

NO.28 A/C DOES NOT WORK SUFFICIENTLY [SKYACTIV-D 2.2]

id0103g1899500

28	A/C DOES NOT WORK SUFFICIENTLY
DESCRIPTION	<ul style="list-style-type: none"> A/C compressor magnetic clutch does not engage when A/C switch is turned on.
POSSIBLE CAUSE	<ul style="list-style-type: none"> PCM DTC is stored. Instrument cluster malfunction (Does not receive A/C request signal from climate control unit or transmit it to PCM) Refrigerant pressure sensor malfunction Improper refrigerant charging amount Seized A/C compressor Climate control unit malfunction (A/C switch malfunction or climate control unit does not determine A/C request or transmit A/C request signal) Open circuit in wiring harness between magnetic clutch terminal A and body ground A/C relay malfunction

Diagnostic Procedure

STEP	INSPECTION	RESULTS	ACTION
1	VERIFY DTC <ul style="list-style-type: none"> Retrieve the PCM, instrument cluster and climate control unit DTCs using the M-MDS. (See ON-BOARD DIAGNOSTIC TEST [SKYACTIV-D 2.2].) (See DTC INSPECTION [INSTRUMENT CLUSTER].) (See DTC DISPLAY [FULL-AUTO AIR CONDITIONER].) Are any DTCs present? 	Yes	Go to the applicable DTC inspection. (See DTC TABLE [SKYACTIV-D 2.2].) (See DTC TABLE [INSTRUMENT CLUSTER].) (See DTC TABLE [FULL-AUTO AIR CONDITIONER].)
		No	Go to the next step.
2	DETERMINE IF MALFUNCTION CAUSE IS A/C RELAY CONTROL SIGNAL OR A/C REQUEST SIGNAL <ul style="list-style-type: none"> Access the PCM PID ACCS using the M-MDS. (See ON-BOARD DIAGNOSTIC TEST [SKYACTIV-D 2.2].) Start the engine and idle it. Turn the ACCS PID to ON from OFF using the M-MDS simulation function. Is the magnetic clutch engaged? 	Yes	Go to the next step.
		No	Go to Step 6.
3	DETERMINE IF MALFUNCTION CAUSE IS REFRIGERANT PRESSURE SENSOR OR OTHER <ul style="list-style-type: none"> Access the PCM PID AC_REQ using the M-MDS. (See ON-BOARD DIAGNOSTIC TEST [SKYACTIV-D 2.2].) Start the engine and idle it. Monitor the AC_REQ PID while turning on and off the air conditioner using the switch on the control panel. Is the AC_REQ PID value normal? (See PCM INSPECTION [SKYACTIV-D 2.2].) 	Yes	Go to the next step.
		No	Go to Step 5.
4	INSPECT REFRIGERANT PRESSURE SENSOR <ul style="list-style-type: none"> Inspect the refrigerant pressure sensor. (See REFRIGERANT PRESSURE SENSOR INSPECTION [MANUAL AIR CONDITIONER].) (See REFRIGERANT PRESSURE SENSOR INSPECTION [FULL-AUTO AIR CONDITIONER].) Is the refrigerant pressure sensor normal? 	Yes	Inspect the following: <ul style="list-style-type: none"> Refrigerant charging amount A/C compressor seized <ul style="list-style-type: none"> If there is any malfunction: <ul style="list-style-type: none"> Repair or replace the malfunctioning part according to the inspection results, then go to Step 8.
		No	Replace the refrigerant pressure sensor, then go to Step 8. (See REFRIGERANT PRESSURE SENSOR REMOVAL/INSTALLATION [MANUAL AIR CONDITIONER].) (See REFRIGERANT PRESSURE SENSOR REMOVAL/INSTALLATION [FULL-AUTO AIR CONDITIONER].)

STEP	INSPECTION	RESULTS	ACTION
5	DETERMINE IF MALFUNCTION CAUSE IS A/C RELAY CONTROL SIGNAL OR MAGNETIC CLUTCH <ul style="list-style-type: none"> Start the engine and idle it. Access the PCM PID ACCS using the M-MDS. (See ON-BOARD DIAGNOSTIC TEST [SKYACTIV-D 2.2].) Turn the ACCS PID to ON from OFF using the M-MDS simulation function. Measure the voltage at the magnetic clutch terminal A (wiring harness-side). Is the voltage 10.5 V or more? 	Yes	Go to the next step.
		No	Go to Step 7.
6	INSPECT IF MALFUNCTION CAUSE IS MAGNETIC CLUTCH OR MAGNETIC CLUTCH GROUND CIRCUIT <ul style="list-style-type: none"> Switch the ignition off. Disconnect the magnetic clutch connector. Inspect for continuity between magnetic clutch terminal A (part-side) and body ground. Is there continuity? 	Yes	Inspect the magnetic clutch. (See MAGNETIC CLUTCH INSPECTION [MANUAL AIR CONDITIONER].) (See MAGNETIC CLUTCH INSPECTION [FULL-AUTO AIR CONDITIONER].) <ul style="list-style-type: none"> If there is any malfunction: <ul style="list-style-type: none"> Replace the magnetic clutch, then go to Step 8.
		No	Inspect the A/C compressor. (poor contact to ground) <ul style="list-style-type: none"> If there is any malfunction: <ul style="list-style-type: none"> Repair or replace the malfunctioning part according to the inspection results, then go to Step 8. If there is no malfunction: <ul style="list-style-type: none"> Replace the A/C compressor, then go to Step 8. (internal circuit open)
7	INSPECT A/C RELAY <ul style="list-style-type: none"> Switch the ignition off. Remove the A/C relay. Inspect the A/C relay. (See RELAY INSPECTION.) Is the A/C relay normal? 	Yes	Go to the next step.
		No	Replace the A/C relay, then go to the next step.
8	Verify the test results. <ul style="list-style-type: none"> If normal, return to the diagnostic index to service any additional symptoms. (See SYMPTOM DIAGNOSTIC INDEX [SKYACTIV-D 2.2].) If a malfunction remains, inspect the related Service Information and perform the repair or diagnosis. <ul style="list-style-type: none"> If the vehicle is repaired, troubleshooting is completed. If the vehicle is not repaired or additional diagnostic information is not available, replace the PCM. (See PCM REMOVAL/INSTALLATION [SKYACTIV-D 2.2].) 		