

## 2021 ASE Correlation Chart

### Heating, Ventilation, and Air Conditioning (HVAC) (A7)

**MLR-** Maintenance & Light Repair

**AST-** Auto Service Technology

**MAST-** Master Auto Service Technology

	<b>Task</b>	<b>MLR</b>	<b>AST</b>	<b>MAST</b>	<b>Text Page #</b>	<b>Task Page #</b>
<b>A. General</b>						
<b>1.</b>	Research vehicle service information, including refrigerant/oil/fluid type, vehicle service history, service precautions, technical service bulletins, and recalls including vehicles equipped with advanced driver assistance systems (ADAS).	P-1	P-1	P-1	212-216	1; 19
<b>2.</b>	Identify heating, ventilation, and air conditioning (HVAC) components and configurations.	P-1	P-1	P-1	55-67	2
<b>3.</b>	Retrieve and record DTCs, OBD monitor status, and freeze frame data; clear codes and data when directed.	P-1	P-1	P-1	215-216	20
<b>4.</b>	Identify steps of an A/C performance test; perform A/C system performance test; interpret results; determine needed action.	P-2 Identify the steps only	P-1	P-1	216	31; 36
<b>5.</b>	Identify abnormal operating noises in the A/C system; determine needed action	P-3 Identify noises only	P-2	P-1	221-222	32

	<b>Task</b>	<b>MLR</b>	<b>AST</b>	<b>MAST</b>	<b>Text Page #</b>	<b>Task Page #</b>
6.	Visually inspect A/C system for signs of leaks; leak test A/C system; determine needed action.	P-1 Inspect only	P-1	P-1	188; 219	34
7.	Identify and interpret heating and air conditioning problems; determine needed action.	P-1 Identify problems only	P-1	P-1	124- 126; 212- 222	14; 31
8.	Identify refrigerant type; select and connect proper gauge set/test equipment record temperature and pressure readings		P-1	P-1	192- 193	33
9.	Inspect condition of refrigerant oil removed from A/C system; determine needed action.		P-2	P-2	196	5; 28
10.	Determine recommended oil and oil capacity for system application.		P-1	P-1	51; 202	4; 5
<b>B. Refrigeration System Components</b>						
1.	Inspect, remove, and/or replace A/C compressor drive belts, pulleys, and tensioners; determine needed action.	P-1 Inspect and replace only	P-1	P-1	37-39	22; 42
2.	Inspect for proper A/C condenser airflow; determine needed action.	P-2	P-1	P-1	187	23
3.	Inspect evaporator housing water drain; perform needed action.	P-1	P-1	P-1	186	39
4.	Inspect, test, and/or service A/C compressor clutch components and/or assembly; determine needed action.		P-2	P-2	35-36	3
5.	Remove, inspect, reinstall and/or replace A/C compressor and mountings; determine recommended oil type and quantity.		P-1	P-1	39-40	4

	<b>Task</b>	<b>MLR</b>	<b>AST</b>	<b>MAST</b>	<b>Text Page #</b>	<b>Task Page #</b>
6.	Remove and inspect A/C system mufflers, hoses, lines, fittings, O-rings, seals, and service valves; perform needed action.		P-2	P-2	200	42
7.	Remove, inspect, and replace receiver/drier or accumulator/drier; determine recommended oil type and quantity.		P-2	P-2	57; 63-65	8
8.	Remove, inspect, and install expansion valve or orifice (expansion) tube.		P-1	P-1	72-74	9
9.	Diagnose A/C system conditions that cause the protection devices (pressure, thermal, and/or control module) to interrupt system operation; determine needed action.		P-2	P-1	34-35	17
10.	Determine procedure to remove and reinstall evaporator; determine required oil type and quantity.		P-2	P-2	223- 225	40
11.	Remove, inspect, reinstall and/or replace condenser; determine required oil type and quantity.		P-3	P-2	71-73	41
<b>C. Heating, Ventilation, and Engine Cooling Systems</b>						
1.	Inspect engine cooling and heater systems hoses and pipes; determine needed action.	P-1	P-1	P-1	116- 117	13; 15; 24
2.	Inspect and test heater control valve(s); perform needed action		P-2	P-2	125	15
3.	Diagnose temperature control problems in the HVAC system related to the engine cooling system, including electric heating; determine needed action.		P-3	P-2	167- 169	14

	<b>Task</b>	<b>MLR</b>	<b>AST</b>	<b>MAST</b>	<b>Text Page #</b>	<b>Task Page #</b>
4.	Determine procedure to remove, inspect, reinstall, and/or replace heater core; properly refill system.		P-2	P-2	128-130	40
<b>D. Operating Systems and Related Controls</b>						
1.	Inspect HVAC system heater ducts, doors, hoses, cabin filters, and outlets; determine needed action.	P-1	P-1	P-1	186	11; 16
2.	Identify the source of HVAC system odors.	P-2	P-2	P-2	220-221	26; 38
3.	Inspect and test HVAC system blower motors, resistors, switches, relays, wiring, and protection devices; determine needed action.		P-1	P-1	87	10
4.	Diagnose A/C compressor control systems; determine needed action.		P-2	P-1	164	3
5.	Diagnose malfunctions in the vacuum, mechanical, and/or electrical components and controls of the HVAC system; determine needed action.		P-2	P-2	68-70; 165; 167-169	16; 17
6.	Inspect, test, remove and/or replace HVAC system control panel; determine needed action.		P-2	P-2	167-169	-
8.	Check operation of automatic HVAC control systems; determine needed action.		P-2	P-2	165-169	18; 19
<b>E. Refrigerant Recovery, Recycling, and Handling</b>						
1.	Demonstrate awareness of the need to recover, recycle, and handle refrigerants using proper equipment and procedures.	P-1	P-1	P-1	191-192	6
2.	Use and maintain refrigerant handling equipment according to equipment manufacturer's standards.		P-1	P-1	191-199	6; 28

	<b>Task</b>	<b>MLR</b>	<b>AST</b>	<b>MAST</b>	<b>Text Page #</b>	<b>Task Page #</b>
<b>3.</b>	Identify A/C system refrigerant; test for sealants; recover, evacuate, and charge A/C system; add refrigerant oil as required		P-1	P-1	191-199; 203-206	28
<b>4.</b>	Recycle, label, and store refrigerant		P-1	P-1	194-199	29