



IMMR  
TST  
MTST  
EC-127  
HV-120  
HV-125-BUS  
HV-125-BWP  
HV-126-DC  
HV-126-DM

**A. General**

1. Research vehicle service information, including fluid type, vehicle service history, service precautions, and technical service bulletins.	P-1	P-1	P-1		X	X	X	X	X
2. Identify brake system components and configurations (including air and hydraulic systems, parking brake, power assist, and vehicle dynamic brake systems).	P-1	P-1	P-1	X	X	X	X	X	X
3. Identify brake performance problems caused by the mechanical/foundation brake system (air and hydraulic).	P-1	P-1	P-1	X	X	X	X	X	X
4. Use appropriate electronic service tool(s) and procedures to diagnose problems; check and record diagnostic codes; interpret digital multimeter (DMM) readings; clear diagnostic codes when appropriate.	P-1	P-1	P-1			X	X		

**B. Air Brakes: Air Supply and Service Systems**

1. Inspect, test, repair, and/or replace air supply system components such as compressor, governor, air drier, tanks, and lines; inspect service system components such as lines, fittings, mountings, and valves (hand brake/trailer control, brake relay, quick release, tractor protection, emergency/spring brake control/modulator, pressure relief/safety); determine needed action.	P-1	P-1	P-1		X	X	X		
2. Test gauge operation and readings; test low pressure warning alarm operation; perform air supply system tests such as pressure build-up, governor settings, and leakage; drain air tanks and check for contamination; determine needed action.	P-1	P-1	P-1		X	X	X		
3. Demonstrate knowledge and understanding of air supply and service system components and operations.	P-1	P-1	P-1	X	X	X	X	X	X
4. Inspect air compressor inlet; inspect oil supply and coolant lines, fittings, and mounting brackets; repair or replace as needed.	P-1	P-1	P-1						
5. Inspect and test one-way (single) check valves, two-way (double) check valves, manual and automatic drain valves; determine needed action.	P-1	P-1	P-1		X		X		
6. Inspect and service air drier systems, filters, valves, heaters, wiring, and connectors; determine needed action.	P-1	P-1	P-1		X	X	X		
7. Inspect and test brake application (foot/treadle) valve, fittings, and mounts; check pedal operation; determine needed action.	P-1	P-1	P-1		X	X	X		
8. Inspect air compressor drive gear components (gears, belts, tensioners, and/or couplings); determine needed action.	P-1	P-3	P-3		X	X	X		

**C. Air Brakes: Mechanical/Foundation Brake System**

1. Inspect, test, repair, and/or replace service brake chambers, diaphragms, clamps, springs, pushrods, clevises, and mounting brackets; determine needed action.	P-1	P-1	P-1	X				X	X
2. Identify slack adjuster/brake adjuster type; check free stroke and applied stroke; inspect and lubricate slack adjusters/brake adjusters; perform needed action.	P-1	P-1	P-1					X	X
3. Inspect and lubricate camshafts (S-cams), tubes, rollers, bushings, seals, spacers, retainers, brake spiders, shields, anchor pins, and springs; perform needed action.	P-1	P-1	P-1					X	X
4. Remove brake drum; clean and inspect brake drum and mounting surface; measure brake drum diameter; measure brake lining thickness; inspect brake lining condition; determine needed action.	P-1	P-1	P-1						X
5. Inspect rotor and mounting surface; measure rotor thickness, thickness variation, and lateral runout; determine needed action.	P-1	P-1	P-1					X	
6. Inspect, clean, and adjust air disc brake caliper assemblies; inspect and measure disc brake pads; inspect mounting hardware; perform needed action.	P-1	P-1	P-1					X	
7. Identify concerns related to the mechanical/foundation brake system including poor stopping, brake noise, premature wear, pulling, grabbing, or dragging; determine needed action.		P-1	P-1	X	X	X	X	X	X

**D. Air brakes: Parking Brake System**

1. Inspect, test, and/or replace parking (spring) brake chamber.	P-1	P-1	P-1	X	X	X	X	X	X
2. Inspect, test, and/or replace parking (spring) brake check valves, lines, hoses, and fittings.	P-1	P-1	P-1		X	X	X	X	X
4. Manually release (cage) and reset (uncage) parking (spring) brakes.	P-2	P-2	P-2	X	X	X	X	X	X
5. Identify and test anti-compounding brake function; determine needed action.	P-3	P-2	P-2		X	X	X		

**I. Vehicle Dynamic Brake Systems (Air and Hydraulic): Antilock Brake System (ABS), Automatic Traction Control (ATC) System, and Electronic Stability Control (ESC) System, Automatic Emergency Braking (AEB) System**

1. Observe antilock brake system (ABS) warning light operation including trailer and dash mounted trailer ABS warning light; determine needed action.	P-1	P-1	P-1			X	X		
2. Observe automatic traction control (ATC) and electronic stability control (ETC) warning light operation; determine needed action.	P-1	P-1	P-1			X	X		
3. Test vehicle/wheel speed sensors and circuits; adjust, repair, and/or replace as needed.	P-3	P-1	P-1			X	X		

	IMMR	TST	MTST	EC-127	HV-120	HV-125-BUS	HV-125-BWP	HV-126-DC	HV-126-DM
4. Demonstrate knowledge of Automatic Emergency Braking (AEB) systems.	P-3	P-3	P-3			X	X		
5. Identify stopping concerns related to the vehicle dynamic brake systems: ABS, ATC, and ESC; determine needed action.		P-2	P-2			X	X		
6. Diagnose problems in the vehicle dynamic brake control systems: ABS, ATC, and ESC; determine needed action.		P-3	P-2			X	X		
7. Check and test operation of vehicle dynamic brake system (air and hydraulic) mechanical and electrical components; determine needed action.		P-1	P-1			X	X		
8. Bleed ABS hydraulic circuits.		P-2	P-2						
9. Verify power line carrier (PLC) operation.		P-3	P-3			X	X		
<b>J. Wheel Bearings</b>									
1. Clean, inspect, lubricate, and/or replace wheel bearings and races/cups; replace seals and wear rings; inspect spindle/tube; inspect and replace retaining hardware; adjust wheel bearings; check hub assembly fluid level and condition; verify end play with dial indicator method.	P-1	P-1	P-1					X	X
2. Identify, inspect, and/or replace unitized/preset hub bearing assemblies.	P-1	P-1	P-1					X	X