



TECHNICAL BULLETIN

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WINDSCREEN WIPERS –103 INSTALLATION

1. PLANNING INFORMATION

A. Aircraft Affected:

MD Helicopters, Inc., MD900 serial number 900-000008 and subsequent.

B. Assembly/Components Affected By This Notice:

Cockpit Screens Installation 900F7305603, Console Component Installation 900E7720001, and Electrical Load Center 900E2750620.

C. Reason:

Owner/Operators may desire to install Windscreen Wipers on their aircraft.

D. Description:

Procedures in this Bulletin provide owners and operators with information pertaining to the installation of the Windscreen Wipers option.

E. Time of Compliance

Customer option, at the discretion of the owner/operator.

F. Classification:

Compliance with this Bulletin is a major alteration.

G. FAA Approval:

The technical design aspects of this Bulletin are FAA Approved.

H. Interchangeability:

None

I. Disposition of Parts Removed

N/A

J. Points of Contact

For further assistance, contact your local MDHI Field Service Representative (refer to the latest revision of the "At Your Service" handbook for address and telephone numbers) or contact the Field Service Department at MDHI, Mesa, Arizona. Telephone 1-800-388-3378 or (480) 891-6342. DATAFAX: (480) 891-6782.

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K. Material/Part Availability:

Contact MDHI Part Sales Dept. (Ref. Parts Request Form at the end of this Bulletin).



Hardcoat Windscreens are required for wiper installation and operation. One of the Hardcoat Windscreens Installations listed below must be ordered separately and installed in conjunction with the Windscreen Wipers Option.

HARDCOAT WINDSCREEN REPLACEMENT PARTS/SUPPLIES			
Nomenclature	Part No.	Qty.	Source
Windscreen LH, Untinted, Coated	900F3302003-101	1	MDHI
Windscreen RH, Untinted, Coated	900F3302003-102	1	MDHI
Windscreen LH, Tinted, Coated	900F3302004-101	1	MDHI
Windscreen RH, Tinted, Coated	900F3302004-102	1	MDHI

WINDSCREEN WIPERS INSTALLATION REPLACEMENT PARTS/SUPPLIES			
Nomenclature	Part No.	Qty.	Source
Bracket Assembly, Motor, LH	900N5200001-9	1	MDHI
Bracket Assembly, Motor, RH	900N5200001-10	1	MDHI
Mount Assembly, LH	900N5200001-7	1	MDHI
Mount Assembly, RH	900N5200001-8	1	MDHI
Motor Assembly, RH	900N5200001-14	1	MDHI
Motor Assembly, LH	900N5200001-13	1	MDHI
Link Assembly, RH	2314M-115-1	1	MDHI
Link Assembly, LH	2314M-115-2	1	MDHI
Arm Wiper	2314M-171-1	2	MDHI
Wiper Blade, RH	2315M-67-2	1	MDHI
Wiper Blade, LH	2315M-67-1	1	MDHI
Switch Assembly	2316M-40-1	1	MDHI
Spacer, Sleeve	NAS47P3C-150	8	MDHI
Rivet, Flush	MS20426AD3	16	MDHI
Screw, Pan Head	NAS7703-54	8	MDHI
Washer, Flat	AN960C10	8	MDHI



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WINDSCREEN WIPERS INSTALLATION REPLACEMENT PARTS/SUPPLIES (Cont.)			
Nomenclature	Part No.	Qty.	Source
Screw, Pan Head	MS27039C0818	6	MDHI
Screw, Pan Head	MS27039C0817	2	MDHI
Screw, Pan Head	MS27039C0814	2	MDHI
Washer, Flat	AN960C8L	8	MDHI
Washer, Flat	HS306-220	8	MDHI
Nut, Hex, Self Locking	NAS679C08M	8	MDHI
Bolt, Hex Head	NAS6204-12	2	MDHI
Washer, Nylon	NAS1515H4	4	MDHI
Plastic Tape, Black, 0.025 in (0.64 mm) Thick, 1.0 in (2.54 cm) Wide	HMS16-1124 (RM006358)	20 in. (50.8 cm)	MDHI
Grommet	MS35489-49	2	MDHI
Connector (P535 and P536)	MS3476W16-8S	2	MDHI
Backshell (P535 and P536)	M85049/52S16W	2	MDHI
Circuit Breaker (CB 38 and CB68)	MS3320-7-1/2	2	MDHI
Terminal Lug (S1)	MS25036-101	40	MDHI
Terminal Lug (CB38 and CB68)	MS25036-149	6	MDHI
Contact, Socket (P535 and P536)	M39029/5-116	16	MDHI
Plug, Sealing (P535 and P536)	MS27488-16	4	MDHI
Contact, Power, Socket (GS)	M39029/22-192	2	MDHI
Wire, 20 AWG	M22759/43-20-9 (RM011266)	210 ft. (64.0 M)	MDHI
Sleeving, Protective, Black	HS5330-1524 (RM010171)	10 ft. (3.05 M)	MDHI
Cable Marker	HS4910-1001	2	MDHI
Jumper, Bonding	HS5509-14-BB-2	2	MDHI
Sealant	HP15-10, Type IV (RM009331)	1	MDHI

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WINDSCREEN WIPERS INSTALLATION REPLACEMENT PARTS/SUPPLIES (Cont.)			
Nomenclature	Part No.	Qty.	Source
Sleeving, Shrink, Black	M23053/16-002-0 (RM012518)	1 ft. (30.5 cm)	MDHI
Safety Wire	MS20995C20 (RM016381)	1 ft. (30.5 cm)	MDHI
Nutplate, Self Locking	MS21075L08N	8	MDHI

L. Warranty Policy:

N/A

M. Tooling:

N/A

N. Weight and Balance:

19.5 lb (8.85 kg) at FS 95.6 BL 00.0.

O. Electrical Load Data:

N/A

P. Other Publications Affected:

Rotorcraft Flight Manual CSP-900PFM-1, Rotorcraft Maintenance Manual CSP-900RMM-2, CSP-900RMM-3, and Illustrated Parts List CSP-900IPL-4 have been revised to incorporate this option.

2. ACCOMPLISHMENT INSTRUCTIONS

- (1). Remove standard cockpit windscreens, retain hardware (Ref. CSP-900RMM-2, Section 53-10-00).
- (2). Position wiper motor mounting bracket assemblies centered about four each mounting holes and match drill from windscreen attach holes.
- (3). Drill four each mounting holes with a number 11 (4.85 mm) drill and deburr.
- (4). Drill nutplate attach holes with a number 40 (2.49 mm) drill and deburr.
- (5). Touch up chemical film (Ref. CSP-SPM).
- (6). Attach four each MS21075L08N nutplates using MS20426AD3 rivets.

NOTE:

- Do not install windscreen attaching hardware at ten locations used for wiper motor bracket assembly and mount assembly installations.
 - Do not seal windscreens at this time.
- (7). Install hardcoat windscreens (Ref. CSP-900RMM-2, Section 53-10-00).

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- (8). Temporarily install wiper motor mounting bracket assemblies (Ref. CSP-900RMM-2, Section 53-10-00).
- (9). Cut a 1.062 in. (2.698 cm) hole in windscreen on center with motor mounting bracket motor shaft clearance hole.
- (10). Remove motor mounting bracket assemblies (Ref. CSP-900RMM-2, Section 53-10-00).
- (11). Position mount assemblies centered vertically on windscreen attach holes. Maintain minimum 0.38 in (9.65 mm) horizontal edge distance, and mark mount assemblies two each attach holes.
- (12). Drill holes with a number 11 (4.85 mm) drill and deburr.
- (13). Temporarily install mount assemblies using windscreen attach hardware.
- (14). Mark mount assemblies on center with windscreen motor shaft clearance hole and remove.
- (15). Cut a 1.062 in. (2.698 cm) hole in mount assemblies on center with windscreen motor shaft clearance hole and deburr.
- (16). Deburr hole in windscreen and install MS35489-49 grommet.
- (17). Prepare upper outboard wiper motor attach hole for electrical bond (Ref. CSP-SPM).
- (18). Install wiper motors onto mounting bracket assemblies using NAS7703-54 screws, HS5509 jumper (upper outboard bolt), AN960C10 washers, and NAS47P3C-150 spacers (Ref. CSP-900RMM-2, Section 53-10-00).
- (19). Environmentally seal bonding jumper at wiper motor (Ref. CSP-SPM).
- (20). Install HMS 16-1124 plastic tape onto the LH and RH motor mounting bracket assemblies four places to prevent any part of the bracket assemblies from contacting structure. Trim excess tape and cut holes for attaching hardware.

NOTE: Do not install screw common to mount assembly in mounting bracket at this time.

- (21). Install mounting bracket assemblies into helicopter with motors attached using MS27039C0818 screws (two lower attach holes), MS27039C0817 screw (top attach hole), and HS306-220 washers. Torque fasteners **8 +/-0 in lb (0.90 +/-0 N•m)**.
- (22). Locate bonding jumper free end attach point on instrument panel, location optional.
- (23). Prepare bonding jumper free end attach point for electrical bond (Ref. CSP-SPM).
- (24). Attach bonding jumper free end to instrument panel.
- (25). Test bonding jumper for class "L" electrical bond (Ref. CSP-SPM).
- (26). Environmentally seal bonding jumper at instrument panel (Ref. CSP-SPM)..

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(27). Install windscreen wiper control switch.

NOTE:

- Location of switch is optional.
- Switch must be installed within reach of the pilot

(Ref. Figure 1)

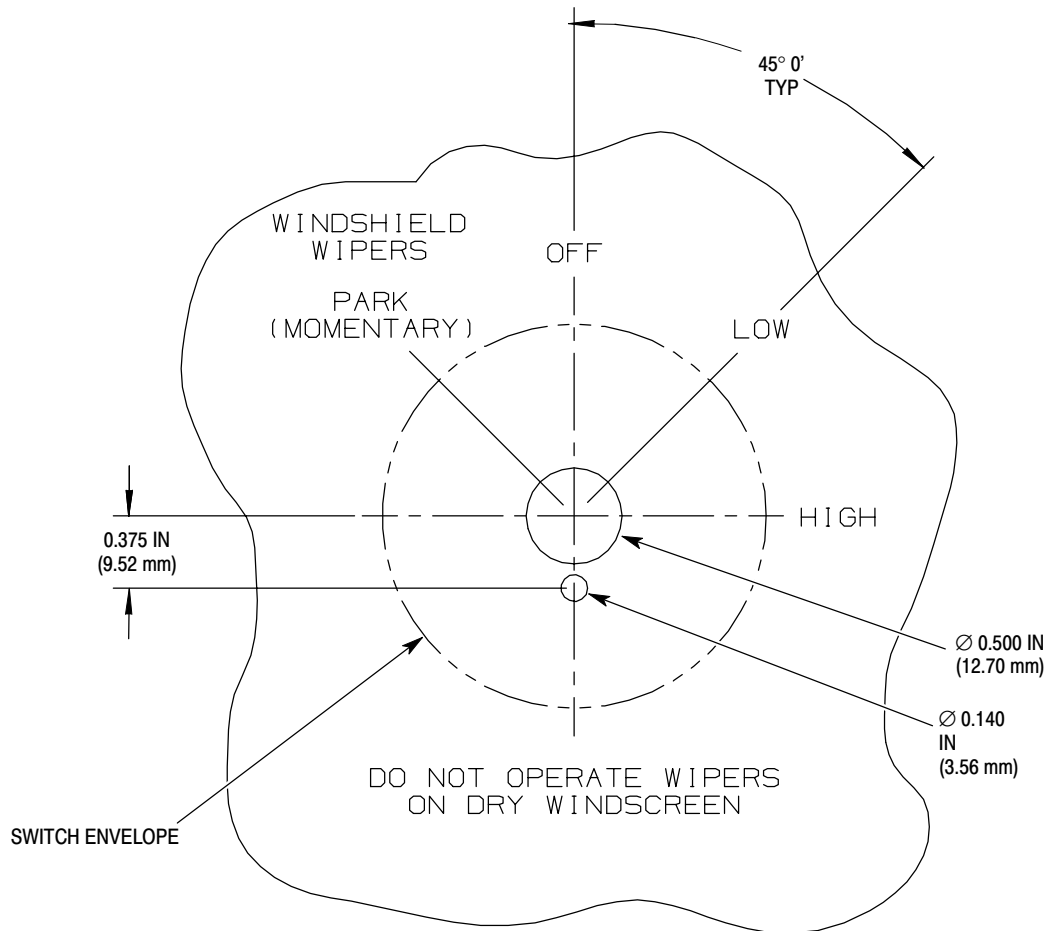
(a). Remove small blank console panel and shift all panels aft of lighting control panel aft to make room for the blank panel (Ref. CSP-900RMM-3, Section 96-00-00).

NOTE: Switch requires a minimum of four inches (10.16 cm) depth clearance.

- (b). Locate switch mounting hole and lockwasher tab hole. Drill both holes with a number forty (2.49 mm) drill.
- (c). Enlarge switch mounting hole to a 0.5 in. (12.7 mm).
- (d). Enlarge lockwasher tab hole to a number twenty-eight (3.57 mm).
- (e). Deburr holes and touch up finish (Ref. CSP-SPM).
- (f). Install switch into panel (Ref. CSP-900RMM-3, Section 96-00-00).
- (g). Mark switch positions and "DO NOT OPERATE WIPERS ON DRY WINDSCREEN" with contrasting permanent ink. Letters to be 0.20 in. (5.0 mm) in height.

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Figure 1. Wiper Switch Mounting and Marking

(28). Access A620 electrical load center and install CB38 and CB68 (Ref. CSP-900RMM-3).

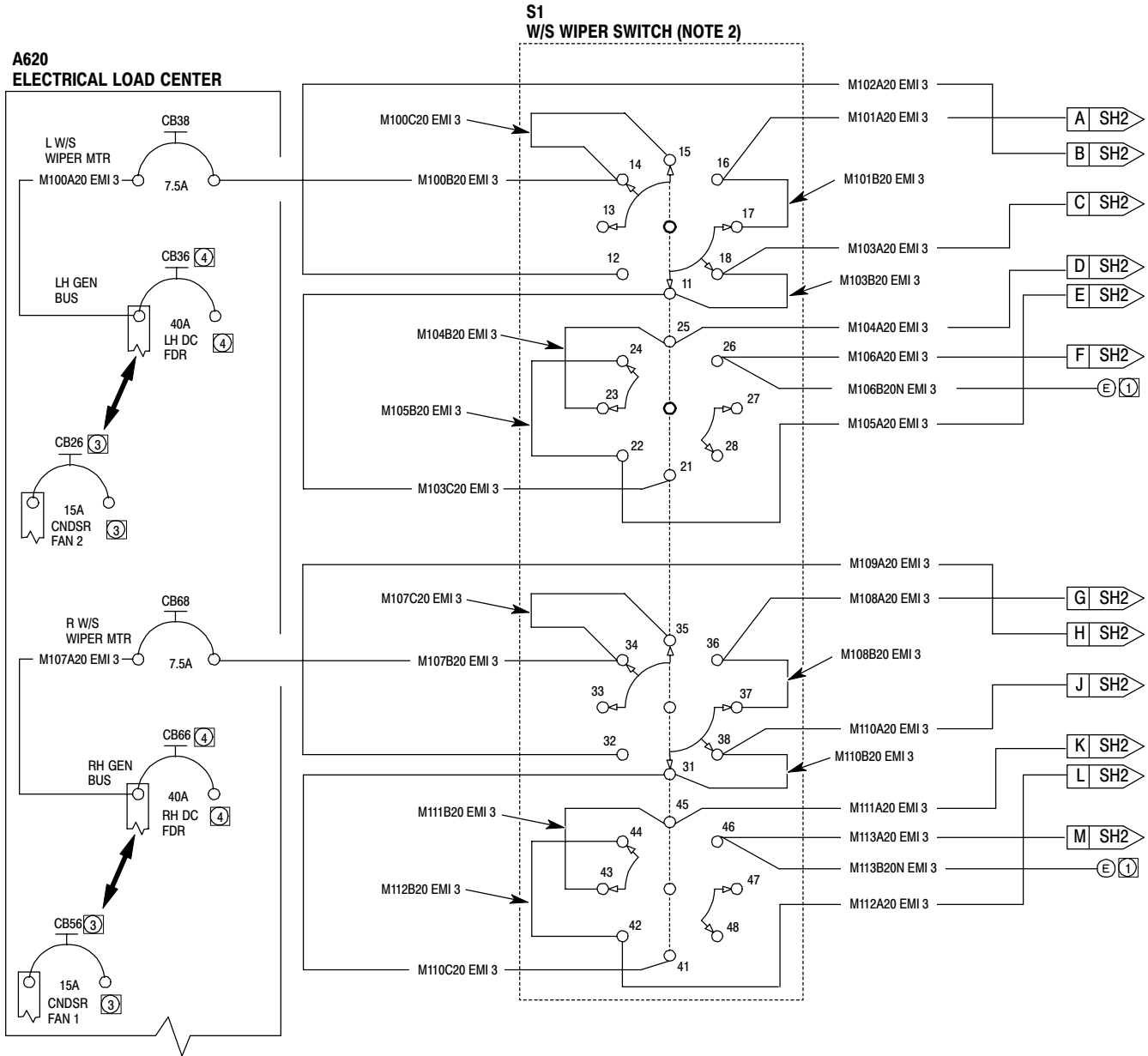
(29). Fabricate wires (Ref. CSP-900RMM-3, Chapter 98).

(Ref. Figure 2)

NOTE: Install ground wires into any open cavity in any ground module position of GS101-GS113 (Ref. CSP-900RMM-2, Chapter 98).

(30). Install wires and route with existing wire harness.

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NOTES:

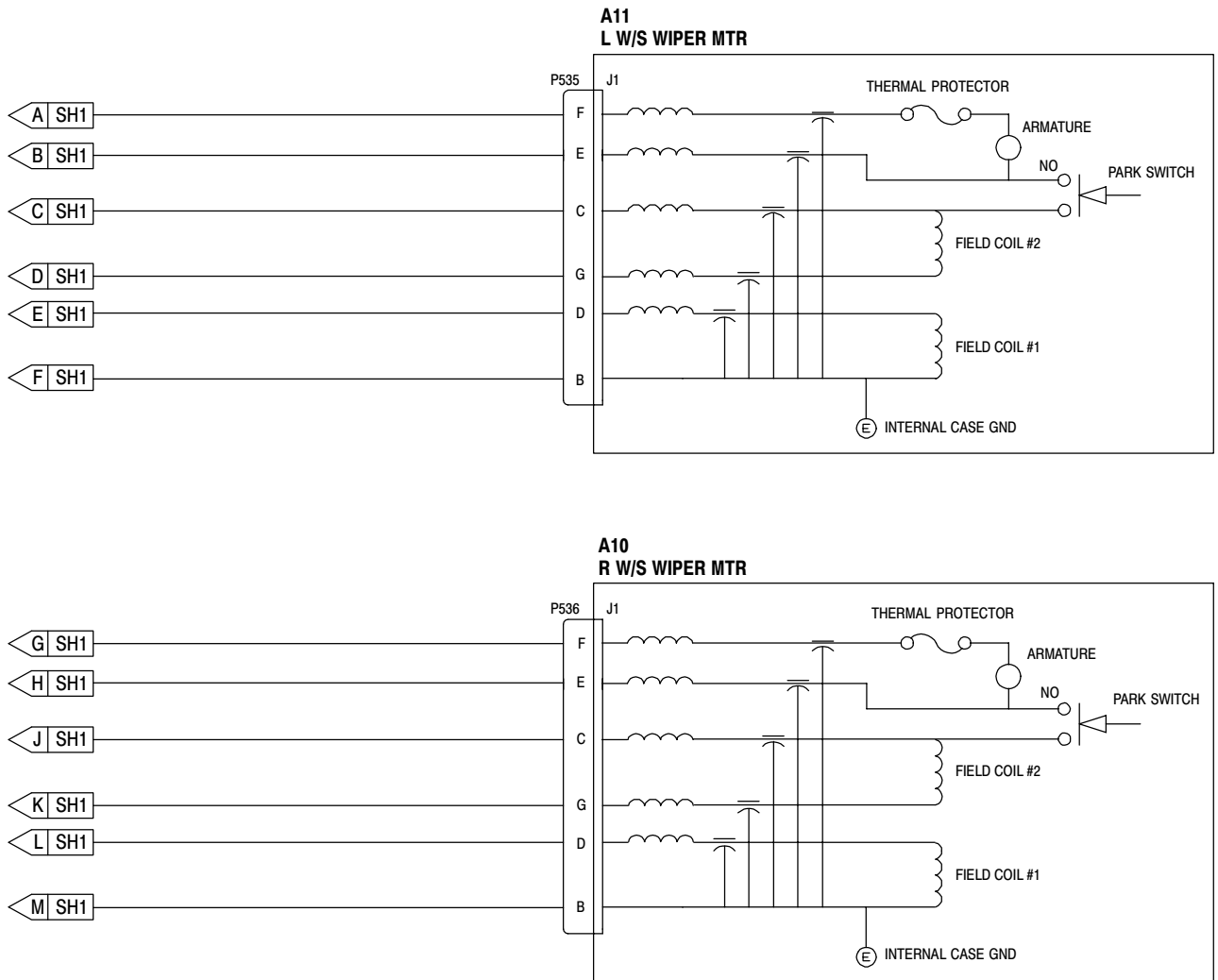
- ① GROUND WIRES MAY BE INSTALLED INTO ANY OPEN CAVITY OF ANY MODULE POSITION OF GS101-GS113.
- ② S1 SHOWN IN THE "OFF" POSITION
- ③ 900 CONFIG
- ④ 902 CONFIG

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Figure 2. Windscreen Wipers Interconnect Wiring Diagram (Sheet 1 of 2)

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Figure 2. Windscreen Wipers Interconnect Wiring Diagram (Sheet 2 of 2)



Ensure proper connection of P535 and P536 prior to wiper operation.

- (31). Connect wires to switch and install connectors P535 and P536 onto wiper motors.
- (32). Apply electrical power to the helicopter (Ref. CSP-900RMM-3).



Ensure wipers are in the park position.

- (33). Position wipers in the park position (Ref. CSP 900RMM-2, Section 53-10-00)
- (34). Remove electrical power from the helicopter (Ref. CSP-900RMM-3, Section 96-00-00).
- (35). Temporarily install mount assemblies using attach hardware and mark a 1.0 in (2.54 cm) radius arc around the motor output shaft center.

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- (36). Install wiper arms (Ref. CSP-900RMM-2, Section 53-10-00).
- (37). Install wiper blades (Ref. CSP-900RMM-2, Section 53-10-00).
- (38). Install wiper links upper end (Ref. CSP-900RMM-2, Section 53-10-00).
- (39). Adjust wiper blades to be parallel to windscreen frame and mark location of wiper links lower attach hole, on mount assemblies, centered on 1.0 in (2.54 cm) arc.
- (40). Remove wiper blades with links attached (Ref. CSP-900RMM-2, Section 53-10-00).
- (41). Remove wiper arms (Ref. CSP-900RMM-2, Section 53-10-00).
- (42). Remove mount assemblies and drill lower wiper link attach point with a "K" (7.14 mm) drill and deburr.
- (43). Seal windscreens (Ref. CSP-900RMM-2, Section 53-10-00).
- (44). Locate nutplate attach holes, drill with a number 40 (2.49 mm) drill, and deburr
- (45). Touch up mount assemblies chemical film (Ref. CSP-SPM).
- (46). Install MS21075L4 nutplates using MS20426AD3 rivets.
- (47). Install mount assemblies using MS27039C0818 screw (upper hole), MS27039C0814 screw (lower hole), and HS306-220 washers. Torque fasteners **8 +2/-0 in lb (0.90 +0.23/-0 N•m)**..
- (48). Install wiper arms (Ref. CSP-900RMM-2, Section 53-10-00).
- (49). Install wiper blades (Ref. CSP-900RMM-2, Section 53-10-00).
- (50). Install wiper links lower end (Ref. CSP-900RMM-2, Section 53-10-00).



DO NOT operate windscreen wipers on a dry windscreen.

- (51). Adjust wiper arm tension (Ref. CSP-900RMM-2, Section 53-10-00).
- (52). Perform windscreen wiper rigging/operational check (Ref. CSP-900RMM-2, Section 53-10-00).
- (53). Secure all previously opened areas (Ref. CSP-900RMM-2 and -3)

Record compliance to this Technical Bulletin in the Compliance Record section of the helicopter Log Book.

