FOREWORD [SKYACTIV-D 2.2]

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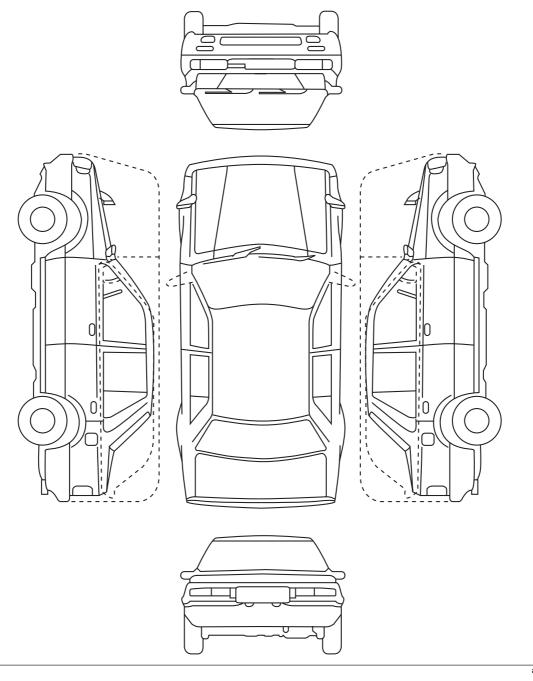
• If there is any vehicle malfunction complaint lodged by a customer, perform malfunction diagnosis according to the troubleshooting procedure.

Troubleshooting Procedure MALFUNCTIONING VEHICLE ARRIVES ACCURATELY VERIFY CUSTOMER COMPLAINT VERIEV REPAIR ORDER AND SYMPTOM IN REPAIR ORDER FORM. BROWSE TECHNICAL INFORMATION AND SEARCH VERIFY SERVICE INFORMATION. SERVICE INFORMATION. DOES ANY SERVICE VERIFY MALFUNCTION USING MALFUNCTION YES INFORMATION MATCH VERIFICATION PROCEDURE IN SERVICE INFORMATION. SYMPTOM AND CAUSE? AND REPAIR ACCORDING TO SERVICE INFORMATION. NO DOES NO MALFUNCTION SEE ACTION FOR NON-REPEATABLE MALFUNCTION. RECUR? YES VERIFY MALFUNCTION SYMPTOM. VERIFY MALFUNCTION SYMPTOM ON ACTUAL VEHICLE. SEE "CAN MALFUNCTION DIAGNOSIS FLOW"*1 AND PERFORM PERFORM CAN MALFUNCTION DIAGNOSIS. DIAGNOSIS FOR CAN RELATED MALFUNCTION. INSPECT FOR ANY DTCs USING M-MDS. PERFORM DTC INSPECTION. YES SEE ON-BOARD DIAGNOSIS SYSTEM AND PERFORM ARE ANY DTCs **OUTPUT?** DTC TROUBLESHOOTING. NO USE M-MDS DATA MONITOR FUNCTION TO PID/DATA MONITOR PERFORM INSPECTION WHILE MONITORING INSPECTION INPUT/OUTPUT SIGNALS. SYMPTOM TROUBLESHOOTING USE M-MDS FUNCTIONS ON THE USE M-MDS SIMULATION FUNCTION TO INSPECT RIGHT TO PERFORM DIAGNOSIS FOR INCOMPLETE ELECTRICAL CIRCUIT OR ACTIVE COMMAND EFFICIENTLY. MODES INSPECTION VALVE STICKING WHILE OPERATING EACH OUTPUT PART WITH THE IGNITION SWITCHED ON. VERIFY MALFUNCTION IS REPAIRED. SERVICE COMPLETED

*1 : CONTROLLER AREA NETWORK (CAN) MALFUNCTION DIAGNOSIS FLOW [SKYACTIV-D 2.2 (L.H.D.)]/ CONTROLLER AREA NETWORK (CAN) MALFUNCTION DIAGNOSIS FLOW [SKYACTIV-D 2.2 (R.H.D.)]

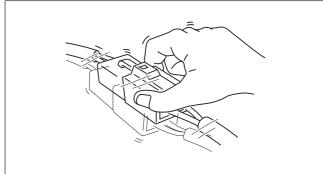
Repair order form and malfunction symptom check sheet				Repair order Check Date/time			with customer Diagnosis			Repair		Explanation to customer			
					In-charge										
Customer	r statement (When?	What? What time	(s)? Wh	ere it occurs. \	Narning lig	ht illumination?	Can anyone repl	licate problem?)							
l				,											
															
					Τ										
Vehicle bo	ody number:				Registrati	on date:			Date of malfunction of	ccurrence:				Odometer readin	ig km {mph}
Engine (S	SOHC/DOHC/RE/DE	i) (Cab /EGI/ Tu	rbo/ Mille	er cycle/ LPG/	Direct inject	ction)				Transmiss	sion (l	VIT/HAT	/EC-AT/CVT)		
	Environmental co	onditions							Driving con	ditions					
Weather	Ambient temp.	Drive scenario	Grade	Occurrence frequency	Fuel	Warm-up condition	Driving operation	Driving posture	Load	Accelerator opening	Shift	t position	Eng RPM	Vehicle speed	Pattern of use
Sunny	-10°C {14°F} or less	Depart/arrive	Flat	Once/day	Regular	Cold	When starting	Vehicle stopped	Headlights on	angle 0/8			Idle	5 km/h {3 mph}	Manta 9/
Cloudy	-10 C {14 F} or less -10— 0°C {14—32°F} 0—10°C {32—50°F}	Traffic jam (city) Standard city street	Upgrade Down		High Oct. Diesel	Half-warmed Fully warmed	After starting Re-starting	Straight-on driving Reversing		1/8 2/8		1 2	Less than 1,000 Less than 1,500	10 km/h {6.2 mph} 20 km/h {12 mph}	Work% Minor use%
Snow High wind	10—15°C {52—50°F} 10—15°C {50—59°F} 15—20°C {59—58°F}	Suburbs Highway	grade N/A	Many times/day Once/week	LPG Other	N/A Other	(min. after stopped)	Right turn Left turn	AUTO *C{*F} Blower: 1 step	3/8 4/8			Less than 2,000 Less than 2,500	30 km/h {19 mph} 40 km/h {25 mph}	Trips% Other%
Wind gusts N/A		Uneven road	Other	2-3 times/week 4-5 times/week	Other	Other	Idling Racing	Other	Blower: 2 steps Blower: 3 steps	5/8 6/8	MT	5	Less than 3,000 Less than 4,000	50 km/h {31 mph} 60 km/h {37 mph}	Between ENG. start→Stop:
Other	30—35°C {86—95°F} 35—4{0°C {95—104°F}	Dry road surface Wet road surface		Once/month 2-3 times/week	Fuel gauge	Water temp.	Accel. from stop Normal driving		Blower: 4 steps Power steering lock to lock	7/8 8/8		N	Less than 4,500 Less than 5,000	70 km/h {43 mph} 80 km/h {50 mph}	Distance, time Approx km
	40—45°C {104—113°F} 45°C {113°F} or more	Snow bound road		4-5 times/month Other	F —	gauge H——	Deceleration Braking		Rear defrost on Wipers on	0,0			Less than 5,500 Less than 6,000	90 km/h {56 mph} 100 km/h {62.1 mph}	Approx Hrs.
	N/A Other	Other					Soft braking Clutch disengage		Audio on Other			Р	Less than 6,500 7,000 or more	110 km/h {68.4 mph} 120 km/h {74.6 mph}	No. of occupants: Load condition kg
							Sudden accel. Light accel.					R N	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	130 km/h {80.8 mph} 140 km/h {87 mph}	Other
					E	c	Shifting (km/h {mph} →					D S		150 km/h {93.2 mph} 160 km/h {99.4 mph}	
							km/h (mph)) Other				AT	L Hold M			
												(km/h (mph})			
												(IIIPII)			
DTC, measu	red data (fuel pressure, int	ake manifold vacuum,	throttle ser	nsor electromotive	force, air flow	v electromotive force,	, other), maintenance,	I , repair, accident hist	I ory, installation of commercia	l devices	ш				
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Dealer nan	ie:		Vehicle body n	umber:		Odometer reading:			
Vehicle-in o	late:		Estimated repa	air completion d	ate:	Person in-charge:			
Subject (Co	ontent):								
Audio mem	ory								
	1 2		3 4		5	6	Fuel level		
FM1							E , , F		
FM2									
AM							1		

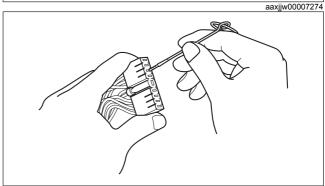


Action for Non-repeatable Malfunction

- 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 (such as PCM circuit voltage) 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 malfunction or occurrence of any DTCs.



Inspect the female terminals on the connector of the electric component which is suspected to be the cause of the malfunction for poor connection.



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