FOREWORD [SKYACTIV-D 2.2]

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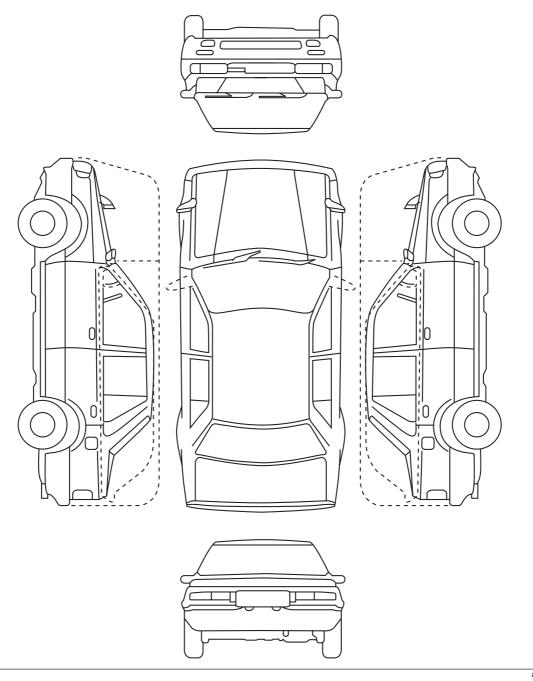
• If there is any vehicle malfunction complaint lodged by a customer, perform malfunction diagnosis according to the troubleshooting procedure.

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 ACTIVE COMMAND FOR INCOMPLETE ELECTRICAL CIRCUIT OR 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.)]

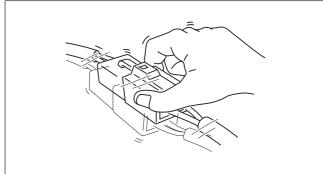
Repair order form and malfunction symptom check sheet				sheet	Repair order Check Date/time In-charge			with customer Diagnosis		nosis	Repair		Explanation to customer	
Customer	r statement (When?	What? What time	(s)? Whe	ere it occurs. V		•	Can anyone repl	licate problem?)						
Vehicle bo	ody number:				Registrati	ion date:			Date of malfunction of	ccurrence:			Odometer reading	ng km {mph}
Engine (S	SOHC/DOHC/RE/DE) (Cab /EGI/ Tur	rbo/ Mille	ər cycle/ LPG/[Direct injed	ction)				Transmission	n (MT/HAT	/EC-AT/CVT)		
	Environmental co	onditions							Driving con					
Weather	Ambient temp.	Drive scenario	Grade	Occurrence frequency	Fuel	Warm-up condition	Driving operation	Driving posture	Load	Accelerator opening angle	Shift position	Eng RPM	Vehicle speed	Pattern of use
Sunny Cloudy Rain Snow High wind Wind gusts N/A Other	-10°C (14°F) or less -10 — 0°C (14—32°F) 0—10°C (32—50°F) 10—15°C (50—59°F) 15—20°C (59—58°F) 20—25°C (68—77°F) 25—30°C (77—86°F) 30—35°C (86—95°F) 35—4(0°C (95—104°F) 40—45°C (104—113°F) 45°C (113°F) or more N/A Other	Depart/arrive Traffic jam (city) Standard city street Suburbs Highway Uneven road Dry road surface Wet road surface Snow bound road lcy road Other	Flat Upgrade Down grade N/A Other	Once/day 2-3 times/day 4-5 times/day Many times/day Once/week 2-3 times/week 4-5 times/week 4-5 times/woeh 4-5 times/month 4-5 times/month Other	Regular High Oct. Diesel LPG Other	Cold Half-warmed Fully warmed N/A Other Water temp. gauge H C	When starting After starting Re-starting (min. after stopped) Idling Racing Racing Accel. from stop Normal driving Deceleration Braking Soft braking Clutch disengage Sudden accel. Light accel. Shifting (km/h {mph} → km/h {mph}) Other	Vehicle stopped Straight-on driving Reversing Right turn Left turn Other	Headlights on Exterior lights on A/C on AUTO 'C(F) Blower: 1 step Blower: 2 steps Blower: 3 steps Blower: 4 steps Power steering lock to lock Rear defrost on Wipers on Audio on Other	6/8 7/8 8/8	1 2 3 4 4 5 6 N R R P R N D D S L Holdd M M (km/h) (km/h) (km/h)	Idle Less than 1,000 Less than 1,500 Less than 2,500 Less than 2,500 Less than 4,500 Less than 4,500 Less than 4,500 Less than 5,500 Less than 6,000 Less than 6,000 Less than 6,000 Cess than 6,000 Less than 6,500 7,000 or more	5 km/h (3 mph) 10 km/h (6.2 mph) 20 km/h (12 mph) 30 km/h (14 mph) 40 km/h (25 mph) 50 km/h (31 mph) 60 km/h (37 mph) 70 km/h (43 mph) 80 km/h (50 mph) 90 km/h (56 mph) 100 km/h (68.4 mph) 110 km/h (68.4 mph) 120 km/h (74.6 mph) 130 km/h (80.8 mph) 130 km/h (80.8 mph) 140 km/h (87 mph) 150 km/h (93.2 mph) 160 km/h (93.2 mph)	Work% Minor use% Trips% Other% Between ENG. start→Stop: Distance, time Approx km Approx Hrs. No. of occupants: Load condition kg Other
DTC, measu	red data (fuel pressure, int	ake manifold vacuum,	throttle ser	nsor electromotive	force, air flow	r electromotive force,	other), maintenance,	, repair, accident hist	tory, installation of commercia	l devices				

Dealer nan	ne:		Vehicle body n	umber:		Odometer reading:			
Vehicle-in o	date:		Estimated repa	air completion d	ate:	Person in-charge:			
Subject (Co									
Audio mem	iory	0	0	4		0	Fuel level		
	I	2	3	4	5	6	i del level		
FM1							E F		
FM2									
AM									

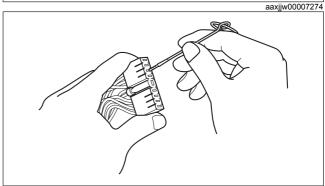


Action for Non-repeatable Malfunction

- 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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