

STEERING COLUMN SWITCHES

1991 Mazda Miata

1991-92 SAFETY EQUIPMENT
Steering Column Switches

B2200, B2600i, Miata, MPV, MX-6,
Navajo, Protege, RX7, 323, 626, 929

DESCRIPTION

Most models use a combination switch. The combination switch includes all or some of the following switches: turn signals, hazard, headlight and windshield wiper/washer controls.

On some models, combination switch also includes headlight dimmer and flash-to-pass switches. Ignition switch and lock cylinder are mounted on steering column. Navajo models use a push button steering wheel lock mechanism. Pushing button releases lock mechanism, allowing ignition switch to be rotated from OFF to LOCK positions and ignition key to be removed.

DISABLING & ACTIVATING AIR BAG

Disabling System (Miata, RX7 Convertible & 929)

1) On Miata, obtain radio code number from customer, and deactivate radio anti-theft function. To deactivate radio anti-theft system, turn ignition key to ON position. With radio flashing "code", press FF and REW buttons. Hold both buttons until 4 lines are displayed. Use preset button No. 1 to enter first number; use preset buttons No. 2-4 to set other numbers. Press FF and REW buttons for about 2 seconds until a beep is heard. After 5 seconds, flashing "code" will go away and radio will operate.

2) On all models, turn ignition switch off. Disconnect and shield negative battery cable. Remove knee protector. Disconnect Orange and Blue clockspring connectors at base of steering column.

Activating System

On Miata, reconnect battery and clockspring connectors. On 929, remove short circuit connector from harness connector. Reconnect diagnostic module connector to diagnostic module and reconnect battery. On all models, turn ignition switch to RUN position. Check AIR BAG indicator light to ensure system is operating properly. For more information, see AIR BAG RESTRAINT SYSTEM article in SAFETY EQUIPMENT.

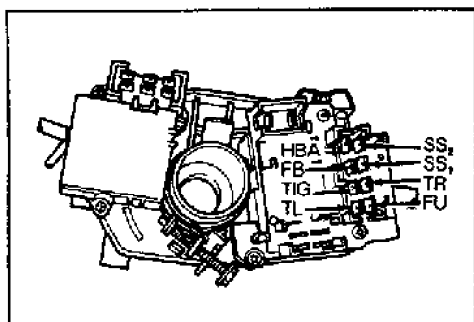
TESTING

WARNING: Miata, RX7 Convertible and 929 are equipped with Supplemental Inflatable Restraint (SIR) system, otherwise known as an air bag. Wait about 10 minutes after disabling air bag system before servicing. Air bag system voltage is maintained for about 10 minutes after system is disabled. Failure to wait 10 minutes before servicing system may cause accidental air bag deployment and possible personal injury. See DISABLING & ACTIVATING AIR BAG.

COMBINATION SWITCH

Remove combination switch. See COMBINATION SWITCH under REMOVAL & INSTALLATION. Using an ohmmeter or self-powered test light, check switch operation. See Figs. 1-15. On Navajo, continuity of

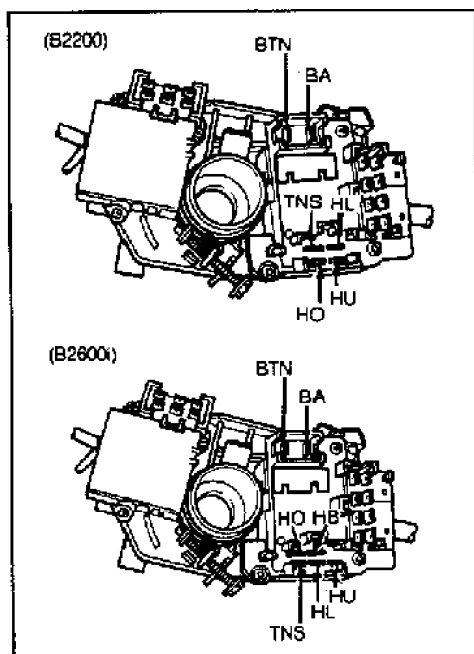
switch should match continuity indicated in COMBINATION SWITCH CONTINUITY (NAVAJO) table. On all models, replace switch if continuity does not test as indicated.



TURN SIGNAL & HAZARD SWITCH

Terminal		FU	TL	TR	TIG	HBA	FB	SS1	SS2
Hazard	Turn								
	Left	○—○			○—○		○—○		
	N				○—○		○—○		
	Right	○—○		○—○	○—○		○—○		
ON		○—○	○—○	○—○		○—○	○—○	○—○	○—○

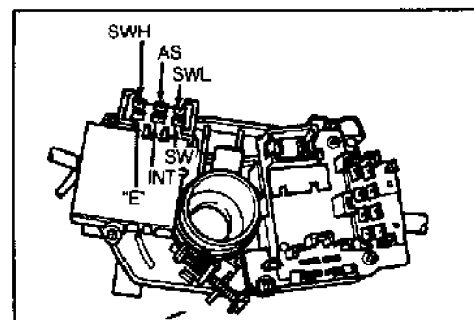
○—○: Indicates continuity.



LIGHTS, DIMMER & PASSING SWITCH

Terminal		BTN	TNS	BA	HL	HU	HB
Position							
Tail, parking							
Head-light	Low beam						
	High beam						
Passing	Tail, parking						

○—○: Indicates continuity.

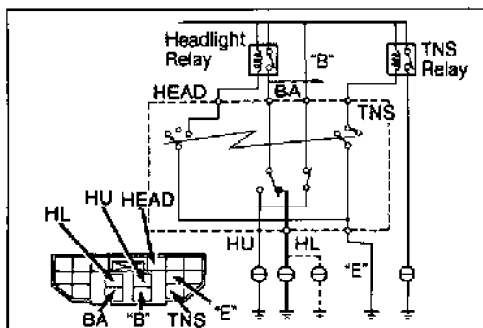


WINDSHIELD WIPER & WASHER SWITCH

Terminal		AS	SWL	SWH	INT	E	SW
Position	One touch						
	ON		○—○			○—○	
Wiper switch	OFF	○—○	○—○				
	INT		○—○		○—○	○—○	
	I (Low)		○—○		○—○	○—○	
	II (High)			○—○	○—○	○—○	
Washer switch ON						○—○	○—○

○—○: Indicates continuity.

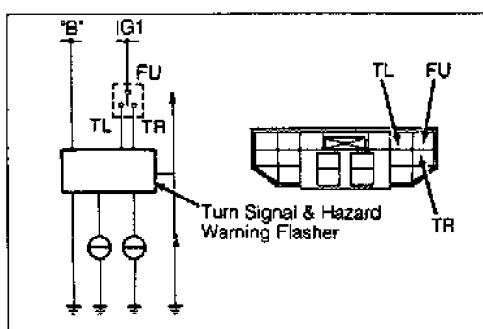
Fig. 1: Testing Combination Switch Continuity (B2200 & B2600i)
Courtesy of Mazda Motors Corp.



LIGHTS, DIMMER & PASSING SWITCH

Position		Terminal						
		E	HL	HU	TNS	HEAD	BA	B
Headlight	Low beam	○				○		
	High beam	○				○		
Passing				○				○
Tail, Parking		○						

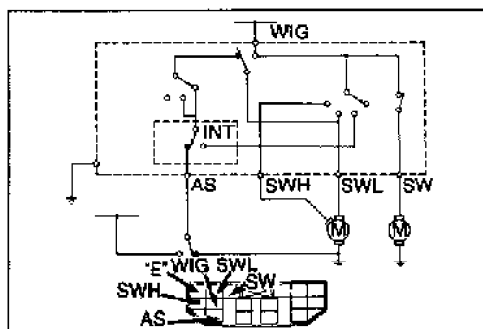
○—○: Indicates continuity.



TURN SIGNAL SWITCH

Switch	Terminal		
	FU	TL	TR
Left	○	○	
Right	○		○

○—○: Indicates continuity.

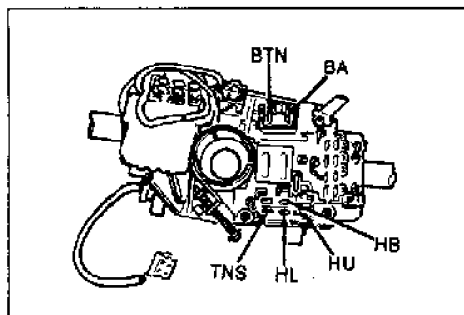


WINDSHIELD WIPER & WASHER SWITCH

Position		Terminal	AS	WIG	SWL	SWH	INT	SW
		One touch						
Wiper switch	OFF	OFF	○		○			
		ON		○	○			
	INT		○		○		○	
	I (Low)			○	○			
	II (High)			○		○		
Washer switch ON				○				○

○—○: Indicates continuity.

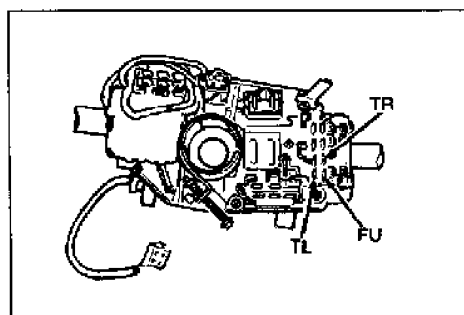
Fig. 2: Testing Combination Switch Continuity (Miata)
Courtesy of Mazda Motors Corp.



LIGHTS, DIMMER & PASSING SWITCH

Terminal		HB	HL	HU	BA	BTN	TNS
Position							
Headlight	Low beam	○—○			○	○—○	
	High beam	○—○		○	○	○—○	
Passing				○—○	○		
Tail, Parking						○—○	

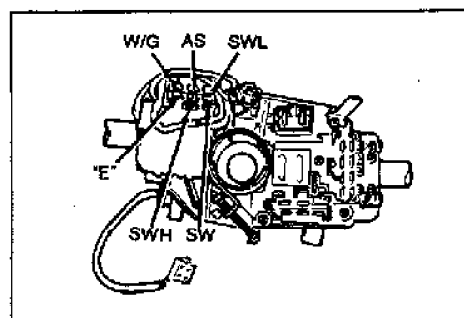
○—○: Indicates continuity.



TURN SIGNAL SWITCH

Terminal		FU	TL	TR
Position				
Left		○—○	○	
Right		○—○		○

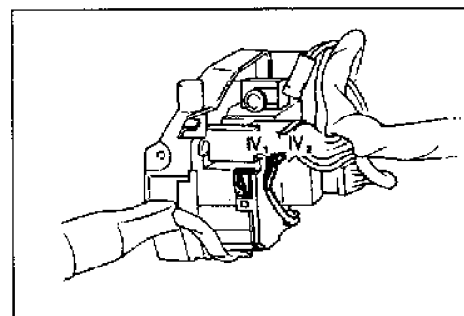
○—○: Indicates continuity.



WINDSHIELD WIPER & WASHER SWITCH

Terminal		AS	W/G	SWL	SWH	E	SW
Position	One touch						
Wiper switch	OFF	OFF	○—○	○			
	ON			○	○—○	○	
	INT			○	○—○	○	
	I (Low)			○	○—○	○	
	II (High)				○—○	○	
Washer switch ON						○—○	○

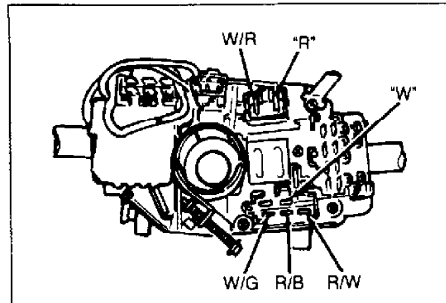
○—○: Indicates continuity.



VARIABLE SPEED INTERMITTENT WIPER TIMER CONTROL

Position	Terminal	IV ₁ — IV ₂
Slow		0—1 kΩ
Fast		40—60 kΩ

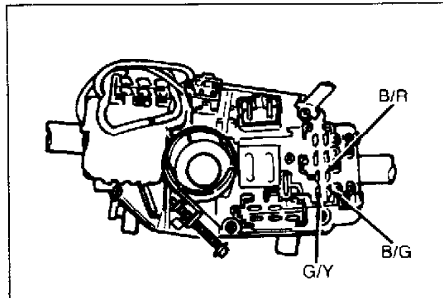
Fig. 3: Testing Combination Switch Continuity (MPV)
Courtesy of Mazda Motors Corp.



LIGHTS, DIMMER & PASSING SWITCH

Terminal		W	R/B	R/W	R	W/R	W/G
Position							
Headlight	Low beam	○—○			○	○—○	
	High beam	○—○		○		○—○	
Passing light				○—○			
Tail, parking light						○—○	

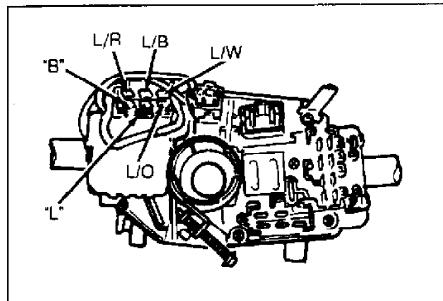
○—○: Indicates continuity.



TURN SIGNAL SWITCH

Terminal		B/G	G/Y	B/R
Position				
Left		○—○	○	
Right		○—○		○

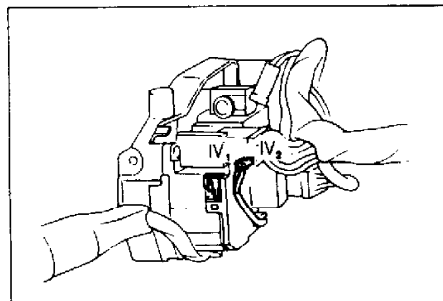
○—○: Indicates continuity.



WINDSHIELD WIPER & WASHER SWITCH

Terminal		L/B	L	L/W	L/R	B	L/O
Position	One touch						
Wiper switch	OFF	○—○		○			
	ON			○	○—○		
	INT			○	○—○		
	I (Low)			○	○—○		
	II (High)				○—○		
Washer switch		ON				○—○	

○—○: Indicates continuity.



VARIABLE SPEED INTERMITTENT WIPER TIMER CONTROL

Terminal		IV ₁ — IV ₂
Position		
Slow		0 — 1 k Ω
Fast		40 — 60 k Ω

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Fig. 4: Testing Combination Switch Continuity (MX-6 & 626)
Courtesy of Mazda Motors Corp.

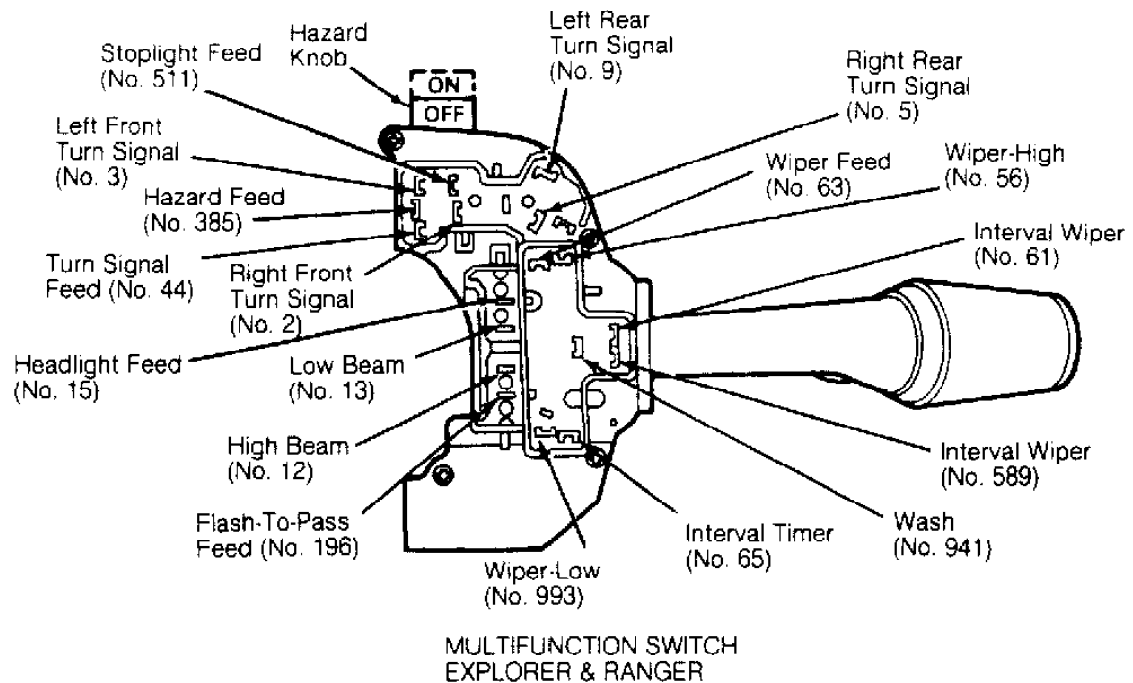


Fig. 5: Testing Combination Switch Continuity (Navajo)
Courtesy of Ford Motor Co.

COMBINATION SWITCH CONTINUITY (NAVAJO)

Switch Position & Continuity	Between Circuits
Turn Signal Off	
Yes	511, 5 & 9
No	511, 2, 3, 44 & 385 44, 2, 3, 5, 9 & 385 385, 2 & 3
Left Turn	
Yes	511 & 5; 44, 3 & 9
No	511, 3, 9, 44 & 385 44, 2, 5 & 385 385 & 2
Right Turn	
Yes	511 & 9; 44, 2 & 5
No	511, 2, 5, 44 & 385 44, 3, 9 & 385; 385 & 2
Hazard	
Yes	385, 2, 3, 5, 9 & 511
No	385 & 44; 44, 2, 3, 5 & 9
Headlight Dimmer (High)	
Yes	15 & 12
No	15, 13 & 196; 196 & 12
Headlight Dimmer (Low)	
Yes	15 & 13
No	15, 12 & 196; 196 & 13
Flash-To-Pass	
Yes	15 & 13; 196 & 12
No	15, 12 & 196

Windshield Washer Off	
No	63 & 941
Windshield Washer On	
Yes	63 & 941
Wiper Off	
No	63, 56, 993, 65 & 941
Low Speed	
Yes	63 & 993
No	63, 941, 56 & 65
High Speed	
Yes	63, 993 & 56
No	63, 941 & 65
Interval Wiper (1)	
Yes	(2) 63 & 65
No	63, 993 & 56

- (1) - Knob turned to maximum time interval position.

(2) - Resistance between circuits No. 589 and 61 should be 7000-13,000 ohms. If knob is rotated to minimum time interval position, resistance should drop to 420-880 ohms.

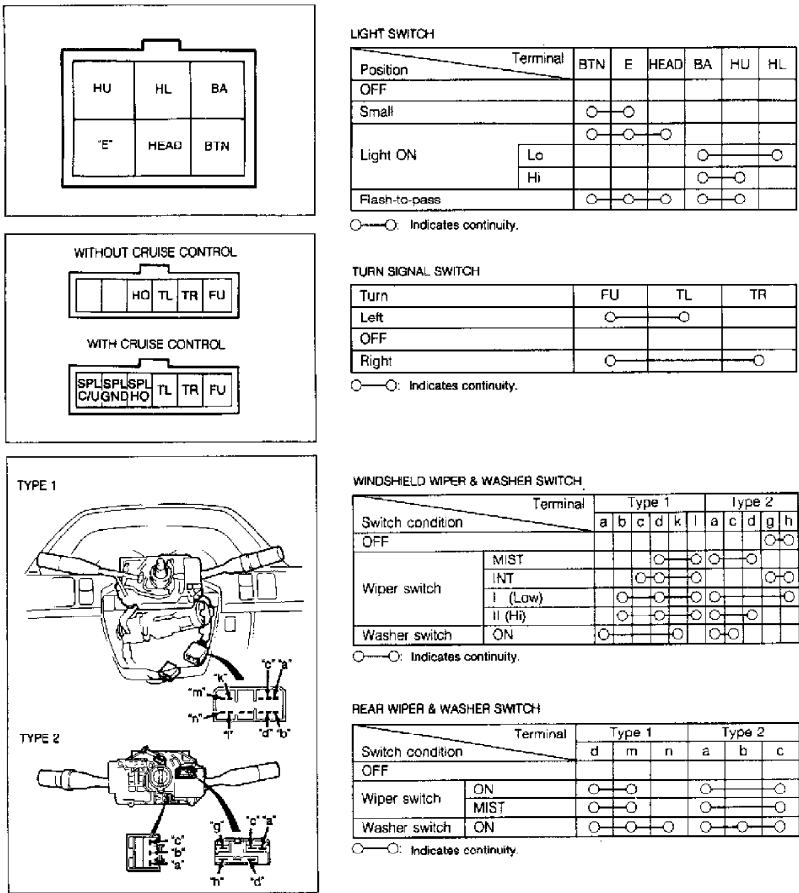
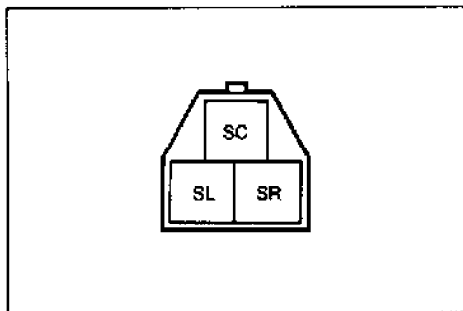
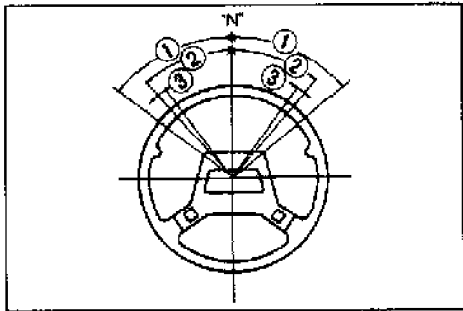
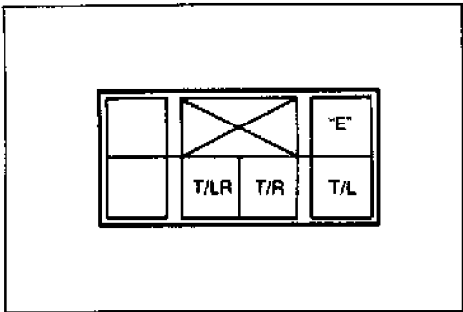


Fig. 6: Testing Combination Switch Continuity (Protege & 323)

Courtesy of Mazda Motors Corp.

NOTE:

Combination switch tests for RX7 include switches located on dash panel.



TURN SIGNAL & HEADLIGHT DIMMER SWITCH

Position		Terminal				
		E	T/L	T/R	T/LR	HRC
Dimmer/Passing		○				○
Turn	Left	○	○		○	
	Right	○		○	○	

○—○: Indicates continuity.

TURN CANCEL SWITCH

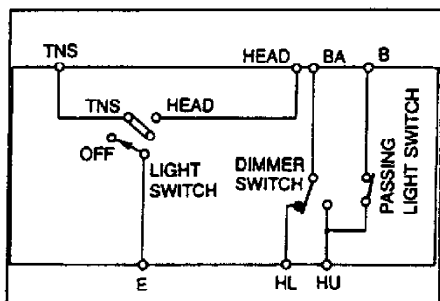
Steering wheel position	Angle
Cancel — set angle ①	53°—63°
Cancel angle ②	38°—48°
Contact ON angle ③	2°—8°

NOTE: Test function of turn cancel switch.

Terminal	Steering wheel position	Continuity
SC—SR	When turned 63° or more to the right from the straight-ahead position and returned to the straight-ahead position.	Yes
SC—SL	When turned 63° or more to the left from the straight-ahead position and returned to the straight-ahead position.	Yes

When replacing turn signal cancel switch, replace it with combination switch as an assembly.

Fig. 7: Testing Combination Switch Continuity (RX7)
 Courtesy of Mazda Motors Corp.

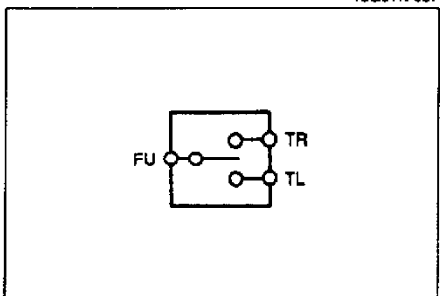


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LIGHT SWITCH

Position \ Terminal	BA	HL	HU	B	E	TNS	HEAD
OFF							
Parking					○	○	
Headlight					○	○	○
Low	○	○					
High	○		○				
Flash-to-pass			○	○			

○-○: Indicates continuity.

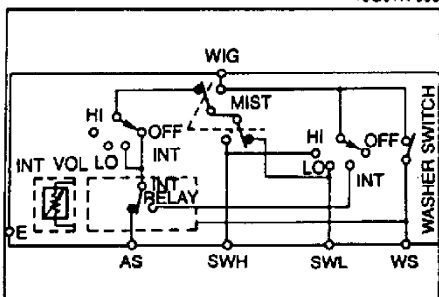


19G0TX-058

TURN SIGNAL SWITCH

Switch	Terminal		
	FU	TL	TR
Left	○	○	
OFF			
Right	○		○

○-○: Indicates continuity.



WINDSHIELD WIPER & WASHER SWITCH

Position		Terminal				
		AS	SWL	SWH	WIG	WS
Wiper switch	OFF	○	○			
	One-touch OFF					
	One-touch ON			○	○	
	INT	○	○			
	I (Low)		○		○	
	II (High)			○	○	
Washer switch ON					○	○

○-○: Indicates continuity.

93G02422

Fig. 8: Testing Combination Switch Continuity (1992 929)
Courtesy of Mazda Motors Corp.

DASH PANEL CONNECTOR NO. ①

NOTE: For location of dash panel connector, see Fig. 10.



○—○ Indicates continuity.


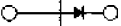





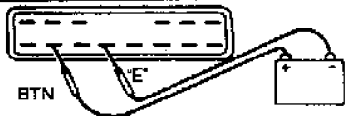



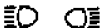






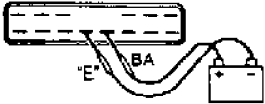


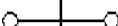


REAR WINDOW DEFROSTER SWITCH							
Rear window defroster switch		TIG	E		CONTINUITY		
	OFF						
	ON						
REAR WINDOW DEFROSTER TIMER CIRCUIT							
		DEF—E			DEF		
	OFF	12V					
	ON	0V					
	TIMER	10—20 min after switch turned on: 12V					
RETRACTABLE HEADLIGHT & HEADLIGHT CLEANER SWITCH							
Retractable headlight switch		BA	RD	RU		CONTINUITY	
	OFF						
	ON						
PANEL LAMP CONTROL							
		Illumination lamps					
		All illumination lamps on and controlled by panel lamp control switch					
		Same as above					
HEADLIGHT SWITCH							
Headlight switch		BTN	TNS	HR	E		CONTINUITY
	OFF						
							
							
RETRACTABLE HEADLIGHT CONTROL CIRCUIT							
		BA	RU		CONTINUITY		
							
ILLUMINATION LAMP (RETRACTABLE HEADLIGHT, HEADLIGHT CLEANER & HEADLIGHT SWITCH)							
					ON		

Fig. 9: Combination Switch Continuity Test (RX7 Convertible 1 of 2)
Courtesy of Mazda Motors Corp.

DASH PANEL CONNECTOR NO. ②

NOTE: For location of dash panel connector, see Fig. 10.



○—○ Indicates continuity.















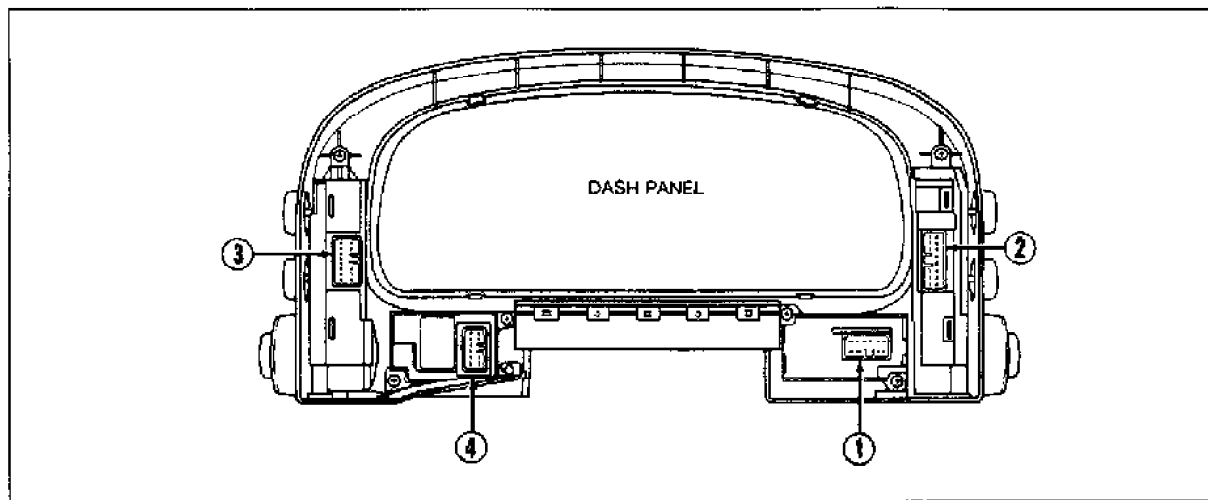
HAZARD WARNING SWITCH				
Hazard warning switch		HZ	E	OHMMETER  CONTINUITY
	OFF			
	ON			
FRONT WASHER SWITCH				
Front washer switch		SW	E	OHMMETER  CONTINUITY
	OFF			
	ON			
ONE-TOUCH WIPER CIRCUIT				
		SWH—E		VOLTMETER  SWH
	OFF	Approx. 12V		
	ON	When switch pressed after 0.5 sec-0V		
	OFF	When switch released after 3 sec-12V		
ILLUMINATION LAMP (FRONT WIPER SWITCH)				
				ON
FRONT WIPER SWITCH				
		SWH—E		VOLTMETER  SWH
	MIST	0V		
	II	0V		
		SWL—E		VOLTMETER  SWL
	I	0V		
		SWL—E		VOLTMETER  SWL
	AS—⊕	0V		
	AS—⊖	0V		
	AS—⊕	Approx. -12V After few sec-0V		

Fig. 10: Combination Switch Continuity Test (RX7 Convertible -2 of 2)
Courtesy of Mazda Motors Corp.



DASH PANEL CONNECTOR NO. ①




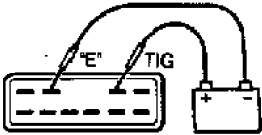





TURN SIGNAL, DIMMER & PASSING SWITCH					○ — ○ : Indicates continuity.	
Turn signal switch		TIG	SR	SL		CONTINUITY
	Right	○ — ○				
	Left	○ —		○		
TURN CANCEL CIRCUIT						
	Procedure				Result	
	Turn switch right — apply 12V to SC				Turn switch cancelled	
	Turn switch left — apply 12V to SC				Turn switch cancelled	
ILLUMINATION LAMPS (TURN SIGNAL, DIMMER & PASSING SWITCH)						
						ON
DIMMER & PASSING SWITCH						
Dimmer and passing switch		HR	E		CONTINUITY	
	OFF					
	ON	○ — ○				

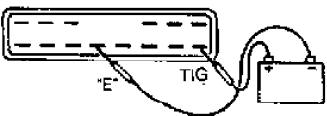

Fig. 11: Combination Switch Continuity Test (RX7 Coupe - 1 of 4)
 Courtesy of Mazda Motors Corp.



DASH PANEL CONNECTOR NO. ②




NOTE: For location of dash panel connector, see Fig. 10.

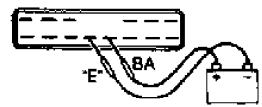


○—○ Indicates continuity.



REAR WINDOW DEFROSTER SWITCH					
Rear window defroster switch		TIG	E	OHMMETER 	CONTINUITY
	OFF				
	ON	○—○	○—○		

REAR WINDOW DEFROSTER TIMER CIRCUIT					
		DEF—E		VOLTMETER 	"E" DEF
	OFF	12V			
	ON	0V			
	TIMER	10—20 min after switch turned on, 12V			

RETRACTABLE HEADLIGHT & HEADLIGHT CLEANER SWITCH						
Retractable headlight switch		BA	RD	RU	OHMMETER 	CONTINUITY
	OFF	○—○	○—○			
	ON	○—○	○—○	○—○		
Headlight cleaner switch (This inspection is operated with the retractable headlights in the open position)		BA	HC		OHMMETER 	CONTINUITY
	OFF					
	ON	○—○	○—○			

HEADLIGHT SWITCH							
Headlight switch		BTN	TNS	HR	E	OHMMETER 	CONTINUITY
	OFF						
		○—○					
		○—○		○—○			

RETRACTABLE HEADLIGHT CONTROL CIRCUIT					
		BA	RU	OHMMETER 	CONTINUITY
		○—○	○—○		

ILLUMINATION LAMP (RETRACTABLE HEADLIGHT, HEADLIGHT CLEANER & HEADLIGHT SWITCH)						
						ON




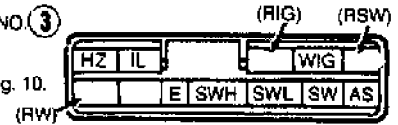
PANEL LAMP CONTROL					
		Illumination lamps			
		All illumination lamps on and controlled by panel lamp control switch			
		Same as above			

Fig. 12: Combination Switch Continuity Test (RX7 Coupe - 2 of 4)
Courtesy of Mazda Motors Corp.

DASH PANEL CONNECTOR NO. ③

NOTE: For location of dash panel connector, see Fig. 10.



○—○ Indicates continuity.





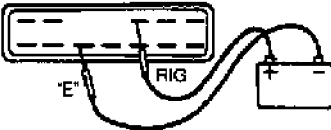

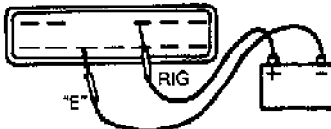

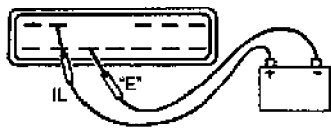



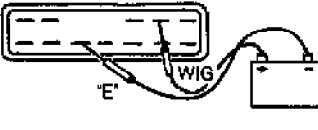

HAZARD WARNING SWITCH				
Hazard warning switch		HZ	E	 CONTINUITY
	OFF			
	ON			
REAR WASHER SWITCH				
Rear washer switch		RSW	E	 CONTINUITY
	OFF			
	ON			
ONE-TOUCH WIPER CIRCUIT				
		RW—E		 VOLT "E" — "RW"
	OFF	Approx. 12V		
	ON	0V		
	INT	Check for clicking sound of the relay by connecting the battery as shown in the figure		
REAR WIPER SWITCH				
		RW—E		 VOLT "E" — "RW"
	OFF	Approx. 12V		
	ON	0V		
	INT	Check for clicking sound of the relay by connecting the battery as shown in the figure.		
ILLUMINATION LAMP (REAR WIPER SWITCH)				
				 ON
FRONT WASHER SWITCH				
Front washer switch		SW	E	 CONTINUITY
	OFF			
	ON			
ONE-TOUCH WIPER CIRCUIT				
		SWH—E		 VOLT "E" — "SWH"
	OFF	Approx. 12V		
	ON	When switch pressed after 0.5 sec-0V		
	OFF	When switch released after 3 sec-12V		

Fig. 13: Combination Switch Continuity (RX7 Coupe - 3 of 4)
Courtesy of Mazda Motors Corp.










FRONT WIPER SWITCH			
 MIST, II POSITION		SWH—E	 VOLT METER 'E' SWH
	MIST	OV	
	II	OV	
 I POSITION		SWL—E	 VOLT METER 'E' SWL
	I	OV	
 INT POSITION		SWL—E	 VOLT METER 'E' SWL
	AS—⊕	OV	
	AS—⊖	OV	
	AS—⊕	Approx. —12V After few sec—OV	
ILLUMINATION LAMP (FRONT WIPER SWITCH)			
 IL			 ON

Fig. 14: Combination Switch Continuity Test (RX7 Coupe - 4 of 4)
 Courtesy of Mazda Motors Corp.

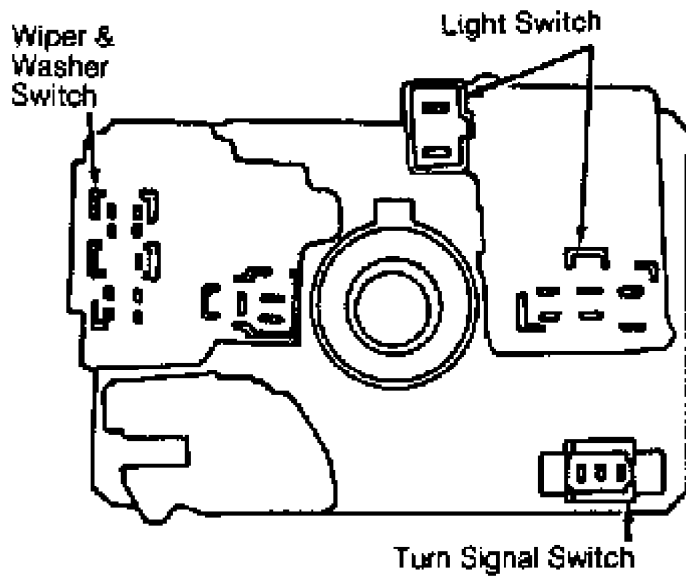
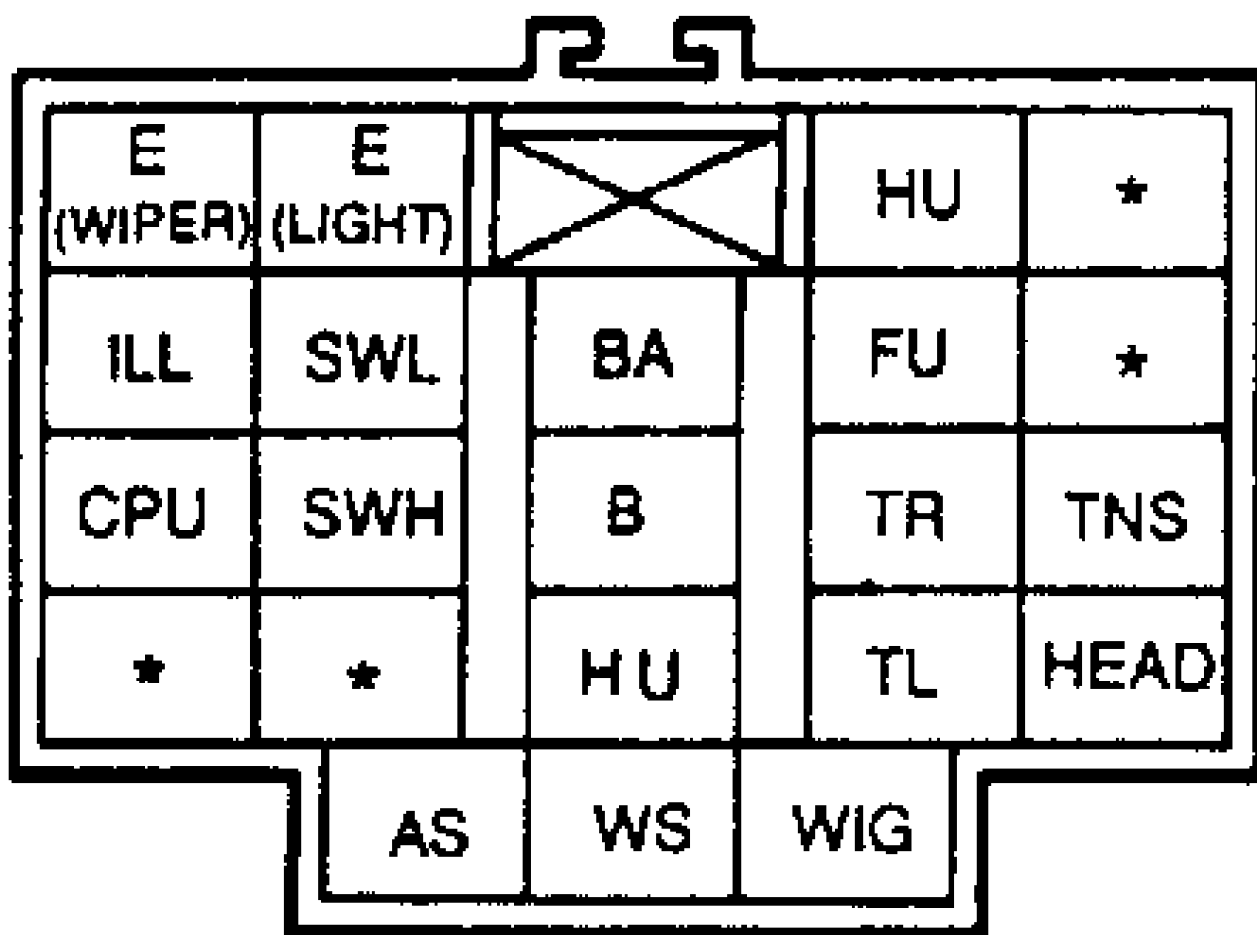
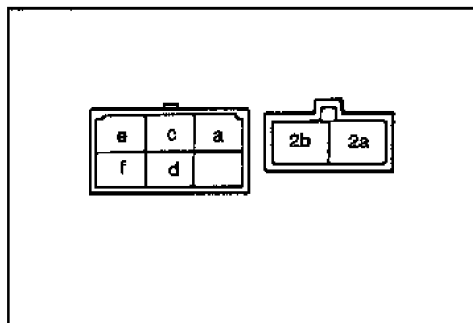
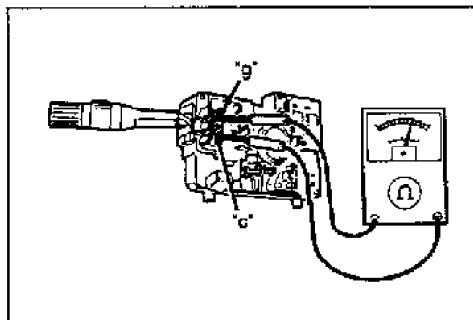
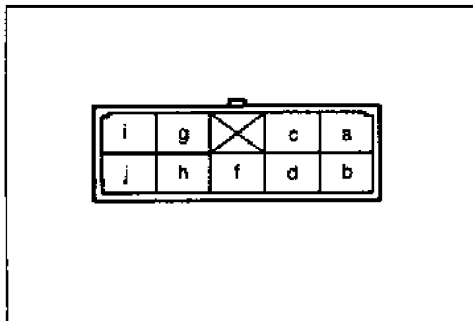
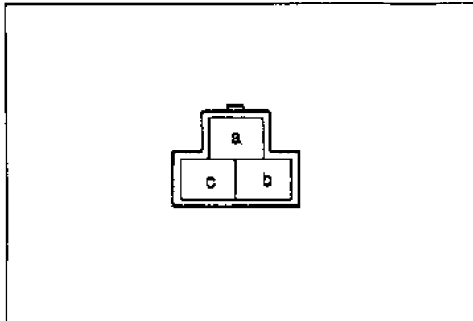


Fig. 15: Locating Combination Switch Terminals (929)
 Courtesy of Mazda Motors Corp.



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Fig. 16: Locating Combination Switch Terminals (1992 929)
 Courtesy of Mazda Motors Corp.



TURN SIGNAL SWITCH

Terminal		a	b	c
Position	Left	○ — ○	○ — ○	
	Off			
	Right	○ — ○	○ — ○	○ — ○

○ — ○: Indicates continuity.

WINDSHIELD WIPER & WASHER SWITCH

Terminal			a	b	d	f	h	i	j
Position									
Wiper switch	OFF	One touch OFF					○	—	○
		One touch ON			○		○	—	○
	INT					○	○	—	○
	Low				○		○	—	○
	High			○	○		○	—	○
	Washer switch ON		○					○	

○ — ○: Indicates continuity.

INTERMITTENT WIPER UNIT

Position	Resistance
Max (Slow)	50 kΩ
Min (Fast)	Less than 1 kΩ

LIGHT SWITCH

Terminal		a	c	d	e	f	2a	2b
Light switch	OFF							
	First and Second	○ — ○						○ — ○
			○ — ○	○ — ○			○ — ○	
	Passing			○ — ○	○ — ○		○ — ○	
Horn switch						○ — ○		

○ — ○: Indicates continuity.

○ (Plate)

NOTE: Terminal 'f' is conductive to plate when horn button is pressed.

Fig. 17: Testing Combination Switch Continuity (929)
Courtesy of Mazda Motors Corp.

HAZARD SWITCH

B2200, B2600i & RX7

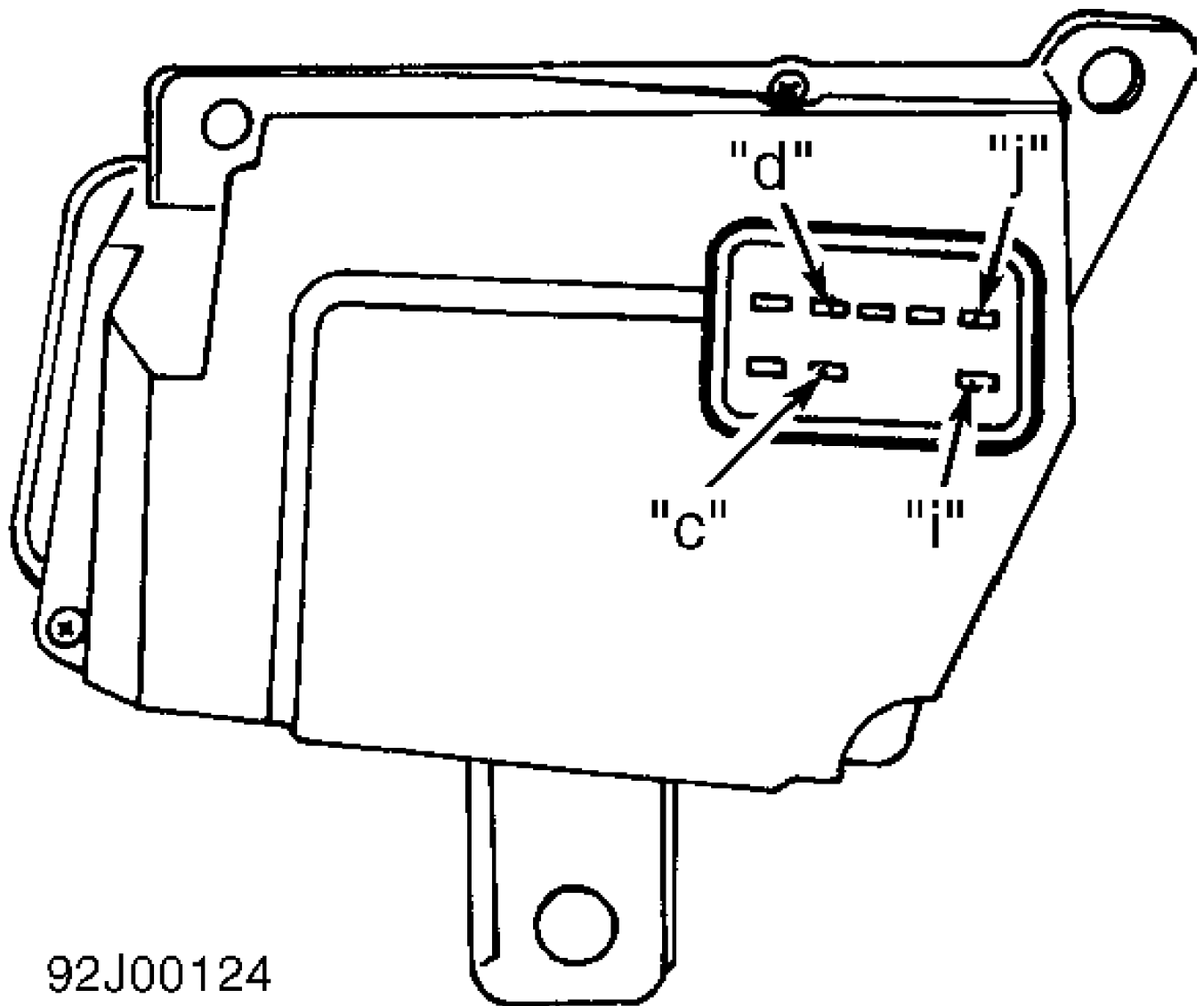
Hazard switch is part of combination switch assembly. To test hazard switch, see COMBINATION SWITCH under TESTING.

Miata

Remove headlight retractor and hazard switch assembly from center of console. Turn hazard switch on. Ensure continuity is present between 2 terminals at bottom of switch. If no continuity is present, replace headlight retractor and hazard switch assembly.

MPV

Remove right cluster switch assembly from right side of instrument panel. Turn switch on. Ensure continuity is present between terminals "c" and "d" and terminals "i" and "j". See Fig. 18. Turn switch off. Ensure continuity is present between terminals "i" and "j" only. If continuity is not as described, replace cluster switch assembly.

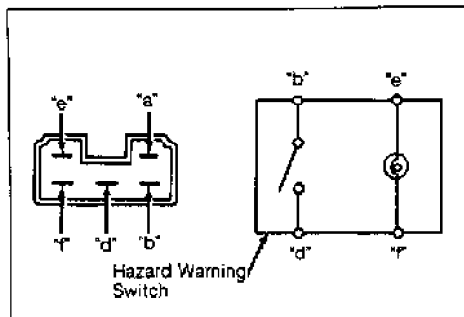


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Fig. 18: Locating Hazard Switch Terminals (MPV)
Courtesy of Mazda Motors Corp.

MX-6, Protege, 323, 626 & 929

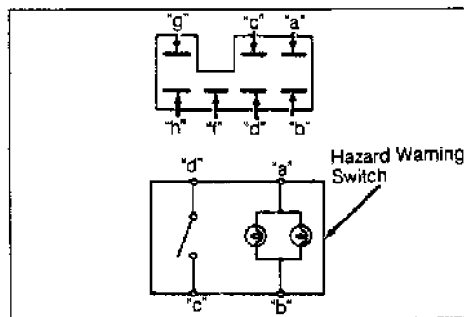
Remove hazard switch from dash. Ensure continuity is present as indicated. See Figs. 19 or 22. If necessary, replace hazard switch.



MX-6, 626 & 929 WITH 2-SWITCH TYPE BUTTONS

Position \ Terminal	a	b	d	e	f
OFF				○—○	
ON		○—○		○—○	

○—○: Indicates continuity.

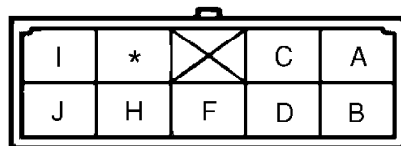


MX-6 & 626 WITH 4-SWITCH TYPE BUTTONS

Position \ Terminal	a	b	c	d
OFF	○—○			
ON	○—○	○—○	○—○	○—○

○—○: Indicates continuity.

Fig. 19: Testing Hazard Switch Continuity (MX-6, 626 & 929)
Courtesy of Mazda Motors Corp.

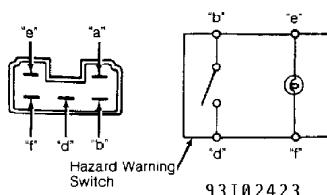


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Switch \ Terminal	A	B	C	F	H	I	J
Hazard warning switch						○—○	
Illumination				○—○			

○—○: Indicates continuity.

Fig. 20: Testing Hazard Switch Continuity (1992 929)
Courtesy of Mazda Motors Corp.



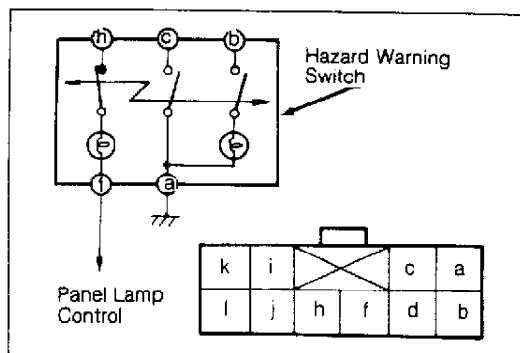
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MX-6, 626 & 929 WITH 2-SWITCH TYPE BUTTONS

Position \ Terminal	a	b	d	e	f
OFF				○—○	
ON		○—○		○—○	

○—○: Indicates continuity.

Fig. 21: Testing Hazard Switch Continuity (1992 MX-6 & 626)
Courtesy of Mazda Motors Corp.



Position \ Terminal	a	b	c	d	f	h	i	j	k	l
OFF					⊗	⊗				
ON	⊗	⊗								

⊗—⊗: Indicates continuity.

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Fig. 22: Testing Hazard Switch Continuity (Protege & 323)
Courtesy of Mazda Motors Corp.

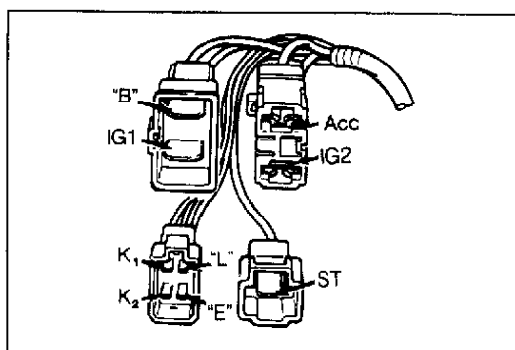
Navajo (Power Source)

Connect test light to ground. Touch test light probe to hazard or combination switch terminal (circuit No. 385, White/Red wire). See Fig. 5. If test light glows, power circuit to hazard switch is okay. If test light does not glow, check for open circuit between hazard switch and fuse block. Repair as necessary. See COMBINATION SWITCH CONTINUITY (NAVAJO) table.

IGNITION SWITCH

Except Navajo

Remove covers from steering column. Disconnect ignition switch connector. Ensure continuity is present as indicated. See Figs. 23 through 28. If necessary, replace ignition switch.

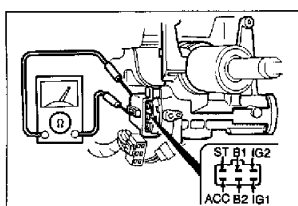


Position \ Terminal	B	ACC	IG1	IG2	ST	L	E	K1	K2
LOCK								⊗	⊗
ACC	⊗	⊗						⊗	⊗
ON	⊗	⊗	⊗	⊗				⊗	⊗
START	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗

⊗—⊗: Indicates continuity.

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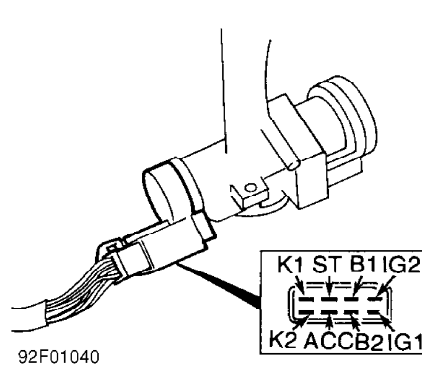
Fig. 23: Testing Ignition Switch Continuity (B2200, B2600i & RX7)
Courtesy of Mazda Motors Corp.



Position	Terminal							
	B1	B2	ACC	IG1	IG2	ST	K1	K2
LOCK							⊗	⊗
ACC	⊗		⊗				⊗	⊗
ON	⊗	⊗	⊗	⊗	⊗		⊗	⊗
START	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗

⊗—⊗: Indicates continuity.

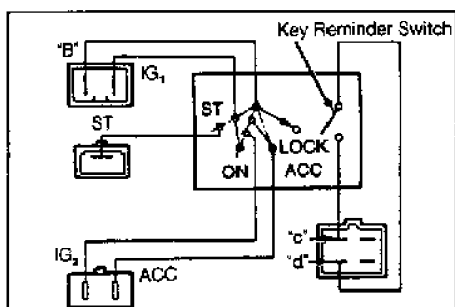
Fig. 24: Testing Ignition Switch Continuity (Miata)
Courtesy of Mazda Motors Corp.



Position	Terminals							
	B1	B2	ACC	IG1	IG2	ST	K1	K2
LOCK							○—○	
ACC	○—○		○—○				○—○	
ON	○—○	○—○	○—○	○—○	○—○		○—○	
START	○—○	○—○		○—○		○—○	○—○	

○—○: Indicates continuity.

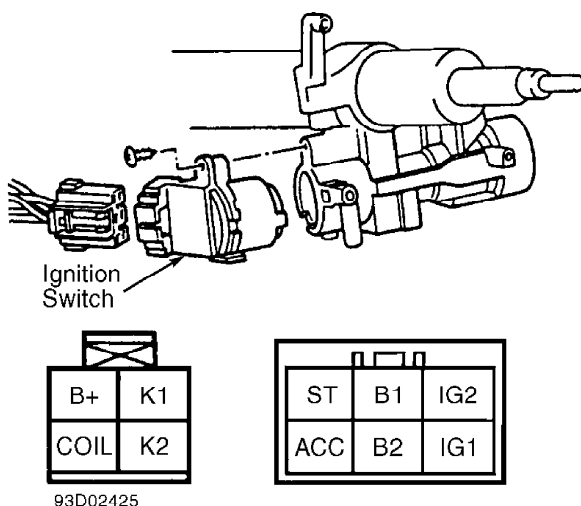
Fig. 25: Testing Ignition Switch Continuity (MPV)
Courtesy of Mazda Motors Corp.



Terminal		B	ACC	IG2	IG1	ST	c	d
Position	Key out							
	Key in						○—○	
ACC		○—○	○—○				○—○	
ON		○—○	○—○	○—○	○—○		○—○	
ST		○—○			○—○	○—○	○—○	

○—○: Indicates continuity.

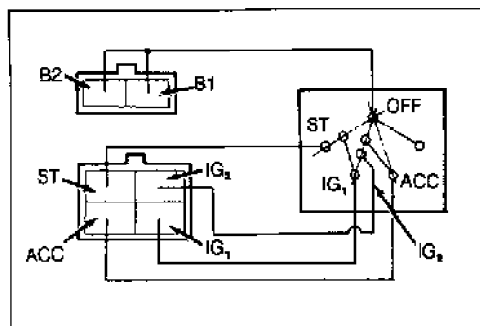
Fig. 26: Testing Ignition Switch Continuity (MX-6, 626 & 929)
Courtesy of Mazda Motors Corp.



Terminal		B1	B2	ACC	IG1	IG2	ST	K1	K2	+B	COIL
Key position	Key in							○—○	○—○	○—○	○—○
	Key out									○—○	○—○
ACC		○—○		○—○				○—○	○—○	○—○	○—○
ON		○—○	○—○	○—○	○—○	○—○		○—○	○—○	○—○	○—○
START		○—○	○—○		○—○		○—○	○—○	○—○	○—○	○—○

○—○: Indicates continuity.

Fig. 27: Testing Ignition Switch Continuity (1992 929)
Courtesy of Mazda Motors Corp.



Position \ Terminal	B1	B2	ACC	IG1	IG2	ST	K1	K2
ACC	○		○				○	○
ON	○	○	○	○	○		○	○
ST	○	○		○		○	○	○
LOCK								○

○—○: Indicates continuity.

Fig. 28: Testing Ignition Switch Continuity (Protege & 323)
Courtesy of Mazda Motors Corp.

Navajo

1) Lower steering column, and disconnect ignition switch connector. Test switch continuity using a self-powered test light or ohmmeter. Continuity should not exist between chassis ground and any terminal, except circuits No. 41 and 977 in START position only. See Fig. 29.

2) See IGNITION SWITCH CONTINUITY (NAVAJO) table for terminal identification. If continuity is not as specified, replace ignition switch.

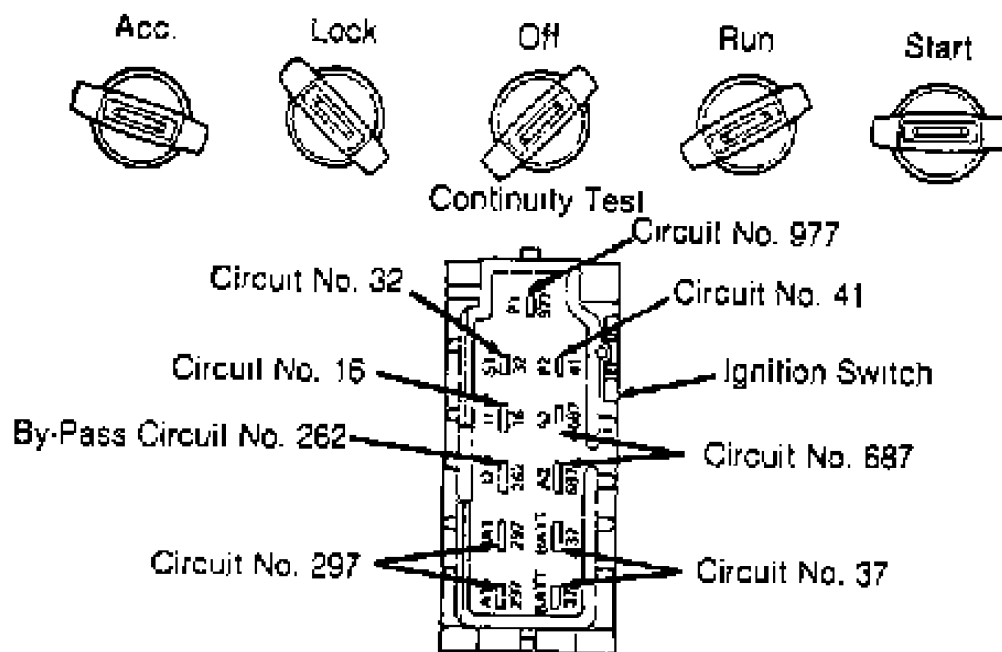


Fig. 29: Testing Ignition Switch Continuity (Navajo)
Courtesy of Ford Motor Co.

IGNITION SWITCH CONTINUITY (NAVAJO)

Switch Position	Continuity Between Terminals
Accessory	37 & 297
Lock	No Continuity
Off	No Continuity
Run	37, 16, 687 & 297
Start	977, 41 & Ground; 37, 32, 262 & Possibly 16

TURN SIGNAL SWITCH

Except Navajo
See COMBINATION SWITCH under TESTING.

Navajo (Power Test)

1) Place ignition switch in RUN position. Connect test light to ground. Touch probe to turn signal or combination switch feed terminal (circuit No. 44, Light Blue wire). See Fig. 5. If test light flashes, power circuit to turn signal switch is okay.

2) If test light does not flash, replace flasher or check for open circuit No. 44 (Light Blue wire), and repair as necessary. See COMBINATION SWITCH CONTINUITY (NAVAJO) table.

WIPER SWITCH

Front
See COMBINATION SWITCH under TESTING.

Rear
See appropriate WIPER/WASHER SYSTEMS article in SAFETY EQUIPMENT.

ADJUSTMENTS

IGNITION SWITCH

Navajo

1) Ignition switch is properly adjusted if:

- * In ACCESSORY, accessory circuit is operative and steering wheel is locked. Automatic shift lever cannot be moved.
- * In LOCK, all ignition switch electrical circuits are inoperative and steering wheel is locked. Automatic shift lever cannot be moved.
- * In OFF, all ignition switch electrical circuits are inoperative and steering wheel is unlocked. Automatic shift lever can be moved.
- * In ON (RUN), all ignition switch circuits or accessory circuits are operative except starter circuit and warning light check circuit. Steering wheel is unlocked and automatic shift lever can be moved.
- * In START, only engine ignition, warning light check and starter circuits are operative. Steering wheel is unlocked and automatic shift lever can be moved.

2) Disconnect negative battery cable. Locate ignition switch on top of steering column tube. Remove ignition switch connector. Rotate ignition key back and forth to each side of LOCK position until a 5/64" (2 mm) drill bit can be inserted into ignition switch lock pin hole.

3) Loosen 2 ignition switch mounting nuts, turn switch to LOCK position (feel for detent) and remove ignition key from cylinder. Move switch up or down along column tube. Locate mid position of rod

lash. Tighten 2 mounting nuts to 40-65 INCH lbs. (4.51-7.34 N.m).

4) Remove drill bit. Plug in electrical connector. Ensure all accessories are deactivated when switch is in OFF position, and ensure all modes function correctly.

STEERING WHEEL & HORN PAD R & I

WARNING: On Miata and RX7 Convertible, wait about 10 minutes after disabling air bag system before servicing. Air bag system voltage is maintained for about 10 minutes after system is disabled. Failure to wait 10 minutes before servicing system may cause accidental air bag deployment and possible personal injury. See DISABLING & ACTIVATING AIR BAG.

Removal & Installation

1) Set front wheels in straight-ahead position. Remove horn button. Disconnect negative battery cable. On Miata and 929, remove air bag module. See DISABLING & ACTIVATING AIR BAG. Remove horn button cover retaining screws from rear of steering wheel.

2) Disconnect horn electrical connector. Remove horn button assembly. Mark steering wheel and shaft for reassembly reference. Remove steering wheel nut or bolt and damper (if equipped).

3) Remove steering wheel. To install, reverse removal procedure. Align reference marks. Install retaining nut. See TORQUE SPECIFICATIONS table at end of article. Ensure damper is aligned with holes of steering wheel.

4) On Miata & RX7 Convertible, set front wheels in straight-ahead position. Turn clockspring connector clockwise until it stops (DO NOT force). Return connector 2 3/4 turns counterclockwise. If necessary, rotate clockspring connector further to align marks on connector and outer housing.

HAZARD SWITCH R & I

Removal & Installation (B2200, B2600i & Navajo)

Remove combination switch. Hazard switch cannot be removed from combination switch. If necessary, replace combination switch. To install, reverse removal procedure.

Removal & Installation (All Others)

On Miata, remove center dash console. On MPV, remove right side dash switch cluster. On MX-6 and 626, push hazard switch from behind dash. On Protege, 323 and 929, remove front dash cover. On RX7, remove cluster switch assembly from dash. On all models, remove hazard switch. To install, reverse removal procedure.

COMBINATION SWITCH R & I

Removal & Installation (Except Navajo)

Disconnect negative battery cable. Remove steering wheel and horn pad. On Miata, RX7 Convertible and 929, remove air bag module. See DISABLING & ACTIVATING AIR BAG. On all models, remove steering column covers. Remove screws attaching combination switch to steering column. Disconnect electrical connector. Remove combination switch. See Fig. 30. To install, reverse removal procedure.

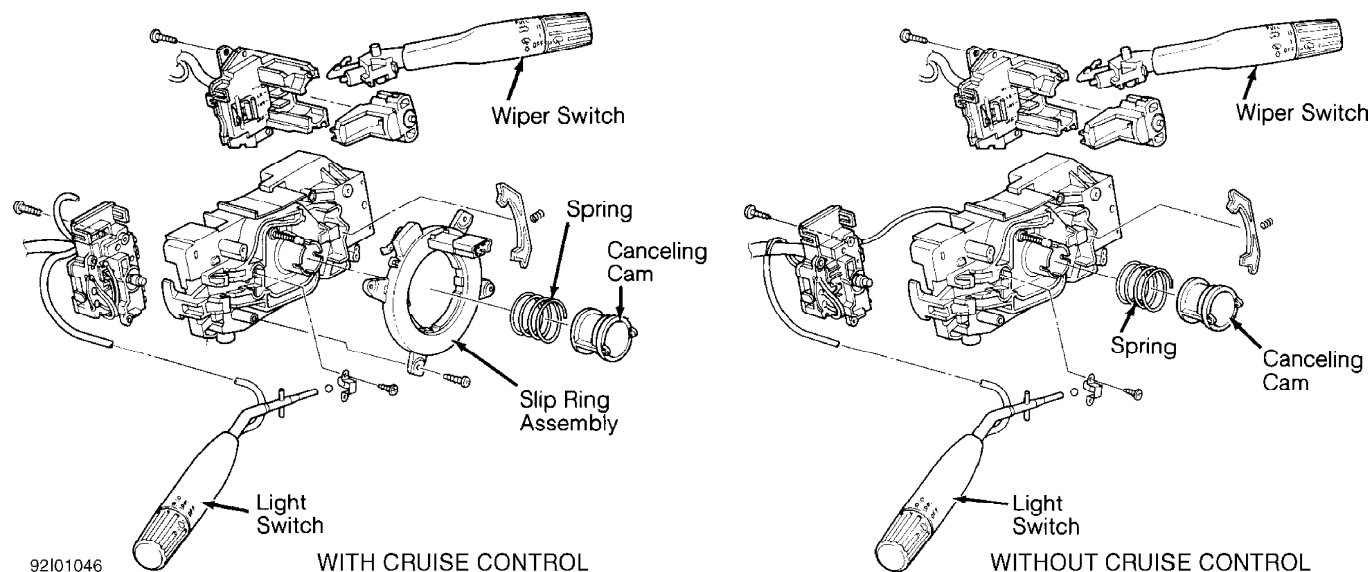


Fig. 30: Removing Combination Switch (323 Shown; Others Are Similar)
Courtesy of Mazda Motors Corp.

Removal & Installation (Navajo)

Disconnect negative battery cable. Remove steering column shroud and 2 screws attaching combination switch to steering column. Disconnect electrical connector. Remove combination switch. To install, reverse removal procedure.

LOCK CYLINDER R & I

NOTE: To remove lock cylinder on all models except Navajo, see IGNITION SWITCH under REMOVAL & INSTALLATION.

Removal (Navajo)

1) Disconnect negative battery cable. Remove steering wheel. See STEERING WHEEL & HORN PAD under REMOVAL & INSTALLATION. Remove steering column covers and connector from key buzzer switch. Use a 1/8" (3.17 mm) drill bit to drill out retaining pin. DO NOT drill deeper than 1/2" (12.7 mm).

2) Place a chisel at base of lock cylinder cap. Using a hammer, strike chisel with sharp blows to break cap away from lock cylinder. Using a 3/8" (9.52 mm) drill bit, drill out center of lock cylinder key slot. Drill down about 1 3/4" (44 mm) until lock cylinder breaks away from base of lock cylinder.

3) Remove metal shavings from lock cylinder housing. Remove snap ring, washer and lock cylinder drive gear. Clean all metal shavings from housing. Carefully inspect housing for damage. If damaged, replace housing.

Installation

1) Install ignition lock drive gear, washer and snap ring. Lubricate cylinder cavity with lock cylinder lubricant. Turn ignition switch to RUN position. Depress retaining pin, and insert new lock cylinder into lock cylinder housing.

2) Before turning ignition switch to OFF position, ensure cylinder is fully seated and aligned into drive gear. Use key to rotate cylinder to ensure correct mechanical operation in all positions.

3) Install electrical connector into key buzzer switch. Connect negative battery cable. Check ignition switch functions, and

ensure column locks when switch is in LOCK position.

IGNITION SWITCH R & I

Removal & Installation (Except Navajo)

- 1) Disconnect negative battery cable. Remove steering column covers. Remove screws mounting ignition switch to steering column.
- 2) Disconnect ignition switch wiring. Remove ignition switch. To install, reverse removal procedures.

Removal & Installation (Navajo)

- 1) Disconnect negative battery cable. Remove steering wheel. See STEERING WHEEL & HORN PAD under REMOVAL & INSTALLATION. Remove lower cover. On tilt columns, remove tilt lever and collar. On all columns, remove upper cover. On A/T models, remove selector indicator cable by removing screw and plastic plug from column casting.
- 2) On all models, remove 5 bolts holding toe plate at bottom of column. Support column, and remove bolts holding break-away bracket to pedal support bracket. Turn column to right. Remove electrical connector from ignition switch. Remove bolts holding switch, and remove switch.
- 3) Before ignition switch is installed, turn ignition lock cylinder to LOCK position. To preset ignition switch, place a wire in opening in side of switch, pinning switch in LOCK position. Place actuation rod on switch and switch on column studs while aligning rod hole with rod. Tighten nuts to 39-63 INCH lbs. (4.5-7.2 N.m).
- 4) Ensure switch is operating smoothly and all modes function correctly. Turn key through each position from LOCK to START. If any position is not correct with key operation, see IGNITION SWITCH under ADJUSTMENTS. To install, reverse removal procedures.

TORQUE SPECIFICATIONS

TORQUE SPECIFICATIONS

Application	Ft. Lbs. (N.m)
Air Bag Module Nuts (Miata & RX7 Convertible)	12-15 (16-20)
Steering Wheel Retaining Bolt (Navajo)	23-33 (31-45)
Steering Wheel Retaining Nut	
Except Navajo	29-36 (39-49)
Navajo	30-42 (41-57)