



# TECHNICAL BULLETIN

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\* Supersedes Service Information Notice No. DN-50, dated 29 June 1979

**SUBJECT:** INSTALLATION OF VOLTAGE TRANSIENT SUPPRESSORS

**MODELS AFFECTED:** 500D Model 369D Helicopter Serial No. 0003D through 0539D.

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

PN 369H90148-503/-505 Engine Air Particle Separator Filter

PN 369H90142-501 Manually Operated Searchlight PN

369D2-90121-501/-505/-507 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 with solenoid valves. Helicopters equipped with squib actuated emergency floats are not affected by Part II of this Notice.

**REFERENCE PUBLICATIONS:**

500D Basic HMI—Volume I, Issued 15 September 1976; Revision No. 2, 27 November 1978

PN 369H90148 Engine Air Particle Separator Kit Installation, IPL and Maintenance Instructions, No. CSP-004, dated 15 May 1976

PN 369H90141 Manually Operated Searchlight Kit Installation, IPL and Maintenance Instructions, No. CSP-03, dated 1 December 1977

PN 369D290121 Emergency Float Kit—Extended Landing Gear, IPL and Maintenance Instructions, No. CSP-025, dated 15 August 1977

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## PARTS LIST

<u>Nomenclature</u>	<u>Part Number</u>	<u>Qty</u>	<u>Mfg</u>
Transient suppressor	16055 Transzorb	2*	General Semiconductor Industries
	or V47ZA7 Varistor	2*	
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	AR**	Commercial
	or MS3367-4-0	AR**	

\*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 369D helicopters Serial No. 0003D through 0539D.)

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 (369D helicopters) or TB10 (369MD helicopters).



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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 369D helicopters, or TB10 for 369MD 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, HMI - Volume I).
  3. Connect suppressor to terminals X1 and X2 of start relay, as shown in Figure 2.
  4. Reinstall start relay, per HMI - Volume I.
  5. Close engine access. door.

## **PART II - INSTALLATION OF VOLTAGE TRANSIENT SUPPRESSORS**

(Applicable 369D helicopter Serial No. 0003D through 0539D 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 No. CSP-004.)
  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.

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- 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 No. CSP-032)
  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 No. CSP-025. )
  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:** Weight and balance not affected.

FAA APPROVED

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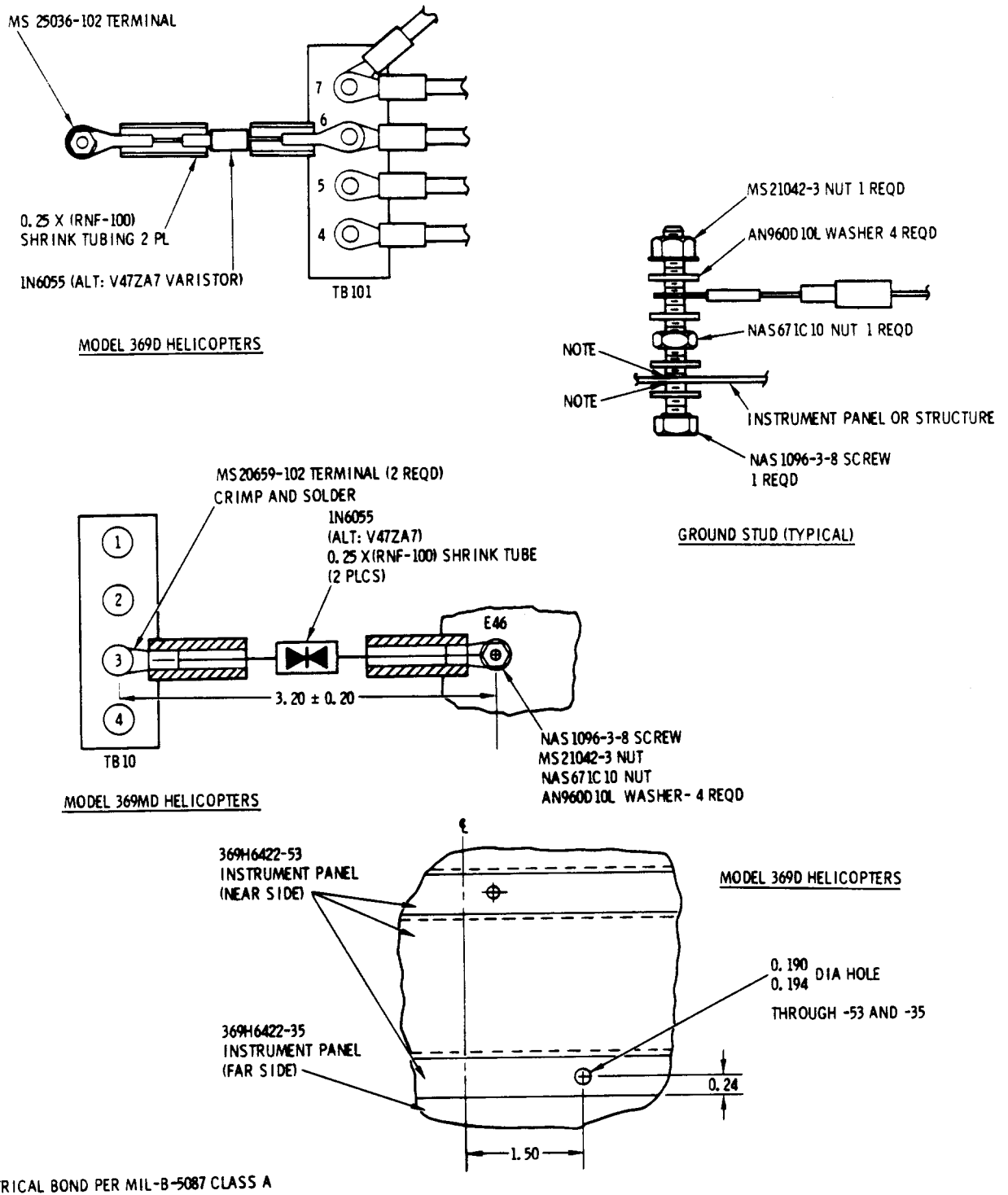
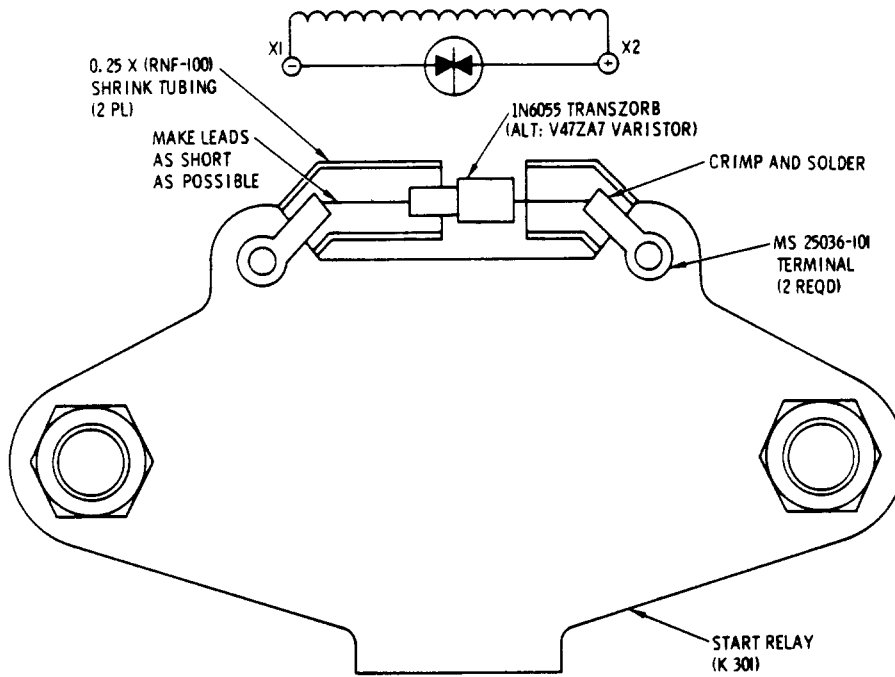


Figure 1. Installation of Transient Suppressor and Ground Stud - Main Bus

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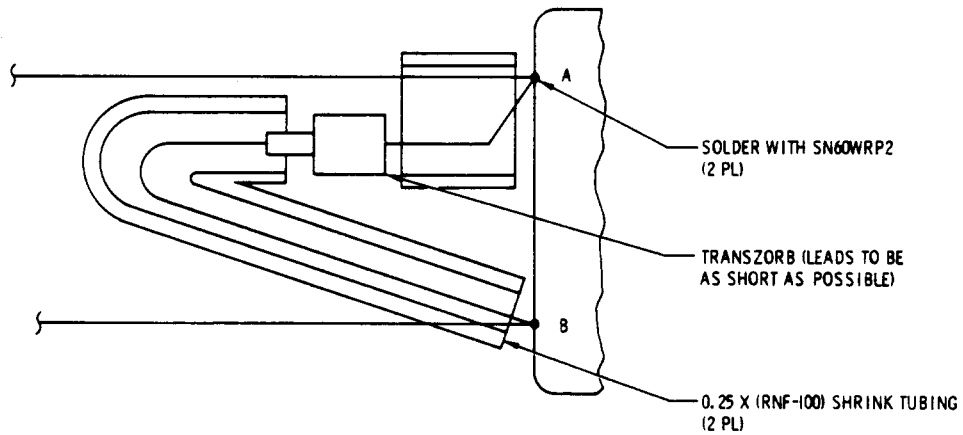
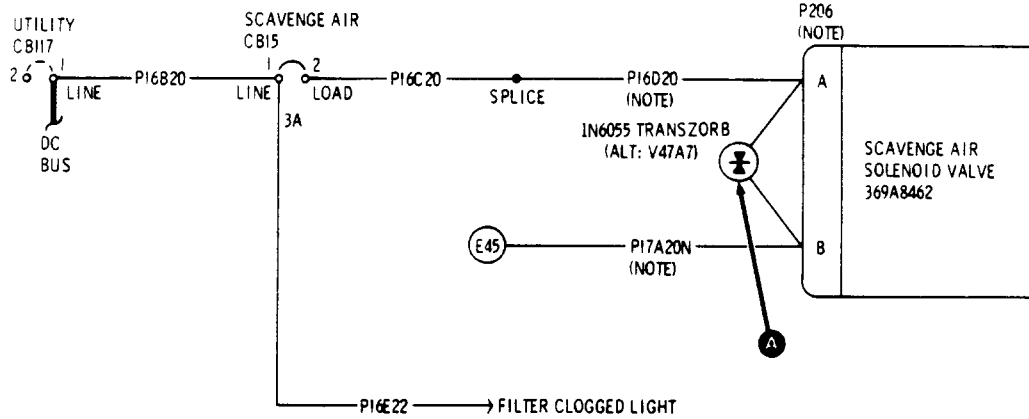


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Figure 2. Installation of Transient Suppressor - Start Relay (K301)

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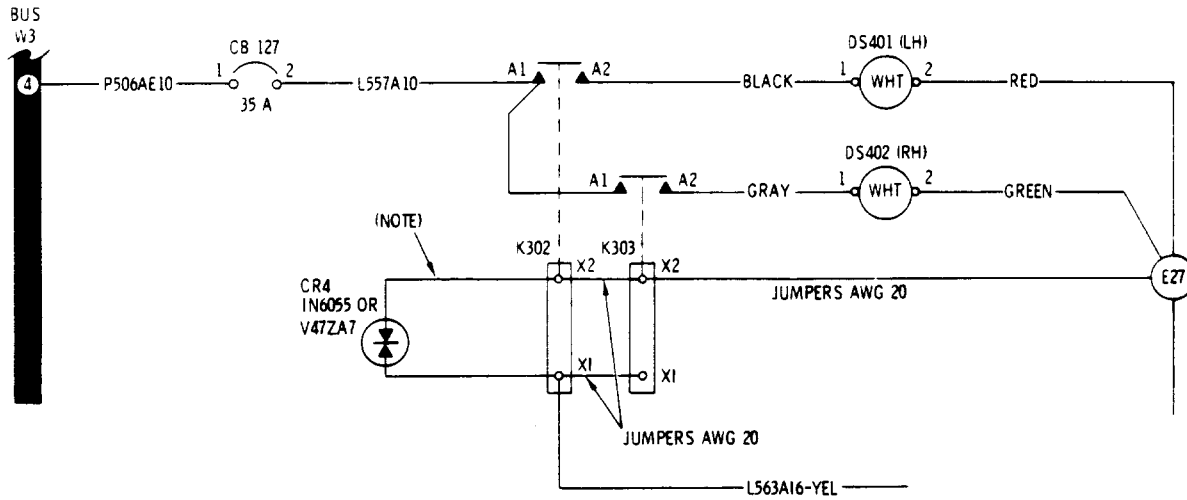
NOTE: PART OF WIRE HARNESS 369A4163

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Figure 3. Installation of Transient Suppressor - Scavenge Air Solenoid Valve, Particle Separator Filter

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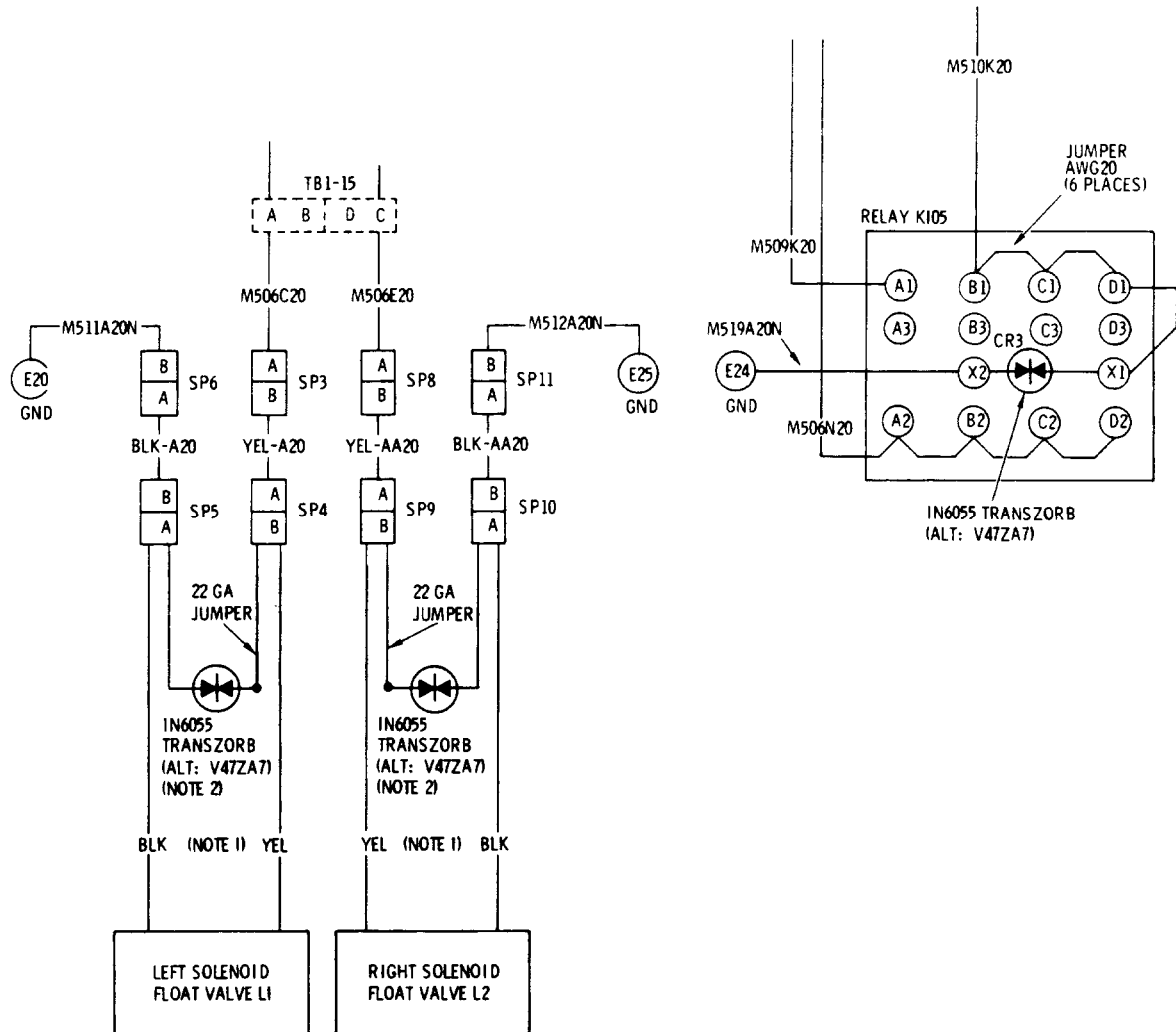
**NOTE:**  
MAKE LEADS AS SHORT AS POSSIBLE

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Figure 4. Installation of Transient Suppressor - Manually Operated Searchlight

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**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