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2011 MAZDA 3 / Axela Sedan OEM Service and Repair Workshop Manual

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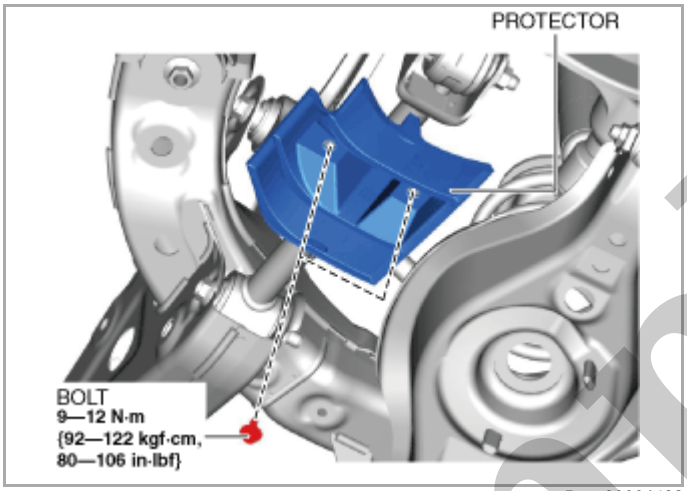
REAR LATERAL LINK REMOVAL/INSTALLATION

SM2897970

id02140080120

1.Remove the wheel and tire. (See WHEEL AND TIRE REMOVAL/INSTALLATION.)

2.Remove the protector. (With protector)



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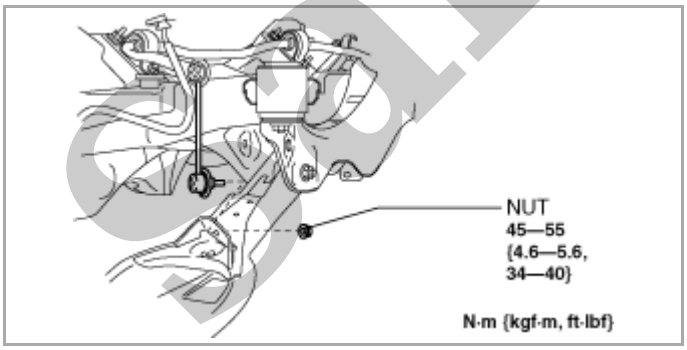
3.Disconnect the rear stabilizer control link from the rear lower arm.



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4.Remove in the order indicated in the table.

5.Install in the reverse order of removal. (See Suspension Links Installation Note.)

6.When replacing the rear lateral link, inspect the wheel alignment and adjust it if necessary. (See REAR WHEEL ALIGNMENT.)

REAR SHOCK ABSORBER REMOVAL/INSTALLATION

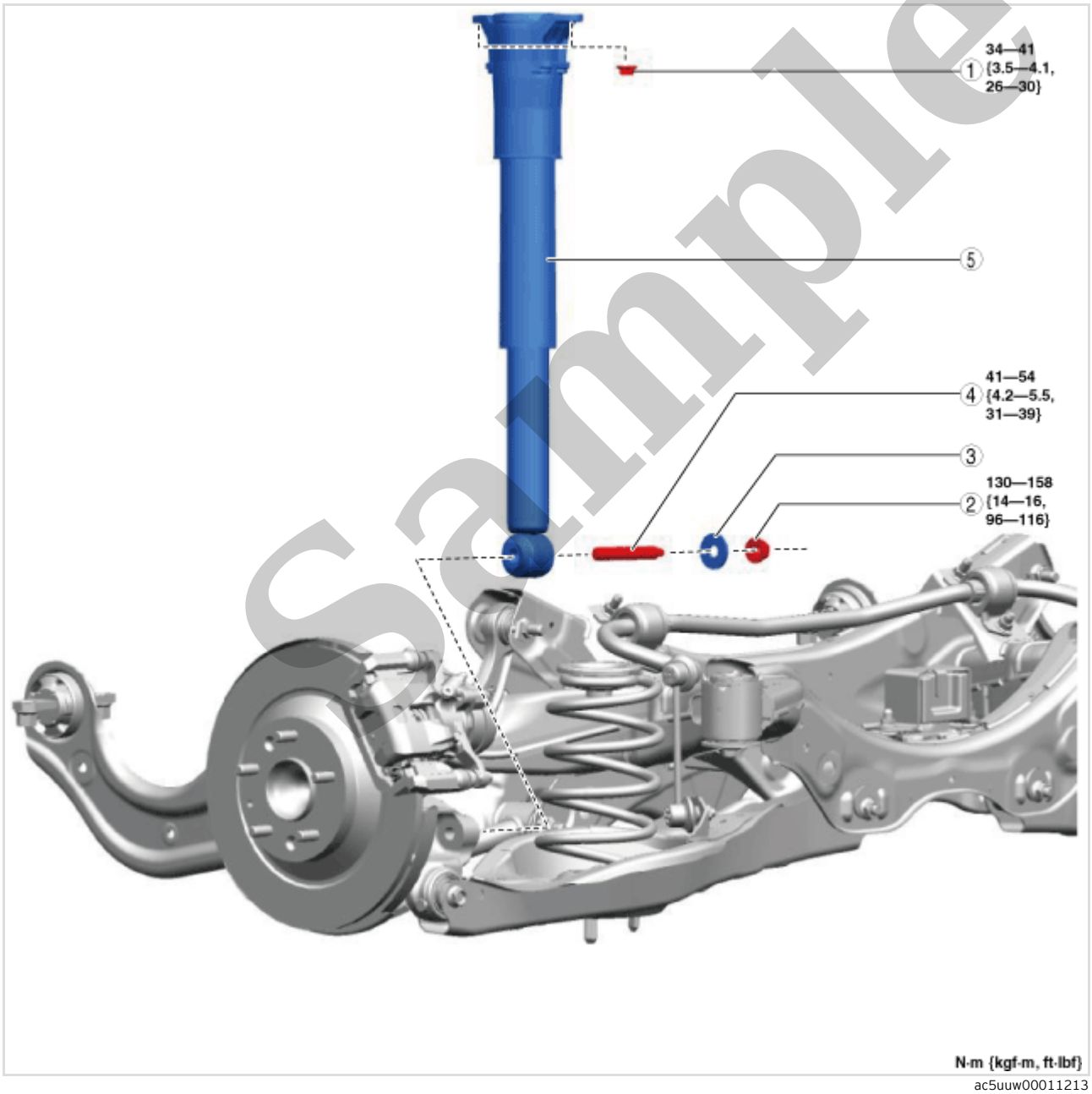
SM2897971

id02140080130

1.Remove the wheel and tire. (See WHEEL AND TIRE REMOVAL/INSTALLATION.)

2.Remove in the order indicated in the table.

3.Install in the reverse order of removal. (See Suspension Link Installation Note.)



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1	Rear shock absorber upper nut (See Rear Shock Absorber Upper Nut Removal Note.) (See Rear Shock Absorber Upper Nut Installation Note.)

Caution

• Assemble the gasket to the correct position. If the rear shock absorber is installed with the gasket deviated or with a gap, it could cause deterioration or abnormal noise of the rear shock absorber, or cause water to penetrate into the cabin.

3.Install the rear shock absorber.

REAR SHOCK ABSORBER DISASSEMBLY/ASSEMBLY

SM2897974

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Special service tool (SST)

49 G027 006 Installer		49 H027 002 Bearing remover	

Replacement part

Piston rod nut
Quantity: 1
Location of use: Rear shock absorber

Oil and Chemical Type

Rubber grease
Type: NIPPON GREASE RUBBER GREASE

1.Remove the rear shock absorber. (See REAR SHOCK ABSORBER REMOVAL/INSTALLATION.)

2.Remove in the order indicated in the table.

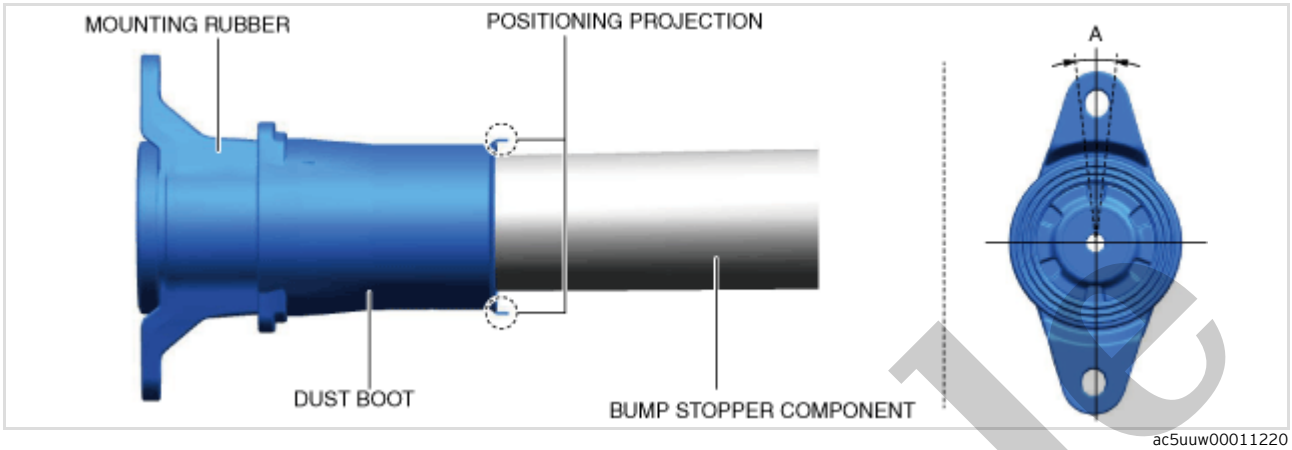
3.Install in the reverse order of removal.

Standard

349.9–356.9 mm {13.78–14.05 in}

Dust Boot Installation Note

1.Assemble the dust boot to position A shown in the figure.



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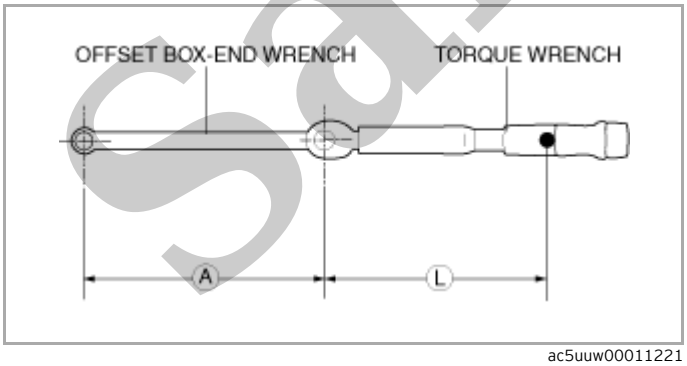
Standard

A: 0°±6.5°

Piston Rod Nut Installation Note

1.Install the offset box-end wrench to the torque wrench as shown in the figure, set it on the piston rod nut, and measure dimensions A and L shown in the figure.



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2.Tighten the piston rod nut after calculating the tightening torque using the following formula.

Suspension

Item	Specification
Front lower arm ball joint stud starting torque	17 N·m {1.7 kgf·m, 12 ft·lbf} max.
Front lower arm ball joint stud rotational torque	3.2 N·m {33 kgf·cm, 28 in·lbf} max.
Front stabilizer control link ball joint starting torque	0.8–3.5 N·m {8.2–35 kgf·cm, 7.1–30 in·lbf}
Rear stabilizer control link ball joint starting torque	0.8–3.5 N·m {8.2–35 kgf·cm, 7.1–30 in·lbf}

Standard tire and wheel (US, Canada and Israel)

Item			Specification	
Wheel	Size		17 × 7J	19 × 7J
	Inset	(mm {IN})	45 {1.8}	
	Pitch circle diameter	(mm {IN})	114.3 {4.50}	
	Material		Aluminum alloy	
Tire	Size		P225/65R17 100H	P225/55R19 99V
	Air pressure (kPa {PSI})	Front	230 {34}	240 {35}
		Rear	230 {34} *4	240 {35} *4
	Remaining tread	(mm {IN})	1.6 {0.063} min.	
Wheel and tire	Lug nut tightening torque	(N·m {kgf·m, ft·lbf})	108–147 {12–14, 80–108}	
	Wheel and tire runout (mm {IN})	Radial direction	1.5 {0.059} max.	
		Lateral direction	2.0 {0.079} max.	
	Wheel imbalance	(g {OZ})	Adhesive-type *1: 13 {0.46} max. Knock-type *2 *3: 8 {0.3} max.	Adhesive-type *1: 12 {0.42} max. Knock-type *2 *3: 7 {0.2} max.

*1:Do not install four or more weights. Do not affix the weights such that they are parallel to each other or overlapping. The total weight of all the weights is 160 g {5.64 oz} or less.

*2:Do not install three or more weights. One weight is 60 g {2.1 oz} or less and two weights are 100 g {3.53 oz} or less.

*3:If a weight of 125 g {4.41 oz} is to be added, divide the weight into two pieces and affix.

*4:When towing a trailer, make sure that the tire pressures of the rear tires are at least 20 kPa (0.2 bar, 2.9 psi) higher than the recommended tire pressures indicated on the tire pressure chart on the driver's door frame.

Standard tire and wheel (Except US, Canada and Israel)

Item				Specification	
Wheel	Size			17 × 7J	19 × 7J
	Inset		(mm {IN})	45 {1.8}	
	Pitch circle diameter		(mm {IN})	114.3 {4.50}	
	Material			Aluminum alloy	
Tire	Size			225/65R17 102V	225/55R19 99V
	Air pressure (kPa {bar <psi>})	Front	Up to 3 persons	230 {2.3, <33>}	250 {2.5, <36>}
			Full load	260 {2.6, <38>}	260 {2.6, <38>}
		Rear	Up to 3 persons	230 {2.3, <33>} *4	250 {2.5, <36>} *4
			Full load	280 {2.8, <41>} *4	290 {2.9, <42>} *4
	Remaining tread		(mm {IN})	1.6 {0.063} min.	

Snapshot data item	Unit		Data contents	Data read/use method	Corresponding data monitor items
IC_VPWR	V		Instrument cluster power supply voltage	• The AWD control module constantly receives the power supply voltage value of the instrument cluster sent via CAN signal from the instrument cluster. • If a DTC is detected, the AWD control module records the power supply voltage of the instrument cluster when the DTC was detected, and it is displayed in the M-MDS.	VPWR *1
IG-ON_TIMER	hh:mm:ss *2		Elapsed time since ignition was switched ON (engine off or on) **Note** **• The instrument cluster records the elapsed time since the ignition was switched ON (engine off or on).**	• The AWD control module constantly receives the elapsed time since the ignition was switched ON (engine off or on) sent via CAN signal from the instrument cluster. • If a DTC is detected, the AWD control module records the elapsed time since the ignition was switched ON (engine off or on) when the DTC was detected, and it is displayed in the M-MDS.	–
PWR_MODE_KEY	Key Out/ Key Recently Out/ Key Approved(Position 0)/ Post Accessory (Position 0)/ Accessory (Position 1)/ Post Ignition (Position 1)/ Ignition On (Position 2)/ Running (Position 2)/ Running - Starting In Progress (Position 2)/ Crank (Position 3)		• Key Out: Ignition switched off • Key Recently Out (Position 0): Elapsed time within 3 s since ignition was switched off • Accessory (Position 1): Ignition is switched to ACC • Post Ignition (Position 2): Elapsed time within 3 s since ignition was switched ON (engine off or on) • Ignition On (Position 2): Ignition switched ON (engine off) • Running (Position 2): Ignition switched ON (engine on) • Running - Starting: Cranking condition	• The AWD control module constantly receives the ignition switch status sent via CAN signal from the instrument cluster. • If a DTC is detected, the AWD control module records the ignition switch status when the DTC was detected, and it is displayed in the M-MDS.	–
TOTAL_DIST	km	Miles	Accumulated total traveled distance from completion of vehicle until AWD control module detects DTC (Odometer value in instrument cluster)	The total traveled distance from which the AWD control module detects DTCs to the present can be calculated by performing the following procedure. 1. Verify the odometer value in the instrument cluster. 2. Verify the snapshot data item TOTAL_DIST. 3. Subtract 2 from 1.	–

DTC TABLE [AWD CONTROL MODULE]

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×: Applicable−: Not applicable

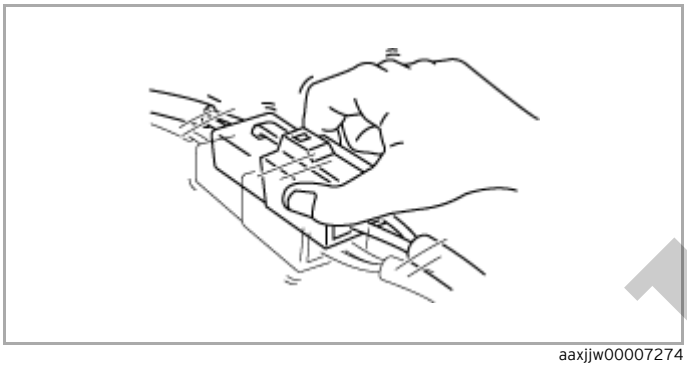
DTC M-MDS	AWD warning light illumination status	Diagnosis system component	Fail-safe	Drive cycle	Self test type*1	Memory function	Page
P164D:00	Illuminated	Configuration data not recorded	×	−	C	×	(See DTC P164D:00 [AWD CONTROL MODULE].)
P182F:00	Flashed	Excessive load detected on AWD part	×	−	C	×	(See DTC P182F:00 [AWD CONTROL MODULE].)
P187B:00	Illuminated	A tire diameter is outside of the allowable range	×	−	C	×	(See DTC P187B:00 [AWD CONTROL MODULE].)
P1886:00	Illuminated	Configuration data not recorded	×	−	C	×	(See DTC P1886:00 [AWD CONTROL MODULE].)
P1887:11	Illuminated	AWD solenoid circuit	×	−	C	×	(See DTC P1887:11/P1887:12/P1887:13/P1887:14 [AWD CONTROL MODULE].)
P1887:12	Illuminated	AWD solenoid circuit	×	−	C	×	
P1887:13	Illuminated	AWD solenoid circuit	×	−	C	×	
P1887:14	Illuminated	AWD solenoid circuit	×	−	C	×	
P1888:11	Illuminated	Differential oil temperature sensor circuit	×	−	C	×	(See DTC P1888:11/P1888:15 [AWD CONTROL MODULE].)
P1888:15	Illuminated	Differential oil temperature sensor circuit	×	−	C	×	
P188A:00	Flashed	Differential oil temperature is out of range	×	−	C	×	(See DTC P188A:00 [AWD CONTROL MODULE].)
U0001:88	−	CAN system Communication error	×	−	C	×	(See DTC U0001:88/U0100:00/U0101:00/U0121:00 [AWD CONTROL MODULE].)
U0100:00	−	Communication error to PCM	×	−	C	×	
U0101:00	−	Communication error to TCM	×	−	C	×	
U0121:00	−	Communication error to DSC HU/CM	×	−	C	×	
U0401:68	−	Abnormal message from PCM	×	−	C	×	(See DTC U0401:68 [AWD CONTROL MODULE].)

*1:(See CONTROLLER AREA NETWORK (CAN) MALFUNCTION DIAGNOSIS FLOW [TYPE-A (SKYACTIV-G 2.5)].) (See CONTROLLER AREA NETWORK (CAN) MALFUNCTION DIAGNOSIS FLOW [TYPE-A (SKYACTIV-G 2.5T, SKYACTIV-D 2.2)].) (See CONTROLLER AREA NETWORK (CAN) MALFUNCTION DIAGNOSIS FLOW [TYPE-B].)

Action for Non-repeatable Malfunction

• If the malfunction does not recur, verify the malfunction cause by performing the following actions:

— Based on the repair order form, attempt to drive the vehicle or perform tests to replicate the malfunction, record the data at that time, and detect the malfunction cause.
— Shake the wiring harness or connector of the electrical component which is suspected to be the cause of the malfunction, and inspect for occurrence of any malfunction or DTCs.



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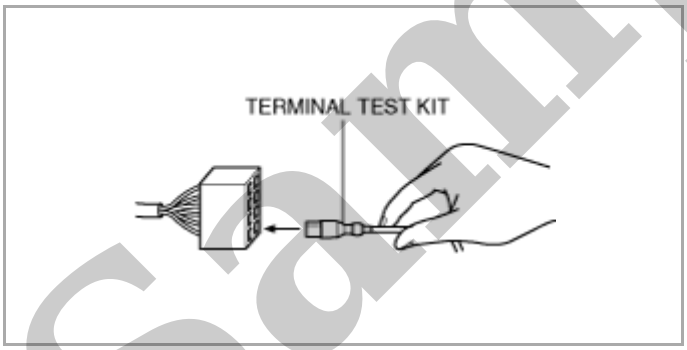
— Inspect the female terminals on the connector of the electric component which is suspected to be the cause of the malfunction for poor connection. (See ELECTRICAL SYSTEM.)

Note

• Tool used (Reference): terminal test kit (49US-15-KIT)



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