

## 2017 NATEF Correlation Chart

**MLR-** Maintenance & Light Repair

**AST-** Auto Service Technology (Includes MLR)

**MAST-** Master Auto Service Technology (Includes MLR and AST)

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

	Task	Priority	MLR	AST	MAST	Text Page #	Task Page #
<b>A. General: A/C System Diagnosis and Repair</b>							
1.	Identify and interpret heating and air conditioning problems; determine needed action.	P-1		✓	✓	124-126; 212-222	16; 26
2.	Research vehicle service information including refrigerant/oil type, vehicle service history, service precautions, and technical service bulletins.	P-1	✓	✓	✓	212-216	1; 19
3.	Performance test A/C system; identify problems	P-1		✓	✓	216	26
4.	Identify abnormal operating noises in the A/C system; determine needed action	P-1		✓	✓	221-222	27
5.	Identify refrigerant type; select and connect proper gauge set/test equipment record temperature and pressure readings	P-1		✓	✓	192-193	28
6.	Leak test A/C system; determine needed action	P-1		✓	✓	188; 219	29
7.	Inspect condition of refrigerant oil removed from A/C system; determine needed action.	P-2			✓	196	7

8.	Determine recommended oil and oil capacity for system application.	P-1		✓	✓	51; 202	7
9.	Using a scan tool, observe and record related HVAC data and trouble codes	P-3		✓	✓	215- 216	20
<b>B. Refrigeration System Component Diagnosis and Repair</b>							
1.	Inspect, remove and/or replace A/C compressor drive belts, pulleys, and tensioners and visually inspect A/C components for signs of leaks; determine needed action.	P-1	✓	✓	✓	37-39	37
2.	Inspect, test, service and/or replace A/C compressor clutch components and/or assembly; check compressor clutch air gap; adjust as needed.	P-2		✓	✓	35-36	6
3.	Remove, inspect, reinstall and/or replace A/C compressor and mountings; determine recommended oil type and quantity.	P-2		✓	✓	39-40	6
4.	Identify hybrid vehicle A/C system electrical circuits and service/safety precautions	P-2	✓	✓	✓	172- 182	21; 22
5.	Determine need for an additional A/C system filter; perform needed action.	P-3		✓	✓	202	30
6.	Remove and inspect A/C system mufflers, hoses, lines, fittings, O-rings, seals, and service valves; perform needed action.	P-2		✓	✓	200	6
7.	Inspect for proper A/C condenser airflow; determine needed action.	P-1	✓	✓	✓	187	9
8.	Remove, inspect, and replace receiver/drier or accumulator/drier; determine recommended oil type and quantity.	P-2		✓	✓	57; 63-65	10
9.	Remove, inspect, and install expansion valve or orifice (expansion) tube.	P-1		✓	✓	72-74	11

10.	Inspect evaporator housing water drain; perform needed action.	P-1		✓	✓	186	34
11.	. 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			✓	34-35	31
12.	Determine procedure to remove and reinstall evaporator; determine required oil type and quantity.	P-2			✓	223-225	35
13.	Remove, inspect, reinstall and/or replace condenser; determine required oil type and quantity.	P-2			✓	71-73	36
<b>C. Heating, Ventilation, and Engine Cooling Systems Diagnosis and Repair</b>							
1.	Inspect engine cooling and heater systems hoses and pipes; perform needed action.	P-1	✓	✓	✓	116-117	15
2.	Inspect and test heater control valve(s); perform needed action.	P-2		✓	✓	124	16
3.	Diagnose temperature control problems in the heater/ventilation system; determine PCM) to interrupt system operation; determine needed action.	P-2		✓	✓	167-169	17
4.	Determine procedure to remove, inspect, and/or replace heater core.	P-2		✓	✓	128-130	17; 35
<b>D. Operating Systems and Related Controls Diagnosis and Repair</b>							
1.	Inspect and test HVAC system blower motors, resistors, switches, relays, wiring, and protection devices; perform needed action.	P-1		✓	✓	87	12; 14
2.	Diagnose A/C compressor clutch control systems; determine needed action.	P-2			✓	164	5

3.	Diagnose malfunctions in the vacuum, mechanical, and electrical components and controls of the heating, ventilation, and A/C (HVAC) system; determine needed action.	P-2			✓	165; 167- 169	13; 32
4.	Inspect and test HVAC system heater control panel assembly; determine needed action.	P-3			✓	167- 169	13
5.	Inspect and test A/C-heater control cables, motors, and linkages; perform needed action.	P-3			✓	83; 162- 163	13
6.	Inspect HVAC system heater ducts, doors, hoses, cabin filters, and outlets; perform needed action.	P-1	✓	✓	✓	186	18
7.	Identify the source of HVAC system odors.	P-2	✓	✓	✓	220- 221	33
8.	Check operation of automatic or semi-automatic heating, ventilation, and air-conditioning (HVAC) control systems; determine needed action.	P-2			✓	165- 169	20

<b>E. Refrigerant Recovery, Recycling, and Handling</b>							
1.	Perform correct use and maintenance of refrigerant handling equipment according to equipment manufacturer's standards.	P-1		✓	✓	191- 199	8; 23
2.	Identify A/C system refrigerant; test for sealants; recover, evacuate, and charge A/C system; add refrigerant oil as required	P-1		✓	✓	191- 199 203- 206	23; 25
3.	Recycle, label, and store refrigerant	P-1		✓	✓	194- 199	24