



Nebraska Career Pathways Project

SKILLED AND TECHNICAL SCIENCES

***Transportation, Distribution and Logistics Cluster
Technical Knowledge and Skills***

High School/College DIESEL/TRUCK SERVICE Student Checklist

				STUDENT:	DATE:
2	1	N	CODE	N = Not Exposed to Performance Element, 1 = Progressing with Performance Element, 2 = Mastery of Performance Element	
				DIESEL ENGINES	
2	1	N	CODE	Demonstrate ability to make general engine diagnosis (TDLT.GED)	
			TDLT.GED.1	<i>Inspect fuel oil, and coolant levels, condition and consumption; determine needed action.</i>	
			TDLT.GED.2	<i>Diagnose causes of engine fuel, oil, coolant, air and other leaks; determine needed action.</i>	
			TDLT.GED.3	<i>Interpret engine noises; determine needed action.</i>	
			TDLT.GED.4	<i>Observe engine exhaust smoke color and quantity; determine needed action.</i>	
			TDLT.GED.5	<i>Perform air intake system restriction and leakage tests; determine needed action.</i>	
			TDLT.GED.6	<i>Perform intake manifold pressure (boost) test; determine needed action.</i>	
			TDLT.GED.7	<i>Perform exhaust back pressure test; determine needed action.</i>	
			TDLT.GED.8	<i>Perform crankcase pressure test; determine needed action.</i>	
			TDLT.GED.9	<i>Diagnose no cranking, cranks but fails to start, hard starting and starts but does not continue to run problems; determine needed action.</i>	
			TDLT.GED.10	<i>Diagnose surging, rough operation, misfiring, low power, slow deceleration, slow acceleration and shutdown problems; determine needed action.</i>	
			TDLT.GED.11	<i>Diagnose engine vibration problems; determine needed action.</i>	
			TDLT.GED.12	<i>Check, record and clear electronic diagnostic (fault) codes; monitor electronic data; determine needed action.</i>	
			TDLT.GED.13	<i>Perform cylinder compression test; determine needed action.</i>	
2	1	N	CODE	Demonstrate ability to make cylinder head and valve train diagnosis and repair (TDLT.CHVT)	
			TDLT.CHVT.1	<i>Remove, clean, inspect for visible damage, and replace cylinder head(s) assembly.</i>	

			TDLT.CHVT.2	<i>Clean and inspect threaded holes, studs and bolts for serviceability; determine needed action.</i>
			TDLT.CHVT.3	<i>Inspect cylinder head for cracks/damage; check mating surfaces for warpage,; check condition of passages; inspect core/expansion and gallery plugs; determine needed action.</i>
			TDLT.CHVT.4	<i>Disassemble head and inspect valves, guides, seats, springs, retainers, rotators, locks and seals; determine needed action.</i>
			TDLT.CHVT.5	<i>Measure valve head height relative to deck and valve face-to-seat contact; determine needed action.</i>
			TDLT.CHVT.6	<i>Inspect injector sleeves and seals; measure injector tip or nozzle protrusion; perform needed action.</i>
			TDLT.CHVT.7	<i>Inspect and adjust valve bridges (crossheads) and guides; perform needed action.</i>
			TDLT.CHVT.8	<i>Reassemble cylinder head.</i>
			TDLT.CHVT.9	<i>Inspect, measure, and replace/reinstall overhead camshaft; measure/adjust end play and backlash.</i>
			TDLT.CHVT.10	<i>Inspect pushrods, rocker arms, rocker arm shafts, electronic wiring harness and brackets for wear, bending, cracks, looseness, and blocked oil passages; perform needed action.</i>
			TDLT.CHVT.11	<i>Inspect cam followers; perform needed action.</i>
			TDLT.CHVT.12	<i>Adjust valve clearance.</i>
2	1	N	CODE	Demonstrate ability in engine block assembly diagnosis and repair (TDLT.EBDR)
			TDLT.EBDR.1	<i>Remove, inspect, service and install pans, covers, vents, gaskets, seals, and wear rings.</i>
			TDLT.EBDR.2	<i>Disassemble, clean and inspect engine block for cracks/damage; measure mating surfaces for warpage; check condition of passages, core/expansion and gallery plugs; inspect threaded holes, studs, dowel pins and bolts for serviceability; determine needed action.</i>
			TDLT.EBDR.3	<i>Inspect cylinder sleeve counterbore and lower bore; check bore distortion; determine needed action..</i>
			TDLT.EBDR.4	<i>Clean, inspect and measure cylinder walls or liners for wear and damage; determine needed action.</i>
			TDLT.EBDR.5	<i>Replace/reinstall cylinder liners and seals; check and adjust liner height (protrusion).</i>
			TDLT.EBDR.6	<i>Inspect in-block camshaft bearings for wear and damage; determine needed action.</i>
			TDLT.EBDR.7	<i>Inspect, measure and replace/reinstall in-block camshaft; measure/adjust end play.</i>
			TDLT.EBDR.8	<i>Clean and inspect crankshaft for surface cracks and journal damage; check condition of oil passages; check passage plugs; measure journal diameter; determine needed action.</i>
			TDLT.EBDR.9	<i>Inspect main bearings for wear patterns and damage; replace as needed; check bearing clearances; check and adjust crankshaft end play.</i>
			TDLT.EBDR.10	<i>Inspect, install and time gear train; measure gear backlash; determine needed action.</i>
			TDLT.EBDR.11	<i>Inspect connecting rod and bearings for wear patterns; measure pistons, pins, retainers and bushings; perform needed action.</i>
			TDLT.EBDR.12	<i>Determine piston-to-cylinder wall clearance; check ring-to-groove clearance and end gap; install rings on pistons.</i>
			TDLT.EBDR.13	<i>Assemble pistons and connecting rods; install in block; install rod bearings and check clearances.</i>

			TDLT.EBDR.14	<i>Check condition of piston cooling jets (nozzles); determine needed action.</i>
			TDLT.EBDR.15	<i>Inspect and measure crankshaft vibration damper; determine needed action.</i>
			TDLT.EBDR.16	<i>Install and align flywheel housing; inspect flywheel housing(s) to transmission housing/engine mating surface(s) and measure flywheel housing face and bore runout; determine needed action.</i>
			TDLT.EBDR.17	<i>Inspect flywheel/flexplate (including ring gear) and mounting surfaces for cracks and wear; measure runout; determine needed action.</i>
2	1	N	CODE	Demonstrate ability in lubrication system diagnosis and repair (TDLT.LDR)
			TDLT.LDR.1	<i>Test engine oil pressure and check operation of pressure sensor, gauge, and/or sending unit; determine needed action.</i>
			TDLT.LDR.2	<i>Check engine oil level, condition and consumption; determine needed action.</i>
			TDLT.LDR.3	<i>Inspect and measure oil pump, drives, inlet pipes and pick-up screens; determine needed action.</i>
			TDLT.LDR.4	<i>Inspect oil pressure regulator valve(s), by-pass and pressure relief valve(s), oil thermostat and filters; determine needed action.</i>
			TDLT.LDR.5	<i>Inspect, clean and test oil cooler and components; determine needed action.</i>
			TDLT.LDR.6	<i>Inspect turbocharger lubrication system; determine needed action.</i>
			TDLT.LDR.7	<i>Determine proper lubricant and perform oil and filter change.</i>
2	1	N	CODE	Demonstrate ability in cooling system diagnosis and repair (TDLT.CSDR)
			TDLT.CSDR.1	<i>Check engine coolant type, level, condition and consumption; determine needed action.</i>
			TDLT.CSDR.2	<i>Test coolant temperature and check operation of temperature sensor, gauge, and/or sending unit; determine needed action.</i>
			TDLT.CSDR.3	<i>Inspect and reinstall/replace pulleys, tensioners and drive belts; adjust drive belts and check alignment.</i>
			TDLT.CSDR.4	<i>Inspect thermostat(s), by-passes, housing(s), and seals; replace as needed.</i>
			TDLT.CSDR.5	<i>Test coolant for freeze protection and additive package concentration; adjust as needed.</i>
			TDLT.CSDR.6	<i>Recover, flush, and refill with recommended coolant/additive package; bleed cooling system.</i>
			TDLT.CSDR.7	<i>Inspect coolant conditioner/filter assembly for leaks; inspect valves, lines, and fittings; replace as needed.</i>
			TDLT.CSDR.8	<i>Inspect water pump and hoses; replace as needed.</i>
			TDLT.CSDR.9	<i>Inspect, clean and pressure test radiator, pressure cap, tank(s) and recovery systems; determine needed action.</i>
			TDLT.CSDR.10	<i>Inspect thermostatic cooling fan system (hydraulic, pneumatic, and electronic) and fan shroud; replace as needed.</i>
2	1	N	CODE	Demonstrate ability in air induction and exhaust system diagnosis and repair (TDLT.AEDR)
			TDLT.AEDR.1	<i>Inspect turbocharger(s), wastegate, and piping systems; determine needed action.</i>

			TDLT.AEDR.2	<i>Check air induction system: piping, hoses, clamps and mounting; check for air restrictions and leaks; service or replace air filter as needed.</i>
			TDLT.AEDR.3	<i>Remove and reinstall turbocharger/wastegate assembly.</i>
			TDLT.AEDR.4	<i>Inspect intake manifold, gaskets, and connections; replace as needed.</i>
			TDLT.AEDR.5	<i>Inspect, clean and test charge air cooler assemblies; replace as needed.</i>
			TDLT.AEDR.6	<i>Inspect exhaust manifold, piping, mufflers, exhaust after-treatment device(s), and mounting hardware; repair or replace as needed.</i>
			TDLT.AEDR.7	<i>Inspect and test preheater/inlet air heater, or glow plug system and controls; perform needed action.</i>
			TDLT.AEDR.8	<i>Inspect and test exhaust gas recirculation (EGR) system; determine needed action.</i>
2	1	N	CODE	Demonstrate ability in fuel system diagnosis and repair (TDLT.FSDR)
				Fuel Supply System Diagnosis and Repair
			TDLT.FSDR.1	<i>Check fuel level, quality and consumption; determine needed action.</i>
			TDLT.FSDR.2	<i>Inspect fuel tanks, vents, caps, mounts, valves, screens, crossover system, supply and return lines and fittings; determine needed action.</i>
			TDLT.FSDR.3	<i>Inspect, clean and test fuel transfer (lift) pump drives, screens, fuel/water separators/indicators, filters, heaters, coolers, ECM cooling plates, and mounting hardware; determine needed action.</i>
			TDLT.FSDR.4	<i>Inspect and test low pressure regulator systems (check valves, pressure regulator valves, and restrictive fittings); determine needed action.</i>
			TDLT.FSDR.5	<i>Check fuel system for air; determine needed action.; prime and bleed fuel system; check primer pump.</i>
				Mechanical Fuel Injection Diagnosis and Repair
			TDLT.FSDR.6	<i>Perform on-engine inspections, tests, and adjustments; check and adjust timing or replace and time a distributor (rotary) type injection pump; determine needed action.</i>
			TDLT.FSDR.7	<i>Perform on-engine inspections, tests, and adjustments; check and adjust timing or replace and time an in-line type injection pump; determine needed action.</i>
			TDLT.FSDR.8	<i>Inspect and adjust throttle control linkage; determine needed action.</i>
			TDLT.FSDR.9	<i>Inspect air/fuel ratio control systems; determine needed action.</i>
			TDLT.FSDR.10	<i>Inspect, test and adjust engine fuel shut-down devices and controls; determine needed action.</i>
			TDLT.FSDR.11	<i>Inspect high pressure injection lines, hold downs, fittings and seals; replace as needed.</i>
				Electronic Fuel Management System Diagnosis and Repair
			TDLT.FSDR.12	<i>Inspect and test power and ground circuits and connections; measure and interpret voltage, voltage drop, amperage, and resistance readings using a digital multimeter (DMM); determine needed action.</i>
			TDLT.FSDR.13	<i>Interface with vehicle's on-board computer; perform diagnostic procedures using recommended electronic diagnostic equipment and tools (to include PC based software and/or data scan tools); determine needed action.</i>

			TDLT.FSDR.14	<i>Locate and use relevant service information (to include diagnostic procedures, flow charts, and wiring diagrams).</i>
			TDLT.FSDR.15	<i>Inspect and replace electrical connector terminals, seals, and locks.</i>
			TDLT.FSDR.16	<i>Inspect and test switches, sensors, controls, actuator components, and circuits; adjust or replace as needed.</i>
			TDLT.FSDR.17	<i>Using recommended electronic diagnostic tools (to include PC based software and/or data scan tools), access and change customer parameters.</i>
			TDLT.FSDR.18	<i>Inspect, test, and adjust electronic unit injectors (EUI); determine needed action.</i>
			TDLT.FSDR.19	<i>Remove and install electronic unit injectors (EUI) and related components; recalibrate ECM (if applicable).</i>
			TDLT.FSDR.20	<i>Perform cylinder contribution test utilizing recommended electronic diagnostic tool.</i>
			TDLT.FSDR.21	<i>Perform engine timing sensor calibration (if applicable).</i>
			TDLT.FSDR.22	<i>Perform on-engine inspections and tests on hydraulic electronic unit injectors and system electronic controls; determine needed action.</i>
			TDLT.FSDR.23	<i>Perform on-engine inspections and tests on hydraulic electronic unit injector high pressure oil supply and control systems; determine needed action.</i>
			TDLT.FSDR.24	<i>Perform on-engine inspections and tests on distributor-type injection pump electronic controls; determine needed action.</i>
			TDLT.FSDR.25	<i>Perform on-engine inspections and tests on in-line type injection pump electronic controls; determine needed action.</i>
			TDLT.FSDR.26	<i>Perform on-engine inspections and tests on common rail injection systems; determine needed action.</i>
2	1	N	CODE	Demonstrate ability in engine brake diagnosis (TDLT.EB)
			TDLT.EB.1	<i>Inspect and adjust engine compression/exhaust brakes; determine needed action.</i>
			TDLT.EB.2	<i>Inspect, test, and adjust engine compression/exhaust brake control circuits, switches, and solenoids; repair or replace as needed.</i>
			TDLT.EB.3	<i>Inspect engine compression/exhaust brake housing, valves, seals, screens, lines and fittings; repair or replace as needed.</i>
				DRIVE TRAIN
2	1	N	CODE	Demonstrate ability in clutch diagnosis and repair (TDLT.CDR)
			TDLT.CDR.1	<i>Diagnose clutch noise, binding, slippage, pulsation, vibration, grabbing, dragging, and chatter problems; determine needed action.</i>
			TDLT.CDR.2	<i>Inspect and adjust clutch linkage, cables, levers, brackets, bushings, pivots, springs and clutch safety switch (includes push and pull-type assemblies); check pedal height and travel; perform needed action.</i>
			TDLT.CDR.3	<i>Inspect, adjust, repair or replace hydraulic clutch slave and master cylinders, lines and hoses; bleed system.</i>
			TDLT.CDR.4	<i>Inspect, adjust, lubricate or replace release (throw-out) bearing, sleeve, bushings, springs, housing, levers, release fork, ford pads, rollers, shafts, and seals.</i>
			TDLT.CDR.5	<i>Inspect, adjust and replace single-disc clutch pressure plate and clutch disc.</i>

			TDLT.CDR.6	<i>Inspect, adjust and replace two-plate clutch pressure plate, clutch discs, intermediate plate, and drive pins/lugs.</i>
			TDLT.CDR.7	<i>Inspect and/or replace clutch brake assembly; inspect input shaft and bearing retainer; perform needed action.</i>
			TDLT.CDR.8	<i>Inspect, adjust, and replace self-adjusting/continuous-adjusting clutch mechanisms.</i>
			TDLT.CDR.9	<i>Inspect and replace pilot bearing.</i>
			TDLT.CDR.10	<i>Inspect flywheel mounting area on crankshaft, rear main oil seal, and measure crankshaft end play; determine needed action.</i>
			TDLT.CDR.11	<i>Inspect flywheel, starter ring gear and measure flywheel face and pilot bore runout; determine needed action.</i>
			TDLT.CDR.12	<i>Inspect flywheel housing(s) to transmission housing/engine mating surfaces(s) and measure flywheel housing face and bore runout; determine needed action.</i>
2	1	N	CODE	Demonstrate ability in transmission diagnosis and repair (TDLT.TDR)
			TDLT.TDR.1	<i>Diagnose transmission noise, shifting, lockup, jumping-out-of-gear, overheating and vibration problems; determine needed action.</i>
			TDLT.TDR.2	<i>Diagnose transmission component failure cause, both before and during disassembly procedures; determine needed action.</i>
			TDLT.TDR.3	<i>Inspect, adjust, service, repair or replace transmission remote shift linkages, brackets, bushings, pivots, and levers.</i>
			TDLT.TDR.4	<i>Inspect, test, repair or replace air shift controls, lines, valves, regulators, filters and cylinder assemblies.</i>
			TDLT.TDR.5	<i>Inspect and replace transmission mounts, insulators, and mounting bolts; determine needed action.</i>
			TDLT.TDR.6	<i>Inspect for leakage and replace transmission cover plates, gaskets, seals, and cap bolts; inspect seal surfaces and vents; repair as needed.</i>
			TDLT.TDR.7	<i>Check transmission fluid level and condition; determine needed service; add proper type of lubricant.</i>
			TDLT.TDR.8	<i>Inspect, adjust and replace transmission shift lever, cover, rails, forks, levers, bushings, sleeves, detents, interlocks, springs, and lock bolts/safety wires.</i>
			TDLT.TDR.9	<i>Remove and reinstall transmission.</i>
			TDLT.TDR.10	<i>Inspect input shaft, gear, spacers, bearings, retainers, and slingers; replace as needed.</i>
			TDLT.TDR.11	<i>Inspect and adjust main shaft, gears, sliding clutches, washers, spacers, bushings, bearings, auxiliary drive assemblies, retainers, and keys; replace as needed.</i>
			TDLT.TDR.12	<i>Inspect countershafts, gears, bearings, retainers, and keys; adjust bearing preload and time multiple countershaft gears; replace as needed.</i>
			TDLT.TDR.13	<i>Inspect output shafts, gears, washers, spacers, bearings, retainers and keys; replace as needed.</i>
			TDLT.TDR.14	<i>Inspect reverse idler shafts, gears, bushings, bearings, thrust washers and retainers; check reverse idler gear end play (where applicable); replace as needed.</i>
			TDLT.TDR.15	<i>Inspect synchronizer hub, sleeve, keys (inserts), springs, blocking rings, synchronizer plates, blocker pins, and sliding clutches; replace as needed.</i>
			TDLT.TDR.16	<i>Inspect transmission cases including surfaces, bores, bushings, pins, studs and magnets; replace as needed.</i>

			TDLT.TDR.17	<i>Inspect transmission lubrication system pumps, troughs, collectors and slingers; service or replace as needed.</i>
			TDLT.TDR.18	<i>Inspect transmission oil filters and coolers; replace as needed.</i>
			TDLT.TDR.19	<i>Inspect mechanical and electronic speedometer components; determine needed action.</i>
			TDLT.TDR.20	<i>Inspect and adjust power take-off (P.T.O.) assemblies, controls, and shafts; perform needed action.</i>
			TDLT.TDR.21	<i>Inspect and test function of backup light, neutral start and warning device circuits; repair as needed.</i>
			TDLT.TDR.22	<i>Inspect and test transmission temperature gauge and sending unit/sensor; determine needed action.</i>
			TDLT.TDR.23	<i>Inspect, test operation, adjust, repair or replace automated mechanical transmission and manual electronic shift controls, shift, range and splitter solenoids, shift motors, indicators, speed and range sensors, electronic/transmission control units (ECU/TCU), neutral/in gear and reverse switches and wiring harnesses.</i>
			TDLT.TDR.24	<i>Inspect, test operation, repair or replace automated mechanical transmission electronic shift selectors, air and electrical switches, displays and indicators, wiring harnesses and air lines.</i>
			TDLT.TDR.25	<i>Use appropriate diagnostic tools and procedures to diagnose automated mechanical transmission problems; check and record diagnostic codes, clear codes, and interpret digital multimeter (DMM) readings; determine needed repairs.</i>
			TDLT.TDR.26	<i>Inspect, test operation, adjust, repair or replace automated transmission electronic and manual shift controls, shift solenoids, shift motors, indicators, speed and range sensors, electronic/transmission control units (ECU/TCU), neutral/in gear and reverse switches, and wiring harnesses.</i>
			TDLT.TDR.27	<i>Inspect, test operation, repair or replace automated transmission electronic shift selectors, switches, displays and indicators, wiring harnesses.</i>
			TDLT.TDR.28	<i>Use appropriate diagnostic tools and procedures to diagnose automatic transmission problems; check and record diagnostic codes, clear codes, and interpret digital multimeter (DMM) readings; determine needed repairs.</i>
2	1	N	CODE	Demonstrate ability in drive shaft and universal joint diagnosis and repair (TDLT.DUJ)
			TDLT.DUJ.1	<i>Diagnose driveshaft and universal joint noise and vibration problems; determine needed action.</i>
			TDLT.DUJ.2	<i>Inspect, service or replace driveshaft, slip joints, yokes, drive flanges and universal joints; check phasing of all yokes.</i>
			TDLT.DUJ.3	<i>Inspect driveshaft center support bearings and mounts; determine needed action.</i>
			TDLT.DUJ.4	<i>Measure and adjust drive line angles.</i>
2	1	N	CODE	Demonstrate ability in drive axle diagnosis and repair (TDLT.DADR)
			TDLT.DADR.1	<i>Diagnose drive axle(s) drive unit noise and overheating problems; determine needed action.</i>
			TDLT.DADR.2	<i>Check and repair fluid leaks; inspect and replace drive axle housing cover plates, gaskets, sealants, vents, magnetic plugs, and seals.</i>
			TDLT.DADR.3	<i>Check drive axle fluid level and condition; determine needed service; add proper type of lubricant.</i>
			TDLT.DADR.4	<i>Remove and replace differential carrier assembly.</i>

			TDLT.DADR.5	<i>Inspect and replace differential case assembly including spider gears, cross shaft, side gears, thrust washers, case halves and bearings.</i>
			TDLT.DADR.6	<i>Inspect and replace components of locking differential case assembly.</i>
			TDLT.DADR.7	<i>Inspect differential carrier case and caps, side bearing bores and pilot (spigot, pocket) bearing bore; determine needed action.</i>
			TDLT.DADR.8	<i>Measure ring gear runout; determine needed action.</i>
			TDLT.DADR.9	<i>Inspect and replace ring and drive pinion gears, spacers, sleeves, bearing cages, and bearings.</i>
			TDLT.DADR.10	<i>Measure and adjust drive pinion bearing preload.</i>
			TDLT.DADR.11	<i>Measure and adjust drive pinion depth.</i>
			TDLT.DADR.12	<i>Measure and adjust side bearing preload and ring gear backlash.</i>
			TDLT.DADR.13	<i>Check and interpret ring gear and pinion tooth contact pattern; determine needed action.</i>
			TDLT.DADR.14	<i>Inspect, adjust or replace ring gear thrust block/bolt.</i>
			TDLT.DADR.15	<i>Inspect, adjust, repair or replace planetary gear-type 2-speed axle assembly including: case, idler pinion, pins, thrust washers, sliding clutch gear, shift fork, pivot, seals, cover and springs.</i>
			TDLT.DADR.16	<i>Inspect, repair or replace 2-speed axle shift control system, speedometer adapters, motors, axle shift units, wires, air lines and connectors.</i>
			TDLT.DADR.17	<i>Inspect power divider (inter-axle differential) assembly; determine needed action.</i>
			TDLT.DADR.18	<i>Inspect, adjust, repair, or replace air operated power divider (inter-axle differential) lockout assembly including diaphragms, seals, springs, yokes, pins, lines, hoses, fittings and controls.</i>
			TDLT.DADR.19	<i>Inspect, repair or replace drive axle lubrication system: pump, troughs, collectors, slingers, tubes and filters.</i>
			TDLT.DADR.20	<i>Inspect and replace drive axle shafts.</i>
			TDLT.DADR.21	<i>Remove and replace wheel assembly; check rear wheel seal and axle flange gasket for leaks; perform needed action.</i>
			TDLT.DADR.22	<i>Diagnose drive axle for wheel bearing noise and damage; perform needed action.</i>
			TDLT.DADR.23	<i>Inspect and test drive axle temperature gauge and sending unit/sensor; determine needed action.</i>
			TDLT.DADR.24	<i>Clean, inspect, lubricate and replace wheel bearings; replace seals and wear rings; adjust drive axle wheel bearings.</i>
				BRAKES
2	1	N	CODE	Demonstrate ability in air brakes diagnosis and repair (TDLT.ABDR)
				Air Supply and Service Systems
			TDLT.ABDR.1	<i>Diagnose poor stopping, air leaks, premature wear, pulling, grabbing or dragging problems caused by supply and service system malfunctions; determine needed action.</i>
			TDLT.ABDR.2	<i>Check air system build-up time; determine needed action.</i>
			TDLT.ABDR.3	<i>Drain air reservoir tanks; check for oil, water and foreign material; determine needed action.</i>
			TDLT.ABDR.4	<i>Inspect, adjust, and align compressor drive belts, pulleys and tensioners; replace as needed.</i>

		TDLT.ABDR.5	<i>Inspect compressor drive gear and coupling; replace as needed.</i>
		TDLT.ABDR.6	<i>Inspect air compressor, air cleaner/supply; inspect oil supply and coolant lines, fitting, and mounting brackets; repair or replace as needed.</i>
		TDLT.ABDR.7	<i>Inspect and test system pressure controls: governor, unloader assembly valves, intake screens, filters, lines, hoses and fittings; replace as needed.</i>
		TDLT.ABDR.8	<i>Inspect air system lines, hoses, fittings and couplings; repair or replace as needed.</i>
		TDLT.ABDR.9	<i>Inspect and test air tank relief (safety) valves, one-way (single) check valves, two-way (double) check-valves, manual and automatic drain valves; replace as needed.</i>
		TDLT.ABDR.10	<i>Inspect and clean air drier systems, filters, valves, heaters, wiring and connectors; repair or replace as needed.</i>
		TDLT.ABDR.11	<i>Inspect and test brake application (foot) valve, fittings and mounts; adjust or replace as needed.</i>
		TDLT.ABDR.12	<i>Inspect and test stop light circuit switches, wiring and connectors; repair or replace as needed.</i>
		TDLT.ABDR.13	<i>Inspect and test hand brake (trailer) control valve, lines, fittings and mountings; repair or replace as needed.</i>
		TDLT.ABDR.14	<i>Inspect and test brake relay valve; replace as needed.</i>
		TDLT.ABDR.15	<i>Inspect and test quick release valves; replace as needed.</i>
		TDLT.ABDR.16	<i>Inspect and test front and rear axle limiting (proportioning) valves; replace as needed.</i>
		TDLT.ABDR.17	<i>Inspect and test tractor protection valve; replace as needed.</i>
		TDLT.ABDR.18	<i>Inspect and test emergency (spring) brake control/modulator valve(s); replace as needed.</i>
		TDLT.ABDR.19	<i>Inspect and test low pressure warning devices, wiring and connectors; replace as needed.</i>
		TDLT.ABDR.20	<i>Inspect and test air pressure gauges, lines and fittings; replace as needed.</i>
			Mechanical/Foundation
		TDLT.ABDR.21	<i>Diagnose poor stopping, brake noise, premature wear, pulling, grabbing, or dragging problems caused by the foundation brake, slack adjuster and brake chamber problems; determine needed action.</i>
		TDLT.ABDR.22	<i>Inspect and test service brake chambers, diaphragm, clamp, spring, pushrod, clevis and mounting brackets; repair or replace as needed.</i>
		TDLT.ABDR.23	<i>Inspect and service manual and automatic slack adjusters; perform needed action.</i>
		TDLT.ABDR.24	<i>Inspect camshafts, rollers, bushings, seals, spacers, retainers, brake spiders, shields, anchor pins and springs; replace as needed.</i>
		TDLT.ABDR.25	<i>Inspect, clean and adjust air disc brake caliper assemblies; determine needed repairs.</i>
		TDLT.ABDR.26	<i>Inspect and measure brake shoes, linings, or pads; perform needed action.</i>
		TDLT.ABDR.27	<i>Inspect and measure brake drums and rotors; perform needed action.</i>
			Parking Brakes
		TDLT.ABDR.28	<i>Inspect and test parking (spring) brake chamber diaphragm and seals; replace parking (spring) brake chamber; dispose of removed chambers in accordance with local regulations.</i>
		TDLT.ABDR.29	<i>Inspect and test parking (spring) brake check valves, lines, hoses, and fittings; replace as needed.</i>
		TDLT.ABDR.30	<i>Inspect and test parking (spring) brake application and release valve; replace as needed.</i>
		TDLT.ABDR.31	<i>Manually release (cage) and reset (uncage) parking (spring) brakes in accordance with manufacturers'</i>

				<i>recommendations.</i>
2	1	N	CODE	Demonstrate ability in Hydraulic brakes diagnosis and repair (TDLT.HBDR)
				Hydraulic System
			TDLT.HBDR.1	<i>Diagnose poor stopping, premature wear, pulling, dragging or pedal feel problems caused by the hydraulic system; determine needed action.</i>
			TDLT.HBDR.2	<i>Check brake pedal pushrod length; adjust as needed.</i>
			TDLT.HBDR.3	<i>Inspect and test master cylinder for internal/external leaks and damage; replace as needed.</i>
			TDLT.HBDR.4	<i>Inspect for leaks and damage, brake lines, flexible hoses and fittings; replace as needed.</i>
			TDLT.HBDR.5	<i>Inspect and test metering (hold-off), load sensing/proportioning, proportioning, and combination valves; replace as needed.</i>
			TDLT.HBDR.6	<i>Inspect and test brake pressure differential valve and warning light circuit switch, bulbs, wiring and connectors; repair or replace as needed.</i>
			TDLT.HBDR.7	<i>Inspect and clean wheel cylinders; replace as needed.</i>
			TDLT.HBDR.8	<i>Inspect and clean disc brake caliper assemblies; replace as needed.</i>
			TDLT.HBDR.9	<i>Inspect/test brake fluid; bleed and/or flush system; determine proper fluid type.</i>
			TDLT.HBDR.10	<i>Test and adjust brake stop light switch, bulbs, wiring and connectors; repair or replace as needed.</i>
				Mechanical/Foundation
			TDLT.HBDR.11	<i>Diagnose poor stopping, brake noise, premature wear, pulling, grabbing, dragging or pedal feel problems, determine needed action.</i>
			TDLT.HBDR.12	<i>Inspect and measure brake drums and rotors; perform needed action.</i>
			TDLT.HBDR.13	<i>Inspect and measure drum brake shoes and linings; inspect mounting hardware, adjuster mechanisms and backing plates; perform needed action.</i>
			TDLT.HBDR.14	<i>Inspect and measure disc brake pads/linings; inspect mounting hardware; perform needed action.</i>
			TDLT.HBDR.15	<i>Check parking brake operation; inspect parking brake application and holding devices; adjust and replace as needed.</i>
				Power Assist Units
			TDLT.HBDR.16	<i>Diagnose stopping problems caused by the brake assist (booster) system; determine needed action.</i>
			TDLT.HBDR.17	<i>Inspect, test, repair or replace power brake assist (booster), hoses and control valves; determine proper fluid type.</i>
			TDLT.HBDR.18	<i>Check emergency (back-up reserve) brake assist system.</i>
				Air and Hydraulic Antilock (ABS) and Automatic Traction Control (ATC)
			TDLT.HBDR.19	<i>Observe antilock brake system (ABS) warning light operation (includes dash mounted trailer ABS warning light); determine needed action.</i>
			TDLT.HBDR.20	<i>Diagnose antilock brake system (ABS) electronic control(s) and components using self-diagnosis and/or specified test equipment (scan tool, PC computer); determine needed action.</i>
			TDLT.HBDR.21	<i>Diagnose poor stopping and wheel loci-up caused by failure of the antilock brake system (ABS); determine</i>

				<i>needed action.</i>
			TDLT.HBDR.22	<i>Inspect, test and replace antilock brake system (ABS) air, hydraulic, electrical and mechanical components; perform needed action.</i>
			TDLT.HBDR.23	<i>Diagnose, service and adjust antilock brake system (ABS) wheel speed sensors and circuits following manufacturers' recommended procedures (including voltage output, resistance, shorts to voltage/ground and frequency data).</i>
			TDLT.HBDR.24	<i>Bleed the ABS hydraulic circuits following manufacturers' procedures.</i>
			TDLT.HBDR.25	<i>Observe automatic traction control (ATC) warning light operation; determine needed action.</i>
			TDLT.HBDR.26	<i>Diagnose automatic traction control (ATC) electronic control(s) and components using self-diagnosis and/or specified test equipment (scan tool, PC computer); determine needed action.</i>
				SUSPENSION and STEERING
2	1	N	CODE	Demonstrate ability in steering system diagnosis and repair (TDLT.SSDR)
				Steering Column
			TDLT.SSDR.1	<i>Diagnose fixed and driver adjustable steering column and shaft noise, looseness and binding problems; determine needed action.</i>
			TDLT.SSDR.2	<i>Inspect steering shaft U-joints(s) slip joints, bearings, bushings, and seals; phase shaft U-joints determine needed action.</i>
			TDLT.SSDR.3	<i>Check and adjust cab mounting and ride height.</i>
			TDLT.SSDR.4	<i>Center the steering wheel as needed.</i>
			TDLT.SSDR.5	<i>Disable and enable supplemental restraint system (SRS) in accordance with manufacturers' procedures.</i>
				Steering Units
			TDLT.SSDR.6	<i>Diagnose power steering system noise, steering binding, darting/oversteer, reduced wheel cut, steering wheel kick, pulling, non-recovery, turning effort, looseness, hard steering, overheating, fluid leakage and fluid aeration problems; determine needed action.</i>
			TDLT.SSDR.7	<i>Determine recommended type of power steering fluid; check level and condition; determine needed action.</i>
			TDLT.SSDR.8	<i>Flush and refill power steering system; purge air from system.</i>
			TDLT.SSDR.9	<i>Perform power steering system pressure, temperature, and flow tests; determine needed action.</i>
			TDLT.SSDR.10	<i>Inspect, service or replace power steering reservoir including filter, seals, and gaskets.</i>
			TDLT.SSDR.11	<i>Inspect and reinstall/replace pulleys, tensioners and drive belts; adjust drive belts and check alignment.</i>
			TDLT.SSDR.12	<i>Inspect, replace as required, power steering pump drive gear and coupling.</i>
			TDLT.SSDR.13	<i>Inspect, adjust or replace power steering pump, mountings and brackets.</i>
			TDLT.SSDR.14	<i>Inspect and replace power steering system cooler, lines, hoses, clamps/mountings, hose routings and fittings.</i>
			TDLT.SSDR.15	<i>Inspect, adjust or replace linkage-assist type power steering cylinder or ear (dual system).</i>
			TDLT.SSDR.16	<i>Inspect, adjust, repair or replace integral type power steering gear and mountings.</i>

			TDLT.SSDR.17	<i>Adjust manual and automatic steering gear poppet/relief valves.</i>
				Steering Linkage
			TDLT.SSDR.18	<i>Inspect and align pitman arm; replace as needed.</i>
			TDLT.SSDR.19	<i>Inspect drag link (relay rod) and tie rod ends; adjust or replace as needed.</i>
			TDLT.SSDR.20	<i>Inspect steering arm and levers, and linkage pivot joints; replace as needed.</i>
			TDLT.SSDR.21	<i>Inspect clamps and retainers on cross tube/relay rod/centerlink/tie rod; position or replace as needed.</i>
			TDLT.SSDR.22	<i>Check and adjust wheel stops.</i>
			TDLT.SSDR.23	<i>Lubricate steering linkage joints as needed.</i>
2	1	N	CODE	Demonstrate ability in suspension systems diagnosis and repair (TDLT.SUS)
			TDLT.SUS.1	<i>Inspect front axles, U-bolts, and nuts; determine needed action.</i>
			TDLT.SUS.2	<i>Inspect and service king pin, steering knuckle bushings, locks, bearings, seals and covers; determine needed action.</i>
			TDLT.SUS.3	<i>Inspect shock absorbers, bushings, brackets and mounts; replace as needed.</i>
			TDLT.SUS.4	<i>Inspect leaf springs, center bolts, clips, eye bolts and bushings, shackles, slippers, insulators, brackets and mounts; determine needed action.</i>
			TDLT.SUS.5	<i>Inspect torque arms, bushings, and mounts; determine needed action.</i>
			TDLT.SUS.6	<i>Inspect axle aligning devices such as radius rods , track bars, stabilizer bars and related bushings, mounts, shims and cams; determine needed action.</i>
			TDLT.SUS.7	<i>Inspect walking beams, center (cross) tube, bushings, mounts, load pads, and saddles/caps; replace as needed.</i>
			TDLT.SUS.8	<i>Inspect and test air suspension pressure regulator and height control valves, lines, hoses, dump valves and fittings; adjust repair or replace as needed.</i>
			TDLT.SUS.9	<i>Inspect and test air springs, mounting plates, springs, suspension arms and bushings; replace as needed.</i>
			TDLT.SUS.10	<i>Measure vehicle ride height; determine needed action.</i>
			TDLT.SUS.11	<i>Diagnose rough ride problems; determine needed action.</i>
2	1	N	CODE	Demonstrate ability in wheel alignment diagnosis, adjustment and repair (TDLT.WA)
			TDLT.WA.1	<i>Diagnose vehicle wandering, pulling, shimmy, hard steering, and off-center steering wheel problem(s); adjust and repair as needed.</i>
			TDLT.WA.2	<i>Check camber; determine needed action.</i>
			TDLT.WA.3	<i>Check caster; adjust as needed.</i>
			TDLT.WA.4	<i>Check toe; adjust as needed.</i>
			TDLT.WA.5	<i>Check rear axle(s) alignment (thrustline/centerline) and tracking; adjust or repair as needed.</i>
			TDLT.WA.6	<i>Diagnose turning/Ackerman angle (toe-out-on-turns) problems; determine needed action.</i>
			TDLT.WA.7	<i>Check front axle alignment (centerline); adjust or repair as needed.</i>

2	1	N	CODE	Demonstrate ability in wheel and tire diagnosis and repair (TDLT.WT)
			TDLT.WT.1	<i>Diagnose unusual tire wear patterns, check tread depth, mismatched tread design; determine needed action.</i>
			TDLT.WT.2	<i>Diagnose wheel/tire vibration, shimmy, pounding, hop (tramp) problems; determine needed action.</i>
2	1	N	CODE	Demonstrate ability in frame service and repair (TDLT.FSR)
			TDLT.FSR.1	<i>Inspect and adjust fifth wheel, pivot pins, bushings, locking jaw mechanisms and mounting bolts; determine needed action.</i>
			TDLT.FSR.2	<i>Inspect sliding fifth wheel, tracks, stops, locking systems, air cylinders, springs, lines, hoses and controls.</i>
			TDLT.FSR.3	<i>Inspect frame and frame members for cracks, breaks, corrosion, distortion, elongated holes, looseness and damage; determine needed repairs.</i>
			TDLT.FSR.4	<i>Inspect, install, or repair frame hangers, brackets and cross members in accordance with manufacturers' recommended procedures.</i>
			TDLT.FSR.5	<i>Inspect, repair or replace pintle hooks and draw bars.</i>
				ELECTRICAL/ELECTRONIC SYSTEMS
2	1	N	CODE	Demonstrate ability in general electrical system diagnosis (TDLT.ESD)
			TDLT.ESD.1	<i>Read, interpret and diagnose electrical/electronic circuits using wiring diagrams.</i>
			TDLT.ESD.2	<i>Check continuity in electrical/electronic circuits using appropriate test equipment.</i>
			TDLT.ESD.3	<i>Check applied voltages, circuit voltages and voltage drops in electrical/electronic circuits using a digital multimeter (DMM).</i>
			TDLT.ESD.4	<i>Check current flow in electrical/electronic circuits and components using a digital multimeter (DMM) or clamp-on ammeter.</i>
			TDLT.ESD.5	<i>Check resistance in electrical/electronic circuits and components using a digital multimeter (DMM).</i>
			TDLT.ESD.6	<i>Find shorts, grounds and opens in electrical/electronic circuits.</i>
			TDLT.ESD.7	<i>Diagnose parasitic (key-off) battery drain problems.</i>
			TDLT.ESD.8	<i>Inspect and test fusible links, circuit breakers, relays, solenoids and fuses; replace as needed.</i>
			TDLT.ESD.9	<i>Inspect and test spike suppression diodes/resistors; replace as needed.</i>
			TDLT.ESD.10	<i>Check frequency and pulse width in electrical/electronic circuits using appropriate test equipment.</i>
2	1	N	CODE	Demonstrate ability in battery diagnosis and repair (TDLT.BDR)
			TDLT.BDR.1	<i>Perform battery load test; determine needed action.</i>
			TDLT.BDR.2	<i>Determine battery state of charge using an open circuit voltage test.</i>
			TDLT.BDR.3	<i>Inspect, clean and service battery; replace as needed.</i>
			TDLT.BDR.4	<i>Inspect and clean battery boxes, mounts and hold downs; repair or replace as needed.</i>
			TDLT.BDR.5	<i>Charge battery using slow or fast charge method as appropriate.</i>

			TDLT.BDR.6	<i>Inspect, test and clean battery cables and connectors; repair or replace as needed.</i>
			TDLT.BDR.7	<i>Jump start a vehicle using jumper cables and a booster battery or auxiliary power supply using proper safety procedures.</i>
			TDLT.BDR.8	<i>Perform battery capacitance test; determine needed action.</i>
2	1	N	CODE	Demonstrate ability in starting system diagnosis and repair (TDLT.STDR)
			TDLT.STDR.1	<i>Perform starter circuit cranking voltage and voltage drop tests; determine needed action.</i>
			TDLT.STDR.2	<i>Inspect and test components (key switch, push button and/or magnetic switch) and wires in the starter control circuit; replace as needed.</i>
			TDLT.STDR.3	<i>Inspect and test, starter relays and solenoids/switches; replace as needed.</i>
			TDLT.STDR.4	<i>Remove and replace starter; inspect flywheel ring gear or flex plate.</i>
2	1	N	CODE	Demonstrate ability in charging system diagnosis and repair (TDLT.CSDR)
			TDLT.CSDR.1	<i>Diagnose instrument panel mounted volt meters and/or indicator lamps that show a no charge, low charge, or overcharge condition; determine needed action.</i>
			TDLT.CSDR.2	<i>Diagnose the cause of a no charge, low charge, or overcharge condition; determine needed action.</i>
			TDLT.CSDR.3	<i>Inspect and replace alternator drive belts, pulleys, fans, tensioners, and mounting brackets; adjust drive belts and check alignment.</i>
			TDLT.CSDR.4	<i>Perform charging system voltage and amperage output tests; determine needed action.</i>
			TDLT.CSDR.5	<i>Perform charging circuit voltage drop tests; determine needed action.</i>
			TDLT.CSDR.6	<i>Remove and replace alternator.</i>
			TDLT.CSDR.7	<i>Inspect, repair or replace connectors and wires in the charging circuit.</i>
			TDLT.CSDR.8	<i>Diagnose AC voltage leakage (failed rectifier) at alternator output; determine needed action.</i>
2	1	N	CODE	Demonstrate ability in lighting system diagnosis and repair (TDLT.LSDR)
				Headlights, Daytime Running Lights, Parking, Clearance, Tail, Cab and Instrument Panel Lights
			TDLT.LSDR.1	<i>Diagnose the cause of brighter than normal, intermittent, dim or no headlight and daytime running light (DRL) operation.</i>
			TDLT.LSDR.2	<i>Test, aim and replace headlights.</i>
			TDLT.LSDR.3	<i>Test headlight and dimmer circuit switches, relays, wires, terminals, connectors, sockets and control components; repair or replace as needed.</i>
			TDLT.LSDR.4	<i>Inspect and test switches, bulbs/ LEDs, sockets, connectors, terminals, relays and wires of parking, clearance and taillight circuits; repair or replace as needed.</i>
			TDLT.LSDR.5	<i>Inspect and test instrument panel light circuit switches, relays, bulbs, sockets, connectors, terminals, wires and printed circuits/control modules; repair or replace as needed.</i>
			TDLT.LSDR.6	<i>Inspect and test interior cab light circuit switches, bulbs, sockets, connectors, terminals and wires; repair or replace as needed.</i>

			TDLT.LSDR.7	<i>Inspect and test tractor-to-trailer multi-wire connector(s); repair or replace as needed.</i>
				Stoplights, Turn Signals, Hazard Lights and Back-up Lights
			TDLT.LSDR.8	<i>Inspect, test and adjust stoplight circuit switches, bulbs/LEDs, sockets, connectors, terminals and wires; repair or replace as needed.</i>
			TDLT.LSDR.9	<i>Inspect and test turn signal and hazard circuit flasher(s), switches, relays, bulbs/LEDs, sockets, connectors, terminals and wires; repair or replace as needed.</i>
			TDLT.LSDR.10	<i>Inspect, test and adjust backup lights and warning device circuit switches, bulbs/LEDs, sockets, horns, buzzers, connectors, terminals and wires; repair or replace as needed.</i>
2	1	N	CODE	Demonstrate ability in gauges and warning devices diagnosis and repair (TDLT.GWDR)
			TDLT.GWDR.1	<i>Interface with vehicle's on-board computer; perform diagnostic procedure using recommended electronic diagnostic equipment and tools (including PC based software and/or data scan tools); determine needed action.</i>
			TDLT.GWDR.2	<i>Diagnose the cause of intermittent, high, low or no gauge readings; determine needed action.</i>
			TDLT.GWDR.3	<i>Diagnose the cause of data bus-driven gauge malfunctions; determine needed action.</i>
			TDLT.GWDR.4	<i>Inspect and test gauge circuit sending units, gauges, connectors, terminals and wires; repair or replace as needed.</i>
			TDLT.GWDR.5	<i>Inspect and test warning devices (lights and audible) circuit sending units, bulbs/LEDs, sockets, connectors, wires and printed circuits/control modules; repair or replace as needed.</i>
			TDLT.GWDR.6	<i>Inspect, test, replace and calibrate (if applicable) electronic speedometer, odometer and tachometer systems.</i>
2	1	N	CODE	Demonstrate ability in related electrical systems (TDLT.RES)
			TDLT.RES.1	<i>Diagnose the cause of constant, intermittent or no horn operation; determine needed action.</i>
			TDLT.RES.2	<i>Inspect and test horn circuit relays, horns, switches, connectors and wires; repair or replace as needed.</i>
			TDLT.RES.3	<i>Diagnose the cause of constant, intermittent, or no wiper operation; diagnose the cause of wiper speed control and/or park problems; determine needed action.</i>
			TDLT.RES.4	<i>Inspect and test wiper motor, resistors, park switch, relays, switches, connectors and wires; repair or replace as needed.</i>
			TDLT.RES.5	<i>Inspect wiper motor transmission linkage, arms, and blades; adjust or replace as needed.</i>
			TDLT.RES.6	<i>Inspect and test windshield washer motor or pump/relay assembly, switches, connectors, terminals and wires; repair or replace as needed.</i>
			TDLT.RES.7	<i>Inspect and test sideview mirror motors, heater circuit grids, relays, switches, connectors, terminals and wires; repair or replace as needed.</i>
			TDLT.RES.8	<i>Inspect and test heater and A/C electrical components including: A/C clutches, motors, resistors, relays, switches, connectors, terminals and wires; repair or replace as needed.</i>
			TDLT.RES.9	<i>Inspect and test auxiliary power outlet, integral fuse, connectors, terminals and wires; repair or replace as</i>

				<i>needed.</i>
			TDLT.RES.10	<i>Diagnose the cause of slow, intermittent or no power side window operation; determine needed action.</i>
			TDLT.RES.11	<i>Inspect and test motors, switches, relays, connectors, terminals and wires of power side window circuits; repair or replace as needed.</i>
			TDLT.RES.12	<i>Inspect block heaters; determine needed repairs.</i>
			TDLT.RES.13	<i>Inspect and test cruise control electrical components; repair or replace as needed.</i>
			TDLT.RES.14	<i>Inspect and test engine cooling fan electrical control components; repair or replace as needed.</i>
			TDLT.RES.15	<i>Diagnose the cause of data buss communication problems; determine needed action.</i>
				HEATING AND AIR CONDITIONING
2	1	N	CODE	Demonstrate ability in HVAC systems diagnosis, service and repair (TDLT.HDSR)
			TDLT.HDSR.1	<i>Verify the need for service or repair of HVAC systems based on unusual operating noises; determine needed action.</i>
			TDLT.HDSR.2	<i>Verify the need for service or repair of HVAC systems based on unusual visual, smell and touch conditions; determine needed action.</i>
			TDLT.HDSR.3	<i>Identify system type and components (cycling clutch orifice tube – CCOT, expansion valve) and conduct performance test(s) on HVAC systems; determine needed action.</i>
2	1	N	CODE	Demonstrate ability in A/C system diagnosis and repair (TDLT.ACDR)
				A/C Systems - General
			TDLT.ACDR.1	<i>Diagnose the cause of temperature control problems in the A/C system; determine needed action.</i>
			TDLT.ACDR.2	<i>Identify refrigerant type and check for contamination; determine needed action.</i>
			TDLT.ACDR.3	<i>Diagnose A/C system problems indicated by pressure gauge and temperature readings; determine needed action.</i>
			TDLT.ACDR.4	<i>Diagnose A/C system problems indicated by visual, audible, smell and touch procedures; determine needed action.</i>
			TDLT.ACDR.5	<i>Perform A/C system leak test; determine needed action.</i>
			TDLT.ACDR.6	<i>Evacuate A/C system using appropriate equipment.</i>
			TDLT.ACDR.7	<i>Internally clean contaminated A/C system components and hoses.</i>
			TDLT.ACDR.8	<i>Charge A/C system with refrigerant.</i>
			TDLT.ACDR.9	<i>Identify lubricant type needed for system application.</i>
				Compressor and Clutch
			TDLT.ACDR.1	<i>Diagnose A/C system problems that cause protection devices (pressure, thermal and electronic) to interrupt system operation; determine needed action.</i>
			TDLT.ACDR.2	<i>Inspect, test and replace A/C system pressure, thermal and electronic protection devices.</i>

			TDLT.ACDR.3	<i>Inspect and replace A/C compressor drive belts, pulley and tensioners; adjust belt tension and check alignment.</i>
			TDLT.ACDR.4	<i>Inspect, test, service and replace A/C compressor clutch components or assembly.</i>
			TDLT.ACDR.5	<i>Inspect and correct A/C compressor lubricant level (if applicable).</i>
			TDLT.ACDR.6	<i>Inspect, test and replace A/C compressor.</i>
			TDLT.ACDR.7	<i>Inspect, repair or replace A/C compressor mountings and hardware.</i>
				Evaporator, Condenser and Related Components
			TDLT.ACDR.7	<i>Correct system lubricant level when replacing the evaporator, condenser, receiver/drier or accumulator/drier and hoses.</i>
			TDLT.ACDR.8	<i>Inspect A/C system hoses, lines, filters, fittings and seals; determine needed action.</i>
			TDLT.ACDR.9	<i>Inspect A/C condenser for proper air flow.</i>
			TDLT.ACDR.10	<i>Inspect and test A/C system condenser and mountings; determine needed action.</i>
			TDLT.ACDR.11	<i>Inspect and replace receiver/drier or accumulator/drier.</i>
			TDLT.ACDR.12	<i>Inspect and test cab/sleeper refrigerant solenoid, expansion valve(s); check placement of thermal bulb (capillary tube); determine needed action.</i>
			TDLT.ACDR.13	<i>Inspect and replace orifice tube.</i>
			TDLT.ACDR.14	<i>Inspect and test cab/sleeper evaporator core; determine needed action.</i>
			TDLT.ACDR.15	<i>Inspect, clean and repair evaporator housing and water drain; inspect and service/replace evaporator air filter.</i>
			TDLT.ACDR.16	<i>Identify and inspect A/C system service ports (gauge connections); determine needed action.</i>
			TDLT.ACDR.17	<i>Diagnose system failures resulting in refrigerant loss from the A/C system high pressure relief device; determine needed action.</i>
2	1	N	CODE	Demonstrate ability in heating and engine cooling systems diagnosis and repair (TDLT.HCDR)
			TDLT.HCDR.1	<i>Diagnose the cause of outlet air temperature control problems in the HVAC system; determine needed action.</i>
			TDLT.HCDR.2	<i>Diagnose window fogging problems; determine needed action.</i>
			TDLT.HCDR.3	<i>Perform engine cooling system tests for leaks, protection level, contamination, coolant level, coolant type, temperature and conditioner concentration; determine needed action.</i>
			TDLT.HCDR.4	<i>Inspect engine cooling and heating system hoses, lines and clamps; determine needed action.</i>
			TDLT.HCDR.5	<i>Inspect and test radiator, pressure cap and coolant recovery system (surge tank); determine needed action.</i>
			TDLT.HCDR.6	<i>Inspect water pump for leaks and bearing play; determine needed action.</i>
			TDLT.HCDR.7	<i>Inspect and test thermostats, by-passes, housings and seals; determine needed action.</i>
			TDLT.HCDR.8	<i>Recover, flush and refill with recommended coolant/additive package; bleed cooling system.</i>
			TDLT.HCDR.9	<i>Inspect thermostatic cooling fan system (hydraulic, pneumatic and electronic) and fan shroud; replace as needed.</i>
			TDLT.HCDR.10	<i>Inspect and test heating system coolant control valve(s) and manual shutoff valves; determine needed action.</i>

			TDLT.HCDR.11	
2	1	N	CODE	Demonstrate ability in operating systems and related controls diagnosis and repair (TDLT.OSDR)
			TDLT.OSDR.1	<i>Diagnose the cause of failures in HVAC electrical control systems; determine needed action.</i>
			TDLT.OSDR.2	<i>Inspect and test A/C heater blower motors, resistors, switches, relays, modules, wiring and protection devices; determine needed action.</i>
			TDLT.OSDR.3	<i>Inspect and test A/C compressor clutch relays, modules, wiring, sensors, switches, diodes and protection devices; determine needed action.</i>
			TDLT.OSDR.4	<i>Inspect and test A/C related electronic engine control systems; determine needed action.</i>
			TDLT.OSDR.5	<i>Inspect and test engine cooling/condenser fan motors, relays, modules, switches, sensors, wiring and protection devices; determine needed action.</i>
			TDLT.OSDR.6	<i>Inspect and test electric actuator motors, relays/modules, switches, sensors, wiring and protection devices; determine needed action.</i>
			TDLT.OSDR.7	<i>Inspect and test HVAC system electrical control panel assemblies; determine needed action.</i>
2	1	N	CODE	Demonstrate ability in refrigerant recovery, recycling and handling (TDLT.RRRH)
			TDLT.RRRH.1	<i>Maintain and verify correct operation of certified equipment.</i>
			TDLT.RRRH.2	<i>Identify (by label application or use of a refrigerant identifier) and recover A/C system refrigerant.</i>
			TDLT.RRRH.3	<i>Recycle refrigerant.</i>
			TDLT.RRRH.4	<i>Handle, label and store refrigerant.</i>
			TDLT.RRRH.5	<i>Test recycled refrigerant for non-condensable gases.</i>
				PREVENTATIVE MAINTENANCE INSPECTION
2	1	N	CODE	Demonstrate ability in engine system preventative maintenance (TDLT.ES)
				Engine
			TDLT.ES.1	<i>Check engine starting/operation (including unusual noises, vibrations, exhaust smoke, etc.); record idle and governed rpm.</i>
			TDLT.ES.2	<i>Inspect vibration damper.</i>
			TDLT.ES.3	<i>Inspect belts, tensioners and pulleys; check and adjust belt tension; check belt alignment.</i>
			TDLT.ES.4	<i>Check engine oil level; check engine for oil, coolant and fuel leaks (engine off).</i>
			TDLT.ES.5	<i>Inspect engine mounts for looseness and deterioration.</i>
			TDLT.ES.6	<i>Check engine for oil, coolant, air, fuel and exhaust leaks (engine running).</i>
			TDLT.ES.7	<i>Check electrical wiring, routing and hold-down clamps, including Engine Control Module/Powertrain Control Module (ECM/PCM).</i>

				Fuel System
			TDLT.ES.8	<i>Check fuel tanks, mountings, lines, caps and vents.</i>
			TDLT.ES.9	<i>Inspect throttle linkages and return springs.</i>
			TDLT.ES.10	<i>Drain water from fuel system.</i>
			TDLT.ES.11	<i>Inspect water separator/fuel heater; replace fuel filter(s); prime and bleed fuel system.</i>
				Air Induction and Exhaust System
			TDLT.ES.12	<i>Check exhaust system mountings for looseness and damage.</i>
			TDLT.ES.13	<i>Check engine exhaust system for leaks, proper routing and damaged or missing components to include exhaust gas recirculation (EGR) system if equipped.</i>
			TDLT.ES.14	<i>Check air induction system: piping, charge air cooler, hoses, clamps and mountings; check for air restrictions and leaks.</i>
			TDLT.ES.15	<i>Inspect turbocharger for leaks; check mountings and connections.</i>
			TDLT.ES.16	<i>Check operation of engine compression/exhaust brake.</i>
			TDLT.ES.17	<i>Service or replace air filter as needed; check and reset air filter restriction indicator.</i>
				Cooling System
			TDLT.ES.18	<i>Check operation of fan clutch.</i>
			TDLT.ES.19	<i>Inspect radiator (including air flow restriction, leaks and damage) and mountings.</i>
			TDLT.ES.20	<i>Inspect fan assembly and shroud.</i>
			TDLT.ES.21	<i>Pressure test cooling system and radiator cap.</i>
			TDLT.ES.22	<i>Inspect coolant hoses and clamps.</i>
			TDLT.ES.23	<i>Inspect coolant recovery system.</i>
			TDLT.ES.24	<i>Check coolant for contamination, supplemental coolant additives (SCA) concentration and protection level (freeze point).</i>
			TDLT.ES.25	<i>Service coolant filter/conditioner.</i>
			TDLT.ES.26	<i>Inspect water pump for leaks and bearing play.</i>
				Lubrication System
			TDLT.ES.27	<i>Change engine oil and filters; visually check oil for coolant or fuel contamination; inspect and clean magnetic drain plugs.</i>
			TDLT.ES.28	<i>Take an engine oil sample.</i>
2	1	N	CODE	Demonstrate ability in cab and hood preventative maintenance (TDLT.CH)
				Instrument and Controls
			TDLT.CH.1	<i>Inspect key condition and operation of ignition switch.</i>
			TDLT.CH.2	<i>Check warning indicators.</i>
			TDLT.CH.3	<i>Check instruments; record oil pressure and system voltage.</i>

			TDLT.CH.4	<i>Check mechanical, electronic and emergency shut down operation.</i>
			TDLT.CH.5	<i>Check mechanical and electronic engine speed controls.</i>
			TDLT.CH.6	<i>Check heater, ventilation and air conditioning (HVAC) controls.</i>
			TDLT.CH.7	<i>Check operation of all accessories.</i>
			TDLT.CH.8	<i>Using diagnostic tool or on-board diagnostic system; extract engine monitoring information.</i>
				Safety Equipment
			TDLT.CH.9	<i>Check operation of electric/air horns and back-up warning devices.</i>
			TDLT.CH.10	<i>Check condition and documentation of safety flares, spare fuses, triangles, fire extinguisher and all required decals.</i>
			TDLT.CH.11	<i>Inspect seat belts and sleeper restraints.</i>
			TDLT.CH.12	<i>Inspect wiper blades and arms.</i>
				Hardware
			TDLT.CH.13	<i>Check wiper and washer operation.</i>
			TDLT.CH.14	<i>Inspect windshield glass for cracks or discoloration; check sun visor.</i>
			TDLT.CH.15	<i>Check seat condition, operation and mounting.</i>
			TDLT.CH.16	<i>Check door glass and window operation.</i>
			TDLT.CH.17	<i>Inspect steps and grab handles.</i>
			TDLT.CH.18	<i>Inspect mirrors, mountings, brackets and glass.</i>
			TDLT.CH.19	<i>Record all observed physical damage.</i>
			TDLT.CH.20	<i>Lubricate all cab and hood grease fittings.</i>
			TDLT.CH.21	<i>Inspect and lubricate door and hood hinges, latches, strikers, lock cylinders, safety latches, linkages and cables.</i>
			TDLT.CH.22	<i>Inspect cab mountings, hinges, latches, linkages and ride height; service as needed.</i>
			TDLT.CH.23	<i>Inspect tilt cab hydraulic pump, lines and cylinders for leakage; inspect safety devices; service as needed.</i>
				Heating, Ventilation and Air Conditioning (HVAC)
			TDLT.CH.24	<i>Inspect A/C condenser and lines for condition and visible leaks; check mountings.</i>
			TDLT.CH.25	<i>Inspect A/C compressor and lines for condition and visible leaks; check mountings.</i>
			TDLT.CH.26	<i>Check A/C system condition and operation; check A/C monitoring system, if applicable.</i>
			TDLT.CH.27	<i>Check HVAC air inlet filters and ducts; service as needed.</i>
2	1	N	CODE	Demonstrate ability in electrical/electronics preventative maintenance (TDLT.EE)
				Battery and Starting Systems
			TDLT.EE.1	<i>Inspect battery box(es), cover(s) and mountings.</i>
			TDLT.EE.2	<i>Inspect battery hold-downs, connections, cables and cable routing; service as needed.</i>
			TDLT.EE.3	<i>Check/record battery state-of-charge (open circuit voltage) and condition.</i>

			TDLT.EE.4	<i>Perform battery test (load and/or capacitance).</i>
			TDLT.EE.5	<i>Inspect starter, mounting and connections.</i>
			TDLT.EE.6	
				Charging System
			TDLT.EE.7	<i>Inspect alternator, mountings, wiring and wiring routing; determine needed action.</i>
			TDLT.EE.8	<i>Perform alternator current output test.</i>
			TDLT.EE.9	<i>Perform alternator voltage output test.</i>
				Lighting System
			TDLT.EE.10	<i>Check operation of interior lights; determine needed action.</i>
			TDLT.EE.11	<i>Check all exterior lights, lenses, reflectors and conspicuity tape; check headlight alignment; determine needed action.</i>
			TDLT.EE.12	<i>Inspect and test tractor-to-trailer multi-wire connector(s), cable(s), and holder(s); determine needed action.</i>
2	1	N	CODE	Demonstrate ability in frame and chassis preventative maintenance (TDLT.FC)
				Air Brakes
			TDLT.FC.1	<i>Check parking brake operation.</i>
			TDLT.FC.2	<i>Record air governor cut-out setting (psi).</i>
			TDLT.FC.3	<i>Check air drier drain valve operation.</i>
			TDLT.FC.4	<i>Check air system for leaks (brakes released).</i>
			TDLT.FC.5	<i>Check air system for leaks (brakes applied).</i>
			TDLT.FC.6	<i>Test one-way and double-check valves.</i>
			TDLT.FC.7	<i>Check low air pressure warning devices.</i>
			TDLT.FC.8	<i>Check air governor cut-in pressure.</i>
			TDLT.FC.9	<i>Check emergency (spring) brake control/modulator valve, if applicable.</i>
			TDLT.FC.10	<i>Check tractor protection valve.</i>
			TDLT.FC.11	<i>Test air pressure build-up time.</i>
			TDLT.FC.12	<i>Inspect coupling air lines, holders, and gladhands.</i>
			TDLT.FC.13	<i>Check brake chambers and air lines for secure mounting and damage.</i>
			TDLT.FC.14	<i>Service air drier.</i>
			TDLT.FC.15	<i>Inspect and record brake lining/pad condition, thickness and contamination.</i>
			TDLT.FC.16	<i>Inspect and record condition of brake drums/rotors.</i>
			TDLT.FC.17	<i>Check operation of brake manual slack adjusters; adjust as needed.</i>
			TDLT.FC.18	<i>Check operation and adjustment of brake automatic slack adjusters.</i>
			TDLT.FC.19	<i>Lubricate all brake component grease fittings.</i>

		TDLT.FC.20	<i>Check condition and operation of hand brake (trailer) control valve.</i>
		TDLT.FC.21	<i>Perform antilock brake system (ABS) operational system self-test.</i>
		TDLT.FC.22	<i>Drain air tanks and check for contamination.</i>
		TDLT.FC.23	<i>Check condition of pressure relief (safety) valves.</i>
			Hydraulic Brakes
		TDLT.FC.24	<i>Check master cylinder fluid level and condition.</i>
		TDLT.FC.25	<i>Inspect brake lines, fittings, flexible hoses and valves for leaks and damage.</i>
		TDLT.FC.26	<i>Check parking brake operation; inspect parking brake application and holding devices; adjust as needed.</i>
		TDLT.FC.27	<i>Check operation of hydraulic system: pedal travel, pedal effort, pedal feel (drift).</i>
		TDLT.FC.28	<i>Inspect wheel cylinders/calipers for leakage and damage.</i>
		TDLT.FC.29	<i>Inspect power brake booster(s), hoses and check/control valves; check power brake booster, reservoir fluid level and condition.</i>
		TDLT.FC.30	<i>Inspect and record brake lining/pad condition, thickness and contamination.</i>
		TDLT.FC.31	<i>Inspect and record condition of brake drums/rotors.</i>
		TDLT.FC.32	<i>Adjust drum brakes.</i>
			Drive Train
		TDLT.FC.33	<i>Check operation of clutch, clutch brake and gearshift.</i>
		TDLT.FC.34	<i>Check clutch linkage/cable for looseness or binding, if applicable.</i>
		TDLT.FC.35	<i>Check hydraulic clutch slave and master cylinders, lines, fittings and hoses, if applicable.</i>
		TDLT.FC.36	<i>Check clutch adjustment; adjust as needed.</i>
		TDLT.FC.37	<i>Check transmission case, seals, filter, hoses and cooler for cracks and leaks.</i>
		TDLT.FC.38	<i>Inspect transmission breather.</i>
		TDLT.FC.39	<i>Inspect transmission mounts.</i>
		TDLT.FC.40	<i>Check transmission oil level, type and condition.</i>
		TDLT.FC.41	<i>Inspect U-joints, yokes, drive lines and center bearings for looseness, damage and proper phasing.</i>
		TDLT.FC.42	<i>Inspect axle housing(s) for cracks and leaks.</i>
		TDLT.FC.43	<i>Inspect axle breather(s).</i>
		TDLT.FC.44	<i>Lubricate all drive train grease fittings.</i>
		TDLT.FC.45	<i>Check drive axle(s) oil level, type and condition.</i>
		TDLT.FC.46	<i>Change drive axle(s) oil and filter; check and clean magnetic plugs.</i>
		TDLT.FC.47	<i>Check two-speed axle unit operation and oil level.</i>
		TDLT.FC.48	<i>Change transmission oil and filter; check and clean magnetic plugs.</i>
		TDLT.FC.49	<i>Check interaxle differential lock operation.</i>
		TDLT.FC.50	<i>Check range shift operation.</i>
			Suspension and Steering Systems

		TDLT.FC.51	<i>Check steering wheel operation for free play or binding.</i>
		TDLT.FC.52	<i>Check power steering pump, mounting and hoses for leaks, condition and routing; check fluid level.</i>
		TDLT.FC.53	<i>Change power steering fluid and filter.</i>
		TDLT.FC.54	<i>Inspect steering gear for leaks and secure mounting.</i>
		TDLT.FC.55	<i>Inspect steering shaft U-joints, pinch bolts, splines, pitman arm-to-steering sector shaft, tie rod ends, linkage and linkage-assist power steering cylinders.</i>
		TDLT.FC.56	<i>Check king pin wear.</i>
		TDLT.FC.57	<i>Check wheel bearings for looseness and noise.</i>
		TDLT.FC.58	<i>Check oil level and condition in all non-drive hubs; check for leaks.</i>
		TDLT.FC.59	<i>Remove and inspect wheel bearings; reassemble and adjust.</i>
		TDLT.FC.60	<i>Inspect springs, hangers, shackles, spring U-bolts and insulators.</i>
		TDLT.FC.61	<i>Inspect shock absorbers for leaks and secure mounting.</i>
		TDLT.FC.62	<i>Inspect air suspension springs, mounts, hoses, valves, linkage and fittings for leaks and damage.</i>
		TDLT.FC.63	<i>Check and record suspension ride height.</i>
		TDLT.FC.64	<i>Lubricate all suspension and steering grease fittings.</i>
		TDLT.FC.65	<i>Check toe adjustment.</i>
		TDLT.FC.66	<i>Check tandem axle alignment and spacing.</i>
		TDLT.FC.67	<i>Check axle locating components (radius, torque and/or track rods).</i>
			Tires and Wheels
		TDLT.FC.68	<i>Inspect tires for irregular wear patterns and proper mounting of directional tires.</i>
		TDLT.FC.69	<i>Inspect tires for cuts, cracks, bulges and sidewall damage.</i>
		TDLT.FC.70	<i>Inspect valve caps and stems; replace as needed.</i>
		TDLT.FC.71	<i>Measure and record tread depth; probe for imbedded debris.</i>
		TDLT.FC.72	<i>Check and record air pressure; adjust air pressure in accordance with manufacturers' specifications.</i>
		TDLT.FC.73	<i>Check for loose lugs and/or slipped wheels; check mounting hardware condition; service as needed.</i>
		TDLT.FC.74	<i>Retorque lugs in accordance with manufacturers' specifications.</i>
		TDLT.FC.75	<i>Inspect wheels and spacers for cracks or damage.</i>
		TDLT.FC.76	<i>Check tire matching (diameter and tread) on dual tire installations.</i>
			Frame and Fifth Wheel
		TDLT.FC.77	<i>Inspect fifth wheel mounting bolts, air lines and locks.</i>
		TDLT.FC.78	<i>Test operation of fifth wheel locking device; adjust if necessary.</i>
		TDLT.FC.79	<i>Check mud flaps and brackets.</i>
		TDLT.FC.80	<i>Check pintle hook assembly and mounting.</i>
		TDLT.FC.81	<i>Lubricate all fifth wheel grease fittings and plate.</i>
		TDLT.FC.82	<i>Inspect frame and frame members for cracks and damage.</i>

				HYDRAULICS
2	1	N	CODE	Demonstrate ability in general system operation (TDLT.GHSO)
			TDLT.GHSO.1	<i>Identify system type (closed and open); perform system tests and diagnosis.</i>
			TDLT.GHSO.2	<i>Read and interpret system diagrams and schematics.</i>
			TDLT.GHSO.3	<i>Perform system temperature, pressure, flow and cycle time tests; determine needed action.</i>
			TDLT.GHSO.4	<i>Verify placement of equipment/component safety labels and placards; determine needed action.</i>
2	1	N	CODE	Demonstrate ability in pump diagnosis and repair (TDLT.HP)
			TDLT.HP.1	<i>Verify proper fluid type.</i>
			TDLT.HP.2	<i>Diagnose causes of pump failure, unusual pump noises, temperatures, flow and leakage problems; determine needed action.</i>
			TDLT.HP.3	<i>Determine pump type, rotation and drive system; determine needed action.</i>
			TDLT.HP.4	<i>Remove and install pump; prime and/or bleed system.</i>
			TDLT.HP.5	<i>Inspect pump inlet for restrictions and leaks; repair as needed.</i>
			TDLT.HP.6	<i>Diagnose root cause of pump failure; determine needed action.</i>
			TDLT.HP.7	<i>Inspect pump outlet for restrictions and leaks; repair as needed.</i>
2	1	N	CODE	Demonstrate ability in filtration/reservoirs (tanks) diagnosis and repair (TDLT.FR)
			TDLT.FR.1	<i>Identify type of filtration system; verify filter application and flow direction.</i>
			TDLT.FR.2	<i>Service filters and breathers in accordance with manufacturers' recommended procedures.</i>
			TDLT.FR.3	<i>Diagnose cause(s) of system contamination; determine needed action.</i>
			TDLT.FR.4	<i>Take a hydraulic oil sample.</i>
			TDLT.FR.5	<i>Check reservoir fluid level, condition and consumption; determine needed action.</i>
			TDLT.FR.6	<i>Inspect and repair or replace reservoir, sight glass, vents, caps, mounts, valves, screens, supply and return lines.</i>
2	1	N	CODE	Demonstrate ability in hoses, fittings and connection diagnosis and repair (TDLT.HFC)
			TDLT.HFC.1	<i>Diagnose causes of component leakage, damage and restriction; determine needed action.</i>
			TDLT.HFC.2	<i>Inspect hoses and connections (length, size, routing, bend radii and protection); repair or replace as needed.</i>
			TDLT.HFC.3	<i>Assemble, hoses, tubes, connectors and fittings in accordance with manufacturers' specifications; use proper procedures to avoid contamination.</i>
			TDLT.HFC.4	<i>Inspect and replace fitting seals and sealants.</i>

2	1	N	CODE	Demonstrate ability in control valve diagnosis and repair (TDLT.CV)
			TDLT.CV.1	<i>Pressure test system safety relief valve; determine needed action.</i>
			TDLT.CV.2	<i>Perform control valve operating pressure and flow tests; determine needed action.</i>
			TDLT.CV.3	<i>Inspect, test and adjust valve controls (electrical/electronic, mechanical and pneumatic).</i>
			TDLT.CV.4	<i>Diagnose control valve leakage (internal/external); determine needed action.</i>
			TDLT.CV.5	<i>Inspect pilot control valve linkages, cables and PTO controls; adjust, repair or replace as needed.</i>
2	1	N	CODE	Demonstrate ability in actuator diagnosis and repair (TDLT.A)
			TDLT.A.1	<i>Identify actuator type (single/double acting, multi-stage/telescopic and motors); determine needed action.</i>
			TDLT.A.2	<i>Diagnose the cause of seal failure; determine needed repairs.</i>
			TDLT.A.3	<i>Diagnose the cause of incorrect actuator movement and leakage (internal and external); determine needed repairs.</i>
			TDLT.A.4	<i>Inspect actuator mounting, frame components and hardware for looseness, cracks and damage; repair or replace as needed.</i>
			TDLT.A.5	<i>Remove repair, and/or replace actuators in accordance with manufacturers' recommended procedures.</i>
			TDLT.A.6	<i>Inspect actuators for dents, cracks, damage and leakage; repair or replace as needed.</i>
			TDLT.A.7	<i>Purge and/or bleed system in accordance with manufacturers' recommended procedures.</i>