

WIPER/WASHER SYSTEM

1998 Toyota Supra

1998 ACCESSORIES & EQUIPMENT
Toyota - Wiper/Washer Systems

Lexus; LX470
Toyota; Avalon, Camry, Celica, Corolla, Land Cruiser, RAV4,
Sienna, Supra, Tacoma, T100, 4Runner

* PLEASE READ THIS FIRST *

WARNING: Deactivate air bag system before performing any service operation. See AIR BAG RESTRAINT SYSTEMS article. DO NOT apply electrical power to any component on steering column without first deactivating air bag system. Air bag may deploy.

DESCRIPTION & OPERATION

All models are equipped with 2-speed wiper motors. An intermittent wiper system is optional. Front wiper motors are protected by an internal circuit breaker. Celica, Land Cruiser, Lexus LX470, RAV4, Sienna, Supra and 4Runner are equipped with rear wipers.

ADJUSTMENTS

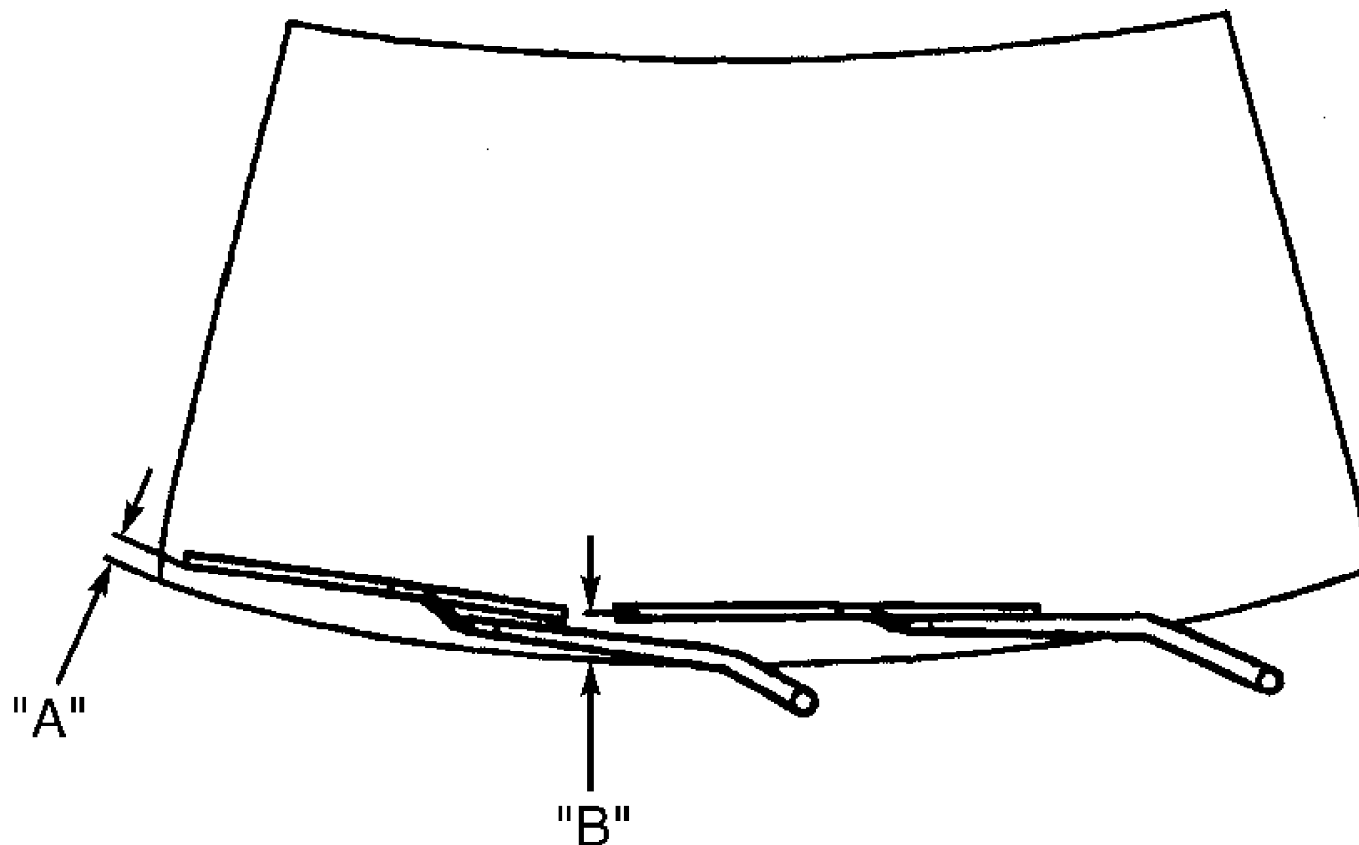
Adjust wiper blades as specified. See WIPER BLADE ADJUSTMENTS table.

WIPER BLADE ADJUSTMENTS TABLE

Adjustment (1)	In. (mm)
Avalon	
"A"	1.6 (40)
"B"	2.6 (65)
Camry	
"A" & "B"	1.4 (35)
Celica	
Front	
"A"	1.42 (36)
"B" .....	.81 (20.5)
Rear	(2)
Corolla	
"A" .....	.98 (25)
"B" .....	.59 (15)
Land Cruiser & Lexus LX470	
Front	
"A"	1.57 (40)
"B"	1.02 (26)
Rear (3) .....	.39-1.5 (28-48)
RAV4	
Front	
"A" & "B" .....	.98 (25)
Rear (3)	7.2 (184)
Sienna	
Front	
"A" .....	.98 (25)
"B"	1.26 (32)
Rear	1.52 (54)

Supra		
Front	(4)	
"A"	.....	1.33 (32.4)
"B"	.....	1.28 (32.4)
Rear	.....	(2)
Tacoma		
"A" & "B"	.....	.98 (25)
T100	.....	(5)
4Runner		
Front		
"A" & "B"	.....	.98 (25)
Rear	.....	(5)

- (1) - See Fig. 1.
- (2) - Adjust top of wiper blade to installation mark printed on glass.
- (3) - From lower edge of rear window to end of blade.
- (4) - Adjust both wiper blades from bottom center of windshield.
- (5) - No information is available.



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Fig. 1: Adjusting Front Wiper Blades
Courtesy of Toyota Motor Sales, U.S.A., Inc.

COMPONENT TESTS

FRONT WIPER MOTOR TEST

Avalon

1) Using 12-volt battery, connect jumper wire from positive battery terminal to wiper motor terminal No. 3. See Fig. 2. Connect another jumper wire between negative battery terminal and wiper motor terminal No. 1. Motor should operate at low speed.

2) Remove jumper wire from terminal No. 3. Reconnect positive battery terminal jumper wire to wiper motor terminal No. 2. Motor should operate at high speed.

3) Remove jumper wire from terminal No. 2 and reconnect jumper wire to wiper motor terminal No. 3. With motor running at low speed, stop motor at any position except PARK position by disconnecting jumper wire from terminal No. 3. Install another jumper wire between wiper motor terminals No. 1 and 3.

4) Connect positive battery terminal jumper wire to wiper motor terminal No. 2. Connect negative jumper to terminal No. 5. Motor should start running and then stop at PARK position. Replace motor if operation is not as specified. See FRONT WIPER MOTOR R & I under REMOVAL & INSTALLATION.

Celica, Corolla, RAV4 & Supra

1) Using 12-volt battery, connect jumper wire from positive battery terminal to wiper motor terminal No. 3. See Fig. 2. Connect another jumper wire between negative battery terminal and wiper motor terminal No. 1. Motor should operate at low speed.

2) Remove jumper wire from terminal No. 3. Reconnect positive battery terminal jumper wire to wiper motor terminal No. 2. Motor should operate at high speed.

3) Remove jumper wire from terminal No. 2 and reconnect jumper wire to wiper motor terminal No. 3. With motor running at low speed, stop motor at any position except PARK position by disconnecting jumper wire from terminal No. 3. Install another jumper wire between wiper motor terminals No. 3 and 5.

4) Connect positive battery terminal jumper wire to wiper motor terminal No. 6. Connect negative jumper to terminal No. 1. Motor should start running and then stop at PARK position. Replace motor if operation is not as specified. See FRONT WIPER MOTOR R & I under REMOVAL & INSTALLATION.

Camry & Tacoma

1) Using 12-volt battery, connect jumper wire from positive battery terminal to wiper motor terminal No. 5. See Fig. 3. Connect another jumper wire from negative battery terminal to wiper motor terminal No. 4. Motor should operate at low speed.

2) Remove jumper wire from terminal No. 5. Reconnect jumper wire to wiper motor terminal No. 3. Motor should operate at high speed. Remove jumper wire from terminal No. 3 and reconnect jumper wire to wiper motor terminal No. 5. With motor running at low speed, stop motor at any position except PARK position by disconnecting jumper wire from terminal No. 5. On Camry, install jumper wire between wiper motor terminals No. 3 and 5. On Tacoma, install jumper wire between wiper motor terminals No. 1 and 5.

3) On all models, connect positive battery terminal jumper wire to wiper motor terminal No. 2. Connect negative battery terminal jumper wire to wiper motor terminal No. 4. Motor should start running and then stop at PARK position. Replace motor if operation is not as specified. See FRONT WIPER MOTOR R & I under REMOVAL & INSTALLATION.

Land Cruiser & Lexus LX470

1) Using 12-volt battery, connect jumper wire from positive battery terminal to wiper motor terminal No. 1. See Fig. 3. Connect another jumper wire between negative battery terminal and wiper motor terminal No. 5. Wiper motor should operate at low speed.

2) Remove jumper wire from terminal No. 1. Reconnect jumper

wire to wiper motor terminal No. 4. Motor should operate at high speed. Remove jumper wire from terminal No. 4 and reconnect jumper wire to wiper motor terminal No. 1. With motor running at low speed, stop motor at any position except PARK position by disconnecting jumper wire from terminal No. 1. Install another jumper wire between wiper motor terminals No. 1 and 3.

3) Ensure ground is still connected to terminal No. 5. Connect positive battery terminal jumper wire to wiper motor terminal No. 2. Motor should start running and then stop at PARK position. Replace motor if operation is not as specified. See FRONT WIPER MOTOR R & I under REMOVAL & INSTALLATION.

Sienna

1) Using 12-volt battery, connect jumper wire from positive battery terminal to wiper motor terminal No. 5. See Fig. 4. Connect another jumper wire between negative battery terminal and wiper motor terminal No. 1. Wiper motor should operate at low speed.

2) Remove jumper wire from terminal No. 5. Reconnect jumper wire to wiper motor terminal No. 3. Motor should operate at high speed. Remove jumper wire from terminal No. 3 and reconnect jumper wire to wiper motor terminal No. 5. With motor running at low speed, stop motor at any position except PARK position by disconnecting jumper wire from terminal No. 5. Install another jumper wire between wiper motor terminals No. 2 and 5.

3) Ensure ground is still connected to terminal No. 1. Connect positive battery terminal jumper wire to wiper motor terminal No. 3. Motor should start running and then stop at PARK position. Replace motor if operation is not as specified. See FRONT WIPER MOTOR R & I under REMOVAL & INSTALLATION.

T100 & 4Runner

1) Using 12-volt battery, connect jumper wire from positive battery terminal to wiper motor terminal No. 3. See Fig. 2 or 5. Connect another jumper wire between negative battery terminal and wiper motor body. Motor should operate at low speed.

2) Remove jumper wire from terminal No. 3. Reconnect positive battery terminal jumper wire to wiper motor terminal No. 2. Motor should operate at high speed.

3) Remove jumper wire from terminal No. 2 and reconnect jumper wire to wiper motor terminal No. 3. With motor running at low speed, stop motor at any position except PARK position by disconnecting jumper wire from terminal No. 3. On T100, install another jumper wire between wiper motor terminals No. 3 and 5. On 4Runner, install another jumper wire between wiper motor terminals No. 2 and 3.

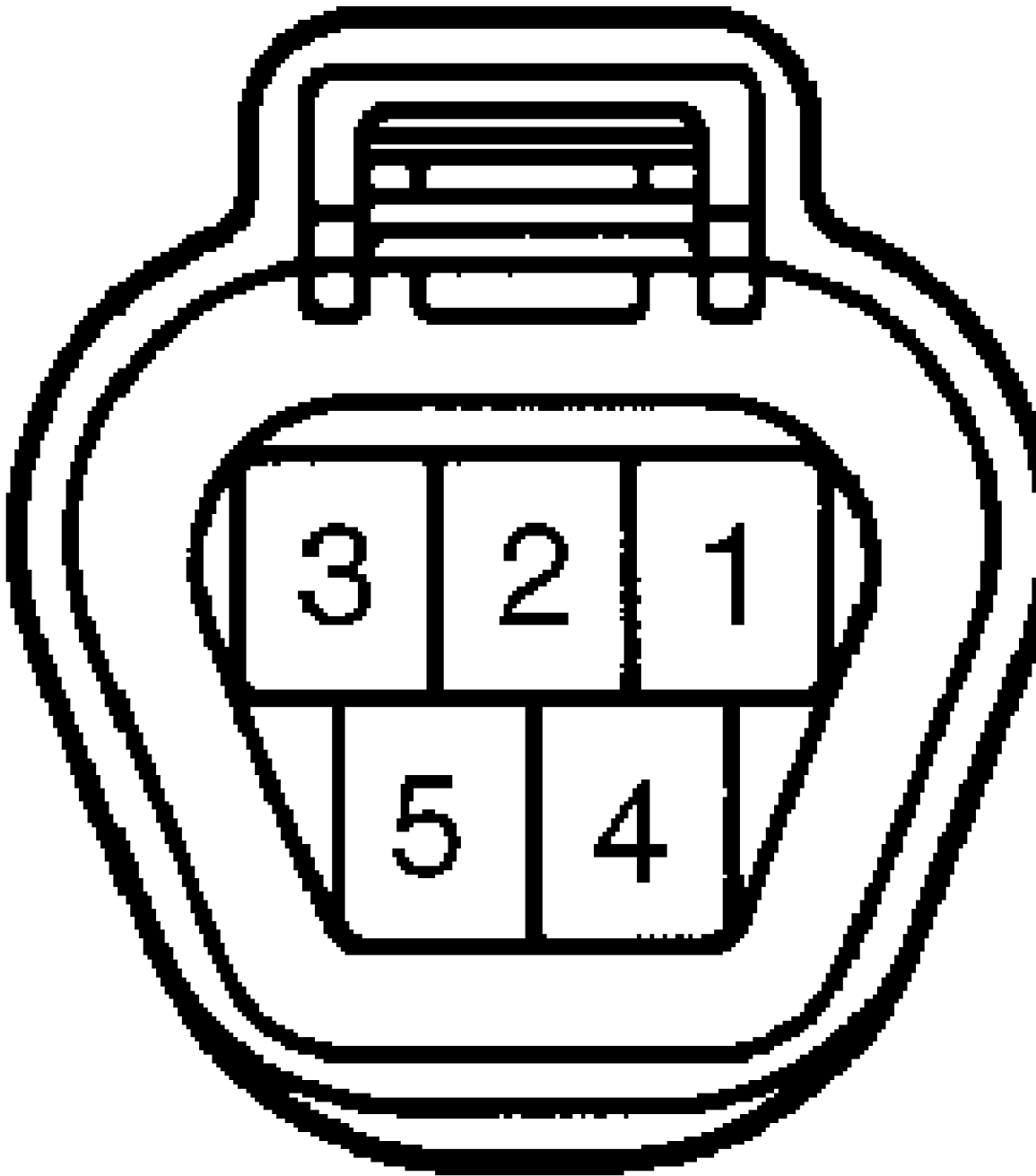
4) On all models, ensure wiper motor body is still connected to battery negative terminal. On T100, connect positive battery terminal jumper wire to wiper motor terminal No. 6. On 4Runner, connect positive battery terminal jumper wire to wiper motor terminal No. 4. On all models, motor should start running and then stop at PARK position. Replace motor if operation is not as specified. See FRONT WIPER MOTOR R & I under REMOVAL & INSTALLATION.



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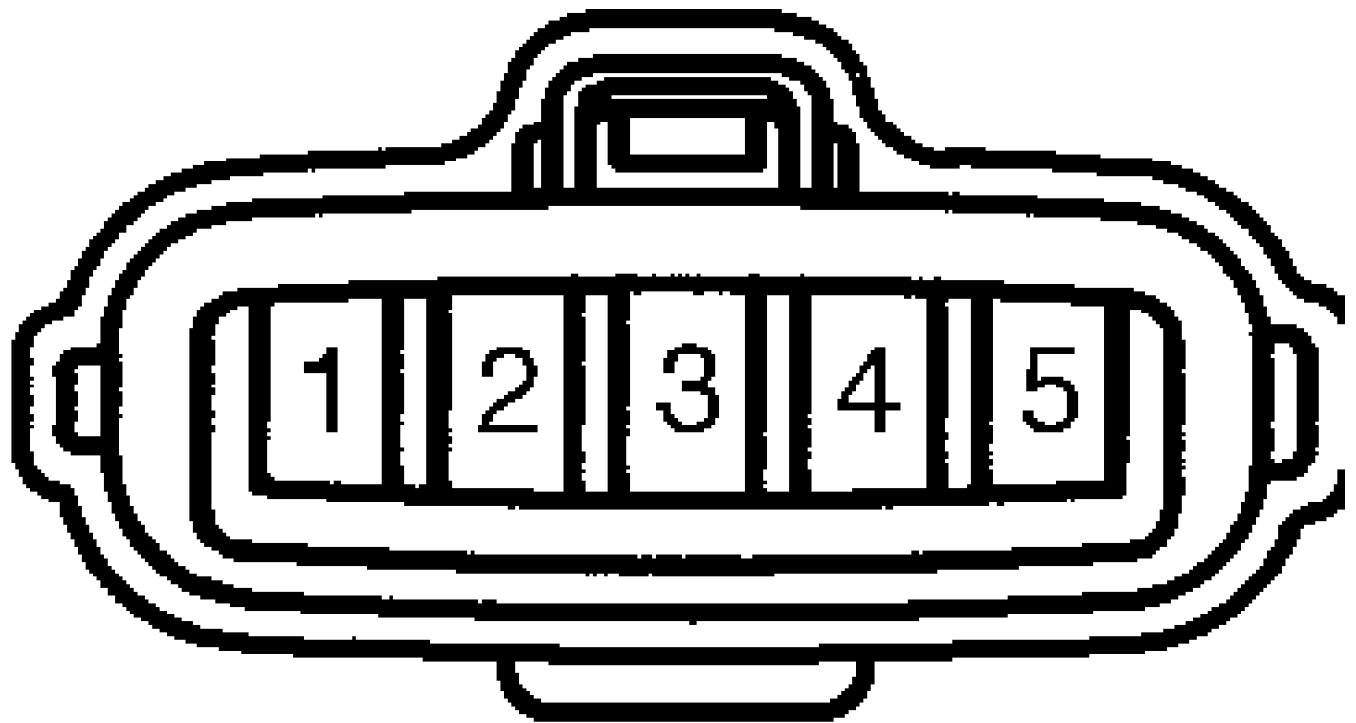
Fig. 2: Front Wiper Motor Terminals (Avalon, Celica, Corolla, RAV4, Supra & T100)

Courtesy of Toyota Motor Sales, U.S.A., Inc.



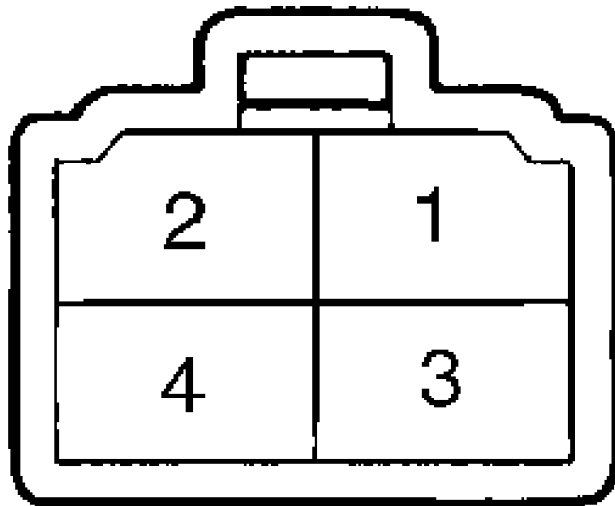
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Fig. 3: Front Wiper Motor Terminals (Camry, Land Cruiser, Lexus LX470 & Tacoma)
Courtesy of Toyota Motor Sales, U.S.A., Inc.



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Fig. 4: Front Wiper Motor Terminals (Sienna)
 Courtesy of Toyota Motor Sales, U.S.A., Inc.



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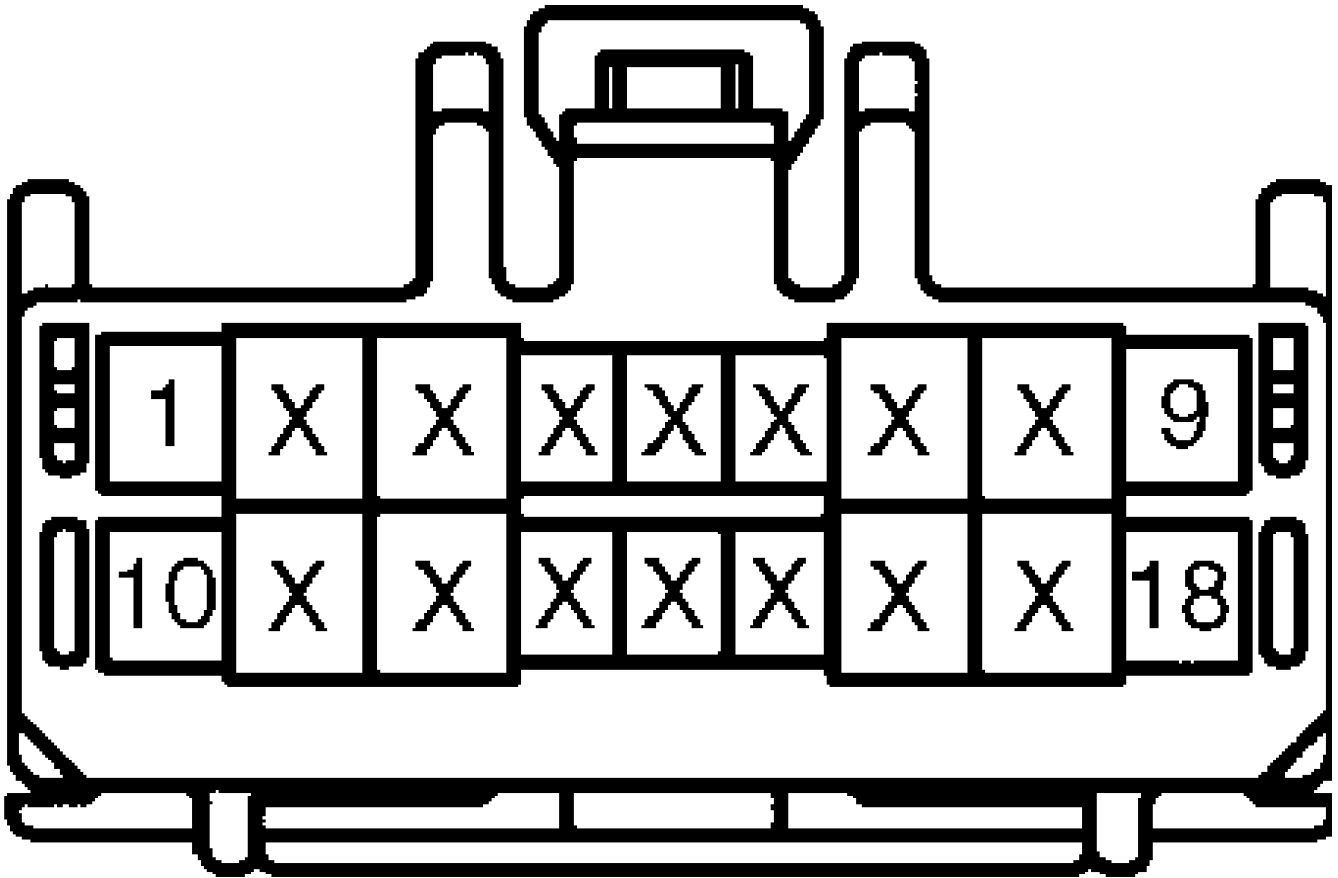
Fig. 5: Front Wiper Motor Terminals (4Runner)
 Courtesy of Toyota Motor Sales, U.S.A., Inc.

With wiper switch in specified position, ensure continuity exists between specified terminals. See WIPER/WASHER SWITCH CONTINUITY TEST table. See Fig. 6 or 7. Replace wiper switch assembly if continuity is not as specified.

WIPER/WASHER SWITCH CONTINUITY TEST TABLE

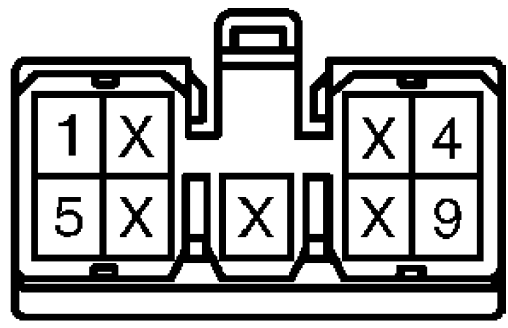
Switch Position	(1) Terminals No.
Avalon, Camry, Celica, RAV4, Sienna & Supra	
Off	7 & 16
Intermittent	7 & 16
Low	7 & 17
High	8 & 17
Washer On	2 & 11
Corolla	
With Mist Wiper	
Off	7 & 16
Mist	3 & 11
Low	7 & 17
High	8 & 17
Washer On	2 & 11
With Intermittent Wiper	
Off	7 & 16
Intermittent	7 & 16
Low	7 & 17
High	8 & 17
Washer On	2 & 11
Land Cruiser & Lexus LX470	
Off	7 & 16
Intermittent	7 & 16
Low	7 & 17
High	8 & 17
Washer OFF	None
Washer ON	2 & 11
Tacoma & 4Runner	
With Mist Wiper	
Off	7 & 16
Mist	7 & 17
Low	7 & 17
High	8 & 17
Washer On	2 & 11
With Intermittent Wiper	
Off	7 & 16
Intermittent	7 & 16
Low	7 & 17
High	8 & 17
Washer On	2 & 11
T100	
With Mist Wiper	
Mist	4 & 8
Off	7 & 8
Low	4 & 8
High	4 & 9
With Intermittent Wiper	
Off	7 & 8
Intermittent	7 & 8
Low	4 & 8
High	4 & 9

(1) - See Fig. 6 or 7.



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Fig. 6: Identifying Combination Switch Connectors For Wipers/Washers (Except T100)
 Courtesy of Toyota Motor Sales, U.S.A., Inc.



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Fig. 7: Identifying Combination Switch Connectors For Wipers/Washers (T100)
 Courtesy of Toyota Motor Sales, U.S.A., Inc.

WASHER SWITCH TEST

T100

With washer switch in specified position, ensure continuity exists between specified terminals. See WASHER SWITCH CONTINUITY TEST table. See Fig. 7. Replace complete wiper/washer switch assembly if continuity is not as specified. See FRONT WIPER SWITCH R & I under REMOVAL & INSTALLATION.

WASHER SWITCH CONTINUITY TEST TABLE

Switch Position	(1) Terminals No.	Continuity
T100		
With Intermittent Wiper		
Off	None	No
On	1 & 2	Yes
With Mist Wiper		
Off	None	No
On	1 & 2	Yes

(1) - See Fig. 7.

FRONT/REAR WASHER MOTOR TEST

Except Celica, Supra & 4Runner

Disconnect washer motor. Connect fused jumper between battery voltage and terminal No. 2. Connect jumper wire between ground and terminal No. 1. See WIRING DIAGRAMS. Motor should operate. If motor does not operate as specified, replace washer motor.

Celica & Supra

Disconnect washer motor. Connect fused jumper between battery voltage and terminal No. 2. Connect jumper wire between ground and terminal No. 1 (terminal No. 3 on rear washer motor). See WIRING DIAGRAMS. Motor should operate. If motor does not operate as specified, replace washer motor.

4Runner

Disconnect washer motor. Connect fused jumper between battery voltage and terminal No. 2 (terminal No. 3 on rear washer motor). Connect jumper wire between ground and terminal No. 1 (terminal No. 4 on rear washer motor). See WIRING DIAGRAMS. Motor should operate. If motor does not operate as specified, replace washer motor.

REAR WIPER MOTOR TEST

NOTE: On Sienna, testing information is not available.

Celica & Supra

1) Disconnect wiring connector from wiper motor. Using 12-volt battery, connect jumper wire from positive battery terminal to wiper motor terminal No. 1. See Fig. 8. Using another jumper wire, connect wiper motor terminal No. 3 and motor body to negative battery terminal. Motor should operate.

2) To check automatic PARK operation, with motor running, motor should stop by disconnecting jumper wire from terminal No. 3. Replace motor and relay as a complete assembly if operation is not as specified. See REAR WIPER MOTOR R & I under REMOVAL & INSTALLATION.

Land Cruiser & Lexus LX470

1) Disconnect wiring connector from wiper motor. Using 12-volt battery, connect jumper wire from positive battery terminal to

wiper motor terminal No. 3. See Fig. 9. Using another jumper wire, connect wiper motor terminal No. 2 to negative battery terminal. Motor should operate.

2) To check automatic PARK operation, with motor running, stop motor operation anywhere except PARK position by removing power from terminal No. 3. Install another jumper wire between terminals No. 3 and 4. Connect jumper wire from positive battery terminal to wiper motor terminal No. 1. Ensure motor operates and stops at PARK position. Replace motor if operation is not as specified. See REAR WIPER MOTOR R & I under REMOVAL & INSTALLATION.

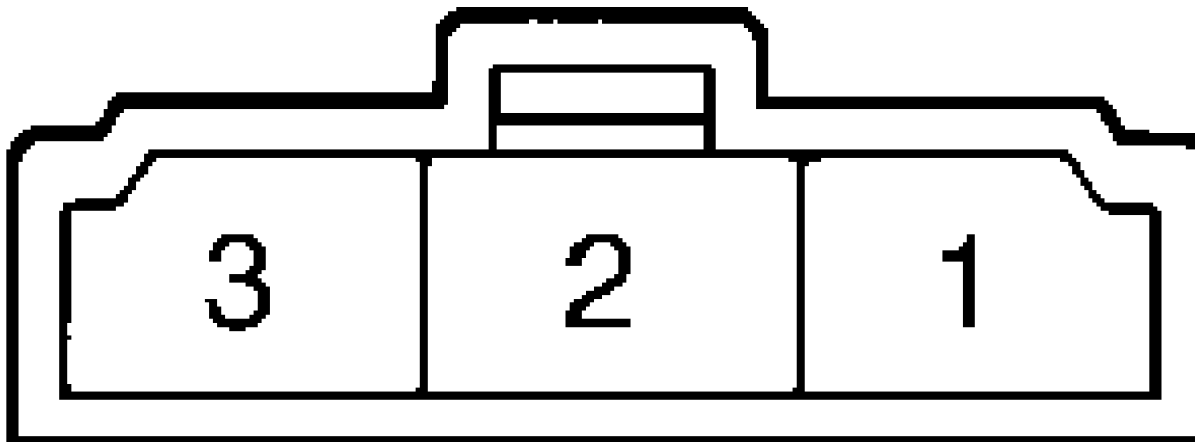
RAV4

1) Disconnect wiring connector from wiper motor. Using 12-volt battery, connect jumper wire from positive battery terminal to wiper motor terminal No. 4. See Fig. 9. Using another jumper wire, connect wiper motor body (ground) to negative battery terminal. Motor should operate.

2) To check automatic PARK operation, with motor running, stop motor operation anywhere except PARK position by removing power from terminal No. 4. Install another jumper wire between terminals No. 2 and 4. Connect jumper wire from positive battery terminal to wiper motor terminal No. 1. Ensure motor operates and stops at PARK position. Replace motor if operation is not as specified. See REAR WIPER MOTOR R & I under REMOVAL & INSTALLATION.

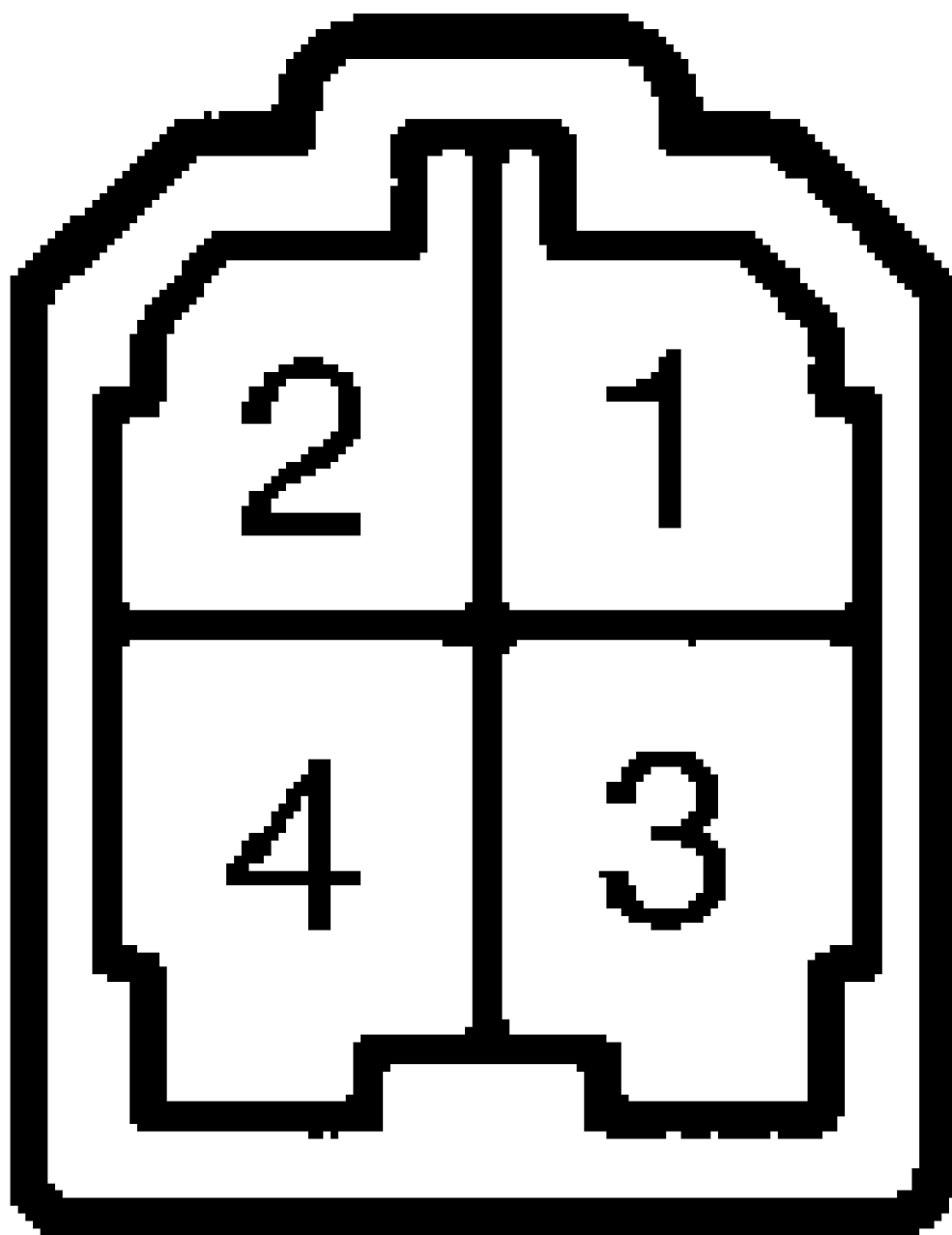
4Runner

Disconnect wiring connector from wiper motor. Using 12-volt battery, connect fused jumper from negative battery terminal to wiper motor terminal No. 1. See Fig. 10. Using another jumper wire, connect wiper motor terminal No. 3 to positive battery terminal. Motor should operate in clockwise direction. Reverse jumper wires. Motor should operate in counterclockwise direction. Replace motor if operation is not as specified. See REAR WIPER MOTOR R & I under REMOVAL & INSTALLATION.



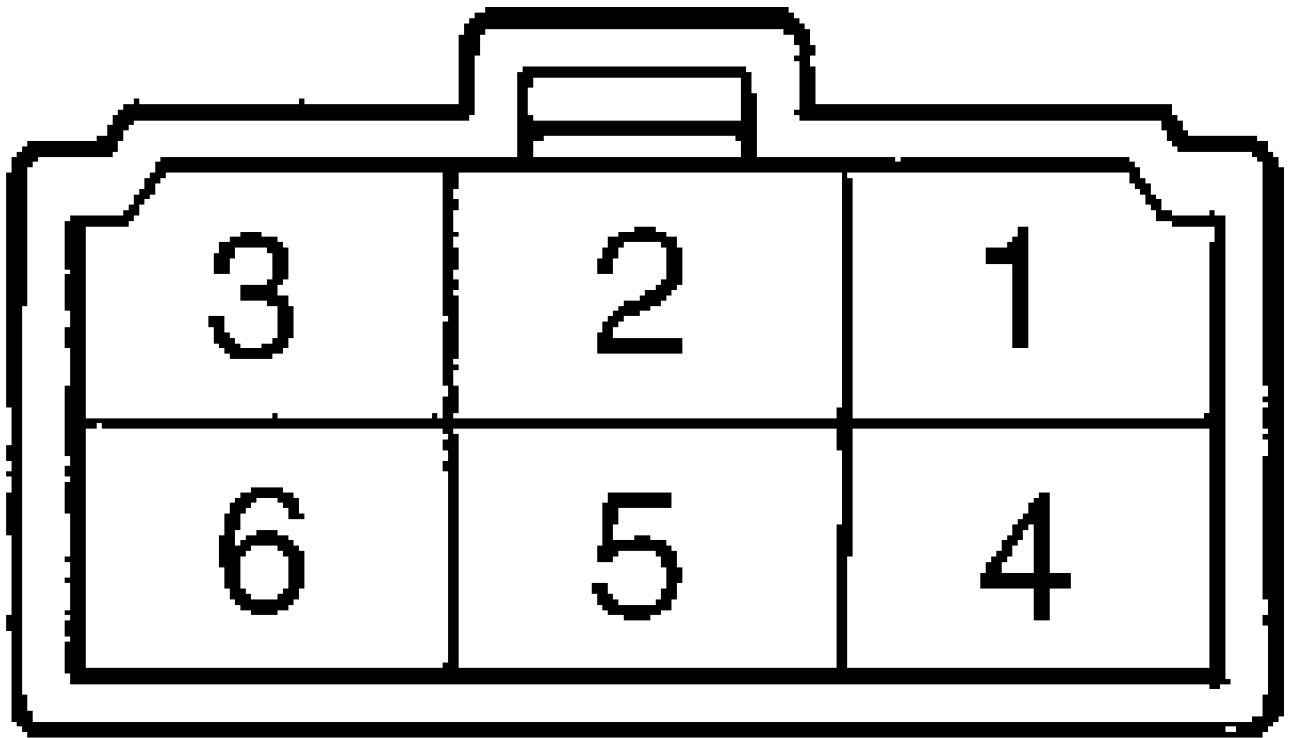
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Fig. 8: Rear Wiper Motor Terminals (Celica & Supra)
Courtesy of Toyota Motor Sales, U.S.A., Inc.



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Fig. 9: Rear Wiper Motor Terminals (Land Cruiser, Lexus LX470 & RAV4)
Courtesy of Toyota Motor Sales, U.S.A., Inc.



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Fig. 10: Rear Wiper Motor Terminals (4Runner)
Courtesy of Toyota Motor Sales, U.S.A., Inc.

REAR WIPER RELAY TEST

NOTE: On 4Runner, testing information is not available. For relay locations, see REAR WIPER RELAY LOCATION table.

Celica & Supra (Intermittent Operation Check)

Connect fused jumper between battery voltage and terminal No.

1. Connect jumper wire from negative battery terminal to wiper motor terminal No. 2 and motor body. See Fig. 11. Motor should operate intermittently for about 9–15 seconds. Replace motor and relay as a complete assembly if operation is not as specified.

Land Cruiser & Lexus LX470 (Continuity Check)

Remove rear wiper relay. Use DVOM and ensure continuity does exist between terminals No. 1 and 5, and 3 and 4. Connect fused jumper to terminal No. 3 and connect jumper wire between ground and terminal No. 4. Check that continuity does exist between terminals No. 2 and 5. See Fig. 12. If continuity is not as specified, replace rear wiper relay.

RAV4 (Relay Operation Check)

Disconnect rear wiper relay. Connect fused jumper between battery voltage and relay terminal No. 3. Connect another jumper wire between ground and terminal No. 6. See Fig. 12. Connect positive lead of DVOM to relay terminal No. 5 and negative lead to terminal No. 6.

Voltage should be zero. Move DVOM positive lead from terminal No. 5 to terminal No. 4. Observe meter. Reading should change from zero volts to battery voltage. If readings are not as specified, replace relay.

RAV4 & Sienna (Continuity Check)

Remove rear wiper relay. Use DVOM and ensure continuity does not exist between terminals No. 3 and 4. See Fig. 12. Check that continuity does exist between terminals No. 4 and 5. If continuity is not as specified, replace rear wiper relay.

RAV4 & Sienna (Intermittent Operation Check)

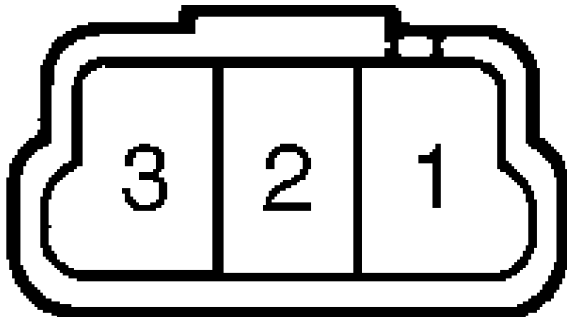
Remove rear wiper relay. Connect fused jumper between battery voltage and relay terminal No. 5 and connect jumper wire between ground and terminal No. 2 for longer than 2 seconds. See Fig. 12. Connect positive lead of analog voltmeter to relay terminal No. 4 and negative lead to terminal No. 2. Move battery voltage lead from terminal No. 5 to terminal No. 3. Observe meter. Reading should change from zero volts to battery voltage within 9 to 15 seconds. If readings are not as indicated, replace relay.

Sienna (Relay Operation Check)

Remove rear wiper relay. Connect fused jumper between battery voltage and relay terminal No. 3 and connect jumper wire between ground and terminal No. 6. See Fig. 12. Connect positive lead of DVOM to relay terminal No. 3 and negative lead to terminal No. 6. Zero volts should be indicated. Connect positive lead of DVOM to relay terminal No. 4 and negative lead to terminal No. 6. Battery voltage should be indicated. If readings are not as specified, replace rear wiper relay.

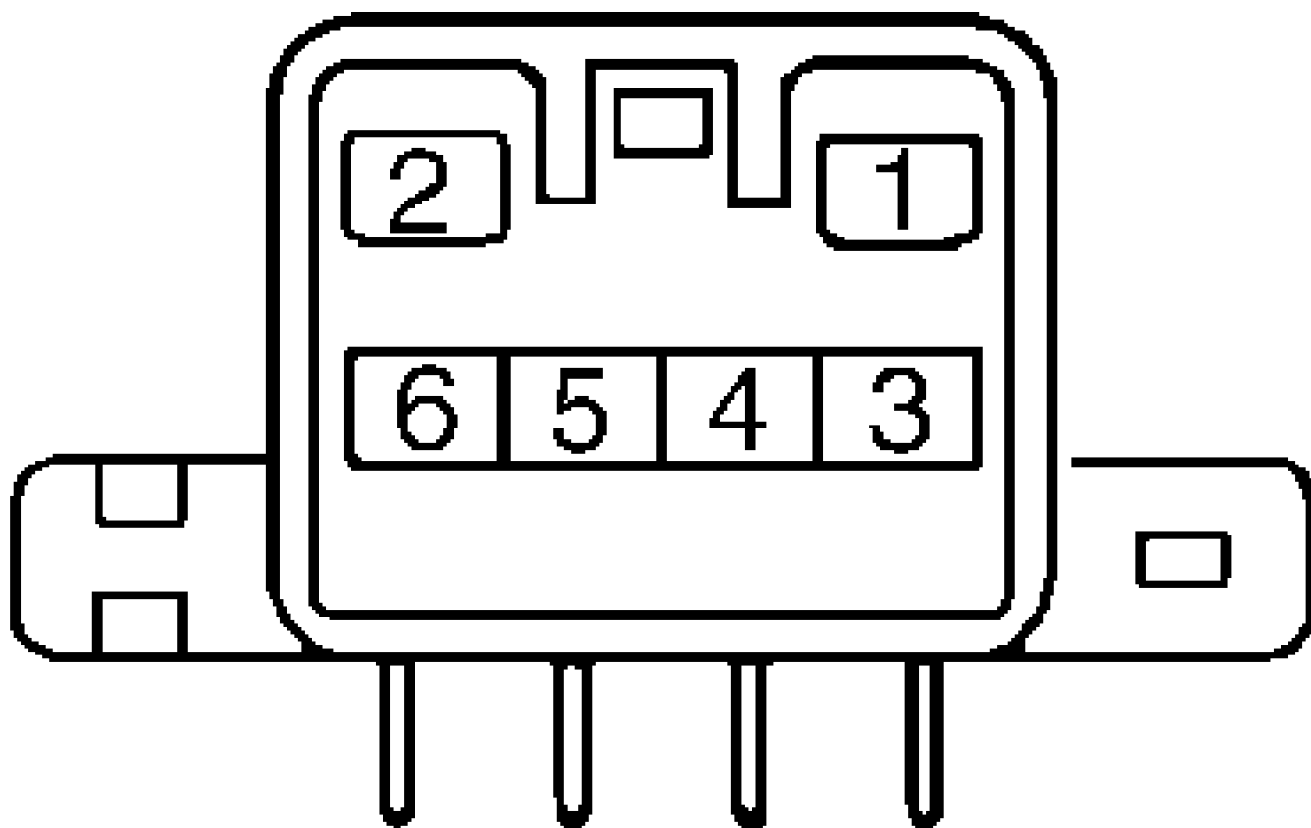
REAR WIPER RELAY LOCATION TABLE

Model	Location
Celica & Supra	Inside Back Door At Rear Wiper Motor
Land Cruiser, Lexus LX470 & 4Runner	Inside Back Door, To Left Of Motor
Sienna	Under Passenger Front Seat
RAV4	Instrument Panel Fuse Block, Driver's Side



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Fig. 11: Rear Wiper Relay Terminals (Celica & Supra)
Courtesy of Toyota Motor Sales, U.S.A., Inc.



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Fig. 12: Rear Wiper Relay Terminals (Land Cruiser, Lexus LX470, Sienna & RAV4)
 Courtesy of Toyota Motor Sales, U.S.A., Inc.

REAR WIPER SWITCH TEST

With wiper switch in specified position, ensure continuity exists between specified terminals. See REAR WIPER SWITCH CONTINUITY TEST table. See Fig. 6 or 7. Replace complete wiper switch if continuity is not as specified. See FRONT WIPER SWITCH R & I under REMOVAL & INSTALLATION.

REAR WIPER SWITCH CONTINUITY TEST TABLE

Switch Position	(1) Terminals	Continuity
Celica		
OFF	None	No
INT	2 & 13	Yes
ON	2 & 10	Yes
Washer	2 & 12	Yes
Land Cruiser, Lexus LX470, Sienna, Supra & 4Runner		
Washer 1	2 & 12	Yes
OFF	None	No
INT	2 & 13	Yes
ON	2 & 10	Yes

Washer 2	2, 10 & 12	Yes
RAV4		
Washer 1	2 & 16	Yes
OFF	None	No
INT	10 & 16	Yes
ON	1 & 16	Yes
Washer 2	1, 2 & 16	Yes

(1) - See Fig. 6 or 7.

SYSTEM TESTS

TESTING FRONT WIPER/WASHER SWITCH INTERMITTENT OPERATION

Avalon, Camry, Corolla, Land Cruiser, Lexus LX470, Sienna,
Supra, Tacoma & 4Runner

1) Disconnect combination switch connector. Turn wiper/washer switch to INT position. Rotate intermittent time control to FAST position. Connect fused jumper between battery voltage and terminal No. 16. Connect jumper wire between ground and terminal No. 2. See Fig. 6. Connect DVOM positive lead to terminal No. 7 and negative lead to terminal No. 2. For Avalon, go to next step. For Camry, Sienna, Tacoma and 4Runner, go to step 3). For Corolla, Land Cruiser, Lexus LX470 and Supra, go to step 4).

2) DVOM should indicate battery voltage. With DVOM connected, momentarily connect terminals No. 16 and 17 with a fused jumper. With jumper still connected to terminal No. 16, move jumper from terminal No. 17 to terminal No. 2. DVOM reading should change from zero volts to battery voltage in about 3 seconds. If operation is not as specified, replace wiper/washer switch. See FRONT WIPER SWITCH R & I under REMOVAL & INSTALLATION.

3) DVOM should indicate battery voltage. Monitor DVOM reading while rotating intermittent time control from SLOW to FAST positions. In SLOW position, voltage will change from zero to battery voltage in 10-15 seconds. In FAST position, voltage will change from zero to battery voltage in 1-3 seconds. If operation is not as specified, replace wiper/washer switch. See FRONT WIPER SWITCH R & I under REMOVAL & INSTALLATION.

4) DVOM should indicate battery voltage. With DVOM connected, momentarily connect terminals No. 16 and 17 with a fused jumper. With jumper still connected to terminal No. 16, move jumper from terminal No. 17 to terminal No. 2. See Fig. 6. Monitor DVOM reading while rotating intermittent time control from SLOW to FAST positions. In SLOW position, voltage will change from zero to battery voltage within 10-15 seconds (6-16 seconds on Land Cruiser & Lexus LX470). In FAST position, voltage will change from zero to battery voltage in 1-3 seconds. If operation is not as specified, replace wiper/washer switch. See FRONT WIPER SWITCH R & I under REMOVAL & INSTALLATION.

Celica & RAV4

1) Disconnect combination switch connector. Turn wiper/washer switch to INT position. Rotate intermittent time control to FAST position. Connect fused jumper between battery voltage and terminal No. 17. Connect jumper wire between ground and terminal No. 16. See Fig. 6. Connect DVOM positive lead to terminal No. 7 and negative lead to terminal No. 16. DVOM should indicate battery voltage.

2) With DVOM connected, momentarily connect terminals No. 16 and 2 with a fused jumper. With jumper connected to terminal No. 2, move jumper from terminal No. 16 to terminal No. 17. Monitor DVOM reading while rotating intermittent time control from SLOW to FAST positions. In SLOW position, voltage will change from zero to battery

voltage in 10-15 seconds. In FAST position, voltage will change from zero to battery voltage in 1-3 seconds. If operation is not as specified, replace wiper/washer switch. See FRONT WIPER SWITCH R & I under REMOVAL & INSTALLATION.

T100

1) Disconnect combination switch connector. Turn wiper/washer switch to INT position. Rotate intermittent time control to FAST position. Connect fused jumper between battery voltage and terminal No. 4. Connect jumper wire between ground and terminal No. 1. See Fig. 7. Connect DVOM positive lead to terminal No. 8 and negative lead to terminal No. 1.

2) DVOM should indicate battery voltage. With DVOM connected, momentarily connect terminals No. 7 and 4 with a fused jumper. With jumper still connected to terminal No. 7, move jumper from terminal No. 4 to terminal No. 1.

3) On non-variable intermittent wipers, DVOM reading should change from zero volts to battery voltage in about 3 seconds. On variable intermittent wipers, monitor DVOM reading while rotating intermittent time control from SLOW to FAST positions. In SLOW position, voltage will change from zero to battery voltage in 6-15 seconds. In FAST position, voltage will change from zero to battery voltage in 0.5-4.0 seconds. If operation is not as specified, replace wiper/washer switch. See FRONT WIPER SWITCH R & I under REMOVAL & INSTALLATION.

FRONT WIPER SWITCH OPERATION TEST

Avalon, Camry, Corolla, Sienna, Tacoma & 4Runner

1) Disconnect combination switch connector. Connect fused jumper between battery voltage and terminal No. 16 (switch-side). Connect jumper wire between ground and terminal No. 2. See Fig. 6. Connect DVOM positive lead to terminal No. 7 and negative lead to terminal No. 2.

2) Depress washer switch and monitor DVOM voltage readings. On Camry, Sienna and Tacoma, readings should change from zero volts to battery voltage within one second of depressing washer switch. After switch is released, readings should change from battery voltage to zero volts in about 25 seconds (3 seconds on Supra, Tacoma and 4Runner). If readings are not as specified, replace wiper/washer switch. See FRONT WIPER SWITCH R & I under REMOVAL & INSTALLATION.

INSTRUMENT PANEL JUNCTION BLOCK CIRCUIT TESTS (REAR WIPER)

RAV4 (Circuit Test)

Remove instrument panel junction block located under driver's side of instrument panel. Inspect 23-pin connector "A" terminals with DVOM by backprobing specified terminals. Disconnect junction block 15-pin connector "B". Test specified terminal. See JUNCTION BLOCK CONNECTOR CIRCUIT TEST table. See WIRING DIAGRAMS. If circuits are okay, replace relay. If circuits are not okay, repair as necessary. See WIRING DIAGRAMS.

RAV4 (Rear Wiper Switch In INT Position)

Disconnect 22-pin connector "A" from junction block. Connect positive lead of DVOM to junction block terminal C9 and negative lead to ground. Connect jumper wire between 22-pin connector "A" cavity terminal A21 and ground. See Fig. 13. If continuity is not indicated, replace junction block.

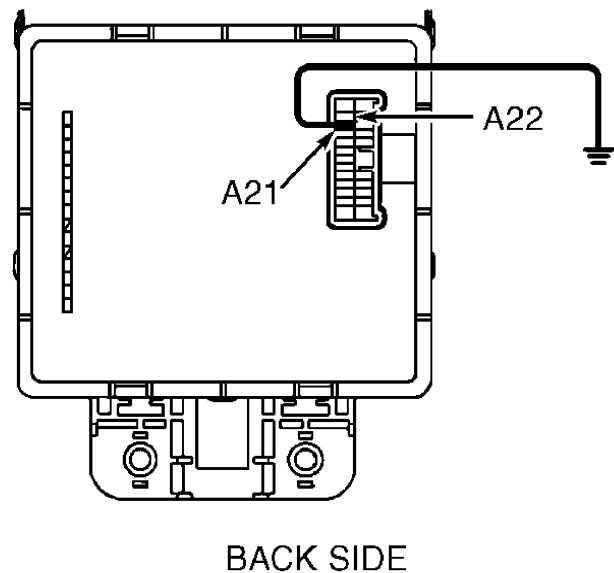
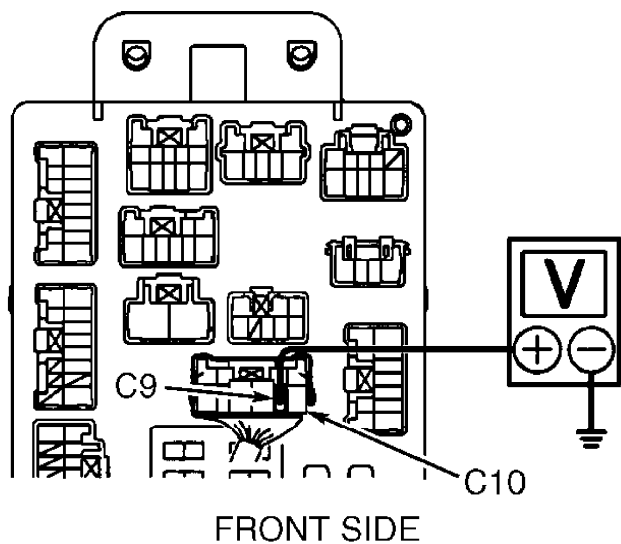
RAV4 (Rear Wiper Switch In LO Position)

Disconnect 22-pin connector "A" from junction block. Connect positive lead of DVOM to junction block terminal C10 and negative lead

to ground. Connect jumper wire between 22-pin connector "A" cavity terminal A22 and ground. See Fig. 13. If continuity is not indicated, replace junction block.

JUNCTION BLOCK CONNECTOR CIRCUIT TEST TABLE

Connections		Switch Position	Specification
A21-Ground	.....	INT	..... Continuity
A22-Ground	.....	ON	..... Continuity
B10-Ground	.....	All Positions	.... Battery Voltage



98G10856
Fig. 13: Identifying Junction Block Connector Terminals (RAV4)
Courtesy of Toyota Motor Sales, U.S.A., Inc.

REMOVAL & INSTALLATION

*** PLEASE READ THIS FIRST ***

WARNING: Deactivate air bag system before performing any service operation. See AIR BAG RESTRAINT SYSTEMS article. DO NOT apply electrical power to any component on steering column without first deactivating air bag system. Air bag may deploy.

CAUTION: When battery is disconnected, vehicle computer and memory systems may lose memory data. Driveability problems may exist until computer systems have completed a relearn cycle. See COMPUTER RELEARN PROCEDURES article in the GENERAL INFORMATION section before disconnecting battery.

FRONT WIPER MOTOR R & I

Removal (Except Sienna)

Remove wiper arm caps, nuts and arms. Remove cowl louver cover. Disconnect wiper motor electrical connector. Remove 6 bolts (3 bolts on Supra) and remove wiper linkage assembly. Disconnect wiper link from wiper motor. Remove 4 screws and wiper motor from firewall.

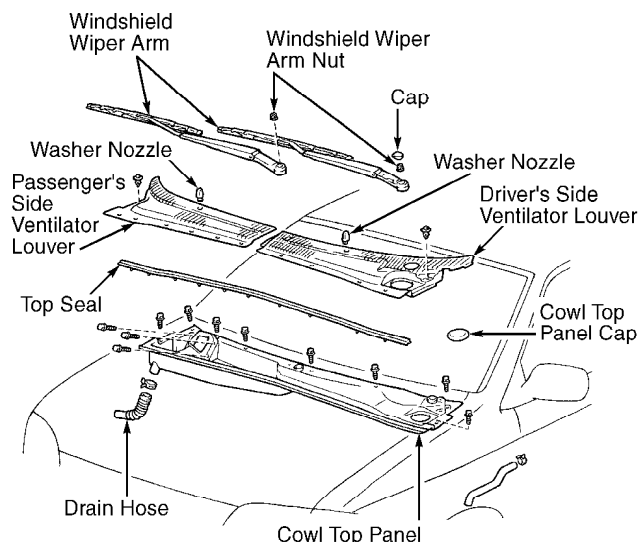
Removal (Sienna)

1) Remove wiper arm caps, nuts and arms. Remove cowl top panel cap. Remove driver's and passenger's side ventilator covers. Remove both washer nozzles from ventilator covers. See Fig. 14. Disconnect drain hose and remove 11 bolts from cowl top panel. Disconnect wiper motor electrical connector. Remove cowl top panel. Remove 4 bolts and remove wiper motor and linkage assembly.

2) Disconnect wiper link from wiper motor. Remove 3 screws and wiper motor from linkage assembly. Remove both cowl drain hoses.

Installation (All Models)

To install, reverse removal procedure. Adjust wiper blades to appropriate position. See ADJUSTMENTS.



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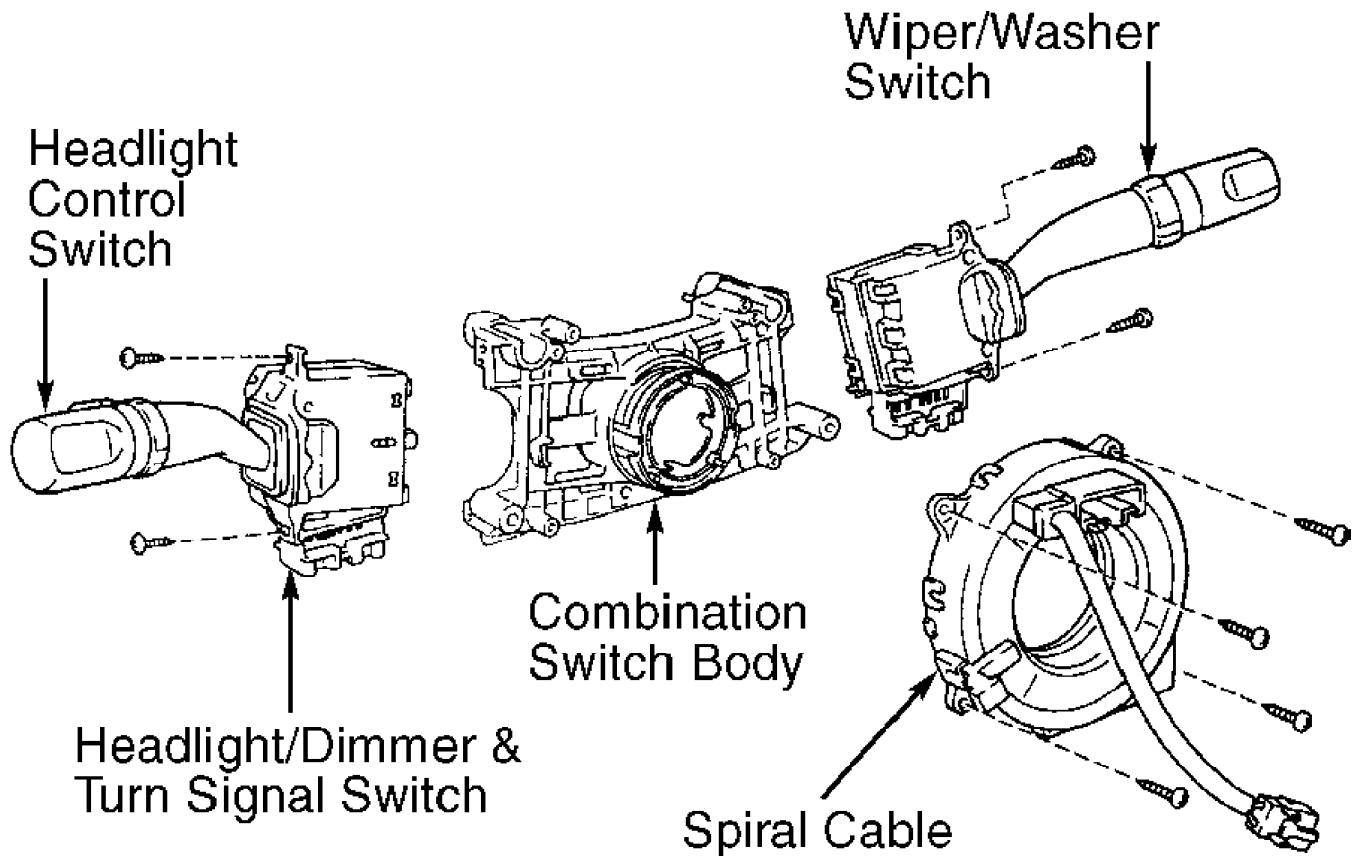
Fig. 14: Exploded View Of Wiper Components (Sienna)
Courtesy of Toyota Motor Sales, U.S.A., Inc.

FRONT WIPER SWITCH R & I

NOTE: Wiper switch is component of combination switch, mounted to steering column. For further information on combination switch removal procedure, see STEERING COLUMN SWITCHES article.

Removal & Installation (Except T100)

Disconnect negative battery cable. To access wiper switch, remove steering column upper and lower covers. Remove wiper/washer switch retaining screws. Disconnect wiper/washer switch from combination switch body. See Fig. 15. To install, reverse removal procedure.



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Fig. 15: Identifying Combination Switch Components (Except T100)
Courtesy of Toyota Motor Sales, U.S.A., Inc.

Removal (T100)

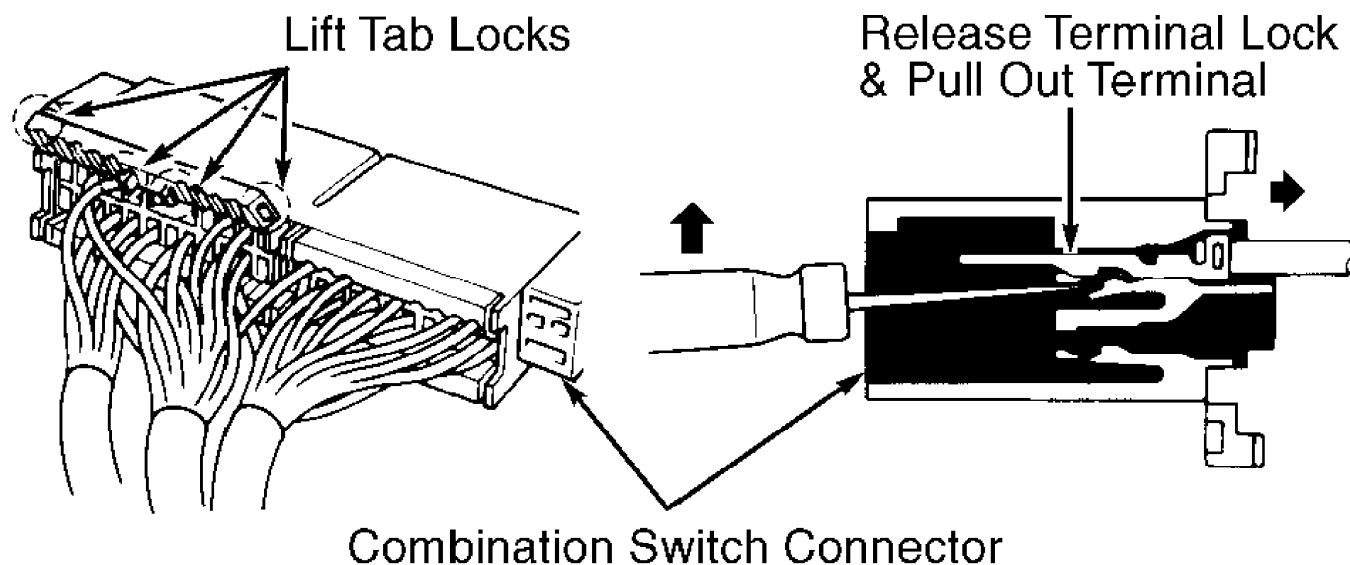
1) Disconnect negative battery cable. To access combination switch connector, remove instrument panel lower finish panel under steering column. See INSTRUMENT PANELS article. Remove steering column upper and lower covers. Remove steering wheel. See STEERING WHEEL.

2) Locate wiper/washer switch wire terminal positions installed into combination switch harness connector. See Fig. 7. Lift tab locks on combination switch connector. See Fig. 16.

3) Using miniature screwdriver, release wire terminal securing tab inside connector. See Fig. 16. Pull wire(s) from connector and through harness jacket tubing. Remove wiper switch retaining screws from rear of combination switch body and remove switch. See Fig. 17.

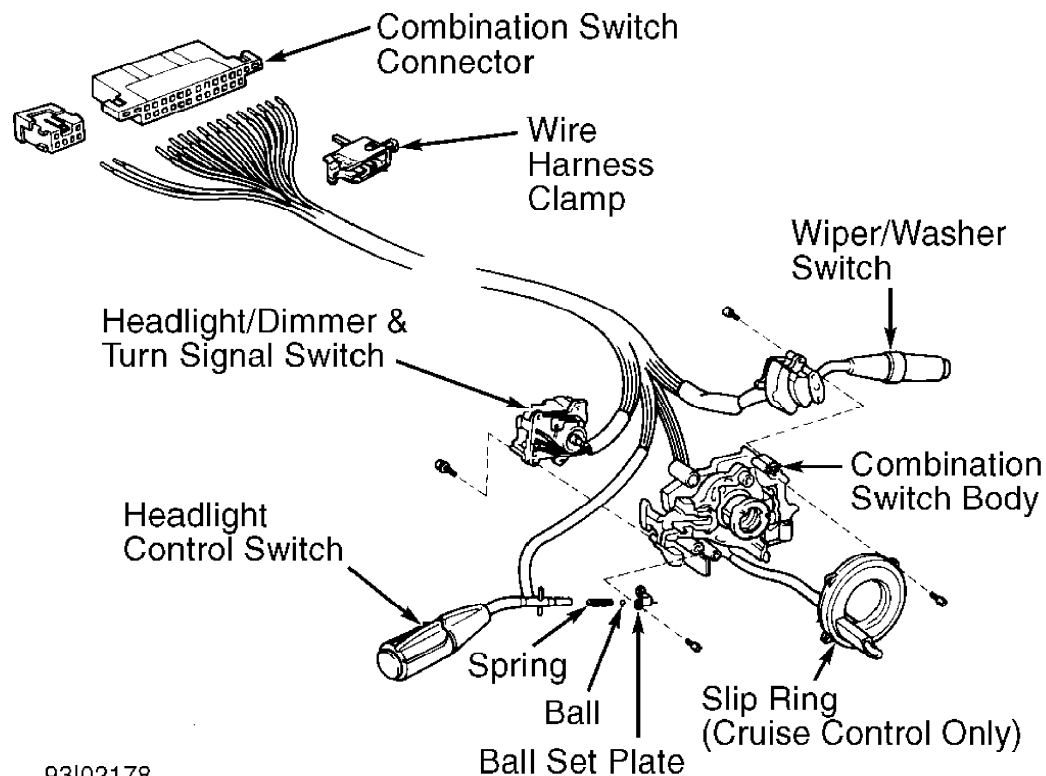
Installation

To install, reverse removal procedure. When installing wiper switch wire terminals to harness connector, push inward on wire terminal until terminal clicks into place.



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Fig. 16: Releasing Wire Terminal Inside Combination Connector (T100)
Courtesy of Toyota Motor Sales, U.S.A., Inc.



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Fig. 17: Identifying Combination Switch Components (T100)
Courtesy of Toyota Motor Sales, U.S.A., Inc.

REAR WIPER MOTOR R & I

Removal (Celica & Supra)

Remove rear wiper arm. Pry off back hatch trim panel.
Disconnect electrical connector, remove 3 bolts and wiper motor.

Removal (Land Cruiser & Lexus LX470)

Remove assist grip and inside handle bezel. Remove back door window garnish (around window) and back door trim panel. Remove plastic protector cover. Remove wiper arm assembly and disconnect rear wiper motor electrical connector. Remove 3 bolts for motor and 2 bolts for linkage assembly. Remove rear wiper motor and linkage assembly.

Removal (RAV4)

Remove back door upper cover (below window) and back door trim panel. Remove plastic protector cover. Remove wiper arm assembly and disconnect rear wiper motor electrical connector. Remove 3 bolts and remove rear wiper motor assembly.

Removal (Sienna)

Remove wiper arm. Remove back door assist grip. Remove pull strap. Remove center garnish above rear door window by prying along window edge. Remove side garnish on each side of window by pulling inward to release clips. Pull rear door trim panel outward and remove. Disconnect rear wiper motor connector and remove bolts attaching rear wiper motor and linkage to rear door.

Removal (4Runner)

Remove back door trim panel. Remove plate and back door glass run channel. Remove outer weatherstrip and remove rear window. Remove wiper arm and wiper shaft nut on outside of door. Disconnect electrical connector, remove 3 bolts and remove wiper motor assembly.

Installation (All Models)

To install, reverse removal procedure. Adjust wiper blades to appropriate position. See ADJUSTMENTS.

REAR FRONT WIPER SWITCH

Removal & Installation

Switch is integral part of wiper switch mounted to combination switch on steering column. See FRONT WIPER SWITCH R & I.

STEERING WHEEL

Removal

1) Ensure front wheels are in straight-ahead position. Place ignition switch in LOCK position and remove key. Disconnect negative battery cable. Remove 2 screw covers from outer sides of steering wheel. Using Torx Wrench (T30), loosen air bag pad retaining Torx screws until screw heads are snug against screw case. See Fig. 18.

2) Carefully pull air bag pad away from steering wheel enough to unlock and disconnect air bag electrical connector. DO NOT pull on electrical connector or wiring. Store air bag pad aside with pad facing upward.

3) Remove steering wheel lock nut and washer from steering shaft. Make alignment mark on steering shaft and steering wheel for installation reference. Using appropriate steering wheel puller, pull steering wheel from shaft while guiding spiral cable wire through steering wheel opening.

Installation

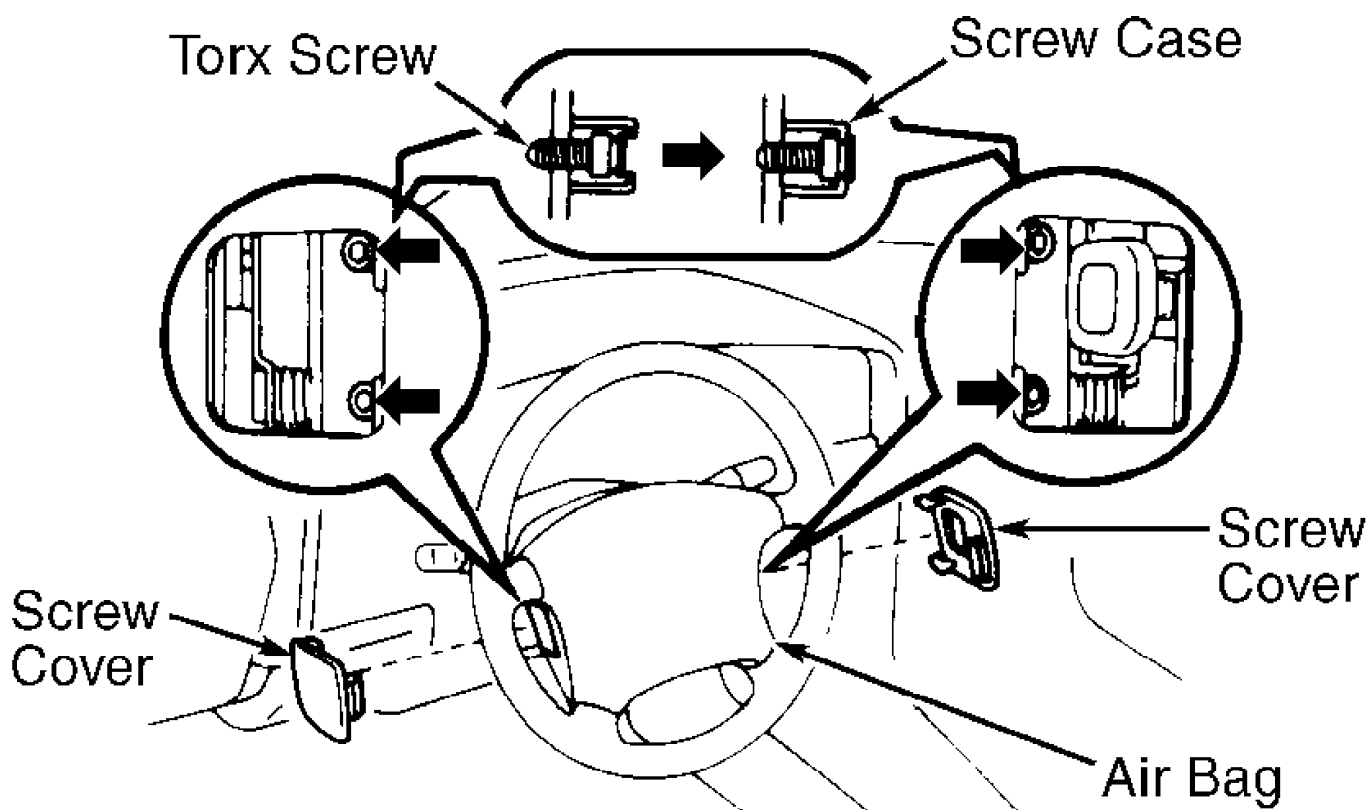
1) Ensure front wheels are in straight-ahead position. Connect and install spiral cable to combination switch. Turn spiral cable counterclockwise by hand until it is hard to turn. Turn spiral

cable clockwise about 2 1/2-3 turns and align Red mark at bottom with opening.

2) Guide spiral cable through steering wheel opening while installing steering wheel to shaft. Align reference marks on steering shaft and steering wheel. Install steering wheel lock nut and washer. Tighten steering wheel lock nut to 25 ft. lbs. (34 N.m).

3) Connect air bag electrical connector and snap down connector lock. Before installing air bag pad, ensure Torx screws are retracted and snug against screw case. See Fig. 18.

4) Install air bag pad to steering wheel ensuring all wiring is NOT pinched and DOES NOT interfere with moving parts. Tighten 4 Torx screws to 78 INCH lbs. (8.8 N.m). Install screw covers. Connect negative battery cable.



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Fig. 18: Removing Air Bag From Steering Wheel (Typical)
Courtesy of Toyota Motor Sales, U.S.A., Inc.

WIRING DIAGRAMS

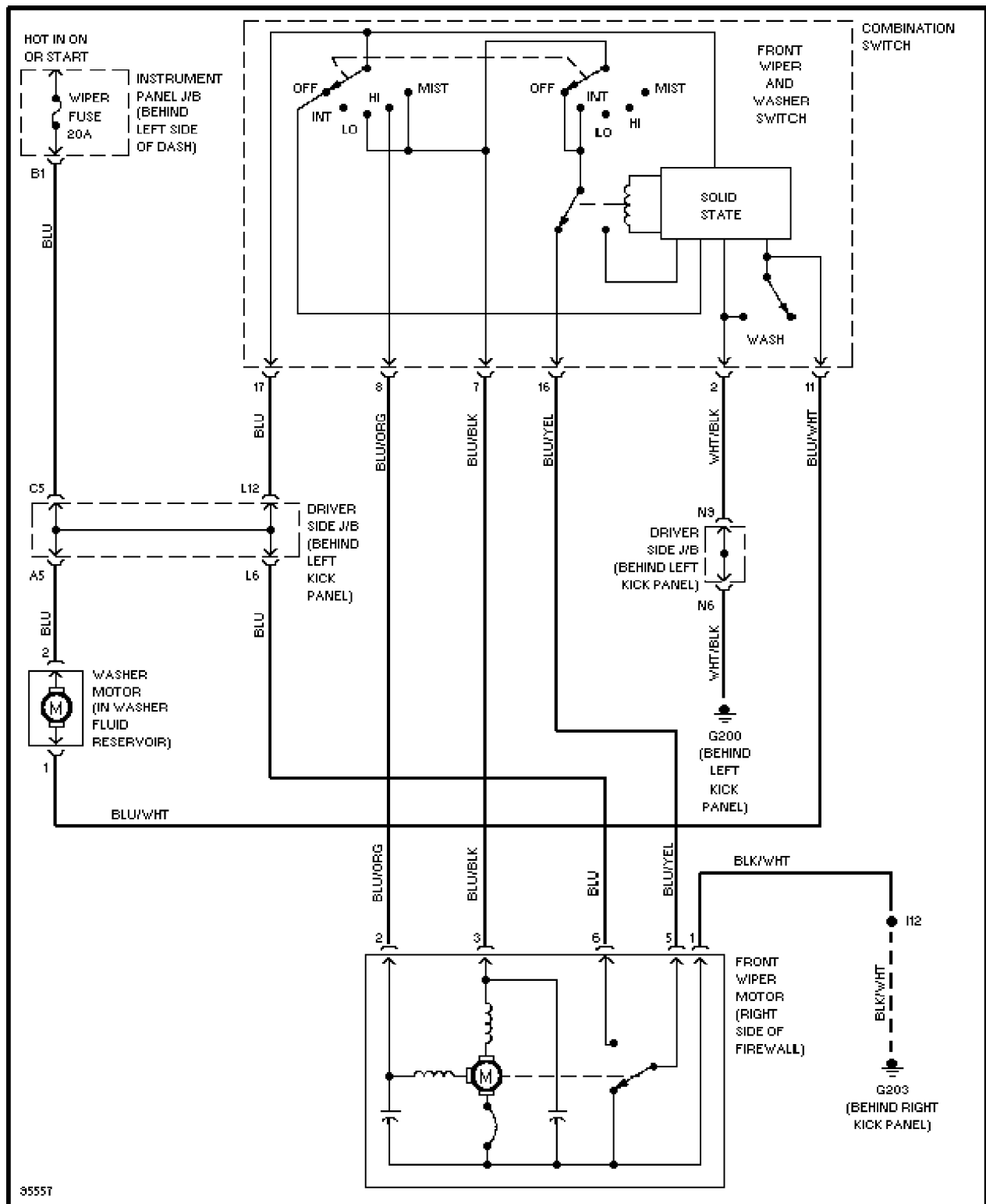


Fig. 19: Front Wiper/Washer System Wiring Diagram (Avalon)

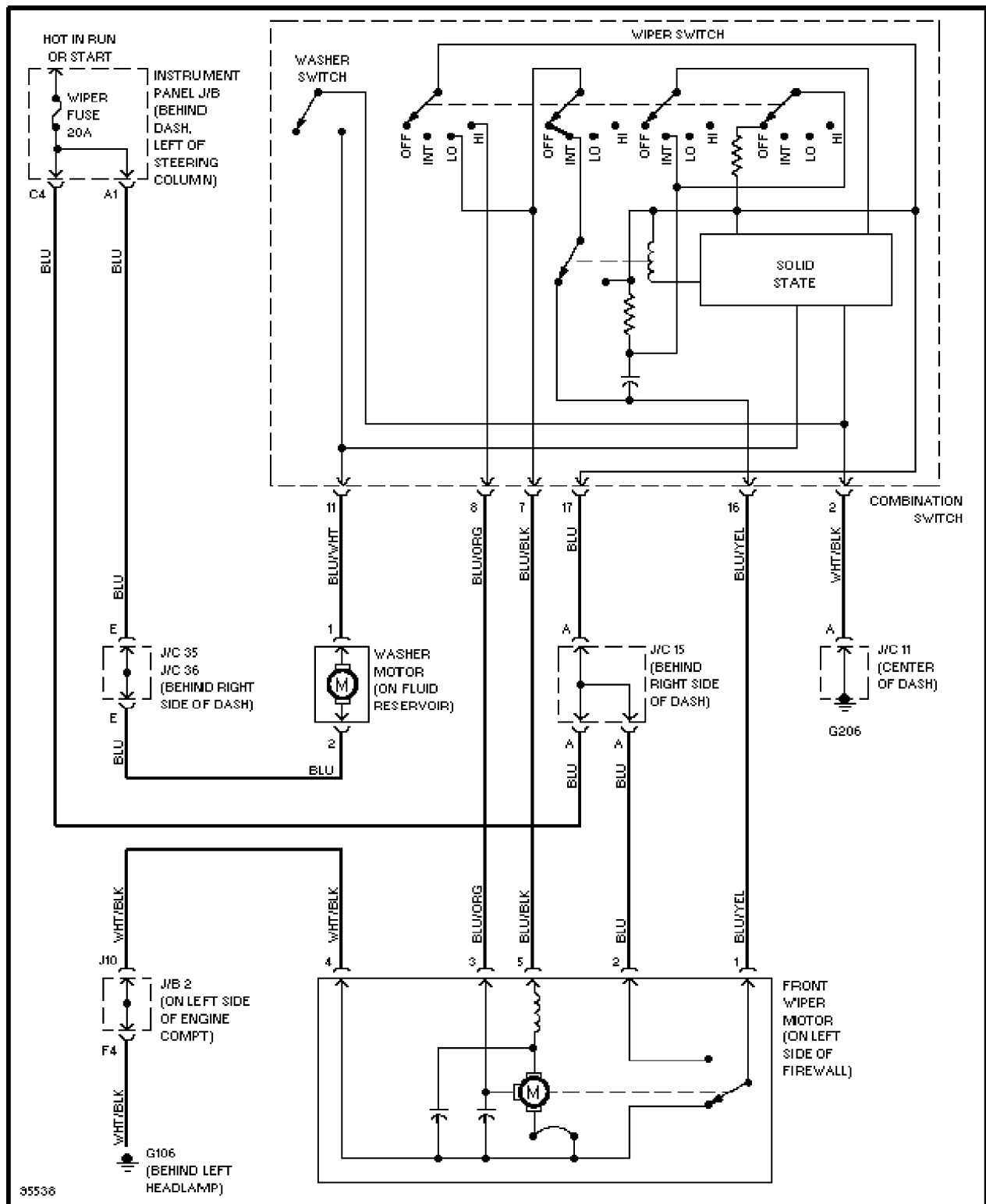


Fig. 20: Front Wiper/Washer System Wiring Diagram (Camry)

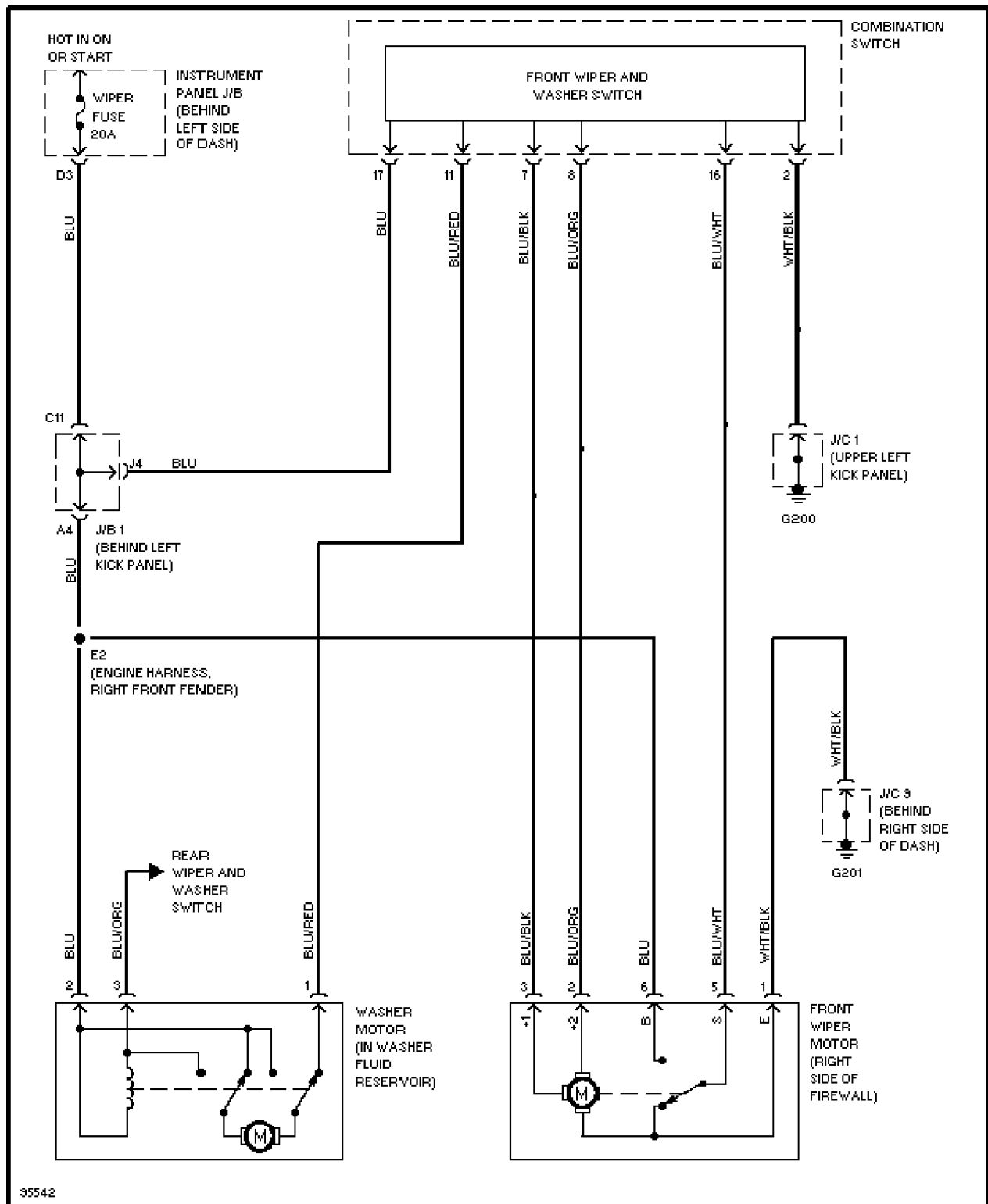


Fig. 21: Front Wiper/Washer System Wiring Diagram (Celica)

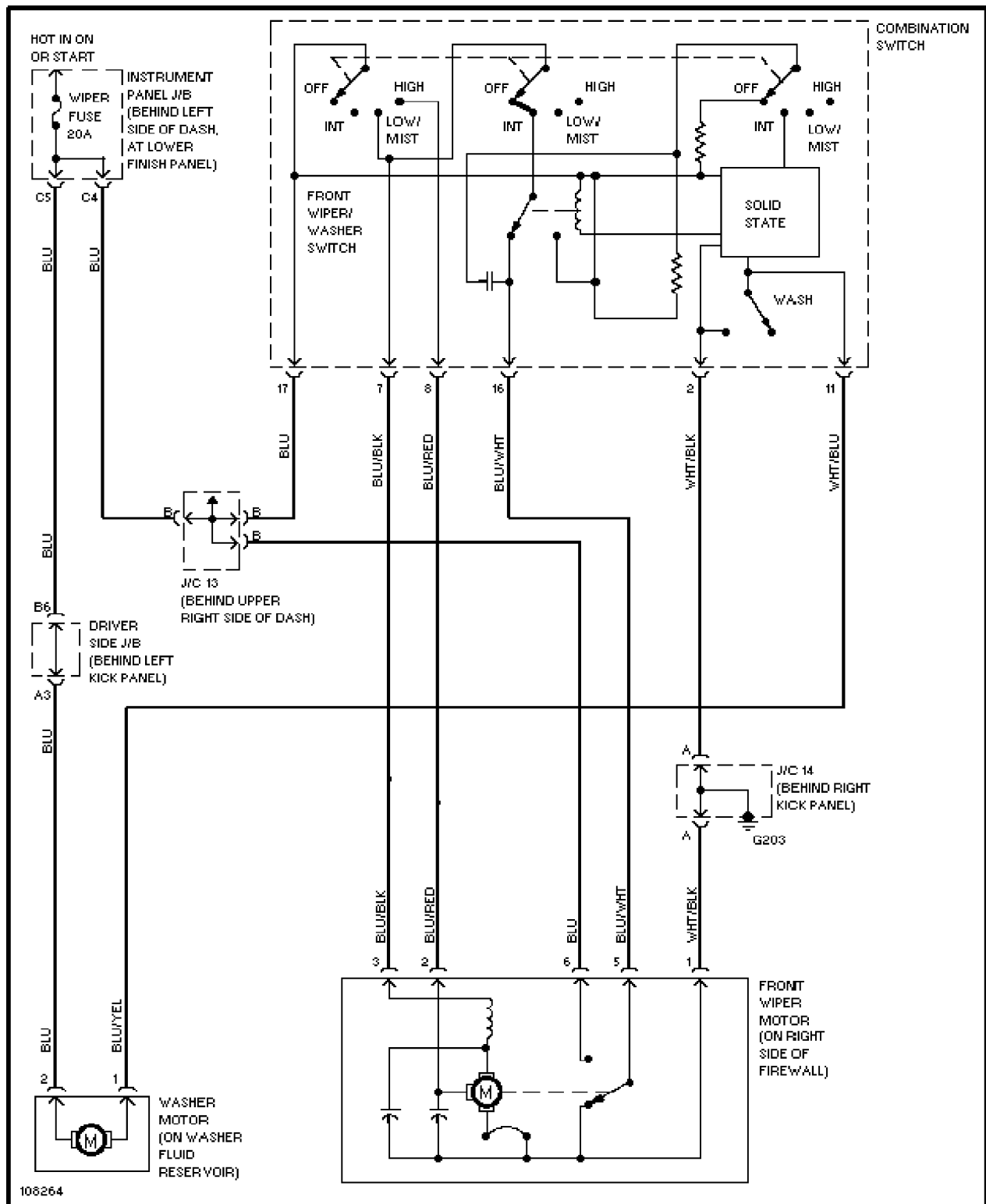


Fig. 22: Front Wiper/Washer System Wiring Diagram (Corolla)

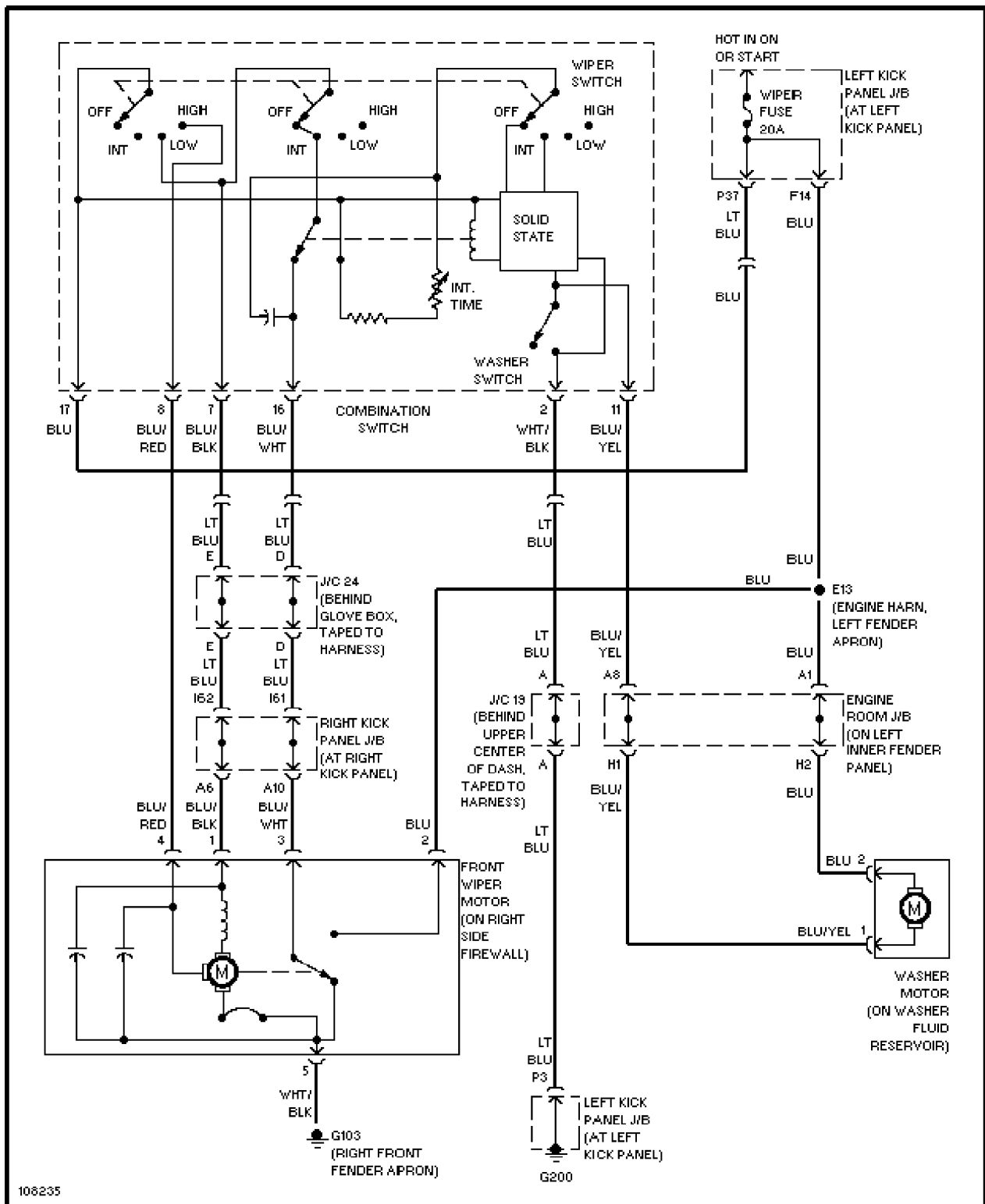
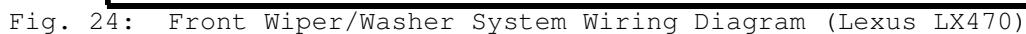


Fig. 23: Front Wiper/Washer System Wiring Diagram (Land Cruiser)



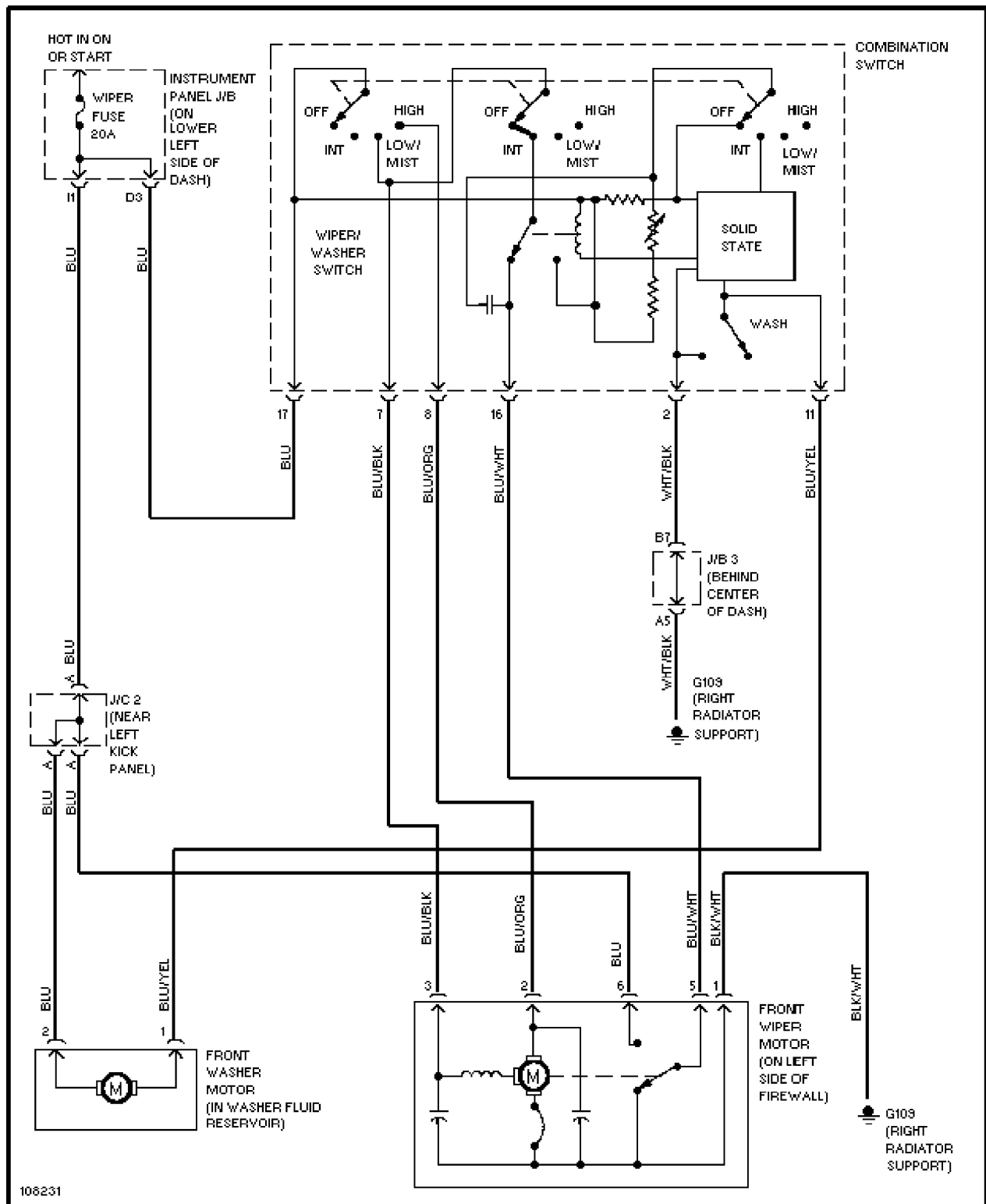
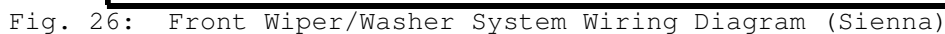
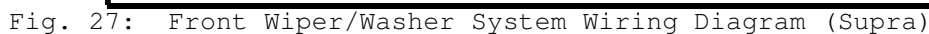


Fig. 25: Front Wiper/Washer System Wiring Diagram (RAV4)





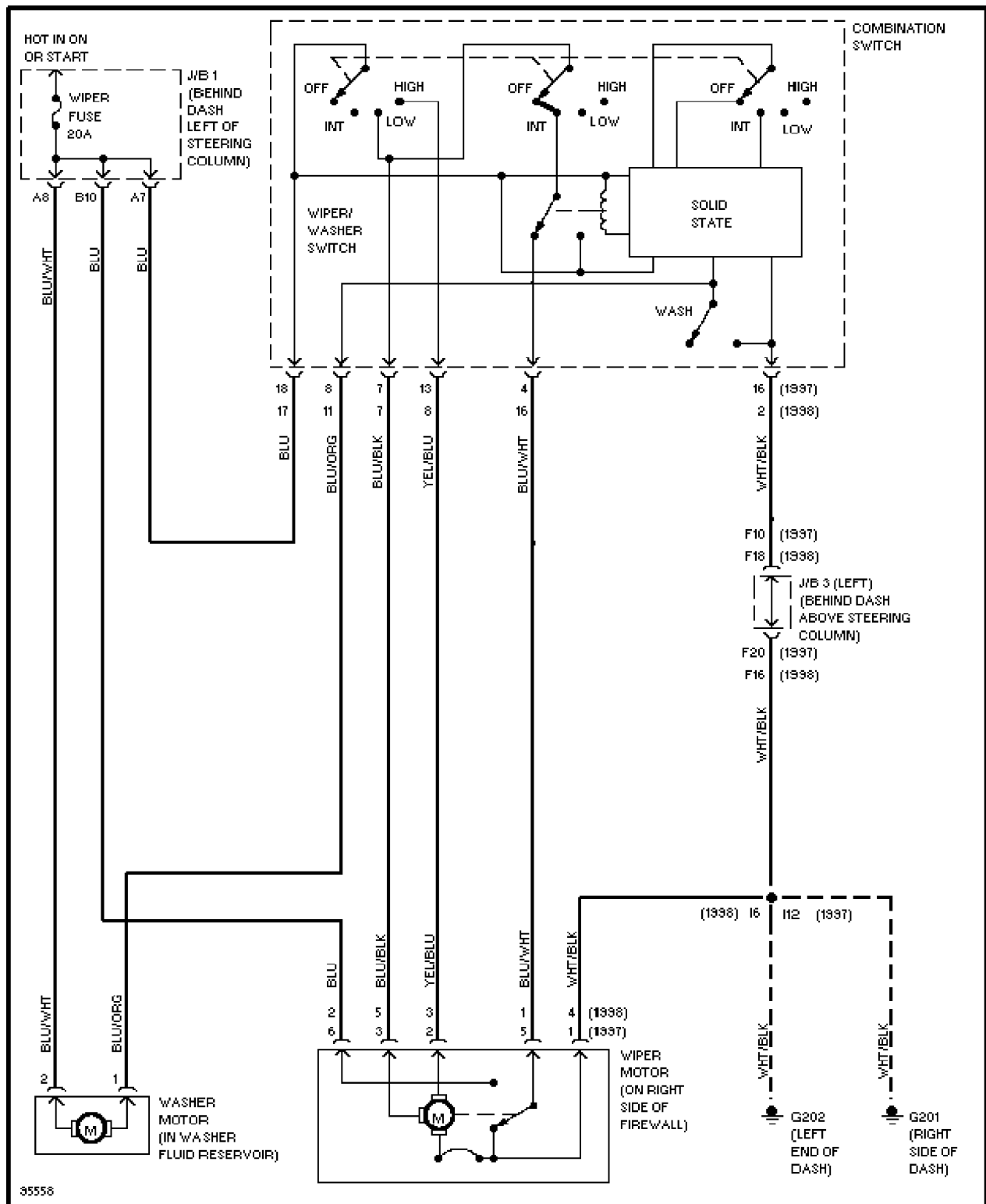


Fig. 28: Front Wiper/Washer System Wiring Diagram (Tacoma)

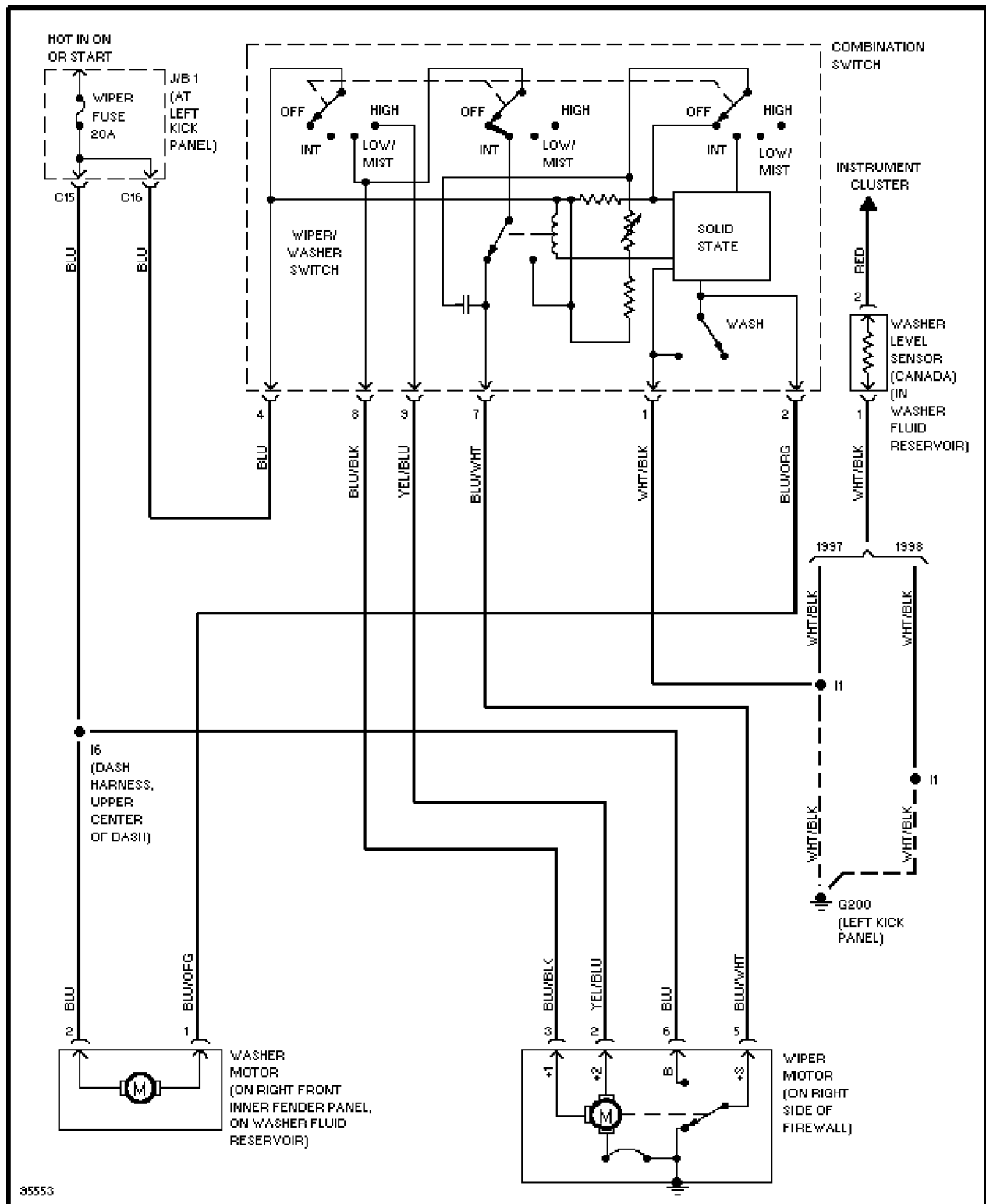


Fig. 29: Front Wiper/Washer System Wiring Diagram (T100)

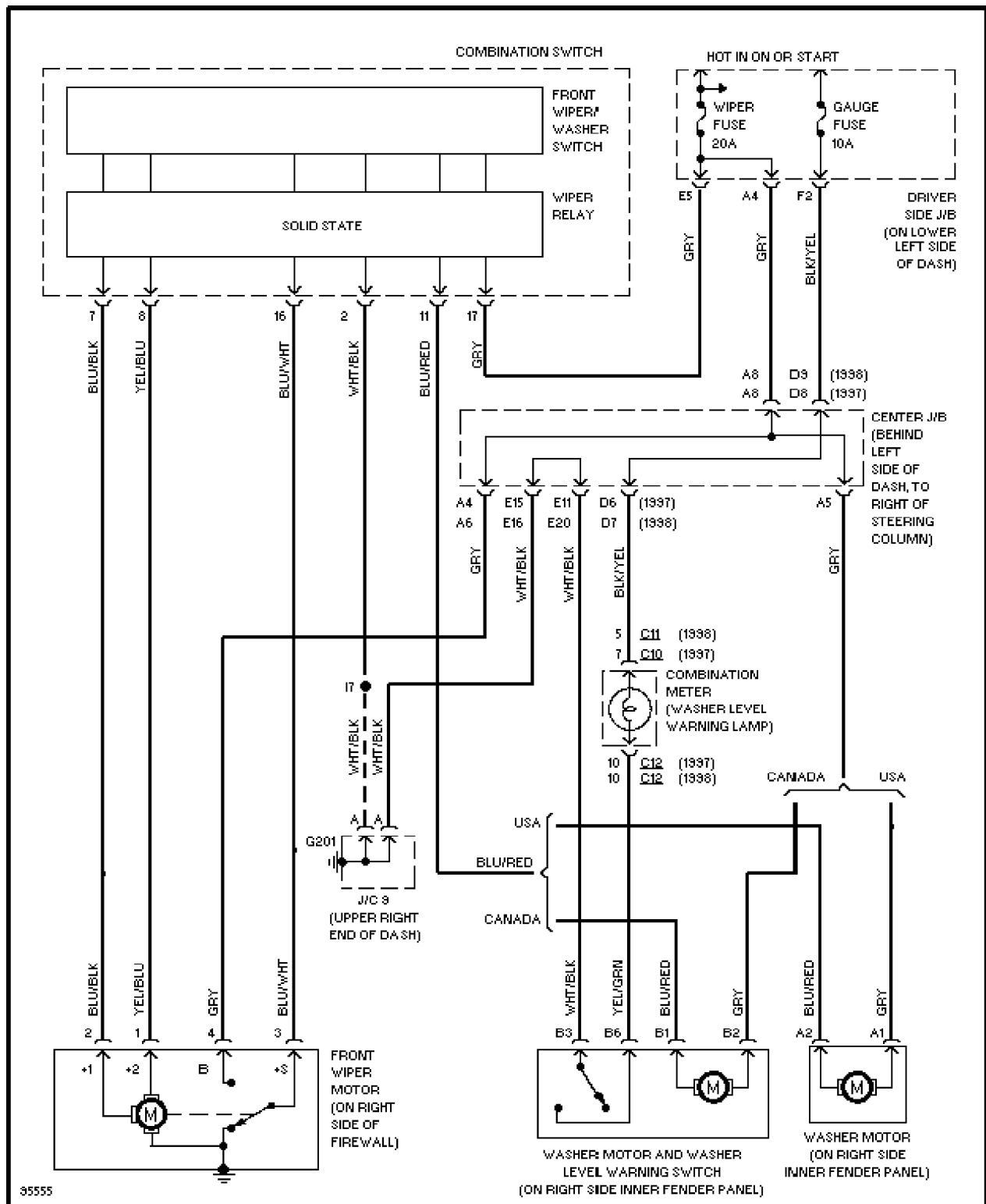


Fig. 30: Front Wiper/Washer System Wiring Diagram (4Runner)

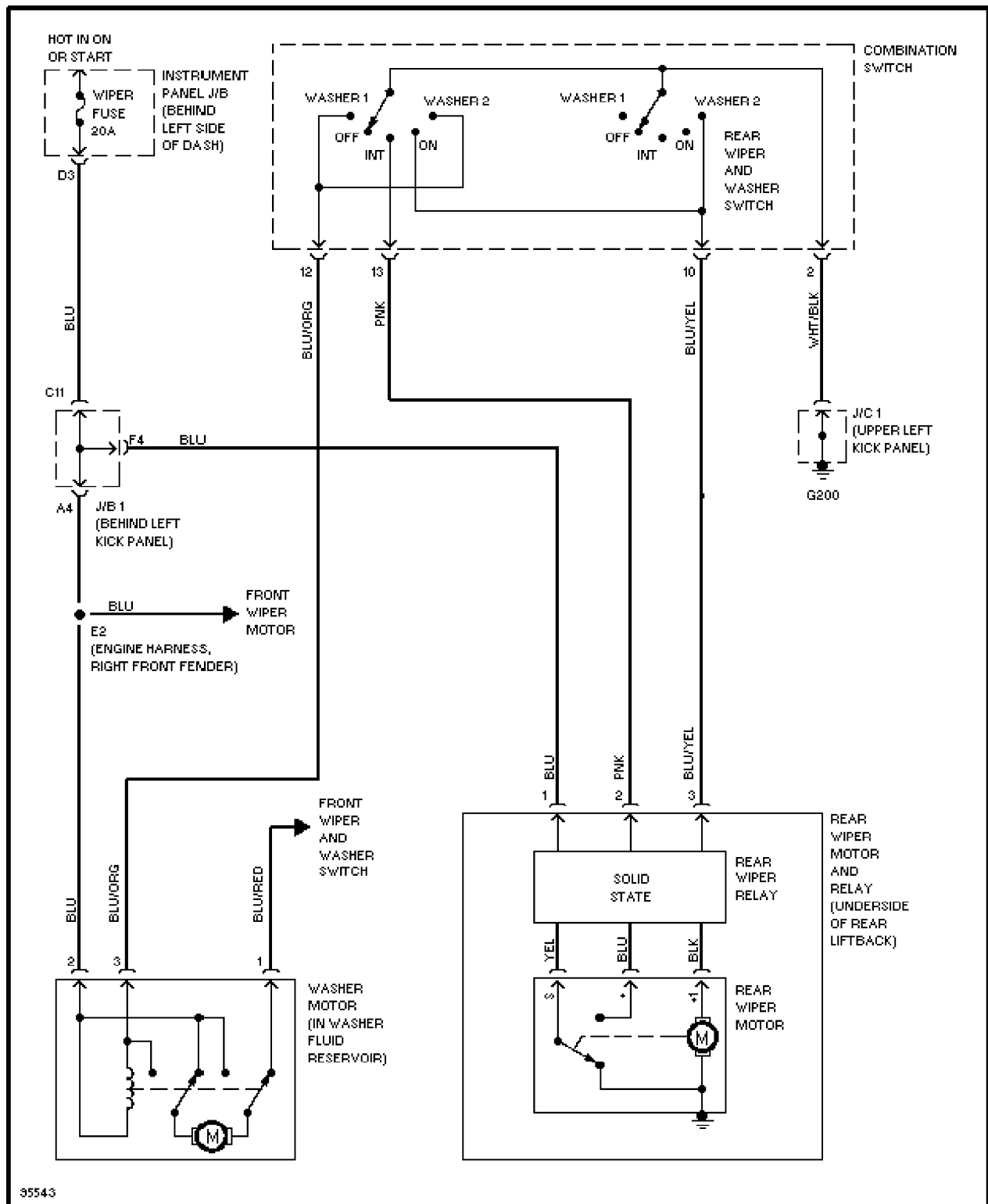


Fig. 31: Rear Wiper/Washer System Wiring Diagram (Celica)

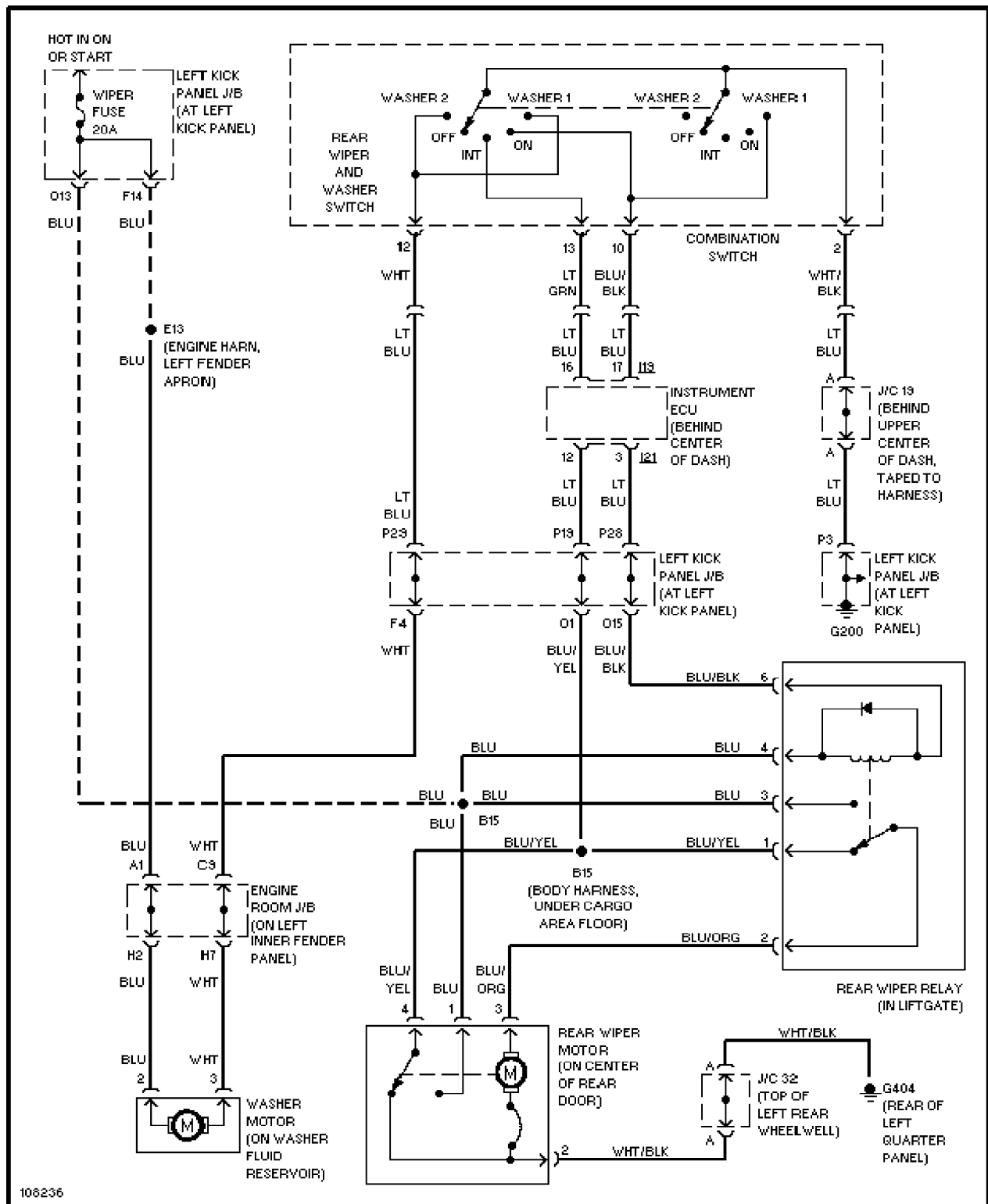


Fig. 32: Rear Wiper/Washer System Wiring Diagram (Land Cruiser)

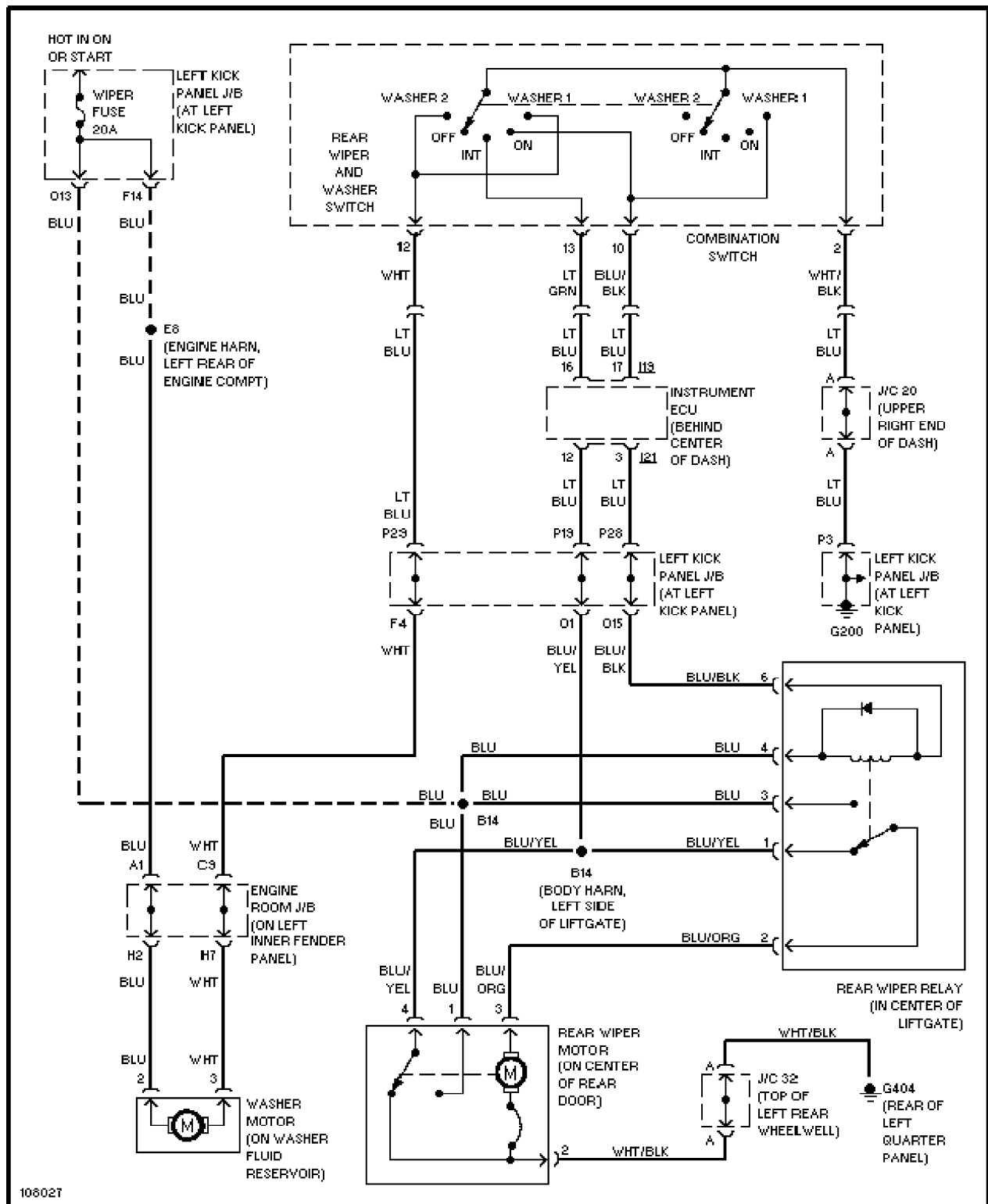


Fig. 33: Rear Wiper/Washer System Wiring Diagram (Lexus LX470)

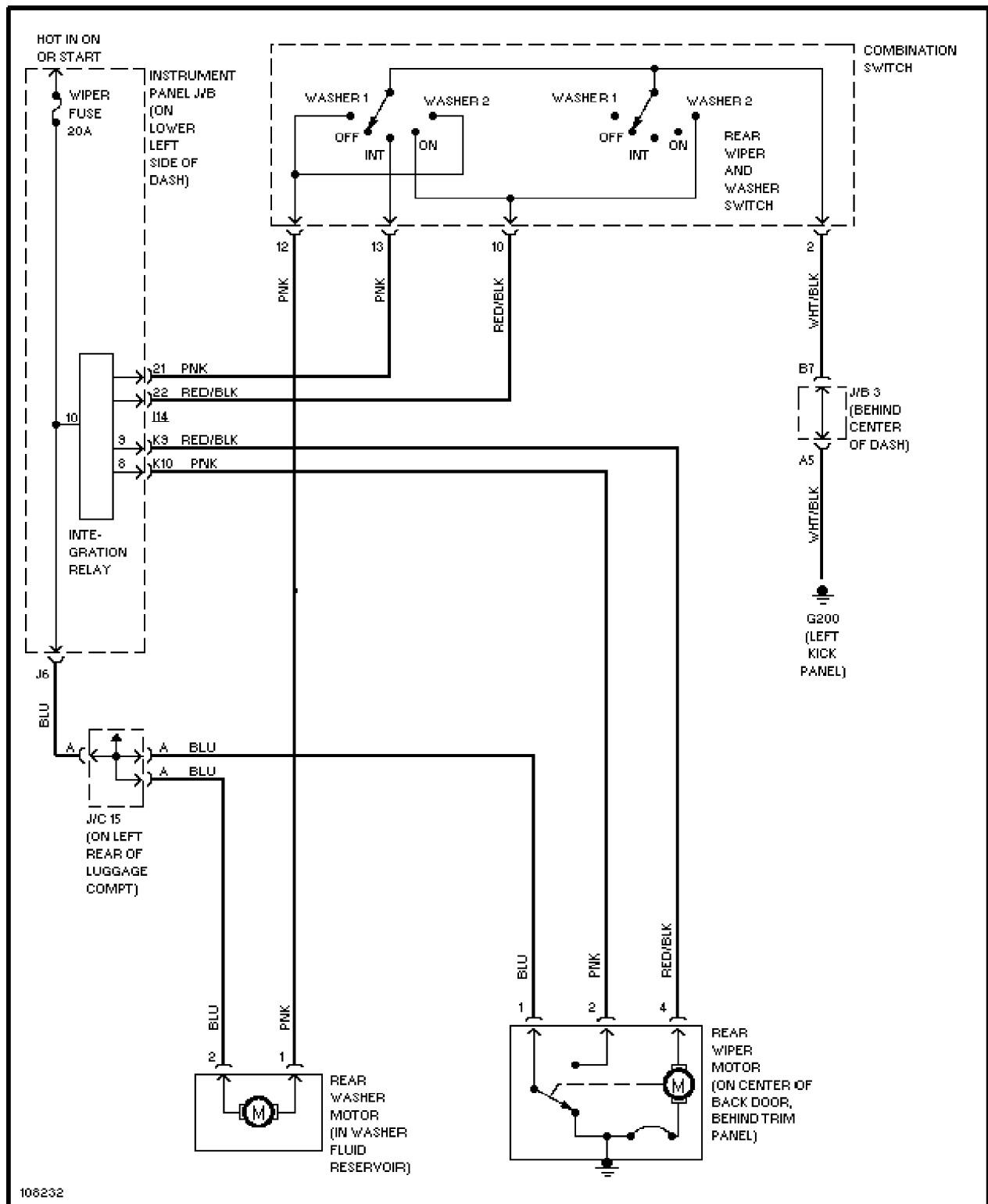
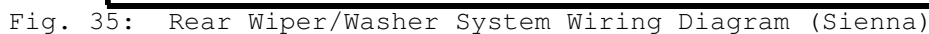


Fig. 34: Rear Wiper/Washer System Wiring Diagram (RAV4)



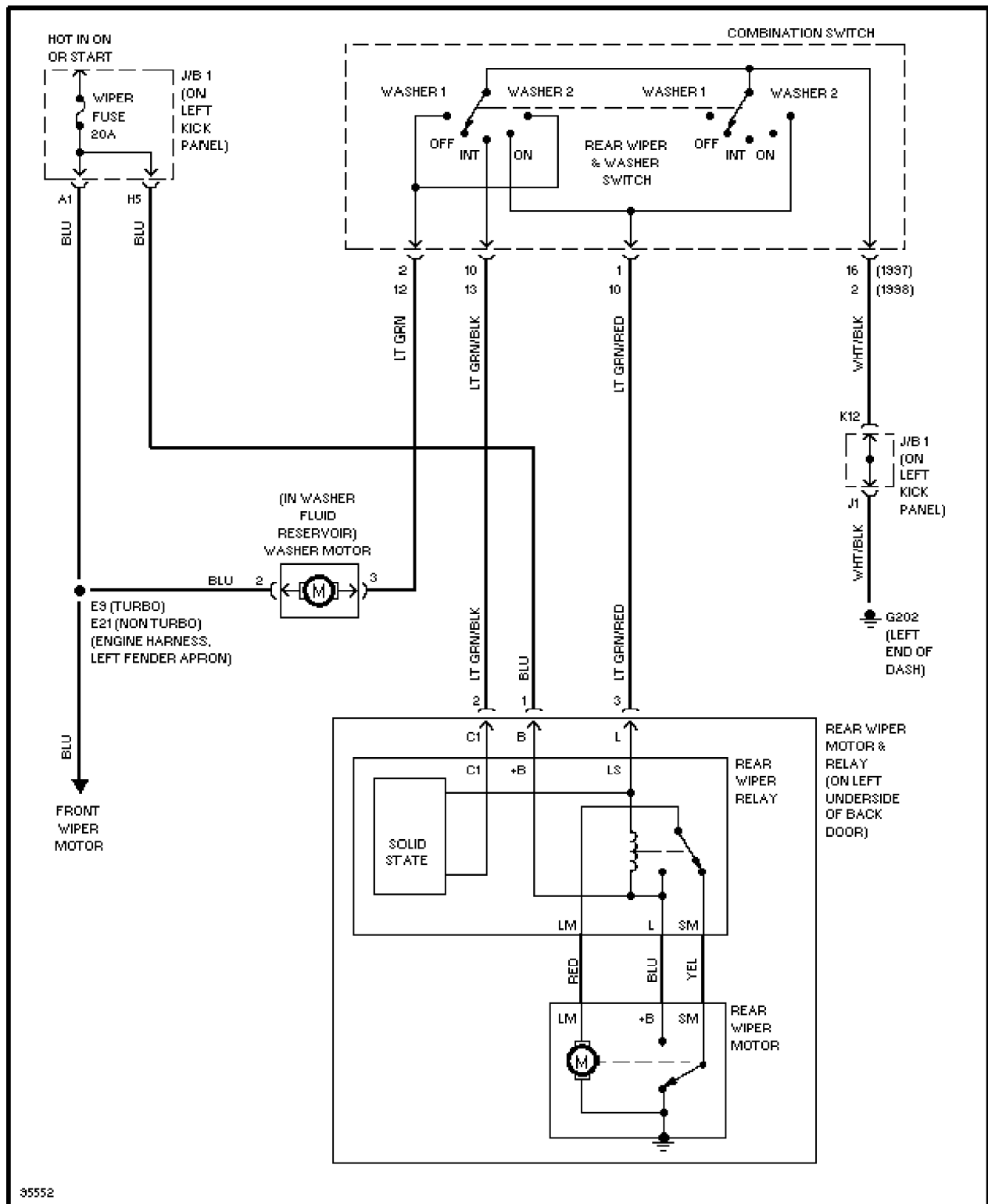


Fig. 36: Rear Wiper/Washer System Wiring Diagram (Supra)

