

CHAPTER 21 — AIR DISTRIBUTION (VENTILATION)

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VENTILATION SYSTEM

21-1. VENTILATION SYSTEM

Air for cabin ventilation is obtained by opening sliding windows in each of the entrance doors (Figure 21-1). Helicopters S/N 4 through 253 provide additional air for cabin ventilation by a ram air scoop mounted under the forward transmission fairing. Four adjustable valves, located in forward and aft cabin roof, provide air distribution for passenger and crew areas. Helicopters S/N 254 and subsequent provide ram air ventilation for the crew area only, through ram air grilles located in nose of helicopter (Figure 21-1). This additional air is obtained by pulling the VENT control knob under instrument panel. Positioning DEFOG BLOWER switch or circuit breaker on overhead panel to ON will circulate air onto windshield to defog.

21-2. RAM AIR AND DEFOG SYSTEM — TROUBLESHOOTING

See Figure 21-2 for troubleshooting ram air and defog systems.

21-3. RAM AIR SYSTEM (HELICOPTERS S/N 4 THROUGH 253)

In flight, ram air is forced into the ram air scoop (Figure 21-1) and is distributed through ducts, located in the cabin roof, to the cabin through four adjustable valves in crew and passenger compartments.

21-4. RAM AIR SYSTEM (HELICOPTERS S/N 254 THROUGH 2488)

The ram air system is part of the vent and defog system (Figure 21-1). With the VENT control knob (2, Figure 21-3 for S/N 254 through 448 and Figure 21-4 for S/N 449 through 2488) pulled out, ambient ram air will be forced through ram air grilles, located on helicopter nose, into air plenum assembly then into crew compartment through defog system.

21-5. RAM AIR SYSTEM (HELICOPTERS S/N 2489 AND SUBSEQUENT)

With the VENT control knob (10, Figure 21-5) pulled out, ambient ram air will be forced through ram air grille on the nose of helicopter, and directed through

the plenum and flapper valve into the crew compartment.

21-6. VENT CONTROL CABLE

Vent control cables (7, Figure 21-3 for S/N 254 through 448 and Figure 21-4 for S/N 449 through 2488, or 12, Figure 21-5 for S/N 2489 and subsequent) are mounted on brackets on lower instrument panel. The VENT control knob will lock in all positions when pulled and will unlock by pressing release button in control knob.

21-7. VENT CONTROL CABLE — REMOVAL (HELICOPTERS S/N 254 THROUGH 448)

1. Remove cotter pin (39, Figure 21-3) and pin (37), and disconnect cable clevis from flapper valve shaft (38).
2. Remove screw (28), washer (31), nut (32), and two clamp halves (27).
3. Remove screw (14), washer (12), and clamp (13).

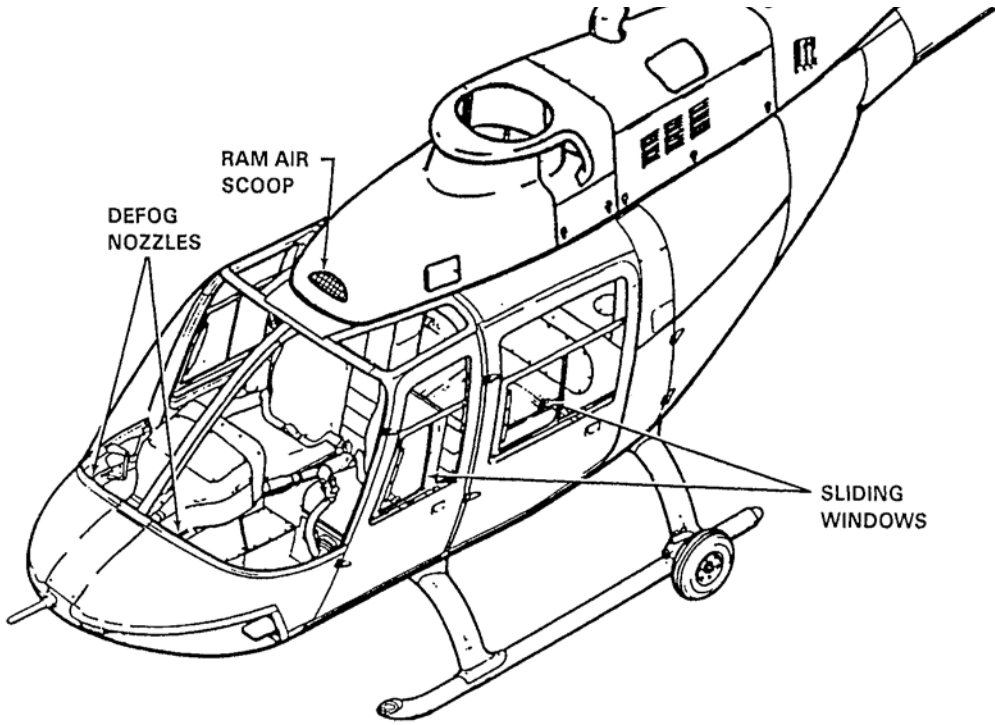


EXERCISE CARE NOT TO DAMAGE CONTROL CABLE HOUSING WHILE CABLE IS BEING REMOVED.

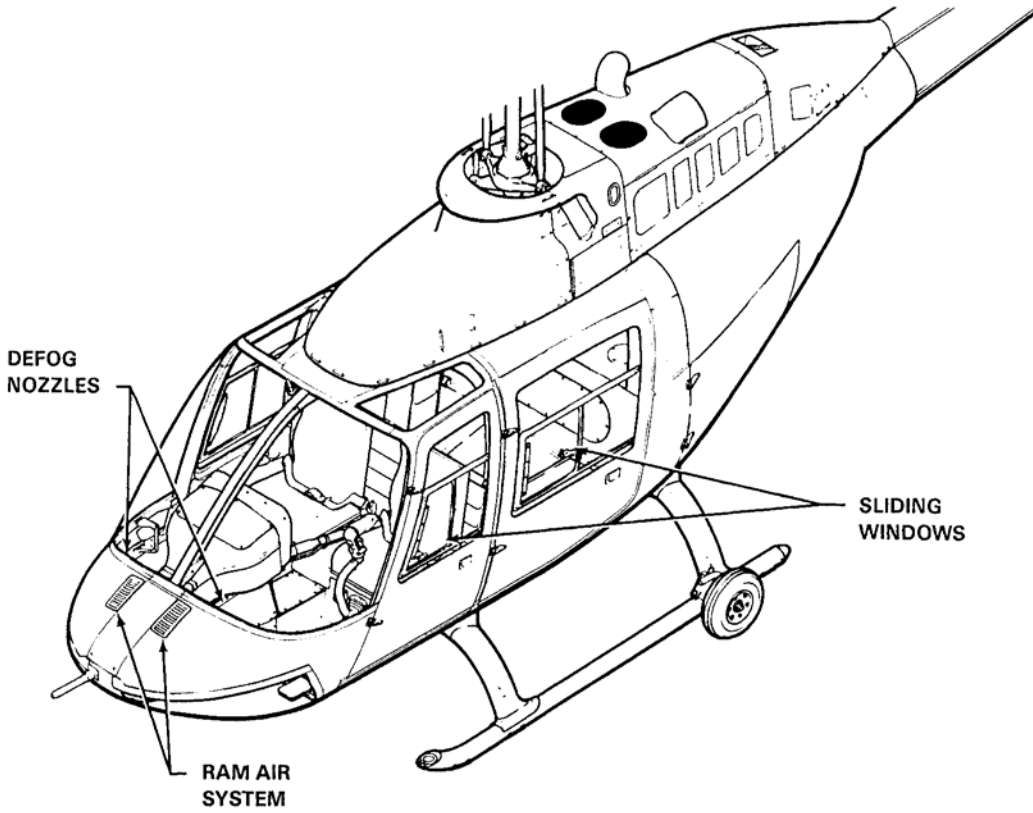
4. Remove nut (3) that secures control cable (7) to bracket (41) and remove cable by sliding aft through bracket.

21-8. VENT CONTROL CABLE — REMOVAL (HELICOPTERS S/N 449 THROUGH 2488)

1. Remove cotter pin (36, Figure 21-4) from pin (34) and disconnect cable clevis from flapper valve shaft (35).
2. Remove nut (30), washer (29), screw (26), and two clamp halves (25).



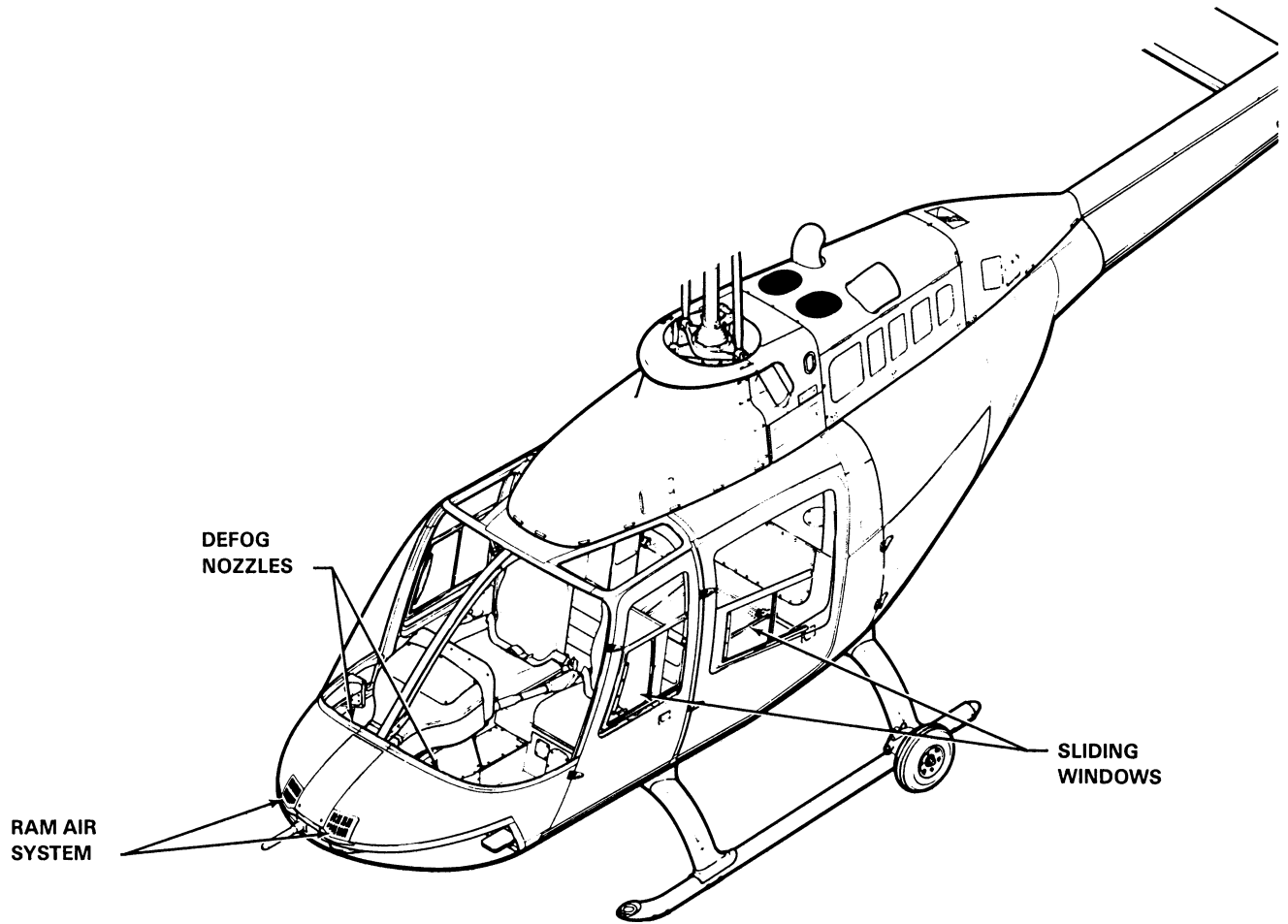
HELICOPTERS S/N 4 THRU 253



HELICOPTERS S/N 254 THRU 2488

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Figure 21-1. Ventilation System (Sheet 1 of 2)

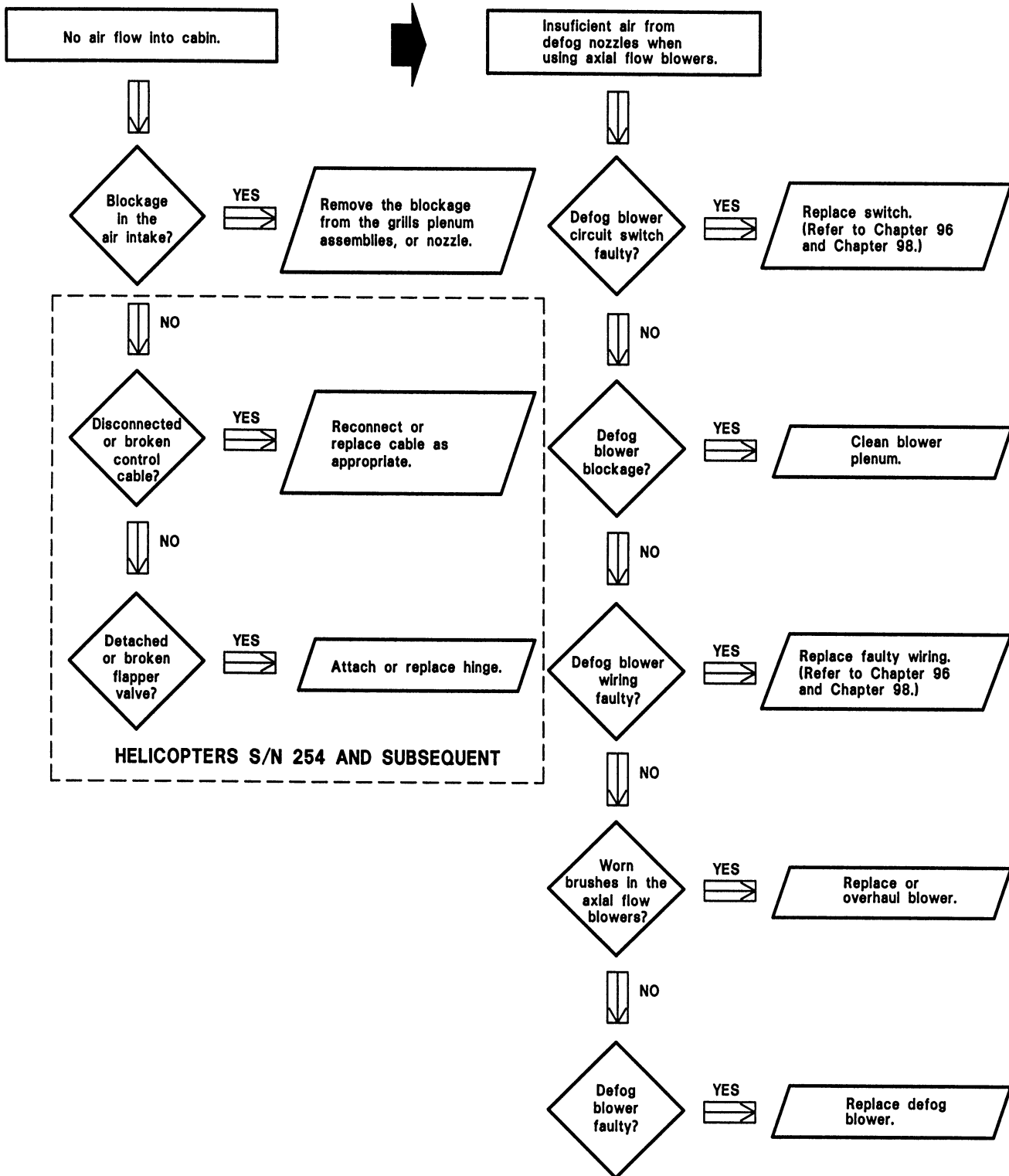


HELICOPTERS S/N 2489 AND SUBSEQUENT

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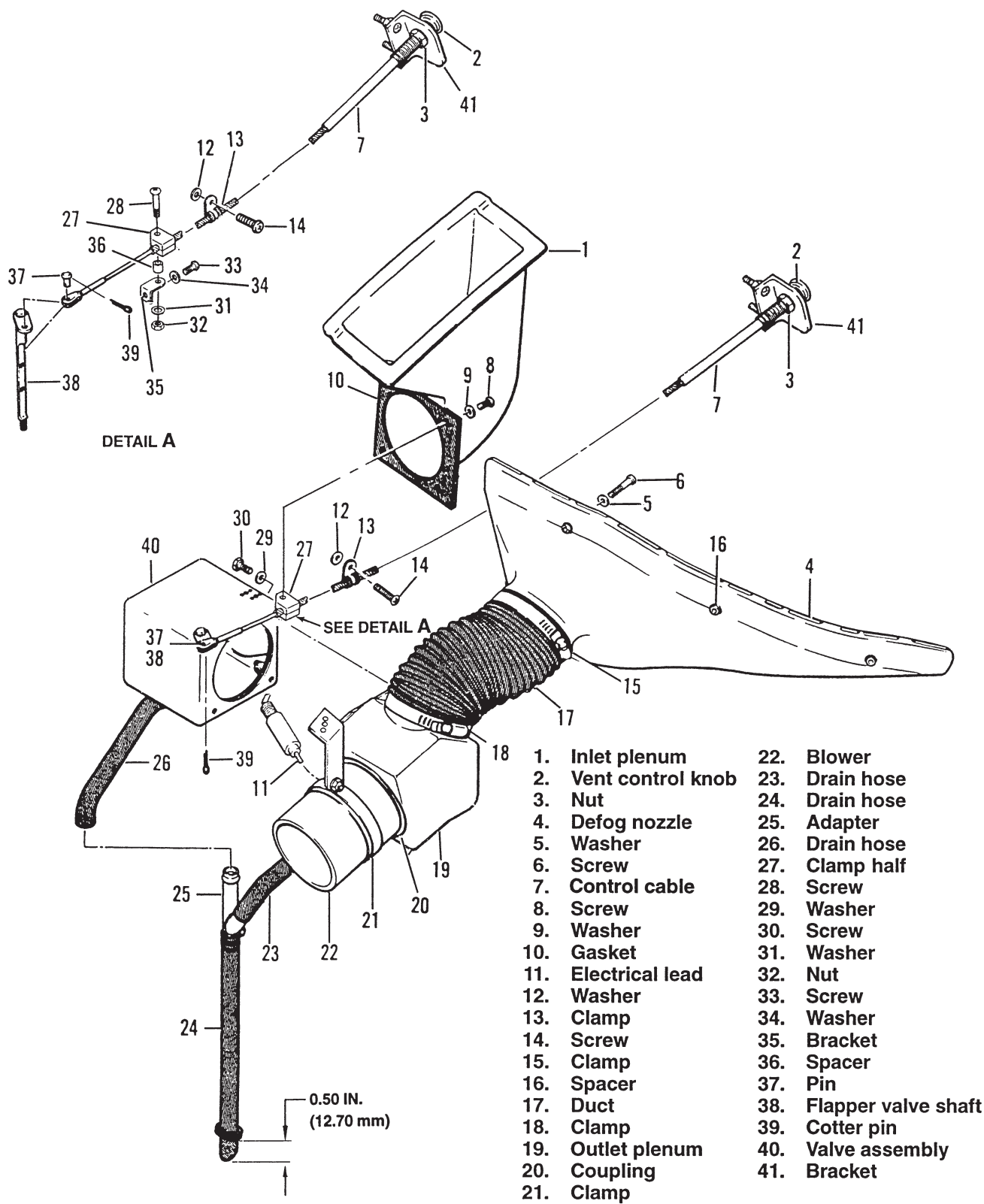
Figure 21-1. Ventilation System (Sheet 2 of 2)

RAM AIR AND DEFOG SYSTEM MALFUNCTION



206A/BS-M-21-2

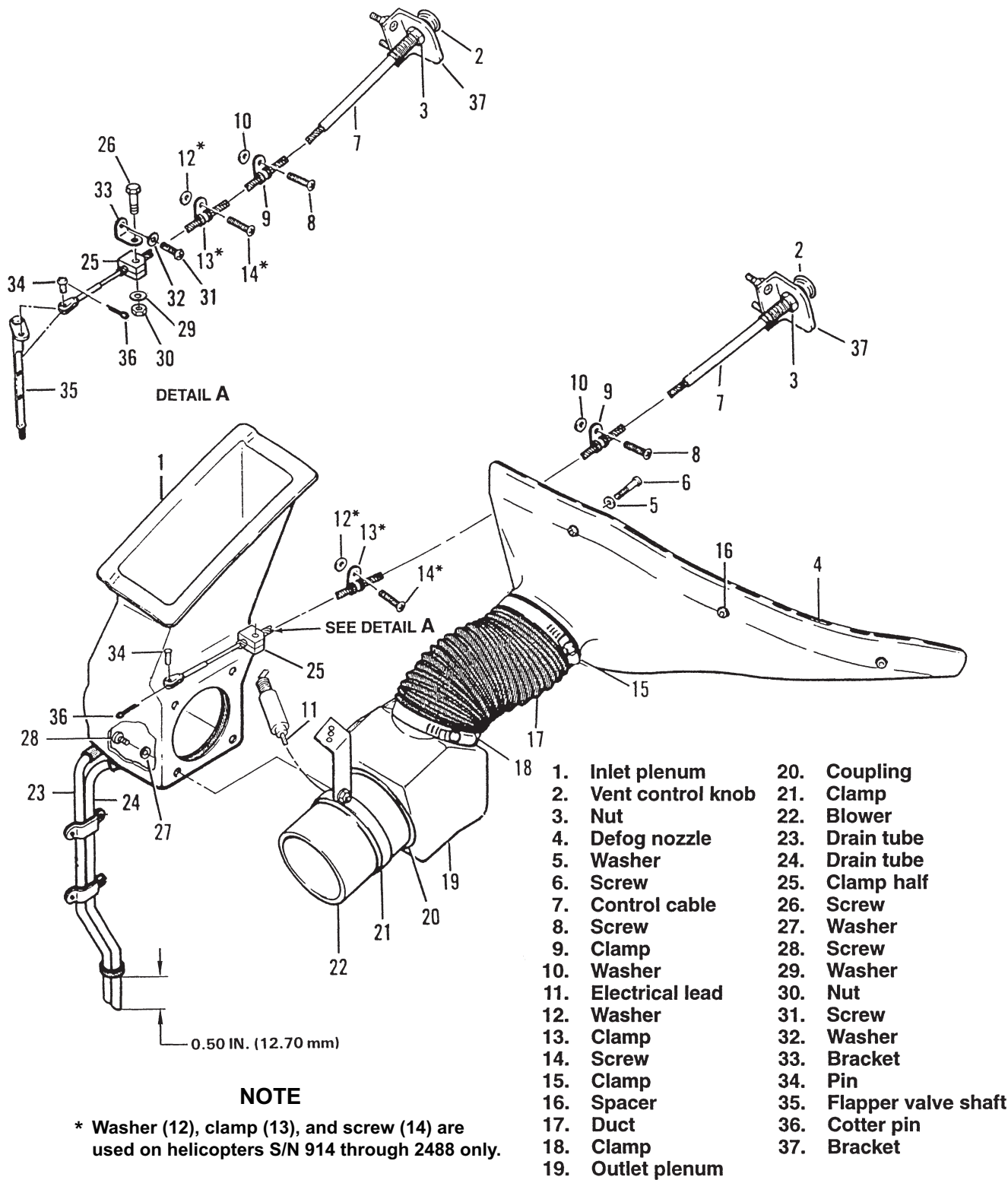
Figure 21-2. Ram Air and Defog System Troubleshooting Chart



HELICOPTERS S/N 254 THROUGH 448

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Figure 21-3. Ram Air and Defog System (S/N 254 through 448)



NOTE

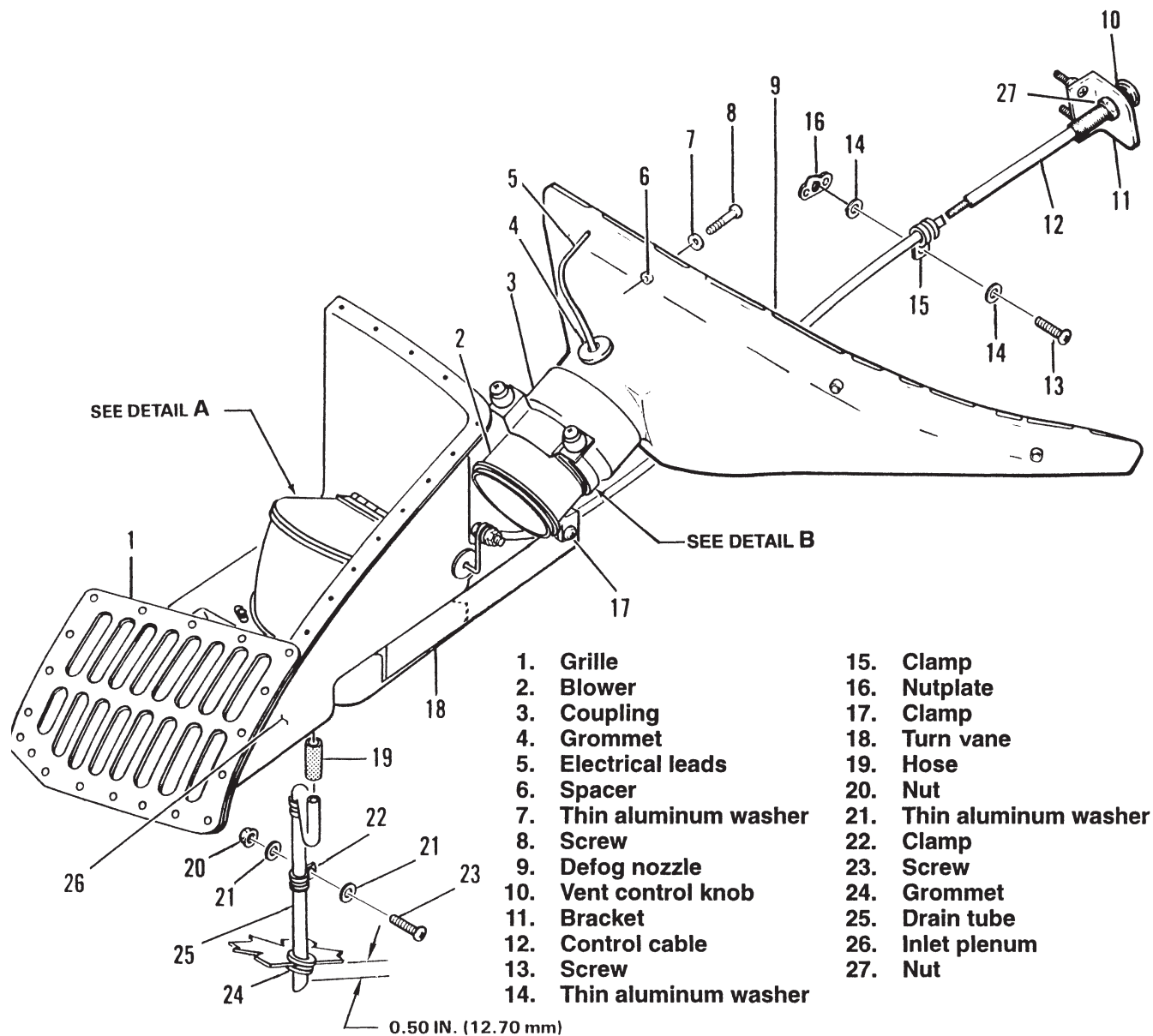
* Washer (12), clamp (13), and screw (14) are used on helicopters S/N 914 through 2488 only.

- | | |
|----------------------|-------------------------|
| 1. Inlet plenum | 20. Coupling |
| 2. Vent control knob | 21. Clamp |
| 3. Nut | 22. Blower |
| 4. Defog nozzle | 23. Drain tube |
| 5. Washer | 24. Drain tube |
| 6. Screw | 25. Clamp half |
| 7. Control cable | 26. Screw |
| 8. Screw | 27. Washer |
| 9. Clamp | 28. Screw |
| 10. Washer | 29. Washer |
| 11. Electrical lead | 30. Nut |
| 12. Washer | 31. Screw |
| 13. Clamp | 32. Washer |
| 14. Screw | 33. Bracket |
| 15. Clamp | 34. Pin |
| 16. Spacer | 35. Flapper valve shaft |
| 17. Duct | 36. Cotter pin |
| 18. Clamp | 37. Bracket |
| 19. Outlet plenum | |

HELICOPTERS S/N 449 THROUGH 2488

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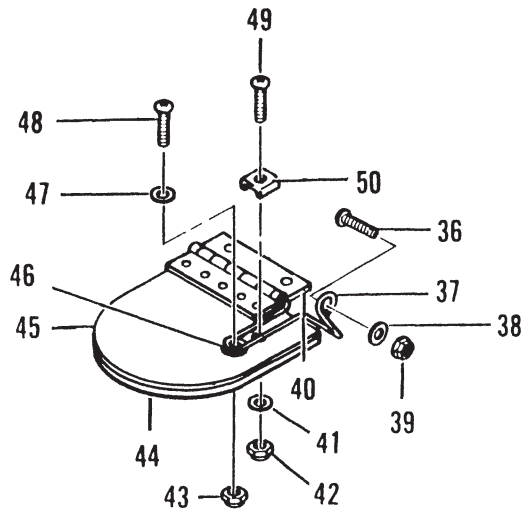
Figure 21-4. Ram Air and Defog System (S/N 449 through 2488)



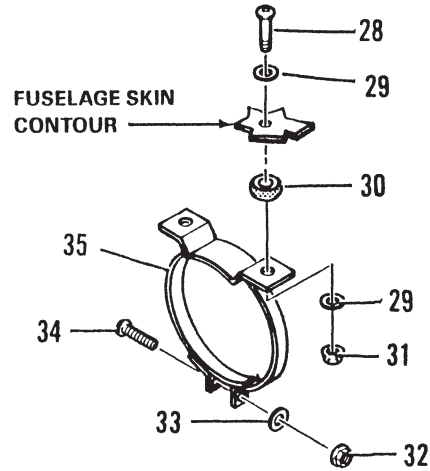
HELICOPTERS S/N 2489 AND SUBSEQUENT

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Figure 21-5. Ram Air and Defog Systems (S/N 2489 and Subsequent) (Sheet 1 of 2)



**DETAIL A
FLAPPER VALVE**



**DETAIL B
BLOWER MOUNT CLAMP**

- 28. Screw
- 29. Thin aluminum washer
- 30. Isolator mounts
- 31. Nut
- 32. Nut
- 33. Thin steel washer
- 34. Screw
- 35. Clamp
- 36. Screw
- 37. Control arm
- 38. Thin aluminum washer
- 39. Nut

- 40. Hinge
- 41. Thin steel washer
- 42. Nut
- 43. Nut
- 44. Gasket
- 45. Flapper valve
- 46. Thin steel washer
- 47. Thin aluminum washer
- 48. Screw
- 49. Screw
- 50. Clamp

206AB_MM_21_0005b

Figure 21-5. Ram Air and Defog Systems (S/N 2489 and Subsequent) (Sheet 2 of 2)

NOTE

Screw (14), washer (12), and clamp (13) are used only on helicopters S/N 914 through 2488.

3. Remove two screws (8 and 14), two washers (10 and 12), and two clamps (9 and 13).



EXERCISE CARE NOT TO DAMAGE CONTROL CABLE HOUSING WHILE CABLE IS BEING REMOVED.

4. Remove nut (3) that secures control cable (7) to bracket (37) and remove cable by sliding aft through bracket.

21-9. VENT CONTROL CABLE — REMOVAL (HELICOPTERS S/N 2489 AND SUBSEQUENT)

1. Remove nut (39, Figure 21-5, Detail A), thin aluminum washer (38), screw (36), and disconnect cable clevis from flapper valve control arm (37).
2. Remove clamps (15) by removing screws (13) and two thin aluminum washers (14) from nutplates (16).



EXERCISE CARE NOT TO DAMAGE CONTROL CABLE HOUSING WHILE CABLE IS BEING REMOVED.

3. Loosen nut securing control cable (12) to bracket (11) and remove cable from bracket by sliding aft through bracket.

21-10. VENT CONTROL CABLE — INSPECTION

1. Inspect housing of control cable (7, Figure 21-3 and Figure 21-4, and 12, Figure 21-5) for kinks, separation, or damage.

2. Check control cable (7, Figure 21-3 and Figure 21-4; and 12, Figure 21-5) for free movement, approximately 2.30 inches (58.42 mm) by moving VENT control knob (2, Figure 21-3 and Figure 21-4; and 10, Figure 21-5) in and out. Check control knob for locking and unlocking action.

3. Control cable shall hold a load of 8 pounds (35.58 N) without slippage and withstand a maximum pull of 10 pounds (44.48 N).

21-11. VENT CONTROL CABLE — INSTALLATION (HELICOPTERS S/N 254 THROUGH 448)



EXERCISE CARE NOT TO DAMAGE CONTROL CABLE HOUSING WHILE CABLE IS BEING INSTALLED.

1. Slide control cable (7, Figure 21-3) forward through bracket (41) and secure with nut (3).
2. Install clamp (13), screw (14), and washer (12).
3. Install clamp halves (27), screw (28), washer (31), and nut (32).
4. Connect cable clevis to flapper valve shaft (38), install pin (37), and secure with cotter pin (39).
5. Check control cable (7) for freedom of movement and operation of flapper valve shaft (38).

21-12. VENT CONTROL CABLE — INSTALLATION (HELICOPTERS S/N 449 THROUGH 2488)



EXERCISE CARE NOT TO DAMAGE CONTROL CABLE HOUSING WHILE CABLE IS BEING INSTALLED.

1. Slide control cable (7, Figure 21-4) forward through bracket (37) and secure with nut (3).

NOTE

Clamp (13), screw (14), and washer (12) are used only on helicopters S/N 914 through 2488.

2. Install two clamps (9 and 13), two screws (8 and 14), and two washers (10 and 12).
3. Install clamp halves (25), screw (26), washer (29), and nut (30).
4. Connect cable clevis to flapper valve shaft (35), install pin (34) and secure with cotter pin (36).
5. Check control cable (7) for freedom of movement and operation of flapper valve shaft (35).

**21-13. VENT CONTROL CABLE —
INSTALLATION (HELICOPTERS S/N 2489
AND SUBSEQUENT)**



EXERCISE CARE NOT TO DAMAGE CONTROL CABLE HOUSING WHILE CABLE IS BEING INSTALLED.

1. Slide control cable (12, [Figure 21-5](#)) forward through bracket (11) and secure with nut (27).
2. Connect control cable clevis to control arm (37, Detail A) with screw (36), thin aluminum washer (38), and nut (39).
3. Install one clamp (15) on control cable (12), and secure to nutplate (16) with screw (13) and thin aluminum washers (14).
4. Check control cable (12) for freedom of movement and operation of flapper valve (45).

**21-14. INLET PLENUM, OUTLET PLENUM,
AND VALVE ASSEMBLY
(HELICOPTERS S/N 254 THROUGH
448)**

An inlet plenum (1, [Figure 21-3](#)), outlet plenum (19), and valve assembly (40), constructed of molded polycarbonate, provide direction and control of ram air

ventilation. The valve assembly contains a flapper valve that is connected to a control cable (7) and VENT control knob (2), and is used by the pilot to regulate ventilation air flow. Drain hoses (23 and 26) are connected to the valve assembly and outlet plenum to drain moisture from ram air and ventilation system.

**21-15. INLET PLENUM AND OUTLET
PLENUM ASSEMBLY (HELICOPTERS
S/N 449 THROUGH 2488)**

A one-piece combination inlet plenum and valve assembly (1, [Figure 21-4](#)), and outlet plenum (19), constructed of molded polycarbonate, provides direction and control of ram air ventilation. The inlet plenum (1) contains a flapper valve that is connected to a control cable (7) and VENT control knob (2) and is used by the pilot to control ventilation air flow. Drain tubes (23 and 24) are connected to the inlet plenum (1) and outlet plenum assembly (19) to drain moisture from ram air ventilation system.

**21-16. INLET PLENUM AND TURN VANE
ASSEMBLY (HELICOPTERS S/N 2489
AND SUBSEQUENT)**

An inlet plenum (26, [Figure 21-5](#)) and turn vane (18), constructed of molded polycarbonate, direct and control ram air ventilation. The inlet plenum contains a flapper valve (45, Detail A) that is connected to a control cable (12) and VENT control knob (10), to provide control of ram air flow by pilot. A drain tube (25) connected to the inlet plenum drains moisture from ram air ventilation system.

**21-17. INLET PLENUM AND TURN VANE
ASSEMBLY — REMOVAL (HELICOPTERS
S/N 254 THROUGH 448)**

1. Remove four screws (8, [Figure 21-3](#)), four washers (9), and inlet plenum (1).
2. Remove cotter pin (39) and pin (37), and disconnect control cable (7) from flapper valve shaft (38).
3. Remove screw (33) and washer (34) that secure bracket (35) to valve assembly (40).
4. Remove drain hose (26) from adapter (25) and valve assembly (40).

5. Remove four screws (30), washers (29), and remove valve assembly (40).
6. Remove blower (22) ([paragraph 21-27](#)).
7. Remove drain hose (23) from adapter (25) and outlet plenum (19).
8. Loosen clamp (18), remove duct (17) from outlet plenum (19), and remove outlet plenum.

21-18. INLET PLENUM AND TURN VANE ASSEMBLY — REMOVAL (HELICOPTERS S/N 449 THROUGH 2488)

1. Remove cotter pin (36, [Figure 21-4](#)) and pin (34), and disconnect control cable (7) from flapper valve shaft (35).
2. Remove screw (31) and washer (32) that secure bracket (33) to inlet plenum (1).
3. Remove two drain tubes (23 and 24) from inlet and outlet plenum (1 and 19) respectively.
4. Remove four screws (28) and four washers (27), and remove inlet plenum (1).
5. Remove blower (22) ([paragraph 21-27](#)).
6. Loosen clamp (18) and disconnect duct (17) from outlet plenum (19). Remove outlet plenum.

21-19. INLET PLENUM AND TURN VANE ASSEMBLY — REMOVAL (HELICOPTERS S/N 2489 AND SUBSEQUENT)

1. Remove screw (36, [Figure 21-5](#), Detail A), thin aluminum washer (38), nut (39), and disconnect control cable (12) from control arm (37).
2. Remove two clamps (22) from drain tube (25) by removing nuts (20), thin aluminum washers (21), and screws (23). Remove drain tube and hose (19) from turn vane (18).
3. Remove attaching hardware (six screws and washers) from turn vane (18). Remove turn vane from inlet plenum (26).

4. Remove inlet plenum (26) by removing attaching hardware (screws and washers).

5. Remove flapper valve (45) from inlet plenum (26) by removing two screws and two thin aluminum washers that attach hinge (40) to inlet plenum.

21-20. INLET PLENUM AND TURN VANE ASSEMBLY — INSPECTION AND REPAIR

MATERIALS REQUIRED

Refer to [BHT-ALL-SPM](#) for specifications.

NUMBER	NOMENCLATURE
C-307	Adhesive

1. Inspect inlet and outlet plenums and valve assemblies for cracks and damage. Repair cracks in accordance with polycarbonate repair procedure ([BHT-ALL-SPM](#)).
2. Inspect blower couplings (20, [Figure 21-3](#) for helicopters S/N 254 through 448 and [Figure 21-4](#) for helicopters S/N 449 through 2488, and 3, [Figure 21-5](#) for helicopters S/N 2489 and subsequent) for security of bond and damage from mount clamp. Replace coupling if damaged.
3. On helicopters S/N 254 through 448, inspect gasket (10, [Figure 21-3](#)) for deterioration. Bond new gasket, if required, to inlet plenum (1) with adhesive ([C-307](#)).
4. Inspect flapper valve installation for secure mounting and proper operation. Repair worn or deteriorated parts as required.
5. Inspect drain hoses (23, 24, and 26, [Figure 21-3](#)) on helicopters S/N 254 through 448, drain tubes (23 and 24, [Figure 21-4](#)) on helicopters S/N 449 through 2488, and drain tube (25, [Figure 21-5](#)) and hose (19) on helicopters S/N 2489 and subsequent, for secure mounting, and make sure the 45° scarf cut protrudes through fuselage skin 0.05 inch (1.27 mm) and faces aft.

21-21. INLET PLENUM AND TURN VANE ASSEMBLY — INSTALLATION (HELICOPTERS S/N 254 THROUGH 448)

MATERIALS REQUIRED

Refer to [BHT-ALL-SPM](#) for specifications.

NUMBER	NOMENCLATURE
C-301	Adhesive

1. With outlet plenum (19, [Figure 21-3](#)) in position, attach duct (17) and secure with clamp (18).
2. Bond drain hose (23) to outlet plenum (19) and adapter (25) with adhesive (C-301).
3. Install blower (22) ([paragraph 21-30](#)).
4. Attach valve assembly (40) to outlet plenum (19) with four washers (29) and four screws (30).
5. Bond drain hose (26) to adapter (25) and valve assembly (40) with adhesive (C-301).
6. Position bracket (35) on valve assembly (40) and secure with screw (33) and washer (34).
7. Connect control cable (7) to flapper valve shaft (38) with pin (37) and secure with cotter pin (39).
8. Check control cable (7) for freedom of movement and operation of flapper valve.

21-22. INLET PLENUM AND TURN VANE ASSEMBLY — INSTALLATION (HELICOPTERS S/N 449 THROUGH 2488)

MATERIALS REQUIRED

Refer to [BHT-ALL-SPM](#) for specifications.

NUMBER	NOMENCLATURE
C-301	Adhesive

1. With outlet plenum (19, [Figure 21-4](#)) in position, attach duct (17) and secure with clamp (18).

2. Bond drain tube (24) to outlet plenum (19) with adhesive (C-301).

3. Install blower (22) ([paragraph 21-30](#)).

4. Attach inlet plenum (1) to outlet plenum (19) with four washers (27) and four screws (28).

5. Bond drain tube (23) to inlet plenum with adhesive (C-301).

6. Position bracket (33) on inlet plenum (1) and secure with washer (32) and screw (31).

7. Check control cable (7) for freedom of movement and operation of control valve.

21-23. INLET PLENUM AND TURN VANE ASSEMBLY — INSTALLATION (HELICOPTERS S/N 2489 AND SUBSEQUENT)

MATERIALS REQUIRED

Refer to [BHT-ALL-SPM](#) for specifications.

NUMBER	NOMENCLATURE
C-301	Adhesive

1. Position flapper valve (45, [Figure 21-5](#), Detail A) in inlet plenum (26) with control arm (37) inserted through grommet on side of plenum assembly. Make sure the control arm is up and forward.

2. Secure hinge (40) on flapper valve (45) to inlet plenum (26) with two thin aluminum washers and two screws.

3. Insert turn vane (18) in inlet plenum (26) and loosely install four forward screws with thin aluminum washers. Install two aft screws with three thin aluminum washers under each, then tighten all screws.

4. Attach control cable (12) to control arm (37) on flapper valve (45) and secure with screw (36), thin aluminum washer (38), and nut (39). Check control cable for freedom of movement and proper operation of flapper valve.

5. Bond drain hose (19) to drain tube (25) with adhesive (C-301).
0.50 inch (12.70 mm) protrusion through fuselage skin, and make sure the 45° scarf cut faces aft. Secure drain tube with two clamps (22), two screws (23), thin aluminum washers (21), and nuts (20).
6. Install hose (19) and drain tube (25) to turn vane (18) and through grommet (24). Check drain tube for

DEFOG SYSTEM

21-24. DEFOG SYSTEM

One defog nozzle is installed on each side of the console for distribution of windshield defogging air. Air is supplied by an electrically driven blower for ventilation and defogging, primarily during ground operation of the helicopter. On helicopters S/N 4 through 253 and S/N 2489 and subsequent (Figure 21-7), the blower is mounted to the forward end of the defog nozzle. On helicopters S/N 254 through 2488 (Figure 21-3 and Figure 21-4), the blower is mounted between the ram air outlet plenum and the defog nozzle. In all configurations, the blower is controlled by a DEFOG BLOWER circuit breaker-type switch on the overhead console. On helicopters S/N 254 through 2488, it is recommended that both VENT control knobs be pulled out and locked in the full open position. On helicopters S/N 4 through 253, and 2489 and subsequent, the defog blowers may be operated with the VENT control knobs in the CLOSED position.

21-25. BLOWER

The defog blower is an electrically operated, axial flow, multivane-type unit.

21-26. BLOWER — REMOVAL (HELICOPTERS S/N 4 THROUGH 253 AND S/N 2489 AND SUBSEQUENT)

1. Ensure DEFOG BLOWER switch on overhead console is in OFF position.
2. Disconnect battery.
3. For helicopters S/N 4 through 153, disconnect electrical lead (1, Figure 21-6) red wire at quick-disconnect, and black wire from ground terminal.
4. For helicopters S/N 154 through 253, desolder electrical lead (9) from filter (10) and remove filter from console.
5. For helicopters S/N 2489 and subsequent, remove electrical lead (5, Figure 21-5) wire No. H23A22 (right blower) or No. H24A22 (left blower) and remove insulating tubing. Insulate electrical leads with new insulating tubing or insulation tape and stow.

6. For helicopters S/N 4 through 253, loosen clamp (7, Figure 21-6). Disengage blower (8) from coupling (6) and remove blower. Feed electrical lead (1) through hole in defog nozzle (4) while removing blower.

7. For helicopters S/N 2489 and subsequent, remove nut (32, Figure 21-5, Detail B), thin steel washer (33), and screw (34) from blower mount clamp (35). Slide blower (2) out of clamp and coupling (3) on defog nozzle (9). Work electrical lead (5) through grommet (4) in defog nozzle, and remove blower.

21-27. BLOWER — REMOVAL (HELICOPTERS S/N 254 THROUGH 2488)

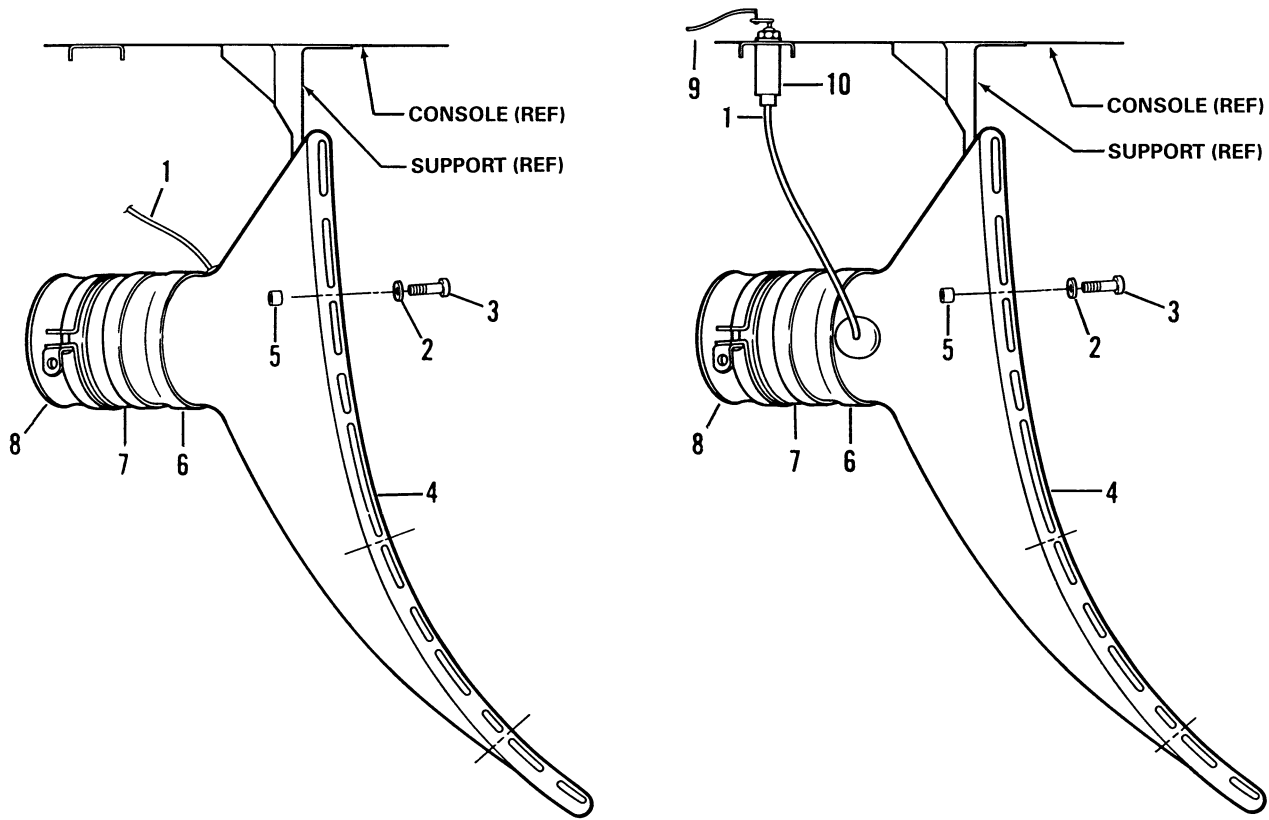
1. Ensure DEFOG BLOWER switch on overhead console is in OFF position.
2. Disconnect battery.
3. Desolder wire from tab on noise filter (part of electrical lead 11, Figure 21-3 and Figure 21-4) and remove filter and electrical lead from console.
4. Loosen clamp (21, Figure 21-3 and Figure 21-4) that secures blower (22) to outlet plenum (19), and remove blower.
5. Loosen clamp (18) that secures duct (17), and feed electrical lead (11) and attached noise filter through grommet on defog nozzle (4), and out through outlet plenum (19).

21-28. BLOWER — INSPECTION AND REPAIR

1. Inspect electrical wiring to blower for chafing and deterioration.
2. Deleted.

21-29. BLOWER — INSTALLATION (HELICOPTERS S/N 4 THROUGH 253 AND S/N 2489 AND SUBSEQUENT)

1. For helicopters S/N 4 through 254, work electrical lead (1, Figure 21-6) through grommet in defog nozzle (4), slide blower (8) through mounting clamp (7), and engage blower into coupling (6).



HELICOPTERS 4 THRU 252

HELICOPTERS 253 AND SUBSEQUENT

- 1. Electrical lead
- 2. Washer
- 3. Screw
- 4. Defog nozzle
- 5. Spacer
- 6. Coupling
- 7. Clamp
- 8. Blower
- 9. Electrical lead
- 10. Filter

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Figure 21-6. Defog Nozzle

2. For helicopters S/N 2489 and subsequent, work electrical lead (5, [Figure 21-5](#)) through grommet (4) in defog nozzle (9), slide blower (2) into clamp (35, Detail B), and engage blower into coupling (3) on defog nozzle. Secure blower in clamp with screw (34, Detail B), thin steel washer (33), and nut (32).

3. For helicopters S/N 4 through 153, connect electrical lead (1, [Figure 21-6](#)) red wire at quick-disconnect, and black wire to ground terminal.

4. For helicopters S/N 154 through 253, install filter (10) into console and solder electrical lead (9) to filter.

5. Connect battery.

6. Check that both blowers (8) operate when DEFOG BLOWER switch is in the ON position.

21-30. BLOWER — INSTALLATION (HELICOPTERS S/N 254 THROUGH 2488)

1. Feed electrical lead (11, [Figure 21-3](#) for S/N 254 through 448 and [Figure 21-4](#) for S/N 449 through 2488) through outlet plenum (19) and duct (17), into defog nozzle (4), then out through grommet.

2. Slide blower (22) into clamp (18) and tighten clamp.

3. Install duct (17) onto outlet plenum (19) and secure with clamp (18).

4. Install electrical lead (11) with attached noise filter into console. Solder wiring to filter.

5. Connect battery.

6. Check that both blowers (22) operate when DEFOG BLOWER switch is in the ON position.

21-31. DEFOG NOZZLE

Defog nozzles are constructed of molded polycarbonate. Outlet slots are located along upper edge of nozzle to direct air onto windshields. Three spacers are located just below outlet slots for mounting defog nozzles to structure support angles.

21-32. DEFOG NOZZLE — REMOVAL

1. Remove defog blower. For helicopters S/N 4 through 253, and S/N 2489 and subsequent, refer to [paragraph 21-26](#). For helicopters S/N 254 through 2488, refer to [paragraph 21-27](#).

2. Remove instrument glareshield, if required, to gain access to defog nozzle (3, [Figure 21-7](#)).

3. Remove screws (1) and washers (2) that secure defog nozzle (3) to support angle at the base of windshield.

21-33. DEFOG NOZZLE — INSPECTION AND REPAIR

1. Inspect defog nozzle (3, [Figure 21-7](#)) for cracks and obstructed outlet slots.

2. Repair cracks in defog nozzle (3) in accordance with polycarbonate repair procedure ([BHT-ALL-SPM](#)).

3. Inspect spacers (4) for looseness or corrosion.

21-34. DEFOG NOZZLE — INSTALLATION

1. Position defog nozzle (3, [Figure 21-7](#)) along base of windshield and align spacers (4) with nutplates in support angle.

NOTE

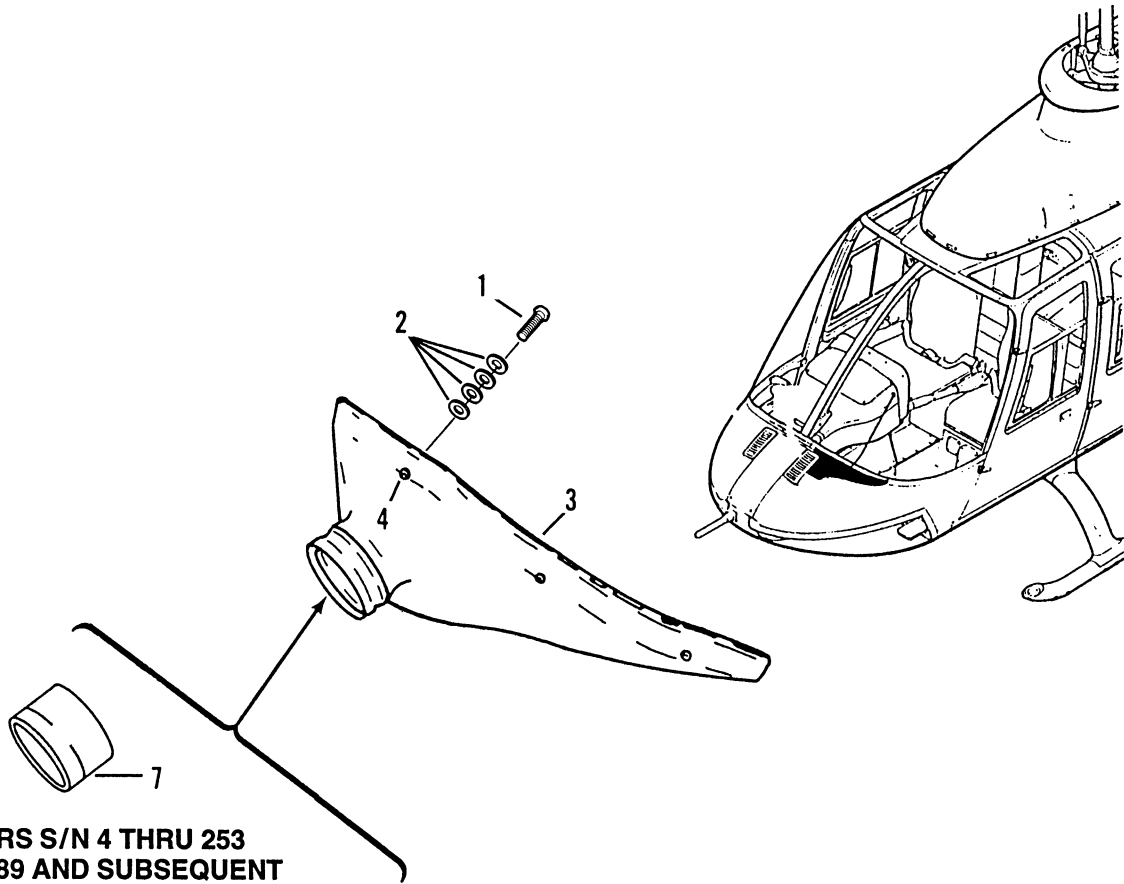
Up to four washers maximum may be used between nozzle and structure to prevent preload of nozzle.

2. Install screws (1), washers (2), and secure defog nozzle (3).

3. Install instrument glareshield if removed.

4. Install defog blowers. For helicopters S/N 4 through 253 and S/N 2489 and subsequent, refer to [paragraph 21-29](#). For helicopters S/N 254 through 2488, refer to [paragraph 21-30](#).

5. Check that both blowers operate when DEFOG BLOWER switch is in ON position, and that air is directed along windshield contour.



**HELICOPTERS S/N 4 THRU 253
AND S/N 2489 AND SUBSEQUENT**



HELICOPTERS S/N 254 THRU 2488

- 1. Screw
- 2. Washer
- 3. Nozzle
- 4. Spacer
- 5. Clamp
- 6. Duct
- 7. Coupling

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Figure 21-7. Defog Nozzle Installation