMI Appendix A, page i.)